CHORD QBD76 EXCLUSIVE!
Bluetooth digital-to-analogue convertor

EXCLUSIVE!
CYRUS CD 8 SERVO EVOLUTION
cd player

MARTIN LOGAN PURITY
electrostatic loudspeakers

SUPERTEST: APPLE iPOD vs. RIVALS
UNISON RESEARCH UNICO R TUNER
KUDOS CARDEA C20 LOUDSPEAKERS
SAMSUNG BDP 1500 BLU-RAY PLAYER
MUSICAL FIDELITY A1 FBP PREAMPLIFIER
LEBEN CS300X INTEGRATED TUBE AMPLIFIER

SCHEU ANALOG CANTUS
tonearm EXCLUSIVE!
verdicts

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ELECTRONIC MAGAZINE
Go to our website www.hi-fiworld.co.uk to buy an electronic version of this magazine, individual issues or a subscription. At present we do not offer back issues, but hope to soon.

Why is it that, as soon as a technology becomes obsolete, it suddenly comes good?

There’s a long and annoying history of this in hi-fi. From valve amps to vinyl, as soon as the world waves goodbye to a particular format, products are launched that finally unlock its true potential!

Now it’s happening again with Compact Disc. No sooner has news reached us that downloads are fast replacing CD singles, than we’re seeing a slew of stunning sounding disc spinners taking the little aluminium Frisbee to new heights. In the past few months we’ve seen several superb mid-priced machines – from AstinTrew’s AT3500 and Rega’s Saturn to Prima Luna’s ProLogue 8 – that push the format forward at the price thanks to excellent engineering and now, in this issue of Hi-Fi World, there’s not one but two more major new products...

First is Cyrus’s CD 8 Servo Evolution (p10) – a brand new slot-loading £1,100 machine with a bespoke, custom-designed transport mechanism that cost hundreds of thousands of pounds to design. The result is that it reads the digits off the disc better than anything anywhere near the price and sounds superb to boot. Second is Chord’s QBD76 DAC (p34) – a landmark digital to analogue converter that sounds like no other. The fact that it’s Bluetooth compatible would be big news for any other DAC, but it’s a trivial detail point on what I think is the world’s best way to play CD right now.

What a shame these didn’t arrive fifteen years ago, when most people’s experience of Compact Disc was being assaulted by nasty, earache-inducing noise; it’s only now that a technologically defunct disc is getting really good.

Still, I didn’t let the alleged ‘death of vinyl’ stop me from enjoying my several thousand-strong record collection in the past few years, so don’t let downloads put you off these new digital delectations. The great thing is that in today’s hi-fi world, there seems to be so much more room for everyone and everything.

Enjoy the new issue!

David Price, editor

testing

To ensure the upmost 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.

simply the best
exceedingly capable
worth auditioning
unremarkable
seriously flawed
keenly priced
Leban CS300X - unique valve integrated amplifier from Japan.

Musical Fidelity A1 FBP preamplifier - striking style with sonics to match...

Moon Equinox RS meets Leema Stream CD.

Scheu Analog Cantus tonearm - clearly superb value for money!

MartinLogan Purity - truly special sounding active electrostatic speakers.

Chord QBD76 - one of the best digital to analogue convertors we've heard so far...
Cyrus CD 8 SE

David Price is wowed by this new Cyrus CD player, featuring their new 'Servo Evolution' transport.

Group Test

Steve Green takes a listen to four portable digital music players from SanDisk, Cowon, Apple and Sony.

Chord QBD76

David Price audits Chord's brand new Bluetooth-equipped DAC.

Terratec Noxon

Steve Green explores this versatile iPod dock, internet radio and network music player.

Leema Stream and Moon Equinox RS

Adam Smith contrasts these two mid-price CD spinners.

Samsung BD-P1500

Noel Keywood checks out Samsung's latest Blu-ray player.

Amplification

Musical Fidelity Ai FBP

This retro-styled two box preamplifier is auditioned by David Price.

Chord QBD76

David Price is charmed by this characterful Japanese integrated amplifier.

MusiCal Fidelity Ai FBP

This retro-styled two box preamplifier is auditioned by David Price.

MartinLogan Purity

Noel Keywood takes a listen to MartinLogan's new affordable hybrid electrostatics.

Kudos Cardea C20

Adam Smith continues his journey through the Kudos range with these floorstanders.

Amphion Argon2

David Price enjoys some Scandinavian style with these svelte standmounters.

Radio

Unison Research Unico R

Noel Keywood scans the wavebands with the help of this valve-aspirated tuner.

Headphones

Audio Technica ATH-W5000

David Price takes a shine to these rather swish headphones.

DIY

DIY Feature Part 19

Peter Comeau takes a closer look at the Wharfedale SFB/3 open baffle loudspeaker.

WD25T v2 - The Sequel

In the final part of the story, Noel Keywood measures the WD25T v2s and Adam Smith takes a listen.

Features

Down on the Farm

Adam Smith visits Bang & Olufsen's headquarters in Denmark.

Olde Worlde

Hi, Fidelity

David Price remembers Ikeda's legendary Fidelity Research FR-64fx tonearm.
CLUB CLASS
A sultry summer’s evening saw Peter Gabriel launching the new B&W Music Club, in partnership with his Real World Studios, based just outside Bath. Described as an online community for audiophiles and music fans, it offers exclusive monthly albums to its members, specially recorded at Real World Studios and downloadable in the Apple Lossless file format to provide CD-quality sound. For a small annual or six-monthly subscription fee, Music Club will offer one specially commissioned album each month, recorded in dedicated live sessions at Real World Studios in Bath. Albums will be available to download for one month only and are provided without Digital Rights Management (DRM) to enable use across a variety of playback media.

The music offered on Music Club will span many different genres and styles from new and established artists from all across the world. Impressively, just two months after the live sessions are first offered to Music Club members, B&W returns the rights for the albums to the artists. The idea is that by providing free studio time, mixing sessions and eventually returning the rights to artists, Music Club will provide an opportunity for new bands, as well as offering more well-known artists a chance to experiment or collaborate on interesting side projects. Peter Gabriel said, “this collaboration with B&W is unique as far as I know and it’s going to allow a lot of interesting projects to happen. For artists, Music Club is a dream proposition because they get some great time in the studio, access to really good recording facilities and can experiment without being committed to anything or anyone beyond a month with B&W.”

Membership of Music Club costs £23.95 for six months, or £33.95 for a year. Based on a yearly membership, this means that Music Club members receive 12 albums for less than £3 per album. B&W will also offer free trial memberships via its website. Each download will be supplied DRM-free in lossless format, at around half the file size of a CD recording and will include printable colour sleeve artwork to enable members to create CD albums from the downloaded files. For more information click on www.bowers-wilkins.com/ios.

REFERENCE STANDARD
It’s always a big moment when KEF brings out the latest Reference Series range, and now the speakers have finally hit the shops. Available in a selection of striking furniture-quality finishes, including High-Gloss American Walnut, Piano Black, Satin Sycamore and High-Gloss Cherry, the three high-gloss variants are finished with multiple layers of lacquer, each one polished to a mirror finish by hand before applying the next one. The result is a rich, deep, shine that surpasses that of most luxury cars, says KEF “The KEF philosophy is not just about Uni-Q, ACE or any of our other technologies – it is the pursuit of natural sound reproduction through intelligent engineering”, says Dr. Andrew Watson, KEF’s Senior Acoustics Engineer. The new KEF Reference Series includes the classic bookshelf Model 201/2, the elegant floorstanding Models 203/2 and 205/2 and the top-of-the-range Model 207/2. There are also two newly developed centre-channel speakers, Models 202/2c and 204/2c; and a unique 3-way dipole surround speaker, Model 206/2DS. Two outstanding sub-woofers, Model 208 and – the ultimate sub – Model 209 complete the range. For more details, click on www.kef.com.

MAKING MOVIES
‘The Edge Of Love’, a new romantic drama movie gives a rare glimpse of a vintage Tannoy ribbon microphone. Directed by award winning filmmaker John Maybury (whose work includes the music video for Sinead O’Conner’s ‘Nothing Compares 2 U’), it stars Keira Knightley as late nineteen thirties cabaret singer Vera Phillips in the real-life story of legendary Welsh poet, Dylan Thomas. In one scene Knightley is shown singing into a bronze-finished Tannoy ribbon mic, produced from 1939 until well after the war. For more information, see, www.capitolfilms.com/Film/Edge_Of_Love_The.
**NEWS**

**ANTI MATTER**

The cure to your platter woes is here, according to Origin Live, who say their new £49 platter mat is the most effective universal design around. Said to be a significant breakthrough, the manufacturer claims a significant increase in clarity and articulation, deeper bass, superior instrumental separation and greater overall musicality. The result of over twenty five years of research - including experimentation with countless platter mats including from felt, fibreglass, cork, graphite, carbon fibre, acrylic, PVC, MDF, aluminium and steel laminates – this mat is said to be more consistent across a wider range of turntables than any of the above materials. It’s only 1.5mm thick, which is well within the ability of most tonearm height adjusters, and the material mix remains top secret, as you might expect! Look out for an exclusive review in Hi-Fi World next month. Meanwhile, for more information, call +44 (0)2380 578877 or click on www.originlive.com.

**HD PHONES**

Philips says its new SHE9850 in-ear headphones have “High Definition transducers with professional grade acoustic performance”. The drivers’ armatures, magnets, drive rods and diaphragms have all been specially selected for greater sensitivity and better linearity. The components have been mounted in a premium grade metal housing which helps to shield the transducer elements from vibration. Further noise isolation is provided by the tight sealing foam sleeves which are made from a slow recovery material as a comfortable alternative to the usual rubber ear caps. The user compresses the sleeves before insertion in the ear and the slow-recovery foam then expands to create a secure and tight fit, says Philips. A high-quality metal carry case is supplied for headphone storage. Price is £89.99. For more information, click on www.philips.co.uk/onlyfeelthemusic.

**BLU TIME**

Late 2008 is when Onkyo says it will ship its first Blu-Ray player, which will work with the company’s ‘High-Definition’ AV Receivers to realise the full potential of the new medium, including full HDMI processing of 1080p video and decoding of Dolby TrueHD and DTS-HD Master Audio surround sound formats. For more information, call +44 (0)1494 681515 or click on www.onkyo.co.uk.

**SHINE ON**

Sanwa’s curiously entitled new CD-REI AT is the latest must-have gadget for CD (and DVD) fans from Japan. Outside, it looks curiously similar to an early nineties ‘Discman’ CD portable, but pop open the lid and you see clever cleaner brushes. Said to remove dust, fingerprints, and oily spots from disc surfaces, it should help with disc skipping and loading problems. It also forms a protective layer on the disc to prevent future corruption without grinding it. Weighing about 300g, it’s powered by an AC adapter. Cleaning kit refills are available, and the cost is around £40 when it arrives in Europe soon.

**PRIMA EXTRA**

Prima Luna have introduced two new optional op-amp upgrade boards for the player for their superb ProLogue 8, reviewed in the July 2008 issue of Hi-Fi World. These can be purchased with the player or added later, “providing a nice little upgrade path”, says the company. The more expensive of the two boards – the Super I/Y Board Plus - retails for a very reasonable £139. For more details, see www.absolutelysounds.com.

**ONE LOVE**

The new DNM Stereo Solid Core Interconnect is said to “build on the original award-winning Mono Solid Core interconnect cable, introduced in 1984”. It boasts “major advances in design and production techniques since that time” - the classic DNM spaced-pair design is retained, but the magnetic performance has been further optimised and careful balancing of capacitance and inductance improves the sound quality of the cable and of any amplifier connected to it. The new interconnect cable is semi-transparent with four high purity oxygen-free copper conductors sheathed in colour coded insulation. Measuring 15mm wide and 1.5mm thick, the small size contains a dual pair, carrying two channels in the ribbon. UK retail price is £22 per stereo metre. For more information click on www.dnm.co.uk/cables.html or call +44 (0)1480 457989. Look out for a review soon!

**SPOTTED:**

Hi-fi industry insiders will be astonished to learn that the UK’s most child-averse man has, ermm, had a baby! After a lifetime spent complaining about noisy kids in restaurants, Robert Follis (hi-fi public relations man extraordinaire) and Angela Kirby produced this little beauty (no, not the iPhone) at St. Mary’s Hospital in Paddington at 3.58am on June 10th, weight 7 pounds 5 1/2 ounces (the baby, not Rob). We wish mum, dad and baby Tom all the best from Hi-Fi World.
EXTREME SORT

Acoustic Energy’s new Extreme 8 loudspeaker is “capable of producing hi-fi fidelity audio whatever the weather.” It is fully water resistant and capable of withstanding dust, dirt, humidity, and severe temperature changes. The two-way sealed enclosure is crafted from reinforced structural polymer, and paintable grilles to allow accurate decor matching to keep the neighbours happy. An innovative mounting bracket makes installation simple. The speaker uses a 160mm version of AE’s signature high-power alloy cone and a 25mm dome tweeter, tuned to accentuate the presence band to best overcome background noise, wind-roar and traffic sounds. Vital statistics are 390x260x260mm and 7kg each, and they cost £449.99 per pair. Click on www.acoustic-energy.co.uk.

SOLAR FLARE

Described as “the world’s first solar-powered digital radio”, Roberts’ new £79.95 solarDAB’s solar panels and rechargeable batteries provide up to 27 hours of listening when not near sunlight. The solar, battery or mains powered device has a white backlight LCD display, soft touch rubberised controls and an AC adaptor. There’s a choice of five colours (white, black, red, green and pink). For enquiries call +44(0)1709 571722 or visit www.robertsradio.co.uk.

UP ON THE HILL

Ferguson Hill’s stunning FH001 horn loudspeaker runs a full range drive unit from 150Hz-20kHz with no crossover, so requires a sub bass unit below 150Hz. Said to “reproduce music with a high level of clarity, detail and dynamics”, with 100dB sensitivity claimed they’re highly efficient and will go loud with just 5 Watts. The stands are a welded stainless steel construction, satin polished, with internal damping, integral spikes, supplied with floor protector discs. The horns are made from toughened 8mm thick, precision moulded cast acrylic. The support ring and phase plug are precision machined from aluminium alloy and have a protective anodised finish. The drive unit is a modified Lowther DX3 full range driver. They require a subwoofer from 150 Hz down, with level control, ideally taking the signal from the preamp stage. Vital statistics are 1650x92x72m and 27kg. Price for these translucent towers is £9,950. See www.fergusonhill.co.uk.

EIGHTH WONDER

Marantz AV8003 networking preamplifier/processor and MM8003 eight channel power amplifier (£1,999.99/£1,299.99) are described as “the perfect playmate for Blu-Ray players”. Said to provide every one of today’s most advanced audio and video processing technologies, it sports Dolby TrueHD and DTS-HD Master Audio decoding, plus HDMI 1.3a connectivity (four in, two out). The design can also, via its built-in digital media player, stream music and movie content via a home network, whether it be on a PC or NAS drive. The MM8003 power amplifier delivers a humongous 1.2kW across its eight channels (150W per channel). For more information, click on www.marantz.com.

SPOTTED:

June saw Naim Audio’s ‘Summer Sounds’ road show arrive in St Albans with Tom Tom Audio hosting. Along for the ride, via vintage racing Bentleys, hi-fi aficionados were treated to Naim’s new HDX digital source and outstanding Superline phonostage fed by the equally sublime Naim Aro-fitted DPS turntable from Germany. Pictured are Tom Tom’s James Almey, Naim’s Doug Graham and DPS’ Will Jack Bauer enjoying themselves. For more information click onto www.naim-audio.com or tomtomaudio.com — oh, and thanks to James for help in preparing last month’s Naim tuner olde worlde!
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Cyrus. It was fractionally colder and more mechanical via the Stello. On the other hand, the Stello provided a slightly better detailed soundscape — everything was crisply and tidily rendered in pinpoint precision, with hi-hats snapping into focus.

Moving to Isaac Hayes’ ‘Branded’ saw the Cyrus again come over as the more musical of the two, making it easy to pigeonhole the Stello as more ‘hi-fi’ sounding. There was a better sense of the recorded acoustic, with a fractionally wider and more dimensional soundstage, inside which things seemed a little more organic. The great man’s voice was beautifully carried by both machines, but again there was a scintilla more ‘feel’ to the Brit machine — Hayes seemed more tangible ‘in the room’, whereas the Stello combo was more interested in deconstructing this excellent mid nineties recording. That’s not to say I didn’t enjoy the Stello — both players are magnificent, and I can see many preferring the forensic mastery of the CD T100/DA100 over the fractionally warmer and more romantic CD 8 SE.

Moving to Herbie Hancock’s 1968 Blue Note classic, ‘Speak Like a Child’, and the flugelhorn and bass trombone sounded altogether more realistic through the Cyrus. Again, there was a sense of a slightly more spacious recorded acoustic, and better depth perspective — instruments hung in space in a more unconstrained way. By comparison, the Stello positioned them more rigidly in the mix, but somehow seemed to constrain by so doing. Cymbals were a little less atmospheric via the Cyrus; there’s a sense that the midband is ever so slightly more prevalent, at the expense of frequency extremes.

The Stello, by comparison, made them more finessed and delicate sounding, but slightly brighter too. Double bass was superbly clear through both machines, but had a fractionally more fluid feel via the CD 8 SE.

CONCLUSION

The new Cyrus CD 8 SE impressed me — not just for what it does, but also why it does it. Which is to say that it’s no happy accident that Cyrus has wrung such great sound from a £1,100 CD spinner — it’s down to a serious injection of time and money on their part, all for the right reasons. The Servo Evolution mechanism is more than a gimmick — its sonic rewards are for all to hear. So much so that it means Cyrus has gone from having a fine player at the price (in the old CD 8x) to one of the very best under £1,500. For those wanting a superb mid-price silver disc spinner then you’ve just found it, whilst audiophiles looking for a tasty new transport must surely seek out the new CD XT for three hundred pounds less.

MEASURED PERFORMANCE

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VERDICT

Cyrus CD 8 SE

FOR

• detailed, lyrical sound
• fine bass articulation
• transport engineering
• design, build
• PSX-R upgradeability

AGAINST

• nothing at the price

REVIEW

Serious engineering adds up to superb sound — a landmark product for Cyrus.
Designed by and for music lovers • AES/EBU, COAX, OPT, USB, I²S
Custom-built power supplies • 192 kHz / 24 bit upsampling
Music-optimized circuitry • 120 dB Signal : Noise ratio
Top loading CD Mechanism • Compact form factor
High Quality I²S interface • Affordably priced

The CDT100 / DA100 Signature combo from April Music is one of audio’s greatest bargains. You can spend more money, but you can’t buy more music.

“One of the best-kept secrets in high-end audio today . . .”
Doug Schneider - SoundstageAV.com
**HEADGEAR — what to listen with:**

**SENNHEISER MX560 (£20)**
Superb earbud type headphones with a very smooth and detailed sound; a dramatic improvement on any of the phones bundled with the portables in this test...

**SENNHEISER PX100 (£30)**
Brilliant half-size foldable portable open back headphones with a lovely sophisticated sound — good enough to use as a serious hi-fi phone in their own right. Active noise cancelling PX-C250 version is excellent at cutting out ambient drones on long flights, but even then a Walkie Pro and twenty tapes was bulky enough to have your other half asking you if you really had to bring it with you!

The nineties saw the advent of CD portables and then MiniDisc, but even then a sizeable amount of music took up enough room for another pair of her shoes. The advent of the digital music portable, or ‘MP3 player’ promised an end to the audiophile’s travel woes, but when we looked at the very first Diamond Multimedia Rio PMP300 back in 1999, it was soon evident that the 32MB it had to store MP3s wasn’t quite enough! Indeed, it has taken the best part of a decade for the breed to grow up, and now you can buy a 4GB machine for just a quarter of the Rio’s original ticket price. What’s more, it sounds a damn sight better too...

Nowadays the choice is wide — bewildering even — so we decided to round up the cream of the crop. This supertest shows that for around £100 you can get yourself a very respectable sounding machine that will hold several hundred songs and is small enough to be invisible to those who disapprove of our manic music proclivities. None of them quite have the sonics of the classic Walkie Pro, but if you run high bit rate compressed files (256kbps or above) in the AAC format (where possible, otherwise WMA), plus a decent pair of headphones [see HEADGEAR] then you’ll really be able to enjoy your trip.

**POWER BOX**
If you’re obsessing about headphones and simply must run a full on, full size pair of hi-fi cans, then you’ll need one of these. Graham Snel Products’ £179 Voyager is a superb sounding portable headphone amplifier. Running on batteries (where it gives about fifty hours) and connected up by a Chord iChord interconnect, it gives a cracking sound — so good that you may find it hard ever to listen without it. An interesting niche product that a few headphone fanatics (such as yours truly) will find compelling. [Contact: Hi Audio on 08450 525250, www.hiaudio.co.uk]

**SANDISK SANSU FUZE 4GB**
£64

**COVON AUDIO DZ 4GB**
£99

**APPLE iPOD NANO 4GB**
£99

**SONY NWZ-A826 4GB**
£120

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Road Thrill

Summer’s here, and the chances are you’ll be leaving your beloved hi-fi at home for a week or two as you hop off on holiday. With this in mind, Steve Green looks at four cheap ways of taking your music on the move, whilst David Price is your travel guide...
This is SanDisk's latest MP3 player, available with flash memory sizes of 2 and 4GB, and it comes in four different colours. The player was the second smallest in the group test, measuring in at 7.8cm tall by 4.8cm wide, and its chunky body felt very solidly built. The Sansa Fuze has some striking similarities to the iPod nano: it's a similar size and shape, and it uses a scroll-wheel for navigation. Then again, you can't blame a manufacturer for copying features from a device that's as impressive as the nano, and the Sansa Fuze is very easy to use, which is due in no small part to its use of the scroll-wheel. Having said that, the Sansa Fuze's user-interface is but a pale imitation of the nano's. The Sansa's scroll-wheel actually rotates, whereas the nano's is touch and motion-sensitive like a laptop's touch-pad, and the Sansa's wheel simply has a cheaper feel to it. The nano's display was also characterised by its super high pixel density, which rendered text superbly well, whereas the Sansa Fuze's display had the lowest pixel density out of all of the players, which resulted in text being rendered poorly, as it had a fuzzy and blocky appearance.

This situation arises as the Sansa Fuze was the only player in the group test not to use a 320x240 pixel QVGA display, rather it uses the much lower resolution QCIF+ format, which consists of 220x176 pixels. As a result of this lower resolution, the picture quality of video files was significantly lower than on the other players. In terms of video support, the Sansa Fuze could play low-resolution MPEG-4 SP (Simple Profile) video files, although Sandisk has developed a software application called the Sansa Media Convertor, which allowed conversion of MPEG-2, MPEG-4 SP and H.264 video files to the format required for playback on the Sansa. The SanDisk was also the only player not to support JPEG files, and the media conversion software had to be called upon to convert JPEGs to bitmap (BMP) files so that they could be viewed on the player. Unfortunately, the conversion software had its problems, because it occasionally selected the incorrect aspect ratio when converting video, and it sometimes cropped the sides off photos. The image quality of photos didn't suffer as much as video files did from the Sansa's comparatively low resolution, although it varied according to the content of the photo.

The Sansa Fuze supported the MP3, WMA, WMA protected, WAV and the Audible (audio book) audio formats. Album artwork was displayed for the track that was being played, which was a feature that all of the players provided. The Sansa Fuze includes an FM radio with 40 presets, which provided reasonably good sound quality on stations with a strong signal, although the tuner itself wasn't very sensitive. FM stations could be recorded to the player's memory, as could voice via a built-in microphone. The memory size could be expanded up to 8GB via the MicroSD/SDHC memory card slot on the side of the player, and USB 2.0 was supported for fast file transfer. Battery life was identical to that provided by the nano, with 24 hours of music and 5 hours of video playback on a single battery charge, and the Sansa supported the Windows, Mac and Linux operating systems.

**SOUND QUALITY**
The Sansa Fuze's sonics made up to some extent for some of its drawbacks, as it delivered a highly energetic sound, with a good soundstage and a strong bass. The Sansa's dynamic sound benefited both the better quality tracks and those that hadn't been so well produced, although things weren't all plain sailing, because the energetic sound sometimes overstepped the mark and the audio became bright as a result. The brighter than neutral nature of the Sansa's sound also made the other players sound more mature and refined in comparison. Overall, the Sansa Fuze is a very good value-for-money player, because it's easy to use and for the price the sound quality is very impressive. However, it's a bit out of its depth against the other units in this group test, which could be described as being heavyweights of the MP3 player market.
COWON iAUDIO D2 £99

M P3 player specialist Cowon jumped onto the bandwagon at an early stage, and since then has managed to build up a loyal online fan base due to its reputation for building quality players. The iAudio D2 is one of Cowon’s latest crop of flash-based players, and is available with either 2, 4, 8 or 16GB of memory. The iAudio D2 was by far the bulkiest device here, as it was between two to three times as thick as the other players. In return for its larger frame, the iAudio D2 did have the largest screen-size of 2.5", and was the most feature-packed too.

The D2’s screen was its standout feature — at least on paper — as it was touch-operated. Cowon provided a mini stylus for use with the touch-screen, but most of the time I resorted to using a fingertip, as I’d imagine most people would, simply because the stylus wasn’t to hand. The Cowon was admittedly significantly easier to control when I used the stylus, but even when I did use it the navigation was far too slow and fiddly for my liking. The icons and menu items that had to be clicked were very small, and there was very little margin for error in where you clicked. The menu structure was unintuitive as well.

Worst of all, however, was that to perform an action, such as to play a different file, it required lots of clicks on the screen which, combined with the fact that the touch-screen was already fiddly to use, made operating the Cowon painfully slow. Touch-screens may be all the rage due to the iPhone using one, but Cowon would do well to remember that they’re supposed to make operating devices easier, not more difficult...

Like on the Sony and the iPod Nano, the Cowon’s screen consisted of a 320x240 pixel array (QVGA format), and the small white text on pale blue background was easily readable despite the relatively low contrast level. The default background wallpaper could be changed to one of your own JPEG images though, if you don’t fancy the pale blue background. It supported the MPEG-4 SP (Simple Profile) and WMV video formats, and picture quality was excellent.

The video quality was usually on a par with that on the iPod when both were playing decent quality video files, and it outperformed the Sony, due to the Cowon’s picture having a higher contrast ratio. The image quality of photos was also very impressive. One drawback when it came to playing video, though, was that the picture’s aspect ratio couldn’t be changed, so viewing 4:3 material didn’t use the full screen.

The D2 supported the MP3, WMA and WMA protected, OGG and WAV audio formats, plus it was the only player on the group test that supported the popular FLAC lossless codec, and it supported the lesser-known Monkey’s Audio lossless format as well. The D2 came with an FM radio built-in as standard, which performed adequately. The 4GB and 8GB models are also available with DAB, which costs an extra £40 on top of the price for the non-DAB versions.

The Cowon provides 52 hours of music and 10 hours of video playback on a single battery charge, which were the highest battery life figures out of all the players on the group test. Additional features included an SD/MMC memory card expansion slot, recording of voice or FM, direct audio encoding, and video files could be output to a TV set. The D2 supports the Windows, Mac and Linux operating systems.

SOUND QUALITY

The Cowon was exceptionally good in the sonics department, as it delivered a highly dynamic sound, with instruments and vocals having very good levels of detail. Due to its big and energetic sound it brought in instruments and vocals to life more than the other players were able to. The soundstage was also very impressive, with instruments being well separated, and there was better coherence between instruments than on the other players. Overall, the Cowon simply delivered music that was more engaging to listen to than on the other players. Unfortunately however, the excellent audio quality was let down by the poor touch-screen-based user-interface, which spoiled an otherwise excellent product.

VERDICT

Super audio and fine video quality, but its touch-screen lets down what is otherwise an excellent product.

CO Won iAudio D2 4GB £99
Cowon Systems Inc.
C +44 (0)131 273 4387
advancedmp3players.co.uk

FOR
- excellent sound quality
- strong video

AGAINST
- fiddly touch-screen
- bulky design
Despites only being released in 2005, the latest version of the iPod nano is now the third generation of Apple’s best selling mini MP3 player, and changes made for the latest version include a full redesign of the casing and video support. The nano also was the smallest of the players in the group test, and its wafer-thin 6mm thickness made it perfect for slipping into a jeans pocket. Build quality was also superb, as the anodised aluminium front and polished stainless steel back gave it a reassuringly solid feel.

The iPod’s legendary user-interface needs little introduction, but it should still be said that the nano was the easiest to use of the MP3 players in the group test by some margin. It’s really Apple’s attention to detail that sets the nano’s user interface apart from the rest. The iPod’s scrollwheel is the best method invented to date for scrolling through long lists; the high resolution display rendered the text immaculately, which made the menus very easy to read; and the menu structure is so simple that even the most hardened technophobe should be able to get the hang of it in minutes. The nano’s interface also included some smaller touches that the other manufacturers overlooked, such as intelligent backlighting. Another nice feature was that album artwork, photos and video screenshots were displayed next to the menus, which greatly enhanced the interface’s overall appearance.

The nano’s display also had by far the highest pixel density out of the players in the group test. The nano, the Cowon and the Sony all used the QVGA screen resolution, which consists of 320x240 pixels, but the nano squeezed these pixels into a 2” screen, whereas the Cowon and the Sony had 2.5” and 2.4” screens respectively. As a result, the nano had the sharpest picture when playing video or displaying photos, and the picture quality was highly impressive. However, for viewing longer programmes, it should be said that the players with the larger screen sizes would be significantly easier to watch than the nano’s 2” screen! In terms of media formats, the nano supported MP3, AAC and protected AAC (from the iTunes Store), Audible (talking books format), Apple Lossless, AIFF, and WAV audio; and the nano could play H.264 and the MPEG-4 SP (Simple Profile) video files. The photo viewer could display JPEG image files.

One drawback compared to the Cowon D2 and the Sansa Fuze was that Apple hasn’t integrated an FM tuner yet. Another issue that some people wouldn’t be very keen on is that, rather than allowing files to be dragged and dropped onto a removable disk that appears in Windows Explorer (or equivalent), which all of the other players allow, files have to be loaded onto the nano via iTunes. Using iTunes does have its compensations though, such as that new files in the iTunes library are automatically uploaded onto the iPod when it’s plugged into the USB socket for battery charging. The final issue is that the Linux operating system isn’t supported. The nano provides 24 hours of music and 5 hours of video playback on a single battery charge and like all of the players in the group test, it supports USB 2.0 for fast file transfer.

**SOUND QUALITY**

Sonically a bit of a mixed bag, on the large majority of tracks, the nano was a joy to listen to, as it delivered a clean and refined sound, which was neither too bright nor too bassy. On some tracks however, it tended to lack that little bit of bite that’s required to deliver high levels of precision and detail to really bring the music to life, and the soundstage was sometimes lacking a little in energy and definition. Tracks that the nano delivered very well tended to be those that had been well produced, but the flip side of this was that the less well-produced tracks, which do need that bit of a kick to lift them, didn’t receive one. It’s a shame that the sound quality lets the nano down a little, because in all other respects it is an exceptional product.
SONY NWZ-A826
£120

The NWZ-A800 series is Sony’s latest generation of Walkman MP3 players, which consists of the NWZ-A826 tested here with 4GB of flash, and the 8GB NWZ-A828. Standing 9.3cm in height, the Walkman was significantly taller than the other players in the group test, which was due to Sony placing the large 2.4” display longways instead of breadthways. The display itself was very attractive, with nicely rendered text as a result of the display having the second-highest pixel density after the nano’s screen, and the use of high contrast white text on a black background was also highly visually appealing in its own right. The Sony was very easy to use, as files could be located quickly via the four-way navigation button, and the menu structure was very simple to understand. I have to say that I still preferred the scrollwheel-based navigation on the Sansa Fuze and especially on the iPod nano, though.

One of the main selling points of the NWZ-A800 series of Walkman is its Bluetooth stereo audio connectivity (using the A2DP Bluetooth audio profile), and Sony has bundled a free pair of Bluetooth headphones along with the Walkman. Setting up the Bluetooth connection between the Walkman and the headphones was a piece of cake, as there was a dedicated Bluetooth button on the side of the player, which automatically set up the connection between them. However, the headphones themselves provided such shocking audio quality that I only managed to listen for approximately 1.386 seconds before I couldn’t bear it any longer! As well as Bluetooth audio, the Sony supports the MP3, AAC (but not protected AAC from the iTunes store), WMA, WMA protected and the WAV audio formats.

The Sony supported the same H.264 and MPEG-4 SP video formats that the nano did. However, whereas the nano was quite flexible in terms of what files it would play, the Sony refused to play files that had a higher resolution than 320x240 pixels. On files it did play though, picture quality was very good, especially when using items that had been encoded in the H.264 format. The Sony’s picture didn’t have the high contrast ratio as the Cowon or the nano, though, and those two players pipped the Sony in terms of picture quality as a result.

The reason why the display had been placed longways instead of breadthways became evident when watching video as well, because the orientation of the picture could be rotated so that video and photos could be viewed with the player on its side to take full advantage of its large display. The operation of the buttons also followed the orientation being used, so for example pressing down what appears to be the right-hand button always fast-forwarded the video. The Sony also resized programmes that were using a 4:3 aspect ratio so that they filled the screen, whereas the Cowon wasted a large portion of the screen displaying black bars around the picture. The Sony’s battery life was second only to the Cowon, as it provides around 35 hours on a single charge when playing audio, and between 8 to 10 hours when playing video. The Sony supports the Windows, Mac and Linux operating systems. Similar to the case with the iPod nano, the Sony doesn’t include an FM tuner or support voice recording, whereas the Cowon and the Sansa each offer both of these features.

