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OCTOBER 2008

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tested



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exposure



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verdicts

- OUTSTANDING
- EXCELLENT
- GOOD
- MIEDIOCRE
- POOR
- £ VALUE



As house prices crumble, credit crunches and confidence quivers, there's never been a better time to buy hi-fi. Why? Because instead of buying on image, hype or name, shoppers begin to care about how much 'sound per pound' a product gives them...

Value is something we at *Hi-Fi World* have always paid attention to, focusing on what we call "affordable audiophile" gear, rather than slickly marketed designer kit with 'telephone

number' price tags...

This issue is a case in point. Actually, we kick off with a true high end system with price to match, but unlike so many flagship one-make packages, Exposure's £15,000 MCX [p10] really delivers the sonic goods. Although expensive, it's still a wise investment.

Following on from this, we test six of the best £2,000 floorstanders [p15]. All these speakers offer dramatic improvements in clarity, refinement and natural musicality over cheaper, supposedly better value designs - our supertest shows how spending less can be a false economy.

On p29, yours truly compares the latest contender for £1,500 CD player crown - Musical Fidelity's AI CD Pro. This is a key market sector because the very best designs at this price start encroaching on true high end products in performance terms. The worst however, struggle to better some £300 silver disc spinners. Without giving the game away, I'll just say that the new MF is an important product at the price!

Continuing the value theme, we've Consonance's £795 Cyber-10 integrated tube amplifier [p36], offering single ended operation which is normally the province of products five times the price. Contrasting this is Cambridge Audio's brand new 840E/W solid-state pre-power combination, offering more power than most people will ever need for £2,000 [p59].

For the same money, you can also buy Linn's new Majik LP12 turntable package - complete with a fine arm and cartridge, it makes ownership of this high end vinyl spinner more affordable than ever. Read all about it on p100.

So, although money might be too tight to mention, October's *Hi-Fi World* shows that if you're in the market for an upgrade, hi-fi has never been better value.

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.



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.

Distributed by Seymour Distribution Ltd 86 Newman Street London, W1T 3EX Tel: +44 (0) 20 7396 8000 Printed by St.Ives, Plymouth Tel: +44 (0) 1752 345 411
Our Agents in Malaysia Millennium Hi-Fi & AV Simon Chang Showroom & office, 500-1-3 First Floor Wisma Indah (Shen Court), Jalan Tun Razak 50400 Kuala Lumpur, Malaysia
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World Radio History

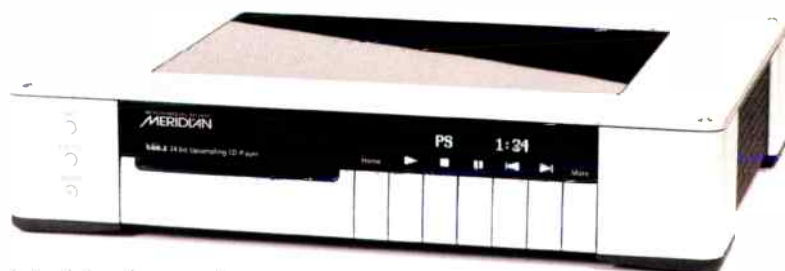


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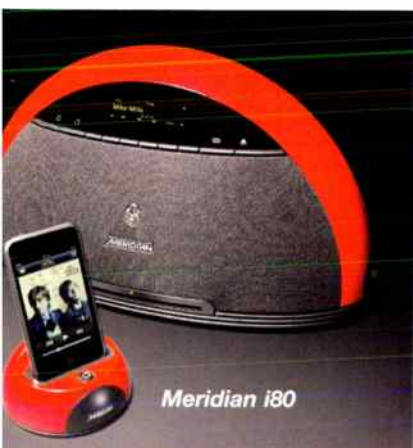


G WHIZ!

Meridian Audio Limited has announced details of a newly upgraded and extended range of G Series components, described by company founder Bob Stuart as "both broader and deeper". It introduces advances such as a new slot-load drive and USB audio connectivity to enhance both quality and versatility. The range now includes the new G68 Surround Processor which is extended into two versions, the G68 AXD and the G68 XXD. The former £4,995 design includes full analogue and digital I/O, with 4 channels of balanced analogue outputs plus 10 unbalanced outputs and a USB audio input. Also fitted is Meridian's powerful proprietary DSP engine, which implements Meridian Room Correction as well as the firm's surround and ambience-recovery processes. The XXD is a fully balanced version of the same. There's also the new £3,500 G61R Surround Processor, implementing Meridian Room Correction processing and adding USB audio connectivity to the model's flexible analogue and digital I/O facilities.

The £3,895 G92 DVD Player/Controller/Tuner is described as "the world's only legitimately high-end system in a box", featuring much of the functionality of the G61R with a fully integrated optical disc drive and Faroudja video processing offering HD 1080p output. It's also available with a DAB radio option for £4,250. The G96 DVD Transport is a new slot-loading optical disc drive that plays DVD-Video and Compact Discs, and features HDMI video output at £3,350. The G06.2 Compact Disc Player (£1,695) also uses Meridian's new slot-load disc-drive mechanism, as does the new (£2,395) G08.2 which is evolved from the acclaimed Meridian 800 design. This sports fully balanced, professional-grade Class A analogue outputs and Meridian's exclusive digital audio upsampling to 176.4kHz/24bit.

Meanwhile, F80 fans will doubtless love the new £195 i80 Universal iPod Dock. It connects to the F80 simply, allowing complete control of the music library stored on the iPod through the F80 remote control or its front panel buttons. Its physical design echoes the curve of the F80 in miniature, with a heavy diecast zinc alloy base and moulded shell available in standard gloss black, but with clip-on red or yellow trims to match your particular F80 model. For more details, click on www.meridian-audio.com.



Meridian i80



C HEAR

KEF's new C Series is the famous loudspeaker marque's new entry level range, "engineered to uphold the company's long-held tradition of making speakers that provide the most accurate response possible at the price point". Power handling is said to be excellent and, as with all modern KEFs, they are easy to drive. They employ stiff, internally braced cabinets and dense, two-layer front

baffles with contoured front slot ports and a 'Tangerine' waveguide for the tweeters, as used on the latest KEF Q range. All models are available in either classic Black Ash or a fine-grained European Walnut finish. Prices are £139.99 for the C1 bookshelf, rising to £479.99 for the C7 floorstander. For more information, click on www.kef.com or call +44(0)1622 672261.

HI-FI WORLD

ASSISTANT EDITOR FOR HI-FI WORLD WANTED

Hi-Fi World is looking for a talented Assistant Editor.

Candidates will have an understanding of electronics, a love of music, and an interest in hi-fi. Excellent communication and writing skills are an absolute must. This is a demanding role in every respect. Enthusiasm and dedication are essential, as are organisational skills. I.T. skills are also required.

There is a need to travel to shows, press conferences and manufacturers, not just in the UK but around the world.

The job is based in our main office in Kilburn, London, so applicants must be within reasonable commuting distance.

If you are interested, please send your CV to publisher@hi-fiworld.co.uk



SPECIAL ONE

An evolution of the classic Acoustic Energy standmount loudspeaker, the new AEI Mk III SE is strictly limited to just 250 numbered pairs. Using the latest technology and materials, the AEI Mk III SE design has been honed to create the best small standmount speaker AE has ever created, says the company. It is made in a strictly limited quantity of just 250 pairs for worldwide distribution, and offered in three finishes; eight-layer, hand-finished Piano Black or Pearl White and Cherry real wood veneer. Alternatively, the AEI Mk III SE can be custom painted in any high-gloss colour for a premium. UK designed and built, the AEI Mk III SE uses a heavily braced 18mm MDF cabinet lined with 4mm steel plate using a specially manufactured damping glue. The 12mm thick baffle plate is milled from a solid aluminium block, providing the stiffest mount for the custom woofer and tweeter assemblies. The bass driver couples AE's signature spun-alloy cone with a diecast magnesium alloy chassis. The motor assembly uses twin neodymium magnets and a 32mm voice-coil for speed and power handling. This is coupled to a 38mm ring-radiator tweeter with a frequency response out to over 40kHz, chosen for its low distortion throughout its operating range. The AEI Mk III crossover has been completely redesigned for the SE model, the number of components being reduced from 13 to just 6. This has allowed AEs engineers to specify "some of the very best components available", including ferrite-core and air-core inductors, Welwyn wire wound resistors and polypropylene film capacitors. Internal wiring is all PTFE-coated multi-strand silver cable, terminated in a single pair of gold-plated WBT binding posts. Prices start at £2,500 per pair. For more information, click on www.acoustic-energy.co.uk or call +44(0)1285 654 432.

SCALE MODEL

Onkyo's new DV-SP406 is described as a "high quality 1080p Upscaling HDMI-equipped DVD player" with USB connectivity. A low-profile, entry-level design, this £100 machine is designed to partner to Onkyo's award-winning range of home cinema receivers. It upscales to 1080p allowing a genuine one-cable HDMI digital connection to a high-definition display. Meanwhile its front-panel USB interface allows easy transfer of digital music files for playback, including DivX. There's a 192 kHz/24bit audio DAC and a 108 MHz/14bit video DAC, and it's possible to send a two-channel, PCM audio signal via the DV-SP406's HDMI output (multi-channel audio is delivered via the DV-SP406's digital outputs). For more information, click on www.onkyo.com.



CIAO BELLA!

After no small amount of success with radios of the analogue and digital varieties, Tivoli have now entered the Wi-Fi radio market with the premium Tivoli Audio 'NetWorks' global radio. It works via a wireless router or from an Ethernet cable, and functions as a standalone unit, but can also be expanded with a stereo speaker, CD player or subwoofer. It comes in a choice of furniture-quality hardwood cabinets finished in Walnut, Cherry and Wenge with gold-toned faceplates. There's an analogue AM/FM radio built in, with a choice of five presets, but through its exclusive 'Global Portal' users can add an unlimited number of Internet stations stored to a 'Favourites' list. These would include many HD Multicast and DAB stations, previously only available from expensive HD or dedicated DAB receivers, says Tivoli. NetWorks even has the ability to stream music files from a computer via an Ethernet or Wi-Fi connection, in MP3, WMA and Real Audio. Also included is a USB input to connect a compatible MP3 player or memory stick. Additional features include a virtual analogue clock, dual independent alarms with sleep timer and snooze function, compact remote control, and easy-to-read four-line by sixteen character backlit display. Price is a hefty £500. For more details, click on www.armorhe.co.uk.



DEJA VIEW

Denon's latest £300 D-M37DAB micro system has been specifically tuned for the UK market. The remote controlled design features a CD player driven by a 60W amplifier with DAB radio and a USB port for MP3 playback from portable audio devices. Denon's optional dedicated ASD-IR dock gives full remote control over your iPod. Adding the finishing touches is a bespoke pair of loudspeakers for an additional £70. For details, click on www.denon.co.uk or call 01234 741200.

JUST LIKE THAT!

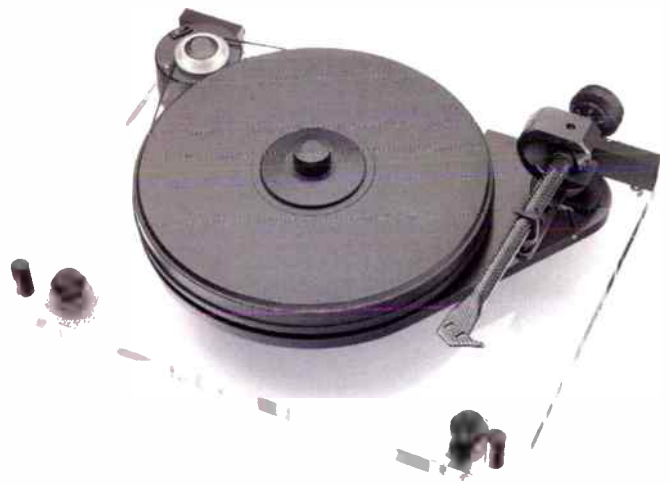
"Majik DS outperforms any CD player", says Linn's Director of Engineering, Gilad Tiefenbrun. After the high end Kivor and Akurate DS network music players, comes the new £1,750 Majik DS – the company's most accessible UPnP A/V 'Digital Streaming' component to date. It's designed to play music stored on a separate, dedicated hard drive and operating on a standard home network. It plays a wide range of music formats, from the highest quality 24/96 WAV and AIFF to the popular MP3. Support for the open FLAC format means the Majik DS delivers far beyond CD sound quality, with support for Linn Records' 24bit Studio Master downloads [see www.linnrecords.com]. Majik DS is designed to operate with a vast array of control options, including computer, laptop, touchscreen, remote control or even mobile phone. For details, see www.linn.co.uk or call +44(0)141 307 7777

OOPS...

The typesetting gremlins struck again last month on P39, so for those of you who have been desperately trying to contact Clearer Audio for some cables, you'll have more luck on +44(0)1702 543981. Our apologies to all concerned!

SEE FOR MILES

Pro-Ject's new £1,000 6 PerspeX turntable "sees the introduction of new technologies which help establish new levels of performance for record playing systems", claims UK importer Henley Designs. The turntable and arm are mounted on a subchassis machined from a granite-like Corian substrate which ingeniously floats above the transparent acrylic plinth on three magnetic suspension points. The substantial record platter is made from a non-resonant sandwich of materials and rotates upon an inverted ceramic bearing. The platter is driven by a belt from a quiet AC motor with two pulleys; allowing easy speed adjustment between 33 and 45rpm. The 6 PerspeX also features the new Pro-Ject 9cc Evolution tonearm in which the headshell and armtube are formed from a single piece of conical carbon fibre. For more details, click on www.henleydesigns.co.uk or telephone +44(0)1235 511166.



BLACK CELEBRATION

Calling Linn DS, Naim HDX or Sonos users, plus any other computer audiophiles! If there ever was a sexy data storage device, the new Verbatim Premium Black Edition 2.5 inch HDD is it. This small 150g external hard drive sports 250 GB of storage space for around £64.99. A 2.5inch affair with a black protective rubber coating, it measures just 84.5x134x16mm, so it fits into the palm of the hand. It runs at 5,400rpm, and data is transferred via the USB ports at speeds of up to 480 MBit/s. The USB port also supplies the HDD with power, so no further power connection is needed. For more information click on www.verbatim.com.

DEAL TIME

The British Audio Dealers Association (BADA) has welcomed its new chairman Simon Byles (of Infidelity) into office. He



confirmed his commitment to the organisation's training objectives, specifically the development of a Visioncraft course and rollout of the Salescraft sales training programme. At its recent annual general meeting on the 7th July, BADA reported that its Demcraft training programme is progressing well. The course is designed to help hi-fi retailers demonstrate high quality hi-fi separates in the conditions they deserve, in a clear and constructive way – something we at *Hi-Fi World* very much support. The association says it will "aggressively pursue" the final stages of training in Demcraft to ensure the 87% compliance is achieved by the end of August 2008. "The first major upgrade in BADA standards for over twenty years" was welcomed, as was news from market research organisation GfK's Simon Foy that high-end separates have demonstrated sales growth during the last year, despite the overall decline in hi-fi sales year on year and the almost record low in consumer confidence. For more information, click on www.bada.co.uk.

BEAT THIS

Monster has announced the "first ever product to be endorsed by legendary hip hop music producer/artist Dr. Dre". The new Beats cans are said to be "mutually designed" with the good doctor, "with groundbreaking and inventive engineering by Monster". Dr. Dre, Jimmy Iovine (Chairman of Interscope Geffen A&M Records) and Monster teamed up to create these phones, sporting a unique and new look with glossy extra wide headband, hinged ear cups and high-quality Monster cable internal wiring. A push-to-listen Mute button adds to the flexibility and convenience. The £280 phones come in a smart carrying case with anti-microbial cleaning cloths, a special Monster headphone cable, a mini-stereo cable adapter, as well as Monster's iSoniTalk, a microphone/headphone adapter for iPhones. For stockists contact +44(0)1923 693766.



COLOURFIELD

Creative's new Zen Mozaic digital portable is said to be "inspired by the artistic expressions of mosaic art". Available in vivid pink, chic black or cool silver, it comes in 2GB and 4GB models (with 8GB and 16GB coming soon) and sports

a built-in speaker, 1.8-inch LCD colour screen, FM radio and voice recorder. Weighing just 43g and measuring 79.5x40x12.8mm, the super compact Creative ZEN Mozaic provides up to 32 hours of audio playback with a single charge of the battery. Prices start at around £50. For more information, see www.creative.com/zenmozaic.

HIGH ENERGY

MIT Cables' new Z-Powerbar is said to be a unique modern approach to an old problem. It uses special noise filtration circuits to remove sound degrading AC line noise. The multiple patented, parallel tuned filters operate over the widest bandwidth, it is claimed, and it sports four "hospital grade" duplex outlets with patented stabiliser circuitry. There's also a single red duplex outlet to indicate power is always on. Its power factor correction reduces transmission losses and improves voltage regulation, and there's surge and spike protection for noise-free A/V performance and improved service life. Said to be "excellent for silent A/V power distribution near fluorescent lights and low voltage lighting", it costs £1,599. For more information, click on www.audioblog.com or call +44(0)870 777 299

Power Tower

Adam Smith experiences Exposure's mighty flagship MCX system...



"it was as if the MCX had dragged an invisible subwoofer in to the room..."

Anticipation can be a wonderful thing. It is said that "everything comes to those who wait" and the excitement that builds up prior to an event that we are looking forward to can be highly satisfying. The problem comes if the event fails to materialise resulting in disappointment. In case you're now wondering what all this has to do with Exposure, allow me to enlighten you – taking an item from first show to production is not a speedy process, but the MCX system here was actually unveiled at the Bristol Sound and Vision Show 2007; hence my anticipation has been building for almost eighteen months. Still, the arrival of a huge and heavy pallet at World Towers finally heralded the readiness of the MCX system and, as my anticipation had reached fever pitch and was in danger of plummeting into an Eeyore-esque sense of 'it's never going to arrive', I was immensely relieved.

Exposure itself has a lengthy history stretching back to 1974, and keen students of eighties hi-fi like myself know them well for their amplifiers which, at that time, came in cute black boxes with that typical slight cottage-industry look. Underneath though, were excellent amplifiers that were highly rated both at the time and still today, as reflected by their continuing high demand and healthy second hand values. Although the original amps were up into Naim Audio territory, this is Exposure's first foray into the 'ultra high-end' arena, with the complete MCX system lightening your wallet to the tune of £15,000.

At the top of a stack of separate components designed to fit together sits the CD player. This is a top-loading item with a delightfully solid sliding lid and weighty CD puck: it incorporates some fine technology. Internally, the player uses 4 separate DAC boards with PCM1704 multi-bit DACs, and each board has separate regulated power supplies for the DAC and audio circuits. These PSUs

are fed from a large toroidal power transformer with separate windings for the mechanism, display, DAC and audio outputs. The analogue outputs are available in balanced and unbalanced form and the unit has optical and coaxial digital outputs, the latter through both BNC and phono sockets.

The unit can also act as a DAC and digital switching centre, with AES balanced, USB, coaxial phono, coaxial BNC (x2) and optical (x2) inputs. The brochure and website also make mention of FM and DAB radio, and our sample had an empty hole on the rear marked 'antenna' so this would appear to be an upcoming option, although pricing and availability are as yet unconfirmed. The player measures 104x490x414mm (HxWxD) and weighs an impressive 20kg.

Going down, we find the MCX preamplifier, which is identical in size and weight to the CD player. This is also a comprehensively specced item, utilising dual mono construction and featuring seven inputs, with a switchable x1 gain A/V option. The CD input is through balanced XLRs, as is one of the auxiliaries, but this latter item can also be changed for an MM or MC phono stage with either XLR or phono input sockets, for £300 extra. The remaining inputs are unbalanced line level items. Three sets of outputs are fitted, one unbalanced, two balanced, so if the huge power output of one pair of MCX monoblocks isn't enough, you can always tri-amp!

Input switching and volume operation are via high quality reed relays, but the volume control is a bit odd. Firstly, it operates over a peculiar range of -53 to +18 on the display, and -53 is not a full mute either - this is only achieved by pressing the mute button. Also, the volume operates swiftly and precisely through the remote control, but is tortuously slow when the front panel rotary control is used, requiring a ridiculous amount of twiddling for an appreciable difference in level.

Finally, lurking at the bottom of the stack are the two MCX monoblocks. With a rated power output of 300W into 8 Ohms and 600W into 4 Ohms [see MEASURED PERFORMANCE], these are as big in nature as they are in stature. Their height is 238mm and they weigh no less than 35kg each so it's best to decide on a position for them and then leave them there! Each amp uses a vast 1.400VA mains transformer with separate windings for the power circuits and the low level signals, and have two outputs for loudspeaker bi-wiring. Both balanced

and unbalanced inputs are provided.

Additionally, each component features RJ45 input and output sockets for system synchronisation, and the amplifiers also have 12V trigger sockets for control from an external A/V integration system. Finally, the MCX system comes with a remote handset with solid buttons for control of all items. These buttons are not grouped together by component or function, and are all the same in appearance, so it takes a little acclimatisation to remember where the important ones are. However, as the handset is a wonderfully solid lump of cast metal that's ideal for assailing burglars (*Hi-Fi World* does not, of course, condone this), I am prepared to forgive it virtually anything...

SOUND QUALITY

Big boxes, big weight, big price tag - but does this mean big sound? Now, I am never immune to the charms

of a low-powered valve amplifier but somehow, when I find myself sat in front of a really good solid state amplifier with a serious power output, then everything in the world seems right. Connected up to our reference Spendor S8e loudspeakers, it was as if the MCX system had dragged an invisible subwoofer into the room, as these not unduly large transducers suddenly sounded around eight feet tall and appeared to have grown several extra bass drivers.

The amplification side of the MCX system has that rare ability to make everything absolutely effortless, and turn any music you care to feed into it into an awe-inspiring experience. As mentioned, the MCX pre/power's bass is truly stunning, but is never a thunderous boom or a soggy wallow. And, if the recording itself has precious little bass, then that's exactly what you hear. Everything at the low end is taut, focused and blessed with an impression of fluent power and control. The Exposures are happy to play softly, with eye-opening amounts of low level detail but, equally as you crank up that volume control, you get the sense that you'll be collecting what's left of your loudspeakers from the back of the garden, without the MCXs even breaking into a sweat.

Even better was the fact that the Exposure combo did not suffer the



most common ailment of powerful, dynamic amplifiers; that of a hard or mechanical top end. The MCX's treble was an utter delight, being clean and expertly detailed, but without any hint of harshness or spit. If the recording was a little edgy, the system told me so, but without ever making the result unpleasant - a feat that only the very best setups can manage. Equally all that power meant no shoutiness or compression as the

"the amplification side of the MCX system has that rare ability to make everything absolutely effortless".

volume increased, just a steady but relentless increase in sonic intensity.

Feeling obliged to fully examine the range of the MCX's abilities, I first popped Propellerheads' 'Take California' into the CD player. This is a pounding slice of dance music and the Exposures loved it. Once again, the bass line was capable of loosening teeth, but was spry and beautifully controlled, and the horrific mess of lyrics contained in the track's samples were easily distinguishable. Moving to the other end of the spectrum however, 'Spanish Harlem' from Rebecca Pidgeon's 'The Raven' is a superbly recorded track at the best of times, but through the Exposures it simply stepped free of the boundaries of the recording and left the result laid out in the listening room with an almost alarming scale. Rebecca's voice was vivid and positively swept aside the listening room to pull me right into the studio, the backing double bass seemed to be within inches of my right ear and, when the hand-held shaker started up later in the track, I nearly stood up to check I hadn't dropped something.

If the MCX amplification



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world radio history



is responsible for the sheer impact and precision of the performance, then it would appear that the CD player is responsible for these atmospherics, offering a spatiality and scale that the little silver disc simply rarely exhibits. Swapping to our, admittedly cheaper, Yamaha CD-S2000, the results were still superb, but everything slipped off back into the loudspeakers somewhat. The Yam is no mean performer in this respect, so to hear it so outclassed by the Exposure shows that this is one exceptionally capable CD spinner. Being ultra-critical, the player can be slightly forward (but not hard) at times,

although not unduly so (most likely as a result of its slightly higher than normal distortion figures). Fortunately, if anything this seems to add to the atmospherics, rather than ruining them. Ultimately, I would go as far as to say that the only significant step up from it I have heard to date is provided by the Naim CD555 - £12,000 dearer!

Even more encouraging was that the MCX system did not care what I threw at it. It pulled the heart out of bad recordings, making them listenable but without masking the essential defects, and took everything, from heavy metal to the softest classical in its stride. Lightly bowed orchestral strings whispered around the room; rich, natural and brimming with spatial timbre, whilst enthusiastic rock guitars scythed out of the loudspeakers with fury and power.

CONCLUSION

The MCX system is an important product for Exposure and needed to be nothing less than stunning in order to succeed - particularly as it was first unveiled so long ago. I cannot help but wonder how many of those people who heard it, loved it and were willing to spend £15,000 on it eighteen months ago might have become fed up with the wait and spent their money elsewhere...

Well, it's their loss, because the MCX is truly one of the finest complete systems I have ever had the pleasure of auditioning. The CD player is the sort of unit that shows even the most fanatical vinyl nut like myself that the little silver disc can deliver the goods, and the amplifiers can drive absolutely anything with ease and the sort of grace and pace that usually accompanies the word 'Bentley'.

They say that patience is a virtue and, in this case, my anticipation has been totally justified; this could well be the last hi-fi system you ever need to buy.

VERDICT ●●●●●

A landmark product from Exposure, the MCX is one of the finest one-make systems available at any price.

EXPOSURE MCX SYSTEM

CD PLAYER	£3,599
PRE-AMP	£3,599
POWER AMPS (PAIR)	£7,799

Exposure
 ☎ +44(0)1273 423177
 www.exposarmifi.com

- FOR**
- stunning atmospherics
 - staggering bass
 - even-handed musicality
 - effortless power
 - build and styling

- AGAINST**
- odd volume control

MEASURED PERFORMANCE

The Exposure MCX CD player has a perfectly flat frequency response from 2Hz to 21.1kHz, so should offer a well balanced and even nature without any artificial brightness or smoothness added.

Distortion-wise it is a bit of a mixed bag, turning in some fine figures for the higher 0dB and -6dB signals, but worsening with reducing test signal level. At -60dB the player returned a result of 0.6%, whereas around 0.2% is a more common result for a high performance player. This has the effect of reducing dynamic range which, at 105dB, is a good enough result, but a little off the best players which can better 110dB. Channel separation was fine at 86dB and noise levels were low, at -102dB

The unbalanced phono sockets gave an output figure of 2.1V, in line with standard CD specifications, and the balanced XLRs doubled this to 4.2V. Jitter from the digital output showed a result of 90pS in program related terms, with random jitter hovering around 6pS - a very good result.

The MCX preamplifier offers a fine, consistent performance across all inputs. Frequency response is wide from 1Hz to 50kHz and distortion low right up to full output. The gain figure on offer is fairly conventional at x3.6 across the unbalanced inputs and outputs, but this does double if the balanced outputs are used. Equally, output overload occurred at 10V through the phono outputs and 20V through the balanced XLRs, so the preamplifier can swing plenty of voltage and should work well with pretty much any power amplifier, as well as the matching MCX items. Channel separation was good at 88dB and noise was impressively low at -103dB, so the MCX preamp should turn in a well balanced and capable performance, as the test results suggest a well designed unit.

The monoblock power amps offer a hefty power output of 338W into 8 Ohms, rising to 676W into 4 Ohms, so they are certainly not short of grunt. Combined with a damping factor

of 103, there is unlikely to be any loudspeaker that these items will not drive and control well, without even breaking into much of a sweat. Distortion figures were equally impressive across the board, peaking at a low maximum of 0.06% for full output at 10kHz.

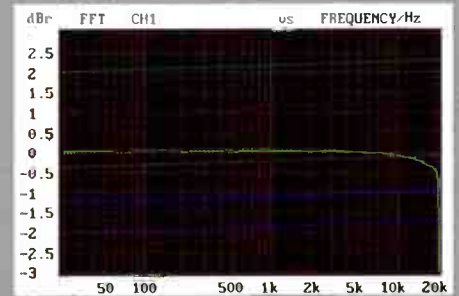
All in all the whole MCX system measures very well indeed, although the CD player does have a small amount of room for improvement in distortion terms. That said though, the system as a whole should turn in a highly impressive and dynamic performance. AS

CD PLAYER	
Frequency response (-1dB)	2Hz - 21.1kHz
Distortion	
0dB	0.001%
-6dB	0.002%
-60dB	0.6%
-80dB	4.5%
Separation (1kHz)	86dB
Noise (IEC A)	-102dB
Dynamic range	105dB
Output (Unbal/Bal)	2.1/4.2V

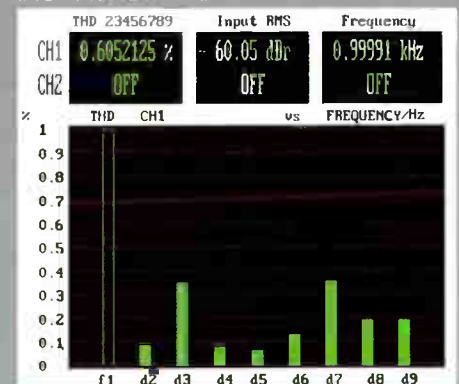
PREAMPLIFIER	
CD/tuner/aux.	
Frequency response	1Hz - 50kHz
Separation	88dB
Noise	-103dB
Distortion	0.002%
Gain (Unbal/Bal)	x3.6/x7.2
Input Overload	>6V
Output Overload (Unbal/Bal)	10V/20V

POWER AMPLIFIER	
Power	338 Watts
Frequency response	1Hz - 54kHz
Noise	-122dB
Distortion	0.002%
Sensitivity	2.4V
Damping Factor	103

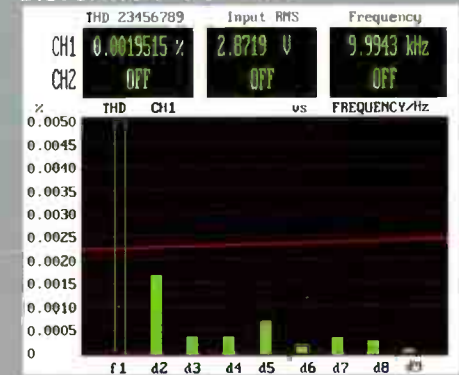
FREQUENCY RESPONSE - CD



DISTORTION - CD



DISTORTION - POWER AMPLIFIER



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DESIGN, BUILD, MUSICALITY & VALUE
• IN THE < \$2K CD PLAYER CATEGORY •

CD 128AWARD

HI-FI WORLD



CD 168 CD-Player



CD 228 CD-Player



CD 128 CD-Player



Integrated Tube Amplifier
SP-120MKII

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Grandder Designs



Budget loudspeakers are all well and good, but spending more really opens up your musical experience - as Adam Smith finds when he compares six £2,000 floorstanders...

As our group test of £1,000 loudspeakers in the June 2008 issue of *Hi-Fi World* showed, you can buy some highly impressive transducers for this nice, round number. By the time the budget has hit four figures, manufacturers have started to pour their engineering expertise into such designs, thanks to the loosening of the cost constraints that afflict budget items. The trouble is, we're a naturally curious lot here, and no sooner had the ink dried on the review, we started wondering how

things would change if you were to double the budget ..

Naturally, it would be reasonable to assume that everything would get better again but we wondered by how much, and in what way? A further doubling of budget allows manufacturers to get really serious - cabinets become larger and sturdier still, drive units become more advanced, crossover components and internal wiring improve and connectors become chunkier and more expensive.

Some makers also take the opportunity to add more drive units

and make true three-way designs, such as seen by the Dynaudio and Dali models in this test; others, such as PMC and Totem, stick resolutely with two way and divert their expenditure elsewhere.

Whichever route is taken, the results give a notable step up in quality over the £1,000 mark, as this supertest shows...

THE CONTENDERS

Monitor Audio GS20	£1,700	p16
PMC FB1i	£1,850	p17
Dynaudio Excite X36	£2,000	p18
KEF XQ40	£2,000	p19
Totem Hawk	£2,200	p21
Dali Mentor 6	£2,200	p22

REFERENCE SYSTEM

Scheu Analog Black Diamond/Cantus turntable
 Ortofon Rondo Bronze cartridge
 Emille Labs KPE-2AS phono stage
 Yamaha CD-S2000 CD player
 Anatek A50R amplifier

Smaller brothers to the *Hi-Fi World* favourites, and runners up for our loudspeaker of the year in 2006, the GS60s, Monitor Audio's GS20s have heritage. As part of the 'Gold' series, which were MA's flagships until the unveiling of the Platinums, the GS models benefit from the ultimate evolution of Monitor Audio's gold dome C-CAM tweeter, plus the use of the 'HiVe II' port design, which uses a "straight rifled construction to aid air flow".

The GS20s are a two and a half way design, in which the bottom driver covers the bass frequencies up to 250Hz, and the upper driver the bass and midrange up to the 2.7kHz crossover point with the tweeter. The bass/midrange driver is not actually rolled off at the low end, like a three way design would be, hence the 'two and a half way' description.

In the case of the GS20s, driver lineup comprises two 6.5in (165mm) C-CAM (Ceramic-Coated Aluminium/Magnesium) drivers featuring RST (Rigid Surface Technology) cones. Above these is a gold dome 1in (25mm) tweeter. The two bass drivers work into separate enclosures, tuned to different frequencies which Monitor Audio claim "provides improved power handling and delivers faster, more dynamic bass and greater transparency through the midrange"

The GS20s measure 924x206x280mm (HxVxD), weigh 20.6kg each and are available in Lacquered Silver or Black, plus Walnut, Rosewood, Oak and Cherry real wood veneers. Finish is superb, and frankly, several other loudspeaker manufacturers could do with a visit



MONITOR AUDIO GS20 £1,700

to Monitor Audio for a masterclass in stylish, solidly made and easily adjustable spikes and accessories!

SOUND QUALITY

Most notable on unpacking the GS20s was the vile smell emanating from them - presumably the veneer! However, with a widow opened and a CD cued up, my olfactory concerns were soon forgotten, as the GS20s are mightily impressive. Most interesting is that nothing initially appears to stand out in particular because they seem to do everything so well. At the low end bass is solid, detailed, well controlled and clean thanks to those carefully designed ports, and at the top MA's gold dome tweeter continues to be one of the finest metal domes designs I have heard. As a result,

the treble is sweet, mellifluous and insightful, but with a perfectly judged sense of crispness without ever sounding splashy.

Even better is the way in which the two ends of the spectrum are joined. Across the mid, the GS20s project the image well out into the listening room, but back it up with a spread of sound across their width that makes placing instruments' positions a breeze. Add in stunning vocal rendition that positively caresses the earlobes with the right artist (yes, I'm thinking Diana Krall here!) and you have the recipe for the sort of loudspeaker that you just do not want to stop listening to.

As if this wasn't enough, the GS20s have one final trick up their sleeve. They are, like many Monitor Audio designs, impressively fleet of foot, rhythmical and dynamic, but so many designs like this tend to be somewhat lacking when the pace is turned down and it's time to be more considered and detailed. Not so the GS20s - they can switch from fast and furious to smooth and cossetting in the blink of an eye and never miss the slightest hint of anything lurking in the background.

VERDICT ●●●●●
First class loudspeakers that successfully combine detail, emotion and atmosphere with pace and dynamics. Brilliant.

MONITOR AUDIO GS20 £1,700
Monitor Audio
+44(0)1268 740580
www.monitoraudio.co.uk

- FOR**
- dynamic alacrity
 - fabulous treble
 - overall even-handedness
 - detail and insight
 - build quality

- AGAINST**
- smelly!

MEASURED PERFORMANCE

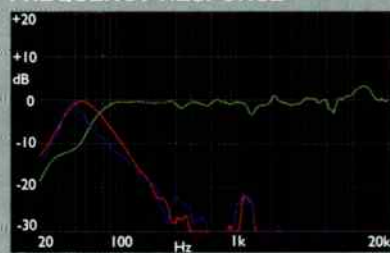
It is not uncommon to engineer a peak into a loudspeaker's output these days, but that of the GS20s is fairly subtle, so it should add top end presence and detail but without making things spitty or hissy. Across the rest of the band, the Monitor Audios have a well balanced and flat response with no large undulations of concern.

At the low end, the main drivers run down to 70Hz and the front and rear ports augment this down to around 40Hz. Also noteworthy is the cleanness of the port output traces - Monitor Audio's HiVe II profiled ports are clearly effective in this area, as they will add no unwanted artefacts.

Electrically, the GS20s offer a well balanced impedance response and turn in a good average measured impedance of 6.6 Ohms, dropping down to a minimum of around 5 Ohms, so they are not a challenging load. Sensitivity was fine at 88dB, so the GS20s should be quite content on the receiving end of

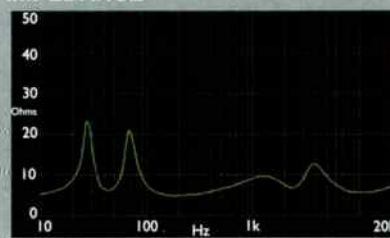
around 45 Watts and upwards. AS

FREQUENCY RESPONSE



Green - driver output
Red - front port output
Blue - rear port output

IMPEDANCE





PMC FB1i £1,850

Some companies have a particular technology that they have developed and honed and PMC are just such a company. Their particular 'thing' is the transmission line and they make use of it in all their models, from the mighty BB5/XBD professional monitors, right down to the DB1i standmounters. The FB1i come in two down from the top of the recently revised 'i' range, below the OB1i and EB1i.

The original FB1 was actually the first loudspeaker developed by PMC for the domestic market and has become a well known model designation, and a popular product since. The latest 'i' upgrades fitted to all models in the range bring it firmly up to date and show that PMC are in no way resting on their laurels.

The FB1i is a two-way design, featuring a 27mm SOLONEX soft dome tweeter, developed in partnership with SEAS, crossing over at 2kHz to a 6.5in (170mm) doped paper bass driver. This sits at the end

of PMC's 3m Advanced Transmission Line, the other end of which vents at the bottom of the front panel. High quality components are used in the crossover, including Solen capacitors.

Vital statistics are 1000x200x300mm (HxWxD), excluding the plinth, and each unit weighs 18kg. The cabinets are available in Black Ash, Cherry, Oak and Walnut real wood veneers and the finish of our review samples was immaculate. I personally found them the best looking here.

SOUND QUALITY

Many people think transmission lines are all about soggy, wallowy bass, but a good design

like the PMCs is far from it. Initially, one might even consider them bass-light until you realise that you are not listening to a struggling drive unit, or a chuffing port, but a loudspeaker with a proper sense of control and ease across the low end. Bass detail was impeccable and really low notes came across as unforced and solid.

Further up the frequency range, I did note a hint of chestiness, I suspect as a result of the driver/line disparity measured at around 150Hz. This did seem to boost some instruments in a slightly artificial manner, for example, the low end of the piano keyboard was a little indistinct sounding. Moving further up the scale, however, the piano was very vivid, and vocals were absolutely superb. The FB1i captured the innate nuances of each singer with the sort of precision that usually commands a much higher price tag. Lead vocals held the attention perfectly, sat right between the cabinets, allowing the backing instruments to fill the outer edges in a most capable manner.

Additionally, the new tweeter fitted to the PMCs removes any vestiges of spit that occasionally lurked in the older models, to offer a fine ambience to the treble. Hi-hats sounded crisp, cymbals rang out beautifully and the FB1i came across as lively yet smooth.

Finally, after the nasal assault that was the Monitor Audios, I have to just mention that the PMCs' veneer had an equally noticeable odour, but this time it was fantastic.

VERDICT ●●●●£

Stylish loudspeakers that show the benefits of a well designed transmission line. Fine value for money.

PMC FB1i £1,850

PMC Loudspeakers

+44(0)870 4441044

www.pmc-speakers.com

FOR

- superb vocal performance
- subtle, yet deep bass
- good midband/treble clarity
- styling and finish

AGAINST

- upper mid chestiness

MEASURED PERFORMANCE

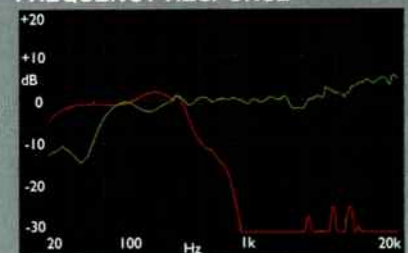
PMC's FB1i loudspeakers exhibit a gently upward rising trend in their response, above 4kHz. This is likely to give them a bright top end, but the actual curve is smooth so they should not be unduly hard, although a modicum of care with partnering equipment might be a wise move. Other than this, their response is very smooth and flat across the bass and midrange, which should bode well for a well balanced performance.

Bass-wise, the main drive unit takes care of things down to around 70Hz, being augmented by the transmission line that takes over and keeps everything pretty much flat down to 30Hz. As a result, the PMCs should have a very healthy low end for such a slim cabinet design.

Electrically the FB1i have something of an inductive rise at 2kHz but this is not unduly large and should not worry the sort of amplifier that are likely to be used to power the PMCs. Average measured impedance was high at 8.8 Ohms, barely dropping to a minimum of 7 Ohms, so the FB1i are unusual in being a genuine, friendly 8

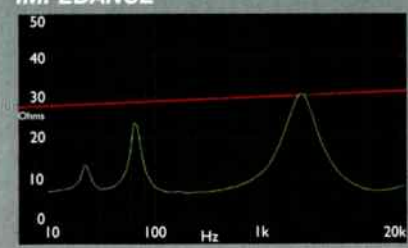
Ohm load. Sensitivity suffers a little as a result, but 87dB is still an acceptable figure and just means that an amplifier of 50W or more would be needed for good sound levels. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



Dynaudio are another company with their fingers in more than a few transducer pies, with an impressive range of professional, domestic and in-car items to their name. The Excite range is the next up from the entry level Audience items and promises "high end audio performance and pure musical fun"!

