SEPTEMBER 2013 WWW.HIFINEWS.CO.UK

# THE HOME OF REAL HI-FI THE HOME OF REAL HI-FI CONTROLLED THE HOME OF REAL HI-FI CON

& Record Review

# LEAN MACHINE

**World Exclusive Devialet's stunning 170 amplifier** 

'Hooray for Hollywood'

Film and the birth of hi-fi sound, p16



HEAD HUNTERS



McIntosh D100 Mac's new DAC/preamp

B&W CM10

UK's top £3k floorstander?

T+A PA 3000 HV

The 'High Voltage' amplifier

**Group Test** 

Stand & deliver
Five sub-£2k mini-monitors

'The world's oldest rock 'n' roll shrine' Classic Venues, Red Rocks, p78



Kandid talk Linn's flagship MC Philips Fidelio New L2 headphones

- PLUS 18 pages of music reviews and features VINTAGE REVIEW Sony's TA-1120A 'solid-state' amp
- OPINION 11 pages of letters and comment SHOW BLOG We report from Premium Hi-Fi in Moscow
- AUDIO MILESTONE Arcam's Alpha 10 DAB tuner
   READERS' CLASSIFIEDS Hi-fi bargains galore



## MUSICAL FIDELITY

### V90-DAC | DIGITAL ANALOGUE CONVERTER

"The V90-DAC is an upsampling DAC of outstanding quality"



The V90-DAC is the perfect way to upgrade the performance of a wide range of equipment. Housed in a solid yet discreet case, it unites sleek design and technical excellence to offer unrivalled musical enjoyment.







# SEP/13

**RIGHT:** Serious sounds when you're strapped for space - see our standmount group test on p41



ABOVE: T+A's ultimate 'High Voltage' integrated amplifier, p52



VINYL: Herbie Hancock's Head Hunters is this month's Vinyl Icon (p72) while Steve Sutherland reveals his role in the invention of Britpop as Gorillaz' Plastic Beach is reissued on 180g vinyl (p70)

RIGHT: Hi-Fi News & RR is the exclusive UK representative of EISA's Audio and Home Theatre panels. Paul Miller is **EISA's Audio and HT Panel Manager** 



here are occasions when you must take courage from your convictions, and experience, and stick your neck out. Ok, so I'm talking about presaging the 'next big thing' in audio rather than reporting from a war zone where the risks are undeniably more hazardous. Nevertheless, over three years ago, when we featured a disarmingly stylish amplifier on our front cover from a French company no-one had heard of, employing a hybrid of technologies likely to enrage the less progressive audiophile, we were, in our own moderate way, taking something of a risk. That amplifier was the

D-Premier and the company was Devialet, a brand now sufficiently world famous that even the US press finally declared it a 'revolution'. How reassuring to have confirmed what we had said three years before...

Of course, the fact that every review in Hi-Fi News is backed up by a world-class test regime mitigates much of the uncertainty that must surely give pause to the hi-fi fanzines that remain. Indeed, much of what we strive to offer the informed enthusiast – including our USB and network audio lab tests - is not available anywhere else in the world. And where it is, quite often we've supplied it!



All of which is a roundabout way of saying that *Hi-Fi News* is, once again, at the vanguard of the amplifier revolution with the world exclusive review of Devialet's second generation ADH amplifier – the elegantly titled 170. Based on the core technology of the D-Premier, the 170 now includes USB, wired and wireless network

### *'Hi-Fi News* remains at the vanguard of the amplifier revolution'

connections at an even lower price. I'll pause myself now and let you turn to p22 for our in-depth review.

But before you do, and while I'm on the subject of next-gen technology, I must tell you about the new digital edition of Hi-Fi News which, in addition to our paper and online versions, can now be downloaded and then enjoyed at your leisure without the internet connection. Please see p82 for more details.

**PAUL MILLER EDITOR** 

#### HI-FI NEWS' EXPERT LINE UP: THE FINEST MINDS IN AUDIO JOURNALISM BRING THEIR EXPERIENCE TO BEAR ON ALL AREAS OF HI-FI & MUSIC



BARRY FOX Investigative journalist supreme, Barry is the first with news of the latest developments in hi-fi and music technologies



JOHN BAMFORD JB brings huge industry experience, a penchant for massive speakers and a love of hi-res audio in all its diverse guises



KEN KESSLER is currently our Senior Contributing Editor and almost singularly responsible for the renaissance in valves and 'vintage hi-fi'



KEITH HOWARD has written about hi-fi for 30 years, and edited Hi-Fi Answers for nine. KH performs our speaker and headphone lab tests