SOUND QUALITY
The Sony provided excellent sound quality, as it delivered a very energetic and precise sound, without becoming too clinical. The soundstage was also very impressive, as instruments were well separated and they were delivered with impressive levels of detail. The Cowon also had an energetic sound, but whereas it sounded punchy and bassy, the Sony was lighter and a little brighter in comparison. This led to it being very impressive in terms of adding life to tracks that hadn’t been very well produced, some of which sounded quite flat or gravelly on the other players. Overall then, the Sony is an excellent all-round MP3 player as it performs strongly in all areas, and it has no significant weaknesses to speak of.

VERDICT

With strong performance across all areas, this is an excellent way to play music on the move.

SOUND QUALITY
- excellent sound quality
- good video quality
- attractive user-interface

AGAINST
- video file support
The RED Reference CD player has been designed as the ultimate source component. With stunning looks and state of the art design, the RED utilises groundbreaking technology to give the most accurate reproduction of compact disc that can be obtained. Shown here with the CPA 5000 Pre-Amplifier with the latest High Frequency power supply and ultra low noise circuitry giving an amazing noise floor performance below -130dB.
Two things struck me whilst testing these four devices: firstly, how great the best MP3 players can sound; and secondly, how good value-for-money the breed has become over the last two to three years – video support only used to be included on expensive top-of-the-range MP3 players, but it has now become standard on all but the cheapest devices. And most surprising of all was how good quality the video can be on the kind of easily affordable players that are included in this group test. Still, this being Hi-Fi World we were most concerned with audio playback, build quality and usability, and with this in mind here are the rankings in reverse order...

At the bottom of the pile is the SanDisk Sansa Fuze. There can be no argument that the Sansa Fuze is the best value-for-money, because it’s significantly cheaper than the other players, yet it provides sound quality that was broadly comparable. The Sansa Fuze’s low resolution display was where it really fell down against its rivals, though, because it simply wasn’t in the same league as the other players in terms of how good the user-interface looked, or how good the picture quality on video was. It’s also important to note that it wasn’t screwed together especially well – too much cheap plastic was used both on the front panel and the control buttons. It was an aesthetic copy of the iPod nano, but this didn’t extend to the latter’s use of aluminium in its fascia or its sublime ergonomics. It actually sounds as good as the little Apple, but in other respects should be regarded as the poor man’s Pod.

Next came the Cowon iAudio D2. It might surprise you to see the MP3 player with the best sound quality and arguably the best picture ranked third out of four. Ultimately though, these devices have to be used, and the usability aspect really is more important on an MP3 player than it is on any other kind of audio device you could care to mention, because people store a large number of tracks on MP3 players, so a key consideration is how quickly and easily these tracks can be located. Unfortunately though, the Cowon’s touch-screen is simply a major hindrance to the whole process, so for that reason alone I can’t recommend people to buy one, hence it coming last out of the better quality players. I’m sure one of the other current crop of Cowon’s better quality MP3 players would sound just as good as the iAudio D2, though, so for people who’re after an MP3 player with very good audio quality, they could do worse than to audition a different Cowon player to this one. The D2 is a classic case of the misuse of clever technology, and a glaring contrast to Apple’s implementation of a touchscreen on the superb (to use) iPod touch.

Runner up is the iPod nano. The reason why I’ve ranked the nano ahead of the Cowon is simply because the nano is the exact opposite of the Cowon: the nano has such an amazing graphical interface that it turns the act of locating a track on an MP3 player from being a chore into an enjoyable experience, whereas if I never had to click the Cowon’s touch-screen ever again it would be too soon! And let’s not forget iTunes – which makes the most of the iPod (as you’d expect) with its seamless integration, podcast handling and general brilliance as a music manager.

Thumbs up also to both the nano’s and iTunes’ use of the AAC codec – the best sounding compressed format and better than MP3 by far. Video was very well implemented on the nano, as the picture was nice and bright but it still had a good contrast ratio. Unfortunately, even running high bitrate AAC the audio on the nano lets the product down as a whole, though. The quality was good overall, but just sounds a bit dowdy sometimes – it lacks that extra something that’s required to let the music really shine. So hopefully when the inevitable fourth generation of the iPod nano is being designed, Mr. Jobs will upgrade the digital-to-analogue converter chip and/or the analogue output stage, so that the audio can match the rest of the product in terms of excellence. It’s such a shame, as this is the only blot on an otherwise utterly immaculate copybook.

Congratulations then to Sony. Although it might seem as if they’ve won this group test by default due to the failings of the Cowon and the nano in certain departments, this shouldn’t detract from the fact that the Sony is actually an excellent all-round MP3 player. It also shows how well the Walkman is progressing – a few years ago the Japanese giant was miles behind the rest, with clunky expensive gadgets running ATRAC 3 that had to be transcoded. Now, you can even plug it in to a Mac via USB and drag and drop AAC files recorded in iTunes to it, and the Sony will play them superbly – so it really is a much more universal product now. Indeed, its sonics are a treat – unlike the nano the Sony’s energy, resolution and dynamics really let the music’s flavour flood out. It was the only player that made the most of the audio on all the tracks it played, whereas some of the other players sounded great on some tracks but mediocre on others. The Sony also had an attractive display, and it was very easy to use. When taken as a whole, video was also well implemented too. With today’s feature-packed MP3 players, you’re buying an overall package, and in that respect, the Sony is an excellent product and a worthy winner of this group test.

"with today's feature-packed MP3 players, you're buying an overall package, and in that respect the Sony is a worthy winner..."
Seemingly from nowhere, Leben's CS300X valve integrated goes straight to the top of David Price's hi-fi wish list...

Say "made in Japan" and you automatically think of massive corporate consumer electronics companies – the Sonys and Matsushitas of this world. What few realise however is that, precisely because the Japanese domestic hi-fi market is so big, there's room to support a very healthy group of specialist manufacturers, doing very different products to your average Yamaha A/V receiver...

This is made all the more interesting by the Japanese cultural phenomenon known as otaku. It's a powerful word in their language, denoting a subset of people who are absolutely obsessed with their hobby. Funnily enough, the phenomenon is something we have here in the UK too (the Hi-Fi World team please take a bow!) but there's no word in our lingo apart from 'enthusiast', which seems awfully lame by comparison.

The Leben Hi-Fi Stereo Company is the dictionary definition of an otaku brand in Japan. Small, massively specialist and way off on a tangent compared to almost all others, this company is as special as the likes of Ikeda or Koetsu. Its products live in a bubble that's as divorced from the mainstream as Morgan cars are from General Motors. They're hand built in small numbers, the UK importer sells out all he can get practically by word of mouth, and basically you have to ask nicely to even be considered for the privilege!

On the slightly eccentric website, Taku Hyodo (founder, designer and owner) is modestly described as being "ranked as one of the best eight tube audio design engineers in Japan", no less! The reason for this is that he is ex-Luxman. Lux is another company with a massive reputation for audiophile greatness in Japan, and home of a nifty tube amplifier or two. His bio also notes that he's a talented musician and previously a professional guitarist. And Leben, just in case you were wondering, means 'alive' in German...

He left Luxman aged thirty, back in 1979 and started his own Kouri Denki Company, producing electronic components and parts. This lead to Hyodo-san bringing out his first commercial product in 1991, the KFH Triode 33 (using 3C33 tubes) and then the Leben RS-35a (with 6L6GCs) in 1995, then the RS-28c preamplifier (running E288CCs) in 1998. These are all cult products, so much so that there's actually a fanclub in Japan (the Leben Audio Lovers' Club)! Now, the company is making some more affordable designs, such as the CS-250 and CS660P power amps, CS-300 integrated and CS600 preamp.

The £2,400 CS300X Limited tested here is a special version of the regular £1,600 CS300 – itself a 12 Watt integrated amplifier using EL84 tubes in a simple point-to-point wired, self-biasing push-pull circuit, with in-house made transformers, presented in a delightfully retro case with wooden side panels. The Limited Edition is basically a cost-no-object build of the stock amp with rare new old stock Mullard EL84s fitted. When it's sold out, you'll have to look on the second-hand market or go for the stock CS300!

If you're expecting massive high end Denon-style design, forget it...

"it lets the music jump right out at you, like a puppy set free in the park..."
albeit of unimpeachable quality, while the Canadian white ash wooden side panels are superb.

There are couple of unusual fittenents on the fascia — a two-stage bass boost (+3dB and +5dB under 100Hz) and a headphone socket (wired directly from the output transformers). A small 'Operation' lamp comes on about twenty seconds after switch on, when the valves are warmed up. Round the back are high quality gold plated phono sockets for five inputs, an IEC mains input and four pairs of speaker binding posts, very nice affairs which take thin bare wire, spades and banana plugs. Then there's a speaker impedance selector switch with four, six, or eight ohms settings.

Inside, it's a veritable sight for sore eyes. The gold painted chassis is visible and of superb finish — reminding me of a pristine Leak TL 12 — and on it sits four EL84s (NOS Mullards fitted to the CS300X) and two General Electric 5751 (which Leben describes as "a premium version of the 12AX7A, again special for the CS300X). The associated transformers all have Leben engraved on them, and the chunky internal wiring is immaculately done. Top passive components are fitted, including precision industrial grade resistors, Sanyo 'OS Condensor' and ELNA Silmic capacitors, 4W high power cathode resistors and Toshiba 3TH41 damping diodes. This little amp runs fairly warm, but not as hot as you might expect.

**SOUND QUALITY**

It's hard to review the Leben using standard criteria, simply because it's so non-standard! Just as you can't criticise a racing bike for its limited off-road capability, so the CS300X can't be admonished for its very modest output power and lack of the sort of crash-bang-wallop you'd get from a Naim NAP500 power amplifier. Rather, this amplifier writes its own rule book. Of course, it's not immune to the laws of physics, so it can only drive high sensitivity loudspeakers, and the more the better. In my room I got perfectly acceptable levels from my reference Monitor Audio PL 100s (quoted sensitivity 88dB), but for more oomph I moved to my pair of classic Mission 752s (91 dB) in my largish listening room, where it sounded relatively unstressed.

Indeed, perhaps the word 'unfettered' is more accurate, because when you listen to this little box it makes music bounce out of the speakers in a tremendously jaunty and carefree way. It's an exceptionally spontaneous performer, making it sound like all the musicians in the studio really wanted to be there, and were bubbling with enthusiasm about the music when they laid down the track. It's a fascinating contrast to — for example — the very fine Rotel RB1092 power with its 586W per channel. For all its massive power, this makes music sound controlled, studied, ordered and kept on a leash. The Leben however, with a piffling 8W or so (see MEASURED PERFORMANCE) actually sounds more powerful in one respect, as it lets the music jump right out at you like a puppy set free in the park.

Such a joyous, upbeat sound is the defining characteristic of the CS300, but not its only standout trait. Another thing that instantly hit me when playing the acoustic jazz funk of Freez's 'Caribbean Winter' was its superb tonal palette. No, I don't mean vast amounts of rosy, sepia-tinted colouration, I mean the ability to accurately convey what an instrument sounds like; just when it starts and stops and how loud it goes. It certainly doesn't have the icy clear tonality of something like a Sugden A21SE — it is definitely on the warm and smooth side — but neither does it make every instrument sound universally soft and fluffy. As such, pianos have rich resonances, brass has rasp and cymbals have an eerie metallic sheen. This is remarkable, inasmuch as the Leben does it so well that going back to a transistor amp, or even most valve amplifiers, makes the music suddenly sound a lot more one dimensional...

Steely Dan's 'Midnight Cruiser' was more of the same — a lovely, breezy romp through a melancholic jazz-rock classic. Given this little amp's modest power, I'd expected soft dynamics and a generally sat- upon sound, but at twelve o'clock on the 40-step volume control, there
just for your musical bliss

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World Radio History
was still plenty in the tank. Snare and kick drums punched confidently out of the mix, with truly surprising speed. True, you couldn’t hear the first millisecond of every transient as you can with some transistor amplifiers — rather, the Leben’s fleetness of foot came from the effortless way it seemed to go from quiet to loud (and back). Rather than etching the leading edges of the notes on your cranium, it handled dynamic swings like they were its vocation in life.

Again, the result was a wonderfully organic and natural sound, Donald Fagen’s voice dripping with texture and his phrasing oozing emotion. Behind this was Steely Dan’s characteristically ultra-tight backing band, sounding like they were doing the greatest take of their studio career. It all sounded so fast, so immersive and so musical that I wanted to keep listening all night.

There’s more to sound than just exuberance though — Kate Bush’s ‘Aerial’ was rendered in a captivatingly subtle way. Those famous chilly vocals of hers gained a fraction of welcome warmth, and once again seemed to be ‘let out’ for the day. Her gentle phrasing was enchanting to hear, and the way she intoned her vocals was quite special — moving on to rock music confirmed the superlative build, quaint but loveable styling and purity of purpose isn’t something you see from many manufacturers, Japanese or otherwise.

“the Leben proffered a vast, wide soundstage”.

Pressing of Vivaldi’s ‘Four Seasons’ (Karajan, Berlin Philharmonic) again was a revelation, the strings of soloist Michel Schwalbe ringing with harmonics where normally what I hear is more like a monochrome photocopy of the same. There was tremendous space to the recording, yet it was highly immediate at the same time. If there was a criticism here, it was a slight lack of body to the cellos, which didn’t have the physical presence I’d have wished for: “Now I get it”, thought I, as I turned up the bass boost to +3dB, and lo and behold the orchestral sound suddenly acquired real scale. In my system though, I thought it was too much. I’d have preferred 1dB, so heaven knows who’s going to use the +5dB booster.

Moving on to rock music confirmed this; Suede’s ‘Animal Nitrate’ was a little light down south for my tastes (although admittedly so is the original recording). The Leben dived into the music, giving its customary gleeful performance, investing the song with a great sense of urgency and momentum, and not to mention energy from its turn-on-a-sixpence dynamics, but bass weight came there none (well, very little). It’s a tad warm in the upper bass, making up for its perceived lack of low frequency clout, but when you hear a really low bass note it’s simply not the Leben’s highest priority. This isn’t to say that it’s slow — quite the reverse; this amp bounds up and down at the low end like a spring; it’s just that you’re never going to get furniture moving physically from it.

CONCLUSION

As I’ve said, you have to look at (and indeed listen to) the Leben CS300X Ltd. on its own terms. This done, it’s an utterly exceptional integrated amplifier that bests virtually everything else I’ve heard. I simply can’t think of anything with such an unfettered, open and musical nature — and one that renders the natural tonality of acoustic instruments so naturally. But in buying in to this amplifier, you have to realise it is not going to drive a pair of stiff speakers of mean sensitivity — and nor will it make relatively easy loads sound like a high end public address system. If you listen at modest levels and go for a big heart ahead of a fat bottom, then this could be for you. I am genuinely impressed by Leben — the superlative build, quiant but loveable styling and purity of purpose isn’t something you see from many manufacturers, Japanese or otherwise.

REFERENCE SYSTEM

Mission 752 loudspeakers
Sugden IA4 integrated amplifier
Monitor Audio PL100 loudspeakers
Mission 752 loudspeakers

MEASURED PERFORMANCE

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-97dB
-1.5
-400mV
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-0.8%
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Clean Fun!

A sophisticated active electrostatic loudspeaker for just £2,390, Noel Keywood found MartinLogan’s Purity a most enjoyable listen...

My Quad ESL-63 electrostatic loudspeaker’s departed this planet long ago, life in the review lane having taken its toll. Also, truth be told, they needed a bigger room - so I could get in as well! A 17x14ft urban lounge isn’t enough for big Quads sitting atop Celestion SL6000 subwoofers. I’m a diehard electrostatic fan though, a condition I developed after owning Braun electrostatics, so I was happy to review MartinLogan’s new Purity. It comprises an electrostatic panel atop a pair of conventional woofers, both driven by a 200 Watt internal amplifier. This is a loudspeaker that would fit my lounge and it’s probably just as well they never made it there as it’s likely they never would have made it back! I ended up listening to the Puritys at Hi-Fi World towers, in a 28ft square room easily able to accommodate them.

Measuring 135cms high but only 24.5cms wide and 37cms deep, the Puritys are compact as electrostatics go. That’s because the open panel you can see at the top reaches down to 450Hz and does not handle bass, where longer wavelengths demand a bigger panel. Below this frequency they cross over to an active bass unit, where the amplifier is housed in the cabinet. That means each loudspeaker needs mains power, but then electrostatics always do.

It also means that loudspeaker cables are not needed; we ran signal cables from a Creek OBH22 passive preamplifier fed by a Yamaha CD-S2000 CD/SACD player, a near perfect drive system for a loudspeaker like this as the smooth sophistication of SACD could be enjoyed on electrostatics, something that gets a big thumbs up from me. This is real high fidelity at relatively affordable prices, since the Puritys cost £2,390, an unusually low price for any electrostatic, let alone one with its own amplifier.

MartinLogan also fit loudspeaker inputs, allowing them to be connected into a system as it stands. However, contrary to comments I saw on the ‘net, these do not give direct connection to the drive units, but attenuate the input down to suit the internal amplifier that then feeds both drivers through a passive crossover on its output, MartinLogan in the U.S.A. told us.

The Puritys were designed to be sensitive enough to run from an iPod, generating a high 95dB SPL from
cabinets have an artificial veneer which isn't especially lovely, but that was no surprise considering price and what's on offer.

**SOUND QUALITY**

The Puritys exhibit all the strengths of electrostatics in spades, if some of their weaknesses too. They set up a fabulously wide sound stage, in the plane of the loudspeakers, that has ethereal height and on which images have a hard-etched outline. This gave a full scale canvas on which the choir and soloists of the Berliner Philharmonica filled the end of the room singing Beethoven's Missa Solemnis, towering in an arc before me as if I had a seat at the concert hall.

Also lifted to a seat with the gods was Hugh Cornwell, singing 'Always the Sun', as sustained organ chords whirled around slightly below and an opening drum roll from Jet Black dived from hard left to far right with breathtaking clarity. The Puritys' huge sound stage worked as well with the Stranglers as it did with a choir and here the MartinLogans took me back to my days with Quad ESL63s and their celestial imaging. With rock recordings, where images are placed with pan pot precision in the final edit, positioning was perfectly revealed in an explicit manner conventional loudspeakers can only mimic.

Accompanying vocals in Spanish appeared just over Toni Braxton's right shoulder as she sang 'Spanish Guitar'. Her voice had a liquid clarity that you only get from a film-like electrostatic panel, completely free from colour and also the deadness of the image that comes from lost subtleties, absorbed by the heavy materials in conventional cones. The Puritys made clearly apparent how hard Toni Braxton was working at her vocal intonation, with their breathtaking portrayal of her voice, that hung clearly in front of me, I could easily make out echo from the studio microphone too.

Spinning Amy Winehouse's 'You Know I'm No Good' had kick drum sounding large and solid, centre stage. Ride cymbals were picked out with pinpoint precision and had real bite, but there was some spitch behind their delivery. Ms. Winehouse sang with a clarity that was unrivalled by conventional loudspeakers: the interjected, gently swelling in a broad swathe across the room, although there was superb differentiation between instruments, equally there was also a little coarseness, the same effect that brought a 'spitch' to sibilance I believe.

Whilst this was also evident with the vigorous strings that embellish the Overture of Wagner's Reinz, the choir and soloists of the Berliner Philharmonica filled the end of the room singing Beethoven's Missa Solemnis, towering in an arc before me as if I had a seat at the concert hall.

Moving the Puritys away from the walls then gave better bass balance and quality, allowing the bass switch to be set to flat. I then stood some absorptive panels a few feet behind the open panels to soak up rear radiation, a trick I used with my Quads. Electrostatics always need fine tuning like this so there's nothing unusual here.

Optional spikes provide an extra measure of adjustment. The lower Puritys again showing their masterful way with vocals.

Electrostatics not only image and reproduce vocals well, they give fantastic results at low levels, due to lack of mass and stiction. This was very obvious in the chiming purity of each key of Lang Lang's piano as he worked with restraint through the quieter parts of Rachmaninov's Piano Concerto No2. Often I find myself gently increasing volume on the remote control to better discern pianissimos, but each note sprang clearly from a perfectly silent back drop (because there's no reflected energy), causing me to hold my breath so as not to disturb the perfection of the playing and its delivery into the room from the Puritys. As strings of the orchestra...
Stepping beyond CD....and even vinyl....
LINN Digital Stream Players (DS)

LINN

MILESTONES FOR THE SCOTTISH COMPANY
1972, Sondek LP12 Turntable
1976, Isobarik DMS/PMS loudspeaker
1991, First CD Player & DAC converter - Karik/Numerik
1999, Sondek CD12 4D Transcription compact disc player
1999 Klimax SOLO Power Amps, 500W, RMS into 4 ohms
2003, Unidisk multi-format disc players
2007, LP12 SE with Keel sub chassis and EKOS SE tonearm

NOW
2007, Klimax DS solid-state digital music network player
2008, Sneaky DS with power amplifier, Majik DS and Akurate DS
2008, Klimax Loudspeakers launch

If it sounds better it is better
CD players have to read the digital data and convert it to music at the same time.
The CD mechanism, laser, and related technology add noise, heat, vibration and electrical interference which compromises the conversion process of digital data to music - the element that most affects audio quality.

Open Day with Ivor Tiefenbrun MBE presenting the Ultimate System at studioAV on Friday 29th August 2008

Book your place at this event by contacting us on the details below. Places are limited so RSVP as soon as possible to avoid disappointment. With special event day prices otherwise call or visit our showroom Tuesday to Saturday 10am - 6pm to demo/purchase
Between the two perforated steel stator panels, front and back, lies a very fine, clear plastic film, a bit like clingfilm. In MartinLogan's words it is a "low-mass PET (polyethylene terephthalate) diaphragm on which there is a thin-film conductive coating". The large holes in the stators "expose more of the diaphragm surface, dramatically expanding effective radiating area without increasing panel size, while spacers help maintain their stiffness without impairing the signature transparent look of MartinLogan electrostats".

It takes thousands of volts of audio on the stators to produce electrostatic forces strong enough to drive the light diaphragm backward and forward, achieved by using a step-up transformer. MartinLogan apply an insulator coating to the steel stators to make them safe. This removes much of the obstruction to sound transmission presented by electrostatic stators and protective covers.

What's special about electrostatics? The diaphragm is super light and driven over its entire surface, so it can follow musical subtleties better than a heavy cone. There is no box too; the rear wave is "lost" into the room. The result is a super clear and highly insightful sound free from colouration. Electrostatics have very low distortion too, but they tend to beam sound to a sweet spot.

The Eagles' Somebody opened, and I am not so wedded to bass quality that all else is subservient. In a nutshell, the Puritys played the Eagles in technicolour and I loved what they did. I did suspect that the Puritys would go so loud, and then not much louder, but it was loud enough for me.

**CONCLUSION**

MartinLogan's Purity active electrostats are a rare, and for many fantastic, experience. Of course they're not perfect, but you can say that of any loudspeaker. But what they do is show how cone drivers in boxes can produce a dull, bleak, slow and contrived sound. One listen to the sparkling clarity, glorious sound staging and immersive low level dynamics and detail of these electrostats will make you depressed with your existing boxes! Factor in their small footprint and room friendliness and you have a very special active loudspeaker.

There's little at the price to match these loudspeakers, I feel - they're a glorious experience, so much so that they have me hankering for much more. There's nothing to match a good electrostatic and £2,390 in this instance offers a unique experience, one well worth listening closely to.

**ELECTROKID**

MartinLogan's UK distributor Absolute Sounds is offering the superb Krell K1U high end iPod dock with a pair of MartinLogan Purity floorstanding electrostatic loudspeakers as the ElectroKid system for £3,740. See www.absolutesounds.com.

**MEASURED PERFORMANCE**

Frequency response of loudspeakers like these depends very much upon microphone position. The result published here is quite complementary, being what you get at the one-third off-axis position with the bass units well away from walls. Generally, over many sensitive walls (i.e., not from below) we measured a wide midrange plateau in output of +3dB or so, that will push vocals and instruments forward. Above 1.5kHz the electrostatic panel runs up to 20kHz, our analysis shows, listened to perpendicularly to the centre, one third off axis.

The bass unit runs down to 26Hz (-3dB) or so, which is very low, but then it is an active system and so can be 'forced' downward using equalisation. The port contributes quite substantially to output, the red trace shows.

Sensitivity is very high, quoted as 95dB SPL (loud) at 1 metre from 100mV input, which is what a battery driven MP3 player will produce.

**VERDICT**

A dramatic sound possessing the airy lucidity of a good electrostatic allied to the bass weight of a box loudspeaker.

**MARTINLOGAN**

**PURITY**

£2380

Absolute Sounds
C: +44(0)208 971 3909

www.martinlogan.com

FOR
- transparent midband
- panoramic imaging
- low level dynamics

AGAINST
- position-sensitive
- spitch with sibilance
- soft bass
or those younger readers who might think the preamplifier you see before you is strikingly modern looking and utterly fresh in its design, I am sorry to say it is not. As we audiophile veterans remember, back in the mid nineteen eighties, a young company called Musical Fidelity launched a peachy little full Class A integrated that looked very, very similar to what we have here — aside from the A1 FBP's backlit LC display and control buttons, of course. So there you go; we have further proof — as if we needed it — that we live in a post-modern world where the old comes back as the new!

I for one have absolutely no hang-ups about borrowing from the past for aesthetic inspiration. Anyway, I think many people confuse new design with good design, but they’re not the same. The bulbous, pumped up shape of many modern cars shows that just because something is new doesn’t make it right. Musical Fidelity’s eighties products were radically different looking — and had sound to match their styling.

You could say that the new A1 Fully Balanced Preamp (£1,499) is ‘affordable high end’, just as the original A1 integrated was. The company says it is designed to work with its 550K and 750K Superchargers (more of which next month), but also fills a useful gap in my recommended preamplifier upgrade path between the likes of Creek’s OBH-22 passive at £299 and Music First Audio’s Silver Passive Preamplifier at nigh on nine times that. Both are great products, but there’s a yawning chasm between the two — is the A1 FBP good enough to fill it?

Well, it’s generously specified, boasting a number of inputs including two fully balanced ones. It also has a proper MM/MC phono stage, a tape monitor, a USB input (meaning it has an internal DAC), a home theatre bypass, plus balanced and single-ended outputs. There’s also a power feed from its external four-stage choke-filtered power supply. The circuit topology is such that it — as the name suggests — works fully balanced throughout, as opposed to some so-called ‘balanced’ designs that are actually single-ended preamps with a balanced input and balanced output...

It is a nice bit of kit to look at, and is certainly well made — both boxes (preamplifier and power supply) conferring all the solidity of the original eighties integrated. However, I am not quite so convinced about the control buttons, which might feel fiddly to some users, while the volume control is a little drastic — one short prod sends it rocketing up! Still, these quirks don’t spoil the user experience, and certainly this reviewer liked the very sturdy and cleanly labelled back panel, making switching interconnects easy. It also has tiny switches round the back, toggling between home theatre bypass mode and the standard auxiliary input, and between moving coil and moving magnet cartridge options.

SOUND QUALITY

Given that it’s such a versatile beast, I ended up using the A1 FBP with a number of different sources and amplifiers, although I can confirm that running balanced yields considerably better sonics, so this is where I ended up — a Stello CD-T100/DA100 Signature providing a balanced output..."
into the Musical Fidelity preamp, which I then ran to my reference NuForce ReFi5E monoblocks, again balanced. I swapped the A1 FBP with my reference MF Audio Silver Passive Pre (at nearly twice the price, lest we forget) to gauge the Musical Fidelity’s sound.

This is a very open sounding device — even by the standards of my reference £2,500 preamplifier. I was quite surprised by its transparency and general lack of character. Indeed, if you can ascribe any particular ‘nature’ to it, it’s rhythmic ‘get up and go’, which on many similarly priced rivals has already got up and gone! Effectively then, we have a light, open and spacious sounding device with a propulsively musical sound.

Hero’s ‘Give In’ was first on the CD player and showed high levels of detail. It set up a very wide recorded acoustic in my front room, with a good deal of depth behind the speakers too. Strings were vividly etched, the Musical Fidelity showing fine instrumental timbres. Indeed, this preamp managed to be both light and bright in the upper mid and treble and strong in the bass. I found myself enjoying the crisply etched hi-hat cymbals and the sparkling harmonics of the violins, and at the same time being impressed by a strong and expressive bass line.

Indeed the A1 FBP demonstrated a vice-like grip on the low frequencies without stifling the emotion out of them. Soul II Soul’s ‘Keep on Moving’ was a case in point — as the whole track is driven by the looped synthesised bass line which pushes the groove. The Musical Fidelity held on tight, showing impressive speed and articulation even compared to my reference MF Audio Passive, which by contrast appeared to slow the bass line ever so slightly. This prowess with timing was evident right up the audio band — as the sequenced hi-hat loops showed. Again, the Musical Fidelity snapped them into focus, whereas they seemed just a touch diffuse and vague via the considerably more expensive reference.

Swiching to some electronic pop in the shape of the Pet Shop Boys’ ‘I’m Not Scared’, and this preamp showed just how clean and detailed it is, throwing vast amounts of information out at me but stringing it together adeptly all the same. It really is great on leading edges of notes, capturing the attack of snare drums with dizzying speed yet managing to cohere it together magically.

A spot of Herbie Hancock, in the shape of ‘I Have a Dream’, showcased the Musical Fidelity’s open soundstaging and natural musicality. By contrast, the MF Audio was a little darker and deeper, giving a fractionally less explicit but more subtle tonality to acoustic instruments. It didn’t push images out into the room with quite the same precision, but hung things back a little better and was fractionally wider overall. Interestingly though, and self-effacing products, but you have to pay a lot more and even then they’re not comprehensively better, as my comparisons show. With this in mind it’s a hearty recommendation for this as an excellent do-it-all ‘affordable high end’ preamplifier — and it just shows you that strikingly styled, retro looking hi-fi needn’t be all show and no go.

SECOND THOUGHTS

Hmmm, £1,500 preamp with built-in MM/MC phono stage? This I couldn’t resist... Setting up the A1 FBP in the Hi-Fi World listening room showed that the dynamic and gritty nature that David noted carries across into the phone stages as well, and Musical Fidelity have done a great job in keeping the character of the unit consistent across these inputs. Both the MM and MC stages are solid performers, nicely musical and very well focused, in image terms, across the centre of the soundstage. Lead vocals stepped smartly into the listening area, instruments were vivid and large-scale and the A1 FBP endowed drum kits with a delightfully solid ‘thwack’ to each strike. Comparing the two, I would say the MC input is a little more spacious and effusive across the upper midband, but both stages are highly competent and a welcome addition to an already excellent unit. AS

VERDICT

Excellent sonics plus fine connectivity win this striking looking preamplifier a recommendation.

MUSICAL FIDELITY A1 FBP £1,489

MUSICAL FIDELITY www.musicalfidelity.com

FOR

- fluid but focused sound
- airy, spacious treble
- propulsive bass
- retro styling

AGAINST

- fiddly buttons

MEASURED PERFORMANCE

Through the line level inputs, the Musical Fidelity FBP has a wide frequency bandwidth of 2Hz - 80kHz and offers a gain of x4.3; figures which were consistent across all possible permutations of Balanced and Unbalanced inputs and outputs. As a result the FBP should turn in a consistent performance no matter how you choose to connect it. Distortion was good at 0.007% and noise low at -73dB.

Equalisation accuracy of the phono stages was good with both MM and MC, the preamp showing a slight fall in its 75uS characteristic, so it will exhibit a trifle less upper midrange sheen than others, where there is commonly a small lift. The Musical Fidelity’s characteristic will suit modern cartridges though, which are becoming ever more bright and forward in their sound. A gain of around x300 is normally expected for Moving Magnet cartridges (x100 for the MM stage and x3 for the preamp). Gain measured out at x420 so it was usefully higher than expected and overload callings satisfactory. Input noise levels were much as expected too, 0.23nV for MM and 0.07nV for MC, the latter being low enough for high quality, low output designs.

All in all, the FBP is a versatile preamplifier that measures well and should be capable of a fine performance, AS.

CD/tuner/aux.

- Frequency response
  2Hz - 80kHz
  74dB

- Separation
  Noise
  Distortion
  Gain
  Overload
  Disc (MM)
  Frequency response
  10Hz - 30kHz
  68dB
  0.23nV
  0.006%
  x420
  22mV in / 9.3V out

- Disc (MC)
  Frequency response
  10Hz - 30kHz
  66dB
  0.07nV
  0.008%
  x2800
  3mV in / 9.3V out

- Distortion

- Distortion

- Distortion

- Distortion

- Distortion

- Distortion

- Distortion

- Distortion

- Distortion

- Distortion
Chord's brand new QBD76 is a DAC with a difference, says David Price, and it's not just the wireless Bluetooth functionality...

Radio Active

There's not normally an awful lot to get excited about when reviewing a hi-fi digital to analogue convertor. Generally they have a proprietary chipset, bought off the shelf from the likes of Burr Brown or Wolfson, a selection of digital inputs on the back and maybe even switchable upsampling to make life especially interesting. You plug it in, it sounds good (or bad), and errm, that's it!

This is not the case with Chord's new QBD76. There's so much in here that I suspect this magazine will be talking about it long after the ink has dried on the September issue. The reason for this is two-fold. Firstly, it has a unique bespoke DAC chip: a development of the one used in Chord's own superb DAC64, of which we are huge fans. Secondly, it introduces a completely new concept (for hi-fi DACs) - that of wireless Bluetooth transmission from a mobile phone. [see TOOTH WISDOM]

The QBD76 is essentially a 'mark II' version of the DAC64, doing things that chip architecture didn't easily permit seven years ago at the time of the original Chord's introduction. Thanks to a new generation field programmable gate array (FPGA) device (the Xilinx Spartan 3) which has no less than 1.25 million gates, a massive amount of functionality can be 'imprinted' on a single chip. Custom coded by Chord, it handles the switching of S/PDIF inputs, all digital S/PDIF decoding, digital Phase Locked Loop, the RAM buffer controller, the Watts Transient Aligned filter and the fifth generation Pulse Array DAC. This forms the heart of the QBD76, and is its single most defining characteristic because it takes control of the sound quality away from OEM chip manufacturers and puts it in the hands of Chord.

