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# welcome

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## verdicts

●●●●● **OUTSTANDING**  
●●●● **EXCELLENT**  
●●● **GOOD**  
●● **MEDIOCRE**  
● **POOR**  
£ **VALUE**

but two did not. They just plugged and played. It is surprising that such a large functional gap should exist between rival products, a make or break difference for many buyers perhaps. It's all a matter of writing your own code for a DSP. Manufacturers have my greatest sympathies here – digital audio is cruelly complex.

Next month, to underline this theme of rapid evolution, we will be looking at Media Players you cannot buy yet. It is obvious what the market needs, but few manufacturers worldwide have looked into their crystal ball and seen the future. Hi-Fi World has seen it and will explain all next month.

Long ago, Britain built large loudspeakers. Tannoy still do for those lucky enough to live in Downton Abbey or the stately pile next door. Otherwise, 13in bass units were squeezed out as interest in beautiful homes strode in. But not so fast: Germany did a good job repackaging the Mini and now they're squeezing 13in bass units back in. Just look at the towering Quadral Vulkans we review this month and believe in the old Yorkshire expression "there's nothing like a good big 'un".

With high resolution digital files playing at the one end of your hi-fi and volcanoes at the other end, you can't say hi-fidelity is anywhere close to dead. Far from it: it is frighteningly alive, as this issue shows! I hope you enjoy it.

## Noel Keywood

### Editor

## testing (see [www.hifiworld.co.uk](http://www.hifiworld.co.uk) for full explanations of all our tests)

To ensure the utmost accuracy in our product reviews, *Hi-Fi World* has extremely comprehensive in-house test facilities, and our test equipment - from big names like Rohde & Schwarz and Hewlett Packard - is amongst the most advanced in the world.

Loudspeakers are measured using a calibrated Bruel & Kjaer microphone feeding a Clio-based computer

analyser, using pulsed and gated sinewaves, in a large room to eliminate the room's influence. Pickup arm vibration is measured with a Bruel & Kjaer accelerometer.

No other UK hi-fi magazine has in-house testing, and none has access to such advanced tests across all types of equipment. That's why you can depend on *Hi-Fi World* reviews.



## ELECTRONIC MAGAZINE

Go to our website [www.hifiworld.co.uk](http://www.hifiworld.co.uk) to buy an electronic version of this magazine, individual issues, back issues or a subscription.

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"subtlety, dynamics and coherence, there's nothing to dislike here"

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# news



## CONCORD ARRIVES

Astin Trew has revealed to Hi-Fi World exclusive news of its forthcoming Concord DAC1, the first product launch from the company's new brand. It has been designed as a hybrid, sporting a dual mono analogue, single ended, valve output stage. The digital side provides six inputs including an asynchronous 24bit/192kHz USB, FireWire and I2S inputs.

The DAC1 features two DAC chips which are used for processing in a dual mono configuration for optimum channel separation and a low noise floor. The company has also been working on reducing the amount of jitter that the unit produces. That is aided by the inclusion of a meaty power supply. The Concord uses two separate power transformers: one for digital and one for analogue, with multiple and very low noise rectification.

If the DAC1 tickles the sonic taste buds then you will also need to know that its aluminium fascia arrives in either silver or black, while the solid brass rotary knobs are finished as bright chrome as standard. Those of a discerning disposition can always turn towards the options of a black or gold finish.

A final cost has yet to be fixed but expect an asking price in the region of £3,200.

(PS: The Concord range is also expected to spawn an integrated, hybrid, 180W amplifier, the second launch product in the Concord range, to be released later in the year). Click on [www.astintrew.co.uk](http://www.astintrew.co.uk) for more information



## GET AHEAD

The new Bryston BHA-1 headphone amplifier packs a lot of technology into a slim chassis while aiming to tackle any headphone you care to throw at it. For example, you get a dual mono amplifier construction to minimise aural cross contamination, presented in balanced or series mode. This means that you receive two amplifiers per headphone driver, potentially enhancing clarity and stability. It also means that the amp will drive just about any pair of 'phones on the market. You even get a 14dB or 20dB switch of selectable gain to increase compatibility. This 'aim to please' extends to the connectivity of the unit. Hence, the availability of four pin stereo XLR or dual left/right three pin XLR outputs on the front along with a 6.3mm stereo jack socket while the rear is occupied by balanced XLR connections, single ended RCA sockets or a 3.5mm stereo jack.

Priced at £1,425, check out [www.bryston.co.uk](http://www.bryston.co.uk) for more information.

## MONTIS MAGIC

The new Martin Logan Montis electrostatic speakers are packed with so much new technology that there are little TM signs sprouting left and right. First there's the Airframem which refers to the speakers very stiff, extruded aluminium composite frame; the CLStm or Curvilinear Line Source Xstat transducer that provides twice the standard diaphragm surface, improving efficiency, while the 24-bit Vojtko™ DSP engine is linked to a 200W Class-D amplifier. Price from £9,800.

Check out our review in the next issue but, until then, try not to trip over the tm signs while you call Absolute Sounds on 020 89713909 or click on [www.absolutesounds.com](http://www.absolutesounds.com) for more information.





## A NAD FOR YOUR PAD?

NAD has announced the forthcoming release of their T 567 Blu-ray player, compatible with 3D discs. For hi-fi fans, the player includes Dolby Digital Plus, True HD and DTS Master Audio 7.1 with Linear PCM and encoded bitstreams available via the optical and coaxial ports. MP3 and WMA are also available. Other options for the sonically inclined include the ability to add a FAT32/FAT16 formatted USB drive and record audio tracks from a CD through the front panel USB drive.

Arriving with Wi-Fi, this 1080p capable player features a range of video formats and options including BD Live and Bonus View plus JPEG, PNG, DivXHD and AVCHD.

Priced at £599, find out more by phoning 01279 501111 or clicking on [www.armorhome.co.uk](http://www.armorhome.co.uk)



## SAMSUNG GO VALVES!

Who would have thought that Samsung, of all people, would be releasing a new iPod dock featuring valve amplification? The DA-E750 supports a range of Galaxy S and Apple devices including the Galaxy S2, Galaxy Note, Galaxy Player, iPhone, iPod and iPad via both docked and via Wi-Fi. Offering 2.1 sound, via the included 100W subwoofer, the DA-E750 includes analogue (composite) input, a USB port plus file support for MP3, WMA and WAV. Also supporting the same file formats is the DA-E650, which also supports dual docking, built-in speakers that collectively output 40W, in addition to an integrated subwoofer.

The same valve technology – Samsung's own design, incidentally – is also present in the HT-E6750W, Samsung's flagship 7.1 Channel Blu-ray 3D

player. Providing 3D Sound Plus and Crystal Amp Plus sound for more power with less noise, the player arrives with a suite of speakers including a dual unit subwoofer, tower Swivel Speakers to fine tune directional audio and the wireless rear satellite speakers, removing those pesky wires. You also get web-connected entertainment via a full web browser and Samsung's Smart Hub to access apps such as BBC's iPlayer, LoveFilm, Netflix and Facebook. Prices are to be announced but check out [www.samsung.com/uk](http://www.samsung.com/uk) for more information.



## KUTTING KORNERS

Hi Fi Racks has announced a new range of corner-fitting shelving units called Akorner, which has been positioned within the Podium brand.

Like other products in the company's portfolio, the Akorner is completely handmade to order from a range of quality hardwoods with a selection of finishes on offer. In addition, you can choose from a selection of sizes or, if you want something a little out of the ordinary, you can request a completely bespoke design to your specifications.

For more information click on [www.hifiracks.co.uk](http://www.hifiracks.co.uk), email [info@hifiracks.co.uk](mailto:info@hifiracks.co.uk) or call 01572 756447 to request a brochure.



## VINYL TRANSFER, ANYONE?

If you have a vinyl collection that you've like to transfer to digital format, try the HRT LineStreamer+, an external soundcard that connects between the computer, via USB, and your turntable.

Featuring an asynchronous USB (which supplies power) and a 24bit analogue to digital converter, the LineStreamer+ uses native Audio Class 1.0 drivers (present in all modern PC, Mac and Linux computers) so there's no drivers or software to install. Featured LEDs show the sample rate at either 32kHz, 44.1kHz, 48kHz, 88.2kHz or 96kHz. Priced at £299, contact 020 8948 4153, email [info1@audiofreaks.co.uk](mailto:info1@audiofreaks.co.uk) or click on [www.audiofreaks.co.uk](http://www.audiofreaks.co.uk) for more information.



## APPLE ACCESSORIES

The SMC 1000 Stereo Boombox is a dock that takes music directly from an iPhone or iPod via the included line in socket. You also receive a digital clock and radio tuner that can be controlled via the included high resolution VFD display. Accompanying the graphic equalizer is a pair of 12W speakers and a touchpad remote control.

Next, the SMC 150 iPhone Travel Speaker measures just 202 x 21 x 184mm, which is small enough for easy storage complete with a fold-away handle. As well as being compatible with Apple's iPods and iPhones, it can also be hooked up with any other musical outlets that sport a 3.5mm jack.

Price for the STK SMC 1000 Stereo Boombox is £99.99, while the STK SMC 150 iPhone Travel Speaker will set you back £38. Click on [www.santok.com](http://www.santok.com) for more information.



## QUAD DUMPS CURRENT

Current dumping can be found within the company's new stereo power amp, the Elite QSP (Quad Stereo Power). A low power, Class A amplifier, aided by current dumping pumps out 140W per channel into 8 Ohms and 250W into a 4 Ohm load.

Current dumping, invented by company founder Peter Walker back in the seventies and used on the venerable 405 amplifier, combines two stereo amplifiers, one to do the donkey work and another to exert fine control over the process. This modern take uses upgraded components, newly designed circuitry and additional attention to internal screening to reduce the possibility of crosstalk problems, magnetic interference and mains hum.

The new amp also features 'green' credentials. Don't laugh. Yes, Class A amps generate enough heat to make a camel sweat but the new Elite QSP also features a stand-by button and then consumes less than one watt of power.

Set within an aluminium chassis, the Quad Elite QSP is available for £1,200. Click on [www.quad-hifi.co.uk](http://www.quad-hifi.co.uk) for more information

## DAC EXPOSED

Exposure is about to launch a new DAC, the 2010 S2 DAC, the company's first ever stand alone DAC product. Featuring multiple inputs such as asynchronous USB, BNC and optical inputs, the DAC also includes a digital volume control for a direct connection to power amplifiers as well as analogue, digital and headphone outputs. Finally, in addition to the included remote control, expect to see two banks of filtering, accessible from the onscreen menu: a low sample rate of 32kHz-48kHz plus medium and high sample rates rated at 88.2kHz-192kHz.

Priced at £800, call 01273 423877 or click on [www.exposurehifi.com](http://www.exposurehifi.com) for more information.



## SONY'S BASS LADEN WALKMAN

Sony has released a new Walkman MP3 player. Called the B170, it is positioned at the 'fun' end of the personal stereo market: the bass boost button, voice recorder, sound equaliser, colour matched pulsating LED and chunky belt clip will testify to that.

The unit does supply a fast battery charge option, providing ninety minutes of play from a three minute charge, plus drag and drop music transfers when connected to a PC via the included USB cable. No file transfer software is required, making the B170 a plug-and-go machine. In addition, the Zappin preview technology plays a snippet of the beginning of each song to speed up the track search process.

Available for £30 (2GB) or £35 (4GB) and with a red, black or blue chassis, click on [www.sony.co.uk/hub/walkman-mp3-players/b-series](http://www.sony.co.uk/hub/walkman-mp3-players/b-series) for more information.



## FEEL THE RENKFORCE

From Conrad Electronics, the Renkforce E-SA9 mini-amplifier measures just 200 x 65 x 135mm but provides a stylish alternative for anyone looking to fill a small space with sound. With its jewel-like chassis and wooden cheeks, the E-SA9 occupies its own style niche but its 12W of power can drive a CD player tuner and auxiliary unit plus two sets of speakers, if required. Ideal for a bedroom, bedsit property or a second system in an office, the Renkforce fetches £45. Click on [www.conrad-uk.com](http://www.conrad-uk.com) for more information.

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For more information on Tannoy's extensive loudspeaker range visit [www.tannoy.com](http://www.tannoy.com)

## ENTRY-LEVEL ONKYOS

Onkyo has announced the forthcoming release of three, entry-level, 5.1 surround sound receivers. All three include Onkyo's own Wide Range Amplifier Technology (WRAT) amplification that provides power while attempting to reduce noise. Audiophiles will be interested to hear that the company has included Burr-Brown 192kHz/24-bit DACs on all channels plus a 32-bit DSP processing chip with discrete output-stage components. Other sound features include both Dolby TrueHD and DTS-HD Master Audio. In addition, an Audio Return Channel (ARC) for TV audio through the home cinema, 3D video and an overlaid On-Screen Display are included.

The HT-S3505 (£300) includes two front speakers, a centre and two satellites plus a 16cm subwoofer, four HDMI and one rear mounted USB port for an iPod dock or DAB tuner.

The HT-S4505 (500) offers a similar configuration but adds a more powerful subwoofer, a front-mounted USB port plus an Audyssey 2EQ room acoustic correction facility. The HT-S6505 (£650) includes wireless-capable networking for audio streaming, InstaPrevue (which gives you a video representation of what is connected to the Onkyo), an associated iPhone/Android app, front panel USB and six HDMI ports. Call 01628 473350 or click on [www.onkyo.co.uk](http://www.onkyo.co.uk)



## HEADPHONES FOR KIDS

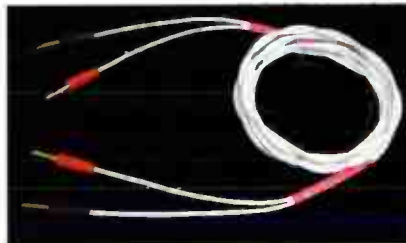
Kidz Gear has announced a set of wired headphones, complete with soft padded cups, for Apple-related devices that provides safe listening for children. Featuring KidzControl, this volume limiting technology reduces the noise to 80-90dB.

The Kidz Gear headphones also includes a remote control option, an audio record feature and voice command system for Skype, iPhone's Siri or iPhone phone call answers. Priced at \$30 (there is no UK price as yet), the headphones will be available at Apple's stores. For more information, click on [www.gearforkidz.com](http://www.gearforkidz.com)

## DO THE TWIST

Twist is a new speaker cable from Black Rhodium that takes the top-of-the-range Ninja cable design and then strips it of all the expensive bits. So you lose the silver plating and the heavy gauge wiring but there's still plenty of good stuff on offer.

And it's called Twist because it is. Twisted, that is: to prevent the formation of a loop aerial which would attract radio frequency interference. The positive and negative cores are connected in opposite directions which lowers the noise floor plus the insulation is double the normal thickness which aids a more natural sound. A 3m pair terminated with 4mm plugs will set you back £71.00. Click on [www.blackrhodium.co.uk](http://www.blackrhodium.co.uk) for more information.



## ANALYZE THIS!

Want to test and tune-up your hi-fi? Need a reference generator of sounds and records? Audio Audit provides a suite of tools that you can use to test everything from speakers to headphones allowing you to perform a wealth of tasks such as checking the cross-over on a subwoofer to even burning them in.

The suite includes a tone generator, a stereo checker for those building their own speakers, a phase tool, a noise generator to check frequency responses, an array of test music and a real-time analyzer to find frequency weaknesses.

Download a free, basic version, Audio Audit Free or the full version for £2.49 via iTunes or click on [www.tigapp.com/audiaudit](http://www.tigapp.com/audiaudit) for more information.



## YOUR GOIN' DOWN!

Artisan Silver Cables, which has been in business since 2009, has decided to reduce the prices of its range of audiophile cables, despite the rise in materials costs and overheads.

Taking a typical one metre length, these include Silver Dream, down from £199 to £149; Ultimate Silver Dream down from £349 to £249; Ultimate WBT down from £499 to £399; Digital Dream down from £199 to £129 and Ultimate Silver Dream down from £299 to £249.

See the full price reductions yourself on [www.artisansilvercables.com/silvercables.htm](http://www.artisansilvercables.com/silvercables.htm)





# Volcanic

From Quadral comes the massive Vulkan VIII loudspeaker. German for volcano, would it live up to its fiery name, Noel Keywood wonders?

**V**ulkan with a 'k' is German for volcano, harking back to the Roman God of volcanic fire, Vulcan. Would it set our listening room alight I wondered? How many Globes would it get if it did? Hmmmm...

As a loudspeaker designer myself I know the various approaches and their justifications and can sense what the designers of the Vulkan VIII had on their mind with this towering monster, one that stands 1.27 metres high no less. A metal coned midrange and ribbon tweeter will together sound 'fast', but it is difficult to get equivalently 'fast' bass able to keep up and you end up with a two part loudspeaker, sound wise. Deep bass can be wrung from ports, and plenty of it if a couple of 8in drive units are

"Nigel's Stradivarius came across as big and solid in nature, smooth and deeply detailed"

used, as in Tannoy's DC8T.

This solution never gives the bass slam of a big 12in or 15in bass unit in a giant cabinet. It is something many crave once they have heard it, usually from big, old loudspeakers bearing resemblances to a broom cupboard. Having lived with Leak 2075s and then Leak 3090s, followed by Tannoy Yorkminsters I know a thing or three about this broom cupboard experience. It's like having one thrown at you!

However, use a 12in bass unit in a loudspeaker and you are faced with a monster in the lounge. Just look at contributor Adam Smith and his Leak 2075s, with their Leak Sandwich 13in bass units. Great aren't they! But the front of such a loudspeaker stretches out to broom cupboard width to accommodate a 13in sandwich bass

unit and not everyone is happy about the visual result, namely the rest of the family. Also, wide front baffles image badly.

Faced with this problem manufacturers are tempted to put the bass unit on the side of the loudspeaker, but then it cannot handle anything above 100Hz. Quadral use a massive 32cm bass unit (12.6in) in the Vulkan VIII, mounted on an angled baffle and vented through front and side panels. This approach allows them to keep the front baffle acceptably narrow, just 29 cms, which lessens the sense of looming presence. And you'll be happy to know that a 32cm bass unit still has more cone area than two 8in (20cm) bass units, giving more slam.

So although you cannot see it, the big Vulkan VIII is a three way, and a heavy one too, weighing 55kgs

apiece. It is ported and you cannot see this either, because the port is underneath, firing downward. A plinth holds the cabinet just above the floor to provide breathing room, as it were, with a rear facing vent. So the Vulkan VIII is a three-way with reflex loaded '12in' bass unit, all cleverly arranged so as not to look like a broom cupboard. Big bass units consistently produce low distortion, our measurements show, and give cleaner, tighter bass than struggling 8in units, so the Vulkan VIII has potential.

Quadral go to all this trouble to engineer in bass that can keep up temporarily with their 17cm Altima midrange unit and this in turn must keep up with their large ribbon tweeter. The Altima midrange uses a "blend of the three light metals,

aluminium, titanium and magnesium" they say, to avoid the metallic coloration of aluminium cones, and the sluggishness of plastic cones.

However, it is the ribbon tweeter that sets the pace, because these things are fast, as well as clean. The Vulkan VIII has Quadral's own design, newly enlarged to go lower and louder, +10dB louder they say. All the ribbon tweeters I have used in the past reached down to 4kHz, leaving an awkward gap to be filled by expecting rather too much from the midrange unit. Quadral's ribbon reaches down to 2kHz they say, so no gap! Big ribbons that go low have been done before, notably by Celestion's Graham Bank, but they are difficult to make and expensive.

There appear to be five different finishes but ours came in deep gloss black. The rear connecting panel has sturdy screw terminals that allow bi-wiring and accept bare wires, spades or 4m plugs. As you might expect, the Vulkan is very well built and finished.

## SOUND QUALITY

There is no running preface to sound quality because – thankfully – our review samples came run in. We ran them for 24 hours with Monitor Audio's De-Tox disc and I started listening with our Icon Audio 845 valve monoblock power amplifiers set to 4 Ohms. In this case bass seemed a bit one-note and boofy and not quite right. As there is an input blocking capacitor on the Vulkans this





may well need to 'see' a low source impedance, which it would not with a valve amplifier. Swapping over to our tight, dry sounding Musical Fidelity AMS50 pure Class A transistor power amplifier largely cured these woes. In our listening room I also found it better to use the Vulkans with bass unit facing outward, rather than inward as in our initial setup. So positioned, and firing straight down the room, is how the Vulkans were reviewed.

Quadral put effort into getting an evenly balanced loudspeaker, a property I greatly value, and the Vulkans follow their philosophy

"thoroughly modern, well engineered loudspeaker, with fantastic imaging and amazing detail"

closely. With no peaks or dips or artificial emphases, our measurements show, they sounded deliciously smooth and natural, rare with ribbon equipped loudspeakers whose designers like to raise treble just to demonstrate the arresting properties of ribbon treble units – enormous, speed, detail and incision. Quadral have resisted this, so I found I could enjoy their lovely ribbon unit without having to wince at sonic lances, for ribbon tweeters to can be challenging if too forward. The midrange unit integrates well, with no change of character to mar crossover, and bass has been engineered to be tight and fast, rather than large and obvious. For such a large loudspeaker bass energy was held in strong check; the Vulkans are not Tannoys! Doing this helps the loudspeaker play a bass tune, by keeping slow-to-decay

subsonics in check.

Moving up and down in front of the loudspeaker showed vertical integration very good out at normal listening distances – rather better than dome tweeter loudspeakers. Best ear height was just below the ribbons but the change in sound balance was not great as I moved further up or down. Listening on the central axis of the ribbon unit, meaning high up, did add in the hiss of strong high treble at times, but only from CDs possessing a lot of high frequency content.

The opening drum strike of Angelique Kidjo's 'Agolo' was muted in terms of subsonic content. It came and went quickly, sounding powerful but well damped. There was none of the resonant boom that I often hear from ported loudspeakers. The ribbons set out a wonderfully clear, sharply etched sound stage on which every instrument had a perfectly defined place – a real strength of ribbon tweeters, and one the big Vulkan exploits beautifully. With the ribbons sitting high, 110 cms above the floor, the sound stage has a celestial quality, something I always enjoy. And with plenty of treble bouncing off side walls the stage sounds wide, even though we use big acoustic damping pads on our walls as part of the room's

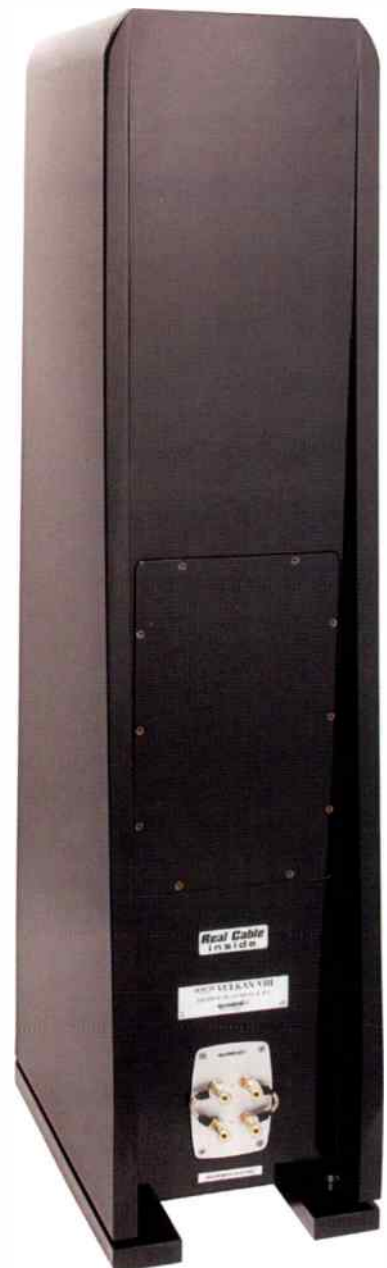
acoustic treatment. Maracas rang out clearly and fine metallic percussion instruments hung in space beautifully.

Swathes of intricate detail accompanied the backing singers and the layered instruments of Kidjo's backing band, bringing a lovely busy feel to proceedings. The Vulkans sound clean and distortion free, yet although they move along at a brisk pace, they sound relaxed. Able to resolve strong dynamic contrasts this makes for a loudspeaker that is fleet of foot yet engagingly dynamic too.

Turning volume right up with Adele's 'Rolling in the Deep' the Vulkans became wickedly loud but stayed relaxed and clean, nearly blowing me back over the

settee. Kick drum was both tightly controlled and powerful too. However, the loudspeakers have a slight boxy thud at times, when pushed hard like this, and here I strongly suspect the big bass cones are letting through box colour, not helped by a nearby baffle behind them. This apart though, bass comes over as tight, dry and powerful, giving the big Vulkans a solid kick. Adele's vocals were perfectly formed and had all the power expected from them.

Listening to Nigel Kennedy playing Vivaldi's 'Spring' brought up an interesting discussion with Rafael Todes, of the Alegri String Quartet. Nigel's Stradivarius came across as big and solid in nature, smooth and deeply detailed – impressive by any standard. There was not the phasiness so common on dome tweetered rivals, doubtless due to the ribbon tweeter. My only small concern here was that his violin lacked the timbral signature of a wooden bodied instrument, with gut strings; it was



a shade too metallic in nature. I was using Eminent Technology LFT-16s as a reference here, for their ability to show that such properties do exist in the recording. Rafael liked the sound of the Vulkans but agreed that there was some "sheen" in the sound as he put it, having owned a Stadivarius like Nigel's for some years. I also learnt, by the way, that the top strings of a violin are metal wrapped to preserve their life, or they wouldn't last more than 30 minutes. The English Chamber Orchestra sounded large and lush behind Nigel, instruments well differentiated from each other in a clean sweep behind him.

The Vulkans captured the deep, resonant tones of Jackie Leven singing 'Desolation Blues' and made him as large sounding as he was in life. They saw right into this recording, surrounding him with floods of fine detail, as well as cues into the surrounding studio, in a performance that came over as easy, unforced yet powerful. Deep male vocals highlight box colour though and again I became aware of some slight boxiness, almost certainly coming from the big bass unit. It was a relatively minor effect though and unintrusive.

**CONCLUSION**

Big loudspeakers often have strong characteristics, massive bass and excess treble too. Quadral have tried and largely succeeded in producing a sound of large scale but great control in the Vulkan VIII – not properties that are easy to combine. It runs cleanly from the highest highs down to the lowest lows without unnatural emphasis over the entire audio range. This is a dry, controlled, finely balanced but accurate loudspeaker. With copious



**A big bass unit demands a cabinet that looks like a broom cupboard, contributor Adam Smith's Leak 2075s show us. Quadral overcome this problem in the Vulkan VIII by angling the baffle.**

dynamics, it is big hearted too, yet goes from loud to soft with an alacrity that is rare. This gives it a smooth ability that defies other loudspeakers.

With so much effort in the design, including a good understanding of how to tie together the various components in subjective terms to achieve a cohesive whole, rather than a disparate set of sonic parts, the Vulkan VIII is one impressive loudspeaker. If you want to hear a thoroughly modern, well engineered loudspeaker, with fantastic imaging and amazing detail, plus deep, fast



bass, this is one you should hear. I'm happy to report it didn't burst into flame either, so it gets full five globes. Vulkan may not be so happy – but I was.

**MEASURED PERFORMANCE**

Our pink noise frequency response shows the Vulkan VIII has an impressively flat frequency response (green) with the measuring microphone vertically aligned midway between ribbon tweeter and midrange unit, putting it at typical ear height. Vertical dispersion of the ribbon is sharply defined so a little higher restores treble above 10kHz, whilst on the tweeter's central axis treble rose to +7dB at 10kHz (grey trace) – a large rise. Although vertical dispersion is constrained, like most ribbon tweeters, lateral dispersion is smooth and wide, so Quadral's big ribbon throws quite a lot of treble energy out into a room and this will give the Vulkan VIII a bright demeanour, even though the on-axis response may seem to suggest otherwise (depending upon where the ear is).

At low frequencies the bass unit roaches down to 70Hz and the large underside port takes over below this frequency, peaking at 30Hz our red trace shows. This puts a lot of bass energy into the room, the port being a huge drainpipe affair (large ports produce less distortion). Bass does not peak up and is in good balance our response measurement shows. A decay graph showed low coloration except for an overhang at 00Hz.

Sensitivity was very high, the Vulkan producing 92dB sound pressure level from one nominal watt of input (2.8V). In fact, with a very low impedance of 5 Ohms overall they

consumed more power than one watt, but they need little power to go loud all the same, 40W is enough. An infinite DCR value suggests Quadral are using an input capacitor. Our impedance trace shows the loudspeaker is almost perfectly resistive and an ideal amplifier load, so it is not difficult to drive.

The Vulkan VIII is a relatively accurate loudspeaker providing it is listened to just below the ribbon tweeter. It will have a bright character all the same, but should sound quite dry in its bass. NK

**FREQUENCY RESPONSE**



Green - ear height; Grey - tweeter height; Red - port

**IMPEDANCE**



**VERDICT** ●●●●●

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# Religious Conversion

**Our review of five USB-to-S/PDIF convertors invokes digital religion, Noel Keywood says. Rafael Todes listens in supplication.**

**D**igital can be confusing at the best of times, and this group of unassuming little convertors demonstrates the issue. Superficially, they convert USB digital audio, typically from a computer, to S/PDIF digital audio suitable for a hi-fi. Their role then is simply to allow a computer to connect to the hi-fi, so music can be played from Windows Media player or iTunes through a decent sound system.

Somewhere along the line, this simplest of ideas got diverted into arcane digital complexity. The digital conversion process has been configured so what could have been simple definitely is not: these units don't just convert, many of them clean up the digital signal too, in order to lift sound quality. Enter religion!

The group comprises five convertors, ranging in price from the Kingrex UC192 at £159 up to an eye watering £825 for the Audiophileo 1 – and more expensive designs are available. Budget convertors simply do their stated job, convert from USB to S/PDIF, but as price increases a more sophisticated method of clock control, known as asynchronous operation (see page 25) enters the picture, as well as other interesting ideas such as an external USB power supply and – naturally! – a battery powered external USB power supply.

Yes, it all gets nutty quickly, but that's what happens to digital audio once audiophile religion takes hold. In this review we keep away from the horrors of Phase Locked Loops and suchlike, and keep it simple. In any case, as intelligent as modern digital circuits are now becoming in their attempts to suppress the ills of digital, the local digital signal chain is so complex and behaviourally difficult to predict, that what actually happens in

any one set up cannot be fully known by outside observers.

Digital audio as it comes out of a computer's USB port is in an entirely different format to that concocted for an S/PDIF connection into a hi-fi system. A USB receiver must assemble the computer audio data, retrieve the clock information, and reduce or eliminate blemishes such as jitter and noise. It is possible to clean up a digital signal using a variety of strategies, often one after another in a daisy chain of digital signal processing, before sending it out to the hi-fi, and both the degree and the sophistication of these strategies is what decides cost.

Whilst most convertors use function-specific silicon chip building blocks, this has difficulties, especially with computer compatibility. Two models, the Halide Bridge and Audiophileo, use non-function-specific Digital Signal Processors (DSP) in conjunction with an audio framework code, as well as their own custom code, to perform the process and both linked up to Windows Vista (SP2) and Windows 7 immediately in our tests (we did not try XP etc). With the others, a special Windows driver is needed, supplied by the manufacturer. Listening was carried out on Windows 7.

Mac OS-X from 10.6 (Snow Leopard) onward works with its own drivers that can handle asynchronous operation. Tests were carried out using OS-X 10.6, so both Windows and Mac were used to check for compatibility.

## LISTENING

The way digital can degrade sound quality is well known to Rafael Todes, as it affects his recordings of the

Alegri String Quartet, in which he plays an Amati violin. In particular, loss of spacial perspectives blurs the placement of players, loss of timbral resolution lessens differences between brass and woodwind, making his Amati sound like a Yamaha synth copy, and digital glare or hardness makes gut strings sound like steel ones. These are all sensitive issues for him so he was keen to listen to these convertors, feeding his Weiss DAC202, a Music First Audio passive preamp, and B&W 802D loudspeakers. Recordings were various but included his own of the Alegri. He listened before we measured and the correlation between what he heard and what we measured is surprising.

*\* see p25 for Conclusion, computer compatibility, asynchronous operation, tests and much more.*



# KINGREX UC192 £159

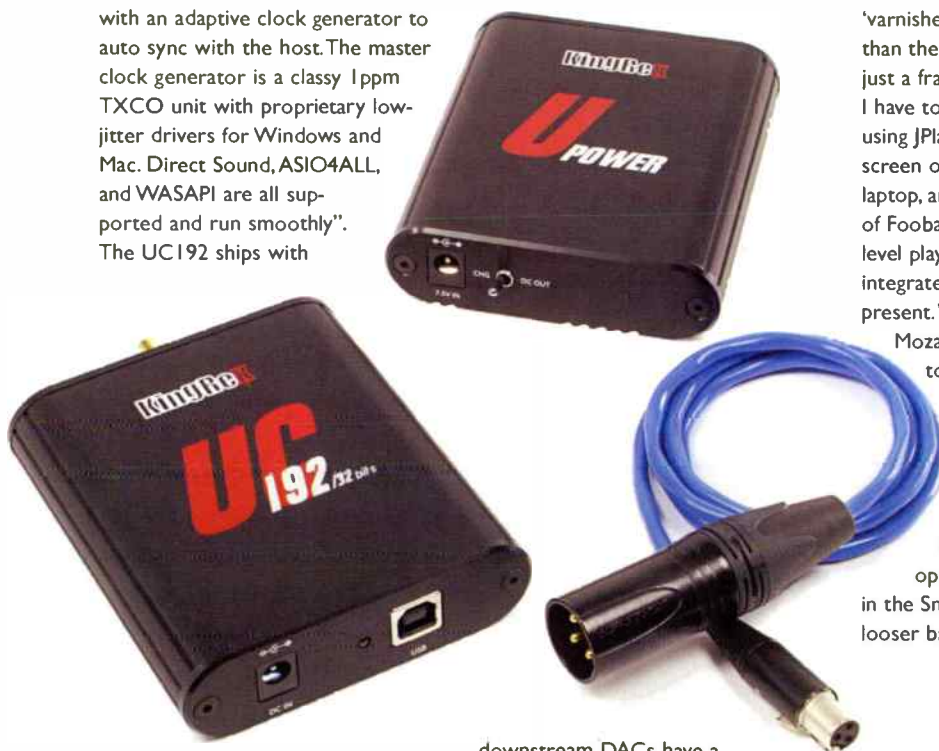
**USP: Optional battery power supply, entry level 32/192 capable converter with proprietary USB drivers. Adaptive.**

**K**ingrex say "the UC192 can transfer from PC or Mac at 16bit, 44.1kHz to 32bit, 192kHz through S/PDIF and I2S outputs. The UC192 runs isochronous with an adaptive clock generator to auto sync with the host. The master clock generator is a class 1 ppm TXCO unit with proprietary low-jitter drivers for Windows and Mac. Direct Sound, ASIO4ALL, and WASAPI are all supported and run smoothly". The UC192 ships with

of an I2S output via an RJ45 socket. This is an internal link, where clock and data are carried separately (there is no agreed socketry for it). It is preferable to S/PDIF but few

## SOUND QUALITY

Listening to the 'Dance of the Tumblers' shows a good presentation, up there with the others. There seems to be a touch more sheen to the sound, not unpleasant, just a bit 'varnished'. The bass is a tad slower than the Halide Bridge and there is just a fraction less air to the sound. I have to mention at this point, that using JPlay in JRiver yielded the blue screen of death to my Windows 7 laptop, and I had to use the fallback of Foobar, which coped well. Not a level playing field, but JPlay doesn't integrate with every convertor at present. When I try and listen to the Mozart on Foobar, there seems to be a problem with the awkward sample rate of 88.2, and Foobar doesn't pick this up, so an exact comparison, like-with-like is impossible. In the Mozart Prague opening, I'm aware of an issue in the Snow Maiden dance, of a looser bass operating – a bit splashy.



a Windows driver (ASIO4ALL) that needs to be installed on your computer and the Kingrex manual explains how, in a procedure that will have Mac users rolling around the floor laughing.

The unit is not USB powered like many, so a USB power supply upgrade will not help. It has its own small wall wart supply, delivering 7.5V at 200mA. A battery version is available however.

The UC192 works right up to 24/192 so will handle top resolution digital audio. Balanced and unbalanced S/PDIF outputs are fitted, electrical only; there is no optical output. However, the electrical outputs are isolated by pulse transformers to break hum loops and reduce electrical noise. Transformers need correct termination to minimise jitter; the mini-XLR output must see 110 Ohm termination and unbalanced 75 Ohm.

Very unusual is provision

downstream DACs have a suitable input – and none from Kingrex, which is peculiar.

Kingrex advise manual driver installation before connection to a computer to prevent Windows automatically installing an unsuitable driver. Kingrex recommend Windows 7 and Mac OS-X 10.6 (Snow Leopard) or later, but older OSes will work, including XP.

*The convertor (top) has a mini XLR balanced output at left, plus I2S through an RJ45 socket at right.*



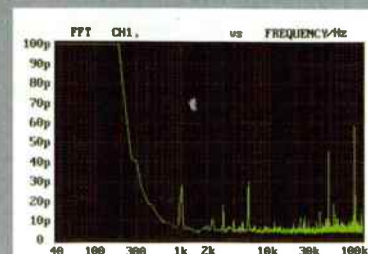
## MEASURED PERFORMANCE

The Kingrex result was dominated by appalling clock drift, no less than 7nS, seen at left in our jitter analysis. This is at least x20 more than expected from any digital source, including CD. Using the external battery supply and / or the AES/EBU balanced connection made no difference. Otherwise, signal related and random jitter figures were reasonably low, the balanced connection showing slight improvement over unbalanced.

Recording sample rate 44.1/Output sample rate 48k

clock drift	7nS
signal related	40pS
random	5pS

## JITTER



**KINGREX UC192** £159  
Kingrex  
www.kingrex.com

# HALIDE BRIDGE £329

**USP:** Integral cabling and Wavelength 24/96 asynchronous DSP code that makes Windows drivers unnecessary.

**T**his is a compact and very easy to use convertor that runs Streamlength USB code from Wavelength Audio to interface with Windows Vista and 7, or Mac OS-X asynchronously. As Wavelength Audio seem to specialise in valve amplifiers, alongside USB products, this is a company with a broad outlook. The Halide runs up to 24/96kHz bit depth/sample rate and is USB powered. It can be used with a USB power supply. In Windows and Mac the device must be selected as usual, to get sound through it, but special drivers do not have to be loaded.

## SOUND QUALITY

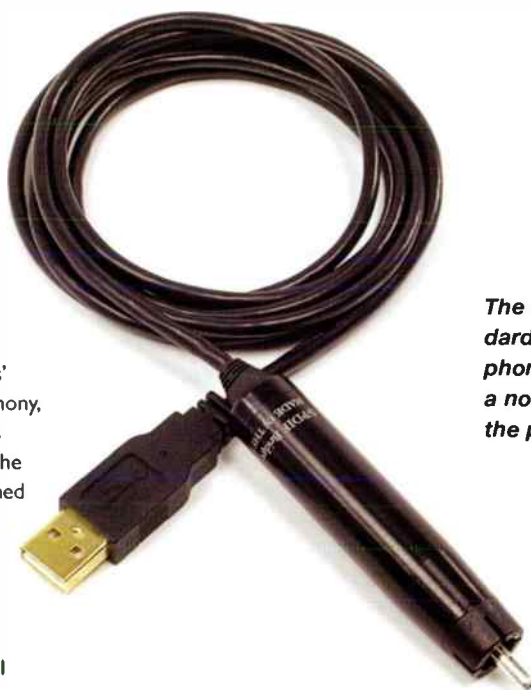
After a cursory survey of the different adapters concerned, I was immediately drawn to this unusual audio piece. It is literally a cable, with the electronics built into the cable – the S/PDIF end. It takes its power from the USB on the laptop, but can be cleverly upgraded by providing dedicated power.

Listening to the Linn Records' version of Mozart's Prague Symphony, conducted by the late Sir Charles Mackerras, I was blown away by the smoothness of the sound, combined with a fulsome and rich quality, which imaged beautifully. The use of the optional dedicated power supply further enhanced this most luxurious of sounds. The link seemed to have a natural sense of authority with this large orchestra. The basses roared with the right amount of grip and grunt, with no noticeable overhang. The violins sounded very natural, big scale, but never shrieking. Listening to Rimsky Korsakov's 'Dance of the Tumblers' on Chesky HD tracks, there is superb separation of the orchestral sections, lovely clean tambourine shakings and an overall sound that is airy, but with control. This is up with some of the best servers I have heard, and I am surprised to be getting these results from a humble Toshiba Windows 7 laptop!



## AQVOX USB POWER SUPPLY

This USB power unit supplies 5V at 1A to a USB line by breaking the power connection from the computer and inserting itself with an in-line adaptor plug – a neat idea. Rafael used it with the Halide Bridge convertor and felt they worked well together.



*The Halide Bridge convertor has a standard USB plug at one end, and a giant phono plug at the other, that plugs into a normal S/PDIF electrical input. Inside the plug lies the convertor.*

## MEASURED PERFORMANCE

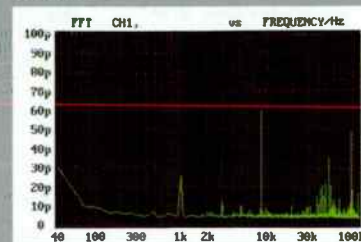
The Halide Bridge managed very low jitter figures right across the board from our 48k sample rate test. Clock drift was a low 30pS and signal related jitter 25pS, our analysis shows.

Signal related jitter fell to just 10pS from a 44.1 CD track un-resampled, from the Mac. Clock drift sunk to 25pS and these figures were almost as good as it gets with digital.

These are consistently good results, suggesting the Halide Bridge withstands whatever is thrown at it very well, making it a robust convertor.