The X36 floorstanders sit at the top of the range and are a full three-way design utilising four drive units. From the top, these comprise a 27mm tweeter with coated soft dome and, below this, a dedicated 4in (110mm) midrange unit comes in below 2kHz. This unit uses Dynaudio's Magnesium Silicate Polymer (MSP) cone material, allied to a lightweight rubber surround.

Below these are a pair of 7in (180mm) MSP-coned bass drivers, working in a tandem below 500Hz and loaded by a suitably large rear-firing bass port. This should bode well for good extension, when allied to the large cabinet, which tips the tape measure at 1040x205x310mm (HxWxD).

The Excite X36s are sturdy items, weighing in at a solid 23.5kg each, and are available in four real wood veneers; Maple, Cherry, Rosewood and Black Ash. Only a single pair of terminals are fitted for connection duties, as Dynaudio remain unconvinced of the benefits, or otherwise, of bi-wiring or bi-amping their loudspeakers.

SOUND QUALITY

The first bars of the opening track that I chose had me pricking up my



DYNAUDIO EXCITE X36 £2,000

ears, as things got off to a highly promising start. Having an impressively large-scale performance, the soundstage spread itself out very well in front of me and offered the sort of authority that only comes from some

the depths of the frequency range, resulting in impressive extension and pace. Bass guitars were tuneful and vivid, and acoustic basses were blessed with a fine sense of body and precision.

good-sized drivers in a sturdy cabinet. Instruments and performers were lined up in a highly cohesive whole across and well beyond the width of the loudspeakers and the main focus of the music was easy to follow. The Dynaudio's top end rang out well with confidence, but without any hardness, adding a pleasing crispness to proceedings and making sure that all finer details were well revealed.

Finally, the vocals then came into play and everything went a little awry. On the positive side, the main performance projected very well into the listening area, still offering a fine sense of scale and spread of action across the width of the enclosures. Unfortunately the vocals themselves were decidedly forward in nature, rather too much so in fact. The dulcet tones of Norah Jones were strident, making the lady herself sound rather cross, and the studio atmosphere around Diana Krall was overblown to such an extent that she sounded like she was singing in a village hall.

Instrumentally, things were a little better, with the Excite X36s adding good tonality to both electric and acoustic instruments. However, when these all came together, such as in an orchestral crescendo, the overall effect was too overblown for my tastes and, when combined with the bright balance of the loudspeaker, made things rather grating to listen to.

Next, the bass line kicked in and the surprise turned into a firm grin, as the Dynaudios pulled every last detail from

VERDICT ●●●
A proper 'big loudspeaker' sound comes from these well built enclosures, but the forward upper mid will not be to all tastes.

DYNAUDIO EXCITE X36 £2,000
Dynaudio
+44(0)1908 237936
www.dynaudio.com/uk

FOR
- good bass
- fine spatiality
- crisp top end

AGAINST
- strident vocals
- grating midband

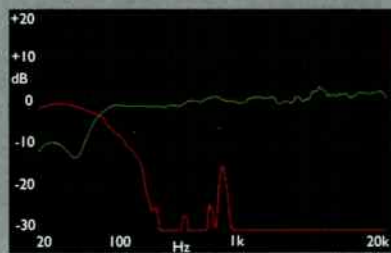
MEASURED PERFORMANCE

The Dynaudio Excite X36s serve up a very flat measurement across their full bandwidth, showing good driver integration through careful design. There is a gentle lift in output of around 1-2dB with increasing frequency, so the X36s are likely to have a bright balance, and the slight lift at around 5kHz may well be audible.

At the low end, the twin main drivers roll off at around 70Hz, before handing over to the port which extends this down to around 30Hz, so the Dynaudios offer good extension and should have a solid and effective low end.

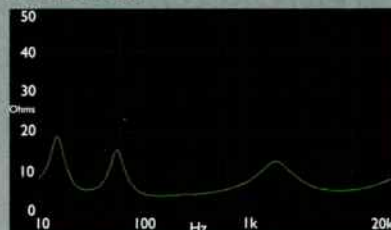
Electrically the X36s turn in an even and undemanding result, with a measured average impedance of 5.8 Ohms, dropping to a minimum of around 4 Ohms. As a consequence, they are a genuine 4 Ohm load but have a good sensitivity of 89dB, so should be happy with amplifiers from 40W upwards. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE





KEF XQ40 £2,000

KEF's XQ40 loudspeakers sit at the top of their recently revised XQ range, which slots in between the affordable Q series and the high end Reference models. The revisions involved increasing the number of models in the range, making improvements to the cabinets and optimising the drivers.

In terms of the XQ40, the result is a three-way loudspeaker that utilises KEF's Uni-Q driver; in this case a 6.5in (165mm) design, with a 0.75in (19mm) aluminium dome at its centre. This operates above 2.5kHz and is loaded by KEF's new 'tangerine' waveguide to optimise the tweeter's output and reduce adverse effects of the natural horn loading provided by the bass/mid cone.

The twin bass drivers are also 6.5in (165mm) designs, paper-coned and sited in their own dedicated, port-loaded enclosures, augmenting the Uni-Q driver below 400Hz. All units are linked by a new crossover that uses high quality components

from the Reference series, and two pairs of terminals permit bi-wiring or bi-amping.

Cabinet finish is superb and available in high gloss Piano Black, Birdseye Maple and Khaya Mahogany, although I personally find the styling a little dumpy. Vital statistics are 1020x231x302mm (HxWxD) and 24.3kg. Both stylish rounded feet and basic spikes are provided for the rounded-bottom cabinet but, to level the speaker using the spikes, the front pair had to be screwed fully in and the rears barely engaged in the thread which did not make for a secure support.

SOUND QUALITY

The KEFs offer a

pleasingly even handed performance across the board. Most notable is that they image in a stunning manner, and maintain this solidity as you move around over a surprisingly wide area. It may have taken time to perfect, but KEF really do have their Uni-Q drive unit superbly sorted in this respect.

Instrumental and vocal detail was highly impressive, and the XQ40s' top end is a tidy yet spry affair, making high frequencies ring out into the listening area with alacrity. Far less patchy than some older KEFs I can recall, the XQ40s maintain their even-handed nature across a wide range of music, and only start to become a little flustered when the music becomes densely recorded. In this situation, they never sound distorted or muddled, but just give a slight sense that everything is crowding out of the drive units at once; in these situations it becomes a little hard to pick each individual item out.

At the low end, which has been something of an area for reservation for me with some other KEF designs such as the iQ9, the XQ40s performed with flying colours. Bass lines were weighty, solid, tuneful and blessed of fine timbre and pace. The only small gripe I had was that a little more grunt wouldn't have gone amiss with certain dance tracks, but the XQ40s are not lightweight and never sounded boomy or uncomfortable. All in all, their low end is very well judged and blends well with the rest of the frequency range.

VERDICT ●●●●

The obvious choice for imagery fans, the XQ40s are a well balanced and enjoyable pair of loudspeakers.

KEF XQ40 £2,000

KEF

+44(0)1622 672261

www.kef.com

FOR

- fabulous imagery
- overall integration
- fine bass detail and pace

AGAINST

- can become jumbled
- poor spike arrangement

MEASURED PERFORMANCE

KEF's new XQ40 loudspeakers show just how much development the company has put into its Uni-Q drive unit and turn in a fine measured performance as a result. The overall frequency response trend is flat and even with only a couple of undulations towards the top end as a result of the horn-loading effect of the main drive cone on the tweeter at its centre. These drops are very narrow however, and much smaller than older Uni-Q designs, so the resulting sound should be good.

It was also noticeable during measurement that the microphone could be moved quite a distance vertically and horizontally away from the main axis with little effect - the XQ40s thus have excellent off-axis performance, making positioning easier. At the bottom, bass rolls off below 70Hz and is augmented by the ports to around 35Hz, so the XQ40s will have a solid low end.

Impedance-wise, the XQ40s have a flat electrical response and an average measured impedance of 5 Ohms, dropping to 4 Ohms in places. Their

sensitivity was good however, at 90dB meaning that they should be happy with 40 Watts or more from a matching amplifier. AS

FREQUENCY RESPONSE



Green - driver output

Red - port output

IMPEDANCE



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TOTEM HAWK £2,200

Another two way design like the PMCs, Totem's Hawks are a little different to the other candidates, and definitely none the worse for it! Totem was founded in 1989 and specialises in developing loudspeakers that are "capable of reproducing a truly musical and involving performance"

The Hawks are the third model up in Totem's floorstanding range, above the Arro and Staf, and below the Forest, Wind and highly impressive flagship Shamans. They make use of a 5.5in (140mm) "extreme long throw" bass driver, allied to a 1in (25mm) alloy dome tweeter, and these two items are united by a first order crossover operating at 2.5kHz.

The Hawks are surprisingly light, but their cabinet is cross-braced and veneered both internally and externally, and a layer of borosilicate damping is sprayed on the internal surfaces to eliminate the storage of unwanted internal energy. An empty chamber at the cabinet's base allows

for mass loading if required.

The Hawks do not come with spikes but rather, Totem's 'Claw' support system. For this, three metal brackets screw to the underside of the loudspeakers and a ball bearing sits in a recess on the underside of these that then sits on the floor.

The Hawks are the smallest models in the test, measuring a compact 910x170x245mm (HxWxD), and they are available in Maple, Cherry, Mahogany or Black finishes.

SOUND QUALITY

Totem's blatant disregard for the laws of physics are well in place with these

loudspeakers as, like most of their other models, they sound far bigger, more solid and bassier than they look! This means an astonishingly weighty low end but coupled with the sort of speed and pace that is generally only found with a small driver. The Hawks' bass driver can be clearly seen to be working hard but, unlike one or two of the even smaller models, they never sound strained or compressed as the volume rises, just fast, taut and astoundingly rhythmical.

Combined with the crisp but well judged treble, this means that the Totems remain utterly musical at all times and really do offer a surprisingly 'out of the box' performance, particularly with the addition of some mass loading to the rear chamber, as this adds the last missing hint of focus to the upper bass.

Across the board, I feel the Totems are the best of the group in one key respect. They may not have the widest soundstage around, although they are certainly not narrow in lateral image terms, but the way in which they can layer and position items in the mix in depth terms, is quite astounding. Backing instruments and singers hang back as they should whilst lead vocals project superbly into the room.

They very occasionally turn strident and project a little too far at times, for which I personally blame the port peak at 850Hz, but the Hawks never stray anywhere near becoming harsh, and remain a joyously upbeat musical companion no matter what you feed them with.

VERDICT

Small of stature but big of sound, the Totem Hawks are dizzyingly spry, detailed and dynamic performers.

TOTEM HAWK £2,200

Joenit Distribution

+32 15 285 585

www.totemacoustic.eu

FOR

- surprising bass
- superb depth perspective
- taut rhythmicality
- diminutive stature

AGAINST

- occasional vocal stridency

MEASURED PERFORMANCE

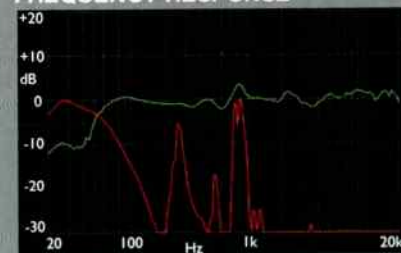
The Totem Hawks have a good, flat trend to their response, with the exception of a ripple around 850Hz which appears to be due to the port. This is a very simple tube with no flaring or attempt at air noise minimisation, and the lack of these aspects can be clearly seen by its huge output peak at this frequency. The port is on the rear panel, so any extraneous noises should not be obvious, but it may have an effect on vocals; this is a little disappointing.

At the low end, the 5.5in driver operates down to a useful 60Hz, with the port adding wanted reinforcement down to 30Hz. This is mightily impressive for such small units and the Hawks are highly likely to belie their dimensions with a properly 'grown up' bass performance.

In impedance terms, the Hawks are once again a mixed bag. On the plus side, they are a very easy load, averaging 10.8 Ohms and not dropping below 7 Ohms. Sadly this does impact sensitivity, which measured a low 83dB, and they are not as well damped

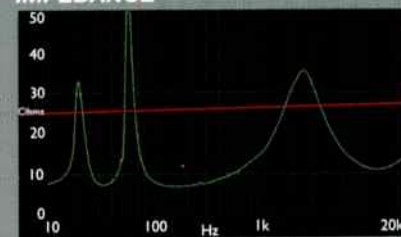
as other designs, so an amplifier with a high damping factor and around 60W will be required. Partner carefully, however, and they should turn in a highly capable performance. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



Dali's Mentor range of loudspeakers sit in the middle of the company's lineup, above the Concept and Ikon ranges, and below the Helicon and Euphonia items, and incorporates design and technological aspects taken from the more expensive ranges. The main model lineup is five-strong, with two standmounting designs and three floorstanders, the Mentor 6s coming in one from the top, below the 8s.

The Mentor 6s are described by Dali as a "two and a half plus a half-way" design! This means both low end drivers cover the full bass range, with the lower unit rolled off at 800Hz, and the upper continuing up to the tweeters at 3.4kHz. Unusually though, the dome tweeter rolls off naturally at the top end, with the ribbon coming in at 12kHz to augment it (hence the extra half way). The bass drivers are a pair of 6.5in (160mm) paper/wood fibre cones loaded by twin rear-firing ports, and the top end is covered by Dali's Hybrid tweeter module, comprising a 28mm soft dome and a 17x45mm ribbon.

Connection is via two pairs of Dali's chunky 'Vice Grip' terminals and the crossovers are mounted directly to these to minimise the signal path length. The Mentor 6s are at the other end of the size spectrum from the Totems, measuring 1030x200x390mm (HxWxD) and weigh 22kg each. The cabinets are available in Cherry and Black Ash real wood veneers, plus Satin White and Satin Black painted finishes



DALI MENTOR 6 £2,200

SOUND QUALITY

One could quite rightly be concerned that a loudspeaker with two bass/mid drivers and two tweeters might well be all boom 'n' tizz but fortunately this is not the case when they are set up as advised, slightly off-axis and not pointing directly at the listener.

The step in response at 6kHz does mean that the treble is quite dominant, and has a certain hissy quality at times. This gives superb levels of clarity and real attack to cymbal strikes, but does mean that gently brushed cymbals, for example, tend to blur into one sound rather than being easily distinguishable strokes.

Lower down, the lift in response in the vocal region works wonders in bringing singers well forward

from their backing tracks and the Mentor 6s turn in an emotive and spacious performance as a result. Equally, backing instruments were not lost as a result of this effect, which can sometimes be the case. Acoustic instruments were blessed with fine timbre and balance, and groups of them, such as in an orchestral setup, remained well defined and easily distinguishable from their companions. Electric instruments such as guitars were handled with equal aplomb, and the Mentor 6s revealing treble picked up on fretboard hand movements well. The Dalis were also impressive in the way in which they were able to reveal the inadequacies of poorer recordings but without making the result unlistenable.

At the bottom, those twin drivers and ports do a sterling job of providing a highly impressive low end performance. Bass lines were punchy, detailed and pleasingly fast without descending into boom or overhang. The Mentor 6s are quite sizeable units and their sound reflects this in the way in which they offer a commanding presence in the listening room.

VERDICT ●●●●●
The Mentor 6s have a detailed and commanding sonic presence that fills a room with sound in an effortless fashion.

DALI MENTOR 6 £2,200
Dali UK
+44(0)845 644 3537
www.dali.eu/uk

- FOR**
- fine top end detail
 - well integrated midrange
 - solid, commanding bass
 - good sonic presence

- AGAINST**
- rather 'hissy' treble

MEASURED PERFORMANCE

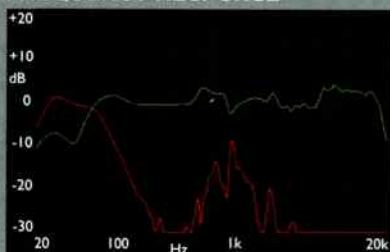
The Dali Mentor 6 loudspeakers have a frequency response that is a little less even than some, but not disastrously so. The lift in the response in the 500-800Hz region will add presence and scale to vocals, and the lift in response above 6kHz will add plenty of top end detail and sparkle. Note that these measurements were taken at 15 degrees off axis, as this is how Dali design their speakers to be used. The response was a little more uneven directly on-axis, which suggests that the Mentor 6's will indeed perform best when not toed-in.

At the low end, there is slight lift around 100Hz, before the main drivers drop off in output at around 60Hz. The rear ports are tuned to around 35Hz, so the Dalis should have a healthy low end.

Electrically, the Mentor 6s measure well, with an even electrical response and an average measured impedance of 5.8 Ohms, dropping to around 5 Ohms as a minimum so they will not place

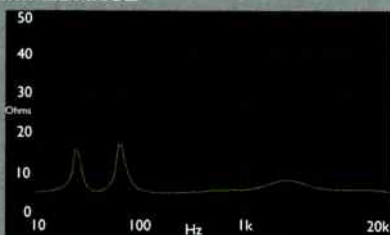
undue demands on a 4 Ohm amplifier tap. Sensitivity was fine at 89dB. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



Once again, a test like this throws up some interesting results. Firstly, the question postulated in the introduction, namely, whether £2,000 loudspeakers are better than £1,000 ones, can be quickly despatched - yes they are. Obviously, there are relative degrees of improvement but generally, the extra budget is spent on the important parts of the loudspeaker and this brings changes that are sometimes quite surprising.

Another interesting aspect of the increase in budget is that you start to see designs creeping in with their own 'Unique Selling Points'. In this case, we have the PMCs with their transmission line, the Dalis with their Hybrid Tweeter Module and the KEFs with their Uni-Q driver. It can be seen that designs are starting to diversify at this point, whereas a collection of, say, £500 loudspeakers, say, will all tend to be fairly similar in terms of basic topology. Still, for a group test, the result is the important thing, so whose technology triumphs this time around?

The only contenders I would actively discount would be the Dynaudios, I'm afraid. On the plus side, they are well built and offer a lot of cabinet and drive units for the money, with a resultingly large-scale sound. The problem is that their midrange is decidedly forward and verges on being unpleasant at times, especially in terms of vocals, which end up rather coloured and overblown, and this is a dominant characteristic. If your system lacks life and presence in this area then they may be just what it needs but in this company, the Dynaudio Excites failed to excite me

Of the other contenders, the KEF XQ40s are magnificent performers in soundstage terms. They are unfussy about positioning and hold a solid stereo image over an impressively wide area. The whole sound melds together very well and they are never less than enjoyable from top to bottom. Their only problem appears when complex material is played, and they start to fall over their own feet a little, muddling the music's aspects all together somewhat. All in all though, impressive and definitely worth shortlisting...

Next to consider are the PMCs, which offer an eye-opening good rendition of vocals, and have the lovely, effortless but subtle bass that you only get with a good transmission line design. I still think they are the most handsome loudspeakers in the test and they are

have that monitor-like sonic nature that gives you the impression you're hearing what you're supposed to, and nothing else. My only gripe is the slight chestiness in the lower midrange but that apart, the PMC FB1s are very fine transducers. They do smell rather good, too!

However, it's a three-way fight for the top spot and a very close-run thing, closer than any other group test I can recall, in fact. Firstly, we have the Dali Mentor 6s, which offer an impressive, large-scale sound like that of the Dynaudios, but with a much more even-handed midrange performance, that captures the nature of the music well. Add in a very healthy bass performance and a highly revealing top end and you have a very capable loudspeaker. If

ears they are convincing winners. When you consider that they love to rock, with a deep, tight and well controlled bass, a beautifully open and emotive midrange and a crisp and insightful top end then this pushes them right to the top of any audition list.

Consider then that they also easily capture the filigree detail of more subtle source material, have an encompassing soundstage that fills any room with ease, are a friendly and efficient load to drive, are superbly finished and packaged and come with a beautifully made, chunky set of feet and spikes. As a result, they virtually sell themselves and are a worthy winner. If only they didn't whiff so much - but I'm sure that will pass with time!

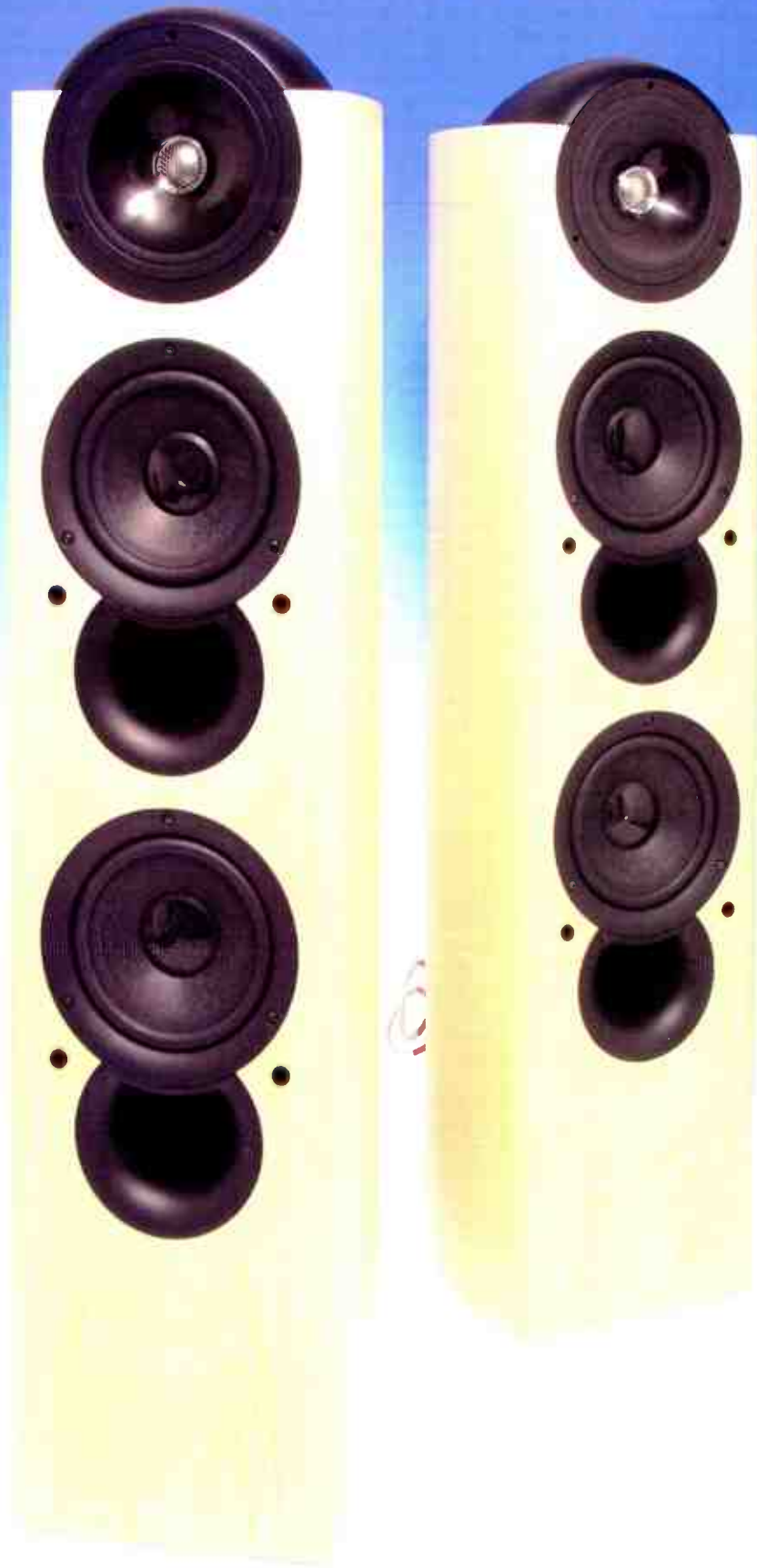
"the extra budget is spent on the important parts of the speaker, bringing changes that are quite surprising..."

only that very slight top end hissiness wasn't so distracting on occasion, these could well have won, but strong competitors mean they come a very close runner up.

So that leaves us two contenders, the first of which are the Totem Hawks. I can't help feeling that if Albert Einstein were still with us, he would be on the phone to Totem, asking them to kindly stop bending the laws of physics, as this can be the only explanation for how the company manages to extract such bass and such sheer gusto from a small driver in a compact cabinet! The Hawks look lost alongside the likes of the Dalis and Dynaudios and each cabinet can be picked up with one hand, yet power them up and they leave you in no doubt that they mean serious business. I still have a slight concern over the port behaviour, and its effect on vocals, but the Hawks are always fun, always dynamic and always totally impressive. I feel they are a mandatory audition at this price point.

So how do you top two five-globers with very minor foibles? Easy - with a five globber that does not appear to have any! The Monitor Audio GS20s are the cheapest loudspeakers in the test at £1,700, yet to my





Q Top

Few manufacturers attempt to design a proper reference loudspeaker. Noel Keywood listens to one that deserves the title, KEF's new Reference 203/2...

Most loudspeakers are too 'characterful' for me. When I designed our own World Audio Design loudspeakers, I deliberately gave them a neutral tonal balance in the interests of fundamental accuracy.

I had high hopes that KEF's new Reference 203/2 floorstanding loudspeaker reviewed here would fulfil the same promise of good basic accuracy, as expected from a true reference design, because the market sorely needs such loudspeakers. Too many have raised treble these days, making vocals sound hard and spitty, cymbals lacerative and long term listening a chore.

I started listening with some confidence, because KEF loudspeakers usually appeal to me, and was happy to find the Reference 203/2 is a thorough exercise in modern day loudspeaker engineering able to banish my general disappointment in modern designs. It is possible for a truly accurate loudspeaker to sound exciting, but poised at the same time, and happily this is what you get from the 203/2.

Sitting at the bottom of the KEF's Reference range, it's a floorstander of reasonable dimensions, standing 1,100mm high, 250mm wide and 450mm deep. It's heavy though, weighing in at 26.5kgs, or nearly 60lbs - not an easy lift.

What you get in this package is interesting: KEF have taken a full range Uni-Q unit and modded it into a dedicated midrange/treble unit by discarding the compliant surround, unnecessary when large bass excursions aren't required. This improves the cone's edge termination and cleans its sound. At the centre of the cone lies a 25mm titanium dome tweeter, protected by a grille. This is the single Uni-Q drive unit - two drive units in one - you can see at the top of the loudspeaker and it does most of the work, covering the audio band from 300Hz right up to and beyond 20kHz. It acts as a point source, providing a highly focused and consistent sound.

Below it are two bass units, each loaded by its own rear chamber, ported on the front. It isn't

"the 203/2s dig deep and retrieve much more than most boxes".

usual to put ports on the front of a cabinet, because they fire internal cabinet 'noise' straight at the listener – definitely a bad idea. I suspect KEF do it for visual effect, but there's a price to pay – more later. I suspect it would be possible to pipe these down to the floor, a good solution, or vent at the rear.

Removable grilles are fitted but the top one is best not used if possible, to allow surface waves to smoothly propagate around the front cabinet face, removing equivocation from imaging. The lower bass unit grille is less critical in this respect and can be left on. The 203/2s are solidly built and well finished, looking good in a room.

You also get a polished wooden box full of goodies (like chrome plated spikes, a spanner and electrical plugs) with this loudspeaker. The latter are for adjusting frequency response – and I found a use for them, more of which later. Bass is set flat as standard, but a -2dB shelf can be selected for use close to a rear wall, to reduce room modes that rise as a wall is approached.

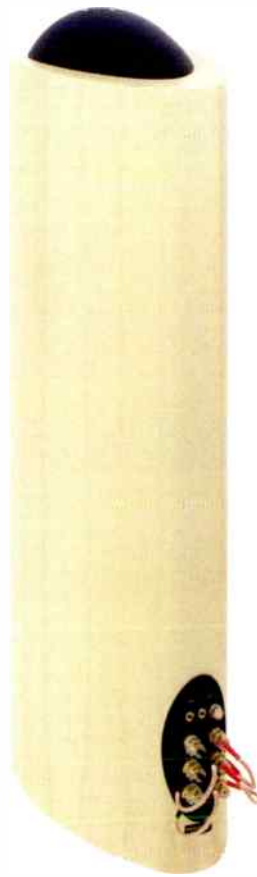
High frequency output from the tweeter (above 3kHz) can be set flat, lifted or set to two levels of cut, both relatively mild at -0.75 or -1.5dB. KEF recommend listening 15 degrees (slightly) off axis and I always place Uni-Qs facing straight down a room, to meet this criterion.

SOUND QUALITY

The Reference 203/2 snapshots as a large confident loudspeaker, with obvious deep bass and a clear midband graced with a sense of glassy clarity that comes from the metal dome tweeter, which also brings speed and incision to the picture, plus obvious extension to the top of the audio band. As you'd hope for the price it comes across as large and muscular; this is not a sound with restraint. But let's look at the picture in more detail.

The Uni-Q coaxial drivers I know well and respect greatly. Putting the tweeter at the centre of the shallow midrange cone does indeed give very consistent images that lack the vertical smear of the usual tweeter-above-woofer arrangement. Phil Collins' opening drum sequence on 'Do You Know, Do You Care', from a 200gm 'Hello I Must Be Going' LP sounded all-of-a-piece and tightly placed centre stage. Uni-Q drivers construct a more compact and specific image than is common. It isn't a big deal perhaps, but it is one small part of what Uni-Q offers and – oh! – it is correct.

The other benefit is that the



sound you hear from KEF Uni-Qs is consistent between differing rooms, and stays the same as you move around a room too. So whilst I swooned over the Willow-the-Wisp beauty of Martin Logan's electrostatic panel in their budget Purity loudspeaker and am suffering withdrawal symptoms, they weren't ideal family listening. The sound collapsed off axis and room sensitivity/placement was a bigger issue than usual. Not so with the 203/2s that were balanced and all-of-a-piece wherever I was, although I tend not to go walkabout whilst listening – honestly!

The 203/2s image beautifully, with voices, drums and accompanying vocals spread in a perfectly described arc between and just past the loudspeakers from Angélique Kidjo's 'Welcome', on her 'Fifa' CD. The reason for this is that the KEFs

"the Reference 203/2 snapshots as a large and confident loudspeaker...".

throw consistent images at walls and ceiling, so you get phantom images that act to extend apparent width and height. Other loudspeakers cannot manage this with such aplomb. Percussion instruments in particular were perfectly formed and had real body, leading edges cutting from the complex mix of 'Shango', from the same CD.

Better, this album waved a green flag for the 203/2's bass, which I was initially worried about as potentially able to lose the plot when thrown inflated bass lines. Far from it; driven by our Quad II-Eighty amplifiers with which I carried out most listening, the KEFs remained in perfect control, making no attempt to over-egg what has already been pumped up during studio mixing. The 203/2s sound fulsome at the bottom end, bass lines striding along with an obvious power and bounce, but also with goodly amounts of time domain grip, well demonstrated by a meaty Robbie Shakespeare bass line on 'Make 'Em Move', from the album of the same name. The eerie closeness of a gun being loaded and cocked at the start of 'No Name On The Bullet', reverberating across the stage, reminded me how beautifully detailed the KEFs are too, in an unforced manner.

That I was experiencing a level of resolution that said "look I can wean you off electrostatics", was really saying something. The 203/2s dig deep and retrieve much more than most boxes, and here I sense a lot of work in finessing the drivers and crossover. As this track suddenly changed tempo the KEFs tracked the changes beautifully, with not a hint of hesitation. They follow a tune well.

Now that KEF have rediscovered the relevance of a flat impedance characteristic, something explained long ago by founder Raymond Cook, the 203/2s can be partnered with a valve amplifier. KEF have been tardy on this one; valve amplifiers now rule the roost and, for the last few years, other manufacturers have been able to meet their requirements, as I always did long ago with World Audio Design loudspeakers. The 203/2s could still be flatter impedance wise, but they matched our in-house Quad II-Eighty nicely all the same (four ohm output), with neutral Creek OBH-22 in-front, fed from a Yamaha CD-S2000 CD player.

To see how they partner a solid-state amplifier I used our favoured Anatek A50R, which offers a pleasingly open and even sound, if a little obvious at the top, favouring detail. With this and a NAD M3, bass became a little too heavy and emphatic for my taste, with the 'speakers three feet from a rear wall in a 28ft square room which

A new star is born



Each year the European Imaging & Sound Association (EISA) assembles a panel of expert judges from some of the continent's leading hi-fi press to investigate the world's finest technology.

After rigorous evaluation they return to vote on one product in each category that they believe offers not only exceptional levels of performance but also provides incredible value. This year they chose the Cambridge Audio Azur 840A Class XD integrated amplifier.

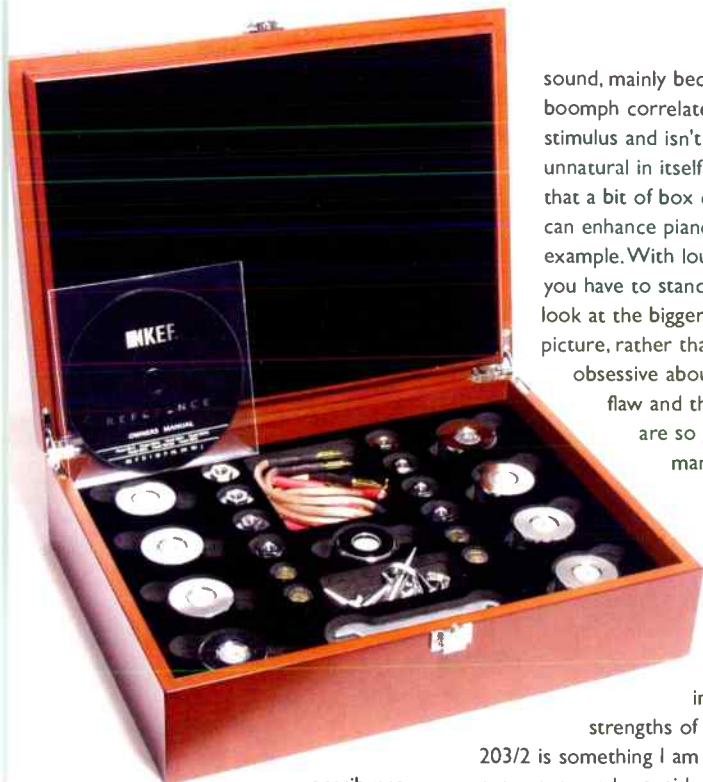
"...a genuinely novel approach... a highly sophisticated, efficient and attractive-sounding amplifier" EISA citation



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sound, mainly because the boomph correlates with its stimulus and isn't subjectively unnatural in itself, in the way that a bit of box colouration can enhance piano for example. With loudspeakers, you have to stand back and look at the bigger subjective picture, rather than become obsessive about one small flaw and the 203/2s are so good in so many ways that I wasn't unduly upset by those ports.

One of the most important strengths of the new

203/2 is something I am not sure KEF even gave much consideration: it can be used with valve amplifiers. The Quad II-Eightys were a sublime match and the KEFs benefitted enormously from their presence. Being a very revealing loudspeaker, changing amplifier is a bit more of a night and day experience than usual.

With the rather well recorded SACD of Lang Lang playing Rachmaninov's 'Piano Concerto No.2', strings were vivid yet easy on the ear. I could hear a little cuppiness if too far off axis and toed the 203/2s in slightly to avoid this. Piano notes were ringingly clear and each as solid as a rock, Lang Lang's precise playing being made very apparent by the KEF's super clean nature. Strings were nicely differentiated, cellos clearly leading violins on one introduction, and crescendos were firm and uncluttered. I enjoyed the highly concise nature of the 203/2s, the body they gave instruments, the focus and their supremely even nature.

The interplay of short sequences from strings and wind instruments in the Overture of Wagner's 'Reinzi' was handled beautifully, again I suspect thanks to the excellent midrange

Uni-Q unit; definitely a case of "less is more" here. Horns blared out strongly, whilst strings answered back with vigour. The Reference 203/2s brought life to classical performances and I enjoyed them greatly.

CONCLUSION

My hopes weren't dashed by KEF's 203/2s. They are a true Reference design, unafraid to be totally accurate. At the same time KEF have maintained the dynamism of their other models. The result is a lovely blend of musical excitement and a great evenhandedness that makes all forms of music thoroughly enjoyable. The Uni-Q midrange/treble unit really does work very well, digging deep to throw out a massive amount of detail: it is an aural delight. For medium sized lounges like my own (17ft x 14ft) where room modes contribute strongly to bass quality and balance, the bass cut facility will be just what the doctor ordered. That makes the 203/2s one of the best-judged loudspeakers I have encountered for a long time and they should be required listening if you're looking for a super high quality floorstander.

contributes nothing modally. I

suspect this delivery would appeal to listeners who like a bass heavy balance. Adjusting the rear panel to produce bass shelf cut worked wonders, bringing the KEFs back into balance with a nice dry bottom end, yet one with real dynamism. I didn't feel any need to adjust treble, but only with the neutral Creek/Quad amplifier system, easy sounding Yamaha CD-S2000 CD player and our Van den Hul Royal Jade loudspeaker cables. Adam has been experimenting with cables recently and I am learning that these cables are a vital ingredient to my sanity!

Whilst testing the 203/2s with gated sinewave bursts that switch on then shut off for a relatively long time, a 'whoomph' from the box emanating from the ports was obvious in the off period. Music tends to smother this, but I knew Terry Wogan talking on Radio 2 would be the very thing to reveal it. Instead I ended up listening to a talk between Radio 2 presenter Michael Ball and author Jeffrey Deaver one Sunday morning about his new book, 'The Broken Window'. Jeffrey Deaver's relatively deep and slightly laconic American delivery left plenty of spaces for the box to be heard and it was apparent as a slight 'boomph'. it was not especially intrusive or upsetting but I did notice that at the side of the loudspeaker the effect was more noticeable, even when music was playing.

This is a peculiar blemish for a Reference loudspeaker to be saddled with, because it's a well known problem for which there are plenty of solutions. Happily, it didn't detract from what I felt was a great all-round

VERDICT

Beautifully balanced, highly accurate and detailed floorstander that's a true reference. Superb!

KEF REFERENCE 203/2 £4,000

KEF

+44(0)1622 672261

www.kef.com

FOR

- supremely accurate
- excitingly dynamic
- great detail retrieval

AGAINST

- 'boomph' from ports
- little cuppy with strings

MEASURED PERFORMANCE

The major feature of the Reference 203/2's frequency response is its sheer flatness, at a time when loudspeaker manufacturers have collectively abandoned any notion of accuracy in favour of showroom shine - aural that is. Granted, KEF have plenty of lower priced loudspeakers able to shoulder this role, the XOs in particular fighting their corner with speed and incision. Make a loudspeaker accurate, like the Reference 203/2 here and you risk being pushed aside in the showroom.

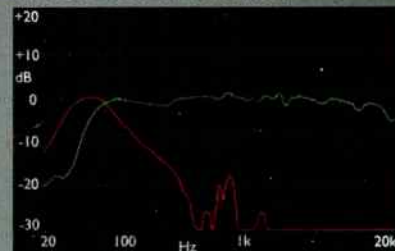
But when it comes to long term listening at home there's nothing like a healthy dose of accuracy, when this also brings smoothness and naturalness to music. Our gated sine wave frequency response analysis displays a lack of undulations and peaks, suggesting the 203/2s will lack colouration. The only caveat is output from the front ports, where a distinct peak is visible at 800Hz, correlating with a bump in the response trace, and likely due to an internal standing wave that will add some small amount of colouration. The ports really should be at the rear.

In truth, treble is flat to 20kHz; the mic was deliberately put off axis for this trace (and all settings were flat). Bass output extends down to 50Hz or so in our gated semi-anechoic response, helped down further to 40Hz or so by port output. The impedance curve shows the port is tuned to 40Hz and the relatively flat trace at low frequencies shows current draw from

amplifiers will be even. For valve amps this is a 4 Ohm loudspeaker, although overall impedance measured 6 Ohms, largely due to the peak at 2.2kHz. Sensitivity was a good 89dB, making the Reference 203/2 valve amplifier friendly - wise these days.

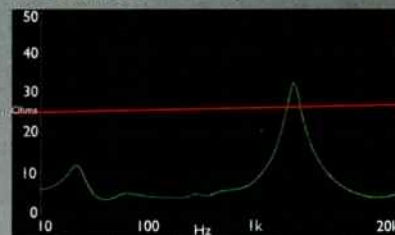
The Reference 203.2 measures like a true reference loudspeaker should. It will have obviously strong bass our pink noise measurements (not shown here) suggest, a very clean, even nature but possibly a little box bounce or 'boomph' from the ports. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE





WDKEL84 Valve Amplifier Kit

"The quality that can be gleaned from this amp is a fine introduction to the joys of the valve sound"

The WDKEL84 features a pair of EL84 valves in Push Pull configuration per channel, providing two channels each 18 Watts into an 8 Ohm load. Described by users as a 'Giant Killer' this kit is available as a 5 input integrated amplifier with ALPS volume control.

WDKEL84 kit £449

WDKEL84 built & tested £599



WD88VA Valve Amplifier Kit

"It proved itself to be an engaging valve amplifier that measured well and sounded superb. Quite simply it plays music, and plays it extremely well."

Adam Smith, Hi-Fi World Dec 06

Often described as a 'sweet sounding' valve, our implementation of the KT88 makes sure that it is driven to its ultimate performance. Available as a 35W stereo power amplifier with single input volume control, or as a relay switched integrated with five inputs.

WD88VA Integrated Amp kit £949

WD88VA built & tested £1249



WDHD3 Headphone Valve Amplifier Kit

"Headphone 3 is a single-ended design with the power pentode wired up in triode configuration for added purity and is as quiet as a mouse"

A beautifully simple stereo headphone amplifier design using Mullard ECL83 valves. It works directly from any source. The circuit uses twin high specification E/1 output transformers that can be wired to drive any headphones between 16 to 300 Ohms.