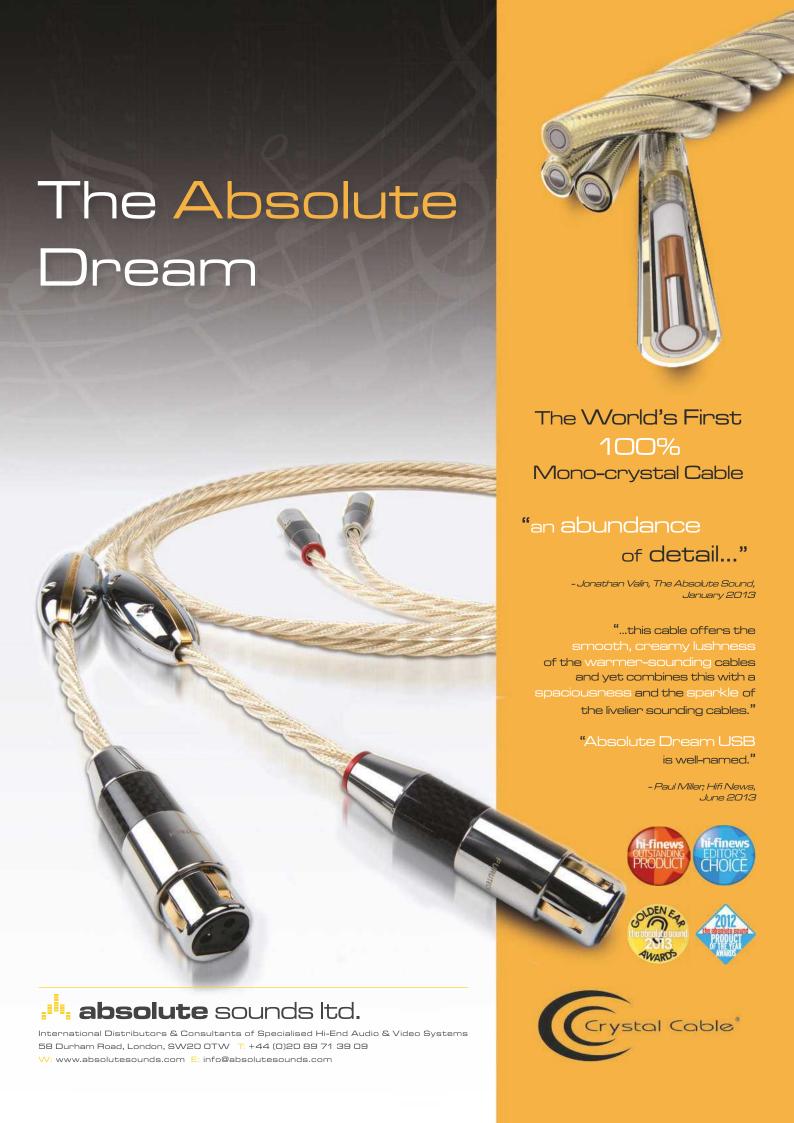
STEVE HARRIS Former Editor of this very title from 1986 through to 2005. A lifetime in audio and a love of jazz makes Steve a goldmine



JOHN HOWES Foremost collector and archivist of vintage hi-fi, famous for the UK's bi-annual Audio Jumble, John shares his experience with HFN



STEVE SUTHERLAND Worked on Melody Maker and then edited NME from 1992-2000. the Britpop years. Steve brings a unique slant to our Vinyl Release pages



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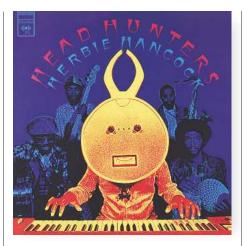
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LEFT: The aspirational amp 'we might actually one day be able to afford...' For Chord's £9090 SPM 1400 Mkll monoblock, see p60

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ABOVE: For our Group Test of £1350-£2000 standmount loudspeakers, see p41



#### **WS** We reveal the latest products and upcoming events ////



# **New Naims**

The celebrations around Naim Audio's 40th anniversary continue to resonate, not least in the revamping of its threestrong Nait amplifier range.

The rated power output of the new £925 Nait 5si has been improved by 10W to 60W over the older 5i model just as the 70W £1595 Nait XS 2 is seen to better the original 60W Nait XS. Both amps benefit from improved component selection, a revised PCB layout

and a unity gain volume bypass for integration into AV systems. The XS 2 also features a new Class A headphone amp to support this rapidly growing sector of the hi-fi market.

The top-of-range £2750 Supernait 2 is still rated at 80W/80hm and has the new headphone amp but loses its original DAC stage in favour of the SuperUniti all-in-one player. Naim Audio, 01722 426 600; www.naimaudio.com

# X-Factor

Drawing on much of the technology deployed in its flagship DSX1000 streamer [HFN May '13], Chord is releasing a sleeker model dubbed the CodeX. Based around the same proven StreamUnlimited UPnP/DLNA network audio streaming client, the CodeX also supports DSD128 and DXD (24-bit/ 384kHz LPCM) files through its USB input. The player's DAC section borrows from

the QuteHD with digital data decoding, clocking, WTA filtering and the fifthgeneration Pulse Array DAC technology all executed via an FPGA. Supported file types include MP3, WMA, WAV, AAC, ALAC and FLAC while control is offered via IR remote, Chord's iPad/iPod Touch/iPhone app or via the on-board jog-wheel. **Chord Electronics Ltd,** 01622 721444: www.chordelectronics.co.uk



### Flab-free DAC

'The V90-DAC is like an F1 racing car - no flab' suggests Musical Fidelity in its promotional literature for this new £199 outboard DAC. The compact V90-DAC is powered via a wall plug adapter and is based around a 'state-ofthe-art 32-bit/192kHz converter' although the asynchronous (driverless) USB input will only accept files up to 24-bit/96kHz. There are also three conventional S/PDIF inputs, two optical and one coaxial, the latter presumably servicing 24-bit/192kHz digital data.

