THE ESSENTIAL HI-FI GUIDE

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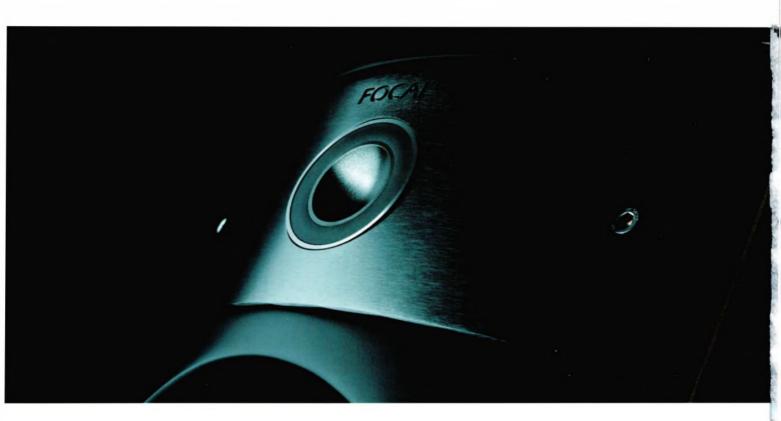


TOWNSHEND ROCK V
The ultimate record player

ROKSAN CASPIAN-M Getting closer to the music



Electra S





When Focal wanted to follow the success of the Electra Be range with a speaker line with similar attributes but at a substantially lower price, the challenge seemed at first very difficult.

After all, the Be has proved to be the perfect speaker for many music lovers - and altering a classic recipe does not always guarantee savoury results.

In the end, the answer proved very simple. Change very little.

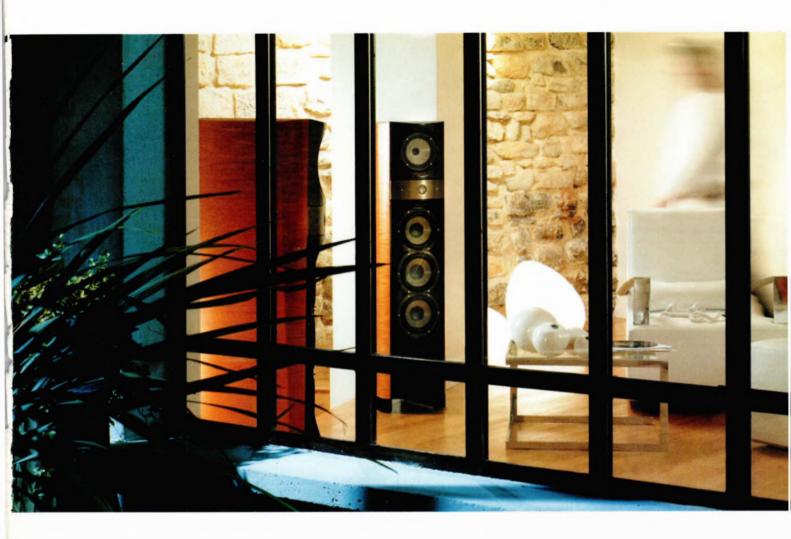
A new tweeter; an AL/Mg alloy unit in place of the exotic beryllium dome, and a simpler finish choice of Classic (left) or Macassar Ebony.

And that's about it - apart from the smaller price tag of course.

Simple.

Focal JMLab UK 0845 660 2680 info@focal-uk.com www.focal-uk.com

Electra Be



Accept no compromise....

Electra 1037 Be

* A phenomenal balance of musical virtues

* Somewhere in the design process, someone wound the fun control round towards its end-stop

The results are astounding".....

"The Focal Electra 1037Be offers superb measured performance.... That on-room response, one of the best have encountered. Wowl"

Transients were faster than sharp, approaching the ease, physicality and true speed that lets you know, even from down the block or round the corner, that you're hearing live music, not a recording.

Stereophile July 2007

Electra 1027 Be

- " A beautifully sweet and sparkling top end, suffused with the finest and most delicate detail".....
- "There's no shortage of deep bass weight or gravitas here"...

"It's a remarkable speaker for the money"...

Hi-Fi Choice Feb 2006 - Editor's choice award

Hi-Fi Choice July 2006 - Sest buy

Hi Fi Choice Sopt 2006 - Component of the year £5,000



















"This is one of the most impressive hi-fi products I've heard this year"

KETAN BHARADIA, TECHNICAL EDITOR WHAT HI-FI? SOUND AND VISIONI. AWARDS 2007

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HI-FI CHOICE JUNE 2008 ISSUE 307

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How many times have you read the term 'credit crunch' in the press over the last few weeks? At HFC towers, it has light-heartedly been blamed for everything from bad weather to traffic jams. But joking aside, if the dailies are to be believed, we should all be tightening our belts and reigning in our spending, but what about that next upgrade?

Well in this issue of Hi-Fi Choice, we've got something for everyone.

If you're feeling flush then look no further than Moon's latest stellar offerings, the incredible CD 5.3 RS and i5.3 RS on p40. This high-end CD and amp combination gives the usual hi-fi suspects a real run for their money. Pair them with the excellent KEF XQ20s (p58) and you've got a cracking hi-fi system with detail to die for.

For those with a little less to spend there's Arcam's new Solo Mini on p48. After drawing the crowds at Bristol, Richard Black discovers why this incredible performer could have us all reaching for the credit cards. For those of you who may use an iPod in addition to your usual main system – Alan Sircom tries B&W's beautiful Zeppelin on p61.

We're also delighted to bring you the new 2008-specification kit from Roksan. The company's new CD player and pre/power amp is put through its paces on p50 and Malcolm Stewards explains why the firm's ongoing low-key development programme should not be kept secret. Other highlights include Naim's new CD5; the entry-level player in the company's portfolio on p54, plus an all-new speaker from Tannoy's new Revolution Signature range, featured on p62.

That just leaves me to point out our cracking subscription deal this month. Join us by Direct Debit in the next 28 days and you'll receive a free IsoTek NeoPlug mains noise suppressing device worth £50!



Dan George Editor

WHY WE'RE NO.1 FOR HI-FI.

POUT TROPING A Since 1975. Hi-Fi Choice has delivered the world's most thorough, no-nonsense guide to buying high-performance hi-fi

SOFEX NOISE

SUPPRESSOR

- · We now publish 13 issues a year including a special edition, The Hi-Fi Awards - the most important annual awards in the hi fi calendar. We also produce The Collection, a separate stand-alone special edition for the newsstand, dedicated to the finest hi-fi on the planet.
- Every issue contains a potent mix of the latest hi-fi news, views. music, interviews and in-depth tests, brought to you by a prestigious team of expert writers from the UK and around the world.
- We only review the most interesting and worthy new hi-fi components - high-performance audio products across a wide range of price points. We obtain more genuine hi-fi exclusives than any other magazine - if it's worthy of your attention, you'll read about it first in Hi-Fi Choice.
- Our tests are the most rigorous in the business, conducted by the UK's most experienced team of hi-fi reviewers.
- Alongside in-depth component reviews and accessory round-ups. every regular issue of Hi-Fi Choice features an Ultimate Group Test on a core hi-fi product category - from source components to amps and speakers.
- Each Ultimate Group Test is conducted using a uniquely thorough. three-step test regime. This consists of carefully controlled 'blind' and sighted listening sessions, a full set of laboratory tests and extended 'hands on' testing by the primary reviewer. No other magazine goes to such lengths to ensure accurate comparative reviews
- Components that best meet our exacting standards are listed in the Buyer's Bible section - the world's most reliable reference guide for the hi-fi buyer.
- That's why Hi-Fi Choice is The Essential Guide To Audio Excellence In The Home

the product in all its glory

Cherry-picked kit - only components make it into

reviews - we give you the





Annotated shots show you what's really going on

Interviews with designers give you extra background nformation -

Carefully considered verdict scores, so you really know what we think of a product -





A former HFC editor. Paul has been writing about his beloved hisf vears. In that time he has become one of the world's most respected the UK's foremost



With more than 40 years as an enthusiast under his belt, Jimmy is one of the country's hest known hi-fi experts His knowledge of system matchino hi-fi tweaking and record collecting is unmatched in the industry



Richard is a professional musician, recording engineer and a highly knowledgeable hi-f analyst to hoot. He has a knack for writing about complicated subjects in a readable way - and he only



Review magazine, Malcolm was one of the hest known and most outspoken reviewers of the 1980s and 1990s He currently edits hi-fi industry bible The



Alvin has been writing about his obsession fo more than 20 years. In contributed his encyclopaedic knowledge to almost every hi-fi periodical you can think of (and



Alan began his journalistic career in the early 1990s. Now a you too can benefit knowledge, from purist two-channel stereo to the latest multichannel



lason previously edited HFC, but can now be found in the wilds of Sussex indulging himself with the very best hi-fi money car buy. His own system is simply sensational and his love of music knows



A highly experienced sharp ears and retail. experience are a valuable mix for HFC Each month, Dom disnenses priceless second hand buying advice that always







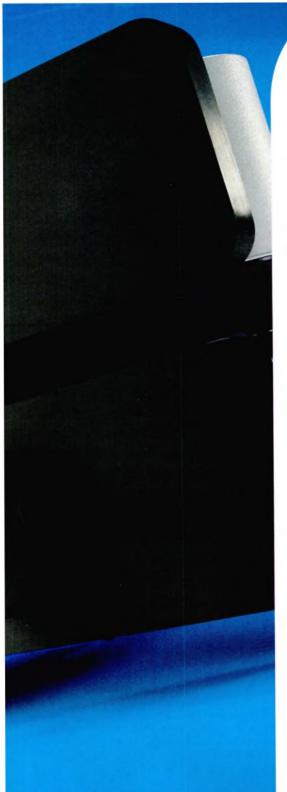




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TURN TO P80 FOR FULL DETAILS





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ULTIMATE GROUP TEST

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- Aurousal A1 Mk2
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BUYER'S BIBLE

SOURCE COMPONENTS

DVD players

Radio tuners

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Vinyl

Ultimate guide to high-performance hi-fi and AV equipment, gathering together all our favourite products for you Your shortlist starts here..

- **AMPLIFIERS** 100 Stereo amps
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PRE-LOVED GEMS

Buy or sell your hi-fi in our special secondhand section...

- 2nd-hand shootout this issue, budget tonearms from £50 to £200
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Our regular information service, including back issues, dealers guide, and the latest subscription offer

- How to subscribe
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MULTITASKER

TEAC's DR-H300 DAB.

DVD/DAB Receiver - HDMI output with upscaling to 1080i and a USB input for MP3.

This **little box of magic** is a real multi-tasker! HDMI interface delivers superb digital quality pictures to your TV with matching sound quality. It also delivers music from almost any source: CD, DVD, Hybrid CD or DiVX Disc, MP3 files on a USB memory stick plus crystal clear DAB radio. Another winner from TEAC, it's all you'll ever need to go beyond your audio **and** visual expectations.

Don't just take our word for it:



"...it sounds better than everything else. And we're not talking 'slightly' here: we're talking 'lots'." Sept 2007 ★★★★



"Involving, weighty and detailed sound with CDs and radio; comprehensive specification." May 2007 ★★★★



"Unbeatable value for money. Quality."
Oct 2007 ★★★★





The leaders in digital music



NEWS

ATC SIA 2-150

After 12 long years, ATC replaces its high-end powerhouse integrated

ATC has been making amplifiers for years, but most of them disappear into the company's active loudspeakers (especially those designed for studios and concert halls). Yet, even though they're thought of as a speaker company, the company is also well known for its integrated and pre/power amplifiers. ATC amps don't come along that often but when they do, audiophiles tend to get excited, even though they don't come cheap.

ATC's new 'baby' integrated has been named the SIA 2-150. It replaces the SIA 150, which has been in the ATC product portfolio for an incredible 12 years. Like its predecessor, the SIA 2-150 is solidly built around a thick aluminium base, with a 12mm-thick aluminium front plate and very high-quality IGUS bush bearings on both rotary controls. As the name suggests, it's a two-channel model, pumping out 150 watts per channel. This is a Class A/B design, although the first 66 per cent of the output is in Class A. The amp features a beefy four MOSFETs per channel, which requires a titanic power supply.

It's is a four line input model, complete with tape input/output and preamplifier output. As yet, it's unclear whether the amplifier will support XLR balanced as well as single-ended phono connections, although given the 350mV input sensitivity and 22k ohms input impedance, it seems likely the gold-plated connections are phono only like the original SIA

150. What is clear is that the wide-bandwidth design (claimed to achieve an unprecedented frequency response of SHz to 200kHz \pm 0.1dB) is said to deliver ultra-low harmonic and intermodulation distortion (total harmonic distortion is said to be just 0.0032 per cent), which should make for highly accurate musical reproduction. With a signal-to-noise-ratio said to be 100dB and crosstalk figures claimed to be better than 90dB, this powerhouse amplifier should prove to be a perfect partner for ATC's super-accurate monitor speakers from its passive range.

ATC is so confident of its new amplifier that it comes with a full six-year warranty. Crucially, there's also a matching CD player in the pipeline, the first ever from the Cotswolds-based firm, which is expected around September this year. While, this may seem a little late in the day to jump on the CD player bandwagon, given ATC's commanding reputation in electronics and loudspeakers, this player will not be simply a range filler. As soon as *Hi-Fi Choice* gets more on this, you'll see it here.

With upmarket models like the ATC SIA 2-150 and the GamuT Si100 now in production, it's clear that the high-end integrated amplifier market looks set to grow and grow. Even if the sources in audiophile's sytems are changing with the times, we'll always need amps and speakers. Expect an in-depth review in *Hi-Fi Choice* soon.

Price £2,248 **Due** May **②** 01285 760561 **⊕** www.atc.gb.net





A New Era for Audio

Red Reference CD player CPA5000 Pre Amplifier SPM 6000 Monoblocks

And for your second home

CPA 3000 Pre Amplifier SPM 1050 Stereo Power Amplifier



hese superb systems have been designed as the ultimate audio components with our stunning looks and truly state of the art design utilising ground breaking technologies to give the most accurate sound reproduction that can be obtained.



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ARCAM FMJ A38 AND P38 🚟

Arcam launches its best integrated to date, with matching power amp option

Arcam's top-of-the-range integrated amplifier – the FMJ A32 – has now been replaced by the new FMJ A38. With it, comes a matching power amplifier in the guise of the P38, which itself replaces the P35 power amplifier. Although they share the same basic styling of all FMJ products, these two new amplifiers have been designed from the ground up, to be the best stereo amplifiers the company has ever made. Given the commanding reputation Arcam's amplifiers have had over the last 30 years – with products like the A60, Arcam Alpha, Delta and more recently, DiVA and FMJ products all receiving rave reviews and strong sales – that's a bold claim.

Both products feature 105-watt current feedback ultra wide-band amplifiers. The two also feature all those funky-named proprietary electromagnetic damping systems Arcam has become known for, such as Mask of Silence and Stealth Mat and 'Fortress of Solitude' (however, this last was eliminated because of the large seam of Kryptonite found beneath the Arcam factory). Both models also fit snugly into Arcam's SDS damped steel, low-resonance chassis.

Audio signals can be beset by thermal conditions in the power amplifier stage and the grunt-delivery parts of the Arcam A38 and P38 are specifically designed to minimize these problems. The amp stage is designed with 'ultra-stable thermal management' in mind and to this

end, the power stages feature new Sanken output devices with excellent thermal coupling. This is helped by an over-large toroidal transformer, as a stiff supply helps in making power delivery seem effortless.

The wide-bandwidth amplifiers are designed from first principles to be fully compatible with high-resolution audio and audio-video sources, such as SACD, DVD-Audio and Blu-ray.

The A38 features a wholly new preamplifier stage, which features details (like the hermetically sealed reed relays) taken from Arcam's top C31 preamplifier. These reed relays are said to not only deliver fine sound, but also help improve the life expectancy of the product. This is matched by a studio-grade electronic volume control (a Burr-Brown PGA2320), again chosen for both reliability, as well as linearity and low noise performance. As it's a fully electronic design, the A38 is fully menudriven and features an eight-page CR90 learning remote. A high-performance MM/MC phono stage is available as an option, too.

The Arcam duo is up against stiff competition, from all sides, with Cambridge Audio integrateds below it and Naim pre/powers above. Fortunately, you won't have to wait long to see how it fares... because it's being tested in the next issue of *Hi-Fi Choice*!

june 2008 HI-FI CHOICE 11

Price £1,200 (A38); £800 (P38) **Due** now **②** 01223 203200 **⊕** www.arcam.co.uk



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NEWS

DALI HELICON 400 LE 25TH

To celebrate twenty-five years of DALI, the Danish company has launched a special edition version of the Helicon 400; the Helicon 400 LE 25th. The speaker retains the hybrid ribbon/soft dome tweeter system and the two 165mm midbass drivers, but where it differs from the standard Helicon 400, is in its use of audiophile-grade components in the crossover (the latter having more in common with models in the upmarket Euphonia range). The speakers also feature special high-quality screw-down bi-wire speaker terminals.

The most obvious change between the standard and LE models are the high-gloss, lacquered and polished piano gloss finish, a golden logo on the front panel and a special gold limited edition nameplate (unique to each pair of 32kg LE speakers). Although the use of gold is rather odd, as traditionally 25th anniversaries are usually silver...

Price £5,300 per pair **Due** now **№** 0845 6443537 **⊕** www.dali.dk



SONUS FABER

(4)

HOMAGE PALLADIO

Sonus Faber's top Homage range has always been exclusive, but the new Palladio Limited Edition series are just that... strictly limited. The three models in the Homage series - the Guarneri, Amati and Stradivari - are all given the Palladio treatment, but in very small numbers. All three will be finished in a sand-coloured highgloss maple veneer (instead of the regular violin red and graphite finishes) and all replace the regular gold with silver-rhodium and 'palladio' connectors and brightwork. Available to special order only, just 100 Guarneri Palladio, 50 Amati Palladio and only 25 Stradiveri Palladio will ever be made, so get your butler to place an order now!

Price £8,200 (Guarneri);

£16,750 (Amati); £26,500 (Stradiveri) per pair

Due now **☎** 020 8971 3909 ⊕ www.sonusfaber.com



GAMUT SI100

GamuT doesn't change its amplifier range that often, so when it announces a new 'affordable' amplifier, the industry takes note. The new Si100 is the cheapest line-level integrated amp design from the Danish high-end company and as the name might suggest, the Si100 delivers over 100 watts –130 to be precise (into eight ohms). Its aluminium and stainless steel body contributes to a 20kg overall mass and the amp also sports six line inputs. Also included, is a home cinema bypass input that turns the integrated into a power amplifier. GamuT's unique single power MOSFET drive is used throughout and (thanks to the beefy power supply) the amp is capable of delivering dynamic, wide- bandwidth signals to low impedance sources.

Price £4,100 Due now ☎ 01252 702705 ⊕ www.gamutaudio.com

JAMO DMR 45

No longer just a speaker manufacturer, Jamo's latest DMR 45 system is a full 2.1 channel DVD/CD receiver with virtual surround sound. Designed to reproduce 5.1-style sound for those who cannot, or do not want five speakers in the room, the DMR 45 can support CD, DVD and CD-R discs encoded with MP3, WMA, MPEG-4 and DivX files. It also comes with a 40-preset AM/FM tuner with RDS, a 2x75-watt amplifier and DTS and Dolby Virtual Speaker pseudosurround modeling. Video enthusiasts will nod approvingly at the 720p/1080i upscaling (through HDMI v1.3), while owners of MP3 players will find the front-mounted USB port real a boon.

The system is ideally partnered with Jamo speakers and is sold as one of two potential packages. The first – the catchily named A 102HCS22 – partners the DMR 45 with a pair of A 102 satellites along with a Jamo SUB 200 powered subwoofer, while the more upmarket A 402HCS22 swaps the satellites for a pair of newly launched floorstanding A 402 speakers and replaces the SUB 200 with an A 400 SUB.







SPENDOR SA1

Spendor's latest standmount is the SA1. It's a compact, sealed two-way speaker that builds upon the strengths of 'Classic' Spendor loudspeaker designs like the S3/5R (tested in *HFC* 306). Available in glossy 'zebrano', satin wenge or piano black, the rigid-braced, damped thin-wall cabinet houses a Spendor-designed 150mm bass unit with a magnesium-alloy chassis and a 22mm wide-surround hybrid tweeter. The SA1 is internally wired with silver-plated copper cables, boasts a highly specified, highly refined crossover network and links to the outside world thanks to a single set of high-quality WBT binding posts. Spendor has even taken the support system into account, by producing an optional matching non-resonant stand, with a front inlay designed to match the choice of speaker.

Price £1,500 per pair with stand (£1,100 without) Due now
■ 01323 843474 www.spendoraudio.com



UNISON RESEARCH

UNICO 100

Nestling just below the super-powerful top-ofthe-range Unico 200, is the new Unico 100 integrated amplifier, which pumps out an impressive 180 watts. It's a hybrid design – like the rest of the Unico range – featuring an ECC83 valve in the preamplifier stage, while the driver stage uses a nearidentical configuration to the top Unico 200 and acclaimed Unico Secondo integrated amps.

The Unico 100 is a true dual-mono design and is also the first Unison product to feature a digital volume control, which works with Unison's in-house microcontroller program and the elegant wood/metal system remote control. Capable of connecting to balanced (XLR) and single-ended (phono) line sources, the Unison 100 is built on a chassis of iron and aluminium.

Price £2,950 **Due** now **2** 01753 652669 ⊕ www.unisonresearch.com

FATMAN ITUBE 452

Fatman has gone distinctly upmarket with its new iTube valvedock for the iPod. The new iTube 452 is a two-box design, with one unit containing the iPod dock, the other a complete 45-watt integrated valve amplifier. With five 12AX7 double triodes in the preamp stage and a brace of four 6L6G output tubes, this elegant round-edged amplifier comes complete with four line inputs for a CD player, tuner and the rest. Yet, for all its valve warmth, this is no revamped 1950s design, as it sports a remote control that can even drive your Apple portable. With all that black, gold, chrome and glass on tap, little wonder that the Fatman comes with a special cleaning glove. We look forward to testing this little wonder soon.

Price £1,499 **Due** now **②** 01235 511166 **⊕** www.fat-man.co.uk





RUSS ANDREWS SP-1

To complete the range of compact audio electronics, Russ Andrews has announced the SP-1 speaker, a thorough reworking of the hugely popular Focal Chorus 705V standmount loudspeaker. As might be expected from the company that imports Kimber Kable, the loudspeaker is completely internally rewired with 4PR speaker cable. The capacitors within the crossover have also been upgraded with KimberKap designs and changes to the internal damping are also a part of the Russ Andrews upgrade path. The two-way ported loudspeaker remains unchanged from the basic French design, although Russ Andrews upgrades are suggested to raise the

sensitivity of the speaker from 89dB to 95dB, thereby creating an altogether different, more efficient loudspeaker design.

Price £399 per pair Due now 20845 345 1550 ⊕ www.russandrews.com

Soundbites

ISOTEK's new Sirius is the company's entry-level power block with mains conditioning. The six-plug strip – the entry point to the new EVO3 series – sports an inductive resistance gate to maximise isolation between each mains outlet, has 22,500 amps worth of instantaneous absorption and K.E.R.P. (Kirchoff's Equal Resistance Path) to provide optimum power sharing from one socket to the next. Sirius costs £250. 20 01635 291357

DENON's new AH-D2000 closed-back, headphones use aluminium in place of the cherry wood cups found in the flagship model. They still sport a 50mm driver with neodymium magnets, microfibre diaphragms, three metres of high-purity 7N-OFC cloth-jacketed copper cable and a magnesium frame. All for £250.

2 01234 741200

@ 01223 441299

SUPRA has announced the new MD06 mains distribution block with an IEC mains inlet and six 13 amp three-pin sockets. It features the company's non-intrusive filtering circuit, which is a three-stage surge protection system that stays out of circuit until required, thereby preventing the sound from suffering when surge protection is not required. The MD06 costs £150.

VIVACITY AR by Ringmat Developments is a clever new resonance control system that utilises NXT's transducer technology, to create specially-designed controlled panels to counter resonance problems inherent to audio. By identifying the node points of linear movement, they are said to sound cleaner and crisper with a wider soundstage. Prices

range from £80 to £100 for the starter packs, with an optional range of nodules starting at around £40.

2 01277 200210

ERRATA: In HFC 306, we highlighted the new R4, the new CD/DAB/USB all-in-one system from Vita Audio. Unfortunately, we inadvertently listed the product at £200 instead of the correct price of £500, following a conversation with Vita's top man at a very noisy hi-fi show! Our apologies go to Vita Audio, its agents, prospective buyers and everyone else for our reporter's poor note-taking and dire lip-reading.

audiofile

HAPPENINGS

⊘ Hi-Fi Diary

JUNE

24-26 CEDIA Expo 2008

ExCeL London www.cedia-expo com (trade only)

AUGUST

29-03 September

Internationale Funkaustellung Messe, Berlin www.ifa-berlin.com

SEPTEMBER

3-7 CEDIA Expo 2008
Colorado Convention Centre,
Denver CO, USA
www.cedia net/expo
(trade only)

18-21 Top Audio Video Show Atahotel Quark, Milan, Italy www.topaudio.it

19-21 London Sound & Vision Show Park Inn, Heathrow www.chestergroup.org

24-27 Hi-Fi Show 2008 Hotel Holiday Inn, Sao Paulo, Brazil www.clubedoaudio.com.br

OCTOBER

3-5 High End 2008 Show
Iris Congress Hotel, Moscow, Russia
www.hifishow.ru

10-12 Rocky Mountain Audio Fest
Marriott Denver/Hyatt Regency Tech
Center, Denver CO, USA
www.audiofest.net

20-02 November

DreamHouse Sound & Vision Show KyivExpoPlaza, Kiev, Ukraine www.dreamhouse.ua

31-02 November

Stuff Live/What Hi-Fi Show ExCeL London www.bestofstuff.co.uk

Resonance resistance

The Funk Firm appears to have genuinely gone back to basics with the arm tube on its new ANTI tonearm. What Funk calls 'F.X' (F dot cross) combines the lateral stiffness of an I-beam with the

combines the lateral stiffness of an I-beam with the torsional stiffness of a tube. This patent pending idea puts crossed I-beams inside the arm tube, which means that it should be significantly stiffer in both up and down, side to side and twisting respects than a standard tube of the same material. In the case of the ANTI (Advanced Neutral Transcribing Instrument) this material is carbon fibre, the ANTI's bearing is a precious stone unipivot and the bias control accurately follows the changing force from the groove against the stylus.



Chesky on the tracks

Norman and David Chesky, the brothers behind the record label of the same name, have launched HDtracks, a download service which offers DRM-free, full



resolution FLAC or AIFF music files from a wide variety of record labels. It also offers 320kbps MP3 versions for those looking to save space. HDtracks is the first company, apart from iTunes, to offer AIFF files with the metadata intact "We post album reviews, biographical essays about the composers, artist biographies and discographies." says David Chesky. The breadth of labels is unusually wide and includes audiophile specialists MDG, Reference Recordings, Dorian and (not surprisingly) the Chesky back catalogue. David went on, "I defy you to name a genre we don't offer" and with soundtracks, latin, reggae and blues on the roster he could be right.

Wireless engine

Audioengine has launched a simple and lowcost system for wirelessly transmitting music from a PC, Mac or analogue source such as a CD player or MP3 player to one of its powered systems. The AW1 wireless system costs \$149 online and uses the company's Avnera technology for transmitting digital signals at up to 16-bit/48kHz. It uses forward error correction alongside other techniques to minimise the dropouts and latency than can occur with wireless systems. The AW1 has inputs for RCA phono, minijack and USB and is USB powered, thus requiring a suitable battery pack for use with non-computer sources. One sender can operate in 40 separate 2MHz wide channels and thus be used with as many receivers

Pro-Ject YouTube

Setting up your Pro-Ject Debut turntable has never been easier, thanks to the online video phenomenon that is YouTube. The Czech record player maker has used the services of Canadian website planetofsoundhi-fi.com to produce a step-bystep guide to assembling and setting up the most straightforward turntable in Pro-Ject's range. To see the video go to http://www.youtube.com/watch?v=1MIK9WcSDtU. You will also find a good selection of other set up and equipment guides at YouTube, some downright sales oriented and others offering inexpensive tweaks.





Devon's cream

Charity shops have long been a good source of second-hand vinyl. But the Oxfam shop in Market Street, Tavistock is now the top UK destination for the vinyl buyer, since receiving an entire collection of 4,000 classical LPs from an anonymous donor.

The haul – believed to be the single biggest donation of music ever to a charity shop – covers every genre of classical music, from baroque works by Bach through to modern composers including Cage and Reich, as well as a selection of Indian classical music. "It's amazing. I can't think of a classical genre that's missing," said Terry Hyde, an Oxfam volunteer who values music for the shop. "It's all there; all your big figures from the 18th and 19th century, your 20th century unlistenable nightmares by Stockhausen, avant garde, opera, unaccompanied violin – virtually every genre is covered."

A few LPs from the vast collection have already gone on sale in the Devon shop and the records are expected to fetch anything from £1.50 to £150. The collection is claimed to be worth in excess of £25,000 and is expected to keep the record collectors of Tavistock busy for the next three years at least.

Just for the record

The world's first audio recording has long been credited to Thomas Edison's *Mary Had A Little Lamb* made in 1877, but a recent discovery suggests that Frenchman Edouard-Leon Scott de Martinville beat Edison to it by 17 years. In 1860, Scott made a recording of a woman singing *Au Clair de la Lune* using a phonautograph which etched sound waves onto paper coated with soot, the transcribing device being a resonator



attached to a needle. Audio historian David Giovannoni, discovered the 'recording' via the French patent office. You can hear the evidence of the discovery at http://www.firstsounds.org/sounds/. Fortunately, fidelity has improved dramatically in the last 148 years!

JIMMY'S TWEAKS #60

HANDY HINTS FROM JIMMY HUGHES - HI-FI'S SUPER-TWEAKER



All good things...

In this, our last *Tweaks* column, it's worth thinking about what's past... and what the future holds.

The audiophile of 50 years ago was likely to be a dab hand with a soldering iron and enjoyed the experience of cueing up an LP. Those of 20 years ago were more likely to buy from a dealer, often entering into a long and trusting relationship with that supplier, and used to enjoy watching a CD disappearing into the inner sanctum of their players. Today, we hunt out the

best prices online and select our music from a menu screen. At each point, our interaction with the medium is reduced and with it, perhaps, goes the magic of the musical moment.

If future formats look set to remove us still further from interacting with the musical medium, how do we get that magic tomorrow? Perhaps the secret will be 'ambience creation'. If putting an LP on a platter got us in the mood for music, we need to find a way to recreate that feeling in the living room, even if the system doesn't let us. Adjusting the lighting, the room temperature, moving the listening chair into the right position and opening a good bottle of wine can all enhance the listening experience, by getting things in good order and by putting you in the right frame of mind. It's the art of tweaking, without tweaking. What a very Zen way of ending things.

THIS MONTH HEC TALKS TO

TY JACKSON Job Title: Director Company: Kore Trading Limited



What is your most exciting product currently in development?

Our Advance Acoustic brand is about to launch a competitively priced, full-width separate FM/AM tuner. This has a valve output stage coupled with an add on, full-width, ultra slimline DAB/DAB+ tuner. It also has the ability to stream Wi-Fi data from you PC, i-Pod etc. I believe this will prove to be the, all things to all men, tuner without compromise.

What is the future of hi-fi in the home?

Clearly, we have been in a new hi-fi era for some time now, with iPod and associated products becoming a continually larger part of the main stream. Our industry has been discussing the various ways in which we can educate the general public in terms of what true hi-fi really is. However, I believe that we sometimes forget that convenience is one of the key selling points of hi-fi product these days and what can be more convenient than an iPod? To this end, the future must be a merger of technologies, combining the qualities and strengths of high-end hi-fi components with all of the flexibility and operational benefits of iPod and MP3 players.

Will downloading kill the CD player?

I feel that there is a solid core of CD enthusiasts who will continue to buy both the discs and the players for many years to come. These are much akin to the vinyl enthusiast who would not entertain any system where sound quality may be compromised. I have not, as yet, heard a hard-drive recording which can match that of even a low-priced CD player with an original CD recording.

Are online sales killing hi-fi separates?

I don't believe that online sales are killing the separates market, however I do feel that the customer is not necessarily making a fully considered purchase when opting to buy online. How can anyone possibly make a final decision to purchase a product solely by what he or she reads or has been told. Reviews are a guide and manufacturer advertising will always state the positives. But remember, beauty is in the eye of the beholder. We all need to choose our hi-fi product in exactly the way we would a car, test drive it, see how it feels and sounds and then determine whether it is right for you.

Are we experiencing a two-channel resurgence?

Many people I speak to believe so. I'm not entirely convinced, although many people have had enough of their multichannel systems. I am talking to more and more customers who are opting for secondary two-channel systems located separately from any other speakers in the living room. The most frequent comment received from these people is, "I had forgotten what proper hi-fi sounded like".

Name a great album you've heard recently?

Muse – Black Holes and Revelations. So many twists and turns, there really is at least three completely different elements to each track. Take track 11, Knights of Cydonia, for instance, which begins like a modern age Country and Western sound and develops in to a superb heavy guitar-based rhythm.

audiofile.

DISPATCHES





Concert Heaven

Mozart at the Festival Hall

rguably the most iconic of concert venues in the UK (with the possible exception of the Royal Albert Hall), the Royal Festival Hall has recently undergone a complete refit, designed to enhance the appearance of the venue and to improve the much criticised acoustics. The amplified sound reinforcement has gone and the reflecting surfaces have been completely remodeled. On my first visit since the refit, I sat near the back and to one side. On my second visit I sat in the middle, which is where most of the press had congregated, while more recently I sat on the right hand side of the auditorium (two rows back from the front and almost within touching distance of the stage).

The sound is much more consistent than it used to be. The music projects better and is much more consistent in different seating positions and, as far as I can judge from the limited number of events I have attended, the

"As far as I can judge, from the events I have attended, the characteristic sound of the hall changes relatively little with the size of the audience."

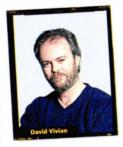
characteristic sound of the hall changes relatively little with the size of the audience. Of course, the sound is more outgoing and louder at the front, exactly as you would expect, but it completely lacks the rather hard-nosed quality that it used to have when heard from close quarters. The musical effect is palpably more easy on the ears.

After a short stay in hospital, I recently returned to the RFH to see Mozart's The Magic Flute, subtitled Impempe Yomlingo in this case, a South African version with a young, talented and entirely black cast and accompanied by an orchestra consisting almost entirely of marimbas leavened by a small percussion section. The production was an absolute hoot from first to last, with a great deal of humour -I shall cherish forever the sight of one of the actors mimiking the playing of a flute, while the music itself was coming 'bebop style' from a trumpeter in plain view, standing immediately behind. The production also included some brilliant dancing, with minimalist sets on the large stage, and the music was, on the whole, surprisingly true to its Mozartian roots.

This unique production is also being performed for a short season, at the Duke of

York (in the heart of London's theatre district). It's well worth the price of an admission ticket, as it's easily the best musical theatre I have ever attended.

than 20 years ago and has since become one of the UK's most internationally renowned reviewers



Hi-fi treasures

My favourite super amp

rom the moment I sold it to a friend, a seed of regret started to germinate. Of all the amplifiers I've ever owned or reviewed, I now realise the one I liked the best, was the smallest and least powerful; my old

Naim Nait 2. Principally, because it put the music first and made you less interested in measuring the exact altitude of its fidelity.

The Nait was miraculously compact, stunningly neat and realistically priced. That something so unimposing could deliver such a musically replete and emotionally generous performance was a source of perpetual amazement and delight. Four and five-figure superamps have come and gone, but none has bettered the Naim's interpretation of "a sufficiency". In a sympathetic system, it struck me as being the perfect amp – subjectively far more potent than its quoted 15 watts per channel ought to be, good enough to let the music communicate completely.

It has never been supplanted in my affection as a true hi-fi treasure, but I've never given up looking for a worthy replacement. And yet now I think I've found it. The Trends TA-10.1 doesn't just espouse the compound 'small is beautiful/ music matters most' philosophy (so elegantly executed by the Nait) it takes it to a whole new level. It's just big enough to accommodate a single set of inputs and (decent) speaker terminals, an on/off toggle switch and a volume knob. It weighs practically nothing and makes the Nait look like a Krell power amp from the '80s. Wonderfully minimalist, too, is the £90 price tag, but then the TA-10.1 was designed and made in that crucible of jawdropping, modern-day hi-fi miracles, Hong Kong. Bit of an upset for apples and carts.

You've probably guessed already, but the tiny Trends amp is built around the TA 2024 Tripath Digital Power Processing amplifier chip. The deal here is genuine top-drawer sound quality at a ridiculous, rock-bottom price – the only casualty being out-and-out grunt. The chip is rated at 15 watts into 4 ohms (about what the Nait managed into 8 ohms) but, like the Naim, it bears little relation to its real world speaker driving capabilities.

In purely musical terms, the TA-10.1 reminds me of the Naim. Not so much in the way it sounds, but the sheer joy its honesty and coherence brings to listening. In a way, the Nait 2 had it easy: it was the first great affordable amp I'd ever heard. That the Trends TA-10.1 pulls off the same trick 20 years of reviewing on, is nothing short of astonishing. For anyone in search of a sense of perspective, you have to hear this amp.

David Vision has been wallowing in gorgeous hi-fi and then describing its virtues and vices in Hi-Fi Choice since 1990



HI-FI REVISITED

MPMAN F10 MP3 PLAYER

It's sometimes hard to believe how dramatically the hi-fi landscape has changed. The impact of downloads on CD sales is proving a significant factor in what tomorrow's audiophile systems will look like. Which makes it all the more stunning that the first-ever MP3 portable player was launched just 10 years ago, especially as it took more than a decade for the same hi-fi hardcore to embrace CD alongside vinyl.

It's a commonly-held fallacy that the first MP3 portable player was the Diamond Rio PMP300, because it was the first player to achieve public acclaim and (for the time) significant sales. More importantly, it was the Diamond that was dragged through the US courts by the RIAA in the forlorn hope of stemming the tide of illegal 'ripping'. This held up the launch of the unit, but also created a cult following. The Diamond Rio arrived at the end of 1998, prior to settling their differences with the RIAA in the summer of the following year. By that time, there was no stopping MP3 ripping and enthusiasts were joining the then-new Napster peer-to-peer service to share their music. This too would be the subject of later lawsuits, which would eventually bring much-needed legitimacy to the MP3 format.

Strangely though, although Diamond got all the attention, it was the MPMan F10 that first made it to market in the spring of 1998. Made by Saehan of Korea, the F10 was roughly the size of a cassette and contained 32MB of flash memory. Hardly an impressive start to the format – with a single 128kbps encoding rate, this meant it could hold around eight whole songs. Wow!

The MPMan connected to your PC using a cumbersome and slow parallel port (like old style printers), and the control interface was strictly limited (a tiny LCD panel on the front). Nevertheless, the product was launched in March 1998 and went into mass production in



"with a single 128kbps encoding rate, this meant it could hold around eight whole songs. Wow!"

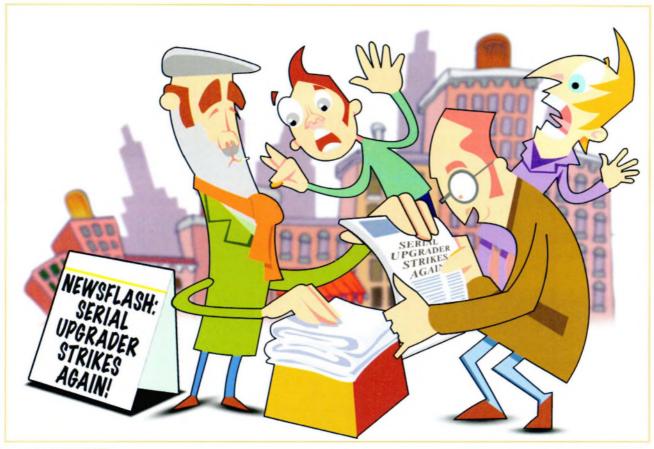
May and hit the US and European shops in the summer of the same year.