WDHD3S kit £349

WDHD3S built & tested £479



WDPre3 Modular Preamplifier System

"So there we have it, a pre-amplifier capable of driving any load and maintaining its linearity no matter what cables or partnering equipment you prefer to use."

This 5 input line level preamp is essentially an SE triode power amplifier in concept. WDPre3 uses an ECC82 double triode arranged as input voltage amplifier and power output amplifier stages, the latter driving oversize 20:1 output transformers.

WDPre3 kit £369

WDPre3 built & tested £494



WDPhono3S MM/MC preamplifier

"...only a few designs meet the requirements of tonal accuracy and maximum retrieval of musical detail."

Twin input preamp with MM and MC relay switched inputs, passive RIAA equalisation and wide bandwidth MC step-up transformers.

WDPhono3S kit £399

WDPhono3S built & tested £524



WDPSU3 Power Supply

Can be used to power either WDPre3 or WDPhono3 units individually or together.

High performance choke power supply with separate HT and Heater feeds for both WDPre3 and WDPhono3 preamplifiers.

WDPSU3 kit £199

WDPSU3 built & tested £299



All our kits are complete with pictorial easy-to-follow instructions.
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Pro-Am



Sporting the famous Philips CD Pro2 mechanism, Musical Fidelity's new A1 CD Pro silver disc spinner is more than just par for the course says David Price...

As we've often said in these pages, the importance of the transport to a CD player's overall sound cannot be underestimated. Tragically though, with so much talk of 24bit DACs, upsampling and valve output stages, this is precisely what has happened. If you believe some of the hyperbole coming from certain manufacturers, it's almost as if sticking the latest DAC in the box, or whistling up a simple tube buffer in the analogue section, is a guarantee of performance. Well, it isn't.

As I explained last month in my review of Cyrus's new CD8 SE, everything begins with the quality of the read that the laser does on the disc. If this particular part of the chain is wrong – or to be more specific, not right enough – then no manner of re-clocking, fancy DACs or glowing bottles under the bonnet will properly compensate.

The key point here is that CD's way of reading the disc is such that it masks its errors at a very early stage – the robust Reed Solomon code makes it hard to tell the difference between the laser misreading the data and interpolating ("guesstimating") what's on the disc, and it actually getting it right. Well, it's hard

to tell from a crude measurement point of view, but the most finely tuned measuring instruments (our ears) still know when all is not well.

Cyrus's solution to the riddle, as we saw last month, was to design their own bespoke transport. Musical Fidelity have taken a different route – to buy in one of the very best commercially available ones. Both companies are to be applauded for taking the issue of CD mechanisms truly seriously. Either could have saved sizeable amounts by specifying the cheapest OEM mech in their parts catalogue, then taking the money and running – but then neither would be the beasts that they are. Musical Fidelity say the Philips CD Pro2 mech "recovers more data, reads a wider variety of discs and has no apparent shortcomings... whilst this is the best available, regrettably it is also the most expensive".

This said, Musical Fidelity's Antony Michaelson is effusive about the Burr Brown 1792 DAC and 4392 sample rate convertor used in the A1 CD Pro. He claims it gives this £1,499 machine generally superior numbers to the £8,500 Nagra CDP [see MEASURED PERFORMANCE], what he calls "state-of-the-art measurements". This, in conjunction with the "fanatically careful detailed

implementation of the printed circuit board design" and the aforementioned mechanism form basis of the A1 CD Pro's appeal.

This may be, but I'd have to add this machine's industrial design. It is truly odd to see that iconic shape re-emerge from the shadows some twenty plus years after it last graced dealers' shelves, but there it is. The build quality is just as good as it ever was, although, as with the excellent matching A1 FBP preamplifier reviewed last month, we have to draw attention to the tiny, fiddly buttons which won't be for everyone. As for me though, this machine worked very nicely – once again we have a top loading machine appearing at this price point, which is no bad thing.

SOUND QUALITY

Regular readers will know that I've endeavoured to personally review almost every new £1,000 to £1,500 CD player released over the past couple of years. This came about thanks to me foolishly nominating myself for a group test of the darned things, on the grounds that being a vinyl junkie I was well suited to critically assess digital disc spinners! Oh well – since then I've heard some fifteen or so designs around the

emillé

just for your musical bliss



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price of this new Musical Fidelity, and have used Astin Trew's AT3500 as my yardstick. This isn't the very best in every way, but is still arguably the most musical of the breed, making it a fine reference.

The AT3500 was duly pressed into action against the new AI CD Pro, and the latter acquitted itself very well indeed. So it should at over £300 more you may say – and you'd be right, but its price tag hasn't stopped the AT inflicting body blows on a good number of more expensive designs! The Musical Fidelity however, was not to be the Astin Trew's latest victim – showing the reference machine a clean pair of heels in a number of respects.

The most distinctive facet of the new machine is its clarity; strings on 4hero's 'Morning Child' were almost supernaturally tangible, as if the song itself had been remixed. The AT gave its usual fulsome and expansive rendition, pushing the soundstage out wide left and right, while the MF was a little narrower and deeper (being directly comparable to Michell GyroDec and SME 10A turntables in this respect). Within the recorded acoustic however, the AI CD Pro offered dizzying insight, telling me more about the timbre and location of the strings, whereas the reference CD player merely obfuscated.

Sometimes this extra detail wasn't welcome; a recent remaster of Steely Dan's 'Doctor Wu' showed the remastering work up a little via the MF; the soundstage being very detailed and dry but tonally a little thin whereas the AT garnished the proceedings somewhat, making for a more palatable listen. The opposite was true on Soul II Soul's 'Keep on Moving'; here was an original 1990 mastering with a full and smooth balance, and the AI CD Pro was on top of things while the AT3500 struggled to keep up. Female vocals from the MF had just the right 'breathy' quality to them, the electronic bassline was fast and superbly syncopated and the mix open and dimensional. By contrast, the AT seemed a little loose and ponderous.

Tonally, the Musical Fidelity is quite brightly lit across the midband. For example, Linn drums

on Café Jacques' 'Boulevard of Broken Dreams' had great impact, with pronounced spaces between the notes, pushing the song along energetically. Closed miked vocals were also quite striking, this player really imparting the grain of the voice. Indeed, it gives a very immediate presentation, placing you right in the stalls – by contrast the Astin Trew is up at the front of the balcony. This really suits some types of music – its rendition of Xpansions' 'Elevation' was almost euphoric – but also makes it picky about the recording quality and mastering. As we're discovering to our chagrin, many modern CD remasters have been compressed up to 0dB, making them sound harsh and strident, and the AI CD Pro doesn't cut such recordings any slack, Jack!

Such a criticism cannot be leveled at Linn Records' recording of JS Bach's Matthew Passion (Dunedin Consort & Players). The new Musical Fidelity conjured up a cavernous recorded acoustic, the soundstage falling back further than I've heard from any other similarly priced player. It displayed superlative violin timbre, and imparted the

reason, it will appeal strongly to a certain constituency of buyers who want a gripping, direct and upfront sound with forensic amounts of detail – as if there's a hotline to the music. What you don't get is a warm, euphonic or stylized presentation; this means it doesn't artificially blunt sharp or substandard recordings, or editorialise about what you should be hearing.

Normally, this sort of design resides at a higher price point – many manufacturers regarding such a device as too extreme for the sub-£1,500 sector. As such, you'll need to partner this machine carefully; meaning clean and highly capable amplification and neutral (non-peaky) loudspeakers with suitably 'dark' and smooth sounding interconnects. This done, such is the AI CD Pro's clarity that you'll struggle to find anything comprehensively better until you spend considerably more.

REFERENCE SYSTEM:
 Astin Trew AT3500 CD player
 Sugden IA4 integrated amplifier
 MF Audio Silver Passive Preamp
 NuForce Ref 9SE monoblocks
 Monitor Audio PL100 loudspeakers



shimmering harmonics of the accompanying recorders. Female voices weren't harsh, but had an appropriately icy quality for the music. Meanwhile, the cellos bowed away broodingly in the background, the player unswayed by the demands placed on it by this dense, complex acoustic recording. Indeed it is excellent at letting individual strands of the music play by themselves, completely unswayed by what's going on in close proximity.

CONCLUSION

No syrupy sounding valve outputs stages for the Musical Fidelity AI CD Pro; instead it sets out to be – and succeeds at being – a high resolution digital player, playing it straight and telling it as it is. For this

VERDICT

Incise and detailed beyond its price with authority and assuredness, this is an excellent new midprice CD player.

MUSICAL FIDELITY AI CD PRO £1,499
 Musical Fidelity
 +44(0)20 8900 2866
 www.musicalfidelity.com

- FOR**
- pin-sharp soundstage
 - instrumental timbre
 - superb CD mechanism
 - styling, build

- AGAINST**
- fiddly buttons

MEASURED PERFORMANCE

Frequency response was flat from 2Hz up to 21.75kHz, our analysis showing a very slight roll down toward 20kHz. This is too slight to affect subjective balance which may well be a little brighter than many rivals.

Distortion levels were low throughout the entire dynamic range, measuring 0.0013% at -1dB through to 0.21% at -60dB, not class leading figures but very good all the same. Similarly, EIAJ Dynamic Range came in at 110dB, again good but not quite a match for the 112dB or so possible. Output level was a normal 2.1V and noise was a low -123dB.

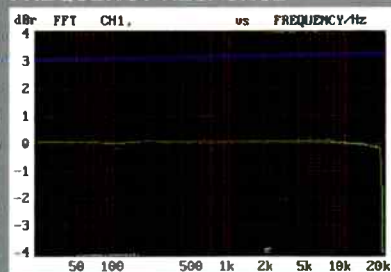
There was a little more jitter than is common nowadays, non signal related measuring 20ps and a -60dB 1kHz tone inducing 500ps, where 300ps or less is common.

The AI CD Pro measured well in all areas, if not quite up with the best in any of them. NK

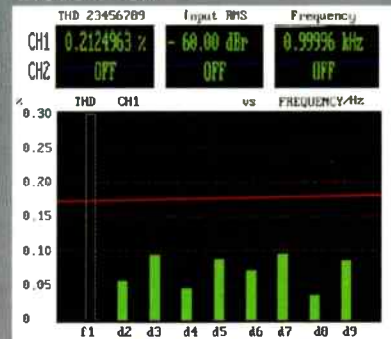
Frequency response (-1dB) CD	2Hz - 21.75kHz
Distortion	
0dB	0.0013%
-6dB	0.0015%
-60dB	0.21%
-80dB	2.6%

Separation (1kHz)	125dB
Noise (IEC A)	123dB
Dynamic range	110dB
Output	2.1V

FREQUENCY RESPONSE



DISTORTION



XQ series



Exquisite

The 'how?' is easy to explain. With KEF's latest Uni-Q® 'point source' driver array, featuring a new segmented "tangerine" waveguide for even clearer HF response, off-axis dispersion is literally unrivalled, creating a breathtaking, 3 dimensional, immersive soundstage. The new XQ Series also adopts technology normally reserved for the Reference Series, such as the independently loaded, ultra-low distortion low frequency drivers that provide tuneful, articulate bass, and a cross-over that delivers inaudible transitions with discrete bass/midrange and HF circuits to eliminate coupling effects seamlessly.

The range features elegant slim floorstanding and bookshelf models and an outstanding three-way centre channel. Choices of high gloss finishes in Piano Black, hand-matched Khaya Mahogany, Birds-Eye Maple or new Warm Cherry wood veneers make for unlimited ability to blend these furniture grade cabinets into the finest environments.

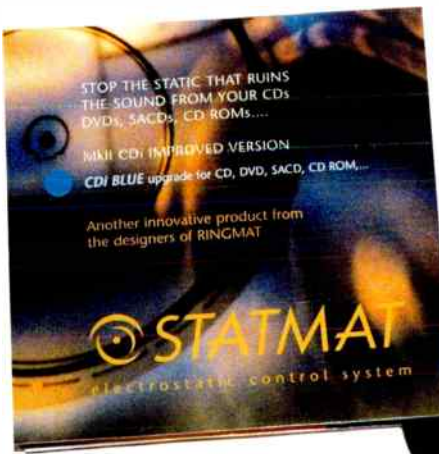
Simply stated, the stunning exterior is promise of sonic bliss.



GP Acoustics (UK) Ltd., Ecclestone Road,
Tovil, Maidstone, Kent ME15 6QP, U.K.
Tel: +44 (0)1622 672261
Fax: +44 (0)1622 750653

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the disc. The static does not cover the CD evenly, but rather appears in the shape of low-voltage hot spots randomly spread over the surface. The fields rapidly change as the



Ringmat. Although we only tested it with CD, Ringmat claim similar improvements with DVD, SACD and other similar media too...

All well and good in theory, but does the Statmat make any difference in practice. Well, surprisingly perhaps, the answer is yes – it's one of those unfathomable gadgets that clearly make an audible difference. The soundstage become more open, while image placement gets a little more precise. Instrumental timbre becomes subtly more authentic, especially the piano. The other area where the CDi Statmat scores is in its ability to unclutter the soundstage. On pieces of music where there's a lot going on such as with a full orchestra, instruments can merge together, particularly in the louder passages – but the Statmat reduces this tendency, seeming to tighten their positioning up. At just under £35, the CDi Blue Statmat is a great value for money tweak for digiphiles. **NR**
[Contact: +44 (0)1277 200210, www.ringmat.com.]

RINGMAT CDi BLUE STATMAT £32.50

Ringmat's latest offering for silver disc spinners is the CDi Blue Statmat. The theory behind it being that during play, a Compact Disc revolves at a very high speed in a closed and dry environment, and this - combined with the heat generated by the CD player itself - causes a gradual build-up of electrostatic fields on

CD is played and this, it is claimed, has a detrimental effect on the all-important timing of the digital signal.

The purpose of the Statmat, then, is to dissipate this static and hence eliminate signal phase distortion by dispersing the low-voltage hot spots while a CD is being played, says

soundbites

PHILIPS GOGEAR £30

For the same money as an iPod Shuffle, this large postage stamp-sized cube gives you twice the storage capacity (2GB). Like the iPod, it comes with basic in-ear earphones and a USB connecting lead – and there's also a CD containing the instruction manual and the Philips Device Manager. Although the instructions insist that you load this before connecting the device for the first time, the software is essentially a firmware upgrade manager; it checks the internet to see if any upgrades for the GoGear are available. So the player will actually work perfectly well without the Device Manager installed on your PC, as it appears as another drive on your computer. You load music by simply dragging and dropping files and folders in the usual way.

That said, it was worth installing the bundled software in the end, as it upgraded the unit's firmware from v2 to v4.01. It only supports MP3, WAV and unprotected WMA – so

very regrettably for some, your purchases from iTunes or Napster will not work...

One nice feature is the ability to make voice recordings via the built-in microphone and store them as WAV files on the device, and the sound quality of these is surprisingly good. The tiny dot matrix OLED screen is extremely clear, bright and easy to read, and all-in-all the GoGear is a very easy-to-use device with intuitive menus. The supplied earphones aren't really up to the job, but via a pricier set of Sennheisers the Philips player gave very good results considering its cost, with a clean and musical character that's superior to the similarly priced iPod.

The only criticism is that they are still a bit quiet and could do with some more drive – the 'Volume Limit' feature of the GoGear 'to protect your hearing' is completely



redundant! The player includes an equaliser for "optimised sound to suit your music style", but as is so often the case, the 'Off' position is the best. Overall, an easy to use, top value gizmo if you're not worried about its modest file format repertoire. **DP**
[Contact: +44 (0)1293 776675, www.consumer.philips.com.]



Pulse Rate

Adam Smith listens to MonoPulse's striking new 42A loudspeakers...

There are many different schools of thought when it comes to loudspeaker design. Some believe that the drive units are the be all and end all, others say the cabinet is most important, a different group point out the crossover as the make or break item and a few individuals on the lunatic fringe believe that none of this matters as long as the drivers are strung together with cable that costs as much per metre as crude oil does per barrel currently!

No matter which school of thought you subscribe to however, there is a general trend towards using one or all of these ideas to set up and modify a desired frequency response, with the general idea being to get it as flat as possible, maybe with the odd spot of judicious tweakery here and there according to the design requirements, or the designer's preference. One or two designers take a slightly different approach, however...

Allan Hendry of MonoPulse is such a designer. A hi-fi enthusiast since his early days, Allan worked in the aerospace industry for years designing phased-array radar systems, and it was this work that made him think about loudspeaker design and in particular, the necessity for phase coherence from the drive units. Allan investigated the impulse response of a wide range of loudspeakers in a variety of situations and came to the following conclusions; firstly, that it was vital to time-align the treble and bass drivers in order that an impulse sent to both drivers would arrive simultaneously at a measurement microphone set in front of each unit (and therefore, at the listener's ears); secondly, that the connection of tweeters out of phase to compensate for the phase inversion of a second order crossover network causes more problems than it solves and, finally, that maintaining phase coherence in a loudspeaker becomes more difficult the more drive units you add.

With this in mind, he picked up pen and paper and the result is the MonoPulse range of loudspeakers, with the name being a nod towards the impulse-correct designs he intended to create. At the moment, there are four models on offer (plus matching

"a fabulously integrated, big and relaxed sound..."

centre channel and rear surround items) – two in the S series and two in the 'Audiophile' A series, of which the 42A is the smaller. Both this and its bigger brother, the 82A, use an 8in (200mm) main driver with a 28mm tweeter claimed to extend to 30kHz but the 82A is slightly bigger physically, with higher power handling and deeper bass courtesy of a main driver equipped with a Kevlar cone and a four layer voice coil.

The 42A's driver is an Audax paper-coned design that crosses over to the tweeter at 4kHz. In keeping with the time domain accuracy, the crossover uses a second order filter on the bass driver, but a fourth order design on the tweeter. Most interesting however is the cabinet, which is an MDF case fitted inside a rolled steel 'hoop' and isolated from it using a "high-hysteresis-loss polymer". The tweeter is suspended separately from the top of the hoop, isolated from the main driver and cabinet, and set back by the required amount to maintain the time alignment. A steel damping bar is fitted to the front of the cabinet, and can be located outside as a styling feature, or tucked away inside if you prefer.

The cabinet itself is covered in cloth which is available in ten different colours, including Black, two different Blues, Red, Green and Burgundy. The steel hoop can also be specified in Gunmetal, Black, Sand, Bronze or Burgundy. Build quality is very good and I personally rather like the styling but am less sure about the Dark Chocolate/Metallic Bronze colour combo that editor DP requested for the review (albeit unsurprising if you've seen his shirt collection). The rear of the main cabinet and the tweeter are covered with black foam and two pairs of terminals allow for bi-wiring duties.

Finally, the 42As are supplied with spikes that fit into the feet and are sufficiently long to allow some experimentation with spacing of the loudspeaker from the floor, which will alter the behaviour of the down-firing port. MonoPulse point out that setting them shorter gives more emphasis and less extension, and vice versa, which is useful for taking different flooring materials and thicknesses into account. Vital statistics are 1080x230x250mm (HxWxD) and 22kg per loudspeaker.

SOUND QUALITY

A decently sized main drive unit usually means a decently large soundscape and this is indeed the case with the MonoPulse 42As. Their eight inch bass/mid unit endows

them with a lovely, properly grown up sound that gives the bass and midrange a great sense of depth, ease, warmth and detail. That is not to say that the 42As are all soft, warm and fluffy at the low end as they certainly are not – bass lines were deep, confident, pacy and blessed with fine rhythmicity. However, whereas some designs with smaller drive units can give a similar effect with an underlying sense of 'see how hard I'm working to give you all this!' the 42As never seemed under duress.

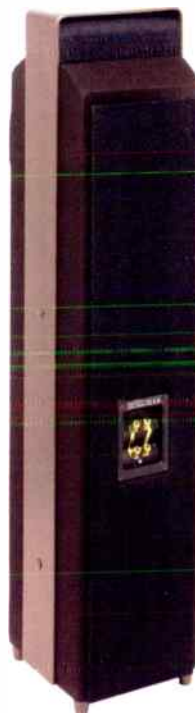
Another most notable feature of the 42As' performance was their transient response. Allan's work on the phase coherence of the design has resulted in a loudspeaker with no hesitancy or wallow. Big-sounding, unstressed loudspeakers can often be rather flabby in timing terms but not so the 42As; drum strikes are swift and snappy, bass guitars are detailed and well defined, and every instrument stands out from its cohorts. Although the image generated by the MonoPulses does not quite envelop the listening area from side to side in the way that some designs can, they still have a fine sense of spaciousness between them, and order everything very neatly in this space. Additionally, they do give fine front to back depth to proceedings.

Mating a larger unit to a single tweeter can often be a hit and miss affair but MonoPulse has done well here. There is no sense of disjointedness between the two drivers and the 42As have a well defined and crisply spry top end. The only problem I found here was that the dip and peak combo above 6kHz means that the likes of cymbals and hi-hats are pleasingly strong and sharp, but tend to lack form and can sound a little spitty as a result. Each strike is a snappy event, but the necessary detail that tells you the size and nature of the item being struck is a little lacking.

CONCLUSION

In a world of loudspeakers populated by the equivalents of high-revving four cylinder engines, the MonoPulse 42As are a relaxed and smooth

V6. They have a fabulously well integrated and big, relaxed sound that is also well defined, yet one that times with positively metronomic precision. These are rare qualities to find together in one loudspeaker and, as a result, the 42As are something of a breath of fresh air into the loudspeaker market. Combine this with their easy load and wide range of interior-friendly finishes and they make a very strong case for themselves. Well worth checking out.



VERDICT ●●●●£
 Quirky yet excellent loudspeakers with an expansive and unstressed sound, plus fine timing and pace.

MONOPULSE 42A £1,495
 MonoPulse
 ☎ +44(0)7785 558238
 www.monopulse.co.uk

- FOR**
- bass weight and detail
 - superb timing
 - 'big' sound
 - build and finishes

- AGAINST**
- treble unevenness

MEASURED PERFORMANCE

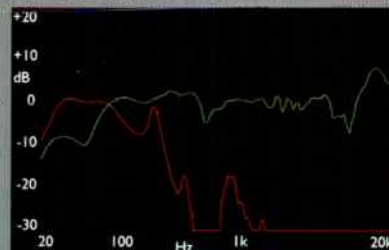
The MonoPulse 42As have a generally even trend to their frequency response, but with a couple of undulations. One is at around 500Hz which is fairly narrow and should go unnoticed, but the other, in the 5-10kHz region may rob some treble detail. The corresponding peak towards 16kHz should help to disguise this, but the 42As' top end may not be quite as even as that of some competitors as a result.

At the low end, the 42As perform well, the main 200mm driver extending down to 75Hz or so, with the port coming in below this, down to its tuning frequency of around 40Hz. This should bode well for a good low end weight and the down-firing nature of the port should absorb its upper output peak at 200Hz.

Electrically, the 42As are a very easy load, only dropping down as far as 7 Ohms in the high frequency region where current draw is minimal. Other than this, they do not dip below 10 Ohms and give a very high average measured impedance of 14 Ohms, meaning that they are a very easy load. An unfortunate downside of this, however, is a sensitivity rating of 85dB, which is low for a floorstander and a long way short of MonoPulse's

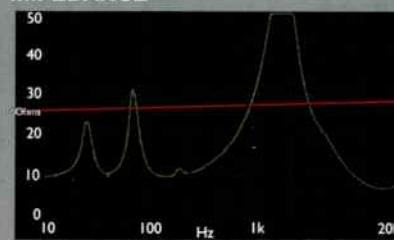
claimed 90dB. As a result, an amplifier with at least 50 Watts will be required for decent listening levels. In addition, the large inductive peak at 2kHz may upset the output stages of some amplifiers - careful partnering would be wise. AS

FREQUENCY RESPONSE



Green - driver output
 Red - port output

IMPEDANCE



Cyber Pace



A Single-Ended amplifier with a USB connection to the outside world? Puzzled, Noel Keywood investigates Consonance's new Cyber-10 integrated...

A USB port on a valve amplifier? Surely not I thought, unable to conceive why any such thing could usefully coexist with something thermionic. The nearest anyone got to managing this in the UK was the Colossus computer with its 2,400 valves - but it didn't have a USB port I'm sure!

Slowly the light dawned as to what fiendish arrangement of old and new could be in mind here. I fired up my portable MacBook and connected its USB port to the Consonance Cyber-10 using their supplied cable. With YouTube running, courtesy of a wireless link to the internet, and the Mac's audio set to 'USB Audio DAC' - an option that appears in System Preferences only when the Cyber-10 is connected - I soon had Sam and Dave crooning through the hi-fi. So the Cyber-10 can act as a self-contained computer sound system.

Obviously, iTunes suggests itself as a great source of music, using AAC compressed files or quality Apple lossless. I must confess though that

I didn't rush to try it. I once had an iTunes account, lost all my music when the computer's hard drive expired and never bothered again. Since hard drives are less reliable than an Austin Allegro running on diesel, I stick to LPs...

Tacking a USB input on to a valve amp means the Cyber-10 is equipped with a DAC, able to convert digital to analogue. It isn't what I've learnt to expect within a small, specialised Single-Ended valve amplifier, but as valves and the internet are popular for enjoying music I suppose there's good commercial logic behind this marriage.

Otherwise, the Cyber-10 is a reasonably conventional valve amplifier of the Single-Ended (SE), pure Class A variety. This means it should have great sound quality, guaranteed free of crossover distortion, but power output of little embarrassment to a gnat. Measurement showed the figure to be 8 Watts in both Ultra Linear and Triode mode, against 12.5W and 8W claimed [see MEASURED

PERFORMANCE].

Eight Watts is a perilously low amount of power for lesser loudspeakers and I wheeled out my tweaked Revolver R45s for listening, as they are always complimentary to valve amps and need little power. Complicating the issue further is the fact that the Cyber-10 suits only 8 Ohm loudspeakers, when most are 4 Ohms these days - and it delivers just 4 Watts into 4 Ohms. So loudspeaker matching is difficult, with little leeway to hit a sweet spot.

Getting some focus on all this, the Cyber-10 is really a super high quality valve amplifier for restrained listening. You don't need deafening volume to enjoy music and a good valve amplifier like this one shows why. Whilst it didn't go loud it did have a compelling dynamic that grabbed my attention and was great to hear. So the Consonance Cyber-10 is focused more on quality than quantity. Eight watts for £795 may seem a little less than obvious as value, but Single Ended amplifiers have a dedicated following and small,



light ones like this, able to integrate into the home are rare. The 12 Watt SE Almarro A318B I reviewed in the September 2007 issue is still one of the finest amplifiers I have ever heard, making its £1,690 price tag relatively low against the quality on offer, but it was pitched as a serious high-end amplifier with output transformers to match, where the Consonance is more a domestic-friendly SE ready for cyberspace.

Manufactured by Opera Audio Ltd. of Beijing, China, the Consonance Cyber-10 is not to be confused with the more powerful Cyber-10 Signature. It uses KT88 or 6550 output valves, one per channel, to drive the loudspeakers, our review sample having both (and I slightly favoured the KT88s but it was biased for the 6550s). The confusing handbook says the Cyber-10 is "factory set" for speakers 6-8 Ohms, but is also "4,8 Ohms. User selectable". I looked inside for a selectable 4 Ohm tap but did not find one, so this is nominally an 8 Ohm amplifier. It can be switched to Ultra Linear or Triode mode. Ultra Linear means low distortion, whilst Triode mode commonly produces more distortion but a sweeter sound, albeit with less gain. I'm afraid that the Cyber-10 muddled this distinction too, giving lower distortion all round in Triode mode, which I chose to use as a result.

Removing the bottom cover revealed some nice components, namely Rubycon caps and metal film resistors. The USB input is unusual, using a Burr Brown PCM2707 as a USB interface and headphone amplifier, but not as a DAC. Instead, the recovered digital signal (32, 44.1 or 48kHz sample rates accepted) is sent to a TDA1543 on a DAC daughter board. So Consonance have put quite an effort into digital capture and conversion. I wish they had tried this hard with the output transformers, which need a decent 4 Ohm secondary to match the 4 Ohm bass unit found inside modern loudspeakers...

The rear carries a pair of sturdy gold plated loudspeaker outlets able to accept 4mm plugs, spades or bare wire. The mains power switch sits here too, not especially convenient but routing mains to the front panel on a small,

tightly packed valve amp like this sets up an induction field that injects hum into the first preamp grid, making rear panel switching preferable, especially as the Cyber-10 has a lot of gain (giving it a usefully low input sensitivity). The Cyber-10 was quiet and hum-free as a result.

The front carries two headphone outlets, old style quarter inch and more recent 3.5mm. There are three switched line inputs, all input sockets being on the left side panel. The Cyber-10 is well made and finished, and is safely wired inside, mains input terminals being screened. The remote control is a solid metal box fitted with plus and minus volume buttons, somewhat different from the usual button fest!

SOUND QUALITY

Small SEs always put a smile on my face, and this one did too. It was as punchy and dynamic as a really good valve amplifier can be, and I was constantly aware of the surreal impact of drum kits considering the low power output, but then power doesn't really equate to dynamic contrast. Maracas cracked out of the little Cyber-10, all but flying into the room at the start of The Eagles' 'Last Good Time in Town'. With an ability to keep vocal and instrumental strands cleanly separate and ringingly clear, the Cyber-10 put life into the track. It also produced a sound lacking the slightly compressed soundstaging and dynamics that solid-state seemingly suffers by way of contrast.

Spinning Angelique Kidjo's bass heavy

'Aye' had bass lines sounding spry and lively, if not with gut wrenching depth. But with a midrange so delightfully able to illuminate each and every instrument in the complex percussion work of tracks like 'Adouma', this wasn't especially consequential. Good amplifiers like the Cyber-10 often do give a conspicuous performance and SEs have their adherents for this reason; there's a rightness about them that's difficult to put a finger on, other than music sounds sweetly clear, natural and unprocessed. I suspect this is partly a product of circuit simplicity; the challenge with an SE is to ensure that potential weaknesses are not allowed to spoil the party.

CONCLUSION

Although its output transformers could usefully be better, the Consonance Cyber-10 still managed to give super sound. I still worry about the general applicability of amps with just 8 Watts, yet I never ran above 4V (2W) according to my 'scope, and I got plenty of volume. So this little USB-equipped beastie sounds wonderful - if not as precise as the Almarro 318B. Although expensive at £795, match it with suitably sensitive floorstanding loudspeakers and it's fine value all the same - for hi-fi and computer use alike.

VERDICT ●●●●●
 Quirky yet characterful amplifier with superb sound at moderate volumes - but power and control are limited.

CONSONANCE
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- FOR**
- spectacular clarity
 - exciting dynamics
 - small size
- AGAINST**
- little power
 - poor speaker matching
 - unemphatic bass

MEASURED PERFORMANCE

Quoted as matching 6-8 Ohm loudspeakers the Cyber-10 produced just 9 Watts from 6550s working into 8 Ohms. Output figures were identical in either Triode or U.L. (Ultra Linear) mode. With a 4 Ohm load output, it fell to just 4 Watts so modern 4 Ohm loudspeakers are not suitable (there is no 4 Ohm output). This suggested the output was load-matched to more than 8 Ohms, and sure enough 10 Ohms gave 9 Watts, so the output transformers are way from optimal.

S.E. working means there is no crossover between valves working in push-pull and none of the distortion that arises from it. The distortion figures were therefore free from this influence and distortion at 1kHz was identical in nature and level to that at 10kHz in both U.L. and Triode mode. However, contrary to expectations, U.L. produced more distortion than Triode mode, making Triode mode preferable. Input sensitivity (gain) fell a little, from 180mV to 220mV, but this is of little consequence.

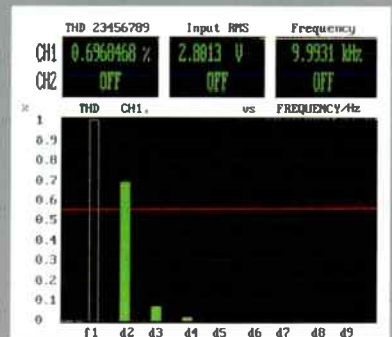
The output transformers handled bass reasonably well, producing 1.4% (second harmonic) at 1 Watt, 40Hz and 5% at full output. Possessing little feedback, damping factor measured a low 1.6, so loudspeakers with good

acoustic damping, like horns, are the best choice. Frequency response covered the audio band, output rolling down gently above 20kHz.

The Cyber-10 measures like many low power S.E.s. It has a stable distortion pattern in which second harmonic dominates. It will need large, sensitive loudspeakers for best results, and with a high impedance. NK

Power	6 Watts
Frequency response	12Hz-18.5kHz
Separation	78dB
Noise	-92dB
Distortion (1W, 1kHz)	0.6%
Sensitivity	184mV
Damping factor	1.6

DISTORTION



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New Arrival

Adam Smith listens to AudiaZ's stylish Eta loudspeakers...



"a vivid, crisp and detailed sound that I can see winning them many fans..."

As I mentioned in my column in the July 2008 issue of *Hi-Fi World*, one of the delights of my first trip to the Munich High End Show earlier this year was stumbling on a number of manufacturers that we simply do not hear of in the UK. Whether the manufacturers in question feel Britain is not a suitable market for their products, or they lack the funding to initiate a suitable distribution network I do not know, but the fact remains that there are many products that we are unlikely to ever see, officially at least, in this country.

However, thanks to the UK distributors and dealers doing the rounds at the show, some of those elusive names are starting to appear. For one of the first, we have to thank John Sampson of JS Audio Consultancy and also JS Audio Repairs, a company specialising in hi-fi repairs, servicing and modifications. The manufacturer in question is AudiaZ, a German loudspeaker manufacturer with a current lineup of three models in their range. The history of AudiaZ dates back to the founding of Hartl & Weber Audio-Design GbR in 2000, by Helmuth Webers and Günter Hartl. Webers is an audio enthusiast with knowledge of electronics and a background in the build and repair of loudspeakers, initially for musicians. In 1995 Webers met Hartl, a fellow enthusiast and a craftsman, well versed in the complexities of cabinet design. Pooling their resources, AudiaZ was the result, with the aim of "designing and crafting exclusive loudspeakers".

All three of AudiaZ's current models are handmade and make use of high quality drive units, such as Accuton's ceramic-coned bass and midrange drivers, allied to Heil AMT, diamond dome or ribbon tweeters. All models are resplendent in stylish and very well crafted handmade cabinets.



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MERIDIAN



The Eta under review here is the base model in the range, something of a surprise considering its starting price of £10,500. For this, your money buys you a three way floorstanding loudspeaker featuring a pair of 150mm

Accuton bass drivers, a 100mm Accuton midrange unit and a single Air Motion Transformer tweeter. These are mounted in a heavily braced and beautifully finished 'multiplex' cabinet, connected by cable that uses surface polished solid core silver conductors in a Teflon dielectric and using nothing but the highest quality components in the crossover.

Further options are available however, firstly a 'Silver Edition' which costs £3,800 extra, upgrades the internal crossover components to solid silver types; secondly the tweeter can be substituted for a 20mm Diamond dome unit (also £3,800 extra) and, finally, the driver cones themselves can be supplied with a black finish instead of silver at no extra cost, although this latter change is purely cosmetic and does not alter the sound.

The Etas are neat and compact, being based on a simple box that measures 1070x210x210mm (HxVxD) and weighs in at 22kg, although they are a little wider given that the front face is actually a diagonal formed by slicing a portion of the box off. Consequently their 'real' width and depth dimensions, if my Pythagoras is right, are actually around 270x270mm. Standard finishes are Walnut and Maple real wood veneers, but other veneers, Piano Lacquer finishes or custom paint requirements can be catered for on request.

SOUND QUALITY

Having already heard more than a few pairs of loudspeakers using the Accuton ceramic drive units and having liked pretty much all of them, I had a feeling I was unlikely to dislike the Etas, and this did indeed turn out to be the case. AudiaZ have come up with a loudspeaker that performs with a real sense of dynamism and authority, that offers a fine blend of

resolution, speed and detail. The Etas' overall balance is quite a forthright one, and the slight lift in output towards higher frequencies [see MEASURED PERFORMANCE] makes itself known by the way in which they add a pleasing crispness to performances.

I have to say that I'm rapidly becoming a big fan of AMT drive units, and the Etas' tweeter adds a superb sense of air and spatiality to proceedings that makes many other loudspeakers at or near the price sound rather half-hearted. Finer details from the back of recordings are pulled out well, but without making the 'front of house' action becoming overblown or harsh. The result is an all-encompassing whole that offers a fine sense of depth to proceedings, stretching nicely back beyond the listening area but focusing the main action beautifully right in front of you.

Nicky Holland's piano on 'Ladykiller' from her eponymous debut CD was vivid and full of detail, and the lady's vocals were a delight, being strongly centre-stage and nicely emotive. Moving on through the disc I did start to detect a hint of upper treble hissiness at times on sibilants, however. That is to say that the Etas never actually sounded overly sibilant as such, but seemed to turn the occasional 's' into a longer drawn-out 'sss'. This was most obvious on poorer quality source material and was exacerbated further by more strident-sounding partnering equipment, so care in matching such items is a wise move...

Lower down, the Etas offer fine upper bass and midband resolution. Instrument character was easy to discern and orchestras were fanned out with pleasing effectiveness. Sometimes lesser loudspeakers make it difficult to easily discern the difference between the likes of a violin, viola or cello, but the Etas captured the innate timbre of each of these items with ease, making orchestral material a vivid experience.

At the low end, things continued well, with fine bass detail and pace. Bass lines were confident and impressively tuneful

but, as might be expected, those twin 150mm drivers did not dig thunderously deep. I also had to carry out a certain amount of experimentation with regard to spike height in order to optimise the down-firing port's performance. Initially, with the spikes screwed fully in, the low end had something of a 'bloom' to it; unscrewing them to lift the 'speakers up helped greatly but did remove an element of extension. Experimentation is the key here.

CONCLUSION

The AudiaZ Etas are a very stylish and well designed pair of loudspeakers that turn in a fine performance across a wide range of music. Some care does need to be taken with partnering equipment in order to fully appreciate their top end, and in terms of positioning to optimise bass performance, but they offer a vivid, crisp and detailed sound that I can see winning them many fans.

I feel that their only real problem is their price and, more specifically, the competition they face at this level, such as the Isophon Cassianos and the B&W 801Ds. The Etas are ultimately no less capable than these models but I feel that they cannot quite match either of them for that instant "Wow - where's my cheque book?" effect. In pure sonic terms then, firmly recommended, but they are up against strong competition.

VERDICT

Well designed and beautifully finished loudspeakers with a dynamic and sophisticated sound.

AUDIAZ ETA £10,500
JS Audio Consultancy
 ☎ +44(0)20 405 9043
 www.audiaz.de

FOR

- superb top end
- fine imaging
- low end detail and pace
- build and styling

AGAINST

- occasional sibilant hiss
- price & competition

MEASURED PERFORMANCE

The AudiaZ Etas are tricky loudspeakers to measure as a result of the different directions in which their drivers face, but all measurements were taken directly facing the midrange and treble units. These drivers integrate well, with just a gentle dip in the 1-3kHz region that will assuage any harshness in the ear's most sensitive region, along with a rise around 5-10kHz which will lift the balance of the loudspeaker towards the top end. There are no sharp peaks or dips though, which bodes well for an even-handed performance.

At the low end, bass actually starts to tail off below 400Hz, before finally dropping off below 80Hz. The port reinforces things down to 40Hz but this gradual tailing off is likely to rob some impact from the low end, although judicious positioning will undoubtedly help here. There is also some potential for fine tuning by varying the height of the loudspeakers on their feet, as the port is down-firing. Electrically, the Etas have a 'roller-coaster' type impedance curve. This does not vary wildly however, leading to a fairly amplifier-friendly load and an average measured impedance of 6.4

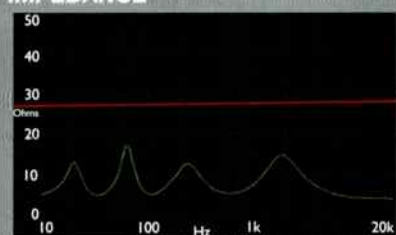
Ohms, dipping to a minimum of around 4 Ohms. This means they do present a genuine 4 Ohm load to an amplifier but, with a measured sensitivity of 87dB, should not need much more than 40 Watts to work well. AS

FREQUENCY RESPONSE



Green - driver output
 Red - port output

IMPEDANCE





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Hi-Fi World gives you the chance to win a Musical Fidelity A1 Fully Balanced Preamp worth £1,499 in this month's competition! Here's what David

Price said about it in the September issue:

"The A1 FBP is 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 works fully balanced throughout, as opposed to some so-called 'balanced' designs that are actually single-ended preamps with a balanced ins and outs...

It is a nice bit of kit to look at, and is certainly well made. This reviewer liked the very sturdy and cleanly labelled back panel, making switching interconnects easy. It also has tiny switches for small presets like toggling between home theatre bypass mode and the standard auxiliary input, and between moving coil and moving magnet.

This is a very open sounding device – even by the standards of my reference £2,500 preamp. I was quite surprised by its transparency and general lack of character. Indeed, if you can ascribe any particular 'nature' to it, it is 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...

Strings were vividly etched, the

Musical Fidelity showing fine instrumental timbre. 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. The A1 FBP demonstrated a vice-like grip on the low frequencies without stifling the emotion out of them. This prowess with timing was evident right up the audio band. On price grounds alone, I hadn't expected the Musical Fidelity A1 FBP to do quite as well as it did...

I have to say that I was genuinely surprised by how capable it was – especially in balanced mode. It has a strong and grippy sound, but with plenty of passion and poise – plus a fine tonality and excellent dynamics. A hearty recommendation as an excellent do-it-all affordable high end preamp."