Musical Fidelity Ltd, 020 8900 2866; www.musicalfidelity.com



#### ATC ALL-IN-ONE

Versatile all-in-one CD player/DAC/ amplifier solutions remain popular and ATC is entering the top end of the market with its £2975 SIACD model. Based around a 100W Class A/B amp, the SIACD includes a CD drive and coaxial/optical digital inputs alongside a legacy 48kHz USB input. www.atcloudspeakers.co.uk

#### RA POWERBAR

Starting at £89 for the four-socket version, up to £149 for the eightsocket strip with built-in SuperClamp, Russ Andrew's Powerbar is aimed at users looking for their first dedicated mains extension block. For a 60-day trial, see www.russandrews.com

### Birth of Proteus

Any new cartridge from the pen of Seiji Yoshioka of Transfiguration is newsworthy, and this £3750 flagship doubly so. As with its earlier MCs, the Proteus employs a yokeless generator with two ring magnets creating a tightly focused field either side of its 5N silver coils. Furthermore these low impedance coils are wound onto a fine mu-metal core that is claimed to 'increase sensitivity by 35dB'. The 0.2mV output remains on the low side, however. Audio Reference, 01252 702705; www.audioreference.co.uk

### Belles goes digital

REFERENCE RANGE PREAMP INCLUDES DAC AND PHONO STAGE



Belles, the amplifier brand of US Power Modules Inc, has announced its first digitallyequipped product, the £3695 A-10 preamplifier. Alongside its five line inputs (one balanced on XLRs) and dual MM/MC phono stage, the A-10 preamp

offers both S/PDIF (coaxial but no optical) and USB digital inputs. The DAC stage is based around the popular Wolfson WM8740 24-bit/192kHz IC. Power Modules Inc. 0203 5442338: www. nunudistribution.co.uk

## ARC's beefy integrated



New models are arriving thick and fast from Audio Research and the £7500 VSi75 integrated amp is just the latest. Inspired by the REF75 power amplifier [HFN Nov '12] and sharing the same output transformers and coupling caps, the VSi75 is offered as a bigger brother to the VSi60 integrated. Both use four KT120 output tubes and two 6H30 driver valves, the VSi75 boasting 50% more power. Absolute Sounds, 020 8971 3909; www.absolutesounds.com

## opo's silver lining

HFN's favourite universal BD player, the Oppo BDP-105EU [HFN Jan '13] is also now to be offered in a silver finish. The specification and £999 price

for this CD/SACD/DVD/BD player will remain unchanged. The BDP-103EU stays in black only. Oppo BD UK Ltd, 0845 060 9395; www.oppo-bluray.co.uk



### Mac's jolly green deck

Already featured in our CES Show Report [HFN Mar '13], McIntosh's new MT5 turntable, complete with a custom-designed alloy tonearm and Sumiko Blue Point 2 high output moving-coil, is now available in the UK at £7495. All components are factory-adjusted so that lucky owners can get up-to-speed as swiftly as possible (three speeds, actually, as the MT5 supports 33.3, 45 and 78rpm). The green illuminated platter is fashioned from an acrylic material, supported on a magnetically-damped bearing assembly and beltdriven via a Swiss-made DC motor. Speed trim is also included. McIntosh Laboratory, 01202 911886;

www.mcintoshlabs.com; www.jordanacoustics.co.uk



#### HI-FI NEWS? JUST ASK...

If you can't always find a copy of this magazine, help is at hand! Complete this form, hand it in at your local store and they'll arrange for a copy of each issue to be reserved for you. Some stores may even be able to arrange for it to be delivered to your home. Just ask!

Please reserve/deliver my copy of Hi-fi News on a regular basis, starting with issue... First name Address. Postcode.



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## **Upcoming Events**

06-11 SEP IFA Consumer Electronics Unlimited, Messe-Berlin,

Germany; http://b2b.ifa-berlin.com/en/

28-29 SEP Salon Hi-Fi/Home Cinema, Hôtel Novotel Paris Tour

Eiffel, France; www.salonhifi.com

**06 OCT** Audio Jumble 2013, The Angel Leisure Centre,

Tonbridge, Kent; www.audiojumble.co.uk The Hi-Fi Show 2013, Beaumont Estate, Windsor;

www.hifinews.co.uk/show

25-26 OCT

# Premium Hi-Fi, Moscow

Words & pictures: Mikhail Borzenkov



With more than 700 companies in attendance and 150,000 visitors, the four-day Premium Hi-Fi show can rightly claim to be the largest electronics exhibition in Eastern Europe. It is divided into two parts: the CEP EXPO held in the huge exhibition halls of Moscow's Crocus Expo centre where massmarket products are shown, and the Hi-Fi & High-End Show in the Aquarium hotel nearby. Here premium brands demonstrate components in smaller rooms

while the seven most expensive systems were presented in a concert hall located on the hotel's top floor.

This year was the first to see 'smart home' products demonstrated, but while certainly clever in their implementation, none was able to rival traditional hi-fi when it came to sheer sound. From the stands hosted by the Chinese production companies to the VIP lounge, here we bring you the best of Moscow 2013...