It was perhaps better known in the US as the Eiger Labs F10, because the US distributor rebranded the MPMan with the company's own logo. Initially sold for \$250, the player quickly dropped in price to compete directly with the Diamond Rio PMP300. This product offered the same memory and connection options, but came with a bigger screen and a funkier interface, and cost just \$200. Eiger Labs soon matched the PMP300 dollar-for-dollar.

MPMan's next response was to deliver the F20, essentially the same device, but with 64MB of flash memory. And the two companies remained close rivals in an almost uncontended market until the arrival of serious competition, first from Creative Labs and then Apple's ubiquitous iPod. However, unlike fellow MP3 trail-blazer Rio (which was bought by D&M holdings in 2003 and subsequently quit the market altogether in 2005), MPMan today remains a manufacturer of portable audio and video products and still trades off being 'the inventor of the MP3 player'. Well, wouldn't you? HFC

Alan Sircom







Psycho hi-fiSerial upgrading and how to beat it

he uncontrollable urge to upgrade is something that afflicts all hi-fi enthusiasts. Sometimes, the urge is justified – you may be using older items that are well and truly superseded. But, you can get the urge to upgrade having, er, just upgraded (a component may barely have settled in and already a replacement is being sought).

Equipment reviews can leave you feeling very dissatisfied. So, when upgrading, it's essential to have some idea of where you want to go. A vague notion that 'things could be better' is potentially dangerous.

In its most extreme form, constant upgrading is a disease without a cure – unless, of course,

"In its most extreme form, constant upgrading is a disease without a cure – unless, of course, the 'cure' is running out of cash."

the 'cure' is running out of cash. But something that might tame the symptoms a bit is — widening and expanding your taste in music. My theory is, that serial upgraders listen to a restricted range of music. That being the case, the pleasure they derive from listening comes mainly from making comparisons. Having heard how good a favourite album sounds with (say) a certain CD player, the serial upgrader gets to wondering how it might sound with the next model up.

So, you buy the next model up and spend the next few weeks re-evaluating your entire record collection (all five discs), noting the various ways in which the new CD player has changed and improved the sound. It can be great fun doing this – hearing detail never before noticed in recordings you thought you knew well

But, I fervently believe that real listening only begins when you forget about equipment. If you're sitting there fussing and fretting about the sound, you're not listening to the

music. So, the next time that little voice in your head starts going on about replacing the amp with something ten times bigger, don't listen.

Drop in to your nearest record shop (or look on-line) and buy some music instead. Be adventurous! Choose something different to what you normally listen to. If possible, spend an afternoon in a record store and listen to what they play – see if any of it takes your fancy. Explore the world of music, rather than the world of hi-fi.

The urge to upgrade may still gnaw away at you, but think of it as the hi-fi equivalent of cold turkey. You're withdrawing from the addiction to technology. Your new drug is music and while its every bit as addictive, it's not nearly as destructive – or as expensive. Unless, of course, you're a serial LP/CD collector like me...

country's best known hi-fi experts. His knowledge of tweaking and his record collection know no bounds



Very Italian

New cable alternative

hree issues ago (*HFC* 304), I discussed a very interesting and unusually affordable new single-strand 'solid core' cable from Denis Morecroft's DNM brand. Single-strand cables do tend to be a little weak in the bass, yet also seems to confer unusually impressive mid and top imaging, sweetness and focus. All that was true of DNM's Stereo Solid Core Precision cable, which costs just £90 for two 5m runs.

I've now found another equally interesting single-strand cable. It comes from Italy, is called Yter, and has links with respected highend speaker maker Sonus Faber. It was originally developed by Sonus Faber's founder Franco Serblin, in association with his metallurgist son-in-law Massimiliano Favella, to provide internal wiring that would maximise the sound quality of his 'flagship' Stradivari Homage model. It also costs £1,200 for a stereo 5m pair, which is comfortably above average and more than ten times the DNM. Indeed, it costs much the same as the Vertex AQ Moncayo and Chord Signature speaker cables (which I regularly use). But the Yter represents a very interesting alternative to either of these fine examples.

What is that justifies its substantial pricetag? Metallurgy naturally lies at the heart of this cable. The conductor is mostly silver, but alloyed with a small proportion of palladium to improve the mechanical properties and resistance to corrosion. Known as Argentum, it's drawn into a 2.3x0.4mm ribbon, and insulated by air-loaded PTFE before wrapping in a black woven sleeve.

Just as interesting as the cable itself, are the split-barrel 4mm plugs fitted at each end. Made from exactly the same silver/palladium alloy and are cold-welded to the cable under pressure, this avoids the 'battery effect' when dissimilar metals are in contact.

The sound quality is quite delicious, especially through the top-half of the audio band. The treble is a little more obvious than with my other cables, but the Yter made



CLASSIC ALBUMS

VAUXHALL AND I MORRISSEY

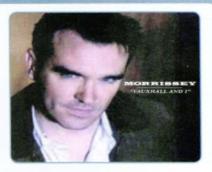
As a singer who, it's safe to say, has not always been cock-a-hoop about life, Morrissey had more reasons than usual to be depressed in 1993. That year, three valued collaborators – manager Nigel Thomas, video director Tim Broad and producer Mick Ronson – would all die in close succession. Yet, in the summer of that year, with producer Steve Lillywhite, he would record the majestic *Vauxhall And I*. More than anything else in his solo canon, this is an album that suggests contentment and acceptance and a kind of deliciously melancholic letting-go that Morrissey himself

called an "end-of-reign atmosphere".

It was certainly a time of change for the singer. At 35, Morrissey was no longer the arch milksop of The Smiths. After splitting with a succession of co-writers, since Smiths partner Johnny Marr departed in 1987, quitarists Boz Boorer and Alain Whyte become his regular musical foils. It was even said that his private life – the focus of which being the enigmatic Vauxhall - was no longer the non-event of yore. Morrissey was growing up. Indeed, when he spoke about the press wanting a Smiths reunion, he made a comment that could have applied to his own, earlier claim to living exclusively through old films and records; "(They're) wanting what doesn't exist, and not wanting what exists."

It was, perhaps, two opposing forces – pain at the loss of loved ones and the feeling that there might be a happy ending after all – that gives the album its particular mien. These are songs about regret, love, memory, betrayal and the glamour of crime, and everywhere happiness and sorrow are intermingled. As is Morrissey's way, he does not tell you why.

Opening song *Now My Heart Is Full*, for example, sounds like the aftershock of some great cataclysm and shows a narrator moved almost to tears, bidding farewell to characters from Graham Greene's novel *Brighton Rock*.



"These are songs about regret, love, memory, betrayal and the glamour of crime."

The purely musical qualities are also worth commenting on. Apart from Vini Reilly on 1988's *Viva Hate*, Morrissey's guitarists were an unobtrusive bunch. On songs like *I Am Hated For Loving* and *Used To Be A Sweet Boy*, though, Boorer and Whyte play like a dream. As the epic nearly-confessional *Speedway* or the uniquely sung *Lifeguard Sleeping*, *Girl Drowning* demonstrate, this is music with nothing wasted or perfunctory.

Defying a UK musical landscape altered by Oasis, *Vauxhall* went to number one, complete with a grainy, hand-tinted sleeve that looked like it had been taken from a 1950s film magazine. Morrissey was back the following year with the same band and producer, but *Southpaw Grammar* saw him afraid and alone again. After 1997's album *Malaajusted*, he took a seven-year sabbatical, before returning with *You Are The Quarry* in 2004.

He's still out there, having most recently put his naked posterior on the inner sleeve of his *Greatest Hits* CD and preparing another solo album. He may yet make a Garbo-esque exit from showbusiness, but it's unlikely he could say his farewell with an album as suitable, or as glorious, as this. HFC

Ian Harrison



beautifully sweet, subtle and clean music when partnered with B&W 800Ds.

Imaging and focus are first class and it was particularly impressive when reproducing percussion with great precision and delicacy. Although transient detail, dynamic range and orchestral string tone are all very convincing, the bass end on heavy rock material seemed a little softened and lacking in grip. However, this is clearly a superior cable by any standards and well worth investigation.

Choice and has been writing about his favourite hobby for nearly 30 years



Rock and rumble!

Making the earth shake

here I was, in the early hours, listening to some moderately heavy rock music, when the whole house began to shake. No, it wasn't the combined effects of four 15 inch (380mm) JBL woofers, but that rarest of British phenomena, an earthquake. That set me thinking about vibrations, which are the rather unstable foundation upon which highend audio is built. The vibrations of the stylus in the groove are converted into electrical signals which are amplified and then fed to a loudspeaker which converts the electricity back into vibrations of the air.

But there are also lots of unwanted vibrations that degrade and distort the music signal. Amplifiers are full of components such as capacitors, resistors, transistors and coils. All of which can work like crude microphones as they're are vibrated by the sound emanating from the loudspeakers, as well as the 50Hz and 100Hz vibrations from the power transformer. The problem is, each of these miniature microphones can, and often does, add its own contribution to the music signal.

Vibrations also corrupt the sound we hear from the loudspeaker. In the perfect world, the chassis of the drive unit should be held totally rigid and stationary, as if it were bonded by a trowel load of Solvite to a mountainside of granite. Then the only thing vibrating the air



"...it should be totally rigid and stationary, as if it were bonded by a trowel of Solvite to a mountainside of granite."

would be the cone or diaphragm giving us a reasonably good replica of the original sound. However, life is never that easy, because every panel of the cabinet also vibrates to add its accompaniment to the music, while the crossover network inside makes its own contribution to the background cacophony.

And what a cacophony it is, because each of these extra vibration signals is a grossly distorted facsimile of the original music and often they are out of step, or time, with the original. Small they may be, but they are still there and they add an audible layer of sound to the music.

Some years ago I bought two second-hand gravestones at an attractive price; mainly because they were still engraved with "Beloved wife, Edith Victoria Maude, now resting with the Angels". I laid one slab on the top of four bricks, put the pre- and power amplifiers in place then laid the other slab over the top. There was a lot of weight there so there was no chance that the amplifiers would be bouncing along in time with the music. And the payback was a cleaner, crisper sound, although visitors began to view me as more than slightly deranged, so the gravestones eventually had to go.

Every few years manufacturers re-discover the effects of unwanted vibrations and offer their new solution. All well and good, but personally I still think there's a lot to be said for holding the system components firmly in place with a few ton of the best Welsh granite. Yesiree folks; me and my hi-fi are going to be more than ready for the next earthquake.

> Slam Curls was the founder-director of Cambridge Audio, Mission and IAG. A hi-fi visionary, he is responsible for designing over 400 products



Quality over style

Do looks matter?

he review in this issue of the Arcam
Solo Mini (page 48) prompts a question:
does it matter what hi-fi looks like?

Chances are, that the people who answer 'no' are diehard enthusiasts who live on their own, or at least have their system in a part of the house that no one else visits. They're proud to have loudspeakers with home-made modifications, amplifiers with holes drilled in the top or front, exposed valves and insanely large cables. This is not a criticism as I've owned equipment like that myself and may

do so again at sometime in the future. Some will answer 'yes', but the majority of us would proably answer that it doesn't really matter as long as the stuff is reasonably presentable, easy to use and securely assembled. I'm not sure that I agree.

For a start, a majority of manufacturers don't agree and they're the ones who have to put their money where their mouth is. The standards of looks, presentation and finish have improved enormously in the last decade or two and this has been an incremental process; each manufacturer trying to make his new range look smarter than his competitors. After all, would you want your hi-fi range to be the one that looked dated in the shop?

But there's more to it than simply making kit fly off the shelves. We all have an incredibly strong inter-sensory link, far stronger (research suggests) than we are consciously aware of. When we see 100kg of American muscle amplifier sitting at the heart of a system, with cables the size of a man's arm connecting it to sources, speakers and the mains, we have certain expectations of the sound. A similar situation arises when we see a vintage Leak or Quad amp, with its curves, exposed valves and brownish casework. The expectations may vary from person to person and will inevitably be based on more or less previous experience, but they will be there.

That's not the end of the world, of course. By a conscious effort of will, one can hear past those preconceptions to a large degree, or one can enlist a second person's help and arrange some sort of 'blind' listening comparison (as we do in our monthly group tests) so that visual cues are simply not there. But – and here's where I get a bit heretical – does it really matter if our aural reaction to a bit of hi-fi is influenced by our visual sense? If we think the amp/CD player/whatever sounds big, bold and commanding, why should we worry about the influences that helped form it?

I think it's quite hard to refute that convincingly. On the other hand, with a product like the Solo Mini it's good to give the preconceptions a bit of a rest. At best, they genuinely help us enjoy a purchase, adding to the overall perceived value. At worst, they can make us discount a bargain untried!

Rehard Black is a professional musician, recording engineer and a highly knowledgeable hi-fi analyst to boot. He writes about hi-fi exclusively for HFC



HIGHS AND LOWS

What do we mean when we speak of 'treble' and 'bass'? In general terms, these are respectively the high frequencies and the low ones. But how high and how low?

Of all 'regular' musical instruments, the piano has the widest frequency range, from about 28Hz to 4kHz (4,000Hz), plus harmonics in each case. If we say that the bottom couple of octaves of its range are the bass, we're looking at frequencies below 110Hz and applying the same logic to the treble gives us 1kHz upwards. Within the orchestra, the double bass has its bottom string tuned to 42Hz, its highest to 100Hz, while the piccolo and violin can extend up to about 4kHz again.

And then there's the human voice, arguably the most important 'instrument'. The lowest male singing range is actually called bass and extends up to about 350Hz, while the highest female voice (soprano – also called treble when a young boy is singing in the same range) has its highest notes around 1kHz, maybe 1.4kHz for an exceptional singer. In fact, bass and soprano ranges overlap by at least half an octave, so from a musical perspective we wouldn't be far wrong in declaring that bass is below about 160Hz or so, treble above 600Hz, and the bit in the middle is the midrange.

It might not look like a very big span but, in fact, the majority of the world's melodies (on a very wide variety of instruments) sit mostly within that span or just a little beyond. The note called 'middle C', which sits directly between the treble and bass staves on a musical score, has the frequency of 261Hz.

From a hi-fi perspective, we may not always see things quite that way. What people think of as bass is often not too far from the guide we've derived above, but it can sometimes extend to rather higher frequencies. Most people's understanding of treble, on the other hand, seems to start at something around 2.5Hz. Crucially, these definitions depends



"...then there's the human voice, arguably the most important instrument."

strongly on the characteristics of the sound one is listening to I've come to realise this as a result of working on recordings, trying to produce a sound that satisfies requirements expressed as 'not enough bass' and so on

As a rough guide, the actual frequency of 'bass' is lower for sustained notes (from church organ, tuba etc.) than for transient ones such as are produced by piano, bass guitar or drums. Boosting very high frequencies, around 10kHz, doesn't have a particularly marked effect on most piano recordings, but is very significant on violin. This isn't particularly surprising when one thinks about it: the total HF energy in the sound of a piano is less than that in the violin because of the very rapid decay of the highest harmonics.

This may sound like a purely academic observation, but it has a practical, everyday application in hi-fi. We all describe the sound of hi-fi verbally, but our terminology is liable to be dependent on the kind of music we like to listen to – not to mention how we each, individually, hear. So next time your friend or hi-fi dealer describes the bass of some product as 'great' and you can't agree, don't write the poor soul off as deaf: they may just have different tastes from you! HFC

Richard Black



diofile ...:

COMPETITION



A Leema Acoustics Stream CD player worth £1,100!



Pride of Wales, Leema Acoustics, has a commanding reputation for high-end electronics. Now, thanks to the Stream CD (and Pulse integrated amplifier), Leema's ex-BBC engineers bring high-end audiophile performance to a new price level. They've achieved this by utilising the same LIPS (Leema Intelligent Protocol System) interconnectivity, as well as the clever and unique multi-DAC architecture in a scaled-down form, from the company's top-of-the-range Antila CD player.

The Stream also includes the new 'L-Drive' one-button system, which means that every single aspect of the CD player's control is operated by a single button (a remote control is also available). Perhaps most important, though, is Leema's unique use of eight 24-bit/192kHz delta-sigma DAC chips to form one big super digital decoder. This sets the Leema apart from its peers, making the Stream one of the most exciting and rhythmically powerful CD players we've ever heard. In our test in HFC 306, we concluded by saying that we were "bowled over by the result delivered by the Stream" and that it "should have the likes of Arcam and Cyrus more than a little concerned". But don't just take our word for it. Why not check out this superior new product for yourself by entering this month's competition. All it takes is the cost of a phone call.

your chance to win, either: (a) call 0906 5852160 and follow the instructions, leaving your selected answer (A, B or and your details where prompted, or (b) send the letter of your selected answer (A, B or C) by email, including your name, address and a daytime telephone contact number to hificomp@futurenet.co.i

QUESTION:

What does LIPS stand for in Leema speak?

A: Large Increment Predictive Signal B Leeks In Parsley Sauce 🕻 Leema Intelligent Protocol System

ers must be received between 1 May 2008 and 28 May 2008. The prize winner will be selected at random from all correct entries received between the relevant dates and will receive a Leema Stream CD player free of charge. The winner will be notified a 28 days of the closing date and will be required to give details of a delivery address in the UK to which the headphones should be sent. Telephone calls will be charged at 60p per minute.



Understanding: Bass Part Two

Everything you wanted to know about bass, but were afraid to ask!

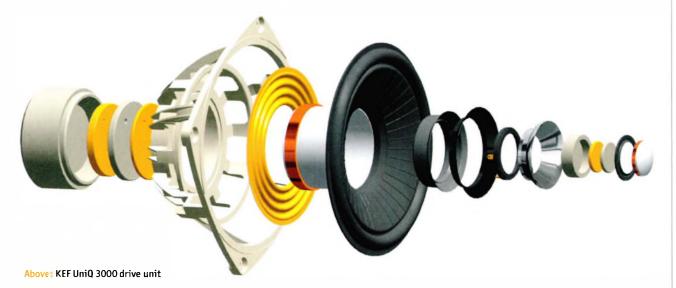
ressure waves are all around us. The lowest frequencies don't always have a discernible pitch, but they are a vital element in shaping nearly every acoustic event we experience. Without well-resolved, low-end sound pressure, what we accept as "real" is diminished. And we all know how "real" sounds. It's the gummy thump when you slam a refrigerator door, the barely perceptible "whoomph" of air if you drop a heavy book on the floor, the percussive harmonics of fingers on a guitar's fret board – a true fusion of visceral and aural perception. It has the tingle factor..

How do we achieve this spine-tingling sense of reality?

As we established in Part One last month, it isn't simply a matter of buying a bigger pair of speakers – though that might be a necessary step. Rather, it's a finely balanced team effort that embraces not just the size of your speakers' bass drivers and the power of your amplifier, but also the dimensions, construction and acoustic properties of your listening room and how your system is matched and set up.

When you listen to a speaker in a room, you're not listening to the speaker but to the integrated response of the speaker and the room. It's how the speaker energises the room that matters, not a question of subjective judgement, because we all hear in the same way. The radiation pattern of a speaker will drive one room differently to the next. The best speakers – and this can only be determined by trying them at home - are those that are consistent. If you measured their response at different points in the room it wouldn't change much. Conventional onaxis measurement gives a very narrow view of real world performance. In fact it tells you very little. You don't listen to the on-axis pressure response of a speaker, you listen to





the integrated power response of the speaker plus the room.

1. ON REFLECTION

By its very nature, a room (any room) presents a very particular set of problems for speakers with serious low-frequency ambitions. Sound waves behave far differently within the confines of walls and a ceiling, than they do in free space or an anechoic chamber (a room devoid of echo). For instance, the possibility for every bass frequency to be heard at the same volume at every point in a room – obviously a highly desirable situation – simply doesn't exist. One reason for this is that every room's

listening position fractionally later than the bass heard directly from the speakers, thus blurring the temporal cues necessary for natural-sounding music reproduction.

2. ROOM TO MANOEUVRE

It's something of an axiom among loudspeaker designers that bass performance of a speaker can only be as good as the room it's in will allow. Not only that, it will vary (maybe dramatically) depending on where the speakers are placed in the room and where you sit in relation to them. It will also be influenced by the amount and type of furnishings. The good news is that whatever the quality of the bass

"Denser brick or concrete wall blocks may have the potential advantage of keeping more bass energy inside the room..."

acoustic character has modal components, the frequencies at which it will resonate more strongly, just like a loudspeaker enclosure itself. Modern recording studios are nearly always designed with this in mind: certain ratios of height to width to depth are better than others at minimising modal intrusions. Unfortunately, unless you build your own dedicated listening room, exploiting mathematically optimum ratios isn't an option. And, rather depressingly, it's been found that the average UK living room has a "persistent dip" at around 60Hz.

Another factor conspiring to make bass sound lumpy or boomy is what's commonly known as boundary effect, or the phenomenon of sound waves mixing with their own boundary reflections creating peaks and troughs of sound pressure so that some bass frequencies are augmented and sound louder while others, because of wave cancellation, all but disappear. This is simply, and unavoidably, a function of the way speakers and rooms interact. And boundary reflections skew the sonic picture in another way by arriving at the

you hear currently in your room, it can usually be improved.

There are, however, some obvious limitations. The construction of your listening room, for example, has a significant bearing on how it will allow bass frequencies to propagate. Lightweight partition walls made from single layers of gypsum board with no insulation used in many modern build houses and flats allow a significant amount of bass energy to pass straight through. This isn't ideal especially for the neighbours - but, subjectively, the effect can be fairly benign, especially if your system, in more substantially built rooms, has a bass that leans towards the leaden or over-ripe. Denser brick or concrete block walls may have the potential advantage of keeping more bass energy inside the room, especially that below 200 Hz, but linearity tends to suffer. It can be a case of "never mind the quality, feel the bandwidth". If you want the best of all worlds – the full quota of bass energy and perfect definition - there's nothing for it, but to build a dedicated listening room

along the lines of a recording studio control room. a mass-layered structure with nonresonant framing that incorporates "dead" air gaps between the partitions.

3. LOCATION, LOCATION, LOCATION

But back to reality. A suspended floor, like board-type walls, will dissipate bass energy. One potential advantage of floorboards, though, is the ease with which heavy-duty cross-headed screws can be sunk into the wood (through the carpet if you're brave) to provide rock solid locating platform for the spikes at the bottom of speaker stands or floorstanders themselves. Newtonian physics, where every action has an equal and opposite reaction, is never more relevant than when dealing with the large excursions of a bass driver cone which, as it moves forwards, tries to push the rest of the speaker backwards. And however rigid the supporting structure, it will succeed - if only to a microscopically tiny degree. The aim is to minimise the movement so that none of the bass information fed to the speaker from the amplifier is dissipated, leading to a subjective "softness" and loss of definition.

YOUR BEST BASS CUTS

Last issue, we asked you to dig out your favourite bass tracks. You did just that. Who could forget *Leftism* by Leftfield, which had more bass than almost all other discs of the 1990s put together.

Meanwhile, jazzers pick out Ray Brown's bass playing in the classic We Get Requests album from the Oscar Peterson Trio. Classical enthusiasts point to J.S. Bach's organ works, with E Power Biggs virtuoso playing receiving strong commendation.

[Feature] Understanding: Bass Part Two

Perhaps, unsurprisingly (given the impressive level of lateral thinking that often informs hi-fi design and engineering), there is another school of thought that runs counter to this and is gaining ground after initially being thought barmy. Championed by Max Townshend of wobbly, air-suspended equipment rack fame, it's an extension of his idea that hi-fi components should be isolated from the sundry air and structure borne vibrations of their surroundings by a lowpass filter - ie a supporting mechanism with a natural resonant frequency of around 3Hz in all planes. To this end, Townshend manufacturers speaker 'cradles', for floorstanders as well as compact designs, using the same heavyweight construction and air bladder technology as the celebrated Seismic Sink equipment racks that effectively decouples the speaker from the room and any vibrational pollution from the big, wide world. It lacks rigidity and that, to some extent, is reflected in the sound which relaxes to become more natural and (given the room effects we've been discussing) less influenced by the construction and dimensions of the listening environment.







"...bass frequencies, more than any other part of the audio spectrum, are manipulated by the space in which they're generated."

4 AIR PLAY

It might seem that we've been working through the subject of bass backwards, putting effect (the adventures and travails of lowfrequency pressure waves before they connect with your lugholes) before cause (their creation by a speaker cone). But this is the right order in which to tackle things. As we said at the start (in Part One), bass frequencies, more than any other part of the audio spectrum, are manipulated by the nature of the space in which they're generated. This is something over which the speaker designer has very little control, other than to align the bass to work best with plenty of space around the speaker or with varying degrees of boundary reinforcement to boost bass output.

That said, in the end it really does boil down to an amplifier controlling a speaker cone. And here there is a strong consensus among speaker designers: a good big 'un will always beat a couple of good little 'uns, even though, in theory, two small drivers, given sufficient cone area and excursion, should be able to match a single large driver in output and extension. Yet, subjectively, they struggle to emulate the easy-breathing effortlessness of a single large driver or the way it pumps air. In this writer's experience, the speakers with the very best bass performance all have large bass drivers: 12 inches in diameter is good, 15 inches better. Of course, there are very good reasons why you don't see many lurking at the bottom of domestic speaker systems: it makes the enclosures that have to carry them big, bulky and, more often than not, ugly. Smaller drivers mean slimmer cabinets.

So, in summing up, it's worth remembering that to produce bass you have to move air. To move air you either have a very large diaphragm that moves a little way, or you have a very small diaphragm that moves a long way. The theory books say there shouldn't be a qualitative difference. But there is.

We'll leave the final word to legendary speaker designer Robin Marshall who, when asked what the secret of good bass was, replied "If you're playing rock 'n' roll, a good ol' JBL with a 15-inch driver". Perhaps it's as simple as that after all. HFC

David Vivian

BIGGIE SMALLS

There are techniques to make a smaller speaker appear bigger than it really is. A tuned port in the speaker cabinet will generate a resonance that can simulate deep bass from a small speaker.

A transmission line is another option. This is a labrynthine pipe that essentially makes a small speaker box behave like a far larger one. Then there's the constant pressure chamber, which has two identical drive units – one in front of the other – in a sealed box. This is best known as isobaric loading.

Audio Destination Tiverton, Devon 01884 243 584

Audio Workshop Norwich 01603 618520

Divine AudioMarket Harborough, Leicestershire 01858 432999

Doug Brady Hi-fi Warrington, Cheshire 01925 828009

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MICECUTS

This month's varied musical morsels

Reviews by Alvin Gold, Jason Kennedy, Dave Oliver, Mark Prendergast, Phil Strongman and Nigel Williamson

AUDIOPHILE VINYL



JOHN COLTRANE

Impressions

pieces; India and Impressions, making it a Playing intensely, but without resorting to 'goose strangling' makes the music highly meditative With lively backing from Elvin Jones and Jimmy Garrison, alongside McCoy Tyner on piano, there is Sound: Engineered by Rudy Van







LITTLE FEAT

Dixie Chicken

Music: This classic from 1973 was the album that put Little Feat on the map and their tight, but laid-back sound was never more enticing. With their music finely honed and the beats solid, they've whipped up ten songs that work with a degree of cohesion rarely encountered. There are standouts like





COMPACT DISC & VINYL

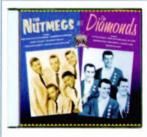


COUNTING CROWS

Saturday Nights, Sunday Mornings

Music: Counting Crows' 1993 debut August & Everything Afterwas a refreshing antidote to grunge with its felicitous echoes of seventies roots-rock and obvious debt to The Band and Van Morrison. After years of sounding lost, the band has rediscovered its passion and Adam Duritz's song writing potency. The result is a welcome return to form on which the anthemic rockers hit hard while the band's folk-rock tendencies flow with an engaging honesty. Sound: Belting rockers and softer, semi-acoustic numbers alternate lending the disc dynamic contrast and a finely calibrated sense of light and shade. NW





THE NUTMEGS & THE DIAMONDS

The Nutmegs Meet The Diamonds Blue SPV CD

Music: Both these fifties doo-wop acts took the effortless vocal harmonies of the streets and squeezed them into the charts just as rock 'n' roll began. The rootsier American Nutmens tended to selfwritten a capella numbers, such as the buzzy Let Me Tell You. While the Canadian Diamonds specialized in dynamic covers such as Why Do. Fools Fall In Love? It all adds up to a 30-track collection from an age which still had melodies to spare. The first of SPV's Doo-Wop reissues. Sound: Variable, as you'd expect when some of the mastering had to be taken from vinyl white labels. PS





BILLY PAGE

Wanna Fly Langley CD

Music. Despite the brilliance of past albums such as the eclectic Mexico and the outstanding Only In Love. Brit singer-songwriter Billy Page is still bigger abroad than he is here. This latest effort from the jet-setting strummer might just rectify that situation with such numbers as the magical, bittersweet Can't Run Away and the serene Nilssonesque title track, with its generous chorus and haunting guitars. A fine introduction to the Page phenomenon.

Sound. Realistic without being dowdy, bright without ever being sharp, whether you're listening on a cheap portable or a £30k Krell set-up. PS

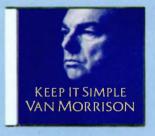




GAVIN BRYARS

The Sinking Of The Titanic Touch Music: Gavin Bryars' tribute to the band which played on as the Titanic sank in is one of the great ambient recordings of the 20th Century. Bryars conveys the music gradually slipping underwater with fragments of folk and ragtime tunes as heard by the survivors. Turntablist Philip Jeck's subtle input gives the music a more nostalgic feel. Superb. Sound: The piece includes a small orchestra plus bottles, bells, cicadas and even the crackle of vinyl to enhance the melancholy, MP





VAN MORRISON

Keep It Simple Polydor

This is a far more free-ranging set than the straight country of 2006's Pay The Devil, gliding effortlessly from blues, through country, skiffle and

jazz. Add romantic balladry (Lover Come Back), autumnal elegy (End Of The Land), classic pop craft (No Thing) and Celtic nostalgia (Behind The Ritual) and you have a near-perfect album that sums up everything that has made him such a consummate artist for over 40 years.

Relaxed and pleasingly scuffed around the edges, this is the sound of a man who knows exactly the feel he wants and how to achieve it with the minimum of fuss. NW

*** * * * *



THIS MONTH'S CLASSIC HI-FI TEST DISC "...complex tunes that sound almost baroque by today's standards."

BRAND X Livestock Charisma

Music: Brand X was the most proficient band on the UK jazz/rock scene of the mid-to-late seventies, equalling many better known super groups in virtuosity. This 1977 set was their only live release and features Phil Collins. ex-Atomic Rooster quitarist John Goodsell and Morris Pert et al, playing

complex tunes that sound almost baroque by today's standards, but are frankly spectacular. The highlights are the longer tracks; Euthanasia Waltz and Malaga Virgin, where they prove that great musicians can play complex material in a cohesive and musical fashion.

Sound: A nice full-scale recording that reveals everything that's being contributed by the six players on a good system. It's one of the best sorted live cuts of the genre. JK







THE B-52S

Funplex Astralwerks

Athens, Georgia's second most famous residents, have come back with an album that is much better than anyone might have expected. The famous beehives may have been tamed, but this collection of irresistibly

upbeat party dance-arounds proves they have just as much zip and verve in their middle years as they had in their twenties. Standouts include single Pump, a riot of pumping guitars and handclaps, the hot pink road trip of Ultraviolet and the camp as Christmas Hot Corner

Guitarist/producer Keith Strickland has updated the classic B-52s sound with subtle electronics. while retaining the things that were most important - Cindy 'n' Kate's divinely off-key harmonies and Fred Schneider's deliciously arch sprechgesang phrasing. DO









OTIS TAYLOR

Recapturing The Banjo Telarc

Music: The banio was barely considered a 'proper' instrument by American whites until the minstrel craze of the mid-1800s, which coincided with it falling out of favour with blacks. Blues veteran Taylor makes the association obvious with a range of songs including traditional string band tunes like Walk Right In, Little Liza Jane and his own trance blues excursions which are reminiscent of recent African blues artists such as Tinariwen and Ali Farka Toure.

Sound: Along with other blues banjo pickers, Taylor has created a sound that is clear and modern, but not lacking in grit. DO







MONADE

Monstre Cosmic Too Pure Music: Singing in French and English, Monade explores the dreamier end of the Stereolab spectrum, with beatific melodies and gentle harmonies, backed by the usual cheesy Farfisa organ, pulsing bass and chiming guitars. It's a beautiful collection of deceptively laid-back tunes with bite; perfect for an intellectually engaged daydreaming on a warm summer afternoon.

Sound: Stereolab elevated their lo-fi tendencies into an aesthetic principle with a distinctively compressed sound and so it is here, the rather cramped soundstage sacrificing overall clarity in favour of an invitingly intimate feel. DO



HIGH-QUALITY AUDIO

BARB JUNGR

Just Like A Woman (Hymn To Nina)

SACD (stereo/multichannel SACD plus stereo CD)

Music: Barb Jungr has clearly been influenced by Nina Simone and she has been compared to the great jazz singer more than once. This album is inspired by Nina rather than a collection of songs by Ms Simone. Of the 11 tracks, three are by Bob Dylan. But you can only tell this from the lyrics, as the arrangements are so different. The Times They Are A Changin', for instance, has

percussion, double bass and piano backing the voice in a very upbeat fashion. She also interprets Lilac Wine in distinctive style with

fine backing by Danny Thompson (double bass) and Mark Lockheart (sax, clarinet) among others.

Sound: This is a spectacular recording with sumptuous tone and pin-sharp imaging. Another feather in Linn Records' cap. JK



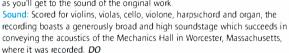


HANDEL CONCERTI GROSSI NOS 7-12

Boston Baroque

Telarc CD

Music: Even for a musical colossus like Handel, producing, as he did, 12 concerti grossi of this kind of quality in the space of a single month pushes the bounds of credibility. This album features concerti 7-12, fine works all, though they contain many borrowings and quotes from previous works by Handel himself and others. Martin Pearlman's Boston Baroque plays all its music on period instruments so this is probably as close as you'll get to the sound of the original work.









Sugar Hill: The Music Of Duke Ellington & Billy Strayhorn Chesky

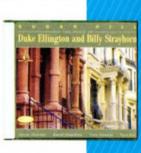
SACD (stereo/multichannel SACD plus stereo CD)

Music: An alumnus of Art Blakey's legendary Jazz Messengers, tenor saxophonist Javon Jackson brings his considerable talents to bear on the canon of Duke Ellington and his long-time arranger and co-composer Billy Strayhorn. He eschews the original big band arrangements in favour of a more intimate small group of piano, sax, bass and drums and focuses on the moodier pockets of Duke's bag, including Prelude To A Kiss, In A Sentimental Mood and Chelsea Bridge.

Sound: In keeping with Chesky's policy of recording in non-studio environments, this was recorded in a New York church and successfully captures the feel of a live performance - minus the audience. DO







Handel

Concerti Grossi

loston Baroque

Martin Pearlman

audiofile.

SHOW REPORT

Heathrow 2008

The Heathrow High Fidelity Show is the perfect opportunity for the independent hi-fi manufacturer and distributor to demo their latest products for both the audiophile and the listening public

rganised by the Chester Group, the Heathrow High Fidelity Show (which took place over the weekend of 29-30 March at the Park Inn Hotel) is not a huge show by any means, but rather one that strives to give smaller manufacturers and distributors a cost-effective opportunity to expose their high-end products to the hi-fi buying public. Having said that, however, it was interesting to see both Focal and Meridian at the show, neither of whom could realistically be described as a small-scale business.

The overall attendance was up on 2007 and pleasingly, several of the demo rooms were filled to overflowing at times. And, while in others you could hear yourself breathing, those who did attend were clearly serious enthusiasts, eager to sample the range of new and fascinating varieties of hi-fi on display.





Easily the best sound at the show was in the Tom Tom Audio room, where a midrange Naim system was driving an unusually squat, black loudspeaker that looked rather like a professional desktop monitor. It turned out to be the Quality Manager 10 from Swedish company Guru – for whom Tom Tom handles the UK imports - and was indeed originally designed as a pro-monitor. Wonderfully musical and capable of an entirely captivating performance, it also produced bass like no other compact speaker (using a fourinch driver) we've ever heard. The price might seem a little high for such a tiny cabinet, but we're sure nobody would think twice about paying £1,700 for a pair once they'd heard them in action.

There was good news for turntable fans in the AVID room where the company announced a revised version of its entry-level Diva model, which, with its new suspension system and other uprated bits and pieces, will sell for around £1,500 complete with arm and cartridge. More unexpected was the news that AVID will be acting as the UK distributor for Escalante Design loudspeakers, which range in price from around £3,000 to £12,000. They didn't sound at all bad in AVID's huge room and their finishes looked absolutely sumptuous. We loved the black and white of the Pinyon, the Indianapolis Red Metallic finish on the Fremont, and the gorgeous, subtle, gradated veneer on the entry-level Juniper.

lcon Audio was flying the flag for the valve camp with a number of new high-value amplifiers and the



this design truly could be driven by a lowpowered thermionic amplifier, the company was powering the demonstration pair with a 2-watt headphone amplifier. "It's not something we'd recommend, but it does rather prove our point," said MD, David Shaw. This is the second iteration of the speakers, which having started life costing over £2,000 now sell for £999. That's the same price as Icon's first single-ended 20-watt amplifier design, the KT88 powered ST20SE. We also saw the new Stereo 25, which, as one might expect, produces 32 watts. This introduction to thermionic technology is for those with realworld budgets, students, people with new families and so on and retails for just E499.





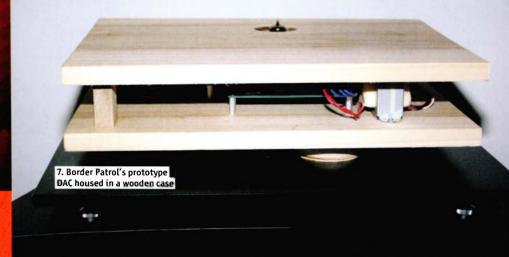


We have become accustomed to loudspeakers with multiple drive units and, while that technology isn't perfect, most of us will tolerate its shortcomings for the benefits it provides. Others will not and companies such as Lovington Horn Loudspeakers have opted to build single driver designs. Lovington demonstrated its SH.1 mark II single horn loudspeaker, which uses a single Fostex driver mounted in a reflex enclosure, rear ported into a truncated bass horn enclosure. In all honesty, that description scarcely tells the complete story of the design of the 'simple' SH.1, but the bespoke loudspeaker is available for £3,495 to anyone who fancies pursuing the single-driver route to high fidelity. The pair on demo sounded dynamic (as horns always do) and their presentation had a grand sense of freedom and scale.

The Sound Practice showed us a veritable slew of attractive items, among which the smartest was certainly the Scheu Analog Diamond turntable. Available in a wide range of finishes, including pink (for the ladies), this elegant, DC-motored, thread-driven, German design provides a highly attractive proposition for those who want performance and a striking appearance at an affordable price. Apparently, singer, Katie Melua owns the first Diamond produced, a black model (now, how's that for a recommendation). The turntable is available now for a very reasonable £1,495, complete with a Scheu-modified Rega RB250 tonearm and a Benz Micro Silver MC cartridge.

We absolutely could not walk past UKD's room without paying a visit. It wasn't to see the Unico Cento integrated amplifier, even though at £2,950 for 180 watts per channel it sounded interesting and was making a damned fine job of powering the Magellan Cello loudspeakers. Nor was it to get a closer look at the beautiful Opera Callas loudspeakers, which use two forward-facing high frequency units and three rear-mounted units to generate their characteristic sound. No, it was because MD, Nick Green was playing Kraftwerk's 22-minute long masterpiece, Autobahn through the system and that was not to be missed. Ah, 1974 and a band that was at least ten years ahead of its time... Somehow, Nick's system seemed to relish it as much as we old-timers did.