Recording sample rate 44.1/Output sample rate 48k	
clock drift	30pS
signal related	25pS
random	5pS

### JITTER



HALIDE BRIDGE £329  
Halidedesign  
www.halidedesign.com

# MUSICAL FIDELITY V-LINK 24/192 £230

**USP:** Asynchronous 24/192 converter, USB powered, with supplied Windows driver software.



**T**he V-Link 24/192 is a straightforward asynchronous converter that covers all sampling rates up to 192kHz, at up to 24bit resolution. It simply has a USB B plug input at one end, like the others, and electrical outputs at the other, in unbalanced form via a phono socket and balanced form via an XLR socket. There is no optical output and no power supply; it is USB powered. An array of bright indicators show sampling rate. This is a plug-and-play unit, but for Windows it needs the ASIO USB driver ASIO4All to be installed, for up to 24/192. With Mac OS-X 10.6 (Snow Leopard) and onward it works fine up to 24/96 only, a limitation imposed by Core Audio in the Mac.

### SOUND QUALITY

This convertor presented a slightly bigger soundstage than the others, and seemed to be fuller to the point of shouting the music at me! It seemed to be louder than the other convertors which seems impossible given the job it's doing. It certainly is a forceful communicator!

I tried a little experiment, fitting the USB power supply to the cable, and this gave me more of a mental picture

of the gaps between the players, and seemed to create a blacker background from which the music emerges. Although it is £70 cheaper than the Halide Bridge, I missed that beautiful sense of calm the Halide created, the way in which it separated orchestral textures so convincingly. The Musical Fidelity seemed to get excited about everything that it reproduced, and in the process I missed the subtlety of texture that the Halide was doing so well, even when both were operating on Foobar.

*Musical Fidelity keep it simple with balanced XLR output (left) and unbalanced phono only. Bright coloured leds show data rate.*



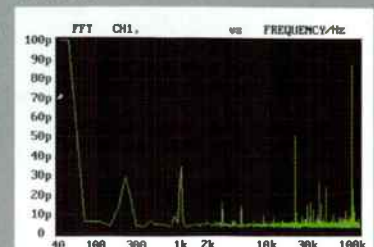
### MEASURED PERFORMANCE

The Musical Fidelity V-Link delivered a good set of jitter figures from our 44.1k sample rate CD test un-resampled. However, when resampled to 48kHz by the Mac, clock drift rocketed from 20pS to 160pS – no disaster by any means and roughly what is expected from CD players, but not up with the best here. Also, a small 30pS jitter peak at 220Hz consistently appeared, not seen on the other devices. These were minor blemishes though and the V-Link still returned good figures.

Recording sample rate 44.1/Output

sample rate 48k	
clock drift	160pS
signal related	35pS
random	5pS

### JITTER



MUSICAL FIDELITY  
V-LINK 24/192 £230  
Musical Fidelity  
www.musicalfidelity.com

# SOTM DX £365

**USP: Asynchronous 24/192 converter with supplied Windows driver software and optional battery/mains power supply.**



**T**he awkwardly named SOTM is from Korea. It is an asynchronous convertor that accommodates 44.1 and 48k sample rates and their multiples all the way up to 192kHz, with up to 24bit resolution, so this convertor ticks all the boxes. It comes with a USB driver disc for Windows (XP/SP3, Vista/SP2, 7), or will work with Mac OS-X 10.6 (Snow Leopard) onward. Data rate must be set in the Advanced tab of the Sound control panel in Windows.

The small SOTM is USB powered but has an outboard power supply option that alternatively will run it from batteries instead of the computer's power supply. The batteries are charged from the mains.

S/PDIF outputs are in balanced AES/EBU form via an XLR socket, unbalanced form via electrical output through a phono socket as usual and – unusually – via an optical TOSLINK option as well. On high quality convertors TOSLINK and its need for a transmitter and receiver – potential sources of jitter – is uncommon.

## SOUND QUALITY

This two unit affair also shows the importance of taking power

seriously. The Chesky download of Rimsky-Korsakov's 'Dance of the Tumblers' shows that this link has a good sense of control, with good delicacy for the orchestral effects going on. The tambourine starts and stops well, the strings sound clean, perhaps a bit less present than I have heard on the Weiss playing through FireWire, but a really excellent well-constructed sound with a good solid soundstage. I would put it equal to the Halide Bridge without the extra USB power supply, but not as good

with the upgrade. It doesn't quite have the airiness of the Halide, but seems to do the transients superbly.

*This is one of the few convertors to have an optical S/PDIF output. Our measurements showed it worked almost as well as the electrical outputs, including AES/EBU at left.*

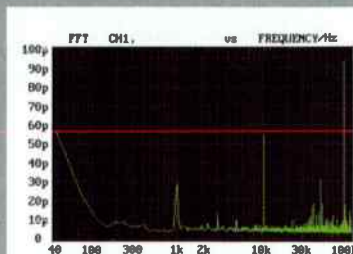


## MEASURED PERFORMANCE

The SOTM produced good if not exceptional figures when fed our resampled 48k sample rate test signal. Signal related jitter was low at 30pS and the random jitter noise floor low at 6pS. Low rate clock drift was a little higher than the others at 60pS, but still not high. With the un-resampled 44.1kHz CD test signal, signal related jitter improved as expected to 25pS, with clock drift and random jitter as before. The optical output was no sinner at 38pS signal related jitter but XLR was worse at 50pS; the unbalanced electrical connection was cleanest. With the external power supply, mains or battery mode, results were unaltered.

Recording sample rate 44.1/Output sample rate 48k  
clock drift 60pS  
signal related 30pS  
random 6pS

## JITTER



SOTM DX £365  
SOTM Audio  
www.sotm-audio.com

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# AUDIOPHILLEO 1 £825

**USP: Asynchronous 24/192 converter with its own DSP code that makes Windows drivers unnecessary.**

The Audiophileo is quite a radical design, based on a DSP with an audio framework code. The Audiophileo 1 is a deep religion convertor that, interestingly, is so complex it is easy to use. Running software that utilises standard Windows and Mac USB drivers it does not need to have a Windows driver loaded, which avoids a lot of hassle. It processes up to 24/192 resolution, working asynchronously. The tiny aluminium case houses not just a DSP but also a full colour OLED display screen, all powered from the USB line. A digital volume control is provided to adjust channel balance by up to 10dB and, for religious education, a jitter generator is fitted so you can learn to identify Satan.

As if this wasn't enough you can also adjust signal rise time, slow for poor cables up to fast (7nS) for so called direct connection, which means almost no cable. There are many ways to perform supplication to the digital god, because there are numerous menus and adjustments in this very unusual convertor.

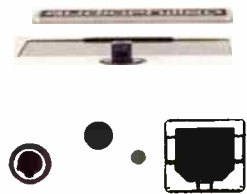
Output is via a 75 Ohm BNC socket only, internally run through an isolating transformer. Adaptors are provided, although it is best to avoid such things at this level and use a quality BNC-to-phono cable to connect to a digital DAC input. There is no optical output. A 12V trigger power supply is provided if the triggering output to control amplifiers is used, and there is a remote control option. A Wireworld USB cable is provided too.

## SOUND QUALITY

Another convertor with a wall wart power supply! This one has an LED display with a volume control. My general impression in the Mozart Prague Symphony recording was that it was finding the elegance in the recording that left most of the others standing. It was the most believable of

the convertors that I heard, with the possible exception of the Halide Bridge, which shared some of its characteristics. The sound of the strings was large, solid and timbrally refined. When I listened to the 'Dance of the Tumblers' on the Weiss DAC202's FireWire output against it, the Audiophileo managed to separate the texture of the cellos and basses better, where FireWire merged the two sections to a greater extent. The soundstage of the Audiophileo was a few yards (metres!) deeper.

*The Audiophileo was a tiny box with tiny sockets on it, for power, trigger and headphone. It has only USB in and BNC socketted S/PDIF out, for which convertors are provided.*

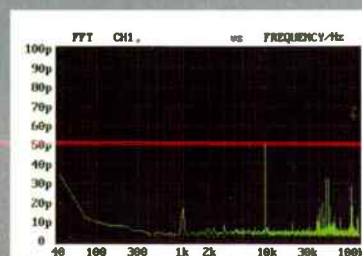


## MEASURED PERFORMANCE

The Audiophileo 1 delivered the best set of figures in the group, just ahead of the Halide Bridge in signal related jitter from our 48k sample rate test signal, returning just 18pS. However, its clock drift was a trifle higher at 35pS, against 30pS for the Halide Bridge. With the less taxing un-resampled CD test signal, clock drift fell to 20pS and signal related jitter to 12pS, incredibly low figures. With the external power supply, signal related jitter sunk to 15pS. Increasing virtual cable from 0 increased signal related jitter slightly, to 35pS max. Switching on jitter produced 4nS of low rate clock drift (non deterministic jitter, not signal related) below 200Hz.

Recording sample rate 44.1/Output sample rate 48k	
clock drift	35pS
signal related	18pS
random	5pS

## JITTER



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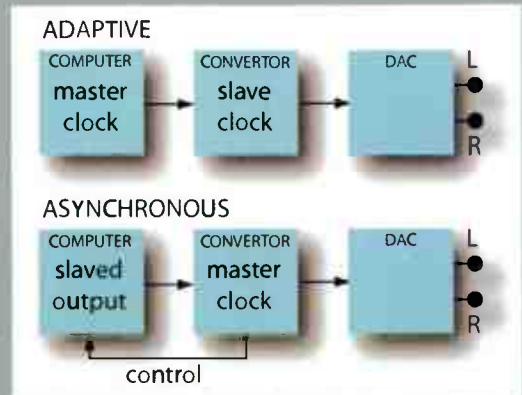


## ASYNCHRONOUS OPERATION

Three methods of operation are available to a USB connected device. In the simplest and most obvious, data is sent from the computer to the device in a unidirectional exchange, the device being locked to and passively following the computer. The main issue is that of clock purity; the recovered clock signal is full of jitter and noise from the computer, so even though purifying is possible, this arrangement is now uncommon.

In Adaptive mode the USB device has its own on-board clock and this is locked to the computer clock through a Phase Locked Loop (PLL). It cures many ills, but not all, especially low rate clock wander. The PLL needs a fast lock speed and this conflicts with its response rate. A FIFO buffer is needed too, to buffer data, it adds to cost. With adaptive mode the USB device is still a passive slave, albeit one able to paper over a lot of computer imperfections.

In Asynchronous mode the clock on the USB device takes control; it is not passively locked to the computer. This requires bi-directional communication to the computer and an operating system able to process the requests (Windows and Mac OS-X can do this). A buffer is again needed. The output of an Asynchronous USB convertor is now, in principle at least, locked and of guaranteed quality so the downstream hi-fi is sent a perfect digital. It is up to the device to negotiate with the computer to stay within its buffer limits.



*In Adaptive mode the convertor has a low jitter clock, phase-locked to the computer clock.*

*In Asynchronous mode roles are changed: a stable, jitter free convertor clock takes charge, feeding the DAC a perfectly clocked data stream. The computer is controlled by the convertor.*

## RAFAEL TONES CONCLUDES

Not being a great fan of iTunes as a media player, I tend to use Foobar when using a PC, to extract high resolution audio files from a laptop. I was recently sent a beta version of JPlay, which uses the shell of Foobar or JRiver, and plays within it. I was very impressed with the results I obtained, and used this method to evaluate the different USB/S/PDIF convertors here. A music track takes longer to load, but there seems to be an improved sense of depth, space and timing over the basic Foobar player.

The S/PDIF cables went into my trusted Weiss DAC202, for conversion to analogue. The Weiss has a FireWire output which proved to be a useful reference.

My conclusions are that of all the convertors, the Audiophile, the most expensive at around £835 was the most sophisticated.

The Halide Bridge, at £269 plus £89 for the optional Aqvox 5V USB power supply proved to be excellent value for money, but it doesn't go to more than 96k 24bit, which may be a problem for some potential customers, given the recordings that are emerging these days.

The Musical Fidelity was good, and easily upgradable and can stretch to the heady heights of 24bit 192k, which will be attractive to those seeking maximum resolution at a reasonable price.

I was also highly impressed with the combination of JPlay in JRiver that I used for this review and look forward to the time when it works seamlessly with all convertors, as it provides for a noticeable improvement over the basic Foobar player. I listened to these convertors before they were measured and we were all surprised to find measurement correlated so well with what I heard. **RT**

## WINDOWS & MAC HEADACHES

Whether you play from Windows or Mac, there are some little headaches that await.

Windows needs to have an ASIO audio driver installed, such as the free ASIO4ALL. This worked for us on Windows 7, but not on Vista. It is said to work on XP but we did not try it. Up to 24/192 can be played through this driver.

The Halide Bridge and Audiophile did not need Windows drivers installed.

Mac OS-X has a built-in ASIO audio interface from 10.6 (Snow Leopard) onward. It worked perfectly with all the convertors in our group, acknowledging the presence of an external clock with the asynchronous models. However, at present core audio on a Mac is limited to 24/96, so 24/192s cannot be played and must be down converted to 24/96 before use.



## JITTER MEASUREMENT

The S/PDIF signal was fed to our Rohde & Schwarz UPL digital signal analyser, able to accept unbalanced, balanced and optical inputs. A 1kHz, -60dB test tone from a Philips test CD was used and the jitter it induced measured as 'signal related' jitter, a specific form of deterministic jitter. The convertors were fed from a Mac Mini using a 44.1k CD clock at 44.1k (unconverted) and rate converted to 48kHz for a higher jitter signal; we show jitter from the 48k signal to illustrate effectiveness of jitter suppression. DC suppression was used, to give a clear clock drift result.

item

Transports Drive & Spindle DAC & DDCs Digital Converters

Thanks to Mark Welsh at Item Audio for supplying four of the convertors, from the many stocked. tel 01782 621225.

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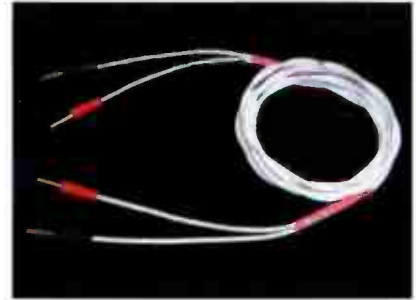
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**MINI-PANELS  
FROM £240 EACH.**

I've reviewed a selection of hi-fi shelving and platforms of late but this system offers another world to the audiophile with a degree of integrated technology that, for its genre, is impressive.

Available as a three-part modular arrangement, the Leading Edge system focuses on the 'platform' as the core, and first stage component. This device, via the trio of accompanying metal couplers, makes sure that each hi-fi box is not resting on its own feet, "By doing that", said Leading Edge director, Steve Elford, "we couple the player to one of the steel pads inset within the platform. Connected to that, inside the platform body, is a labyrinth of complex shapes. So, instead of the hi-fi having to deal with the vibrations inside it, derived from external sources including airborne distortions, it's now seeing a route through the coupled steel tripod, through the steel plate into a hard material labyrinth below. Because this pathway offers low impedance, it sucks the vibration down that way, the vibrations see it as an easy outlet path. The platform then breaks the vibrations down with destructive interference."

The second part of the approach includes the platform's wire wool-like decoupling feet that, to work

properly, are jacked up to offer support to the platform. The feet are fifty per cent more efficient at decoupling than any soft Sorbothane material but they are far more consistent over a wide range of loads.

"The third part," added Elford, "is underneath the wooden top, sandwiched between and through the labyrinth – an electromagnetic absorbent layer to absorb radar waves. This material derives from Stealth technology and is efficient right up in the mobile phone spectrum. Hence, RF airborne radio-derived noise is lessened too."

Underneath that is a room acoustic panel with micro perforations that are bonded with the perforations facing downwards. When you eventually build up a Leading Edge rack of platforms, you are adding airborne acoustic attenuation in-between each layer of your rack. Hence, the Leading Edge rack adds to the removal of distortion as you build it.

"Finally, the mini-panels – more perforated blocks – are added as walls to each shelf, enclosing the sides of the rack, removing yet more airborne noise. With a double layer of perforations and a layer of the electro-magnetic absorption material," added Elford.

The whole thing is designed to be modular and is available in any finish you want. For those on a budget, looking to upgrade over time, you can initially invest in a platform only, which can be used on any third party shelf. That enables you to add more platforms and couplers and then, later on, the Leading Edge racks.

Spinning my Icon CD-X1 player and a copy of Skunk Anansie's 'Hedonism', reviewing the platform

attached to the rack but without the mini-panels, there was an immediate increase in clarity and soundstage focus with more space in an around the vocal performance. Singer, Skin, appeared more relaxed while the upper mids were more easily discernible with subtle electric guitar effects and greater tonal accuracy now a part of the sonic spectrum. Treble-infused cymbals exhibited an improved delicacy while bass offered more punch.

Adding the mini-panels was a revelation, adding extra focus, strengthening the stereo image and removing the cloudy diffusive nature of the soundstage to a well ordered presentation. More air around the vocal performance was joined by filigree subtleties that were now audible within the upper mids while bass added both weight and heft.

Onto vinyl and my Avid Acutus playing a range of Ella Fitzgerald backed by Duke Ellington and, this time, reviewing the platform alone, placed upon my reference Avid Isorack underneath my Icon PS3 phono amp.

Without the mini-panels, focus still improved measurably alongside dramatic improvements in the platform's ability to extract detail from the upper midrange. The Fitzgerald vocal especially benefitted from the reduction in the slight upper mid hardening that had previously been present, while the bass played a more important part in the music and brass enjoyed a fuller, more textural presentation.

Adding the mini-panels increased the blackness that the music emerged from, adding clarity and confidence to the vocal, plus structure to the bass. Musicians also appeared to be more relaxed while subtle elements around each instrument surfaced to delight the ear.

Leading Edge's structural methodology to tackle a whole host of distortive influences has resulted in a platform/rack combo that has the ability to completely transform your hi-fi. Frankly, until you hear this system, you really have no idea how well your hi-fi is performing because your system is, I have no doubt, swamped in distortion to a lesser or greater extent – probably the latter – distortion that you tend not to know is there until it's gone. Yes, this system is expensive but, if you can scrape the cash together for a basic set-up, before you upgrade your next component, you will be pleasantly surprised. **PR**

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**SOUNDBITES**

# Extra Magic

Cambridge Audio have added features to their popular DacMagic digital-to-analogue convertor, to come up with the new DacMagic Plus. Rafael Todes listens closely.



In the new incarnation of their DacMagic digital-to-analogue convertor (DAC), now called the DacMagic Plus, Cambridge Audio have added many extras. As one of the best-selling DACs of its price range, its predecessor, the DacMagic set the bar for what an entry level Dac should do.

Using second generation Anagram Technologies digital up-sampling to 24 bit/384kHz, and twin Wolfson WM8740 DACs in dual-differential configuration, the new version now includes a headphone socket with volume control, as well as the ability to use the DAC as a preamp, to connect directly to a power amp.

There are a lot of features for the money, to add to the already bustling DacMagic's balanced outputs. The USB input can now accept up to 24bit/192kHz, ready to receive the highest resolution files being recorded these days. There is even the scope to stream (with an additional purchase of a Bluetooth receiver BT100) from an iPod or iPad, or any Bluetooth-compatible device. Not having one, I had no opportunity to test this feature, but all-in-all, this is a feature-laden DAC, which promises many things!

## SOUND QUALITY

Hooking up the Cambridge to my reference Bel Canto CD2 transport, using a

Chord Indigo S/PDIF cable, I put on one of my favourite recordings of Solti conducting Wagner overtures, the extraordinary rantings of a megalomaniac genius, possibly one of the most stirring recordings I possess. Immediately, I was greeted by a tameness, a gentleness which seemed to dampen down the party. Where the music is capable of sweeping me away, I sat there unperturbed. It's just not very dynamic.

The DacMagic Plus was not doing anything majorly wrong apart from this. Its sound is quite silky, not brash and brassy, the soundstage is a bit flat, I have heard better staging for the money.

There is in particular an aspect of its bass reproduction that is causing this apparent lethargy. In the Wagner, when the double basses play

the results were better. The lack of dynamic force was less noticeable. The orchestra's different textures seemed to be like that Photoshop technique called 'liquefy', where you can take an image as if printed on some plasticine, and then pull it! The textures of the instruments, rather than being finely etched, were a little runny (smeared?). It was a pleasant sound, but a little low down the high detail Eco-system for my taste. Having listened to six USB/SPDIF convertors in this issue, this product did not seem that sophisticated in comparison.

The Rimsky-Korsakov's 'Dance of the Tumblers' on Chesky hi-res shows the rhythmic problem clearly. When in the latter half of the dance the basses are playing offbeat syncopated quavers, the attack is



what should be a rhythmically driving motif which generates the rhythmic and musical energy, the resultant effect is too little incision, too late. It sounds like they are not participating, and the music loses some of its electricity.

Listening to Mozart's Prague Symphony – Charles Mackerras on the Linn label, using my Windows 7 Toshiba laptop and JRiver with JPlay,

so late that I'm not sure if they are meant to be on or off the beat - disorientating!

Turning now to Renée Fleming in the most famous aria from Dvorak's Rusalka, "Song to the Moon", the DAC's even-keeled tonal balance makes Fleming's voice sound sweet and clear, sometimes this can shout with a tonally less-refined DAC, but here the Cambridge DAC shows its

Reference system  
VAC Auricle Musicblocs  
B&W 802Ds  
Chord Speaker Signature Speaker Cable  
Music First Audio Copper Classic V2 Preamp  
Bel Canto CD2  
Weiss DAC202



"from Dvorak's Rusalka, "Song to the Moon", the DAC's even-keeled tonal balance makes Fleming's voice sound sweet and clear"

best side. The orchestra behind the soprano is a bit flat spatially, and the instrument separation is again a bit squashed, but overall it's not bad for the price point.

The headphone output is of course a new and welcome addition to the model. It provides perfectly acceptable quality of listening, I've heard more dynamic headphone amps before, with wider soundstage and more detail, but it's not unpleasant and is a useful bonus for anyone who wants to get reasonable sound quality from a laptop on the move.

**CONCLUSION**

I can't help feeling a bit disappointed with the new DacMagic Plus. Whilst it sets out with the best intentions to be all things to all people, I think that it has over-stretched itself. I would rather a DAC that performed a more limited range of functions really well – never mind the width, feel the quality! The new Musical Fidelity V-Dac, although a touch on the brash side, has more life to its sound, and is more engaging. It does less, but what it does, it does better. Potential buyers need to consider whether they value facilities or sound quality most. The DacMagic Plus scores on the former more than the latter.

**MEASURED PERFORMANCE**

With a white noise test signal input via electrical S/PDIF at 192kHz sample rate, frequency response extended to 30kHz (-1dB) and then fell slowly and smoothly to measure -5dB down at 96kHz, our analysis shows. So the DacMagic Plus fully exploits a 192kHz sample rate signal.

Of the optional filters, only Steep affected the amplitude response, by a little, inserting a slightly steeper filter cut off at 96kHz.

Distortion was low with 16bit and 24bit signals, at -60dB measuring 0.18% (with 115dB of Gaussian dither) and 0.04% respectively, both figures being up with the best DACs available. So the DacMagic Plus is linear too. Largely as a result of this, EIAJ Dynamic Range with 16bit measured a high 101dB and with 24bit this increased to 114dB. Noise measured -100dB, with a 16bit -60dB input signal notched out (to avoid muting), so the DacMagic is quiet.

Output from the phono sockets was 2V and from XLR 4V.

The DacMagic Plus measured very well in every area. It has very wide bandwidth and low distortion and noise. However, Rafael seemed to hear low rate clock drift and we could not measure that without taking the DacMagic apart to get to its 12S line.

NK

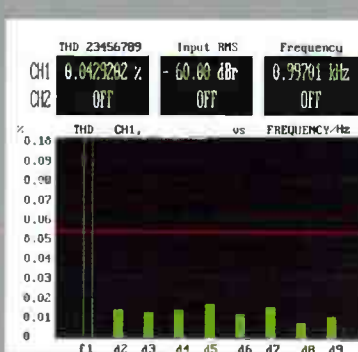
Frequency response (-1dB)  
CD 2Hz -30kHz

Distortion (24bit)	%
0dB	0.008
-6dB	0.005
-60dB	0.04
-80dB	0.34
Separation (1kHz)	102dB
Noise (IEC A)	-100dB
Dynamic range (16/24bit)	101/114dB
Output (phono, XLR)	2/4V

**FREQUENCY RESPONSE**



**DISTORTION**



**VERDICT**

Technically slick and full featured budget DAC, but with less than impressive sound quality.

**CAMBRIDGE AUDIO**

DacMagic Plus £350  
+44 (0)845 900 1230  
www.cambridgeaudio.com

**FOR**

- lots of facilities for the price
- bluetooth capable
- tonally well-balanced

**AGAINST**

- a bit sleepy, bass late-sounding
- Limited soundstage
- Lacks dynamism

# mail



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## LETTER OF THE MONTH PRIZE



KEF Q100 LOUDSPEAKERS

For more advice see Letters from earlier issues at [www.hi-fiworld.co.uk/letters](http://www.hi-fiworld.co.uk/letters)

A pair of KEF Q100 loudspeakers are on their way to **NICK M JONES**, Letter of the Month winner in our MARCH 2012 issue.

## Letter of the Month



*Linn Akurate DSM network player has HDMI inputs able to carry high resolution audio, says Dr Jeremy Honeybun.*

### LINN ON STREAM

I have read Hi-Fi World regularly now for a few years and always enjoy it. It is great that you cover all aspects of hi-fi, including the latest digital developments. However, I am amazed that you can write a large article on digital streaming with no mention at all of Linn.

Linn pioneered digital streaming long before everyone else jumped on the bandwagon. I started streaming with a Slimdevices Squeezebox a few years ago now, then added a DacMagic. I decided to upgrade my speakers in 2009 and my dealer then introduced me to the Linn DS. I had a demo of a variety of CD players at all price levels, all of which were OK, but they all had a sharp edge to the tone which I have since learned is what analogue fans complain about with digital audio.

The Linn DS doesn't have this and sounds much smoother – analogue apparently, although I wouldn't know as I have never owned a record player, being a child of the 80s. At a later date I compared the Majik DS with the Akurate DS. I didn't really think

the Majik significantly better than my Squeezebox combo, although four times the cost, but the Akurate DS was a major improvement. There are at least three iPad apps to control the DS, all of which make it a wonderfully easy experience, as well as the potential to use Android devices or a computer. Setup requires some computer knowledge, but if you don't have it Linn oblige their dealers to set the system up for you.

You say in the Naim NDS XS review that no one uses HDMI for a digital input. I imagine you wrote the article before December 2011, when Linn introduced the new DSM range, because Linn do use HDMI in the Akurate and Klimax DSMs. The Akurate DSM is a wonderful device. It might be expensive, but it combines a digital streamer with an Akurate pre-amp, and has four HDMI inputs as well as all manner of other digital and analogue inputs. So, I can play my Skybox, and Universal Disc Player and anything else through it. Blu-ray discs are stunning. It is stereo only of course, but I am not

allowed to have any more than two speakers!

Linn have also continually developed the DS software, and recently implemented Airplay functionality as well as the ability to stream any audio output from a computer, so it really does everything that is possible in digital!

Linn has always supported 24bit/192kHz resolution. Naim seem to get lots of coverage in the hi-fi press, but Linn hardly any, which makes me think they are out of favour for some reason. My dealer sells both Naim and Linn equipment and tells me the Linn equipment is streets ahead at similar price levels.

I have no affiliation with Linn other than being a satisfied customer, but can't help feeling you are doing your readers a disservice by not telling of the wonders that are available! I would be interested in your views!

On another point, you often mention that you have to have a USA address to buy from HDtracks. In fact, if you live outside the USA you just have

to pay by Paypal rather than credit card. No USA address is then needed.

With best wishes,

**Dr Jeremy Honeybun  
Abergele  
North Wales**

Thanks for that Jeremy. You certainly make a good case for considering Linn and your views are duly noted. High resolution digital does have a smoother sound than is common from CD, but then much of it comes to us through modern Analogue-to-Digital Convertors (ADCs), unlike CD where much of the recorded material comes from lower quality convertors from yesteryear, and was then mangled (truncated) by bad studio equipment and processes. The future looks bright and you are enjoying it now, it appears.

A few people have told us music can be bought from HDtracks using Paypal, but David Chesky of HDtracks told us their U.S.-only sale restriction was for reasons of Copyright, not payment. Our London based IP address was rejected by their website, which confirms this. One solution is to use a friend in the U.S. to buy and then re-send; another is to use a U.S. proxy server perhaps. **NK**

### CLEAN AWAY

I am happy to be able to restore some semblance of peace and harmony to the Smith household, or at least to give the long-suffering Mrs Smith back the hours of freedom she has enjoyed while Adam pursues his second hand hi-fi hobby.

I too balance the inconvenience of a house overflowing with ancient relics of the hi-fi past with the freedom of knowing that my husband and 17 year-old son are happily (and inexpensively) employed. The joy on their faces when they come back from the Age Concern warehouse with a pair of KEF Chorale III speakers for 5; the anticipation as they go to try out their latest 70s record deck, tape player or amplifier; the excitement as they venture out on their latest expedition, hoping to find an unwanted Garrard 401; all these are worth the constant battle for space (I think). I have also managed to persuade them to recycle those of their purchases which are less successful by donating them back, thus making space for new finds.

I too discovered the quasi-magical powers of Cif with Bleach, admittedly for use on a kitchen sink, rather than on old hi-fi. I can, however, vouch for its potency in the removal of tea and coffee stains. I also searched high and



**Mix Flash spray with bleach, with Cif and you have a potent way to clean old hi-fi, says Rosie Neale.**

low for it when it was removed from sale and could not believe that such an excellent product would disappear, when there is so much ineffective and expensive cleaning material in the shops.

However, I am delighted to announce that I have discovered an alternative which, while slightly less convenient, has the same effect (at least on sinks). One day, at my wits end, I tried mixing Flash Spray with Bleach with normal Cif cream and was amazed and delighted to find that no noxious gases were emitted and it worked! Since then, I have used this mixture on a regular basis and while the consistency is somewhat more liquid than the unbeatable original, I believe that it could still be used to remove smoke stains and ingrained dirt from old stereo equipment. Something is certainly required, since some previous owners seem to like to coat their hi-fi with the kind of sticky miasma I had previously only encountered on toddlers hands. Short of starting a petition on the Downing Street website to bring back Cif with Bleach, this is the best solution I can offer.

**Rosie Nea**

Hi Rosie – and many thanks for your letter. I have settled on Cif Lemon for most cleaning duties, with the application of Flash with Bleach for those more stubborn marks, stains and grime, which is proving most effective. I'm still not so sure I'd be keen to mix the two, though...

Finally, please pass on my congratulations to your husband and son for their sterling efforts in terms of seeking out those unwanted classics and re-homing them. Recycling is seemingly the buzzword on everyone's lips these days and I prefer to think of our activities in terms of this, rather than the "hoarding old rubbish" description that Mrs Smith seems to think is more accurate! **AS**

### CROSSOVER

Thanks a lot for making me completely paranoid! I used to be the proud owner of a Onkyo TX-NR 809 AV receiver and now thanks to you I am wondering if at low listening levels if my trusty old Onkyo 605 AV receiver (also used as a room heater) was sweeter sounding. This all came about because dear NK goes and checks out the Onkyo 608 in April and claims it to be cross over distortion free and then in July he checks out the Onkyo 609 and claims it to have cross over distortion. Then it is all topped off by testing the Onkyo 709 and that is found to be crossover distortion free! So where exactly does my Onkyo 809 stand?

Don't get me wrong. The Onkyo 809 sounds superb and goes loud up to rock concert level sound pressures without absolutely no strain. This would have been great when I was younger 20 years ago when I was the one giving music appreciation lessons to my neighbours with my trusty refrigerator sized Cerwin Vegas and a Proton D1200 amplifier. But now I worry about getting attacked by younger and presumably fitter neighbours and loud listening is limited to during thunder storms.

By the way, if you ever test the



**Onkyo AV receivers have a little crossover distortion, but it isn't enough to worry about. They still sound good.**

Onkyo 809 make sure that you turn off the "Double Bass" function. The default is set to ON and it completely ruins the sound.

Best regards,  
**K. Fonseka**

The Class A/B amplifiers used in AV receivers often have a bit of crossover distortion, but not too much – at least in the decent receivers from companies like Marantz and Onkyo. Somewhere around 0.2% or less at 10kHz is about tolerable. The exact figure can vary a bit, however, within the context of one model or across models. Poor output transistor matching will affect consistency between samples, in spite of negative feedback which suppresses differences. There's more variability in the setting out the standing (quiescent) current through the output stages too, often a matter of factory adjustment. Our figures are representative rather than absolute, so when small differences exist they are not necessarily too much to worry about.

Also, when an amplifier runs hot at idle it is biased more heavily into Class A and this is generally

As for cartridges, I see the Cadenza Blue is the Kontrapunkt B replacement, but reviews suggest the Bronze is the better bet. I've also seen repeated mentions of a Benz Wood and Koetsu.

Clearly I need to listen to some of these, but I need to have a shortlist of options/combinations. In terms of budget, I'm thinking up to £3k, but perhaps further if the musical results were worthwhile as in terms of tonearm. I intend this being, like the Orbe, the last I will ever buy!

Current system: Nait 3, Dynaudio Audience 60s, Naim cable (and was a Planar 3 with upgraded motor). Music: Beatles, Dylan, Queen, Springsteen, Pink Floyd, Dire Straits, Johnny Cash, Orbison, etc, plus some classical/easy listening.

I love my Naim and the Dynaudios but after a while felt I wanted more from the sound. I found myself turning it up and am sure the turntable is the limiting factor. I know the rest will need upgrading at some point as well now (any amp suggestions for the future?), but I'm happy to go one component at a time and make sure each is exactly what I want. There will be no more upgrades after this, hence why I'm happy to stretch the arm/cartridge budget if I need to. It needs to do it all: the harsh 60s Dylan, the Fab 4s

The only downside is my Victorian terrace (or neighbours) is not going to allow my new system to sing at its best, so I'm thinking I need to move and buy a new house. That's some really serious investment in hi-fi!!

Thanks and regards,

**Dave Rose**

Hi Dave. With the lovely Michell Orbe you can set your sights a little higher than the Techno arm and an SME309 is recommended. Not only does it have fine sound quality, but it is beautifully finished and lovely to use.

Of the Ortofons my preference is for the Cadenza Bronze. Where the Blue is a trifle brightly lit, the Bronze seems to have a golden sheen to its treble, a sweet quality that is quite lovely. The Cadenza Black and higher all get a little darker and smoother in their delivery, a little sober suited if undoubtedly accurate. That makes the Bronze excellent value I feel as it has all you'd expect of a good MC, including wonderful stage depth and a lovely open sound, plus solid and tuneful bass. The Benz Wood is also delightful and very even natured, where the Koetsu is more full bodied and rounded in its sound.

Don't forget that with such a lovely front end you'll be able to listen with electrostatic headphones and not hear the warts, keeping both you and your neighbours happy. **NK**

### IMPURITY

I have over the years been an avid reader of Hi-Fi World, primarily because of the balanced and informative reviews over a wide range of equipment prices. Those reviews plus my own listening have resulted in the following system, which until about one month ago was entirely vinyl based. Having started on the hi-fi trail some 20 odd years ago as an impoverished student I have worked my way from an STD 305M, Pink Triangle PT Too, Michell Orbe onto one of Rafael Todes castaways – an Acoustic Signature Challenger. Please let him know it's continuing to provide excellent service!

Arms (Rega, SME, Origin Live) have come and gone over the years, but a Jeff Spall Audiomods arm with VTA adjuster currently resides on the turntable – which I happen to think is both excellent value for money, but also a great listen. My cartridge is a lowly, but fun Dynavector 10X5. At some point in the future it will be replaced by a Moving Coil – probably the Clearaudio Concept MC you reviewed favourably.

Phono stage is the Clearaudio Balance + with Accuvue battery supply, which I think is excellent. Incredibly quiet and with full balanced ins and outs



**The Michell Orbe turntable deserves an SME309 arm or better, even though it is a 'budget' model.**

considered good for sound quality; unfortunately reviewers often complain about the heat not realising the connection between the two.

**NK**

### IN ORBIT

I now have a Michell Orbe turntable, but also a question. I understand a Techno arm is a fine budget choice, but is there a good musical return in spending more? I have been trawling reviews and names that keep coming up are Funk, Audio Origami, SME IV,V, and Origin Live right up to the Conqueror (the Illustrious is definitely out of budget!).

musicality, the ethereal beauty of Floyd, the depths of Cash's voice, the soaring Orbison tenor, the bass on Dire Straits, Graceland etc

Any advice hugely welcome. Although a little daunted by the thought of putting the Orbe together, I can't wait to get the arm and cartridge so I can listen. I read a review of the Orbe in 1995 when it came out – and when I was a student – and loved the look; I heard it at Bristol the next year – and a couple of times since – and loved the sound and promised myself that one day I would have one. I am now very happy!



# letters On-Line!

You can now read our Letters on-line, from the last issue back to March 2010. That's a treasure trove of information and advice to our readers, as well as a fascinating catalogue of reader's systems and views. There's mountains of buying information, all just a click away on your computer or i-Pad. Have fun!

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## World Mail June 2011 issue

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Your experts are -  
DP David Price, editor; NK Noel Keywood, publisher; PR Paul Rigby, reviewer; TB Tony Belton, reviewer; RT Rafael Todes, reviewer (Allegri String Quartet); AS Adam Smith, reviewer; DC Dave Cawley, Sound Hi-Fi, World Design, etc.

...or the reply pane at the bottom of the page.  
Replies will go on-line and in the magazine if suitable.

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Post Preview

The screenshot shows the HI-FI WORLD website interface. At the top, the 'HI-FI WORLD' logo is prominent. Below it, there's a 'Magazine issue date' section with a 'Display' dropdown menu currently set to 'All'. A list of issue dates follows, from September 2011 back to March 2010. To the right, there are promotional banners for a 'COMPETITION PRIZE' (August 2011 issue) and 'SEVENOAKS' audio equipment. The bottom of the page features a 'Contact' link and a small image of a CD/DVD case.

Just go to [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk) and click on Letters in the left hand menu list, under the FEATURES category. This will take you to the individual months of issue. To see the full list set the 'Display' drop-down list to 'All'.



**Martin Logan Purity loudspeakers have two inputs, Line and Loudspeaker. Both feed an internal amplifier that drives the woofer and the electrostatic panel. Long cables to the Line input raise matching issues.**

– though that's another upgrade path altogether!

Loudspeakers are Martin Logan Purity, which work surprisingly well in my smallish 5m x 4m front room. I took a bit of a gamble on these as I realise they ideally need a larger room to breathe properly, but placed 3 feet from the front wall they work very well. Even my wife likes them and noticed the improvement!

Now for the subject of my query. I originally drove the Purities via a pair of Trichord Alecto mono-block amps via long speaker cable (QED XT Anniversary bi-wire), but having sold the Alectos, and with the intention of going down a purer route i.e. phono stage driving the Purities directly via long (8m) interconnects (Wireworld Solstice) I find the sound to be veiled and duller in comparison,

**Here's your geographical problem: Alexandra Palace transmitter comes between you and the transmitters you really, really want – Crystal Palace (or Croydon) and distant Wrotham, all of which serve London. Our map is to scale.**

which is not to my preference. I like a transparent, balanced, open sound with imaging which can exploit the Purities capabilities.

Now I realise the Wireworld interconnect is a relatively cheap cable and I could look to replace it with perhaps the DNM solid core, but my question is slightly more fundamental. Are the Purities better driven via a long interconnect or via long speaker cable – my ears tell me the latter, but I appreciate I am not comparing apples with apples.

Just to compound matters further, I finally relented and purchased my first CD player – a Shanling MC 30 – for occasional CD, Tuner, and Hard Disk (iPod or similar) based music. I have to say it is a fantastic bit of kit for the money and sounds perfectly acceptable (though not as realistic or satisfying as the turntable) through the Purities via the QED speaker cable. Veiled and duller via the Wireworld interconnect.

So, in my ideal minimalist world I would like to wire my turntable through the Shanling's auxiliary input and then connect the Shanling to the Purities via long interconnect or speaker cable – depending on your advice. Given that this is likely to cost close to a £1000 for some 10m of cabling your advice would be greatly appreciated! I am of course assuming here that the Shanling's single ended amp is good enough to do justice to my phono-stage?

An alternative strategy would be to connect the phono-stage directly to the Purities via a long interconnect and the Shanling to the Purities via long speaker cable, as the Purities can accommodate both sets of cables simultaneously. Martin Logan warn against using both sets of connectors, however whilst both sets of cabling would be engaged I would be listening to the Shanling or the Turntable, but never both at the same time!!

I hope the above makes some sense to you and that you are able to shed some light on the problem.

One final question. Would you kindly recommend an indoor FM aerial for the Shanling. I live in Southgate and get pretty good reception via Ally Pally.

Many thanks for your advice, and keep up the good work with the magazine.

Regards,  
**Scobie Alvis**

It sounds very much as if the long 8 metre run from preamp to each loudspeaker offers too great a capacitive load for the output impedance of the preamp. This is rolling off high frequencies, producing dull treble. It is why the Alectos, with their very low output impedance, did not sound dull.

You could check this by making up or buying some short interconnects of 1-2m and connecting them to the loudspeakers to see if the balance returns to normal. Because 1nF, a typical capacitance figure for 8m of cable, exhibits 8k Ohm reactance at 20kHz either the cable is very capacitive or the output impedance unduly high, suggesting a different preamp, or cable, or both, would not suffer such dullness. This suggests you should listen to alternatives if possible. You seem to have an unfortunate set of conditions there.

In our review of the Purity in the September 2008 issue we do note that the internal amplifier drives both subwoofer and electrostatic panel and that the loudspeaker input is simply attenuated down before going through the internal amp, so you are right that the line input is best used, as we note in the review. This being the case you are probably best off not using the Shanling power amp if you can avoid it.