In the room of local distributor Barnsly, valve amps from German company Octave were used with a Hanss Acoustics T-30 turntable to drive a pair of Audiovector's flagship R11 Arrete speakers. The phono stage was a Whest PS.30R and the cartridge an AT-33 EV from Audio-Technica. www.audiovector.com



Mikhail Borzenkov is the Editor-In-Chief of Stereo & Video, which is the oldest hi-fi magazine in Russia and one of the most popular. A monthly publication running to 200 full-colour pages, it was first published in 1994 and offers subjective reviews as well as lab tests, conducted at the magazine's own facilities. Originally a TV journalist, Mikhail also hosts a programme on the Russian Culture channel which sees him discuss modern cinema. www.stereo.ru



Transrotor recently added two new turntables to its catalogue – the Rossini and Crescendo – the latter shown in Russia for the first time. Weighing more than 25kg, it's the most affordable deck from the German company to feature its Transrotor Magnet Drive technology. www.transrotor.de



One system that drew a constant stream of visitors was this all-Naim set-up. A CD-555 CD player sits atop the left rack while an NDS network player using an iPad takes pride of place atop the right rack. Speakers were the Ovator S-400s. www.naimaudio.com

#### **VBLOG** Sights and sounds from around the globe

Clearaudio showed its new Master Innovation turntable (top of left rack) featuring technology from its flagship Statement model. The deck features a no-contact drive system, which sees the main and upper platters floating on a magnetic field above the drive platter. The electronics used were from Teac's Distinction series, which echoes the looks of the more costly Esoteric line. The AI 3000 integrated (bottom of left rack) had no problem driving the B&W 800 series speakers. www.clearaudio.de, www.teac.com





A real show-stopper was this multichannel system from McIntosh, the XRT1K speakers sporting no fewer than 28 tweeters. They were driven by MC2301 valve monoblocks said to be capable of delivering up to 300W into 8, 4 or 20hm. A real surprise came in the form of a new USB DAC/ digital preamp. Dubbed the D100, it fed hi-res tracks from a laptop to Sennheiser HD650 headphones [see p32]. www.mcintoshlabs.com



We'd give living space to most speakers produced by Italian manufacturer Rosso Fiorentino. Here the standmount Fiesole (left of picture), with its hand treated soft dome and ribbon super tweeter, is accompanied by the new flagship floorstander Siena (far right). This features a closed-box bass section, two aluminum cone woofers and an Italian leather finish. The Volterra can be seen centre. www.rossofiorentino.com

Here a pair of KEF Reference Series speakers were being driven by Bob Carver Black Beauty 305 power amps. Said to deliver up to 290W into 20hm, these little American power houses proved a good match for the KEFs, making for a powerful but gentle sound that certainly impressed many a visitor to the room. www.bobcarver.com



A rare combination: Montana SPI speakers are used with valve amps and a phono stage from Canor plus a new Storm deck from Acoustic Signature. The system also featured a new digital source component from Aesthetix Romulus comprising a Teac CD transport, USB DAC and tube output stage in one package. www.aesthetix.net, www.acoustic-signature.com.



# L-ite Plus 5.1 system



For over 50 years Quad Electroacoustics has produced the most accurate and neutral loundspeakers in the world. The L-ite Plus Series represents the latest evolution of the highly acclaimed Quad electrodynamic series. Redesigned and re-engineered using the most up to date materials and processes, these new evocations of our design philosophy achieve levels of detail, clarity and perspective that will be a revelation and source of continuing delight to all music lovers.

L-ite Plus loudspeakers may be used in Stereo or Home Theatre systems or in conjunction with components from the Quad L range in multi-channel applications. However you use them, the style is impeccably and uniquely Quad and one which will be welcomed by audiophiles who value the clear natural sound that is the hallmark of all Quad products.

#### **DWBLOG** Sights and sounds from around the globe

While the colourful Onkyo Colibrino micro systems and ILunar docking stations (bottom of display rack) certainly caught the eye – the latter promising '3D sound' thanks to drivers spread around the curved chassis – the real news was the company's ES-FC300 headphones. Best known for its AV receivers, headphones mark a new departure for the company. www.onkyo.com



Teac's new mid-sized 501 series of components includes a stereo integrated amp, headphone amp, a DSD-capable DAC and CD player. Beautiful retro styling, high class metal bodies and outstanding build quality makes for a great combination. They also see the company taking a serious step into real-world hi-fi. www.teac.com





ELAC speakers, Hegel DACs and amplifiers, Cambridge Audio CD-spinners and network players... but the Qv2 AC Line Harmonizer from Nordost was the stand-out product here. A simple-looking cylindrical plug, it really seemed to change the sound when added to the power socket. www.nordost.com



Guru speakers from Sweden are new to the Russian market. They come in a variety of colours, sport aluminium top plates and promise to deliver sound as uncolored as is possible to achieve from a passive home monitor (Guru has a pro-line of active monitors as well). The 'Helmholtz Resonator' enclosures also have their appeal. www.guruaudio.com

A new series of sturdy, classic looking CD/SACD players and stereo integrated amplifiers from Pioneer could be also heard, though the N-50 and N-70 media players and A-50 and A-70 Class D amps were the stars of this show. We were taken by their junior brother, the A-30 - a humble Class AB affair whose sound was truly addictive. www.pioneer.eu



Harman Group manager Michael Pyle, who is responsible for the promotion of Mark Levinson, Revel, Lexicon and JBL Synthesis in Russia, told us about a new Performa3 line from Revel, featuring a completely new tweeter and other components reworked to new specifications. He also revealed that the top-of-the-line Mark Levinson 52 preamp is due soon. www.revelspeakers.com, www.marklevinson.com



#### **BLOG** Sights and sounds from around the globe /



Accustic Arts' Streamer ES is a UPnP media player/internet tuner with support for playback via flash-drives. It handles FLAC up to 24-bit/192kHz, features gapless playback and fast/forward functions and can be controlled apps. Last but not least every component used made in Germany.