The changes are myriad, but suffice to say the new 5th generation Pulse Array DAC has had a lot of work, particularly on the noise shaper architecture with the aim of reducing noise (it now has 8th order noise shaping, and 2608 times oversampling and digital filtering). A new digital Phase Locked Loop has been developed using a highly accurate 115MHz clock. Data-related jitter is completely removed from the source, says Chord, and you're left with just random master clock jitter of less than 3ps cycle to cycle [see MEASURED PERFORMANCE]. As before, it features a switchable RAM buffer, which was left on for this review.

The unit itself is about as exotic as it is possible to make a digital to analogue convertor look and feel. It retains the DAC64's 338x60x145mm dimensions and hewn-from-solid feel (and 7kg weight), but adds a few more flourishes. As before, the large glass aperture showcases the circuitry inside (which lights up in red), but there's a second, smaller 'looking glass' showing a simple alphanumeric red LED display. This works in conjunction with the buttons on the top to give source selection, RAM buffer (off, minimum and maximum) and phase. Round the back, along with the very obvious Bluetooth aerial are a pair of balanced audio outputs and a pair of RCA phono outs, plus two coaxial and optical digital inputs, an AES XLR in and a USB input.

SOUND QUALITY

In short, this is the very best DAC I've heard to date. As regular readers
TOOTH WISDOM
Advanced Audio Distribution Profile (A2DP) is a subset of Bluetooth, designed to send high quality stereo or mono audio from one device to another. Although designed ostensibly for streaming audio from a mobile phone to a wireless headset, Chord have harnessed it to work with their new QBD76 DAC and Chordette Gem Bluetooth music player. The system works well on the QBD76, locking on to a new Nokia A2DP-compatible phone and playing AAC files in a stable, fuss free way once the usual Bluetooth "handshaking" has taken place (it initially requires you to enter a code before it recognises the Chord as a Bluetooth device). Of course, this isn't the primary function of Chord's new flagship DAC — but it's a handy one that adds a new dimension to an already highly versatile machine. And for those specifically interested in Bluetooth music playback, then they have the new Chordette Gem (£398), more of which next month. The Chords already support a very wide range of mobile phones, PDAs and personal computers — a three page long list of compatible phones is supplied, including most of the latest Nokias and Blackberrys — and I suspect this will grow in length dramatically over the coming months and years.

MEASUREMENTS PERFORMANCE

| Frequency response measured ruler flat | Distortion (%) |
| 0dB | 0.0008 |
| 6dB | 0.0007 |
| -60dB | 0.18 |
| -80dB | 4.7 |
| Separation (1kHz) | 125dB |
| Noise (IEC A) | -123dB |
| Dynamic range | 110dB |
| Output | 2.86/5.7V |

CONCLUSION

Verdict

	 Dramatically musical yet devastatingly revealing sound makes this unique product the definitive digital to analogue converter right now.

Chord QBD76

£3,000

Chord Electronics

+44(0)1622 721444

www.chordelectronics.co.uk

For

- stark focus
- infectious musicality
- unfettered dynamics
- design flair
- engineering, build

Against

- Bluetooth appeal?

This is the very best DAC I've heard to date.
Discover a whole new world of sound from a new generation of music player that outperforms any CD player. Enjoy digital music at recording studio sound quality for the first time.

Linn Majik DS

Linn Majik system offers
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Linn Ex Dem List

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<td>£1500 Ex Dem Black &amp; Silver</td>
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<td>Klass CD Player</td>
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<tr>
<td>NUMARK DA Converter</td>
<td>£400 Used Black</td>
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<tr>
<td>Control</td>
<td>£5000 Ex Dem Black</td>
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<tr>
<td>Kros AV Processor</td>
<td>£3750 Ex Dem Black</td>
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<td>Kaeon Pre Amplifier</td>
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Playback

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<td>Linn K3200 Power Amplifier</td>
<td>£800 Used Silver</td>
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VARIOUS SPEAKER PACKS AVAILABLE AT SPECIAL PRICES PLEASE CALL OR SEE OUR WEBSITE FOR DETAILS

Ex Demo Silver

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Playback

Kros AV Processor
Kros AV Processor
Kaeon Pre Amplifier
Kros AV Processor
Kaeon Pre Amplifier
Kros AV Processor
Kros AV Processor

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Terratec’s Noxon iRadio does indeed look like a radio but, despite those unassuming looks, it does quite a lot more, keeping a trick or two from view!

In addition to its Internet radio functionality – giving you access to over 11,000 stations, it’s also a Wi-Fi media player in the same way as a Roku Soundbridge, so you can stream your music through it anywhere in the house. It even comes with the option of an integrated iPod docking station, although this adds about £110 to the price tag.

As with all such products, providing you’ve got a working 802.11 wireless network in your home, you’ll find setting it up simple - it merely consists of pressing ‘OK’ a couple of times on the remote control followed by entering your wireless network password - the device supports the WEP and WPA/WPA2 security formats.

The iRadio supports the MP3, WMA, AAC/AAC+, Ogg and WMA Protected audio formats, as well as the M3U and PLS playlist formats. The media player side of the device only works with UPnP music servers installed on your computer, and they determine which audio formats are actually playable on the media player. I used the UPnP server included in Windows Media Player 11, which worked well but doesn’t support AAC/AAC+ or Ogg, whereas the TwonkyMusic UPnP server that was supplied on the CD does support them, but it sometimes made the iRadio run slowly. The iRadio also works with UPnP servers installed on Mac and Linux machines.

The iRadio had no problems with Wi-Fi reception in my flat, and it was quick at both tuning into Internet stations and cueing up audio files on the media player.

Terratec is best known for being a manufacturer of computer sound cards, and they’ve used their audio experience to good effect, because the iRadio is the best-sounding single-speaker portable radio I’ve reviewed to date. Most portable radios that can playback high bit rate MP3 files - such as via an SD card or over a Wi-Fi network - still provide a significantly constricted sound. The iRadio, on the other hand, provides a far more expansive and vivid sound than the norm, with higher levels of precision and detail than portable radios typically deliver. The top end was exceptionally good. The bass could distort a little at high volume levels, though, but the iRadio can go very loud indeed due to its use of a 5W speaker, and backing the volume off a little sorted this issue out.

Summing up, the issues with the BBC’s streams should be sorted out this year by Terratec releasing a firmware upgrade, and the usability issues aren’t a major concern. As a result, I don’t think these things should detract from the fact that in all other respects the iRadio is a superb Wi-Fi radio, which will allow people to make the most of the audio quality of both music stored on their computers and of Internet radio. Heartily recommended as a way in to a wonderful wireless world.

VERDICT

With excellent sound at a very reasonable price, it outperforms many considerably more expensive designs.

TERRATEC NOXON iRADIO

£120

Terratec Electronic
+ 44 (0)870 458 0011
www.terratec.net

FOR

- sound quality
- attractive display
- usability via remote

AGAINST

- usability via front panel
- issues with BBC streams

Electric Music

Steven Green switches on to Terratec’s new Noxon iRadio – a combined Wi-Fi Internet radio and media player...
ENGLAND

Audio Affair
Birmingham B9 4AA
T: 0800 520 0710
www.audioaffair.co.uk
support@audioaffair.co.uk

Fusion
Wickham Market, Suffolk IP13 0AD
T: 01728 642526
www.fusion.co.uk
enquiries@fusion.co.uk

Oxford Audio Consultants
Oxford OX1 1JD
Tel: 01865 790879
www.oxfordaudio.co.uk
info@oxfordaudio.co.uk

Synergy AV Ltd.
Congleton, Cheshire CW12 1JR
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BEAUTIFULLY ENGINEERED SOUND
VERBATIM SMART DISK 250GB PORTABLE HDD £75 APPROX.

Computer hard disk drives (HDDs) are today’s equivalent of magnetic tape. Whereas music used to be stored on long runs of Mylar-backed ferric oxide whizzing past tape heads, now it’s on little magnetic platters spinning around at silly speeds — something IBM would never have imagined when they invented hard disks for their accounting computer back in 1956! Still, this state of affairs won’t remain so forever, as solid-state drives begin to make inroads. The drive inside is a high quality item — a Samsung HM250JI Spinpoint M5, with an 8MB buffer. Although not as fast as pricier designs, it’s perfectly swift enough for most uses. For example, copying 260MB of MP3 files from a PC to the Verbatim took approximately 16 seconds, whereas in the other direction it was half that.

This is ideal for such applications, being fully Plug’n’Play compatible. As soon as it’s hooked up your Mac or PC will ‘see’ it and allocate it a drive letter, then – hey presto – you have access to 250GB (232GB formatted capacity) of storage. This runs out at approximately 8,000 songs in Apple Lossless, or put another way, 360 uncompressed CDs worth of music.

The drive inside is a high quality item — a Samsung HM250JI Spinpoint M5, which is a 5400RPM SATA-150 drive with an 8MB buffer. Although not as fast as pricier designs, it’s perfectly swift enough for most uses. For example, copying 260MB of MP3 files from a PC to the Verbatim took 16 seconds, whereas in the other direction it was half that. The highly compact 85x135x25mm unit itself looks smart in its matt silver plastic housing and at 150g is very light. As you would expect from a Spinpoint drive, it’s fairly quiet in operation and blinks blue LEDs on both sides to signal it is working. It comes bundled with Nero’s ‘Back it Up 2 Essentials’ software. All in all, a great way to store music and a lot less fuss than a vault full of Ampex 456!

[SOUNDBITES]

SOUNDBITES

CLEARER AUDIO SILVER-LINE OPTIMUS REFERENCE INTERCONNECT £500/0.5M

Having been impressed with Clearer Audio interconnects over the years — finding them to offer high end performance and mid-fi prices, we couldn’t resist trying the company’s own flagship wire. With its lavish silver-plated nylon braiding, the Silver-line Optimus Reference Interconnect looks and feels exotic. Indeed, it’s hand made as a pseudo quad-balanced design running 99.9999% silver conductors insulated in low-loss foamed polyethylene. Clearer Audio says it is, “not technically a true multi-strand cable nor a solid-core cable — it is in fact both, as there are several solid conductors arranged in a spiral multi-strand configuration”. This interconnect runs four cores of MSS Super-Pure Silver conductors with a total of twelve per core. It is shielded using the company’s six layer Star Shielding Technique with all layers being grounded via the Parallel Earthing System — this is claimed to be effective across the whole EMI spectrum with an attenuation of over 130dB. The cable is also fitted with the company’s Super Suppressor ferrite rings which attenuate RFI on the cable line, and termination is by Eichmann Silver Bullet RCA or Neutrik X-Series XLRs. Finally, the Interconnect is fully burnt in on the Audiodharma Pro 2.5 Cable Cooker. The standard half metre version costs £500, or £725 for the 0.75m and £912 for the full 100cm; additional 0.25m lengths cost £187. Expensive stuff, but Clearer Audio do say that, including burn in, it takes sixty hours to build.

It’s always hard to assess what, for most people, are unrealistically expensive interconnects, and very hard to recommend them on value for money terms, but these can still be given an enthusiastic thumbs up if cost is no object and you have a system great enough to unlock its abilities. Compared to its closest rival — Chord Company’s Indigo (£322/m) — the Clearer Audio is an altogether smoother and darker sounding wire. Whereas the Indigo majors on dazzling amounts of detail and a stark, explicit presentation that leaves you breathless with its energy and life, the Silver-line is a deeper and more velvety listen. Although possessing less conspicuous detail, close listening confirms it’s all there — along with inky-black silences and vast background atmosphere — just not served up with quite the same vigour.

Instead, this cable has an uncannily natural, unforged presentation that lets the components in your system do their thing, unfettered and uninterrupted. It’s wrong to say this cable sounds ‘superb’, as it doesn’t really sound much at all — being amazingly self effacing. I’d recommend it heartily to those with high end systems that sound a tad too brightly lit and mechanical for their tastes – this would be the perfect palliative.
Adam Smith finds that Kudos Audio's C20 adds up to a great floorstanding loudspeaker at the price...

It's funny how, in life, the old saying that "the whole is more than the sum of the parts" can be so true (my brother-in-law and I were having this very discussion about Angelina Jolie only last weekend but that's probably for another time.). After all, consider taking a competent but unspectacular saloon car engine and installing it into a solid but basic chassis, and adding utilitarian but functional bodywork. Doesn't sound particularly inspiring does it? ! But that's exactly what Maurice and Spencer Wilks did in 1948 and the result was the Land Rover.

The same can be said of some hi-fi components. Most of us have experienced items like the 1980s Goodmans Maxims, Wharfedale Diamonds, the original NAD 3020, Cambridge Audio's DACMagic DAC and even the current Usher S-520 loudspeakers - outwardly simple items superbly implemented that sound far better than expected as a result. Conversely, as we all know from trying to match systems, taking two good elements and putting them together does not always guarantee a resounding success.

These were exactly the thoughts I was having as I unpacked the Kudos Cardea C20s when they arrived in the office. But I hear you crying, "what the heck has this got to do with them?" Simple really - last July I tested the Kudos C2s - the C20's cheaper brothers, and these remain one of my favourite pairs of loudspeakers at around the £2,000 price point. I followed this with a listen to the C10 standmounters in February of this year and these offered even better treble from their SEAS Crescendo tweeter but a slight lack of 'body' from their smaller cabinet. Consequently, the question has been playing at the back of my mind for a while as to whether the C20s could combine the best of both worlds, or would they not gel? Are they the Land Rover of loudspeakers? There was only one way to find out...

To briefly recap, the C20s have the same cabinet and main bass/mid drive unit as the C2s. This latter item is a SEAS Prestige item, with a 7in (180mm) coated paper cone. The SEAS Crescendo tweeter to which it is mated is one of the most expensive tweeters on the market, packing a great deal of technology in beneath its unassuming faceplate. A 29mm soft dome design, the unit uses a 26mm diameter voice coil in an 'underhung' configuration. This means that the voice coil winding...
height is shorter than the magnetic gap in which the coil sits and, in the case of the Crescendo, results in a 1.5mm winding length sat in a 2.5mm long gap. Combined with the tweeter’s maximum travel of 1mm peak to peak, this ensures the voice coil never moves out of the region in which the magnetic gap’s behaviour is still linear, thus reducing distortion.

Further back, the Crescendo uses what SEAS call a ‘Hexadym’ magnet system, using six Neodymium magnets to provide “efficient ventilation and damping of cavities behind the dome, surround and voice coil”. Finally, the tweeter has a notable horn loading to it, with the central part of the horn made from chrome plated precision machined brass.

The C20s are available in Cherry, Walnut, Sycamore and Rosewood real wood veneers and their fit and finish is impeccable; it would shame any loudspeakers at twice the price I have encountered. Small, neat grilles are provided that attach to the driver screws magnetically and two pairs of binding posts at the rear permit bi-wiring or bi-amping - unlike some other loudspeakers.

Like their smaller siblings, the Kudos C20s definitely have a forward and generally bright tonal balance. A rising response lifts the upper mid and treble to ensure that ‘dull’ is not a word in their vocabulary. However, all those of you thinking of the word ‘harsh’ and ready to turn the page, hold on, as there’s not an ounce of harshness to the Kudos units - every last metallic shimmer from percussion comes through loud and clear with these loudspeakers.

The Kudos C20s are a genuine 8 ohm design and should be a nice, easy drive for any amplifier. Lower impedances are often used to boost sensitivity, but the C20s were also fine on this score, turning in a respectable figure of 87dB. Consequently, at least 40 Watts from a matching amplifier would be wise but the C20s are not current-hungry and so will not require a musclebound powerhouse for optimum performance. As a result, the C20s will have a balance that tends towards brightness, but the high quality tweeter should mean that this is not accompanied by any harshness.

At the low end, the bass driver rolls down below around 80Hz, before handing over to the port which is tuned to around 38Hz but has a broad output spectrum thanks to its downward position. Consequently, the C20s should have good low end weight but without any obvious port noise, particularly as this has a clean output with no unwanted artefacts at higher frequencies.

Interestingly, the C20s have a high average measured impedance of 10.5 Ohms, barely dropping below 8 Ohms at any frequency. This is relatively uncommon these days, as most designs use four Ohm bass drivers, but the C20s are a genuine 8 ohm design and should be a nice, easy drive for any amplifier. Lower impedances are often used to boost sensitivity, but the C20s were also fine on this score, turning in a respectable figure of 87dB. Consequently, at least 40 Watts from a matching amplifier would be wise but the C20s are not current-hungry and so will not require a musclebound powerhouse for optimum performance. As

**CONCLUSION**

As I had hoped, the addition of the Kudos C10’s tweeter to the already highly capable C2s lifts the C20s’ performance even higher and makes absolutely everything you care to throw at them a truly captivating experience.

My only word of caution would be with regard to partnering - a bright or hard sounding amplifier is likely to give a pretty relentless result, so a more sophisticated amplifier is definitely the order of the day. Our Anatek A50R was just about on the right side of fine, but the Quad II-Eighty/Creek OBH22 combo was perfect, and really showed these loudspeakers at their best. If you value detail, atmospherics and sheer musical involvement above all, these may well be the designs you have been waiting for.

Just like the Land Rover I mentioned earlier, I can see many people becoming instant fans of the Kudos C20s because what they do so well, few loudspeakers at the price can match. Even better, they won’t leak oil over your driveway...

**VERDICT**

Crisply detailed performers with jaw-dropping transient abilities. A beautiful package at the price.

thoughtful, stepping smartly out of the soundstage to stand proudly clear of the backing track. Add to this a massive sense of space to the mid and top end that stretches out between, behind and beyond the cabinets and you have the recipe for a truly enthralling listen. The weekend before this review, I attended an open air performance by a travelling theatre company in our village and happened to find myself sat at the front, right beside the drumkit that they used for sound effects. Hearing a real, unamplified drum kit at such close quarters made me realise how poorly some loudspeakers reproduce such items, but drum strikes were snappy and lifelike, and cymbals were almost alarmingly realistic through the Kudos units - every last metallic shimmer from percussion comes through loud and clear with these loudspeakers.

It’s not all top and no bottom, however. The bass end of the C20s makes perfectly to the rest of the frequency range resulting in a taut, detailed, fast and punchy delivery. Any sluggishness in the low end would be ruthlessly exposed by the swift transient response of the tweeter and Kudos have done a superb job of making sure that the whole integrates perfectly. Bass guitars came through as taut and focused; the intro to Simply Red’s ‘Sad Old Red’ was just about as good as I have ever heard it - bass guitar was tight and emotive, and the hand movements around the drumkit that resulted, so a more prominent forward bass will have the C2Os’ punch and kick back in a big, bold rockabilly ensemble.

**REVIEW**

**KUDOS CARDEA C20 £ 2,950**

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**FOR**

- level of detail
- rhythmicality
- taut transients
- build quality

**AGAINST**

- build quality
- rhythmicality
- level of detail

**SOUND QUALITY**

Like their smaller siblings, the Kudos C20s definitely have a forward and generally bright tonal balance. A rising response lifts the upper mid and treble to ensure that ‘dull’ is not a word in their vocabulary. However, all those of you thinking of the word ‘harsh’ and ready to turn the page, hold on, as there’s not an ounce of harshness to the Kudos units - every last metallic shimmer from percussion comes through loud and clear with these loudspeakers.

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**MEASURED PERFORMANCE**

The Kudos Cardea C20s, like their cheaper C2 brethren, have a gently rising response with frequency, but this is smooth across their bandwidth and contains no nasty peaks or dips. As a result, the C20s will have a balance that tends towards brightness, but the high quality tweeter should mean that this is not accompanied by any harshness.

At the low end, the bass driver rolls down below around 80Hz, before handing over to the port which is tuned to around 38Hz but has a broad output spectrum thanks to its downward firing position. Consequently, the C20s should have good low end weight but without any obvious port noise, particularly as this has a clean output with no unwanted artefacts at higher frequencies.

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Unison Research’s brand new Unico R analogue tuner actually uses valves, Noel Keywood was amazed to find!

Keen radio listeners aren’t given a lot of thought these days. Tuners, whilst uniformly good, are rarely honed to have a particular sound, especially one evocative of the past. But the Unico R from Unison Research has been crafted to echo old sureties; it enjoys glowing valves and a sound that’s clear and relaxing. It even takes thirty seconds to warm up, so you can’t just ‘switch on the transistor’ for music! A little patience is required, and a little more if you want to hear the Unico R at its best, because this takes ten minutes, the handbook warns...

It might sound intensely retro, but at the same time this is a ‘hybrid’ VHF/FM tuner, as Unison Research call it, a modern design that’s essentially solid-state, accompanied by a balanced valve audio output stage. Being a synthesiser tuner it tunes in accurate 50kHz steps across the VHF/FM band from 87.50MHz to 108.00MHz. It can be stepped manually or set to scan automatically. There is a Medium Wave AM section too, that tunes in 9kHz steps.

Although manual tuning is provided for all those that like to spin a tuning knob - and it has a lovely silky feel to it - Unison Research fit twenty memories for VHF/FM and a further twenty for Medium wave. In PRESET mode the Unico steps through the presets, to provide fast and accurate selection of pre-tuned stations, from the comfort of the armchair as remote control is provided - definitely a useful modern convenience.

The Unico R is well built and weighty at 8.5kgs, so it feels rock-solid when buttons are pressed or the large tuning knob twirled. The sizeable chassis (450mm wide, 340mm deep, 95mm high) conceals a small rocker switch that nestles just behind the fascia, on the left side panel. Press this and power comes on; the central liquid crystal display lights up a pale yellow and explains a worrisome silence: the valves are warming up! After thirty seconds are counted down numerically the Unico R springs into life at the last tuned station.

A horizontal bar across the display acts as a signal strength meter, but sadly it is uncalibrated and Unison Research say nothing in the owners manual about what value it may have and how to use it. Measurement showed it needs to be nearly full right, or maximum, before a condition known as ‘full quieting’ (lowest noise and best rejection of interference) is reached. This should be explained in the handbook.

Complicating the issue slightly is that the bar display will not reach its indicated maximum no matter how much signal is applied; maximum is about 90% of full scale, aligned just beneath the ‘2’ of Hz. As long as the bar approaches or reaches this point the aerial is adequate. However, tests showed the Unico R is insensitive and needs a lot of signal to manage this, so a very good outdoor aerial is required for best results.

As well as signal strength the display panel shows station frequency or, if RDS (Radio Data System) is selected, station name, in big letters easily legible from a distance. Also fitted are tune accuracy and stereo indicators. I manually tune to my local station frequencies to avoid accidentally picking up distant transmitters, easy to do with Radio 2 and 3 in London if you use a large outdoor aerial able to pull in distant transmitters. The signal strength meter can however, sort out this little difficulty by showing which signal is strongest - another use for it.

"the new Unison Research Unico R has a magic all of its own..."
The rear panel carries an F connector for the VHF aerial, so an adaptor (not supplied) will be needed for an old style coaxial plug. The AM aerial connector is a pair of wire spring clips, as usual. Audio outputs are via phono sockets (unbalanced) or XLR connectors (balanced), fed from a pair of ECC82 double triode valves.

**SOUND QUALITY**

I ran the Unico R alongside our resident all-valve Leak Troughline tuner, supplied by GT Audio, to see how close it could get to the best radio I’ve yet heard. I also used a Hitachi FT-5500MKII, mainly to check signal conditions, and the rather good VHF/FM tuner in a Marantz SR8002 receiver as a modern benchmark.

Like many of the tuners in our group test last month the Unico R had a forward and detailed midband that brought clarity to presenters like Eddie Nestor and Kath Melandri presenting Radio London’s ‘Drivetime’ programme, making for great intelligibility as they spoke and group test last month the Unico R offered, so much aiiioutli and easy in traffic delays on BBC Radio London. Troughline made clear, as Steve warm sounding Marantz) that the example.

fulsome sound of the Marantz output was lighter than the warm, to Terry VVogan in the morning. The frequency bumps and thumps from through this, but the Marantz tuner managed it easily, due to superior clarity and selectivity. So the Unico R isn’t suited to really demanding reception requirements, but its alternate channel selectivity is high enough to get all major stations I found, from my outdoor array which pulls in a huge number of VHF/FM stations.

The Unico R offers a lightly spacious and highly detailed sound that’s really impressive by general standards. However, it has competition from the exceptionally talented Creek Evolution RDS at £285 and the Rotel RT-06 with DAB at £399 - both considerably cheaper.

The picture changes a little if you can take advantage of its balanced valve output stage by using an amplifier with balanced inputs. I used a Yamaha A-S2000 with Chord cables to compare unbalanced phono to balanced XLR. Through the latter the Unico R sounded tidier, with more low frequency push to help bring bass lines up in the mix - this is certainly how the Unico R should be used. I found it revealing but still short on soul compared to the classic Leak - but then so is every other modern tuner!

**CONCLUSION**

With a nice and slick sound, beautiful build and classy styling, the new Unison Research Unico R has magic all of its own, although you do have to pay for it at £950. Overall though, I feel the Creek Evolution RDS is a stronger design at one third of the price. Good then, and worth auditioning if you want a light and airy delivery from a nicely crafted product, but it faces stiff competition.
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Hi-Fi World gives you the chance to win one of our favourite sub-£2,000 CD players - in the shape of PrimaLuna's superb new ProLogue Eight! Here's what David Price said about it in the July 2008 issue...

"Although measurable by sophisticated electronic equipment, the most accurate gauge of jitter is the human ear, which hears it as tonal hardness and lack of clarity. What's needed is the best possible clock — and PrimaLuna's ProLogue Eight is the first production CD player to come fitted with the 'SuperTubeClock', which uses a low-noise mini-triode vacuum tube. For once we found the manufacturer's claims matched our findings, with this machine turning in the lowest ever jitter we have ever measured. That's not the only tube in the player, because the ProLogue Eight sports more glass bottles than the perfume counter at your local House of Fraser. In addition to the single clock valve, there's a dual mono zero-feedback analogue output stage using one 12AX7 and one 12AU7 per channel, plus a vacuum tube rectified power supply incorporating eleven separate power supply regulation circuits. Custom designed isolation transformers separate the analogue and digital devices for decreased signal degradation and improved sonics and there's also a decent sprinkling of high quality resistors and polypropylene coupling capacitors fitted. In-between the specially clocked transport and the tube output stage lies the latest Burr Brown PCMI792 DAC with SRC4I92 upsampling circuit. Striking sounding, the PrimaLuna seemed obviously less coloured than my reference. The ProLogue Eight renders the midband with breathtaking accuracy. It's like you've just given your camera's shutter release button first pressure, and it's suddenly snapped everything into exact focus. Kate Bush's 'Moving' showed this in no uncertain terms. The PrimaLuna locked down the recorded acoustic, letting me hear the four walls of her vocal booth, the exact location of each instrument and the sound of fingers against bass guitar strings. More startling however was the way the song timed; it snapped the musicians' rhythms together, letting me hear how they were 'playing off' one another. The space between the notes became far more marked, the song sounding more broody and evocative. A fascinating new entry to the £1,500 silver disc spinner market, the PrimaLuna ProLogue Eight brings vanishingly low jitter to the game, and its associated clarity and rhythmic ease. This is one of the most 'analogue' sounding digital disc players I've heard, in the way the different elements of the mix seem to live and breathe by themselves."

If you'd like to win this superb bit of kit then all you have to do is answer the following four easy questions. Send your entries by 31st August on a postcard to:

September 2008 Competition, Hi-Fi World magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.

QUESTIONS
[1] What does the 'supertubeclock' use?
[a] a low noise mini triode vacuum tube
[b] a pair of old boots and a piece of string
[c] a pile of classic Madness seven inchers
[d] a wedge of cheesecake and some blueberry pie

[2] What tubes are in the analogue output stage?
[a] 12AX7s and 12AU7s
[b] 300Bs and KT88s
[c] 845s and ECC82s
[d] EL34s and K5881s

[3] What digital to analogue convertor chip is used?
[a] Burr Brown PCMI792
[b] Philips SA7350
[c] Philips TDA1541
[d] Analogue Devices AD9736

[4] How did David Price describe its jitter levels?
[a] "vanishingly low"
[b] "not bad"
[c] "wicked"
[d] "quite good, actually"

September Competition
Hi-Fi World Magazine
Unit G4 Argo House
The Park Business Centre
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London NW6 5LF
Amphion's Argon2 Anniversary is a quintessentially neutral but enjoyable Scandinavian standmounting loudspeaker, says David Price...

Being colourless, odourless and non-toxic, Argon is a neutral and benign gas — which I suppose are precisely the qualities you want in a loudspeaker, especially a relatively affordable one such as this £1,199.99 standmounter from Amphion. Unlike the gas though, this Argon (mark 2) was not discovered in Scotland in 1894, but designed in Finland in 2008. All their models look striking, are beautifully finished and show real design flair. Still, they need to be to succeed in this country's crowded loudspeaker market — where anonymous boxes disappear into obscurity seconds after their launch...

The standard Argon2 is a sturdily built (11kg) small-to-medium sized (380x310x190mm) two-way standmounter with a 25mm SEAS titanium dome tweeter, and 165mm SEAS aluminium membradued mid/bass driver. The cabinet is notable for its unusual waveguide for the tweeter, the idea being to control its room dispersion characteristics more accurately than letting it just stick out of the baffle. Also, it moves the point source of the tweeter dome level with the dust cap of the mid/bass unit, effectively time-aligning it.

The Anniversary model reviewed here adds a flourish or two. There's the option of matt off-white paint finish as well as the stock Finnish Birch, plus Black and Cherry. The tweeter becomes titanium membrauned, instead of the stock aluminium one, coming straight from the parts bin of the high end Amphion Krypton2. Accordingly, the crossover has been tweaked for a smoother response. The rear terminals have been changed to gold-plated WBTs, single wired only.

SOUND QUALITY

I was most interested to hear the Amphions, being the first speaker from this mysterious manufacturer I've tried. My enthusiasm was rewarded with what is quite an inert sound — as the Argon2s duly lived up to their Greek appellation and proved fairly free from the normal nasties I expect from a box at this price. Although they present a fairly stiff electrical load [see MEASURED PERFORMANCE], I was heartened to find out that my reference Sugden IA4 Class A integrated could drive them. (Love it as I do, this isn't the world's most load-insensitive transistor powerhouse). So, aspirated by both vinyl and CD sources, battle commenced with the Amphions atop...
16" Apollo speaker stands, single wired via Black Rhodium Tango cable. These are medium sized standmounters – considerably bigger than Wharfedale Diamonds, for example, but not up into Linn Sara territory either. As such, I'd expected a decent bass and that's what I got. Supertramp's 'Child of Vision' showed them capable of a clean and 'insistent' low frequency performance, one that didn't push the limits of either the driver or the cabinet. As such, even at highish listening levels, the Argons stayed in control and relatively unpressed – there was little sense of a small box wheezing through its port trying to keep up with things. Bass guitar lines were nicely tight, although lacked the on/off nature of the £1,500 ATC SCM-19 – remember, the latter are closed box (infinite baffle) and give bass that switches on and off like a light emitting diode. Still, the Amphions took the bull by the horns and turned in a firm and fluid performance.

Compared to Quadrad's super little Picos I reviewed last month, the Argons were a revelation in the bass. Low notes had body and slam, and the ability to communicate their relative dynamics; the slightly smaller Picos sat on crescendos somewhat, delivering a less emotive sound as a result. Double bass on Miles Davis's 'So What' from 'Kind of Blue' – the opening part – showed how an instrument's true character is revealed. The icy vocals of Kate Bush's 'Sensual World' showed a tiny 'light spot', while Vivaldi's 'Four Seasons' (The English Concert/ Simon Standage) was masterfully performed. The Argon2 Anniversary holds its tracks well, and produced a detailed and musical sound - showing how an all-analogue recording can really sing.

MEASUREMENT PERFORMANCE

The Amphion Argon 2 loudspeakers have a very flat response across their full bandwidth with only a very small glitch of 2dB or so at 1kHz and a gentle rolling down of the treble output above 15kHz to deviate from this. The former is likely to be mostly inaudible, although it may add a little 'edge' to some vocals and the latter may well rob a little top and sparkle. That said, though, the Argon2s should be well balanced and offer an even-handed presentation. At the low end, the main driver extension rolls off below around 80Hz and the port is tuned to 40Hz, so the Amphions should have good low end weight for their size. There is some port output in the 800Hz region but as the port is tucked away on the rear of the cabinet, this should not be intrusive.

Electrically, the Argon2s have a rather alarming inductive rise to over 50 Ohms at 2kHz, which some amplifiers may not be particularly impressed with. Equally, the bass driver and port impedance peaks are higher than most, but that is the price that excel more in some particular respect. I can think of few that offer such a well rounded and pleasing package. The Amphion Argon2 Anniversary is an unerringly well balanced, easy going and pleasingly musical loudspeaker that doesn't write its presence large on the music, or on your listening room for that matter. It has real ability from the bottom of the frequency spectrum to the top, and an unpressed yet engaging demeanour that makes it a pleasure across all types of music. Interestingly, their nature is such that the only time this modest looking, medium sized standmounters took my breath away was when I tried to find a product that would comprehensively outclass them – when I realised you'd need to spend twice as much on a pair of Monitor Audio PL100s!

Verdict

Starting looks maybe, but these speakers sound smooth, sweet and self-effacing – making for an excellent, if unusual, package at the price.