Ally Pally doesn't transmit VHF/FM as far as I am aware; the BBC's list of English Radio transmitters ([www.bbc.co.uk/reception/transmitters/radio/england\\_fm.shtml#Wrotham](http://www.bbc.co.uk/reception/transmitters/radio/england_fm.shtml#Wrotham)) does not list it. It transmits TV and DAB only I believe. This is not good news for you because it means you have a nearby transmitter, one mile due South of you, that you need to reject, not accept. But you have to point the aerial South to get commercial VHF/FM stations from Crystal Palace, and South East for BBC national stations



from the Wrotham transmitter, Kent – see our map.

You should ideally use a highly tuned VHF/FM aerial able to attenuate out-of-band TV and DAB signals in this role, meaning a large multi-element array. Getting decent VHF/FM in Southgate doesn't look easy to me, from inspecting maps and looking at BBC transmitter lists. I live in North London too and have a massive array on my roof to get a decent signal from Wrotham, but luckily Ally Pally isn't near enough to be a nuisance. Finding a knowledgeable and experienced local aerial fitter would be a help.

It may just be you will get best results by swinging the aerial to point away from Ally Pally in the hope of picking up a distant VHF/FM repeat transmitter. Search the BBC's on line transmitter lists and maps to find one! **NK**

### FOGGY SOUND

As your publication has been most helpful in the past regarding my numerous queries and letters, I thought I would ask your advice once more. My system is now pretty much in place. It is a Townshend Rock Reference turntable SME V arm, Transfiguration AF-1 cartridge (looks OK at 60 x MAG on Stylus Tip), I also have a substitute Ortofon MC-2000, so I can check my fault with this perhaps.

Quicksilver Full Function preamplifier, Quicksilver V4 Monoblocks, Celestion A3 speakers. I use an ALLNIC Phono (new) Stage H1 200 Phono Stage into a Line Input of the preamp. I had a step up MC transformer but it suffered from hum, so I went for this alternative.

This system seems to have lost its high frequency response and when listened to it sounds like there is a layer of fog in front the detail, to use a cliché: it is like listening through a veil. Bass response is very good, mid is good also.

I wondered about valve change outs on the old preamp as I have many spares, but also wondered about the main capacitor change outs, as these will be of a certain vintage. Its one of these. Main CAPS also shown. However, I am not really sure if this solves the problem as I am not sure exactly what the CAPS do in terms of the extremes of frequency response.

I do have a considerable amount of all round engineering knowledge and I am dashed handy with a soldering iron if need be.

Your advice would be greatly appreciated.

**Scott Ewan (WGPSN)**

I am a bit confused about your system here Ewan, and exactly what capacitors you wish to change, in



Internal view of Scott Ewan's Quicksilver amplifier.

what preamp. Surely you need to do a little detective work first, do you not?

I am very suspicious about your new Allnic phono preamp. You do not say if all was apparently correct before, if you could tell when suffering hum that is. I suspect there may be a matching problem between here and preamp, or it does not suit the Transfiguration cartridge, although MC cartridges have such low output impedance (a few ohms DCR) that they will feed just about anything. The only thing some will not feed is a step up transformer with a very high step up ratio, meaning an ultra low input impedance (the Allnic may have a step up transformer inside).

If the cartridge has developed a problem, or is a poor match, then swapping to your Ortofon MC-2000 would show this up. Did you buy the Allnic from a dealer who could lend you an alternative? You really do need to isolate the culprit in your system and I am sorry to say I cannot be certain what it is at a distance. **NK**

### AUDIO RECORDING

Some years ago when the C60 type cassette was considered an acceptable recording/replay medium I owned a small (150mm x 100mm x 50mm!) portable recorder, which I think was manufactured by Sanyo. The plus point was that an external microphone could be used for enhanced quality and the benefits were evident when played back through the hi-fi system.

The mini cassette is still widely used for dictation today, but there are digital equivalents available. My question is whether the latter, when used with an external microphone, can produce the same or enhanced quality relative to my original C60 cassette machine of yesteryear, or is there a better way forward?

As a foot note, a colleague used to take a small recorder such as mine on his travels feeling that sounds and voices

were more evocative than pictures. Modern digital cameras now try to capitalise on this thinking with "video clips" but the sound in hi-fi terms is relatively basic.

I would appreciate your comments and suggestions.

With thanks.

**Glyn Wreakes**

The market is more diverse today and perhaps a little bit more confusing and impenetrable as a result. There's no end of dictation machines but they are not all so easy to use. The art of recording seems to have vanished from hi-fidelity, heavens



**The Korg MR-2 will record super high resolution audio in PCM (24/192) or DSD (1-bit). A great unit if you want good quality live sound.**

knows why. The pro market offers an interesting range of products, including hand held audio recorders of quality that typically start at £100 and run up to £500 or so. I suggest you go to [www.studiospares.com](http://www.studiospares.com) and take a look at portable recorders.

Most have on-board microphones to record speech, vocals or instruments live, recording to USB or SD card at up to 24/192 resolution. Very interesting is the Korg MR-2 that records in PCM at up to 24/192 and it can record in 1-bit DSD code as used on SACD. Price is £560.

An important feature on digital recorders is the peak limiter or compressor. Where old analogue recorders overloaded gently, digital recorders do not – and they must be kept out of overload to avoid severe distortion. Even with 144dB of dynamic range available from 24bit resolution it is still difficult. Note also that many of these recorders record to SD card, but few hi-fi media players will play back from SD card; most work with USB memory sticks. There's something of a gap here.

Modern video cameras prioritise video, not audio, and 16bit at 48kHz sample rate, stereo, or Dolby surround sound is about as good as it gets. The on-board mics are not so clever either, until you reach semi pro models with external mics sitting on top and these are too bulky and expensive for audio recording alone. Compare the Canon HF G10 with its semi-pro version the XA10 to see what I mean. **NK**

### IMPEDANCE PROBLEM

*My question concerns valve amplifiers and their ability to work well with relatively low impedance speakers, since I've been told that this can be a problem. My speakers are Elac FS-207a with an impedance curve which drops to 3.4 Ohm at 220 Hz. Would it be problematic in any way – or not desirable – to use for instance, an Icon Audio Stereo 40 III to drive these speakers?*

*Thank you in advance,*

*Kind regards,*

**Nils Olsen,  
Copenhagen**

Hi Nils. Valve amplifiers handle low loads with ease, providing they have 4 Ohm output terminals. As Icon



**Chris Allman's massive Commonwealth Electronics turntable, so heavy it prevents Australia floating away!**

Audio note with the Stereo 40 it works down to 3 Ohms without difficulty. Where transistors will break down quickly, like a fuse, if too much current is drawn through them, valves will not. They just get a little hotter and distortion rises. Valves are very robust in this sense and will endure the output terminals being shorted for many seconds. A 4 Ohm tap valve amp will match and drive a low impedance loudspeaker better than a transistor amp in truth. With the latter distortion rises into a low load as current draw goes up and, ultimately, the output transistors will fail or – most likely these days – output current limiting protection circuits will act. These may “chatter” or just turn the amp off in disgust! **NK**

### IDLE PRAISE

*I have finally finished my Commonwealth Electronics Turntable. I would not have even started the project if Hi-Fi World had not highlighted how good idlers can be properly plinthed (my plinth is 32kgs). At first switch on after all the work I was more than a bit nervous it might sound a bit naff, but I need not have worried as right from the off not properly set up it sounded amazing with*

*no rumble at all and amazing timing and the bass is just amazing!! Anyway thanks for the guidance.*

*I recently bought a DNM series 2a preamp from a friend, it was made in 1984 I think, and apart a smoking cap at first switch on (since replaced them all) it sounds really nice, which was a surprise for such an old preamp. I have had a Google for info on it and found very, very little indeed, not even that many seem to go for sale. Just a thought, but IMO it would make a good old World article any chance? I would lend you mine, but being here in Aus it is a bit far away.*

*Regards,*

**Chris Allman  
Queensland, Australia**

### YESTERDAY AND TODAY

*You've been able to advise me many times in the past, and now I need that help again! I have long dreamt about replacing my modded TEACTI CD transport with one of its expensive Esoteric cousins, but digital audio seems to be going through a revolution which promises better than CD-quality results, even from ripped CDs. As this is as surprising as it is welcome, is it madness now to consider spending so much on such a device, or is computer audio not mature enough yet to warrant the same expenditure?*

*This has been brought to the front of my upgrade to-do list by the breaking of the TEAC's tray mechanism, and although I can get it fixed (as I have once before in its twenty year existence), I thought it might be an omen to start dipping a toe into computer audio waters. As I am a long-term hi-fi nut, with both vinyl and CD sources, I know nothing about this and have understood only a percentage of what I've read! So I need simple go out and buy this and this and install that kind of advice.*

*Unless you think it hopelessly*



**The 4 Ohm output of a valve amplifier will easily drive 3 Ohm loudspeakers.**



**Great remote control and fine sound quality make the Cyrus Stream X a good network player for a system with Quad ESL-63s, like that used by Ross Heyward.**

outdated in pure sonic terms, I would prefer, for now, to keep my existing DAC, an (with remote volume control fed directly into a Chord 1200B). I have a recent Asus laptop (running Windows 7, 64-bit) with a lot of CDs ripped to it losslessly (I think!) already, in WAV form, and iTunes for use in my iPod Classic 160. I could use this into one of the DAX's digital inputs with a USB to SPDIF converter (in which case which one?), or would you recommend a music server, NAS, etc.?

Regardless, it should be remote-controllable for volume and track from the listening chair. As my speakers are modded Quad 63s, it is a highly revealing system which will certainly show up any shortcomings, so rather than give you a budget I would prefer to ask you to recommend items of equal (or better) sound quality to my existing gear, for as little money as you think I can get away with!

Thanks again,  
**Ross Heyward**

Hi Ross. Your Audio Synthesis DAX Decade Black Gate Balanced works at 44.1kHz and 48kHz sample rates only – it is nearly ten years old now. This prevents you from playing 24/96 hi-res files unless down-converted – and then you will lose quality. It will do as a stop gap though. You could produce down converted copies of hi-res files using a programme like XLD and load them up to Windows Media Player or alternative, such as Foobar. I do not know whether the audio drivers of your Asus with Windows 7 can be set to down-convert internally, but certainly a Mac running OS-X 10.6 or higher can handle this task. Look at our comparison of USB-to-S/PDIF converters this month to choose a suitable product.

Adding in remote control gets complicated, because you either need a large screen by the hi-fi or a small one in your hand and there are myriads of possibilities here, from iPhone and iPad apps to dedicated

remotes, or a Sonos Connect perhaps. The Cyrus Stream X we reviewed last month is a player that would suit you, it seems to me. **NK**

### NET VALUE

In addition to reading hi-fi magazines such as yours, I also read a computer magazine. In the latest issue, there is a letter from a reader about digitally downloaded music, in which he asks if he can sell the digital files that he has paid for, but does not now wish to keep. He mentions that he can of course legally sell his unwanted CDs, DVDs, tapes or indeed, books.



**A high quality USB memory stick like the LaCie Whizkey is one way we can store downloaded music. No flashing led, plus fast download speed and aluminium RF screening.**

The law allows an 'original' of something to be resold. But digital downloads have no physical presence and are viewed in law as a 'copy of an original'. So they cannot be resold. The only way they could be resold is for the hardware that they are stored on to be sold with them! And even this could break the terms and conditions of contract.

So digital downloads appear to have no second-hand value at all, under current law. Which doesn't bother me in the least, as I only want music on physical media and will never buy downloads! So, "old, dead CD" and LPs, and even tapes are fine for me. As long as I can buy them, and when I can't I'll just stop buying music at all. Is that what the music industry wants?

No, actually what the greedy entertainment industry really wants is for us to pay for every time we play a track or album. They would love to have downloads that "expire" after a given time, so we would have to re-buy them. They love the idea of charging us for streaming films, for example, because we would only see it once.

Best regards,  
**Rod Theobald.**

Yes, sadly there is that expressed wish, to charge us per play. I remember music sites trying to sell songs that would expire after ten plays – an extraordinary idea in some ways. However, it could be argued that there's no difference between this and live performance, where we pay to listen just once – and walk away with the memory only. We have become used to physical storage formats.

It was the emergence of recording that allowed this and storage of music brings historical value to it. It ceases to be a fleeting pleasure for listeners, as music was before recording became possible. Unfortunately, physical formats seem to be falling out of fashion. Album downloads represented 30% of the

total music market in the UK in 2011, the BPI say, and the figure is rising fast, at 24% last year. With CD sales down to 86 million and falling around -12% per annum there isn't much life left in this old dog. But then it has been going thirty years now, a lifespan similar to LP (1960-1990) and with a very similar 'bell curve' sales pattern too. With this as a background, and no alternative to CD, then we are all going to have to improvise.

As hard drives form piles awaiting secure disposal in my home I'm not putting my faith in any hard drive. We either store music on memory sticks in future, or try and sneak into an Adele concert with a Walkman Pro! **NK**

# Boxing Double

**Adam Smith checks out Audiosmile's Advantage add-on bass module for the Kensai loudspeaker.**

**T**he idea of a subwoofer has been frowned upon for many years by many audiophiles and, having heard more than a few of them, it is sometimes not difficult to understand why. Boomy, thumpy, one-note bass that blunders along half a second or so behind the rest of the music does not make for an enjoyable listening experience and I can quite understand why some would prefer to leave such devices to the remit of the home cinema setup for 'exploding helicopter' duties.

Unfortunately, if this is your only experience of a sub then, frankly, you've missed out on a potentially impressive experience. Taking one, or preferably two, well designed subwoofers and utilising them to augment a good pair of small loudspeakers can work brilliantly when very carefully positioned and set up. You get all the advantages of the small loudspeakers, plus the bass that they are physically unable to reproduce; it's a win-win situation.

This is exactly the route Audiosmile's Simon Ashton has taken for the next step in his loudspeaker range. The Advantage is the unit in question, designed to visually match the magnificent Kensai – one of the few loudspeakers that we all agree is utterly magnificent! Matched subwoofers are not unheard of – after all Celestion augmented the low end of their classic SL600 with the SL6000 dipole subwoofer, and the Rogers AB1 did a similar thing for the LS3/5A. Even Goodmans added the B-Max subwoofer for the Maxim 2s back in the 1980s, so such methodology has not just been limited to higher-priced mini monitors.

The Advantage is different to these mentioned units, and indeed many other sub/sat combinations, by virtue of it being active but with amplifiers that also power the Kensai as well as its own bass drivers, resulting in what Audiosmile refer to as a 'Hybrid Active floorstander'. What this means is that the Advantage takes a line level input into its electronic crossover, then sends everything above 120Hz through an amplifier to a pair of terminals on the rear to which the Kensai is connected. Everything below 120Hz goes through a second amplifier to the twin bass drivers in their sealed, force-cancelled enclosure. Gain for the upper frequency part is fixed, but there is a +/-6dB range of adjustment provided for the bass that augments or cuts output effectively but subtly. Obviously the small cabinets do not allow for large, discrete amplifiers, and Audiosmile have designed their own, based around National Semiconductor's LM4780TA chip amplifiers, each rated at 120W in their bridged configuration.

If you simply read the specifications of the Advantage, you are likely to be disappointed as Audiosmile quote a -3dB frequency range figure of 48Hz – exactly the same as the Kensai! However, the sealed enclosure of the Advantage rolls off with a second order slope, compared to the fourth order of the ported Kensais. This, combined with the fact the the Kensais' woofer no longer has to deal with anything below 120Hz, means that bass is unlikely to be thunderous, but should be more effortless and weighty.

The Advantage comes supplied with mains leads, a high quality





line level interconnect lead and a short length of loudspeaker cable terminated in 4mm plugs for the Advantage to Kensai link. The units themselves are sturdy and well built and the only black mark I awarded was in terms of the fixing of the two units together.

"one note segued into the next with smoothness and precision and no trace of overhang or blur"

Audiosmile provide rubber isolation mounts which are screwed into threads in the top of the Advantage before the Kensai is sat on top and a provided tool is used to slide in between the two to turn the mounts back in an anticlockwise direction to engage with threads on the base of the Kensai. This was a fiddly and tiresome process and I found the resulting wobbly mounting of the Kensai to adversely affect midrange clarity and focus. After listening for a day or so, I replaced the rubber mounts with spikes between the two enclosures to good effect and would recommend purchasers to experiment similarly.

### SOUND QUALITY

Initially I spent a good period listening to the Kensais on their own, to refresh my impressions of them, and they are certainly no less superb than I remembered. They really are an impressively neutral yet ebullient loudspeaker and, although everything that they do is scaled down ever so slightly, they still easily filled my room with a captivating, dynamic and thoroughly enjoyable sound. They really do fill the space between them in quite a surprising manner and are so even-handed that their lack of bass rarely seems to be an issue. Still, with a solution to this on hand, it was time to fire up the Advantages...

My very first impression was one of slight dismay as the lovely spread of sound across my listening room appeared to have vanished and was replaced by two loudspeakers. Fortunately as I listened further I came to realise that letting the Advantages warm up thoroughly is an absolute must to hear them at their best and, after a few hours of

running, that swathe of sound was back in place once more.

What was even more pleasing was that Audiosmile really have judged the balance of the Advantage very well indeed. It sounds as if it goes much deeper than its specifications would suggest but, most importantly, the quality of the bass on offer is nothing short of superb. I would even go so far as to say it shows a clean pair of heels to many floorstanders at the same price. There is no boom, no inadequately aligned port playing along and no sense of a cabinet struggling to keep up with tuning that is trying to defeat the laws of physics. The Advantage simply plays along with the music in perfect timing and with no sense of struggle or breathlessness.

Playing some of my traditional bass test tracks through the Advantage and Kensai, the pairing came through with flying colours. Bass guitar detail on Simply Red's 'Sad old Red' was magnificent and the hands moving up and down the fretboard were as vividly etched into the performance as I have heard them. Equally, one note segued into the next with smoothness and precision and no trace of overhang or blur. Switching to a synthesised bass line courtesy of Jean Michel Jarre, the Advantage really came into its own, offering plenty of weight and impact to the bass end but also imbuing each note with a deliciously rounded and fruity sense of purpose – there was no mistaking his instruments of choice as proper analogue synthesisers and not those new-fangled digital things!

The only time I really started to reach the limits of the Advantage was when the bass tracks became

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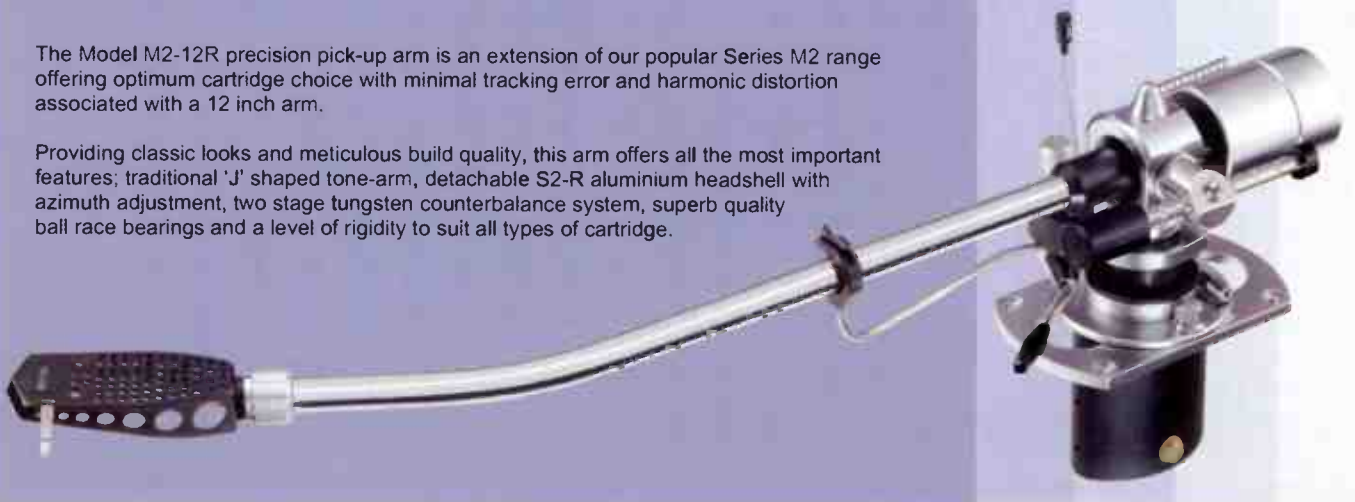
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**The Advantage on its own at left, and with mounted Kensai loudspeaker at right. A loud-speaker cable with 4mm plugs connects the two, delivering a signal from the power amplifier housed within the Advantage. The Advantage is driven by a preamplifier.**

particularly torturous. 'The Shen' from Infected Mushroom's 'Classical Mushroom' CD had the drive units exhibiting the occasional sound of their limits being reached, whereas through my KEF B139-equipped Ferrograph loudspeakers, it is me who generally emits sounds of pain first! However, the Advantage is not Audiosmile's attempt to put Velodyne or REL out of business and as long as it is not pushed ridiculously hard then it will take on anything you care

to throw at it.

An added side effect of the change to the drive configuration of the speaker is that the Kensai also seems to benefit from the removal of the lower frequencies fed to it. As a result, the midrange seems airier and the speakers' already impressive levels of insight kicked up another gear as well. Instruments in orchestras were better defined within their placement across the width of the soundstage and Diana Krall's piano on her 'Love Scenes' album gained a notable extra sense of clarity.

My only concern over the Advantage's performance was that it seemed to diminish the pleasingly spacious front-to-back presentation of the solo Kensais – swapping back to my Naim Supernait driving them alone restored this and so I began to suspect the inbuilt amplification. Swapping a few more amplifiers around led me to conclude that this was indeed the case and that I seemed to be exploring the limits of those otherwise highly capable internal amplifiers.

This was a brave methodology for Audiosmile to choose and it largely succeeds, chiefly because it relieves the Kensais of the lowest frequencies and because the whole combo is so well tuned. However, it does limit future upgrade paths and also leaves any high quality amplification that you already happen to have rather redundant.

**CONCLUSION**

In creating and configuring the Advantage in the way they have, Audiosmile have sought to maintain the essential character of the Kensai but to augment it in the area in which it is weakest, namely the bass. Based on my living with the loudspeakers for a number of weeks, I would say that by and large, they have succeeded admirably. The Advantage doesn't boom, thump or wallow, but simply underpins the Kensai with a firm, taut and

superbly balanced low end that integrates perfectly and results in a very competent and highly enjoyable loudspeaker.

My only concerns are to do with the mounting method chosen for the Kensai which, as mentioned, can be overcome without too much difficulty if you find it as disadvantageous as I did, and the limitations of the inbuilt amplification on the performance of the Kensai. Good though those inbuilt amplifiers are, I would still have preferred to have my own amplifier driving the Kensai and to leave the internal units for the bass end. That said, the performance of the overall unit is still extremely impressive, and more than able to hold its head high against the floorstanders that share its price tag. Given that the Advantage takes up no more space than a pair of stands that might normally support the Kensai, if you already own a pair of Kensais then I would say the Advantage is a very sensible purchase.

**REFERENCE SYSTEM BOX**  
 Garrard 301 turntable  
 SME 309 arm  
 Ortofon Kontrapunkt b cartridge  
 Anatek MC1 Phonostage  
 Marantz CD94/CDA94 CD player  
 Naim Supernait amplifier (used as preamplifier)

**VERDICT** ●●●●●  
 A balanced and well integrated combo; the Advantage upgrades the Kensai loudspeaker in a very effective manner.

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- amplifier limitations
  - Kensai mounting



**MEASURED PERFORMANCE**

Our pink noise frequency response shows that the Kensai has in itself been re-worked slightly to have smoother treble than when we first tested it back in May 2009. It remains a smooth and evenly balanced loudspeaker by any standards though, especially at higher frequencies because of its magnetic planar treble unit, where loudspeakers with dome tweeters get ragged.

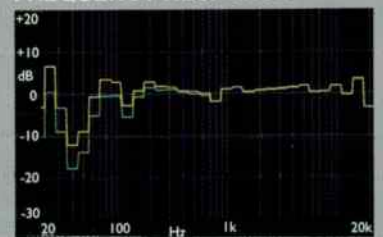
Low frequency output rolls down gently at low frequencies in the Kensai alone, a suitable condition for wall mounting. The Advantage subwoofer lifts output just a little to suit a position away from a wall. Audiosmile still keep the combo flat and even down to 60Hz however, with the bass level control set to 0 - see the green Frequency Response trace. Turning bass right up to maximum gives +4dB of lift at 80Hz, as the yellow trace shows. This is a sensibly modest amount that gives the control good resolution, allowing fine tuning. A room peak at 24Hz shows the subwoofer produced deep bass.

The amplifier has a voltage gain of x30 (+29dB) so 95mV input delivers one nominal watt (2.84V) to the Kensai and with this it delivers a modest 85dB SPL. So 400mV is needed to give a loud 97dB, easily within the ability of most preamps. As preamp gain is commonly

x3 it will take 133mV input to the preamp to produce 97dB, which is a realistic value so the Kensai subwoofer is well proportioned electrically.

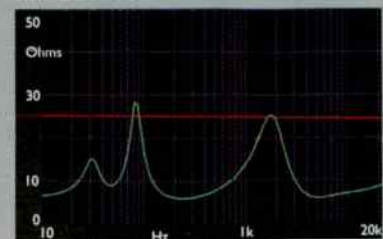
The Kensai subwoofer is neatly engineered to give an accurate basic result. It lifts low frequency output by a modest but useful amount and runs low as well. NK

**FREQUENCY RESPONSE**



Green - bass control at 0  
 Yellow - bass control at Max

**IMPEDANCE**



# Pocket Player

**NAD's new Viso 1 is a dock that turns your iPod or iPhone into a pocket player, finds Noel Keywood.**

**I**t's rush hour on the Bakerloo line. I block out the packed cattle truck by listening to music from my iDevice. Collapsing at home afterward, I plug it into my hi-fi – the NAD Viso 1 – to keep listening.

I'm illustrating a point here: I don't really do any of this! But I suspect that's the idiom into which the Viso 1 slots, alongside many rivals including the seminal Zeppelin from B&W and the Monitor Audio i-deck 100 I reviewed last month in our March 2012 issue. In other words it is a quality iPhone / iPod dock that tries its hardest to mimic a full scale hi-fi, without any of the paraphernalia – especially wires – of high fidelity as we know it.

The Viso 1 is another dock that is peculiarly inextensible: it has no way of sending the signal it gathers out to a full size hi-fi, not even one made by NAD. This I don't understand, as it blocks off any upgrade path. The Viso 1 is conceptualised as a hi-fi in itself, just like Monitor Audio's i-deck 100. There is no analogue output, nor a digital one. So the question is: how does it fare as a stand alone mini hi-fi, one you might want to use in a bedroom, say?

To distinguish themselves, iPod docks need a USP, or Unique Selling Proposition. Without it they will be unable to rise above the fast growing herd. The Viso 1 has a good one: you do not need to physically dock your iPhone or iPod onto it. Take out your iPhone as I did

(for real this time!), press Play and music issues forth from the Viso 1 even if you are in another room. It connects by Bluetooth aptX, a short range wireless link. This overcomes the issue of being unable to see your player's menu across a room, something that blights most players. Your iPhone or iPod becomes a controllable source, the Viso 1 a simple slave. So this is a dock where docking isn't a priority, unless you want to watch video. Well, there had to be a snag!

Many docks ignore video, but like Cambridge Audio's iD100, this one has a video output. The idea is you can watch a music video – and you can with the Viso 1 but only if the iPhone is docked. Bluetooth does not transmit video from the iPhone.

You pick up the Viso 1 in a neat, plastic handled just-portable box. NAD pack a simple Quick Start Guide on an A4 sheet of paper, and it tells an owner they can download a full manual in PDF from their website at [www.nadelectronics.com/products/made-for-ipod/VISO-1-iPod-Music-System](http://www.nadelectronics.com/products/made-for-ipod/VISO-1-iPod-Music-System). A simple remote control is provided, with button battery, plus power leads. The remote is used when the Viso 1 is docked and as NAD do not expect it to be used often like this it is small and plasticky. As NAD say, you plug in and switch on and Viso 1 is ready to go, after removing a blanking plug from the dock's upward facing, 30 pin Apple connector. I got music straight away, but the remote volume control was tardy at times and seemed not to work one minute, then work fine

the next.

Volume and source selection can be changed on the player using a small control panel, useful if the remote gets lost. The rear carries an optical digital input (TOSLINK) so a Mac Mini can be linked in, acting as a music server. It plays through the Viso 1's on-board 24/96 DAC, fitted to utilise the digital audio output of an iPod or iPhone, rather than its analogue output, for better audio quality. There is no analogue input or output, a curious omission that prevents the Viso 1 being used as a terminal able to feed a hi-fi.

After switching on Bluetooth in the phone it recognised the Viso 1 immediately and performed a handshake, which includes exchange of an encryption key to a recognised client with Bluetooth. Afterward the Viso 1 worked perfectly, and volume can be adjusted on the iPhone. Via Bluetooth only sound played from a music video. The iDevice must be docked to transmit analogue Component video from Apple's 30 pin connector to the Viso 1's three Component output sockets. As video quality was poor even from a high definition video I played, likely to due to limitations of the iPhone's on-board video DAC, the provision



**An optical digital audio input, component video output and mains power.**





"the Viso 1 had a large, easy sound"

of a single Composite output would have made more sense, as on Cambridge Audio's iD100. On the Viso 1 its Component video outputs are simply feed-throughs it appears, as Component (RGB) is what is available on the 30 pin output socket, at least in later players. Still, better that video is available than not at all; most modern TVs will accept Component as well as Composite video after all. Only older / simpler devices use Composite alone. A 'near field' option can reduce treble.

And sound quality? There was plenty of bass, considering the unit's modest size 500mms long, 300mms deep (inc cables) and 270mm high, but it was inevitably a bit boomy, and no match for the controlled low end of Monitor Audio's i-deck 100 with its auto-tune system. The midband was fair in terms of balance if tinged with a little muddle; again Monitor Audio's was crisper and cleaner when placed at ear height. The Viso 1 had a large, easy sound, one that was warm due to reticent treble, our measurements show. At best, on its central axis, treble was down, but off-axis it was worse. The Viso 1 was not especially analytical or insightful as a result.

**CONCLUSION**

The Viso 1 does demonstrate a great way to use any portable player – as a personal source. It's like having a CD player in your pocket – although iTunes will not transfer

24/96 files to the iPhone, saying they are an "unsupported format" (on the 'phone), so to play high res. you must use the optical input.

The Viso 1 should offer snappier sound quality and a little more extensibility to fully justify it's not so small price tag. So I'll not be using it after the commute home just yet, but NAD have come up with an ingenious dock here and I suspect we'll be seeing more of this idea from them. It needs a little tiddling up, that's all.

**VERDICT** ●●●●●  
An iPod and iPhone dock that's a delight to use. It should sound better at the price though.

**NAD VISO 1** £499  
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- easy to use
  - plays video
- AGAINST**
- warm sound balance
  - boomy bass
  - no line output



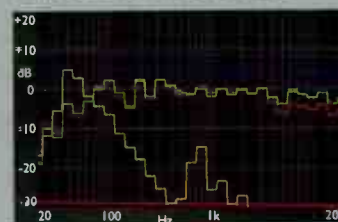
**MEASURED PERFORMANCE**

Measured on-axis the Viso 1 has a smooth response with no major suck outs, but treble above 3.5kHz is -2dB down, partly explaining its soft sound. Off its central axis treble loss was greater, adding to the sense of softness.

Our red trace shows the "near field" option, which further reduces treble.

The port (yellow) peaks at 80Hz, about right for a good perception of bass. NK

**FREQUENCY RESPONSE**



Green – normal  
Red – 'near field'  
Yellow – port



# Budget... exposed

**Exposure has dipped its toes into the budget waters with a new CD player and integrated amplifier under the newly created 1010 series. Paul Rigby wonders if the company can retain its reputation for quality.**

**N**ormally, you pay for what you get. In today's arena, however, 'budget' is subject to ever moving goalposts so today's budget sound is superior to the budget sound of, say, five years ago. Now that audiophile outfit, Exposure, has been attracted to this sector, the competition has just heated up by several degrees. So just how hot are the company's new integrated amplifier and CD player?

Before we get to that point, however, what I really wanted to know was: why? Why do these lower priced Exposure units exist at all? Why did the company feel the need to enter the budget market? "Because we had customers looking

for cheaper hi-fi. To do that, we couldn't make them in England which was why we decided to make these in Malaysia," said Tony Brady, designer for both units, calling from that very country because, of course, Exposure is Malaysian owned. "We have a lot less features on these than on our usual products. We used cheaper casework – steel cases with an aluminium front – we retain the quality of parts, though. We don't skimp on the transformer, for example. This is not your China-made product with rubbish in it. We have taken the more expensive features out like Pre Out, Bi-Wire Out, a simpler remote and so on but the rest is the same, such as the CD mechanism".

These products lower the price of the Exposure entry-level product. "Before, that would have been a 2010 S2 but that's something like £800 a box these days. These new products sound like a smaller version of the larger products. But the less features you have, the more money you save and what we have done is to produce common tooling to reduce costs further so the lid, chassis and front panel is common between the CD player and amp. This means that we can spend more money elsewhere," continued Brady.

So just what do you get for your money? For the amp, measuring 90 x 420 x 300mm and weighing in at 5kg, you have five line inputs, including one that features fixed gain

for AV. You also get just the one set of speaker outputs plus a tape out. "Inside we have a reasonably big transformer for the money, a 120VA toroid, using the same manufacturer as our other products and it's nice and quiet. The volume control is also the same, an ALPS. Here, it's not worth buying cheap samples and inviting trouble. You'll also see a single sided PCB with relay input switching – again, the same as on our other models – and two surface mounted power amp modules."

On that PCB, there are minimum signal paths which helps to reduce distortion while Brady also declared that he uses fairly big boards to help maintain relatively large separation distances between components to further aid a lack of cross-contamination.

"lean and mean products that provide the ultimate in value for money."

The CD player, also weighing in at 5kg but spanning 90 x 420 x 300mm, features standard, basic controls and sockets all around the chassis. Inside, there is a minimal power supply (a more expensive CD player would have included separate power supplies to various operations in the chassis) while digital outs have been eliminated. The transformer remains of a high quality, though, as does the CD mechanism and display. The DAC is a PCM1716 – the same as the 2010.

Once the units are constructed in Malaysia, they are shipped to England whereupon, "We test them again – we are doing 100% checking at the moment which costs us money but I'd rather we did that now and iron out the problems than send it out and then find that you have a

problem later".

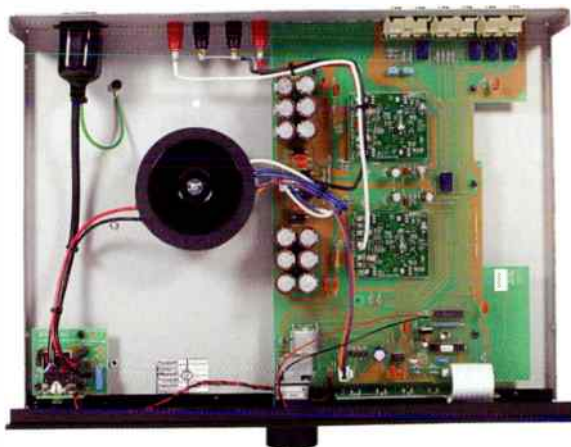
As far as the range is concerned, the 1010 is constricted to just the amp and the CD player with no immediate plans to extend the range, but that could change in the future.

### SOUND QUALITY

So what do these 'basic' designs sound like? Turning firstly to the

Exposure amplifier, I hooked up my Icon Audio CD-X1 CD player and span Gabrielle's 'Rise' disc. Comparing it first to my reference Rotel RA-06, this integrated amplifier dampened the sonics with a heavy blanket of bass as opposed to the Exposure, which lifted the dynamics and the soundstage, elevating it above the speakers. Bass was not as dense or as powerful as the Rotel but the Exposure's lower frequencies were more precise while the upper mids were awash with new detail. The Exposure lacks a richness of depth and maturity but this is a facet of the price point and the cut corners during the design stage.

The Exposure is an efficient machine that digs deep into the mix. In this case, it managed to bring a large basket of new sonic elements



Internal view Exposure 1010 amplifier

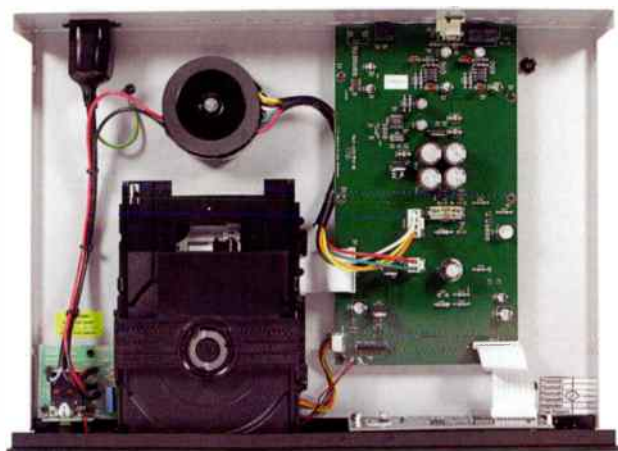
which were largely invisible via the Rotel. The backing singers were brought forward on the Exposure, providing an improved portrait of their performances while teasing apart the chorus, illuminating individual voices and Gabrielle's vocal displayed more texture.

Moving to jazz and the XRCD version of Dexter Gordon's 'Doin' Alright' where the Exposure showed a lightness of touch that was absent from the Rotel. The double bass had more prominence on the Rotel but the Exposure provided greater tonal balance with a tremendously detailed upper midrange that gave character and emotion to the piano but also a more reedy nature to the sax. Treble work, via the cymbals was light, feathered, with a shimmer that provided a frisson to the entire track.

Hooking up my T+A G10 turntable, I played the title track from Anita O'Day's original LP, 'Trav'lin Light', on Verve. The Exposure corrected the slightly unbalanced nature of the Rotel, by pushing O'Day's vocal forward, into the lap of the listener. Providing a much more open and natural soundstage, the Exposure expanded the boundaries of detail, giving the backing brass greater pizzazz. The double bass did recede somewhat, on the Exposure, but that was generally for the good as the reduction in the bass provided space for the upper midrange frequencies.

Flipping over to Kraftwerk's 'Radioactivity', despite the Rotel having the edge on the Exposure in bass terms, the Exposure exhibited a cleaner, punchier set of lower frequencies. Also, the Exposure's midrange-generated percussive synth effects had a greater bounce, providing more life and energy, while the synth-based choral backing exhibited more atmosphere and presence.

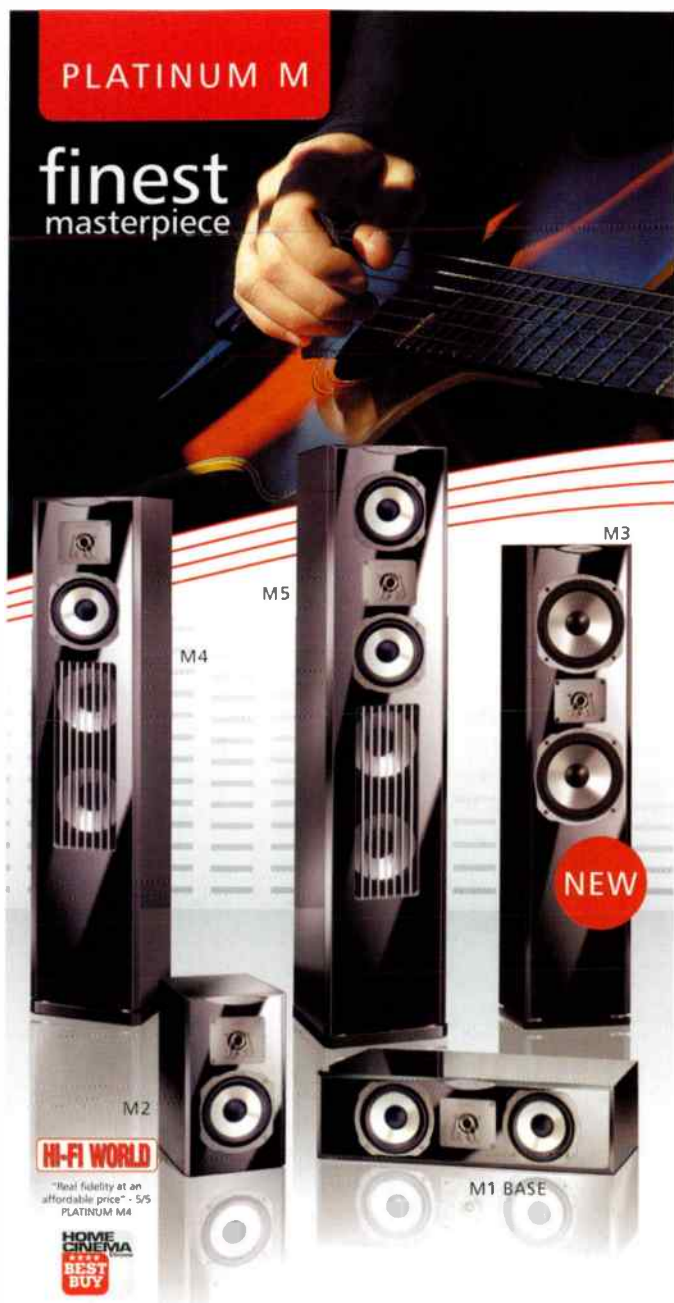
Moving boxes and plugging in



Internal view Exposure 1010 CD player

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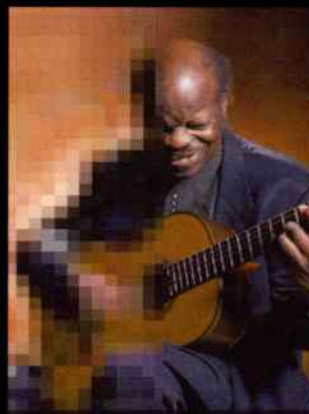
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the Exposure CD player, what was eyebrow raising when listening to Dexter Gordon, was just how close it was, in sonic terms, to my reference CD player. The soundstage was just as broad and expansive while the upper mids allows Gordon's sax to soar. OK, the Exposure didn't have the Icon's richness and maturity of tone and there wasn't quite the same degree of excavation of detail. That said, for the price, the performance of the Exposure was quite remarkable. The piano managed to convey much of this instrument's complexity while the treble offered a lightness of touch. Upper mids, in general terms, were informative and 'undigital' in their presentation. There was none of the expected coldness or hardness of this price range for which the company should be congratulated.