Fascinating stuff was happening in the Border Patrol room where we learnt that the two sheets of wood sitting atop a table with a valve poking through the top was, in fact, a prototype DAC design that the company was working on. When we asked why the wooden 'case', we learned that the engineers thought that, in this instance, wood sounded far superior to metallic casework. We intend to watch progress on this project with interest. Also on display were Border Patrol's The Juicy Current power conditioners (£645), which are specifically designed to work with Class A valve amplifiers, rather than offering a non-specific, jack-of-all-trades type solution to all mains problems.



autofile

SHOW REPORT

The Border Patrol amplifiers were doing a sterling job of powering the £4,995

Devore Fidelity Gibbon Nine floor-

standers. How these handsome speakers came by such an unusual appellation has its roots in the designer's childhood: he says he was always a fan of the gibbon "because of its graceful, effortless motion through the trees. It seemed like a perfect mascot for a compact, but spirited range of speakers. Also, as a long, skinny kid I always related somewhat to gibbons." The speakers have been designed to work equally well with a truly vast range of amplifiers, from low-powered Shindo valve designs to the most muscular Krells, all the while being musically communicative... which they certainly seemed to be with the Border Patrol Class A valves.

We have never been great fans of acoustic room treatments, at least not in domestic environments.

Who, honestly, wants his family to sit listening to music in a room that resembles a studio or

a padded cell? Advanced Acoustics has an

answer to this problem: a variety of free-standing or wall-mounted treatment panels offered in a choice of colourful fabric finishes that kill echoes and reflections. The panels can be further disguised by being printed with your choice of artwork or high-resolution photographs. Now you know what to do with that kitsch photo your partner adores. You can use it to disguise an acoustical panel, kill your flutter echoes and please your other half. Prices range from £70 for a 60x60cm mini-wall panel to

VertexAQ Taga Distribution

Block
Contains Silver Jaya mains filtration
and acoustic energy absorption
(795)

Products to clean up your mains supply were also in abundance at the show. One that we spotted, in more then one location, was the £795 six-way distribution block from Vertex AQ. This amazing product claims not to mess up the pace, rhythm or timing of your system – always a good thing. Fellow *HFC* correspondent Paul Messenger, already has an

£200 for the larger Photophonic 60x120cm

acoustic panel.

10. Clean-up your mains supply with this six-way distribution block

order in so we didn't bother pleading for another to try. Nor did we attempt to purloin an Elbrus combination mains filter, which he has already earmarked and which at £2,800 offers passive filtration for amplification and a 300VA balanced-output for source components.

All-in-all, this year's Heathrow High Fidelity show had a pleasant and positive vibe about it, with the majority of exhibitors really keen to show us their wares. It certainly made a refreshing change from some of the other shows we've attended recently.

It's also satisfying to see the diversity of equipment available from high-end manufacturers, as well as gratifying to note that, whether solid-state or valve, vinyl or CD, it was down to how well it played music, which, at the end of the day, is the only thing that really matters. **HFC**

Malcolm Steward





9. A range of wall-mounted treatment panels to kill unwanted room noise from Advanced Acoustics



"And the Award goes to ..."



PM6002 March 2008

PM6002 (Group Test Winner)

"Celebration time for Marantz: The PM6002 is a great example of a budget hi-fi component - grab one fast."

"The Marantz is built like a brick outhouse, and sounds a real treat"





MARANTZ CD6002

Awards Edition

PM6002 (5 Star Review)

"Sturdy feel and looks: full spec: vivacious, animated sound, especially with voices!"

"A superb amp for the money that'll provide you hours of music fun."

CD6002 (Best CD Player under £ 300)

"Price, and the ability to entertain with all music make the CD6002 king."

THERE'S NO ONE QUITE LIKE GRAMMAR

Congratulations on assembling a team of people who obviously know and love their hi-fi. However, the other component of being a hi-fi journalist is the bit that involves communicating in the English language, which has become rather tortured in recent issues.

Here are two examples. In *Understanding DACs (HFC* 304); please note that 'data' is a pleural [sic] noun (singular datum). Therefore, the DAC does not 'take the data in and perhaps buffer it', it buffers them. Neither 'is the data converted', but (you will have picked it up by now), instead the data 'are' converted.

The other sin is starting paragraphs with conjunctions. Page 41 yields a paragraph starting "But it's not easy to criticise...". This

can also be found on page 71 'And on top of Triangle's budget...'. As a paragraph signals the end of one topic and the start of a new one, it's extremely inelegant to use a conjunction to link two successive paragraphs, it does not make grammatical sense.

I suggest you give your sub editor a bit of a prod. Remember you are British journalists and when not actually listening to Elgar, you should be writing lucid grammatical prose, like what Shakespeare wrote.

Peter Norrie Leicester

HFC We respectfully draw on the sage advice of Oxford's grammarians for the first matter. Although datum's traditional usage is recommended, 'data' is effectively an uncount noun specifically in the context of information technology.



"In *Understanding DACs*, note that 'data' is a plural noun."

Uncount nouns (you will have picked it up by now) tend to be the expression of more abstract things - like 'advice' and 'data'.

We bow to a far higher authority on starting paragraphs with conjunctions, because many chapters in the King James Bible begin with 'And...', as indeed do the books of Leviticus, Numbers and 2 Chronicles, as well as several books in the Apocrypha. Even those unmoved by early 17th century English forms should note that common usage (as confirmed in the esteemed sub-editor's copy of the English Usage Guide for the leading UK broadsheets) stresses the importance of 'flow' over 'form', in reference to both sentence and paragraph. This means that paragraphs can also be considered linked quanta of information rather than discrete topics. But keep enjoying the mag!

COMMA CHAMELEON

Your usually well-written magazine surprised me this month (HFC 304) suffering, as it

LETTER OF THE MONTH



DYNAMIC DISAPPOINTMENT

I'm a bit of a rock dinosaur and still read Rolling Stone, albeit mostly online. Late last year, it published a feature called Death of High Fidelity, which chilled me to the bone. It claimed that artists and record labels crank up the sound levels to get listener attention, by actively compressing the dynamic range of recordings. This, it said, has made music almost unlistenable on conventional hi-fi systems and fatiguing even on MP3 players. Is this true? If so, why aren't you complaining?

Jerry Barnfather via email

HFC Music has been cut for radio edits for decades, using dynamic compression to make singles more airplay friendly. However, recently the album cut has suffered the same problems, largely to make music more acceptable through cheap in-ear headphones. The Rolling Stone feature lays part of the blame at the feet of Pro Tools, the industry standard post-production program, but the first skirmishes took place long before that. We have been grumbling about this for years, but our entreaties fall on deaf ears... presumably from playing music too loud.



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[CHOICE MAIL] Readers' letters

■ did, from a spate of misplaced commas. The guilty commas interjected themselves at the beginning of articles to which they were not invited. Examples include, from page 51; "The original Naim NAIT 5i, has earned a formidable reputation." and on page 57; "The latest idea, is a spring suspension system that can be adjusted."

On a more positive note, thank you for the 50 Top Tweaks supplement – it was very enjoyable.

Dean Wybrow Southend-on-Sea

HFC Our highly trained sub-editing gerbil has never been the same since he had his semi-colon removed. He just punctuates everywhere, these days...

DISC DEATH

I read in *Choice Mail* that we will soon see the end of discs to store music and films. I am old enough to have had a radio and piano as the only home entertainment, although my Gran had a wind-up gramophone. I am in awe of inventors who have created all the entertainment products in the past 60 years and do not mourn the passing of any transient medium. I read about the next generation of discs being three-dimensional with enormous capacity for storage but, inevitably, there are three competing formats. Who knows what we'll be using in another five years or so.

Jeff Borland via email

HFC We somehow doubt the next form of storage will be in any way physical. Most companies seem intent on providing music as a datastream rather than a slab of plastic. How you store data locally may vary with time (the IBM-designed hard disk drive used in today's computers is now more than 50 years old and ripe for replacement by non-moving solid-state systems), but bits are bits irrespective of how they are stored. That said, we are still holding out for those shiny 'data crystals' that people always seemed to use in those 1970s sci-fi shows.

GOOD MF OR BAD?

Your recent review of the Musical Fidelity XT100/Triple-X170 amp and power supply



left me with a sense of real disappointment. I bought this combination last year on the strength of an earlier review in your magazine by Alan Sircom that predated your latest review, albeit with the smaller power supply.

My dealer spent quality time with me during the set up of the amplifier at home (I have the partnering CD player), with various speaker, interconnect and power cables before we arrived at the best sound, something your reviewers in the latest review failed to do. Perhaps *HFC* should take it's own advice when reviewing amplifiers by experimenting with cables. Most dealers are only too happy to accommodate this.

I am extremely happy with this, my first MF amplifier and totally disagree with your latest review. If you believe this amplifier to be as bad as your review suggests, please amend your Best Buy recommendation, or re-test it on its own with speakers and cables more suited to it's characteristics.

In passing, how ethical was it to have a representative on your blind listening panel that is associated with one on the amplifiers on test?

Lawrie Newton via email

HFC This dichotomy shows why both solo tests and blind listening have their place. Solo tests allow the reviewer to take time to test a product in its ideal setting. In this case, Alan Sircom also used the partnering CD player and selected cables and speakers to show the product in its best light. However, it is also useful to evaluate products in the more empirical manner of our *Ultimate Group Tests*. Sadly, not everyone has the benefit of an experienced dealer to tailor their system to suit their needs anymore and we believe the level-playing-field nature of the blind listening test better suits such system building.

We have retained the Best Buy rating of the XT100/Triple-X combination because that test is not affected by the rating of the amplifier with its bigger power supply. Finally, as to using people associated with equipment under test, the rigours of blind testing means people don't know what products they are listening to at any time. Often, this means the person most critical of a product works for the very company that manufactures it!

FIVE FROM TEN

How far has CD technology really advanced in the last decade? I currently have a budget of £700 to spend on a luxury item and as hi-fi is one of my passions, I'm considering upgrading my CD player.

I currently own an aging Arcam Alpha 5+, which was upgraded to the 6 specification shortly after purchasing the player ten years ago. For amplification, I use the original series Audiolab 8000Q pre and 8000P power amps, which still delight. Last year, I had the same urge to replace the CD and my local dealer loaned me a new Arcam CD player to try. I remember it had a price tag of £800 (the model number escapes me), but I failed to be impressed by any improvement over my old player. My dealer suggested that before parting with my hard earned cash, I should look towards replacing my Castle Avon speakers. Therefore, I took home and fell in love with a pair of Dynaudio Focus 140 speakers. From the moment I listened, the sound was such a vast improvement.

Now I'm seeking that satisfaction once again. Is it possible to buy new or second hand, a CD player that's going to bowl me over for the budget I have available, or as the wife says, am I just going to waste my cash?

Jez Williamson via email

HFC This is a problem of familiarity, Jez. The Arcam Alpha line of CD players produced a distinctly warm and slightly woolly sound (smooth at the top and middle, indistinct in the bass) that is hard to find at the price today. Modern players are arguably more musically accurate, but that accuracy comes at the expense of some of what you originally sought in the Arcam. At £700-£800, the options are limited and some of the best products (Arcam, Cambridge Audio) may leave you cold, although you may find the Rega Apollo to your liking. Otherwise, you just need to push your budget, either to the Naim CD5i or even higher to the likes of the Rega Saturn, or Shanling CD-T1000SE.

Left: Shanling CD-T1000SE CD player





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Advantage CD1S	£N/A	£1,199	£795
Anatek CM05 Pre-amp + MB50 Monoblocks	£4.000		£2,295
ATC SCM50 ASL Speakers	£7,958	£4,995	£4,295
Audionet Art V2 CD Player	£2,400	£1,095	£995
Audionet Sam V2 Integrated	£2,400	£1,295	£995
Audio Research CD7 CD Player	£7,000	£5,995	£5,495
Ayre K1XE Pre-amp	£5,995	£3,495	£2,995
Bel Canto S300 Power	£1,199	£899	£750
Cairn 4810 Integrated	£2,700	£1,295	£795
Chord DAC 64	£2,495	£1,495	£1,295
Dali Euphonia Speakers	£7,500	£4,995	£4,295
Eastern Electric Minimax Power	£995	£649	£495
Electrocompaniet EC4.8 Pre & AW120 Power	£4,500	£3,795	£3,395
Flying Mole PA S1 Pre-amp	£999	£595	£395
KR Audio Antares Power	£N/A	£1,495	£1,095
LSA VS-1 MKIII Reference Integrated	£2.500	21,755	£1,795
McIntosh MCD201 CD Player	£3,400	£2.695	£2,195
Musical Fidelity DM25 DAC & Transport	£4,000	£2,895	£2,495
Musical Fidelity A5 Pre-amp	£1,499	£795	£595
Musical Fidelity KW250S	£4,999	£2.995	£2,195
Nordost Thor	£1,650	£1.095	£895
Origin Live Aurora	£N/A	£995	£795
Papworth Class A Integrated	£2.000	£1,195	£895
Project X-pack	£750	£495	£295
Stello 220 DAC & 200 Transport	£N/A	£1,495	£1,195
Teac Esoteric DV50	£N/A	£1,295	£1,095
Unison Research Unico CD Player	£795	21,293	£495
EX-DEM	FULL RRP	NOW	CLEARANCE
			PRICE
Audio Zone Amp1 Integrated	£1,595	£1,295	£1,095
Audio Zone Amp2 Monos	£1,895		£1,395
Audio Zone Pre T1	£1,695		£895
Audio Zone DAC1	£895		£695
AVI Pro Nine Plus Speakers	£890	£695	£595
CEC 3300R Integrated	£699	£495	£395
CEC 5300 CD Player	£1,399		£695
Clearaudio Accu + Power Supply	£410		£295
Eastern Electric Minimax CD Player	£999	£749	£695
Eastern Electric M520 Integrated Amplifier	£1,699		£1,099
Isotek Titan Multilink 6-way	£395		£295
JAS Audio Orior Grand (small birds eye)	£2,995		£2,195
JAS Audio Supertweeters	£649	£449	£395
Leema Xones Speakers	£1.895	£1,395	£1,095
Leema Xen Speakers	£1,235	£595	£495
Musical Fidelity KW550 Integrated (0 hours use)	£5,000		£2,995
Musical Fidelity A1008 Integrated	£2,999		£2,495
Musical Fidelity A1008 CD Player	£2,999		£2,295
Qinpu A8000 Integrated	£1,295	£795	£695
Qinpu A1.0X Integrated	£300	£230	£195
Vertex Silver Solfon 1m i/c	£895	1130	£695
VPI Turntable Cover for Scout	£99		£60
7			100

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REVIEWS

Welcome to the HFC hardware reviews section – the only place for definitive tests of the latest hi-fi components. Our unique combination of extensive listening, unsighted comparisons and scientific lab reports, conducted by the UK's most experienced set of reviewers, ensures you're holding the most comprehensive and reliable guide to high-performance hi-fi in the world.



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OUR RATINGS EXPLAINED

Star ratings for various different criteria, like sound quality and value for money nor an mon nor we liked timir point here is p to the job of

the time with managers e800 player, the 17 MkH M, which has excellent build and e a very good impression in HFC 243. At same price there's also the Cyrus 7, and all-rounder in a compact case. Yet ritying the Heart with the standard is we switched over to the Siemens grade, a companson somewhat muddied by the fact that it was a cold for hot swap — the Case Managers of the same on the same all days with the

Our overall conclusion after a livelier wrobes shone shough The Siemens-equipped player has an in snappier sound with better timing that is with dense material with remarkable fidence and ease it even seems to be

tou can find more civilised players for the money. But few combine dynamics with fine timing skills as effectively as this. HFC

PRO and build and open, lively build from a valve OAC with lenty of inputs. Trangort is so great value for money. CON AC doesn't engage as well as
Iso great value for money CON AC doesn't engage as well as
he transport with loss of eight and power through the ass unless you prize one
uality. Cables cost extra and ompetition from single hassis designs won't help.

The things we like most about the product

The things we think could be better

The product's final score. All criteria are taken into account but the emphasis is on performance. Components scoring more than four stars may qualify for an HFC Award Badge

OUR AWARD BADGES EXPLAINED



Best Buy

A component receiving the coveted *Hi-Fi Choice* Best Buy Badge has been judged to deliver excellent performance at its price point, thereby offering outstanding value for money.



Editor's Choice

This Badge is awarded only to those components that are judged to deliver reference-standard performance, regardless of cost. These products may be considered among the very best of their kind.

Turn the page for the most rigorous tests of serious hi-fi in the business...



Moon shines

If you've got the budget, Moon's CD and amp combo is out of this world

PRODUCT Moon CD5.3 RS and i5.3 RS

TYPE CD player and integrated amplifier

PRICE CD5.3 RS (£3,150); i5.3 RS (£3,150)

KEY FEATURES (CD5.3 RS) Size (WxHxD): 43x11x36cm

Weight: 12kg

Digital outputs: coaxial (RCA phono)
Analogue outputs: RCA phono (optional balanced)

- □ Burr-Brown PCM1730E DAC (24-bit/192KHz)
 □ (i5 3 RS) Size (WxHxD): 43x10x38cm
- Weight: 13kg
 Rated power: 85 watts (8ohms)
 Inputs, five at line level
 Outputs, preamp and tape

oon Audio is one of those less well-known brands that quietly goes about the business of making top-notch audio electronics at its base in Boucherville, Quebec. The CD 5.3 RS player and i5.3 RS integrated amplifier featured here form part of Moon's Classic series range – a group of products that also includes two further CD players that are more affordable and a similar helping of integrated amps.

Both components also carry the RS suffix, which means they've been revised from their North American specification, to comply with European RoHS (Restriction of the use of certain Hazardous Substances) regulations. This influential directive bans the sale of new electronic products on the EU market with more than the agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

The electronics in both the CD player and the amp are fundamentally different than the standard versions. Due to the RS regulations, both products include higher temperature grade PCBs, with gold-plated rather than tin/lead composite traces and have extensive use of improved dielectric (insulating) material.

Health and safety concerns aside, Moon is also the sort of company that opts for a stable and considered approach, which is reflected in the no-nonsense engineering of its products. And when it comes to amplifier design, it uses DC coupling (where capacitors are completely removed from the signal path in order to produce a better soundstage). Moon also uses power supply transformers with 'tight regulation' on the premise that such devices allow the amp to drive difficult loudspeaker

loads more effectively than 'typical' transformers which Moon claims deliver ten per cent less voltage. The i5 3 RS has a specification to deliver 85 watts, which doesn't seem a great deal for the price, but when combined with a high damping factor and low output impedance, it results in surprising amounts of grip. As ever with power figures, quality is more important than quantity and this is apparent when you try to drive tougher speaker loads at higher levels.

On the features front, the i5.3 RS has five line-level inputs, one of which is configured to operate as a unity gain input – very useful if you want to combine stereo and multichannel

the partnering amplifier, but it has a bump on the top to make space for the disc drive. The four legs have threaded sockets into which you screw the small pointy feet that discourages one from stacking the player atop an amp. Construction is solid rather than slick (the front panel is very professional-looking), but the top plate looks a little tinny for the money. The rear end is embellished with decent WBT socketry and thus looks and feels the biz.

Under the lid the CD player has a Philipsbased transport mechanism driven by Moon's own control software. On the power supply side, there are two mains transformers – one of which supplies the analogue output stage,

"...musical enjoyment is not always related with specs, features or numbers. The quality of design and the parts selection are..."

systems in one room. Essentially, it means that the integrated turns into a power amplifier for this input and the volume control is taken out of the circuit. One unusual touch is the way that the balance operates, reducing the level of one channel while leaving the other constant, or vice-versa. The remote control is pleasant enough and apart from a minor fault with it (we couldn't decrease the volume), its only shortcoming is the lack of direct 'track entry' keys. While it has a sleek and streamlined, uncluttered look, the lack of track selection capability is mildy disappointing.

The CD5.3 RS CD player inhabits a very similar heatsink-flanked case to

while the other drives the digital side and the disc drive system. The power supply has eight stages of voltage regulation prior to supplying elements like the DAC (which is a Burr-Brown 1730E). While this is not a chipset we've seen in many other players, it is a 24-bit/192KHz converter with 8x oversampling.

As with the amplifier, the CD5.3 RS has a DC servo circuit and proprietary analogue filters. Digital and analogue circuits share the same board, but have their own ground planes, the idea being to minimise circuit length by sharing a board and to minimise interference by not sharing a ground.



Q&A...

We talked to
Dominique Poupart
from the Simaudio
R&D department
about these
two components.



your power supply

tightly resulated, what does that mean in delivery torses?

DP: It does not mean you get more measured power in watts, but the sound is more dynamic and natural at the same time. This is because power delivery stays in control even during a loud passage of music. This allows for a much more controlled and defined sound during peaks, as opposed, for example, to the many components that sound stressed during musical peaks. This is why it sounds more natural and it prevents listening fatigue as well.

How do the RS changes affect sound quality?

The difference is subtle, but everything gets better. It's like having better cables in your system.

There's not a lot in the spec to suggest that the CD5.3 RS is anything special, but it clearly is.

That's because musical enjoyment is not always related with specs, feature or numbers. The quality of the design, the parts selection and materials used throughout are at the very essence of the result. A lot of what makes our products special is in the engineering details. We pay special attention to the power supply distribution. Specific attention is also paid to the supply of the clocking system, which makes big difference to jitter. Someone else using the same clock would not get as good a result because of the DC supply. We prefer to work more in the lab and in the sound room and less in marketing offices.

Why do Mean components take so long to run-in and warm up?

About the long run in, we do not have much control on this, there are plenty of high-quality parts inside that take time

to break-in. I have a theory, but no way to prove it. But here it is anyway: because most of the parts are used way below their capacity to ensure reliability, it takes longer to break them in. Think of it like a pair of new shoes that you would wear once a week instead of every day. It would then take longer for them to perfectly fit your feet.



SOUND QUALITY

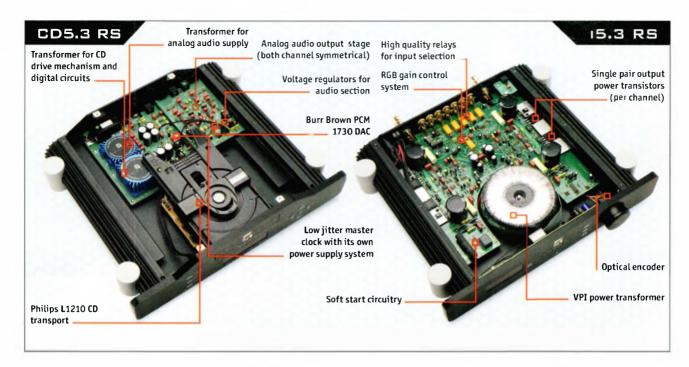
The last time we listened to a Moon from the Classic series, it was the precursor to this amplifier and was simply called i5. At the time, we found the sound overly smooth, while using very similar cables to those still in our reference system (Townshend and Living Voice) and changing them did the trick. This time with different speakers, Bowers & Wilkins 802Ds, we had almost the opposite problem. To start with the balance was too bright and too dry, but rather than curing this with cabling we tried putting some damping between the pointed feet of the Moons and the glass shelves on our Townshend VSSS equipment support. This sorted things out nicely (as this is not the first time that such an effect has been

noted, those of you using points on glass might be interested to try the same experiment).

The other factor that probably came into play and is likely to of cured the dry aspect of the balance, is that the Moons had been left to warm up for an additional 12 hours. With the preliminaries taken care of, things get very interesting indeed.

First impressions from the first spin of our regular test disc reveal the incredible levels of detail on offer. This is matched with true musical coherence, delivered in a genuinely engaging fashion. Barb Jungr's rendition of Who Do You Love is revealed in full effect, despite being an SACD on a CD player. Her voice, in particular, is rich in nuance and depth. The tempo of another track from the





"The Moon certainly knows how to take advantage of the subtlety offered by a big pre/power amplifier..."

same disc, Trouble In Mind, is reproduced in a fashion that enlivens the music without threatening to make it forward or brash. The pairing makes a very clean sound indeed, with smooth highs and tight imaging. In fact, in this latter respect, we'd go as far as saying it is uncommonly effective. Individual instruments and voices are far more solid and distinct and the effects, or surrounding acoustic, is easily distinguished. This was particularly apparent on Melody Gardot's Worrisome Heart, where the voice has quite a lot of compression.

Another female voice, that of Gillian Welch, reveals this combo's ability to expose the layers that seem to exist within recordings. Not so much the different parts, as the harmonies that she produces when singing alone and with a backing vocalist. The recording's slight hardness is not smoothed over, but neither is it emphasised, so there's no discomfort. In fact, it gets right to the heart of the matter on the song 14th Day of April.

Taking the CD5.3 RS on its own and putting it up against our reference Resolution Audio Opus 21 (via more revealing Classe amplification) shows the Moon in a very positive light. This is one of the few occasions where we felt that our player of reference was in danger of being eclipsed by a similarly priced product. The Moon certainly knows how to take advantage of the subtlety offered by a big pre/power

amplifier, producing acres of space from the Melody Gardot disc and making her voice even more seductive

Next to the Opus 21, the CD5.3 RS has a cleaner top end that makes the music sound less lively, but also allows you to play it at a higher level without any hardness. Some will prefer the more forward and dynamic sound of the Opus 21, those with smoother-sounding speakers or more highly damped rooms, but in this system, the Moon's ability to deliver great instrumental tone and depth of tone with no tendency to hardness works very sweetly indeed. In truth, we got carried away and started playing some great music at proper levels; stuff like David Wilczewski's Room in the Clouds, which builds up a real head of steam on the track Speedy. With this, the system separates everything out so that you can hear the individual elements, but keeps the pace right on the money, so that it retains the excitement as well as the detail.

Having had such a good time with the CD player in the 'big' system, it was time to see how the amplifier fared on its own. In this instance, a Leema Tucana (£3,000) was summoned in order to give us a point of reference. Here things were a little closer - yet again the Moon proved the more relaxed of the two amps delivering a more threedimensionally solid sound, but one with a less crisp and tight bottom end. The Tucana is a

rather more powerful amplifier and this is apparent when you play some weighty Grace Jones, where the extra depth and kick in the bass is particularly welcome. The amp has a very good sense of pace and a smooth, relaxed presentation that doesn't skimp on details, nor dynamics. The Tucana on the other hand, delivers a bit more of the tension and drama in a piece, its resolve of leading edges makes it that much tighter.

The Moon combination is a very appealing package. Its combines great imaging with strong timing and dynamics. Although, the CD5.3 RS seems the stronger of the two, in tandem, the results are cosmic. HFC

Jason Kennedy







Townshend's finest

Could the Rock V really be the best turntable we've ever heard?

PRODUCT Townshend Rock V/Excalibur II

TYPE Turntable and tonearm

PRICE £4,500 (Rock V); £2,500 (Excalibur II)

KEY FEATURES Size (WxHxD): 52x17x42cm

Weight: 17kg
 Excalibur II: 202mm effective length
 Speeds: 33 ∕ 45 manual
 Variable dish clamping

CONTACT 20 020 8979 3787 # www.townshendaudio.com

he Rock is a truly iconoclastic turntable. With its trough of silicone fluid and high-mass design, it stands out from the crowd. Ever since the Cranfield Institute of Technology developed the Rock in the late seventies, Max Townshend has been the only person licensed to use the design, but its

radical nature has not always been easy to sell and the Mk V is the first Rock to be made for a couple of years. The problem is, Max is an engineering perfectionist who finds it difficult to sign-off any project which has the potential for improvement. And this time it has paid off, for the Rock V is the most remarkable turntable Townshend has ever made and quite possibly the best we've ever heard.

This is partly due to the new Excalibur II tonearm, a design that was built from the ground up to work with a damping trough – hence the two-layer magnesium rigging at the headshell. This spaceframe construction encapsulates the ethos of the whole arm,

which is to be as stiff as possible. According to Max, if a pick-up arm can be resonated, then this adds noise to the signal as the resonance finds its way into the coils of the cartridge.

The Excalibur II is built around the bearing structure of a Rega RB300, because Townshend prefers ball race bearings for their stiffness. Max considers this part of the Rega design to be completely sound. He is less keen on the magnesium pipe, however, replacing it with a stainless steel tube that's damped and scarf-jointed to the complicated headshell.

The headshell isn't slotted (which is usually the case), but instead, has two pairs of mounting holes that suit the majority of



"...the purpose of the silicone is to damp vibration created by the arm/cartridge as a result of energy picked up by the stylus..."

cartridges. Fitting can be rather more fiddly than usual, however, even with the arm tube removed (something that fortunately can be done very easily and quickly with a single bolt)

For the uninitiated, the purpose of the trough of silicone is to damp vibration created by the arm/cartridge resonance, as a result of energy that the stylus picks up as it traces the groove. A silicone fluid of precisely the correct viscosity anchors the headshell end of the arm as solidly as it is held by the bearings at the pivoting end

The Rock V differs from its predecessor by virtue of its platter material and the suspension system it uses. The last Rock, dubbed Anniversary, used the same inflatable system as the old Townshend Seismic Sinks. The new V has a spring suspension system with short, large diameter springs damped by rubber bellows to stop them bouncing Although the suspension feels quite stiff, it seems to work extremely well thanks to the clever engineering in each of the bellows, that controls the rate at which air moves through it.

The Rock V's distinctive white platter sits on a glass subplatter with a layer of Deflex

sandwiched in between for damping purposes. Max won't divulge what the white material is, but it's softer than acrylic and significantly heavier than the expanded PVC used by Funk. It's weight is in the same ball park as acrylic and the whole platter comes in at 4.8kg. In the platter's centre is a stainless section that can be raised or lowered to adjust the degree of dish produced by the screw down clamp meaning it can be lowered for heavyweight pressings or even clamp-free use. This also has the same diameter as the hole left behind when a 7-inch single is prepared for juke box use. It's hard to imagine anyone buying one for this purpose, but they won't regret it.

SOUND QUALITY

Using a high-end van den Hul Condor on the Excalibur II and the Hi-Fi Choice Awardwinning Townshend DCT interconnect, the Rock V is simply astonishing. What you immediately notice is just how quiet the thing is – it simply lets so much detail through that you have to re-calibrate your expectations of the format and at HFC, vinyl is already held in very high regard. The second thing that hits

you is quite remarkable. It's as if something has been taken away that was previously taken for granted as a characteristic of the format the coloration seems to vanish. In fact it's this coloration that is so much a part of vinyl, that it's hard to come to terms with the fact that it is created by the vast majority of turntable/ arm combinations. But, it's the lowering of the noise floor that is, perhaps, the most extraordinary. The Rock reveals that other players (however fancy or refined) cannot reproduce the quietest parts of each note, the full decay, reverberation or the last ounce of detail.

In practice, this makes for huge resolve and tremendous dynamic range. The latter proving revelatory of the differences between recordings, some of which are distinctly compressed while others are open, relaxed and expansive. Steely Dan's fabulous Countdown To Ecstasy is an example of the former, a fact that's brought into sharp relief if you put on John Martyn's Solid Air afterwards - a recording of similar vintage but with huge amounts of space, atmosphere and level. This ability to reveal such wide dynamic range affects playback as well. With better recordings you don't have to turn up the wick to feel the power and energy in the groove, which is a rather special achievement – the energy comes through with ease at even at moderate levels. Stevie Wonder's I Wish is a good example of a relatively flat recording that has good



HFC: Why does the Excalibur II have

MT: It's to get the

centre of gravity at the

point of intersection of the tonearm's bearings. If we had one counterweight, it would have to be in the centre, but this is hard to achieve with a central counterwight stub. I also wanted to allow for a future upgrade, which I'm going to call Zero Lateral, which turns a pivoted arm into a parallel tracker. If you have one counterweight its large diameter would get in the way of this.

You use a Rega main bearing, is it really good enough?

Nearly all bearings are the same, they are a hard steel pin with a hardened ball. People use heavily engineered bearings because they think that rumble comes from the bearing, but it comes from the uncontrolled arm/cartridge resonance. The only bearing I've heard that rumbles was a ball race. Essentially the Rega bearing is easily good enough for the job and using it keeps costs down.

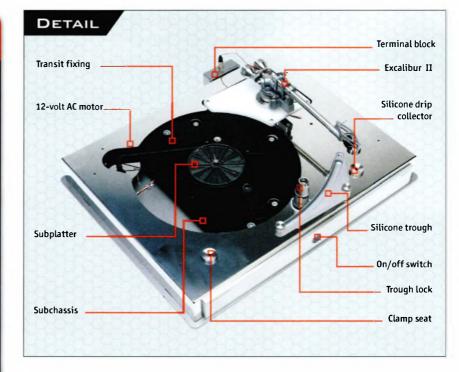
What makes the noise floor so low?

The platter material, the 4mm damping pad within the platter and because the platter is truly impedance-matched to the record. Unlike PVC, which has a filler in when it's in rigid form [as opposed to in vinyl records] and acrylic, which is far worse again. One of the best platters is a stack of LPs. What happens in platters is that the sound radiates from the needle and goes into the platter material, it doesn't reflect at the interface. Because this platter is so close to vinyl the soundwave from the needle goes into the platter and is absorbed by the damping pad which removes any echo. The other factor is the suspension which absorbs all the micro-vibrations coming up from the supporting surface.

What's with the small sub-platter?

The smaller the diameter of the sub-platter the lower the influence of variations in the belt. The weight of the platter swamps any variations in the belt with a small sub-platter, whereas with a peripheral belt drive any





dynamic range and as a result comes across with incredible power and funk through the Rock V. This turntable has the most precise timing this reviewer has ever encountered. The term 'solid as a rock' was once used to describe the sound of earlier Rocks because of their prodigious bass extension. In the digital age, when almost any CD player can do the same (albeit not many turntables), it is an equally appropriate description of its timing, which is bang on the money. In fact, everything about the sound of this turntable is understated in order to let the sound of the records you play shine through. And that they do, so much so that a slew of sleeves starts building up as you find more and more favourites to hear anew. It's not often that hard-bitten reviewers get carried away in this fashion, but this turntable has that effect in spades.

One remarkable thing, is that it achieves all this using the motor and bearings from a £400 turntable (the Rega P3-24), which crucially suggests that these elements are not as critical

as many make them out to be. What really counts is as far as we've seen, is killing all resonance except that of the stylus.

One would almost expect a turntable with these characteristics to sound like a CD player but that certainly isn't the case here, the Rock V has better timing and a wider perceived dynamic range than any CD player we've tried. Put on a digital recording and you know all about it, from the powerful bass to the crisp highs, but there is also a vinyl humanity and depth to the sound.

We've reviewed several incarnations of the Townshend Rock over the years, but never have we been as impressed as we are now. So much so, that in this hack's honest opinion, this is the best turntable we've ever reviewed. There may be better products out there somewhere, but it's hard to imagine such an achievement without a trough. **HFC**

Jason Kennedy





SERIES



DB1/

GB1

TB2

"They sound vivid and dynamic and deliver a thumping bassline" - GBI

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Small is beautiful

Arcam's new Solo Mini one-box hi-fi system blows us away

PRODUCT Arcam Solo Mini

TYPE One-box hi-fi system

PRICE £650

KEY FEATURES Size (WxHxD): 23x9x35cm

■ Weight: 6.7kg ■ DAB/FM/AM tuner

Rated power. 25 watts ☐ Inputs: five line level (four phono, one mini-jack) ☐ USB input ☐ Outputs: three (tape, preamp, and headphone)

CONTACT № 01223 203200 @ www.arcam.co.uk

lushed, no doubt, by the success of the original 'Solo', Arcam has now progressed to a three-band, half-width, receiver with built-in CD player – and that's usually the territory of Aiwa, Matsui and other faceless brands that no one has ever heard of.

All the same, Arcam is keen to point out that the Mini has plenty of Arcam cred, with features such as digital-to-analogue conversion and a 25-watt output (that's real hi-fi watts, not PMPO, or some such fancy concoction).

There's certainly plenty of logic in combining a DAB tuner and CD player in the same unit, since they both need digital-to-analogue conversion. And, once you've done that, you

might as well add a USB input, so that files on USB portable audio devices can also be played.

The power supply – which is a linear type based on a toroidal transformer – is common to all the stages. However, even with all the space saving efficiency that comes with surface-mount components, it was clearly a bit of a squeeze to get everything in the case. The inclusion of a slot-loading CD mechanism could easily be seen as another compromise but, just because most slot-loading players are a bit ho-hum, we shouldn't be in a hurry to condemn this one.

The DAB module is the usual minute, self-contained affair and the FM/AM one likewise. Source switching and volume control are electronic and the final squeeze is in the power amplifier section. It might have been just about possible to fit in a discrete output stage, but Arcam has opted for a power integrated circuit secured to a heatsink that, while on the small side, is more than adequate for any music duty we tried.

In case radio, CD and USB don't rock your boat, Arcam has thoughtfully provided four line inputs on the usual phono sockets at the rear, plus an extra one on the front in the form of a stereo mini-jack. There's a fixed-level output, quaintly labelled 'tape', and a preamp output so that remote amps can be driven (the same output allowing the Mini to be upgraded by the addition of an external power amp). If you hanker after more, or more refined power, then also nestling at the rear are control connections for multi-room automation.

Operation is pretty friendly, with a fair degree of intelligence built in. For instance, when you insert a CD, the source selector automatically switches to CD on the reasonable assumption that you actually want to play the disc. The controls directly above the front panel work well enough, though the extra buttons on the remote make life easier. Volume steps are sensibly set at 1dB, with basic tone and balance controls included. We really can't think of anything Arcam's left off – you can even use the Mini as an alarm clock!

SOUND QUALITY

To our great delight, the Solo Mini proved to be everything we'd hoped for. Arcam sent it in for review with an accompanying pair of 'Muso' loudspeakers (£130 each). These may be a popular choice, though we couldn't really work up much enthusiasm for them. Instead, we spent many happy hours enjoying the Mini's prowess in the company of a pair of the very fine Living Voice Auditorium speakers. Purloined initially for our valve amplifier group test (*HFC* 305), their high sensitivity of around 92dB was no less-suited to the relatively modest output of the Mini.

Now that may seem an odd pairing – a £2,100 speaker with a £650 mini-system? On the contrary, we found ourselves drawn inescapably to the conclusion that, with a budget of two to three thousand pounds, a



"This is a system with a degree of finesse, that could convince the most hardcore devotees of separates to change their ways."

Mini, plus the best loudspeakers one can find, it's still an eminently sensible choice. After all, the Mini isn't just competent; it is, in context, stunning.

One does, of course, makes allowances for systems like this and we had a high expectation of some residual hiss or hum. But, hang on – there isn't any. With fine-quality separates, you have to press your ear to the tweeter to hear anything of that nature and, yet even though the Auditorium is a sensitive speaker, we were not aware of any background noise. So far so good!

The CD player, however, is bound to be a bit coarse and lacking in detail compared with any half-decent separates. Except that it's not! We compared it with the exceptionally fine Chord DAC64 fed by a decent transport. While we could spot it as an upgrade on the Mini's built-in player, it was the sort of differential we'd expect from a £500-class CD player (and some of them are quite alarmingly good).

But isn't the Mini's amplifier a bit of a puny starveling? Well no, it isn't. It does run out of

power eventually, but up to that point it has astonishingly high-levels of detail, control and grip. It's not a Krell or Musical Fidelity, but it has real insight, tuneful bass, sweet and extended treble and admirably little character of its own – it gets on with any style of music with equanimity.

The DAB tuner is perfectly decent, while the FM one may be the weakest part of the system but that's all relative and it's still better than the FM section of some digital/analogue tuners we've come across, with a nice 'bite' to the sound and good integrity. It's worth mentioning that a quick visit to the lab, resulted in a set of measurements not unlike those from good modern separates, and the real-world power output is comfortably above the rated 25 watts.

This is a system that plays music with gusto, conviction and a degree of finesse that could convince the most hardcore devotees of separates to change their ways. It's possible that some painstakingly assembled systems of CD, amp and tuner for under £1,000 could see

it off, but they still wouldn't offer as many features and would probably take up about five times the space.

So what are the applications for the Mini? From ultra-upmarket alarm clock to the heart of a dedicated stereo system, they are nearly endless. Add a pair of Musos or other miniature speaker and put it in a bedroom, study or kitchen. Use it to lift the performance of a (non-multichannel) TV setup and add games, mobile music player and auxiliary inputs to the equation. Or, as already suggested, add the best speakers you can buy, secure in the knowledge that the range of inputs and outputs makes it painlessly upgradeable both upstream and down.

You could even give one as a present and spread a little real music replay quality.