AMPHION ARGON2 ANNIVERSARY

Kore UK Ltd.
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- even, expansive midband
- overall musicality
- styling, build, finish

Against
- unatmospheric treble

Monitor Audio PL100 loudspeakers

Sugden IA4 integrated amplifier

REFERENCE SYSTEM

Marantz CD63K1 DP CD player

Amphion Argon 2 Anniversary

ARGON2 PICO loudspeakers

Sensitivity as a result was not as high as is seen on some lower impedance designs, at 84dB, so around 50-60W from the amplifier would be wise. AS an undemanding load in current terms, and will work on an 8 Ohm output tap.
Does spending twice as much cash double the sonic dividend? Adam Smith compares and contrasts two fine CD players from Leema and Moon, the latter double the other’s price...

Going Up

It is always interesting to hear feedback from dealers and distributors as to the state of the hi-fi market. Obviously we know of the situation regarding seasonal highs and lows, whereby sales tend to drop in the summer as everyone’s gone to the beach or, more likely, are stood beside their barbecue in the garden, under an umbrella hoping that the rain will stop. Either way, with more expenditure on travel, suncream and Aberdeen Angus quarterpounders, the hi-fi budget always drops at this time of year and a bit of a quiet time occurs...

However, the most interesting aspect of the marketplace is how the sales of items at different price levels change. It is true that the budget end of the spectrum ticks along fairly healthily most of the time and one might think that it is the top end of the market that suffers when the money dries up, but this is not the case. It is actually the mid-price band that suffers the most, because it is an aspirational area to the more impecunious, those who have to cut back when the going gets tough. The top end of the market attracts people insulated from everyday money problems.

Many manufacturers spend a surprising amount of time, thought and budget on the mid-price items; more than you might think because they want people to trade up to products with fewer cost related performance constraints. As a result, we wondered just how much extra performance can be obtained by a jump from the lower end of the mid-price CD player rung up to the top, particularly in the light of recent letters from readers with concerns over the relationship between equipment price and performance.

Representing the more reachable end, we have the new Leema Stream. This matches the Pulse amplifier to form Leema’s entry level system and costs £1,095. For this you get a very neatly styled and very well built box with a grand total of two controls on the front panel - an off/standby button and Leema’s ‘L-Drive’ knob. Leema state that this is “a radical new control device” that “removes clutter from the front panel whilst offering rapid track selection”. Frankly it’s so unusual I’ve given it its own boxout - see p49! Equally minimalist are the remote control (twelve buttons, only eight of those for the CD functions) and the display, whose miserly two digits make a Naim CD5i look positively over-endowed with its four. I can’t help feel this is a step too far in minimalism but then I also sat there pondering that more digits would ruin the styling. It’s a tricky one...

Under the bonnet, the Stream is more feature-packed, containing Leema’s LIPS control system that allows intelligent interface with other...
The most notable aspect of the Leema's performance for me was the surprisingly capacious soundstage and sense of depth that it bestowed onto music - a fine achievement for any CD player and downright impressive for one at its price. The music stretched off into the distance with alacrity and the space around performers was at the sort of levels that we vinyl-heads are more used to.

Spinning Emma Peel's 'Winter', the Stream sat Bibian Harmesen's vocals firmly centre stage and followed her bass line with pleasing precision. Equally, backing vocals and instruments spread behind the main track with precision and musicality, although I did notice an occasional slight slurring of vocal sibilants at times. This turned the odd "sss" into a "ssh" but remained at the sort of levels that you have to listen for, rather than being obvious.

The Leema also digs notably deep at the low end, deeper than many players at the price, but a small downside here is that it is a touch looser than some - our reference Yamaha CD-S2000 edged ahead of it in terms of bass dexterity and dynamic alacrity, but the Yam is particularly good in this area, so the Stream should not be thought of as lacking in these terms...

At the top end, that effusive enthusiasm continued and the Leema proved that it absolutely loves to run with a rhythm. Whether it is a rock guitarist getting carried away, a superstar DJ spinning something particularly 'phat' or an orchestra cranking the action up a level or two, the Stream laps it up. It is more than content to whisper softly when the occasion demands but I strongly suspect that purchasers will end up waking their neighbours, thanks to the Stream's infections rhythmical musicality and exuberance.

Switching to the Moon proved an interesting counterpoint. As is so often the case when changing to a costlier item, the overall sound gained a healthy sense of sophistication, as if the Equinox RS was rather smugly saying "move over little L-Drive or Drive-L?"...

So, the clever chaps at Leema have decided it's time the good old transport control buttons were updated, and have come up with L-Drive. Basically, you press and hold the control knob for tray open/close, press once for play or pause modes, press twice for stop and rotate the control in either direction for forwards or backwards track skip. This is clearly one of those gadgets that is already going to be absolutely infuriating or complete and utter genius...

Actually, it's pretty good. It takes a little getting used to and early frustration can lead to the incorrect number of presses and thus the wrong command but you soon get the hang of it and it's quite intuitive after a while. The rotation for track selection turned out to be swift and very useful, particularly on the test bench, as one of our test CDs has 99 tracks and we use number 75 quite a lot. Any players that have no direct selection keypad, or won't count backwards from 1 to 99 and then on downwards to 76 cause us sure thumbs and frustration as we have to slog upwards from 1 to 76. In this respect the Leema was brilliant, and I have to say, I'm a convert to L-Drive!

Incidentally, whilst talking knobs, if anyone knows of an on/standby switch with a more lovely action than the Stream's, I'd love to see it...

The Stream tips the tape measure at (HxWxD) and weighs 10kg.

L-DRIVE OR DRIVE-L?

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"take hi-fi separates on their own terms, rather than simply dismissing them on price..."

CONCLUSION

These two CD players show just how interesting the mid-price hi-fi market is, as both are very fine designs that turn in impressive performances. In terms of those prices, though, the Moon Equinox RS does indeed gain an extra level of sophistication and insight over the cheaper Leema and also offers more features (but then, it really couldn’t fail to...)

However, the Leema Stream scores in terms of sheer brio, atmosphere and musicality and is certainly not half the player that the Moon is, even if it is half the price. If you can afford the Moon, it should definitely be high on your audition list, but beware of discounting the Leema because "it's too cheap".

This test shows that you should take hi-fi separates on their own terms (and importantly, how they integrate with the rest of your system), rather than simply dismissing them on price.
Unassuming Samsung's new BDP-1500 may be, but it's also a fine Blu-ray player nonetheless, says Noel Keywood...

S
amsung products come cheap, but technically they're running the socks off rivals, explaining why Samsung has become a manufacturing giant. We've been hassling them for their new BD-P1500 Blu-ray player for months and are pleased to get it for review. Now boasting an Audiophile mode, does it deliver better digital audio than the outgoing '1400, I wanted to know?

I was expecting the BD-P1500 to be a more sophisticated version of my '1400, but Samsung have changed course with this player. Mechanically, it is a simplified version of the 1000, 1200 and 1400 that went before, pared right down I suspect to meet arduous Blu-ray performance criteria whilst selling at a stunningly low price of £230.

When I dropped in a CD and pressed Play I realised how far sacrifice has gone - there's no track number display! I had to switch on the TV to see this. The casework has been pared down to the very simplest possible mechanical assembly and the rear panel has been shorn of most socketry. Stereo audio output sockets accompany a Composite video output (low quality analogue video) and three Component outputs (high quality analogue video).

There's no S-Video or Scart, nor a coaxial digital audio output, just an optical one. Of course, there's an HDMI output that carries high definition digital audio and video and is now the de facto standard for the future. Finally an RJ45 socket is fitted for internet connection (marked LAN, or Local Area Network, meaning your home network) to allow software upgrade, and either a CD or USB flash drive can also be used for Firmware upgrade. Go to www.samsung.com/uk/support/download/ for an owners manual and more information on upgrading.

Our measurements showed the humble analogue stereo audio outputs of this player deliver a full analogue bandwidth of 45kHz from 96kHz sample rate digital. In other words, play a DVD or Blu-ray with high quality 24/96 digital and you get the much of the benefit via the stereo outputs, albeit with surround sound folded down into stereo. It's a thorough way of doing things, characteristic of Samsung and impressive for such a cheap player. This is good news for anyone wanting to connect the analogue audio into a stereo hi-fi.

Where the outgoing BD-P1400 had analogue 5.1 surround-sound output, the BD-P1500 subtly but cleverly rearranges all this. Analogue surround-sound connection isn't available. Instead, this player can be set to decode internally to PCM then re-encode to DTS (i.e. compress) so that digital audio can be piped out through the optical digital connector. This is an ingenious scheme that allows the player to connect digitally to older receivers lacking an HDMI input and pass through Blu-ray high quality digital formats like Dolby TrueHD. It's an alternative - sort of - to analogue connection. Downsampling from 96kHz to 48kHz is provided for compatibility with receivers lacking 96kHz onboard processing.

I noticed with a sense of satisfaction that Samsung now use the term "Audiophile" in their audio set-up menu. Selecting Audiophile mode effectively turns the player into a transport, piping out digital audio unprocessed to a receiver, which will need an HDMI 1.3 input and full onboard processing, including DTS Master Audio. Lacking this, the BD-P1500 can be set to turn DTS HD (but not Master Audio) and Dolby TrueHD to PCM before sending it to the receiver.

Video wise, the BD-P1500 upsamples DVDs to High Definition format, as do all Blu-ray players. It plays all Blu-ray video, plus AVCHD from a HD camcorder. Tests with our Silicon Optix Blu-ray disc showed fields being dropped when set to 1080p output, but full resolution when set to 1080i and the TV (Samsung M8) left to de-interlace. Then the BD-P1500 gives silky smooth (low noise) and highly detailed pictures - stable and free of jaggies. DVD upsampling was also very good, Silicon Optix and Burosch test discs showed, with no weaknesses. Picture quality was as good as it gets from DVD and Blu-ray, if over emphasised for visual impact, with shadows too dark and colours over saturated. There are no picture adjustments, and the player needs at least one setting that provides a more natural look, I feel.

Connected to the internet, there's no sign the player has been given an IP address from a DHCP server, and little way of knowing whether a connection has been established. I thought it hadn't until I spotted the player, unidentified, on my internet router's client list. You must search for its MAC address, declared in the Network menu. A software/ firmware update to 080623.0I.XEF took thirty minutes over the internet connection, a fast 20Mbps link from cable, so the files are big, but it was problem-free.

The BD-P1500 starts and responds faster than the outgoing 1400, firing up in less than ten seconds and getting a menu up from drawer close in twenty seconds, although not heavy Java menus, from 'Resident Evil: Extinction' or "CD sound quality was well balanced"
Angelique Kidjo’s Agolo’ kicked on a receiver. ‘Spiderman’, which can take one minute or more. The underside of the player gets very hot, so ventilation is important and it must not be stacked on a receiver.

**SOUND QUALITY**

CD sound quality was well balanced through the analogue outputs. Angelique Kidjo’s ‘Agolo’ kicked off with plenty of low end power behind its striding bass line and percussion had vibrant life, whilst vocals were clear and intelligible. Switching to the optical digital output (S/PDIF) brought about a clear improvement, tidying and focussing the sound, but then that’s to be expected because digital-to-analogue conversion was then being carried out in a £1,300 Marantz SR-8002 receiver. Switching again to HDMI brought no obvious difference; I slightly preferred S/PDIF, likely because of lower jitter, but both were crisp and clear. So this is a decent CD player from its analogue outputs, if not ground breaking. All the same I was impressed by the wide open, dynamic sound of 24bit/96kHz digital through these outputs from the Chris Botti Live Blu-ray, where the audience spread out in a wide arc around the front speakers. There was a lovely sense of ambience and drums had both speed and power, more so than the compressed digital version the player can send through S/PDIF when set to re-encode.

Putting the BD-P1500 into Audiophile mode had ‘Nine Inch Nails’ rearranging my furniture with hard punching Dolby TrueHD (packed PCM). This is where Blu-ray gets impressive and the BD-P1500 delivers. Drums have both power and fierce impact, whilst cymbal strikes - sometimes from the rear speakers - fired from the loudspeakers like bullets. Well recorded PCM certainly has impact...

Selecting Bitstream in the Audio menu sent Nine Inch Nails and Elton John’s New York concert out via the optical link in surround-sound, but it was less exciting, DTS compression making things diffuse. This is a nice idea, but it’s only for compatibility with old receivers.

**CONCLUSION**

All in all the BD-P1500 does a fine job at a low price. It’s a technological tour de force contrived to deliver audiophile sound, and a great buy if you want easy Blu-ray today.

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**MEASURED PERFORMANCE**

The audio outputs that accompany Composite Video deliver full CD spec. sound, even if their labelling makes this look doubtful. CD bandwidth reached 21.1kHz and our analysis shows an unusually flat response characteristic. DVD-Video PCM soundtrack played properly, with 10bit/48kHz reaching 23kHz and 24bit/96kHz reaching 45kHz from the analogue outputs. It gave a digital audio output via optical S/PDIF too, at 48kHz sampling rate, so Samsung don’t cut any corners. Distortion levels (16bit) were higher than a good CD player, but not by any great margin. At -60dB the usual -80dB were resolved well, including a dithered tone where distortion was just 1.8%. Results were no disaster by any means. Better, signals down to -80dB were resolved well, including a dithered tone where distortion was just 1.8%. Results were no disaster by any means. Better, signals down to -80dB were resolved well, including a dithered tone where distortion was just 1.8%. Results were no disaster by any means. Better, signals down to -80dB were resolved well, including a dithered tone where distortion was just 1.8%. Results were no disaster by any means. Better, signals down to -80dB were resolved well, including a dithered tone where distortion was just 1.8%. Results were no disaster by any means. Better, signals down to -80dB were resolved well, including a dithered tone where distortion was just 1.8%

**VERDICT**

Excellent, entry level Blu-ray player serving up top quality pictures and fine sound.
In modern times, the greatest power invested in musicians is technology. Punk spawned a splintered revolution that reached into many areas and futures. One of which ultimately led to artists being able to record their own music. The result was that musicians were given freedom to record and to disseminate their works — initially via cassette, then CD-R and now over the Internet. This has meant that many more artists can produce albums and gig off the back of them.

Such a democratisation of musical output has meant that there is much more music out there than can ever be heard by a national public, so the downside is that talented musicians can fall through the cracks without receiving their due. And so it is with William D. Drake...

A highly experienced artist, Drake has a strong, 'hardcore' following through his work with the cult band The Cardiacs — who took performance art to a different level back in the nineteen eighties — plus other bands including The Sea Nymphs, Nervous and Wood. Right now though, he's currently part of that other productive musical world, the 'self-published' solo artist.

Lack of major label record company backing means you won't have seen 'Briny Hooves' advertised on the back pages of Q magazine, which means thinking music buyers may well not have heard Drake's interesting sound. I'm sure he’s already been compared to both Julian Cope and Peter Hammill, so I won’t fall into such a reductive trap — suffice to say his vocal sound is earnest yet uplifting in a unique way. His song writing is boundary pushing, as this CD on sheBear Records shows...

"I got a band together, Bob Leith, drummer from The Cardiacs, the bass player, Dean Gainsborough Watkin from Nervous - I collected together my favourite musicians," Drake told me. "This album was a real turning point. It was the first time that I'd been able to do exactly what I wanted. There was no time constraint on it."

The reason being that Drake had asked sound engineer, Darryl Anthony, to create the album with him. Anthony’s fee was spent on a new Apple Mac which was subsequently used within the recording process that took its own sweet time to complete. Part of the recording for the album was done in Anthony’s bedroom. As Drake put it, "He put a batch of old mattresses in there — a Stonehenge of mattresses — which were positioned in a square, acting as a control for both vocals and trumpet. The entire recording process was very acoustic and organic, even though we used the Mac in the chain. We did a lot of remixes for this album."

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In fact, this remixing went on for so long, Anthony had, by this time, begun working in a professional recording studio. One of the most significant items present in the studio that was of great use for the final remix was an old analogue Studer mixing desk which had come direct from the Berlin Philharmonic Orchestra.

"Actually, we were mixing one of the tracks on the album, 'The Seashell Song', with this desk and we realised that it sounded miles better than any other track. That was partly because of the quality of the equipment being superior to what we had used before, but also because it was analogue. So we decided to remix the other tracks. The Studer gave the piano, for example, a syrup-like, golden tone. It was wonderful."

This 'tone' was always an unconscious aim. Whilst the music and the songs were of primarily concern, Drake did listen for an analogue sound. "This was enhanced by our use of a valve preamplifier, which we always worked through," said Drake. As such, Drake one day hopes to produce 'Briny Hooves' on vinyl. As yet, he hasn’t because, "I can't afford it," he declared. "It will, though, it'll sound so much better on vinyl."

It's a beautifully crafted album of mature, powerful and moody pop songs — and as yet a largely undiscovered gem. Although it may not be falling off the shelves at your local Zavvi, it's still very well worth reaching out for. To read more, click on www.williamddrake.com. You'll be glad you did. PR
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NCP Flight Path - Dedicated car parking for over 300 cars - £10 all day (normal price £18)
B&O have combined the two types to interesting effect, however, making use of MLS measurements in a room that measures no less than 12m square (that's around 40 feet in each direction in proper units!) which certainly makes removing those reflections a lot easier. Loudspeakers are loaded onto a crane assembly that can be electrically moved towards a small balcony in one corner and then motored back out to sit right in the centre of the room for measurement. The crane can carry up to 120kg and can also orientate the unit under test through a full 360 degrees in all axes for power measurements - something that B&O carry out on all their designs. Nothing quite prepares you for walking out onto the balcony in the corner from the measurement lab, however - the room is huge and empty and apparently the sunken section at the bottom has proved useful in the past for small concerts, or entertaining large numbers!

The second important aspect of the Acoustic design process in Struer is the listening panel. This is a collection of twelve individuals from within the company who are selected for their fine and consistent hearing. The individuals can come from anywhere within the organisation - from factory floor to director, and can be summoned at any time during the day to evaluate a new design, rating it from one to ten over a 100 point scale. Consistency is vital - each member of the panel is regularly checked and if scoring a design as 8.2 on Monday morning, each member is expected to be able to score that same item with the same music within 2 points on a Friday afternoon. If they cannot, they are politely asked to leave the panel... Listening is carried out in a purpose-built room, heavily acoustically treated and featuring acoustically transparent screens that are used to disguise the items playing. The engineers are also careful to hide the boxes of any rivals' equipment used for benchmarking in order to eliminate any preconceptions before listening.

A similar setup of room and viewing panel exists for video products, the evaluation room for these being very high tech, with the ability to generate all sorts of natural and synthesised light sources in all directions in order to fully test the automatic adaptive contrast circuits within the televisions. On demonstration here was the new BeoVision 4 65” plasma, featuring a miniature camera that automatically pops out from the screen surround every 120 hours or so, to recalibrate the blue balance of the picture - the blue colour of plasma sets fades much faster than the red or green and this is the first set to automatically compensate for this during its life. Finally, for those of you who think that Blu-ray is as good as it gets in picture terms, I can confirm that the difference between such a picture, and a raw RGB signal played side by side on two identical sets is still quite depressing...

The next stop on the tour was one of the most interesting for me, whilst also being the most alarming! Down in the bowels of the Engineering division is what is referred to as the 'Torture Chamber' and it is here that B&O carry out stress testing of their products like no other manufacturer I know of.

Here, all of the company's products are subjected to high temperatures, low temperatures, extremes of vibration and drop tests from the height of half a metre or so to ensure they survive even the most arduous shipping conditions. Watching a 40” LCD in its box be dropped right in front of me made me jump, I can assure you. In addition, remote controls are thrown around, knocked off tables and smeared in a huge variety of polishes, cleaning products and even hand creams, to ensure that they continue to work and that no lettering comes off, even under the harshest of abuse in the home.

Finally, one of the most disgusting sights I have ever seen was the smoking machine - here, televisions have a continuous stream of cigarette smoke blown at them for a period of days to weeks, to ensure that the seals around their screens do not allow any of this to penetrate the internals. I am willing to bet that there are very few smokers in the factory and, if there are, sticking their heads into this machine would be an instant cure!

Naturally, there are the couple of oddities around. One is a picture of a television that was accidentally left
The smoking machine for TV testing. The box is clear Perspex and it is lined with clear polythene that is replaced every few weeks. The brown colour visible comes from the cigarettes and the liner in there was about a week old when I visited. Pass the sick bucket!

in the freezer over a weekend but the photograph on the wall shows it working, albeit with the picture under a thick layer of ice. Even better is the MX series television sat in the laboratory that suffered a similar fate, but in an oven - its plastic casing has melted completely and it looks very sorry for itself. Impressively, though, it still works...

The next stop in the main factory was the real jewel in the Bang & Olufsen crown - the aluminium processing plant. This is something that B&O are immensely proud of and something that they will not consider moving either out of house, or out of Struer. The interior of the factory has to be seen to be believed - this is the first industrial site I have ever visited that was so sparkling - you really could eat your dinner off the floor! Here, aluminium is cut, shaped, polished, anodised, trimmed and, in the case of colours other than the natural silver, stripped and anodised again - a cut surface would be a different colour to that of the main finish.

The number of employees who have worked for B&O for more than 25 years is astounding, and still growing.

Bureau (see www.visitsruer.dk) along with events organised by independent enthusiast groups like BeoWorld (www.beoworld.org), so almost anyone can go and see the company in action. My advice would be to give it a go if you are still in any doubt about whether Bang & Olufsen's products are "all show and no go". The level of design and craftsmanship put into each item is staggering, and the passion of their employees is impressive, as was the weather - when I visited at least! And yes, it was raining again when I landed back at Heathrow...

If you leave your TV in the oven for too long, it will look a bit like this. Mind you, if B&O made it, it'll probably still work...

There's no escaping B&O in Denmark - not even in your hotel room!
THE DOORS
Vinyl Box
Rhino
A luxurious box set, this collection consists of seven 180gm HQ LPs, consisting of all six of The Doors' studio releases in stereo with, in addition, a mono version of their debut album. The entire set has been remastered and supervised by Jac Holzman, founder of Elektra Records and production supervisor for The Doors, and Bruce Botnick, The Doors' engineer/co-producer/mixer for all six studio albums. The set was mastered by the much vaunted Steve Hoffman. As far as the packaging is concerned, all albums are presented as exact replicas of the original releases, including all the artwork, packaging, inner sleeves and mixes. The albums are contained in a very sturdy, thick cardboard box with an outer sleeve, fashioned in a fake crocodile skin effect.

There has been much discussion of this set's sonics on the Internet, most of which I totally disagree with. Firstly, this box set has been created from a set of DVD-A masters, not the original master tapes. Reportedly, it's a direction that Jac Holzman wanted to follow. Why? There may have been a perceived notion that the final mastering would be processed quicker and in a more efficient manner with digital sources. I personally think it was a bad decision. That's not to say the final sound of the box set is poor – far from it. However, with the original masters, it could have been better. Compared to Steve Hoffman's earlier DCC attempt at a Doors reissue, apparently created from the original masters, the new box set is relatively neutral and flat with a reduced volume offering more scope for dynamics. Not quite the ultimate collection on the market therefore, but it's certainly the best sounding.

NEIL YOUNG
Living With War "In The Beginning"
NEIL YOUNG & CRAZY HORSE
Live At The Fillmore East
March 6 & 7, 1970
Classic Records
Both these albums are reviewed together because they are so similar in their raison d'être. That is, they are both old - and new at the same time. The Fillmore is Young's first venture in his long awaited archive series. Much of this gig has already been bootlegged, it has to be said, and it also looks like there's a few tracks missing from those bootlegs too. However, the sound quality of this release is excellent. So, we're talking swings and roundabouts. The 'War' release is more intriguing. This is almost a director's cut of the previously released 'Living With War' album, stripped of the choir and other ephemera. It's designed to do two things: keep the political issues discussed on the album in the front of Young's fan's minds and the media, as well as supply that message in a more concentrated form.

I don't know what it is with Classic Records and Neil Young but, whenever the company releases his works, the records have an extra 'something', that smacks of love and attention. Both are superbly packaged in quality card stock, both are presented as gatefolds and both records are, unusually for Classic, contained in simple plastic bags instead of the paper-based inner sleeves. The Fillmore release has an image, in the gatefold's centre, of the band in action, pasted alongside a newspaper cut-out of a review of the entire evening's entertainment that not only featured Young but Miles Davis and Steve Miller too. You also receive a credits pull-out. For 'War', the design is more elaborate with a sheet overlaying the front of the original gatefold cover with the word 'RAW' stamped over the title - and, by gum, this 'pre-mix' certainly is that! Inside, you also receive a large fourteen page lyric booklet. Both records sound great but I have to report that both have been created before the latest Classic Records technology advancements have been fully implemented. For example, both records do not have the new-style groove guard. However, this takes nothing away from both records which are superb productions and highly recommended to all Young aficionados.
SANTANA
Caravanserai
Speakers Corner/Columbia

Santana are the most well known exponent of Latin-oriented rock music. Anyone who has seen the wonderful coverage from the Woodstock festival in 1969 cannot fail to be impressed by the group's energy and skill, and this particular release is one of Santana's early classics. Released in 1972, this album blends the group's trademark Latin rhythms along with rock and even elements of jazz to keep the listener always on their toes. You never really know what to expect with this release and that's part of the joy of the project which is always looking for ways and means to push and break musical boundaries. As such, you may listen to it and be distinctly underwhelmed. However, don't be deceived - this is a classic 'grower'...

The album is a typical Speakers Corner production in that it appears to be a duplicate of the original. There are no clues that this is a product of 2008; no bar codes, no Speakers Corner logos or copyright notices, no credits pertaining to the reissue. As the original was in 1972 – so is the reissue in 2008. As such, the package is a little treasure. The album has been mastered by the German-based Pallas to their usual high standards. The 180gm vinyl runs quiet which allows the music to breathe. Also, the mastering, from original master tapes, has produced a wonderful separation of the many instruments that appear on each track. This is a great test record for any new hi-fi component, to see if it can successfully identify the guitar, bass, drums, organ, piano, congas, bongos, timbales and other associated percussion. The mastering gives you every opportunity however, separating each successfully, making each track somewhat of an adventure. Highly recommended.

OTIS REDDING
The Dock Of The Bay
Sundazed/Volt

This is both a joyous and tragic album. Redding was one of the most influential and powerful ambassadors of soul during the sixties. His performances were always played 'to the max'. Like his contemporary, James Brown, Redding physically sweated over his performance, unravelling his emotions in front of the audience, dragging them into the song with him. His big and bold arrangements only enhanced the almost theatrical production he gave to soul and the trademark Stax sound – within which he was so reliable. Mainly because his performances were always consistently good. That's why this album is joyous. The tragedy revolves around the fact that the album was his last. Redding was to die at the criminally early age of twenty six just when he was about to break into the charts with the title track – in fact, the single was released posthumously. This last single also appeared to see an important turning point in his approach to his artistry which was rapidly maturing. The phrase 'if only' is more sadly applied to Redding than most.

The album, released in 1968, is a hotch-potch of singles and b-sides that cover the previous three years of Redding's career. Selected by Booker T. & the MG's' own Steve Cropper, who co-wrote 'The Dock Of The Bay', the album only goes to confirm how significant 'Bay' was to Redding's developing talent because there's nothing else on this album that sounds like it. Nevertheless, this is still an album all Redding and soul fans should own, featuring highlights such as 'Don't Mess With Cupid', 'I Love You More Than Words Can Say' and 'Ole Man Trouble'.

The mastering is of both high quality and contentious. It has obviously been processed with care and attention to detail, producing a wonderfully clear, open sound. It's contentious because Sundazed appear to have retained the original compression that gives the production its trademark sixties sound. You will either love or hate this approach. To some ears, the album will have a harsh, oppressive, almost digital playback. To others, it will offer truly authentic sound, successfully duplicating and reflecting a sixties production. You pays your money...
David Price welcomes Osamu Ikeda to the pantheon of audiophile greats, telling the story of his most popular product – the legendary Fidelity Research FR-64fx tonearm...

Hi, Fidelity!

When the former factory manager of Japanese tonearm specialist Grace decided to start his own business, he probably didn’t imagine that his name would become a legend in high end audiophile vinyl circles, but it did. It was in 1964, at the age of thirty five, that Osamu Ikeda formed Fidelity Research Kabushiki Kaisha. By the mid nineteen seventies his company was making truly world-class tonearms and pickup cartridges which could only have come from his own fair hand. Unlike so many other designers of the day, Ikeda was no copyist. taking out several international patents and finessing his designs like few others. Indeed, so respected was he in Japan that his products were even used by the Imperial Family.

The late nineteen seventies were the glory days for Fidelity Research, the era being regarded by many as the high watermark for vinyl hardware (if not software!). Ikeda was in the right place at the right time with a wide range of superbly built and interestingly engineered pickup arms and cartridges. The FR-60 series of tonearms was surely his strongest product, being a superlative device at a time when there was a paucity of competition.

Lest we forget, the international mid-seventies vinyl scene had been defined by its dalliance with ‘ultra low mass’ design. Hi-fi magazines championed the use of Shure V15 cartridges, tracking at ever lighter forces (i.e. down to 0.75g), in the name of less ‘record wear’, and subsonic resonance control. An entire generation of tonearms had been built to track them, the cheerleader of which was SME’s Series III. Launched in 1980, it was built as a carrier of high compliance moving magnet cartridges.

In Japan however, the ‘ultra low mass’ fashion never caught on to the same degree. The country’s audiophiles had (and still do have) an enduring love affair with the tank-like Ortofon SPU moving coil, meaning that higher mass tonearms never went away. Factor in a host of superb Japanese MC cartridge makers from Supex to Signet, and there was real demand for a beefy, ‘battleship’ tonearm such as the Fidelity Research FR-64S.

High mass arms have their downsides, but one unalloyed plus is their strength. With thick metal arm tubes, the counter-weights necessary to balance them and chunky bearing arrays tough enough to take all this weight, they are robust carriers of high mass moving coils where the likes of the SME III would have baulked at the challenge. Whereas the latter’s effective mass was 5.0g, the FR-64S weighed a suspended subchassis-bending 35g!

A beautifully screwed together stainless steel tubed pickup, this arm found itself in many broadcast studios, often sitting right next to a Technics SP10, tracking a cartridge that would make your average DJ-spec Stanton 500A look lightweight. But surely the high watermark of the high mass Japanese battleship arms was the twelve inch (301mm) FR-66S version, with forty percent less tracking error. Still, even the nine inch FR-64S was far too heavy for most applications – its effective mass making it suitable for cartridges with a compliance of around 5-10cu, of which there were...
"so respected is Ikeda in Japan that his products are used by the Imperial Family..."

very few (and none made by Fidelity Research themselves, even!).

With this in mind, the FR-64fx was introduced in 1981 as a 'real world' high mass pickup, with a dynamically balanced design similar to the S but with a much lower 20g effective mass. In designing the 64fx, Ikeda took the opportunity to tweak it for the (then) new generation of high performance moving-coil cartridges with higher tracking ability, giving it higher rigidity and sensitivity. This meant the conventional bearing assembly was changed to radial ball bearings.

Deep-oxidised matt black aluminium for the arm tube gave extra stiffness, with revised geometry for optimum low distortion tracking, by increasing the offset angle by approximately two degrees. The universal arm/headshell interlocking was improved by the use of a stronger connector and stiffer headshell, finely tooled to achieve a superb fit, while silver internal wiring was fitted. The bias compensator was redesigned as a thread linked, weighted unit, and the counterweight was modified with an improved locking system. As per the FR-64S, the 64fx came in a longer version – the FR-66fx.

Selling for £270 in the UK in 1982 (£17 more than a Linn Ittok) and ¥69,000 in Japan, the lighter, stronger arm tube and headshell allied to the heavy construction of the arm base and pillar made for a very strong, stable pickup arm with vanishingly low friction. Indeed, in this respect it measured much better than rival Dynavector and Grace products from Japan with only Sumiko's MDC800 able to compete (at £800!). Sonically the FR-64fx is still one of the best pivoting tonearms around, characterised by its very open, unstressed and relaxed sound, conspicuously uncoloured and neutral in tone.

Great as the Fidelity Research tonearms were, the company suffered at the meteoric rise of digital audio in the early eighties. Ikeda's strongest market (his home market of Japan) was particularly prone to the all-conquering Compact Disc; hitherto high end turntables, arms and cartridges were (literally) dumped by many audiophiles who believed that digital was the future of high end. This, plus chronic difficulties with Japanese labour unions, resulted in the sad end of the company in 1985.

Still, the great man came back with Ikeda Sound Laboratories Company. An altogether smaller and more specialist affair, he designed, built and inspected every product by hand. It was a chance for yet more innovation, not least the world's first MC cartridge without a cantilever, the Ikeda 9. The new IT345 and IT407 tonearms were launched in autumn 2006; coming in twelve and sixteen inch versions respectively, the former is the spiritual successor to the classic FR-66fx.

Lyra's Jonathan Carr adds a postscript, "Ikeda is still alive and active today, but he is getting quite old. Clearly something needs to be done to keep his designs alive after Ikeda himself passes on. But I am sure this will happen. He has bequeathed the rights to continue manufacturing the arms to the present subcontractor; so this will remain open. Lyra may also choose to help out. It would be a shame to see those great designs disappear."
Early Wireless World advertisement for the Wharfedale SFB/3

My analysis of Open Baffle designs was interrupted by the sudden acquisition of a loudspeaker that I have been longing to lay my hands on for the past 35 years! That speaker is the one whose picture I featured on the Open Baffle design page in this magazine, namely the Wharfedale SFB/3. So why the wait for 35 years?

As a budding speaker designer in the '70s I devoured every article and book I could find that expounded the art of speaker design. But it was the books by Gilbert Briggs, the founder of Wharfedale, that captured my interest most.