Playing Barclay James Harvest's 'Slideshow' from the 'Victims Of Circumstance' CD, this well recorded eighties disc reflected many of the same facets of the Dexter Gordon CD: the Exposure lacked some of the Icon's richness but excelled in detail retrieval. I did notice a slight lifting of the Exposure's upper frequencies



when compared to the Icon. This was mostly down to the 'solid state vs. valve' comparison though. There were no excessive frequency extremes visible. What was visible, at least aurally, was the Exposure's heavier, weightier bass response which was both grippier and crisper.

detail while offering a toe-tappingly enjoyable performance. You never feel that the hardware is treading water or that the designer wasted any of his valuable design budget on fripperies. These are lean and mean products that provide the ultimate in value for money.

**CONCLUSION**

Both Exposure units performed well during all areas of my tests. As a duo, the pair would grace any budget system. Within their limits, the CD player and amp prioritise the most important aspects of musical production, committing resources where they are needed most: the retrieval of

**REFERENCE SYSTEM**

- Avid Acutus turntable
- T+A G10 turntable
- Icon PS3 phono amp
- Aesthetix Calypso Preamp
- Icon 845 power amps
- Rotel RA06 integrated amplifier
- Quad 57 Electrostatics (One Thing upgraded)
- AE Radiance One speakers
- Atacama HMS 1 speaker stands
- Tellurium Q Graphite speaker cables
- Chord Epic Twin speaker cables

**VERDICT**

**EXPOSURE 1010 CD PLAYER** £395  
Holding its head high during sound tests, the 1010 CD player, for the price, is an essential entry on any demo list.

**FOR**

- transparency
- punchy bass
- timing
- musicality

**AGAINST**

- nothing

**VERDICT**

**EXPOSURE 1010 INTEGRATED AMPLIFIER** £425  
The 1010 Amplifier excelled, particularly in its upper mid performance, which was magnificent, lending an almost valve-like response.

**FOR**

- upper mids
- clarity
- detail
- efficient design

**AGAINST**

- nothing

**Exposure**  
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**MEASURED PERFORMANCE**

**EXPOSURE 1010 CD PLAYER**

Frequency response shows a smooth output right up to 21.2kHz our analysis shows, with no peaking or excessive roll off, so the 1010 CD player will have an even tonal balance.

Distortion levels were very low throughout the player's dynamic range, the critical -60dB figure being a low 0.17%. However, there is some noise in the convertor circuitry and this degraded the EIAJ Dynamic Range value to 96dB, where 98dB or so is common. Noise measurement with a notched out -60dB tone to avoid muting was high at -96dB. However, this is still well below audibility and as the convertor was very linear the 1010 should have an easy sound, free of obvious CD type distortion.

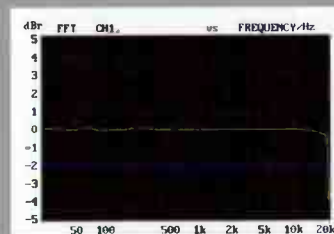
There is no digital output so jitter from this source could not be measured. Analogue output level was a normal 2V.

The Exposure 1010 CD player turned in a neat measured performance and has no major weaknesses. NK

**Frequency response (-1dB)**

CD	2M <sub>Z</sub> 21.1kHz
Distortion	%
0dB	0.0016
-6dB	0.0005
-60dB	0.17
-80dB	1.6
Separation (1kHz)	102dB
Noise (IEC A)	-96dB
Dynamic range	97dB
Output	2.2V

**FREQUENCY RESPONSE CD**



**DISTORTION CD**



**EXPOSURE 1010 AMPLIFIER**

The Exposure 1010 amplifier produced 55 Watts into an 8 Ohm load, rising to 90 Watts into 4 Ohms. As most loudspeakers hover around 6 Ohms these days, and use 4 Ohm bass units, the 1010 will in use give close to the 90 Watt level of output, not bad for a budget amplifier. Damping factor was a healthy 48 so the amplifier will exert good control over loudspeaker bass cones.

Frequency response of Exposure amplifiers always was limited, like that of Naims, and this contributes to an easy top end. The 1010 reached just 18kHz (-1dB) at half volume, and just a little more at full volume - 23kHz. In conjunction with low levels of high frequency crossover distortion at 10kHz the 1010 will likely sound smooth, even a little mild. Only at high power did high frequency distortion rise to around 0.2%, mainly crossover with extended harmonics our analysis shows. However, this is a good result, especially as budget amplifiers go.

Input sensitivity was low at 470mV so low gain/output phono stages will not match so well. Silver disc players will be fine though.

The 1010 is neatly engineered with no weaknesses. It produces plenty of power and will have a smooth sound, measurement suggests. NK



**DISTORTION EXPOSURE 1010 AMPLIFIER**

# High Rise

The number of music sites selling high resolution downloads is on the rise. Here are some listings for you.

**H**Dtracks is a U.S. site with a fast expanding catalogue of classic Rock, much of it from the 1960s onward. Run by David Chesky of Chesky Records, a long established audiophile record label, HDtracks has a mouth watering selection of classic albums in high resolution digital, selling for around \$23 (around £14, according to exchange rate). That's not so much more than £8 or so for an album from iTunes+ in 256k AAC, which is well down the quality scale.

Currently, HDtracks only sells to the U.S, because of copyright issues. A U.K. album like 'Tea for the Tillerman' seen above was licensed long ago for sale in the U.S. under terms different to those in the U.K. Try and buy and you get a refusal. In an interview with David Chesky in New York we were told he is negotiating with the music companies to resolve this problem and expects HDtracks to be able to sell overseas within the next six months. Until then, just look at their catalogue of all-time classics and drool!

### WHAT DOES IT MEAN?

- 24/96 - a high resolution digital file that sounds obviously better than CD, yet can be easily played.
- 24/192 - same as above, but with higher sampling rate. Marginally better sound but few players as yet.
- FLAC - Free Lossless Audio Codec compresses files for faster download, but does not affect sound quality.



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**Genres**

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- Rap/Hip Hop
- Childrens
- Gospel & Religious
- Miscellaneous

**New HD Music...**

[Schumann - The Violin Sonatas](#)  
Pontinen (Pontinen), Roan...  
Composer: Schumann, Robert  
Genre: Classical / Sonata  
88khz/24bit (FLAC)

[endBeginning](#)  
New York Polyphony  
Composer: Brumel, Antoine - Clemens H...  
Genre: Classical / A Cappella  
96khz/24bit (FLAC)

[Paris Quartets vol. 3](#)  
Florilegium  
Genre: Classical  
192khz/24bit (FLAC)

[Revelitas Chamberworks](#)  
Ebony Band  
Genre: Classical  
192khz/24bit (FLAC)

**Find HD Music**

Search the Web for High Definition Music

Search



### Directory of HD music download sites from Find HD Music

#### NAIM LABEL

The recording company of Naim Audio, Naim Label offers mainly Jazz and Classical downloads in FLAC and WAV.

#### LINN RECORDS

Over 300 HD albums ranging from 44khz/24bit to 192khz/24bit in FLAC or WMA. Mostly classical and Jazz with some Rock/Pop titles and a few in other genres.

#### HIGHRESAUDIO

German based site offering over 400 mainly classical and jazz titles. The site will display its pages in either English or German.

#### THE CLASSICAL SHOP

The Classical Shop is a division of Chandos Records Ltd and has over 300 24bit albums available as FLAC downloads.

#### MELBA RECORDINGS

An Australian label featuring classical recordings available as 24bit/96khz ALB, WMA or FLAC downloads.

#### CHANNEL CLASSICS

eClassical

Dacapo Records

2L - The Nordic Sound

Gimell

Sacred vocal music of the Renaissance.

Gubemusic

An eclectic music store with over 70 HD titles available.

High Def Tape Transfers

Pristine Classical

Blue Coast Records

7Digital

HiFiTrack

Downloads NOW!

Analekta Records

Bleep

Cedille Records

Uniphaye Music

Bandcamp

Qobuz

This is a French site with over 800 titles in a variety of genres available as high definition downloads.

#### ITRAX

Over 130 HD albums available in 96khz/24bit as WMA or PCM. All tracks have been recorded and delivered in HD. Offers a variety of genres.

There's a dedicated search site for finding high definition music – 'Find HD Music' pictured above, at [www.findhdmusic.com](http://www.findhdmusic.com).

At left is their Directory of high definition sites.

### Directory of HD music download sites from Weiss – see

[www.weiss-highend.ch](http://www.weiss-highend.ch)



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**£700**  
**TRADE-IN DISCOUNT**  
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**M2**  
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**ROKSAN**

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\*Caspian

\*Attesa

\*DP-1

# ROKSAN

## £700 TRADE-IN SCHEME

Roksan Audio and Henley Designs are delighted to announce a product exchange program on a scale like no other. In 2009 we showed our commitment to our customers by increasing the warranty term on all products to 5 years. Now we're back with a CD Player exchange scheme that allows existing customers to dramatically elevate their systems in a more affordable way.

Any owners of the Caspian, Attesa or DP-1 CD Player - whether the unit works or not - can return their old model to an authorised M2 reseller in exchange for £700 off the value of a brand new M2 CD Player!\* In a market where trade-in values are falling sharply, we are continuing to support our loyal customers.

The Caspian M2 CD Player is a multi-award winning feat of engineering. The stylish and innovative design delights the eyes as well as the ears, and it represents the pinnacle of Roksan's technical prowess.

For more information on your nearest reseller, contact Henley Designs.

Web: [www.henleydesigns.co.uk](http://www.henleydesigns.co.uk) | Tel: 01235 511 166 | Email: [sales@henleydesigns.co.uk](mailto:sales@henleydesigns.co.uk)

\* Offer expires: 31<sup>st</sup> August, 2012

# WORLD STANDARDS

Your guide to the best products we've heard that are currently on sale in the UK...

## TURNTABLES

### REGA RP1 2010 £225

Pleasing sound, fine build and ease of set-up and use make this a great first 'real' hi-fi turntable.

### REGA P2 2008 £300

Excellent value for money engineering, easy set up and fine sound.

### REGA P3-24 2008 £405

Seminal affordable audiophile deck with fine bundled tonearm. Tweakable, and really sings with optional £150 outboard power supply.

### MICHELL TECNODEC 2003 £579

Superb introduction to Michell turntables - on a budget. Top quality build and elegant design mean it's still the class of the mid-price field.

### FUNK FIRM VECTOR II 2009 £860

Innovative engineering gives a nimble, pacy and musical sound that's one of the best at the price.



### MICHELL GYRODEC SE 2005 £1,138

Design icon with superlative build and finish. Sound is beautifully smooth, effortless and exceptionally expansive. No longer peerless at the price, but still a brilliant platform.

### MARANTZ TT-15S1 2005 £1,299

Cracking all in one deck/arm/cartridge combination, this must surely be the best sounding 'plug and play' package at this price point.

### ROKSAN RADIUS 5.2 2011 £1,450

Although getting expensive, the latest Radius is a highly grown up package with a flowing yet engaging nature; a fine package.



### AVID DIVA II SP 2010 £2,000

New twin belt drive and power supply make this a more commanding performer, although there's a substantial price hike. Speed, dynamics and detail are hard to beat anywhere near the price.

### INSPIRE ECLIPSE SEV2 12 2010 £2,349

Finely engineered, smooth and detailed sounding deck offering valuable twelve inch tonearm compatibility.

### NOTTINGHAM ANALOGUE HYPERSPACE 2010 £2,390

Deliciously spacious, lyrical and beguiling sounding turntable, but lacks ultimate grip.

### MICHELL ORBE 1995 £2,500

The top Michell disc spinner remains a superbly capable all rounder with powerful, spacious sound that's delicate and beguiling.

### DR FEICKERT WOODPECKER 2010 £3,445

Elegant deck with great low frequency solidity, coherent soundstaging and a precise midband.



### LINN LPI2SE 2010 £3,510

Surely hi-fi's most iconic turntable, the legendary Sondek goes from strength to strength. New Keel subchassis and Radikal DC motor add precision and grip to one of the world's most musical disc spinners. Expensive, though.

### ACOUSTIC SIGNATURE STORM 2011 £3,612

An excellent high end design with a smooth, solid, open and lyrical sound and razor sharp styling and build.

### FLETCHER AUDIO OMEGA .5 2010 £3,699

Charming high end turntable that's a fitting testament to the late Tom Fletcher.

### PALMER 3 2010 £3,750

Eccentric hand built high end turntable with a pleasingly smooth, sweet and lucid sound.



### E.A.T. FORTE S EVO 12 2010 £4,750

Excellent premium price turntable with power, precision and passion aplenty, but relaxed and easy going by nature too. Great value package with the Pro-ject Evo 12" arm option.

### ACOUSTIC SOLID ONE 2007 £4,050

Huge turntable, both in terms of sheer mass and sonic dynamics. Fit up to three arms and enjoy, just don't damage your back moving it...

### SME MODEL 10A 1995 £4,556

Exquisitely engineered deck and SMEV tonearm combo that's an extremely accomplished performer with classical music.

### AVID VOLVERE SEQUEL 2007 £4,600

Stylish high end vinyl spinner with industrial strength build quality and a sound to match. Exceedingly neutral yet powerful sound is edge-of-the-seat stuff.

### BRINKMANN BARDO 2010 £5,845

Unique high end direct drive turntable with amazing grip and focus, albeit not the most romantic of natures.



### McINTOSH MT10 2008 £8,995

Big, expensive, controversially styled and glows more than some might consider necessary, but an astonishingly good performer.

### EAT FORTE 2009 £12,500

Lavishly finished two box, two motor turntable with gorgeous Ikeda 407 tonearm bundled. Exceptionally stable and unfussy performer with a relaxed but highly enjoyable gait.

## TONEARMS

### REGA RB251 2009 £136

Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a taut and detailed sound. A little lean for some tastes, but responds well to rewiring and counterweight modification.

### MICHELL TECNOARM A 2003 £442

The late John Michell's clever reworking of the Rega theme, using blasting, drilling and rewiring! Surely the best overall performer under £500.

**ORIGIN LIVE SILVER 3C** 2010 £599  
Excellent mid-price tonearm with a clean and open yet lyrical sound.



**HADCOCK GH-242 EXPORT** 2010 £770  
Consummately musical, lyrical sounding tonearm, but needs the right turntable. Excellent value.

**SME 309** 1989 £767  
Mid-price SME comes complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

**FUNK FIRM FXR II** 2010 £1,175  
Clever reworking of the ubiquitous Rega platform, the FXR II gives a wonderfully musical, almost unipivot like performance.



**AUDIO ORIGAMI PU7** 2007 £1,300  
The classic Syrix PU3 updated to spectacular effect. Hand made to order, with any mass, length and colour you care for. Fit, finish and sound truly impressive.

**NAIM ARO** 1987 £1,425  
Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

**HELIUS OMEGA** 2008 £1,595  
Stylish and solid lump of arm with fabulous build quality, that turns in a dynamic and weighty performance.

**SME SERIES IV** 1988 £1,620  
Offers nine tenths of the SMEV's magic at just over half price. Exquisitely built and finished, and a design classic. Faces stiff competition these days, but lovely nevertheless.

**SME 312S** 2010 £1,750  
Twelve inch magnesium alloy armtube plus SME V bearings makes an impressive transcription tool with an insightful yet composed sound. Superlative build completes the package.



**GRAHAM PHANTOM** 2006 £3,160  
Sonically stunning arm with magnificent bass dexterity and soundstaging. Build quality up to SME standards, which is really saying something!

**TRI-PLANAR PRECISION** 2006 £3,600  
Immaculate build, exquisite design and one of the most naturally musical and lucid sounds around.

**SME SERIES V** 1987 £2,389  
Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

**LINN EKOS SE** 2010 £3,700  
Subtle mods over the years, including revised bearings and the recent new wiring has kept it a serious contender in the superarm stakes. Has a commanding musicality all of its own.

**OL ENTERPRISE 3C** 2010 £4,500  
Few if any pivoted arms come close to this arm's combination of liquid musicality and forensic grip.

**CARTRIDGES**  
**AUDIO TECHNICA AT-95E** 1984 £25

Great starter cartridge that's detailed and musical beyond its price. Superglue the stylus in for better sound!

**AUDIO TECHNICA AT-F3/III** 2010 £189

Great value entry level moving coil with detail and grip you just can't get from similarly priced moving magnets.

**ORTOFON 2M RED/BLUE** 2007 £60/£120  
Modern, high resolution budget moving magnets that are always an engaging listen.



**GOLDRING G1042** 1994 £239  
One of the best MMs going, with sweet and extended treble and punchy, muscular bass.

**ORTOFON VIVO BLUE2011** £275  
Super new budget moving coil cartridge from respected Danish manufacturer; a real step up from previous efforts.

**DENON DL103R** 2006 £295  
Awkward to get working properly with a poor mounting arrangement, yet it rewards with a musical performance that makes similar priced cartridges sound cold.

**DYNAVECTOR DV10X52003** £295  
Distant descendent of the classic Ultimo 10X, this has warmth and sweetness in spades, allied to a punchy bass. Beats G1042 comfortably.

**ORTOFON 2M BLACK** 2007 £350  
Staggeringly good high-end MM that uses a stylus from the MC Jubilee and easily rivals similarly-priced MCs

**DYNAVECTOR DV20X-H2003** £395  
Deliciously sweet sound with fantastic get-up-and-go makes this a great value budget MC. High output version works a treat with valve phono stages too.



**AUDIO TECHNICA AT-OC9MLIII** 2010 £399  
New stylus and cantilever breathe life into this feisty, punchy and detailed performer.

**ORTOFON RONDO BRONZE** 2005 £500  
Excellent mid-price moving coil with real rhythmic alacrity and a decent deal of finesse.

**LYRA DORIAN** 2007 £649  
Incisive and musical, this baby Lyra is one of the most powerful and revealing MCs at its price point. Beware the sharp treble, though!



**BENZ MICRO GLIDER L2** 2008 £650  
Crisp, clean and detailed MC; particularly impressive at both ends of the frequency spectrum

**ZYX R-100H** 2005 £799  
Exceptionally tight sounding and detailed cartridge with the musical skills to match, this is up with the best at the price, with a presentation all of its own.

**TRANSFIGURATION AXIA** 2007 £890  
Musically adept and highly resolute cartridge with impressive tracking abilities. Top end lift means careful matching required, however..

**BENZ MICRO WOOD SL** 2010 £945  
Highly finessed Swiss moving coil that plays music with riflebolt precision.



**ORTOFON CADENZA BLUE** 2009 £1,000  
Musical, out of the box sound, allied to real finesse, makes this a great do-it-all high end moving coil.

**ORTOFON CADENZA BRONZE** 2010 £1,350  
Smooth and engaging high end MC with a slightly warmer and more relaxed presentation than its superb bigger brother.

**ORTOFON CADENZA BLACK** 2010 £1,650  
Ultra incisive, transparent and dimensional moving coil with grip and punch aplenty.

**ORTOFON MC WINDFELD** 2008 £2,250  
Ortofon's new flagship MC is a sophisticated and alluring performer that takes the vinyl experience to a new level.

**KOETSU RED K SIGNATURE** 2007 £2,399  
The new K Signature adds a hefty dose of insight and finesse to the already impressive Red and the results are fabulous.



**DIGITAL SOURCES**

**MUSICAL FIDELITY V-DAC** £170  
Clear, concise, low distortion sound belies giveaway price. Supelative value for money.

**CAMBRIDGE AUDIO DACMAGIC** 2010 £230  
A flexible new DAC, this is an impressively rhythmic and detailed performer.

**ARCAM rDAC** 2010 £300  
Cracking budget DAC sporting a fulsome and musical sound with gorgeous build and styling.

**MUSICAL FIDELITY MI DAC** 2010 £400  
Surprisingly sophisticated upsampling DAC with oodles of detail and air, but bass isn't quite as powerful as it could be.

**STELLO DA100 SIGNATURE** £750  
Superbly finessed sounding DAC at the price, with strong driving bass and plenty of air and space.



**CAMBRIDGE AZUR 840C** 2006 £800  
Well built CD player with a silky, yet detailed sound and a whole host of useful facilities. Excellent value for money.

**NAIM CD5i** 2008 £895  
Naim's new italic 'i' variant improves even further on the original mid-price classic, offering super tight, grippy and musical sound.

**ROKSAN KANDY K2 CD** 2010 £900  
A charmingly musical performer at the price, this is a surprisingly sophisticated CD player for the money.

**BENCHMARK DAC-IS 2009** £930  
Power, precision and poise - allied to real seat-of-the-pants musicality, this DAC justifies its premium price.

**MUSICAL FIDELITY M3 CD** 2011 £995  
Excellent mid-price machine with slick slot loading and an open and inviting sound.

**ELECTROCOMPANIET PD-1** 2011 £1,250  
Quirky but highly capable digital convertor with an effective wireless radio option (£250) and balanced outputs.

**SIMAUDIO MOON 300D** 2010 £1,290  
Lovely fluid sounding DAC with a deep, dark, velvety tonality.



**CYRUS CD8 SE** 2008 £1,350  
Bespoke Servo Evolution mech makes this the most musically engaging machine at the price, with super smooth tonality to boot. Optional PSX-R adds bass and dimensionality.

**DENON DCD2010AE** 2010 £1,700  
Powerful, open sound allied to a rich tonality and satisfying subtlety make this an excellent mid-price buy.

**NAIM DAC** 2010 £1,995  
Superb high end digital convertor with a probing, punchy and forensically detailed sound.

**MERIDIAN GO8.2** 2011 £2,400  
Everyman's modern high end CD player, the stylish, well made Meridian has an extremely enjoyable yet refined and accurate sound.

**MARANTZ SA-KI PEARL CD** 2010 £2,500  
Finely honed affordable high end silver disc spinner, this has a musical lucidity that's unexpected at this price.



**LEEMA ANTILLA IS ECO** 2011 £2,995  
Stable and smooth yet superbly detailed and musically engaging, this is class of the £3,000 CD player field.

**CHORD QBD64** 2008 £3,000  
Bespoke architecture gives a uniquely musical sound that's beguiling yet proffers dizzying incision and grip.

**ELECTROCOMPANIET EMC-1UP** 2009 £3,450  
Quirky yet extremely capable high end upsampling CD spinner, with a musical fluency that beguiles more than it impresses.



**ACCUSTIC ARTS CDP1MK2** 2007 £3,985  
Styling not to everyone's taste but build quality is impeccable and the performance is stunningly musical.

**ESOTERIC X-05** 2010 £4,495  
Superlative 'affordable high end' CD/SACD spinner with excellent build, massive detail and great poise.

**WEISS DAC202** 2010 £4,600  
Brilliantly open and insightful sounding DAC with a range of useful features.

**ELECTROCOMPANIET EMP-1/S** 2011 £4,650  
Epic in scale, lavish in tone and exuberant in its musicality, this is a memorable SACD spinner. Quirky in operation and modest in finish, though.

**NAIM CDX2-XPS2** 2003 £4,950  
A fine high end machine, but add an XPS2 and it becomes one of the most charismatically engaging 16bit machines we've ever heard. Plays music with such passion!

**NAIM CDS3** 2003 £7,050  
The most polished Naim CD to date; tremendously capable and musical, but lacks the Rottweiler quality of the cheaper CDX2-XPS2.

**dCS DEBUSSY** 2011 £7,500  
Compact, stylish DAC bringing the gloriously smooth, svelte, spacious sound of dCS to a wider audience.

**ACCUSTIC ARTS DRIVE 1 MK2/TUBE DAC 2** 2007 £7,980  
Superbly built high end CD transport and DAC combo that shows just what the format can be capable of. Very tangible, musical sound with wonderful dynamics and glistening harmonics. Only curious styling and clunky build detract from its brilliance!

**DCS PAGANINI DAC** £9,599  
Digital rarely sounds better; dCS's bespoke Ring DAC makes for power, punch and insight on an epic scale. Add clock and upsampler for an even more profound experience.



**NAIM CD555/555PS** 2006 £14,000  
Very probably the best CD player yet made - certainly the most expensive; a digital tour de force.

**NETWORK**

**NAIM HDX** 2009 £4,405  
Interesting one-box network enabled hard disk music system gives superb sonics together with impressive ease of use.

**LINN KLIMAX DS** 2007 £9,600  
Landmark network music player, offering brilliant sonics at up to 24/96 resolution from hard disk/NAS. Expensive, but you can hear why...

**PHONO STAGES CAMBRIDGE AUDIO 640P** 2009 £99  
Excellent entry level design that raises the bar for budget phono stages. Crisp, smooth yet brightly lit sound on both MM and MC that's a vast improvement on most budget inboard designs.

**GRAHAM SLEE ERA GOLD V** 2004 £370  
Warm, open and musical nature makes this a great budget phono stage.

**ICON AUDIO PS1.2** 2007 £599  
Excellent valve phono stage with good range of facilities and fine imaging abilities.



**CHORD CHORDETTE DUAL 2010**  
£799

Well presented mid price designed with detailed sound and USB input for archiving.

**ASTIN TREW AT8000 2010** £880  
Expansive, detailed, powerful sound makes this a leading sub-£1,000 contender.**A.N.T. AUDIO KORA 3T LTD** 2010 £995  
Exceptionally musical and natural sounding all discrete transistor phono stage, with highly lucid, valve-like presentation.**AVID PULSUS** 2010 £1,100  
Powerful, propulsive, expansive sound puts this right at the top of the £1,000 phono stage tree.**QUAD QC24P** 2007 £1,200  
Dynamic performer that can be used on its own as a complete phono-level preamp.**ICON AUDIO PS3** 2008 £1,500  
Super sounding valve phono preamplifier, with an expansive, engaging and organic nature that makes vinyl sheer joy!**SUTHERLAND 20/20 2010** £1,999  
Well engineered, smooth sounding solid-state phono stage with a charm of its own.**EMILLE ALLURE** 2010 £2,495  
Just as the name suggests, this is a lovely way to play LP with an exceptionally open and lucid sound.**AVID PULSARE** 2010 £3,800  
This superbly built, well specified phono stage has a powerful and authoritative sound that bristles with detail and energy.**WHEST PS.30 RDT SE2011** £4,500  
The least solid-state sounding Whest we've heard, this builds on the family strengths of precision and grip but adds a welcome poise and fluidity.**NAT AUDIO SIGNATURE** 2011 £5,633  
Sophisticated sounding, unusually engineered MM and MC phono stage, but faces stiff competition at this lofty price.**AMPLIFIERS****ICON AUDIO STEREO 40/III** 2010 £1,200

Excellent starter tube integrated, with plenty of detail and an expansively musical sound.

**AUDIOLAB 8000S** 2006 £400  
In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound but not the world's most beguiling.**NAIM NAIT 5i** 2007 £725  
The italic 'i' version remains one of the most musically competent and dynamically engaging integrations at the price.**CAMBRIDGE 840A V2 2007** £750  
Version 2 addresses version 1's weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.**SUGDEN MYSTRO** 2010 £1,225  
Sugden's first Class AB integrated in a long time surprises; rollickingly good fun, it loses surprisingly little in smoothness to its Class AB siblings.**NAIM NAIT XS** 2009 £1,250  
With much of the sound of the Supernait at half the price, this is powerful, articulate and smooth beyond class expectations.**CREEK DESTINY 2** 2010 £1,445  
Beautifully voiced integrated amplifier with a distinctly seductive, tube like sound. A solid-state superstar!**SUGDEN A21A S2** 2008 £1,469  
Crystalline clarity, dizzying speed and forensic detailing makes this seminal design the most musical at the price, but power limited so needs sensitive speakers.**CYRUS BXPD** 2010 £1,500  
A quality integrated that suits all genres of music providing insight and clarity in a compact but flexible package.**ANATEK A50R** 2007 £1,600  
Simple integrated amplifier with super bass grip and effortless dynamics.**VINCENT SA-236MK** 2010 £1,749  
Big, powerful and expansive sounding hybrid transistor amplifier, with a lively, musical nature.**NAIM SUPERNAIT** 2007 £2,475  
Integrated *tour de force* from Naim that combines impressive functionality and connectivity with super sound.**AUDIO RESEARCH VS160** 2009 £3,298  
Load of tube power allied to a strong bass and smooth open midband makes this a grin-inducing listen.**LEEMA TUCANA II** 2010 £3,495  
Polished high end integrated amp that combines power, detail and genuine musicality with a good range of facilities.**SUGDEN IA4** 2007 £3,650  
Goodly amount of Class A power, icy clarity and a breathtakingly fast, musical sound make this one of the very best super-integrations.**QUAD II CLASSIC** 2010 £4,500  
Beautiful retro styled integrated amplifier with a subtle, supple sound - although needs matching to speakers that are easy loads.**QUAD II CLASSIC INTEGRATED** 2010 £4,500  
Thoroughly modern music maker with classic style and great pedigree, this amp sings with gentle music but is no headbanger!**SIM AUDIO MOON 6001** 2010 £5,750  
Sturdy build, useful facilities and a wonderfully relaxed, seamless and even-handed sound will win this many friends.**MUSICAL FIDELITY AMS351** 2010 £6,000  
One of the best high end integrations we've come across, this combines hear-through transparency with musical get-up-and-go.**DARTZEEL CTH-8550** 2010 £16,500  
Charismatic and quirky high end solid-state integrated amplifier with superb sound and a charming visage.**HEADPHONE AMPLIFIERS****FIDELITY AUDIO HPA 100** 2011 £350  
Great little headphone amplifier with a lively yet refined and open sound.**MUSICAL FIDELITY X-CAN V8** 2008 £350  
Open and explicitly detailed sound plus serious bass wallop and the ability to drive anything to very high levels makes this a great partner for most mid-to-high end headphones.**PREAMPLIFIERS****CREEK OBH-22** 2008 £350  
Brilliant value budget passive, with remote control, mute and input switching, plus an easy, a neutral sound.**ICON AUDIO LA-4** 2011 £800  
Uses early 6SN7 triodes for liquid sound, has plenty of gain and remote control.**NUFORCE P-9** 2007 £2,200  
Impressive two box preamp with superb resolution and an engaging sound.**DPA CA-1** 2010 £2,650  
Excellent solid-state preamp with a meticulously detailed and propulsive sound, but a deep velvety tonality.**MELODY PURE BLACK 101D** 2007 £3,295  
The clarity and openness of valves plus firm grip and fine detail make this a preamplifier masterclass.**MF AUDIO CLASSIC CII SILVER** 2010 £4,500

One of the best preamplifiers we've heard at any price, this transformer coupled marvel does very little wrong; its powerful, clean, open yet delicate sound is unmatched at or near the price.



**MODWRIGHT 36.5 PRE/PSU**  
2010 £5,995

Exceptionally open and expansive, yet musically expressive sounding high end preamplifier.

**MUSICAL FIDELITY PRIMO**  
2009 £7,900

Seriously expensive, but one listen explains why. Wonderfully exuberant sound that can only come from a top quality tube design.

**POWER AMPLIFIERS**  
**XTZ AP-100** 2010 £520

Decently smooth yet usefully muscular, this power amp punches way beyond its price point in sonic and value terms.

**QUAD 909** 2001 £900

The latest current-dumper has a smooth and expansive character with enough wallop to drive most loads. Not the most musical, but superb value all the same. Lovely build, finish and Quad's legendary service are nice.

**NUFORCE REFERENCE 9SE V2**  
2006 £1,750

Brilliant value for money monoblocks with massive power and super-clean, three dimensional sound.



**DPA SA-1** 2010 £2,850  
Pacey, engaging and rhythmic almost to a fault, this solid-state power amplifier isn't the world's most powerful but is none the worse for it.

**QUAD II-40** 2005 £3,230  
Modern tube monoblock power amplifiers with plenty of power, liquid and open mid-band and spacious, airy treble. Explicit, engaging sound, but not as euphonic as some.

**ELECTROCOMPANIET NEMO**  
2009 £4,450 (EACH)

The Norwegian power station is as cool as a glacier tonally, yet impresses with its sheer physicality and fleetness of foot. 600W per channel makes for a massive bang per buck.

**ICON AUDIO MB845 MkII** 2010 £5,500

With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.



**QUAD II-80** 2005 £6,000  
Quad's best ever power amplifier, this is a dramatic performer with a silky but dark tonality, blistering dynamics, serious power and a compellingly musical sound. They don't come much better.

**MUSICAL FIDELITY AMS50**  
2010 £7,000

Mighty, assured high end full Class A integrated proffering icy clarity allied to real musicality. Lacks the lucidity of the best tube amps but redeems with power and punch.

**LOUDSPEAKERS**  
**Q ACOUSTICS 2020** 2010 £140

Great little standmounters with a friendly, fun yet surprisingly refined gait. Excellent value starter speakers.

**ACOUSTIC ENERGY NEO I**  
2007 £199

Tidy and well balanced standmounters with pleasing clarity and detail.

**MISSION MX2** 2011 £200  
Sophisticated sound alloyed with real musical insight makes these small standmounters super value for money.

**ACOUSTIC ENERGY NEO I v2**  
2010 £225

Civilised sounding speaker with fast and tuneful bass.

**B&W 686** 2007 £279  
B&W's new baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag.

**WHARFEDALE DIAMOND 10.3**  
2010 £290

Great small standmounters for audiophiles on a budget; dry punchy sound with impressive soundstaging at the price.

**MORDAUNT SHORT AVIANO 2** 2010 £300

Classy sounding standmounter at a still affordable price.

**KEF IQ30** 2009 £330  
Beautifully built, classily styled standmounters with exceptional image projection and a very clean, detailed sound.



**USHER S-520** 2006 £350  
Astonishingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions.

**XTZ 99.25** 2010 £640  
Disarmingly open and refined at the price, these standmounters bring unexpected clarity, refinement and insight to the price point. Exceptional value for money.



**ACOUSTIC ENERGY AEI CLASSIC**  
2006 £845

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

**SPENDOR S3/5E** 2004 £950

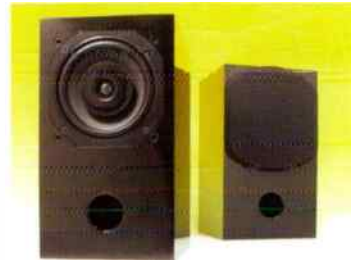
A natural successor to the BBC LS3/5a, whose impressive neutrality, imaging and evenhandedness makes this a superior, if less charismatic, loudspeaker.

**MY AUDIO DESIGN MY1920** 2011 £1350

Exceptionally smooth, spacious and refined mini monitors that beguile and excite in equal measure.

**ELAC BS243** 2010 £1,000  
More transparent and spacious than they've a right to be at this price, these refined mid-price standmounters represent top value.

**RRR FS100** 2007 £1,055  
Mind-boggling amount of loudspeaker for the money. Big and sturdily built with serious bass and awesome soundstage scale. A real bargain.



**ONE THING AUDIO ESL57**  
2007 £1,450

One Thing Audio's modifications keep the good old ESL57 at the very top of the game.

**GURU QM-10P** 2007 £1,595  
Quirky but adorable standmounters that are way off the pace in respect of detail and power, but well capable at playing a tune and pulling you in to the music.

**USHER BE-718** 2007 £1,600  
Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

**MARTIN LOGAN SOURCE**  
2008 £1,600

Brilliant entry level electrostatics, giving a taste of loudspeaker esoterica for the price of most moving coil boxes. Tremendous clarity, evenness and delicacy, although not the world's most powerful sound.

**SPENDOR S8E** 2008 £1,895  
Generously large, silky smooth delivery, this dynamic sounding floorstander is an excellent all rounder.



**ISOPHON GALILEO** 2007 £2,100  
Big standmounters that really grip the music and offer quite startling dynamics and grip.

**MONITOR AUDIO PL100** 2008 £2,300  
The flagship 'Platinum' series standmounter has a lovely warm and delicate sound with superlative treble.

**EMMINENT TECHNOLOGY LFT8B** 2010 £2,300  
Brilliant ribbon/moving coil hybrid with seamless, delicate and expansive yet tremendously musical nature.

**PMC OB11** 2008 £2,950  
Cleverly updated floorstanders give scale and solidity in slim and well finished package.

**MY AUDIO DESIGN MYCLAPTON SE** 2010 £3,299  
Powerful, dynamic, musical yet refined, this unconventional point-source design yields dramatic sonic benefits.

**MAD MY CLAPTON GRAND MM** 2010 £3,599  
Distinctive coaxial standmounters with wonderful soundstaging, bright lucid midband and true musical insight.

**YAMAHA SOAVO I.1** 2009 £3,000  
Musical, transparent large floorstanders with impressive dynamics and cohesion. Excellent build and finish.



**MOWGAN AUDIO MABON** 2007 £3,995  
Massively capable loudspeakers that offer dynamics, scale and clarity in an elegantly simple package. Wide range of finishes, too.

**B&O BEOLAB 9** 2007 £5,000  
Technically impressive and visually striking loudspeakers with sound quality that more than matches their looks.

**TANNOY DEFINITION DC10T** 2010 £5,000  
Wonderfully wide and open, super fast and amazingly engaging to listen to.

**ECLIPSE TD712z/2** 2011 £5,100  
Flawed genius, and wilfully so. These loudspeakers don't do everything well, but what they can do is profound and enthralling; rhythms, dynamics and soundstaging.

**ARS AURES MI** 2006 £5,995  
Sublime build and finish allied to an insightful, assured and even-handed musical performance makes these an essential high end audition.



**QUAD ESL-2905** 2006 £5,995  
The old 989 with all the bugs taken out, this gives a brilliantly neutral and open sound like only a top electrostatic can; still not a natural rock loudspeaker, though.

**SPENDOR ST** 2010 £5,995  
This classy sounding, superbly presented big floorstander will appeal to those seeking high end sonics with subtle looks.

**REVOLVER CYGNIS** 2006 £5,999  
Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

**VIVID VI.5** 2010 £6,000  
Breath-taking transparency, superlative coherence and dizzying speed make these one of the best standmounters ever made - providing you like their 'studio sound'.



**GERMAN PHYSIKS LIMITED II** 2011 £7,800  
Don't be fooled by the austere looks; this is a superbly enjoyable omnidirectional speaker with a wonderfully fast, expansive sound.

**USHER BE-10** 2009 £10,500  
Clever high end moving coil design with immense speed and dizzying clarity allied to epic punch. Needs the best ancillaries to fly, though...

**B&W 801D** 2006 £10,500  
In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.



**ISOPHON CASSIANO** 2007 £12,900  
Drive units featuring exotic materials allied to superlative build quality result in an immensely capable loudspeaker. Not an easy load to drive, however.

**REVOLVER CYGNIS GOLD** 2010 £15,000  
Vast in scale with effortless dynamics and an easy, barrel chested bass, these big bangers are great for lowish power tube amps. Large room needed!

**MARTIN LOGAN CLX LINEAR** 2010 £15,990  
Meticulously crafted electrostatic that's free from traditional limitations, this is one of the very best loudspeakers money can buy.

**ACCESSORIES WADIA I701** 2010 £349  
The first iPod dock to extract the music digitally, letting you hook your little Apple direct to a DAC for superior sound.

**ISOTEK AQUARIUS** 2010 £795  
Highly accomplished premium priced mains conditioner that delivers the sonic goods, unlike so many others.

**TOWNSHEND MAXIMUM** 2003 £800  
Classy ribbon supertweeter with flexible level settings and cool styling - you'll be amazed at the difference it makes, especially with Quad electrostatics.

**HEADPHONES JAYS V-JAYS** 2010 £49  
Wonderful little budget over-ear portable phones with a clean, smooth sound to beat the best of the rest at the price.



**SENNHEISER MX-550** 2005 £19  
Our unqualified recommendation for those seeking a serious sounding pair of in-ear phones. Smooth, detailed and musical.

**SENNHEISER PX-100** 2002 £29  
Cracking pair of lightweight open back cans ideal for personals, but good enough for real hi-fi use. Superb build allied to a smooth and engaging performance make them the spiritual successor to the HD400s.



**GOLDRING DR150** 2006 £70  
Excellent build and fine sound makes these budget cans superlative value for money.

**SENNHEISER HD-590** 1998 £199  
The company's best real-world cans to date. Open and smooth with plenty of detail. Brightly lit midband makes them an ideal partner for a valve headphone amp.

**SENNHEISER HD-650** 2004 £250  
A super all round reference design with crisp, detailed and even sound allied to superlative build and comfort. Cable upgrade yields great results.

**SENNHEISER HD800** 2010 £1,000  
The ultimate expression of the Sennheiser philosophy offers massive speed, clarity and insight, although lacks some of the charm of the softer, more beguiling rival Staxes.



**STAX SR-007T OMEGA II/SRM-007T** 2006 £2,890  
Simply the best headphones we've ever heard at any price, these sweetly translucent electrostatic earspeakers are like no other headphone, or loudspeaker for that matter...



## INTERCONNECTS

TELLURIUM Q  
BLACK

2010 £276/3m

A deep, dark, velvety performer that's nevertheless highly musical, it represents excellent value as mid-price cables go.



## TECHLINK WIRES

## XS

2007 £20

Highly accomplished interconnects at an absurdly low price. Stunning value for money.

## WIREWORLD

## OASIS 5

2003 £99/M

Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

## CHORD COMPANY

## CHAMELEON 2

£90/M

One of our favourites, these are musical performers with a smooth yet open sound.