After all, we have no hesitation in declaring the Arcam Solo Mini as one of the nicest and most exciting hi-fi products we've come across in a very long time. We can't recommend it more highly. **HFC**

Richard Black







A trio of finely balanced Caspian components from Roksan

PRODUCT Roksan Caspian M Series-1

TYPE CD player, preamplifier and power amplifier

PRICE (CD player) £1,250; (preamp) £1,295; (power amp) £950

KEY FEATURES (CD player) Size (WxHxD): 43 2x8x33cm ○ Weight: 10kg ○ Outputs: three (digital); 75 Ohm coaxial, 110 Ohm balanced AES/EBU XLR and Toslink optical ○ (Preamp) Size (WxHxD): 43 2x 8x33cm

- Weight: 12kg Inputs: five line-level
- Outputs: three RCA phono (Power amp)
- Size (WxHxD): 43 2x8.5x33cm Weight: 10kg ● Rated power: 85 watts per channel (eight Ohms)

CONTACT № 020 8900 6801 @ www.roksan.co.uk

hen Roksan launched the Darius loudspeaker and the Rok-DP1 CD player, one couldn't miss the distinctive styling – the loudspeaker, for instance, with its tweeter (suspended on springs) set inside an exo-skeletal stand, or the DP-1, which resembled a miniaturised top-

loading washing machine. Since those days the company's products have adopted a rather more toned-down appearance. There's no real cause for concern, though, because while their appearance has moved toward the mainstream their performance certainly hasn't.

The models under review here are actually '2008 specification' Caspian M Series-1 components and represent upgrades over their forerunners (also known as Caspian M Series-1 components, see *HFC* 278). Name, rank and number remain unchanged. Nor is there any external differentiation between the generations. So the only way to confirm which M Series amplifier you own is by checking the serial number. If it's greater than 0115000, then it's this year's specification.

The upgraded CD player features an individually selected, high-specification Sanyo

transport mechanism driven by a discrete, fully regulated power supply. The transport electronics do not to require any setup and this, according to the manufacturer, eliminates potential 'aging' and drifting of the laser control parameters. The use of carefully selected, high-quality components further ensures stability in this vital area. The DAC board uses no less than six fully regulated power rails, six high current op-amps and a custom-made, high-precision crystal for its master clock.

In fact, Roksan asserts that every component in the player has been meticulously chosen to enhance the overall performance and reliability, and that the latest specification machine has had almost all its digital and analogue circuitry upgraded to deliver lower distortion, lower noise and higher dynamic

Roksan Caspian M Series-1 CD player, preamplifier and power amplifier [Review]

range. These improvements offer, according to the manufacturer, "unsurpassed timing, dynamics and sound staging" along with "tighter and better defined bass, life-like open and detailed midrange with much extended, yet smoother and clearer top end."

Similar performance improvements are claimed for the amplifiers and these have also benefited particularly from upgrade attention to their power supply stages. The dual-mono, complimentary, fully symmetrical preamplifier has four regulated power rails for the left and right channel amplification sections, two regulated rails for the buffer stage and two regulated power rails for an optional internal phono amplifier. The eight, low-impedance, low-noise regulators for the amplifier stage are fed by two sets of high-efficiency, ultra-fast rectification and mains smoothing reservoir capacitors. On the other hand, control and logic circuits have their own independent regulated power supplies, to eliminate unwanted interference with the audio section. At a fundamental level, the preamplifier has



"Roksan asserts that every component in the player has been meticulously chosen to enhance the overall performance..."

five line-level inputs along with a tape connection and multiple outputs (three plus tape) all through RCA phono sockets. The fascia is a minimalist affair with buttons for tape and mode (mute/standby) and rotary controls for input selection and volume.

The cosmetically matched, 85-watt power amplifier - which can also partner the Caspian integrated in multi-amped loudspeaker installations - features a single set of inputs, a set of line outputs (from which another power amplifier can be daisy-chained both using RCA phono sockets) and a substantial pair of loudspeaker sockets that will accommodate 4mm banana plugs, or bare wire connections. Its fascia features just two buttons, auto and manual, which control switching to and from standby mode. In auto mode the amplifier will 'wake up' when it receives a signal and 'sleep' after a predetermined absence of an input.

The power amplifier has had its power supply stages enhanced to extract yet more performance from the design. In this instance, the amplifier shares elements of the topology used in the top-of-the-range M Series mono amplifiers. It further benefits from high specification components and improved cooling. Not that the Shahinian Compass loudspeakers we used with the system demand

huge reserves of power, but they nonetheless seemed to appreciate the ease and control with which the Caspian amplifier drove them through single runs of Chord Company Signature speaker cable.

SOUND QUALITY

Listening to the CD and amplifiers working in unison it's clear that while they're considered high-end — and indeed they exhibit many qualities typically associated with high-end equipment - they have no problems conveying music's fundamental elements and communicating with the listener. Something that not all high-end equipment manages to do quite as succinctly, if at all.

Michael Hedges' Rickover's Dream is given a great portrayal by this set-up, which conveys all the dynamics and the crystalline clarity of the glorious sound he achieved from the unusual set-up on his Martin D-28 quitar, with its mix of a Lazarus FRAP pickup providing its brilliant treble and a Sunrise magnetic pickup delivering its throaty lows and mids. The acoustic pickup was intensely sensitive and, being mounted under the bridge, it frequently captured the sound of his hand touching the quitar's soundboard with startling acuity (something that this system reveals with

unnerving clarity at times). This aside, however, the system transcends merely demonstrating what a virtuoso quitarist Hedges was and shows the listener that he was, first and foremost, a virtuoso musician who simply used the guitar to convey his thoughts and feelings to his audience

Switching to another quitarist, the equally talented Jeff Beck playing the Mingus standard, Goodbye Pork Pie Hat on his album Wired, the system again reveals more than sufficient revelatory aptitude. The original recording's tape noise is evident at all times, except when the cymbals mask it or the buzz from his noisy quitar amplifier distracts you. In fact, the system adroitly reveals all this track's subtle 'noises off', including drummer, Richard Bailey quietly fumbling with his sticks before starting to play. But, it's Beck's playing that draws most attention, first because of its extreme technical prowess and second, because it's so beautifully expressive: his mix of tones, phrasing and varying attack along with the way he catches feedback just before it reaches the point of being out of control are utterly sublime.

All this system's pace and detail would be wasted without control, so we bring out an album (Los Jovenes Flamencos, featuring fiery gypsy artists such as the Amador brothers' band, Pata Negra) that will quickly demonstrate if the Roksan combo could be provoked into scrappy behaviour. The system, however, sailed through Yo me que quedo en Sevilla, a rapid-fire onslaught of flamenco guitars and animated vocalising, maintaining

Q&A

Roksan designer, Touraj Moghaddam talks about his theories on CD design and tells HFC how to fine-tune the Caspian system.



elements do
you consider
contributed most to the improved
performance of the CD player?

TM: Certainly the combination of the new motherboard and the DAC board. These days both mechanism controllers and D/A convertor ICs can be affected by the relative 'position' of the clocking system. The new board's layout optimises these distances and provides the CD player with far better integration between the data acquisition circuits and the data conversion circuits. This is one reason why Roksan doesn't make stand-alone DACs anymore. In the times of the DP1 and DA1, for example, the D/A IC was quite happy to be far away from the main 'clock' which was in the transport. Now, however, that will not bring about the best performance and so we are concentrating on CD players - albeit with multiple digital outputs for those who may still have and love their DA1s and DA2s.

What's the easiest way for users to optimise the performance of the Caspian CD player?

First, the player will benefit from being placed on a suitable support structure. As with other highend machines, the idea is to minimise mechanical vibration interfering with its operation. Then it's vital that it is connected to the amplifier with high-quality interconnects. If these are analogue leads, then the left and right channels should be twisted together. I know that you used Chord Company cables for the test, which are a fine choice, but I would recommend our company's own interconnects – Roksan HDC-02A high-definition analogue cable or HDC-01D high-definition coaxial digital cable. These were, of course, designed with our electronics in mind.

How do you reel about people using main: 'improvement devices' - conditioners and fanty cables - with your amplifiers?

As long as these components are high-quality and correctly designed, they should compliment the performance. Of course you do not want to spend

too much, when you could put that money towards a pair of Caspian Mono power amps, which should provide an even bigger step-up in performance terms. In short, the entire system should be 'balanced' in terms of cost and performance.





■ exceptional grip over the frenetic proceedings and keeping Raimundo and Rafael's guitars distinct and individual in the sound stage, which served to emphasise the intricate interplay and harmony between the brothers. And when bassist, Danny Thompson joined kora player, Toumani Diabate to play *Caramelo* with flamenco fusionists, Ketama, the system showed that its control extended comfortably to both extremes of the frequency range. It demonstrated great power and grip on the bass and appreciable delicacy and dynamism on the harp-like African instrument.

The system shows similar finesse when fed a chamber ensemble and two singers performing Mahler's Das Lied von der Erde. The Roksan setup again exhibits a captivating blend of muscle and extraordinary gracefulness. Dynamic extremes are appropriately brutal or slight, depending upon what the recording demands. The system's low noise floor, detail and ability to gradate dynamics further enables the

creation of a credible, suitably scaled, three dimensional acoustic in which the performance takes place, lucidly portraying the decay of notes into a near tangible space. Even if one regards this as artifice, it is still a very pleasant artifice to have!

Roksan has achieved something rather special with this system; it offers none of the tedium and lack of motivation that so often accompanies high-end hi-fi. It might not look particularly exciting, but its cohesive and considered sound more than makes up for that reserved exterior. **HFC**

Malcolm Steward





DEFINITIVE AUDIO



Main image: KSL Kondo Gakuon Mono Valve Amplifiers





















Point of entry

Naim significantly upgrades its entry-level CD player

PRODUCT Naim CD5i

TYPE CD player

PRICE £850

KEY FEATURES Size (WxHxD): 43x7x30cm

O Weight: 8.1kg ○ Analogue outputs: DIN and RCA phono (no digital output) ○ Redbook CD-R compatibility

O I-com remote control included

CONTACT № 01722 426600 @ www.naimaudio.com

he Naim CD5*i* is the CD player designed to accompany the NAIT 5*i* integrated amplifier (recipient of a Best Buy badge in *HFC* 305). It is also an 'italic' upgrade from its predecessor and, in keeping with the NAIT 5*i*, the subtle change of nomenclature disguises some significant changes in this entry-level machine.

The CD5 i uses every possible development from previous or more costly Naim CD players to establish it as the reference model among entry-level players. The drawer and transport suspension are borrowed from the CDX2, as is the magnetic disc clamp, all of which allow the Philips transport to deliver a performance far in advance of anything it could offer mounted in a conventional tray mechanism.

The CD5 i uses the same Naim-developed replay and control software as the reference CDS3, ensuring that the junior player presents

the maximum information from discs in a similarly musical and believable manner.

It also uses the Wolfson WM8706 DAC. It is Naim's opinion that the choice of DAC in a budget player is not especially critical, provided that the execution of the circuitry around the DAC is first-rate with, for example, correct grounding and a very low-impedance power supply. The Wolfson, nonetheless, remains a fine choice that delivered the best performance in the many auditions Naim carried out. Nonetheless, the company still prefers to spend more money on areas that it considers to be of much greater importance, such as the power supply, the transport and its mounting, and anti-microphonic casework.

To that end, the CD5*i* comes housed in the die-cast zinc and extruded aluminium casework, that is a development of the casing used in the existing 5 series, which provides excellent resistance to the effects of external vibration. The player also continues the trend of including RCA phono sockets alongside Naim's traditionally favoured DINs. The phonos allow easy connection to non-Naim amplifiers with a variety of interconnect cables permitting fine-tuning of the sound, which can be beneficial when the CD5*i* is used in a non-Naim system

One cannot write about a Naim product without detailing the power supply arrangements that play such a pivotal role in all the company's products. The CD5i draws its power from a large custom designed toroidal transformer - with discrete analogue and digital windings - that does not allow the voltage rails to sag when there is a heavy demand for current placed upon it. This promises good musical performance especially at the lower end of the frequency spectrum. The transformer feeds thirteen (four analogue, nine digital) regulated supplies using carefully chosen components, including selected SMT regulators and low ESR decoupling capacitors to ensure that the supplies are low noise. The ground paths use star earthing to provide the lowest impedance earth connection and the circuits are designed to dump ground currents back to specifically chosen points that are closely coupled to the power supply. This decreases interaction of the circuits and reduces noise

As for the results of all these improvements Naim states: "The CD5i presents music with more clarity and authority, but without detracting in any way from the traditional values of timing and musicality" There is only one way to discover whether that is an idle



"The player also appears to have acquired some transparency, along with a delightful openness and ability to communicate."

boast by connecting it to a high-end Naim DBL system to test its ultimate capabilities, as well as a rather more price and performance appropriate Roksan Kandy LIII integrated amp, driving a pair of Neat Motive 1 loudspeakers.

SOUND QUALITY

The CD5i straightaway demonstrates its rhythmic capabilities with Die Tönzerin from German songstress, Ulla Meinecke's album Wenn Schon Nicht Für Immer Donn Wenigstens Für Ewig. This song is all about timing with its agreeably sparse instrumentation, consisting of nothing more than a repetitive cymbal figure and some economical keyboard playing beneath Meinecke's deviously phrased and ruthlessly exposed vocals. The CD5i conveys the timing with military precision, but simultaneously enriches the performance by portraying each element in the mix within its own clearly defined acoustic space. It also emphasises the emotional contrast between this song and others on the disc such as the near Eurovision awfulness of 50 Tips, Meinecke and her band's uber-schmaltzy version of Paul Simon's 50 Ways to Leave Your Lover.

The player also appears to have acquired some additional transparency, along with a

delightful openness and ability to communicate. And this manifests itself as a noticeably improved articulation of Dr. John's vocals on the album *Duke Elegant*. Words and phrases that might have appeared ambiguous before are now presented with improved deliberation, clarity and certainty.

This step forward in hi-fi terms does not seem to have been achieved at the expense of any of the musicality that the previous CD5i exhibited. The album's rhythms are as tight and fluid as ever and even tracks with a generally relaxed temporal feel such as Perdido, have that subtle sense of urgency about their timing. This ensures that the music never crosses the jazz fusion boundary to become middle-of-the-road muzak. When the laser encounters the next track, Don't Get Around Much Any More, you can sense the player eagerly shifting up a gear to reflect the increase in tempo. And then it hits Solitude, a slow number in which the Naim sounds supremely confident, rendering the pitch of the piano and Dr. John's marvellous phrasing with absolute conviction. The same is true of its portrayal of acoustic and electric bass lines, both of which exhibit idiosyncratic leading edge and note shape. We only intended to sample a couple of tracks from this album, but thanks to the CD5/s performance

we ended up listening to it from start to finish.

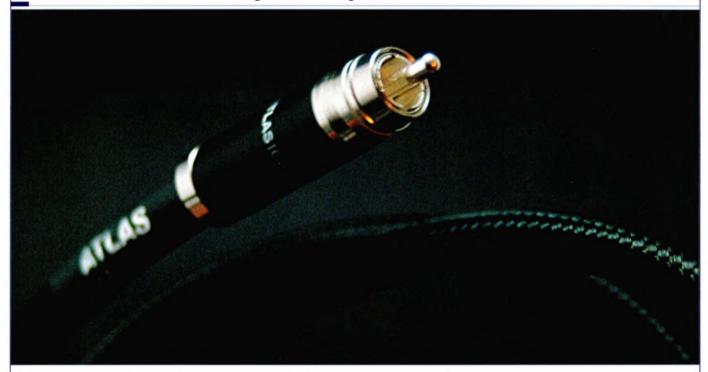
As we seemed to be having an old favourites session, blues guitarist Robert Ward and his band The Black Top All Stars' *Fear No Evil* was the next disc to be clamped under the CD5/s puck. The player revels in this album's R&B stylings and delights in the soulful *Stratocaster* track. It communicates Ward's funked-up blues, playing deftly and with all the tension and emotion intact.

Ultimately, it looks as though Naim is playing totally straight in its assertions about the CD5*i*. It certainly does present music with greater clarity and authority, while it has lost none of its ability with other traditional musical values for which buyers select Naim. And while the company developed the player in conjunction with its own NAIT5*i* amplifier, there's no reason why it shouldn't be partnered by any similarly musically capable amplifier such as the Creek Evolution or the Roksan Kandy LIII that we used in these tests. **HFC**

Malcolm Steward



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SPEAKER CABLE



Hi-FiNews









PS Audio's mains conditioner makes a great upgrade

HI-FICHOICE magazine

PRODUCT PS Audio Quintet Power Center

TYPE Mains conditioner
PRICE £395

s recently as HFC 303, we reviewed PS Audio's Quintessence Power Center, only to discover in late February that the model has been discontinued. Fortunately, PS Audio's UK distributor had sent us a Quintet Power Center at the same time, so we are able to fill the gap by evaluating this model instead. In fact, PS is so enthusiastic about its new Power Center that it's even included a well-presented, ten-minute video by company bod Paul McGowan on its website

Many features of the Quintessence are shared by the Quintet, including the five 'IsoZones' and three switching zones. What this means is that every socket (in the USA, where sockets are smaller, these are pairs of sockets) has its own dedicated filtering to isolate it from both the supply and other plugged-in devices. This set-up allows the supply to be switched independently to two pairs of sockets and one single one. This is permanently on when the Quintet's power switch (concealed under the sinewave logo) is on, or with a short delay to permit automatic power-up sequencing.

It's quite impressive that PS has managed to squeeze all the electronics necessary inside such a small assembly (with little or no wasted space) plus relays and filtering components tucked in beside mains outlets. There are even pairs of sockets for overvoltage protection (no filtering) of telephone, CATV and TV/FM aerial feeds and remote control automation via trigger inputs. Although the unit lacks the Quintessence's voltage display, it still monitors mains voltage and will cut the supply if voltage rises or falls dangerously (fortunately, a very rare situation in most areas of the UK).

PS is particularly proud of its use of 'nanocrystalline materials' in the toroidal power chokes that filter each outlet. In practice, this means that the chokes can achieve usefully high values of inductance without needing hundreds of turns of copper wire on them, reducing losses and series resistance. Suitably rated capacitors and spike protectors complete the component array. The unit is exceptionally robust and clearly marked for easy use. It also takes up less space than most fully-filtered conditioners. It is supplied as standard with a regular commercial mains cable (PS does, of course, make upmarket alternatives).

SOUND QUALITY

So far, we haven't reviewed a single mains conditioner that didn't offer some degree of beneficial effect to the audio performance, but it's fascinating that they all seem to differ slightly in the kind of benefits they bring to the party. The degree of improvement also varies from model to model and also from situation to situation. What we can say is that, overall and at this price point, this is one of the most beneficial units we've tested (which puts it in direct competition with units such as the Isotek Solus and the Russ Andrews Ultra Purifier).

In performance terms, this unit resembles the PS Quintessence, which may explain why the latter is discontinued. And, as with that unit, the Quintet seems most adept at improving the resolution of the sound and lowering the perceived noise level.

Rather unusually, though, its 'effect' seemed most pronounced with a couple of power amps (low-level components are typically more affected), which acquired an extra level of ultrafine detail. Various CD players and even a few

preamplifiers were improved in similar ways but, we felt, less obviously.

Nevertheless, this is clearly an effective unit that does pretty much what it says on the box. The addition of switching features, the overvoltage protection – for the very rare occasions when it might be needed – and the space-saving size makes it a very attractive upgrade at the price. **HFC**

Richard Black







Tangerine dream

KEF's new streamlined XQ models feature a brand new 'tangerine' waveguide

PRODUCT KEE XO20

TYPE Standmount loudspeaker

PRICE £1,000 per pair

KEY FEATURES Size (WxHxD): 23x38.5x30cms Weight: 9.2kg
 Lacquered real wood finish ◆ Advanced 165mm Uni-Q driver array ◆ Curved cabinet • Tangerine waveguide • Sensitivity: 88dB

CONTACT ☎ 01622 672261 ♦ www.kef.com

ounded back in the 1960s, KEF (an acronym for Kent Engineering Foundries) has long operated at the leading edge of hi-fi loudspeaker design. Even though the

company has undergone numerous changes, its approach to design and technology has remained remarkably consistent throughout.

A good example of this impressive track record is the XQ20, a compact standmount which forms part of a new mid-price XQ range of speakers. There are five models in total two standmounts, two floorstanders and a centre speaker. All are based around KEF's proprietary co-axial Uni-Q driver array and cunningly curved cabinetwork, beautifully lacquered in real wood veneer finish. The variations depend upon enclosure volumes,

driver diameters, and the addition of extra bass-only drivers in the floorstanders.

This £1,000 per pair is the larger of the two standmounts. It's a two-way design based on the very latest version of a 165mm Uni-Q drive unit, loaded by a front port and an enclosure of approximately 16 litres (the curved tapering renders exactitude difficult here and KEF doesn't supply the relevant data)

This solitary drive unit has an interesting history. Taking advantage of the development of ultra-compact and powerful rare-earth magnets containing neodymium, iron

boron, the Uni-Q driver made its debut back in 1988. It's a variation on the co-axial theme, placing a tiny tweeter on the end of the polepiece in the centre of the bass/mid cone, so that it actually sits at the latter's effective acoustic centre, creating a 'coincident' variation on the co-axial theme.

This construction has both advantages and disadvantages. On the plus side, it makes crossover integration between midrange and tweeter relatively simple from an acoustic point of view. It also ensures that output is entirely consistent and symmetrical at any given measurement axis (the formal term is 'axisymmetric'). It's therefore also free from the vertical axis 'lobing' that is invariably created in the crossover region where the two sources

with the Reference series. This too is based on waveguide theory, the profile of the cone is shaped into a specific curve so that no interference patterns occurs between the direct wave and reflections of that wavefront off the cone. This is done by ensuring that the expanding wavefront always remains perpendicular to the cone, so that no reflections can be created. This Uni-Q has a flared 118mm shiny plastic cone and unusually flat surround, while the tweeter uses a 19mm titanium dome.

The whole thing feels very solid, weighing a substantial 9.2kg. The curved top, base and sides all help increase the stiffness and avoid concentrating and focusing the internal standing waves. Two pairs of terminals fit directly through the enclosure and wire links

"The latest tweak to be applied to the tweeter is a so-called 'tangerine waveguide', which is making its debut in this XQ-series."

are spaced apart, as in conventional two-way systems. However, it can also be pointed out that placing a tweeter so that it's recessed down in the neck of a cone is not an ideal way to create wide dispersion, while the additional complication is that said cone is moving to and fro in response to the music signal.

Twenty years of development have steadily refined the Uni-Q. More powerful rare-earth magnets have improved tweeter sensitivity and recent versions have drilled pole-pieces to avoiding creating back-pressure behind the diaphragm. The shape of the tweeter's dome diaphragm has also been modified and now has an elliptical profile.

The very latest tweak to be applied to the tweeter - too late indeed for inclusion in the new Reference series that was introduced only last year - is a so-called 'tangerine waveguide', which is making its debut in this most recent XQ-series. Viewed from the front, this wavequide does indeed look a little like a small citrus fruit, though it actually consists of eight small vanes extending inwards from the tweeter dome periphery, dividing its output into seven segments. The intention is to compensate for the fact that, when a tweeter dome is driven at its periphery by a voice coil, its fore'n'aft motion falls short of the ideal of a pulsating sphere. The loading on the diaphragm provided by the vanes increases relative output from the outer parts of the dome, more closely mimicking the pulsating sphere.

The XQ's Uni-Q also benefits from the new cone profile that was recently introduced

are supplied. The curved base requires special stand-coupling arrangements and two alternatives are supplied: a curved hard rubber pad can support the enclosure itself, or a tripod of hard feet may be used (albeit without lock-nuts, though these shouldn't be necessary if the feet are screwed in tightly).

SOUND QUALITY

Our measurements comfortably confirm KEF's 88dB sensitivity rating and also show a rather easier load (which only drops significantly below 60hms above 8kHz) than the company's claimed 3.2 ohm minimum suggests. Pair matching was adequate.

In-room far-field measurements indicate that the XQ20 is probably best kept clear of walls. Without any wall assistance the bass region is quite smooth and even, well- extended for the size of the enclosure, but also a little dry. Close-to-wall siting tends to supply too much midbass (around the 45Hz port tuning frequency), somewhat at the expense of upper bass output. However, some of the extra bass that is supplied by close proximity to the wall might well be found preferable in order to balance out the rather strong top end. The farfield in-room averaged response is quite smooth and also remarkably flat overall - but probably a little too flat through the treble region. Experience across a wide range of models has shown that the 'ideal' (not to mention the average) response under these conditions shows some down-tilting in the presence and treble regions, whereas the XQ20 stays almost ruler-flat to the limits of audibility

The brightness seen in these measurements was immediately and obviously audible, the more so because the low frequency end is both dry and notably clean. While there's no denying that this speaker is significantly brighter than average and the top end does immediately draw attention to itself, happily the top end is also pretty clean and well integrated. Although there is a mild tendency to emphasise sibilants, the bonus is that it does ensure speech sounds open, clear and intelligible even at the very lowest of listening levels. The corresponding disadvantage being a tendency to become aggressive if the volume is turned up high.

The bass alignment might not have been ideal under our room conditions, but the strength and shape of the enclosure are very effective at avoiding any boxiness or thickening coloration. Indeed, the bottom end here is unusually crisp and clean, with good drive and purpose, albeit with a rather dry and cool character.

Some midband coloration is audible, with slight thickening and pinched voice reproduction, but neither are excessive. The point source coherence supplied by the coaxial driver delivers fine stable stereo imaging across a generous listening zone, assisted by the low box coloration and the advantage of a quality 'head-size' standmount. HFC

Paul Messenger





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PRODUCT Bowers & Wilkins Zeppelin

TYPE Integrated iPod system

PRICE £400

CONTACT № 01903 221500 # www.bowers-wilkins.com

he Zeppelin is an integrated iPod dock complete with digital amps and built-in speakers. The dock itself sits on a sturdy chrome outrigger that stands proud of a chrome bar and has a reassuringly sturdy feel when accessing the iPod's functions. The power cable, USB port, toslink digital connector and stereo minijack (for external sources) lies at the rear. There's also a composite and S-Video connector for playing iPod videos on your telly and a pair of rearfiring bass ports, one for each 'speaker'.

The two black grilles hide the speakers, giving the dock its 'Zeppelin' look (actually, it's dimensionally closer to a scaled-down 30 St Mary Axe — 'the Gherkin' — laid on its side). Each side of the speaker holds a 25mm tweeter unit and a 90mm slotted woven fibreglass midrange cone and both of these are powered by their own 25-watt amplifier. A 125mm bass driver, driven by its own 50-watt amp and matching, pebble-shaped piano gloss remote completes the package.

There's some subtle digital signal processing going on inside the Zeppelin, too. This tailors

the output of the Zeppelin, according to the volume level, to make it sound consistent virtually irrespective of room size. It also allows you to charge most iPods while connected and a multicoloured LED on the left speaker describes Zeppelin and iPod status.

The functionality of the Zeppelin is basic, given the price of the system. The pebble remote has rudimentary iPod controls, but fights shy of the iPod's menus and playlists. It's a simple product to install, however, because all you have is a choice of whether to use the additional rubber foot, or not.

SOUND QUALITY

The system is impressively powerful for an iPod dock; we can envisage these units being used to pump out dance tracks in every gym in the land. There's also an admirable sense of separation; not stereo separation, but the ability to separate individual instruments within a mix is very strong. The last time we heard sounds so clearly differentiated from a unit this small, it had both Meridian and Ferrari badges on it.

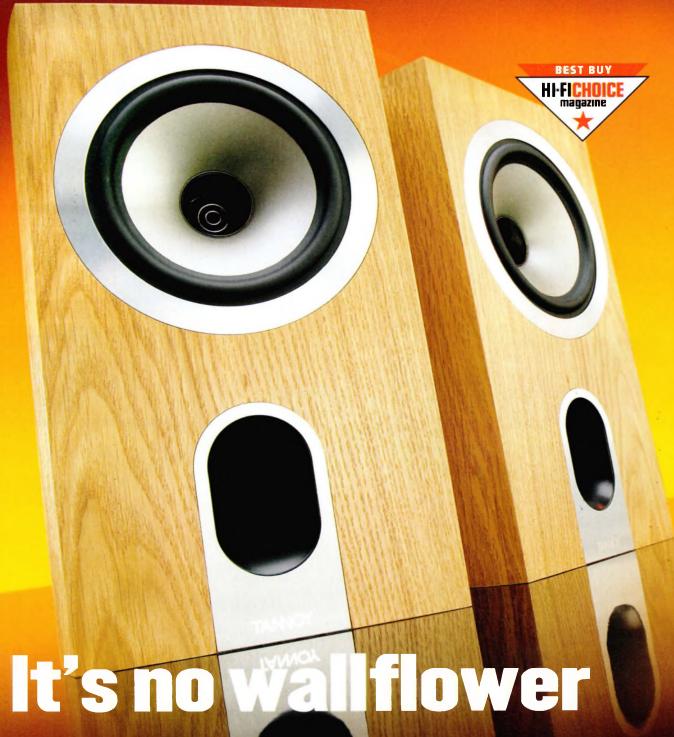
It's not an F80 though. There's a distinct lack of dynamic range here that apes the performance of the iPod, which makes everything sound like it's playing at the same level. It may well be a very loud level, but when you are playing something like The Pixies (or,

of course Led Zeppelin), you expect the quiet bits to be very quiet and the loud bits to be very loud; here everything is all at the same level. This is endemic to modern recordings and to iPod material not recorded in Apple Lossless; unfortunately, the Zeppelin throws this into sharp repose.

Led Zep puns are a cheap shot here, but one that's impossible to resist. This is no *Black Dog* and it's good for *Rock and Roll*, but there remains a *Communication Breakdown* between the Zeppelin and hi-fi. **HFC**

Alan Sircom

VERDICT SOUND PRO The Zeppelin looks great and can fill a big room with surprisingly loud, extremely **FEATURES** well-separated sound. A very well out together iPod package indeed. BUILD **□** CON Lacking in dynamic range (at $\star\star\star\star$ any volume) and the iPod controls are too simplistic for VALUE what is essentially an expensive dock-fi. Yes, this is style over substance, but the same could be said for the iPod itself. The sheer volume and room-filling scale of the sound is impressive. However, the sound lacks the subtlety of dynamic shading that good hi-fi can produce.



Yet again, Tannoy's dual-concentric driver confirms its timeless benefits

PRODUCT Tannoy Revolution Signature DC6

TYPE Standmount loudspeaker

PRICE £800 per pair

KEY FEATURES Size (WxHxD): 23x36.5x23cms

- Weight: 7.2kg
 150mm dual concentric driver
 Sensitivity: 88dB
 Impedance: 8 ohms (nom)

CONTACT 2 01236 420199 **www.tannoy.com**

Ithough it's currently owned by Danish ProAudio operation TC Electronic, Tannoy remains one of the Grand Old Names of British hi-fi (and ProAudio) loudspeakers, retaining its own entirely

individual and unique approach to product design and development. For such a large and well-established brand, its mainstream domestic hi-fi activities seem to have been surprisingly quiet recently, at least as far as products coming into HFC for review are concerned. This is probably because the company's attentions have been focused on its widespread ProAudio activities. So the arrival of this first representative of a new Revolution Signature range is particularly welcome.

Historically, this new range harks back to the Definition models that first appeared in the

mid-1990s, combining dual-concentric drivers with real wood veneered enclosures. More than a decade on, the basic layout remains similar, but enclosures, drive units and crossover networks have all undergone significant development and refinement in the interim, so overall performance should also have moved on significantly

The complete Revolution Signature range comprises four stereo pairs and two centrefront (dialogue) models, each available in real wood 'light oak' or 'espresso' colour finishes. The stereo pairs come in two-way standmount and two-and-a-half-way floorstanding versions, and use either 150mm or 100mm dual-concentric main drive units. These are housed in the appropriate-size enclosures and with a matching bass unit in the floorstanding versions. (The LCR models also come with the larger or smaller dual concentric drivers, this time with a matching passive radiator.)

The subject of our review is the £800 per pair DC6, which is based around the larger 150mm dual concentric driver, mounted in an attractively finished and interestingly shaped enclosure. Of the real wood veneer options, 'Espresso' is currently proving the more popular by a significant margin. 'Espresso' might well be the height of current cabinetwork fashion, but the same cannot be said for a wood veneer which has a resolutely matt finish. Speaking personally, I think this type of surface treatment (probably originating from Eastern Europe) looks much more natural than the

down the 'throat' in the middle of a bass/mid cone, shows how the concept continues to be refined and developed with a shorter tulip waveguide and much modified tweeter. Built on a 150mm cast alloy frame, the flared doped paper bass/mid cone is 115mm in diameter, driven from a high-power-handling 44mm edge-wound voice-coil. The 25mm diameter tweeter has a titanium dome just 25 microns thick, with a claimed extension to 54kHz. The crossover point is set at 1.8kHz, with a second-order roll-off feeding the bass/mid section and a simple first-order feed to the tweeter.

SOUND QUALITY

Under our in-room far-field measurement regime, the DC6 comfortably met its 88dB sensitivity rating and did so alongside a relatively straightforward nominal impedance of 8 ohms, with an easy-to-drive minimum at around 200Hz. However, the pair match

"Historically, this new range harks back to the mid-1990s, combining dual-concentric drivers with real wood veneered enclosures."

typical high-gloss approach that seems to be favoured by Far Eastern sources.

The cabinet encloses a volume of 11 litres, and is loaded by a port at the front, below the solitary dual-concentric drive unit. Although the front panel is wide enough to accommodate the 150mm drive unit, the back panel is exceptionally slim – only just wide enough to accommodate the strip of five terminals. Although the front and back are flat and parallel, with the top and base likewise, the sides are formed into a tight curve so the depth corresponds quite closely to the width. This has the multiple advantages of stiffening the sides, spreading out the horizontal standing waves and dispersing reflections.

The five terminals? One pair feeds the bass/mid, another pair the tweeter, while the one left over is connected to the drive unit chassis. Like a similar feature found on Tannoy's more upmarket Dimension and Prestige models, the idea is to allow the chassis to be earthed back to the amplifier in order to reduce RF interference. But there's little evidence of cable brands making appropriate five-conductor speaker cables available, so the feature's practical relevance must be questioned.

Tannoy's famous dual-concentric driver began life way back in 1948 and, in various forms, has been a cornerstone of the company's loudspeaker technology ever since. A co-axial drive unit, which places a horn-loaded tweeter

between our two examples was not particularly close, which is a little disappointing.

Although the port tuning is 50-55Hz (depending on the sample), a frequency which usually leads to some mid-bass excess in our test room, our measurements reveal a surprisingly dry bass alignment. When the speakers are mounted on open 60cms stands well clear of walls, relative output rollsoff very gently and progressively below 200Hz. Close-to-wall siting fills in the midbass zone very nicely, lifting it up to match the broad, slightly projected and impressively smooth and even upper midband and presence, though there remains some lack of output through the upper bass and lower midband.

These measured findings were clearly reflected in the listening results. Close-to-wall siting normally leads to a clearly audible increase in voice band coloration, but that didn't seem to be the case here. With their backs to the wall, the DC6s somehow seemed to dissociate themselves entirely, sonically speaking, from the stereo soundfield they were creating. There is, perhaps, an associated reduction in stereo-image depth, but this is only mild in degree and did little to spoil the party (especially since such depth is usually an artificial studio construct).

This Tannoy isn't perfect by any means, but it does the most important things very well indeed. The bass is smooth, clean, even and

fast, with no evidence of thickening or overhang. And if ultimate weight and extension is somewhat limited, that's hardly unexpected in a compact standmount. The voice band is particularly impressive, too, sounding attractively open, expressive and coherent, with the sort of delicate and subtle detail that seems to be a feature of well-behaved paper cones. The top end is very well-judged, too ,if anything erring a little on the side of restraint, which is arguably better than tending to draw unwanted attention to itself.

This is a speaker that knows how to rock and roll, as timing is invariably excellent. Few bands have ever made greater demands on timing precision than Little Featstykes and on these speakers the live *Waiting For Columbus* album builds superb tension throughout.

Orchestral material is equally effective, the texture of massed strings reproduced with a realism that is thoroughly convincing. Brass instruments are amongst the most difficult to handle, with a tendency to sound aggressive, but happily the Tannoys are smooth as well as forward, so brass has good punch and vigour but avoids sounding over the top. **HFC**

Paul Messenger





Denon DL-103

TYPE MC cartridge

PRICE £100

CONTACT ☎ 01234 741200 # www.denon.co.uk

he DL-103's appearance gives you a clue as to its origins, which lie in Denon's design department of 1963. The vinyl groove hasn't changed a lot since then, however, so it's still a worthy contender with a very tempting price. There have been various incarnations of the 103 where efforts have been made to tweak its performance with alternative wiring and coils, but the standard unit won't say die. It produces an output of 0.3 mV and so needs a decent MC phono stage. It also gives its vintage away with a 2.5g required downforce, which makes it better suited to higher mass arms. The stylus is inevitably spherical, which means that it's not hyper sensitive about set up, which is handy. Less convenient, is the old-school deep-slot mounting, which is fiddly to set up, especially if you use the aluminium fixing bolts supplied

In our SME IV it produces a smooth and remarkably powerful sound with slightly restrained treble, which makes for relaxed listening on the whole – piano, for instance, is relatively easy on the ear. It's not as hot in

timing terms as more contemporary designs - in fact it's positively laid back compared to the Dynavector and Ortofon 2M. However, it does have a degree of refinement rarely encountered with MCs, which many will **VERDICT** appreciate. It also has a bit more 'air' through A budget classic and one of the least expensive MCs around but it requires a the midband and decent weight through the bass. It's not hard to 'hear' why the DL103 has lasted the course, as it has a musicality that's per MC stage to giveof very easy to enjoy. HFC

Dynavector DV-10X5

TYPE MC cartridge

PRICE £250

CONTACT 20 01665 830862 # www.dynavector.co.jp

he 10X5 is the least expensive cartridge in Japanese brand Dynavector's extensive range and, like the Denon, its origins can be traced back to a time when vinyl ruled supreme (1978, to be specific). Unlike the Denon, however, it has gone through five revisions since then, so is a more up-to-date design with an elliptical stylus and a more conventional downforce requirement for an MC of two grammes. It has a strong 2.5mV output meaning you don't need a hyper-sensitive MC phono stage, making it more economical for those starting out on the vinyl path to sonic enlightenment. A forthcoming revision is said to include threaded inserts, which would greatly aid mounting, but as it stands it's difficult to set up. You have to use the supplied aluminium slot-head bolts and round nuts and there's no stylus quard for assurance.

Fortunately, it's worth the trouble (it wouldn't still be around if not) and is capable of producing a solid and precise soundstage with

real weight and power. Tonally, it's very convincing too, managing to combine good detail resolution with a relaxed balance that's sensitive to timing without leaning on the leading edges. The lazy groove of Tom Waits Swordfishtrombone sounds so right that it's hard to find the limitations unless you have something better on hand (the Ortofon Rondo Red reveals greater subtlety in the bass and a little more refinement). But the Dynavector makes up for this with vibrant dynamics and a great sense of timing that hooks you into the music. HFC



VERDICT

An MC with a high output, great dynamics and fine timing. The incunting challenges will be forgotte after a single track.



Ortofon 2M Bronze

PRICE £200

CONTACT № 01235 511166 # www.henleydesigns.co.uk

rtofon's new 2M (for MM) range of interchangeable stylus moving magnet cartridges has a body shape that's modelled on the facets of a diamond. In the case of the 2M Bronze, the diamond stylus tip itself is a Fine Line shape designed to track up to very high frequencies. This is the penultimate model in the 2M range and shares its Noryl plastic/glass body material with the black version that sits above it. Both also have slit-pole pins and silver-plated copper wire The former is an Ortofon invention that reduces eddy currents and is said to deliver a more neutral balance. Recommended tracking force is a gentle 1.5g, which should suit most of today's tonearms and the output is a robust 5mV, so it will work with any MM phono stage.