Mr. Briggs had a way of writing that was both humorous and informative and, as well as possessing a keen ear for high quality sound reproduction, produced books which became the epitome of DIY manuals throughout the '50s and '60s. In fact I'm just checking my copy of the seminal work 'Loudspeakers - The Why & How of Good Reproduction' now and find, to my astonishment, that the first edition was dated May 1948.

These books, besides teaching the reader in the gentlest possible way about how loudspeakers operated both in fundamental terms and also in practical situations, served as a vehicle for the sales of Wharfedale drive units, though Gilbert Briggs was always generous enough to show the attributes of other commercial designs if, like Peter Walker's original QUAD Electrostatic, they were of notable interest.

Of particular interest to me was the companion volume to 'Loudspeakers' entitled 'Cabinet Handbook' which elucidated all the ways that you could put drive units to use. As well as details on the various methods of loading drive units, namely closed box, reflex, acoustic labyrinth and line source, were outline plans for enclosures to which the DIY fanatic could fit Wharfedale drive units.

One of these caught my fancy, largely because it was so different to anything I could buy in the shops in the '70s. It was a plan for a fairly compact baffle, much the same size as the original QUAD Electrostatic, that stood 30 inches tall and 36 inches wide. Drive unit complement was a 12 inch and 10 inch bass and bass-midrange mounted close to one another to improve “mutual radiation impedance” and an upward firing 3 inch cone treble mounted behind the baffle. The other innovation of this speaker was the inventive control of panel resonance by using sand filling in the side panels of the baffle. The illustration of the plans shows this more clearly and you can get an idea of the driver layout from a photograph reproduced from Briggs' 'A to Z in Audio' published in 1960.

As far as I can ascertain, the concept for the SFB/3 (Sand Filled Baffle/3 drive units) came about because it was more compact than the large corner enclosures that Briggs favoured for his high performance designs but, when stood near a corner or alongside a side wall, achieved a similar output of bass power, though not necessarily extension.

Even so, a test by Ralph West, a known ESL devotee, in Hi-Fi News November 1956 described the SFB/3 as sounding 'less like a loudspeaker than anything previously listened to'. As for bass he commented 'bass was surprisingly good without any bass lift, in fact, it took quite a time to decide whether or not to use a little' and 'experiment showed it would handle enough power at 35 c.p.s. to give a really loud pure tone'.

In cosmetic terms a single SFB/3 was preferable in many rooms to a purpose built brick corner enclosure (see photo of comparable designs of the '60s) and many were bought.
**DIY FEATURE**

**Loudspeakers**

A pair of SFB/3 take pride of place in a listening test amongst comparable Wharfedale models. In the '50s and '60s large loudspeakers were common amongst audio enthusiasts.

as mono speakers. The later growth in popularity of stereo reproduction which, despite being introduced in the '50s didn't really catch on until the proliferation of stereo discs in the early '60s, saw many users add a second speaker to their first.

So, when buying QUAD Electrostatics, for example, one often finds the 'pair' are actually of different ages. Such is the case with this pair of SFB/3s. They are subtly different in manufacturing details indicating that a second speaker was added to the first to implement stereo in the home. Now what was thought of as a 'compact' loudspeaker in the early '60s, especially as a single unit in a room, is now considered unduly large and obstrusive in a room. Actually it was having to house two such speakers in a living room to enable stereo reproduction that marked the death knell of large speaker reproduction. By the mid '60s, smaller, compact closed box speakers were all the rage and, in my view, things have just got worse ever since!

But enough of the history. The point is how do these venerable Wharfedale designs stand up today and, more to the point, what do they tell us about open baffle performance and reproduction in a real room? The description of how the SFB/3 is designed to work in a typical room location is covered in Briggs' 'Loudspeakers - Fifth Edition' in the 'Baffles' chapter. Drive unit complement is a 12 inch bass unit specially designed for the SFB/3, a 10 inch 'Bronze' bass-midrange and the ubiquitous Wharfedale Super 3 (3 inch) cone treble unit.

Peculiarly, the 12 inch and 10 inch units are connected in parallel with no crossover, relying on their natural roll-off in each case, whilst the Super 3 is placed on an upward facing sub baffle behind the main one ostensibly firing at the ceiling. With dipole arrangement of bass-midrange and vertical dispersion of the treble unit the speaker was described in the Wharfedale advert as 'Omni-directional'. The only crossover component is a 4 uF capacitor in series with the treble unit. Later a series rheostat was added to provide adjustable HF output.

The whole arrangement is one that Ralph West called 'retrograde', meaning that mounting a drive unit on an open baffle is how speakers were first designed - boxes came later. But, he is at pains to point out, early 'bass' reproducers had a fundamental resonance in the 100Hz area and very limited excursion. For the SFB/3 Briggs had designed a 12 inch unit with 30Hz resonance and a long throw suspension and magnet gap for good linearity when driven hard.

This allowed the listener to apply judicious bass lift (+2 on a Quad preamplifier bass control) without overpowering the bass unit. In addition the 10 inch unit on the same baffle, in close proximity to the 12 inch unit, provided both a means of sharing the power handling and spreading the resonance through what Briggs called 'mutual coupling'. This also increases the radiation resistance, resulting in an improvement in efficiency at low frequencies.

You can see how this 'mutual coupling' works by viewing the impedance graphs. First the graph of the bass unit measured alone showing its fundamental resonance. Originally the unit was fitted with a foam surround, an innovation at the time which improved the mating of cone and surround and reduced edge reflections for a cleaner 'top' end. Unfortunately foam surrounds have a tendency to disintegrate over a period of several decades of use and the units in my samples have expertly applied felt surrounds as replacements.

Fundamental resonance with these slightly heavier surrounds has

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**Fig. 10.11. Speaker Tests in Lab. measuring 18 13**

**A** 1 speaker brick assembly.

**B** 4 speaker mobile model.

**C** 3 speaker baffles.

**D** Coaxial 12 in 5 cu. ft. reflex cabinet.

**E** 8 Column speaker.

**F** As E, but concrete.

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**Impedance of SFB/3 bass unit**

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DIY FEATURE

Impedance of SFB/3 10 inch 'mid' unit. Note the 'interference' caused by the reaction to the mutual coupling with the nearby bass unit.

Overall impedance of SFB/3. The spread of fundamental resonance from the bass and mid units in parallel and mutual coupling on the same baffle effectively damps the LF peak.

This is evidence of the 'mutual coupling' Briggs talked about. Out towards the middle of the room, which is where I suspect many owners would now try to place a pair of SFB/3s, the bass is undoubtedly lightweight and the midrange far too forward in nature. Across a corner the bass becomes thunderously deep and 'fat' thanks to the multiplication of reflecting surfaces and corresponding strong coupling to all room modes (maximum room gain) but loses all its articulation too.

To obtain the performance that Briggs expects, the ideal position is indeed, about a metre or less from the corner and butted up against a side wall, angled towards the listener. This angle proves important as it reduces the effects of reflections from the rear of the drive units and the side wall by spreading the minor standing waves over a wide range.

In the next article I'll continue experimenting with different room positions for this combination and our proposed bass units for our own project. Certainly Briggs' advocacy for a pair of dissimilar drive units sharing the low-frequency load is an eye opener and the resulting damped resonance (a low Q coupling) flies in the face of the current advice which, it has to be said, seems to be based on 'free standing' baffles rather than ones that utilise room gain to its utmost advantage.

When we look at driving the Wharfedale 10 inch Bronze on its own we see not only a higher fundamental resonance but also that this impedance trace is distorted because, of course, it is also exciting the 12 inch unit in close proximity. This is evidence of the 'mutual coupling' Briggs talked about.

Turning to the graph of overall impedance you can see that the fundamental resonance of both units is both spread and damped, resulting in the claimed 'Bass Resonance 30/35 c/s' described in the SFB/3 advertisement.

At first sight the response graph, taken anechoically, does not look promising. A steady fall from 225Hz, where the half wavelength equals the baffle's minimum 30 inch dimension, continues to decline at 6dB per octave below 150Hz where both baffle dimensions fail to reflect the drive units' output. Note that the treble unit is not measured on the forward axis where the microphone only picks up the direct output of the bass units.

But how does this translate when the SFB/3 is used in the listening room? For a start the output of the 12 inch unit is considerably reinforced by its close proximity to the floor. This restores much of the output down to 150Hz as only the larger baffle dimension now causes the step down in response below this frequency.

Briggs' preferred placement was part way down the room and up against the side wall, which increased the apparent baffle width as well as causing an improvement in bass output by coupling better to the room gain. Interestingly this position is identical to that recommended for many dipole speakers including full range electrostatics (though not often adhered to in modern homes!).

Out towards the middle of the room, which is where I expect many owners would reduced to 26Hz indicating a high mass cone and highly compliant inner suspension. The massive Alnico magnet achieves a high sensitivity of 94dB with an impedance of around 12 Ohms. This is a remarkable unit by any standards and would be regarded as of astonishing quality were it being produced today.

At first sight the response graph, taken anechoically, does not look promising. A steady fall from 225Hz, where the half wavelength equals the baffle's minimum 30 inch dimension, continues to decline at 6dB per octave below 150Hz where...
World Designs' new WD25T v2s arrive at Hi-Fi World - Noel Keywood wields the measurement microphone and Adam Smith wields his cars...

With the WD25T v2s installed in the listening room at World Towers and suitably warmed up, I see no point in dwelling about the bush, so if you were intending to skip ahead to the last paragraph, I shall say straightaway that these are the best loudspeakers bearing the World Designs badge that I have heard to date, and that's saying something as the previous models were certainly no slouches!

Where the WD25T v2s really score over their original predecessors, for me, is in terms of the sheer realism that they impart onto music. The loudspeakers themselves simply disappear leaving you with a room full of instruments playing directly in front of, and slightly above, you. It is almost as if you're sat in the stalls looking up at the stage of a live concert, the result is that vivid.

The ever so slight dryness of tonality that I sometimes felt with the original WD25Ts possessed is gone, and in its place is an even-handed neutrality that seems to impart no unwanted character onto the music at all — what you hear is exactly what you are meant to hear. The midrange is emotive and fluid, and the top end sweet and possessed of impressive clarity, but without falling into the realms of the harshness and spit that can sometimes accompany a design where the high frequency output has simply been lifted in order to gain insight.

I have no doubt that this neutrality is largely down to the new ARCENA cabinet material, that removes any vestiges of cabinet bloom that conventional materials can tend to impart on the sound. Another nice side-effect of this is that the WD25T v2's bass is superb, and integrates beautifully with the mid and treble.

Unlike many modern loudspeakers, the WD25T v2s are optimised to work close to a wall and this makes them an incredibly room-friendly (and spouse-friendly!) proposition. As a result, initial listening may lead listeners to believe that the loudspeaker is a little bass shy but this is most definitely not so. Simply, the cabinet is not singing along, and there is no poorly tuned port adding any unwanted effects. What you are left with at the bass end is detail, a solid sure-footedness and a surprisingly healthy extension, that picked out the lowest notes of my Jazzanova test track with ease — something that surprisingly few floorstanders manage.

All in all, the WD25T v2s are highly impressive loudspeakers, blessed with an effortless nature, thanks to that nice big main drive unit, and magnificent levels of neutrality and atmosphere, thanks to the new cabinets and redesigned crossovers.

Even with the price approaching £1,000 for a fully built and tested pair, the WD25T v2s are astounding value for money and I can think of no other loudspeaker at the price that offers their addictive mix of grace, pace and neutrality. Highly recommended.

MEASURED PERFORMANCE

Designed to be used close to a wall, you can see our gated sine wave frequency response trace shows bass output slowly rolling down below 150Hz. Moving the loudspeaker close to a wall and measuring with pink noise clearly shows how the low frequency output comes up, reaching down to 40Hz. The WD25T goes low then, but works with the room to stay flat and well damped, in effect. This is a nicely judged piece of design that will give better bass control and quality than usual, without sacrificing deep bass. The overall response balance is flat, but there is strictly no high frequency emphasis, unlike most modern loudspeakers. Furthermore, the tweeter has been pulled down slightly at its crossover with the bass unit to keep total radiated sound power into the room similar, to better integrate the two, this working a best into a room lightly damped at higher frequencies, which most are. So WD25T v2 is very accurate, exhibiting better balance across the audio band than most commercial loudspeakers, which these days come with raised treble so as to shine in a showroom demo.

Sensitivity measured 87dB from one nominal watt of input, which is good if not exceptional. The loudspeaker needing around 40 Watts or more ideally. The impedance characteristic is smooth and reactive, the single bass peak from the closed cabinet being well damped. Overall impedance measured out at 10 Ohms, with 8 Ohms a minimum, so this is strictly an 8 Ohm load as far as valve amps are concerned. WD25T v2 is wideband and deadly accurate. It is also well integrated and well damped in the bass. So this is loudspeaker that others will struggle to match for accuracy. NK

FREQUENCY RESPONSE

IMPEDANCE

WORLD DESIGNS WD25T v2
BASIC KIT £479
PLUS CABINET KIT £914
FULLY BUILT/TESTED £1148
World Designs
C +44(0)1832 293320
www.world-designs.co.uk

www.hi-fiworld.co.uk SEPTEMBER 2008 HI-FI WORLD
"digital is not a universal panacea by any means..."

adam smith

The alarming news that was doing the rounds on the radio regarding Freeview recently set me thinking. In case you hadn’t heard about this, the story is that the heads at Freeview decided to introduce a new type of transmitter signal that was not compatible with several types of Freeview box in use, including models from Daewoo, Labgear and Triax. The result is that users with Freeview boxes from these manufacturers are now left with blank television screens and Freeview box-styled paperweights. Of more concern is that the changeover is planned to continue in both Scotland as well as other parts of the country and by the end of it, it is estimated that around 200,000 people will be affected. Most of them will have to buy new set top boxes but those who have televisions with integrated digital tuners will need new sets.

Frankly, I think this is an appalling state of affairs and smacks of the poor organisation and “we know better” attitude that is creeping into so much of our lives at the moment, nowhere more so than the home entertainment industry and, frankly, I am rather tired of being forced down a particular road because of someone who thinks they know best.

For me, the classic example of this is the plasma and LCD television market. The increasing popularity of huge screens does call for this new technology. As a side thought, I bought my television second-hand from a dealer dedicated to the manufacturer and when I visited to collect it, several similar models were in the showroom but switched off, whereas they had all been playing on my previous visit a few weeks earlier. When I mentioned this, the dealer told me that they had discovered that, if they left them on, they had a tendency not to sell any of the company’s new LCD or plasma sets, as the pictures were not as good: hardly a resounding affirmation of the new technology.

I also feel that a certain amount of blame for our modern woes can be laid at the door of Dr. Digital. Now I am not a diehard digital-phobic by any means but cannot help but feel that it has been touted as a panacea for all the problems that we didn’t actually have in the first place. Some might consider it surprising that I would site the likes of MP3s and digital music as one of the more successful results of digitalisation as it is perfect for the market in which it has been adopted most enthusiastically - that of portable audio. The forerunner of this was the Compact Cassette and only a fairly small bunch of enthusiasts ever attempted to make this into a proper high fidelity music format; exactly the same as is being done with compressed digital today - perhaps the Naim HDX will become the spiritual successor to the Nakamichi CR-7E, only time will tell.

No, to my mind, the strengths of MP3 and the like are exactly like that of the good old cassette - music sharing and bringing the product to a wider audience. I’m sure most of us have copied albums for our friends or made compilation tapes for the car/walkman without worrying unduly about the sound quality, and the iPod and its ilk are bringing this back up to date in a very successful way.

However, digital is not a universal panacea by any means and I rather resent being told that it is by those who supposedly know best. The most prime example of this is, as our very own Steve Green keeps reminding us, the DAB radio format that is being rammed down our throats. I am thoroughly sick of listening to radio presenters banging on about how their show is coming to us in “crystal clear digital quality” when I can barely make out what they are saying thanks to the intensely annoying ‘bubbling mud’ effect that comes and goes throughout the day even in our central London offices.

DAB simply does not work on the train either, so my daily commute relies on good old VHF/FM and, at home in the Hampshire countryside I still have no DAB radio. Why? Well, entering my postcode into the www.getdabdigitalradio.com website still tells me that “We’re sorry, there are no digital radio stations available in your area at the moment”. If this is progress in a shiny new digital world, I’m not impressed.
The present is a far more interesting time for hi-fi than ten or twenty years ago...

David Price

One of the most fascinating things about this job is watching, from an excellent vantage point, the tortured relationship between consumer electronics manufacturers and the buying public.

I don’t know if you’ve ever given it much thought, but products don’t just fall from the sky like fruit from trees. Think of the most prosaic and just fall from the sky like fruit from electronics manufacturers and the certain wasn’t down to its inventors as a music carrier. How so? Well it accidentally became a massive hit the Compact Cassette, which failed eight track cartridges and Elcaset. Only look at the glorious failures like succeed, save a ‘hunch’ from the new consumer technology packages, decisions by several companies over dull Freeview box, for example, and it much thought, but products don’t buy as a dictation medium, but like iPods for example, take an awful lot of planning and design, with very little or no certainty that they’ll succeed, save a ‘hunch’ from the manufacturer...

For evidence of this, you need only look at the glorious failures like eight track cartriges and Elcaset. Then there was the curious case of the Compact Cassette, which failed miserably at its original intended use as a dictation medium, but accidentally became a massive hit as a music carrier. How so? Well it certainly wasn’t down to its inventors Philips, who did only passable players - instead they can thank one Akio Morita over at Sony in Japan, who invented the Walkman.

You can imagine how consumer electronics must ‘write’ and ‘wriggle’, as their products are launched out into the marketplace, and are greeted by mass collective indifference or find them being used in different ways to how they’d originally intended!

Surely the joker in the audio format pack is MP3, though, Motion Picture Experts Group. I Audio Layer-3, to give it its full name, is the one format that emphatically them being used in different ways to as their products are launched out wirelessly at that!

The present is a far more interesting time for hi-fi than ten or twenty years ago. There’s a sense that retailers were saying, “We like to sell you vinyl and CDs”; instead it felt like “You must have CD and be glad of it”. We were all told that 16bit PCM was best for us, and that was that. Now that digital has migrated off discs into a highly versatile and extensible form, we can use what suits us — and run it alongside analogue should we wish.

I do hope that SACD and DVD-Audio come back, reborn as digital file formats rather than optical discs with clunky interfaces and the need to buy special players. I particularly liked SACD, and would relish the chance to download this, but even 24/96 is astonishingly good compared to CD — as downloads from Linn Records and Naim Label’s websites show.

These days, my vinyl system is bigger and better than ever — as is my record collection. But I’m developing a ‘digital backbone’ of music on my computer, stored in two iTunes libraries (320kbps AAC and Apple Lossless concurrently), which is increasingly being used — both for music streamed around the house is increasingly being used — both for music streamed around the house and taken out and about on my Sony NWZ-AB18 Walkman (the model immediately prior to this month’s group test winner).

Digital always had the capacity to give music listeners (and buyers) tremendous flexibility, but it’s only now we’re beginning to see it. And true to form — as consumer electronics goes — it was all down to an obscure computer file format that the music hardware makers, for a long time at least, did their upmost to ignore!
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Specialist Shadow Brands include: ADAM Audio, Aperion, ART Loudspeakers, Audio Zone, Audio Physic, ATC, AV/CI, Bel Canto, Bryston, Chord Cables, Clearaudio, Creek, EAR/Yoshino, Eastern Electric, Epos, GamuT, Hovland, Hyperion, IsoTek, JAS Audio, Jungson, Manley Labs, Marantz Legendary, McIntosh, Musical Fidelity, Musical First, Music Tools, Nordost, Opera, Pathos, PMD, Resolution Audio, Shanling, SME, Tannoy Prestige, Transfiguration, Unison Research, Vertex AQ, VPI, Wadia, Wilson Benesch and many more.
"The Digital Radio Working Group recommends that FM should be switched off by 2020..."
Walrus 11 New Quebec St, London W1

Pure Sound A30 Amp (£1199)
British designed/Far Eastern made the A30 is stunning value. It might look plain, but boy, does it sound good! We also stock the amazing P10 valve phono stage (£449).

Musical Fidelity A1 (£999)
The legend returns! The all new A1 has a very difficult act to follow but does it by a wide margin. Features remote control, 6 inputs including phono and USB, 30W/channel, and still a true Class A design (MF spec). Come and have a listen now- waiting list expected!

Brinkmann La Grange+10.5 Tonearm (£10,990)
Another in the (very) shortlist for the best, at a price only a fraction of some competitors. You may never want another turntable after auditioning the Brinkmann combination!

Aura Note Music Centre (£1400)
The complete solution. CD, FM/AM tuner, USB stick/Drive reader, digital audio from your PC/Mac via USB. Sound is clear and clean, with 50W/ch on tap. A Killer Product!

STAX

Musical Fidelity A1 (£999)
The legend returns! The all new A1 has a very difficult act to follow but does it by a wide margin. Features remote control, 6 inputs including phono and USB, 30W/channel, and still a true Class A design (MF spec). Come and have a listen now- waiting list expected!

Luxman L550A (£2795)
A very complete solution. The usual excellent Luxman sound quality, 30W/channel (although measures far more), decent phono stage, balanced inputs, tone controls. I want one. Now.

* Please ask about our ex-demo stock; many items are virtually as new but with large reductions.

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"the fact that an LP can be magnetised in the first place is pretty startling..."

Paul Rigby

One of the more contentious issues relating to the technology advances announced by Classic Records in this issue's second part of the Black Art feature [see p92] is the idea of demagnetising your vinyl. The fact that a plastic record can be magnetised in the first place is pretty startling, but it's true. The material that gives a record its colour, carbon black, contains metallic trace elements that create a weak magnetic field and degrade sound when they roar past your sensitive cartridge's magnets at 33.3rpm or 45rpm. Testing Classic Records' sensitive cartridge's magnets at 33.3rpm sound quality through the eradication of a select number of gadgets that purported to address the magnetisation of the record was pretty startling, but it's true. The material that gives a record its colour, carbon black, contains metallic trace elements that create a weak magnetic field and degrade sound when they roar past your sensitive cartridge's magnets at 33.3rpm or 45rpm. Testing Classic Records' Clarity series, which removes the Carbon Black entirely and improves sound quality through the eradication of this magnetic influence, impressed me so much that I felt that I had to investigate further...

During my research for the Black Art feature I was made aware of a select number of gadgets that purport to address the magnetisation problem. Some of which are designed for both vinyl and CD (which also suffers from this problem, but for different reasons). One immediately hove into view. 'The Talisman', from US-based Walker Audio is priced at £200 (www.audiophilecandy.com). A 4.5" bar magnet, it's coated in thin plastic with a felt covering on its base. However, it's pretty powerful so, if you do grab one, keep it well away from your electronics!

To demagnetise a vinyl record, you place the disc on a flat surface. It is preferable to use a rotating turntable or, even better, a cleaning machine (the latter, of course, doesn't feature that sensitive cartridge). While the record rotates in a clockwise direction, you move the Talisman in an anti-clockwise direction on the left-hand side of the record, for six rotations, keeping the Talisman an inch or so from the surface. To process a CD, I placed the stationary CD on a table and moved the Talisman, anti-clockwise over the CD - again for six rotations.

Before and after testing was startling and strongly resembled the effect heard when listening to Classic Records' Clarity series. Before, the sound 'bled' around the soundstage, giving an almost 'cloudy' effect. After processing, the music was pin-sharp and instruments were better placed around the sound stage. This was the effect for both vinyl and CD. I would recommend treating each disc, every time before play as the beneficial effects wear off eventually.

Despite not purporting to change the magnetisation of the CD, Merigo Audio's 'Signature 3-D Stabilizer' provided a similar result with less hassle. Basically, a CD-sized disc constructed from carbon fibre and Kevlar with strategically placed triangle shapes cut around it, you place the disc on top of your CD before play. The result is similarly gratifying, giving the same amount of focus and soundstage improvements. It is priced at £125 (www.audiophilecandy.com).

Back to demagnetisation and the Bedini 'Ultra Clarifier Quadri Beam'. This rather flimsily constructed plastic box is designed to demagnetise CDs only and comes in varying flavours from a cheaper, single beam, hand-held version (£60), to a dual-beam version (£125) and the box under test, the top-of-the-range quad-beam priced at £225 (sales@virtuososound.com). To process a CD, you open the transparent lid, place your CD on the central spindle and press a big red button. The CD is revolved at high speed, then the motor cuts out after a minute or so.

The result? Impressive. And I don't use this word lightly. Running a Naim CDS, via a Naim NAC 112/ NAP 150 pre/power through a pair of One-Thing Quad TSL 57s, I initially tested Mixmaster Morris' classic 'Global Chillage' album. The focus of the Talisman was there, yes, as was the improvements in soundstage. However, the Bedini went so much further. Every aspect of musical reproduction was improved: separation of instruments was striking, the sound stage was vastly extended, bass was lifted. My hi-fi stopped trying so hard. There was also a definite analogue quality about the presentation.

The Bedini is also a boon to poorly mastered CDs, especially those which have suffered from damaging Peak Limiting. The Sugababes' 'Angels With Dirty Faces' is a good example of a bad master. Ordinarily, this CD sounds harsh with excessive sibilance. After treating it with the Bedini, you could still hear the wretched mastering problems. However, the CD became listenable. The analogue effect calmed the general screeching whilst the excellent instrumental and vocal separation meant that, instead of hearing a painful, metallic lump of harshness the brain was able to accept the good and bad elements of the music, one step at a time, giving a much more even and acceptable effect all around.

Bottom line? I'm totally won over. Now, before I listen to a vinyl record I don't just clean it, I also treat it with The Talisman, and before I play a CD I treat it with the Bedini. If your funds won't stretch, however, the Merigo also comes highly recommended for CD play. !
TURNTABLES

PROJECT RPM 1 GENIE 2007 £125
An absolute masterpiece of 'if you don't need it, don't include it' engineering. What's left is superbly made and turns in a staggeringly good performance, regardless of the low price.

REGA P1
2008 £189
Rega undercut their own P2 with this new entry-level deck. Easy to set up and fine sound quality.

REGA P3
2000 £298
Great affordable audiophile deck with fine bundled tonearm. Tweakable, and responds well to careful sighting on a Base platform.

TECHNICS SL1200II 1973 £395
Slick build makes it a respectable performer, although the cheapo arm limits it - fit a Rega RB250 and it's suddenly a serious mid-price machine.

MICHELL TECNODEC 2003 £575
Innovative attempt to produce the best sounding machine. Extremely wide open and natural sounding through obsessive attention to detail. The result is an extremely wide open and natural sounding machine.

PRO-JECT X PACK 2005 £650
Decently musical sound, fine build and blisterring value for money turntable, arm and MC cartridge package.

ROKSAN RADIUS 5 2003 £750
Fantastic value allied to intelligent, interesting and 'out of the box' design makes for a wonderful entry-level superdeck. Open and musical sound is more inviting than Michell Technodec rival, and the bundled Nima tonearm. Tweakable, and responds well to careful sighting on a Base platform.

OL AURORA MKII 2007 £750
Seminor entry level high end deck showing obsessive attention to detail. The result is an extremely wide open and natural sounding machine.

FUNK FIRM VECTO 2006 £760
Innovative attempt to produce the best sounding turntable at the price; highly musically enjoyable.

MICHELL GYRODEC SE 2005 £970
Design classic with superlative build and finish. Sound is beautifully smooth, expansive and effortless but lacks bass grip compared to some rivals now.

MARantz TT-1551 2005 £999
This, the most musical sub-£1,000 turntable package, includes a fine tonearm and MM cartridge, plug and play vinyl at its best.

AcoUSTIC SIGNATURE CHALLENGER 2006 £1,289
Heavyweight turntable in more ways that one. Massive sharply focused soundstage allied to vast dynamic range makes it outstanding at the price.

VPI SCOUT/9" JMW ARM 2006 £1,995
With a massive, solid and focused soundstage, superlative transients and excellent musicality: this turntable is exemplary at the price.

PROJECT RPM 10 2006 £1,500
Suitable for use with nearly any arm and cartridge combination. Great affordable audiophile deck with fine build and blisterring value for money turntable, arm and MC cartridge package, includes a fine tonearm and MM cartridge: plug and play vinyl at its best.

REVOLVER REPLAY 2007 £1,500
Unbelievable spring back into the vinyl market like they've never been away, with a stylish and solidly built LP turntable. Welcome back!

SCHEU ANALOG BLACK DIAMOND 2007 £1,500
Stylish and highly capable turntable with seriously impressive bass. Comes with tweaked RB250 and high output Benz Micro MC cartridge as a package - superb value for money.

CLEARAUDIO SOLUTION SATISFY 2006 £1,650
Wonderfully big, powerful and enthusiastic sound is tempered by a little over exuberance on occasions. Super value, with a great upgrade path.

THORENS TD2030 2006 £1,895
Excellent design and a supplied Rega RB300 make this a highly capable vinyl spinner. Blue tint to the Perspex base is rather pretty, too!

MICHELL ORBE SE 2002 £1,916
Ultimate evolution of the Gyro adds massy acrylic platter and two-stage isolation. Fantastically capable all rounder with commanding, powerful, detailed sound that gets the best from almost any arm and cartridge.

LINN LP12SE 1973 £3,510
New Keel subchassis is not cheap but brings the LP12 firmly into the 21st Century, with pace, dynamics and low end grunt.

SME MODEL 10A 1995 £4,556
Exquisitely engineered deck and SME V tonearm combo that's an extremely accomplished performer with classical music.

CLEARAUDIO REFERENCE 2003 £6,000
The company's best value vinyl spinner: good enough to get the best from almost any tonearm and cartridge combination. Brilliantly open and neutral sound, supertia pitch stability, stunning build and styling - Michell Orbe does most of this at half the price, however.

ACOUSTIC SOLID ONE 2007 £7,000
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...

AVID VOLVERE SEQUEL 2007 £7,600
Stylish and very well built vinyl spinner that measures well and sound spectacularly neutral and vivid.

SIMON YORKE S9 2002 £8,995
Magnificently designed and built 'record player' that has musical abilities few can match. The arm is particularly impressive, despite its apparent simplicity.

McINTOSH MT10 2008 £8,995
It's big, expensive, controversially styled and glows more than some might consider necessary! Fortunately it's also an astonishingly good performer...

TEONEARMS

REGA RB350 1984 £112
This is capable far beyond its price point, with a tight, lean and detailed sound. Responds well to counterweight modification, reholing and general tweaking.

MICHELL TECNOARM A2003 £399
John Michell's brilliant reworking of the Rega RB350 theme, using blasting and drilling techniques usually seen in motorsport! The result is the best sounding arm at £400, and as good as same at four times the price.

ORIGIN LIVE SILVER 2006 £599
This expertly fretted Rega boasts a superbly even, transparent and tuneful sound. Gives away only a small degree of finesse and dimensionality to top arms.
HADCOCK 242 SE 2000 £649
Latest of a long line of unipivots, with added mass, revised geometry and better finish. Musical like no others at the price.

SME 109 1989 £677
Mid-range SME comes complete with cost-cut aluminium armbase and detachable headshell. Tight, neutral sound with good tonality, but lacks the V's pace and precision.

SME SERIES IV 1988 £1,127
Offers nine tenths of the SMEV's magic at around half price. Exquisitely built and finished, and a design classic. Faces stiff competition these days, but lovely nevertheless.

ORIGEN LIVE ILLUSTRIOS 2002 £1,570
A modern superarm with battleship build. Extremely strong, even and open sound in the mould of the late, lamented Zeta, plus fine tonal colouring. Exquisite.

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

SME SERIES V 1987 £1,614
The so-called Best Pickup Arm in the World isn't quite, but comes pretty close. Vice-like bass with incredible weight, ultra clear midband and treble. Does everything except beguile the listener.

LIIN EKOS 1987 £1,700
Suitable over the years, including revised bearings and the recent new wiring has kept it a serious contender in the superarm stakes. Lacks the SME's slam, the OL's clarity but has a feisty musicality all of its own.

GRAHAM PHANTOM 2008 £2,495
Sonically stunning arm with magnificently solid armbase and soundstaging. Build quality almost up to SME standards, which is saying something.

TRI-PLANAR PRECISION 2006 £3,600
Stunning build, exquisite design and surely the most naturally musical and lucid sound around makes this a remarkable pickup arm.

CARTRIDGES

AUDIO TECHNICA AT-110E 1984 £29
Great starter cartridge that's refined, detailed and musical beyond its price.

ORTOFON 2M RED AND BLUE 2007 £60/£120
The first new budget MM designs for many years. Ortofon's 2M Red and Blue are high resolution designs that are an engaging listen.

GOLDRING G1042 1994 £135
One of the best MM's going, with sweet and extended treble and punchy, muscular bass.

ORTOFON SAMBA/SALSA 2006 £150/£200
Fine cartridges that offer that MC magic at an affordable price. Samba is more dynamic and forward, Salia rather smoother but both are great performers and track well.

DENON DL103R 2006 £200
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 DV10XS 2003 £250
A distant descendant of the classic Ultimo IDX, this has warmth and sweetness in spades, allied to a punchy bass. Beats G1042 comfortably.

AUDIO TECHNICA AT-OC9MLII 2007 £270
New and improved stylus and cantilever plus serious price reduction equals stunning dynamics and clarity. A real bargain.

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
The best modern budget MC combines deliciously sweet sound with fantastic get-up and-go. High output version works a treat with valve phono stages too.

LYRA DORIAN 2007 £495
Incisive and musical; the Dorian is one of the most revealing cartridges at the price.

ORTOFON KONTRA 'B' 1999 £720
Surprisingly articulate performer by Ortofon standards. All the brand's usual polish and clarity all of its own.