## DNM RESON

2002 £40/M

Neutral and transparent - a steal!

## VDH ULTIMATE

## THE FIRST

2004 £260/0.6M

Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space results in a crackling cable for the money.



## TCI CONSTRICTOR

## 13A-6 BLOCK

2003 £120

Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

## MISSING LINK CRYO REFERENCE

2008 £375

Currently our favourite 'affordable high end' interconnects, with a deliciously smooth, open and subtle sound without a hint of edge or grain. Superb value, inasuch as it's as good as some designs at three times the price.

## TUNERS

## DENON TU-1500AE

2006 £120

Excellent entry level analogue tuner; slick sonics and fine feature count make it a bargain.

CAMBRIDGE  
AUDIO 640T

2005 £250

Sweet sounding digital/analogue hybrid with fine build and finish at the price.

## ARCAM FMJ T32

2009 £550

Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.

## CREEK CLASSIC

## TUNER

2006 £550

No tuner offers better sound per pound; wonderfully three dimensional and smooth from bottom to top.

## MICROMEGA FM-10

2010 £750

Don't let the modest proportions fool you, this is a state-of-the-art modern analogue tuner with bespoke internals giving a warm, expansive sound.

## MYRYAD MXT-2000

2005 £800

Sumptuous sound and excellent build is all most will ever need in a tuner; superb.

## MAGNUM DYNALAB MD-90T

2010 £1,295

Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.

## MAGNUM DYNALAB

## MD-100T

2006 £1,895

One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.



## SYSTEMS

## YAMAHA CRX-M170

2007 £200

One heck of a lot of quality performance on DAB, CD and FM for £200! Optional matching £120 NX-E300 loudspeakers aren't too shabby either.

## TEAC DR-H300DAB

2008 £329

Nicely built and styled mini with fine performance on all sources that even plays DVDs!



## NAD C-715DAB

2008 £429

Small, neat looks cover a truly capable system that shows just what a compact design can achieve.

## ARCAM SOLO MINI

2008 £650

Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to its bigger brother.

## SHANLING MC-30

2007 £650

Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.



## PEACHTREE AUDIO

## IDECCO

£1,000

Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.

## ARCAM SOLO

2005 £1,249

Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

## LINN CLASSIK MUSIC 2008

£1,250

Neat update of the original and best one-box stereo system; superbly musical sound beats equivalently priced separates.

## NAIM UNITIQUE 2010

£1,350

Great little half width one-box system with truly impressive sound allied to a wealth of source options.



## MERIDIAN F80

2007 £1,500

Fantastically built and versatile DVD/CD/DAB/FM/AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn't a 'proper' hi-fi product; most see sense when they listen to it...



## AURA NOTE MUSIC CENTRE

2007 £1,500

Lovely shiny CD/tuner/amplifier with fine sound quality and dynamic abilities.

## NAIM UNITI

2009 £1,995

Uniquely versatile one box music system with excellent ergonomics and sonics to match. A landmark product for Naim.

## LINN CLASSIK

## MOVIE

2007 £2,250

Superbly built all-in-one that offers excellent sound across all formats and is surprisingly easy to use.



## MERIDIAN SOOLOOS 2.1

2010 £6,990

Thanks to its crisp styling and bright, colourful touchscreen, plus excellent search facilities this is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers.

## MARANTZ 'LEGEND'

2007 £22,000

The combination of SA-7S1 disc player, SC-7S2 preamp and MA-9S2 monoblocks delivers jaw-dropping performance.



# Ear Piece

**Icon Audio has recently upgraded its HP8 headphone amplifier to the Mk.II standard. Paul Rigby dons his cans.**

**S**ome people buy 'toy' dogs because those miniaturised pooches are both cuddly and easy to handle, a lot easier than the often lolloping, two ton, shaggy hounds that roam streets and parks. Gazing at Icon Audio's latest HP8 Mk.II headphone amplifier, I had to restrain an involuntary 'Awww' and an immediate urge to pick it up and say, in an annoyingly cloying tone, "Who's a good boy!"

Yes, I know I need to get out more and – OK – my hospital appointment is in the post, but the HP8 looks, at first glance, like a 'cuddly' version of my Great Dane-like Icon Audio MB845 power amps. Designer and head honcho at Icon Audio, David Shaw, designed the HP8 Mk.II that way, to give it a 'family' resemblance. "I wanted the headphone amp to have a distinctive look that bore some similarity to our other models", said Shaw.

But why a Mk.II in the first place? "We had a certain amount of restructuring, we moved our factory and, subsequently, we made further developments in the likes of transformers and the like and so I saw further improvements could be

made to the HP8. The earlier version used an EL84 valve, probably the smallest in the range of hi-fi output valves. It was used in the Leak TL-12 and Stereo 20 and it's often used in headphone amplifiers today but I thought that the 6SN7, which is a very versatile valve, had exceptional audio qualities and there are various kinds available. I thought that it would be a better valve to use".

The output from the HP8 Mk.II is about half what it was before, but it still provides a good sound level. Shaw also upgraded the transformers. "We wind our own transformers. They now have improved bandwidth and definition. We've found better quality copper now and the way that they are wound is slightly different".

Looking at the HP8 Mk.II, you really get a sense of how mechanical this little beast is. This is a pure valve unit. It's not a hybrid, a box with a valve output stage or a part valve construction. It is a pure, miniature mains valve amplifier complete with a miniature transformer and power supply. On that subject, it doesn't offer a plug in the wall supply as many other products of this type do. Instead, it has a built-in power supply along with good quality components and hard wiring. It's also very simple, featuring just three valves.

"That is very important," emphasised Shaw. "Partly for reliability but also it's easier to build something that's relatively simple, then you can predict the result. It's one of the beauties of valves that you can get great results from just a few of them."

Another reason that the Mk.II exists is because of customer demand. "The existence of this unit follows a lot of requests, confirmed Shaw. "Before the HP8 was built, we had a headphone section on a lot of our integrated amplifiers. People were telling us that they listened a lot to headphones, in some cases they didn't listen to speakers at all because of where and how they lived."

So, Shaw then felt that he was possibly missing out and that his products could deliver something

different to the competition. He also believed that his headphone amp would sound a little bit warmer than some of the other products on the market. "I listen on headphones quite a lot and some material can sound quite strident, harsh and overwhelming. My ideal sound doesn't sit well with that. It's not the sound I get from loudspeakers and it's not the headphones, I think it's the hardware presentation".

Shaw prefers valves in a headphone amp, rather than solid state, because you have a far more intimate relationship with a pair of headphones than you do with a pair of speakers. Hence, the level of detail that a system is capable of can be astonishing. With valves, they "match people's expectations of what they expect to hear. They suit the profile of our hearing better. Digital circuits emphasise more faults and problems in the recordings which easily turn onto glare or over-brightness, leading to listening fatigue – which is emphasised still more via headphones".

The chassis of the Icon itself, coloured black, measuring 1480 x 110 x 350mm and weighing in at a respectable 6.5 kg, includes a full size



"an impressive performer that allows your headphones to perform to the best of their ability"



headphone socket on the front with an ALPS volume pot and a low/medium/high output switch to cater for all headphone types. The rear includes a pair of phono inputs, power socket and earth connector. Inside, you will find high quality cable mixing copper, silver and Teflon insulation. Ceramic valve sockets are fitted to provide good insulation and low leakage. "We even use good quality iron — a special iron from Japan — in our hand-wound transformers, which effects sound quality".

And as for that sound quality?

## SOUND QUALITY

During listening tests I compared the Icon to the valve-based Musical Fidelity X-Can 8VP.

Starting with vinyl and Kate Bush's 'The Painter's Link' from her 'Aerial' album, the Icon introduced more air into the presentation and a smoother flow to the music. Via the Musical Fidelity (MF), Bush sounded rather claustrophobic in her delivery. With the Icon, her voice had a more rounded nature, as her diction became more precise while her

own backing dubbing provided more personality compared to the Musical Fidelity's rather processed view.

The brief Rolf Harris spoken word introduction also introduced a textured, granular aspect that the Musical Fidelity featured but the Icon successfully explored to the full. Upper mids had a more sparkling nature while treble performed with a greater sense of freedom.

With a bass orientated track, drums sounded tighter on the Icon than the MF which had a slightly woolly, low frequency performance; my ear could track the bass guitar easily via the HP8.

Replacing Bush with Johnny Cash and 'Seasons Of My Heart' from the Columbia original 'Now There Was A Song!' Both of these units use valves and both were playing vinyl, yet the Icon sounded warmer than the MF. This was down to a maturation of the overall sound on the Icon's part, giving the vocal an extra strength and potential for greater power. Bass was now focused and better integrated into the mix because of a lack of the MF's slight bloom in this area. The MF provided an excellent suite of detail with crisp upper mids but could be accused of lacking realism and humanity. The Icon injected a needed sense of emotion, fattening out the soundstage to boot.

Moving to CD and the Icon CD-X1 spinning the Helen Merrill LP 'Jazz 'Round Midnight'. Singing 'Summertime', this easy paced ballad is dominated by the slow, deliberate double bass beat which was a little flabby on the MF compared to the more precise Icon. The Icon also provided a greater examination of the instrument, mining a rich seam of detail and transferring subtle, yet distinct, elements such as the

plucking of each string, which was realised on the Icon. The sound, on the MF, had a contrived, almost manufactured feel which dramatically changed when the Icon hove into view, the latter packing in more air and emotion to swathe the Merrill vocal with nuance and subtlety.

Finally, I span the Greenslade prog rock piece, 'Live 1973-1975'. A live recording and tough to get right, the Icon infused it with a free, airy, dynamic atmosphere that gave the band an immediate sense of freshness. Upper mids had a detail and clarity and the soundstage had a broad, entertaining and grand aspect. Bass sounded positively mean and aggressive, adding weight and substance while its own detailed aspect lent it a personality that the MF found difficult to maintain.

## CONCLUSION

Well built and sturdy (Icon Audio quotes a lifespan of twenty years for their products including this headphone amp which is "infinitely repairable", according to David Shaw — no 'throwaway society' on Planet Icon!) with pleasingly rugged lines, conforming to the Icon house style, the Icon HP8 Mk.II is an impressive performer that allows your headphones to perform to the best of their ability. Offering a transparent midrange plus characterful low frequencies, the Icon is a great, value for money, all-rounder that is effective competition against most rivals, even expensive ones.



## REFERENCE SYSTEM

Avid Acutus turntable  
SME IV arm  
Benz Glider cartridge  
Icon PS3 phono amp  
Aesthetix Calypso Preamp  
Icon Audio CD-X1 CD player

## VERDICT

Offering a clean, open soundstage, the HP8 Mk.II provides precision and detail over the entire sound spectrum.

ICON AUDIO HP8 MK.II £550

Icon Audio

☎ +44(0)116 2440593

www.iconaudio.com

## FOR

-it's cute!  
-upper mids  
-focused bass  
-airy soundstage

## AGAINST

- nothing



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[www.trackaudio.co.uk](http://www.trackaudio.co.uk)



**Track Audio**



**WIN A CYRUS STREAM X NETWORK PLAYER WORTH £1400 IN THIS MONTH'S GREAT GIVEAWAY!**

**H**ere's your chance to win the advanced Cyrus Stream X network player, as reviewed in the March 2012 issue of Hi-Fi World! Here's what we said...

"The Stream comes in three different flavours. The Stream X we tested is the simplest and cheapest version. Priced at £1400 it is hardly 'cheap' and this version is a relatively simple home streamer that reads music from your computer, from iPod or iPhone via digital USB cable (not dodgy analogue from the headphone jack!), plays internet radio, or reads from six digital inputs: five S/PDIF and one USB, on the rear only.

There are no analogue outputs, meaning no on-board digital to analogue convertor (DAC), so connection must be made by the

single S/PDIF digital output, an electrical connection via phono socket.

There are two TOSLINK inputs, so a CD transport can be connected up via optical cable for example, but the signal is routed through to the digital output.

The absence of analogue outputs means connection must be made into a 'digital' amplifier, meaning one equipped with an internal DAC like a Cyrus 6XPd, or into an AV receiver, or into a DAC. However, as the Stream X does not have an on-board digital volume control, such a DAC cannot feed a power amplifier direct; it must go into an amplifier's Aux input, unless the DAC has its own volume control or a passive preamp with remote control of volume is used (oh, the options!).

A DAC and analogue outputs

are fitted to the Stream XP (£2000), in both fixed and variable form. The DAC does handle 24/192. Cyrus told me. Then there is the Streamline, which has an on-board 30 Watt power amplifier that drive loudspeakers direct, price £1600. With less functionality than the Cambridge NP30, price £400, the Stream X looks costly, but it has some serious ability.

One big difference between these Cyrus streamers and all others are their lavish n-remote control that brings the interface to the user. Where with most other players a small screen on the streamer itself, usually far from the user on the other side of the lounge, offers the only view of what can be lengthy menu trees, Cyrus provide a remote control with a 40mm x 50mm colour display screen that is pin sharp, bright and crystal clear."

For a chance to win this great prize, just answer the following four easy questions. Send your entries on a postcard only by 31st March 2012 to: **April 2012 Competition, Hi-Fi World magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.**

**RULES AND CONDITIONS OF ENTRY**

- ONLY ONE ENTRY PER HOUSEHOLD
- MULTIPLE ENTRIES WILL BE AUTOMATICALLY DISQUALIFIED
- PURCHASE OF THE MAGAZINE IS NOT A PRE-CONDITION OF ENTRY
- NO CORRESPONDENCE WILL BE ENTERED INTO
- THE EDITOR'S DECISION IS FINAL
- NO EMPLOYEES OF AUDIO PUBLISHING LIMITED, OR OF ANY COMPANIES ASSOCIATED WITH THE PRODUCTION OR DISTRIBUTION OF THE PRIZES, MAY ENTER

**QUESTIONS**

**[1] How many flavours are there?**

- [a] none
- [b] two
- [c] three
- [d] too many

**[2] How many analogue outputs?**

- [a] fifty
- [b] two
- [c] far too many
- [d] none

**[3] Does it have a DAC?**

- [a] yes
- [b] no
- [c] possibly
- [d] maybe

**[4] Is the n-remote?**

- [a] lavish
- [b] circular
- [c] unreadable
- [d] too bright

April 2012 Competition  
Hi-Fi World Magazine  
Unit G4 Argo House  
The Park Business Centre  
Kilburn Park Rd.  
London NW6 5LF

**entries will be accepted on a postcard only**

**JANUARY 2012 TANNOY REVOLUTION SIGNATURE DC6T LOUDSPEAKERS WINNER:  
Mr. David Paine of Derbyshire**

# Analogue Experts

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**ROKSAN**



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### Roksan Xerxes 20+

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Special Edition version of the world-famous Debut turntable; the ultimate in affordable Hi-Fi.  
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# FOXY BOXY

Adam Smith checks out Pro-Ject's clever Stream Box DS network player.

**A**s with so many things in the world today, music is going virtual. Whether the days of the CD are numbered it still remains to be seen, but it is an undeniable fact that digital downloads are becoming increasingly popular and it is not difficult to see why. After all, CD restricts you to 16 bit, 44.1kHz digital, but when it comes to downloads, resolutions are gradually growing higher and higher and source material is becoming more and more plentiful. Add to this the whole fiasco surrounding DAB digital radio and the fact that it is now just as easy to find a better selection of radio stations on the internet at higher quality, and this is another reason why a digital streaming device of some sort makes perfect sense.

The latest item to appear on the scene comes from Pro-Ject and flings itself into the fray at a decently competitive £700 price point. This suggests that it should offer more than, say a Cambridge Audio NP30 and certainly, on powering it up and being greeted by a rather tasty 3.5in TFT colour display, this is one immediately obvious advantage!

In connection terms, there is not a great deal to cause confusion to

the unwary. An Ethernet socket on the rear panel provides connection to a network and the unit also comes with an aerial that plugs into the back panel for wireless use. Outputs are available in digital and analogue format, the former through a coaxial phono plug rather than the optical alternative. USB inputs are available on both the front and rear panels, each independently selectable from within the unit's menu.

The unit is designed for use with all file resolutions up to 24/192 and covers all major formats including MP3, FLAC, AAC, WMA, WAX, LPCM, ASX and Ogg Vorbis, although it does not support Apple lossless.

As a streamer, it is able to work with all DLNA certified Media Servers, plus Windows Media Player version 11 and above. The Stream Box DS also includes the vTuner Internet Radio facility with automatic detection of local stations, although, given the quality of program content from most local radio stations I have listened to, I'm not entirely sure I would see this as a selling point...

An access code from the vTuner website may be obtained through the unit and this allows you to compile a list of favourite radio stations that can be stored on the unit for easy

access. Until this is done, you are left with looking at a list of recently listened-to stations, or searching for the one you want each time.

Other upgrades that the website lists include a multiroom audio application that operates with Windows Media Server 12 and the installation of 'Jamcast' onto your PC or laptop that will make the Stream Box appear as a virtual soundcard and allow streaming from the PC direct to the Stream Box. Finally, the unit will work with the iMediashare app for iPhones and Android devices to allow them to stream directly to it.

Setup of the Stream Box DS is quite painless. On startup it is simply a matter of specifying whether you would like to connect through a wired or wireless connection, setting up the wireless network with your password in the case of the latter, and then searching the network for your chosen media server. The Stream Box DS leapt onto my network with almost childish enthusiasm and found my media server without any difficulty, so with some high resolution audio delights loaded up, and my favourite internet radio stations scribbled down, it was time to start listening.





**SOUND QUALITY**

Starting off with radio and the internet stream of KEXP 90.3 from Seattle, the Stream Box DS sounded neat and tidy enough. Stereo imagery and depth were noticeable by their absence but this stream is only a 128kbps item and so I was not expecting sonic fireworks, but the Pro-Ject did a generally good job, I felt.

One aspect in which it did fall down, however, was the seeming inability to display the bit rates of stations that I was listening to (the KEXP station displays it in their logo) thus making it impossible to determine how high quality a stream I was listening to. I was also disappointed that the Stream cannot be re-wound or even paused – as someone who is used to the Tuneln radio app on my iPhone that offers this facility, it seems a curious oversight. Moving to Radio 3 and a higher bit rate stream (I assume!) the Stream Box opened up better and offered a much better sense of impact and detail to the performances on offer.

Moving to a source whose parameters I did know, I played a

impressively silent background I found that I was listening at a lower volume than I usually would – everything seemed just better etched and more vivid within the performance.

At the low end, the Pro-Ject was solid and, once again, nicely detailed, but seemed to lack punch and drive. Switching to something with more of a kicking bass line, the Stream Box DS didn't really want to play, continuing to sound very tidy and accomplished, but not really digging into the heart of the material on offer. Whilst this may work wonders in making some noisy, thrashy material a bit more socially acceptable, some of us like our noise...well...noisy!

My other gripe with the Pro-Ject, however was an underlying effect that seemed to be in place no matter what source or bit-rate I chose, and that is the undeniable fact that the sound seemed very reluctant to escape from the proximity of my loudspeakers. With the aforementioned Phantom Limb track, singer Yolanda Quartey's vocals were locked in the loudspeakers and seemed reluctant to come out. Despite a generally spacious and airy nature, the Stream Box seemed to struggle when it came to focusing the performance centrally. I happen to have the album from which



**REFERENCE SYSTEM BOX**  
Marantz CDA94 DAC  
Naim Supernait amplifier  
Modified Ferrograph S1 loudspeakers

**VERDICT**

A nicely styled and easy to use digital streamer that offers a pleasant performance.

**PRO-JECT STREAM**

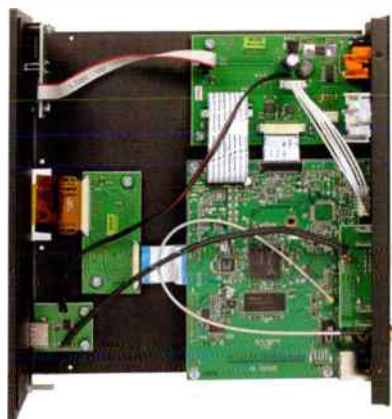
**BOX DS** £699  
Henley Designs  
+44(0)1235 511166  
www.henleydesigns.co.uk

**FOR**

- neat styling
- good screen and interface
- ease of setup
- impressively clean treble

**AGAINST**

- lack of central image focus
- a little too 'polite'



selection of 24/192 downloads from both my NAS drive and through the front-mounted USB socket from a USB stick. Generally speaking, both of these were much better, with the unit offering an excellent sense of purity and air to the top end that is usually missing in CDs. By comparison, the CD copy sounded rather clanky and mechanical, showing that the benefits wrought by the increase in resolution are much more than subtle. With some soft vocal jazz or smooth instrumental music, the Pro-Ject is a joy to listen to, washing the performance over you like the bubbles in a hot bath.

Equally, the subtle backing effects lurking in the depths of Phantom Limb's 'Don't say a Word' came through very cleanly when played on the Pro-Ject and, thanks to the

track is taken on both CD and LP and changing to either of these planted her right in the middle of the soundstage (in fact, right in the middle of the room on the LP) but going back to the high-res download pushed everything back into two places once again. Taking the digital output from the Stream Box DS into my Marantz CDA94 DAC helped things along somewhat but still failed to ameliorate the problem totally, which was a disappointment, especially given the undeniable strengths of the unit in other areas.

**CONCLUSION**

The Pro-Ject Stream Box DS is a versatile digital streaming solution that comes in the sort of typically enticing package that we have come to expect from Pro-Ject.

The design is neat, it is easy to use and get running and the user interface is trouble-free. The only problem is that, as measurement suggests and listening confirms, the sound quality of the device is not up with the best at, or indeed, a little below the price.

Pleasant and enjoyable to listen to it most certainly is, and for many people I have no doubt that this will be more than enough, but unfortunately the Stream Box DS does not show what the digital format is capable of when offered in high resolution. Feed it some noisy, grungy material and it seems to send it out the other side with a nice sugar coating to take the bitterness away. The Stream Box DS deserves great credit for its overall package, its user-friendliness and its general 'niceness', but if the ultimate in honest sound quality across all genres of music is what you are after, I would advise careful auditioning before purchase.

**MEASURED PERFORMANCE**

Frequency response reached 48kHz with a 96kHz sample rate signal, so the Sound Box DS has sufficient analogue bandwidth to do justice to higher sampling rates. However, even with a linear 24bit signal distortion at -60dB was high, measuring 2.6% and this is nowhere near the 0.04% possible, nor the 0.2% of 16bit. Here the Sound Box is way below what is expected, having much higher distortion than demanded for high fidelity.

Output was low at 0.8V, below the 2V value usually adopted to keep low level signals above noise in the output amps.

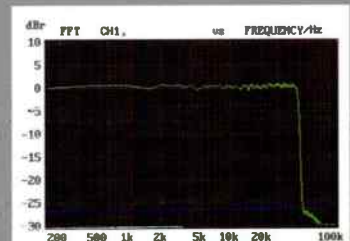
Although random and signal related jitter were very low, low rate clock drift was atrocious at 4nS. A bad result is usually around 1nS and a good one 0.1nS for this phenomenon.

The Sound Box DS is disappointing in measured terms. It needs to provide a considerably better performance to be comparable to current rivals. NK

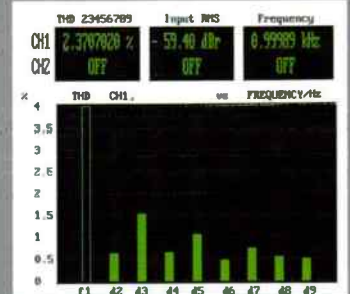
Frequency response (-1dB)

	5Hz-48kHz
Distortion (16bit)	%
0dB	0.003
-60dB	2.6
Separation (1kHz)	96dB
Noise (IEC A)	-86dB
Dynamic range	87dB
Output	0.78V

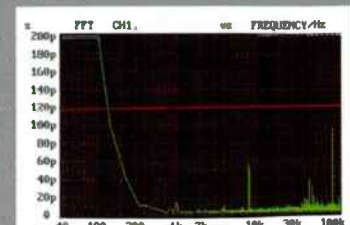
**FREQUENCY RESPONSE**



**DISTORTION**



**JITTER**



# WORLD CLASSICS

Here is our list of the great and good from audio's glorious past, products that have earned their place in hi-fi history. You'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price.

**We do not sell these products. It is for your information only.**

## DIGITAL

**CAMBRIDGE AUDIO CD1** 1986 £1500  
Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.

**CAMBRIDGE AUDIO CD4SE** 1998 £200  
A touch soft in the treble and tonally light, but outstanding in every other respect.

**LINN KARIK III** 1995 £1775  
The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

**MARANTZ CD73** 1983 £700  
A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 DAC -super musical



**MARANTZ SA-1** 2000 £5,000  
The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



**MERIDIAN 207** 1988 £995  
Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

**MUSICAL FIDELITY TRIVISTA** 2002 £4000  
When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

**MERIDIAN MCD** 1984 £600  
The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.



**NAIM CDS** 1990 £ N/A  
Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.



**SONY CDP-101** 1982 £800  
The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!

**SONY CDP-R1/DAS-R1** 1987 £3,000  
Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.



**SONY CDP-701ES** 1984 £890  
Sony's first ever bespoke high end audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperback-sized remote control.

**TECHNICS SL-PI200** 1987 £800  
CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pro' use and laden with facilities - a great eighties icon. Sonically, it's pure fun, with hefty bass that can still show weedy modern players a thing or two!

**YAMAHA CD-X1** 1983 £340  
Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

**COMPACT DISC TRANSPORTS**  
**TEAC VRDS-T1** 1994 £600  
Warm and expansive sound made this a mid price hit. Well built, with a slick mech.



**ESOTERIC P0** 1997 £8,000  
The best CD drive bar none; TEAC's Tokyo boys pushed the boat out in style. Brilliantly incisive, ridiculously over engineered.

**KENWOOD 9010** 1986 £600  
The first discrete Jap transport was beautifully done and responds well to re-clocking even today.

**DACs**  
**CAMBRIDGE AUDIO DACMAGIC** 1995 £99  
Good value upgrade for budget CD players with extensive facilities and detailed sonics.



**DCS ELGAR** 1997 £8500  
Extremely open and natural performer, albeit extremely pricey - superb.



**DPA LITTLE BIT 3** 1996 £299  
Rich, clean, rhythmic and punchy sound transforms budget CD players.



**PINK TRIANGLE DACAPO** 1993 £ N/A  
Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard. Clever plug-in digital filter modules really worked!



**QED DIGIT** 1991 £90  
Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

**TURNTABLES**

**ARISTON RD11S 1972 £94**

Modern evolution of Thorens' original belt drive paradigm, Scotland's original super-deck was warm and musical, albeit soft. Still capable of fine results today.

**ADC ACCUTRAC 4000 1976 £300**

Bankers 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

**PIONEER PL12D 1973 £36**

The beginning of the end for the British turntable industry. When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL112D was off the pace compared to rivals



**PIONEER PLC-590 1976 £600**

Sturdy and competent motor unit that performs well with a wide range of tonearms. Check very thoroughly before buying due to electronic complexity and use of some now-obsolete ICs.

**DUAL CS505 1982 £75**

Simple high quality engineering and a respectable low mass tonearm made for a brilliant budget buy. Polished, smooth and slightly bland sound.

**GOLDRING LENCO GL75 1970 £15.65**

Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today from specialists. Eminently tweakable. Similar 88 and 99 motor units are budget 301/TD124 rivals.

**LINN AXIS 1987 £253**

Simplified cut-price version of the Sondek complete with LVX arm. Elegant and decently performing mid-price package. Later version with Akito tonearm better.

**LINN SONDEK LP12 1973 £86**

For many, the Brit superdeck; constant mods meant that early ones sound warmer and more lyrical than modern versions. Recent 'SE' mods have brought it into the 21st century, albeit at a price..



**MARANTZ TT1000 1978 £ N/A**

Beautiful seventies high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan.



**MICHELL GYRODEC 1981 £599**

Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved until recently. Early examples sound cold and mechanical, but now right on the pace. Clean, solid and architectural sound.

**TECHNICS SP10 1973 £400**

Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SP10/II will give any modern a hard time, especially in respect of bass power and midband accuracy.

**REGA PLANAR 3 1978 £79**

Brilliantly simple but clean and musical performer, complete with Acos-derived S-shaped tonearm. 1983 saw the arrival of the RB300, which added detail at the expense of warmth. Superb budget buy.

**GARRARD 301/401 1953 £19**

Heavy metal - tremendously strong and articulate with only a veiled treble to let it down. In many respects, better than the seventies 'superdecks' that succeeded it.



**ROKSAN XERXES 1984 £550**

Supposedly the first to 'better' the LP12. Super tight and clean sound, with excellent transients. Less musical than the Sondek, but more neutral. Sagging plinth top-plates make them a dubious used buy.

**SONY PS-B80 1978 £800**

First outing for Sony's impressive 'Biotracer' electronic tonearm. Built like a tank with a clean and tidy sound, albeit lacking involvement. Scarily complicated and with no spares support - buy with caution!

**THORENS TD124 1959 £ N/A**

The template for virtually every 1970s 'superdeck', this iconic design was the only real competition for Garrard's 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass.



**TOWNSHEND ROCK 1979 £ N/A**

The product of academic research by the Cranfield Institute, this novel machine has an extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

**TRIO LO-7D 1978 £600**

The best 'all-in-one' turntable package ever made, Trio/Kenwood threw their 'engineering best practice' book at this one with startling results. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

**TONEARMS**

**ACOS LUSTRE GST-1 1975 £46**

The archetypal S-shaped seventies arm; good, propulsive and involving sound in its day, but ragged and undynamic now.

**AUDIO TECHNICA AT 1120 1978 £75**

Fine finish can't compensate for this ultra low mass arm's limited sonics - a good starter arm if you've only got a few quid to spend.

**ALPHASON HR100S 1981 £150**

First class arm, practically up to present-day standards. Buy carefully, though, as there is no service available now. Totally under priced when new, exceptional.



**SME 3009 1959 £18**

Once state of the art, but long since bettered. Musical enough, but weak at frequency extremes and veiled in the midband. Legendary serviceability and stunning build has made it a cult, used prices unjustifiably high.

**GRACE G707 1974 £58**

This early Japanese example of the tonearm art has a smooth, lyrical sound. Imported by Linn, fitted to early LP12s. Sonically way off the pace now, though.

**REGA RB300 1983 £88**

Inspired budget esoterica. Detailed, tight, neutral sound but tonally grey sounding in absolute terms. Responds well to tweaking, and its cheaper RB250 brother better still.



**SME SERIES III 1979 £113**

Clever variable mass design complete with Titanium Nitride tube tried to be all things to all men, and failed. Charming nonetheless, with a warm and inoffensive sound.

**HADCOCK GH228 1976 £46**

Evergreen unipivot with lovely sweet, fluid sound. Excellent service backup.



**LINN ITTOK LVII 1978 £253**

Arguably the first 'superarm'; Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. Now off the pace, but the final LVIII version worth seeking out.

**NAIM ARO 1986 £875**

Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened frequency extremes.



**TECHNICS EPA-501 1979 £ N/A**  
Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

**INTEGRATED AMPLIFIERS/COMBOS**

**DELTEC 1987 £1900**  
Fast, dry and with excellent transients, this first DPA integrated is the real deal for eighties obsessives. Ridiculously punchy 80W per channel from a tiny, half-size box. Radical, cool and more than a little strange.

**ROGERS A75 1978 £220**  
The prototypical Audiolab 8000a – lots of sensible facilities, a goodly power output and nice sound in one box. The later A75II and A100 versions offered improved sonics and were seriously sweet and open to listen to.

**EXPOSURE VII/VIII 1985 £625**  
Seminal mid-eighties Exposure pre-power, offering most of what rival Naim amps did with just that little bit extra smoothness and sweetness. Still, it's by no means 'sweet' by today's standards, being lean, punchy, musical. It's also possessed of that quintessentially eighties look – frumpy black steel boxes with rough silk screened logos!



**SUGDEN C51/P51 1976 £130**  
Soft sounding early Sugden combo with a plethora of facilities and filters, complete with seventies-tastic DIN socketry. A sweet and endearing performer as you'd expect, but lacking in power and poor load driving ability, so partner carefully.

**VTL MINIMAL/50W MONOBLOCK 1985 £1,300**  
Vacuum Tube Logic was one of the Europe's biggest tube names in the eighties, and it shows. Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

**A&R A60 1977 £115**  
Sweet and musical feature-packed integrated; the Audiolab 8000A used its blueprint to great effect.



**CREEK CAS4040 1983 £150**  
More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

**AUDIOLAB 8000A 1985 £495**  
Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.



**MCINTOSH MA6800 1995 £3735**  
Effortlessly sweet, strong and powerful with seminal styling to match.

**SUGDEN A21 1969 £ N/A**  
Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

**MISSION CYRUS 2 1984 £299**  
Classic eighties minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.



**MUSICAL FIDELITY A11985 £350**  
Beguiling Class A integrated with exquisite styling. Questionable reliability.



**NAIM NAIT 1984 £350**  
Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage, very low power.

**NAD 3020 1979 £69**  
Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super-amp.



**MYST TMA3 1983 £300**  
Madcap eighties minimalism, but a strong and tight performer all the same.

**ROGERS CADET III 1965 £34**  
Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves



**ROTEL RA-820BX 1983 £139**  
Lively and clean budget integrated that arguably started the move to minimalism.

**CHAPMAN 305 1960 £40**  
Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper second-hand.

**PREAMPLIFIERS**

**AUDIOLAB 8000C 1991 £499**  
Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.

**CROFT MICRO 1986 £150**  
Budget valve pre-amp with exceptionally transparent performance.

**AUDIO RESEARCH SP-8 1982 £1,400**  
Beautifully designed and built high end tube preamplifier with deliciously sweet and smooth sound. Not the last word in incision or grip, but that didn't matter to those who aspired to it.

**CONRAD JOHNSON MOTIV MC-8 1986 £2,500**  
Minimalist FET-based preamplifier from the Yank valve specialists is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden high end stuff. Something of a curio, but worthwhile nonetheless.

**LEAK POINT ONE STEREO 1958 £ N/A**  
Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!

**LINN LK-1 1986 £499**  
A brave attempt by the Glasgow boys to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not half bad for under £100.

**LECSO AC-1 1973 £ N/A**  
Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.



**QUAD 22 1958 £25**  
The partner to the much vaunted Quad II monoblocks - cloudy and vague sound means it's for anacrophiles only.

**QUAD 33 1968 £43**  
Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...

**NAIM NAC32.5 1978 £ N/A**  
The Salisbury company came of age with this, their classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

**POWER AMPLIFIERS**

**HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110**  
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

**LEAK STEREO 20 1958 £31**  
Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



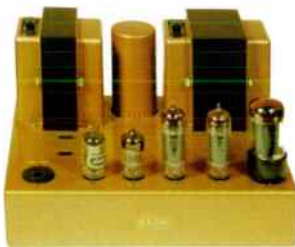
**LEAK STEREO 60 1958 £N/A**  
Leak's biggest valve power amp offers 35 Watts per channel and more low end welly than the smaller Stereo 20. Despite concerns over reliability their rarity means high prices are the order of the day.

**LECSON API 1973 £ N/A**  
Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

**MARANTZ MODEL 9 1997 £8000**  
Authentic reproduction monoblocks still more than cut the sonic mustard. Highly expensive and highly sought after.

**MICHELL ALECTO 1997 £1989**  
Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!

**LEAK POINT ONE, TL10, TL12.1, TL/12 PLUS 1949 £28**  
Early classics that are getting expensive. Overhauling is de rigeur before use, using original parts if possible. Surprisingly crisp and musical sound, that's far more modern than Quad IIs. Deeply impressive when in fine fettle.



**MUSICAL FIDELITY XA200 1996 £1000PR**  
200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.



**QUAD II 1952 £22**  
The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly



**QUAD 405 1978 £115**  
The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound. 606 and 707 continue the theme with greater detail and incision.

**QUAD 303 1968 £55**  
Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

**KRELL KMA100 II 1987 £5,750**  
Ludicrous monoblock version of the giant KSA-100 is one of the seminal eighties transistor power amplifiers. Massive wallop allied to a very clean and open Class A sound makes this one of the best amplifiers of its type, ever.

**RADFORD STA25 RENAISSANCE 1986 £977**  
At the time, very possibly the least cool amplifier on the planet – and we're not talking heat dissipation here. This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.



**PIONEER M-73 1988 £1,200**  
Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the eighties-tastic experience.



**PHONO STAGES CREEK OBH-8 SE 1996 £180**  
Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring G1042 for an unbeatable budget combination.



**LINN LINNK 1984 £149**  
Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, although off the pace these days.

**MICHELL ISO 1988 £ N/A**  
This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in finesse.

**TUNERS MARANTZ ST-8 1978 £353**  
Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.



**CREEK CAS3140 1985 £199**  
Excellent detail, separation and dynamics - brilliantly musical at the price. T40 continued the theme...

**NAD 4040 1979 £79**  
Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica. Needs a good antenna to work properly, however.

**NAIM NAT03 1993 £595**  
The warm, atmospheric sound is further proof of Naim's proficiency with tuners.

**PIONEER TX-9500 1976 £295**  
Another of the serious classic solid-staters. Boasts the usual high end Jap package of fine sound, brilliant sensitivity and superb build.

**LEAK TROUGHLINE 1956 £25**  
Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Fed to a modern outboard decoder they're deliciously lucid with true dimensionality.



**YAMAHA CT7000 1977 £444**  
Reputedly the best of the classic Jap analogues, this combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

**QUAD FM4 1983 £240**  
Supreme ergonomics and styling allied to a pleasingly lyrical sound with plenty of sweetness and detail made this one of the best tuners around upon its launch.



**REVOX B760 1975 £520**  
More of a semi-pro machine than a domestic bit of kit, the Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?

**NAD 4140 1995 £199**  
Brilliant affordable digital tuner has a smooth, detailed musical sound plus sensible real-world facilities.

**ROGERS T75 1977 £125**  
Superb mid-price British audiophile design, complete with understated black fascia. Fine sound in the true Rogers mould – smooth and sweet with fine dimensionality.

**SANSUI TU-9900 1976 £300**  
A flagship Japanese tuner designed to steal sales from the likes of Accuphase and Revox, it boasts superlative RF performance and an extremely smooth and lucid sound, along with very fine build and finish.

**SONY ST-5950 1977 £222**  
One of the first Dolby FM-equipped tuners, a format that came to nought. Still, it was Sony's most expensive tuner to date, and boasted a very good sound quality allied to brilliant ergonomics.

**SEQUERRA MODEL I 1973 £1300**  
Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio, including impressive multi-purpose oscilloscope display.



**TECHNICS ST-8080 1976 £180**

National Panasonic's specialist hi-fi brand was a big hitter back then, and this is no exception. Superb FM stage makes for a very clean and smooth listen with lots of detail and depth.



**ANALOGUE RECORDERS**

**YAMAHA TC-800GL 1977 £179**

Early classic with ski-slope styling courtesy of Mario Bellini. Middling sonics by modern standards, but cool nonetheless!



**AIWA XD-009 1989 £600**

Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

**NAKAMICHI CR-7E 1987 £800**

The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



**PIONEER CTF-950 1978 £400**

Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.



**REVOX A77 1968 £145**

The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days. B77 better, but couldn't match the Japanese.



**SONY WM-D6C 1985 £290**

Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.



**SONY TC-377 1972 £N/A**

A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

**DIGITAL RECORDERS**

**SONY MDS-JE555ES 2000 £900**

The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.



**PIONEER PDR-555RW 1999 £480**

For a moment, this was the CD recorder to have. Clean and detailed.

**MARANTZ DR-17 1999 £1100**

Probably the best sounding CD recorder made; built like a brick outhouse with a true audiophile sound and HDCD compatibility.



**KENWOOD DM-9090 1997 £500**

Serious and sophisticated sound thanks to well implemented ATRAC 4.5; surprisingly musical MD recorder.

**SONY TCD-8 DATMAN 1996 £599**

Super clean sound makes this an amazing portable, but fragile.

**LOUDSPEAKERS ACOUSTIC RESEARCH**

**ARI8S 1978 £125**

Yank designed, British built loudspeaker became a budget staple for many rock fans, thanks to the great speed from the paper drivers, although finesse was most definitely not their forte...

**BBC LS3/5A 1972 £88**

Extremely low colouration design is amazing in some respects - articulation, stage depth, clarity - and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence. Partner with Rogers ABI subwoofers for an extra two octaves of bass!

**LOWTHER PM6A 1957 £18 EACH**

This seminal full-range driver is still manufactured. High sensitivity, as fitted to many classic horn designs.

**HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110**

Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

**TANNOY WESTMINSTER 1985 £4500**

Folded horn monsters which certainly sound good if you have the space. Not the last word in tautness but can drive large rooms and image like few others.

**JR 149 1977 £120**

Infamous cylindrical speaker that was ignored for decades but now back in fashion! Based on classic KEF T27 / B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but rewards with fine clarity and imaging.



**SPENDOR BCI 1976 £240**

Celestion HF1300 tweeter meets bespoke Spendor Bextreme mid-bass unit - and the result is a beautifully warm yet well focussed sound. A little bass bloom necessitates careful low-stand mounting, but these prove that the seventies did have some fine designs after all!

**QUAD ESL57 1956 £45 EACH**

Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midband performance, although frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and supertweeters.



**KEF R105 1977 £785**

Three way Bextreme-based floorstander (complete with castors!) gave a truly wide-band listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace. The quintessential nineteen seventies loudspeaker.

**IMF TLS80 1976 £550**

Warm and powerful nineteen seventies behemoth with transmission loading and a mixture of KEF and Celestion drive units. Impressively physical wideband sound but rhythms aren't its forte.

**MAGNEPLANAR SMGA 198X £800**

Technological loudspeaker with genuinely musical abilities; fast, smooth, open, dry.



**MISSION 770 1980 £375**

Back in its day, it was an innovative product and one of the first of the polypropylene designs, warm, smooth, clean and powerful sound.