Mark Levinson products have been absent from the Moscow show for several years but were back in force in the form of the No512 SACD player, No52 preamp (a two-chassis construction in a bid to isolate the control block from the audio circuits) and mighty No53 Reference Mono power amps (the first switching power designs from the marque). Speakers were the Revel F208s. www.marklevinson.com



Russian tube amplification and acoustics specialist Next Sound came up with an unusual system. Vintage professional JBL 43 series speakers were driven by proprietary vacuum tube monoblock amplifiers and an active crossover. In terms of sound it was perhaps easily the best rock-oriented system of the show. www.next-sound.ru

Probably one of the most anticipated premiers at the event: the ultra high-end NHB-458 mono power amps from darTZeel paired with Montana WAS speakers. Very expensive and very ambitious, the system was well worth hearing, even if we had doubts that the Jadis digital source was the best choice. www.dartzeel.com





Primare showed its BD32 universal Blu-ray player hooked up to a PRE32/A32 pre/power, SPA22 AV amplifier and DAC30 digital-to-analogue converter. Sadly the company's new 60-series didn't make it to the show but the NP30 network player did, if only for a day. Not yet available, it was good to catch a glance of what appears on paper to be a promising release. www.primare.net

Below can be seen the Avantera Plus speakers from Audio Physic with rear-tilting baffles and side-firing woofers. Paired with Accustic Arts amplifiers the sound was smooth yet wonderfully precise. The turntable was a Spiral Groove SG2 while an FL phono stage from Audia Flight completed the system. www.audiophysic.com



#### **WBLOG** Sights and sounds from around the globe





Thirty years ago, the former Soviet VEF Radiotehnika RRR brand symbolised the best quality and sound available in the USSR. Now based in Riga, its recent speakers, with their 3- and 4-way designs, wide front baffle and adjustable crossovers, echo late '80s models, immediately promoting waves of nostalgia among Russian music lovers. www.rrr.lv

Onkyo can't be accused of hiding anything from its customers. Here its flagship TX-NR5010 AV receiver had its top plate removed so that everyone could see that it genuinely has no fewer than nine channels of amplification. Also of note is that it has an active (digital) crossover built in, enabling it to drive a front pair of speakers, avoiding their passive crossovers. www.onkyo.com



The Odeon No 38 horn speakers from Germany are not brand new, but they remain extremely popular with hi-fi show goers. Weighing 125kg each, they have a claimed sensitivity of 96dB and could be driven easily by the Jadis valve amps used here. A French Verdier turntable served as the only source for the system, giving the whole set-up real appeal to those who like to break with the norm. www. odeon-audio.com



Here Teac's new 501 range has a full audio system built around it, though you can simply use the 501DA integrated amplifier. Offering 24-bit/192kHz high resolution content streaming via USB, the 501DA can easily drive quite demanding speakers as it is said to deliver 90W per channel into 4ohm thanks to its use of Class D ABLETEC modules from Norway. Bowers & Wilkins CM8 floorstanders completed the system. www.teac.com

Aside from Marantz's new SA-11S3 SACD player and NA-11S1 network player [see p14], Ken Ishiwata showed an entirely new product: an iPod/iPhone/iPad dock called the Consolette. It supports AirPlay, wireless and wired Ethernet connections, plays FLAC files and has a real wood veneered rear panel. It also has a built-in tuner with a '60s style jog-wheel. www.marantz.com



#### **VBLOG** Sights and sounds from around the globe //////



If you're a movie freak with modestly deep pockets then your dream of high-end cinema sound at home may come true with the Anthem Statement system. The Anthem D2v 3D processor packs the latest Sigma Design video processing engine along with eight HDMI inputs. Add the five-channel A5 power amplifier kicking out a claimed 5x180W plus the Paradigm Signature S6 full-range speakers and you've a set-up to really rattle the rafters. www.anthemav.com



T+A export manager Jens Weltke told us about the company's new HV Series media player and amp [see p52], which was first shown at this year's CES. According to Jens, the solid state amp aims to mimic the sound of a valve design. The idea is to have the transistor output stage working at a higher voltage, hence the HV (High Voltage) monicker. www.taelektroakustik.de



while inside the soundbar can be found two tweeters, two woofers and two passive radiators. www.paradigm.com

Paradigm's Soundtrack System comprises a powered soundbar with a double-ported wireless subwoofer and aims to meet the needs of those looking for a compact home cinema speaker system. Class D amps are used,

Yamaha is well known for its excellent AV receivers, speakers, musical instruments and even motorbikes, but this year it made a bold move into the mobile accessory market with a new line of headphones. Coming in a wide choice of colours and a range of prices, the flagship HPH-Pro 500 models will set you back 500 Euros. www.yamaha.com





Marantz brand ambassador Ken Ishiwata presented a new network player/DAC. Designed fully in-house, the NA-11S1 fills a hole in the company's reference product line and includes DSD support [see HFN Jul '13]. At the listening session, foobar2000 was the media server software of choice

www.marantz.com

# Next month

# The ultimate high-end hi-fi experience

very enthusiast dreams of the chance to enjoy the sound of the world's best hi-fi systems, presented by the industry's most respected professionals. That dream will become a reality at the inaugural Hi-Fi Show, brought to you by the trusted audiophiles behind Hi-Fi News & Record Review and Hi-Fi Choice magazines.