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

ZYX R-100H 2005 £625
Exceptionally tight sounding and detailed cartridge with the musical skills to match, this is up with the very best at the price, with a presentation all of its own.

BENZ MICRO GLIDER L2 2008 £650
Crisp, clean and detailed MC; particualrly similar- priced MCs.

LYRA DORIAN 2007 £495
Incisive and musical, the Dorian is one of the most revealing cartridges at the price.

ORTOFON KONTRA 'B' 1999 £720
Surprisingly articulate performer by Ortofon standards. All the brand's usual polish and clarity all of its own.

ORTOFON MC WINFELD 2008 £1,799
Ortofon's new flagship MC is a sophisticated and alluring performer that takes the vinyl experience to a new level.

KOETSU RED K SIG 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 DISC PLAYERS

CAMBRIDGE AUDIO 640C V2 2006 £250
Superb entry level CD player; crisp, composed, musical sound plus fine build and ergonomics.

MARANTZ CD6002 2008 £299
Revealing and open budget CD player, once the menus have been navigated to set the player up optimally!

REGA APOLLO 2006 £498
Highly rhythmic and beguiling performer, although lacks some warmth of tone. Superb ergonomics and design.

RUSS ANDREWS DAC-1 USB 2007 £599
Not just a USB gadget, but a truly accomplished upgrade DAC that makes the best of CDs, MP3s and digital radio.

CAMBRIDGE AUDIO 640H 2005 £599.95
Fine sonics and decent build make this our favourite affordable HD music server.

MARANTZ SA700K1 SIG 2006 £600
Brilliant CD/2ch SACD spinner with a big, sweet, analogue-like sound - CD is totally competitive at the price with the best dedicated machines.

AUDIOLAB 8000CD 2006 £650
Ultra clean and transparent sound with amazing detail retrieval, just a tad bright and analytical for some, though.

SHANLING CDT-80 2005 £650
Very impressive mid-price machine with a big, sumptuous, expansive sound – better still when tubes are changed.

STANDARDS

KOETSU RED K SIG 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.

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 CDs i 2008 £850
Naim's new italic 'i' variant improves even further on the original, offering superb performance in a very well built package.

EASTERN ELECTRIC MINI MAX CD 2005 £925
Highly accomplished tube-equipped all rounder with a clean, open and musically lucid sound; superb value.

www.hi-fiworld.co.uk  SEPTEMBER 2008 HI-FI WORLD 79
STANDARDS

Cyrus CD8i 2005 £1,000
Highly incisive, engaging, gritty and dynamic sound, but needs careful matching to smooth ancillaries. Optional PSX-R adds bass and dimensionality.

Benchmark DAC-1 USB 2007 £999
Pro-based DAC with useful range of inputs and impressive headphone outputs too. Save £250 if you don’t need the USB-equipped version.

Electrocompaniet PC-1 2008 £1,034
Tidy and polished-sounding CD player with strong bass and an assured sense of confidence.

Exposure 3010 2003 £1,200
One of the most ‘analogue’ CD players, second only to the Stanley. Wonderfully beguiling balance leaves you looking for the tube output stage.

Rega Saturn 2007 £1,298
Wacky looks surround a highly accomplished CD player that marries a smooth midband to excellent bass grip.

Edgar CD-1 2007 £1,350
Quirky Slovakian CD spinner with all-valve output and a truly spine-tingling performance.

Stello DP-200 2004 £1,495
Brilliant do-it-all upsampling DAC preamp with headphone output and phone in. One of the best digital to analogue converters around, allied to mind-boggling flexibility.

Marantz DV9600 2006 £1,500
Impressively accomplished universal disc player, that performs superbly on CD, SACD, DVD Audio and DVD Video.

Raysonic CD128 2007 £1,599
Spaceship styling and fine build around a highly competent mid-priced CD spinner means a feast for the senses.

Chord DAC64 2005 £1,995
Bespoke architecture gives a truly uniquely musical sound that’s beguilingly musical in nature, if a tad tonally dry. Superb build and aesthetics too!

Shanling SCD-T2000 2007 £2,250
Updated version of original SCD-T200C standardises upgrades optional on the older model and adds a few more tweaks for good measure. The result is a stylish player that works superbly with both CD and SACD.

Fusion 64 2006 £2,200
Unique digital and analogue audio engineering makes for an exceptional CD player that, on some programme material, is peerless.

Linn Unidisk 1.1 2004 £6,500
Surely the ultimate universal DVD player: superb in every department, but its CD playback shines brightest considering it’s not a bespoke Red Book machine.

Naim CD5 2003 £7,050
The most polished Naim CD to date: tremendously capable and musical, but lacks the Rottweiler quality of the cheaper CDX2-XF52.

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.

Esoteric X-01 2005 £8,995
Breathtaking feat of digital audio engineering, and surely the best sounding combination CD/SACD spinner money can buy.

Naim CD555/555XP 2006 £14,000
Very probably the best CD player yet made – certainly the most expensive; a digital tour de force.

Digital Recorders

Sony RCD-W3 2002 £350
Usual superb Sony ergonomics make for a nononsense budget buy. Fine direct digital copies, but analogue input poor. Middling sonics, but there’s a digital output!

Yamaha CDR-HD1000 2002 £600
Hi-D means PE-style ease of editing, but compromises recording quality ever so slightly. Add decent CD replay and it’s a fine all rounder nonetheless - top value.

Phonostages

Project Phonobox LE2004 £99
Great little box that improves on most bundled phono stages found in budget integrated amplifiers, adding detail and definition and a measure of smoothness too.

Trichord Dino 2002 £299
Great all rounder with switchable MM/MC. Fast, fluid and smooth like no others at the price.

Jolida JD9 2006 £400
Hybrid tube/solid state phono stage with a good range of adjustability. Excellent value for money and a fine, dynamic sound.

Graham Slee Era Goldy 2004 £460
Wonderfully warm, open and musical nature makes this an essential audition for those wanting a top value mid-price phono stage.

Lehmann Black Cube SE2006/495
Clean, smooth and even right across the frequency range, this phonostage represents super value for money.

Puresound P10 2007 £400
Guy Sargeant’s new MM phono stage is an absolute belter. Simple but very effective.

Aqvox Phono 2 C1 2006 £598
Brilliantly versatile yet affordable phonostage with a beguiling sound, but careful matching essential. Balanced operation of real benefit.

Icon Audio PS1.2 2007 £599
Excellent value phono stage with good range of facilities and fine imaging abilities.

Clearaudio Symphono+ 2006 £809
Superb high resolution phonostage with a tight, gritty and engagingly musical sound.

Anatek MC1 2007 £850
A spectacularly good MC phono stage that offers value-like insight, underpinned by seriously impressive bass.

Eastern Electric Minimax Phono 2006 £1,099
A stunning phono stage with superb clarity and impeccable dynamics, allied to the atmosphere of valves. Can hold its own with even more expensive designs. A veritable bargain.

Linn Linto 2000 £900
A musical and incisive performer, with more speed than the Delphi at the expense of detail and tonal colour.

Quad 3034P 2007 £995
Dynamic performer that can be used on its own as a complete phono-level preamp.

Trichord Diablo + NCPSU 2006 £1,198
Highly musical performer, this is one of the best phonostages at or near the price, but lacks the polish of the rival Whist.

Amplifiers

NAD C315BBE 2007 £180
A couth and highly polished budget amplifier with NAD’s typically useful loudspeaker driving abilities.

Marantz PM6002 2008 £299
Revealing budget amp with fine phono stage and tight, rhytmical bass.

Onkyo A-9755 2006 £700
Beautifully built, usefully versatile and truly enjoyable sonics make this another great affordable audiophile product from Onkyo.

Naim Nait 5i 2007 £725
The italic ‘i’ version remains one of the most musically competent and dynamically engaging integrated amps 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.

Jungson JA-88D 2006 £899
Stunning value for money. Class A monster integrated; extreme power and clarity at a puzzlingly low price.
More power and greater transparency improve even further on the already impressive A21s to give truly impressive results.

This baby tuber is beautifully sweet and creamy, but lacks solid-state's clarity, detail and incision. Low, low power means speaker choice critical.

Well built and surprisingly muscular valve integrated. Engagingly musical.

Superb build, useful power plus a deep full bodied sound make this an excellent mid-price buy.

Simple integrated amplifier with spectacular musical.

Preamplifiers

A truly exceptional headphone output stage; the best at the price and an essential audition.

MUSICAL FIDELITY

X-CANS V3 2003 £49
Mr. Michaelson's best headphone amplifier to date, with an extremely open and explicitly detailed sound plus serious bass wallop and the ability to drive any phones to very high levels. Errs towards brightness with some headphones, so match carefully and use smooth cables.

SUGDEN HEADMASTER 2003 £600
Unusal combined preamplifier and headphone amplifier, this boasts a surprisingly smooth and open sound.

Preampifiers

Brilliant value budget passive, giving little away in sonics to far more expensive designs. Connectivity and build aren't great, but what do you expect at this price?

MODWRIGHT SWL.90SE 2003 £2,000
Captivating sound quality that will transform your system. Build quality is equally impressive and value top-notch. Highly recommended.

POWER AMPLIFIERS

ROKSAN KANDY LIII 2008 £600
Fine budget power amp that punches well above its weight and can embarrass more expensive designs.

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 super value all the same. Lovely build, finish and Quad's legendary service are nice.

NAIM NAP150 2002 £795
Driven by a decent source and a NAC112, this gives highly enjoyable results - providing you like the Naim sound! Taut, fast and feisty despite its relative lack of power.
## LOUDSPEAKERS

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Price</th>
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### LOUDSPEAKERS

**ACOUSTIC ENERGY NEO I**

Tidy and well balanced standmounters with pleasing clarity and detail.

**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.

**USHER S-520**

2006 | £320

Astoundingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions.
**Sennheiser HD-650 2004 £50**
Not the best headphone in the world, but a superb all round reference all the same. Very crisp, detailed and even sound allied to superlative build and fine comfort makes all most people will ever want. Cable upgrade yields great results.

**Stax SR-007T Omega II/SRM-007T 2006 £2,890**
Simply the best headphones we’ve ever heard at any price, these sweety translucent electrostatic earphones are like no other headphone, or loudspeaker for that matter...

**Interconnects**

**Techlink WIRPS XS 2007 £20**
Highly accomplished interconnects at an absurdly low price. Stunning value for money.

**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 superbly build quality, result in an outrageously capable loudspeaker. Not an easy load to drive, however.

**Hifiworld**

**Monitor Audio IDECK 2006 £200**
A genuinely effective and surprisingly cost effective upgrade, but results could vary so a home demo of the power conditioner is recommended.

**Accessories**

**Monitor Audio IDECK 2006 £200**
Fine design, impressive flexibility and a lucidly superlative build quality result in an immense.

**Isotek GG Vision 2006 £650**
A genuinely effective and surprisingly cost effective upgrade, but results could vary so a home demo of the power conditioner is recommended.

**Headphones**

**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-I 2002 £29**
Excellent entry level analogue tuner; slick sonics and fine feature count makes it a bargain.

**Goldring DR-550 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.

**Cambridge Audio 640T 2005 £250**
Sweet sounding digital/analogue hybrid with fine build and finish at the price.

**Marantz ST-7001 2006 £299**
Stunning performance on FM (at the price) coupled with its ability to get the most from DAB broadcasts makes this the best affordable tuner.

**Yamaha TX-761 2007 £350**
Suss the standard for FM performance at the price and is so slouch on DAB either.

**Arcam DT9 2005 £450**
The very best DAB tuner around, with Ferrari. Ignore nay-sayers who sneer at any price, these sweetly translucent electrostatic earphones are like no other headphone, or loudspeaker for that matter...

**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-E30 loudspeakers aren’t too shabby either.

**Teac-DR-300 DAB 2008 £329**
Nicely built and styled mini with fine performance on all sources that even plays DVDs!

**NAD C-715 DAB 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 so it is bigger brother.

**Arcam Solo 2005 £995**
Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

**Linn Classik 2002 £995**
The best one-box stereo system money can buy; superbly musical sound beats equivalently priced separates.

**Meridian F80 2007 £1,500**
Fantastically built and versatile DVD/CD/ DAB/FM/M4 unit, designed in conjunction with Ferrari. Ignore nay-tayers who sneer that it isn’t a ‘proper’ hi-fi product; most see sense when they listen to it...

**Shanling MC-30 2007 £500**
Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.

**Linn Classik Movie 2007 £2,250**
Superbly built all-in-one that offers excellent sound across all formats and is surprisingly easy to use.

**Marantz 'Legend' 2007 £22,000**
The combination of SA-751 disc player, SC- 752 preamp and MA-952 monoblocks delivers a truly jaw-dropping performance. Start saving now...
The all-new M-series from ROKSAN

High performance hi-fi separates that will make your heart sing

To find out more about the M-Series of high performance hi-fi separates from Roksan, and where you can buy them visit: www.henleydesigns.co.uk

www.henleydesigns.co.uk

ROKSAN CENTRES OF EXCELLENCE
Midland Hi-Fi Studio, Wolverhampton • Audio Merchants, Glasgow • Audio Republic Ltd., Headingley, Leeds • HG Rapkin, Northampton • Hi Fi Sound, Darlington Home Media, Maidstone
Kronos Hi-Fi, Dungannon • Merlin Music, Melrose • Music Unlimited, Leverton, Boston • Sevenoaks Sound & Vision, Yeovil
Sevenoaks Sound & Vision, Southgate • Sevenoaks Sound & Vision, Holborn • Technosound Systems Ltd., Dunstable
Unilet Sound & Vision, New Malden • Videotech, Huddersfield • Zouch Audio, Asby-De-La-Zouch
very fine tuning of cartridge and arm geometry - to obsessive degrees - does affect sound...

As news of Dr. Feickert's amazing Adjust+ system for pickup cartridge alignment permeates the internet, a lot of people can justifiably say "I told you so"! It proves conclusively that very fine tuning of cartridge and arm geometry — to almost obsessive degrees of accuracy — does affect sound quality for good technical reasons. I thought I knew a thing or two about vinyl and all its geometries, but this extraordinary system has taken me by surprise. A lot of what it does I barely understand.

Happily, when I asked Dr. Feickert for enlightenment, he promised to tell me more at the forthcoming London Sound & Vision Show, at Heathrow's Park Inn hotel. He'll be flying over from Germany and giving lectures on how the system works. I'll be there of course, since we are exhibiting at the Show (see www.chestergroup.org for details), taking place September 19th-21st. And I'm allocating a budget in my head to ply him with any sort of beverage he might fancy to wheedle as much info as possible from him!

Some really dedicated tweakers, a breed found on the internet forums, insist that fine adjustment of arm height makes a really big difference. Whatever you adjust on an arm will bring about measurable changes in performance, and arm height alters Vertical Tracking Angle and distortion levels, so I accept what they are saying, but to date I have treated the need for extreme accuracy with some scepticism.

Records are supposedly cut at 22 degrees so this is the ideal VTA value. Also, most cartridges have a VTA closer to 30 degrees, our measurements show, to give them good surface clearance. The higher quality Ortofon's commonly run very close to the disc surface, as anyone who once used the low riding, smooth sounding VM520E will remember. The new model Ortofon 2M Black is their current top of the range Moving Magnet design and, following Ortofon tradition, is a precision device with a VTA of exactly 22 degrees, our German DIN 45 S42 test disc, fetchingly entitled Spruwinkel-Mes-Shellplatte (trace angle measuring disc), tells us!

To date that's all I have known about the effects of VTA: it affects distortion figures. However, Dr. Feickert identifies an entirely different result: it affects phase too. Apparently, when arm height is correct, phase angle as read by the Adjust+ measuring system will be 90 degrees at the crossing point of the Left and Right channel traces. I achieved this perfect condition with the Ortofon 2M Black, as you can see on p98 if you look closely at the phase graph for it (top). It took a lot of fine arm height adjustment to get this right. Even the smallest movement introduced a relatively large phase error, so all the internet forum twitter about the need for super fine arm height adjustment appears to be based on substantial fact. I'm shocked!

I'm also a little baffled at present as to why 90 degrees is a magic value. How both arm height and headshell tilt introduce significant phase changes in each channel against what appears to be mono reference cut is also a mystery. However, I noticed with some satisfaction that Dr. Feickert was surprised we managed to get a theoretically perfect result, but then that's because we have the ability to measure Vertical Tracking Angle. As a result, we can identify the few cartridges available possessing a 22 degree VTA and therefore able to meet the 90 degree criterion without needing an arm height that is impractical. This is because with a 9in arm the arm pillar must be moved a large 4mm to make one degree of difference at the headshell, so to correct the usual error of 8 degrees or more, the pillar would have to be moved down 32mm. This is out of the question, since if it is moved down just a few millimetres the cartridge body will start to rub against the disc surface.

So you cannot get perfect results unless you start off with a cartridge possessing a VTA of 22 degrees in the first place. These are not only rare, but few other than this magazine are able to identify such a beast because our now unavailable German DIN 45 S42 test disc is the only one I know of — and I think Hi-Fi World has most — that possesses a VTA test. It is joined now of course by the Adjust+ disc, although this measures VTA only indirectly, displaying it as phase angle.

What the Adjust+ system shows then, is that to get a particular set of phase relationships from a cartridge absolutely right, you must first have a cartridge with a VTA of 22 degrees, then you must adjust headshell tilt and arm height to perfection. Whether LPs you buy will then match is another argument, as they may be cut with a differing cutter tilt angle, but we did find that our LPs all seemed to benefit.

The 2M Black sounded dramatically better focused and more intensely detailed after my long adjustment session. The system certainly has its challenges, as it's computer based, demands a good soundcard and then a lot of application in order to get a result. However the result in itself is quite outside anything I have ever come across before and seems to be conveying information about LP replay hitherto little known or discussed. Extraordinary then — and worthy of any internet twitter it might generate!
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In the second of his two-part feature, Paul Rigby looks at the work of Classic Records...

EMILLE LABS KPE-2AS 94
This stunning top-of-the-range phono stage is reviewed by Adam Smith...

ADJUST+ 97
Noel Keywood tries this novel new cartridge alignment system.

news

GUITAR HEROES RETURN
Two legendary guitar heroes have re-released albums on vinyl via the German outfit, SPV. The first is Led Zeppelin man Jimmy Page, who recently teamed up with the Black Crowes to produce 'Live At The Greek'. Recorded in October 1999, this 3LP collection features fourteen Led Zep covers from the twenty tracks and, to be honest, some of them are superior to the originals. Both Page and the Crowes perform at their very best. 'Blackmore's Night' on the other hand, features Richie Blackmore, ex-Deep Purple plus songwriter and vocalist Candice Night. With 'Secret Voyage', the pair produce a combination of rock, folk and a take on old renaissance music. It's quite an eclectic mixture but highly entertaining. Both albums are presented in gatefolds and both are well mastered.

Direct from Spain’s Wah! Wah! record label (www.wah-wahsupersonic.com) come three eclectic releases - ideal if you occupy the leftfield of the musical firmament. Take the startling The Free Pop Electronic Concept's 'A New Exciting Experience'. Originally, released on Portugal’s Palette label and created by Antonia and Fernando Lameirinhas, this is a mixture of sunshine/soft pop, 'cutting edge' (for 1965) electronica, psychedelia and jazz. It’s a loungecore gem.

Next, mixing jazz with R&B is The Dave Davani Four’s 'Fused', blending jazz with soul via a wicked Hammond organ sound. This LP was originally released in 1965 on Parlophone, featuring covers plus a few originals. Highly recommended to Hammond fans!

Finally, UK folk fans should note Hunt & Turner’s ‘Magic Landscape’, mastered by the increasingly well respected GZ in the Czech Republic. This 1972 release features quality songs and simple, yet effective, arrangements.
STRANGE ROCK FROM RUNE GRAMMAFON

Featuring a mixture of both electric and analogue instruments, Rune Grammafon focuses on that uniquely Scandinavian avant-garde approach to music. The label has released three interesting LPs from three exploratory groups. Elephant9’s ‘Dodovoodoo’ combines a fusion of prog rock with jazz—mixing superb musicianship and complex rhythms with more considered, experimental pieces that use space to full.

The Scorch Trio’s ‘Brolt’ also takes rock as its foundation but adds an almost psychedelic, whacked out, go-where-the-music-takes-you approach to their art.

Finally, Motorpsycho’s ‘Little Lucid Moments’ is a very attractive release of just 500, mastered on splatter coloured vinyl. It mixes full-on indie rock with ethereal moments and experimental pieces that wouldn’t appear strange in a Frank Zappa album.

BRIT ROCK RARITIES

Direct from the Italian label Rave Up (www.raveuprecords.com), we have three rare, rock/pop, re-releases. Doug Derek & The Hoax’s grammatically dodgy, ‘Who The Hell Is Doug Derek’ is a re-release of an album “that never was”, from almost thirty year old songs. Created from the water-damaged masters (the label’s done a good job because the album sounds perfectly fine on that score), this power pop album features hooks aplenty. Iron Virgin’s self-titled album takes a Scottish glam rock outfit from 1974 and features their singles: ‘Jet’ (a Wings cover) and ‘Rebels Rule’, plus unreleased tracks. Imagine an incarnation of The Sweet and you’ve got Iron Virgin. Finally, Gregor MacKenzie And The Misanthropes’ ‘Torture That Girl’ sounds like your typical punk band: slurred, indistinct lyrics, hard edged guitar and flailing drums—ah, yes, it all comes back to me now...This anthology features 24 tracks including some unreleased ones.

STATIC CARAVAN? MY ASS!

Ass, for it is he, has released a new album on Static Caravan (www.staticcaravan.org) in glorious purple vinyl. Called, deep breath, ‘My Get Up And Go Just Got Up And Went’, this is a superb piece of acoustic guitar playing that will be of great interest to fans of either John Fahey or Leo Kottke. It’s a superbly mic’d recording too, providing some great deep bass sounds from the body of the guitar and offering top notch dynamics throughout.

JAZZ COUSINS

Two classic LPs have been re-released from the German-based Speakers Corner records. The first, ‘Miles Smiles’, is a classic Miles Davis release. The legendary trumpet player’s 1966 album saw the Quintet (featuring Tony Williams, Ron Carter, Herbie Hancock and Wayne Shorter) all getting into their stride after their debut, 1965, ‘ESP’, release.
"across the top end the Cantus is remarkably clean and detailed, without a hint of sibilance..."
compensation is fitted as Scheu claim it is not required. The instructions provided are basic but tell you all you need to know, except what the 45mm diameter rubber belt/washer in the box is for - I never did find out...

Fit and finish of the Cantus is superb, as we have come to expect from Scheu Analog, and belies the £760 retail price. My only real niggles are the lack of an armrest - which I generally view as highly desirable, especially given the rather wobbly nature of a unipivot - and why doesn’t the balance weight have the lovely bright chrome finish of the other metal parts?

**SOUND QUALITY**

So far, every unipivot arm that I have encountered has been blessed with a lovely sense of air and spatiality when compared to a conventional pivoted design, and the Cantus is no different in this respect. The soundstage really does stretch far and wide beyond the loudspeakers and between its extremes is positively packed with fine levels of well sorted detail.

Across the top end the Cantus is remarkably clean and detailed, without the slightest hint of sibilance or 'spitch', and it maintains this performance across the entire side of the record, thanks to its twelve inch length giving lower tracking distortion.

Midband detail was equally impressive, the Scheu pulling lead instruments well to the fore of the performance and placing backing aspects precisely where they should be around this. Lead vocal performances were vivid and strong, stretching out into the listening room in a highly convincing and impressive manner.

Van Morrison sounded suitably gruff on his 'Enlightenment' album, and the emotion of Kurt Cobain's 'Nirvana: Unplugged in New York' performance was quite striking, especially when coupled to the atmosphere with which the Cantus endowed the whole concert.

The Cantus definitely strikes a quite forward balance, however, which is something that should be borne in mind when matching cartridges. Sounds4Enjoyment provided a Scheu Analog MC Scheu for the review, which is a fine Benz Micro-sourced design, but I felt that this combo was too hard and forceful across the upper midband, especially with electronics such as OMH's 'Forever Live and Die'.

Rather smoother Ortofon Rondo Bronze was a much better match in this respect, and really showed the Cantus off to the best of its abilities.

The one area in which I have sometimes felt it necessary to be a little forgiving when it comes to unipivots is in their bass performance, which can sometimes lack the focus and depth of a conventionally pivoted design. It was here however that the Cantus played its trump card, as it has one of the tightest and most detailed bass performances you are likely to find, south of the likes of the £1,300 Audio Origami PU7.

Combined with the Black Diamond turntable which is itself no slouch down the bottom, the result was a setup that simply floored every listener. The bass guitar from Van Morrison's 'Tinseltown in the Rain' provided a positively granite-solid foundation for the track to build on and the Cantus hung the backing percussive effects outside the loudspeakers most convincingly.

Briefly swapping back to our Pioneer PLC-S90/SME M2-10 combo added a lovely dose of SME top end sweetness to alleviate that slight upper mid hardness that still lurked somewhat, but shrank the soundstage and pushed the bass guitar back into the mix.

---

**REFERENCE SYSTEM**

Scheu Analog Black Diamond turntable
Scheu Analog MC Scheu/Ortofon Rondo Bronze cartridges
Emilie Labs KPE-ZAS phono stage
Creek OBH22 preamplifier
Quad II-light power amplifiers
Spender S8e loudspeakers

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**CONCLUSION**

The Scheu Analog Cantus 12 is a highly impressive arm design that departs from the conventions of such devices to deliver an impressive result. As mentioned, it requires a cartridge with a rather smoother nature to achieve a really well balanced result but the clarity, dynamics and sheer low end agility that it offers are rare at the price.

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**MEASURED PERFORMANCE**

Just as its appearance is quite different to all other arms, so the Scheu Analog Cantus measures unusually as well. Thanks to its skeletal structure the main arm modes are well distributed, as there is no main tube as such to resonate. The largest of the resonant peaks is at 550Hz, corresponding nicely to the half wavelength of a twelve inch item, but it does not reach 0.1g in magnitude so the arm structure is very well behaved.

Equally good is the headshell itself, the design of which is more related to other arms and shows the usual pattern of closely crowded peaks. However, once again, these peaks are at a lower level than we are used to seeing, most likely due to the headshell being much thicker than usual and thus better damped.

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**VERDICT**

**FOR**

- superb detailing, dynamics and ambience make for a thrilling listen

**AGAINST**

- slight upper mid hardness
- no arm rest!
Many visitors to recent hi-fi shows have been amazed at the Gamut sound and without prompting said:

"Best sound at the show"

At Bristol in February and again at Heathrow in March the Gamut CD3, the new Si100 integrated amplifier and the new S3 stand- moun speakers drew unstinting praise from visitors. Here’s one:

“I must say that out of all the displays at the show me and my business colleague both agreed that yours was the most impressive.” NICE!

That was from Heathrow where we set out to show two key aspects of getting the best from a system using

• a well-integrated subwoofer to achieve clean, tight bass while controlling the room resonance

• mains filtration and platforms and cables from Vertex AQ to absorb damaging acoustic energy.

The result?—a realistic-sized sound-stage, dynamicics to die for, lightning-fast transients and deep, natural bass.

After a thrilling organ excerpt at hall-rilling volume a listener said:

"Yes, but I have heard it better – in Westminster Abbey!"

A key design target of Gamut is to match their performance to the way humans hear in the time domain. Our hearing sense is amazingly sensitive to timing – it’s how we locate sound sources accurately, a prehistoric survival skill without which timing music fails to satisfy.

Gamut has been drawing praise from other sources: "As the audiophile press has affirmed for several years now, Gamut is on to something very, very good." STEREOPHILE

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Using ultra stiff boron, Nagaoka’s new top of the range MP-500 aims to fight it out with the best. Adam Smith takes a ringside seat...

The Nagaoka MP-500 sits at the top of Nagaoka’s new range of MM cartridges and incorporates a number of changes compared to the more affordable MP-150 that Noel reviewed back in our June 2008 issue. Most noticeable to the eye is a gold finish which isn’t necessarily any less visually challenging than the MP-150’s green hue! Secondly, Nagaoka see fit to secure the removable stylus assembly to the cartridge body with a hex bolt, a la Linn KI8, which is a fine idea, securing the two items together nicely.

Under the skin there are changes as well. The MP-500 sports a tapered boron cantilever and a Line Contact diamond stylus, compared to the MP-150’s aluminium and elliptical items. These should bode well for secure tracking and good detail extraction from the bottom of those precious grooves. Cartridge mass is up slightly, to 8g, but this is not high and will suit virtually any arm.

SOUND QUALITY

It may be somewhat tricky to drop the stylus where you want it, thanks to the chunky body, but the results are well worth obtaining when you do. The MP-500 sports a tapered boron cantilever and a Line Contact diamond stylus, compared to the MP-150’s aluminium and elliptical items. These should bode well for secure tracking and good detail extraction from the bottom of those precious grooves. Cartridge mass is up slightly, to 8g, but this is not high and will suit virtually any arm.

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MEASUREMENTS PERFORMANCE

Frequency response of the MP-500 measures ruler-flat right across the audio band, from 20Hz up to 15kHz, with just a small lift thereafter. This will be difficult to detect audibly. On inner grooves tracking lesses result in some -5dB loss at high frequencies, due to the stylus minor radius being unable to fully read short mechanical wavelengths. This is a bit more than today’s line contact shapes but it is still acceptable, the cartridge maintaining good overall balance from outside to inside grooves - and a deadly accurate tonal balance of course.

Tracking was good, if not quite up with the best, top torture tracks inducing mistracking. There should be no problem here in use. Lateral distortion was low at 0.5%, but vertical high at 5.6%, due to excessive Vertical Tracking Angle of 30 degrees. Luckily this is mostly second harmonic, but it may detract from Left and Right image cleanliness. Output was on the low side at 3.8mV at 5cms/sec rms against the huge 8.6mV of an Ortofon 2M Black.

CONCLUSION

The Nagaoka MP-500 is a very coosh-sounding and highly capable MM cartridge. A little more laid back than its obvious rival, the Ortofon 2M Black, it nevertheless turns in a highly accomplished performance for the price. Add in fine tracking abilities and easy alignment thanks to the chunky body, and you have a very worthy contender at the price.

VERDICT

Accomplished and well balanced high end magnetic cartridge with a smooth and detailed sound.

FOR
- tonally balanced
- finely detailed
- stable tracking
- easy to set up

AGAINST
- slight softness
- stylus hard to see
Black Art

In the second of his two-part audiophile vinyl feature, Paul Rigby looks at the work of...

Most records are produced using 120gm vinyl and a teardrop shaped groove guard at the outer edge - but not all. Specialists like US-based Classic Records do things slightly differently in a bid to deliver a superior sounding product. It has approached the process from different angles, the first being the initial step in the vinyl chain, when the vinyl pellets are created, cut from the extrusion, as described last month. If the cutter is not overly sharp, bits will be sheared from the extrusion. When the pellets are melted for pressing, the 'bits' will melt first, then crystallise. “This dust can be a source of low level noise,” explained Classic Records’ CEO, Michael Hobson, “hence, if you play a blank disc, you can hear the sound of the vinyl. We have now invested in a de-duster to remove that noise.”

Next, Classic addressed the profile of the vinyl record, finding that if measured with a micrometer, your basic stereo record is not flat. The nature of the pressing produces a record with a U-shaped valley cross section. According to Hobson, “the grooves near the groove guard and the first inch and a half of the play area are all canted outwards, they’re not perpendicular. The centre is pretty perpendicular. When you go towards the lead out, the grooves are canted towards the centre of the record. You have physical groove distortion.”

Hence, information retrieval is not consistent. The principal culprit for the valley profile is the groove guard and the effect it has on the vinyl flow during pressing. So Classic removed it, which helped to create a perfectly flat record and improved sound. The Super Vinyl Profile was born. Job done? Not quite. During pressing, because of the lack of a groove guard, Classic began to experience non-fill and dishing problems on stereo releases.

After cutting one of Mobile Fidelity’s legendary UHQR vinyls (pressed by JVC in Japan in the nineteen seventies) in half and measuring it — he found the answer. “It’s flat,” revealed Hobson, “and it has a groove guard! The flatness is why they sound so good.” But that groove guard is non-conventional in shape – which stops that ‘valley' cross-section. Hence, Classic now utilise a variant of the JVC groove guard to perfect completely flat records that, says Hobson, fill properly and press consistently well.

Classic has also moved all its pressing from automatic to the more labour-intensive semi-automatic process. “This system doesn’t press based on time,” said Hobson. “The human operator releases a pressed record when a set temperature is reached. This is how they used to do it in the nineteen fifties and this is how we’re doing it now.

More importantly, you can hear the difference. Being able to determine at
Records are jacketed at the Classic Warehouse.

magnetic structure. Play a record and place a magnet near to the cartridge, and you get a distortion. After all, a cartridge is an electromagnetic generator. Imagine that cartridge again and those vinyl-based magnetised trace metals running closely past it at 33 or 45rpm. There’s going to be a disruption of the signal.”

The awareness of vinyl’s magnetic properties is why there are a small, but growing band of demagnetisation gadgets currently occupying the market. Furutech has a turntable-shaped demagnetiser on sale now for around £1,000 whilst Hi-Fi For Sale (www.hififorsale.com) sell the more manual Talisman system for around £200 from Walker Audio [see Paul’s column on p75 - Ed.]

Classic has now removed the carbon black for a new, limited edition ‘Clarity Pressing’ 45rpm series featuring tinted clear vinyl. It’s a controversial measure, “People will flip, they’ll say we’re completely mad but we’re going to let people listen and hear the difference,” said Hobson. Stock vinyl is capable of superb sound – it has infinite resolution, unlike digital – but quality varies due to the different processes taken in the production process. Classic Records is an exemplar of best practice.