For a chance to win this superb preamp, just answer the following four easy questions. Send your entries on a postcard only by 30th September 2008 to: **October 2008 Competition, Hi-Fi World magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.**

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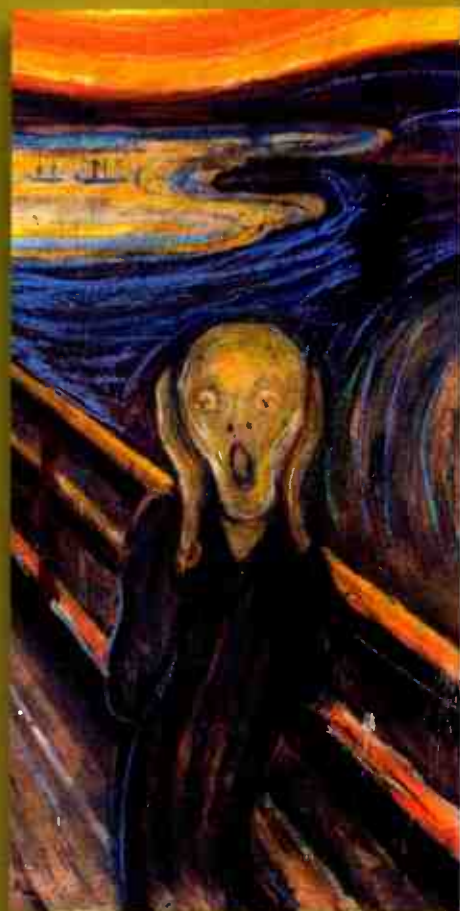
QUESTIONS

- [1] What does 'FBP' stand for?
 [a] fairly big preamp
 [b] fiendishly burlesque preamp
 [c] funky brother preamp
 [d] fully balanced preamp
- [2] How many fully balanced inputs does it have?
 [a] 5
 [b] 4
 [c] 3
 [d] 2
- [3] How expensive was DP's reference preamp?
 [a] £5,200
 [b] £250
 [c] £52
 [d] £2,500
- [4] DP described its nature in terms of what...?
 [a] "timbral acuity"
 [b] "tonal dexterity"
 [c] "temporal exactitude"
 [d] "rhythmic get up and go"

October Competition
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 Unit G4 Argo House
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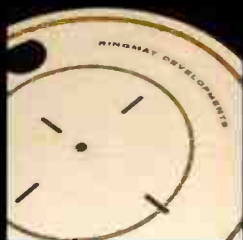
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DIGITISING VINYL

Thanks David, for your recent article on iTunes for beginners. Much appreciated, as I have finally succumbed to the charms of an iPod classic 160GB. However, you didn't cover what I would have thought must be an issue for a lot of your more mature readership: recording their LP collection.

My intention was to transfer a proportion of my LPs to it losslessly, to keep my second system box-count down in the more presentable bits of the house (WAF), although if I'd known beforehand the mess I was going to get into, I don't think that I'd have bothered! What was intended as a minor purchase is increasingly looking like a major one, as in addition to the iPod itself, I have had to buy a dock, and now it seems a new computer, as my existing laptop is too old with too small a memory. My children informed me (!) that if I start on one computer I have to stick with it, as a new one will wipe everything already loaded onto the iPod. This alone would have given me pause for thought!

Therefore, I'd like to know what I'll need to achieve this in addition to my iPod, the dock, a Mac(?) and hi-fi system, especially as I want to achieve a result that mirrors the quality of my main system front end (Technics SP10MK2, SME 312S, Van den Hul Colibri XCM). Is the Mac soundcard up to the job, or do I need something better, and how much do I need to spend to beat its quality and on what?

I've done some research and there seems to be only "pro" gear out there, that may or may not be appropriate as they're mostly for microphones. Hi-fi gear seems limited to Lyngdorf preamps with ADCs and room-correction (to try to fix two problems at the same time, but that's another letter altogether!). They're expensive as a consequence, and I have to admit that I haven't understood the (subtle?) differences between them despite some effort.

Apple iTunes music archiving software is available free for PC as well as Mac.

Perhaps there's a stand-alone ADC that's cheaper/better? Any suggestions?

Ross

Hi Ross. Well, this is one of those how long is a piece of string-type questions, isn't it? There are so many ways of digitising your music, and it all depends on your budget and your commitment to the project. One possible way might be this: buy yourself an old PowerMac G5 with a big hard drive in. They're expensive, but not as pricey as you'd think considering most Mac anoraks have already upgraded to the new MacPro. Fit an M-Audio Audiophile 192 PCI soundcard, which offers up to 24-bit/192kHz operation, with two balanced analogue inputs, along with S/PDIF digital. This will let you get your vinyl on to hard disk, along with Audacity software (free to download from <http://audacity.sourceforge.net/>). You can then burn them to CD or convert them to Apple Lossless for your iPod. This will give you what is by any standards a very good sound, but the weak link is the Analogue to Digital convertors, so ideally you

should invest in a Benchmark ADC1 which is a superb A-D (look out for a review by Patrick Cleasby very soon). Unfortunately, you're looking at the thick end of £1,000 here, though...

A sneaky trick would be to buy a good, ageing DAT machine such as a Sony DTC-77ES and use its internal ADCs to output digital via its S/PDIF into your soundcard or direct into the PowerMac. Simply put it into Record mode with no tape in and it will work as an A-D; considering you can pick one up for £150 or so it's a fine working compromise and sounds very good indeed at 16/48 resolution, which you should use in preference to the CD stock 16/44.1kHz setting. DP

There are a few limiting factors you should consider here. One hour of music converted to 24/96 PCM will occupy 2GBs of disc space. Lossless compression commonly halves the value, so expect 1GB. An LP usually runs for 40mins, so now we are looking at 650MBs or so storage space per LP. You will get 230 LPs onto your 160GB iPod Classic, or

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460 if you encode at 24/48. However, your new computer will have to process and archive all this material, so you will need a sizeable drive and it's usually best to run either a second internal drive or an external Firewire drive, as you don't want this material jamming up a PC's main C: drive.

Apple iTunes runs on PC as well as Mac and a 24/96 soundcard like the Creative Sound Blaster Audigy SE, costs £40 or so and will do initially, although better is available. David's suggestion of a second hand G5 is fine. However, if you swop from PC to Mac you will need to buy all new software, unless the excellent OpenOffice suite (www.openoffice.org), free for PC and Mac, will do.

Migrating iTunes from one computer to another is a well covered topic on the internet. Google Macworld and "How to shift iTunes libraries", or go to the Apple website. Doing this shouldn't wipe the tunes from your Classic; I suspect your children are trying to frighten you! Remember to back up though. I have just lost the entire contents of a IGB Olympus XD camera card full of Kuala Lumpur Show shots to a dodgy card reader, reminding me how fragile solid-state storage can be. Luckily, I had downloaded them to a Macbook whilst on the road as I strictly don't trust computers. Vinyl LPs are a much more reliable storage medium! **NK**

LOST IN SPACE

Something like fifteen years ago, a friend and I visited the Buxton Hi-Fi Show and listened to a demonstration being given by Arion Acoustics of their valve amplifiers. They were nice looking bits of kit, and I said to my friend at the time that they were probably the only amps at the show that I could live with (i.e. that I would want in my home to listen to on a day to day basis). As a student at the time, my pockets were very shallow and couldn't stretch to the £1,000+ price. Since then, though, the brand appears to have evaporated. Do you have any idea what happened to them?

Steve Reece

Hi Steve. In a word no, but I suspect that someone, somewhere reading this will have! Here's hoping he writes in and your mystery will be solved. In the meantime, Icon Audio and Prima Luna have some very amenable budget valve amplifiers out now I suggest you see if you can live with them too. **DP**

LEAD ASTRAY?

I recently bought a Musical Fidelity X-CANS v3 headphone amplifier and



Icon Audio Stereo 300B valve amplifier costs an affordable £1699.

Sennheiser HD-650 headphones. However, in your May 2008 review of the Sennheiser PXC450s, you state that the HD650s give "superlative performance when suitably upgraded with premium connecting cables". As a result of this, I asked my local specialist dealer, who stated that they did not do such upgrades but believed that there were American companies who did and were expensive - but he had no further information. Have you any details of the possible cable upgrade and the companies that are providing the service, please? Also, how about a comparative test of LP cleaning machines?

Graham Adams

There are two Sennheiser cables I've tried. Stefan AudioArts Equinox was reviewed in the June 2004 issue, and Russ Andrews HCl in August 2005. Both are similarly priced at around £250 which is a lot of money considering the price of the HD650s but both yielded serious improvements. I found the Stefan AudioArt to be better on balance, with a more lucid midband and spacious treble, but either is good enough to show you just how bad the stock Sennheiser cable is (thin, hard and shouty sounding).

As for the LP cleaning machines, well we actually do have a plan in

motion, but like many of our grand schemes, it does take some time to realise. Watch this space! **DP**

AS IF BY MAGIC

Oh dear, my Ringmat CDI Blue has decided to stay inside my Alchemist Forsetti transport! The CDs are playing okay and everything seems to be alright; what should I do? As it happens, I was tentatively considering purchasing a new transport. You clearly have three or four favourite players in the £1,200-£1,500 price bracket but I am looking for a transport only for around this price, or may stretch a little further if necessary. I am using a Musical Fidelity A3 upsampling DAC. What would you suggest?

Colin

The first thing to do is to whip off the Alchemists bodywork (or just its top plate), which should give you easy access to the mechanisms innards. At this point, make sure the power is switched off of course, so you can go in and fish the errant Ringmat out. This done, your Alchemist can be offered for sale, to part finance a Cyrus CD-XT SE transport (£800) and matching PSX-R (£500) power supply. I got tremendously impressive results from the new Cyrus CD8 SE CD player last month, which uses



Cyrus CD8 SE gave "tremendously impressive results" says Editor David Price. The CD-XT is the transport-only version.



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the new Servo Evolution mechanism found in the XT SE. Aspiring this new Cyrus transport with the PSX-R will give it a super-clean power feed, bringing breathtaking results I expect. Next month I'll be assembling a system around precisely this front end, so keep your eyes peeled. **DP**

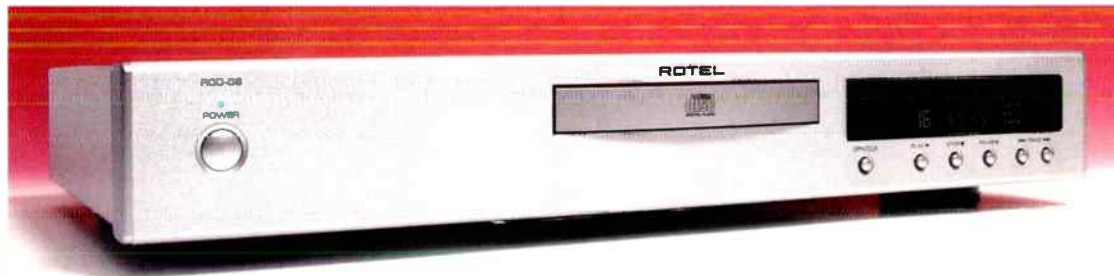
ENIGMA CODE

I always look forward to my copy of the magazine arriving in the post, and enjoy every bit of it. Especially the reviews such as your CD player group test in the July 2008 issue. I recently purchased the Cambridge Azur 640C v2 as a replacement for my 1999 Arcam Alpha 7SE; it isn't broken, just relegated to the spare system in the computer room. This consists of a 1977 Armstrong 626 receiver, a pair of 'Dalesford D' bookshelf speakers, purchased from a hi-fi magazine in kit form (probably Hi-Fi News, back in the early eighties). The

It always amuses me when people tell me, but Hi-Fi Whatsit? said this amp's no good, or that player is their Award winner. Very interesting I'm sure, but to our ears, with our systems, tastes and review methodology, we think otherwise. I am not casting aspersions on other magazines or reviewers, but I can confidently say that with ours at least, all review kit gets a good long auditioning period, usually in two different systems (and rooms/locations) with several pairs of ears involved, plus our own very informative measurements as a precursor to the review. I would also draw attention to the fact that, on several occasions since I've been editing this magazine, we've had review kit direct from other magazines that upon measurement proved partially faulty (i.e. not to spec)! So there is at least the possibility that others have reviewed

state of our review sample, although I mentioned it, to dock marks for a dent here and there, most likely inflicted by a courier, seems a little perverse. Fair enough, if all units leave the factory like this then there would be genuine cause for complaint, but Rotel assure me this is not the case!

*Clearly if all magazines are unanimous that something is brilliant then there's a reasonable chance that they are all right, but a glowing review from one magazine and a rather muted one from another can well be down to the differing tastes of the reviewers and the music/system/listening room that each one uses. Excellent though the Cambridge is (and it really is) I felt the Rotel bettered it in a couple of significant areas, hence why I picked it as the winner. Why not go out and have a listen to one? You might just find yourself agreeing with me. **AS***



"How did the Rotel RCD-06 get to win?" asks Gerald Smith.

Arcam replaces a Marantz CD5400, which has been passed on to my brother.

So much for the preamble, the main reason for writing is that the CD Group Test surprised me in that the Azur 640C v2 is £100 cheaper than its rivals, and the fact that it performed so well against the others is a tribute to Cambridge Audio. I am very happy with mine, which is running with my Quad 306/34 preamp and FM4 tuner, plus Cambridge DAB300 and Tannoy Revolution R3 floorstanders. But how did the Rotel RCD-06 get to win? I had previously bypassed this machine having read the 'What Hi-Fi Sound and Vision' review in January 2008 when they said, once it was a good player, but newer rivals have turned it into an also ran? I am even more surprised because you have made it the winner despite it not being in very good shape (a battered review sample)!

Well, you pay your money according to your own ears, in the end though, it is not always possible to review a product personally, which is why magazine reviews are helpful. This is not a complaint by the way, but it does serve to illustrate the old saying 'one man's meat is another's poison'.

Gerald B. Smith

substandard samples... Measurement prior to review guards against this and provokes us to contact manufacturers for a proper working, representative sample.

*Still, even if all magazines had identical review protocol, there would still be that most unpredictable of variables involved - human beings! As you say at the end of your letter, its different strokes for different folks! **DP***

"How did the Rotel RCD-06 get to win?" - simple, it was the best sounding player when I listened to them all! Clearly I cannot comment on the test results of another magazine as I do not know who did the listening, or what system they used for auditioning, but I can't help raising a wry smile that you're happy with our thoughts on the Cambridge, because you have one, but not the Rotel, because it countermands someone else's comments. If you were asking me how the Rotel came to win as a result of you hearing it and thinking it was rubbish, then fair enough, but to ask this question just because someone else didn't think that much of it is, frankly, a little short-sighted. As regards the

FINDING VINYL

Having only become interested in hi-fi in the past couple of years I was quite surprised by the amount of space your magazine devotes to turntables and vinyl LPs. After all, wasn't this technology made obsolete by CDs more than twenty years ago? However, by the sheer volume of people with far more knowledge and experience in these matters than I do, advocating that vinyl potentially offers a far better sound than CD, it's started me wondering whether I should consider purchasing a turntable. There are number of factors that put me off this idea, namely inconvenience (the time taken to clean and maintain stylus and LPs, and the time needed to set up and tune turntables to get the best from them) and cost. By this I mean having to replace cartridges on a regular basis, building a collection of LPs (I haven't purchased a vinyl LP in over two decades and have maybe twenty five in questionable condition), plus the fragility of both turntables and vinyl LPs, especially with my rampaging six year old son around.

So the improvements in sound from any turntable I purchase would have to more than make up for the downside. My current system includes an Arcam CD73T, Denon AVR 2807 with

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The Marantz TT15S1 offers real value for vinyl playing, says David Price.

Orpheus Aurora 3 Signature edition (v2) speakers. As you may well not know them, the Orpheus Aurora 3 are a 2.5 way floorstanding speaker with two 6 inch woven Kevlar bass/midrange drivers and a 1 inch silk dome tweeter. A nominal 4 ohm speaker with a claimed frequency response of 37Hz to 20kHz +/- 2dB and sensitivity of 92dB. As to how they sound, I don't think I can put it any better than Greg Borrowman from Australian Hi-Fi magazine who concluded they were "excellent loudspeakers, with a gorgeously rich, beautifully detailed and a highly musical sound". The signature edition simply offers an upgraded crossover to the standard edition.

Would you please recommend any turntables (must be complete with arm and cartridge) for around the price of the Arcam CD73T that I should audition. My preference is for something fairly simple to set up and maintain but with some leeway to upgrade if I get the urge. My musical tastes include rock, pop, blues and jazz.

Jeff Tacey

Hi Jeff. There's one turntable that's just right for you and yours - Marantz's TT15S1. At around £1,000 it comes with a tonearm and high quality cartridge preinstalled, and the whole package is beautifully finished, takes a matter of minutes to set up and works brilliantly from the off. You'll find it has a very musical and spacious sound with a delectable quality that's easily good enough to work with speakers even better than your prized Orpheus Aurora 3 Signature editions (v2)! Of course, there are better turntables at the price than the Marantz, but none comprehensively outclass it and none approach its user friendliness. Indeed, to be frank the TT15S1 might even stretch that Denon AV receiver of yours. So when funds permit, I'd go for a Leema Pulse integrated amp just to top things off - this will bring you a vastly more organic, natural sound than your good but rather

sterile sounding Denon.

Finally, if at all possible, make sure you mount the deck high up on a wall shelf both for sonic reasons and to keep junior at bay! **DP**

My choice for anyone wanting to dip a toe in the water of LP playing is a Rega turntable fitted with a good modern moving magnet cartridge, my choice here being the Goldring 1022GX. Make sure you get an RB250 or 300 arm. I say this because it offers great dynamics and a wide, well defined sound stage, even at low frequencies where more traditional tubular designs tend to lose definition and contract stage width. The Goldring cartridge is fundamentally accurate and also has real impact: it's

NEEDLE TALK

I am an avid reader of your fine publication and one of my favourite pastimes is reading your magazine while listening to my music and drinking an Australian red. I especially enjoy the World Classics and Vinyl sections and this prompted me into slowly building a system of my own from old components found on the Internet. I have now reached a point where I feel I am close to completion (if that is ever possible in this magnificent obsession of ours) except for one last important thing - a new cartridge for my turntable.

The turntable I run is in great condition and is a Luxman PD284 Direct Drive that uses the standard tonearm. I currently run this through my Luxman LV104U Hybrid Amplifier and am told that its phono stage (MM and MC) was reasonable for the period. The cartridge I currently have is a Shure (model unknown) and it sounds okay but I imagine it's well past its use by date. My question is simply this: I would like to try a quality moving coil (Rondo series for instance) or a high quality moving magnet such as the Ortofon 2M Black but are my turntable and amplifier phono stage up to the task? If not, would you suggest some other cartridges that you feel may be more suitable, please?

Garry Meier



Luxman PD284 - an Ortofon Rondo MC might be stretching it a little far.

a fun listen. These two do LP justice, at low cost.

Then you've got to sort yourself some LPs and here both the fun and expense can start. There are a lot of new re-issues around, often re-cuts from original master tapes on 200gm vinyl - and they sound fantastic. Then there's the new stuff from Amy Winehouse, Goldfrapp et al, and finally many people buy second hand. Whatever, with a modern turntable and cartridge you are in for a treat. **NK**

The Luxman LV104U was one of the classic Luxman items with a couple of cheeky valves peeking from behind its front panel, lulling you into the sense that it had some serious thermionic trickery going on inside it. Actually, it was just a simple buffer between preamp and power amp but the unit was pretty decent for all that and the phono stages were also more than capable, so you have a good building block to start with. Equally the PD284 is a fine deck, although not

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Consequently, whilst a cartridge upgrade from 'unidentified Shure' territory would be a fine idea, I think the Ortofon Rondo series of MCs might be taking things a bit too far. In MM terms I would head for the Goldring 1042 at £170 or Ortofon 2M Bronze at £225 as a realistic maximum. If you really fancy an MC, then the Ortofon Salsa for £220 would be my choice. **AS**

Agreed. Maybe a Rondo Red would work in your Lux deck, down hill with the wind behind it, but I wouldn't go any further. Any more and you're going to have to invest in a Trichord Dino (£299) and bypass your phono stage. **DP**

THINK PING

I understand you reviewed the Consonance Forbidden City Ping all-in-one unit, which has recently been very well reviewed in the Gramophone Magazine. I have heard one driving Acoustic Zen Adagio speakers (£3500), and to my and the dealer's astonishment, it did not disgrace itself. However I wondered what speakers you used, and what you would recommend trying it with?

Tony Yates

I reviewed the Consonance Forbidden City Ping with our reference Spendor S8e loudspeakers and it sounded superb and drove them very well indeed. The amplifier section is derived from the standalone Forbidden City Tristan amplifier, is decently powerful and has a high damping factor, so it should have no problem driving virtually any loudspeaker you care to throw at it. All in all, I was very impressed by the unit and would recommend it highly, and our loudspeaker favourites from the Usher S-520 at £320, through the £1,055 RRR FS100s up to our £2,000 Spendors all worked beautifully on the end of it. However, it is difficult to recommend a specific pair of loudspeakers for you without knowing your budget. **AS**

REPLACING VALVES

Thank you for an excellent magazine hugely informative and entertaining, and one which I look forward to reading each month. However, something which I do not believe has been featured to any great length is that of valve breakdown, identification and resolution. I am running, to my immense pleasure, an EAR864 valve preamp into an EAR 890 power amplifier and I find that this combination has added immensely to my listening pleasure and is, frankly, all I ever dreamed of. The quality of



Consonance Forbidden City Ping - able to drive a wide variety of loudspeakers.

the sound I am listening to has leaped forward since the acquisition of these amplifiers.

However, in the past week or so, there has been a series of clicking noises coming from the left loudspeaker. I have switched the cables connecting the preamp and the amplifier and the problem moved as well, to the right hand speaker. This seems to prove that the problem arises in the preamp, particularly as it is present on both vinyl and CD, but the sound quality seems unaffected. The next step I am not sure of. How do I identify which valve is at fault, as I do not wish to ship a heavy and delicate item back to the manufacturers for what may prove to be a simple and easy valve change?

Do I need to replace valves in matched pairs, and where is the best place to buy good ones? Your advice would be greatly appreciated as it is surely likely to be affecting a growing number of readers due to the valve "baby boom" that is very much in vogue at present.

Alan Robson

Hi Allan. There's not too much to worry about here. The 864 uses four ECC83s and one ECC82, none of which are too expensive - around £8 apiece - unless you fancy NOS (New Old Stock) Mullard or Black Sable treated. As valves from different manufacturers can sound quite

different from each other it is best to buy in matched pairs or, in your case in complete sets.

The ECC82 is a low noise design prone to microphony in standard form, but modern versions have added stabilising elements to suppress this. As this is a small signal amplifier I suggest you splash out on a decent cryogenically treated type, which will cost £20-£30. For the ECC83s two matched pairs of Mullard new production would be a sensible choice. The bill will total £75 or so.

If you want to spend less, get one matched pair of ECC83s and hope the ECC82 is OK. If it isn't the popping noise will continue after substitution and you will then have to get a new ECC82. You could of course find which valve is noisy simply by moving ECC83s from one channel to another, one at a time. When the noisy one is moved, the noise will swap channels. If the noise does not move then it is the ECC82. Have fun! **NK**

ROLL WITH IT

Regarding the article in the June issue of Hi-Fi World, experimenting with bi-wiring makes me mindful of countless other things to do I have read of in various magazines over the years. I recall reading in one of Gilbert Briggs' books on loudspeakers, at about the time

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DEEP CRYOGENIC TREATMENT

The process involves taking the vacuum tubes and freezing them down to -312 F and soaking these for a minimum of 12 hours. Then the temp is held at this low level for 24 hours. The vacuum tubes are then slowly brought up to normal levels over the next 12 hours.

Metals respond very well to deep cryogenic process. The reasons are as follows: During the cooling or solidification phase of the manufacturing process, molecules are trapped in a haphazard pattern. This is down to stress caused in the bending and welding of the anode plate material. This random placement causes obstacles for electrons and when encountered this interference can cause noise, slow down electron flow and sound distortion affecting the quality of the sound of the vacuum tube. At very cold temperatures (below -312 F), the molecules will align in a more uniform, compact structure through the removal of kinetic energy. When the material is returned to ambient temperature, this new uniform, compact pattern is maintained. Thus changing the structure of the nickel permanently. This process makes a permanent change and the benefits do not deteriorate over time or upon return to operating temperature. It changes the whole way the vacuum tube performs.

The biggest benefits I have found has been a dramatic improvement in dynamic range. Bass response has been clearer with reduction in microphonics. The really most startling fact as been how the valve operates under saturated and overdriven conditions. This has made some of the more hectic Fender amps sound fuller and warmer.

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Cryogenic treatment of valves involves freezing them to below -200 degrees Celsius, then bringing temperature back up slowly. This changes the molecular properties of the electrodes, improving sound quality dramatically.

when stereo was new, that bass has no stereo imaging qualities. He wrote of having a pair of affordable 3 cubic foot loudspeakers spaced apart as normal, but adding a central large bass speaker in a solidly built cabinet, with left and right cable pairs feeding a transformer that summed the channels to feed the bass speaker.

using one, centrally placed, perhaps even to stand the TV on!

So I have a long-standing aim to put my 15in unit to use, but do you have any idea of the transformer specifications? I am willing to undertake forming one and do the winding too, but can you or someone offer some information with regards to possible

with a passive crossover to roll the top end of the Wharfedale unit off at a suitable point to match your main loudspeakers. If you don't mind making such a crossover you could actually use virtually any normal amplifier that has a mono button, although these will only accept line level inputs from a spare preamp output, and not a speaker-level input. Personally, I'd go with the dedicated sub amp - it's a lot easier and will give plenty of power to give you solid and well controlled bass. Remember to adhere to Briggs' enclosure design specification for good extension, though. **AS**



Fig. 10/7. One bass speaker and various treble units.
 A Goodman's Bowl.
 B Multi-speaker array for wall mounting.
 C 5" unit with diffuser.

From Gilbert Briggs 'Stereo Handbook' (Wharfedale 1959), a single centre loudspeaker with a selection of satellites.

I presently have a Wharfedale 15in bass driver with roll surround, lying unused for 26 years after I removed it from the 9 cubic foot corner enclosure

specs for such a device that would no doubt have to cope with a good few watts of audio power, please?

Thanks to you chaps, now at least newcomers to the vinyl world and hi-fi in general have a good place to start. I have looked around for quite some time for a magazine with useful 'real world' information in it and yours is outstanding in its field.

R.W. Scarbro

From the article you are referring to, it is interesting to note that Gilbert Briggs was basically postulating the '2.1' system - something that is a very well known configuration today, which just shows how ahead of his time he was! Things have moved on a little since then however, and modern technology can bring you something a little more effective than a transformer to generate your '.1' channel.

The most obvious route to take is to purchase a dedicated subwoofer amplifier from the likes of BK Electronics (www.bkelec.com), who will sell you an amplifier module from 50 to 500 Watts and complete with the necessary frequency filtering controls - without these you would need to come up

The original Briggs article is to be found in a Stereo Handbook of 1959, a time when speakers generally lived in corners, and if very lucky, had sand filled baffles! There clearly were domestic thoughts going on here in the mind of Briggs; "we are not going to get away with two that size".

The recommendations in the article (co written with KEF founder Raymond Cooke) were for three different, and frankly rather odd arrangements, all crossing over at around 400Hz. The actual experiment used a Wharfedale "W2" loudspeaker system as a common bass unit for both channels, with a selection of random unidirectional "tweeter" boxes, including a Goodmans "bowl" speaker! The article also included details of how to construct an isolating transformer - 1in. Silicon core iron, with two windings of 200 turns of 18 s.w.g. copper side by side. With modern amplifiers and power, that would simply not be big enough, as we are talking power handling of a few watts only.

In theory our "heads" cannot localise sounds below about 330Hz, as, at this frequency, the length of the sound wave would mean it hitting both our ears at the same time, and it is roughly the same size as our heads (unless like me, you have a big head!). Sadly, speakers produce distortion, both harmonic and simple, extraneous noises plus we have timing issues due to our rooms, none of which fool anyone. Crossing over this high means you will be able to spot the bass is coming from a different direction...

90Hz would be a great place to crossover, but that means having a wee small set of satellite speakers and a common bass unit and, with a good clean bass unit, it can really work (my very own ÜBER Project uses a similar concept to supplement a pair of Tractrix horns - but two for stereo).

To make the system work, I

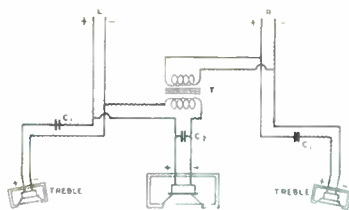


Fig.10/6 Two treble speakers with common bass unit and isolating transformer T. The two capacitors (C1) are 10 Mfd with 15 ohm speakers, or 60 Mfd for 7.8 ohm circuits. The shunt capacitor C2 has the same value but may be omitted if the centre speaker is a full range model.

How it was done in the past: low frequencies were tapped off with a transformer. Nowadays, just use a sub-woofer or a BK crossover.

that I built over forty years ago. This monster had a sand filled baffle with two back panels that were also sand filled the spacing for the sand was two inches, so there was a lot of sand! Gilbert Briggs' findings were that there was no noticeable stereo effect at low frequencies using a pair of these enclosures and he then wrote about just

would suggest going active with the Wharfedale unit. There is a small circuit that can be generated to split and filter the signal, but the ready-made sub amp Adam suggests is much easier; it would still work out cheaper (and better) than the transformer route suggested by Briggs. **HB**

'Goin' Home' and Billie Holiday's 'Lady in Satin' for £5. All sound great after a good clean with the Disco Antistat and replacing the inner sleeves with new high quality items. I also purchased eight new records at the Bristol Show but, of these, two had to be returned because they were badly warped. Of these purchases, however, I can highly

Quite right. A good school friend of mine often found himself on the receiving end of my sarcasm for having a Linn LPI2/Ittok/Karma back in the nineteen eighties, precisely because he only owned about ten LPs at the time. Now then, we don't want to be silly, do we? With this in mind, I'd counsel that TecnoArm for your TecnoDec. If you have enough cash for a SME IV, then buy a GyroDec - simple as that. Still, if you're going to upgrade your turntable fairly soon after, it wouldn't be a cardinal sin to go for a Lyra Dorian MC first. I know that Noel isn't a fan, but I've found it suits the fairly warm sounding Gyro platform very well indeed, giving a very spry, dynamic and detailed sound. Oh, and for the record, any dealer who pooh-poohs a Technics SL1200 either hasn't heard one properly set-up or rather wishes it wasn't as good as the £1,000+ designs he's trying to shift off his shelves! **DP**

WIRELESS WORLDS

That was a very interesting article by Steve Green on internet radio in this month's edition. The three sound cards he mentions are all for PCs, I think, which makes sense but I can't integrate my PC with my hi-fi - different rooms. Can he recommend anything for a laptop, please?

Also did you review a wireless interconnecting device a while ago as your gadget of the year?

My reaction on hearing that the BBC was not going to invest in DAB+ was to go out and buy a secondhand Creek T50 as back up for my Leak Troughline. It might also allow me to get my Quad AM tuner serviced too!

William Comery

Hi William. It is still possible to listen to Internet radio on your hi-fi system even though it's in a different room



Lost cause? Digital Radio runs at roughly one tenth of the resolution of FM...

Michell Technodec with Rega RB250 was the final choice of John Belcher. Is a GyroDec next?

TECNO TALE

Following your advice in the February edition of Hi-Fi World magazine, I listened to a Rega P3 24 with Ortofon 2M Blue and found it to be a pleasant listen, but without being really captivating. One of your recommendations was the Technics SL1200 and I thought long and hard about this. After mentioning my thoughts to a local dealer, I was put off by the disparaging remarks from one of the assistants who had one and was adamant that it could in no way be used as a hi-fi unit.

At the Bristol Show, like Patrick Cleasby, I visited the Henley Designs room but was put off by the sheer quantity of decks on display, with no ongoing demonstrations, which I found most discouraging. Next door however, were Michell Engineering and I had a long chat with them a completely different attitude and lovely vinyl playing in the background. I was impressed by the sound coming from the GyroDec, but noticed that the simple TecnoDec was built on the same principles and employed the same motor. I ended up buying one, complete with Rega RB250 and at discount with a free UniCover thrown in for good measure. I have been using it since then sited on an Asda granite block and running an Ortofon 2M blue, as I wanted a more up to date sound than the Goldring 1042.

I now have some forty records, including some bargains like Dire Straits' 'Love Over Gold' and Oscar Peterson's 'Mellow Mood' for £2; and Art Pepper's

recommend 'The very Best of Diana Krall'.

However, I am already wondering about upgrades! The TecnoArm A is the obvious one, although I'd love an SME: would the Series IV be over the top? As for the cartridge, the Ortofon 2M Black seems the way to go but I do have the notion to try a Moving Coil, even though this would probably necessitate an MC preamp. To remind you, the rest of my system is an Eastern Electric MiniMax CD, Musical Fidelity TriVista 21 DAC, Sony E77ES tuner, Musical Fidelity A3.2 amplifier and Dynaudio 1.3 Mk2 loudspeakers.

John Belcher

Some things are just meant to go together. John - fish and chips. Mark and Lard and, of course, toast and Marmite. To that list I would personally add Michell and SME, as I have always found their products to complement each other perfectly. A Gyro with Series IV is a stunning setup and an Orbe with Series V is still right up the top of my turntable wish list! That said, though, I would say that a IV is slight overkill for a TecnoDec and would personally go for the TecnoArm/Ortofon 2M Black Combo. I find that the TecnoArm needs careful cartridge matching to give of its best and that it really does work superbly with the 2M Black. This will give you a great setup, especially for around forty LPs!

AS



DS Players the future of music



When Linn told us they were releasing the DS line of products we were skeptical to say the least. We were wrong.

We took delivery of our Linn Majik DS demonstration model on the 16th of June 2008. We took our time, listened carefully before jumping to any conclusions.

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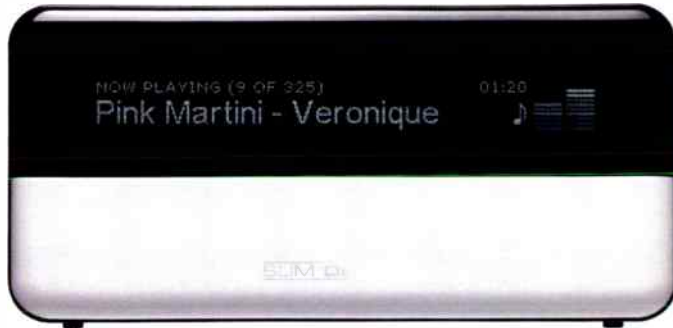
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to your computer. The easiest way to connect your hi-fi to your broadband connection would be to use Wi-Fi, and for that you would need to buy a wireless router and a Wi-Fi media adaptor. Wireless routers combine an ADSL or cable broadband modem, a Wi-Fi transmitter/receiver, plus a few Ethernet sockets. So you would plug your broadband telephone wire into the router to provide the wired connection to the Internet, you



Slim Devices Squeezebox, a great way to get internet radio.

would typically connect your main desktop computer to the router via an Ethernet cable, and other devices, such as laptops and Wi-Fi media adaptors or Wi-Fi Internet radios, would connect to the router via Wi-Fi. All of the devices that are connected to the router via Ethernet or Wi-Fi would then be able to connect to the Internet or to other devices on the network. The Wi-Fi media adaptor would plug into your hi-fi system via phono leads or S/PDIF digital audio output, and they can connect to Internet radio stations directly, so you don't need to have your computer on when listening to Internet radio on your hi-fi system.

Also, because wireless routers allow devices on the network to communicate with one another, Wi-Fi media adaptors also allow you to play music on your hi-fi system that's stored on a computer. Wi-Fi Internet radios work in the same way.

Two highly rated Wi-Fi media adaptors are the Slim Devices Squeezebox 3 (also known as the Squeezebox Classic) and the Terratec Noxon 2, which both cost around £150. The Squeezebox has the edge, though, as it provides more comprehensive audio format support. Wireless routers currently start at around £15, but one that is widely recommended is the Netgear DG834G, which costs £35-£40 from amazon.co.uk or ebay.com, and it has the added benefit that it supports ADSL2+.

I'm afraid I don't have much experience with sound cards for

laptops, but a couple that might fit the bill are the Creative Labs X-Fi Xtreme Audio, although that uses the ExpressCard interface that is only available on newer laptops, or the Echo Indigo, which is a PCMCIA card.

On the subject of the BBC using DAB+, they will still switch to using it eventually, although I wouldn't bother waiting for them to do so. The quality of the BBC's Internet radio streams should overtake DAB in September

again.

In the same edition, Chord's QBD76 (catchy name - not!) USB input has its rates and sound quality ignored again. As for the Bluetooth capability, the rates and sound quality were ignored. In fact, maybe it only handles 16/44? This is what I would assume if I wasn't aware of the magazine's tendency to omit such information. Just to show that its not just digital facts you like to keep secret, turn to (same edition) the Cantus tonearm. A very interesting arm - wouldn't it be great to know if it has VTA adjustment, and if so, how easy this is to operate.

So here's a chance to redeem yourselves. I would be very grateful if you could answer the following three questions:

1. Can you tell me of a good sounding USB to S/PDIF convertor? Should handle stereo 16/44, 24/88 & 24/96 at least, and preferably have a coaxial output. Ideally it will cost less than £500.

2. Can you tell me of a good sounding A/D convertor? It should handle stereo 16/44, 24/88 and 24/96 at least. Ideally it will cost less than £1,000. (I'm aware of the several 'professional recording' boxes that usually come with a lot of features I don't need. In fact I have an E-MU 4040 (c. £120) but it seems to hide the differences between data rates - everything sounds like CD.

3. When are you going to review the Linn Sneaky? (NB. I already know what data rates it handles - but does it show up the differences?)

Nick Pledger

I am afraid that, in some instances, we cannot cover all the bases - simply because of the lack of page space in the review. When space is short, and we're cramming an extra review or two in to the magazine as was the case in the September issue, I elected to concentrate on the review unit's primary functionality - i.e. how it sounds doing the thing it's most

when they increase the streams bit rate levels, and the BBC's multicast radio streams should be widely available within the next 2-3 years at higher quality than will ever be available via DAB+. **SG**

AND ANOTHER THING...

Yours is the only hi-fi magazine I buy regularly, as I like the mix, I like the review items and the letters pages are very good. However, sometimes your reviews lack important detail. Generally, if there is a USB input, you often ignore it. If there is a DAC, you neglect to state what data rates (16/44, 24/88, 24/96, 24/192) it will handle (and whether it filters them properly - but all magazines fail here).

To support my case, take the September 2008 edition's review of Musical Fidelity's A1 preamplifier.



Benchmark USB DAC, fitted with digital USB input.

You state "it also has a USB input (meaning it has an internal DAC)". I was interested at once, as I'm am thinking of concentrating on a computer/music server hi-fi (as well as LPs of course). I wondered what it sounded like and whether it will accept 24/96, but still don't know as it was never mentioned

likely to be used for. Of course, in both those instances you cite, it would have been nice to go over every feature in forensic detail, but then that would have meant one less Soundbites review, and/or a one-page review of something else instead of a two. It's a tricky balance Nick, and I

appreciate your concern, but we can't please all of the people all of the time – more's the pity.

As for those specific points – rest assured we will come back to them; I will be using the Chord as a long-term reference and will try every last bell and whistle. As for DAC sampling rates – it's unusual to find one that doesn't do 24/192 now, so we're tending not to list them just as we don't now remind you in every CD player review that the format is only 16bit, 44.1kHz oversampling.

know why you want one – I take it you want to listen to music on your computer via its USB out. In which case, the most elegant option if you have Wi-Fi is to use an Apple Airport Express – just stream it to the Apple and pipe out the direct digital datastream via its optical digital output into your DAC. [2] The Benchmark ADC1 USB fits the bill perfectly, and lo and behold has a USB interface (answering your first question) and works to 24/192; I haven't tried one but have heard

driven out of the showroom they lose a huge percentage of their value. It is a situation where the Hi-Fi World team are uniquely placed with the experience of many different cartridges and where we, as enthusiasts, really do take your recommendations on trust and buy without an audition. So could you please recommend your favourite mid-price cartridges please - say between £600 and £1,200?

I currently run a Dynavector 20X-H high output moving coil, on an SME 4 arm, on a GyroDec. I want to move over to a moving coil and don't really know how to make a choice. I'll also need a phono stage which will either be a Naim Stageline, PhoNote (with transformer), or Audio Note M2 RIAA with transformer - unless, of course, you have a better recommendation? But I can always borrow and try the different phono stages - it's choosing the cartridge which is the problem!
Ted



SME IV arm will happily partner an Ortofon Kontrapunkt b moving coil cartridge.

I think this is fair enough. It's also reasonable to point out that we deliberately don't list every last minute detail of the specification of every bit of kit we review, simply because we appreciate that you can see for yourself on the website. We always publish the URL for this, and most people now have internet access, so it's just a click away. That way, there's more room to describe how it sounds – which I think is the main concern of most readers. These days, if you want to know how many grommets it has in its casework, then you shouldn't find it too hard to find out for yourself!

Okay then, if we can possibly redeem ourselves for our alleged crimes against audiophilia, then here goes! [1] No I can't, but I'd like to

great things about it from industry professionals, and we loved the DAC. [3] Haha! That's a good question – we're on to it. Patrick Cleasby is typing up his review this very minute; it should appear either in the November issue, or December at the very latest. And to give you a sneak preview, I heard one at House of Linn ([HYPERLINK "http://www.houseoflinn.com"](http://www.houseoflinn.com)) in Manchester recently and was most impressed! DP

NEEDLE TALK

The problem with cartridges is that they don't follow the normal rules for buying hi-fi. Most dealers have very limited experience of cartridges – often none at all. And you can't try before you buy because they are rather like a car - once

Hi Ted – sadly you neglect to mention the rest of your system, especially the speakers – which often need to be carefully matched to cartridges, but here goes anyway! Put simply, I'd go for an Ortofon Kontrapunkt b (£775) – it's a wonderfully lyrical yet detailed cartridge that suits both your arm and cartridge down to a tee. I would run it through the new Whest Audio Whest TWO phonostage, which is brilliant value at £650. Together you have a very high resolution combination that's dizzyingly dynamic yet very musical. If you have a particularly clean and forward sounding amp and speakers (i.e. a Lyngdorf/Wilson Benesch for example), then adding some warmth from a PhoNote tube phonostage (at around twice the price of the Whest) would really help, but most systems would really sing with the Whest TWO. DP

The listening experience at house of linn is so good - demonstrations last for hours....