**MISSION 752 1995 £495**

Cracking Henry Azima-designed floorstanders combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.

**HEYBROOK HBI 1982 £130**

Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic.

**CELESTION SL6 1984 £350**

Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit course at high frequencies and limp in the bass. Speakers would never be the same again...

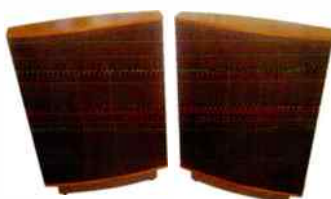
**LEAK SANDWICH 1961 £39 EACH**

Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.



**QUAD ESL63 1980 £1200**

An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics



**YAMAHA NS1000 1977 £532**

High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



**MISSION X-SPACE 1999 £499**

The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!



**CLASSIC CONTACTS**

When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all these companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

**GT AUDIO**

(Graham Tricker, Bucks)  
Leak Troughline specialists. Also Quad and most classic tuners, radios and amplifiers restored, repaired.  
Tel: 01895 833099  
Mob: 07960 962579  
www.gtaudio.com

**TECHNICAL AND GENERAL**

(East Sussex)  
Turntable parts - wide range of spares and accessories, plus arms and cartridges.  
Tel: 01892 654534

**CARTRIDGE MAN**

(Len Gregory, London)  
Specialist cartridge re-tipping service and repairs. High quality special cartridges.  
Tel: 020 8688 6565  
Email: thecartridgeman@talktalk.net  
www.thecartridgeman.com

**QUAD ELECTROACOUSTICS**

(Cambs) Quad's service department, able to repair almost all Quad products, from the very first. (Also Audiolab, Mission & Wharfedale).  
Tel: 0845 458001 | www.quad-hifi.co.uk

**Dr MARTIN BASTIN**

(Shropshire) Garrard 301/401 restoration, renovation and service. Special plinths; rumble cures, etc.  
Tel: 01584 823446

**ARKLESS ELECTRONICS**

(Northumberland)  
Specialist in repairs, restoration and modifications to all amplifiers, valve or solid state, ancient and modern.  
Tel.: 01670 530674  
Email: info@arklesselectronics.com  
www.arklesselectronics.com

**CLASSIQUE SOUNDS**

(Paul Greenfield, Leicester)  
ESL-57s restored, rebuilt, fully renovated or improved. Leak, Quad valves amps etc.  
Tel: 0845 123 5137/  
Mob: 0116 2835821  
Email: classique\_sounds@yahoo.co.uk  
www.flashbacksales.co.uk/classique

**WEMBLEY LOUDSPEAKER**

(Paul MacCallam, London)  
Comprehensive loudspeaker servicing.  
Tel: 020 8 743 4567  
Email: paul@wembleyloudspeaker.co.uk  
www.wembleyloudspeaker.com

**CLASSIC NAKAMICHI**

(Paul Wilkins, Worthing, West Sussex).  
Restore, Repair & Service Nakamichi Cassette Decks.  
Tel: 01903 695695  
Email: paul@bowersandwilkins.co.uk  
www.bowersandwilkins.co.uk

**ONE THING**

(Coventry) Specialist in electrostatic panel manufacture and repair. Can refurbish ESL 57s and 63s as well as Leak Troughlines and Quad IIs.  
Email: one.thing@ntworld.com  
www.onethingaudio.com

**LORICRAFT AUDIO**

(Terry O'Sullivan, Bucks)  
Garrard 301/401 and their own 501 repair, spares and service.:  
Tel: 01488 72267  
www.garrard501.com

**EXPERT STYLUS COMPANY**

(Wyndham Hodgson, Surrey) Stylus replacement service for all types of cartridge. Including precise profiling for 78s. Tel: 01372 276604  
Email: w.hodgson@btclick.com

**OCTAVE AUDIO WOODWORKING**

(Bristol) Unit 2, 16 Midland Street, St Phillips. Bristol. Tel: 0117 925 6015  
www.octave-aw.co.uk

**REVOX**

(Brian Reeves, Cheshire)  
Revox tape recorder spares, service and repair. Accessories also available.  
Tel: 0161 499 2349  
Email: brian@revoxservice.co.uk  
www.revox.freeuk.com

**SOWTER TRANSFORMERS**

(Brian Sowter, Ipswich)  
Large range of audio transformers for valve amps, cartridges, line drive, interstage plus all associated services.  
Tel: 01473 252794  
www.sowter.co.uk

**LOCKWOOD AUDIO**

(London)  
Tannoy loudspeaker parts, restoration and repair. Also Epos and TDL loudspeakers.  
Tel: 020 8 864 8008  
www.lockwoodaudio.co.uk

**ATV AUDIO**

(Henry Dulat, Surrey)  
Repairs, restorations and upgrades to valve and transistor amps and all analogue audio including Revox.  
Tel: 01372 456921 Mobile: 07730 134973



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From **£5499.95 (upgradable)**

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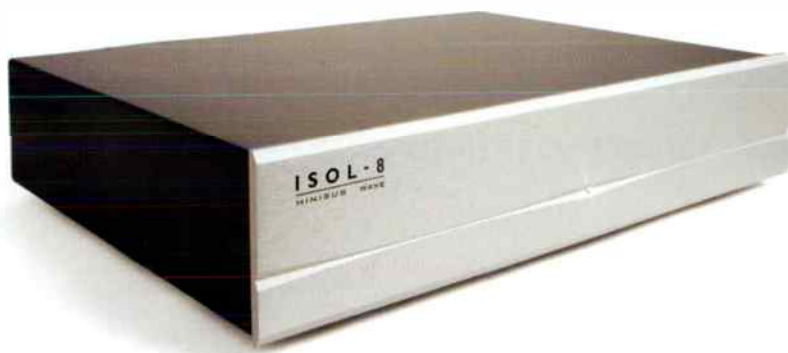
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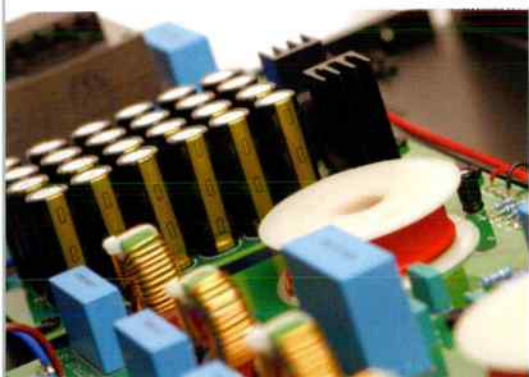
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### ISOL-8 MINISUB WAVE £699

Your mains electricity supply is a nasty place to be – if you're a piece of hi-fi equipment, that is. We think of electricity as being pure and natural when, in fact, it is infected by rubbish in the shape of harmonic distortion, radio frequency interference, noise from other connected items and DC components. This bunch of electro-bandits degrade the sound quality by preventing the circuits in your hi-fi



chain from performing properly. They literally 'get in the way'.

The ISOL-8 MiniSub Wave power conditioner has been designed to reduce or eradicate this multi-stream distortion by filtering it out while leaving the rest of the signal untouched using a new Transmodal filter topology for the low power sections such as CD players, turntables and the like.

But enough technology, what does it sound like? I began by hooking up my valve-staged Icon CD-X1 CD player, via a bog-standard cable to the mains. I then span the overly compressed 'Stronger' via The Sugababes and then placed the Wave in between the Icon and the mains. Even after a few seconds, the improvements in sound were evident with an obvious elevation of clarity. The removal of a large amount of distortion brought several dimensions of emotion back to the vocal which sounded far more relaxed than before. Not only that, the vocal also sounded fresh and more feminine. That is, the constituents of the female

voice, that were previously largely masked, now revealed a far more nuanced performance, with a raft of new elements that came into play.

Behind the vocal, I could hear the synth-inspired string effects rising from the music which gave a more romantic and even compassionate tone to the early part of the track. Also, at this point, a bass-lead, low frequency tone that had previously sounded rather tremulous, now revealed itself to be nothing more than a highly vibrational synth effect that now shook with dynamic power. In fact, bass sounded like it had been scrubbed clean, polished and newly presented, making it sound tighter and positively frisky.

With so much distortion reduced or eradicated, the Wave did two things. Firstly, it managed to paint a widescreen soundstage that encouraged subtle upper midrange details but, unlike some cheaper power conditioners, it did so without cutting into the resident dynamics.

Moving to my Avid Acutus analogue turntable set-up I compared its performance when connected to the ISOL-8 MiniSub Wave to direct mains connection. This demonstrated that the better quality the product and the more complex its construction, the better the benefits. Listening to a selection of jazz via Ella Fitzgerald and Duke Ellington, connected to the mains direct, was like listening to a friend while standing in a crowded bar. The information was there, the communication could be achieved, most of the emotion could be discerned but the surrounding ambient distortion blocked the more subtle aspects of the speech.

With the Wave in place, Fitzgerald's voice became

softer. She sounded like she had stopped trying and was now enjoying herself. The Wave released far more filigree elements that arose from her performance, revealing previously unheard emotions while the backing orchestra stopped sounding like a mushy melange and now started to sound like a group of individual instruments.

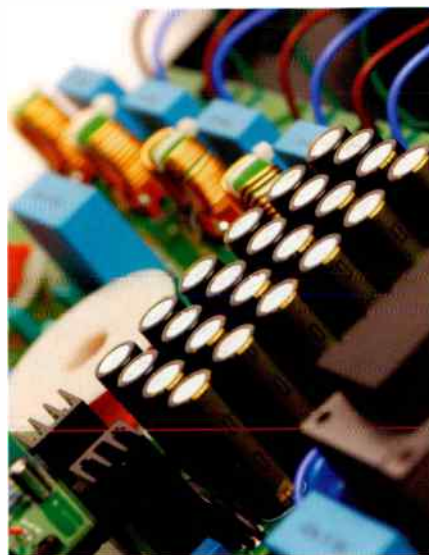
Overall, the upper midrange lost that sense of hardness that the mains-only connection forced upon the music. That was backed up with the trumpets, which now had texture while the trombones provided an individual tonal personality for the first time. Bass, meanwhile, started to play a significant part in the song, giving the track drive.

The ISOL-8 MiniSub Wave provides a significant aural improvement to your music – whether that be via a digital or analogue source. It won't conjure up new musical strengths but it will allow your hi-fi to properly perform to its true potential, quite possibly for the first time.

If you listen to your hi-fi chain now, you will probably wonder what on earth I'm wittering on about. "I can't hear any distortion!" you will cry. Yet, if you have always lived with distortion, if your untreated mains supply has been the only thing you have ever connected your hi-fi to, then is it any wonder?

The only way you will hear any difference is if you remove the distortion. It's a bit like living your entire life in a disco. Try walking out of the door and hearing the silence. Listening to distortion free hi-fi? It's a whole new world. And let me tell you this...the ISOL-8 MiniSub Wave is just the beginning. **PR**

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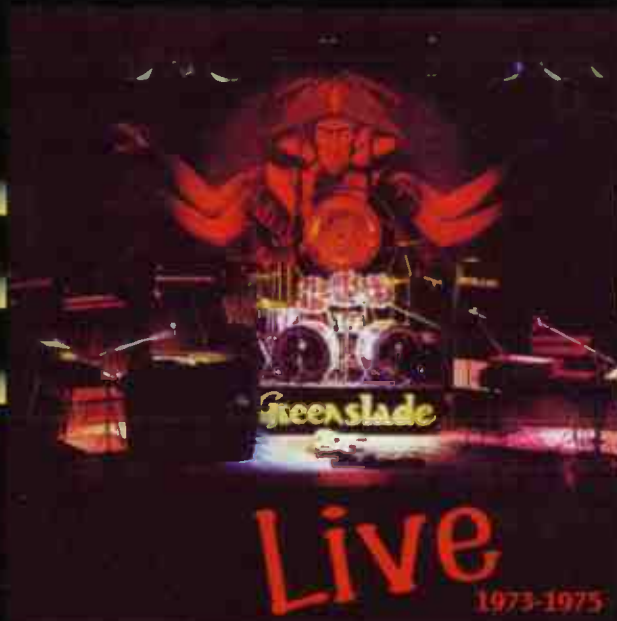
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**THIN LIZZY**

*At The BBC*  
**Mercury**

Casual Thin Lizzy fans can buy a two CD collection of BBC recordings: sessions and live gigs, devoted to the group but, for those who have invested more time and emotion in this dramatically under-rated rock group, this magnificent box set will serve them well.

Packed onto six discs, this set includes sessions from classic radio shows like Stuart Henry's Sounds Of The Seventies in 1971, John Peel's Sessions in 1973 and Bob Harris's show of the same year – and that's just the first disc! Disc two looks at 1974 via John Peel, Bob Harris and the Rock On show while disc three moves from 1973 to 1976 with both of those legendary broadcasters. It's when you get to disc four that you enter the live, In Concert, shows. The first is an eleven track affair at the Radio International Concert, disc five comes from 1981 at the Hammersmith Odeon and spans nine tracks while the sixth is another eleven tracker from 1983 and the Regal Theatre Hitchin.

As a bonus, you also receive a DVD of rare performances. This is a fascinating disc as it includes coverage from the Rainbow Theatre, London in 1978-79, the Regal Theatre, Hitchin plus appearances on Top Of The Pops

in the late seventies and early eighties and the Old Grey Whistle Test in 1979 plus the Three Of A Kind show in 1982.

Contained in a hardback folder which sits in a slip-case, the CDs and DVD are accompanied by a suite of liner notes, rare photos plus information on missing sessions (often just commercial tracks used when time was short) that will be priceless for the completist.

Excellent mastered, this is a brilliant collection that every Thin Lizzy and rock fan needs in their collection. Essential.

**GREENSLADE**

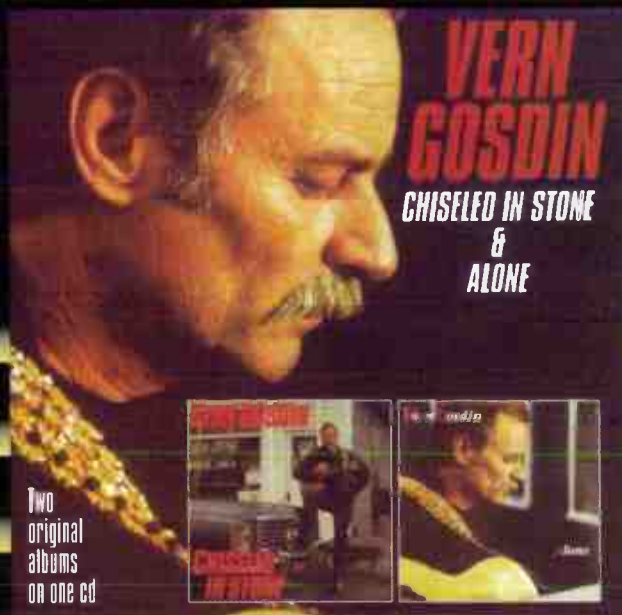
*Live: 1973-1975*  
**Angel Air**

Prog fans should be pleased as punch at this new release from Angel Air. Greenslade was headed by Dave Greenslade, ex-keyboard player from the prog rock outfit with strong jazz inflections, Colosseum. Joining him in the new outfit was Tony Reeves, the bass player from Colosseum.

This is a valuable collection of rarities on a single CD disc. Comprising four live tracks from 1973 (which plunders the band's self-titled debut album) plus four live tracks from 1975, which takes cuts from that same album, the second LP, 'Bedside Manners Are Extra' and the band's third album, 'Spyglass

Guest'. These are the only known live performances that survive from that period while the accompanying booklet features an interview with Reeves, "We were very different to everyone else," he said. "The two keyboard no guitar thing – it is the most distinctive thing about us. It's refreshing to know that there are bands out there that have drawn a bit from us. Spock's Beard, for example. To have inspired someone else, that's not a bad legacy."

Listening to this well produced CD, you will hear that music from the first two albums continue the Colosseum philosophy by blending classic rock, jazz, blues and symphonic rock with an elaborate style that arises with the dual-keyboard interplay between Greenslade and Dave Lawson (late of the band, Episode Six – an outfit that was a breeding ground for future Deep Purple members). This CD provides an introduction to the band as a whole, providing a selection of superb Mellotron keyboard sequences alongside stretches of brilliant Minimoog progressions. New prog fans will find Greenslade a tight band, musically, without the often debilitating self indulgence yet offering a series of multifaceted ideas that blend into often intricate conglomerates of ideas that stand repeated listening.



**JACK SCOTT**

*Touch Me Baby, I Go Hog Wild*  
Jasmine

Jack Scott sang a melange of rock'n'roll, rockabilly and country music but he set himself apart because of his attitude to his music and his work. The guy was one tough cookie. Skip along this double CD compilation to track eleven and play 'The Way I Walk' and you will be faced with a dark, brooding, growling figure. If Scott had approached your seat in a bar, you would be wise to suddenly remember a prior engagement.

Scott wasn't afraid to stamp his own style upon his songs and have confidence in his own abilities and arrangements such as the pronounced use of acoustic guitar within his work, more so his early rock'n'roll sides such as track nine's 'Goodbye Baby' that helped the track to swing with an intense musicality.

This compilation looks at Scott's work from those early rock'n'roll times to 1960 when Scott moved from his ABC label to Top Rank in 1959 where he enjoyed his last two major singles hits: 'What In The World's Come Over You' (1959; a smoky ballad detailing a collapsing relationship) and 'Burning Bridges' (1960; another ballad, more heartache). But don't let these

weepies fool you. You don't mess with Jack Scott.

Also look out for a range of other Jasmine releases, this month. The Diamonds' 'The Strroll' is a double CD featuring four original LPs plus bonus tracks for this fifties, R&B covers group. Also look out for George Jones' 'The Genesis Of Genius: The Early Sessions', a fifty-four track, two CD affair plus The Penguins' 'Earth Angel', a focus on the doo wop group from 1954-60 and a useful compilation for blues fans, '50 Of The Most Influential Blues Songs Of The 20th Century', including songs from Otis Rush, Freddie King and Howlin' Wolf.

**VERN GOSDIN**

*Chiseled In Stone/Alone*  
T-Bird Americana

Gosdin is an important figure in the country music genre. His history includes being a part of the Hillmen which featured future Byrd member, Chris Hillman, and then teaming up with his brother, Rex, to form the Gosdin Brothers which took an active part in the creation of country rock, associated themselves with The Byrds and even teamed up with then ex-Byrd, Gene Clark, producing an album in 1967.

As a solo artist, Gosdin struck gold with a string of top country hits during the late seventies and

throughout the eighties as the more traditionalist movement of country became popular. Both of these albums sit within that period. 'Chiseled In Stone' serves as the epitome of Gosdin's work at this time. Appearing in 1988, it is a pure, five globe-rated, gem which is packed with superb songs in which every track is as strong as the next. Based upon Gosdin's strong, yet gentle, voice, the album explores both emotions and relationships, inserting pain, anguish and plenty of pathos.

The second album in this collection, 'Alone' doesn't quite have a quality of 'Chiseled', it is full of great performances — Gosdin created the album right after a divorce — but the quality of the songs lets him down. There's still plenty to enjoy here, though.

This is just one CD release on a whole host of T-Bird Americana issues this month. Others include sister of Barbara, Louise Mandrell's self-titled album plus 'Maybe My Baby' on one CD, a similar pattern with George Jones & Tammy Wynette' 'We Go Together' and 'Let's Build A World Together' and Tracey Byrd's 'It's About Time' and 'Ten Rounds'. Then there are a range of hits packages from the likes of Connie Smith and 'The Hurtin's All Over' (1964-72) and Dottie West's 'Country Sunshine' (1963-74). **PR**

# System synergy

**Marantz make great sounding systems of well matched components – and they don't cost the earth either. Tony Bolton lives with a Marantz CD6004 CD player and PM6004 amplifier, feeding Boston Acoustics A360 loudspeakers and finds real synergy.**



**S**o it has been your lucky day, and some of the lottery numbers actually match yours, and you now have £1500 to do with as you wish. Since you are reading this magazine, you are obviously going to go hotfoot to your nearest hi-fi dealer to buy yourself a new system. But what to choose from the plethora of equipment out there?

Well one suggestion would be the new Marantz PM6004 amplifier and its matching CD player, the CD6004. These have taken over from the award winning 6003 series and cost £309.90 each.

The amplifier casing retains the elegantly curved edges of its predecessor, and the practicality of five line level inputs and a built in MM phono stage. There are two pairs of speaker terminals to allow for bi-wiring, and remote control. Internally the case-shielded toroidal transformer and customised main capacitors have been retained, and supplemented with new circuit boards that feature discrete components in both the pre and power amplification sections. The previous model's ICs (integrated circuits or chips) have been ditched in favour of better performance. Defeatable tone controls are provided, as is a loudness control.

Matching this is the CD6004 CD player. The casework is identically sized at 440 x 370 x 110mm (w

x d x h) and both are available in the usual black or silver options. The 6004 has been considerably redesigned and now features a new transport mechanism, an upgraded power supply, and a solid metal bottom plate to eliminate vibration. There is also a new DAC, a CS4398 chip, and Marantz's new HDAM-SA2 amplifiers for each channel.

Apart from spinning the silver Frisbees, the CD6004 has a USB 2.0 socket on the front panel which allows either memory sticks or iPods and suchlike to be connected directly to the DAC for better quality reproduction of your mobile music source. iPods and iPads can also be recharged by the USB connection without, it is claimed, detrimental effect upon the sound quality.

A little searching around for suitable loudspeakers to match the Marantz units produced the A360 floorstanders from Boston Acoustics. These are the flagship model in the Company's A-Series and boast dual 165mm DCD woofers, a 89mm DCD midrange unit and a 25mm Kortec soft-dome tweeter housed in a quite handsomely styled cabinet. This measures 1060 x 345 x 274mm (h x w x d) and weighs 20kg. They are available in either gloss white or black finish and cost £719.90 per pair. Some thought has been given to the stability of the cabinets and there are two legs sticking out either side at the back which helped these tall columns to be quite stable even

when sat on carpet without spikes attached.

The manufacturer's specs claim a frequency response from 38Hz to 25kHz, an impedance of 8 Ohms and a sensitivity of 90dB (SPL/2.8V/m) making them an easy match to a wide range of amplifiers. The plastic framed grills are held in place by magnets, meaning that there are no unsightly holes in the front panel when they are removed. A single pair of speaker terminals are mounted low down at the back.

I am a great believer in the beneficial effects of carefully chosen cabling when connecting up a system, and for this combination I chose Atlas Cables new version of the Equator interconnects. First introduced in 2002, these are now in Mark III form, and feature cold welded connections between the 99.9999% pure copper co-axial stranded conductors and the new Integra plugs. These are an unusual design and feature two brackets that extend over the conductors to eliminate RFI and four asymmetrical leaves that spring open when inserted into a socket and wipe clean the signal path. The cable is gripped by two conjugate brackets which do not compress the cable. Research at Atlas has shown that compressing a cable can alter its impedance, affecting the sound of the music that is flowing through it. Finally there is a non-magnetic ABS cover over the plug.

The matching Equator speaker cable comes in a variety of forms with either 2 or 3 sq. mm. conductors. The bi-wire version uses multi-stranded 2 sq. mm. for the bass and two 1.2 sq. mm solid core conductors for the treble. The dielectric is made of polypropylene and the conductors are contained in cotton yarn to reduce microphony.

The interconnects retail at £75 per metre pair and the speaker cable

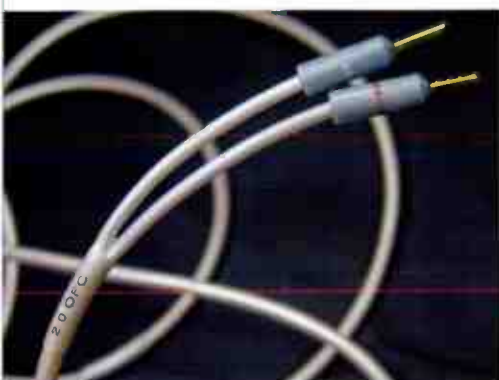


Available in either black or white, the Boston Acoustics A360 have a pleasantly understated appearance.

starts at £6 per metre, rising to £12 per metre for the bi-wire version.

I initially set this system up in a spare room and left it to burn in with the CD player on repeat for a couple of days before moving it all into the front room and starting listening.

Bearing in mind that two pairs of the interconnects on my front room system cost as much as this entire set-up, you will understand that I felt a little trepidation when inserting the first CD. I needn't have worried. Morcheeba's album 'Big Calm' (Indochina Records ZENO17CDX)



The Atlas Equator speaker cables

flowed out of the A 360s with a smoothness that was instantly easy to listen to, and very involving. Skye's voice had that lovely velvety texture that I find so beguiling and seemed to be firmly placed in the centre of the music. The band was nicely spread around a quite reasonably large area in front of me, and got on with the business of playing their tunes in an unruffled and entertaining way. Bass notes were well shaped and seemed to have good depth and solidity, allied to quite a punchy presentation when the music required. Mid range and treble detailing was good, helping to create a sonic picture of a group of musicians relaxed and at ease with their craft. I enjoyed the music, which was displayed with enough class that I could forget the relatively modest cost of the equipment, and focus on

Soloists stood in front of the mass of sounds being generated behind them, without getting swamped by the wealth of musical detail available. I could be churlish and comment that there was a certain thinness to the sound of stringed instruments that was not totally tonally accurate, but that is partially a result of my being used to listening to this music on a system that costs many times the value of this one. Considering that music was passing through the on-board phonostage of a £310 amplifier and £720 loudspeakers, the results were very impressive and more than acceptable.

I also tried each of the components separately, attached to the Leema electronics and Charios as appropriate. Each gave a good account of itself and the amp



the sounds that it was creating.

In fairness the Marantz system was not about to do a David and Goliath and take on the resident Leema Acoustics Tucana II, Antilla IIS Eco and Chario Ursa Major set-up, but neither did it disgrace itself in taking over as the main source in the room for a few days. During this time it reproduced radio and television sound in a very capable way. Background detailing was quite comprehensive, helping to flesh out the images moving across the screen. Radio 3 transmissions were reproduced with a level of depth and body that was impressive for equipment at this price point, and throughout I was pleased by the neatness of the sonic package presented to me. It did not try to show off with overly deep rumbling bass or brightly defined treble.

Rather, I felt that there was a balance to the sound – one that was convincing and well mannered.

Since the phonostage was MM only I moved my Linn Sondek, complete with the MusicMaker III moving iron cartridge, downstairs, and settled down with Von Karajan conducting the Berlin Philharmonic through the Beethoven Symphonies (Deutsche Grammophon 2740 172 - 10). The demands of the fourth movement of the 9th Symphony, with the power of a full orchestra and chorus, were handled well.

surprised me by seeming to produce higher sound levels than I expected given its relatively modest 45 Watts per channel claimed output.

The Atlas Cables loom proved particularly capable when installed in my resident system, sounding as though it had cost a lot more than its price. It displayed levels and textures in the music that I would not normally have expected to hear at these prices and seemed to offer exceptional performance for the money.

As a complete system costing, including cables, under £1500, I felt that the inexpensive '6004' system was very capable. The Marantz products worked well individually, but combined, they produced a sound that seemed to build on the strengths of both items and to nullify any small weaknesses.

The Boston Acoustics A360 'speakers complemented this with a down-to-earth honesty that was enjoyable and satisfying.

If you are on a tight budget, or looking for an affordable second system, then I would recommend this combination without hesitation. The amp and CD player offer excellent connectivity, covering all sources from analogue to the latest digital devices, and the speakers, while being unobtrusive in size and styling, proved capable of producing sounds in a manner that was fatigue free and musically coherent.

*The back panel of the CD6004 carries analogue and digital outputs, the latter in electrical and optical form.*

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- nothing

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### FURUTECH CRUISE HEADPHONE AMPLIFIER £375

Why a portable headphone amp? This one relies on extracting the digital signal of a portable or laptop via USB to process it through its better quality internal Digital-to-Analogue Converter. This strategy avoids the cheap, low quality DACs common in laptops and portables. For those players lacking a USB output there is a Line level input too and this is connected either into a line output or a headphone socket. Furutech suggest volume in the portable is then turned up to maximum and left there, but quite often this will result in output overload and distortion, so their advice here needs to be treated with caution.; half volume is likely to be safest.

Easily hidden in a pocket – the Cruise spans just 65x120x28mm and weighs a mere 198g. In fact, although it is rather deeper, the Cruise is as long as my iPhone and just a touch wider.

If there's one thing that you can lay at the doorstep of the Furutech house, it's the fact that it certainly knows how to present a piece of hi-fi kit. Resplendent in a tasteful mixture of carbon fibre and polished steel, the sculptured lines of the Cruise looks, feels and handles like a piece of expensive jewellery: possibly a cigarette case that Cary Grant might lift from his jacket pocket in the film, 'Breakfast At Tiffany's'. Grant might, in this case, be rather bemused to find that his cigarette container also features a mini-USB which doubles as a charge port, a tiny on/off switch, a variable resistor rotary volume control plus a 3.5mm line socket and a 3.5mm headphone port.

Sound tests were conducted with a pair of Sennheiser HD650 headphones.

I plugged the Cruise into the USB port of my bog-standard dual-core PC laptop, running a WAV version of Gabrielle's 'Sunshine' (from the album, 'Rise'), extracted via Exact Audio Copy. It was now placed upon a wider, richer soundstage, bass was noticeably punchier with a large amount of bloom removed while new, low frequency, elements were introduced into the presentation.

The upper midrange was intriguing. Gabrielle's vocal was now lighter and bouncier than before with a more confident, floaty aspect to the delivery while organic instruments, like the introductory acoustic guitar, was more characterful.

Of course, with these revelatory sonic improvements, the PC's own, inherent, sonic problems were also exposed. The Cruise is unforgiving in its level of transparency, showing you just how thin and clanky the upper midrange can be on a standard PC rig, and as for that splashy treble? Don't get me started.

Moving to my 64GB, iPhone 4S, playing a WAV version of jazzman, Geoff Keezer's 'Stompin' At The Savoy' from his 'Turn up The Quiet' album and the Cruise managed to drag a heap of detail to the fore giving my iPhone's headphone output an unfamiliar, and pleasantly surprising, degree of musicality. Most jazz tends to live in the upper midrange and the Cruise managed to clear a large amount of distortion from the chain allowing the

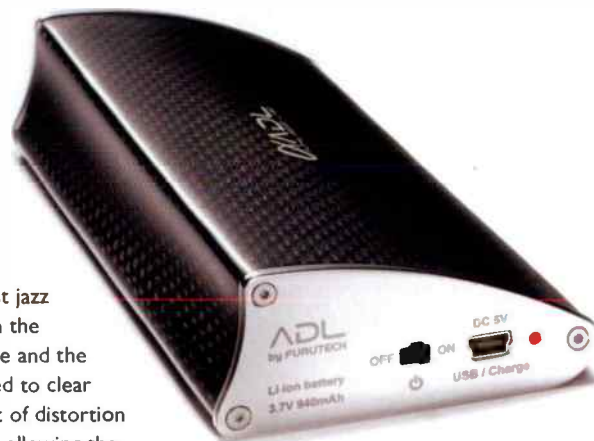
piano to gain an extra degree of coherence while the saxophone too sounded a whole lot reedier than before. The double bass played a necessary supporting role but, via the Cruise, this instrument also added drive to the track for the first time as well as revealing more of its own inherent personality by introducing more vibrational resonance into the mix.

While this Japanese miniature performed well on established digital sources, I felt that the Cruise was capable of a lot more so I turned towards a more generous analogue source and hooked up the line level of the Cruise to the headphone socket of my Sony WM-D6C – the best sounding portable sound source this side of the Alpha Nebula. I inserted a Maxell METAL-CD tape featuring Madness' 'One Step Beyond', transferred from a relatively recent 10" vinyl reissue via a Nakamichi Dragon.

With the Cruise in full flow, the Walkman sounded more confident and slightly less strident. In its original guise, the Walkman did display a slight upper midrange hardening that gave the electric guitars a somewhat brash tinge. This was removed with the Cruise connected while distortion was reduced to reveal more top-end detail. Meanwhile the Cruise also succeeded in lifting the bass a little to give the lower frequencies more heft.

The Furutech Cruise is not just a pretty face. By shouldering the headphone amplification duties in a portable environment, you are easing the burden on your sound source, giving the sonics space and room to breathe. While it can be a little ruthless in revealing a sound source's inadequacies, the Cruise offers undoubted quality, providing a level of maturity in sound presentation that will please all mobile audiophiles. **PR**

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## tony bolton

It's a well known fact that small children and turntables are not a good mixture, as a friend discovered several years ago when his then three year old daughter destroyed the needle on his Shure V15xMR cartridge attached to his Goldring Lenco GL75. The deck and the records were consigned to the attic for a number of years. Recently my friend's wife gave him an ultimatum of either use the deck and records, or get rid of them, so they were promptly put back to the front room. Unfortunately the intervening years had rendered the deck inoperative so I was called over to sort it out.

The Lenco L75 was introduced back in 1967 and remained in production until around 1984, being manufactured in its native Switzerland, as well as Italy and the UK. A lot found their way into music centres but many were also sold as free standing hi-fi decks. They featured idler drive via a conical pulley acting on a vertically mounted rubber idler wheel. This gave infinitely variable speed from 30 - 86 rpm and 15 - 18 rpm.

The arm was Lenco's own design and was made of a heavy brass tube mounted on knife edge bearings that sat in rubber V-blocks. The counterweights were also brass, heavily chromed, and the combined weight of all of this meant that, over a period of time the knife edge bearings slowly cut through the rubber V-blocks causing the arm to sink down in it's mounting to the point that it would not lower onto a record.

Needless to say, this is what had happened to my friend's machine. Luckily Technical and General (01892 654534) still sell replacement parts so a new set of V-blocks were acquired and I was given the job of fitting them.

This is a fairly straightforward

task which involves removing all of the weights from the arm and unscrewing the blanking plate at the back of the arm pillar. Once this is done the chromed top section of the pillar is moved upwards very gently. At this point access is required to the underneath of the machine so that the earth wire can be fed back up through the base of the pillar as the top section is raised. Great care is needed here to ensure that the earth wire doesn't become detached inside the arm. If this happens the only cure is to replace the arm and pillar in their entirety (as I once found out by bitter experience).

Having raised the top of the pillar, the arm can be lifted out of its mounting and the old V-blocks removed. These ones were in a very poor condition, one having sheered through completely. The new ones were fitted and the arm carefully lowered back into place, easing the wires back down through the hole from the underneath. Once reassembled the arm rode at its correct height in its column, and with the fitment of a new needle to the Shure, music was once again flowing.

However, the sound was not as good as I know it can be from these decks and this is due to the cabling from the terminal block where the arm wiring connects to the cable that goes to the amplifier. It dates from the days when it was assumed that cables 'made no difference', and changing it is one of the biggest upgrades that you can do to most period decks. In this case the wires are accessed by removing the platter.

On Lencos this is a 4.5kg mass of machined alloy, and the correct way of removing it (according to my Lenco handbook) is to firmly insert two large screwdrivers under each side of the platter, hold a block of wood over the centre of the platter and give it a whack with a mallet\*.

This breaks the seal on the conical spindle and the platter pops off. It was then the work of a few minutes to unsolder the old cable from the terminal block and to fit some new leads. In this case it was a pair of old Sonic Link interconnects that had the phono plugs removed from one end and the bare wires soldered into place.

While the platter was off a little grease was applied to the main bearing and some light machine oil to the motor bearings. The motor normally hangs suspended by springs under the deck, but for storage and transportation there are three transit screws to do up. Forgetting to undo these results in very bad rumble from the motor.

The other immediate change that I recommended is changing the platter mat. The rubber one supplied does nothing for the sound, but I have found that either the Blue Horizon mat or a Funk Firm Achromat gives excellent results.

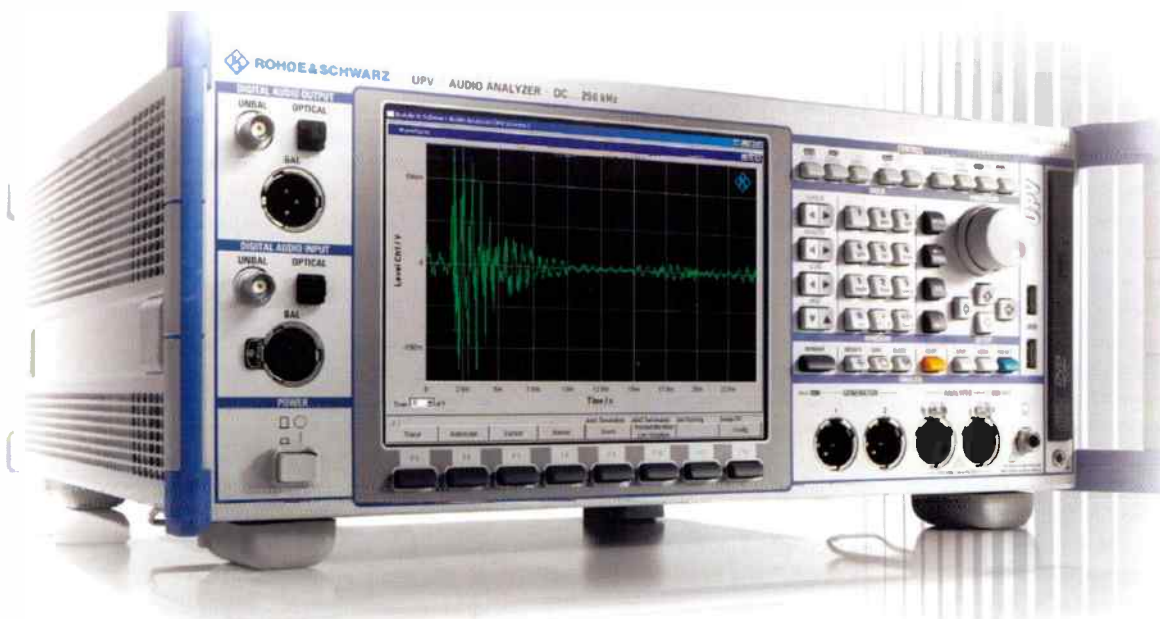
So having got it all put back together, with the transit screws undone, we settled back to have a listen. I am pleased to say it sounded very good, with that deep powerful bass that only comes from an idler drive deck. The new leads gave a nice, open midband and smooth treble, and for the total expenditure of about £15 for blocks and a bit of work. My friend now has a turntable that will hold it's own against most models costing up to, say, £300 or even a little more. ●

\*Mallet - crickey! Just lift the platter a little and support it, then give the spindle a sharp rap with a screwdriver handle or suchlike. This separates the spindle from the platter. It is a standard engineering method for a fairly common mechanical joint. Force is not needed. **NK**

# World Standard Tests

How we perform all the tests, and what they mean, is detailed on our website: [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk). Go to the **product category** (e.g. Loudspeakers), then **Tests**.

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"high resolution jitter analysers are as rare as hen's teeth"



## noel keyword

**T**here's no doubt digital is horrible. It can sound good, but the technicalities and complexity are – well – horrible! Old sureties, such as digital code being impervious to the outside world and notionally 'perfect' are disappearing down the drain at an alarming rate.

A major reason is that perfection suits no one in a world that relies on the imperfect being upgraded tomorrow. Someone at Philips should have thought of this conundrum long ago, before declaring CD "perfect". Nowadays the big chip manufacturers need to tell us their chip sounds better than their rival's and to do this they focus on digital's one known weakness: jitter. It makes me almost feel sorry for digital; it was oh-so-perfect not long ago and now it is being dragged up and down through the mud!

There always was, lurking in the background, a nasty truth about digital: it is analogue. Claude Shannon connected digital data rate to analogue bandwidth long ago – the 1930s. This month the whole issue of what happens to a digital signal when you start messing around with the analogue properties of its transmission medium became apparent in our apparently innocent review of five USB-to-S/PDIF convertors, although that was not the only cause of jitter. It was just one that became apparent in our tests, showing how horrible digital can be.

Our analyser showed quite clearly that cables, connectors and even dust measurably affect jitter levels. All this is talked about on the internet, as part of the sea of speculation and hypothesis that floats around. However, few have measured proof of their assertions, because high resolution jitter analysers are as rare as hen's teeth. Hi-Fi World has been able to measure jitter on

a digital signal for many years but we have not swung our Rohde & Schwarz UPL analyser onto the subject in any great way. Until now.

Assessing the sound quality of five all-digital USB-to-S/PDIF convertors is something that would have attracted scorn just years ago and I was unsure we could readily tell the five convertors apart on any reliable basis. Sound quality differences between digital products are not clear cut, even though they are subtly important. The nearest analogy is that of preamplifiers. Transistor preamps can be designed to measure all but perfectly. Yet many drain the life from music, rendering it "boring" as some are want to say. Why, I do not know and even fret about a little; after all I should have some idea! Listen to a Music First Audio transformer preamp after any solid-state design and you will know what I mean, as so many others have found out.

Compared to this situation, digital products look easier to criticise. The jitter they produce comes from everywhere, our analyser reveals. Hold on to your seat: jitter levels even changed when we reversed a 10m optical cable. Polishing its optical ends to remove fine dust seemed to cure the problem, but quite what was going on here I dread to consider too deeply. One has to invoke the idea of optically asymmetric dust, for heaven's sake! On a scale of degrees of nuttiness, that's worse than putting CDs in the freezer to improve sound quality.

In listening tests held by researchers to assess the impact of jitter on sound quality, many nanoseconds (nS) of jitter – quite a lot – is usually identified as being audible (CD players typically produce less than one fifth of this). Our measurements here suggest a

miniscule 50pS or so may be audible, if in a subtle almost subliminal way.

This issue is complicated by the fact that jitter takes at least three different forms.

One form affects the music signal directly. We apply a 1kHz tone at -60dB to put a figure on it. At 50pS or less it isn't a major player in terms of subjective impact it would seem, but I hesitate to be sure.