Each record is carefully inspected before shipment.
often find it interesting to note how some hi-fi manufacturers come by their names and, in particular, how this tends to differ depending on where the company are located in the world. Consider for a moment, the Western firms, whose monikers tend to be either simply related to the names of the founder(s) or chosen to reflect some technical or design aspect of the equipment they make.

Move over to the Far East, however, and things tend to take a more romantic turn. I remember things more interesting than just having to deal with 'China Voice Coils' or suchlike...

In hi-fi terms it is no different - we have the Opera Audio Company (Consonance) who, errm, name their products after operas, and a brief surf through the internet reveals a whole host of other OEM companies with Hope, Sunrise and other inspirational leanings! It is no different in Korea either; it would seem, and when Kwangwoo Electronics decided that the time was right, in 1991, to name their new dedicated hi-fi division, "it turns LP records into a truly immersive musical experience..."

only too well from my days of liaising with Chinese suppliers whilst at Goodmans Loudspeakers, there were several companies with a 'Lucky' or 'Shining' in their name and this looks to a slice of Korean history for inspiration.

Emille Labs was the result; named after the Emille bell that was cast in 771 AD in honour of King Seongdeok. The finished item weighs 18.9 tons, is ten feet high and seven feet in diameter and currently hangs in the National Museum of Gyeongju. It also apparently continues to mystify metallurgists to this day as it has no blowholes as a result of its manufacture. The bell was designed to be heard evenly in all directions and its note lingers for over three minutes when struck, the sound intended to "free the masses from worldly troubles and distress".

As this is exactly what a good hi-fi system does, I would say that Emille have chosen their name well and, with distribution now secure thanks to Angelsound Audio, that includes the British multitudes too. Emille's range currently comprises preamplifiers, power amplifiers and integrated amps; the latter including the Kl-120 monoblock integrated, an unusual configuration and one that will keep you fit running backwards and forwards adjusting volume knobs.
if you place them next to each loudspeaker...

The newest item in the range however, is the KPE-2AS phono stage, a two box design that separates the power supply from the main circuitry. Two inputs are provided, one for MM and one for MC cartridges and these are selectable from a front panel switch, with two MC settings - 'MC LOW' providing a 50 Ohm load, and 'MC HIGH' offering 300 Ohms. Also on the front panel is a six position gain control that permits the unit's output to be optimised to your amplifier for minimal volume twiddling between different sources.

The circuitry of the KPE-2AS comprises a passive RIAA stage with high quality step-up transformers for the MC input. Valve complement is a pair of ECC82s and a single ECC83. Each unit weighs 3kg and measures 150mm wide and 250mm deep, with the PSU coming in at 90mm high and the main unit 115mm or so thanks to the protruding valves.

Essentially neutral of which it approaches music ease but appeared to think that the room
player to player and the Emilie not
Musical action swooped around the
it is clean, sweet, open and detailed.
usually valve aspirated, meaning that
only find in a well designed product,
open nature that allows the music
you listen to briefly and think " very
simple nature that allows the music
realise that the KPE-2AS acts the
character, its sound
listen, the more you
of great joy and frankly the
Emilie Labs KPE-2AS is one of the finest designs I have heard.
Essentially neutral of character, its sound may lack that initial showroom 'wow factor' but the more you listen, the more you realise just how 'right' it sounds. Even more interestingly, when you go back to an old friend, in our case the MiniMax, you realise that the KPE-2AS acts the
performance.

MEASURED PERFORMANCE
Our frequency response analysis shows a distinct bump at low frequencies, caused by raised gain in this region. It amounts to a +1dB lift around 150Hz and is caused by a small error in the 318uS L.F. time constant. This affected the MM and MC inputs equally, meaning both MM and MC cartridges will sound a little warmer and fuller than usual, seeming to have more body. As modern cartridges have increasingly raised upper midbands and are becoming quite forward, this isn't necessarily a bad thing.

Distortion levels were very low as valves go, as were noise levels. This is a quiet stage and will suit low output MCs. It has plenty of gain for them, measuring a high x100, so 1mV in will give nearly 2V out. Gain when set to maximum on MM is a low-ish x120. Like many valve phono stages this one can push out a huge output of 43V, allowing vast input overload figures.

Two input impedances are available for MC: 50 Ohms (Low) and 300 Ohms (High) and these should cover the vast majority of users' requirements.
When it comes to Vinyl, you need the best

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To find out more about the full range of turntables from Pro-Ject, and where you can buy them visit: www.henleydesigns.co.uk
Modern technology comes to the aid of the LP with Dr. Feickert Analogue’s Adjust+, a way of adjusting the vertical alignment of your cartridge for better sound. Noel Keywood whisks a sample out of Germany...

Here’s a pickup cartridge alignment gadget for vinylistas that’s both bold and extraordinary. It’s bold because it uses powerful computer processing to reveal some of the less seemly aspects of pickup cartridge behaviour; things you may not want to know. Extraordinary because no one has ever offered anything like it before; mainly because some arcane problems must be overcome.

We stumbled upon the system at this year’s Munich High-End show and I thought the scheme bordered on nuts. But since cartridge measurement is something of a speciality for me I was drawn to it like a moth to a flame and Dr. Feickert was gently relieved of a sample whilst we bombarded him with questions. If you love LP and want to fine tune your turntable to the vertical alignment of their system enables owners to perfectly align it. The CD carries software and add-in adjustable measurement functionality.

SET UP
To run Adjust+ software you need a PC running Windows XP or Vista. It must have a sound card and Adjust+.

The basic proposition made by Dr. Feickert is that setting your cartridge to be perfectly vertical may not be ideal. The Adjust+ measurement method is able to show the ideal setting, using a novel measurement scheme. I am deliberately not explaining this in any technical detail because it can become complicated very quickly, with lots of arcane talk about modulation axes and such like, all of which will mean little to the average sane human being. It was an important and much-discussed issue in the hi-fi firmament a long time ago when LP reigned supreme. It remains important today, perhaps more so than ever, as cartridges have been refined and are considerably more expensive, with more being expected of them. At heart though, the LP and pickup cartridge remain quite a simple electromechanical system within which there’s room for considerable variability that demands accurate adjustment if the system is to be optimised. Unfortunately, to do it properly requires specialised test equipment and that’s what you get, in effect, with Adjust+.

What I walked away with at the Munich Show was a test LP and software CD, as well as a 5 metre long stereo signal lead terminated in a 3.5mm stereo jack at one end and phono plugs at the other, plus a small spirit level. It was the test LP that surprised and intrigued me when I saw it. Accurate test LPs are difficult to produce and very rare beasts. Most were dreadfully inaccurate and completely misleading. However, Shure, CBS Labs, JVC and the German DIN (originally, Deutsche Industrie-Normen) Standards Organisation produced usable discs and we assessed the Adjust+ disc against them. The system is only as accurate as this LP and if it is wrong then you will misalign your system, not align it. The CD carries software for PC (Mac using a virtual machine or Bootcamp), and the signal lead is for connection of the hi-fi to the computer. The basic methodology is to play test signals on the LP and analyse them on the computer, adjusting the pickup cartridge for best results.

The LP and the software between them possess a suite of tests, not just alignment of cartridge verticality, or Horizontal Tracking Angle (HTA, as Adjust+ terms it). However, HTA is the main test and the one that stands out as novel against what has gone before. I will look at the entire system in this review, its accuracy and its potential application. There is a Pro version that adds additional measurement functionality.
The Creative Soundblaster Audigy card we used. It has a 24/96 input ADC, works with XP and Vista and suited Adjust+.

recommend it runs "HD Audio with 24bit/96kHz sample rate". See their website www.adjustplus.de, where you can also download a user manual to inspect System Requirements in detail. Beware that traditionally it has been common for sound cards to be rated by digital-to-analogue output conversion and the input analogue-to-digital converter is often of lower resolution than the advertised spec. Adjust say a 24/96 input ADC is needed for best results. This will give very wide dynamic range and a bandwidth comfortably greater than the 20kHz limit of the analogue test LP. Specifically for this review I bought a budget Creative Sound Blaster Audigy SE, costing £40 on London's Tottenham Court Road. It was fitted to a test mule PC based on an Asus PSW Deluxe motherboard running Aero-free Vista Home Basic, on an Intel 6550 processor accompanied by 2GB of memory.

The Audigy was problem-free with Vista, as claimed, and Adjust+ worked flawlessly with both, using the Blue 3.5mm jack line input and the supplied signal lead. Thin leads like the one supplied are capacitive though, this one measuring out at 800pF. As this equals 10kOhm reactance at 20kHz the cable will appreciably roll off treble if fed by a phono stage of output impedance higher than 2kOhm or so, something to be aware of when measuring frequency response. This factor does not affect HTA measurement though.

The signal cable's phono plugs can be plugged into Record Out sockets of an amplifier fitted with a phono stage, into Preamp Out sockets if they exist, or directly into the output of an external phono stage. It would be possible to use loudspeaker outputs, but only with very low volume, being aware that grossly overloading the computer card by accident from this output may blow its input stages. Also, valve phono stages may have a high output impedance, in which case a short connecting lead of 200pF max. should be used to the computer if frequency response is to be unaffected. The Audigy overloaded at 2.2V in and the Trichord Diablo overloaded it on the test bench until set to lowest gain. The programme needs just 5MB of disc space and occupies 40MB of memory, so it is small.

I suffered initial registration difficulties, but these were overcome and Adjust+ are changing the system. I downloaded Version 1.02 to update the CD. Once validated, Adjust+ does not need an internet connection to run.

MEASUREMENT

To quantify Horizontal Tracking Angle the programme measures channel crosstalk and phase, as well as amplitude, and plots the values on a graph. To begin this process Adjust suggest the headshell should first be tilted +2.5 degrees (i.e. anti-clockwise) away from vertical, measuring angle with a spirit level supplied, placed on the headshell. A set of measurements are made at this tilt, then it is progressively rotated through vertical, half a degree at a time, all the way to +2.5 degrees, a measurement being made at each half degree point. This gives eleven sets of measurements, sufficient for the programme to draw a neat set of graphs. One shows how crosstalk values change, another how phase changes. This should be sufficient to show the optimum headshell angle, where phase difference is close to zero and crosstalk balanced. I was impressed by the slick interaction of computer with LP, but manually it's quite a procedure, one dedicated vinylistas will love but others may find daunting, especially when it comes to interpreting the results. The results can be saved, converted to PDF, or printed.

The spirit level supplied has lines on it, but no values and setting to half a degree resolution had me peering at it intently through a magnifying glass (an improved alternative is now available for Euro25). The handbook says the second line represents 2 degrees, so each line is one degree. Getting angle set accurately was difficult but it became easier with practice. All the same, on an SME312 and M2-10 tight fitting headshell collars made setting 0.5 degrees difficult and time consuming, I defaulted to 1 degree for most measurements. Limits of 3 degrees or more are needed within Adjust+ as 2.5 degrees is too little.

I ran five cartridges through the HTA test, a Nagaoka MP-500, Goldring 1012GX and 1042, a Denon DL-103 and an Ortofon 2M Black. The picture of a cartridge popped up to prompt me to enter the headshell angle, as set with the spirit level, and the right dark blue boxes down the right of the screen show this value and the results obtained for it. You can see both phase and crosstalk, the latter being crosstalk from Left to Right channel and Right to Left channel, made by putting a signal in one channel and measuring the other. You don't have to peruse and understand all this, however, because by selecting a graphing function you can get two graphs that tell you at what angle the headshell should be set for best sound quality.

Well, that's the general idea but after two days of test work it became apparent that results were being complicated by cartridge characteristics and that the Ortofon was a precision device best used as a demonstrator of what Adjust+ can do. Look at the screen results and...
At top is the results screen showing crosstalk and phase values, as well as headshell angle entry. Below are results for Ortofon 2M Black with optimised VTA.

The Goldring 1012GX produced no phase information (top), but the crosstalk graph (below) identifies ideal headshell angle as -1.5 degrees. Below are phase and crosstalk for a Denon DL-103, identifying +1.5 degrees as ideal.

"I doubt I've ever heard a top quality cartridge so accurately aligned, and the result moved LP up yet another notch..."
Letter of the Month

WELL ARMED 1
Well done for not just concentrating on high end equipment. As much as lesser mortals like me enjoy reading about £60k systems, even if I can afford one my wife would find herself at the very least on a GBH charge.

I have had a long interest in all things vinyl but since purchasing an elderly but perfectly serviceable Linn LP12 sporting an SME 3009 tonearm I’ve been disappointed. The ancillaries are reasonable with a Goldring 1042 cartridge, Lehmann Black Box phono amp, Cyrus Pre and Power amps all linked up with reasonable cabling.

Even after a service and rewire of the tonearm, stripping the deck, re-oiling the bearing and getting it bouncing beautifully, and adding an Origin Live motor and speed controller I still found myself unwittingly playing CDs in preference to vinyl. It was difficult to put my finger on what the problem was but the sound was constrained with little real bass along with a limited soundstage and a generally harsh sound making it tiring to listen to -something I knew vinyl shouldn’t be.

Not wanting to relegate my fairly extensive vinyl collection to a dusty corner or, worse still, the attic, I decided drastic measures had to be taken.

Looking at the system as a whole the weak link had to be the tonearm and regardless of the truly beautiful engineering of the SME, I decided it had to go.

The obvious replacement would have been the Michell Tecnoarm or Rega based Origin Live, due to their cost and regular rave reviews but, looking for something different, the Roksan Nima caught my eye. It appeared to be a simple and well engineered design, not unattractive and considerably cheaper than the Rega based arms, so the Nima it was. After a simple fitting and setting up procedure I nervously cued up the cartridge hoping that my vinyl blues would be a thing of the past. Well, I really needn’t have worried. The contrast between the old and new arms was as extreme as night and day. The sound was controlled, the timing tight, the bass punchy and there was no sign of harshness. All in all my system was singing and the CDs and television took a definite back seat.

What have I learnt about this little episode? Well, there is normally an answer to your hi-fi woes and it needn’t cost the earth. Added to this, as great as the SME was in its day, either due to degrading connections or design it isn’t up there with even modestly priced modern arms. Will the Nima be as sought after in thirty years time as the SME is today? I doubt it, but for now it’ll do very nicely thank you.

Jason Walker

As lovely as it was - and much admired in its time - SME’s 3009
was designed for low mass, coupled with adequate structural strength - prime concerns at the time when people laughed at the notion that arms or turntables "had a sound". In vibrational terms it was less than successful and your findings echo ours. Not all Golden Oldies are really that golden. All the same, it was quite a good match for the Shure V15 cartridge, which also dominated the popularity charts at the time - and Kevin Wood finds it also suits the later V15 VX and SLI200 - see the following letter.

We find arms have quite distinctive sounds, related to their vibrational behaviour, which we measure with a miniature Bruel & Kjaer accelerometer. Adam is a great fan of the Nima, as he is of the SME M2-10 we use. I favour the rigid grip on dynamics and the wide low frequency sound stage of the Rega RB300 and its variants. So there's even an area for subjective preferences. Vinyl can sound flat and lifeless if a poor arm is used, or a knackered cartridge! Happily, a Rega RB30 (£190) or Roksan Nima (£425) do not cost the earth and will do justice to even expensive cartridges, giving a great sound from vinyl. NK

It always amazes me the prices that the old 3009 series arms fetch secondhand. They are nice - as any SME - but are way off the pace sonically, both compared to affordable modern arms (Origin Live Silver, Michell Technoarm) and also to SME's own modern arms. I think a lot of the 3009's appeal is retro appeal; it's nice to have one just for the sake of having it! I think you made a good choice with the Nima too. As Naim's ARO shows, the LP12 really is at the low end, where it lacks in vibrational behaviour, which we measure with a miniature Bruel & Kjaer accelerometer. Adam is a great fan of the Nima, as he is of the SME M2-10 we use. I favour the rigid grip on dynamics and the wide low frequency sound stage of the Rega RB300 and its variants. So there's even an area for subjective preferences. Vinyl can sound flat and lifeless if a poor arm is used, or a knackered cartridge! Happily, a Rega RB30 (£190) or Roksan Nima (£425) do not cost the earth and will do justice to even expensive cartridges, giving a great sound from vinyl. NK

Yes and no. The SME M2-9, like the M2-10 we use, do a great deal here at Hi-Fi World, is a lovely thing in many ways and a big sonic improvement over an older SME. It has a delightful midrange and a beautifully sweet and detailed top end that makes most other arms at the price sound hard or grainy. Where it does tend to fall down however is at the low end, where it lacks a certain amount of impact and can be rather soft. It is actually best partnered by a deck like the SL1200, which will add back some of the missing impact, but it still won't have the low end grunt of the Rega derivatives. They do occasionally crop up second-hand but not often and, thanks to SME's legendary build quality, they hold their value well, so don't expect a bargain if you do find one...

Finally, I was going to heartily endorse the Roksan Nima, but it would appear that reader Jason Walker ("WELL ARMED !") got there before me! I keep looking at my own, standard, SL1210 and feeling the day approaching when I can no longer cope myself from fiddling with it. When that day comes, the first thing that will be going onto it is a Nima. As to Jason's question regarding the collectability of the Nima in thirty years' time, if there's any justice it certainly ought to be.

Perl

Hmmm - interesting. Just about the only thing the old SME 3009 had going for it was a nice fluid midband (I find both its bass and treble light and loose), and of course this is the classic 'fault line' of the Rega RB300-based arms which are far more explicit, and some say to the point of sounding mechanical. Having done a A-B comparison between the old SME 300952 and a very early M2-9 several years back - on a Michell GyroDec admittedly, and not the Technics - I found the latter was a smoother, more open and slightly tighter version of the original 3009. So the short answer to the question is that the M2-9 would take you a lot closer to where you want to be going - however, as Adam says, the Nima will too and it's cheaper! DP

TWO TIMING

About two years ago I took the decision to sell my old turntable set up in favour of a Garrard 401. The old unit was a Thorens 160 with a Mission 774 and a Music Maker 3. Having set up the Garrard 401 with an SME 3009 I found that the Music Maker 3 suddenly didn't sound anything like as good as it had previously and elected to buy a Shure V15 VX which sounded superb. However, I was loathed to get rid of my Music Maker 3 and so ended up buying another turntable unit and having tracked down a Mission 774 arm on eBay went about having a solid Sapele plinth made into which I fitted the Garrard but aligning the arm from the back of the deck rather than the side, it seemed to provide a better alignment when using the protractor. The back of the plinth had phono sockets installed which gives me greater flexibility on interconnects and back came the superb sound with the Music Maker.

The problem I have now is that I want to use both decks, since some things sound better on one or the other, but I only have one phono input into my Musical Fidelity kW 500. Is there a switching unit available on the market that will enable me to have both decks connected so that I haven't got to disconnect one or the other each time I want to change over, which is a real fag? Or is there a circuit diagram that I could use to make something up?

And one point of interest - I have now swapped all my mains leads for solid silver and have discovered that it virtually eliminates any differences between speaker cables, although I'm not sure why, and we are comparing Transparent, Audioquest and Chord as well as all of which, until now, have had their own
MAIL

idiosyncrasies. Hope you can assist on the technical question.

Kevin Wood

A solution is to buy an external phono stage and plug it into one of the unequalised inputs, like AUX. You then just switch input from PHONO to AUX. NK

Yes, because switching the low level output from the cartridge is sonically very risky - so best go for a good basic phono stage like Trichord’s Dino, or put up with the cable swapping!

DP

THE WRONG PRICE!

My current system consists of a Thorens TD160 Super with a rewired and Audio Origami’ed Rega RB300 and SRM tech acrylic mat and clamp. This incorporates a Red Gum plinth and has substantial structural improvements to the subchassis. This is fed into an Allan Wright valve preamp/phono stage which is followed by a 15 Watt pure Class A kit amp with dual mono regulated power supply. These power a pair of Coral full range speakers in spherical concrete enclosures. My digital source is a Yamaha CDX-I110, a classic Japanese battleship player weighing in at 14 kilos and bought at the local op shop for $30 Aus (about a tenner in GBP!).

Your articles on hot rodded Technics SL 1200 turntables have been interesting, particularly as I have a Technics SP10MKII awaiting surgery. Any chance of an article on this classic deck?

One thing that has always bugged me about all hi-fi publications is the music used to evaluate components. Invariably it is a selection of Jurassic classical/jazz with Dire Straits or Pink Floyd thrown in to show how ‘modern’ the reviewer is. Can you imagine a teenager checking out the high end gear and thinking, “Nice! Maybe this hi-fi stuff is okay?” They would then read on about how great it made music recorded fifty years before they were born sound!

In this area Channa Vithana is really kicking ass. The guy evaluates components listening to Slayer and can speak with authority about Dave Lombard’s drumming! This is what our hobby needs - a link to modern day software. Still, well done on a top magazine that even my audio veteran father enjoys, despite describing David Price as “merely a boy who’s played with a lot of audio toys!”

Ben North

Ha ha, thanks Ben - and as I’m now the wrong side of forty, I’ll take your dad’s description of me as a compliment! Reviewer’s music - what a great issue you raise. Nobody’s summed it up better than that great late eighties house classic from The Reynolds Girls (“not ‘arf, great mate”, etc.)…”No heavy metal/rock and roll! We don’t want them back/I’d rather jack - than Fleetwood Mac”. How’s that for a hi-fi reviewer knowing music made after ‘Wish You Were Here’? Impressed, are you not? DP

Fleetwood Mac? I’m sure I’ve heard of them. In fact, I think I might even have one of their albums tucked in amongst my James Last, Ray Conniff and Val Doonican... AS

I put on Wolfmother the other day Ben, but it was too geriatric, so I went back to The Saints. NK

TURNING TO TECHNICS

Hi guys, I must say I’ve been reading ‘Hi-Fi World’ for many years now, great mag, well done to all of you. I have the recent March 2008 edition magazine. Can I ask you about the review on

Technics SL1200 - a good Direct Drive turntable when a decent arm is fitted, like the Rega RB250 seen here.

Well, Peter, I can confirm that the Technics is more than capable as a hi-fi turntable, even in standard form. I have owned mine for around eight years now and was always telling anyone who mentioned it that it was indeed a fine-sounding unit, in the same way that I kept telling everyone around eighteen years ago that the Garrard 301 was brilliant. If only people would listen when I start ranting, instead of sitting there with eyes glazed over... But I digress!

If you’re just looking for a basic, easy to use, easy to set up and fuss-free deck to listen to some vinyl, then it’s a great starting point. If it comes fitted with a rubber mat, ditch it and fit a Funk Firm Achromat, remove the rubber washer between headshell and arm and fit something of the calibre of an Ortofon 2M Blue or Goldring 1042 to it. Obviously you’ll be needing a phono stage and so, to get you going, you can do much worse than a Cambridge Audio Azur 640P - the results may surprise you!

However, your system is pretty high-end, and the handy thing about the SL1200 is that you can start fettling it in order to bring it upmarket a bit, as David’s article showed. His tweaked SL1200 is a mighty impressive sounding deck thanks to the Audio Origami’d Rega arm and Lyra cartridge and some modifications along these lines (although personally I’d start with a Roksan Nima arm instead) allied to an Anatek MCI phono stage will see off some pretty hot competition - it all depends on how much you want to spend. AS
SONY SAVED!

Thank you for the helpful answer you gave to my previous turntable question (Hi-Fi World March 2008). eBay and the opportunities it affords being what they are, I have just had a Sony TTS3000, PUA286 and ADC QLM30mkIII combination delivered by an enthusiastic young (twenty five year old) collector. The arm is in obvious need of a thorough service, but sounds rather good with what I think no-one would call a high-end cartridge.

Now for the question - how can I know whether it would take a fixed geometry headshell and cartridge like an Ortofon SPU? And what other sort of cartridge would suit this arm once Johnnie has had a look at it? My cartridge budget is about £200-£500.

Adam was right - vinyl can be addictive - who knows where I will put the next twenty seven in this flat? Wait till the wife gets home from her mountain holiday and sees it lurking on the sideboard!!

Nigel Briggs

PS. - Any suggestions for a twin turntable phono stage below £1,000 that would not be shamed by my Linto and/or Stageline N/Hi-Cap?

Now, that’s a rather nice piece of machinery you’ve stumbled on there, Nigel - I approve wholeheartedly! As you say, the loving attentions of Audio Origami on the arm are a wise first step and then you can look for a cartridge. Regarding the SPU, there will be no adjustment on the arm for aligning this beast as standard. If you really, really want to go this route, then your best bet is to drill the turntable plinth out to accept an SME cutout (with the slot centred on the current mounting position) and then buy a Slatedeck Universal arm mount to fit your PUA286 back on - this will then allow you alignment room to set up the SPU correctly.

However, if I were you, I’d buy the Sony arm a Sumiko HS-12 headshell from Stone Audio and fit}

Cyrus CD8 SE CD player - "as good as it gets for around £1,000 right now." says Editor David Price.

CD player are the TASCAM CD-01UPro with the balanced digital XLR outputs - this is a preferred option as it retails for $895AU, Cyrus CDBX and the Rega Apollo.

For the valve amplifier, I was thinking of the Cayinn A88T, which retails for around $2,000AU (and some reviews indicate that this unit shines when used as a power amp). My listening room is square-ish, with window furnishings, with solid timber floors and is around 20' X 22'. I listen to mainly jazz and western classical (both vocal and instrumental) and also Indian classical (both vocal and instrumental) on CD and vinyl.

I am also contemplating the Shanling MC30 as a CD player and using its pre outs to feed the power in on the M.F.A3.2cr. Any thoughts?

Amad Prodhan.

The Tascam we don’t know, because it is a rack mounting item aimed at studios, possessing pitch change and such like. It may look nice, but it is quite different from the considerably more expensive Cyrus and Rega players, both of which possess a very
it with an Ortofon 2M Black or MC Salsa. As far as a twin input phono stage under £1,000 goes, some do indeed have two sets of input sockets, but one is for MM and one for MC. The only two that have two independently configurable inputs that spring to mind are the Lehmann Black Cube Twin at £670 and the Audiolab 8000OPPA at £550. Either that or you could buy a second single-input unit and connect it to a spare line level input on your amp, in which case, go for the £650 Whést Two.

As to how to deal with partners’ reactions to new purchases, stand in front of the mirror, affect your best innocent face and repeat until it comes naturally: “New? That thing, dear? No000, I’ve had it for ages”!

POWER HOUSE

Following advice received in these pages I have made a few serious changes to my system over the past few years that have, without doubt, improved my system quite substantially. I now have a couple of problems as a result of my latest upgrade. My current system comprises a Teac T1 transport (with Trichord Clock 4 and power supply upgrades), Musical Fidelity Tri-Vista 21 DAC, NAD C160 preamp, Ratel RB1092 power amp and Linn Kaber speakers. Cables are Linn K400 speaker (behind cavity wall so not easy to change!), QED silver digital cable and IXOS Ixotica interconnects (not sure which Ixotica, it’s purple and was cheap at Richer Sounds about eight years ago). The rack is a five-tier Sound Organisation type. My room is about 11’ x 20” and the system is set up to fire across rather than down. My musical tastes tend towards middle of the road rock, some Zeppelin, Floyd and the dreaded Celine Dion and Michael Bolton when the wife’s about. I do like to turn the wick up when listening.

The Rotel power amplifier has replaced a couple of bridged NAD C270 powers that I used to use to get the Kabers to perform anything like I wanted them to, I demo’d it with my speakers but not with my NAD pre or cables, etc. During the demo I found that it easily drove the Kabers and seemed more refined and in control than the NADs did and a good opportunity (at £750) to get in some better amplification than the NADs. Unfortunately due to ongoing home improvements I’ve not yet been able to set up my system since having the Rotel but am now only a month or so from my long awaited relaunch when I can connect everything up, enjoy and annoy the wife again!

Now, the queries I have are the following. Firstly, is the NAD preamp now a serious weak link or is it good enough? If not, then what should I be looking for?

Secondly, during the demo of the Rotel I also heard it played loudly through some different speakers and was seriously concerned about what limitations the Kabers may be placing on my system when pushed to higher volumes (always my only real criticism of them), so should I look for something better, newer and larger that will let the Rotel do it’s stuff? I have read good things about the Monitor Audio ranges...
maybe GR/GS20 or 30 (or maybe even the cheaper RS8?) and always get tensest when I read about the Yamaha NS1000Ms. What is there that could retain the detail and clarity of the Kabers but would take a bit more punishment with the volume higher?

With regards to preamplifier or speaker upgrades, I would much prefer to go down the second-hand route and look for better value for money rather than new. Lastly, where the hell should I be with cables? It's always been a grey area for me, and I must be honest and say that I've never been terribly impressed with cable upgrades or changes so would appreciate some guidance here.

Dave Mayer

If you've never heard any major changes from cables then don't worry - I must confess to being rather wary about the whole cable situation myself. I recently listened to a manufacturer's £150 interconnects, which were a fine improvement over the £70 types I usually use - all well which were a fine improvement over a manufacturer's £150 interconnects, worrying - I must confess to being guidance here.

In terms of gutsy loud loudspeakers, Monitor Audio are usually a good bet here and the GS20s are fine units if you like your rock music loud. Why not go one further up the range and opt for the runners-up for the Hi-Fi World 'Loudspeaker of the Year' award in 2006 - the GS60s? These are fabulously dynamic beasts and love nothing more than a good blast of rock.

Do also consider the RRR FS100s, though, as we found these went ridiculously loud with little power, thanks to their 93dB sensitivity. On the end of your 500W Rotel amp, I imagine it'll be your ears giving up long before anything else.

Regarding the NAD preamp, it's a pretty good item but can be bettered. It's difficult to know what to recommend without an idea of your budget, however: AS

I think the basic Creek OBH-22 passive is a good place to start with preamplifiers. We've found it to be something of a giant-killer at £299, and as good as many £1,000 products in many ways. As a preamp your NAD C160 isn't half bad, so switching to the Creek will be less of an improvement than with many integrados, but you'll still find real improvements in detail, grip and general transparency. This is a good starting point, after which you can begin to consider altogether more esoteric stuff - come back to us for guidance here.

Even with the Creek preamp, you'll have a really decent amplification combo with the Rotel. You should make the best of its prodigious power and partner it with speakers that like a bit of a tickle, and as Adam says, the Monitor Audio GS60s would be ideal. You'll find yourself with a really powerful, grippy and dynamic system that's smooth and svelte too, making it ideal for the sort of sophisticated rock you like (as opposed to Slayer, so beloved of Channa Vithana and Ben North!).

As for cables, you're going to have to start thinking about them to tune your system. It's less a case of good and bad here, and more about the changes that individual designs make to specific systems. However, given that most systems are a tad hard and bright (as are many modern recordings), I find Black Rhodium Silverline Optimus (£455/m) adds tremendous clarity and space, but is about as far as you should go with your system now.

Dave Mayer

A cracking little passive pre-amp, the Creek OBH-22 - with remote control, no less.

GAIN STRAIN

I have recently changed my system from a Linn/Naim set up. This is now a Townshend Rock/Excelibur! Dynavector DV20X turntable, Sugden Bijou Phonomaster phono stage, Audio Research SP9 MkIII preamplifier and Series 1 Quicksilver Monoblocks, all playing into Celestion A3s.

Whilst all the above sounds rather good I find the listening levels very low, and basically I am cranking up the SP9 (virtually full tilt) in order to get a decent listening level. I am not sure why this is; the monoblocks aren't exactly low powered and give 60 Watts per channel?

My Naim Hi-Cap/110/72 combination was deepening at about 9-10 o'clock setting, and the 140 only had an extra 10W. Am I doing something wrong or is there something wrong in my set up? Please help me as I am at my wit's end.

Ewan Scott

It could be several things. Firstly, is your Dynavector the high or low output version of the cartridge (DV20X-H or DV20X-L)? If it's the low output version and you're running it in to the Sugden's moving magnet input, Bob's your uncle.

Otherwise, it sounds like a mismatch between the Audio Research SP9 and the Quicksivers. This would be odd, but still you need to check with the manufacturers - ask them if the output/input sensitivity is matched. However, don't be fooled by volume controls - different manufacturers design their preamps (or integrateds) differently, so some give most of their volume at the lower end of the dial (conferring a sense of power in the user), whilst others are more linear and you really have to turn the volume knob across to get power out. 10 Watts will be neither here nor there in terms of perceived volume, so don't fooled by output power specs either! DP

WIDER VIEW

I have just been going through the May issue and noticed the news item about the Denon Blu-ray player on p8. I was therefore wondering - will all
these new Blu-ray players play the old type ("normal" resolution) DVDs as well as Blu-ray discs? If so, will they upscale them to 1080? How about the play back of SACD and DVD-Audio? Furthermore, does this mean that the universal player (like the Denon DV-3910) is gone for good?

Fred Scheutz

All Blu-ray players play video DVDs, upscaling their picture to full High Definition of 1920x1080 so you can watch on an HDTV. As is so often said, you don't get a real high definition picture because no new information is available, but in practice if you take a good modern film on DVD and upscale it, it won't look too much worse than the true high definition Blu-ray.

If you want to play DVD-A and SACD discs the Oppo DV-980H DVD player will do the job, via an A/V receiver.

I have yet to come across a Blu-ray player that plays either DVD Audio discs or SACDs. The forthcoming Denon Blu-ray transport will not play either I have been told, which is a shame. Universal players are a thing of the past, it seems...

Power Game

My current system comprises a Trichord-tweaked Sony CD player with upgraded op-amps and power supply, an Arcam Alpha 10/9P combo bi-amping BKS electrostatic hybrids - lovely Danish speakers. I also have a Fostex DS DAT machine for radio recording, etc. The Arcam is getting elderly and struggles a bit with the power demands of the electrostatics, so I was debating investing in an AVI lab series amplifier: do you think this would be a worthwhile upgrade?