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School Of Rock

David Price gets down to the dynamic sound of Cambridge Audio's 840E/840W preamplifier/power amplifier combination...

Let's start this review in an unconventional way, shall we? To cut a long story short, the biggest problem this pre-power combination faces its name – by which I mean Cambridge Audio. Being an avowed fan of the brand, I certainly don't have an issue with it, but to be brutally frank there are going to be people spending £2,000 on an amplifier who do...

You see, it's not impossible to ignore the sizeable number of audiophiles who are brand snobs. For example, I know several who won't countenance any audio electronics that don't have the word 'Naim' written on the front panel. The same goes for Meridian, Krell, Linn, Mark Levinson, etc. – you get my drift...

Those spending £350 on a 540A integrated amplifier won't give a stuff about the badge because they just want the best sound per pound. But at night on nine times that amount, sadly things aren't quite the same. With this in mind, the Cambridge Audio 840E/840W will never sell to some stick-in-the-muds, while others will need a lot more convincing than they would had it been made by the hi-fi equivalent of Gucci. That's the uphill struggle this pre-power combination faces.

I sense that Cambridge Audio realise this too, which explains the formidable engineering, build, and feature set – no resting on laurels here! They've thrown everything they've got at this pairing – including fully balanced operation, Cambridge's

own Class XD power amplification and massive flexibility across both pre and power amps.

The £800 840E is visually very similar to the 840A v2 I reviewed last year, with its large central backlit LC display with programmable alphanumeric displays for each of the eight sources, and a large volume control legend. Indeed it's more than this – its programmability means tone controls can be selected and stored by input, or bypassed in direct mode, and there's gain trimming for each input (so you can match the level or your phono stage to your CD player, for example), and even alphanumeric naming too on its large display. It also sports the latter's Terrapin amplifier modules designed and built by Cambridge Audio, plus full resistor

ladder and relay based volume and balance controls. Factor in Trigger Ins and Outs to automatically power up or down the matching 840W power amplifier, an RS232 port, IR emitter and Control Bus In/Out for seamless integration with custom install systems, Cambridge Audio's Incognito multiroom control capability and it's a flexible beastie.

The finish is good – both preamp and power amplifier are certainly substantially built. The thick 7mm aluminium front panel and extruded side panels, locked to a 2mm formed steel base plate specially designed to reduce vibration make for a strong and heavy platform. However, at this price, the fine Cambridge Audio finish begins to look less impressive against some price rivals – let's not forget that this combo is now playing with the big boys; Unison Research's superbly finished S6 valve integrated only costs a few hundred pounds more.

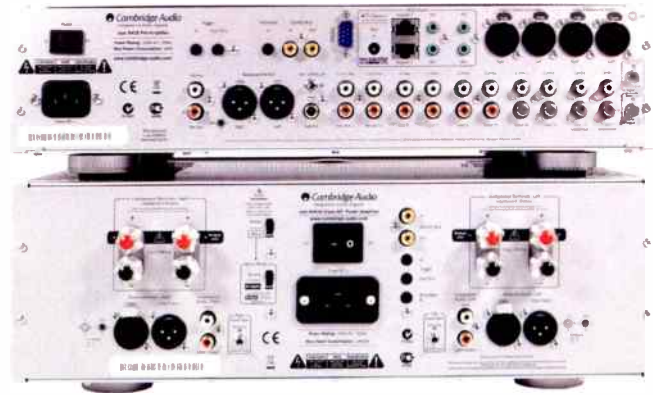
Still, I do like the brutal, lump-like quality of the 840W. It's a big and very heavy box, and purposefully styled. It pushes out 200W RMS per channel [see MEASURED PERFORMANCE] and one attempt to remove it from its packing

"adds power and an insight that the already excellent 840A v2 can only dream of...".

confirms this. The W can even be bridged to give 500W in mono for difficult high end speakers. Inside, it packs second generation Class XD technology, running two pairs of very high current output transistors per channel. Twin rectifiers and separate transformer taps for dual mono operation of the left and right power amplifiers are specified, along with an oversized low leakage flux toroidal transformer with a hefty 1200VA power rating. As befitting a power amplifier of this type, there's a clever protection system. Cambridge Audio's proprietary CAP5 protection system constantly monitors the amplifier and detects short-circuits; there's even a solid-state temperature sensor with over-heat cut out.

SOUND QUALITY

The first generation Class XD Cambridge Audio 840A was a sonic success, but to my ears not an unqualified one. In short, it sounded very detailed and controlled, but a touch too mechanical. For me, the big surprise was the 840A v2 that followed, which was altogether more



fluid and musical – so much so that it proved capable of giving Naim's Nait 5i rival a real run for its money some eight months ago. And this is where we take up the story on the 840E/VV, which builds on this base and adds power and an insight that the already excellent 840A v2 can only dream of...

This new pre-power combination is – as the introduction to this review suggests – a veritable sonic success. For its price, it offers a redoubtable degree of power and purchase, along with real subtlety and poise. It is not only better than the highly proficient 840A v2, it's a lot better in a number of ways. As such, it represents a real

success for Cambridge Audio.

However, the problem with selling £2,000 amplifiers is that frankly they have to be a bit special, such is the quality of the competition. It's also the case that at this price, buyers get an awful lot more choice about how their new amp is special – which includes some serious valve designs (Ikon Audio's 300B integrated at £1,695 and Sugden's full Class A transistor A21SE at £2,145 spring to mind). Set against such competition, this pre-power combination has to work a lot harder to earn its stripes...

Kicking off with Simply Red's 'Money's Too Tight to Mention', and there was no way I could miss the bass performance of this combination. The kick drum sound was breathtaking, being immensely strong and assured sounding yet possessed of excellent timing too. Ditto the snare, the Cambridge imparting this big, slick eighties production in all its glory. Rather than just beating along in time to the music, the drum sound seemed to resound around my listening room, lacerating through the mix and hitting

me in my rib cage. Behind this was a bass guitar line which could well have emanated from the very centre of the earth, so deep it sounded. The 840W turned it an almost PA amplifier-like shove.

Totally, this combo was on the dry but fulsome side. Bass is definitely generous but not euphonically over full, midband is very clean and proper, and treble is icily incisive without being hard. It's an interesting contrast to my reference Sugden IA4 (£3,495) which proved altogether looser and warmer in the bass, but more open and spacious in the midband and treble.

Dynamically the Sugden was shown up to be less than impeccable by the Cambridge combo. Moving from Simply Red to The Police's 'Everything Little Thing She Does is Magic', and those deep bass synthesiser lines were carried with utter authority by the 840E/840W, whereas the Sugden seemed a little out of breath. As the music built in complexity, there was a sense of compression from the Sugden, whereas the £1,500 less expensive Cambridge held things together in superior proportion; instruments were allowed more space in the mix, better located and able to play individually with seemingly superior freedom.

The midband was where I found this combo to be most controversial; I can see some loving it and others dismissing it on the basis of its performance here. There's no denying its excellent detail and superlative proportion; the ease with which all those strands are separated out both spatially and dynamically is truly special. However, I found this combo to be a little less fluid than it might be. For example, the Cambridge pre-power seemed to be more interested in deconstructing the many strands of the mix in a forensic way, whereas the Sugden was less fastidious about the exact location of this guitar part or that vocal, but altogether more musical and ebullient sounding. Whereas I heard an emotive

performance from Sting via the IA4, I heard a technically 'note perfect' vocal track from the 840E/840W.

Actually, this really suited some types of music. Kraftwerk's 'Boing Boom Tschak' was breathtaking to behold – no two ways about it. Here the Cambridge combo absolutely ruled the roost, as if to say "this is mine". The Sugden sounded a fraction sweeter and more atmospheric, but altogether more imprecise and breathless – seemingly wilting under the challenge of conveying the song's swingeing dynamics and complex strands. Here, that massive, barrel-chested bass of the Cambridge was a joy, as was its ability to let all different elements of the mix play independently, unfettered by how loud the others needed to be. Likewise, it conjured up a massively wide soundstage, giving a true 'widescreen' presentation compared to the altogether narrower and more diffuse one emanating from the reference Sugden.

However, when I switched over to jazz, I found almost the opposite was true. Back with the Cambridge, and suddenly Donald Byrd's 'Street Lady' sounded rather dry and rhythmically plodding on this less than perfect early nineteen seventies Blue Note album. It dutifully did the job alright, supplying its usual vastly spacious soundstage, but didn't really seem to be having fun all the same. Indeed, the Cambridge combo rather drew my attention to the recording's various imperfections, whereas the Sugden glossed over them slightly, preferring instead to focus on the song's infectious groove and the complex rhythmic shifts. It also drew attention to the Cambridge's ever so slightly steely treble – which is a touch more metallic than it needed to be.

CONCLUSION

As the greatest expression so far of Cambridge Audio's Class XD technology, the 840E/840W pre-power is a truly accomplished sounding solid-state combo. In some respects, it's one of the best such packages I've ever heard at the price – massive power, huge authority and a wonderfully proportioned and well ordered soundstage are not to be sniffed at. But buyers should remember that – just like any other product at the price – it has a character of its own (in

this case a touch on the cerebral side) – and buy it with this in mind. If you're looking for a gushing, effusive and emotional listen, this combination won't be for you. However, if you want to experience the physical scale and dynamic majesty of music I can think of nothing better for the money. If this is precisely what you want, then don't let the fact that Cambridge Audio have recently been masters of affordable budget hi-fi dissuade you.

CLASS XD
Cambridge Audio's so-called 'Class XD' (crossover displacement) operation uses bespoke, patent pending technology, first seen on the 840A. Now "subtly revised", it gives pure Class A operation at low levels, moving smoothly into an enhanced version of Class B at higher levels. This system should not be confused with Class AB, which inherently generates greater distortion at high levels than a pure Class B design, says Cambridge Audio. XD technology feeds a controlled current into the output stage actively displacing the crossover point in a new way so that the usual Class B crossover point no longer occurs at zero volume - the worst possible position in terms of distortion – but at a significant output level. "The result is a smooth and linear transition between the two modes of operation, which differs significantly from the abrupt, gain transition of a Class AB amplifier", it is claimed. The new 840W also adds a new output stage topology, where two pairs of very high current output transistors are used per channel, plus an extra high current transistor per channel for the XD circuit.

REFERENCE SYSTEM:
Marantz TT1000/Origin Live Silver/Ortofon Winfield turntable
Whest Audio Whest Two phono stage
Sugden IA4 integrated amplifier
Monitor Audio PL100 loudspeakers

"bass is definitely generous but not euphonically over full, midband is very clean and proper, and treble is icily incisive without being hard".

MEASURED PERFORMANCE

The Azur 840W power amplifier runs very hot so appears to use a high standing current to linearise low level behaviour. Little distortion exists in the midband but at 10kHz a low figure of 0.004% is returned when driving a 4 Ohm load. However, as this value is comprised primarily of second harmonic, our analysis shows, it is unlikely to have any subjective impact. The distortion pattern at various output levels and loads was reasonably stable, so no problem here either. Power output was very high, measuring 200 Watts into 8 Ohms and 360 Watts into 4 Ohms, so there's plenty of grunt for those who might need it. A damping factor of 83 suggests the power amp will exert good grip on bass cones.

Input sensitivity of the power amplifier was low via the unbalanced phono inputs, measuring 1.7V, but it was even lower via the unbalanced input, measuring 3.5V.

With low gain in the preamplifier as delivered, the system has little overall gain, 400mV using phono connection between pre and power and an unusually low 800mV using balanced XLR connection. This is okay for silver disc players that always output 2V,

but it is low for most external phono stages.

The Azur 840E preamp has a gain of x4 via phono in/out, or balanced XLRs as delivered, but it is adjustable.

The Azur combination measures well. It delivers high power and low distortion, but sensitivity is low when pre and power are connected via a balanced line. NK

Power	210watts
CD/tuner/aux.	
Frequency response	3Hz-127kHz
Separation	90dB
Noise	-120dB
Distortion	0.004%
Sensitivity	400mV

DISTORTION

THD 23456709 Input RMS Frequency
 CH1 0.0042316 % 2.8411 V 9.9946 kHz
 CH2 OFF OFF OFF

Y-axis: THD CH1, X-axis: FREQUENCY/kHz

VERDICT ●●●●£

Truly accomplished pre-power combination with massive authority and breathtaking dynamics at the price.

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- FOR**
- expansive soundstaging
 - sledgehammer bass
 - dynamic articulation
 - facilities, flexibility
- AGAINST**
- overly controlled sound
 - noisy volume control

Jungle Fever

Noel Keywood braved the sweltering summer heat to visit Malaysia's annual A/V Show in Kuala Lumpur...



The Mayor of Kuala Lumpur opens the show...

was an 805 that runs at 850-1500V and there was a dull red glow from the anodes, so this thing was working for a living in their Reference 3 monoblocks. Spec'd on the website as a 25W push-pull amp., it looked to me like a giant Single-Ended or SE design, suggested by the single 805 output tube and vast output transformers. I'm not surprised Audio Space haven't made it to the UK; Health and Safety will likely be their first customer. But I was suitably impressed by the amplifier's size and sound. Perhaps protective covers are available, in which case it might just pass UK safety standards.

Big comes in other forms, and for better or for worse the biggest price for an SACD player was being touted at this show by British company dCS. It was for their Scarlatti three-box player priced at a mere £33,000. Er, yes – I didn't know or even suspect it could ever cost this much to play a frisbee. Also on display was their more affordable one-box Puccini priced at £9k and the intermediary Paganini two box at £17k. Senior engineer Martin Reynolds explained that their players contain the dCS Ring DAC and complex Field Programmable Gate Arrays to encapsulate their own proprietary circuits. I was suitable impressed by Martin's fluent descriptions of complex digital circuitry, so he took me by surprise when he admitted to starting out in audio designing Beard

Malaysia's annual A/V Show is a great place to find products from Japan and China that haven't yet made it to the West. But things go the other way too, I found: I walked into a room dedicated to the Rogers LS3/5a and found a floor smothered in classic valve amps. I thought I was in heaven!

One of China's little known

was located in the main ballroom alongside Panasonic and Sharp. Whilst the big Japanese names have abandoned audio for giant screens, projectors and anything else that will make a buck, China still supports high end audio and somehow I suspect it always will...

Xindak were not alone. In the Tong Lee room I spotted Chinese Yarland amplifiers (www.yarland.com). Their FV-34C with EL84s carried a

RM1699 price tag (£269) and a FV-34B cost RM2999 (£468) - and both prices include loudspeakers (I didn't ask)! But whilst this sounds like the sort of low price once expected from cut throat Far East trading I found it doesn't apply generally;

Kuala Lumpur is now as expensive as London, more so when you want a cool beer.

Whilst Xindak and Yarland were intriguing, Audio Space from Hong Kong (www.audiospace.com.hk) were a little frightening. I spotted a very bright glow from a large valve, surmounted by a ceramic top cap - which means frightening volts. It



Xindak CV20 amplifier from China.

manufacturers I discovered was the Chengdu Xindak Electronics Co (see www.xindak.com). I was told by Asia Sound Equipment that, "they build only hi-fi, unlike many Chinese companies", and with ninety employees are relatively large. The Xindak CV20 amplifier sat near to Rega turntables in a room thronging with people, because it



Audio Space Reference 3 monoblocks from Hong Kong.

Do NOT visit Kuala Lumpur
 641 222 EXT 4211



DIY Paradise and their horn loudspeakers.

valve amplifiers.

Loudspeakers largely came in standard multi-driver form, until I walked into DIYparadise (www.diyparadise.com.my). Towering upward at the end of the room was



Sonus Faber Stradivari Homage loudspeakers put up a wonderful sound in the Perfect Hi-Fi room.

a large, single drive unit monster, with an attractive rich redwood finish. I was intrigued. It looked very much like an enthusiast's design rather than a commercial product - and it was. Well, in truth a bit of both. Formed by a group of Malaysian enthusiasts DIY paradise sells both kits and fully built products. Made by one of the founders, this loudspeaker was a 12ft long horn with a constant taper, copied from a design by Jan Hedlund. At the throat of the horn sits a single full range Coral Beta 6in drive unit. The horn back loads it, folding upward then back down to the mouth that terminates against the floor. Beside this unit sits a smaller horn with a larger mouth, designed by DIY Paradise.

Hewn from dark brown woods, their products were delightfully Malaysian in character, because this is a country where carved hardwoods are - or were - used in traditional homes. Trouble is, I

realised wandering down a Malaysian hotel corridor some years ago, wood makes a tasty meal for termites; there were large holes in the corridor's skirting boards and neat piles of wood dust on the carpet! I don't quite know how DIY Paradise will cope with claims from their local customers that creepy-crawlies ate the hi-fi!

One of the best sounds of the show came from the spacious Perfect Hi-Fi room (www.perfecthifi.com.my). They were demming Sonus Faber Stradivari Homage loudspeakers, driven by Mark Levinson amps. The sound stage was airy and spacious, populated with solid well formed images of instruments. A steady stream of listeners were hopping into and out of the arm chairs to listen, drawn by the sound, which carried well.

The K.L. show these days is predominantly A/V for commercial reasons, pure audio being too small a segment in Malaysia to draw a large audience, organiser Dick Tan of 3Dot Events told me. At least, for now. Rapid growth in the late nineteen nineties saw the appearance of audio shows and audio columns and sections run by the English language Star newspaper, but those days are over. All the same, dedicated audio doggedly lives on in Malaysia as it does elsewhere, in a tension between what music lovers around the world want and what the Consumer Electronics business needs to manufacture to produce a profit.

One factor that must have slowed access to music for Malaysians was the elimination of

pirated CDs and DVDs. They were everywhere in the huge Sungai Wang shopping mall on my last visit in 2003, the copies so well made it was impossible to tell them from the real thing, except for a suspiciously low price that made purchasing music little strain for locals. Now those vendors have gone. Disc prices at the show were on average a little higher than those in London I found, making them very high by local standards.

Wandering into rooms looking for exotic Far Eastern products, I was taken aback by what I saw in the LS3/5a Club room. A sea of classic valve amplifiers sat on the floor, all in fine working condition. There were Quad IIs, a Radford STA 15, Leak TL12 Plus, Leak TLI2.1, a McIntosh MC240 and a Diva Bluesky. They were being used alternately to drive a pair of KEF LS3/5A loudspeakers, accompanied by Rogers ABI subwoofers. The club is just that; it doesn't exist to sell anything but is the passion of Joseph Ki, from Kuching, Borneo and can be found at <http://tech.groups.yahoo.com/group/ls35aclubmalaysia>. It's a venue for discussion on music and hi-fi.

Joseph had a fascinating tale for me. Raised in Borneo, he studied architecture in London and is a member of the Royal Institute of British Architects. Whilst staying in the Bayswater area he was drawn into the shop of Thomas Heinitz where he marvelled at Quad ESL63s. They were too expensive and bulky for a student, so he walked out with LS3/5As instead. Now a practising architect in Malaysia, Joseph owns no fewer than twenty six pairs - a true enthusiast if there ever was one!

Although the go-go days of rapid economic growth in the late nineties are over, Malaysia's annual K.L. International A/V Show still has plenty of interest I found. And when the going all becomes too much it's the only show where I can sit down and enjoy Nasi Lemak washed down by a cool Tiger beer - heaven!



Joseph Ki and his LS3/5As.



Power House

Packing serious punch and the latest hi res decoding, Yamaha's chunky new DSP-AX863SE A/V amplifier offers much on paper, but does it deliver? Noel Keywood decides...

Yamaha's superb CD-S2000 CD and SACD player was an instant hit with us. Its sound was conspicuously superb, smooth, enveloping and deeply detailed, without being shouty - very Yamaha and true hi-fi. I know many people have sizeable SACD collections and the CD-S2000 will make the most of them, as well as CD of course, but only in stereo. For a little less money - £800 - Yamaha's new for 2008 DSP-AX863SE amplifier can do the same, but in surround-sound when used with a suitable player. Would I get similar results to the svelte CD-S2000 I wondered or, with full surround-sound, might it sound even better?

It looks like a receiver, I know, but there's no radio tuner, so the AX863SE is an amplifier that's more or less identical to the current crop of receivers in all other respects. It has 7.1 channels and if you don't want 7.1, but simpler 5.1, then the spare amplifying channels can be used to bi-amp Left and Right front loudspeakers for better quality. You can, as usual, choose not to use a Centre loudspeaker, an option I prefer for high quality music reproduction.

Yamaha offer yet another variation on the theme of 'loudspeakers everywhere', and that is Presence Left and Right loudspeakers that, they suggest, are wall mounted 6ft or higher just outside the Front loudspeakers, to extend stage width and height. The signal for these will be internally derived through signal processing so it is a contrivance, if possibly an entertaining one. I did not try this as the mounting position identified by Yamaha in their handbook happens to coincide with wall mounted uplighters in my lounge and I didn't fancy removing them for loudspeakers! Bi-amping cannot be used in conjunction with these Presence loudspeakers.

Like all the latest receivers, the new AX863SE will decode all new high resolution music formats, including DTS HD Master Audio and Dolby TrueHD, as well as lower res. Dolby Digital Plus, meant for bandwidth limited broadcast channels used by radio and TV. Both are becoming quite popular on Blu-ray releases but - as an aside - I did see DTS HD-MA used to losslessly pack 16bit/48kHz on one Blu-ray, so superb sound quality isn't guaranteed. Neither the music business nor the film industry seem keen to go beyond 24bit/48kHz at present. It works well,

giving much more slam than Dolby Digital, but isn't exactly cutting edge...

Finally, audio wise, DSD digital code from SACD is processed and a small DSD flag will light on the orange display when received. But would it sound as svelte as SACD from the CD-S2000 player, I wondered?

The short answer is no. Measurement showed DSD processing was relatively poor [see MEASURED PERFORMANCE], an afterthought. This was disappointing in what is presented as a high quality product, priced at a not inconsiderable £800. It is common nowadays to convert DSD digital to PCM before turning it to analogue through the digital-to-analogue convertors (DACs). The Marantz SR8002 carried out this conversion effectively, giving full SACD performance, characterised by extremely low midband distortion of 0.05% at -60dB. Compare this with 0.64% from the Yamaha amplifier here, or 0.04% from Yamaha's own CD-S2000 player we all liked so much and you can see the DSP-AX863SE is behind in its DSD processing. Yamaha have down converted DSD to CD code, it appears, as bandwidth is limited to 21kHz, when it should reach 35kHz at least. You do get surround-sound,



but not with the great quality SACD possesses. I used an Oppo DV-980H DVD player to route native DSD code through the Yamaha, via an HDMI link.

Not everyone cares about SACD of course, now it is an obsolete format disappearing from shop shelves. Instead, we have high definition digital audio arriving on Blu-ray as PCM, in 24/48, 24/96 and 24/192 code (packed by either Dolby TrueHD or DTS HD Master Audio). In their specification Yamaha claim to use Burr Brown 24/192 DACs in all seven of this amplifier's channels, making it able to handle any of these codes. Since they are all we're likely to get into the foreseeable future, the AX863SE is future-proof. However,

which shuts off displays and all video processing (the TV goes blank) for purest audio. I was a bit disappointed to find only Pure Direct on the Yamaha. This mode gives the best sound, but no picture to watch a video performance. If you want to see video then analogue audio goes through the processor, which degrades quality by imposing a bandwidth limit and passing the signal through an ADC then a DAC.

VIDEO

On the video side, the AX863SE accepts Composite, S-Video and Component analogue inputs, as well as HDMI 1.3a digital. Monitor outputs for a TV exist in all these formats too. I was surprised to find that if

"I found it entertaining with 24/96 DVD-A, and with Blu-ray downright impressive..."

measurement showed that whilst it handled 24/48 and 24/96 well, 24/192 actually generated higher distortion - when it should have been lower!

This was not so good. All I can say in defence is that we are very unlikely to get 24/192 coded music on Blu-ray for many years yet. What really matters now is 24/48 and 24/96 PCM processing and performance here from the AX863SE was passable in that it matched CD down to -60dB and bettered it at -80dB, so there's a little more dynamic range. Bandwidth was greater than CD, as it should be, reaching expected limits. This isn't a cutting edge performance, but will yield decent sound from Blu-ray all the same.

Processing of digital code from a CD player or transport connected up via the S/PDIF digital inputs fell below the quality of all the budget CD players in our July 2008 group test, so redemption wasn't to be found here I'm afraid to say. In a nutshell then, audio wise the DSP-AX863SE doesn't meet reproduction standards expected from current audio signal formats, putting it into quite a different league to the technically polished CD-S2000.

All the usual audio inputs are fitted, including analogue, S/PDIF digital, optical and electrical, and shiny new HDMI 1.3a. For the most part I used HDMI to receive digital from an Oppo DV-980H DVD player and a Samsung BD-P1400 Blu-ray player.

Used to Marantz's 'Direct' option, which bypasses the processor for a better sound, and Pure Direct

a TV is connected via HDMI then by default the receiver's On Screen Display (OSD), which is essential for set up, isn't available. This will cause owners grief at set up. I guessed it was available from the analogue outputs, and from there found that the OSD only appears on HDMI if processing is selected. By default, Through is set, the correct choice when HDMI is used to connect a hi-def player to a hi-def TV, so Yamaha need to work out how to get the OSD to appear, or put a warning in the handbook about the OSD's absence in this situation!

The handbook curiously makes no mention of how to obtain the OSD or what it is for, let alone this problem. Instead, it appears to suggest that you switch on, press Scene 1 and are then ready to go. The handbook needs improvement...

Yamaha place faith in their auto-tune system and it wasn't fazed by the googly I threw at it, with no Centre loudspeaker or subwoofer connected, but it did see fit to raise a warning about running quadraphonic! Levels and distances are set and can be viewed, but equalisation is not applied, a sensible approach. Individual loudspeakers can be equalised manually using the graphic equaliser.

Setting up manually is made awkward by some obscure menu presentations, notably for subwoofer set up, and inconsistent use of the Enter function. The menus could well be clearer too.

SOUND QUALITY

Initially, CD sounded smooth and even, svelte in fact, very much in the Yamaha mould - and to my liking. There was a taste of CD-S2000 here I felt. Bass was nicely balanced, whilst not

being overly dynamic, treble smooth and the midband quite airy. I slowly became aware that there was a warmth in the lower mid region that was pleasant, but a little artificial and that a wiry edge tinged sibilance and transients that, by the end of Amy Winehouse's 'Back to Black' was becoming irritating. Spinning Steve Winwood's 'Roll With It' I realised that the basic tonality was very similar, Winwood not sounding too dissimilar from Winehouse.

Connecting a Russ Andrews DAC1-USB up to the Multichannel inputs bypassed the Yamaha's digital processing but utilised the audio output stages and this clarified the picture. The Yamaha's smooth, easy but lucid sound was there in abundance, a gloriously airy midband becoming apparent, accompanied by easy, natural treble and firm, if not forceful bass. Gone was the thickening of the lower midband, pinched midband imaging and the wiriness. On balance then, CD processing of a signal from a super low jitter Samsung BD-P1400 Blu-ray connected via optical S/PDIF, and using Pure Direct mode, was distinctly mediocre.

Moving on to 24bit/96kHz PCM



from both DVD-A and Blu-ray, the picture changed dramatically. Santana's Supernatural DVD-A had an airy spaciousness across the midband that peppered Latin American percussion instruments around my room in a fashion that was both impressive and immersive. When Yamaha get going they really do well and this was one of the most atmospheric renditions I've heard to date. I sank back to listen to Santana's masterful guitar work, where deep technical ability is transcended by sublime fluency and expression. Guitar never talked better for anyone except Hendrix, and the AX863SE made this very

simply musical



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apparent; the best hi-fi brings you closer to the music and here the Yamaha excelled. Whatever I chose to spin, I was greeted by the same easy yet fluid sound, which had a sense of spaciousness that seemed very apt for surround-sound. Treble was as smooth as silk and bass easy yet natural. Auto-tune had over-emphasised the rear loudspeakers which needed to be manually attenuated, but that's common enough and only to be expected. My harder sounding DVD-As were tamed by the Yamaha, which seemed more able to place the music in the room in an easy manner, without unpleasantness.

I have no 24bit/192kHz recordings of music yet, only test tones, so I couldn't judge this. But SACD was no problem and although it didn't measure well, DSD distortion isn't subjectively nasty so things weren't so bad in practice. With Rock the Yamaha wasn't especially forceful, drums sounding a little restrained in their

dynamics with the Vivino Brothers, although saxophone was full bodied and harmonically rich. There was a lack of real airiness that I attribute to truncated bandwidth. Whilst Rock on SACD was entertaining it was smooth and slick rather than viscerally exciting. This didn't detract so much from classical though, Rachmaninov's Piano Concerto No2 played by Lang Lang sounding easy on the ear, if a little murky when orchestral strings rose to crescendos. A 2008 recording on Harmonica Mundi of Beethoven's Symphony No3 was clear and concise in placement of orchestral sections, with convincing string tone, smooth if a little restrained all round. Generally, the Yamaha's handling of DSD was a notch up on CD, sounding smoother, but did not fully exploit what SACD can do. It was enjoyable all the same.

Providing you press the Pure Direct button, the Phono input is no disappointment. It has an upper midrange sheen, that's for sure, but it doesn't overwhelm an otherwise

lucid midband and atmospheric sound that had Alison Goldfrapp's breathy vocals drifting through my room in delightful fashion, from her new 'Seventh Tree' album. I was using a Nagaoka MP-500 £350 cartridge, granted, but an old-range MPI0 or I1 wouldn't be out of place. One unexpected result is that the sound betters digital - whoops!

CONCLUSION

The DSP-AX863SE was inconsistent, sounding lacklustre with CD, very good with 24/96 digital and pleasant with SACD, if no more. CD apart, I found it entertaining and with 24/96 PCM on DVD-A and Blu-ray downright impressive. With SACD it was enjoyable too, if not top notch, whilst LP was fine. In practice it will sound very good with most current replay material, but not all. Its digital processing needs to be improved, as does the handbook. Then its underlying strengths, notably a fine analogue section, will become more readily appreciated.

MEASURED PERFORMANCE

Continuous sine wave (RMS) power measured 136 Watts into 8 Ohms, rising to 210 Watts into 4 Ohms in each of its seven channels, so the AX863SE has plenty of power, these figures being well above the 105 Watts specified into 8 Ohms. It will go very loud, as this is put through seven loudspeakers. Damping factor was high at 47, suggesting the Yamaha will have well controlled bass.

Via the 7.1 analogue inputs, which bypass the processor and provide best quality for external analogue connection, frequency response was a wide 2Hz-122kHz, so there's full support for 192kHz sampling, which has an analogue bandwidth of 100kHz. Via the processor the upper limit is 22.5kHz, set by anti-alias filtering, and this limit applies to all other audio inputs unless Pure Direct (but not Straight) is selected.

Sensitivity was high at 240mV and distortion, mainly from the output stages, quite low at 0.02% at 10kHz, 1 Watt. The AX863SE is unlikely to display the slight coarseness of sound many receivers suffer and will handle external analogue connection well.

Processing of CD digital (i.e. 16bit at 44.1kHz sample rate) was fair. The receiver has, via Pure Direct, a ruler-flat frequency response but at -60dB distortion was double that (+6dB) of budget players, so it was no surprise that EIAJ Dynamic Range was 6dB down on the best, measuring a low 106dB. There was more noise than usual

too, although at -95dB it will not be audible.

Processing of 24bit/96kHz digital was more promising, the -60dB tone coming in at 0.25% and a -100dB tone being resolved. The upper response limit was 34kHz (-1dB). Unfortunately, 24bit/192kHz digital was processed less successfully, distortion rising above 24/96, a -60dB tone exhibiting 0.36% distortion, for example. The upper response limit was again 34kHz, output being -13dB at 90kHz.

Processing of DSD digital from SACD was disappointing. Yamaha's internal transcoding scheme, (usually via PCM), reduces DSD to CD resolution, bandwidth being brickwall limited to 20.6kHz, whilst distortion was high at 0.64% on a -60dB, 1kHz tone - worse than CD. A -100dB tone was just resolved. DSD through the AX863SE gives surround-sound, our measurements showed, but that's all. Quality was worse than that from CD when distortion should be ten times lower, for example.

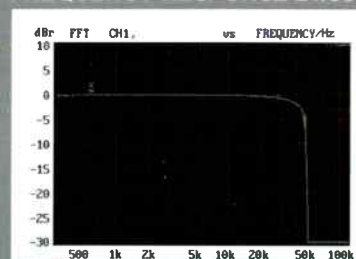
The phono input gave fair results, a +0.3dB lift at high frequencies (above 1kHz) and similar loss at low ones (below 1kHz) will give a bright-ish sound with modern flat response MM cartridges. However, it will not be out of place with oldies like the Shure M97xE or old model Nagaokas. There's no warp filter. Noise was on the high side at 0.9uV e.i.n. but not excessive and likely not audible with a decent cartridge with good output level.

The DSP-AX863SE gave rather

inconsistent results. It's good via analogue connection, mediocre with CD digitally connected via S/PDIF, reasonably good with HDMI connected 24/96 digital, poor with 24/192 super high resolution digital and also poor with SACD. NK

Power	136 Watts
7.1 ch Direct input	
Frequency response	2Hz - 122kHz
Separation	82dB
Noise	-103dB
Distortion	0.02%
Sensitivity	240mV
Damping Factor	47

FREQUENCY RESPONSE 24/96



DISTORTION



VERDICT ●●●●
Lovely analogue sound, but poor digital processing makes this an inconsistent product.

YAMAHA DSP-AX863SE £800
Yamaha Electronics UK
+44(0)1923 233166
www.yamaha-uk.com

FOR
- good analogue sound
- superb 24/96 digital
- many facilities

AGAINST
- poor with CD
- mediocre with SACD
- no OSD via HDMI

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Stuart Hopwood - Director, Home Entertainment Show Ltd.

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Music lovers will be in for a treat as you will be able to hear the very best in 2 channel stereo music systems from the likes of Naim Audio, B&W, Cyrus, Dynaudio and many more. For those of you who like the warm friendly tones of valve amplification there will be a plethora of these from all over the globe. Indeed, whether you are from the digital is best camp or "music from the old fashioned vinyl" camp, there will be plenty to interest all visitors.

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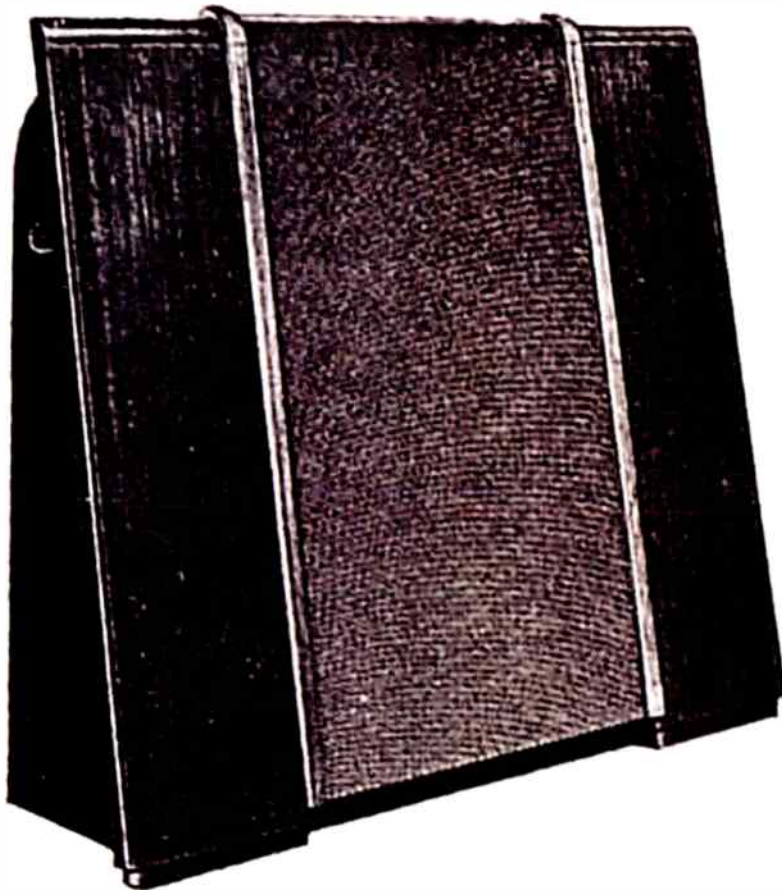
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Designing



Part 20 - Open Baffle Room Responses

– free standing well away from walls and corners. I've seen countless photographs of free standing open baffles and it is easy to be misled into thinking this is the best thing to do with baffled speakers.

Whether looking at open baffles, electrostatic or box loudspeakers I've never really been happy with speakers that need to be stuck in free space in order to deliver a balanced result, although I can understand the thinking behind it. Because speakers are traditionally measured in anechoic conditions the resulting designs naturally tend to gravitate towards a speaker which works independently of the room acoustics.

However, against that is the fact that room acoustics can never be dialled out of the equation where loudspeakers and rooms are concerned. In order to achieve a performance close to that measured in an anechoic chamber you'd have to play your speakers in a large open space like a field. Indeed, in the absence of an anechoic chamber, there were many designers, Gibbs included, who ended up measuring speakers hoisted clear of the ground in a quiet piece of countryside.

One of the problems with designing speakers for free standing is how do you take account of the inevitable interaction with the room in which they are eventually placed? There's no real answer to this. In fact most of the problems that users experience with free standing speakers are invariably concentrated in the bass.

This is hardly surprising when you look at what really happens as wavelengths get longer and stretch down to bass regions. Below 300Hz, reflections from the floor, ceiling and nearby walls start to add to the speaker's output, unless the room is the size of a concert hall and the speaker hoisted clear of the floor.

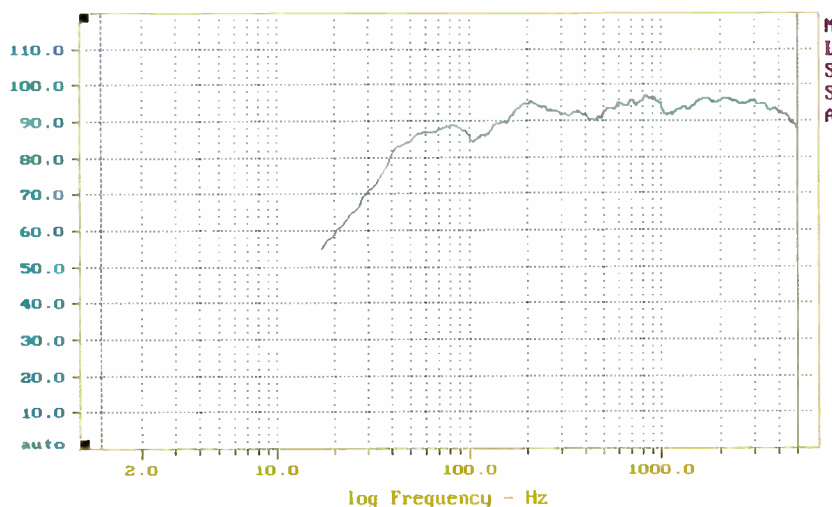
As few listeners are prepared to put their speakers well away from rear and side walls, reflections from

Last month I was lucky enough to have the opportunity to investigate one of the great commercial open baffle designs, namely the Wharfedale SFB/3. As

I pointed out, the designer Gilbert Briggs found that positioning the SFB/3 alongside the side wall, angled

towards the listener, and a metre from the room corner gave the best performance. Last month's listening seemed to indicate that this was, indeed, the best position, so let's analyse why.

First, we can take a look at the response in a position that most hi-fi users would automatically choose



In room measurement of Wharfedale SFB/3 free standing spaced away from walls.

Loudspeakers

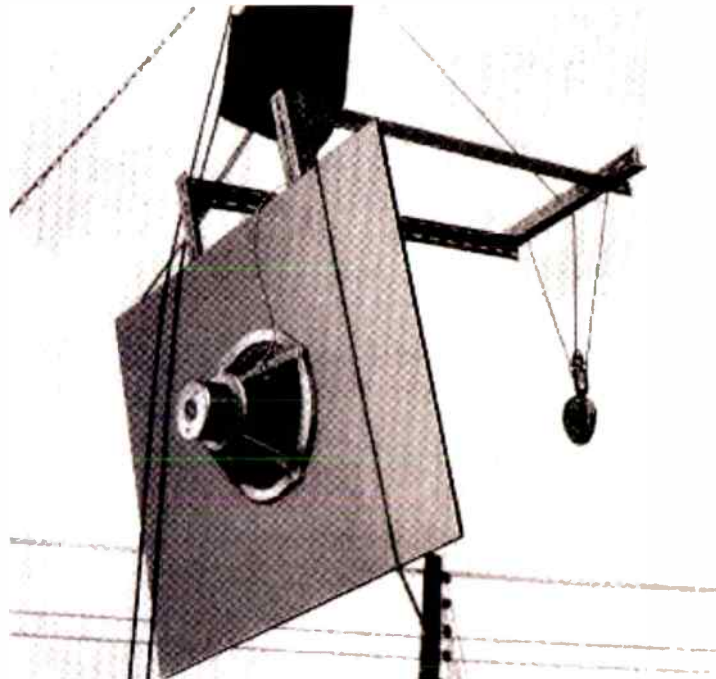
these boundaries add considerably to the perceived output of the speaker below 150 – 200 Hz (the exact frequency of transition depending on distance from the walls). In addition the room is, of course, a closed box in itself and low frequency energy builds up with reflections from ALL the room boundaries. We call this 'room gain' and a speaker's output is boosted by progressively greater amounts as the frequency moves below 100Hz. Up to 9dB of room gain can be measured in smaller rooms.