In a refreshing departure from the conventional show format, visitors will be treated to a series of memorable high-end audio experiences. Each of our major suites will feature examples of the very

best that the high-end can offer with scheduled presentations and demonstrations by a mix of famous designers, recording engineers and audio personalities. Our other suites will offer interactive demonstrations of the best headphones and headphone amplifiers, heavyweight vinyl and hi-res digital media plus the very highest quality accessories available.

For up-to-the-minute information on exhibiting brands, advance ticketing and other announcements, please visit our website.



25 -26 October • Beaumont House Estate • Old Windsor, West Berkshire

# www.hifinews.co.uk/show



Czech Republic - Stereo & Video

Finland - Hifimaailma

France - Stereo Prestige & Image

Germany - Eins Null, Hifi Test TV Video, LP

Greece - Hxos Eikova

Hungary – Sztereo Sound & Vision Italy – AUDIOreview

Norway – Watt Poland – Audio

Portugal - Audio & Cinema em Casa

Russia - Stereo & Video Serbia - Hi-Files Spain - AV Premium Sweden - Hifi & Musik

Ukraine - Stereo & Video

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# Hooray for Hollywood

Barry Fox on the intriguing tale of how Hollywood recorded movie music

RIGHT: In the usic has always relied 1920s sound was on patronage: kings, recorded direct queens and lords to a disc. The of the realm. In the 1930s and 1940s music patronage discs measured 16in and ran came from an unlikely source: the at 331/₃ rpm. film companies. Movie studios in Hollywood, the UK and Europe Here, at a 1926 were earning big money from demonstration. an engineer selling a few hours' escape from holds one such economic depression and war, soundtrack disc through fun musicals, film noires The turntable and epic swashbucklers. Producers it would have could afford to spend big money on been played on soundtrack music. The studios hired the best composers, orchestrators can be seen on and musicians. Of course many a massive tripod base (lower soundtracks were just mood music, centre of image) which clumsily warned of disaster ahead, or pointed up trivial action. **BELOW:** Publicity But for some movies the composer shot issued by

**TOP TALENT** 

Metro-Goldwyn-

Mayer in 1939

showing the

music for The

Wizard Of Oz

being recorded

Parts of the score

to several optical

enabled a stereo

Bolger's 'If I Only

in Hollywood.

were recorded

tracks which

version of Ray

Had A Brain'

sequence to

he released on

laserdisc in 1990

The roll-call of talent included Dmitri Shostakovich while Aram Khachaturian wrote for literally dozens of films. Sir Arthur Bliss composed for Things To Come in 1935, and Sir William Walton and Ralph Vaughan Williams also scored British productions.

Musical legend Erich-Wolfgang Korngold bridged the gap between concert hall and movie studio with full-bodied scores for red-blooded features such as Captain Blood, (1935), The Adventures Of Robin Hood (1938), and The Sea Hawk

was given a free hand within broad limits of time and style.



'How the music was

recorded matters

just as much as its

high quality'

(1940). Aaron Copland wrote for The Red Pony (1949).

The high quality of the music is only part of the story. How it was recorded matters just as much. And thereby hangs an intriguing tale.

For the first few years of the talkies, in the late 1920s, sound was recorded direct to a disc. The discs measured 16in and ran at 331/3 rpm to give around ten minutes of lo-fi, to match the running time of a standard 1000ft reel of 35mm

movie film at 24 frames per second. The sound was scratchy because low-noise vinvl had not yet been developed, and in any case, would

have been chewed by the heavy pick-ups used.

Mechanically syncing disc to film with gear trains was tricky and often went wrong. The Gene Kelly movie Singing In The Rain gives a colourful, entertaining and generally accurate picture of how the Heath Robinson systems worked.

The industry quickly looked for a better way to record. There was no tape, so a method of recording sound optically, onto the same strip of film as the pictures, was devised. In fact there were two methods.

variable area and variable density [see sketch, above right].

In each, light is shone through a narrow slit onto photographic film that is moving at a steady speed of 18in per second (24fps). For variable density recording the audio signal modulates the strength of light that reaches the film, to make a fixed width track, which fluctuates between clear and dark.

For variable area recording, the strength of light through the

slit is steady and the audio signal moves flimsy metal strips (similar to the ribbons in a ribbon microphone) across the slit.

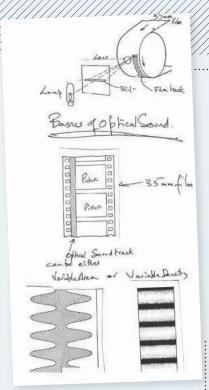
So the track is a wavy line.

Both types of track are played in the same way. Steady light is shone through onto a photo-cell which senses changes in intensity. The output from the photo-cell is then amplified. Variable density recording fell out of favour, because it did not work well with colour film.

#### **GLORIOUSLY LINEAR**

Years of research, development and trial and error went into perfecting the variable area system. The slit width determined the frequency





response, but this had to be matched to the size of the silver grains in the film emulsion and their sensitivity to light. The best compromise emerged as a slit height of 0.012mm, which gave a clean frequency response from around 40Hz to 10kHz.

Much like digital recording, optical capture is gloriously linear, but only up to a peak level at which there is hard clipping and distortion. As long as the recording engineer kept the level meters out of the red, an optical track could capture far better fidelity than a disc.