Easily installed on our DPS2/SME IV turntable and arm, the 2M Bronze delivers a lively and vivacious sound that makes up for what it lacks in refinement with zest and energy. Pace is clearly delivered, as is the midband, but the treble is not quite as clean as the MCs in this group. The bass, while tuneful,



Next to CD there is little to choose in terms of tonal balance, but the Ortofon wins on the timing and vigour front. If you are after an upgrade for a budget turntable it's well recommended. HFC

VERDICT

nt resolve that



Ortofon Rondo Red

TYPE MC cartridge

PRICE £300

CONTACT ☎ 01235 511166 ⇔ www.henleydesigns.co.uk

he Red is the base model in Ortofon's Rondo range, but it's still the most sophisticated cartridge in this group. It's also the most expensive, but not by much. Its key distinguishing feature, which it shares with the Rondo range, is a body made from ground hardwood and resin - a sort of expensive MDF, which should offer many of the advantages of a hardwood body without the expense of making one. It has an aluminium cantilever and an elliptical stylus and produces half a millivolt, so a moving coil phono stage is a must in this instance. Downforce is a substantial 2.3g and it will, therefore, work best in higher mass tonearms such as the SME. Pro-Ject supplies this cartridge on its Xperience turntable, however, which has a medium-mass carbon fibre tonearm

On the turntable the Rondo Red is a snappy and sophisticated cartridge that has the dynamics of the Dynavector, but adds another degree of resolution thanks to its clean delivery. Its strengths lie in the bandwidth



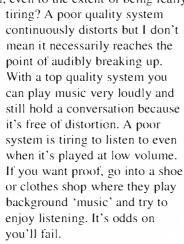


This is a fairly well-trodden path but it leads to dissatisfaction, endless upgrades and a lot of wasted money. It's likely that the system will help you lose interest in music pretty rapidly. The problem is that there are more myths about hi-fi than Aesop's Fables. CD gives you perfect sound. All CD players sound the same. A £50 CD player plays high fidelity music. All magazine reviewers are experts. Big speakers are always better than small ones. More watts per channel is everything. MP3 format gives you high quality. A collection of 'Best Buy' components will be a great system. And so on and so on ... ALL MYTHS!

Music - the real aim

Our aim must be to buy a hi-fi system that will prove musically satisfying, reliable and deliver true value for money. If the system doesn't excite you musically you've wasted your money. What is even worse is that you may not even realise you've bought a bad egg — you'll just switch the TV on instead and your desire to

listen to music will gradually diminish. Have you ever been in a pub or club where you realise it's very difficult to conduct a conversation, even to the extent of being really



What and Where to buy

The system you think you want may not be right for you. – So where do you start? Here's an important tip...don't start with WHAT, start with WHERE.

There is only one way to give yourself the best chance of getting it right first time, and that's through a specialist hi-fi dealer. Now it's likely you have preconceived ideas that may put you off visiting one. Although you would welcome the advice and guidance, you don't know the technical jargon. You don't want to be talked down to. Your friend has said they only sell expensive gear and they're not interested if you don't have a big budget. They're expensive. Again, just myths. Most specialist hi-fi dealers are running their business because, above all, they love music. They spend a large portion of their time listening to music and comparing systems to get the best possible result. They know the component combinations which don't gel together and, conversely, they know the combinations which give the best performance within a given price range. But they all also know the system must suit you.



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The story doesn't end there. These shops won't abandon you once you've put your hand in your pocket. They won't leave you to set up the system you've selected as best you can. They'll install it in your home, make sure it sounds great, and make sure you're entirely happy with the way it works. Why? Because a high proportion of these dealers' custom comes through people who have bought from them before, either directly or by commendation. It's vital to them to get it right for you.

price of everything and the value of nothing." Specialist retailers know that not all potential purchasers will seek them out. They tend to attract the more discerning, thoughtful customers. Let's face it, a good deal is about more than just a good price. After all, unless you've got money to burn, you'll be living with your new system for years. Most of these dealers offer much longer equipment guarantees than provided by the manufacturer, a very worthwhile benefit, but it also makes it in the dealer's interest to ensure high build quality and reliability. Maybe you could save a few

pounds by buying piecemeal but you'll lose out on the

maybe they believe that taking care of their customers

overall package. As far as the dealers are concerned,

properly is a nicer way of doing business than just

Oscar Wilde wrote "... too many people today know the

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SOUNDCRAFT HI-FI 40 High Street. 01233 624441

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THE POWERPLANT 40 Church Road, Hove. 01273 775542

Chelmsford

RAYLEIGH HI-FI 216 Moulsham Street. 01245 265245 Colchester

RAYLEIGH HI-FI

33 Sir Isaac's Walk. 01206 577682

Kingston-upon-Thames

INFIDELITY
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LOUDSPEAKERS

High-performance standmounts compete for market supremacy

y no means the least costly speaker systems on the market, our Ultimate Group Test focuses on the high value of the marketplace, with our original price target lying between £200 and £400.

It didn't quite work out that way. Although the average price is around £350 per pair, for various reasons three of our six contenders fall outside those initial guidelines. At the bottom end of the price scale we wanted to include a Wharfedale Diamond 9.1. Scheduling meant that this model missed out on last year's test, but unanimous praise in other magazines has helped to make it a major market leader, so coverage here in Hi-Fi Choice was well overdue. In fact, we managed to obtain samples of a new £180 per pair Anniversary version, carrying a £30 premium over the standard model and featuring a lovely walnut veneer, in celebration of the company's 75th anniversary.

Triangle's new Titus EX also comes in over our target at £450 per pair, but

that's simply a result of the declining sterling against the Euro – three years ago, its ES predecessor cost £370!

The model that caught us entirely by surprise was the Mk2 version of the Aurousal A1. The Mk1 was a Best Buy as recently as HFC 299, at a price that we assumed was £450 per pair. Having enjoyed the original, we were naturally keen to try the Mk2, anticipating the price wouldn't be all that different. The first shock came with the discovery that the price had increased more than 20 per cent to £549. Then came the even bigger shock when we realised that Aurousal's quoted price - uniquely in our experience on the UK hi-fi scene - had excluded the VAT. By the time these two pennies had dropped it was too late to reschedule, so that's the reason that the A1 Mk2 is well out of price kilter with the others.

All six of our speaker models are standmounts and all, bar one, have small (130mm) bass/mid-drivers. These obvious similarities only make

the substantial sonic differences that much more interesting. **HFC**

EQUIPMENT USED

- Naim CDS 3/555 PS CD player
- **⊘** Burmester 001 CD player
- ▶ Linn Sondek LP12/Rega RB1000 turntable/arm
- Rega Apheta cartridge
- Magnum Dynalab MD 106T tuner
- Naim NAC552 preamp
- Naim NAP500 power amp
- Cables from Vertex AQ and The Chord Company

MUSIC USED

- Bob Dylan Modern Times
- ▶ Laurie Anderson Strange Angels
- **▶** Lowell George Thanks, I'll Eat it Here
- Nitin Sawhney Beyond Skin
- **⊘** Tanyas Hello Love Be Good
- Wagner Tannhauser Overture

BBC Radios 3 and 4 were also used extensively

ON TEST



Advance Acoustic UM20



Aurousal A1 Mk2 £645



Bowers & Wilkins 686



Focal 706V £369



Triangle Titus EX



Wharfedale Diamond 9.1 £180



LISTENING TESTS

Loudspeakers vary dramatically in size, type and tonal balance, and often behave unpredictably according to where they're placed. The difficulty facing sequential unsighted loudspeaker tests is the tendency to judge each example according to how its balance differs from the model that preceded it Accordingly, hands-on listening sessions gave scope to adjust to the changes in balance and also to experiment with positioning.

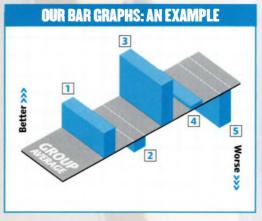
LAB TESTS

The equipment used was a Neutrik Audiograph analogue signal generator with synchronised pen recorder. This was used to plot the far-field in-room averaged response traces, as well as the impedance plots. Pair-matching was also checked at one metre

No other magazine offers an equivalent test and listening programme for comparative tests.

LAB REPORTS: THE BAR GRAPH

- 1] Sensitivity: Sensitivity is a measure of how loud a speaker will go for a given voltage from the amplifier. It's scaled to 2.83V at 1m (corresponding to 1 Watt of power for an 8 Ohm load). It's a widely quoted figure, but can be misleading, as loudspeaker sensitivity can vary quite significantly across the audio range; and because lower impedance speakers extract more current and amplifier power than higher impedance examples.
- **2] Bass extension:** The bass behaviour of loudspeakers is heavily modified by the room in which they are used. To replicate 'real world' conditions, our figure represents the averaged bass roll-off frequency at –6dB ref the broad midband, measured across the far field for a stereo pair in a 4.3x2.6x5.5m room
- 3] Ease of drive: The lower the impedance of a speaker, the more current it will extract from the driving amplifier for a given voltage (volume) setting. Lower impedance designs are therefore theoretically harder to drive, especially at low and midband frequencies but they also tend to have higher sensitivities, which reduces their voltage requirement for a given level of loudness.
- **4] Overall frequency balance:** The overall broad frequency response trends do much to define the character of a speaker, although true neutrality is the obvious goal
- **5] Response smoothness:** Beyond the overall tonal balance of the speaker, the small scale smoothness has much to do with the delicacy of the sound and its ability to deliver subtle harmonic shading. It's also a factor that separates more costly speakers from their cheaper rivals.



£200 per pair ☎ 01623 517000 @ www.advance-acoustic.com

ADVANCE ACOUSTIC UM20

A combination of French design with global manufacturing

relatively new name on the hi-fi scene, Advance Acoustics was founded in Toulouse, France in 1995, to design, develop and out source manufacturing of highquality stereo hi-fi components.

Loudspeakers were the first items on the agenda, but since then the company has introduced an extensive range of electronic components, from some very serious amplification to several clever iPod products.

The £200 Ultim UM20 is the smallest of the company's four stereo speaker pairs and the only standmount in the line-up. It's a simple two-way miniature, combining a small 130mm bass/mid driver and 25mm tweeter in a tough, yet attractive enclosure with a shaped front panel to assist high frequency dispersion. The rear panel has a single terminal pair alongside the unusual combination of a wall bracket and a small reflex port.

The enclosure combines four cherry wood veneered panels, separated by heavily post-formed black edges, all finished in a glossy lacquer. The back and the front are all black, and the latter seems to be extra thick, with some chamfering around the tweeter.

The little 130mm main driver has a high-quality cast alloy frame and a flared and doped paper cone, roughly 100mm in diameter. This crosses over at around 3kHz to a 25mm soft dome tweeter, using high-quality crossover components operating at 12dB/octave.

SOUND QUALITY

Although the smooth and open midband (and nicely judged top end) were immediately noticeable, a lack of bass weight and warmth was also rather obvious when the speakers were positioned on stands and well clear of walls.

Moving them back close to the wall produced an immediate and clear improvement, with very little sacrifice in terms of smoothness, though not unexpectedly image depth and air were slightly curtailed.

When a small speaker is coupled closely to a wall, acoustically, there's often a tendency to create an unwanted peak in the upper midband. This will tend to emphasise detail, especially in the voice band and can become rather wearing over the longer haul. The UM20 largely manages to avoid this hyped detailing, though it does have a slight tendency towards forwardness and unevenness, leading to slight coarseness and some edgy coloration when reproducing human voice.

However, in a price context its limitations are only to be expected and eminently forgiveable, as the overall sonic character has a liveliness and openness that more than compensates for the mild-coarseness and colorations.

In many ways the sound is fairly typical of a small and well-conceived paper cone drive unit, in which a degree of coloration is considered an acceptable trade-off for the fine delicacy and good communication skills of this approach. Certainly the UM20 is very good at conveying the expressive qualities of human voices, which always makes the speaker an

enjoyable and involving experience, notwithstanding the inevitably rather limited dynamic tension.

The ear/brain invariably focuses on the midband here, which perhaps does the entirely adequate and self-effacing bass and treble performance something of a disservice. Suffice to say, both are smooth and well balanced to avoid attracting unwanted attention. They don't get in the way, so the listener gets

sucked into the thoroughly enjoyable and informative midrange. **HFC**

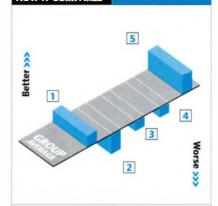


LAB REPORT

Advance Acoustic claims a sensitivity of 88dB, and that's exactly the thoroughly respectable figure that came out in our tests. And although the impedance dips to around 5 ohms through the bass and lower midrange, it doesn't look unduly demanding, which is probably sensible in view of its likely partners.

This is a tiny 'miniature' speaker, so deep bass isn't expected to be on the agenda. In free space there's an obvious lack of mid-bass (60Hz – 150Hz), while the 55Hz-tuned port output looked likely tomitigate against close-to-wall use. Happily, that wasn't the case at all and the UM20 delivered a fine bass alignment with assistance from close-to-wall positioning, while the attendant increase in midband unevenness was relatively mild. Indeed, the mid-to-treble looks smooth and very well balanced. The pair match of our samples was unusually good for an inexpensive speaker.

HOW IT COMPARES



- 1] Sensitivity >> +10%
- 2] Bass extension >> -20%
- 3] Ease of drive >> -10%
- 4] Overall frequency balance >> -10%
- 5] Response smoothness >> +20%

SPECIFICATIONS			
Measurement	Rated	Actual	
Sensitivity @ 1 m/2 83V	88dB	88dB	
Impedance (nominal/minimum)	4 ohms	7/5 ohms	
Estimated bass assension (-6dB)	55Hz	42Hz	





£645 per pair **©** 07837 956069 **@** www.aurousal.com

AUROUSAL A1 MK2

Aurousal has upgraded the performance and price of its A1 speaker

t the end of last year we reviewed the Aurousal A1 loudspeaker (HFC 299). What distinguished the A1 from most (if not all) of its immediate competition was that it was a based on a single full-range drive unit, an approach that has certain unique advantages as well as unavoidable limitations. Given that it also used a very decent-looking real wood veneered enclosure, the quoted price of £450 seemed sharp enough for a Best Buy rating.

Six months later and a new Mk2 version of the A1 has appeared, claiming a number of improvements over the original model, but also including a significant price rise. Now quoted at £549, we were a little surprised to discover (too late in the day to change the review group) that this relatively high figure excluded VAT, so the actual UK selling price of the A1 Mk2 is £645. Significantly more than we anticipated and also substantially more costly than the other models in this group.

Simplicity is, of course, the key feature. The solitary driver looks like one of Ted Jordan's small metal diaphragm units, combining a cast frame with a 90mm diameter metal diaphragm. The main cone is conventionally concave, while a much smaller cone pointing outwards covers the voice-coil area in the middle. Naturally there's just a single terminal pair and no crossover as such (though some degree of network equalisation has been

introduced, which will inevitably

introduce a little extra phase shift). And naturally the single voice coil will have to handle the full bandwidth output from the amplifier, which will somewhat limit power handling and loudness potential.

The prime roles of the enclosure are to support the drive unit properly and ensure that the sound from the front of the diaphragm is kept separate from that generated out of phase by the back of the cone. A tuned port fitted to the front panel and energised by the rearward radiation and the box volume will reinforce the bass region. Said enclosure is finished in a real wood veneer (beech or cherry) and, if it's a relatively prosaic example of the genre, at least it's the real thing. Piano gloss black is an optional extra. According to Aurousal, this Mk2 version includes "bass weight optimisation", with further improvements to internal acoustic behaviour.

SOUND QUALITY

Kept well clear of walls and with a bottom end that's dry, well controlled and with adequate weight, the Mk2's much flatter overall in-room balance is a major improvement over the original. The result is much better neutrality, alongside similar (though somewhat less extreme and obvious) overall time coherence.

The top end remains rather dull and lacking in 'sparkle', because it becomes progressively focused into a relatively tight beam as frequency rises. Best results are, therefore, found when

> The A1 Mk2 might not quite match the tight time coherence of its predecessor, but it gets very close and delivers an intimacy and realism, especially with voices, that's exceptionally seductive. The tight timing also underpins sharper and more vigorous dynamic expression than most of the competition. Some nasal and 'cunned hands' colorations

are audible, but imaging is precisely defined and very well focused. HFC



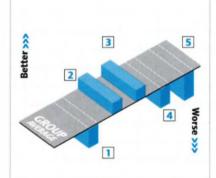
LAB REPORT

Single full-range driver speakers invariably show some limitations under measurement and that was certainly true of the original A1, which performed best through the midband region, but fell away rather towards the upper and lower ends of the audio band.

This Mk2 version shows a significant improvement in overall neutrality, essentially it would seem through adding a degree of network equalisation that increases the impedance slightly above 150Hz, presumably through adding an inductance in series with the driver. This has the positive effect of reducing the previously prominent midband by about 3dB, but the sensitivity (now 86dB rather than 89dB) and the top end are also reduced by a similar amount.

The net result is very well-balanced, though not particularly smooth below 40Hz up to above 3kHz, with a reduced treble zone above this point.

HOW IT COMPARES



- 1) Sensitivity >> -20%
- 21 Bass extension >> +10%
- 3) Ease of drive >> +10%
- 4] Overall frequency balance >> -20%
- 5] Response smoothness >> -30%

SPECIFICATIONS		
Measurement	Rated	Actual
Sensitivity @ 1 m/2 83V	87d8	86dB
Impedance (nominal/minimum)		8/8 ohms
Estimated bass extension (-6dB)	39Hz	30Hz





£279 per pair № 01903 221500 @ www.bowers-wilkins.com

BOWERS & WILKINS 686

The 686 is the baby of Bowers & Wilkins' budget 600-series

&W is dead - long live Bowers & Wilkins: the marketing decision to revert to its original name has much to do with avoiding any confusion with car maker BMW, now that Bowers & Wilkins has forged an alliance to put high-quality audio systems into the brand new Jaquar F-type saloon.

The most successful hi-fi loudspeaker company in the world might be owned by a Canadian these days, but it's still essentially a British company with its headquarters and major manufacturing operation in Worthing, plus research and development labs a few miles inland at Steyning.

The 600-series, in a variety of iterations, has represented the budget price, entry-level range in the Bowers & Wilkins line-up for decades. This fourth-generation range. consisting of four stereo pairs plus numerous home cinema additions, first started appearing last summer. The six-year gap has brought in a number of changes. Drive units, for example, have undergone significant refinement; prices have increased and manufacture has shifted to China. This £279 per pair 686 is the smallest of the 600-series. It has no direct equivalent in the previous range and actually costs £30 more than the rather larger 601 S3 did in 2001. It's quite a lightweight affair at just 4.9kg and the styling is attractively contemporary, with chunky proportions and a combination of a

black front with a choice of four vinyl woodprint finishes - black ash, light oak, red cherry and wenge – on the other five. The 130mm main driver has a 90mm Kevlar cone and a solid, central phase-compensating 'bullet'. The tube-loaded tweeter has a rather vulnerablelooking 25mm aluminium dome, while a new surround allows for a simpler, first-order crossover feed

A bracket is fitted to the rear to facilitate wall mounting, which might seem a little contradictory in view of the nearby port. Twin terminal pairs provide a bi-wire/-amp option. A clever two-part foam bung allows the antiturbulence Flowport to be entirely blocked or re-tuned (by removing the central plug in the bung), giving three alternative bass alignments.

SOUND QUALITY

After spending some time fiddling around with various combinations of positioning and ports, we came to the conclusion that the best arrangement in our room was to mount the speakers on open stands in free space and fit the ports with the foam sleeve, keeping the port-loading but lowering the frequency to avoid interaction with our room modes.

The sound of the 686 is best summed up as 'small but sweet'. It's certainly very well balanced and behaved, notably neutral in tonal balance with good overall coherence and very little evidence of time-smear. The bass is punchy and lively and speech reveals very little coloration through the vital voice band.

> Dynamics, however, sound a bit feeble and repressed, but the high quality of the drive units is evident in the wide dynamic range available, a lack of dynamic tension robs the music of some of its excitement.

This is an impressive speaker, with evidence of high-quality engineering. While its rather cautious approach has some validity in a budget system context, the

small size and significant price remain



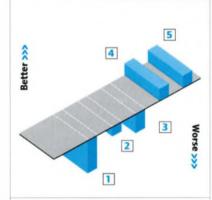
LAB REPORT

Claimed sensitivity is very low at 84dB, which we wouldn't dispute, though it errs on the conservative side as we would have given it 85dB. One reason lies in a very mild and easy-to-drive impedance, which only drops below 6 ohms around 200Hz.

A key feature is the foam bung (see main text) which allows three different bass alignments. Fully open, the port is tuned to 57Hz; fully sealed the fundamental driver/box resonance is at 69Hz; the narrow foam-lining tunes the port to 42Hz. Under our room conditions the restricted port worked best with the speakers in free space, or with the port blocked when the speakers were against the wall.

Whatever bass alignment and positioning is chosen, the 686 delivers a textbook balance above 200Hz, with impressively smooth output through the midband and treble, and just a hint of restraint across the presence zone (1.5 - 4kHz).

HOW IT COMPARES



- 11 Sensitivity >> -40%
- 21 Bass extension >> -10%
- 31 Ease of drive >> -20%
- 41 Overall frequency balance >> +10%
- 51 Response smoothness >> +10%

SPECIFICATIONS		
Measurement	Rated	Actual
Sensitivity @ 1m/2 83V	84dB	85dB
Impedance (nominal/minimum)	8/5.1 ohms	8/6 ohms
Estimated bass extension (-6dB)	45Hz	40Hz





£369 per pair 20845 660 2680 # www.focal-fr.com

FOCAL 706V

Classy drivers feature in Focal's affordable standmount

s France's leading speaker manufacturer until 2004, Focal used to market its complete loudspeaker systems under the JMLab brand. It has since reverted to its original name (which used to be reserved for raw drive unit and in-car sales).

In 2006, Focal introduced no fewer than ten new stereo pairs in its 'budget' Chorus ranges, a huge number that reflected the fact that there are actually two distinct Chorus ranges – the simpler, more inexpensive and traditional-looking 700Vs and the more stylish, costly and substantial 800Vs.

A year ago (*HFC* 294), we tested the £289 per pair 705V, the smallest and least expensive of the ten, so this examination of the next model up, the somewhat larger and more costly £369 per pair 706V, is well overdue.

First and foremost, being a drive unit specialist, Focal makes all its drivers in its French factory. The cone driver used here has a 165mm cast alloy frame and a 120mm diameter Polyglass cone, made of paper coated with glass 'micro-spheres'. The familiar Focal inverted dome tweeter has a 23mm aluminium/magnesium alloy diaphragm, driven by a rather smaller voice coil. It's mounted in a rigid L-shaped cast chassis at the top edge of the enclosure, unobstructed by the visually rather striking V-shaped grille; a small

optional protective mesh is supplied for those with young and curious children.

The distinctive styling has tapering side panels, so the internal faces are not parallel and, therefore, avoid creating focused (frequency specific) standing waves. All the panels, finished in a dark Amati vinyl woodprint, are a substantial 20-25mm thick. A front port provides bass loading and signal is applied via a single terminal pair.

SOUND QUALITY

As the in-room measurements indicated, the 706V likes some – but not too much – assistance from wall proximity. Having found the best overall bass alignment, one is rewarded by a beautifully even, smooth and neutral overall sound quality, with good voice band integrity. The mild presence restraint does create a slightly 'shut in' and hollow effect, but overall coherence is pretty good and time-smear is modest.

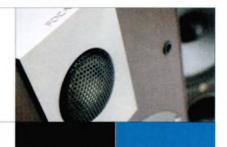
'Walking' bass lines show fine agility and a good sense of direction and purpose, while the bass as a whole has a measure of grip, power and authority that is clearly superior to the group average.

The top end is very well-judged, adding delicacy and air without drawing attention to itself, and the sound as a whole delivers plenty of fine detail, with no obvious boxiness or serious colorations even when quite close to a wall. Imaging is spacious with nice focus, though depth is somewhat curtailed.

The overall dynamic range is wide, showing good enclosure control and delivering good detail deep down in the mix. Best of all, however, the 706V is capable of creating a fair measure of genuine dynamic tension and this is an important ingredient in helping the musical expression to come through.

Whereas the smaller 705V proved a little disappointing and was clearly out of its depth in our test room, the slightly bigger 706V has proved to be a resounding success, which would tend to suggest that doubling the main driver's cone area might

be the key ingredient that helps bring life to the music and brings the music to life. **HFC**

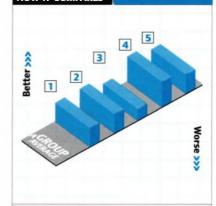


LAB REPORT

Focal's 90dB sensitivity claim seems distinctly optimistic: using our far field in-room technique it struggles to make 88dB. Happily the load stays above 4 ohms and isn't excessively demanding, while the bass is still producing useful output down to 30Hz under in-room conditions, helped by a port tuning frequency of 43Hz. Pair matching is rather good.

In free space the frequency balance is remarkably smooth and flat from 100Hz up to the limit of audibility, with just a little restraint in the presence zone 2-5kHz. Below 100Hz the bass rolls off gently, so some wall proximity will be beneficial, though full close-to-wall siting is not recommended as it's likely to lead to midbass excess. The bottom line is, one needs to experiment with placement in order to find the best compromise to match the characteristics of any given room.

HOW IT COMPARES



- 1] Sensitivity >> +20%
- 2] Bass extension >> +20%
- 3] Ease of drive >> +10%
- 4] Overall frequency balance >> +30%
- 5] Response smoothness >> +20%

SPECIFICATIONS		
Measurement	Rated	Actual
Sensit vity @ 1 m / 2 83V	90dB	88dB
Impedance (nominal/minimum)	8 / 3 6 ohms	7/4.5 ohms
Estimated bass extension (6d8)	47Hz	30Hz







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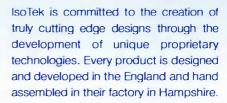
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TRIANGLE TITUS EX

Triangle's new budget speaker is rather different from its predecessor

riangle is very individualistic - some would say somewhat idiosyncratic - in its approach to hi-fi loudspeaker design. It recently received a major injection of capital, when founder and eminence arise. Renaud de Vergnette sold a majority shareholding to French businessman and long-term Triangle enthusiast Olivier Decelle. De Vergnette remains closely involved in product development, but the takeover has led to substantial expansion in engineering and marketing resources.

Successor to the Titus ES, (reviewed in HFC 269), the EX is the smallest and one of just two standmounts in Triangle's least-costly Esprit EX range. Regrettably, following the strengthening of the Euro against the pound, the price has recently increased to £450 per pair from £370 per pair.

Very much a variation on the theme of the range as a whole, the Titus EX shares the same unusual horn-loaded tweeter and the same rather individual styling, alongside a smaller enclosure and smaller cone driver - a 130mm bass/mid driver and a ported enclosure volume of around 11 litres.

The styling remains rather prosaic, with a slightly convex front panel painted a metallic charcoal grey, while the rest is covered in a rather undistinguished vinyl woodprint. Large gold-coloured grille mounting lugs provide a measure of decoration, but the new and quite large badge attached to the grille seems to overlap the mouth of the tweeter horn slightly.

Although there has been plenty of prejudice against horn-loaded tweeters in the past (they do have some potential drawbacks) they have several advantages over conventional direct radiating domes. First, the diaphragm is well away from potential damage by prying fingers; secondly, high inherent efficiency confers considerable dynamic headroom; thirdly - and this is main reason Triangle favours their use the horn mouth more closely matches the size of the bass/mid driver cone, which is claimed to smooth the crossover transition.

The small 130mm bass/mid driver now has a 95mm paper cone with a soft central phase plug and a conventional rubber surround (as distinct from the unusual 'double-S' fabric surround used in the previous model). This crosses over to the tweeter at around 2.5kHz. Twin terminal pairs adorn the back panel and a port is mounted on the front.

SOUND OUALITY

Barring a touch of nasal coloration, the little Titus EX sounds quite smooth and wellbalanced when operating clear of walls, though the lack of any real bass weight and power is rather obvious

Placing the speakers back against the wall proves very effective in improving midbass output. However, this positioning also interferes somewhat with the midrange, introducing a sometimes aggressive and over-

> 'shouty' quality that tends to exaggerate detail, but which isn't quite in the true sprit of hi-fi neutrality.

That said, this is unquestionably a fun loudspeaker. It might be a bit coloured and edgy, but it's always lively and involving. And whilst it's not particularly smooth or muscular, it delivers the vital midrange dynamics with the sort of

enthusiasm that always leaves one searching for the next disc to spin. HFC

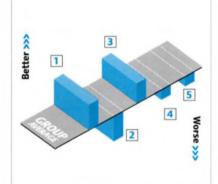


LAB REPORT

Our sensitivity rating, measured under far-field inroom conditions, is 89dB - generous enough, but 2dB less than the 91dB claimed. Fortunately, the accompanying amplifier load is not too demanding, staying above 4 ohms throughout. Pair-matching was pretty good, but a relatively high port tuning of 68Hz explains the limited bass extension

It's no surprise to discover that this speaker works best when sited close against a wall, as this fills in the otherwise too lean 50 - 90Hz zone very well. However, close-to-wall siting also has some negatives further up the band, showing mild leanness through the lower midband (200 600Hz) and then peaking up to a rather obvious prominence in the upper mid (800Hz - 1.5kHz). Although the treble is smooth and well-judged in relative level terms, a distinct notch was visible at 1.8kHz.

HOW IT COMPARES



- 11 Sensitivity >> +30%
- 21 Bass extension >> -30%
- 31 Fase of drive >> +20%
- 4] Overall frequency balance >> -10%
- 51 Response smoothness >> -10%

SPECIFICATIONS		
Measurement	Rated	Actual
Sensitivity @ 1m/283V	91 dB	89dB
Impedance (norminal/minimum)	8/3.8 ohms	6/4 ohms
Estimated bass extension (-6dB)	SS Hz	48Hz





AUDIO WORKSHOP NORWICH

WORKSHOP NOTES 2: VINYL VISION

When dividing up your budget for a vinyl front end, the temptation is to start with the cartridge (well, it is in the signal path), then the arm, then the phono stage. Then..er...buy a turntable with what's left!

So spending 80% on the turntable alone sounds perverse, but long term the turntable will define your achievable vinyl sound quality as arm and cartridge cannot do their best on a poor platform. Budget cartridges & arms are acceptable stopgaps, but a cheap turntable is simply a waste of money. Put your money into a quality turntable now, then when you upgrade you will realise *all* of your investment, not just part of it.

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WHARFEDALE DIAMOND 9.1

Anniversary version of this popular speaker is excellent value

aving celebrated its 75th anniversary in 2007, Wharfedale is the quintessential traditional name in British hi-fi speakers, with a history that extends back to the very birth of the product. It's no surprise, therefore, that the company has been through a number of substantial changes over the years and operated under several different owners. For the past decade or so, it has been part of the Chinese-owned IAG Group, alongside a number of other well known UK names. And the strategy of combining British design talent with low cost Chinese manufacturing seems to have been rather successful.

The Diamond series have always been budget entry-level speakers and the Wharfedale catalogue lists many Diamond 8 and Diamond 9 models for both home cinema and stereo use. There are no fewer than six stereo pairs in the Diamond 9 range, but the 9.1 miniature is the one that's been grabbing the headlines. In the standard vinyl finish it costs just £150 per pair, but our limited Anniversary edition (with better fit, but the same acoustic performance), comes in a lovely waxed walnut wood veneer, with gilt trim and concealed magnetically attached grille.

Though both enclosure and bass/mid driver are decidedly small, this is a very classy little speaker. This is certainly true of the enclosure, which has curved sides to add stiffness to the structure and disperse horizontal standing waves and reflections. Twin ports, claimed to

reduce distortion by 40 per cent, are fitted into the front panel.

The little (125mm) main driver has a 'skeletal' cast alloy frame, to avoid reflecting the rearward radiation. It has a 100mm diameter cone made from woven Kevlar-in-polymer-matrix, while the tweeter has neodymium magnets and a soft 25mm doped fabric dome diaphragm. Twin terminal pairs are fitted on the rear.

SOUND QUALITY

Although the Diamond 9.1 delivers a rather small sound, dynamically speaking, and lacks any serious bass weight or power, it still delivers a surprisingly generous and spacious soundstage which is significantly bigger than the visual cues lead one to expect.

The speaker can sound a little too thick and heavy if it's positioned too close to a wall. When some space is left around them, however, the modest coloration and well controlled boxiness, the cleverly organised balance and the fine overall coherence really come into their own. And the overall sound has a warmth that small loudspeakers often lack. The sound might also be a little too laidback for some tastes perhaps, but that is a worthwhile feature of any low-cost speaker system that's likely to be used with modestly priced sources, amplification and ancillaries.

Small speakers often show a tendency to 'shout', by over-projecting the upper midband and presence zone. While such character might have initial showroom appeal, it can become wearing after a time and is not what

hi-fi ought really to be about. It is very much to the credit of this Wharfedale that it carefully avoids such a pitfall and manages to sound like a genuine 'grown up' hi-fi speaker, despite its very modest price.

There are limitations, especially in its reluctance to generate any real dynamic tension and a slightly muted dynamic expression. But the fine soundstage imaging, substantial freedom from boxiness and the well-controlled tonal balance,

all amount to a beautifully made hi-fi performer at an unfeasibly low price. **HFC**

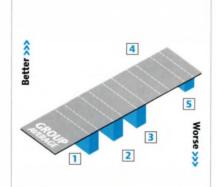


LAB REPORT

This is a small speaker, which is inescapably reflected in the measured performance. Sensitivity measures a modest 86dB, exactly as specified, though this should be seen in the context of a relatively easy amplifier load and a bass alignment that, unlike most miniatures, doesn't really need close-to-wall siting.

Although this speaker is best kept clear of walls, best results were found with a gap of about 60cms between speaker and wall. The tonal balance is a little unusual, as output starts to roll off, albeit very gently, above a relatively low 800Hz. The upper portion of the audio band, between 800Hz and 20kHz, is not particularly smooth, but it does hold within impressively modest limits and show a well controlled progression. The presence zone, often hyped up to emphasise detail in small loudspeakers, is gently restrained here.

HOW IT COMPARES



- 1] Sensitivity >> -20%
- 2] Bass extension >> -20%
- 3] Ease of drive >> -20%
- 4] Overall frequency balance >> 0%
- 5] Response smoothness >> -10%

SPECIFICATIONS		
Measurement	Rated	Actual
Sensitivity @ 1 m / 2 83V	86dB	86dB
Impedance (nominal/minimum)	6 ohms	7/5 ohms
Estimated bass extension (6dB)	50Hz	40Hz





CONCLUSIONS

These high-value standmounts hold their own against the industry big bcys

Ithough this group is significantly less expensive than usual, the low manufacturing costs available from Chinese factories has thrown up a few surprises. Three of the six speaker pairs are finished in real wood veneer and two of those are the least expensive in the group. That they're also the smallest is rather less surprising.

On this occasion, all six models are standmounts, presumably coincidental since our similar group, reviewed a year ago in HFC 294 included four floor-

standers. At these prices the standmount usually has a clear advantage, because the unwanted enclosure contribution is much less, but the extra cost of a stand may need to be taken into account

Working up the price ladder, it's hard to argue with Wharfedale's Best Buy Diamond 9.1 package, either in our £180 per pair luxury finish Anniversary version, or the cheaper standard model. Though too laid-back to be strictly neutral, this very clever design sounds bigger than it should and ought to match modest system components rather well.

More lively and engaging, if also more obviously coloured, the little Advance Acoustic UM20 is just as attractive, suits close-to-wall siting and also clearly deserves a BB flag.

Not unexpectedly, Bowers & Wilkins' little £279 per pair 686 is a very safe, if somewhat unambitious performer, with the undoubted advantage of very flexible bass tuning.

Our third Best Buy, however, is Focal's £369 per pair Chorus 706V, which clearly demonstrates the dynamic advantages to be gained from a larger main

driver, in a generous and surprisingly smooth package.

Somewhat handicapped by its recent price rise, the £450 per pair Titus EX is a vigorous and exciting speaker, which is very much in the Triangle tradition, well-suited to close-to-wall positioning.

While Aurousal's Mk2 A1 is a clear improvement over the original and its simple full-range driver approach unquestionably delivers the least time smear, the price increase is somewhat daunting. **HFC**

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HINTS AND TIPS

- >> Floor-coupling spikes should have tight lock-nuts, but don't over-tighten these or you'll strip the socket threads
- >> Finding the right place to put the loudspeakers acoustically is very important. It's important to take the time and trouble experimenting.
- >> Moving a speaker from a free space location until it's close to a wall will substantially boost the midbass.
- >> Expect speakers to improve steadily over the first 100 hours or so.
- >> Use decent speaker cable, if you want your system to perform at its best

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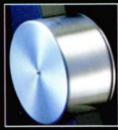
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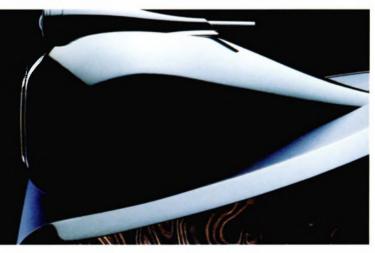
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BUYER'S BIBLE CD PLAYERS

CD PLAYERS

Audio disc players for music only

Despite the emergence of new formats and the resurgence of an old one (vinyl), CD is still the king of formats if you require breadth of choice. And despite the fact that other sources will play CDs, if you want to hear your discs at their best, there's little substitute for a dedicated CD player.

It's also the most enduring format on the market. Despite high-resolution contenders like SACD and DVD-Audio, nothing has been able to undermine this universally popular format.

CD players work by reading a stream of 1s and 0s off a disc that spins at a constantly changing speed (to counteract the increasing length of 'groove'). This bitstream is then digitally filtered before undergoing digital-to-analogue conversion in the DAC (D-to-A convertor). Thereafter, the signal is filtered



again before being amplified and sent to the output sockets.

The processes of reading the disc and converting the data are sometimes split between a CD transport and separate DAC in so-called two-box players. A popular approach with very high-end kit, this separates the electronically noisy elements from the sensitive analogue stages, but can introduce timing errors known as jitter, therefore one-box players usually offer best results where budget is a consideration.

SUPER AUDIO CD

SACD or Super Audio CD is a relatively new audio-only format introduced by Sony and Philips. It offers higher resolution than CD in the form of considerably greater bandwidth and improved dynamic range. It also has

the potential for uncompressed surround sound using up to six channels, and most new discs take advantage of this. SACD discs are usually hybrids and will play on normal CD players, but you won't be

able to appreciate their highest quality or their multichannel capability without an SACD-compatible player. Some SACD players also play DVD and even DVD-Audio – these are listed in our DVD section.

A.\$0

WHAT'S A DAC?

A DAC or digital-to-analogue convertor is a fundamental part of any CD player and converts the digits read from the disc into an analogue music waveform which is amplified to line level.

WHY HAVE SEPARATE TRANSPORTS & DACS?

Discs are read by a transport or disc drive, which creates radio frequency 'noise'. Separating the DAC means the conversion can be done with less interference.

CAN I USE AN OUTBOARD DAC WITH MY INTEGRATED CD PLAYER?

Yes, if it has a digital output - and most do.

DO I NEED DIGITAL CABLES FOR A CD PLAYER?

No. All analogue cables are suitable for connecting a CD player to an amp. Digital specific cables with 75ohms impedance are useful when connecting the player to a digital recorder or DAC.

WHAT IS OVERSAMPLING/UPSAMPLING?

Oversampling involves multiplying the sampling frequency by a whole number, usually between four and 32, but sometimes higher, and is designed let the DAC to work in a more linear fashion.
Upsampling is where the data stream is stretched out by interpolation and is typically used to refer to large changes in sampling rate such as from 44.1 kHz to 192kHz.

CAN I PLAY SACDS ON A NORMAL CD PLAYER?

Yes. The vast majority of SACD discs are hybrids, with a CD layer that all CD players can read.

CAN I PLAY DVDS ON A CD PLAYER?

No, the same applies to DVD-As. But you can play CDs and DVD-As on normal DVD players.

TOP BUYS



Rega Apollo £498

Rega's latest entry-level player is a splendidly musical performer, given its modest price. Bass is good, midrange is great and high frequencies are truly exceptional.



Cambridge Audio Azur 840C £750

Sitting at the top of Cambridge Audio's Azur range, the 840C is a technically innovative player with a sound that belies its sub-£1,000 price – open, subtle and refined.