If room gain and the effect of room boundary reflections was entirely predictable then, of course, it could be extremely useful in the design of all types of speakers. Using the increased bass output due to the room we could design either speakers with high sensitivity in the midrange and treble or small loudspeakers with no real bass output of their own.

In reality, rooms differ so greatly in their low frequency performance that trying to predict how a free standing speaker will behave in a room is like trying to choose the outright winner of a horse race. Yes you can read the 'form' but there are always too many variables to be able to know for certain what will and won't work.

As a result, speakers that are designed for free standing use and that have, or attempt to have, an extended bass response often end up delivering a lumpy, ill defined and, often, over-emphasised bass performance in typical living rooms. Listeners typically complain of bass 'boom' or 'weak' bass depending on where the reinforcements and cancellations of certain bass frequencies occur.

So, is there a method whereby we can predict how a speaker will behave in a room at low frequencies with a fair degree of predictability? Well we can have a good stab at it, if we assume close coupling of the speaker to two or three room



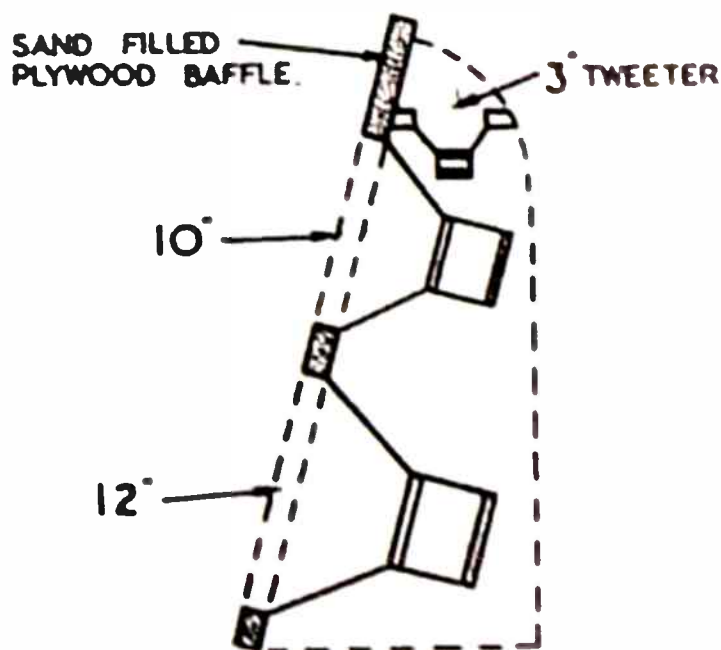
Traditional speaker measurement of an open baffle speaker on a hoist in a field

boundaries.

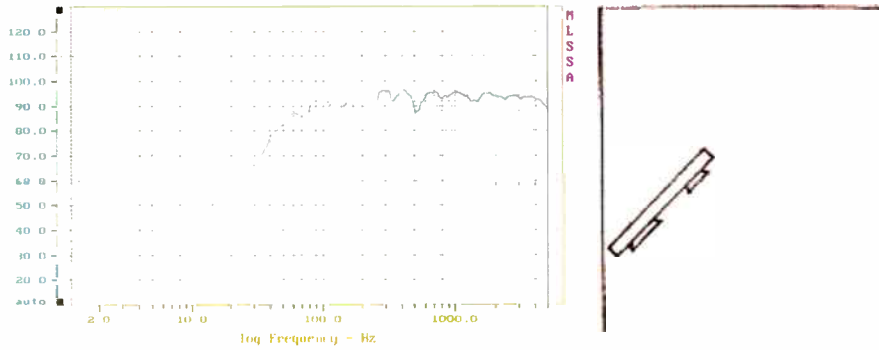
The floor is an obvious one. It's always going to be there anyway so we can couple the speaker to it by placing a bass unit close to it and making sure the baffle stretches all the way to the ground

i.e. a floorstander rather than a standmount.

Then, if we ask the listener always to place the speaker close to one wall, we have two boundaries to which we can couple the speaker. Each boundary theoretically gives



Drive unit arrangement of Wharfedale SFB/3



In room measurement of SFB/3 in Briggs' recommended position.

us 3dB of low frequency gain, so it is well worth attempting this feat as, suddenly, we no longer need to use other methods of boosting bass output, for example by using a bass reflex enclosure!

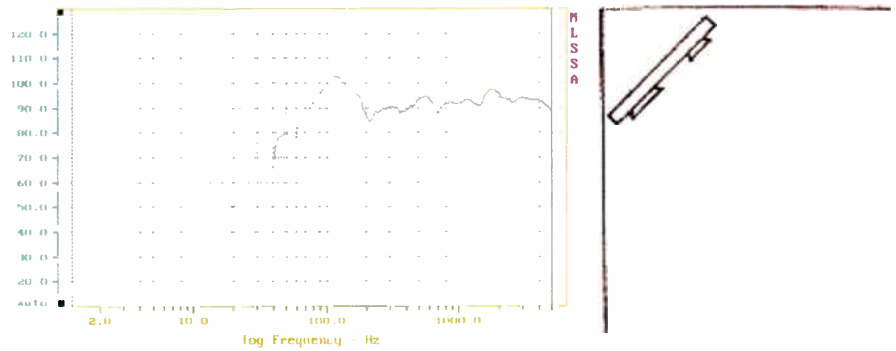
But what are the pitfalls of using nearby boundary reinforcement? There must be some, otherwise all speakers would be designed this way. We may have solved the problems at low frequencies but, by positioning boundaries close to the drive unit, we've introduced reinforcement and cancellation at higher frequencies.

So this technique is really only successful when used in three-way speakers. The bass unit can be put close to the floor and, possibly, wall and crossed over to midrange and treble units which are kept clear of the boundaries. This, perhaps, is why you see the enthusiast's open baffle speakers out in the middle of the room. As the typical open baffle design is often based around a single, full-range drive unit it does not lend itself to the close boundary design approach.

Now, this is where the SFB/3 comes in. Here's an open baffle with a floor coupled bass unit, plus a bass/mid unit mounted close by and a treble unit on a separate baffle.

Specifically designed for boundary reinforcement? That's what I was interested in finding out.

Analysis of the free standing position shows, obviously, some bass reinforcement from the floor but, also obvious, is the bass light balance compared to the midrange output. By the way these measurements are taken using an average of three



SFB/3 placed across a corner to couple strongly to all room modes.

microphone positions 2m from the speaker with absorbent (a large sofa) under the microphone to absorb the first floor reflection.

Compare this to Briggs' recommended position, with the side of the speaker abutting the side wall, angled towards the listener and a metre out from the corner.

What is remarkable about this measured performance is how the bass power in the room is brought better into balance with the midrange right down to 80Hz, resulting in a -6dB point of 65Hz. Now this might not seem like a very

extended bass response when we think about the lowest audible frequency of 20Hz but it is all a question of balance.

If your aim with your speaker design is to achieve as extended a bass response as possible then you wouldn't select an open baffle with

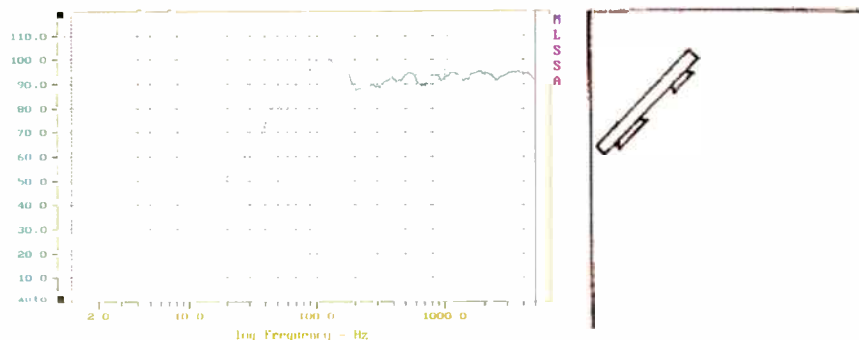
which to achieve it! Surely the reason for choosing an open baffle is to achieve that open and uncoloured sound that comes from not having a box enclosing the drive units. All we can expect from a good open baffle design is to bring the bass power into balance with the midrange so that the speaker covers the full range of musical instruments.

Let's put that into perspective. Many hi-fi enthusiasts live quite happily with miniature stand mount speakers that struggle to emit any significant bass power below 60 – 80 Hz. And yet the owners of these speakers speak delightedly of the fantastic bass response achievable from their favourites, how come?

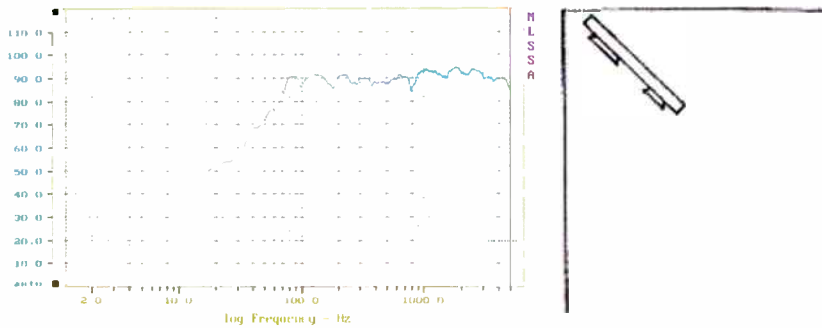
The answer lies in the way our ears perceive the reproduction of bass instruments. Although the fundamental frequencies developed by bass guitar and percussion do, indeed, lie in the 40 – 60Hz area, these are not the strongest output

of these instruments. Like many musical instruments it is the harmonics that make up the majority of the character of sound that we, as listeners, appreciate.

On that basis, providing that a speaker can generate a strong output in a room through the 80 – 200Hz region,



Effect of moving the SFB/3 0.3m away from the corner position.



Experimental position for bass analysis only by pointing the baffle side nulled output towards the corner.

this will make that loudspeaker sound as though it has a tremendously powerful and apparently extended response. An 80Hz pure tone is deeper than you would think by just looking at the numbers. By comparison, a 40Hz pure tone, whilst sounding incredibly impressive when air is really moved strongly by, say, a large pipe organ, is felt as much as heard.

The reason I say 'pure tone' is because most speakers have a strong second harmonic output when fed with a 40Hz sinewave anyway. This makes most people think that 40Hz is a deep and powerful bass note when, actually, they are probably hearing more output at the 80Hz second harmonic. Older speaker designers, well aware of this effect, used to call this 'frequency doubling'.

The upshot of all this is that, if you really want to hear the fundamentals of musical instruments in perfect balance with their harmonics, then you should be looking either to a large loudspeaker with a big diaphragm area or a large subwoofer. Otherwise delivering a satisfying bass performance is just a matter of delivering bass power where it really matters – in the 80 – 200Hz region with, perhaps, some extension to a -6dB point of 60Hz or thereabouts.

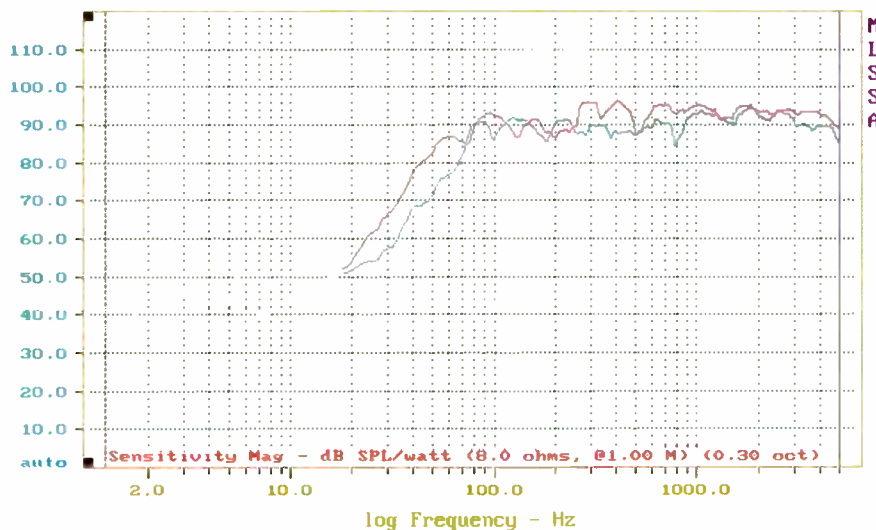
That is exactly what the SFB/3 does in its recommended position in the room, coupling to both side wall and floor and angled to avoid upper frequency standing wave reflections and cancellations.

Now the strongest bass output in any room is delivered by putting the speaker in a corner. Obviously this couples the speaker to all room modes extremely well,

but is a little disconcerting unless the speaker has deliberately been designed to fit with this format. Due to the width of the SFB/3 we can't fit it snugly into the corner, instead we have to place the baffle across the corner.

Let's look at what happens to the measured performance when we do this. Yes, there is a significant increase in bass output, as expected, but it is centred around a boosted peak at 110Hz. This not only unbalances the bass to midrange performance but also, note, provides a dip in energy at 200Hz. Not surprisingly the sound of the speaker at this position is 'boomy' and overblown in the bass region.

I wondered whether it was possible to achieve the best of both corner reinforcement and side wall coupling by moving the speaker marginally away from the corner by 200 – 300mm. A typical result is shown in the next graph taken at 0.3m from the corner. As you can see there is still considerable boost centred on 120Hz, the advantage here being that the dip at 200Hz has now levelled out. This position still exhibits the bass boominess when listening, however.



Comparison of experimental position (blue trace) compared to Briggs' recommended position on side wall (red trace).

A choice remark by Noel Keywood led me to investigate one more possibility to use the extra gain available from corner reinforcement. All we have to remember is that an open baffle is a bipole. As such it will have a null in output either side of the baffle. Could we point this null into the corner?

The answer is

shown in the last graph. Here I've pointed the edge of the baffle into the corner. Amazing, for a corner position, we've lost the peak at 120Hz and, instead, the bass output looks perfectly balanced with midrange! Could this be our perfect open baffle position?

Obviously, as far as the midrange is concerned, this is something of a disaster as the output of the mid unit is pointing towards the side wall, not towards the listener. But leave that out for the moment as I'm just interested in the bass for this analysis.

For the final graph I've overlaid this angled into the corner response with the best sounding side wall coupled response. You can see that, although the bass performance down to 80Hz looks great in the corner response there is very little reinforcement from the room below this frequency. In comparison the side wall position looks a little bass light, when compared to the midrange level, in the 100 – 200Hz range but has good extension down to 65Hz.

I think this technique shows some promise, however, and it's given me an idea with which to experiment in the coming weeks. I'll report back on how this idea works out next month.



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WORLD CLASSICS

In this heavily revised section, you'll find the great and the good from audio's glorious past. Most are seminal designs which have earned their place in hi-fi history, but you'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price. Think we've overlooked something? Then write in and let us know!

DIGITAL

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

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

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

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



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



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

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

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



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



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

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



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

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

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

COMPACT DISC TRANSPORTS

TEAC VRDS-TI 1994 £600
Warm and expansive sound made this a mild price hit. Well built, with a slick mech.



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

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

DACs

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



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



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



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



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

TURNTABLES

ARISTON RD11S 1972 £94

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

ADC ACCUTRAC 4000 1976 £300

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

PIONEER PL12D 1973 £36

The beginning of the end for the British turntable industry. When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL12D was off the pace compared to rivals



PIONEER PLC-590 1976 £600

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

DUAL CS505 1982 £75

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

GOLDRING LENCO GL75 1970 £15.65

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

LINN AXIS 1987 £253

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

LINN SONDEK LP12 1973 £86

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



MARANTZ TT1000 1978 £ N/A

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



MICHELL GYRODEC 1981 £599

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

TECHNICS SP10 1973 £400

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

REGA PLANAR 3 1978 £79

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

GARRARD 301/401 1953 £19

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



ROKSAN XERXES 1984 £550

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

SONY PS-B80 1978 £800

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

THORENS TD124 1959 £ N/A

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



TOWNSHEND ROCK 1979 £ N/A

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

TRIO LO-7D 1978 £600

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

TONEARMS

ACOS LUSTRE GST-1 1975 £46

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

AUDIO TECHNICA AT1120 1978 £75

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

ALPHASON HR100S 1981 £150

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



SME 3009 1959 £18

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

GRACE G707 1974 £50

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

REGA RB300 1983 £88

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



SME SERIES III 1979 £113

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

HADCOCK GH228 1976 £46

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



LINN ITTOK LVII 1978 £253

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

NAIMARO 1986 £875

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



TECHNICS EPA-501 1979 £ N/A

Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

INTEGRATED AMPLIFIERS/COMBOS**DELTEC 1987 £1900**

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

ROGERS A75 1978 £220

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

EXPOSURE VII/VIII 1985 £625

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

**SUGDEN C51/P51 1976 £130**

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

VTL MINIMAL/50W MONOBLOCK 1985 £1,300

Vacuum Tube Logic was one of the Europe's biggest tube names in the eighties, and it shows. Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

A&R A60 1977 £115

Sweet and musical feature-packed integrated; the Audiolab 8000A used its blueprint to great effect.

**CREEK CAS4040 1983 £150**

More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

AUDIOLAB 8000A 1985 £495

Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.

**MCINTOSH MA6800 1995 £3735**

Effortlessly sweet, strong and powerful with seminal styling to match.

SUGDEN A21 1969 £ N/A

Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

MISSION CYRUS 2 1984 £299

Classic eighties minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.

**MUSICAL FIDELITY A1 1985 £350**

Beguiling Class A integrated with exquisite styling. Questionable reliability.

**NAIM NAIT 1984 £350**

Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage, very low power.

NAD 3020 1979 £69

Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super-amp.

**MYST TMA3 1983 £300**

Madcap eighties minimalism, but a strong and tight performer all the same.

ROGERS CADET III 1965 £34

Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves

**ROTEL RA-820BX 1983 £139**

Lively and clean budget integrated that arguably started the move to minimalism.

CHAPMAN 305 1960 £40

Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper second-hand.

PREAMPLIFIERS**AUDIOLAB 8000C 1991 £499**

Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.

AUDIO RESEARCH SP-8 1982 £1,400

Beautifully designed and built high end tube preamplifier with deliciously sweet and smooth sound. Not the last word in incision or grip, but that didn't matter to those who aspired to it.

CONRAD JOHNSON MOTIV MC-8 1986 £2,500

Minimalist FET-based preamplifier from the Yank valve specialists is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden high end stuff. Something of a curio, but worthwhile nonetheless.

CROFT MICRO 1986 £150

Budget valve pre-amp with exceptionally transparent performance.

LEAK POINT ONE STEREO 1958 £ N/A

Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!

LINN LK-1 1986 £499

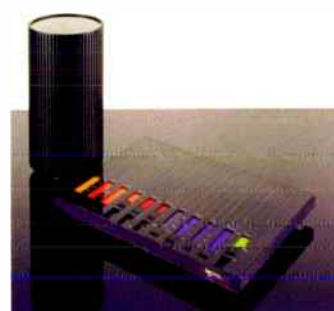
A brave attempt by the Glasgow boys to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not half bad for under £100.

NAIM NAC32.5 1978 £ N/A

The Salisbury company came of age with this, their classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

LECSO AC-1 1973 £ N/A

Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.

**QUAD 22 1958 £25**

The partner to the much vaunted Quad II monoblocks - cloudy and vague sound means it's for anacrophiles only.

QUAD 33 1968 £43

Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...

POWER AMPLIFIERS**HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110**

Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

LEAK STEREO 60 1958 £N/A

Leak's biggest valve power amp offers 35 Watts per channel and more low end welly than the smaller Stereo 20. Despite concerns over reliability their rarity means high prices are the order of the day.

CLASSICS

LEAK STEREO 20 1958 £31

Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



LECSON API 1973 £ N/A

Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

MARANTZ MODEL 9 1997 £8000

Authentic reproduction monoblocks still more than cut the sonic mustard. Highly expensive and highly sought after.

MICHELL ALECTO 1997 £1989

Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!

LEAK POINT ONE, TL10, TL12.1 1949 £28

Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical sound, that's far more modern than Quad IIs. Deeply impressive when in fine fettle.



MUSICAL FIDELITY XA200 1996 £1000PR

200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.



QUAD II 1952 £22

The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly



QUAD 405 1978 £115

The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound. 606 and 707 continue the theme with greater detail and incision.

QUAD 303 1968 £55

Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

RADFORD STA25 RENAISSANCE 1986 £977

At the time, very possibly the least cool amplifier on the planet – and we're not talking heat dissipation here. This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.



KRELL KMA100 II 1987 £5,750

Ludicrous monoblock version of the giant KSA-100 is one of the seminal eighties transistor power amplifiers. Massive wallop allied to a very clean and open Class A sound makes this one of the best amplifiers of its type, ever.

PIONEER M-73 1988 £1,200

Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the eighties-tastic experience.



PHONO STAGES

CREEK OBH-8 SE 1996 £180

Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring G1042 for an unbeatable budget combination.



LINN LINNK 1984 £149

Naim-designed MC phono stage built to partner the original Naim NAIT – yes, really! Fine sound, although off the pace these days.

MICHELL ISO 1988 £ N/A

This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy – if lacking in finesse.

TUNERS

MARANTZ ST-8 1978 £353

Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.



CREEK CAS3140 1985 £199

Excellent detail, separation and dynamics – brilliantly musical at the price. T40 continued the theme...

NAD 4040 1979 £79

Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica. Needs a good antenna to work properly, however.

NAIM NAT03 1993 £595

The warm, atmospheric sound is further proof of Naim's proficiency with tuners.

PIONEER TX-9500 1976 £295

Another of the serious classic solid-staters. Boasts the usual high end Jap package of fine sound, brilliant sensitivity and superb build.

LEAK TROUGHLINE 1956 £25

Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Fed by a modern outboard decoder they're deliciously lucid with true dimensionality.



YAMAHA CT7000 1977 £444

Reputedly the best of the classic Jap analogues, this combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

QUAD FM4 1983 £240

Supreme ergonomics and styling allied to a pleasingly lyrical sound with plenty of sweetness and detail made this one of the best tuners around upon its launch.



REVOX B760 1975 £520

More of a semi-pro machine than a domestic bit of kit, the Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?

NAD 4140 1995 £199

Brilliant affordable digital tuner has a smooth, detailed musical sound plus sensible real-world facilities.

ROGERS T75 1977 £125

Superb mid-price British audiophile design, complete with understated black fascia. Fine sound in the true Rogers mould – smooth and sweet with fine dimensionality.

SANSUI TU-9900 1976 £300

A flagship Japanese tuner designed to steal sales from the likes of Accuphase and Revox, it boasts superlative RF performance and an extremely smooth and lucid sound, along with very fine build and finish.

SONY ST-5950 1977 £222
One of the first Dolby FM-equipped tuners, a format that came to nought. Still, it was Sony's most expensive tuner to date, and boasted a very good sound quality allied to brilliant ergonomics.

SEQUERRA MODEL I 1973 £1300
Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio, including impressive multi-purpose oscilloscope display.



TECHNICS ST-8080 1976 £180
National Panasonic's specialist hi-fi brand was a big hitter back then, and this is no exception. Superb FM stage makes for a very clean and smooth listen with lots of detail and depth.



ANALOGUE RECORDERS
YAMAHA TC-800GL 1977 £179
Early classic with ski-slope styling courtesy of Mario Bellini. Middling sonics by modern standards, but cool nonetheless!



AIWA XD-009 1989 £600
Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

NAKAMICHI CR-7E 1987 £800
The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



PIONEER CTF-950 1978 £400
Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.



REVOX A77 1968 £145
The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days. B77 better, but couldn't match the Japanese.



SONY WM-D6C 1985 £290
Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.



SONY TC-377 1972 £N/A
A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

DIGITAL RECORDERS
SONY MDS-JE55ES 2000 £900
The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.



PIONEER PDR-555RW 1999 £480
For a moment, this was the CD recorder to have. Clean and detailed.

MARANTZ DR-17 1999 £1100
Probably the best sounding CD recorder made; built like a brick outhouse with a true audiophile sound and HDCD compatibility.



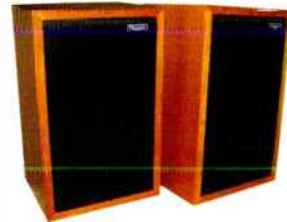
KENWOOD DM-9090 1997 £500
Serious and sophisticated sound thanks to well implemented ATRAC 4.5; surprisingly musical MD recorder.

SONY TCD-8 DATMAN 1996 £599
Super clean sound makes this an amazing portable, but fragile.

LOUDSPEAKERS
ACOUSTIC RESEARCH AR18S 1978 £125
Yank designed, British built loudspeaker became a budget staple for many rock fans, thanks to the great speed from the paper drivers, although finesse was most definitely not their forte...

BBC LS3/5A 1972 £88
Extremely low colouration design is amazing in some respects - articulation, stage depth, clarity - and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence. Partner with Rogers ABI subwoofers for an extra two octaves of bass!

HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.



LOWTHER PM6A 1957 £18 EACH
This seminal full-range driver is still manufactured. High sensitivity, as fitted to many classic horn designs.

TANNOY WESTMINSTER 1985 £4500
Folded horn monsters which certainly sound good if you have the space. Not the last word in tautness but can drive large rooms and image like few others.

JR 149 1977 £120
Infamous cylindrical speaker that was ignored for decades but now back in fashion! Based on classic KEFT27 / B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but rewards with fine clarity and imaging.



SPENDOR BCI 1976 £240
Celestion HF1300 tweeter meets bespoke Spendor Bextrene mid-bass unit - and the result is a beautifully warm yet well focussed sound. A little bass bloom necessitates careful low-stand mounting, but these prove that the seventies did have some fine designs after all!

QUAD ESL57 1956 £45 EACH
Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midband performance, although frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and supertweeters.



CLASSICS

KEF R105 1977 £785
 Three way Bextrene-based floorstander (complete with castors!) gave a truly wide-band listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace. The quintessential nineteen seventies loudspeaker.

IMF TLS80 1976 £550
 Warm and powerful nineteen seventies behemoth with transmission loading and a mixture of KEF and Celestion drive units. Impressively physical wideband sound but rhythms aren't its forte.

MAGNEPLANAR SMGA 198X £800
 Technological loudspeaker with genuinely musical abilities; fast, smooth, open, dry.



MISSION 770 1980 £375
 Back in its day, it was an innovative product and one of the first of the polypropylene designs. Warm, smooth, clean and powerful sound.



MISSION 752 1995 £495
 Cracking Henry Azima-designed floorstanders combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.

HEYBROOK HBI 1982 £130
 Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic.

CELESTION SL6 1984 £350
 Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit course at high frequencies and limp in the bass. Speakers would never be the same again...



LEAK SANDWICH 1961 £39 EACH
 Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.



QUAD ESL63 1980 £1200
 An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics.



YAMAHA NS1000 1977 £532
 High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



MISSION X-SPACE 1999 £499
 The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!



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THE KINGSTON TRIO
Turning Like Forever:
Rarities Volume Two
Collector's Choice Music

It may be a little difficult to believe, but this group represents a landmark in musical history. More than that, The Kingston Trio is but one of a handful of artists who have, like a dam plonked in the centre of a river, actually changed the course of music itself. A folk group, the three band members - Dave Guard, Nick Reynolds, and Bob Shane – created a harmonic vocal sound partnered by their acoustic music accompaniment of guitar and banjo.

As a group, they made folk a popularist genre. Indeed, they ruled the folk roost during the late fifties and early sixties. However, their importance was more than picking up an entire musical genre, single-handed as it were, and making it vital and a force in music. Without The Kingston Trio, it is almost certain that we wouldn't have had Bob Dylan, Peter, Paul & Mary or Pete Seeger...

As an important part of musical history, Collector's Choice has done all Kingston Trio and folk fans a great service by compiling a second collection of rarities. So what you get

here are thirty six tracks of varied and intriguing cuts. They include an instrumental version of 'Stories Of Old', an alternate take of 'Go Tell Roger' and an unreleased track called 'January Summer'. Sometimes you'll hear different vocal arrangements such as in 'Love's Been Good To Me'. You also get a radio interview plus a number of additional fascinating radio spots including some radio jingles and a chance to plug their latest album, at that time, 'Sunny Side!' Other promo recordings for radio include those made for KCPX in Salt Lake City, the home of DJ Bill Terry, who helped launch the group in the first place.

KATHLEEN EDWARDS
Asking For Flowers
Rounder/Decca

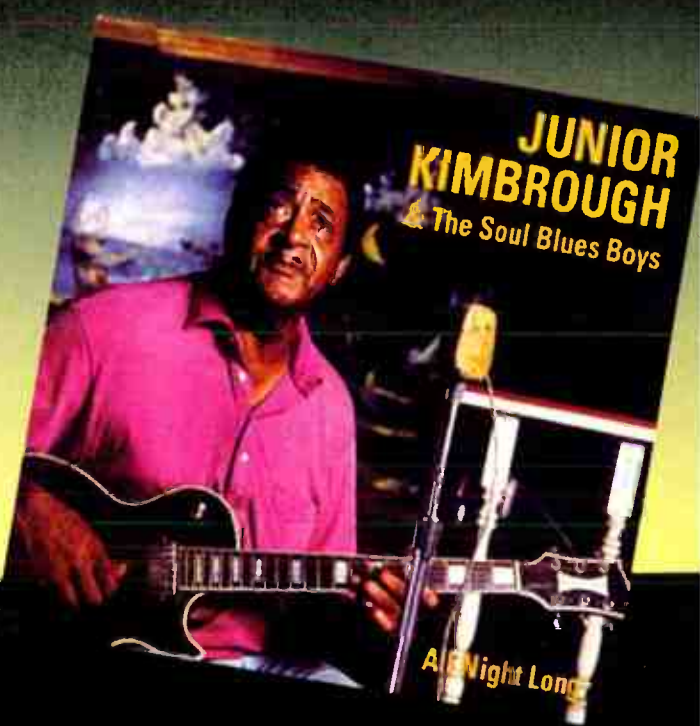
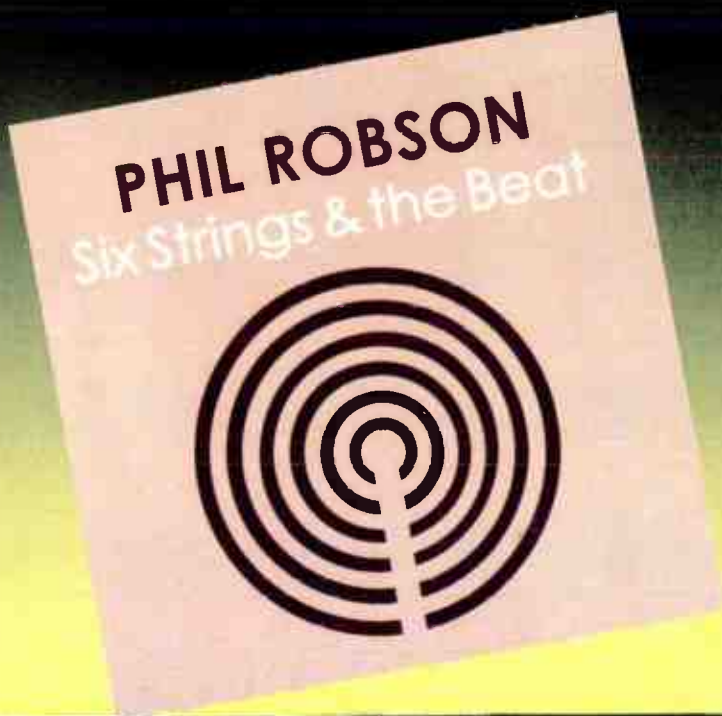
Kathleen Edwards, a singer-songwriter and guitar player, has handpicked a style from a selection of genres and made the resultant creative risotto her own. There's elements of country here as well as rock, and smatterings of folk that add flavours of authenticity. Like any good singer-songwriter, she is in love with words. How they feel on the tongue, how they blend with others to shape a song and how the audience reacts to them. She does have a

soft spot for swear words, however (witness the track, 'Sure As S**t!').

My camp counsellor once put it like this," said Edwards, "she said 'the reason that you swear a lot is because you're not smart enough to fill in the blanks with words that you don't know.' And I thought that was actually a great point. And from that point forward, I realized that I didn't want to be gratuitous in my cussing. And that it actually is a lot more interesting to have words that have the same meaning, but they're legal."

She also takes inspiration from real-life events. Including the sorry tale of Alicia Ross, reported missing, then later found murdered by her next door neighbour. "Part of the reason I think I was so struck by this story was because I really just saw my mother," said Edwards. "You know, how could a parent get up out of bed every morning after knowing that that's the fate that their child met? And all the years that they spent nurturing their child, and trying to keep them safe and protected."

Like the title that fronts it, this new album is a bit of a grower. It melts into your subconscious like a dollop of cream on the top of a glass of hot chocolate.



PHIL ROBSON
Six Strings & The Beat
Babel

Stemming from the increasingly popular Babel record label, Robson, a renowned jazz guitarist and co-leader of the band The Partisans, has successfully accomplished a difficult task – plugging a string quartet into a jazz set-up and making it work. Sounding vaguely Bill Frisell-like, the album wholly benefits from the strings as they both add counterpoint but also their own unique ‘improv’ moments. Label owner and executive producer on the album Oliver Weindling always has sound quality in mind when he produces his works. This begins with the choice of studio, for example - in this case Eastcote. It was chosen because, “the atmosphere there was a bit gutsier - the engineer has worked with Ian Dury but also had a broad understanding of music and could place Robson into context.”

The process of recording a jazz album is very different to recording a pop album. Jazz demands more of an ‘as live’ approach in the studio. Which may explain why jazz albums tend to be turned over quickly. “Robson recorded this album in just two days,” said Weindling, “his group with the

strings had already done four or five gigs and they were well played in. They also wanted to keep the tension of the performance within the final album. They knew they could add overdubs and edits later but they didn’t want to. They have a great degree of probity”

The band were well prepared – no staring at walls and scratching of arses here. The strings alone contain complex arrangements with definite Bartok influences yet Robson was in the studio from 10am to 7pm for just two days – job done. There are still a few blemishes left on the recording but they just add to the vitality and angularity of the album which is highly recommended.

JUNIOR KIMBROUGH
All Night Long
Fat Possum

Kimbrough was one of the most significant blues guitarists of the modern age. He commanded total respect from his neighbours – and not just because he had thirty six children! “He was a sweetheart and a legend but was also the man: no-one messed with Junior,” said Fat Possum’s Licensing Director, Bruce Watson. Kimbrough redefined the blues genre and was a hero to many contem-

porary artists such as U2 and Iggy Pop. “He was one of the few blues artists we worked with who basically created his own sound.” When Fat Possum recorded Kimbrough, it was early in the label’s life and its equipment was basic, featuring a, “Fostex 8-track, a bunch of cheap microphones and a cheap board.”

The label set up its equipment in Kimbrough’s Juke Joint (basically a shack used for drinking). The recording was a basic affair, “the equipment was plugged into a light socket,” added Watson, “so this was not audiophile.” The fact that the recording was analogue of the most basic kind helped to make the Fat Possum ‘sound’, “and we pretty much kept that sound, even when we could later afford a nicer studio. We aimed to keep it raw and never be too produced.”

Fortuitously, this provided a perfect complement to Kimbrough’s style. If the label had dragged the man into an expensive studio, the chances are that his overall performance would have been castrated. On ‘All Night Long’, Kimbrough is revealed as a raw performer. His deep groove, elemental guitar and almost improv style is perfectly backed via fluid bass and drums.

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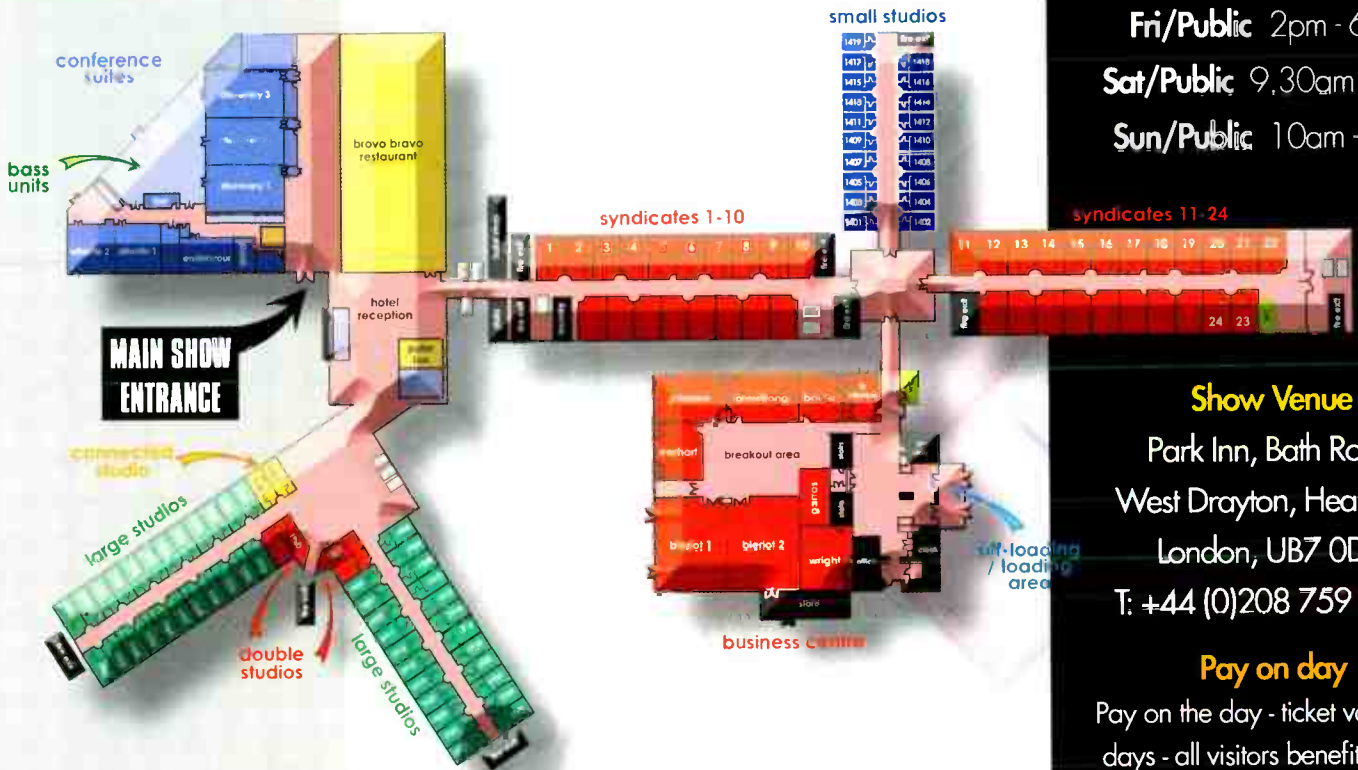
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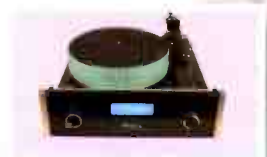
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"in real terms hi-fi has improved dramatically,
but has also got more elitist..."



david price

My earliest memories of hi-fi go back to the nineteen seventies, which makes me young enough to be dismissed as merely a 'boy' by our more senior readers, and old enough to be described as 'fossilised' by our younger ones. Still, it's not such a bad time to be able to remember, because hi-fi was sufficiently different then to show me what's happening now.

Of course, the world was a very different place back then. At the time when ABBA were making early assaults on the charts, disco was all the rage and it was quite unnatural to see men with shorter than shoulder-length hair, 'hi-fi' assumed an altogether more profound status in the great scheme of things. It was a glittering, jewel-like thing which, along with a semi-detached with an integral garage and a Ford Cortina 1.6GL [a 2.0 Ghia, surely?! – AS], was regarded as one of the most important things in life to aspire to.

This isn't to say that the hi-fi equipment itself was particularly worthy of the esteem in which so many people held it. To be honest, the fast-growing consumer electronics giants of the day (Sony, Hitachi, Panasonic, etc.) had cottoned on to the fact that this was a very good way to sell boxes of electrical circuitry to the world's public – and were pursuing this goal in earnest. Hi-fi of the nineteen seventies was vulgar – in both original meaning of the word (i.e. 'for the multitudes') and in the modern sense too ('crude').

Whilst classic-crazy audiophiles might look back on that time with a sense of fascination – drooling at pictures of high end Denon DP-3000 turntables, Pioneer RT-909 open reels and Pioneer TX-9800 tuners – let's not forget that about ninety

nine percent of what went under the name of hi-fi back then wouldn't make it to market now, so bad it would be seen to be.

The recipe was simple; take a standard transistor amplifier, put it in a big box with a thick brushed aluminium front panel; add chunky spun alloy knobs and some big meters and let the public's insatiable appetite for anything shiny and new do the rest. Inside, of course, it was a different story – a generic circuit with the cheapest possible passive components (and lots of them; this was before op-amps), wiring as thick as horsehair and the smallest possible frame type transformer you could get away with...

No one would be able to sell such stuff now – but not because the buying masses wouldn't accept such tat. Rather, it's down to the fact that the buying masses aren't interested in separates hi-fi at all anymore. No longer do we have Mr. and Mrs. Soap from Surbiton – frequent holiday makers on the Costa Brava and loyal Ford Mondeo customers to a fault – interested in separates. Instead, people now have umpteen different ways of playing music (from computers to mobile phones), and the 'real' hi-fi industry has singularly failed to show them that they can do better. The tectonic plates of the consumer electronics market have moved, sending tremors through the hi-fi industry.