What's more, unbroken recording time was limited only by the length of a reel of 35mm film.

around 1000ft and ten or 11 minutes. So optical



recording beat disc hands down on two counts: fidelity and duration. Plus, there were none of the clicks, pops and cyclic noise all too often heard from discs.

The downside is that background hiss is generated by the grain of the photographic emulsion, and dust on the surface. So the optical track is doubled-up to create a pattern that varies symmetrically about a central line. This limits the amount of clear film 'seen' by the photocell with the result that hiss is reduced.

#### PRE-RECORDED MUSIC

After a few years the practice of recording an orchestra while the actors performed was abandoned. The music was soon being prerecorded optically with the singers and dancers miming to optical playback. This presented its own problems. Fred Astaire had to match shots of his feet with the separately recorded sound of his taps with accuracy of one sprocket hole, or 1/48th of a second.

Sometimes the soundtrack music was recorded with multiple microphones to multiple optical tracks, then mixed to mono, and finally mixed with dialogue and sound effects tracks to make a release print [see boxout, p19].

There was even some over-dubbing; in the 1941 Walter Huston movie The Devil And Daniel Webster the barn dance sequence uses multiple optical overdubs of a single fiddle player, Violinist Jascha Heifetz was bewildered when he first saw the film with one fiddler apparently playing so many notes. With so much high quality music being

**ABOVE: Still at** the forefront of cinema sound today, it was **Dolby Labs that** persuaded the movie industry to ditch the 'Academy Curve' in the 1970s, so improving the sound of music in cinemas dramatically

#### ABOVE LEFT:

Sketch showing the two methods by which sound was recorded optically. The methods varied either the density or the area of the light hitting the film strip

35mm optical sound projector in all its glory

**RIGHT: Fred** 

a pre-recorded

soundtrack

captured, so ingeniously, cinema audiences should have heard great sound. But they seldom did.

Under-powered amplifiers and inadequate speakers in barn-like cinemas wrecked the sound. So in 1938 the Academy of Motion Picture Arts and Sciences in Hollywood standardised the way cinemas should reproduce sound. Unfortunately, they went for the lowest common denominator approach. The so-called Academy Curve specified brutal filters for all cinemas which left only the frequency range 100Hz-1.6kHz flat and normal. Response at 40Hz was reduced by 7dB, with 5kHz down by 10dB and all musical life at 8kHz and above slashed by 18dB.

In a vicious circle of audio degradation, the studios started to boost all the higher frequencies on the prints they released to the →



# Air Force

FROM AN EMPTY STAGE SILENT BUT BECKONING
A STYLUS FINDS ITS GROOVE





**absolute** sounds Itd.

Tech DAS



'Music sourced

direct from the

optical recording

is unadulterated'

cinemas. This pre-emphasis pushed both the mid and high frequency audio into clipping, which made it sound even worse.

This audio vandalism continued right up until the 1970s when Dolby Labs persuaded the industry to ditch the Curve and finally give audiences a chance to hear what the studio had actually recorded.

#### LONG HARD FIGHT

Ioan Allen, of Dolby Labs, spearheaded the long hard fight. He recalls: 'We started work on

improving the quality of 35mm soundtracks in 1971. Response in the theatre was then only around four octaves, from around 125Hz to 3kHz - little better

than an analogue phone line of the time. The heavy pre-emphasis required to compensate for this high frequency roll-off led to significant high-frequency overload track distortion... The Dolby approach was to equalise the loudspeakers to a much wider range characteristic, and throw out any high-frequency playback filters. This much flatter playback characteristic took full advantage of the soundtrack response itself, typically extending to around 10kHz.

'But this revealed increased grain noise at mid and high frequencies, along with the increased audibility of scratches and dirt resulting from the improved high-frequency response. And extension to the low-frequency loudspeaker performance increased the audibility of hum. So Dolby A-type noise reduction was used across the entire audio bandwidth.'

From then on the sound of music in cinemas improved dramatically.

But a cinema has never been a good place to listen to music. There are too many cutaway interruptions, by speech or sound effects.

Music sourced direct from the original optical music recording is unadulterated. Unfortunately original optical tracks from the 1930s and 1940s are seldom still available. The nitrocellulose 'nitrate' film used pre-1950 had a nasty habit of turning to goo and then dust, or exploding. In the UK only the British Film Institute on the South Bank and its Conservation Centre at

> Berkhamsted are licensed to handle nitrate film.

So even if a nitrate original still exists in a vault, no-one from the music industry can

access it. 'Original soundtrack' CDs have usually come from a previously made disc or tape copy, which may itself be a copy of other copies, mostly old analogue. Pedigree and provenance is all-important.

I have spent the last three months tracking down some of the best examples of soundtrack albums. The music from Snow White And The Seven Dwarfs (1937) was the first commercially released film

soundtrack album to be offered. It is still available. The



LEFT: In the UK only the British Film Institute is licensed to handle nitrate film. According to the organisation, the projectors used are equipped with gas extinguishing systems and operated by specially trained projectionists. Storage and transport conditions are also tightly controlled

**RELOW: The** music from Snow White And The Seven Dwarfs (1937) was the first commercially released film soundtrack album to be offered, and sonically it still shines to this day. And it wasn't only Hollywood that was employing top name classical composers as Music From The Movies. British Movies 1937-1957 on the Vocalion label demonstrates

#### RECORDING FANTASIA

Leopold Stokowski was an audio enthusiast and jumped at the chance of working with audio pioneers Harvey Fletcher and Arthur Keller of Bell Labs on new ways of recording and reproducing sound.