0	r favourite		FDO				SPE	CIFICA	ATION	S		
	D PLA			SAGD COMPATIBLE	ELEC DIG CUTPUT	OPT DIG CUTPUT	CD-RW COMPATIBLE		BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	
Audi	o-only CD and SAG	CD pl	ayers	MPATE	6 047	G OLIT	OMPATI	COTECT) JUBO	E SOC	EOUT	
	PRODUCT	E	COMMENTS	開	르	PS	BE	8	H	鱼	흑	
	£1,000					-						3
	Arcam DiVA CD73	450	Neatly built and well presented player that's especially good at bass and timing, with detail hardly less assured		0	0		0				
	Audio Analogue Rossini	850	Valve-sporting player delivers a warm, engaging sound, but mediocre remote and no optical out may limit appeal		0		0					-
	Cairn Tornado	850	The Tornado is a full-on experience that shuns compromise and delivers intensely real sound for its price		0						0	
	Cambridge Audio Azur 740C	500	Very flexible, this innovative upsampling player sounds exceptionally neutral and highly informative		0		0			0		
	Cambridge Audio Azur 840C	750	Ultra-civilised sound is not to every taste: rhythm-lovers may find this player frustrating		0		0		0			
	Creek Evo	495	A minute treble lift: otherwise this is a very capable player that offers fine value		0	0	0					
	Denon DCD-500AE	160	Cheap, well built and good, if slightly soft-edged sound quality				0			0		
	Denon DCD-700AE	250	Excellent entry level quality CD player lacks for nothing. Musicians please note: even has variable speed replay		0		a			0		
	Marantz CD6002	280	A hint of treble unevenness is the only specific flaw: performance is class-leading in most areas				a	0		0		
	Naim CD5i	825	Bass has great extension but lacks control, slightly. Tonal neutrality higher up is excellent, however									
	Quad 99CD-S	650	Revels in big music thanks to fearless presentation: smaller-scale works can lack focus			0	0		0			
	Rega Apollo	498	Unless you can't abide top-loaders, check this out: musically it's a highly praiseworthy performer		0		0					
	Sony SCD-XA3000ES	800	A good, if not truly great, all-rounder with CD and fine multi-channel SACD performance	0	0	0	0	0				
	Vincent CD-S6 MkII	999	With its tube output stage, a beguiling midrange, sweet highs and attractively figured lows plus fine dynamics		0				0			
BOVE	£1,000								26			
	Bryston BCD-1	2,050	Not as open as some but rather more timely than most, it sounds a lot more gripping than it looks		0	0			0			
	Cairn Fog 3	1,995	Ergonomically challenged, high energy player with Gallic charm and digital preamp on board		-0	0			۰			
]	Chord Red Reference CD	13,345	The definitive statement in Red Book CD playing, this player's look and sound places it at the top of the tree		0	0	0					
	Classe CDP-102	3,000	Rich, dynamic CD/DVD player with a full bottom end, impressive dynamics and a luxurious yet revealing balanced		0	0	0	0	0		0	
]	Classe CDP-202	4,750	CD/DVD-A player with brilliant sound, if sophistication is your bag. Includes S-video and composite outputs		0		0				0	
	Copland CDA823	1,750	Don't let the laid-back character fool you - this player has plenty of insight too		0		0		0			
	Cyrus CD8x/PSX-R	1,400	Lightness of touch is the key here, but there is also good bass and some very fine detail on offer too		0							
]	EMM Labs CDSA	6,995	Classy, stripped down to basics SACD/CD player with some excellent engineering below decks	0	0	0	0		0			
	Esoteric X-03SE	4,995	$Resolution\ and\ musicality\ close\ to\ the\ top\ of\ the\ game.\ For\ out\ and\ out\ transparency\ and\ build\ quality\ it's\ hard\ to\ beat$	э	0	0	0		0			
	Gamut CD3	3,500	Superb resolve of fine detail combined with a perfectly judged balance and an ability to draw you into the music		0		0		0			
	Leema Antila	2,495	Musically engaging player that will have you going through your CDs afresh. Balanced connection is best		0	0	0		0			
	Leema Stream	1,095	$\label{thm:control} The \ most \ timely \ disc \ player \ at \ its \ price \ point \ has \ tactile \ imaging \ and \ good \ dynamics, but \ unusual \ control \ system$		0		0					
	Linn Majik	1,950	Compact and capable of most CD formats, it's musically communicative with fine pace and enthusiasm		0	0	0					
	Marantz SA-7S1	5,000	Something of a bargain even at this price, the SA-7S1 sets the benchmark for CD/SACD players of its ilk		•			0				
	Marantz SA-11S2	2,500	Superb value for money, this well-balanced player features various filter settings to customise performance		0	9	0		0			
]	Meridian G06	1,695	Highly refined player with a combination of analysis and self-effacing response to musical demands		0	0	0	3				
	Musical Fidelity X-RAY v8	1,098	Accurate, yet musical performer, £799, but requires £299 TRIPLE-X power supply outside of X-T100 system		0	0	0					
]	Rega Saturn	1,298	Good detail, lively natural bass, and good integration of musical strands without losing their individual character		0		0					
	Shanling CD-T1000SE	1,600	Commendably committed player which gets right to the heart of a wide variety of musical styles		0		0			0	Œ	
1	Unison Research Unico CD	1 105	Strong timing and rhythm, this player is well equipped for more melodic music, with good detail resolution		6							

SPECS (42) SACD COMPATIBLE Plays high-resolution SACD discs in multichannel and/or two-channel mode. ELEC DIGITAL OUTPUT Electrical coaxial output for digital connection to a DAC or digital recorder. OPT DIGITAL OUTPUT Optical Toslink output for digital connection to a DAC or digital recorder. CD-RW COMPATIBLE Will play CD-RW (rewritable) discs, most CD players can cope with CD-Rs. CD TEXT Will display album and track titles from inserted disc. BAL ANALOGUE OUT Balanced XLR output connections for similarly equipped amplifiers.

NEADPHONE SOCKET Quarter inch (6 3mm) headphone jack fitted to the CO player VARIABLE OUTPUT Player features both fixed level and variable, volume adjustable outputs



This distinguished, yet minimalist Scandinavian CD player combines a real ear for detail with full-scale dynamics and an effortless musical style. A genuine hi-fi star,



Esoteric X-03SE £4,995

 $Esoteric's\ entry-level\ CD/SACD\ player\ delivers\ astonishing\ sonic\ detail\ and\ precision,$ coupled with a gorgeous sense of musical structure. Truly, it's brilliant.

BUYER'S BIBLE DVD PLAYERS

DVD PLAYERS

Disc players for audio and video

Although players featuring both DVD-Audio and DVD-Video are thin on the ground, the universal disc player (that also supports SACD and CD alongside the DVD formats) continues to dominate the worlds of audio and video alike. In fact, it's rare to find a DVD player that doesn't support DVD-Audio and SACD these days.

So, what advantages do universal disc players hold over traditional CD players?

Put simply... choice. A DVD player or universal offer the listener the chance to use far more than just your CDs and build up a wider collection of music and video, all played through one device. The technology has matured now, and the performance of all formats played through these devices gets surprisingly close to dedicated players these days. The same cannot be said of Bluray or HD DVD players, many of which are not yet good enough to play CD well.

DVD-AUDIO. HD DVD AND BLU-RAY

DVD-Audio is a high-resolution music format that offers multichannel, stereo and Dolby Digital tracks on dedicated DVD-A discs.

The discs can be played on any DVD player, but can only be appreciated at their best with a DVD-A or universal disc player. In fairness, the DVD-Audio format has not proved to be a resounding success, and SACD discs are more readily available.

The two new kids on the block are HD DVD and Blu-ray. Both the same physical size as the CD and DVD disc, these formats offer even more data storage capacity than DVD (up to 50GB instead of DVD's 8.5GB). However, these formats are the exclusive domain of home cinema and gaming fans. Sadly, the possibility of super-high-resolution music-only Blu-ray or HD DVD discs remains distant at best.

0&A

WHICH AUDIO OUTPUTS GIVE THE BEST OUALITY?

Use the analogue outputs for CD, DVD-A and SACD, and the coaxial digital output for DTS and Dolby Digital movie soundtracks.

WHICH VIDEO OUTPUTS GIVE THE BEST QUALITY?

The best connection is HDMI, then component video, followed by RGB Scart. All these are clearly superior to S-video and the basic composite video option.

DO I NEED A MULTICHANNEL AMP TO USE A DVD PLAYER?

Only if you want to hear music and movie soundtracks in multichannel surround. DVD players can be used with stereo amps and just two speakers to great effect, but you'll only get stereo, not surround sound.

WHAT IS 1080P?

HDTV is defined by the number of lines the picture creates and whether it's interlaced (like old TV) or progressive scan (like a PC monitor).





HDMI LINK: A flat, multi-pin socket that carries digital audio and video, like a digital SCART lead. Arguably the best choice for HDTV pictures.

VIDEO CONNECTIONS: Yellow socket is composite; red, green and blue sockets are for component; the small black multipin socket is S-Video; the big one is SCART. **DIGITAL OUTPUTS:**For Dolby Digital,
DTS and PCM
audio bitstreams.

ANALOGUE AUDIO OUTPUTS: For stereo and multichannel connections, use these for best results with DVD-Audio, SACD and CD.

Our favourite 🕞 BEST BUY 🚾 EDITOR'S CHOICE **DVD PLAYERS** Audio/Video disc players BADGE? PRODUCT UP TO £1.000 Arcam DiVA DV135 Unchanged looks and stereo-only DVD-A/SACD, but the overall performance is great across all formats. Stunning picture, too 900 296 Hel Denon DVD-1920 250 Respectable (if unexciting) and flexible audio player, but something of a star from its HDMI equipped upsampling video subsystem Marantz DV7001 600 Enhanced model based on DV6001, but with various improvements, including superior CD replay capabilities 296 Marantz DV7600 600 274 A mid-market cracker, with sound and picture quality that generally exceeds expectation NAD T585 800 Easy to live with universal player that shows clear signs of rejuvenation of the Classic range 294 Onkyo DV-SP503E 300 Budget Onkyo universal player is a straightforward Pioneer based implementation, which performs well with audio and video 275 Pioneer DV-LX50 450 Nicely built universal player for those who value finesse over speed and energy. Decent picture too 306 Yamaha DVD-S2500 700 Universal player, slightly stronger with video than audio, but well turned out with a wide range of analogue and digital in and outputs 280 AROVE \$1 000 Accustic Arts Surr Player 4.495 A very high-quality Pioneer-based machine, excellent sound from both hi-res and regular formats 299 Arcam DiVA DV137 Good overall audio performance and excellent upscaling HDMI DVD-Video player, but stereo-only SACD playback at time of writing 285 Denon DVD-3930 Well engineered universal player, with useful bypass facilities for pure audio, and unusually powerful video image processing 287 EC Linn Akurate CD 299 This highly engaging multiformat non-video player doesn't have huge transparency or a fancy box, but is musically addictive Marantz DV9600 With excellent, next-generation picture and impressive sound quality on CD and SACD, this sets a very high standard to beat 280 Meridian's most widely compatible G-Series DVD player – groundbreaking DVD-Audio replay and a fine CD player too Meridian G98AH 265 Naim DVD5 2.565 Naim's first DVD player is a real success, notable for its class-leading sound with CD and (optional) multichannel DVD-Audio 263 279 T+A SACD 1245 R 2000 Dedicated stereo only/SACD/CD player avoids the usual compromises. It does a limited job, but it does it with fine fidelity Townshend TA 565 CD A universal machine that excels with music and is quite exceptional with good of stereo CD 270

SPECSICE DVD-A COMPATIBLE Plays high-resolution DVD-A discs in two and multichannel modes. SACD COMPATIBLE Plays high-resolution SACD discs in two and multichannel modes. ELEC DIGITAL OUTPUT Electrical coaxial output for digital connection to a multichannel amplifier or receiver OPT DIGITAL OUTPUT Optical Toslink output for digital connection to a multichannel amplifier or receiver HEADPHONE SOCKET Quarter inch (6.3mm) headphone jack fitted to the DVD player









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Constructed from silver plated, oxygen-free copper covered in a white polythene jacket. This cable manages to deliver the smallest of details combining this with smoothness and fine control.

Bass is substantial, mid range boasts bags of drive, a superb cable for the price.

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QED

INFORMATION

The QED HDMI-SR Reference interconnect provides outstanding digital signal integrity for exceptional picture quality and sound. It is recommended for direct digital connections between the highest quality, suitably equipped components, including HD Ready products.

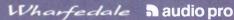
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Shure

IN-EAR HEADPHONES SE420



Shure's SE420 sound isolating earphones feature Dual TruAcoustic MicroSpeakers and a sound isolating design. They use dedicated tweeters and woofers to provide a detailed sound stage that's free form outside noise. Lows, mids and highs are distinct and defined for accurate reproduction for all the details of your music. A Premium Fix Kif offers portability, connectivity and a comfortable customised fit.

Audio-Technica

HEADPHONES AD900



The AD900 Air Dynamic headphones from audiotechnica give you high quality sounds with deep balanced bass. The AD900s boast a unique self adjusting headband and newly developed 3D wing upport which allows for a comfortable and enjoyable listening experience.

Grado

HEADPHONES SR60



With a tremendous reputation for high performance and high value these headphones are very comfortable and use carefully matched Grado drivers and low-mass polymer diaphragms offering a warm, natural sound.

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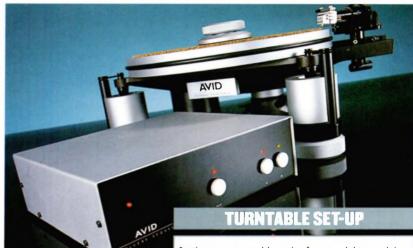
VINYL

Turntables, cartridges and phono stages

Record players or turntables offer the digital revolution serious competition when it comes to sound quality. Even a modest model can turn musical tricks that most CD players struggle with. Some call it vinyl warmth, but in reality it's a lack of digital hardness that makes the format so engaging. True, the software requires a bit more care, but even a knackered LP is more playable than a scratched CD.

Record players are made of three, perhaps four, fundamental parts. The turntable is the plinth and platter, usually also containing the motor and any suspension system. A tonearm sits on the plinth and allows the cartridge to trace the vinyl groove by pivoting or parallel tracking over the record. The cartridge contains the means of turning the mechanical movement of the groove wall into an electrical signal.

A fourth element is an amp dedicated to the delicate job of amplifying and equalising the cartridge's insubstantial output. This is called a phono stage and can be found in some integrated amplifiers and preamps, but is



increasingly purchased separately for use with line-only amps.

There are two types of phono cartridge: moving magnet (MM) and moving coil (MC), and with a few exceptions the latter outperforms the former. But MCs produce a lower output and require better-quality amplification to be heard at their best. As a general rule, MCs offer a broader bandwidth, greater dynamics and more detail, but the better moving magnets do most things well enough to distract you from your CD collection.

Setting up a turntable varies from model to model, but the general principle is to level the platter by adjusting the suspension or, as with solid platters, the surface it sits on. Sprung suspensions sometimes require a bit of fine-tuning to sound their best, but the principle is to achieve a smooth, pistonic bounce. Cartridge set-up is even more critical, as the angles at which the stylus traces the groove affects its tonal balance and levels of distortion. A good alignment protractor is essential if you are intending to set up your own cartridge, as is a degree of patience. In essence, there are two angles you need to get right: the tracing angle as the cartridge crosses the record if you are looking from above, and the vertical tracking angle (VTA), which is adjusted by raising or lowering the arm base to bring the arm parallel with the record surface.

TOP BUYS



Pro-Ject RPM 5 £400

Pro-Ject's entry-level RPM deck is a good-looking, great-sounding package that delivers terrific value for money. A class act and no mistake.



The Funk Firm Funk V £760

The more costly of two turntables from The Funk Firm, the Funk V builds on its sibling's virtues to deliver a sound of sheer class – dynamic, detailed and refined.



Clearaudio

Champion £1,475

Current king of acrylic, the Clearaudio deck, arm and cartridge combination turns in a beautifully well-balanced delivery, but choose your support wisely.



Avid

Volvere Sequel £3,500

Avid has been one of the most impressive exponents of the vinyl arts in recent years, and this mid-range deck is a stunning example of analogue engineering.

	r favourite				SPE	CIFIC	ATION	S	
	URNT	AL	IF2		SUSP SUBCHASSIS	SPEED CHANGE	SUPPLIED WITH AFM	SUPPLIED WITH	SSIJE NUMBER
	ord players			SPEEDS	HASS	CHABL	되 A	H CART	HAMIN
ADGE?	PRODUCT Avid Volvere	2,750	COMMENTS A combination of a heavy platter with a sprung suspension that makes the vinyl it spins sound powerful and solid	33/45	S	mim	<u>s</u>	-	298
[C]	Avid Volvere Sequel	3,500	Heavyweight turntable that will deliver more of what's in a vnyl groove than most of the competition	33/45	0	9			229
	Clearaucio Champion	1,365	Smart, practical and good-sounding, with impressively 'dead' arm. Isolation recommended	33/45	-	-	0		26
	Clearaudio Performance	1,670	Ceramic-magnetic bearing spells a surprisingly uncolored performance. Good arm and cartridge	33/45				_	29
c	Clearaudio Ambient	4,220	Innovative use of materials leads to a fast, precise and thrilling sound (tonearm extra)	33/45		0	0	0	27
c	EAR Disc Master	7,695	Combines new 'no contact' drive technology and high quality materials to bring state of the art resolution	33/45/78		0	opt		27
	The Funk Firm Funk	450	You won't find another turntable at the price that can touch the Funk for dynamics, tone colour or detail	33/45			opt		27
	The Funk Firm Funk V	750	Vector drive brings a refinement to the standard Funk that increases resolution. For high-class analogue sound, it's a killer	33/45			opt	opt	
	Goldring GR2	265	Nicely finished Rega-manufactured deck with RB250 arm and an open, engaging sound quality	33/45		-	opt	opt	26
	Michell Tecnodec			33/45					26
c	Michell Orbe SE	767	Simple and smartly understated, performs above expectations – full-bodied and highly detailed	33/45	0				23
		2,015	A superb turntable, able to mix it with the best at virtually any price. Now features new DC motor						28
	Pro-Ject Expression II	250	A smooth and engaging turntable with the ability to revel in the glory of vinyl, with upgradable arm cable	33/45			0		
	Pro-Ject RPM 5	400	Great looks plus an on the ball, engaging sound that puts it in the serious league, needs good isolation for best results	33/45					27
	Pro-Ject RPM 6.1	550	With its minimal chassis and huge platter this is a steady design that's capable of fine results with a decent cartridge	33/45/78					29
	Pro-Ject RPM 9 X	1,000	A gorgeous turntable that sounds as good as it looks – vital and transparent! Price includes carbon-fibre arm	33/45					26
	Rega P3-24	398	Very competent, uncoloured and musical, much improved by £148 outboard electronic power supply	33/45		opt			29
	Rega P5/RB700	698	Combines a great sense of timing with market-leading resolution and a phenomenal tonearm – a hard act to beat	33/45			_		25
<u> </u>	Rega P7/RB700	1,298	A highly capable player that could hold its own in the most exalted company – a vivid and natural performer	33/45		0	opt		25
С	Rega P9/R81000	2,498	Exceptionally elegant hi-tech player with complex outboard supply, ceramic platter and wonderful R81000 tonearm	33/45			0		228
	Roksan Radius 5/Nima	850	Sophisticated design with accomplished sound quality, excellent imagery and good isolation (acrylic version tested)	33/45	0	۰			248
c	SME Model 10A	3,411	Elegant and extremely capable design, tested here with Series V/309 hybrid arm	33/45	0	0	0		19
С	SME 20/12A	11,133	Brings a calmness and precision to vinyl replay that we have rarely encountered, build quality is second to none	33/45/78	0	۰	0		293
С	Townshend Rock Anniversary	4,900	If you want to get to the meat and bones of the music this is a great tool for the job (price inc. Excalibur arm)	33/45	0		0		259

Ou	r favourite	BES"	T BUY (EC) EDITOR'S CHOICE				
		_		S	PECI	ICATII	
	ПИПИ	U	ARTRIDGES			REFLACEABLE STYLLIS	SSILE NUMBER
MM	and MC cartridges			MM	NC.	E.E.	ER
BADGE?	PRODUCT	3	COMMENTS				
	Cartridge Man MM III	625	The MM III challenges MCs at twice the price, it produces detail, space and energy and has stunning resolve in the right arm	0			266
	Denon DL-103R	200	Adds refinement to basic DL-103, at a price. One of the best rock'n'roll cartridges around				285
	Grado Prestige Gold	110	Produces rich, open and expansive music with the minimum of fuss	0		0	235
EC	Lyra Helikon	1,095	Highly capable and highly neutral, this is a cartridge for all seasons, albeit fussy about vinyl quality				215
	Ortofon Salsa	200	Despite a touch of midrange coloration, this cartridge really involves the listener with good extension and a clean, agile sound				290
	Sumiko Blue Point Spec Evo III	239	High output MC with refinement at high frequencies and a nimble, articulate and revealing sound				270
	van den Hul MC One Special	699	A gorgeous cartridge that's worth the price every time you hear a familiar track in a whole new light				235
EC	van den Hul Condor XCM	2,400	A stunning cartridge with stereo imaging, dynamics and detail resolution to die for		0		265
EC	Wilson Benesch Naked Analog	1,450	With its smooth clean highs, transparent midband and nimble bass, this is a lot of performance for the money				253

Our favourite BEST BUY (C EDITOR'S CHOICE **PHONO STAGES**

Phor	o stages			DAN ONO	DNO INPU	ADJ. G	IMPEDAN	BWIN 308
BADGE?	PRODUCT	Σ	COMMENTS	22	3	N	R	Ð
	Cambridge Audio 640P	60	An outrageously good bargain that suits budget systems, but can confidently survive upgrades before and after in the chain		0			305
	Creek OBH15	220	Practical and highly compatible unit offering fine detail and pleasing, mellow balance	0	0			305
	NAD PP2 phono stage	50	A fine buy for turntable users on a tight budget - open tonality and clarity is distinctly impressive for the money	0	0			245
71.0	Tom Evans Microgroove	400	For dynamics and real bass extension with good tonal colour this is the one to beat. The Plus version (£700) is even better!		0			234
EC	Tom Evans The Groove	1,800	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for maximum information retrieval off any LP	0				201
***	Trichord Dino/Dino+	498	Relaxed yet resolute with very good image depth and natural balance, not to mention great flexibility	0	0		0	234

TURNYABLE SPECS (LEY) SPEEDS Speeds offered in rpm. SUSP SUBCHASSIS Turntables with a sprung or suspended support for the platter and arm. SWITCHABLE SPEED CHANGE Some decks require manual lifting of the belt from one pulley to another to change speed, but not these ones. SUPPLIED WITH ARM Deck is supplied complete with tonearm – some require a separate purchase in this department, but the dealer will fit it for you. SUPPLIED WITH CARTRIDGE Some decks are supplied with a starter cartridge and this is included in the price shown

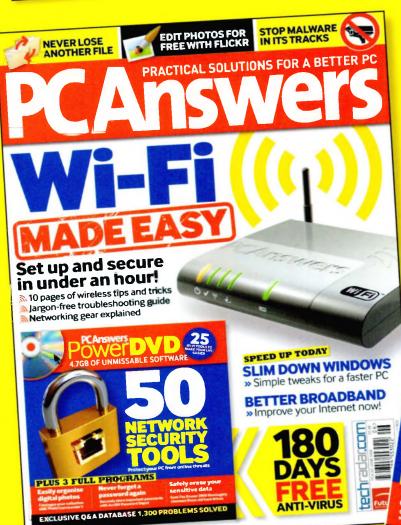
CARTIFICISESPECS KEY MM Moving magnet cartridge – see amp and phono stage features to match this type MC Moving coil cartridge – see amp and phono stage features to match this type REPLACEABLE STYLUS Some cartridges have separate styli for ease of replacement, but it compromises sound quality.

PCAnswers

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ISSUE 185 ON SALE THURSDAY 1ST MAY

RADIO TUNERS

FM and DAB hi-fi separates



Radio is a fantastic musical resource that's in danger of being taken for granted, but whatever your tastes there's someone out there

catering for it. If you haven't got a decent tuner hooked up to your hi-fi already, you're missing out!

DAB or FM?

Digital Audio Broadcasting (DAB) is now said to be available to more than 80 per cent of the population and the long-term plan is to switch public broadcasting over to digital entirely, but hardware prices have yet to come down to a point where this would be acceptable. Its advantages over FM include hiss-free reception, the potential for a wider range of stations and the ability to display comprehensive programming information. FM's RDS system means that station name and occasionally track titles are displayed, but the range of information is fairly limited.

Where FM scores over DAB is in the lower

cost of hardware and the greater reception area. It can also provide higher sound quality if reception conditions are favourable. Absolute sound quality judgements are muddied by the fact that you are listening to different forms of compression and processing at the studio for each station.

What is clear, however, is that there are more and more radio stations broadcasting on DAB that aren't available on FM. So if it's variety of programming you're after, they have a lot to offer.

RECEPTION

The quality of signal you feed a tuner will dictate its sound quality. So serious FM listeners should get a decent external aerial and connect it with as few junctions and splits as possible. Every time you split the cable (ie take a feed for another tuner) you halve signal strength! With DAB the same applies but get a DAB-specific aerial. See www.bbc.co.uk/digitalradio for details.



Denon TU-1800DAB £250 Combines DAB with FM/AM reception and good all-round design at a tempting price



Creek T50 £550

A thoroughlyaccomplished AM/FM tuner with a substantial and detailed sound.



T+A T1210R £1.000

This FM tuner looks, feels and sounds top-notch - great detail and imaging.



Magnum Dynalab MD 90T £1,195

FM tuner with valves - 'affordable' for an MD, but still streets ahead of most radios.

Our favourite BEST BLY @ EDITOR'S CHOICE

Onkyo T-4555DAB

TUNERS FM & DAR HI-FI SEPARATES BADGE? PRODUCT FM.M.L 251 Creek T50 Very fine results indeed with precision, polish and insight added to excellent basics 128 Cyrus FM-X 283 A classic no-nonsense FM tuner that achieves gratifying sonic results. Upgradable with PSX-R power supply FM Denon TU-1500AE FM.M.I 100 281 130 Well attuned to the crowded modern EM band, this tuner produces clear, detailed sound with plenty of gusto Denon TU-1800DAB DAR FM M 200 283 There's a little grain on FM, but the decent performance on both bands makes this a great dual-band choice Magnum Dynalab MD 90T 257 No remote or presets as standard, manual everything and valves... but its sound is simply sublime FM Marantz ST7001 FM reception could offer a little more detail and insight. DAB is fine, but near-identical Denon 1800 is cheaper! 200 283 NAD C422 FM M 250 Admirably free of roughness or other obvious nasties, with just a slight lack of clarity 30 Primare T21 A very fine tuner - bass and treble are both well extended and detail is excellent FM 230 Pure DRX-702ES 210 Apparently good value is restricted by persistent veiling on FM: 'PAC' on DAB mellows sound a little DAB FM M 283 Rega Radio 3 FM.M 20 283 Strong bass, clear treble and a high enjoyment factor make this an appealing FM performer Rotel RT-02 FM M 30 242 A highly competent tuner which always sounds appealing and fuss-free T+AT1210R FΜ 100 283 High-end looks are matched by the sound, which is detailed and sophisticated, with useful features too Arcam DIVA DT91 DAR FM 16 299 Some grain at low levels, but sound is lively, large in scale and tonally very natural. Very smart! Cambridge Audio DAB500 Very good sound, plus optional response tweaks, and slickest operation yet DAR 10 248 Denon TU-1800DAB DAB,FM,M 200 Very good detail and a highly believable impression of real musicians playing. Imaging can be a little constricted Marantz ST7001 DAR EM M 200 299 250 Midband detailed and precise; treble can be thick but bass is extended, and sound generally energetic NAD C445 DAB.FM 299 300 FM is laid-back despite bright balance, but has good detail. DAB slightly livelier than most 30

SPESSION WAVEBANDS Which bands are supported: FM, M - medium wave, L - long wave, DAB - digital audio broadcasting, PRESETS How many stations can be stored in memory, RDS Radio Data System - station names rogram titles can be displayed among other facilities (FM only, DAB has more comprehensive display potential). REMOTE CONTROL For the couch potato. SIGNAL STRENGTH METER Useful for setting up an aerial ROTARY TUNING KNOB An ergonomic alternative to buttons

Admirably free of grain or obvious tonal blemishes, this tuner achieves a high standard in all areas on

DAB.FM

299

STEREO AMPLIFIERS

Integrated and pre/power amps

Amplifiers come in two basic forms: integrated and preamplifier (pre) plus power amp combinations. Integrated simply means that both pre and power sections are in one box. There are definite advantages to separating the low level, delicate signals in the preamp from the radiations of a power amp, so the more ambitious designs come in two or more cases. In some cases, each channel has its own power amp called a monoblock.

Amplifiers use two basic technologies: transistors or valves. Transistors are popular because of their practical and technical advantages, but valves - aka tubes - live on owing to aspects of sound quality that trannies can't replicate. If you want to play your music loud, use trannies; if you appreciate acoustic music, try valves.

The fundamental of amp/speaker interfacing is power rating and speaker sensitivity. You can drive a high-sensitivity speaker with a ten watt valve amp, but it takes a 200W behemoth to get the best out of speakers which present a difficult load. As a rule, you can't have too much power.

How to choose an amp

The main areas in which amps vary are: timing, dynamics, stereo imaging and transparency. Timing is the ability to present the attack and decay of each note precisely; amps with strong timing have a snap and coherence that is very appealing



Dynamics is a general term for the ability to portray variations in level between individual notes and is different to dynamic range (the difference between the loudest and softest notes). Dynamically strong amps tend to have more life and energy.

Stereo imaging is how solid or three-dimensional an instrument or voice sounds. The point of having two rather than one speaker is to make it possible to recreate the soundstage of the original recording, thus amps that have strong imaging skills can create a sonic space that seems to extend the room.

Transparency of detail is the most obvious difference between amps. One amp will present more subtlety than another, but the drawback with using this as your main criterion is that a forward or 'bright' sounding amplifier will emphasise detail at the expense of overall musical coherence.

SHOULD I LEAVE MY AMP ON **ALL THE TIME FOR BEST RESULTS?**

All audio electronics perform better when they are warmed up, and this is particularly the case when it comes to amplifiers. If there's no way that you can leave it on all the time, make an effort to switch it on at least 20 minutes before listening.

WHAT IS BI-WIRING AND **BI-AMPING?**

Bi-wiring is when you run separate cables to the treble and bass/mid terminals on the speaker. In most instances, this improves sound quality so long as identical cables are used. Bi-amping is using two stereo amps to drive one pair of speakers, using one amp to drive the treble and the other for the bass/mid sections of the speakers.

WHY DO VALVE AMPS HAVE **SO LITTLE POWER?**

Valve amps are inherently low powered in absolute terms - at least when you compare them to their transistor-based cousins. But when partnered with high-sensitivity loudspeakers, they are quite capable of producing perfectly adequate head-banging levels.

Stereo amps can be used in home cinema set-ups as well. You don't get the surround and centre channels, but well set-up stereo speakers do a remarkably good job of creating atmosphere for movies. Stereo amps tend to be better at reproducing music as they don't have the (electrical) noiseinducing digital processing of AV amps. AV amps cost three to four times as much as stereo models of a similar quality.



If you thought the PM7200 was a great budget amp, just wait until you hear this! Its sound is so detailed and involving. you'll think it costs twice the price.



Cyrus 6vs2 £600

The latest 'singing shoebox' from Cyrus is an absolute peach! Strong rhythmic flow, tunefully extended bass and excellent stereo imaging are among the highlights.



Are you looking for an amp that combines weight and musical gravitas with rhythm, detailand subtlety, with gorgeous build quality to boot? In that case... here it is!



This amp's massively enjoyable musicality is hard to beat: all the effusiveness of a great valve amp and none of the stereotypical softness. Brilliant!

			EST BLY EC EDITOR'S CHOICE		S	PECI	FICAT	IONS	
		J	AMPLIFIERS	=	PHC	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (M)	ISSI
-	d amplifiers			INE INPUTS	PHONO INPUT	CONTR	E SOC	JIPUT	ISSUE NUMBER
ADGE? PRODUC		£	COMMENTS	SIN	PS	ROL	至	3	集
UP TO £1,000 Arcam	DiVA A70	500	A sweet and are attend one officials good page and page with patrual dispersion and good data!	0	0.40.4			00	0
		500	A smart and practical amp offering good snap and pace, with natural dynamics and good detail		MM	•	0	60	2
	coustic MAP305DA II	600	A lot of amplifier for the money and capable of revealing and exciting sound in the right company. Includes 4 digital inputs	5		0		100	
	DiVA A90	850	Practical, affordable and impressively flexible amp with a laid-back approach but plenty of insight too	7	opt	0	0	100	
-	ridge Audio 640A v2	300	Slightly cheap-feeling controls are the only real downside to this powerful and lively little amp	6		0		75	2
	idge Audio Azur 740A	500	Ticks all the boxes for bass, clarity, imaging etc. and invites the listener into the music with uncommon grace	6				100	2
	ridge Audio 840A v2	750	The biggest differences between this and most amps at twice its price are in looks and show-off factor. Powerful and detailed	8				120	2
Creek		500	Not the most accurate, strictly, but it's lively, energetic musical presentation is entirely lovable	5	opt	0	0	85	2
Cyrus		600	Spunky little amp that reproduces instrumental timbres and acoustic spaces well, with real musical involvement	7				40	2
-	PMA-700AE	250	One of a growing number of new low cost amps, it offers good timing and analysis at up to moderately high volume levels	4	MM		8	50	2
	tz PM7001KI	550	A self-effacing amplifier which serves the music admirably with fine bass, sweet treble and unforced detail		MM	0		70	2
	J Fidelity X-T100	899	By separating amp and TRIPLE-X power supply, this deceptively powerful valve-sporting amplifier is both enticing and musical	3	0	0		70	2
Naim N		725	More versatile than previous Nait's, the 5 <i>i</i> is a great all-round amplifier that offers vivid insights into all manner of music	4		0		50	3
Onkyo	A-933	500	Puts the music first, with sound that delivers the basics correctly but above all involves the listener	5		0		80	2
Pionee	er A-A9	600	Takes on the mantle of the legendary A400. Not as cuddly, but very resolute and revealing for the money. Has USB input	4		0		80	2
Unison	Research Unico P	795	Sound belies indifferent measured performance with good detail, balance and flowing melodic quality	5	MM			50	2
Vincen	t SV-236	999	Valve hybrid whose sound is as idiosyncratic as its styling, short on neutrality but high on sparkle	6		0		100	2
BOVE £1,000				200	100			100	
AMR A	M-77	4,400	A thrilling amplifier that brings you the dynamics of valves with the power of transistors in a substantial but well featured design	6				180	2
Ayon S	Spirit	1,745	Pentode or triode operation is available at the flick of a switch with this muscular integrated	4				50	3
Boulde	er 865	7,750	Extremely transparent to detail but less revealing of energy, high power, superb build but only balanced inputs	4				150	3
Coplar	nd CTA405	2,498	A musical and involving amplifier, which also has incredible insight and is user-friendly by valve amp standards	5	MM			50	3
Creek	Destiny	1,100	A highly assured performer that doesn't superimpose its personality on the music	6				100	2
Dense	n Beat B110	1,200	Great bass provides firm underpinning for involving and enjoyable listening - real 'smile factor'	6	opt	0		60	2
Leema	Pulse	1,195	An organic and revealing sound alongside good power reserves and superb features, including a great MM/MC phono stage	5	-			80	3
Moon	Evolution i-7	4,750	Sophisticated, with an elegant build and sound quality, very limited features, even by high-end standards	5		0		150	2
Musica	al Fidelity A1008	2,999	With DAC, phono stage and built-in valve buffer, this powerhouse amp can really grab hold of a loudspeaker	4	0			250	2
Mystèr	re ia11	1,250	Small, deceptively powerful integrated valve amp with a crisp, pacy sound	4				40	3
NAD M	13	1,899	Massive and flexible, it goes very loud with fine authority and dynamic range, but lacks some sparkle	7				180	2
Naim S	SuperNait	2,350	Serious communicative ability meets convenience in this sophisticated and powerful integrated design	6		0		80	2
Pathos	Classic One MK3	1,535	An attractive amp offering a beautifull musical presentation with good tonality and detail	5		0		70	3
Primar	re I30	1,500	A smooth, sophisticated yet agile performer, and beautifully built too	6				100	2
Pure S	Sound A30	1,100	Valve integrated, with the accent on music rather than rhythm. Needs more inputs, though	3				30	2
Sugde	n A21aL Series 2	1,299	Lovely solid-state Class A amplifier, sweet as a nut and more powerful than its predecessor	5	opt	0		21	2
Unison	Res. Unico Secondo	1,200	Very good detail and coherence. Tonality is natural, imaging precise and deep, and dynamics are wide and unforced	6	opt	0		110	2
	Res. Performance	5,500	Massive and bulky valve amp sounds brilliant, with good power for a single-ended design, wide bandwidth and fine neutrality	5	Н	0		40	2
Unison	Research P70	3,495	Delightful valve amplifier with fine neutrality, sweet midband, impressive bandwidth and ample power	4				70	3

	STEREO AMPLIFIERS e/power amplifiers EF? PRODUCT E COMMENTS			SPE	CIFIC					
Pre	PRODUCT £ COMMENTS 2.2,000 Arcam FMJ C31 1,200 Professionally presented, beautifully built and exceptionally revealing, this preamp achieves much by doing little				POWER AMPLIFIER	LINE INPUTS	PHONO INPUT	REMOTE CONTROL	POWER OUTPUT (W)	ISSUE NUMBER
	0 £2,000	Z.	COMMENTS	20	20	S			5	20
18	Arcam FMJ C31	1,200	Professionally presented, beautifully built and exceptionally revealing, this preamp achieves much by doing little			5	opt			27
*	Croft Precession I/Polestar I	1,400	Compact pre/power combo with battery preamp and hybrid power, with freedom from timesmear, bass could be firmer	0		6			25	29
8	Cyrus Pre Vs2/6 Power	1,000	Pre offers stunning resolution and feature count for the money and power is subtle, open and musical	0	0			0	50	29
С	Naim NAC 122x/NAP 150x	1,575	Musically rewarding with outstanding sophistication, grip and insight for such a modestly priced design	. 0	0	6	opt		50	28
8	Quad 99/909	1,650	Well thought out and well executed, with a strong, engaging sound and just a little veiling		0	5			136	25
	Rotel RC-06/RB-06	598	A capable and surprisingly powerful-sounding combination which offers real value			5			70	28
a not	Russ Andrews HP-1/PA-1	1198	Simply featured, but sounds appealingly realistic and solid. Highly capable in all areas design	0	0	2		0	50	30
E LEUV	Border Patrol Control Unit	2,995	Bluff looking valve preamp, with one of the most neutral yet dynamic sounds around	0		5	opt			27

SPECSICEY LINE INPUTS input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc. PHONO INPUT input sockets and onboard phono stage for a cartridge. Either MM (moving magnet) or MC (moving coil), occasionally both. REMOTE CONTROLA remote control is supplied with the amplifier. HEADPHONE SOCKET To drive your cans with. POWER OUTPUT Manufacturer's rated output in watts per channel.