Then there is random jitter, just general phase noise. Mostly it measures around 10pS in narrow band terms. An (old) Mac Mini optical output is 'dirty', suffering a random jitter floor of 20pS or so. This is likely attributable to quick-and-dirty clock conversion from packetised audio on the computer bus, to continuous audio on S/PDIF. Random jitter varies but not by large amount in most consumer equipment, our measurements show.

Last but not least is low rate clock drift. It is seen below 100Hz and usually wanders up and down in amplitude in random fashion. In a computer a value of 500ppm is put on clock stability so it is there alright, even if apparently in small quantities. The Kingrex UC192 suffered this problem in our tests, as you can see clearly at left in our jitter analysis. And Rafael heard it before we measured the units.

Low rate clock drift is the phenomenon that affects bass quality. Signal related jitter likely accounts for glare and coarseness, but it is difficult to be certain about this.

Our unprepossessing little group test of USB-to-S/PDIF convertors this month raised a wide slew of horrible issues. It was a fascinating exercise, one that taxed our abilities, but the outcome we all found intriguing. There will be more to come I am sure, our measurements being aided by a new Rohde & Schwarz UPV digital analyser. ●

# Vinyl is black!



The Evo ! What an evocative name and rightly so too! The SL-1200 evolved from a Hi Fi turntable into a DJ deck and now we turn it back into a Hi Fi turntable again! Fitted with the legendary SME 309 tonearm and the Audio Technica AT33EV your emotions will run wild. The AT33EV is itself an evolutionary cartridge hence its EV suffix and matches the SME 309 so well. We have worked with direct drive turntables and moving coil cartridges for over 30 years now and the EVO has evolved into a mature product that is quite simply a world beater. We can supply completely new units with 5 year guarantees or we can convert your own, even if you bought it used.

The SME 309 tonearm is a delight to use, to look at and more importantly to listen with! Featuring the very same tapered magnesium armtube as the SME V you might wonder why this tonearm has such a low price tag. SME have a very long history and pedigree of making as they say "The best tonearms in the world" and we agree with them. This might be the last tonearm you buy, and in the long term has to be the very best value for anyone. We fit more 309s than all other arms added together, we simply love them to bits!

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"I came wide awake in bed and realised I hadn't put the CD in upside down"



## adam smith

**T**here has been a fair bit of scare mongering of late with regard to the possible fate of the Compact Disc as a music format and the suggestion that some labels may stop producing them in a few years time. It seems that, as digital downloads increase in popularity, there is a general feeling that the old silver Frisbee will be heading the way of the dodo, eight track cartridge and Elcaset and that everyone will soon be going virtual in terms of their music collection. Personally, I think this is a little bit presumptuous (after all, vinyl didn't exactly die as predicted thirty years ago!) but there is undoubtedly a swing towards digital streaming and this includes, some might be astonished to hear, the Smith household!

Firstly, however, let me reassure my fellow vinyl disciples that I am not abandoning my analogue quest in life – far from it, as the recent 400 mile round trip I made at 5:30 on a Saturday morning to collect the latest addition to the Smith vinyl stable will testify. No, I have embraced this digital age for other reasons, most of which came upon me in a rush, and started over the festive season at the end of last year.

As the diaries would have it, my wife and I ended up doing a great deal of entertaining through December and January, thanks to Christmas, New Year and several milestone birthdays in the family, and it was this that made me realise that there were a couple of shortcomings in the entertainment system in the Smith dining room. Not the lovely B&O Beosystem 5000 itself, of course, but more the software it plays and...er... the operator.

There we were; the first dinner party of the season and I had a good selection of recent LP releases to aurally delight my guests. The trouble is, most of these lovely, high quality pressings were on double LPs, some

playing at 45 rpm and this, of course, means only two to three tracks per side. I cued up side one, scooted round the table to top up wine glasses like a good host, sat down, served myself some veg and gravy, picked up my knife and fork and...side one had ended! Up, turn it over, sat back down, a few mouthfuls and a bit of a chat and that was it for side two. My wife eventually grew tired of this and instructed me to switch to CDs which I duly did, whereupon problem number two cropped up.

Those of you who are familiar with the B&O Beogram CD50 Compact Disc player that makes up part of the Beosystem 5000 will know that it is unusual in requiring the disc to be inserted label side down. I know this of course – I've owned mine for over ten years. However, that aforementioned wine, combined with the fact that I hadn't used it for a few months resulted in the CD player 'mysteriously' refusing to work. I attributed this to electrical gremlins, stuck a cassette on and the evening passed smoothly, to be ended by one of those 3am post-hangover moments of sudden clarity when I came wide awake in bed and realised I hadn't put the CD in upside down. There's that operator error I was talking about.

A few weeks later this was followed by the same CD player merrily playing a CD that I had inserted the correct way up, but refusing to eject it. Dismantling the unit the next day in order to extract the offending disc revealed that I had put it in on top of another disc already in there.

Clearly it was time to do something. Either I had to give up drinking, or look at some sort of foolproof digital streaming solution that would be idiot proof and play without regular gaps! The final impetus was my beloved Marantz CD94 suddenly throwing a huge stop and refusing to load discs. This

was serious and it is still presently in pieces on the workbench but I realised that I needed an alternative, and I needed it fast.

The solution seemed obvious. Ever since first hearing one, I have lusted after a Naim HDX and this would do the job perfectly and without me having to involve my computer too much. However, a glance in the Smith piggy bank revealed an amount substantially short of the HDX's asking price so a more affordable solution had to be found. I went for a sturdy 3TB NAS drive in the end, which seems to be working well but I was distinctly unamused by the palaver required to get the whole thing up and running. As an Electronic Engineer by day I managed it fine but I wonder how many other non-technical types would find it such a bearable process? We have almost performed a U-turn in technological terms it seems to me – after all, the advent of CD instantly wiped out the common gripes of cartridge matching, stylus cleaning, record handling, and all the other minutiae that come with the vinyl experience. Here was a convenient, small and hardy format you could pop into a player and press play – it was easy.

To jump onto the download gravy train, however, you have to get to grips with networks, IP addresses, configurations, permissions, account settings, apps and wondering whether Ogg Vorbis is actually a real format or just a computer geeks' joke (most people I questioned had never heard of it, let alone used it!).

Frankly, I can't see CD shuffling off its mortal coil any time soon and there are plenty of us out there, including me, who value our CD collections highly and continue to gain great enjoyment from them. My advice would be to carry on enjoying them – just steer clear of your favourite Cabernet Sauvignon whilst you do so! ●

# vinyl section

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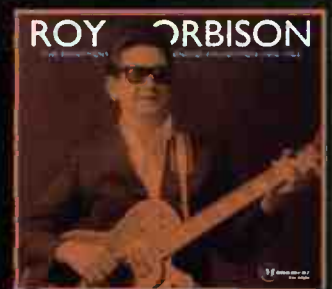
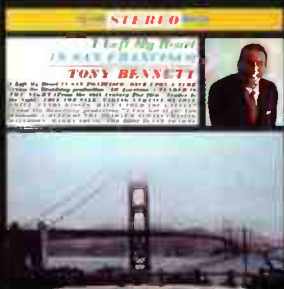
Tony Bolton listens to a phonostage with historic EQs

### THE TRIP

...is a film soundtrack, via Reel Time, that serves as a vehicle for bluesman, Michael Bloomfield (late of the Paul Butterfield Blues Band) along with Hendrix drummer, Buddy Miles plus a seminal cast of session musicians. Mixing blues, jazz, high energy guitar and playful retro sequences, this is a slice of sixties culture.



## news



### JUST A MAN

Music On Vinyl [www.musiconvinyl.com](http://www.musiconvinyl.com) has just released a new batch of vinyl featuring solo male singers beginning with the living legend, Tony Bennett and his classic, 'I Left My Heart In San Francisco' (1962), in which Bennett found a maturing voice, which has been crying out for a vinyl remaster for years as has his 'The Movie Song Album' (1966) in which even the lesser material was delivered beautifully.

Roy Orbison's distinctive voice can be heard on 'The Monument Singles Collection (1960-1964)'. This excellent suite of tracks spans two LPs: the first disc covers A-sides while the second disc covers B-sides.

Speaking of A-sides, one of the most famous from Elvis Presley's career appears on the mislabelled 'soundtrack', 'Loving You' (1958), that features the single '(Let Me Be Your) Teddy Bear'. The B-side is packed with original material, however.

Next, Tom Waits' 'Rain Dogs' (1985) was a successful follow-up to 1983's 'Swordfishtrombones'. Packed with varied styles, the album moves from chaotic vibes to catchy ditties.

Moving to Marvin Gaye's 'I Heard It Through The Grapevine' (1968), featuring the Motown self-titled standard via the album title song, and offering plenty of other choice cuts via Norman Whitfield, Ashford & Simpson and Frank Wilson.

Finally, check out Joe Jackson's 'Night & Day' (1982) in which Jackson revealed himself to be an honest to goodness songwriter and not just a punk and featuring the hit single, 'Steppin Out'. Full of style an Tin Pan Alley flavours.





**TAKE A LEFT...**

For those who enjoy music from a more avant-garde direction, check out Purity Supreme's EP, 'Always Already' (Ash International (Reserva)) that spouts disturbing psychobabble, overlaying a primitive, tribal rhythm.



Rocket From The Tomb formed in 1974 but released their debut LP in 2010 (I kid you not). This year's 'Barfly' (Fire) sounds like another indie rocker buy, vocally and lyrically, it's unsettling.

Sun Glitters is Luxembourg-based Victor Ferreira who offers a new bass-heavy, beats structured, trippy, blissful, spiritual, angelic, floaty, meditative, yet groovy album – that's 'Everything Could Be Fine' (Lebenstrasse).

Yasunao Tone's 'MP3 Deviation #8' (Mego; editionsmeego.com) moves away from rhythm. This new conglomeration of noise, effects and incidentals of life constitutes the bits that fit in-between the melodies.

Dealing in landscapes of sound, Chris Watson's latest, 'El Tren Fantasma' (Touch To; [www.touchmusic.org.uk](http://www.touchmusic.org.uk)), takes a railway theme but it mixes the technology with a symphonic ambience that time stretches the metallic cacophony.

As for Jackie O Motherfucker's 'Fig.5' (Fire, 2000), it uses organic instruments to form a series of mood pieces from the reflective to the downright scary. This band are always interesting.

Finally, Neutral Milk Hotel have family links to Olivia Tremor Control and Apples (In Stereo). 'On Avery Island' (Fire, 1996) is a concept piece, a lo-fi experimental work that is both enigmatic and demented.



**READY TO RUMBLE?**

A new company for Vinyl News is Rumble Records which focuses on classic music from the fifties...at least, thus far.

Starting off with the Leiber & Stoller-backed Coasters whose brand of rock'n'roll and R&B is shown well on their 1958, self-titled, debut that also features work from The Robins – the original name of the group. The 1960 release, 'One By One, however, meshes R'n'B and pre-rock'n'roll standards such as 'Satin Doll'.

Next, Harry Belafonte's 'Calypso' (1956), which launched his career and infused his folk rhythms from then onwards, influencing many other artists and bringing the calypso beats into the mainstream.

The Teenagers (1956) featured the amazing talents of one Frankie Lymon, the thirteen year old wonder kid who was mature beyond his years. The LP includes the hit song, 'Why Do Fools Fall In Love' which inspired Berry Gordy to design his Motown sound around Lymon's vocal style.

Finally, look out for blues man, Chuck Willis', 'The King Of The Stroll' (1958) with a compilation from his years at Atlantic featuring the adaptation of 'C.C. Rider', 'My Life' and 'It's Too Late'.



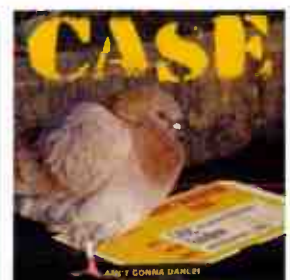
**...AND FINALLY**

'Where's My Daddy' (Spiral Groove, 1969), from the West Coast Pop Art Experimental Band, is an appealing, laid-back, easy going LP that is reminiscent of Crosby, Stills & Nash with its sweet, harmonic delivery but, here, it is accompanied by a playful spirit and psychedelic edge.

Two from Giant Sand (Fire). 'Goods And Services' (1995) sees an indie rock band with stoner attitude along with discordant touches that add a grungy edge while 'Chore Of Enchantment' (2000) is a more introverted, considered LP backed by heavy, sludgy guitar with Lou Reed-like vocalisations.

Fink's new release, 'Perfect Darkness' (Ninja Tune; [ninjatune.net](http://ninjatune.net)) is well titled as it features a slightly tortured vocal with serious attitudes. Fink isn't messing about on this LP and has a unsettled soul seeking musical redemption.

Finally, Case's 'Ain't Gonna Dance!: Recordings 1980-1985' (Damaged Goods; [www.damagedgoods.co.uk](http://www.damagedgoods.co.uk)) offers a punk core and high energy presentation with ska-like overtones, catchy rhythms and get-up-and-pogo properties.





# New Metal

**Cable producer, Tellurium Q, has moved into hardware. Paul Rigby checks out the company's new phono preamplifier, the Iridium Phono.**

**T**ellurium Q will be known to many as a producer of top quality cables. I reviewed a pair of their Graphite 'speaker cables and power cables in the March 2012 issue of Hi-Fi World, for example. Until now, hardware has largely been absent from the catalogue but the outfit does have a hardware pedigree. Technical Director, Colin Wonfor, is known for his eighties-era, Inca Tech Claymore amplifier design, for example, so the appearance of the Iridium Phono, phono preamplifier was eagerly anticipated.

But why has it taken so long for Tellurium Q to get around to creating this phono amp? "When you throw resources and R&D into cable, it's not just a case of buying it off the reel and getting it out there, you have to research and process these things — there's an entire cycle to be completed. There was so much work and resource commitments that had to go into the cables before we could move onwards," said company director, Geoff Merrigan.

That was complicated by the even longer R&D research cycle, that began before the cable research started, devoted to this phono amp and other promised hardware products slated for future release.

And the reason for producing a phono amp first? "Because Colin is a vinyl fan. He thinks that analogue

sounds better than digital. When he had a phono amp in the Claymore, people said that it was one of the best phono amps they had heard, at that time".

Spanning just 165 x 57 x 166mm and weighing a mere 1.2kg, the Iridium Phono chassis features a volume control on the front. According to Colin Wonfor, "To give you the option of driving an amplifier directly without having to use a pre-amp.

Also, because the phono amp has its own power supply, it won't be interfered with by the digital side,

"startlingly good phono amp that provides the best of both solid state and valve technology"

as you might with a proper pre-amp. There's less noise and hum loops.

We chose a volume control over DIP switches because, when looking at average cartridges and their prices we decided to come up with a sonic range that's not bad: between ten and a hundred Ohms, for simplicity. Saying that, we are currently working on a more advanced version of this phono amp which will feature an automatic matching system within it," said Wonfor.

There are two outputs on the back. One is termed 'Buffer' for a

fixed level that can be fed into pre-amps and the other is called 'Volume' which allows the unit's volume knob to control the output level. There's also a choice of MM and MC sockets. A toggle switch allows you to hook up two turntables and flick between them.

Inside is a fully solid state system. There is a reason that Wonfor decided not to go valve in his design. "I built valve kit years ago and they're not as quiet. To do it properly would mean a unit that is too large and too expensive. You'd need a linear power supply of 300W to 400W that would

have to be very fast. It'd be far too expensive, especially as we like to make our products in Britain which is what the Iridium Phono is — every bit of it. If there is a problem, we can sort it out today. We haven't got to wait for an airplane to take us to China and then get someone to translate and then get back to England and then it's still wrong".

Wonfor also has a problem with the valve sound. He dislikes the absence of a bottom end, for example, on valve phono amps, "Moving Coil valve systems sound

nice but their hiss is ridiculous unless you can build expensive circuits which, if built properly, will cost more than the Iridium".

Inside the Iridium is a toroidal power transformer which connects to a linear regulator, driving the output buffer, another drives the moving coil facility and yet another drives the moving magnet circuit, helping to reduce distortion. To that end, there is also a filter on the mains output while, internally, Tellurium Q's low noise cable is in there too.

Further "We also use a 30VA transformer that only takes 2W that produces less noise. It will drive silly loads, giving the amp more headroom, making it really robust and capable of handling anything that's thrown at it. You see, we don't want these phonos back...ever! There are Claymores, built in 1982, out there, still running and they have never been in for repair," boasted Wfonfor.

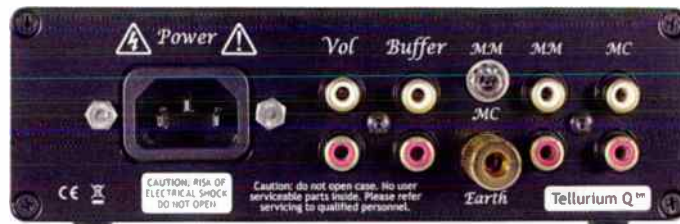
In addition to the low noise design features listed above, the company has included a series of additional design features, included to remove even more distortion. I asked Wfonfor what they were.

"I'm not telling you," he replied a little too emphatically. Wfonfor was concerned, I later found out, that company innovations would be copied by competitors. On that note, I decided to listen to the unit myself and see what all the fuss was about.

## SOUND QUALITY

Playing 'Satin Doll' from the 'Ella Fitzgerald Sings the Duke Ellington Songbook' LP the Iridium Phono featured an extra bass dimension to the overall presentation, when compared to my Icon PS3 (£1,600). Fitzgerald's voice had an added confidence alongside Ben Webster's sax solo, which also benefited from the bass enhancement. Webster's breath being accentuated to an extent that more emotion could be discerned. His more noticeable breathing technique added both colour and subtlety. Similarly, the guitar solo provided a more rhythmic tone. The fingers fairly bounced off the strings.

The first track of the flip side, 'Rockin' In Rhythm', exhibited a soundstage that was a touch more open and expansive on the PS3 but the Iridium produced extra focus and control. On the Fitzgerald vocals, the PS3 featured a freer flowing delivery but the Iridium did cut out the slight PS3-induced upper midrange bloom. Orchestrally, the PS3 had the edge on brassy tones on the trumpets and sax but the Iridium gave a more ordered approach to this rather chaotic



arrangement which sounded more like a live gig than a studio recording.

Moving to more rocking fare and the Pixies' 'Where Is My Mind?' from 'Surfer Rosa', the initial impression was two-fold. Firstly, there was a tremendous sense of weight and density to the music as a whole, via the Iridium. It was almost as if more information had been packed into the same musical space. This effect was partly caused by the magnificent bass which was lead-weight heavy. It had heft that acted as a secure foundation for the whole track, giving the band an extra presence and a sense of authority and seriousness that the PS3 struggled and failed to replicate.

The second immediate impression was the tremendous focus that hit all areas of the sonic spectrum. Tellurium Q's efforts in reducing distortion has paid dividends here as the absence of sonic rubbish allowed a great amount of detail to reach the ear. Because distortion has a habit of deflecting frequencies from the ear and masking others, you often get a diffuse presentation. The PS3 is not noticeably prone to these deleterious effects but it was more apparent when compared to the Iridium which collected all of those previously wayward elements and regrouped them into a more recognisable and enjoyable whole. Think of the Iridium as a sheep dog and the untrained frequencies as sheep, ready to be deflected by outside influences.

## CONCLUSION

I'm not a fan of solid state phono amps. To be honest, I'm not a fan of solid state – period. Valve output is more in sympathy with the human ear, providing a less harsh, more open and sculptured sound. The Iridium is not like other solid state units, however, and the secret is in the distortion... or lack of it. Because

Tellurium Q endeavours to remove this aural mush, the Iridium's output is much freer and airy in its basic structure, than other

solid state phono amps: a facet that valve amps are famous for, of course. The Iridium takes that clear presentation but then combines it with an attendant extra focus that is a facet of the distortion-free sound. In addition, the Iridium also adds a slice of solid state-sourced, punchy bass made all the more intense and characterful by that lack of distortion.

What you have, in total, is a startlingly good phono amp that provides the best of both solid state and valve technology. A market leader in its price point, the Iridium will provide stiff competition for solid state phono amps far higher up the price ladder.

## REFERENCE SYSTEM

Avid Acutus turntable  
Benz Glider moving coil  
SME IV arm  
Benz Glider cartridge  
Icon PS3 phono amp  
Aesthetix Calypso Preamp  
Icon 845 power amps  
Quad 57 Electrostatics (One Thing upgraded)  
Tellurium Q Graphite speaker cables

## VERDICT

A very clean output with attractive dynamics, the Iridium Phono's distortion-free playback features a wealth of musicality.

## TELLURIUM Q IRIDIUM

PHONO £1,380

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www.telluriumq.com

## FOR

- focus
- deep bass
- valve-like character
- compact

## AGAINST

- nothing

## MEASURED PERFORMANCE

The Iridium offers x200 gain (46dB), rising to x2000 (66dB) at maximum volume – both high values. With a 14.6V output overload limit this gives high input overload values of 70mV and 7mV and this was confirmed under measurement. This makes the stage flexible in its ability to interface with low gain preamps.

Noise was not especially low, equivalent input noise (e.i.n.) measuring 0.5µV from MM and 0.34µV for MC, figures a few dB worse than many others. One reason was the presence of some rectifier buzz in the residual, meaning the internal DC lines need more smoothing, but then putting a mains PSU inside a small case with high gain stages always brings up this difficulty. Noise and hum are low enough not to be readily audible but this isn't the quietest stage around and probably is best not used with super low output MC cartridges.

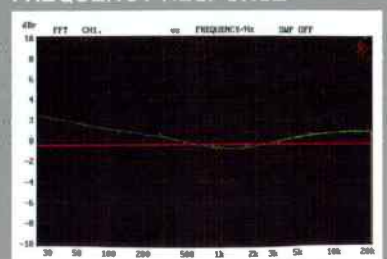
RIAA equalisation was not as accurate as that of many preamps, showing a 1dB variation overall, the 75µS curve effectively not producing enough HF attenuation and excess bass

gain. Our analysis shows the treble and bass rise. Low frequency gain remains constant down to 1Hz (and likely dc due to direct coupling), so there is no warp filter or any warp attenuation. Bass will be obvious and strong.

The Iridium will have quite a distinctive and likely muscular sound, measurement suggests. NK

Frequency response	1Hz-100kHz
Separation	80dB
Noise (e.i.n., MM, MC)	0.5µV / 0.34µV
Distortion	0.003%
Gain (MM, MC)	x200, x2000
Overload	14.6V out

## FREQUENCY RESPONSE





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 Tel: 0131 558 9989

# Old Gold

**Yes, its been around for a long time, but Goldring's 1022GX is still a great budget cartridge, Tony Bolton finds.**

**O**ccasionally it is nice to bump into old friends and renew the connection, at other times, the meeting merely serves to remind you of why the relationship faltered in the first place. Hi-fi can be a bit like that as well. Items that were once cherished possessions, used everyday, find themselves relegated to the spare room as the system evolves, until something causes you to dig out the old component and get reacquainted.

This has just happened to me. Somewhere around 1994, on the advice of this magazine, I bought a Goldring 1042 cartridge which graced my Thorens TD160 Mk.II for several years. Following my switch to MCs the 1042 was boxed up and put away in a 'safe place'.

Fast forward to 2012, and a package arrived from World Towers containing a Goldring 1022GX, the next model down from the 1042. Being keen to get listening, I attached the 1022GX to the Hadcock arm on my Sondek and set to work on the task of running in. This proved very necessary with this cartridge, the new-needle rattiness taking a good ten hours before it departed and the sound started to settle down. After another ten hours or so things had started to stabilise with the bass creating a very firm foundation for the rest of the music to sit upon.

The Doors' 'L.A. Woman' demonstrated this with the driving bass line complementing the intensity of Robbie Krieger's guitar and Jim Morrison's growly vocals. The 1022 seemed to be in its element with this sort of music, revealing an ability to reproduce rhythms effectively and with a drive and energy that was hugely enjoyable. I also liked the incisiveness given to the guitar, giving it the precision and effectiveness of a scalpel blade in shaping and forming sounds.

'A Lot of Stick (But Not Much Carrot)' from Bentley Rhythm Ace's second LP confirmed this. The music comes from a strand of electronica known as Big Beat, and with the 1022 in charge, the music more than lived up to its name. This track has a rolling beat that, to me, has a certain reggae-ish feel to it, with some quite odd sounding samples and effects overlaid alongside live drums, bass and keyboards. Some of the samples were quite rough in their sound and the Goldring displayed this detailing without making a fuss about it, whereas, for instance, an Audio Technica would have made this roughness the centre of your attention for a brief moment. The Goldring casually mentioned it in

"the 1022 added a certain zest to the Brubeck that made the complex time signatures and the virtuosity of the performers stand out"

passing.

That is not to say that the high frequencies were in any way curtailed. They had a clear and defined place in the proceedings, perhaps a little more obvious in their presentation than the 1042 would be, but still authoritative and precise. By this point I had finally remembered where the 'safe place' was that I had put the 1042 in, so it came out to join in the fun. Both took a stint at playing Elgar's Cello Concerto and Dave Brubeck's 'Time Further Out' and this showed the sibling similarities and also the differences.

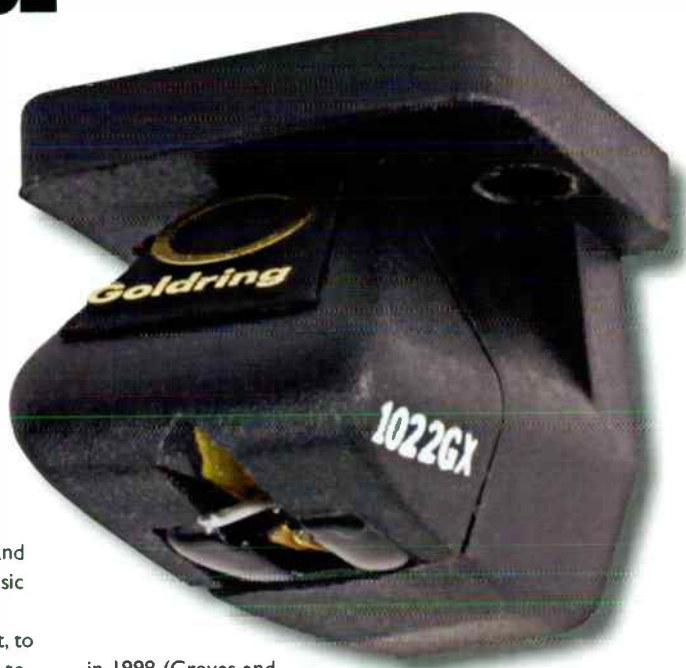
This version of the Elgar was the second of three recordings made by Paul Tortelier - the first being in 1954 (Sargent and the BBC Symphony Orchestra) and the last

in 1998 (Groves and the Royal Philharmonic Orchestra) - all three to great plaudits (this recording being recommended by the Penguin Guide to Recorded Classical Music 2008) and shows him in particularly good form. Compared to the Du Pre recording I feel that this performance is equally impassioned but possibly a little cooler headed, and provides a slightly different emotional viewpoint

on this well known piece.

The 1042 seemed a bit more at home with the mass and complexity of sound in the Elgar, the 1022 seeming to slightly run out of steam when the orchestra swelled and the sound waves got very complicated. It did well, but at times the music felt a little as though there was something just holding it back, and compressing the sound somewhat. The 1042, negotiated this in a more convincing manner. Both cartridges provided a big enough soundstage to portray the orchestra in a realistic space, the 1042 adding an even deeper and darker background which gave the impression of greater scale to the sound which suited large orchestral music very well.

Conversely, the 1022 added a



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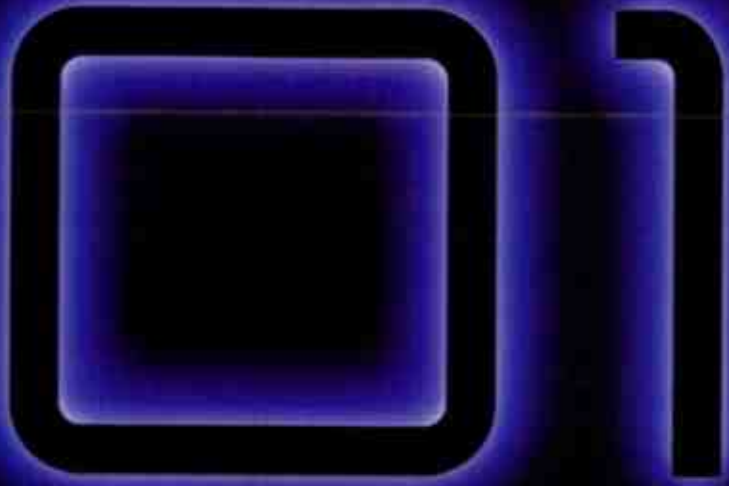


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The original 1000 series of cartridges was introduced in 1985, consisting of the 1010 (£29.95) 1020 (£44.95) and 1040 (£69.95) models. They all featured a body made of POCAN. This is a trade name for polybutylene terephthalate (PBT) manufactured by a company called Laxness, and is used in everything from automotive engineering through to household appliances due to its toughness, rigidity and freedom from resonance.

The original cartridges were fitted with either an elliptical stylus or Van Den Hul Type 1 or 2 tip, depending upon model.

Nearly 20 years ago the range was updated with a change of stylus and the introduction of the 1006 model. This took over the elliptical stylus and the rest of the range acquired a two in their nomenclature, becoming 1012 (Gyger II stylus) 1022GX (Gyger I) and 1042 (Gyger S).

Throughout this the body, and the internals which consist of an Alnico magnet, aluminium cantilever and a mu-metal pole piece which has 4000 turns of very fine wire around it, have remained unchanged

certain zest to the Brubeck that made the complex time signatures and the virtuosity of the performers stand out a little. There was a bit more ebullience to the sound, a bit more sparkle, that seemed to suit the more 'pop' orientated genres of music rather than the classical ones.

And here, I think, is the decision maker when choosing one of these units. Nowadays only £15 separates the cost of the 1020GX and the 1042, so I would base any purchase on your favoured musical genre. If classical is more your fare then I would find the extra £15 and buy the 1042. If, however, you tend more to beat driven sounds then the 1022GX would be more likely to suit. It transmitted music with a bit more bounce and go to it that added a certain edge of excitement to guitar sounds, and a real punch to Joe Morello's drumming with the Brubeck Quartet.

It is a compliment to the original design of 25 years ago that these cartridges are still in production and unchanged in nearly two decades since their only upgrade. A perfect example of the "if it ain't broke, don't fix it philosophy". They were ahead of the competition then and still set a standard for the price points now, offering a well balanced and inviting sound that offers a flavour of high-end performance at an affordable price. It must be a good twelve years since I last listened to the 1042, and it has been thoroughly enjoyable getting reacquainted, and getting to know the 1022GX has added



to the pleasure. Both are excellent performers and I would buy either with confidence, the choice being decided by the types of music that they will be required to play.

#### MUSIC USED:

Elgar 'Cello Concerto' Paul Tortelier.  
London Philharmonic Orchestra conducted by Sir Adrian Boult.  
EMI Records Ltd. ASD 2906 1973

The Dave Brubeck Quartet 'Time Further Out'  
CBS Records BPG 62078 1961

The Doors 'Greatest Hits'  
Elektra/ Asylum Records  
P 109036E 1980

Bentley Rhythm Ace 'For Your Ears Only'  
Parlophone Records LC 0299

## MEASURED PERFORMANCE

Frequency response measured ruler flat to 10kHz our analysis shows but on outer grooves response rises above 10kHz (green trace) by modest +2dB up to 20kHz. On inner grooves however there was an equivalent tracing loss so the 1022's frequency response strikes a perfect compromise from start to end of an LP. A tracing loss of 5dB at 20kHz is about as expected from a good stylus; because inner groove distortion is high it is best if harmonics are attenuated, not accentuated.

Tracking was very good at 1.8gms but the 1022GX could not quite clear the highest level torture test tracks, like most cartridges, although budget Nagaokas can manage this. With 2gms downforce applied these tracks were negotiated more securely.

Distortion was a little higher than usual at 1.4%, against a common value of 1%, but as this was second harmonic it is of little consequence. The 1022GX sits higher on a disc than the low riding 1042 and its vertical tracking angle is higher as a result, measuring 27 degrees on our sample; the 1042 is closer to 22 degrees. The results is a little more second harmonic distortion on left and right images. 3.5% our measurements show. Although that sounds high it is quite reasonable.

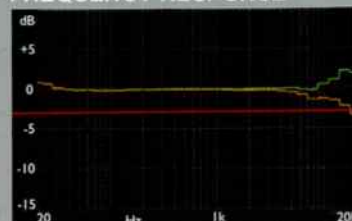
Output was a healthy 5.6mV at 5cms/sec rms and channel imbalance

0.95dB. Channel separation was not high at 22dB, but this is satisfactory for stereo.

The 1022GX measures very neatly all round, like its stablemates. It has the same flat frequency response as the 1042 but is a smidgen down on tracking and VTA. It remains a very good cartridge in measured terms though, still up with the best. NK

Tracking force	1.8gms
Weight	6.3gms
Vertical tracking angle	27degrees
Frequency response	20Hz - kHz
Channel separation	22dB
Tracking ability (300Hz)	
lateral	70µm
vertical	45µm
lateral (1kHz)	22cms/sec.
Distortion (45µm)	
lateral	1.4%
vertical	3.5%
Output (5cms/sec rms)	5.6mV

#### FREQUENCY RESPONSE



#### VERDICT

Established, lucid and musical moving magnet cartridge entering its third decade of production.

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[www.goldring.co.uk](http://www.goldring.co.uk)

#### FOR

- Open midband.
- Deep, dark bass.
- Good imaging.

#### AGAINST

- Occasionally forward high frequencies

#### SYSTEM USED:

Linn Sodek/ Hadcock 242 Cryo arm.  
GSP Audio Revelation phonostage  
Bont Audio TAP X passive pre-amp.  
2 x Quad 303 power amps.  
Kelly KT3 loudspeakers.







# Black Beauty

Adam Smith takes a listen to Claro Audio's new Clarity Dual turntable.

**T**urntable design can be a funny old thing at times. If you listen to some designers then it would seem to be something akin to witchcraft and, as a result, there are turntables on the market made from all sorts of exotic materials and designed from ridiculously complicated (or sometimes just plain ridiculous...) underlying principles that often feature some very basic internals and setup instructions on a badly photocopied piece of A4.

True, those decks can sometimes sound marvellous after a week of setup and tuning, at least until someone nearby happens to sneeze and throws everything off-kilter once more. No wonder some vinyl newcomers think we're all mad...

Fortunately, there are also other types of company around. These are

the people who realise that the task of rotating a lump of vinyl at a steady 33 or 45rpm without fluctuation, noise or rumble actually isn't all that difficult in the great scheme of things, as long as the inner workings are of premium quality, finely toleranced

"it was as if my seat at the performance had been upgraded from the back of the stalls to the front row"

and well assembled. Ironically, most of these types of manufacturer actually have their backgrounds in engineering, making precision components for other industries, such as medical and aerospace. When

people like these turn their hands to turntable design, the results can often be quite spectacular; which brings me neatly to Claro Precision Engineering.

Regular readers may remember that I was bowled over by their Clarity 09 turntable a few years

back, which was a design instigated by a rotten scoundrel who promptly vanished when all the hard work was done and it was time to pay the bill. John Jeffries kindly took a quantity of completed units to market under his

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Rotel RC-907BX pre amplifier. Good condition.	£ 99	Leak pre amplifier for Leak TL10.1. Ex cond.	£ 99
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HiQ balanced phono pre amplifier. Awesome.	£ 249	AKAI AT-K331, FM/AM stereo tuner. Mint & boxed	£ 99
Yamaha YSP 800 5.1 speakers with digital amps.	£ 299	Quad FM3 tuner in excellent condition. From....	£ 99
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Lumley brand and Claro undertook the decision to

market the rest of the decks as a limited run of high quality units and thus the Clarity 09 was born. The decks all sold and designer Peter Curran breathed a sigh of relief and probably thought his days in the hi-fi industry were done. But then the emails started coming in...

You see, Peter had taken the unusual step of ending the Clarity 09's instruction manual with a request for feedback from owners, plus any ideas for improvements or additional features that they would have liked to have seen on their decks. Whilst the feedback was positively glowing, there were enough suggestions for Peter to sit down and start work on the Clarity 09's successor. This was duly presented to Claro's board members and the thumbs-up was given for initial samples to be made.

Although ostensibly visually similar to the 09, the new Clarity Dual is a very different beast. The obvious signs of change are the repositioned on/off switch, the 3 pin IEC mains inlet rather than captive lead and the superb black finish, but a great deal has gone on under the skin, too. Most notable are the twin arm mounts that give the new deck its 'Dual' moniker, which comprise an Acetal base to isolate vibration, topped with a spacer and the arm mount of your choice. Any length and mounting pattern can be catered for as they are made to order and

the price of the deck includes two mounts, plus neat covers for when one is not being used.

The platter is a 95mm thick Acetal item and, again, the spindle is simply fitted into the middle of this and

not part of the bearing, unlike 99.9% of other decks – once again this

speaks volumes for the engineering involved, as concentricity must be absolutely spot on if speed variation is to be avoided. Fortunately, my ears could detect no issues in this department.

Said platter is powered again by twin motors but these are higher quality items than used in the Clarity 09 and Peter roped in colleague Charles Appleyard for a re-design of the electrical circuitry inside the plinth. This, plus re-designed motor mounts, mean that the platter spins up to speed much faster and the drive system in general has more torque. Finally, on the power front, the Dual has the option of an offboard PSU, designed by Roger Davis of RD Technology, which offers switched 33 and 45rpm speeds, plus a third variable option.

The build and construction quality of the Clarity Dual is absolutely breathtaking and it abounds with superb touches. From the PSU case milled from a solid lump of metal, to the multi-turn adjustment pot for variable speed, to the arm pod locating dowels with

their positively micrometric precision fit. My favourite part is the record clamp, however. This is a two-part collet based design with a reverse thread that cannot be over-tightened – when it's at the optimal torque, the two parts of the collet simply separate.

The final icing on the cake was a beautifully printed colour instruction manual which walks you through the turntable assembly and setup with clear text and pictures – no dodgy A4 photocopies here! These improvements have pushed up the price compared to the Clarity 09, with the deck retailing at £3,720 and the optional PSU for £1,920 but Peter informs me that a Hi-Fi World special offer is on the table for both units at £5,100; a saving of £540. So, should you be tempted?

## SOUND QUALITY

As I cued up the Clarity Dual I did idly wonder to myself whether I would find myself enjoying a listening experience that was very similar to that of the Clarity 09, but with a few rough edges smoothed and a general lift in performance. Consequently,



when the music started in earnest, I was quite taken aback by what I heard as, whilst the Clarity Dual does indeed share some common traits with its forebear, in many ways it is a very different beast.

We often speak in the magazine of the characteristics of certain turntables that we know well, such as the image width of a Gyrodec, the soundstage depth of an SME10A or the sheer joie de vivre of an LP12, but the Clarity Dual is the first deck in a while that has carved its own niche in this comparison and that is in terms of the truly colossal soundstage that it generates. Spinning some familiar tunes, it was as if my seat at the performance had been upgraded from the back of the stalls to the front row, with performers looming large and lifelike in front of, and above me. The



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effect was a little uncanny at first but as I adjusted I realised that this was a truly immersive experience – almost surround sound with two loudspeakers.

When fitted with a twelve inch arm, the Clarity Dual combines with the innate smoothness of such an item to turn in a very composed and commanding performance. Spin a badly recorded track and the deck lets nothing escape, but with much better recorded material, it simply steps aside to let the music through; the lower tracking distortion offered by the longer arm combines with the Clarity's insight to make everything very pure, clean and immensely detailed.

Throughout the top end and midrange, the Clarity setup offers a sweetness and beautifully rendered sense of calm and unruffled ease in the way in which it serves up in front of you everything contained in the grooves. Large scale orchestral material was particularly impressive in this respect, the Clarity's scale and purity combining to ensure that the power and grandeur of such an arrangement left me positively breathless.

Typani crashed, violins soared and cellos positively leapt out of the speakers at me, whilst the Clarity remained unruffled, poised and effortlessly capable at all times. When the action calmed down, however, the deck was equally magnificent at letting every whisper through; fine action crept out of an impressively silent background, once again speaking volumes for both the stability of the drive system and the quality of all moving components.

Nothing intruded on my

listening experience; where there was supposed to be silence, I heard silence and yet the deck's dynamic range seemed to cover a wider span than I am used to. My Garrard 301 is no slouch in this respect, but even it had a hard time keeping up with the Clarity.



Talking of the Garrard, it generally re-gains much ground against competitors at the low end, thanks to its positively gargantuan yet wonderfully controlled bass. However, the Clarity once

again had it looking decidedly worried, as the Clarity Dual is most definitely no slouch when it comes to punch and sheer depth. Bass from the deck digs deep, hits hard and never outstays its welcome, and I would say it is right at the top of the tree at the low end when it comes to belt-driven turntables. Some bass notes, in particular, seemed to linger just a fraction

of a second too long when compared with the Garrard but, given that I was perched on the edge of my seat intently listening for the effect I would wager that it will not trouble most listeners!

## CONCLUSION

As mentioned, I have long felt that there is no need for some of the black arts that some designers seem to think is necessary to instill into a turntable design. High quality engineering, careful design and meticulous build quality will do the job perfectly and I can think of only a few other turntables that epitomise this as well as the Clarity Dual. Peter Curran has taken his time on his new baby, and made sure to listen to the feedback of customers for his already superb Clarity 09 deck, before carefully implementing the suggestions to see what effect they had.

That resulting effect is nothing short of astounding, and the Clarity Dual shows that a truly high end turntable need not be fragile, temperamental, difficult to install or awkward to use. The deck is a breeze to set up, a pleasure to use and a truly epic performer. Its sound simply presents music with the sort of grandeur, insight and sheer emotion that I have only previously encountered with a handful of decks bearing much higher price tags. Review items come and go from the Smith listening room, but the Clarity Dual is the first item in a long time that I am truly going to miss when it is gone – it really is that good.