In real terms, hi-fi has improved dramatically. It's hard to find the equivalent of those rotten sounding, knob-festooned Japanese monsters in today's separates market. But serious audio has also got more elitist. Whereas in the nineteen seventies, the Japanese understood vulgarity perfectly, giving the masses well made mass produced fodder that they wanted to buy, we now find the market populated by highly specialist

designs that don't sound decent without careful matching and setting up.

Meanwhile, the very people who sell this don't seem terribly interested in engaging with the mass market. I've heard tales of many specialist retailers scoffing at iPods and their ilk, alienating precisely the sort of potential customers they should be chasing. It's as if they've pulled up the drawbridge and are looking down from the castle battlements, cursing and swearing at the 'proles' below who've kept them in business...

Still, I think I'm beginning to sense a shift in this unhappy state of affairs. Gradually, we're seeing a 'sea change' in specialist hi-fi, as the retail trade is beginning to embrace the demon MP3 (or should that be AAC), and manufacturers are finally launching crossover products that give today's mass music buyers a stepping stone back to real hi-fi again. This is absolutely necessary if hi-fi does not, to coin the phrase, "eat itself". An ever smaller group of specialists making ever more specialist hi-fi for a shrinking demographic isn't exactly a business model to die for.

I think serious hi-fi manufacturers have a responsibility to make more mass market fare; we need to see modern equivalents of all those old Japanese music centres and 'casseivers' that once dominated the likes of Laskys. And we also need a more proactive, crusading even, attitude from hi-fi dealers – this means expert but friendly advice, along the lines of the 'demcraft' courses run by BADA which aim to raise standards and skills amongst dealers.

Put these two sides together and there's surely a future for hi-fi – after all, listening to music will never go out of fashion. What we're fighting for though is the right to be the ones to make this possible. ●

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"the whole personality of the record can be improved by judicious editing and equalisation..."



paul rigby

Whenever I review a CD or vinyl album, I try to give you a sense of where it has come from. Sometimes I focus on creative roots, especially if the album is a new production, and on other occasions I concentrate on its productive heredity, especially if the work in question is a reissue.

Indeed, there's an awful lot that can be said about the sound quality of any aural work by examining each step of its production. They used to say that the camera doesn't lie but, in this digital age, we know that just isn't true. Similarly, it was said that what the ear beholds must be the truth, and we also know in our times of recording technology that this no longer holds either. For, between the plucking of a string, the singing of a note or that banging of a single drum and the sound reaching your ears, there's a journey to be taken by that pure, original sound.

This journey might as well be a million miles and a hundred years away because that sound may be recorded, re-recorded, compressed, remixed, remastered, tweaked, changed and thoroughly mucked about with in a wholly ungentlemanly manner, even before you get to listen to it. Alter just one variable in that process and that same set of notes can sound totally different from the original. Suddenly, that song you love, you now hate. That great magazine review turns into a stinker and a creative reputation is damaged. And, of course, vice-versa...

For example, I have heard mono compressed reissues from The Byrds which I find unlistenable and stereo audiophile versions of the same

songs which are a wonder to the ear. I have heard works by Pink Floyd which have been treated as Jack The Ripper would treat an unfortunate lady of the night – and with no less grisly results. Yet, I have also heard previously unlistenable renditions from George Formby brought, blinking, into the audiophile sunlight via the healing hands of a man who cares.

When a group decides to record a song - before that song emerges from a (hopefully half-decent) hi-fi - they have to contend with the quality of their own musical equipment, the shape of the studio room, microphone placement, the skill of the engineer, the recording equipment, the cutting equipment and so on. It just takes one of these steps (plus others I don't have space to include) to go awry and the whole musical production falls flat on its face.

With the launch of a remastering project, however, it is sometimes possible that you can go back and right wrongs. My coverage of BGO Records' (www.bgo-records.com) Savoy Brown reissue project [see *Classic Cuts*, p130] showed that it is possible to do just that. Andrew Thompson, the mastering engineer on the Savoy Brown project, was able to explain a range of specific changes about how exactly the overall performance was improved. Mastering as a force for good, as it were.

Take the reissued Savoy Brown album, 'Getting To The Point': Thompson was able to detail some of his mastering tweaks. "On track 1, at 63Hz I added 3dB to enhance the bass presence. I also altered the bandwidth a couple of times. I introduced a narrow-band at 63Hz and a wider band at 12Hz. Affecting

a frequency with a wide band means you also affect neighbouring frequencies: 60Hz and 66Hz in the former's case, whereas a narrow band change is more pin-point."

This shows how, for example, a mastering engineer can at the same time reduce the general bass of a drum kit, increase the floor shaking bass of a bass drum and also tighten up a bass guitar without ruining the overall sound.

Here's another instance, "specifically, track four, left-hand channel I added a narrow band at 3kHz to bring out some definition. This is a very revealing frequency. If something sounds a bit muffled on one channel you can push a snare or a guitar. If you push a guitar sound however, the vocal on the same track could sound horrible. So, it's a question of balance. Same track, right-hand channel, I've taken away, at 125Hz, a couple of dB. This is the upper bass/lower mid that would affect the boomy, boxy, hard sound. You sometimes get the wrong kind of thud on a drum in this area. It can also adversely affect the vocal," said Thompson.

There were plenty of additional changes made by Thompson, of course, but the above gives you an idea of how the whole personality of the record can be changed and, in this case, improved by clever, deliberate editing. Which just goes to show how important the role of a mastering engineer is. He is the hidden face behind the stars. The conductor, if you will, whose skill and personality can make or break any record, new or old. He is the ultimate controller of the journey of sound. Which is of course why talented mastering engineers are so valued and in such high demand. ●

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"new applications will only emerge once super fast broadband becomes widely available. Interesting times lie ahead..."



steven green

Broadband in the UK received a much needed shot in the arm recently when BT announced that it's planning on rolling out 'super fast' broadband to 10 million homes – about 40% of all UK households – by 2012, at a cost of £1.5 billion.

BT said that it would roll out the technology using a combination of fibre-to-the-home (FTTH) and fibre-to-the-cabinet (FTTC), although BT's press release said that FTTH deployment "will be focused primarily on new-build sites", so it sounds like the vast majority of people will receive coverage via the far more limited FTTC.

The difference between the two technologies is that, with FTTH, the data would travel over fibre-optic cable for the whole journey from the Internet right the way into people's homes, whereas FTTC would consist of BT laying fibre-optic cable as far as the roadside telecoms cabinets, and the final leg of the journey would still consist of data travelling over copper telephone wires – most likely using VDSL2, which is a faster version of ADSL. What matters most to users, though, is the download speeds, and BT said that people using FTTH would see speeds of 100 Mbps, with the potential of seeing over 1,000 Mbps in future. Those connecting via FTTC would see speeds of up to 40 Mbps, but BT added that it's "investigating technologies that can increase those speeds to more than 60 Mbps".

BT claimed that it would introduce the technology to rural as well as urban areas but, considering that the cost of rolling out fibre nationwide has been estimated to be around £15 to £18 billion, and BT is only planning on spending £1.5 billion to cover 40% of the population, I think it's unlikely that people living

outside of the towns and cities will be amongst the 40% who will receive coverage. BT said that it would consider extending coverage after 2012 though, so long as there's sufficient demand from consumers. Personally, I think the issue of super fast broadband access could turn into a repeat of what happened when broadband was first rolled out, where people from rural areas put pressure on the government to make sure that broadband was provided in their area, and I think virtually everybody will end up getting access eventually.

One of the main reasons why I imagine BT has taken this decision is that it would otherwise face losing a lot of customers to Virgin Media, which is due to launch a 50 Mbps broadband package on its cable network over the coming months. Virgin's chief technology officer Howard Watson also trumped BT's announcement of 40 to 100 Mbps download speeds by saying, "we are setting ourselves a vision of households using 200 Mbps by 2012".

Virgin's cable network, which covers over 50% of the population, works in a similar way to FTTC, with fibre-optic cable going as far as local neighbourhoods, then copper wire is used to deliver the signal into people's homes. However, Virgin's 'hybrid fibre-coax' cable network has the inherent advantage that the coaxial cable that goes into people's homes can carry far higher data rates than the thinner telephone wire that BT will be using, so BT's FTTC will always be playing catch-up to Virgin's cable broadband.

Another factor that I think will have influenced BT is that mobile broadband is growing very quickly, and one City analyst firm even predicted recently that there will be 2.1 billion mobile broadband subscribers by 2015 – in comparison

there were 367 million fixed-line broadband subscribers at the beginning of this year. The bulk of those 2.1 billion users would simply be paying for the ability to surf the Web on their mobile phone or laptop, but mobile broadband is also going to get far faster over the next few years. A perfect example is the upcoming release of the 3G LTE (Long Term Evolution) system, which could provide significantly higher download speeds for home users than the 10 Mbps that BT estimates "the majority" of users would receive via ADSL2+ – which is the fastest type of broadband BT will provide, short of using the fibre-based technologies.

So if BT didn't provide higher broadband download speeds, I think a lot of people would switch to using mobile broadband instead. 3G LTE is also "only" a 3.9G technology, and true 4G systems will supposedly offer download speeds of up to 1,000 Mbps to stationary users. Consequently, roll-out of the 4G systems could well force BT into deploying FTTH to a greater percentage of the population, as well as putting more pressure on it to provide FTTC to everyone else.

Both the fixed-line and mobile broadband providers cite HDTV and HD video in general as being the main applications that will drive demand for faster broadband, as well as other bandwidth-hungry applications such as online gaming and teleconferencing. However, HD is the most obvious application that super fast broadband would enable, and nobody predicted the phenomenal success of user-generated video content on YouTube. So I think there will be a few other highly successful applications that will only emerge once the very fast speeds become widely available. Interesting times lie ahead. ●

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"a future where we download music from the internet to a hard drive isn't one I'm looking forward to..."



noel keyword

Use computers - but don't like them! Worse, I have a horrible sense they are getting ever closer as necessary for music listening and very soon I will be forced to accept downloading music from the 'net and playing it from a system with a computer in it...

That for me will be a sad day. Call me old fashioned, but I don't want the message split from the medium, where music is just a file on a hard drive. Nor do I want to be forced to use remote controls, servers, wireless routers and suchlike paraphernalia to listen to music. I know the benefits; it's the drawbacks that make me balk.

To listen to music I can choose an LP from my reasonably well ordered collection, switch on the Garrard with a satisfying clunk, place LP on turntable, cue up, lower tonearm on to disc, then sit back and enjoy. I have been doing this now for longer than I dare admit(!) and cannot remember the turntable ever telling me I don't have permission to do what I'm doing or that I have performed an illegal operation - unlike a computer, especially one with Windows Vista on it.

Mistracking may occur I know, but it's not an onset-of-death experience. It will be just a temporary blemish in the listening experience, a minor irritation. The LP may suffer a little groove damage but it will be playable and enjoyable, now and into the future. It isn't about to be torn to pieces by the cartridge or made unusable in any other way. I know this because I have hundreds of LPs played by dodgy devices over the years, like a Shure M55E I once owned, and they are with me today still providing enjoyment.

That's durability for you, a degree of durability computers do not have. Mistracking of that tiny lightweight head in a disc drive is an altogether

different matter. When it starts to happen only the shortest warning is provided by data corruption before the whole shebang goes skyward and, if you haven't backed up, you've lost everything. It's total wipe out with no recovery whatsoever. This is impossible with LP.

Backup is the answer! But when you back up, it is usually to another hard drive and this, it seems to me, is placing faith in something that has just let you down, which hardly sensible! Okay, so there are server farms around the world running thousands of RAID array SCSI discs that guarantee data integrity, but somehow I am deeply suspicious about storing music that's valuable to me out there in cyberspace. I know my music will be on a drive somewhere, but where? Having faith in online storage isn't me; I have an iDisk on my desktop but never did get to use it.

And how much will it cost me to keep my music safely for the sort of period my LPs have sat trustily on shelves at home? Some of those LPs - especially an almost mint set of Beatles Factory Samples have indeed gone up in value. That isn't something that will ever happen to music stored in cyberspace.

I was reading wise words not so long ago about how music was a fleeting pleasure before Edison's gramophone arrived and that we all just had to get used to it being like that again - but wasn't convinced. The tide has turned against contrived views like this. Nowadays people are starting to realise that music issued on LP is best not separated from it. The music and the LP together encapsulate a period in time and really are as one when looked at like this, an historical record in effect. Together they can also hold fond memories for their owner, much like a family photograph. That was just one reason I chose not to throw

away my LPs when CD came along. It's also why I value them ever more as time goes on. Yes, LP sounds better than CD, but there's more value to them than just their utilitarian purpose. You can't say this about hard drives!

I have the tools and ability to record my LPs to a server in whatever digital code I choose, but see no point in doing so. My LPs are fine as they are and need no attention whatsoever, one reason why they are so wonderful. Whether a music server will enhance my enjoyment of them, I doubt somehow. Stabbing at tiny unlit buttons on a remote control in the dark is something I do with the AV receiver and it isn't the exciting bit.

I once took to iTunes but the love affair was short lived, ceasing abruptly when the hard drive expired, together with all the music I had bought. It's a great service and I keep telling myself I should sign up again and spend a bit more time trying to sort out how to backup the library and do all those housekeeping things one must do to keep such a library safe, but perhaps tomorrow.

My scepticism was strengthened recently when I purchased a LaCie Terrabyte drive for storing video. It lasted a few months before expiring. Luckily, I found a user forum where others had suffered the problem and diagnosed it to failure of the controller, not the drives. I got all my video back by removing the two 500GB drives and installing them into the host computer. It was a close shave and another reminder never to trust computer hard drives.

So you see, a future where we download music from the internet to a music server with a hard drive inside is not one I'm not looking forward to. I thank heavens for an LP collection that will see me through hard drive failure! ●

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SEVENOAKS
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the experts in home entertainment

"overall component synergy is the most important aspect of assembling a good hi-fi system..."



adam smith

Well, the builders are still working hard on our kitchen and, despite adding turntable number 32 to the Smith collection at the weekend (Sonab 65S in case you were wondering), I still have no space, worktop or suitable dust barrier to allow me to start fiddling with it, or any other of the recent arrivals. As a result, I have found myself spending more time than is strictly good for me staring into space and thinking profound thoughts.

The main topic occupying my brain recently has been loudspeakers, thanks to a good few weeks of measuring, listening and generally humping around the contenders from this month's £2,000 floorstander group test [Note to Editor – more small standmounter group tests please: they're much easier to move!]. This proved very interesting as pretty much all of the contenders were highly capable, but just approached their music-making in different ways.

In many ways, the humble loudspeaker is probably one of the most controversial components in the reproduction chain. Yes, debates continue with regard to belt versus direct drive (who thought we'd hear that one again, twenty years on?), non oversampling versus oversampling DACs, DAB versus FM and various others, but loudspeaker debates seems much more passionate and far-reaching...

In one corner you have me, surrounded by my fellow big floorstander supporters, in the second are the small standmounter fans and in another the electrostatic enthusiasts. A fourth contains the full range driver brigade, who are waving cheekily at the horn guys in the next corner and somewhere in the distance of this multi-cornered shape I appear to be conjuring up are the

omnidirectional lovers. There are a whole myriad of ways of approaching the turning of an electrical signal back into sound and we all have our own particular preferences.

It has always been my opinion that the loudspeaker has the biggest effect on the sound of a system. Whilst I feel that overall component synergy is the most important aspect of assembling a good hi-fi system, if someone brought out the thumbscrews and forced me to nail my colours to one particular mast, it is the loudspeaker I would point at as being the component that brings about the most dramatic changes.

It is precisely because these items can have such a large effect on the sound that makes choosing them a tricky prospect. Even if you have drawn up a shortlist and organised a demo, the problems do not end there. Imagine you have two pairs set up for comparison: pair A with a rising treble response and pair B with a falling one. No matter how good both designs are, the simple fact remains that if you listen to pair A followed by pair B, then pair B will most likely sound dull, whereas if you reverse the order, pair A will probably sound bright. As a result of this, it is always worth listening to multiple contenders in a variety of different orders.

Another issue can rear its ugly head when you find more than one pair that you would be happy to live with. I found this in this month's test, as the Dali Mentor 6s, Totem Hawks and Monitor Audio GS20s all proved to be absolutely first class designs and choosing between them was an interesting prospect. Ultimately though, the Monitor Audios were the natural choice as winner, as they basically did not put a foot wrong during the time I spent listening to them on a variety of amplifiers, sources and musical material. They

repeatedly proved themselves to be an exceptionally capable pair of loudspeakers with no flaws worth worrying over.

The problem is that this does not mean that the Totems or the Dalis should automatically be discounted (nor indeed the KEFs and PMCs, as these were equally impressive in their own ways). The Mentor 6s were hugely detailed but just a little too 'toppy' for my liking on most of the amplifiers with which I tried them. The only exception being a low-powered valve design with a rather soft top end, where the two balanced each other perfectly – system synergy in action!

The Totems were an even more tricky case. If anything they are even more dependent on matching than the Dalis, thanks to their low sensitivity, relatively low damping and necessity to experiment with mass loading for optimum performance. That said, I freely hold my hand up and confess that I think they're brilliant, and have done since I first heard them about five years ago. What Totem have done with small cabinets, and the sheer punch, gusto and downright enjoyability of the result makes them highly persuasive units. All in all, this proves that an extended home demo is by far the best way to make your decision.

Frankly, it was something of a light relief to have another spanner thrown in the works, namely smell! I have never before noticed two components with such pronounced odours as the GS20s and the PMC FB1s, and the Monitor Audios are still stinking out the *Hi-Fi World* listening room, a good week or two after their arrival. Perhaps the easiest way to decide on your component is actually to sniff it, although this would send Dansette prices through the roof – you really can't beat warm valves in a leatherette case! ●

vinyl section

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OCTOBER 2008

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LINN LP12 MAJIK 100

David Price tries the most affordable new Sondek to date.

ORTOFON SPU 105

Haden Boardman tells the story of one of the world's greatest classic moving coil cartridges.

SOUNDBITES 109

David Price auditions Origin Live's new turntable platter mat and Vantage Audio's record clamp.

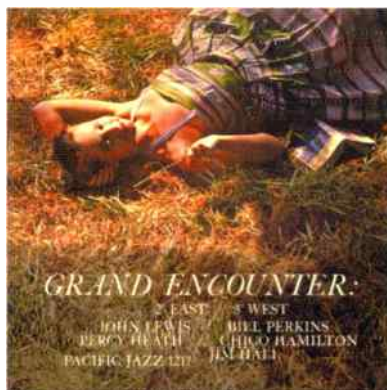
ADJUST+ 111

The second of a two-part feature in which Noel Keywood tries this superb modern cartridge alignment system.

news

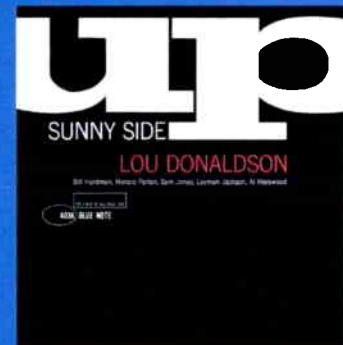
PURE PLEASURE PAIR

Two new releases have appeared from Pure Pleasure. 'Grand Encounter' AKA '2° East/3° East', is a perfect cool jazz album featuring John Lewis (piano), Percy Heath (bass), Jim Hall (Guitar),



Bill Perkins (tenor sax) and Chico Hamilton (drums).

Jazz not for you? How about country blues? If so, try Keb' Mo's self-titled debut: a brave, fearless chap who attacks his genre with gusto which doesn't always work, but it's well worth tagging along for the journey.



ALL THAT JAZZ

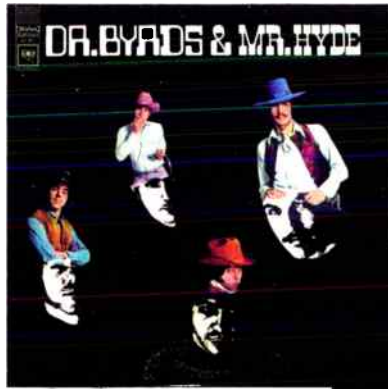
Classic Records from the USA has released three new jazz albums via the legendary Blue Note label. Firstly, from the respected alto sax bop player Jackie McLean, comes the largely uptempo 'Capuchin Swing'. Mixing originally penned tracks ('Condition Blue') and covers ('Don't Blame Me'), the band comprises Blue Mitchell (trumpet), Walter Bishop, Jr. (piano), Paul Chambers (bass) and Art Taylor (drums). A great introduction to McLean's works.

Lou Donaldson was another bop sax player but 'Sunny Side Up' (1960) is the antithesis of 'Capuchin Swing'. Here, in conjunction with Horace Parlan on keys, Bill Hardman's trumpet, drummer Al Harewood and bassists Sam Jones and Laymon Jackson, they calmly smooch through the likes of 'It's You Or No One'. Not the greatest of albums, it does however give you a window on a number of hard bop gems.

Finally, Duke Pearson's 'Tender Feelin's' (1959) maintains the relaxed atmosphere, this time via piano, with a selection of smooth ballads such as 'Bluebird Of Happiness'. Along with bassist Gene Taylor and drummer Lex Humphries, this straight-ahead jazz piece is a great way to end a busy week with a cool drink in one hand and a cool blonde in the other... [hope the wife isn't reading this, Paul - Ed.]

THE CAPTAIN AND THE DOCTOR

Direct from the American-based Sundazed label come two 180gm LPs. 'Dr. Byrds & Mr. Hyde' (1969) was a strange album. After previous band ructions, original band member Roger McGuinn was the only Byrd left standing after the release of the 'Sweetheart of the Rodeo' album. 'Dr. Byrds...' was a country-rock piece and McGuinn was eventually joined by Clarence White, Gene Parsons and John York. Not a great album *per se*, as the band had not quite gelled, but there are some brilliant highlights and sparkling individual performances.



Captain Beefheart's 'It Comes To You In A Plain Brown Wrapper' was supposed to be Beefheart's second album to be released in 1967. Despite the tracks intended for that album appearing in 'Strictly Personal', a horribly edited, unofficial form, the legendary album has never been released in full until now, complete with unreleased and unedited tracks. Excellent, vinyl only and highly recommended to all Beefheart fans...



LILY & MARIA

Out now on Sunbeam and presented in a swish gatefold with liner notes on offer within, Lily & Maria's only, self-titled, album, released in 1968, presents a skewed form of psychedelia and folk with a decidedly choral delivery. Full of ambiguous lyrics, which enhanced the mystery of the pair, this sparse, spooky, production leaves the listener feeling decidedly unsettled...

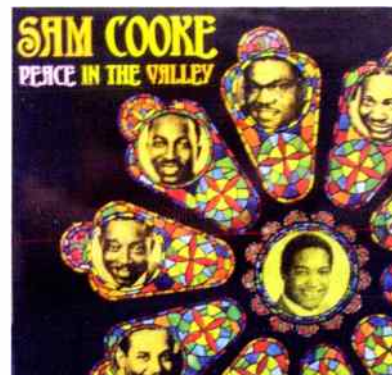


GENIUS BLACK

Three highly talented black artists have been celebrated by Italian outfit Get Back. The first, Elmore James, is captured in 'Genius Blues'. This is a compilation of the great man's recordings from the nineteen fifties, highlighting some of his classic material including 'Stormy Monday Blues', 'Standing At The Crossroads' and 'Held My Baby Last Night'.

Next up is Curtis Mayfield and a themed compilation based on his love songs. Actually called 'Love Songs Vol. 1', it obviously infers that there's more to come. Examples include 'Hey Baby (Give It All To Me)', 'Dirty Laundry' and 'If You Need Me'.

Finally, Get Back has released Sam Cooke's 'Peace In The Valley', an LP covering the entire output of Cooke's works with the Soul Stirrers, one of the foremost gospel groups with whom Cooke first sang in early 1951 until 1956, the date he went solo. Tracks include 'Jesus Gave Me Water' and 'Just Another Day'.



SEVENTIES SOUNDS

Direct from Spain's Wah Wah Records comes a double bill of buried nineteen seventies treasure. Steve Tilston's debut work, 'An Acoustic Confusion' (1971) is a largely instrumental, sometimes vocal, album of folk and acoustic guitar. Lovers of Bert Jansch and Wizz Jones should apply. Tilston was close to other artists on the small The Village Thing label, as were Graham and Anne Hemmingway whose album, 'The Sun Also Rises' is also published by Wah Wah. This acid folk, self-titled, album from 1970 resembles the Incredible String Band in style.



Carbon Dating

Linn's first LP12 hit the shops way back in 1972, and since then it has evolved so much that under the surface the turntable is almost unrecognisable. The price has risen dramatically too, but the new entry-level Majik package puts it back on the value map, says David Price...

You might be surprised to learn that the first Linn Sondek LP12 sold for around £80 in 1972. True, this was still a lot of dosh back then (remember, we were yet to experience the ravages of strike-hit, inflation fuelled seventies Britain in all its glory), but so is the £1,560 Linn charge for the cooking Sondek in 2008. Worse still, you'll need to add an arm, cartridge and power supply to that to get the deck to rotate, much less make a noise...

those bolt-on extras (or should I say essentials?) for a very reasonable £1,995, complete with five year warranty and a choice of Maple, Cherry, Rosenut, Walnut or Black Ash finishes. An optional hinged transparent lid adds a further £145 if you require it. This 'plug and play' package (well, your dealer will set it up for you and there's nothing extra to pay on top) includes the LP12 itself, an internal 'Majik LP12' power supply (£295), a solid base (£110), a Pro-Ject 9cc tonearm (£413) and a

might expect.

The 9 inch conical armtube echoes Wilson Benesch's high end A.C.T. 2 in its use of carbon fibre. An inverted bearing design with four hardened ABEC7 spec ballraces, it features good copper internal wiring, plus accurate VTA and azimuth adjustment. The supplied Linn Adikt is also impressive; we found it very good on the test bench [see MEASURED PERFORMANCE] and it auditioned no less well. Beautifully finished, it features a rigid body and a Gyger II stylus – which is replaceable.

For those who need me to reprise the LP12 Sondek, I shall do so briefly – as there can't be many reading this magazine who don't know what the fuss is about. Getting on for thirty six years old, for many years it was the paradigm for high end decks. An independently suspended subchassis design, it uses an AC synchronous motor to drive an inner platter via a short, flat section belt. On top of this sits a heavy Mazak outer platter and a simple felt mat to support the record. Coil spring suspension isolates the platter and arm, while a patented, high precision single-point bearing forms a 'closed loop' with the tonearm and cartridge, says Linn.

SET UP

Setting up the LP12 is easy, because your dealer does it for you! Linn's dealer training programmes are uniformly excellent at teaching them what is a relatively uncomplicated, but still fiddly, process. As such, your deck should arrive correctly fettled, so all you'll have to do is site it correctly. This in itself has been the subject of much debate, but suffice to say LP12s like light, non-resonant

"even in 'poverty spec' Majik form, it is blissfully nice to lay ears upon..."

Indeed, rather than the basic price, I think it's the cost of the ancillaries that has put off an entire new generation of potential LP12 buyers. Whilst £1,560 isn't *that* bad – the problem is that the cheapest Linn Akito arm is now £720, and the cheapest Linn Adikt cartridge is £225. Then you've got the baseboard and power supply to consider (£990 for a Lingo, anyone!), so you can easily end up with a £3,500 sized hole in your pocket.

Well, Linn obviously think this is limiting LP12 ownership too, because the new Majik LP12 addresses precisely this point, packaging up

Linn Adikt Moving Magnet cartridge (£225). If you do the sums, that's a saving of £1,040 no less...

Of course, Linn have done 'get you started' packages on the LP12 before. In the late seventies, dealers would happily sell you a Rega R200 tonearm and usually throw in a cartridge, to give you an entry-level LP12 for under £300. Then Linn Products themselves cottoned on to this, and the Basik was born – a £46 tonearm/cartridge combination to get you going. The Majik LP12 is the twenty first century version of that.

The idea is that you can then take advantage of the large amount of official (and unofficial) modifications available for this great deck – from the Lingo external power supply to Keel subchassis via the Ekos tonearm, Akiva cartridge and Trampolin base board. It was a good idea then, and it's a good idea now; my only query being why didn't they offer such a package five years ago, when the world and his wife were coming back to vinyl?

Some might be shocked to find a 'lowly' Pro-Ject 9cc tonearm on an LP12, but don't underestimate it – as our listening tests showed, it's a quality affair that is better than you





platforms, such as light rigid coffee tables and – better still – purpose-made hi-fi wall shelves. Still, there are umpteen other options, from the superb Quadraspire racks to twenty year old bargain Audiotech tables on eBay!

Needless to say, the LP12 must be level to give of its best, but there are a few other little tweaks that many years of LP12 owning taught me. First, the Linn's short sturdy belt gives good torque transfer between the motor and the platter; superior in my view to long string-type belts that drive the periphery of the platter (*a la* Michell's GyroDec) in terms of 'grip'. However, it is accordingly more sensitive to dirt on the inner platter (the gearing effect 'amplifies' any surface imperfections, creating subtle speed variations) so it's *imperative* to keep belt and the inner platter edge scrupulously clean. As such, don't touch the edge of the inner platter at all and handle the belt with clean hands [Wearing cotton gloves is a good idea when setting up any belt drive deck – AS].

At the risk of facing ridicule, I'll also add that, to my ears and in my system, the different surfaces of the belt sound different. One is slightly smoother and silkier to the touch than the other (no idea why; I presume it's just how it's made; if you can't tell the difference between the two surfaces, try feeling it with your

lips), and I think the smoother side sounds better. Ditto, either side of the felt mat has a fractionally different sound. I'll leave it to you to decide whether experimenting with these is worth five minutes of your life or not; many will think the latter so I mention it only for the sake of completeness!

SOUND QUALITY

Well, what we have here is a very nice, accessible LP12 experience. To my ears, it's certainly the best sounding 'entry level' Sondek yet made (better than nineteen eighties LP12/Basiks with the higher spec Valhalla power supply in my opinion). It crystallises everything that's great about this deck – and reminds me why Linn have kept it in production for so long. Even in 'poverty spec' Majik form, it is blissfully nice to lay ears upon.

No, you're not going to get vast tracts of bottomless bass, enormous levels of forensic detail or ear assaulting dynamics – but the interesting thing is that this simply doesn't matter. The LP12 gives an unalloyed musical experience, taking you into the spirit of the song and

singing its heart out. In this respect, I've still yet to hear *any* other turntable at any price that does this...

Rose Royce's 'Wishing on a Star' was a case in point. The LP12 let the music float by me, untroubled by the need to obsess on particular aspects of this venerable, late seventies all-analogue recording. Whereas my Michell GyroDec reference took great trouble to tell me about the tape hiss on the recording, the Linn instead majored on the beautiful harmonics issuing from the piano part, and the pianist's gorgeously



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10 AUDIO REVIEW

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laid back playing style. Beautifully loose, the track was a warm and wonderful musical experience instead of a forensic examination into the recording techniques and equipment at the time.

Michael Jackson's 'Don't Stop Till You Get Enough' was another ear opener. The LP12 Majik has a gentle, warm bass (none of the excess of the seventies and eighties versions here) that doesn't impress with its power or dynamic contrasts, but golly gosh can it play a tune! The sequenced bass line opening the song had all the enthusiasm of a terrier chasing a rat, bounding up and down with heady abandon. When the percussion cut in, the LP12 Majik was ready and

veritably ripped through the complex percussive elements in Quincy Jones's epic production.

Even this entry-level LP12 proved particularly good with heavy rock; Lynyrd Skynyrd's 'Saturday Night Special' is about as good an exemplar of the breed you'll find this side of ZZ Top, and the 'baby' Linn was well up for conveying all its glory. Guitars had believable timbre, vocals were appropriately raw and grainy and the bass tuneful and superbly fluid. Again, the Sondek's 'easy' quality let the music breeze past me, conveying the lazy feel of the recording, but was still compelling listening all the same.

Moving to my well worn copy of Beethoven's Pastoral Symphony (DG, Karajan, Dresdner Philharmonic), and I noticed how the LP12 doesn't emphasise surface noise as some, considerably more expensive turntables do. Again it gave a sweet and organically musical rendition, although with classical music it's easier to discern the deck's tendency to pull in the left and right extremes of the concern hall; Michell's GyroDec gives a far more expansive stereo acoustic.

Still, the LP12's soundstage fell nicely back like an SME 10A, where the GyroDec seemed to fall off much sooner.

CONCLUSION

Turntables are like shoes, they just need to fit you properly before you can really live with them. The Majik LP12 won't suit every individual, because it falls short on several counts (bass extension, dynamic articulation and soundstaging), but it also wins hands down on several others (musicality, tunefulness). Those who place the former attributes above the latter should look no further than Michell's GyroDec or Avid's Diva; superb designs both. However, audiophiles who happen to believe 'it don't mean a thing if it ain't got that swing' must hear this. The Majik LP12 brings its own unique and charming way of making music to the £2,000 plug and play party – and not before time some might say!

REFERENCE SYSTEM:

Michell GyroDec/TecnoArm/Linn Adikt
Sugden IA4 integrated amplifier
Monitor Audio PL100 loudspeakers

VERDICT ●●●●£

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FOR

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- superb build and finish
- iconic status
- upgrade path

AGAINST

- constrained dynamics
- unexpansive soundstaging
- stiff competition



MEASURED PERFORMANCE

The Majik LP12 features a new, simple power supply that runs the motor at 33rpm only, but the quality of this item has clearly not been skimped, as the deck returned an IEC weighted Wow and Flutter figure of 0.084% which is a respectable result. Visible flutter components within the graph were very low, showing that the bearing is of high quality.

Speed accuracy was good, with our 3150Hz test tone being resolved as 3145Hz and the Majik LP12 maintained this consistently over a period of several hours running.

The Pro-Ject 9cc arm supplied with the Majik LP12 is based around a carbon fibre arm tube and shows good results under measurement. The main arm tube mode is clear, measuring around 0.17g at 650Hz, but the trace is very clean other than this, showing that the arm should have an essentially neutral character. The headshell, formed from a flattening of the main tube, is also better behaved than most and should endow the arm with a clean top end.

The Linn Adikt MM cartridge supplied as part of the Majik package is an equally impressive performer. In a world where it is increasingly common to find cartridges with strong high frequency peaks, the Adikt has a pleasingly flat response up to 20kHz. However, whilst a response like this can result in a noticeable dropoff in high frequencies on the inner grooves when tracking losses come into play, the Adikt showed very little loss in this respect, thanks to its high quality Gyger II stylus profile. As a result, the Adikt should maintain an even-handed performance across the entire LP side.

The tracking ability of the Adikt was also

good, with it only becoming marginal on the highest cut 300Hz test track, and starting to mistrack on the top 1kHz track. The very best MMs and MCs can usually manage to get through all of these tracks, but the Linn generally did well and should stay secure in most grooves.

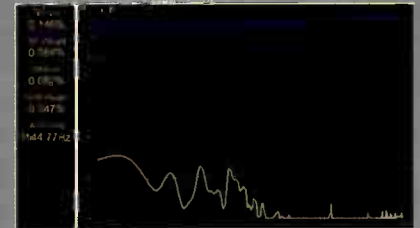
Vertical tracking angle was spot on at 22 degrees, another refreshing change from the norm, giving an impressively low figure for vertical distortion of 1.9% and an even better one of 0.4% for lateral - excellent results. Channel separation was good at 28dB and the Adikt has a healthy output level of 6.5mV, so it will match any standard MM phono stage quite happily.

Taken together, the three component parts of the Majik LP12 turntable combo measure well. Good speed stability from the turntable combined with the essentially neutral characters of the arm and cartridge are likely to give a pleasingly consistent result across all music genres. AS

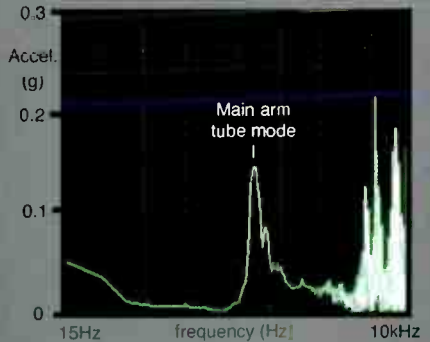
CARTRIDGE TEST RESULTS

Tracking force	1.5 - 2.0gms
Weight	7gms
Vertical tracking angle	22degrees
Frequency response	20Hz - 20kHz
Channel separation	28dB
Tracking ability (300Hz)	
lateral	85µm
vertical	45µm
lateral (1kHz)	21cms/sec
Distortion (45µm)	
lateral	0.4%
vertical	1.9%
Output (5cms/sec rms)	6.5mV

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Shell Like

Ortofon's classic SPU cartridge is surely one of the most important moving coils ever made, and retains a huge fan base even today. Haden Boardman tells its story...

By today's standards, Ortofon's SPU 'stereo pick up' is a flawed and anachronistic device, but that doesn't mean it should be dismissed out of hand or simply forgotten. Instead, this venerable moving coil is actually very important in the great scheme of things, both for the role it played in the early days of stereo micro-groove LP reproduction, and for its sound quality which is distinctive and distinguished even today.

Back in the nineteen fifties, Ortofon ruled in moving coil cartridge technology. The early monophonic A, AB and famous C pickup heads are rightfully legends. In 1956, one would set you back £17 17 shillings, when the nearest priced high end cartridge was by Lowther, at £15. With no standard mounting system, buying an Ortofon cartridge would lead to you purchasing a matching arm (as would the vast majority of vintage pick ups; Decca, EMI, etc.). This state of affairs only

**Pearl in the shell:
Ortofon SPU Gold...**



really changed with the introduction of the SME pick up arm; early versions of that used Ortofon's G type head shell, setting an industry standard that lasts to this very day.

A stereo pick-up is a much more complicated beast than its mono counterpart. A mono record simply wiggles the stylus from side to side; there is no up and down movement (which is why you should never play stereo records on an old pre-stereo mono pick-up, as the cartridge is not

recommended load of 3 ohms, and frequency response of 20Hz-20kHz. It was available with three different sized stylus tips, for playing your old mono recordings, 78s and stereo LP. This did mean you had to have two cartridges, or three if you played 78s! Around 1965, Ortofon introduced an elliptical stylus for the SPU, making it possible to fit your deck with an SPU-GTE.

"none can move me in the way an Ortofon SPU does..."

designed to track the extra stereo information, it will simply gouge it out!) A stereo pick up, however, has to transmit electrically the three dimensional graph of the groove; slide to side and up and down.

First mention of the SPU comes around 1961. Its output was 500µV with a

Installed in a plastic G headshell, the naked SPU body does not really fit in to anything else with ease. There were two versions initially, with or without transformer step-ups stuffed into the back of the headshell – the latter explaining that 'T' designation. Ortofon continued this option right up as late as 1978. The cartridge remains in production to this day – with nine different models,

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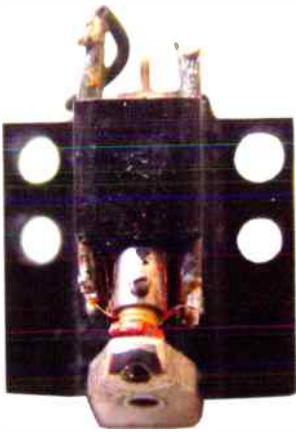
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The SPU in its 'birthday suit' - this is what it looks outside the shell!

four wired for mono, and five distinct stereo versions.

However, this classic has rather fallen out of fashion. Throughout the 1960s and 1970s, cartridge and

"the Ortofon SPU digs out more emotion and detail than any other cartridge I have listened to"

tonearm design moved towards lower mass, something that was not moving coil-friendly and especially unsuited to the SPU (the current SPU hits the scales at around 30



A variety of limited editions were offered during its long production run...

grams, three to four times the norm!) As arm mass became lower, and the obsession with trackability came to the fore, Ortofon launched the S15 and the SL15; these are based on the SPU but will work in (slightly) lower mass arms and have normal half inch mountings.

Although no longer a universal high end favourite (in Europe at least; the same cannot be said of the wacky hi-fi world that is Japan!), Ortofon's original patent on stereo moving coil cartridges is echoed by almost all modern moving coils, which have their generator system based on SPU principles – with the likes of Audio Technica, Denon and Fidelity Research as notable exceptions. The SPU's spirit lives on in so many other modern moving coils...

SOUND QUALITY

For me personally – and I realise this view isn't held by everyone – the Ortofon SPU digs out more emotion and detail than any other cartridge I have listened to. Its weight, authority and soul almost

defies description. Bass is organic, and seems to start lower than most other cartridges, and it can convey real drama and emotion. Midrange is clear and clean, stereo image is exemplary, detail, ambience: everything is where it should be. On earlier cartridges the treble can get a bit 'rattled'; that plastic G shell may have its bakelite charms, but acoustically it is not great. The later GM metal shell version is a vast improvement, but weighs even more!

Listening to my own 1989 SPU Gold, Garrard 401 and SME 3012/II is still a shocking experience. From a collection of over twenty moving coil cartridges, I have a true love for Denon DLI03 (which is almost as greedy in requiring a high mass arm to get it to truly sing) and several of the later Ortofons which have incredible outright detail and insight. But none can convey that real power of music or move me in the way an SPU does.

FITTING AN SPU

Matching arms are the real restriction here. Ideally you need an arm with a detachable headshell, and boy do you begin to restrict your arm choice! The classic arm to use with an SPU has to be a 12" SME. Whatever you may think about this, there's a certain 'peaches and cream' quality to this combination. 'Super arms' for SPUs include most of the Fidelity Research range (rare, hard to find and expensive, especially the long FR66) and Ortofon's own arms (frankly the older ones are a bit crude for the prices they fetch, the new Japanese-made ones are super but a little expensive). Best buy is the Audio Technica ATP1503 broadcast arm - again rare but not unaffordable - and also the sister ATP12 or 16. Want to break the bank? Try the Ikeda IT-345 or IT-407 – see David's article in the September issue.