Krell EPB 700cx

Naim NAP 500

Naim NAC 552

Primare PRE30/A30.2

EC

Linn Klimax Kontrol

Marantz SC11S1/SM-11S1

BUYER'S BIBLE STEREO/AV AMPS

Our favourite BEST BUY C EDITOR'S CHCICE TEREO AMPLIFIERS continued Pre/power amplifiers 6 opt Bryston BP26 DA/2B SST 5,550 Bryston's top preamp is now a serious competitor. The power amp reveals a lot of signal and delivers serious grunt 100 278 EC. Chapter Preface/II+ 9,800. Among the finest amps available, the resolution of this preamp and power amp challenges the best at any price EC Chord Prima/Mezzo 140 6,100 Small, muscular, beautifully made and styled and sounds like a dream 120 269 Classe CP-700/CA-M400 13.350 Pre plus mono power combo with superb build, huge power and enormous flexibility. Sounds stunning, too Cyrus DAC XP 2.200 A knockout DAC/ore with naturalness and resolution to die for and six digital inputs for signals up to 96kHz Densen Beat B-200/B310 8 2.300 Lively, energetic combination that bring a great sense of scale to familiar recordings not 80 276 EC Densen Beat B-250/B-350 8.200 Upgradeable to surround, with sweet preamp and slightly coloured power amp, but sound is big and assured 6 125 270 ECS EA-1 Understated monoblocks with real transparency to the fine detail, passion and energy in your record collection EC Gamut D3 3,430 Creamy smooth, yet lets you hear all the fine detail that goes to making a tonally rich, dynamically strong sound 5 opt 265 EC Gamut D200 Mk3 3.950 A great power amp that's now even better - one of the best regardless of price 200 247 EC Hovland HP-100/RADIA Uncommonly musical valve/transistor hybrid transcends stereotypes, one of the genuine high achievers 125 250

14,998 Reference class amplifier may represent overkill in many systems, but when no compromise is called for, this is it

5,000 Preamp and power amp duo delivers high resolution and is consistent with different loudspeaker loads

12,100 Extremely expensive preamp, but still solid value. Magnificent sound with fine flexibility and convenience

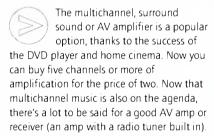
11,875 Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading-edge definition

2,400 Smart kit that lives up to the visual promise with gorgeous sound – a really musical performer

Beautifully executed example of Scots audio art, sounds as clean as it looks and is a lot more transparent than most

AV AMPLIFIERS

Surround sound amps for music and movies



So if you fancy hearing what DVD-Audio, SACD or even music DVD-Video can do, then check out a multichannel amp and speaker set-up - they're stunning with movies and none too shabby with music.

AV amps are usually designed primarily for movies and come with digital processing for the various soundtrack formats - Dolby Pro-Logic (analogue), Dolby Digital and DTS, which offer discrete surround sound in 5.1 and 7.1 channel formats. More ambitious designs also offer THX post processing, designed to emulate the sound of the mixing theatre at home.

Processing in AV amps is needed because the surround formats on DVD-Vs are



compressed, limiting their high-fidelity potential. This is why new formats SACD and DVD-A, which don't use 'lossy' compression, were created for music.

All this processing power can take its toll on analogue formats. The best multichannel amps for music are often the simplest, but any that offer a complete bypass option with six-channel input are suitable. It's also worth looking at real power – five or seven channels of amplification are not easy to produce with a feeble power supply, and the cheaper amps in particular often fail to live up to the claims.

0.8.4

700 234

233

6 220 304

HOW MANY CHANNELS?

Depends on how many speakers you want. Multichannel music discs come with six or 5.1 channels, but for new movies, 7.1 is where it's at. 7.1 set-ups also mean you have speakers directly behind you - preferable for music discs.

WHAT'S THE DIFFERENCE BETWEEN A PROCESSOR AND AN AV AMP?

Processors don't have built-in amplification and you need separate power amps. AV amps and receivers have processing and amps in the same box.

WHAT DOES THE .1 IN 5.1 STAND FOR?

This is the LFE (low frequency effects) or bass channel that is reproduced by a subwoofer.

HI-FI MEETS SURROUND SOUND

With DVD-Audio and SACD offering highquality multichannel music, surround sound is no longer just a home cinema thing. An increasing number of people want to build a multichannel system that will do their music as well as their movie

DVDs justice, and the number of AV products delivering sufficient quality is on the increase. But most aren't cheap building a top-quality system with five or more channels is inevitably more expensive than sticking with stereo. There

are some very decent integrated options below £1,000, though the best (and most costly) route is to buy a separate processor and power amp(s). Or you can add AV amplification to a stereo model you can't bear to part with.

AV AMPS BUYER'S BIBLE



If you're looking for an affordable multichannel amp that's good with music as well as home cinema, this is a top buy.



DiVA AVR350 £1,500

Arcam's latest receiver offers a good helping of processing and connection options, with exceptionally musical sound.



AVC-A11XVA £2,500

A splendid 7.1-channel amp that packs in the latest digital links and processing formats without sacrificing sound quality.



SSP-600/CA-5200£11,900

Anyone seeking a high-end multichannel solution that's equally adept with music and movies should park their ears here.

5 120 238

	ır favourite				SPE	CIFIC	ATION	IS
A	V AMP	L	IFIERS			7.1	5-CHANNEL POWER (W	88
Mul	ltichannel amplifiers			REC	LINE INPUTS	COMPATIBLE	POWE	SSUE NUMBER
BADGE	? PRODUCT	£	COMMENTS	RECEIVER	SIN	THE	R (W)	/BER
MUL	FICHANNEL INTEGRATED AMPS							
	Arcam DiVA AVR350	1,500	Sets the standard for music and movie performance at the price, although features count low and HDMI limited		7		100	284
:	Cambridge Audio Azur 640R	600	Simple and elegant receiver. Attributes that reflect in good sound quality without the distracting toys you'll find elsewhere		7		100	292
EC	Denon AVC-A11XV	2,500	Sensible, real world derivative of AVC-A1XV, but still immensely flexible, and well endowed with digital i/o		11	=	140	273
EC	Denon AVC-A1XV	4,000	Inelegant, but powerful and effective tool with excellent auto set-up and capable of driving two 5.1 systems simultaneously				170	266
EC	Lexicon RV-8	5,000	Classy multi-zone receiver lacks high tech digital attributes (HDMI etc) but majors on very effective audio engineering		10		140	267
	Marantz SR-12S1	3,000	A multichannel amp that can be taken seriously in stereo too. Resources are in the engineering rather than the gimmickry		3		160	255
EC	Pathos Cinema-X	4,750	No processing, just sexy Italian style, a sextet of valves and the chance of 450 watts in stereo! Cultured sound, too		5		110	270
EC	Pioneer VSA-AX10Ai	3,000	State of the art one-box amplifier with enhanced sound quality, auto set-up and other enhancements		10		150	260
	Sony STR-DB798	250	Cheap but effective, and passably good with pure audio sources, but control system messy		7		100	273
	Sony STR-DB795	300	A superb value little amplifier, well appointed technically and successfully tuned for UK ears		7		100	260
193	Yamaha DSP-AX759SE	500	More a stereo amp with basic multichannel thrown in, but a great performer with music at this price		6		100	287
MUL	TICHANNEL PREAMPS/PROCESSORS	AND POWE	R AMPS					
5	Arcam A90+7.1 mod, P90/3	1,920	Add Arcam's multichannel module and a P90/3 power amp to the A90 stereo integrated and you've got got superb purist 5.1		8		90	250
	Arcam AVP700/P1000	3,000	Cutting-edge processor/tuner with HDMI sounds great, but the matching Class H power amp lacks finess to match its power		8		135	275
EC	Arcam FMJ AV8/P7	5,750	High-quality preamp/processor (£3,150) and seven-channel power amp (£2,600). An excellent fusion of stereo and surround sound		7		180	235
EC	Classe SSP-600/ CA-5200	11,900	Subtle, exacting sound, tremendous flexibility and high power audiophile standard amplifier - lacks hi-tech digital interfaces		11		200	278
EC	Copland CVA306/CVA535	3,748	Tube analogue six-channel pre transforms multichannel audio from a novelty into a genuine advance for the high fidelity art		5		125	236
	Linn Exotik	1,750	Is hi-fi ready to make the jump to multichannel music? Linn think so with this musical preamplifier		4			260
EC	Linn Exotik + DA	3,245	Good analogue preamplifier with multichannel in/out up to 7,1 and a home cinema processor of quality combine to make a tempting package		8			291
EC	Meridian 861	9,833	Powerful surround processor with flexible modular construction, marvellous versatility to drive any speaker configuration		6			230
	Naim AV2/NAPV175/NAP150	4,175	First truly credible multichannel system from Naim is idiosyncratic but offers excellent basic sound with modest spatial steering		5	0	50	238
EC	Parasound Halo C1/A51	7.500	Powerful and flexible processor/power amp combo with impressive sound. Excellent value – processor includes onboard screen		11		250	243

4,200 Great all-round system which brings the qualities of good stereo high fidelity to a multichannel world SPECS KEY RECEIVER integrated multichannel amp with built-in radio tuner. LINE INPUTS input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc.

7.1 CHANNEL COMPATIBLE The amp either has seven-channel in and outputs or in some instances is equipped with seven channels of amplification.

5-CHANNEL POWER (W) Power output in watts per channel of all channels driven by the amp

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Primare SP31.7/A30.5

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STEREO SPEAKERS

Speaker pairs for stereo sound

While loudspeakers are relatively straightforward in construction, they have one of the most difficult jobs in hi-fi – turning an electrical signal into an acoustic one. Most consist of two or more drive units in a box that usually has a port in it to make life easier for the cone in your mid and/or bass driver. Alternatives to this arrangement include panel speakers, which use electrostatic or ribbon technology, and horns, which use drive units in complex cabinets that greatly improve efficiency.

Box speakers are either designed to stand on the floor (floorstanders) or on a stand (stand or shelfmounts). Floorstanders have greater internal volume which can translate into greater efficiency and/or bass extension, but less substantial designs also introduce cabinet resonance and thus distortion. But they don't need stands and therefore have the aesthetic edge. Standmounts have less cabinet to vibrate and often score in terms of imaging and timing, but need good stands to work well.

Positioning

The closer the speaker is to a wall, the greater the reinforcement of bass. As all rooms differ, there's no simple formula for placement and experimentation will yield the best results. Altering the angle at which the speakers face the listener can also make a difference to balance and stereo image.

Going multichannel

Many stereo speakers can be augmented with centre and surround channels from the same brand to create a multichannel system. The most important element is a centre channel, which needs to match the stereo pair as closely as possible. For the best musical results, surrounds should be as per the front left and right channels, but if space or funds don't permit, smaller designs can be used quite effectively.

POWER

Though some speakers have a power rating, this isn't as informative as a rating for how difficult they are to drive, nor does it indicate wattage extremes for the partnering amp. In practice, an amplifier cannot be too powerful. Our listings quote ease of drive to indicate how much power

your amp needs to avoid a mismatch. An above-average (A+) speaker will work with amps rated at 25W plus, while an average (A) speaker will need 50W or more, and a below average (A-) speaker could require 100W plus to sound its best. These are quidelines rather than rules.



Choosing speakers

Because speakers and the rooms they are used in vary so much, choosing a pair tends to be quite subjective. To find some that will suit you, try to listen to a good variety to hear how they differ, and if possible, audition some at home. Tonal balance tends to vary the most, but is less important than more subtle factors such as timing and dynamics. Finally, listen with your ears not your eyes – great-looking speakers aren't necessarily great sounding.

Spikes

Floorstanding speakers and stands have threaded inserts for spikes that allow rigid coupling with the floor. These have the advantage of draining resonance from the speaker and giving tighter bass, but can result in more vibration getting back to the electronics and often cause the floor to resonate as well.

0&A

IF SPEAKERS ARE RATED AT 75 WATTS, DOES THAT MEAN I NEED A 75 WATT AMP?

No, see the box on power for the full story.

WHICH SPEAKERS ARE BEST FOR SMALL ROOMS?

Those designed to work close to the wall will be smoother in confined spaces. Speakers that have relatively dry, tight bass will also sound better.

WHICH SPEAKERS ARE BEST FOR BIG ROOMS?

Big, efficient, easy-to-drive designs are more likely to be able to fill a room better than compact models.

DO I NEED TO BUY CENTRE AND SURROUND CHANNELS FROM THE SAME BRAND AS MY STEREO SPEAKERS?

Yes, assuming that you're wanting to create a homogenous surround sound experience, where voices don't change when they move from one channel to another.

BUYER'S BIBLE



Mercury F4 £350

Tannoy's Mercuryspeakers have a long history of 'quality' sound at low prices, and the latest range is no exception – this floorstander is thoroughly engaging.



Ikon 6 £899

Complete with a ribbon super-tweeter, this is an exceptionally capable floorstander for the money, delivering a highly detailed $\,$ and truly engrossing sound.



805S £1,600

A superbly well-engineered standmount that's capable of delivering magnificent musical communication, alongside superior subtlety and delicacy.



Performance 6 £3,500

This extraordinary speaker stands at the pinnacle of Mordaunt-Short's current range. State of the art resolution and imaging are among its many attributes.

Our favourite est ew controls choice

	eo speakers		SPEAKERS	SIZE W,H,D (C	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	HREE SPACE	CLOSE TO WALL	
	PRODUCT £1,000	ξ	COMMENTS	(CM))ER	K	Z Z	æ	I.	
10	Acoustic Energy Linear 1	250	Not at its best with classical but a well integrated, involving, timed aligned speaker nevertheless	19,36,26	г	Α+	50	0	Т	2
	Acoustic Energy Aegis Neo 3	370	Pretty, neutral floorstander sounds open with wide dynamic range and good bass weight	20,90.5,24	0	А	24	0		1
	Acoustic Energy Aelite 3	750	Wood-veneered all-rounder has exceptional neutrality with deep smooth bass	20,103,39	0	А	22			
	Acoustic Energy AE1 Classic	845	Sharply priced classic replica has a beautifully balanced midband, wide dynamic range and little boxiness	18,295,255		A-	45			
	ALR Jordan Entry L	500	Not the most pretty speaker but a sonic triumph, with a beautifully judged balance and impressive transparency	20,86,29	٥	А	23			
	ATC SCM11	849	A very fine little speaker that's at its best with good, natural recordings where it adds little and reveals much	21,38,25		A-	55	0		
	Aurousal A1	450	Single-driver system is coloured but wonderfully coherent and very effective at communicating emotions	20.5,36,27		А	40			
	AVI Neutron IV	499	A great example of what can be done with a genuinely small speaker, but the warts-and-all balance won't suit all	15,27,21		Α-	65			
	B&W DM303	180	Chunky looking and liuvely sounding, with deep bass, a fine midband and a restrained top end	30,33,23		Α	23		0	
	B&W CM1	500	Luxury miniature has neutral, laid back sound, with low coloration, fine imaging but weak dynamics	165,28,28		A-	40	0		
	B&W 683	899	A fine all-round performer with high-class drivers at a very realistic price	20,99,34		Р	20	0		
	B&W 705	900	Deft, delicate and delightful, if a little bass light, with clever enclosure and driver engineering	22,42,29		Α	35			
	DALI Ikon 6	899	Needs care with setup, but rewards you with impressively transparent and almost obsessively detailed sound	19,100,33	0	А	37	0		
	DALI Ikon 7	999	Bulky vinyl floorstander has high sensitivity and a bright sound with superior coherence, delicacy and transparency	20,114,34	0	A+	22	0		
	DALI Monitor 1	1,000	Beautiful miniature with advanced drivers sounds marvellously coherent with fine vocal expression	16,32,24		А	40	0		
	Dynaucio DM 2/10	775	Unfashionably bulky standmount has fine dynamics, grip, bass and headroom and is delicate and well mannered	27.5,45,35		А	22	0.		
	Epos ELS 303	399	Midband is impressively smooth, even and coherent, but the sound lacks some dynamic grip and top end detail	18,85,20		A-	28	0		
	Epos M5	349	Gorgeous miniature works well close to wall. Could be smoother but communicates with authority	18,33,21		A-	40			
	Epos M12.2	449	A true classic stand-mount with lovely presentation, fine sound balance, superior coherence and low coloration	20,37,25		A-	40	0		
	Epos M22	949	Very classy floorstander has a tricky bass and an edgy top, but a very smooth and even midband	20,88,25	0	Α-	25	0		
	Focal Chorus 816 V	1,000	Fine, warm balance, superior dynamics, and a sweet top end, but could be smoother	28,100,37.5	a	Α+	20	0		
	Heco Celan 300	595	Does tone colour, dynamics and detail with aplomb and communicates superbly in its +2dB mode. Sensitive, too	23,36,33		A+	40	0		
	JBL Studio L880	700	Good value floorstander with neutrality, massive headroom and plenty of punch. Could be more transparent	22,99,37	a	А	25	0		
	KEF iQ3	280	Shapely, vinyl-covered stand mount has lively dynamics and fine imaging, but could be smoother and sweeter	22,37,33		A+	40	9		
	KEF iQ9	800	Shapely and solid floorstander has wide bandwidth and dynamic range with superior neutrality and sensitivity	22,94,33	0	А	25	0		
	Mission elan e34	400	A return to form for Mission with a pacey, vibrant sound matched to good looks	35,96,34	0	A+	48			
	Monopulse 42A	995	Uniquely different in style and sound, midband time-coherence is magnificent but treble is too restrained	26,110,25	0	A+	28	0		
	Monitor Audio BR2	200	Good looking standmount has a muscular sound with superior coherence	18.5,35,25		A-	30		0	
	Monitor Audio BR5	400	Not the best dressed in its class, but detailed, bold sounding, good value and an easy electrical load	17, 85,25	9	A-	36	ò		
	Monitor Audio GS10	800	More neutral tonally than some recent MAs. Quality stereo design which take's up little room and is easy to drive	20, 36, 27		A-	40	0		
	Monitor Audio Silver RS8	800	Bold, dynamic sound marks it out from the crowd, and it's an easy load that works well in larger rooms	90, 18, 27	0	А	33	0	٥	
	Mordaunt-Short Avant 906i	350	The generous, well balanced sound shows good enclosure control, could do with more grip and better spikes!	16.5,85,29.5		А	40			

SPECSIGY SIZE WXHXD (CM) Width, height and depth of one cabinet in centimetres FLOORSTANDER Speakers that don't require stands. EASE OF DRIVE How much power the amplifier needs (approximately) to drive the loudspeaker effectively A+ 25 watts plus A 50 watts plus A- 100 watts plus A- 100 watts plus ACT Active — the speaker has its own in-built amplifier. BASS FROM How low the speaker goes — the smaller the number the deeper the bass FREE SPACE The speakers work best away from wall(s). CLOSE TO WALL The speakers will work best when up against a wall (but avoid corners).

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NAD C325BEE

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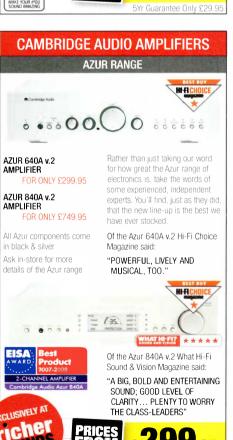












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BUYER'S BIBLE STEREO SPEAKERS

C	TEDE	DEU GDEYNEDG			SPECIFICATIONS					
STEREO SPEAKERS contraction				SIZE W,H,D (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FRIE SPACE	CLOSE TO WAL	SOCIAL MONIBER
	PRODUCT	3	COMMENTS		Ħ			Ë	AL	
2 (1)	PMC TB2+	795	Classy transmission line stand-mount has superior midband, restrained presence and a bright clean top end	20,40,30		Α.	28			2
	ProAc Tablette Ref Eight	699	Stunning standmount with electrostatic-like imagery. Its Signature brother costs £200 more and is even better!	15,27,23		A+	40	۰		2
	Q Acoustics 1010	99	Neatly styled miniature has limited bass and power handling but fine midband voicing at a very sharp price	15,21.5,19.5		A	48			
	Q Acoustics 1050	330	Great value, the sound lacks smoothness but has fine dynamics and impressive transparency	19.5,97.5,30	0	A+	28	•		-
	Quadral Pico Rega R1	849	Could be more muscular, but neutral and open with spacious imaging and little coloration	19,34,26		A-	30			
4	Revel Concerta F12	298	Cute baby sounds busy, coherent and involving, if a touch thin. Sweet and delicate treble with even bass	15,32,24			50			
	Spendor S3/5R	900 725	Massive multi-driver floorstander is not pretty, but has great headroom, bass weight and impressive neutrality	25,108,36		A	22	0		
	Tannoy Mercury F4	350	Small, beautifully accurate monitors are excellent for speech, but not suitable for thrash metal in barns Floorstander has an engrossing sound with good dynamics and a warm, restrained output	17,31,19 20.5,97,29	0	A A+	90	-		
	Totem Rainmaker	795	Standmount has a big sound, with a smooth midband and bright top. Could have more punch and warmth	17,35.5,23		A+ A	25	0		
	Triangle Antal Esw	995	Smoother than its predecessors, with a beautifully balanced bass and midband, though the top end is uneven	20, 108, 34	0	A	20			
	Triangle Titus ES	370	Not pretty but busy, coherent and involving, if a little thin. Sweet and delicate treble with even bass	18,37,30		Α-	40		0	t
_	Triangle Comete ES	500	Bulky standmount lacks style but delivers engrossing musical coherence and vivid dynamics	20,42,34		Α	40		0	
*	Wharfedale Opus2-M1	1,000	Elegant mid to compact three way, a new direction in recent years for Wharfedale	23,51,36			42	٥		
ARON	/E £1,000									H
	A2T Mezzo	2,000	Seamless overall coherence, with persuasive monitoring capabilities. Sounds a little mid-forward. Top could be sweeter	27.5,40,26		A+	40	0		Ī
94	Amphion Prio 520	1,600	Gorgeous styling and a lively sound with good voice band integrity and a sweet top end	16,104,22	0	Α	40	0		
	ALR Jordan Classic 5	1,200	Slim, laid back floorstander has sweet sound with fine coherence, imaging and dynamic range	17,99,26	0	Α	28	0		
	ALR Jordan Note 3	1,350	Costly but clever; adjustable ABR gives much of the weight of a floorstander with the agility of a standmount	24.5,37,31.5		А	26	0		
d.	ATC SCM16A	2,203	Makes a great case for the active speaker. Good value, including built-in amps, and fuss-free	27,45,33	,	ACT	42	0		
1	ATC SCM19	1,499	Super linear motor system, heavy weight construction and fabulous veneer that makes the ATC a pro favourite	22,44,31.5		A-	54	0		
8	Audio Physic Spark 3	1,499	Classy and discreetly laid back floorstander has delightfully neutral balance and surprising bass weight	15,98,22		A+	27	0		
	AVI ADM9	1,000	Active mini-monitors that are exceptionally accurate and dynamic, and they give good iPod, too	20,30,26	1	ACT	60	0		
8	AVI Duo	1,299	Sophisticated floorstander, a natural partner for AVI's electronics. Unusually clean and honest musical presentation	19,77,28	0	А	50	0		
C	B&W 802D	8,000	Great timing, superior dynamics and a sweet top end all enhance musical communication. Makes sweet music	37,115,56	0	Α .	<20			
d s	B&W 805S	1,600	Classy standmount with excellent coherence and imaging. Can sound laid back but otherwise a real delight	24,39,33		Α	25	•		
	Dynaudio Focus 220	1,850	Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble. Could be more dynamic	20.5,98,29.5	0	Α-	<20	0		
0	Eclipse TD510	1,200	Replacement for the TD512 does astonishing things with musical timing. £600 floor stands also recommended	24,36,26		Α	45	0		
`	Focal Chorus 826 V	1,250	Times nicely, goes loud with ease and will produce precise imaging if appropriately set up.	28,104,37.5	0	А	45	0		
	Focal Chorus 836V	1,549	Bulky, sharply priced three-way could be prettier. Has good bass with genuine grip, but top could be sweeter	28,115,38		Α	28	0		
c]	Focal Electra 1027 Be	4,000	Outstanding mid and top with fine delicacy and low coloration, but lacks some bass grip and drive	26.5,111,35	0	A-	25	0		
	Free FS1	3,000	An elegant active design for anyone after the minimum of wiring Wireless with Sonos or Airport Express	16,87,27	P	·CT	35	0		
<u>c</u>	Gamut Phi5	2,550	Lovely and discreet floorstander has excellent sound and several very clever engineering touches	17,100,24	0		20	0		
	Jamo Reference R909	7,500	Top model (in a class of one) is open, full and easy on the ear, and surely a classic in the making	48,127,54	0			0		
c]	KEF Reference Model 201/2	3,500	Very classy but costly three-way stand-mount with much improved Uni-Q; could be more transparent	25,42,41				0		
	Kudos Cardea C1	1,450	A very pretty compact standmount with a delightfully subtle and delicate sound quality	20,35,27				0		
	MartinLogan Source	1,599	Careful install needed, but capable of remarkable transparency at an extremely competitive price	24,120,37	0			۰		
	Meridian M3100	1,850	Attractive and capable active (125w) with great imaging and strong bass. High neutrality and good power handling	19,39,25		ACT		0	opt	
	Monopulse 42A	1,495	Oddball styling, fine bass-to-mid balance and dynamics, and superb voice coherence, but untidy treble	26,110,25		А	25	•		
6.6	Monopulse 82	2,495	Could be more neutral, but excellent coherence, lively dynamics, fine imaging and a wide dynamic range	27,110,25		Α- «	<20	0		



BUYER'S BIBLE

Our	favou	ırite	BEST BUY	EDITOR'S CHOICE

OTEDE				SP	CIF	CATIO	NS		
Steree speakers BADGE? PRODUCT	υ ;	SPEAKERS continued	SIZE W.H.D (CM	FLODRSTANDER	EASE OF DINNE	BASS FROM (HZ)	FIFEE SPACE	CLOSE TO WALL	ISSUE NIJMHER
Monitor Audio PL300	5,000	Completely new level of sophistication from a brand best known for mainstream, cost effective designs	41,111,47			28			301
Mordaunt-Short Perf 6	3,500	Revolutionary enclosure design and aspirated tweeter make for a fast, hi-res ride	24,121,37	•		35	0		264
Neat Elite SE	1,499	Smooth and natural performer with notably expressive midband. Fine voice articulation and unusual sweetness	20,90,18		A	25			267
Neat Motive 1	1,200	Beautifully neutral balance sounds open without aggression. Fine midband but could be more authoritative	16,92.5,20		A-	20			276
Neat Momentum 3	1,745	Sounds a lot bigger than it looks, with good coherence and an impressively wide dynamic range	22,38,27		A-	23			302
Opera Seconda	1,295	Classy cabinetwork plus beautifully judged neutrality with crisp, clean and deep bass	24, 1025,31.5	0	A-	20			297
PMC Wafer 2	1,650	Clever 'hang-on-wall' speaker has minimal sonic compromises. Smooth midband delivers impressive stereo imaging	33.5,57.5,10		Α+	45			285
PMC FB1+	1,695	Nicely proportioned floorstander has a sweet top and a beautifully natural, open and restrained midband	20,100,30		А	20			260
PMC EB1	5,950	The best argument for large speakers that we've heard in a long time	29,120,46.5		A-	19			292
PMC GB1i	1,275	Pretty little floorstander has great class with fine delicacy and sweet detailing	15.5,87,23.4		А	30			306
Quad ESL 2805	4,500	Uniquely wonderful natural realism, exceptional imaging, coherence and low level detailing	70,107,38.5		A-	45			294
Rega R7	1,498	Super-slim and super-smooth floorstander has fine agility with a slightly bright overall character	27,98,35		А	25			271
Rega R9	2,498	This subtle, laid back but very informative performer has a very superior dynamic range, especially in the bass	17,103,39		А	25			271
Revel F32	3,200	Meticulously balanced, tonally neutral design makes for a taut, well disciplined sound	22,105,39		А	20			256
Revel M22	1,800	A remarkably clean and revealing speaker with superb tonal and microdynamic capabilities	22,37,30		A-	48			274
Roksan Caspian FR-5	2,000	Sharp looking speaker sounds exceptionally open and lively without aggression. Could be warmer and richer	20,100,25		А	22			290
Ruark Talisman III	1,499	No bass demon, but a sophisticated and agile speaker epitomising Ruark's design ideals	22,84,31		А	22			259
Sonus Faber Cremona Audit	. 2,690	Open, exciting and with surprisingly good bass this is 'The Little Speaker That Could' (stands £575 extra)	20,35,37		А	50			305
Sonus Faber Grand Piano D.	2,498	The Grand Piano Domus has a fabulous physical appearance and delivers a dean, refined sound	21,106,31		A-	32			283
Tannoy Dimension TD8	4,000	This stylish speaker is a splendid all-rounder, with fine dynamics, precise imaging and minimal coloration	31,86,30		A-	25	0		240
Tannoy Glenair 10	2,999	With a 250mm dual concentric driver this is a generously proportioned, highly engaging speaker for a good price	36,100,35		A+	38	0		295
Totem Model 1 Signature	1,595	Expensive, but very seductive miniature delivers a beautifully smooth and balanced midband	17,31,23		А	35	0		277
Triangle Genese Quartet	1,895	Great material value and a solid all round sonic performance with great loudness potential	23,117,37		А	25	0		302
Triangle Celius Esw	1,395	Not the smoothest sound around, but has great vigour and enthusiasm, plus good scale and weight	20,117,34		А	22	0		277
Triangle Magellan Concerto	14,750	New 'sw2' version is less immediate than its predecessor, but it's easier to live with and remains highly enertaining	60,160,45	0	A-	32			290
Usher Compass CP-6381	2,500	Lots of speaker for your money, with plenty of deep bass, unusual styling and massive build	35,127,65		А	20	0		270
Vivid Audio B1	7,750	Impressive cabinet design combined with hi-tech drivers to make truly world class speaker	27,110,38		A-	40	0		261
Wilson Benesch ACT	8,400	Superb enclosure gives uncanny freedom from 'boxiness'. Well balanced, but top end might be sweeter	23,108,36		А	20			252
Wilson Benesch Curve	5,000	Much (but not all) of the ACT's performance in a much more compact and affordable package	23,91,37		А	28	•		254
Wharfedale Airedale Neo	9,000	Expansive yet relaxed sounding, the Neo is a coloured but surprisingly musical and enjoyable speaker	52,115,45		A-	25			296
Yamaha Soavo 2	1,200	Cunningly crafted stand-mount with a beautiful balance that always sounds lively, open and involving	22,38,35		Α	28	۰		296

Our favourite	BEST BUY [60] EDITOR'S CHOICE

C	HIDWA		'EDC	ar co	or io.	11.11.0	_
9	UBWO	U	EU2	378		BASS	ISSI
Bas	s speakers			SIZE W,H,D	POWER (W)	BASS FROM (HZ	SSUE NUMBER
BADGE	? PRODUCT	£	COMMENTS	CM	3	(ZH)	男
	B&W PV1	950	Gorgeously styled sub shakes the air but not the floor, delivering a very clean sound with negligible coloration	29,34,35	500	20	259
EC	B&W ASW850	2,000	Does all the things subwoofers should do with music and movies alike, but transparently and seamlessly	53,56,52	1,000	18	246
EC	Eclipse TD725sw	2,700	Delivers solid meaningful bass, but with unusual tunefulness, speed and articulation	52,47,50	500	40	287
	Monitor Audio ASW100	300	For the price, this compact subwoofer performs particularly well	32,32,34	120	27	225
EC	REL 305	795	Landmark mid-price sub, works particularly well with low crossover frequency, looks great too	32, 36, 34	300	25	284
	REL Stampede	550	Few subs at this price match the Stampede's subtlety and ease of integration. Much more hi-fi than AV	28,40,29	100	18	257
88	REL T1	595	Standard setter at the price: flexible, easily set up and packs quite a punch	36,40,420	300	25	291
-	REL Strata 5	700	Highly musical sub that integrates well but the REL Stampede offers near-identical performance for less money	32,46,33	150	18	257
	REL Storm III	900	Excellent sub with powerful, detailed and deep bass. Comprehensive facilities, including flexible filter adjustment	42,62,33	150	18	225
	REL Storm 5	1,000	Well engineered, good bass depth, appropriate for mixed hi-fi & home cinema/multichannel systems	34,52,37	200	15	267
•	MartinLogan Dynamo	449	Refined, compact sub brings established MartinLogan virtues to a new price and size point	29,35,32	200	25	301
	Velodyne SPL-800R	699	Powerful, highly configurable sub with auto setup feature and attractive, compact packaging	26,27,33	1,000	28	286
EC	Wilson Benesch Torus	5,200	Amp and sub-package built like a sophisticated pile driver, with deep, state of the art performance	45,33,45	1,000	10	290

SZECSICE* SIZE WXHXD (CM) Width, height and depth of one cabinet in centimetres. POWER (W) How many watts the onboard amplifier of active models delivers.

BASS FROM How low the sub goes, the smaller the number the deeper the bass.

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HEADPHONES

For your ears only



Headphones come in several varieties and some are designed for particular usage. The majority of 'cans' use dynamic cone and coil-type drive units and can be used with anything from a personal stereo to a dedicated amplifier. Other types also exist, most significantly electrostatics that use a charged panel membrane to produce a distinctly refined sound. These are supplied with their own dedicated amplifiers, which tends to increase the price.

Cans are split into several types. There are open and closed-back designs, the latter being best for noisy (or noise sensitive) environments as they minimise leakage and intrusion. Open-back types tend to have a more open, less 'in-head' sound. There are also three variants of earpad design: circumaurals enclose the ear and press on your head, supra-aurals press on the ear and intra-aurals sit in the ear and are particularly popular with personal stereo users.

Getting the best from your cans

Getting a good result with headphones is not

quite as straightforward as it should be. Merely plugging them into the output on your CD player or amp will not give particularly engaging results unless you are very lucky. If you are planning on serious listening, invest in a dedicated amp - the increase in dynamics is not in the least bit subtle. A variety of models are made and prices start at around £80 for a QED, a little more for designs from, say, Creek or Musical Fidelity. And if you're really into cans, look up the valve-powered Earmax.

Our favourite	BEST BUY [EC] EDITOR'S CHOICE
HEADPH	IONES

Ster	eo headphones	ינה		ELECTROSTATIO	SUPRA-ALIRA	CIRCUMALRA	OPEN BACK	CLOSED BACK	WEIGHT (g)	M JACK ADAPTOR	ISSUE NUMBER
ADGE?	PRODUCT AKG K270 Studio	£ 129	COMMENTS Pro oriented design which is very transparent and great with acoustic material	1.2			^	*	270		230
EC	AKG K1000	650	Neutral, analytical and completely out of the head sound, suitable for connection to speaker outputs only						270		244
	Audio Technica ATH-W1000	400	Superbly comfortable and very revealing. Long listening sessions are a pleasure with new musical insights						250		304
	Beyerdynamic DT770	190	A touch coloured in the mid, but less than most closed cans; detailed and with excellent bass						290		287
	Beyerdynamic DT880	200	Informative, neutral and surprisingly close to good loudspeakers. Good for occasional and long-term listening alike						205		300
]	Grado SR225	180	Tonally shows the way to Grado's amazing GS1000 flagship, but detail and soundstage are not truly class-leading						200		300
	Grado SR325i	310	Highly sophisticated and detailed sound with great extension: check for comfort						200		270
]	Grado GS1000	995	One of the finest transducers on the planet, with detail to die for						250		288
	Sennheiser HD485	65	A great all-round headphone for occasional or even heavy use, refined in sound and comfortable, too						220		296
	Sennheiser HD595	150	Technology from upmarket HD650 model makes this a very revealing headphone that's also extremely comfortable						270		266
1	Sennheiser HD650	300	Astonishing resolution and hardly less impressive tonal balance make this a true hi-fi experience						260		252
	Sennheiser PXC450	299	Noise-cancelling model: as good as it gets for making the most of listening in planes, trains and automobiles						240		302
	Shure SE420	240	Expensive and no replacement for top conventional 'phones, but streets ahead of most in-ears with real refinement						15		295
	Shure E500PTH	420	Sophisticated in-ear design with three drivers, plus switchable 'voiceover' mic in the lead; high-quality stuff						20		285
	Stax SR-001 Mk II	239	Expensive and power hungry, but this electrostatic drags personal stereo into the world of high fidelity						280		268
С	Stax SRS-2020 Basic Sys. II	349	Luxury option at its price, but the sound delivery is five-star quality all the way						205		295

SPECS KSY ELECTROSTATIC Uses electrostatic film instead of more common cone or dome dynamics. SUPRA-AURAL Earpads sit on ear rather than around it. CIRCUMAURAL Earpads rest on the head around the ears PEN BACK Vented capsules let sound in and out CLOSED BACK Sealed capsules WEIGHT In grams 3.5MM JACK ADAPTOR Allows connection to personal stereos, computers et

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CABLES



Wires to hook your system together

Hi-fi cables come in two varieties: interconnects and speaker cables Analogue interconnects come in

preset lengths, generally with RCA (phono) plugs attached, though some equipment uses XLR connectors for balanced connection - this can be sonically advantageous, especially over longer runs. Speaker cable is commonly sold by the metre and can be used without plugs or can be fitted with screw or solder-on types.

Choosing cables is not quite as straightforward as it might seem. One problem is that components interact with the cables you use and this often results in audible effects, but there are few cables that are fundamentally incompatible with any components, and we recommend the advice of a good dealer. In any case, you should look to spend as much as you can afford.

Digital cables come in two flavours: electrical and optical. In most instances electrical varieties sound better than optical, given the choice, but optical cables may be a better bet over long runs (10m+). Optical inputs/outputs usually use Toslink connectors, while most electrical types use RCA plugs, but some opt for BNC connection instead – check your components before you buy.

	ır favourite				S	PECIF	ECIFICATIONS				
	CABLES erconnects and spea		cables	STRANDED	SOLID CORE	DOPPER	SILVER	DIGITAL CABLE TYPE	SOUE NUMBER		
BADGE	PRODUCT OGUE INTERCONNECTS	Ξ	COMMENTS	0	m	20	30	m	2		
	Atlas Questor	70	Very open and informative at high and mid frequencies, with slightly dry bass. Imaging particularly fine	6		6			29		
	Audioquest Sidewinder	45	A lively and detailed cable, with fine tonality and excellent rhythm. Slight added upper-bass warmth does little to detract			0			29		
	Black Rhodium Prelude	80	Practical and sensibly priced all-rounder that seems happily compatible with a wide range of kit						29		
	Black Rhodium Coda	150	Superb bass and excellently neutral and detailed midrange: treble generally sweet with occasional slight constriction						2		
C	Black Rhodium Concert	255	This DCT cable from the Polar range gives a distinctively dark timbre, rich in detail, with low subjective noise						2		
	Cambridge Azur Reference	50	Performance wouldn't shame a cable at twice the price: especially adept in the treble with no trace of dryness						2		
	Clearer Audio Copper-Line Alpha		Sounding like something a good deal dearer, this cable offers near high-end detail and seems highly compatible too						2		
	Clearer Audio Silver-line	244	Complex, well-screened cable which offers good sound all round with exceptional bass – at a price!						2		
С	CrystalCable Piccolo	260	Thin cable, but tougher than it looks, Piccolo has some qualities of a solid core type genencally - notably resolution, focus and articulation						29		
	Ixos Ixotica IX1	200	Notable for its relaxing sound, this cable still presents plenty of analytical detail						2		
	Monster M350i	45	Few cables at this price reveal so much about the recording space. Clear treble, too						2		
	Monster M1000i	200	Very capable, with only a hint of bass dryness to set against excellent results elsewhere						2		
	Nordost Wyrewizard Dream	95	Slight lack of precision in extreme treble, otherwise detailed and neutral with authoritative bass						31		
	Oehlbach NF214	63	The bass is a matter of taste, but suits many smaller speakers. Very good mid and treble						2		
	Profigold PGA3000	60	Not the ultimate for lovers of clinical precision, its character is engaging and detail and extension are good						29		
	Supra EFF-1X	77	Lively-sounding cable which maintains a high level of detail and neutrality. Musically, a great all-rounder						3		
	Townshend Isolda DCT1C0	99	Silky-smooth treble, with remarkably good detail too: midrange and bass also very fine						3		
	van den Hul Integration Hybric	125	Bass is nothing remarkable, but mid and treble are outstandingly open and clear: very transparent						3		
	Wireworld Luna 5	30	Authoritative bass and clear treble outperform many cables at twice the price						2		
	AL INTERCONNECTS					75.5					
	Atlas Compass	50	Slight improvement in detail over giveaway cables, plus distinctly more tuneful bass and more open treble, make this fine value					E	2		
	Clearer Audio Silver-line	125	Very satisfying performance with finely-etched detail and sweet treble					E	2		
	Supra AnCo	80	This cable can give a useful fillip to a good transport/DAC combination, even in a high-end context					E	3		
	Wireworld Starlight 5	90	Cleargains in detail and imaging precision are this cable's main strengths: good value and near-high-end performance					Ε	2		
	CER CABLES PRICE PER METRE	-77									
	Atlas Hyper 1.5	10	Don't look to this cable to beef up the bass, but its performance at higher frequencies is revelatory at the price						2		
	Atlas Ascent 2.0	55	A highly analytical cable, with more bass extension than at first appears and very fine detail across the board						2		
	Chord Epic Twin	40	Good all rounder, which generally sounds relaxed and musical, and a full bass that stops the right side of sounding blowsy						21		
	CrystalCable Piccolo	1,480	Tougher than it looks, Piccolo has some of the qualities of a solid core type generically – notably resolution, focus and articulation						30		
	Kimber 8PR	12	A cable that really enjoys the music, also admirable for the levels of analytical detail it allows through. Excellent value						2		
	Monster MCX-1s	8	Notable for its bass, which is perhaps a touch overdone at times but could be a good foil to small speakers. Good mid and treble						2		
	Nordost Heimdall	162	Alternative to Valhalla, silver plated, micro-monofilament construction, low colouration, hi-res and suitable for exacting systems						2		
	QED Silver Anniversary XT	5.50	Full bass and nicely detailed treble combine with good imaging - a budget bargain						2		
	QED X-Tube XT300	10	A natural and well controlled sounding cable that's cost effective for mid-priced systems						23		
]	Supra Sword	116	Zero inductance construction, medium resolution cable that has an excellent midband and is fundamentally musical						2		
	Townshend Isolda DCT	50	Cryogenically treated 'impedance matched' cable with stabilising components added: great sound all-round						24		
	van den Hul The Bridge	6	Better bass than treble, with good detail though a touch of constriction at times						29		
	Wireworld Luna 16/4	5	Budget biwire cable offering tuneful and extended bass, good treble, and midrange with just a little lack of detail						29		

SPECS ICY STRANDED Cable has a number of (usually) twisted strands to conduct the signal. SOLID CORE Cable has one or more individually insulated strands to conduct the signal COPPER Material used to form the conducting element of the cable SILVER Alternative material used to form the conducting element of the cable DIGITAL CABLE TYPEE - electrical, 0 - optical Cables are one metre length unless otherwise stated.