As regards the source, I was contemplating the Russ Andrews or Benchmark DACs as I have other digital sources such as Sonos music server and some elderly 300 disc multichangers which I use to provide music for the kitchen, outdoors and dining room. Do you think this would give me better sound than investing in an AstinTrew which I have heard and seems super?

Alan Fearick

I wouldn't have thought that the Arcam should struggle with your BKS loudspeakers, as ribbons are usually a fairly benign load and, judging by their current models at least, seem to have a decent sensitivity. However if you need more grunt than the Arcam combo can provide then the AVIs would be a bit of a sidestep as they only produce around 20W more than your Arcams. If you need a bit more beef I would suggest going to the likes of the Rotel RB-1092 which kicks out over 500W and should keep you and more than a few of your neighbours entertained...

The Russ Andrews or Benchmark DACs will make a worthwhile upgrade to your digital sources and are well worth investigating.

It's hard to say how well your Sonos, or Sony CD changer, would respond to the company of - for example - the Russ Andrews DAC 1 USB. Certainly, with a good transport, this little wonder DAC comes very close - you'll find it a more detailed, finessed and polished performer than the AstinTrew, but a little less emotionally intense and dramatic. DP

MOD Squad

I've been following your mid-priced CD player reviews, namely the units from AstinTrew, Rega, Edgar and Raysonic, and have been thoroughly enjoying the quality of writing. As a result, I am at the start of a complete, albeit in stages, replacement of an aged hi-fi set up.

Russ Andrews DAC 1 USB up-samples and gives a clean sound. It's a good way to upgrade a CD player.

Down here in Australia, for whatever reason (it's not sourced from Europe?), the Raysonic is considerably more affordable. And then I came across this advertised USA upgrade on Audigaron for the Raysonic CD128:

"LEVEL 1 – This is done to single ended part of the machine only:
  a) We add one pair of premium upgrades can include Mundorf or Auricap capacitors, master clock, diodes and op-amps. We can also add internal deemphasis, better RCA sockets, silver wire, etc. but often some of the items these upgrades do seem a little out of kilter so to speak.

The clock makes the biggest difference to any upgrade, so doing that and some caps and op-amps will
Raysonic CD128 - made in China, less expensive in Australia and modded in the U.K.

get you a large gain in performance. Anything else after that is icing on the cake and the level of the rest of your system must be taken into account. The cost does depend on what you exactly want done, a clock for example is over $400, our recommended op-amps AD825 are $40 - per module."

Burson Audio, who are local to me in Melbourne, make highly regarded clocks for much less than these suggested costs. I've also been considering trying their preamp and these suggested costs. I've also been to my old Sony CDP-X33ES - was the experience I had with Audiocom obvious reasons. I can tell you that comment on specifics here Jim, for area you could delve into for an article?

Jim Gleeson

Hmmm... well it's hard for me to comment on specifics here Jim, for obvious reasons. I can tell you that the experience I had with Audiocom - who did a similar round of mods to my old Sony CDP-X33ES - was dramatic. About £500 worth of tweaks turned it into a machine that would live with anything under £2,000 or more. However, I cannot comment about Burson, what they do may be better or worse. Assuming they know their stuff (why don't you ask them to put you in touch with them?), then it's a great way to get big gains on a limited budget - as long as your CD player and/or laser has got plenty of life left in it. By the way, we have another Audiocom feature coming soon - this time, I've let them loose on a classic high end Sony machine! DP

Reducing digital jitter improves sound quality considerably I've found, reducing messiness, making for a harder sense of timing a bringing out bass dynamics. This is why clock upgrades can have a big impact upon the sound. However, the upgrade list you provide for the Raysonic CD128 is extensive and, I suspect, expensive. Both Meridian and Chord Electronics now use technically advanced ways of processing digital signals and, for what you may end up paying for these tweaks, I recommend you listen to the new Chord QBD76 DAC reviewed in this issue. I have spent a few hours with it and, like DAC64 it replaces, find it an amazing step up from what has gone before. In a nutshell, Chord use a complex Watts Transient Aligned Filter, that they build using a Field Programmable Gate Array, to implement more sophisticated digital processing than has gone before. The new DAC is less warm than DAC64, but has real depth perspectives and a peculiar 3D solidity to images that is far removed from the flat letterbox flow in each section. Sceptics often believe that bi-wiring cannot work because each arm is commnated at the amplifier, so it sees the same voltage. It doesn't however, see the same current so any current related effects will likely be lessened. NK

SPEAKER TWEAKER

I own and enjoy a pair of Usher S-520 loudspeakers and was pleased to see in your February 2008 issue that you were able to endorse my choice. But ever since reading your report I have been intrigued by Noel's suggestion that he would "break out the soldering iron and pull the tweeter down a bit". Could you elaborate on this modification please? Thank you.

Brian Bradshaw

I was thinking aloud Brian. The S-520 is a lovely sounding small loudspeaker, but its treble is a little scratchy and measurement shows a peaky tweeter. It's usually easy to cure this sort of thing, with a notch filter or just a parallel capacitor or series inductor to roll things down a bit. Unfortunately, our Editor was seen heading down the M4 some time ago with two pairs in his boot, no less! They haven't reappeared in the office since. When they do - I'll probably have to trade a valve phono stage internal panel damping which improved things further, making a very detailed and atmospheric loudspeaker. There was commercial design doing exactly the same but I cannot remember now who this was.

Peter Graves

The negative split is the visible mechanical side of bi-wiring. I was highlighting the fact that when this is done differing electrical currents then flow in each section. Sceptics often believe that bi-wiring cannot work because each arm is commnated at the amplifier, so it sees the same voltage. It doesn't however, see the same current so any current related effects will likely be lessened. NK

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Protrusions around front baffle will cause reflections

FEELING GRAVITY'S PULL

In his review of the Audio Pro Mandial M1 loudspeakers in the May '08 issue, David Price states that, "lovely as these mini monitors are, not even they can get around the laws of physics". Indeed they won't, as they will be substantially compromised by the amount of diffraction from the cabinet sides extending in front of the plane of the baffle, and this is clearly evident from the ripples shown in the mid to high frequencies in the Frequency Response plot.

It is a credit to the drivers and otherwise structural integrity of the cabinet that the speakers sound as good as DP has heard, and leaves one to wonder how extraordinary they might sound if a low diffraction front had been used, such as Mission use at this price-point. Manufacturers too often do not get the best possible from their chosen components, and in this case priority given to the user convenience of a push-in grille - what a waste of potential!

Adam Smith states that the port is tuned to "around 80Hz". If the correct Impedance plot has been published the port/cabinet is tuned a little above 110Hz, and 80Hz is the frequency where the bass driver and port outputs are in opposing acoustic polarities - 180 degrees phase difference between their outputs. If a front exiting port I would expect very little actual 80Hz output, but perhaps the rear exiting port changes this in some way.

I have been wondering for quite a while how Hi-Fi World test equipment works. Does your device analyse the spectrum of the pick-up microphone's output for each frequency (or frequency band) of the input signal, or does it merely measure the output level? If it measures only signal level, then I suggest that shown as an 85Hz-90Hz peak in port output may be predominately 2nd harmonic distortion, along with some 3rd harmonic. Though if your device does analyse the output signal's spectrum and it is the Fundamental frequencies predominantly, then I am quite puzzled by this!

I have not measured any loudspeakers with rear exit ports, however all low to medium power bass driver front ported speakers I have measured, and particularly those with small diameter ports, have had audibly dominant 2nd and 3rd harmonic distortions at frequencies below the port/cabinet tuned frequency.

What I do is sweep a low distortion sine wave down in frequency from about 120Hz to moderate audible volume level and listen for changes in timbre. Apart from audible effects of any cabinet wall resonances, and their harmonics, the wanted output of the loudspeaker usually sounds like a continual lowering of the fundamental frequency till around the region of the port/cabinet tuning - the Fb. This frequency is usually audible obvious as the timbre changes at least a little owing to the substantially reduced cone movement at Fb. If driven to higher output here, port noise becomes audibly obvious. Returning to moderate signal drive and sweeping lower in frequency soon the timbre audible lightens. This is when the 2nd harmonic is becoming predominant. With further lowering of the input signal's pitch no fundamental is audible, and usually the timbre changes again to somewhat coarser as the 3rd harmonic increases in level.

Try this with the ported loudspeakers you test. The audible results correlate with what one hears when auditioning with music that has not had its low frequencies high-pass filtered - which unfortunately most popular music styles' recordings have had done in the Mixing or Mastering stages, leaving little below about 100Hz, though this varies from around 80Hz to as high as 120Hz from different recordings. Some of these recordings have had a boost applied to the octave above to give the psychoacoustic impression of significant bass response when listened to via mini sound systems andportables, etc. Spectrum analyse some of the recordings you regularly use and publish the results. This can be of use to readers.

There are genuinely low frequency content recordings and there are superficially low frequency content recordings. Some people have never been shown the difference and do not understand why a favourably reviewed loudspeaker does not sound so good in its bass range with the music they play (other than room modes' effects and different speaker locations in the room cause).

Alan Barnes

Yes, the port damps the cone at around 110Hz the impedance curve suggests, seen as the centre of the dip between the peaks, and not at 80Hz where there is an acoustic output peak. Adam was, however, making reference to the port's acoustic contribution which can be seen to peak in output at 80Hz.

Ridges will reflect sound and don't help imaging. I talked about how flat front baffles with rounded edges gave better stereo imaging on p108 of the August 2008 issue. But other factors come into play too, small loudspeakers usually having a very nice midband because of their small, light cones. Those ridges won't help, but then this little loudspeaker isn't a balls out reference design.

We use the common and popular Clio based measurement system for loudspeakers, seen on p3. Like all modern analysers this system uses a modern computer to process data taken from a convolution, so the information shown is spectral. We start with simple, reliable third-octave pink noise, then run an MLS, then gated sine wave, which is convolved to improve the signal-to-noise ratio. Our plots do not scale port output to main output though.

It is on our agenda to look at distortion, but this isn't an easy property to measure with the degree of accuracy and certainty our measurements must have, because they must correlate well with what manufacturers like KEF, for example, measure - or we would very quickly hear about it!

Most CD recordings reach down to 40Hz, approximately the lowest note played on bass guitar, and it is common for them to have lifted energy around the 80Hz region to improve 'speed'. I have yet to measure a disc that stops at 100Hz: it would have little audible bass. Some CDs reach below 40Hz, the heartbeats on 'Dark Side of the Moon' comprising pulses at 25Hz, for example. What exists on discs is interesting, which is why we often take a peek at it, but this is a little technical for most readers and not of great concern I suspect.

NK
**AMPLIFIERS**
- Roksan Caspian monoblocks boxed/superb: £1295
- Bel Canto EVO 2 power amp: £595
- Goldmund SRM-295 monoblocks ex demo: (£5500) only: £1295
- Wadia MD-805 SET monoblocks As new: (£16500) our price: £7950
- John Shanks Phase 2 integrated amp with phono: £350
- Kora Triode 100 5B Monoblocks: £3500

**PRE-AMPS:**
- Auto Note MB pre-amp with phono/remote MINT: £795
- Yamaha DSP-E800 processor/3 ch amp: £795
- Auto Note Zero monoblocks with pre-amp (ex demo): £495
- Proceed PM pre-amp: £1495
- Mark Levinson Model 40 processor/preamp: Factory sealed cost over £30000 offered for only £1295

**CD PLAYERS & TRANSPORTS**
- Esoteric X-03 ex demo full manufacturers warranty. please phone £1295
- Marantz CD 873 £7950
- Sony CDPM41 CD Player

**TURNTABLES, CARTRIDGES & TONEARMS**
- Ortofon 507 MK2: £2995 only £1995
- My Sonic Eminent cartridge (new) £2750
- Goldmund Eidos CD/SACD player ex demo. mint/boxed/full warranty (£3195) only £2495
- Sony CDPM41 CD Player £60

**MISCELLANEOUS**
- Townsend Seismic Sink 3 Tier equipment stand £300
- Selection of Naim Naim DAC £350
- Gel balanced interconnect @ 3000 £175
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650 199
900 399
1275 759
379 249
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179 119
1695 1360

Loudspeakers
Audio Physics Virgo3 Maple S/H
B&W DM655.2 S3 walnut S/H
JMLab Micro Utopia be Classic x-demo
Konos Essence Floorstander Palasander S/H
Living Voice Audio OBK 0/2 Cherry x-demo
Martin Logan Freya x-demo
Martin Logan Mosaic x-demo
Martin Logan Surnur Cherry x-demo
Pen Audio Charm Active Subwoofer x-demo
Pen Audio Rebel 2 x-demo
ProAudio Response D180 Yew x-demo
ProAudio Response D138 Cherry x-demo
Ruark tisamin 1 lmagonyi S/H
Sonus Faber Cremona Maple X-demo
Sonus Faber Concerto Grand Piano S/H
Spender S3 Cherry S/H
Tsunami TS300 Beech Subwoofer S/H

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1995 999
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4000 3999
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1793 1150
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1995 999
1995 999
1625 8199
4630 3699
869 375
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THORENS TD160 BC Super
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47 LABORATORY GAINCARD amplifier 25w version. Excellent condition. Sparingly used. £1200. Tel: 01373 301423

WANTED FOR my Thorens TD160 Mk1 tone arm. I need head for it. The type is with the four prongs that fit into the connections in the tone-arm. Tel: 01386 830 757

BANG & OLUFSEN 5500 system with speakers £499. Soundcraft 12 band graphic equalizer £45. Wharfedale Diamond 3 £40. Videoeton Minimak 2 speakers £35. Aspen PE 12 £40. All very good condition. Tel: 01708 457 691

THORENS TD150 II upgraded plinth, improved suspension, armboard cut for Tabriz arm. Spare blank armboard. No cover so £65. Buyer collects. Ortofon Rohmann cartridge, new cantilever £185 including postage. Tel: 07951 553091 (London)

PAIR QUAD II monoblocks. Croft modified £600. Pair ESL 57s, bronze, late models, £600. Nottingham Spacedeck with Monitor arm. £400. Buyer collects. All in working order. Tel: 01923 237769 (Warford)

MUSICAL FIDELITY power amplifier P270, boxed, very good condition, £450. Buyer collects. Tel: Chris 07813 773030 (Derbyshire)

SANSUI SP 1001 3-way speakers, tone controls, £150. Eltax Profile floorstanding speakers, £50. NAD Tuner 402, £30. Atacama speaker stands £18", £35. Leak 2000 receiver £30. Tel: 01455 220214 (Coventry)


REVOX A77 tape recorder. 12ips & 7 1/2ips. £300. Akai 4000 DS tape deck. £60. Both first class. Tel: 01753 586 660 (Windsor)

KRELL BOXED KAV400xi amp, two years old, as new, owner going all valve, can demo. £1500. Technics pre, was state of the art, now not working. £50. Tel: Stanley 07951 553091 (London)

REVOX A77 tape recorder. 12ips & 7 1/2ips. £300. Akai 4000 DS tape deck. £60. Both first class. Tel: 01753 586 660 (Windsor)

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SANSUI SP 1001 3-way speakers, tone controls, £150. Eltax Profile floorstanding speakers, £50. NAD Tuner 402, £30. Atacama speaker stands £18", £35. Leak 2000 receiver £30. Tel: 01455 220214 (Coventry)

WANTED: PIONEER cassette deck recorder. CT5740S. Must be in excellent condition. Tel: 01452 713211

CHORD INDIGO interconnect. Stereo pair 1 metre. RCA terminations, Superb but now surplus. £550. Tel: 01752 773369

WDB8VAXL INTEGRATED. Tape loop, upgraded components. Assembled by professional audio engineer, £900. Owns. Reason for sale is I've changed to a pre/power combination. Please phone 07710 737232

NORDOST RED DAWN speaker cable, 5 metres bi-wire. Only twenty minutes use. £500. No offers. Buyer collects. Tel: 0191 281 5482 or 07748 118310

CECIL WATTS Dust Bug and Pillar. Both plush roller and brush as new plus Parasitic Disc Preener in original tube. Similar condition. Offers invited. Tel: 07710 828 286 (Brighton)

QUAD ELS 57's original panels good condition. Series No's 29179 and 29182, circa 1972. New EHT boards by One Thing. New crossover caps give total matching. £650. Tel: 01622 690 460

TARGET AUDIO Hi-Fi Rack with six shelves. Excellent condition. £75. Tel: 07667 726628. (Berkshire)

KRELL 400xi 200wphc into 4 ohms. 2 years old, little used. Pure, sparkling, detailed sound. Excellent working order; boxed. Offers above £1350. KT88 integrated 18wphc, boxed, guaranteed. £475. Tel: Stanley 07951 553091

NAIM NAIT 2 chrome bumper. £250. Not 02 tuner £650. CDi £425. Headline, olive, box £150. NAPSC £90. Revolver RW45si speakers, cherry £475. All boxed, serviced. As new. Tel: 01639 641 043

SONY CARBOCON 5500 featured this mag June 08 - 'true high end, even by todays standards, taut and sinewy' Ring for details. £250. 07946239708 (Manchester area)

DUAL 505-2 variable speeds control balanced arm. Tracking adjustment. Sonic absorb platform. PAP630 turntable. Unmarked Limited lid, perfect condition. ARPP7 cartridge and good stylus. 33 - 45, end of play stop. £85. Tel: 07710 828 286

MERLIN VSM MME floorstanders, latest lead-free version, light use, SuperBam, boxed (£6000) £2200, Berning ZH270 with all Berning upgrades, superb condition, cryoed output tubes, boxed, £22,600, mopomoso@gmail.com (London)
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CLASSICAL VINYL LPs at Oxfam, 170 Portobello Road, London W11 2EB. From £1.99. Donations of books, video's, LPS, DVD's & CD's always welcome. Tel: 020 7727 2907.

MICHIELL GYRODEC SE, RB 300 Techno weight Uncover MC 30 Supreme £850. Dino Dino + upgraded cable £450. Tel: 07840815757

QUAD 303, 33, FM3, instructions, leads, including 'free' 33 for spares/repair. £240. Leak Trouthome III tuner, £80. Leak Stereofonic tuner £40. NAD 4155 tuner, boxed, instructions. £50. Tel: 07956 438044

YAMAHA RX-V550 A/V Receiver RMS 90Wx6 excellent condition including 6 speakers, 2 fronts, 2 rears, 1 centre and a Celestion 75 watt powered subwoofer. All speakers perform well but need some minor tidying up. £160 the lot. Tel: 07810 522 499 (Mid Herts)

VINTAGE Hi-Fi, Leak, 2001 turntable, £90, two pairs, 2030 speakers, £50, Leak 1800 receiver, £75, Leak 2200 receiver £95, Ariston Q deck £75, JVC Quarzlock turntable, £50. troughline Stereo speakers, £50. Throughline Quattron, £50. Seen working. Others. Tel: 07855 439 635

LOWITHER LOWOTHER Acousa twin speaker wanted. Made late 1960's. PM7A drive units wanted. Any condition. Working drawings, mounting screws also wanted. Tel: Jeff 020 8220 0380

QUAD 303 serviced 1998 £90. Quad Qil choke £40. Watts Dust Bug £10. Tel: 01344 774 445 (Berks)

AUDION SILVER Night 300B valves push pull monoblock together with Michell Iso Hera power supply. Total cost £2500. One owner, accept £1100. Tel: 020 763 5702 after 7pm

PROAC D15 Response loudspeakers. Very good condition. £600. Tel: 0753 0581717

ICON AUDIO MC34-A valve amplifier. Full Icon KT88 upgrade 40wpc Feb. £90. Black chrome gold finish. Excellent sound and condition. Bargain £300. Tel: 0116 284 9087 (Leicester area)


MORDAUNT SHORT MS40i floorstanding loudspeakers twin 165mm mid bass drivers. New tweeters fitted. Easy amp load. Excellent bass. Rosewood colour. Original cartons/handbook. Mint. Collection only. £150 0.5m wire. £155. Tel: 0151 608 4481

VOYD VALDI turntable in rosewood. No arm or cartridge. Immaculate. Separate PSU. Siblele offers please. Tel: 07747 753007 (London)

MARANTZ 6000KI CD player professionally modified, including Trichord Clock 4, N/C PSU. Currently configured as transport. Easy to set up to full player. Cost nearly £2k. Tel: 0151 608 4481 (Wirral)


SOWTER OUTPUT transformers types, 9593, 9066t, 9058, 9521 (mains). Two of each and one mains. High spec. Excellent bass extension. Suitable for paral- lel push-pull. Contact (07895) 197571. saselec2000@yahoo.co.uk

WANTED: LARGE Silver old style 'Boombox' Ghetto Blaster cassette radio recorder all in one unit. Must have 8" diameter speakers, large amplifiers tuning knobs and carrying handle. Tel: 020 8969 0070

UNISON RESEARCH S6 integrated valve amp, re-valved (£795). Tonearm off Technics SL1210 MkII, profes- sionally removed, brand new. Offers. Luxman AM/FM tuner model T100L, black finish, mint. Offers. Tel: 0161 480 7880

FOR SALE: ROGERS JR149 speakers comes with two spare Kef727 tweeters. £150 ono. Sony solid state stereo tuner ST 788 vertical wood case AM/FM £15. Tel: 07807 149857

LINN CLASSIK black Diapason Karin Sonus Faber stonewood speaker stands Nordost speaker cable new 2006. £1575. Tel: 01733 757 499 (Pitterborough).

NYTECH CTA252DXII stereo receiver, mint, black, £95. Dovedale speakers, perfect, teak, £50. Trouthome Stereo III tuner, £60. Good working order. Tel: 01922 865 414

CLAAS AMP, Musical Fidelity A308 CR CD. Mirage stand £600. Tel: 0753 0581717

SUGDEN MASTERCLASS C2. Sovereign class £1790. Tel: Jim 1206 510 393

LEAK TL25+ pair mono- blocks, one champagne, one bronze, electrically identical, professionally rebuilt. £750. Leak TL110 pair, great condition, professionally rebuilt, re wound mains transformers £750. Can e-mail pho- tos. Essex. 07828575122 hieatta@doctors.org.uk

NAD 3020A Amplifier, Ditton 100 speakers, Dual CS505-1 record deck. All in excellent condition, although record deck requires servicing. Brand new Ortofon cartridge/stylus. £250 ono 020 8360 1758.

FOR SALE: Quad FM3 tuner £80. Quad 405 power amp £180. Both good condition. Tel: 01278 459556 (Somerset)

EPOS ES14s Original Speakers on Heybrook Stands (£160). Sony TCK 520 Cassette Deck (£25). Both Items Mint Condition. Tel 07876-597406

PAIR QUAD ESL63 loud- speakers in original boxes £600, Quad 606 130W pwr amp £200. Tel: 02308673829 (Southampton)

SUGDEN MASTERCLASS CDP. Legendary TDA1541 S1 DAC! Owned from new. £275. Tel: 01962 846 853

LINX NEBULA integrated amp 60w (UK-made - Hitachi Mosfets 60W/ch) £600. £400. Offering. Matched with Doveland factory made. £500.

MATCHED TONEARM LEAK arm, NAD 8200 cartridge.

MICHIELL GYRODEC SE turntable, Trichord Dino phono stage, Chord Chameleon interconnect. All superb. Welcome any test. Rega arm Pickering stylus Michell Clamp. Can demonstrate. £950 ono. Tel: Ian 0161 928 4992 (Manchester)

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LINX NEBULA integrated amp 60w (UK-made - Hitachi Mosfets 60W/ch) £600. £400. Offering. Matched with Doveland factory made. £500.
RED WINE Audio Signature 70 monoblocks, perfect condition. 35wpc into 8 ohms. See rave review of the Signature 30 on 6Moons; the 70s are even better! Tel 07920751519


FOR SALE: Roksan Kandy Mk111 CD Player. (Black) mint. Nearly four years old. Boxed with remote, cables, etc. £325 inc shipping or £300 collect. 01215202029 West Midlands.

SUPEX 901 super pu cartridge offers. Audio Research ribbon tweeter - replacement ribbon unused. HRAS32 offers. Jordon Watts 6.5inches aluminium cone speakers. michael.st.jean@ntlworld.com

LEEMA STREAM CD player and Leema Pulse amplifier. Like new condition with remote controls, manuals and original packaging. £1600 ovno. Genuine sale. Tel 07796 226641 or email chris@leemorgan7.wanadoo.co.uk or leemorgan7.wanadoo.co.uk

NAIM 112 preamp£299, Celestion SL600 speakers £299, Atacama R724 stands £79, all boxed excellent condition. Chord Cobra 2 interconnects £29pr. Chord Silver Siren interconnects £45pr. Tel: Martin on 01984 640588 (Somerset)

TOM EVANS-The Groove. Phono Amp. 18 months old. Immaculate Condition. Run-In then re-boxed. Serious high end sound. 750.00 Only. 07956125695.

EPOS ES22 speakers in Light Cherry, superb condition & performance, virtually as new with original packaging, spikes & User Manual - £475. 07963-232638 (Herts.) sjross99@msn.com

WILSON SYSTEM 8 in Obsidian black. U.K. purchased and installed. Only 68 hours use. Perfect condition with all accessories, crates and manuals etc. Superb, full range sound in a compact package. Pictures and demonstration available on request. Retail £26,000.00, sell for £16,500.00. Call 01925 656990 or 07738 59051 for further details

KEF B139a pair boxed bought as spares/to build Fried Model H sub-bass also included drawings instructions £120.00 01 872 863089 Cornwall

DENON DVD-3910. As new being 2nd room Unused spare. For sale to highest bidder £1200 (exvat) 0134481455 or 07774 493808 Cornwall

REGGAE & SKA 45s and LPs wanted – 1960 to 1980. Condition immaculate. £45 per item. Any quantity from 1 to 1,000. Contact no. 01983249612 (Watford).

CONRAD JOHNSON PV10A PRE/ MV55 power, superb amp, new valves in pre, new set supplied for power. all boxed, manuals, £995, or PV10A £450, MV55 £600, NAD 4020A tuner, excellent. £25, Rodd 01706 345418 mail @ roddtheobald.force9.co.uk

BOSE LIFESTYLE 5. Pre-amp, CD, FM/AM tuner with RF remote. Used in dining room only. Complete with original accessories and in as new condition. £225 ono (£700 new) Tel079592056746

WANTED: Top quality Hi Fi seperates and complete systems, Naim, Linn, Cyrus, Meridian, Arcam etc,fast,friendly response and willing to travel/pay cash Please call me on 0781 5892458

UNISON RESEARCH Smart 845 SET monoblocks (pair) £1550: Avalon NP2 Evolution loudspeakers £1200; Graaf WFB-One valve phonoline preamplifier £795; Moth RCM £50. Tel. 01923 219711 (Watford).

MARANTZ SR 8001 AV receiver HDMI 7x 125 watts 8 ohms toroidal transformer as brand new with Marantz dealer warranty invoice. List £1200 will accept £395 space required. sgbill@talktalk.net

QUAD 306 current dumping poweramp 50 Watts per channel Excellent condition and working order £200 ono Mobile 07502009541

WANTED FAULTY or non working Quad 34 or 44 preamps or FM3 tuners, Naim 32 preamps. Also decoder for Quad FM2 tuner. No dealers. Contact Mike on 01758 613790 with price.

AUDIO ANALOGUE Bellini Donizetti Pre Power Amps with remote control finished and working order £200 ono. Mobile 01215202029. For sale to highest bidder £475, more info email user@leemorgan7.wanadoo.co.uk or call 07812750572

SNELL, TYPE J loudspeakers, driver units renewed in 2005, complete with pirate stands excellent sound and condition. £450.00 contact no. 01983249612

ROKSAN KANDY MK111 CD player (Black) Mint nearly 4 years old. Boxed,with remote and cables. £325 inc shipping or £300 collect. 01215202029.

ORELLE SP200 Power/SC200 Preamp. Original boxes. Little used. Active & passive outs. MC/MM input boards still boxed, 100 watts/channel. £500 Will Part-Ex quality turntable. m@mk3hplus.com

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MARANTZ CD65 ii Special Edition CD player, classic model, mint condition. £80. Yamaha Surround Sound 5.1 starter system, RX-V350 AV Receiver, NS-P100 speakers and subwoofer, new, sealed boxes, £140. 020-8366-2647

EXPOSURE CLASSIC preamp XXV111 This is a brand new product, an unwanted prize it is in a box. The colour is Titanium £900 or near offer christopher_oconnor@sky.com 07971003594

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GARRARD 301 + origin live upgraded rega 300 arm +goldring 1042cart £700 ATC intergraded amp vgc £1600 Peter at mchapel@yahoo.co.uk

CHORD DSC 900 DAC, silver boxed.perfect (1900) £700. Teac T1 CD transport, VRDS mechanism, boxed incl Stereowox HDX digital cable, v.good condition £300. Tom 01925 766 200 ( Warrington)

DYNACO A25 Classic Loudspeakers with stands. One badge missing, otherwise excellent condition and sound. £99. Buyer collects. Stone St Iv (Cambs.) 01480 354084. Email juan.catt@ntworld.com.

LEAK 2075 speakers £750 ono. JBE Slate Mk3 direct drive turntable £750 ono. Audio Alchemy MM/MC phonostage £150. B&W 1800 speakers £195, 01798 813133/ reconcile@bdlr.freererve.co.uk

KENWOOD L-07D headshell warranted. pontneuf9@btinternet

BANG & OLUFSEN 5500 system with speakers £499. Soundcraft 12 band graphic £45. Wharfedale Diamond 3 £40. Videoton Minimax 2 speakers £35. Pioneer PLD2 £40. All very good condition. Tel: 01708 457 691

WANTED: STYLUS or arm for systemdek turntable. Anyone who can sell me one or tell me what exactly I need and where to find it please email gavandsarah@hotmail.co.uk

QUAD 77 integrated amplifier £180. Linn Tukan speakers (black) £120. Denon TU-260L tuner £30. All boxed and in very good condition. Buyer collects. Tel: 01268 774416 (Essex).

WANTED CHOARD Odyssey 2 speaker cable 2x3m with silicon outer jacket chord plugs also wanted PMC DBD wallbrackets tel 01234 302769 or 07840428253

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VAN DEN HUL cables The Second. 0.8m Rca to RCA. £90. Integration 0.8m both boxed as new. £70. Tel: 01772 315723

LINN AXIS turntable, Akito arm, K9 cartridge, £395. Tel: 01708 251103


TARGET AUDIO Hi-Fi Rack with six shelves. Excellent condition. £75. Tel: 07867 726628 (Berks).
Whether you’re back in Blighty after your long hot summer holidays, or sneaking away for a bargain priced city break, there’s no better companion than September’s copy of your trusty Hi-Fi World! There’s the usual mad mix of old and new, from Chord’s Chordette Bluetooth music player to a comprehensive feature on Rogers’ classic LS3/5a BBC mini monitors — with a review of the newest incarnation. There’s a special feature on Funk Firm’s Linn LP12 modifications, an in-depth review of Naim’s HDX 24/96 digital music server, and a scoop review of Exposure’s stunning new MCX high end system. Here’s just some of what we hope to bring you:

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NAIM HDX DIGITAL MUSIC SERVER
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**FREE READER CLASSIFIED ADS COPY DEADLINES**  
OCTOBER 2008 - 6TH AUGUST 2008  
NOVEMBER 2008 - 8TH SEPTEMBER
The George Mitchell Collection, published by US-based Fat Possum Records (www.fatpossum.com), is an invaluable selection of unique field recordings recorded and archived by Mitchell and sung by an array of blues singers during the period from 1962 to the early eighties. They range from the legendary figures such as R.L. Burnside and Big Joe Williams to the relatively obscure performers such as Cecil Barfield and William "Do-Boy" Diamond.

Diamond, for example, was recorded in 1967, in Canton, Mississippi on his "boss man's" farm. He told Mitchell that playing blues was, "the onliest thing that pacified me. Make me feel uplifted and such a thing as that. Don't be feeling drowsy and dead, drowsified." One of Diamond's favourite subjects within his songs was, "cause I like 'em". Which is fair enough but almost got him into trouble. His great voice used to attract the ladies who would end up sitting on his lap, much to the chagrin of their attendant boyfriends and husbands. Diamond, at one point, even gave up singing because he was afraid he'd be shot by the same!

So the journey continued, around the country for the next twenty years. The reaction that Mitchell received from the black community was interesting. After all, here was a young white kid, toting a reel-to-reel tape recorder turning up in a sixties black community, asking lots of questions, "I always got good reactions, though," said Mitchell. "They were always pleased that there was somebody that was interested in them because it wasn't happenin'! They were all anxious to play and to cooperate and to do it right there and then, in their house. The good ones were all passionate about their music." In fact, if Mitchell ever received a negative reaction it was from white neighbours who would suspiciously ask why he would even want to enter the black neighbourhood.

Mitchell's library of recordings was eventually bought by a short-lived record label called Cello Records. "They saved them," explained Fat Possum's Bruce Watson, Head of Licensing. "The tapes had previously just been lying around in boxes around George's house. Each of George's originals were transferred to 2-track, half-inch tape. We received the tapes in that format. What prompted the box set was that a lot of the recorded guys only sang three or four songs. You couldn't release a whole CD on them."

Initially therefore, these songs were published on a limited 7" series. Now however, Fat Possum has collected the songs on a seven CD box set, each with between twenty and twenty-nine tracks on each, complete with an informative 46-page booklet. The recordings may have been cleaned up a little but what you hear on these CDs is largely the untouched original George Mitchell archives in all their rawness, with that measure of spontaneity and passion that comes from the impromptu nature of the recordings. Anyone interested in blues music needs to have this set — it is music from the source..."
Be there.

The Beryllium Evolution

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