All these arms are heavy, meaning they're totally unsuited for mounting on bouncy, suspended chassis decks. The whole concept fits the Garrard 301 idler or Technics SP10 direct drive concept incredibly well. Both decks rely on a plinth to tune the sound, and both decks suit these high mass arms and low compliance cartridges. De-shelling an SPU is not a bad idea, but fiddly. You can buy the current SPU Royal as an N version without shell, and Ortofon supply the cartridge with a suitably machined spacer to fit a conventional headshell. There are certainly better headshells out there than the G; I can fully understand why the Japanese go for the earlier C shell with its more rigid square shape.

As for the electrical side of things, remember you have to cope with the low output. New SPUs are about 200µV, although there is now a choice as the Meister Silver manages 300µV and the Synergy 500µV. I like my 1980s Gold which struggles at 100µV! There is a following for the little Ortofon headshell T transformers, but I feel that is because they boost the output to around 7mV. Personally, I do not think they are that good, and currently use an old Ortofon T3000.

BUYING

Try to avoid the vintage stuff – it's a 'pot luck' situation. If you know someone who can rebuild a dead one for you then fine, but other than that leave it those for those rebuilders and Japanese collectors, as most are now totally worn out. From the mid nineteen eighties there were a surprising number of special editions, in fact I think virtually every second-hand SPU you see will be a special of some kind. These are better made, and sound tighter. Although not officially sold in the UK, Henley Designs will supply new SPUs via your local Ortofon dealer as a special order from Denmark; which might save a lot of messing about in the long term... [Contact: Henley Designs, +44(0)1235 511166, www.henleydesigns.co.uk.]



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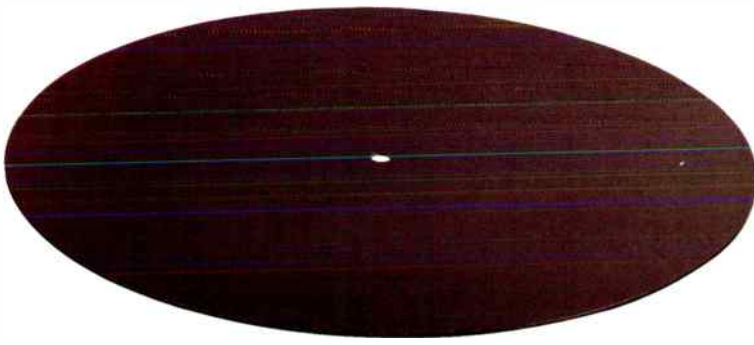
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ORIGIN LIVE PLATTER MAT £49

Platter mats were all the rage back in the nineteen seventies, as anyone who remembers the Spectra mat and its ilk will testify. Unsurprisingly perhaps, with the exception of the venerable Ringmat, the breed had been more or less forgotten about for many years – thanks to the rise of digital. Now though, we're back in a world where there are umpteen different aftermarket solutions. This is healthy, because the right platter mat can make or break a turntable, and it's frightening that some manufacturers seem to give this aspect of their deck's design fairly scant attention. Well, Origin Live have now joined the fray with

this, their so-called universal platter mat. 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 felt, fibreglass, cork, graphite, carbon fibre, acrylic, PVC, MDF, aluminium and steel laminates – it's claimed to be "more consistent across a wider range of turntables than any of the above materials". Needless to say, Origin Live are keeping mum about the material(s) used!

It's certainly one of the less conspicuous aftermarket mats – at

only 1.5mm thick it shouldn't cause problems with VTA adjusters and is very light, so it won't overburden weak belt drive motors or make direct drive servos work harder for their living. It was a direct swap with the stock felt mat on a Linn LP12, and produced interesting results. With every type of music, the mat further improved the Linn's already impressive rhythmic snap, and seemed to lower the noise floor even more. There was a slight improvement in focus, and generally a more relaxed yet authoritative sound. Moving to a massive Marantz TT1000, the OL mat worked wonders. Ping the platter with the stock glass mat and it rung like a bell, but substituting the Origin Live dampened it down dramatically. This was reflected in the listening, as the deck became noticeably cleaner and more focused across the midband, while the bass – which had been very strong but slightly laboured sounding – gathered speed and fluency. Overall then, a brilliant upgrade at just £49 for beltlers and direct drives alike. **DP** [Contact: +44 (0)2380 578877 www.originlive.com.]

soundbites

VANTAGE AUDIO RECORD WEIGHT £85

Like platter mats, record clamps and weights were all but forgotten for many years, but are gradually coming back into vogue. The arguments around clamping have raged for ages, with Linn making a big statement in the UK high end turntable market by arguing *against* their use. Whilst the LP12 might (arguably) sound better without a record clamp, most turntables are obviously improved by their use. It makes sense, after all, that the disc is firmly affixed to the platter, as flatly as possible and with its surface 'damped' – with vinyl, any vibration (even tiny amounts of airborne resonance) muddies the sound. Screw type clamps work well – Michell's standard-fit GyroDec item (also available as an aftermarket accessory) is great on belt drive decks. They're generally light, so they don't upset the springs on suspended subchassis decks, yet achieve a good

purchase on the disc itself. However, for direct drives or idlers that don't have wobbly wire coils to contend with, a massy record weight makes good sense. Vantage Audio's is hewn from solid brass – and is about acoustically inert as any such big lump of this type of metal, and no less heavy. Its size, mass and design are very close to that of Trio's classic Lo-7D clamp – which makes it just about ideal.

The problem with this device is that it is simply too heavy for most direct drives. Even our battle-hardened Technics didn't sound completely happy with it on. With direct drives, it all depends on the torque of the motor; the SL1200 is good in this respect, but even it seemed to be struggling. There was no speed drop, it was just that although changing the sound, the weight wasn't really improving it. Moving to a Marantz TT1000, and things took a real turn for the better,

resulting in a deeper, 'darker' sound with greater ease and less sense of direct drive's 'cerebral' nature. The music flowed more naturally, whilst the very slight upper midband tonal hardness seemed to soften out a bit. There was a sense of better control, as well as a more relaxed sound overall. Although not able to try this on Garrard 301/401s, I suspect it would be an ideal partner. So if you run a rugged non-suspended deck, this is a superb affordable tweak. **DP** [Contact: 0845 429 4643. www.vantageaudio.com.]





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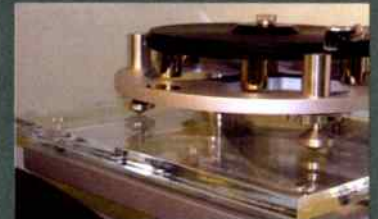
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Right Angle

Modern technology comes to the aid of the LP with Adjust+, a way of adjusting the vertical alignment of your cartridge for better sound. In the second and final part of his review, Noel Keywood delves deeper into its capabilities...

ADJUST ⊕ Test Record

Last month I looked in detail at the primary functions of the Adjust+ software, namely that of setting cartridge verticality (or horizontal tracking angle), as well as vertical tracking angle. Getting them right significantly improves sound quality. If you missed this feature in the September issue, this is available in electronic form on our website, for £1.90. In Part II this month I am looking at other measurements Adjust+ can make. They don't facilitate adjustment, but can tell you how well your record deck is performing.

FREQUENCY RESPONSE

I was intrigued by this option within Adjust+. Measuring cartridge frequency response is difficult and the problems obscure. Few test discs have ever been accurate enough in themselves to give a meaningful result, so I doubted Adjust+ could manage better. One professional test disc, cut at half speed, is accepted as accurate worldwide: JVC TRS-1007. We have two samples, bought from Japan at high cost long ago, that we use for our cartridge tests. TRS-1007 is now out of production and unavailable.

Frequency Response Test 2000 20000 Hz TRS-1007
JVC



JVC TRS-1007 test disc offers accurate frequency response measurement.

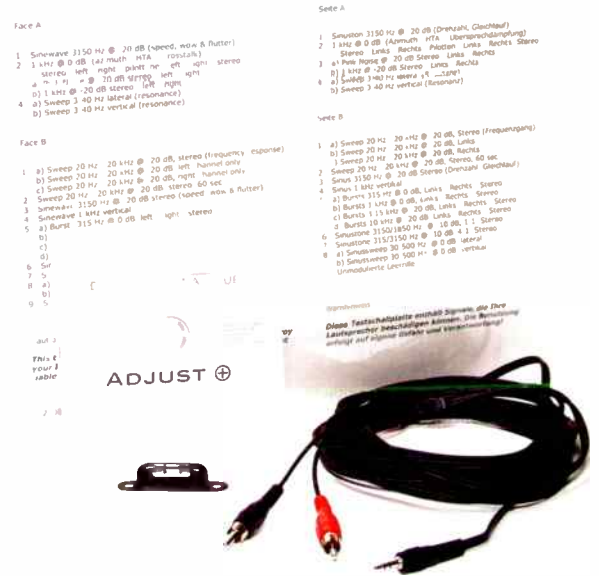
Amazingly, the Adjust+ disc gave similar results to TRS-1007, although that is not to say "the same". Look

at the graphs of Ortofon's 2M Black with JVC and Adjust+'s discs. The Adjust disc shows raised bass, and treble that looks ragged, but reaches 20kHz within one dB or so. JVC TRS-1007 superficially looks a lot different - although to my eye it looks similar. The reason is that below 1kHz cartridge generators are flat, ignoring arm resonance which occurs very low at 12Hz or so. So the Adjust+ plot is wrong (explanation later) and you can safely draw a straight line in your mind from 40Hz up to 1kHz.

It is at high frequencies that test discs have traditionally been inaccurate, and here the Adjust+ disc gave a result similar, if not the same, as TRS-1007 - impressive. So you can measure the real frequency response of your cartridge to a useful degree of accuracy. But why would you want to? The reason is that many cartridge preamps, including the Trichord Diablo we used within this review, possess switchable capacitance that modifies the high frequency response of Moving Magnet cartridges (but not MCs). Adjust+ will show you how things change as you do this and whether the response gets better or worse. It will also show just how flat, or otherwise, your cartridge is.

As LP playing makes a comeback, the emergence of the Adjust+ test LP is good news, but there are problems. For good reason, test discs never use RIAA correction, but custom equalisation that demands a special preamplifier, which means you can't measure frequency response through an ordinary phono preamp at home. RIAA boosts treble during cutting, and cuts bass, and the treble boost increases both velocity and acceleration of the cutter.

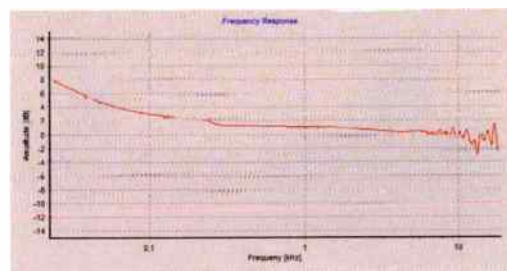
To keep both of these high frequency parameters within acceptable limits for the cutter and playback stylus, signal level on the Adjust+ LP has been kept down, resulting in a poor signal-to-noise ratio at low frequencies. As a result



of this, warps start to contribute to the test results, explaining the low frequency lift in the response graph. It may be possible for Adjust+ to lessen this with narrower FFT bins, but there is a trade off against measurement times.

At the other end of the scale, our Goldring 1012GX got decidedly shaky at high frequencies tracking the Adjust+ disc, mistracking above about 4kHz, although it stayed in the groove. So it appears that high velocities are reached all the same and some cartridges will object, likely giving ragged treble under measurement. The Ortofon 2M Black also looks uncertain at high frequencies, our response shows, compared to its behaviour on the JVC disc, likely for this reason.

Ultimately, then, the Adjust+ disc gives a good result providing you ignore the low frequency part of the graph.



Frequency response of Ortofon 2M Black with Adjust+ disc.

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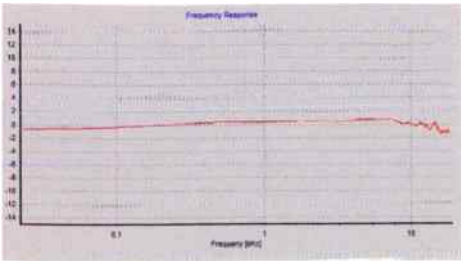
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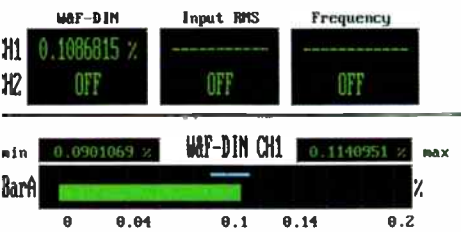
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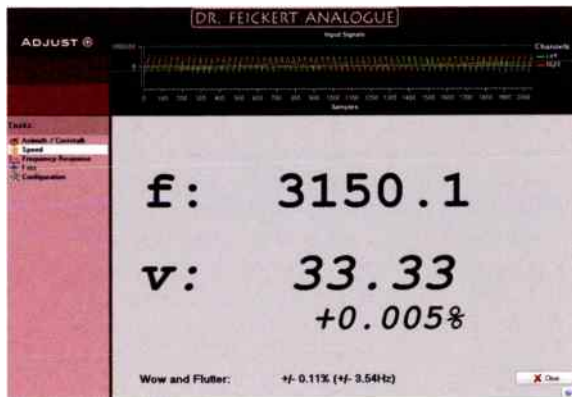
Frequency response of Ortofon 2M Black with JVC TRS-1007 disc.



Wow and flutter of our Pioneer PLC-590 test turntable measured 0.108% according to our Rohde & Schwarz UPL analyser, using the Adjust disc.

SPEED ACCURACY / W&F

Speed accuracy is a fairly straightforward measurement, where a 3,150Hz tone is read from a track on the test LP. If it reads 3181Hz



Wow and flutter of the Pioneer measured 0.11% according to the Adjust analyser and disc. Speed error was negligible at 0.005%, because this is a quartz-locked Direct Drive.

then the player is running 1% fast and Adjust clearly displays error in large numerals. Turntables usually have an error of less than 0.5%; anything greater indicates there is a problem.

Wow and Flutter refer to variations of speed, Wow being slow variations below 10Hz and Flutter fast ones above 10Hz. Interestingly, Flutter is analogous to digital Jitter, both being variations of frequency, or frequency modulation. Adjust+ gave a reading of 0.11% with our Pioneer PLC-590, a little higher than our Rohde & Schwarz UPL audio analyser with DIN weighting selected, playing test LP DIN 45 545 Gleichlauf-Mess-Shallplatte ('synchronisation measuring record', Babelfish say) that recorded 0.07%. So the Adjust+

result is close to professional test equipment. Adjust+ say the result is weighted and the disc has a residual wow and flutter value of 0.03%.

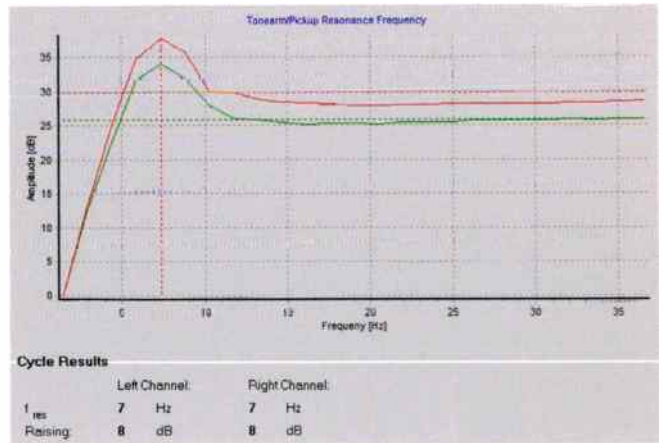
To get a meaningful reading, the LP must be centred so the arm isn't swinging in and out and professional test discs usually have an outer locked groove for this purpose. The Adjust+ disc lacks this so it has to be centred visually in an ad-hoc manner. When I placed the disc off-centre deliberately, the 0.11% result rose to 0.2%, illustrating how a large wow component at 0.55Hz due to disc eccentricity will affect the result. Even without a locked groove, the Adjust system has sufficient resolution and accuracy to give a meaningful result, showing just how well a turntable is holding speed and whether maintenance is needed. Again, this is an impressive result, because cutting lathes in themselves can suffer speed variations that will affect any disc that is cut, but the Adjust+ disc avoids this problem.

LF RESONANCE

Pickup arms have a lower subsonic limit (i.e. below 20Hz) imposed by the resonance of arm mass against cartridge compliance. Ideally, it should be around 12Hz. Much lower and the arm will read warps rather than ride over them; much higher and low audio frequencies will receive noticeable boost. Frequency will be low if the arm is heavy (high effective mass) or the cartridge very compliant. Another factor here is cartridge weight, which at 8gms or more approaches the effective mass of a modern arm at 12gms or so.

Adjust+ measures low frequency response using a frequency sweep from 8Hz up to 40Hz. Usually, there will be a resonant peak of 4dB or more and you can see this in our graph showing behaviour of a Goldring 1012GX cartridge in an SME M2-10 arm. Adjust+ neatly identifies the peak and measures both its frequency and amplitude.

There's not so much you can do about the LF resonance, because, if it is low, using lighter headshell screws or abandoning the finger lift will make little difference. If it is high, when an in-compliant Moving Coil cartridge is used in a lightweight arm say, mass can be added to the



Low frequency arm resonance. Adjust+ graphs it and identifies frequency and amplitude, in this case the 7Hz and +8dB result of a Goldring 1012GX cartridge in an SME M2-10 arm.

headshell. However, these days lightweight arms don't exist; most are medium mass. So measuring LF resonance is interesting, but it doesn't facilitate system tuning.

CONCLUSION

All in all then, the Adjust+ test LP is accurate and gives a reliable set of measurements, in conjunction with a computer and soundcard, plus Adjust+ software. The system is superb value at 249 Euros, allowing a cartridge to be aligned with great accuracy, and a wide range of test data to be gleaned about turntable behaviour. It is perhaps a bit complicated, as such an ambitious system inevitably will be, but it works well and is mightily impressive. Nothing like it has ever appeared before, to my knowledge, so it moves the art of LP playing forward by a significant step.

VERDICT

Sophisticated and highly accurate cartridge alignment system that provides stunning results.

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FOR

- aligns HTA and VTA
- adds focus and body
- many measurements

AGAINST

- complex
- time consuming
- some cartridges unsuitable

ADJUST+ LP TRACK LIST

TRACK CONTENT	PURPOSE
SIDE A	
1 Sinewave 3150Hz	wow and flutter
2 Sinewave 1kHz, lateral/left/right	headshell tilt
3 Pink Noise lateral/left/right	frequency response
4 Sinewave 1kHz, lateral/left/right	headshell tilt
5 Sine Sweep 3Hz-40Hz lateral	arm resonance
6 Sine Sweep 3Hz-40Hz vertical	arm resonance
SIDE B	
1 Sweep 20Hz-20kHz lateral/left/right	frequency response
2 Sweep 20Hz-20kHz lateral slow	frequency response
3 Sinewave 3150Hz	wow and flutter
4 Sinewave 1kHz, vertical	VTA distortion
4 Sine bursts 315Hz left/right/lateral	tracking
5 Sine bursts 1kHz left/right/lateral	tracking
6 Sine bursts 3.15kHz left/right/lateral	tracking
7 Sine bursts 10kHz left/right/lateral	tracking
8 Twin tone 3150Hz + 1850Hz 1:1	intermodulation
9 Twin tone 315Hz + 3150Hz 4:1	intermodulation
10 Sweep 30Hz-500Hz	arm tube resonance
11 Silent groove	rumble

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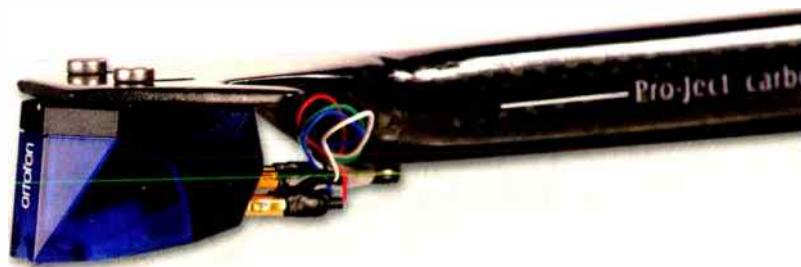
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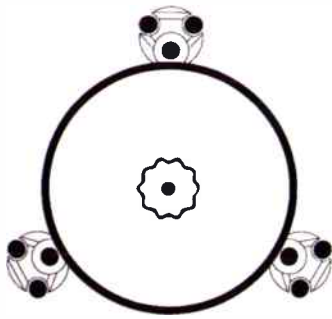
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LINN KABER Aktive black £550. 3 Linn LK 100s £250 each. Henley phono M/C upgrade, silver wired, battery powered £250. Quad valve FM2 £80. All in very good condition. Tel: 01647 61421

KEF REFERENCE 100 centre speaker. Excellent, boxed with instructions, £50. Kef Q85 surround speaker, as new, boxed with instructions, £40. Buyer collects. Tel: 01902 782 509 after 6pm

UNISON RESEARCH Hybrid valve equipment. Unico Secondo 120w/ch integrated amplifier with phono inputs, £950 ono (currently £1560). Unico CD player £850 ono (currently £1450). Excellent reviews. Spare Quad 99, Primare CD110 remotes, offers? Tel: 023 8073 8935

REGA PLANAR 3, RB300, S. Bias black £225. AE Aegis Evo 3's black £225. Target turntable wall stand £30. Denon DVD 2800 (£750) £225. Pioneer DV350 player £70, 110 amp £57. Sony DVP NS705V SACD £200 (£470). STSB920 QS tuner £100. Tel: Jim 01206 510 392, mob 07765 264381

NAIM CD3, good condition in perfect working order. £240. Tel: 01282 816445

KRELL 400xi immaculate, good working order. Offers above £1350. Conrad Johnson PV12AL valve pre, immaculate, good working order £650. Lovely Quicksilver valve monoblocks, Croft upgraded with new Precision components. Offers above £750. Tel: Stanley 07951 553 091

LOOK HALF Price bargain. Top of range Audion Golden Night 300 B monoblock amplifiers. Latest model, as new, virtually unused, boxed with owners manual. Cost £4400. Sell £2200. Tel: 01943 466 381

MISSION CYRUS 3 amplifier £150. Mission Cyrus FMX tuner £100. Pair Hi-Fi World KLS3 three way floorstanding speakers, beech finish. Tel: 01732 457 712

TANNOY: STUDIO Monitors 15 DMT II and Universal Super Tweeters ST-100. New February 2005. Domestic use only, pair as new, manuals and boxes. £2199 ono. Tel Robert 01392 873 984 (Exeter)

NEW TEAC DAB FM radio with remote control, NXT speaker, instruction manual, digi clock LCD display. Very special unwanted prize. Bargain. £125. Stereo receiver. Tel: 023 8073 7823

WANTED: DPA 200S pre/power amplifiers. Must be in very good condition. Tel: 01306 887 554

MUSICAL FIDELITY X-LPS V3 phono amplifier MM/MC, mint, boxed. Pair Lyn Olsen ME2 speakers with external X-overs. Professionally built, midnight blue. 18" and 24" Atacama stands. Genuine offers please. Tel: 0115 975 4070 (Nottingham)

SOUND ASSOCIATES 520C power amp made by Quad, upgraded £200. Rotel RA940BX integrated, upgraded, £75. One Audax Piezo gold dome tweeter £60. Tel: 0113 248 8340

QUAD 405 Mk2 power amplifier, late grey model with some scuff marks on case. £180. Tel: 01372 728 951 or Email: mrgcooper@aol.com

SUPERB DAK amplifier 4x100w + 100w subwoofer with LF gain. Inbuilt UHJ decoder surround sound. Controls for stereo width/balance, front/rear balance. Laboratory quality. Cost thousands. £475. Collect. Tel: 01753 586 660 (Windsor)

WANTED: NAKAMICHI cassette deck CR-7. Must be in excellent condition. Tel: 01452 713 211

WANTED: TWEETERS for Monitor Audio R952 speakers. One or a pair. Tel: 07723 059 047

LIVING VOICE Auditorium Avatar OBX-R2 in Santos rosewood. Excellent condition, original packaging. Less than 3 years old. £2100. Tel: 023 8031 6335

CYRUS CD7Q £325. Pre X £325. PSX-R £200. Boxed, manuals, remotes. Very good condition. Naim NAC82 wanted. Part Exchange? Tel: 01977 609839

MILLER & KRIESEL V.125 12" sub £250. Music Works 6-way mains megablock. 3x 1.5m IEC leads £225. Tannoy Oxford, no grills £125. All items excellent condition. Tel: 01722 334 694 (Salisbury)

WHARFEDALE EVO 30 speakers, maple veneer, beautiful sound, original model, only £320. Cambridge A840 Azur, 18 months warranty left, £360. Tel: 01225 706783 (Wilts)

PSB QUALITY crossover networks c/w connector housing. Single wired gold plated sockets. £40 plus P&P with free PSB (NAD) tweeter. Tel: 01132 733 744 (Leeds)

FORTY CURRENT Hi-Fi magazines for sale. £20. Buyer collects. Mr. Gunn, after 6pm. No timewasters or nit pickers. Summer gift. Tel: 01268 767 841

NORDOST SUPER bi-wire flatline MkII 2x4 metres 2-4 connection banana type. Very good condition. Boxed. £90. Tel: 01733 757 499 (Peterborough)

MARK LEVINSON 38.5 preamp, mint condition. Very, very low use. With manual and remote. Cost £6500, will accept £1450. Tel: Tony 07868 714 812 (London)

MUSICAL FIDELITY Nu-Vista CD3. Nov 2001. Under 1000 hours use. One owner. Mint in all respects. Tremendous value at £800. Tel: 01752 773 369

WANTED. Slate Audio Glass Mat or similar product. 01909 730 681. 07783 327 689.

LINN ADIKT MM cartridge, new, £160. E.A.R. 509 Mk2 monoblock valve amplifiers, £1500 ono. Croft Epoch (Special) valve pre-amplifier £1000 ono. Cabbasse monoblock amplifier £500 ono. Lector 2 box CD player. Lector pre-amp. Several high quality leads and interconnects Russ Andrews Power Cords for mains. Tel: 020 8524 2181

HUGE SPEAKERS RRR FS100, 1230mm tall, 43.5kg. Six months old. See review Hi-Fi World November 2007. Tel: 01962 713 517 (Winchester)

EXPOSURE CD player. Original version. Little used. £250 or near offer. Tel: 0151 677 3521

ARCAM CD73 CD player, mint condition. Cost £450, sell £200 ono. Tel: 07940 797 483 (Greenock, Scotland)

MARANTZ CD94, new drive belts fitted plus new spare set available. Open to offers or P/X for Quad 405. Tel: 01277 219 639 Essex

DENON TUNER + remote £40. Technics cassette deck RSB355 £35. Philips 601 CD £20. Marantz CD65 black £35. JVC AKII FMJ amp £40. Pioneer A110 black amp £57, DVD 350 £70. NAD 3020/4020A £90. Dual 505 + arm £35. Rotel RT950BX £60 (£300) Can send. Tel: Jim 01206 510392 or 7765 264381

LINN SONDEK, Ittock arm, no cartridge - £500 o.n.o.; Audio Innovations 1st Audio Monoblocks - £450 o.n.o.; contact Derek on 07729 065 244 or at dereklove@tiscali.co.uk

Hi-Fi WORLD magazines some from 1991 onwards and almost every copy to 2008. £50 buyer must collect. Musical Fidelity DAC and PSU V3 12 months old used a couple of times £395 plus postage. Tel: 07967122765 Manchester

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

ELAC FS207.2 Jet3 ribbon speakers, cherry finish. With boxes and manual, Mint condition. £395 Tel: Frank 02920 419226 (South Wales).

THETA GEN III DAC, One of the greatest ever. Excellent condition. You can take your DAC to my home to compare in Sutton SM3 8SA. £620. Tel: 020 8661 5329. Email: zhuo_deng@hotmail.com

CLEARAUDIO STABILITY headshell, AC006, SME fit, engineered design (Similar to Orsonic headshell). Few days use only, boxed as new, transforms SME 3009 / 3012 type arm performance, £100. 01204 578074 (Bolton)

SME 3012R tonearm, complete with two counterweights, twin weight outrigger, armlead, phono connectors arm base. Superb example, perfect working order. Spare new Soundlab solid headshell. £650, 01204 578074 (Bolton)

AYRE P-5XE phono pre-amp - as new condition - 18 months old, one owner - original packaging, manual. Balanced and single ended inputs. £999 + carriage. Tel: 01892 530830

REGA PLANAR 9 turntable, Arcam Alpha8 CD, Alpha9 amp, Alpha8 tuner Pioneer twin studio deck, custom built americanewewood Castle speakers cost over £6000 accept £650 ovno very nice system 07732890753 stormx29@btinternet.com

NAIM 112x preamp £349, Naim 150x power amp, 2008 £599, Naim Flatcap 2x 2007 £449, all mint boxed. Chord Co. Carnival+ speaker cables 2.8m. bi-wire £69pr. mint: Tel. Martin 01984 640588.

LUXMAN Direct Drive Turntable PD444 magnet suspended spindle, crystal phase locked loop. Sumo Polaris 111 Power Amp S/N 8102145. Arcam Delta 110 Digital Pre-amp R/C. Offers. Buyer collects. Kent. stangers@supanet.com

TEAC A3304S, discrete 4 channel, H/S Reel to Reel deck, excellent condition. Includes original Nabs, metal spools, spare belts, 4 line + 4 mic inputs £175.00 ono. Tel: 02476276666 p6blueslover@aol.com

NAIM NAP200 £650; Naim NAC202 £650. Both £1200. NAPSC power supply £90. Stageline S (m/c) £90. Everything £1350. All boxed, mint (bought summer 2006, hardly used). Tel 01327 706637 (Daventry).

GARRARD 401 turntable, SME 3009 Series II pick-up arm and SME 2000 plinth (rosewood), £450. Telephone 01189 413708.

LEAK 2075 speakers £750 ono. JBE Slate Mk3 direct drive turntable £750 ono. EAR 934P MM/MC valve phono stage £500ono. B&W 1800 speakers £195. reconcile@bdlrs.freesevice.co.uk or 01798 813133.

LINEAR A Tom Evans valve amp £1850. Vibe pre. £950. Grace M902 pre and headphone amp with DAC £575. Mordaunt-Short Performance 6LE new sealed. Mike 01224 572370

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QUAD ESL 63's, black, matched: 026623/ 026624. Owned from new (1988), Quad service 2002, little use since. Reluctant sale, downsize in property. Will demonstrate (Cambridge). £850 buyer collects. 01223 569646: gw.hargreaves@ntlworld.com

WANT: QUADRAPHONIC-LPs Dolly Parton "Bargain Store" RCA APD1-0950, Dolly Parton "My Tennessee Mountain" RBCA APD 1-0033
quadmastersound@yahoo.de

SALE: JACKSON 5 "In Japan" Quadraphonic-LP Tamla Motown CD4W-7037 70,00 EUR
quadmastersound@yahoo.de

AUDIONOTE OTO SE integrated valve amp with mm phono stage, plus MC step up transformer, recently serviced by audionote, excellent sound - £800 ono Tel 0161 775 8744

CLEARAUDIO STABILITY headshell, AC006, SME fit, engineered design (Similar to Orsonic headshell). Few days use only, boxed as new, transforms SME 3009 / 3012 type arm performance, £100. 01204 578074 (Bolton)

FOR SALE SD Acoustics SD5 pair of floor standing 3-way speakers. Rear ported, black lacquer finish, good condition, original boxes. No manual or spikes. Tri-wireable. £500 ono. Greg 01524 62809

SME 3012R tonearm, complete with two counterweights, twin weight outrigger, armlead, phono connectors arm base. Superb example, perfect working order. Spare new Soundlab solid headshell. SME rebuild, £650, 01204 578074 (Bolton)

SPENDOR BC1s in teak, on trolley stands in stunning looking and sounding speakers. Original cartons and manuals. Any trial. £300 o.n.o or swap! Call Steve 07808 628236 or 02082240915

QUAD II Forty power amps & QC Twenty-Four matching pre-amp in cartons, in mint condition -stunning!! Any Demo £2200 inc shipping! Call Steve 07808 628236 (EpsomSurrey)

WANTED CHORD Odyssey 2 speaker cable 2x3 m silicone outer jacket chord plugs. Also wanted PMC DBI speaker wallbrackets Tel 01234 302769 or 07840428253

QUAD 306 current dumping poweramp 50 Watts per channel. Excellent condition and working order. £170 ono. Mobile 07502009541

WHARFEDALE 708 Loudspeakers, Black Ash, in good condition. Below average use. Complete with matching Heybrook HBS Stands. £210 ono. Buyer collects, can demonstrate. Telephone 01709563292 (Evenings)

NAIM CD3, NAC62S, HiCap, NAP250 (chrome) £650, Epos ES11 with Stands £75. Black LP12, Cirkus, Trampolin, Ekos, Lingo, 17D2 £1200 Good Condition. Original Boxes. Buyer collects. Colin. Barrett60@ntlworld.com

TANNOY PRESTIGE Glenair 10 loudspeakers brand new, still boxed and never played, fully guaranteed, made in the UK £2450 ono (RRP £3300). Part exchange possible. London 07855343330 naissus@hotmail.co.uk

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MARANTZ CD16 high end CD player. exc condition, boxed, manual, remote. £250 ono. Tel 0207 932 0108

ROTEL RA-05 amp Rotel RCD-06 CDplayer, latest models, immaculate, boxed £350. Half price! no offers. Lee West Midlands 01384 412234

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NAIM CDX2 with XPS2 power supply. Immaculate condition, 15 months old, 21 months left on warranty. Complete with boxes, manuals etc. £3700.00 01235 765986 sfinch123@ntlworld.com

WANTED FOR project, faulty or non working Quad 34 or 44 preamps. cabinet condition unimportant but must be complete and pcb intact. also Quad FM3 tuner. Mike 01758 613790 .

LOWTHER PM2C drive units used very little excellent condition £140 each or £200 the pair. Buyer collects Tel 070956568

HI-FI ANSWERS Monitors from the 70's. Well built and in good condition. Midrange has gone down on one of the speakers, due to the crossover, I believe. No time to repair. Will accept £150. Buyer collects. St Ives Camb. Tel: 01480 354084.

GUIDELINES FOR BUYING AND SELLING SECOND-HAND EQUIPMENT

FOR THE BUYER

1. Not everyone is honest - Buyer Beware!
2. Don't send cash!
3. Accept no verbal guarantees.
4. Have you heard the item or something similar? If not, why do you want it?
5. Don't pretend to have knowledge - it's your fingers that will get burnt!
6. Is it working? If not, why not? Can it be repaired and if so is it worth it?
7. Has it been modified and, if so, have notes been kept?
8. Was it any good in the first place?
9. Don't send cash!
10. If you are in the slightest doubt, arrange an audition (see point 5) If it's too far, wait for another time.
11. Either buy it or don't: vendors are excusably impatient with 'consultation' exercises.
12. Don't send cash!

FOR THE SELLER

1. Not everyone is honest - Seller Beware!
2. Make no verbal guarantees.
3. Even 'nearly new' is still second-hand. If the manufacturer's guarantee is no longer in force, your price should reflect this.
4. There is very little intrinsic value in second-hand hi-fi; it's only worth what someone will pay for it.
5. The best guide to pricing is last month's Classifieds: that a 'classic' was worth £xxx a year or two ago is no guide. Values fall as well as rise.
6. Amateur second-hand dealing is not a big money game; you win some, you lose some.
7. Be prompt with despatch. If in doubt about buyer's bona-fides, either wash out the deal or send C.O.D.
8. There will always be time-wasters; be tolerant within reason!

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CHORD DAC64, Purchased May 2004, Still under manufacturers guarantee. As new. Silver. Dual data. New Price £2360, sell £1150. Quad 57's full refurb by One Thing costing £1000. Black material finish, new stands. Emaculate. Sell £775. Croft Epoch Elite pre and series 5 power amp Black and gold purchased from new cost £2000 sell £850. Emaculate Telephone Graham 01622-750732 for full details. Kent area

TLC MAESTRO 130s large floorstanding speakers, nice cabinets. One works fine, other sounds awful Suit DIY repair or build project. £NotMuch but you collect from Portsmouth. More info from pompeybay@btinternet.com.

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QUAD ELS63s pair including stands £700. Quad FM4 tuner, Quad 34 control unit, Quad 36 power amplifier. Offers invited. Tel: 01403 754 318 or Email: gee153ward@tiscali.co.uk

PIONEER PDS801 CD
player £120. Mordaunt Short Pageant (1981) speakers £100. Valve preamp with phono stage £100. Albarry S508 poweramp £250 ono. All mint. Tel: 07708 431963 (Cheshire)

WANTED: TARGET B5
equipment stand. Black finish only with shelves glass or black MDF. Liverpool area. Tel: Keith 0791 906 1178

WANTED WANTED: Hi-Fi
Year Books for most years. Any reasonable condition. Please telephone with quantity and asking (sensible) prices. Tel: 07710 828 286 (Brighton)

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CLASSIC CONTACTS

When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all those companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

CLASSIQUE SOUNDS
(Paul Greenfield, Leicester)
ESL-57s restored, rebuilt, fully renovated or improved. Leak. Quad valves amps etc.
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(Paul Wilkins, Worthing, West Sussex)
Restore, Repair & Service Nakamichi Cassette Decks.
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(Bristol)
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Tel: 0117 925 6015
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LORICRAFT AUDIO
(Terry O'Sullivan, Bucks)
Garrard 301/401 and their own S01 repair, spares and service.
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NEXT MONTH

As the long nights draw in, the hi-fi season kicks in and all of a sudden there's no excuse not to be spending more time with your system! With this in mind, November's Hi-Fi World is rounding up three high end systems for your pleasure – including the best products from the likes of Meridian, Clearaudio and Chord! And there's so much more – including exclusive reviews on Acoustic Energy's superb AE1 MkIII SE mini monitor loudspeaker [pictured], DNM's enigmatic new 3D preamplifier and Q Acoustics' affordable 1050i floorstanding loudspeakers. Here's just some of what we hope to bring you:

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MONSTER BEATS by DR. DRE HEADPHONES
CONSONANCE DROPLET LP3.1 TURNTABLE
ICON AUDIO PS2x VALVE PHONO STAGE
MERIDIAN 808.2 DIGITAL DISC PLAYER
OLDE WORLDE: GARRARD ZERO 100S
Q ACOUSTICS 1050i LOUDSPEAKERS
NAIM HDX DIGITAL MUSIC SERVER
PIONEER VSX-LX51 A/V RECEIVER
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SAVOY BROWN

RAW SIENNA

1970

Blues rock outfit Savoy Brown found more success in America than here in the UK. Headed by Kim Simmonds, the group had a Jethro Tull approach

to its line-up, which is to say that it changed regularly! 'Raw Sienna', originally released on the Deram label, is arguably their best album, and one of the best blues rock albums to come out of this country, displaying a gamut of styles with some truly distinctive highlights such as 'Needle and Spoon' and 'Stay While the Night Is Young'.

The album is currently available for sale from BGO Records (www.bgo-records.com). Beat Goes On has a magnificent catalogue of releases that rewards close examination and covers a wealth of genres. Always well recorded, its CDs offer great value for money as the company often provides two albums on one disc. This is the case with 'Raw Sienna' which is doubled up on the same CD with 'Looking In', released in the same year and almost as good an album as its CD partner.

Thankfully, BGO treats its music with the respect it deserves, so when it assigns a mastering engineer to help produce a new re-release, it goes for someone who not only understands the music but also the digital and analogue formats. This gives the source every chance to shine on the much maligned CD format. This is a difficult task that only the more experienced engineers can pull off. In this case, the chosen mastering engineer was Andrew Thompson.

Interestingly, Thompson's source when creating this reissue was a CD-R. You can hear the audiophile alarm

"A mastering engineer can make or break a reissue, and Andrew Thompson did a great job with this..."

bells ringing, can't you? There was a very good reason for this, however. Firstly, any third-party record label very rarely has the opportunity to handle an original master tape for reasons of physical distance and the risks of posting, fragility and so on. While the likes of Speakers Corner will send Sony, say, a new blank master tape for a forthcoming vinyl reissue, this Savoy Brown release was always going to be a digital release, not analogue. Yet Thompson's main reason for using the CD-R source was of a more practical nature. "I spent a lot of time working in the old Pye studios and I saw transfers that had been made for compilations. Each new tape copy increases the amount of hiss. Audibly, the frequency transfer is great but, often, there will be increased background noise and hum. To do that for a final digital format would not, therefore, be necessary or desirable."

Thompson also commented that you cannot wholly trust the parent company to make a top notch flat transfer (or clone as it's sometimes called) to an analogue tape. When did they last clean their tape heads? Did they align the recording correctly with a NAB test tape (a tape of test tones that helps align the following music to the tape heads)? "There have been times when I've returned the clones because the tape azimuth has been completely off, for example." Hence the use of a CD-R

flat transfer is not always such a bad idea after all...

Thompson tried to produce a CD with a similar warmth to that of a good vinyl set-up. "One of the biggest disappointments for so many reissues is the tinny sound. You know that they've gone back to an original master and flat transferred it. However, they forget that many CD players have an innate coldness as opposed to many turntables which add their own warmth. Also, you have to make a note of where it was cut, as many lathes add to the music's personality. For example, on an American Scully lathe – as opposed to a European Neumann – it'll add a bit of bass life giving you extra warmth. This is why many American cut albums had a warmer, apparently deeper, sound."

Hence, for 'Raw Sienna', Thompson was conscious of lifting the bass in the right areas to give the whole production a warmer sound. Of course, if the bass was too forward, giving a boxy feel to a bass drum, for example, Thompson declared that he would slice the bass to quieten it down a bit. Which all goes to prove that, firstly, analogue has a big say in how a digital production will sound but, most importantly, a mastering engineer can make or break a reissue. BGO Records can be thankful, however, that Andrew Thompson did a great job with this CD – it's highly recommended. **PR**

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