STANDS AND SUPPORTS

Equipment racks and speaker stands



If you want to get the most from your source and amp components, it's important to consider good quality support. Dedicated equipment supports are racks and tables made specifically to hold hi-fi gear, and the best can have a profoundly positive effect on sound because, for example, they can help to isolate kit from ground-borne vibrations and mechanical or electrical interference. Equally, if you own a pair of small 'bookshelf' or 'standmount' speakers, it's important to place them on good quality, purpose-built speaker stands.

Our favourite BEST BUY EDITOR'S CHOICE

	MILIDMENT CUDDADTC			SPEC	SPECIFICATIONS				
Equ	Alphason A5-G Alphason A5-G Algorithms and Design Concept 400 Custom Design Concept 400 Custom Design Milan Custom Design Milan Custom Design Wilan Algorithms and Design Vantige Algorithms and Design Vantige Custom Design Vantige Algorithms and Algori	HEIGHT CM	TOP PLATE SIZE (CM)	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER		
BADGE?	PRODUCT	300		80	66,46	0		Glass	247
	Atacama Equinox			81	50,50		4	Glass	217
725	Audiophile Base Std Supp't	900		57	46,35		3	MDF	302
	Custom Design Icon Signature	330	Gorgeous wood and glass looks: sound lacks a little detail but is nicely lively	75	56,37		4	Glass	286
	Custom Design XL4	380	Simple construction pays off in smart looks. Sound contribution is minimal and largely harmless	65	60,42		4	Glass	293
	Custom Design Icon 400	600	Beautifully built, conveniently adjustable and with little sound of its own, a very classy rack	75	57, 41		5	Glass	263
	Custom Design Concept 400	700	Slightly drab looks, but great sound and efficient use of space ('Acoustic' version tested – standard version £300)	74	48,40		4	Metal	247
	Custom Design Milan	449	Respect is due to any stand that looks this good with nothing more to complain of than slight muddying of detail	57	48,39		4	Glass	302
	Custom Design Vantige	449	'Acoustic Aluminium' shelves plus steel supports equal practicality plus musical satisfaction: just a shade bright	62	49,44		4	Metal	271
	Partington Minim	420	Adds its own character to the benefit of rock most particularly, but slightly to the detriment of acoustic sounds	78	45,37		5	Glass	302
	Quadraspire Q4 Reference	480	Excellent performance from the school of wobbly racks. Natural sounding and plenty of detail	51.5	49,39.5		4	MDF	217
	Russ Andrews Torlyte Rack	988	Attractive modular system made of very light Torlyte: a touch of added warmth is its only vice	68	54,49		4	Torlyte	240
8	RA Torlyte Platform	130	This unassuming platform can be a godsend, cleaning away mid/treble muddle from the sound	8	48,36		1	Torlyte	302
C	Townshend VSSS	1,300	The Seismic Sink goes all glassy and attractive, yet retains the same excellent vibration-killing sound quality	76	35,50		4	Glass	273

Our favourite BEST BUY E EDITOR'S CHOICE

SPEAKER STANDS

Speaker	stands
---------	--------

She	akei Stalius			T (CM)	E (CM)	LABI	ELDEC	LEGS	JMBER
BADGE?	PRODUCT	£	COMMENTS	\$	S	F	0	SS	33
	Anvil Sound Display Stand	226	A variety of smart looks available - sound is clear and precise	50	20,17			1	293
	Custom Design RS300	110	An attractive stand whose lack coloration and ringing makes suits it to high resolution systems, at a tempting price	56	16.5,18			1	281
	Custom Design SQ402	100	More a range than a model, capable of fine results especially with Acoustic Steel top plates	62	18,16.5			2	299
EC	Custom Design SQ404	200	Robust four-pillar design gives very low coloration and maximises performance of speakers great and small	61	18,16.3			4	283
	Partington Ansa 60	99	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62	18,15			4	232
EC	Partington Dreadnought BS	249	The Dreadnought Broadside is a superb stand for high-class standmount speakers – and it looks great too!	61	17,15			5	261
EC	Partington Heavi II	399	Robust to the nth degree, this stand helps produce very taut, precise bass and detailed upper frequencies	53	31,22	-		6	287
EC	Russ Andrews Torlyte	299	Very relaxed sound from this metal-free design, with excellent imaging too	60,50	15,21			3	280
	riuss Andrews fortyte	233	very relaxed sound from this metal-free design, with excellent imaging too	00,50	13,21			3	200

E JUPMENT SUPPORTS SPECS KEY HEIGHT Of complete stand. TOP PLATE SIZE (CM) Width by depth of the supporting platform(s). Single figures indicate a square platform. WELDED As opposed to bolt-together construction. NUMBER OF SHELVES To put your kit on (different configurations are often available). SHELF TYPE Material that shelves are made of

SPECIAL STANDS SPECS (GY HEIGHT Of each stand, not including spikes. TOP PLATE SIZE (CM) Width by depth of platform. Single figures indicate a square platform. Speakers generally overhang top plates FILLABLE The stand can be mass-loaded with sand and/or lead to stop ringing, WELDED As opposed to bolt-together construction, NUMBER OF LEGS That support the stand

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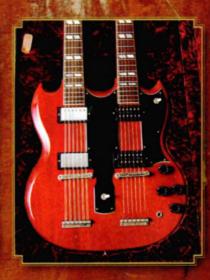
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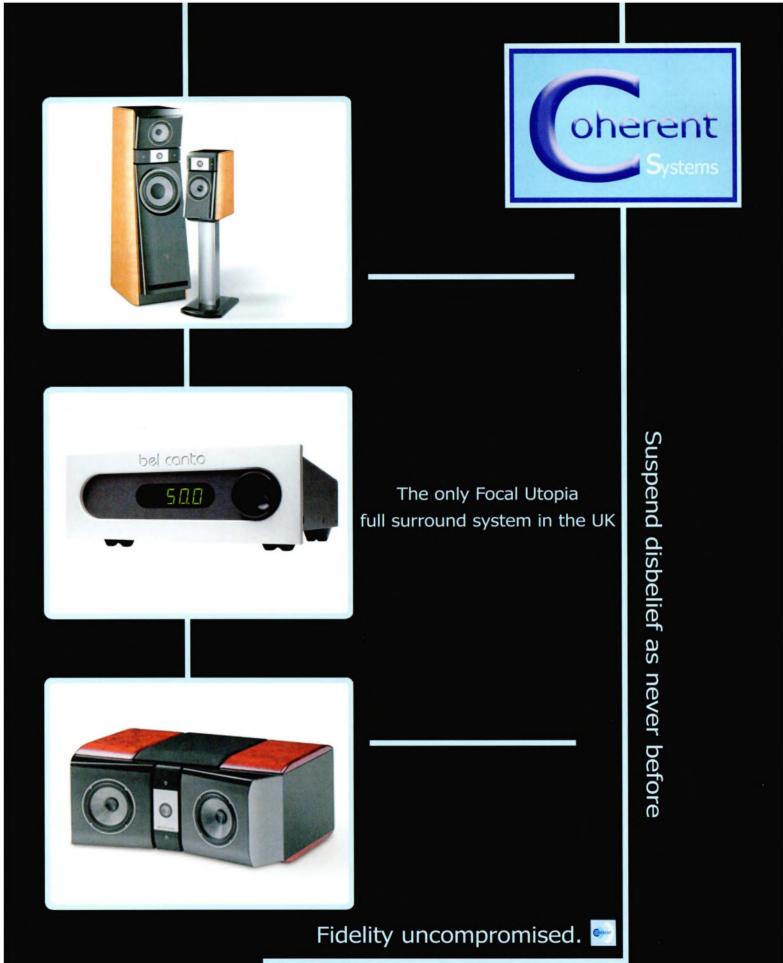
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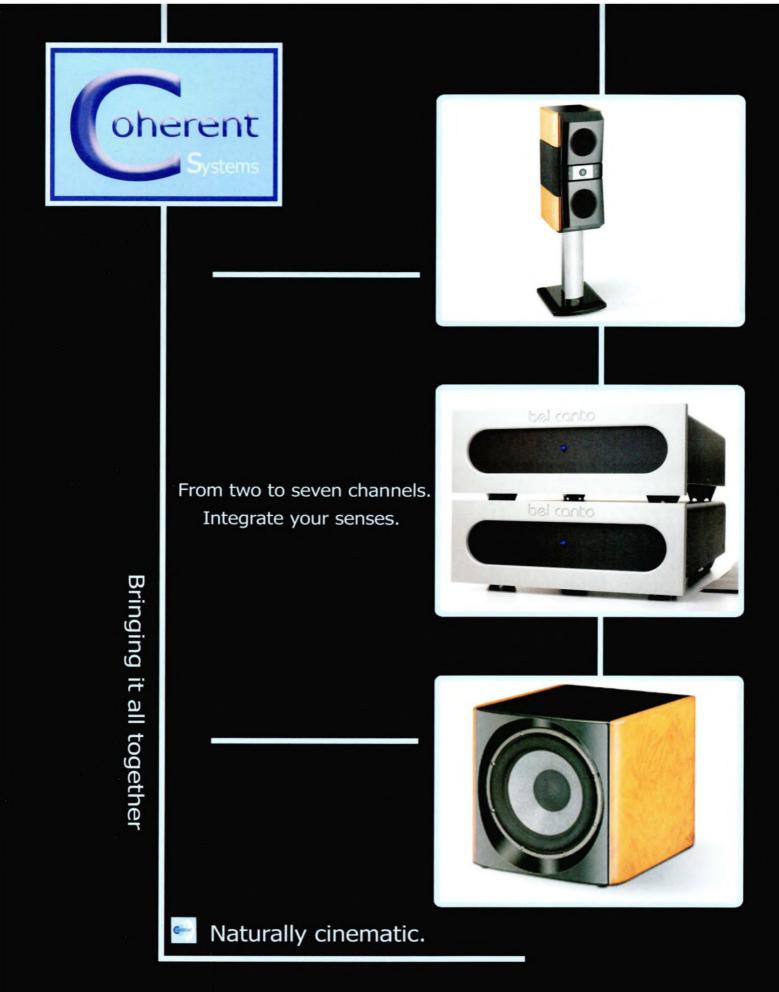


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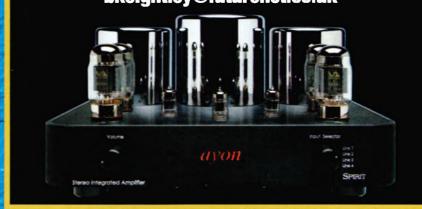
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2nd-hand shootout

There's bargains aplenty to be had with tonearms from £50 to £250. Here's what to look for...

ith any tonearm there are three basic checks worth making. The first is to ensure that the main tube is straight and true. Run your fingers down the length of the tube, checking for any creases. Any fault here will be an indication that at some point the tonearm has been bent and subsequently straightened – thereby losing its mechanical integrity. Secondly, the bearings need to be sound. Hold the arm by its base and gently swing the arm across. The movement should be smooth. Finally, older tonearms can suffer from earthing problems. The thin wire inside the arm is often soldered together and can easily go astray.

The only foolproof way of checking this is by actually listening to the arm attached to a turntable. With the earth strap attached to an amplifier, there should be no buzzing or hum emanating from the speakers. For these reasons it's worth taking extra care when buying online. If you can't actually hear the tonearm, then look for sellers with reliable recommendation and the offer of a refund.

The Rega RB300 is, perhaps, the best known budget tonearm. Throughout its 25 year life it's dominated the budget market and has been adapted by many including Akai, NAD and Moth. The key to the RB300's success is the sheer rigidity of the thing. A one-piece arm tube was, and still is, a revelation at its price point. The internal cabling is less impressive. It's little wonder, then, that countless RB300s have been modified in some way. A word of warning here: although companies such as Origin Live can modify a Rega arm extremely well, others are less successful. Rega warns that, "the high rigidity and weight of wires used in many common modifications will often lead to excessive bearing wear and restriction on bearing movement. This shortens the life of the product and will lower performance". Our advice is to steer clear of any 'home-made' modifications. Priced from around £50 for an older arm up to around £150 for an ex-demo model, the RB300 is still one of the finest hi-fi bargains to be had

The Roksan Tabriz is a step-up from the RB300. Launched in 1990 for just £150, the modern day

100000 C

version of

now costs close to £500. The Tabriz is a very neutral sounding arm and one which rarely becomes flustered - either by the music or partnering equipment. In addition to the innate good manners of the tonearm, what's always appealed was the availability of the 'Zi' upgrade kit. This comprised of the 'intelligent' low-slung counterweight from the Artemiz arm and a higher grade arm cable. In addition to the usual checks, it's worth closely inspecting the cosmetic condition. The matt paint used is softer than the others here and scratches to the headshell, arm base and where the arm meets the arm holder are not unusual. An early scruffy model can be had for as little as £75, with £250 being about right for a Tabriz Zi in good condition

Next up is the SME 3009. This beautifully engineered J-shape tonearm was in production through, the latter part of the 20th Century and it's a testament to its construction quality



Above: The vintage SME 3009 tonearm

use a high-compliance cartridge, the sonic differences between the many variations of the 3009 are slight. Those in the know reckon the fixed head version to be slightly superior to the detachable one – mass is reduced and rigidity improved.

At the top of our budget is the Alphason HR100S. These days Alphason is best known for equipment supports but the company actually started out as a turntable manufacturer. Launched in 1980, this one-piece design was revolutionary in using a single titanium arm formed in an 'S' shape. Although often imitated, it was rare to find a rival that offered the quality and value of the HR100S. Even when production stopped in

"...around £150 for an ex-demo model, the RB300 is still one of the finest hi-fi bargains..."

that many of the older models are still going strong. Understandably, SME no longer fully supports the original models from the '60s, but it still offers a full service back-up for the Improved versions – not bad for a product that was effectively 'replaced' 20 years ago! The main difference with the 3009 Improved is the use of nylon instead of steel bearings. As it turned out the term, 'Improved' was something of a misnomer but, provided you

1993, the price was a very reasonable £500 about half the price of most genuine rivals. The sound quality is beautifully composed with a lucidity and balance that beats the competition. It's a very precise sounding tonearm and one that really requires a decent quality MC cartridge to get the best results. The only significant upgrade was the fitment of internal silver cable in the late '80s. These models can be identified by the 'MCS' suffix. Take care when buying, as parts are no longer available. Having said that, both the bearings and arm tube are very strong, so problems are unlikely. An early model in good condition shouldn't cost more than £200, with £250 being enough for a MCS model in excellent working order. For around half the price of an equivalent SME or Linn tonearm, the HR100S is still something of an unsung hero. HFC

> Dominic Todd Next month: E2,000 turntables

Above: Alphason HR100s with its distinctive S-shaped arm



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TECHNICAL & DESCRIPTIVE TERMS BUYER'S BIBLE

GLOSSARY

TECHNICAL TERMS

5.1-CHANNEL AUDIO Six discrete channels, typically front left and right, centre, surround left and right, and LFE (Low Frequency Effects) for a subwoofer. BALANCE Most loudspeakers have a characteristic frequency balance resulting from emphasising parts of the audio range and/or de-emphasising others

BASS The lowest three octaves of the audio band - 'low bass' refers to the bottom octave (20-40Hz), 'mid-bass' the middle octave (40-8DHz) and 'upper bass' the top octave (80-160Hz).

BI-AMP (sometimes tri-amp). Loudspeakers equipped with separate access terminals to each drive unit can be driven by separate (matching) power amplifiers for each driver.

BI-WIRE (sometimes tri-wire) Loudspeakers with separate access terminals to each drive unit can be driven by separate cable runs between the amp and each driver.

CD-R Recordable CD that cannot be erased, though discs that have not been completely filled can have tracks added until the disc is finalised.

CD-RW Re-writable or re-recordable CD. ompatible with older CD players. CLASS A The operation of an amplifying stage or device in which current always flows, as opposed to Class B, where some of the devices are effectively turned off some of the time Class A tends to have the advantage of offering lower distortion, while Class B tends to generate less heat

CLASS AB Most practical amps operate in Class A for the first fraction of a watt and Class B thereafter.

CLIPPING An amplifier's output waveform is 'clipped' if the volume is advanced too far and no more 'volts' are available to sustain ever-increasing power levels. Distortion increases dramatically at this point

CLOCK Any electronic oscillator that is used to generate a timing reference signal. Used to synchronise the data being taken from a disc

CROSSOVER A simple electrical network which divides the full bandwidth signal received from the power amplifier, apportioning various drive units.

DAB (digital audio broadcasting). Digital radio using frequencies in the 217.5-230MHz band. Broadcasters use varying degrees of compression and offer a broad range of programming.

DAC or Digital-to-Analogue Converter. The stage in any digital component at which incoming digital data is used to reconstruct a recognisable analogue (music) waveform

DOLBY DIGITAL A compressed digital audio format that typically contains five or more entirely discrete channels, eq. 7.1 EX where side and rear channels are used

DOLBY PRO-LOGIC, DPL Forerunner to DD that 'steers' information to the front L/R, centre and mono surround channels via an analogue matrix.

DRIVE UNIT/DRIVER A transducer which converts electrical energy into acoustic energy, eg bass driver, tweeter.

DSD (direct stream digital) The coding format used for SACD offers a frequency response of over 100kHz and a dynamic range over 120dB. It has over four times the data capacity of CD.

DSP (digital signal processor). Integrated circuit that handles the decoding of digital audio streams. In 5.1 processors, it separates the left from right and front from rear, while managing the various bass options

DTS or Digital Theatre Sound, Competitor to Dolby Digital with a reduced 4:1 promises higher quality.

DVD-AUDIO High-resolution variant on DVD offering up to 192kHz bandwidth and 24-bit dynamic range. Discs are compatible with standard DVD players.

ELECTRICAL DIGITAL Any digital connection that uses an electrical cable rather than optical. Includes the balanced ('AES/EBU') interface.

FILTERS Filters are intrinsic to digital audio, both analogue and digital. These are often very sophisticated in design, and in total they probably have rather more to do with the 'personality' of CD player sound than most other factors.

FREQUENCY RESPONSE The range of frequencies, from low to high, which a loudspeaker will reproduce.

IMPEDANCE With speakers, the complex electrical load that a driving it

JITTER An insidious distortion specific to digital audio caused by imprecision in the clock, used to regulate the conversion of data into analogue audio

KBPS (Kilobits per second) Digital data rate measurement system used primarily with highly compressed formats such as MP3, DAB etc. The higher the amount, the better the quality.

LINE LEVEL Practically every modern source component (except phono cartridges) gives an output in the region of 1-2V, referred to as 'line level'. It follows that all inputs labelled 'CD', 'tuner', 'aux' or 'tape are designed for this input level and are thus interchangeable.

LOSSLESS COMPRESSION A method of reducing the number of data bits (density) without corrupting the original description of the musical signal.

LOSSY COMPRESSION Reduction in data density by recourse to a complex psycho-acoustical model that predicts what is, and what is not, 'audible' within a

MIDRANGE The middle three or so octaves of the audio band, where the ear is most sensitive, covering the approximate frequency span from 160Hz up to 3kHz

MP3 (MPEG layer 3) Lossy compression format for digital audio that drastically reduces data content in order to squeeze music through internet connections or allow hundreds of CDs to be stored on a hard disc

OUTPUT IMPEDANCE A measure of resistance to alternating current, a source with low output impedance (below 100 ohms) helps ensure compatibility with most amplifiers, even with long interconnect cables.

PCM (pulse code modulation) The digital coding system for analogue waveforms used for CD and DVD. Quality is limited by the oversample and bit rates used - CD is 44.1kHz/16-bit while DVD-A is capable of 192kHz/24-bit

PRESENCE BAND Critical section of the audio band at the point where midrange and treble meet

QUANTISATION NOISE A form of distortion or noise resulting from errors in the description of the musical signal by the digital code

SACD (Super Audio CD) was launched in 1999 and is a Sony/Philips format based on DSD coding that offers high resolution stereo and multichannel sound from hybrid discs that can also be played on

SAMPLE RATE The rate at which the musical waveform is sliced up into discrete chunks. For CD, this is 44.1kHz or once every 0.023msec. DVD will also support 48kHz and 96kHz.

SENSITIVITY The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per watt (dBi W), measured 1m from the speaker.

THX Standards system for home cinema set-ups which includes amplifier power and speaker dispersion characteristics. The latest THX Ultra 2 standard is more stringent than THX Select.

TOSLINK The proprietary name given by Toshiba to the optical fibre signal transmission system it invented for consumer applications.

TRANSISTOR/MOSFET The two main types of power semiconductor used in solid state amplifier output stages

TREBLE High frequencies, the top end of the audio band, ie above 3kHz. TWEETER Treble driver

TWO/THREE-WAY Loudspeaker crossovers split the signal into two or three frequency bands, a two-way speaker can have more than two drive units

WATTS (per channel) The watt is the unit of electrical power and the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, speaker sensitivity variations can make more difference than amplifier output. WOOFER Bass driver.

DESCRIPTIVE TERMS

AGGRESSIVE Forward and bright sonic character.

AMBIENCE The impression of an acoustical space, such as the performing hall in which a recording was made

ANALYTICAL Highly detailed. ARTICULATE Intelligibility of voice(s) and instruments and the interactions between them

ATTACK The leading edge of a note and the ability of a system to reproduce the attack transients in music

BALANCE Essentially tonal balance, the degree to which one aspect of the sonic spectrum is emphasised above the rest. Also channel balance, the relative level of the left and right stereo channels

BODY Fullness of sound, with particular emphasis on upper bass. Opposite of thin.

BOXY The sound of a loudspeaker with audible cabinet resonances

BRIGHT A sound that emphasises the upper midrange/lower treble

DARK A tonal balance that tilts downwards with increasing frequency. Opposite of bright

DECAY The fadeout of a note, if follows the attack.

DEFINITION (or resolution) The ability of a component to reveal the subtle information that is fundamental to high fidelity sound.

DEPTH (of image) The perception of music being reproduced behind the loudspeakers and inhabiting a reproduction of the acoustic space of the original recording.

DETAIL The most delicate elements of the original sound and those which are the first to disappear with lesser equipment.

DRY A sound that is devoid of 'juice' which usually comes across as fine-grained and lean. Also a loss of reverberation as produced by a damped environment.

DYNAMIC The suggestion of energy and wide dynamic range. Related to perceived speed as well as contrasts in volume both large and small.

EUPHONIC An appealing form of distortion that generally enhances perceived fidelity, often ascribed to the harmonic elaborations of some valve amns

FAST Good reproduction of rapid transients which increase the sense of realism and 'snap'.

FOCUS A strong, precise sense of image projection

FORWARD(NESS) Similar to an aggressive sound, a sense of the image being projected in front of the speakers and of music being forced upon the

GRAINY A slightly raw, exposed sound which lacks finesse.

GRIP A sense of control and sturdiness in the bass.

GRUNT See grip. HARD Uncomfortable, forward, aggressive sound with a metallic

HARSH Grating, abrasive.

tinge.

IMAGING (stereo) The sense that a voice or instrument is in a particular place in the room

JUICY Sound that has joie de vivre energy and life.

LOW-LEVEL DETAIL The quietest sounds in a recording

MUSICAL or musicality. A sense of cohesion and subjective 'rightness' in

NATURALNESS Realism. **OPAQUE** Unclear Tacking transparency.

OPEN Sound which has height and 'air', relates to clean upper midrange and treble

PACE Often associated with rhythm, a strong sense of timing and beat. PRESENCE A sense of an

instrument or voice occupying a place in the listening room

PRESENCE RANGE The upper

SEISMIC Very low bass that you feel rather than hear.

SIBILANCE An emphasis of the 'S' sound, often heard on radio SNAP A system with good speed and transient response can deliver the immediacy or 'snap' of live

SPEED A fast system with good pace gives the impression of being right on the money in its timing. STURDY Solid, powerful, robust

THICK A lack of articulation and clarity in the bass.

THIN Bass light

sound

TIMBRE The tonal character of an instrument

TIMING A sense of precision in tempo. See speed and pace

TRANSIENT The leading edge of a percussive sound. Good transient response makes the sound as a whole more live and realistic.

TRANSPARENCY, TRANSPARENT

A hear-through quality that is akin to clarity and reveals all aspects of detail

TWEAK To tune a system or component in an attempt to get the best performance from it.

TWEAKER Someone who enjoys this process.

VEILED Loss of detail due to limited transparency.

WARM A fullness in the lower midrange/upper bass.

WEIGHT A sense of substance and underpinning produced by deep, controlled bass

READER CLASSIFIED

Welcome to *Hi-Fi Choice Reader Classified*, the UK's first and best <u>free</u> private ads service for second hand hi-fi. These pages a must-read if you're thinking about buying used kit, and if you want to sell something it's definitely the place to be. It's <u>free</u> to place an advertisement – simply submit your ad of up to 30 words,

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FOR SALE

ACCUPHASE T108 tuner, one of the best around, excellent condition, boxed 01332 843758 (Derbys).

ARCAM AVR 300 AV Receiver, silver, brand new, boxed, unopened, £750 no offers. Val 01908 661094 (Milton Keynes)

ARCAM DV79 DVD player, HDMI interface, black, mint, boxed, £495. Ixos 105 digital interconnect, custom made, 6m, WBT locking RCA plugs, £45 01772 745553 (Lancs)

ATACAMA R724 speaker stands, £80. High-quality Nordost Blue Heaven interconect, excellent, £65. Andrew 01484 427426 (W Yorks).

AUDIOLAB 8000A integrated amplifier, good working order, boxed, £100. Ted, 020 8449 9648 (N London)

AUDIOLAB 8000S amp, £250. Rotel RQ970BX phono,

B&W DM601 S3 speakers and Apollo stands. All VG, bargain at £100. 07917 058915 (Oxon).

BORDER PATROL 300B SE power amplifier, £1,700. Border Patrol Control Unit line stage pre-amplifier, £1,400. Both items boxed and in superb condition. 0141 6411371 (Glasgow).

CONSONANCE 2.2 Reference CD Player, RCA Valve and direct balance outputs. Spotless cherry wood and chrome finish. Philips pro transport. Boxed, instructions (£1,295) £675ono. Call Cliff on 01634 842874 (Kent).

CYRUS DVD8-Q plus PSX-R Quartz Silver Cyrus DVD8 Q with silver PSX-R. Upgaded QDAC fitted. Immaculate condition and will include spare DAC. £600 07734 325260 (Glasgow).

DENON PMA-700AE integrated amp, £120. Denon DCD-700AE CD player, £120, both boxed, manuals (mint).

EXPOSURE XVII preamp and XVIII mono amps, recently overhauled and updated by Exposure, £600. Bryston BP20 preamp with MM/MC phono, £600. All boxed and in very good condition.

O151 334 1964 (Merseyside).

JEFF ROWLAND CONCERTO

& 501s. Lovely, compact prepower 500-watt combo – superb sounding with tremendous build. Comapct and beautiful, in excellent condition, £5,700ono. j_rooprah2001@yahoo.co.uk (Middx).

KEF IQ9 floorstanders, maple. boxed, unused, still under warranty, (£800) £480. 020 8529 6764 or 07920 124288 (London)

KEF Q35 speakers, UniQ technology and performance at a bargain price. Wonderful imagery, depth and coherence. Totally reliable. Good condition.

WANTED

CAN ANYONE HELP? Wanted. Small handheld CB transceiver with flexible aerial. 07833 751800 (Lancs).

CELESTION SL6, 600 or 100

loudspeakers, good condition, unmarked preferred, good price paid, private buyer, will collect. 01946 862815 (Cumbria).

GRAHAM 2.2 ceramic armwand wanted, in good condition. Contact irvose@yahoo.com.

MERIDIAN 502 or similar preamp wanted. Must have remote control. Also want Quad 405. 01277 219639 (Essex)

PIONEER A300R precision amplifier. 1970's Sugden A21a. Onyx OA21, Naim Nait amp. Inca Tech Claymore. Sonneteer Campion amp. 07810 103908 (West Yorkshire).

WANTED tonearm lead with

straight DIN plug. Cardas,
Transparent, Nordost or similar.
Quality headphones; AKG, Beyer,
Grado etc. 07973 220663 (Leics)
WANTED top-quality separates
and complete systems – Naim,
Linn, Cyrus, Meridian, etc. Fast,
friendly response and willing to
travel/pay cash. Please call John
on: 0781 5892458.



Above: Consonance 2.2 Reference CD player

£40. Soundstyle hi-fi separates stand, £100. All in very good condition, buyer to collect. 01603 483274 (Norfolk).

AUDIO PHYSIC TEMPO

speakers, mint condition, boxed, cherry finish, (£2,195) £1,300. 01491 614325 (Oxon)

AUROUSAL A1 loudspeakers, piano black, as new condition, boxed. Bargain at £275. 01903 774255 (Sussex).

Castle Richmond 3i standmount speakers, (£320) £150. Boxed, oak, excellent condition, will post. 01772 468116 (Lancs). **DALI IKON 6** loudspeakers, new

DALI IKON 6 loudspeakers, new and unused, £375. 01634 233137 after 7pm (Kent).

EXPOSURE 2010S integrated amp, four months old, five hours of use only, as new, user gone upmarket, £300. 01226 211234 (\$ Yorks)

BUYING TIPS

Buying second-hand can be a great way to pick up a bargain. A formerly expensive second-hand component might well prove a better long-term bet than a brand-new product if the price is right.

Do some research on which brands have a good service back-up, so if something does go wrong, you can get it fixed. Unless you purchase from a dealer, you're unlikely to get any warranty, so it's up to you to ensure the fitness of any gear that you buy.

Usually, speakers should be less prone to breakdown than amps, and amps should be more reliable than CD players. But any abused component could be trouble – have a proper dem, and judge the seller as well as the goods!

FOR SALE

Black ash finish floorstanders. £90. 01395 264868 (Devon) **KRELL KAV400XI** Integrated amplifier, silver, UK model, box, manual, remote, looks and sounds superb, (£2,800ish) £1,575. Tel Stephen 01462 680262 (Herts)

KUDOS S50 loudspeaker stands, 24-inch-high single-column design with triangular base plate, black finish, rated a Best Buy, £40. 0161 432 3852 (Cheshire)

LINN GENKI CD player, grey case, excellent condition with Linn interconnects and original packaging, £550ono.
0114 2507866 (Sheffield)

LINN KANS MK 1 £150. Rega EL8, £125. Marantz CD62SE, £75. Also, Cambridge CD4SE CD player wanted. 07810 103908 (E. Yorks)

LOWTHER PM 6 pair of drive units. Buyer arranges collection or delivery. 0191 214 0473 (Newcastle upon Tyne).

MANA SOUND BASES for Naim SBLs or similar size, £100. Musicworks six-way mains megablock + 3 IEC equipment leads, 1.5m each, £200. All boxed. 01722 334694 (Wilts)

MARANTZ CD17 black, £450. Musical Fidelity amp with separate power supply, £350. Nordost Solar Wind interconnect, £45. Owned from new, excellent. 07787 166713 (London).

MARANTZ DV6001 upscaling DVD player 1080p, boxed, unopened, (£350) selling for £250. 01323 461432 (East Sussex) MARANTZ SIGNATURE CD

player CD17, PM17 amp, ST17 tuner, Tannoy R3 speakers, five-tier Sound Organisation stand, van de Hul interconnects, Quad Profile speaker wire, £1,000. evening only 07872 334814 (W. Yorkshire)

MERIDIAN 507 CD player in mint condition, MSR remote, original packaging. £600 delivered to anywhere in Europe or £570 local pick-up near Paris. jonathan.kenyon@free.fr or Tel: +33 607 270 871 (France).

MICHELL QC power supply (for Gyrodec or Orbe with AC motor). £100. Robert 07900 320318 (London/Kent)

MUSICAL FIDELITY A308CR

pre and power, excellent condition, boxed, manuals etc. Fantastic sound. £3,900 new, sell for £1,950ono including interconnects.

Andy 0115 912 6424 (Notts).

MUSICAL FIDELITY NU-VISTA

3D CD player, mint condition owned from new, boxed with manuals, £1,500. John 01303 863424 (Kent).

MUSICAL FIDELITY NU-VISTA

M3 Super Integrated Amplifier. Original valves, certificate of authenticity, manual and boxes. Good condition, can demonstrate, £1,450ono, plus postage. Contact Niall on 0790 607 1024 (Cardiff).

NAIM NAP 250 power amplifier, olive case in original packaging, excellent condition with Russ Andrews Power Kord but no interconnects, £750ono. 0114 2507866 (Sheffield)

NORDOST BLUE HEAVEN

interconnect for sale, excellent transparency and attack, £60. 01454 427426 (W. Yorks).

NORDOST SPM REFERENCE

interconnects, XLR, boxed and unused, £450. Linn Karin preamp, remote, mint, £375. KEF Kube 200 mint, instructions etc, £75 003531 2954076 (Dublin)

PMC FB1+ speakers, superb sound. Natural Ash finish, one owner. Mint condition and all original packaging, £750. 029 2031 6934 (Cardiff)

PURE SOUND A30 valve amplifier, as new, boxed (£1,195) £760. Weight 20kg, so buyer collects. 01491 614325 (Oxon).

PRIMARE 30.1 amplifier, excellent cond. boxed with instructions, £450. KEF 104/2 Reference Loudspeakers, v.g.c., with Kube and instructions, £100. (01255) 675115. (Essex)

QUAD ESL 63 electrostatic loudspeakers for sale, tub radiators gone in each, offers around £200 for pair, buyer collects. 01634 631322 (Devon).

QUAD 405-2 amplifier, upgrade by Lucid Designs, mint, £350. PMC TB-2 speakers with stands, as new, boxed, £450. AVC amp, KT88s, as new, £395. 01487 814015 (Cambs)

QUAD CDP CD player, 15 months old, excellent condition, demo if required £525 07779 615774 (Derby).

REVOX G36 valve quarter track 10.5in cap tape recorder. Replacement capstan assembly, hand book etc. fine example of machine £300. Leak valve

Troughline 3 FM stereo tuner £50. 01782 256087 or mobile 07791 048621 (Stoke-on-Trent).

ROTEL RCD-06 CD player. Latest model, boxed, immaculate, cost £350 new, bargain at £150. lee-t@lycos.co.uk 01384 412234 (W. Mids)

SOMETHING SOLID speaker stands. Fully welded construction, black, 63cm height, mass filled, spiked feet, photo available. Ring for other dimensions. Quality stands. VGC, £80 01582 423791 (Beds).

SONY SCD-555ES Super Audio CD player, excellent condition, boxed, £250 ono. Bryan 07866 3670060 or 01302 327513 (Doncaster)

SONY SCD-XA3000 ES, Super

Audio CD player, black, excellent condition, 2005, £350, any trial 01302 538027 (Doncaster). **SOWTER OUTPUT** transformers 9593, 9066t, 9508, 9521 (mains). Two of each and one mains. High-spec. Excellent base extension. Suitable for

mains. High-spec. Excellent bass extension. Suitable for parallel push-pull. 07895 197571. saselec2000@yahoo.co.uk (Cambridge).

SPENDOR CLASSIC Series SP2/3E speakers, rosewood, (£2,000) £650 ono. Suitable Acoustic Energy mass-loaded stands available, (£600) £200. QED Genesis Silver Spiral speaker cable 5m+7m lengths. (£400) £150, 023 8073 8935 (Hants).

TEAC A450 cassette deck. Very rare, never used, boxed. Battleship build quality. Offers over £250. 0161 865 9607 (Manchester).

THETA INTREPID five-channel amp, rarely availale, £3,000. Martin 020 7845 1193 (SW London).

THORENS 160BC MK II

turntable, Hadcock 228 unipivot super arm, Ortofon M20S cartridge. Boxed, one owner, £225. Marantz CD60SE, £70, Rotel RCD-965BX discrete CD player, £85. All excellent condition. 01722 334694 (Wilts)

YAMAHA RXV630 RDS A/V amp, excellent, boxed, £100. 01323 461432 (East Sussex).

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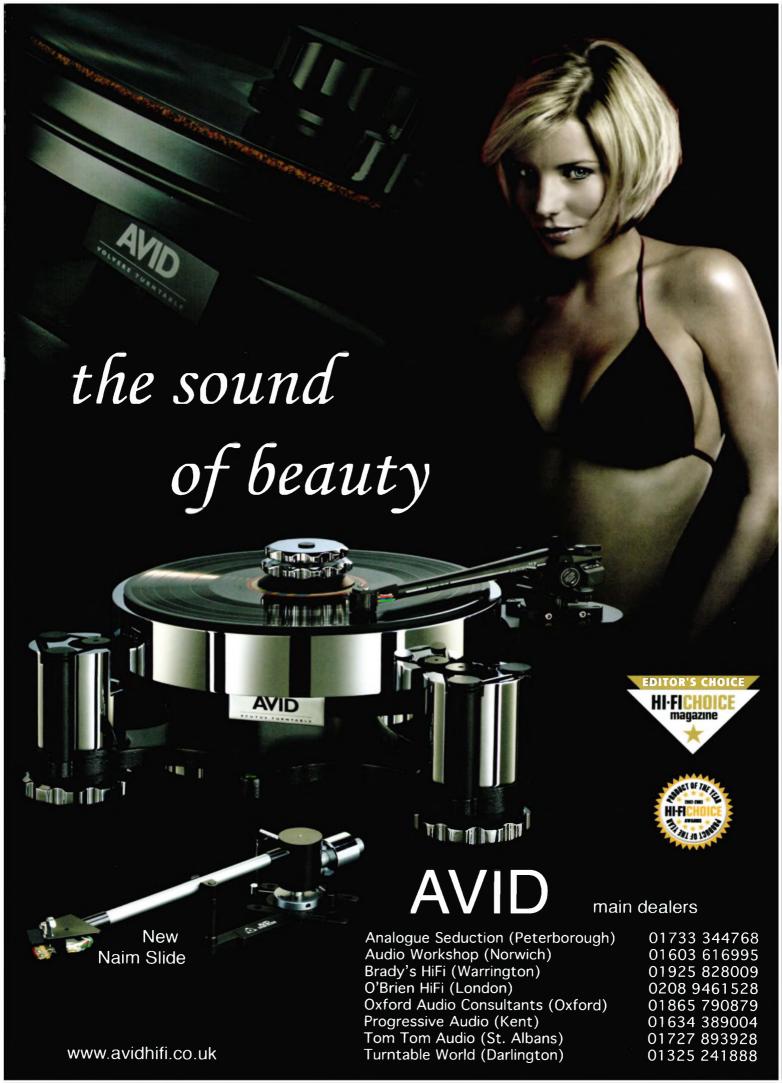
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