### REFERENCE SYSTEM BOX

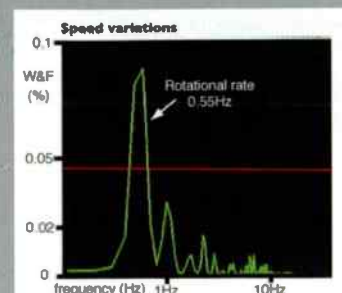
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## MEASURED PERFORMANCE

The Clarity Dual was a little erratic in speed stability. It would run stable for some time, returning an unweighted wow value of 0.1% or less, and then it would start to vary speed, wow increasing to 0.3%. The first value is very low, in Direct Drive territory, the second high and in Rega Planar P3/24 territory. Wow at this level is not obvious, but pitch is a bit 'watery' as it were – although some listeners hear 0.3% wow immediately. Our Clarity was basically rock stable but was prone to short periods of wander. Our analysis was a long term average over ten minutes and shows basic rate wow measuring a low 0.08% at 0.55Hz (one revolution at 33rpm), a good result. NK

Speed accuracy	+0.2% fast
Wow	0.3%
Flutter	0.08%
Total W&F DIN weighted	0.18%

### SPEED STABILITY



### VERDICT

One of the finest turntables I have reviewed, the Clarity Dual sets new standards for both engineering prowess and sound quality.

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# 78 mate

**Old shellac 78rpm discs and early microgrooves used a variety of equalisations. Playing them properly is something the Vad Lyd MD12 Mk3 can do like few others. Collector Tony Bolton digs out his oldies to investigate.**

**M**ost phono stages are fitted with very few controls. Some have a mono/stereo switch but that is usually as far as it goes.

This is fine if you only play records made in the last fifty years but if you have older recordings then some adjustment for the different record companies recording equalisation characteristics is needed. There are a few phono stages on the market that do this, but only one, as far as I know, that has such wide capabilities as the Vad Lyd MD12 Mk. 3 under review here.

Manufactured in Denmark, the MD12 is a development of the Elberg MD12 Mk.II and is obviously designed for studio usage, coming in a slim metal case with extensions to the fascia to allow for rack mounting. The front is populated with buttons to select MM or MC sensitivity on the two inputs and impedance settings for MC cartridges. A rotary switch selects from the range of eight 78 rpm curves and four microgroove curves. There are two mono switches. Used individually they will monitor the sound on one groove wall and send it to both output channels, allowing the user to find the least worn or damaged wall to listen to. Pressed in together the buttons select both groove walls in pure mono.

A 'Vertical' switch allows playing

of both Edison Diamond Discs and Pathes which used vertical modulation of the groove, rather than the lateral cut of conventional records.

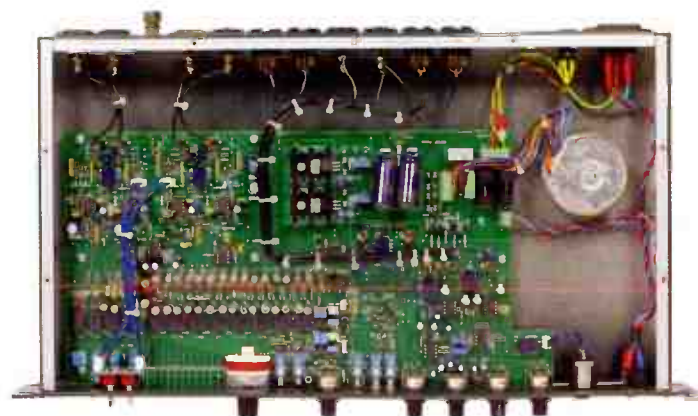
The output volume can be controlled from the phono stage allowing direct connection to a power amplifier (I tried this with the Quads and found it worked very well, giving a sound that seemed closer to the music than when wired via a pre-amp).

At the back are a range of sockets for the two inputs and both balanced and unbalanced outputs.

I started listening in 78rpm mode, finding that when correctly equalised a lot of older recordings suddenly lost the muffled, archaic sound that is often attributed to these discs. The mid band seemed more open and the higher frequencies came forward creating a far more balanced sound. Opening up the higher frequencies also increased the surface noise somewhat (always a bugbear of 78 reproduction due to the abrasive surface of these records which was designed to wear down the steel needles used at the time, before they wore the record), but there was a most effective high frequency filter provided on a rotary switch, which could be fine-tuned to give the best combination of treble extension and surface noise reduction.

Fats Waller's last recording, 'Ain't Misbehavin' came to life using the US MID 30 setting. Both vocals and his piano seemed better projected and the sonic fireworks at the end, where Waller and Zutty Singleton on drums interact before ending in a classic example of stride piano playing, were both vivid and enjoyable. The sound was reproduced with a fairly broad paint brush applied to the tonal palette. My GSP Audio Revelation (also with switchable EQs) [see HFW May 2008] seemed to offer more detail and delicacy, and also a bit more bass response.

One thing the Revelation couldn't do was reproduce my one and only Edison Diamond Disc and, after pressing the 'Vertical' button on the Vad Lyd, for the first time I was able to hear a pleasant little Foxtrot taken from the show 'Ziegfeld Follies





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In the acoustic recording era there was very little that could be done to affect the tonality of a recording. However, this changed with the advent of electrical recording in 1925. For the first time it was possible to adjust the relative levels of treble and bass in a recording, and each company had its own favoured settings.

This was done for various reasons: some due to the capabilities of, and electrical losses found, in the early cutting heads and reproducers, and also because most record companies made playing equipment, so recordings were tailored to sound at their best on that company's machines.

In 1945 Decca introduced their FFRR (Full Frequency Range Recording) technique which recorded sounds above 15kHz for the first time, and then in 1948 Columbia (USA) produced the microgroove LP, closely followed by RCA Victor with the 7-inch 45 rpm disc in the same year. All of these had differing levels of treble boost and bass cut, a situation which grew more complex as other companies started to produce their own discs. In 1955 the RIAA (Recording Industries Association in America) settings were allegedly standardised although some discs did not adopt this standard until the next decade. This uses a +17dB boost from 20Hz to 50Hz<sup>0</sup>, then falls by 6dB per octave to 0dB from 500Hz to 2125Hz, then falling by 6dB per octave to -13.7dB at 10kHz.

Older recordings reproduced through this curve tend to sound a bit muffled and flat so correction to the original recording characteristic is needed to reproduce the correct tonal balance.

of 1924'. Compared to lateral cut acoustic recordings of the period, the Edison offered superior sound quality and I began to understand the reasons for their survival in the USA until 1929, in the face of a market dominated by laterally cut discs.

Moving to microgroove, a Decca FFRR recording of 'Lohengrin' gained in definition and detail with the correct EQ. I still felt that the bass was a bit light though and tested this using an RIAA recording of Sandy Denny and the Strawbs. The bass was there, but not as weighty a presence as I would like to hear, and I felt that this was exacerbated by a tendency to spotlight the higher frequencies. This produced an impression of



detailed treble but it seemed a little artificial.

Overall I felt that the performance was a mixed bag. This phono stage will reproduce just about anything that man has recorded using a modulated groove, and if you have Pathes and Edisons in your collection then I don't know of anything else that will do the job.

The Variable filter was also very useful. However, I felt the level of detail and subtlety in the sound was not commensurate with what I would expect of a phono stage at this price point, so for good condition 78s and certainly microgroove usage, the Revelation, at around £700, would seem better value. However, the Revelation lacks high frequency filtration so 78 surface noise can be overly intrusive. So if your records are less than mint the Vad Lyd can cope better.

If the facilities the Vad Lyd provides are essential to you then I would recommend it without hesitation. The sound is pleasant enough but I feel that there are certain weaknesses to its tonal palette that could do with amending for it to be a true high fidelity component. Recommended, but with a couple of reservations.

#### MUSIC USED:

Wagner 'Lohengrin' Keilbirth conducting the Bayreuth Festival Chorus and Orchestra Decca Records LXT 2880 - 2884 1953

Atlantic Dance Orchestra 'Lonely Little Melody' Edison Record 51379 1924

Fats Waller and His Rhythm 'Ain't Misbehavin' HMV C.3737 1943

Sandy Denny and the Strawbs 'All Our Own Work' Hallmark Records SHM 813 1973

#### SYSTEM USED:

Linn Sodek/ Hadcock 242 Cryo arm/ MusicMaker III and Denon DL 103 (modified for 78s) cartridges. GSP Audio Revelation phono stage Bent Audio TAP-X passive pre-amp. 2 x Quad 303 power amps. Kelly KT3 loudspeakers.

Clearaudio Master Solution/ Magnify arm/ Benz Micro Wood SL cartridge. Leema Acoustics Tucana II amp Chario Ursa Major loudspeakers

#### VERDICT ●●●●

Danish manufactured phono stage with the ability to play nearly anything with a groove in it!

Vad Lyd MD12 Mk. 3 phono stage - £1995.00  
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www.soundhifi.com

#### FOR

- twelve preset EQ curves.
- on board volume and balance controls.
- MC and MM cartridges.
- plays vertically cut discs.

#### AGAINST

- lacks a little subtlety and delicacy.
- bass performance a bit lightweight.

## MEASURED PERFORMANCE

The Vad Lyd offers both unbalanced phono outputs and balanced XLR outputs, and the latter add x2 gain and more than double the output overload ceiling from 10V to 22V. Gain for MM, phono sockets inputs to outputs, is a high x300 (50dB), rising to x660 (56dB) via the XLR output. There is a volume control and this needs to be turned down to lower output swing and possible overload from high output MMs that can deliver 35-40mV. However, the Vad Lyd's overload margins are good, being set by the voltage supply lines of the line output chips as usual.

Noise was low, equivalent input noise (e.i.n.) measuring 0.5µV from MM and 0.14µV for MC, figures a few dB worse than a good hi-fi stage.

RIAA equalisation was disappointingly inaccurate against that of typical hi-fi stages with a 1dB variation overall, the 75µs curve effectively not producing enough HF attenuation. Our analysis shows the effective treble rise this produces.

Bass rolls down as the unit runs out of low frequency gain, even with the bass cut filter out; most hi-fi stages are flat below 20Hz (constant gain). This will give the Vad Lyd a lighter sound than a typical hi-fi stage. Selecting bass cut reduced gain below 1kHz, not 80Hz as suggested - a crude piece of

filtering.

The Vad Lyd has a lot of basic ability but by hi-fi standards it isn't very polished, accurate or subtle in behaviour. NK

Frequency response	40Hz-20kHz
Separation	82dB
Noise (e.i.n., MM, MC)	0.5µV / 0.14µV
Distortion	0.006%
Gain (MM, MC)	x300, x560
Overload	10V Phono out

#### FREQUENCY RESPONSE



#### BASS FILTER



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**TERMS AND CONDITIONS:** Only one advert per reader. No Trade adverts. This section is strictly for readers selling secondhand hi-fi equipment only. Maximum length per advert is 30 words. Adverts over 30 words will not be accepted. Telephone numbers and E-mail addresses are treated as one word. Model numbers are treated as one word i.e. Quad 303 = two words. Email your advert to; [classifieds@hi-fiworld.co.uk](mailto:classifieds@hi-fiworld.co.uk) or fill in the form on page 129 and post it to Hi-Fi World Free Readers Ads, Suite G4, Argo House, Kilburn Park Road, London NW6 5LF. Sorry, we cannot accept adverts over the telephone. The Publisher reserves the right to judge submissions.

WANTED FOR enthusiast: Quad 2 amps, pre-amps, Tuners and related spares. Any literature & valves would also be appreciated. I am also looking for a single Radford Auditorium speaker. 0117 9467188  
[slkw@btinternet.com](mailto:slkw@btinternet.com)

ARCAM SOLO CD/FM/DAB All-In-One units. Original Solo £490 ono. New Solo Neo £875 ono. Both as new with manuals and boxes. Would part exchange for Linn Classik and/or Ninka speakers. Tel: 023 8073 8935 or Email: [golf3385@hotmail.co.uk](mailto:golf3385@hotmail.co.uk)

BALANCED AUDIO Technology (B.A.T.) VKDS SE CD player, uses four legendary 6H30 valves, XLR and RCA connectors, excellent, immaculate and as new. Remote c/w 2 new spare valves. Triple packed. For sale at approx 1/3 new price. Accept £1900. No offers. Technics upgraded SL1210MkII, cartridge, very good condition, plus Technics SL-D2 D.D.T.T. £190 for the two. Tel: 07951 553091 (London N.W.)

REVOX PR99 MkIII high speed. As new condition. Many new parts fitted. No wear or scratches. Best you will find. £1500. Pics to email. Tel: 01246 275 479

PROJECT PHONO SE MM/MC, piano black. Excellent condition. Very little use. Bargain. £40. Tel: 01371 850 665

ROKSAN RADIUS 5, acrylic turntable for sale with Origin Live Rega RB 600 tonearm and Goldring 1022 cartridge. £700 ono. Tel: Andy 01484 427 426

FOCAL ELECTRA 1027BE. Slate gloss black premium finish. Excellent condition with boxes. £2195 (£5059. Collection please. M+K 5000 Mk2 subwoofer with two 12 inch units! £495 (£2100) Collected. Tel: 07776 143 890 (Southampton)

CYRUS III pre-amp M Block power amp. Two power supplies, £640. M+K sub speaker active V75 MkII, £350. Mission surround speakers, £150. Mission 753 speakers, black, £200. Yamaha decoder DSPE390 £50. Tel: 01455 220 214 (Coventry)

RUSS ANDREWS Reference Wattgate 1mtr mains cable £125 LAT International IC-100-D (1/2mtr) for Naim interconnect (£160) £50. Naim NAP250 (162567) £950. CDX CD player (156794) £850. NAC82 + NAPSC (165294)+(165298) £1100. Hi-Cap (185835) £550. All late olive. Non smoking environment. Boxed. Tel: 07872 955 698. Junc7 M6. Email: [pavz\\_01@msn.com](mailto:pavz_01@msn.com)

MUSICAL FIDELITY AI CD Pro for sale. Immaculate condition, little used, boxed. £499 ono. Contact Andrew on 07791529128 or 0207 252 8122

WANTED: MERIDIAN F80. Ideally in mint or as new condition. Tel: Ade 07875 114 913 (Watford)

PROJECT PHONO Box SE, MM/MC. Little use, excellent condition. £40. Tel: 01371 850 665 (Essex)

SYSTEMDEK IMPROVED Ittok, Avondale power supply, Isokinetic platter, Cardas arm, rewired, great bass. Sugden CD 06, serviced Moorgate Acoustics. Sugden amp Mistro 09. Demo Saturdays. Tel: 01246 237 084. Details Thursdays only

WANTED: INSTRUCTION booklet for Denon stereo cassette deck DR-MII. reasonable price paid. Tel: 01323 643 204

ACOUSTIC RESEARCH AR18BX speakers. Need new surrounds. £20 pair. Buyer collects. Tel: 01344 776 445 (Berkshire)

MICHELL ARGO pre-amp, excellent, as new, (£700) £220 ono. Tel: 07917 288 253

MARTIN LOGAN Aeries-i electrostatic loudspeakers. Excellent condition. Light oak 'cheeks'. Original boxes and manual. Fantastic sound. £900. Tel: Tom 07809 554 827 (West Yorkshire)

OLIVE 3HD music server/CD ripper, black, only occasional use, mint condition, boxed, 12 months old. RRP £900, sell £550. Tel: 07745 648 456

MOBILE FIDELITY Geo-Disc. The precision cartridge alignment system. Used once. £20. Hi-Fi+ magazines from Number 2 to Number 65 (total) 64, collection from Dorking, £90. Tel: 01306 887 554 or 07956 581 771

GRAHAM SLEE Era Gold V moving magnet phono stage, excellent condition, £200. Music Maker classic moving iron cartridge, approx 25 hours use (£1200) £600. Cartridgeman Isolator, £25. Tel: 07745 648 456

DENON DP3000 1970's high quality direct drive motor unit, vgc and in full working order with Jelco 750 'S' shaped tonearm, mounted in professionally made maple veneered plinth with hinged perspex lid. Superb retro look front end. £750 ono. Tel: 07745 648 456

AIWA XD-009 Excellia cassette (World Classic) £175. JVC 1720 cassette £20. Bang & Olufsen System 5500 plus speakers, mint £500. Kef Coda 3 speakers £30. Pioneer A88X amplifier £250. Tel: 01708 457 691

FOR SALE a pair of QUAD II FORTY Monoblock power amplifiers fitted with matched cryogenic KT88 valves and less than 20 hours use in 'as new' condition and supplied in original boxes and packaging, £2350 ono. Tel: Steve 01268 785808 (Rayleigh Essex), Mob: 07505042660.

MAGNUM DYNALAB MD-90T tuner. 6 months old as new £625. Quad FM4 late grey model, phono socket outputs, perfect working order, unmarked case. £100. Tel: 07722997 448

WANTED FOR Enthusiast. Faulty or non working Thorens TD-166 and Sony TC-377 open reel to reel. Tel: 0790 891 8344

PROAC FUTURE ONE, ribbon, mint, ebony, £2000 ono. Krell KSA 50-S, boxed, offers. Michell Iso Hera phonostage, boxed, £300 ono. Tel: 07979 300 421 (Wigan)

TEAC (ESOTERIC) P700 CD transport. Audiocom upgraded. Very good condition. £295. Leak Troughline 2 tuner. One Thing serviced, £130. Marantz solid state tuner £30. All ono. Tel: 01844 358 104

KIMBER D-60 digital coaxial cable, 1m, phono plugs, brand new, never used with protective case. Half price £100. Hear what that new DAC can really do. Ring between 10am 6pm. Tel: 01902 884 694

RADFORD STA25 power amp. Nice amp £1650. Castle Howards SE2, lovely condition, £395 ono. VPi HW19 gloss black SME cutout with Martin Basin PSU, £350. Counterpoint SA12 poweramp, £295. Tel: 01255 421 589

FOR SALE: Technics SL1210 Mk2, very good condition, £249. Garrard 401 plus power supply £1200. Tel: 0207 499 8729

SENNHEISER HD558 cans. Cost £160. Accept £75. Boxed. Tel: 07851 391 288

BRYSTON B60R amplifier, black, mint condition, very little use. 10 months old with 20 year warranty. Cost new £2300. Selling £950. Tel: 01246 232 085 or 07754 507 519 (Chesterfield, Derbyshire)

ARCAM 10P3, 3 channel power amplifier, 3x 100w, 8 ohms, boxed, as new, little use. £400. Russ Andrews RGB scart lead, as new. List £189. £60 plus postage. Tel: 01772 812 992

CELEF PE1, highly regarded late 1970's speakers. Good condition. £100. Castle Warwick speakers, £50. Sheffield, buyer collects. Tel: 0114 236 9620

NOTTINGHAM ANALOGUE Interspace turntable, RB250 arm. As new, £300. Tel: 01472 816 684 (Grimsby)

KENWOOD KX9050S. Amorphous Alloy PC-OCC. 3 Head. Closed Loop / Dual Capstan / 3 Motor Direct Drive. Dolby B / C / S. For Sale @ £100. Mobile 0787 571 9136 Email: Lesliegriffiths@fastmail.fm

MAGNEPLANAR 1.4 Loudspeakers Ex condition (owned since new) - includes new covers + bespoke stands & hifi tuning fuses updated. Can demonstrate, call for details (Bedfordshire) email: Stuartdarshan67@googlemail.com T:07870 912 963

SOMETHING SOLID speaker stands. Fully welded construction. Black. 63cm height. Mass filled. Spiked feet. Photo available. Ring for other dimensions. Quality stands. VGC. £50 01582 423791 (Beds)

WANTED: JVC 4ME-4800 8 track player in working order. Email: highhopes@ntlworld.com

FOR SALE: Canary Audio CA-608 Integrated. 40 wpc, ELMA input selector, ALPS volume pot and Hovland Musicaps; 240v transformer fitted. Amp is in mint condition. Selling as upgrading to Art audio. Contact: Keith Telephone: 07905312191

NAD C315BEE amplifier, 40 wpc, 6 line inputs, plus matching C515BEE CD player, titanium, remotes, boxed, £100 each. Buy both for £200 and get a free Nad 4225 tuner! hfc@rodtheobald.force9.co.uk, 01706 345418.

GALE SILVER monitor bookshelf 'speakers, black ash, boxed, mint, £40. hfc@rodtheobald.force9.co.uk, 01706 345418.

WANTED: Top quality Hi Fi separates and complete systems, Naim, Linn, Cyrus, Meridian, Arcam etc, fast, friendly response and willing to travel/pay cash Please call me on 0781 5892458

RUSS ANDREWS high current (reference) powercord 0.8 metre new style with nylon braid. £70 + £3p&p Tel -: Trevor on 0191 460 9033

LINN IKEMI CD player. Close relative to legendary CD12. Excellent condition with box and manual. £790. Cambridge Audio DACMagic, silver. HiFiNews outstanding product. With box and extended warranty 2014. £125. Tel 029 2062 6462.


MARANTZ CD46 player. Black finish. Remote control. Great sound. VGC. £300. Buyer to collect from Hertfordshire. Tel: 01438 223463"

STAX 4040 Kimik modified (from new) electrostatic headphone system. Only 100 hours usage, boxed, instructions and as new condition. Nearly £1800 new, £900 own Bucks 07825 664 215

EUPHYA ALLIANCE Symbiose 320 amplifier Casing mixture of non magnetic metal and perspex Great Sound Check out Euphya Amplifier review on 6moons.com £3450 sell £1100 Tel 01243 528010 WSussex

ACOUSTIC ENERGY AE1 original speakers, black, boxed, with fluted stands, stands are heavy so pick up from devon only, nearly mint just the usual blue tack problems, nice sound dont match my room. £540. e-mail alan.g@talktalk.net-mob.07929240370

QUAD 33/303 amplifier £180, Garrard 401 turntable £400, SME 3009 tone arm £200, Quad FM4 tuner £100. Telephone 01189 413708.



**Heatherdale**  
audio limited

Tel. 01903 261213 or (after hours) 07860 660001  
e-mail: heatherdale@hifi-stereo.com Web: www.hifi-stereo.com

**Main dealer for Esoteric**

<b>SPEAKERS</b>		
Tannoy Stirlings, ex. cond. £1495	Audio Note SORO integrated amp with phono £1495	Esoteric P-03 transport with D-03 DAC, superb condition, boxed with instructions and remote. (£24,000 new) offered for £9495
NEW Furayama Audio Lab Supreme/S speakers from Japan with HEIL AMT tweeters (RRP 7995) £4995	Wavac MD 300B integrated amp, superb/boxed (RRP £7995) £3495	Audio Note Zero CDT CD Transport £395
Yamaha Soave 1's in MINT condition, boxed with instruction book, cost new £2000) only £995	Audio Note P2-SE power amp (RRP £5730) only £2495	Audio Note Zero DAC, new £399
<b>PRE-AMPS</b>	Audio Note P2-SE power amp £1595	
VTL 2.5 pre amp with phono input ( cost new £3200) £1495	Audio Innovations 2nd Audios mono blocks, Ex. cond' £1195	<b>TURNTABLES, CARTRIDGES &amp; TONEARMS</b>
Cello Palette pre amp, boxed £3850	Pure Sound 18 integrated valve amp, superb cond' boxed £1295	Michell Gyrodeck SE, superb cond' boxed £895
Wavac PR-21 pre amp. NEW (RRP £16,875) £9,495	Almarro 205 Mk11, NEW, (£1250) special offer £995	2 Tier Turntable wall mount turntable stand £195
Trilogy 909 pre amp, ex demo, mint, full man' warranty, (£4495) only £3495	TRI TRV-88SE amplifier, NEW, (£1895) special offer £1499	Clearaudio Insider Reference "WOOD" MC cartridge, £4995
Audio Note Zero Remote controlled pre amp, MINT £350	Trilogy 968 power amp, ex demo, full man' warranty, (£4695) only £3750	BRAND NEW 1/2 PRICE £2750
Audio Note Zero pre amp, Ex cond'. £250	Lindley Tyson (Quad 11's) KT88 valve monoblocks £2750	Koetsu Black MC cartridge, new/unused £1455
<b>AMPLIFIERS</b>	Almarro 318B (new) £2750	Selection of high end MC cartridges at discount prices. Please call
Audio Note SORD SE with phono input £1895	<b>CD PLAYERS &amp; TRANSPORTS</b>	<b>MISCELLANEOUS</b>
Ayre AX-7E integrated amp, superb, boxed. £1495	Accuphase DP-75V CD player, MINT/BOXED, cost new £4995	Accuphase T-109 Tuner, poss' the best tuner ever made. £1295
Audio Note OTQ PP with phono stage £149	Esoteric DV-50S CD/SACD player, mint/boxed, cost new £10,000 offered for £4995	Townshend 3 tier S/Sink stand £395
Viva 300B monoblocks £1295	4k offered for only £1495	STAX SR-303 headphones with energizer £395
Wavac MD-805, 55 watt monoblocks (£14,500) MINT £6995	Boulder 1012 pre amp with built in DAC, absolutely superb, £7995	Solo headphone amplifier £195
	Musical Fidelity A1008 CD player, superb/boxed £995	Wavac AC-2 mains conditioner RRP £17,500, this unit is brand new and offered for only £8995
	Lector Digidrive transport with DigiCode DAC, NEW £3995	Yamamura 1.5 mtr. balanced interconnect £595
	TRI CD player, NEW, (£1895) special offer £1499	

ALL USED CARTRIDGES ARE CHECKED UNDER A MICROSCOPE BEFORE BEING OFFERED FOR SALE. WE TAKE PART EXCHANGE ON NEW & USED STOCK and buy in for cash VISA - SWITCH - MASTER CARD - AMEX - DINERS CLUB WELCOME

ABBEY ROAD Monitor cables. 1M phono interconnect, Perfect £120 ( £230). 1M Powercord , perfect £95 (£180). Chord Electronics DSC 900 DAC. Fabulous build, immaculate condition. Boxed £395 (£1900). 01925 766200. tom.rae@hotmail.co.uk

FOR SALE. Sony TA-E900 Esprit. Ultra High End Pre-amp. Near Mint and in daily Use. Very Rare. For Sale @ £1500 Mobile 0787 571 9136 Email: Lesliegriffiths@fastmail.fm

KEF 104/2 "Enjoy the Music" Decade Award wonderful fatigue free listening speakers, rosewood, excellent condition retired Kef Dealer's personal speakers, seldom used £575 Tel: 020 8951 3178

LEAK TROUGHLINE 3 FM Tuner, steel case, with Stereo 30 Plus amplifier in wooden case £60. Also Goldring Lenco turntable with arm and cartridge £50. Tel Clive 01474 872863 (North Kent)

CAMBRIDGE DAC3 £80 Audio Institute VR70 Integrated 40wpc EL34 ALPS pot Excellent £150 Pioneer A400 amp 60wpc excellent £125 13ECL 86 valves £40 Tel 01233 661556 (Ashford, Kent)

PAIR OF Neat Motive 2 floorstanding speakers (maple finish). 18 months old - immaculate - original packing box available. £1105 new - £700 o.n.o - genuine reason for sale (upgrade) Contact John (Portsmouth) 07971 353769.

STACKED QUAD ESL 57's. Totally refurbished by one thing. 4x new treble panels, total rewire, component change. 2x new bass panels, rest serviced. Will deliver. £1200 ono. 07886794180 David.

TECHNICS SL-1210 Mk2, new, boxed and unused. Intended to fit SME 309, but using Thorens instead. Hard to find new. £450. LAVRY DA 11, pristine, barely used, boxed. Fabulous. £650. Contact Paul on 07970 905899 or at paulkhodges@btinternet.com.

CARTRIDGE MAN music maker cartridge. Rebuilt a few years ago, at least half of its Life left. Sounds fantastic. £300. 07886794180 David.

MOBILE FIDELITY\_Geo-Disc, the precision cartridge alignment system, used once £20.00. Hi-Fi+ magazines from number 2 to number 65 (total 64) - £90. Collection from Dorking, Surrey. Tel 01306 887554 or 07956581771.

24bit 192kHz or 24bit 96kHz WAV file vinyl LP transcriptions. Email for more information: bridges.geoff@btinternet.com

WANTED NON working Quad 34 and 44 preamps, Quad fm3 and fm4 tuners. Non workers only. Contact Mike 01758 613790.

WANTED: KEF Corelli speakers in excellent condition. Email: royngreen@waitrose.com

2 CROWN DELTA mono amps power hungry 2,000 watts each and will dim your house power supply so a free Kv6 step down transformer offered with them at £2100 williskb@aol.com

PRO-JECT. Phono Box,SEII. Fully Boxed @ £120 Contact details: Mobile 0787 571 9136 Email: Lesliegriffiths@fastmail.fm

BOSE SOUNDDOCK 10 workstation. Excellent condition and working order with remote £350 ono. Tel: 07982865638

FOR SALE 2004 Naim CD5i (209531) and Nait 5i (209543) both vgc, with remote and interconnect. £700, may split. Tel 07785 733202, email wearnema@aol.com (Chichester, West Sussex)

AUDIOLAB 8000 P+ 8000C, P = silver, C = Black. Perfect sound and condition £495.00 07816 758688 NE London.

NAIM AUDIO NAIT analog tuner and SNAPS power supply, working, perfect condition, £370 Tel; Martin 07967 205466

MARANTZ KI-PEARL SACD Player. Mint Condition. Minimal Use For Sale @ £ 1850.00 Mobile 0787 571 9136 Email: Lesliegriffiths@fastmail.fm

LINN LP12. Fluted Afrosonia Plinth. Fitted with Trampolin 2 Cirkus Bearing Kit New Akito Arm. Grado Reference Platinum Cartridge With Pro-Ject Phono Box SE II All @ £1350.00 : Mobile 0787 571 9136 Email: Lesliegriffiths@fastmail.fm

WANTED MINT or vgc face plate with handles for a Krell KSA 50 Mk I, any colour. Does anyone have a spare they want to sell?. Call John on 07931165556 or 01726-222911 evenings, email johnbporter@hotmail.co.uk.

PAIR ROGERS LS3/5A, pair sandfilled stands, pair Audio Pro sub bass speakers. Tel: Mike: 01296 623 540 (Bucks)

EPOS M12 loudspeakers with matching Atacama SE24 filled stands. Cherry wood, bi-wireable, mint condition, total new £625. Accept £299 ono. Speakers boxed. Tel: 01255 428 298 or 07719 212 852 (Clacton on Sea)

MERIDIAN 588-24/502 pre, 557 power amp. All mint. £2000. May split. Birmingham pick-up only. Tel: Phil 07973 426 291

WANTED FOR enthusiast: Quad 2 amps, pre-amps, Tuners and related spares. Any literature & valves would also be appreciated. I am also looking for a single Radford Auditorium speaker. 0117 9467188 slkw@btinternet.com

ARCAM SOLO CD/FM/DAB All-In-One units. Original Solo £490 ono. New Solo Neo £875 ono. Both as new with manuals and boxes. Would part exchange for Linn Classik and/or Ninka speakers. Tel: 023 8073 8935 or Email: golf3385@hotmail.co.uk

WANTED: INSTRUCTION booklet for Denon stereo cassette deck DR-M11. reasonable price paid. Tel: 01323 643 204

**GUIDELINES FOR BUYING AND SELLING SECOND-HAND EQUIPMENT**

**FOR THE BUYER**

1. Not everyone is honest - Buyer Beware!
2. Don't send cash!
3. Accept no verbal guarantees.
4. Have you heard the item or something similar? If not, why do you want it?
5. Don't pretend to have knowledge - it's your fingers that will get burnt!
6. Is it working? If not, why not? Can it be repaired and if so is it worth it?
7. Has it been modified and, if so, have notes been kept?
8. Was it any good in the first place?
9. Don't send cash!
10. If you are in the slightest doubt, arrange an audition (see point 5) If it's too far, wait for another time.

11. Either buy it or don't: vendors are excusably impatient with 'consultation' exercises.
12. Don't send cash!

**FOR THE SELLER**

1. Not everyone is honest - Seller Beware!
2. Make no verbal guarantees.
3. Even 'nearly new' is still second-hand. If the manufacturer's guarantee is no longer in force, your price should reflect this.
4. There is very little intrinsic value in second-hand hi-fi; it's only worth what someone will pay for it.
5. The best guide to pricing is last month's Classifieds; that a 'classic' was worth £xxx a year or two ago is no guide. Values fall as well as rise.
6. Amateur second-hand dealing is not a big money game; you win some, you lose some.
7. Be prompt with despatch. If in doubt about buyer's bona-fides, either wash out the deal or send C.O.D.
8. There will always be time-wasters; be tolerant within reason!



### TRACK AUDIO FLOORSTANDING SPEAKER STANDS. FROM £650.00

As their name suggests, most floorstanding loudspeakers stand on the floor. However, this is not always the best way of siting them. Floors can bring a multitude of problems into the world of hi-fidelity audio. Most UK homes have suspended wooden floors. These can interact with 'speakers to produce sonic effects ranging from deep thrumming bass notes to a muddy and indistinct sound. The listener will usually blame some aspect of the equipment for this when in fact it may well be the surface that the speaker is standing on that is the culprit.

Buckinghamshire based Track Audio have developed stands which should overcome the problem of

mounting a speaker in isolation from its surroundings, and detaching it as much as possible from acoustic interaction with the floor beneath it.

These stands are beautifully engineered pieces of CNC machined aluminium plate available in a range of sizes to suit the majority of speaker footprints. Underneath are adjustable spikes made from high quality stainless steel, which have a threaded adjuster and a locking ring. Holes are provided around the edges of these into which a stainless steel pin can be inserted to rotate the adjusters. A circular spirit level is thoughtfully fitted to the front left of the top plate.

The spikes contain a hydraulic damper system to further isolate the speaker. Unwanted resonance from the cabinets is converted into heat,

rather than being transmitted to the floor of the listening room. A set of pads to be fitted to the bottom of the speaker cabinets in place of the original spikes are also provided.

I tried these stands under both my Kelly KT3s and Boston Acoustics A 360 speakers. The effects on both pairs of speakers was dramatic. The bass seemed to suddenly gain new levels of depth, clarity and tunefulness. It was more precise in its form and shape. Treble seemed smoother, more detailed and to reach higher, while the midrange opened up to reveal previously masked colours and textures in the music.

A fringe benefit was a big reduction in the bass noise transmitted to adjoining rooms of our house (and probably to the neighbours house as well).

With prices starting at £750 for a pair, these stands are not cheap, but the engineering of them is first class, and a few minutes spent listening to the sonic benefits that accrue shows they are work well and are a worthwhile upgrade to your system.

**T.B.**

+44 (0)1494 723755  
www.trackaudio.co.uk

# soundbites

### ATLAS CABLES EOS 2.0 MAINS CABLE. £160.00

Although the mains cable supplied with most hi-fi equipment successfully channels power in, it rarely gets the best quality power supply into the equipment. Mains cables are usually made with cheap copper in the cable and fitted with plugs that fall into the "cheap and cheerful" category. Amongst the many aftermarket options available, Scottish manufacturer Atlas Cables have developed and launched a new range of cables, the Eos series.

These come with a choice of conductor size ranging from 2sq. mm. to 4sq. mm and in 10 or 16 Amp variants. The Eos 2.0 reviewed here, as the name suggests uses 2sq.mm. OFC conductors that are insulated in a dielectric made of high pressure, low temperature extruded PTFE. This is housed in a PVC sheath with a fabric cover. The conductors are twisted to reject EMI and are housed

within an aluminium foil surround with a drain wire to reject RFI. At the mains end is Atlas' own design of 13 Amp plug. This large cylindrical item is made of polycarbonate and contains a silver fuse (in this example, rated at 10 Amps) and copper bronze pins which are polished prior to plating with 1.25 microns of pure Rhodium. The IEC plug at the other end is also made with Rhodium plated copper pins.

After a suitable running in period, I plugged it into the Leema Acoustics Tucana II amplifier in my front room system. I tried comparing it to a standard mains lead and the performance difference was significant. With the Eos in charge there was a dramatic extension to the range of the sound in both treble and bass areas, and a whole wealth of the small details that flesh out a sonic picture came to the fore. I also compared it with other similarly priced leads that I have around

the house, and I was particularly impressed with the smooth and intimate detailing to the mid range and treble. It wasn't a sudden "oh wow" difference, but I realised that I was becoming aware of a bit of extra shape and texture to instruments and vocals that had previously passed me by.

This cable is well thought-out and made, and produces a performance that once listened to, you will not want to be without. **T.B.**

+44 (0)1563 572666  
www.atlascables.com



# NEXT MONTH

*Pictured*  
Martin Logan Montis

With winter slowly melting away and the days getting longer Hi-Fi World brings even more light to your life with some great new products. Here's some of what we hope to bring you in our May 2012 issue.

## LOWFIDELITY

Martin Logan Montis hybrid electrostatic  
Audiovector Ki3 Super  
Triangle Galaxy II home cinema pack

## VINYL

Five budget Moving Coil cartridges below £1000  
Rothwell Rialto phono stage

## DIGITAL

Pro-Ject Media player  
Mac Mini Special  
Cambridge Audio Azur 651C-S CD player

## AMPLIFICATION

Cambridge Audio Azur 651A-S  
WAD KEL34 valve amplifier kit

## FEATURES

Replacing CD - a media player for tomorrow

## OLDE WORLDE

Nakamichi Dragon

We cannot guarantee all the above will appear, due to malfunctions, updates, failures, fire, flood, cargo ships being boarded by pirates, or sinking when the captain waves to his mates.



**PICK UP THE MAY 2012 ISSUE OF HI-FI WORLD ON SALE MARCH 30TH, OR  
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# FREE READER CLASSIFIED ADS ORDER FORM

## STOP PRESS

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You can email your advert to us at: [classifieds@hi-fiworld.co.uk](mailto:classifieds@hi-fiworld.co.uk)  
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London, NW6 5LF.

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telephone**

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## ROY HARPER STORMCOCK SCIENCE FRICTION

"I'm grateful that there is physical product out on the streets that people can buy"

**R**oy Harper is a cult hero who can fill the Royal Festival Hall (which he will be doing in November) but he's not in the headlines and Hello magazine photographers have no wish to peer into his front room. Yet Harper, now seventy years of age, is the embodiment of British musical eccentricity and distinctive English creativity. He's hardly a superstar yet he regularly played with Paul Simon, Nick Drake and Joni Mitchell, he shared the same manager as Pink Floyd and legends such as Paul McCartney and Jimmy Page guested on his albums. Since releasing his debut LP in 1966, he has amassed twenty-one studio albums and fourteen live albums. To many music fans, Harper is not just celebrated but his music, his words and his philosophy have become interwoven into their own lives to an extent that Harper is part of their daily furniture. Like Bob Dylan – Harper matters.

Maybe it's no bad thing, therefore, that Harper will see a resurgence in his profile as iTunes will soon be swamped with his works as twenty digital albums will be released onto the service over the next several months, staggered in four album chunks. The first four: 'Stormcock', 'Flat Baroque And Beserk', 'Bullinamingvase' and 'Sophisticated Beggar' are out now.

What will interest audiophiles more is the fact that Harper has also quietly been initiating a CD reissue and remastering process of his catalogue. These include the four albums currently out as digital downloads plus others like 'The Dream Society', 'HQ' and 'Counter Culture' plus a compilation of love

songs – a new release, now on CD.

Another of those digital LPs that has now experienced the joys of a modern CD remastering is arguably Harper's best album, his 1971 release, 'Stormcock'. An album that is packed with great music with no weak links or the slightest dip in quality. There are only four tracks on the LP: 'Hors d'Oeuvres' is a lazy, tired take that rolls over your senses like sunburn. You suddenly realise, after listening to it, that it's under your skin; 'The Same Old Rock' is a poetical number that is notable for featuring one of Led Zeppelin guitarist, Jimmy Page's, best solos (although he's credited as 'S. Flavius Mercurius'); 'One Man Rock and Roll Band' features some amazing acoustic work by Harper that is beautifully textured while 'Me and My Woman' has distinct flavours of mellow Marc Bolan and folkish Donovan-esque vocalisations.

"I'm grateful that there is physical product out on the streets that people can buy," said Harper. "Especially, as I see how truly chaotic the digital world is: the love songs project, for example, has been impersonally placed online by iTunes. That album was slapped online, destroying the structure and flow we had provided for the album, where each track dynamically fit into each other. iTunes put it online bare, as tracks one to twenty-five."

Hence, Harper wanted to retain the physical option to be able to control its creative design. Also, "... in the early days, some of my albums suffered badly from transfer from vinyl or tape to CD. All kinds of unwanted

artefacts were transferred. There were some albums where I couldn't even play the original CD album any more. Some of the more modern CDs are fine, they were made for CD."

Harper started the remastering process of his older CDs with this album, 'Stormcock' which now replaces the original CD version, "It's a much better record than it was – it's so superior, it sounds like the original vinyl. Once we heard the album, we realised that there were at least ten other records that needed to be brought to that standard."

This physical remastering is a separate, private project that Harper is personally overseeing (over at [www.royharper.co.uk](http://www.royharper.co.uk)). He has been happy with the results, "'Stormcock' is amazing. It's great how much you can bring instruments out of an original analogue tape just by choosing particular frequencies and by ignoring others." Not all of the catalogue had tape as a source option, however. About a third of the have been remastered from original tape, others were CD originals and around a quarter had to be vinyl dubs because the tapes had degraded and the original vinyl was the best available source.

One thing is for sure, though. 'Stormcock's remastering is a sonic accomplishment which blends well with the content because it also happens to be a creative triumph that competes and arguably even trounces the classic releases seen that year from the likes of Pink Floyd, Led Zeppelin, The Who, The Beach Boys, Yes and Kevin Ayers. **PR**



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