In 1938/1939 Stokey recorded the all-musical soundtrack for Walt Disney's Fantasia, using eight synchronised optical recorders. Six channels were used for separated signals from the orchestra sections, the seventh channel was used to record a mix of the other six, and the eighth was an ambient distant pick-up of the whole orchestra.





The eight-track recording was then mixed down to three optical audio tracks, left. centre and right. A fourth track carried a pilot tone to control the gain of an expander which improved the dynamic range by about 20dB. A second projector was synchronised for the pictures. The film could play only in specially equipped cinemas. In the 1950s Fantasia was re-issued, with a magnetic stereo track culled from the original opticals, and in 1957 the music was released on LPs. Two Pickwick CDs were released in 1990.

In 1940 Harvey Fletcher recorded Stokowski optically and played the tracks in stereo at Carnegie Hall, with a 30Hz-15kHz bandwidth. Sadly, no copies of this recording exist.



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Featuring the latest groundbreaking technology from dCS, Vivaldi will transform your listening experience, taking your music collection to levels you have not heard before.







music by Frank Churchill still holds up although the sound is a bit boxy and the squeaky vibrato of Adriana Caselotti would sink a battleship.

David Bennett has re-mastered many jazz releases for Avid, including transfers from Glenn Miller and Tommy Dorsey 20th Century Fox soundtrack LPs. 'Even though the albums may have come from first generation tapes taken from 35mm film, the pressings are pretty poor and the Top Rank versions issued over here had reverb added,' he recalls. Most of the Glenn Miller material, from the soundtracks of Sun Valley Serenade and Orchestra Wives, was issued on two 10in HMV

LPs, and these sound better than the Top Rank ones.

'However if you listen to the DVD soundtracks of these films the music is astonishingly

well recorded. I assume that the actual film soundtracks are a first generation optical copy of the 35mm sound film.'

#### RARE DISCOVERY

Some years ago I discovered a rare CD, issued in the USA in 1994, which appears to have come from the original nitrates, or first generation copies, recorded for Sun Valley Serenade at the 20th Century Fox studios in 1941. Some tracks run for over seven minutes and the audio quality is remarkable.

What's more, some of the music was recorded to several optical tracks, from which the CD producer reconstructed this 'stereo' release. The separation between vocalists, brass and saxes sounds far more realistic than anything that could be achieved with modern electronic trickery.Sadly, The Original Glenn Miller Orchestra In True Stereo, on the Vipers Nest label, now sells for over \$100 on eBay.

Optical multitracks were also used to record some of the music for The Wizard Of Oz in 1939. Tom Holman of THX was able to get to the originals, and mixed a stereo, extended version of Ray Bolger's song and dance sequence 'If I Only Had A Brain'. This first appeared on a special edition laserdisc boxed set released in 1990.

Sometimes it's not just the original optical tracks that are lost; the orchestrations have often gone too. In the 1990s Christopher Palmer, William Stromberg and John Morgan used bare piano lead sheets to reconstruct some of the best scores by Miklós Rózsa, Max Steiner, Victor Young, Adolph Deutsch and Erich Korngold. They were then re-recorded for the Marco Polo label

'Sony found 20

minutes of music

recorded for the

film but not used'

with German and Russian orchestras.

These CDs are now available again in The Naxos Film Music Classics collection. Some

of the music is inconsequential but Captain Blood And Other Swashbucklers [Naxos B0007ACVL4], with themes written by Erich Wolfgang Korngold, Victor Young, Max Steiner and Miklos Rozsa, will make a mischievous blind test for pundits who sneer at 'film music'. For the genuine original sound, you can now download (from Amazon or iTunes) Korngold's music from The Adventures Of Robin Hood, Some of the themes are quite magical.

For something lighter, try *Shall* We Dance, early recordings by Fred Astaire [B0000273AI] re-mastered by Australian Robert Parker. Some

**FAR LEFT: With** some material recorded to several optical tracks the CD producer was able to compile a stereo release. This disc, The Original Glenn Miller Orchestra In True Stereo, on the Vipers Nest label, now sells for over \$100 on eBav

#### **ABOVE CENTRE:**

The Naxos Film **Music Classics** collection includes Captain **Blood And Other** Swashbucklers - 'a mischievous hlind test for pundits who sneer at "film music"

**ABOVE:** For the Casablanca Soundtrack CD, Sony Music went back to the movie nitrates

**BELOW: Sonv** CD. The Best Of **Busby Berkeley** also utilises the original optical recording, this time from 1937

tracks come from studio disc recordings, others from optical film tracks. The opticals sound far better.

Music From The Movies, British Movies 1937-1957 [Vocalion B001D0N30K] reminds that it wasn't just Hollywood that was employing top name classical composers. This CD includes Sir William Walton's 'Spitfire Fugue' from the First Of The Few, played by the Hallé Orchestra, along with many London Symphony Orchestra recordings under Muir Mathieson and two scores by Ralph Vaughan Williams, VWs' wonderful 'Prelude' from the 49th Parallel will make another good blind test to try on musical snobs.

#### UNIQUE OPPORTUNITY

Sony owns both movie and music companies, so has unique opportunities to source music albums from film originals. For the Casablanca, Original Motion Picture Soundtrack CD of music and dialogue. Sony Music went back to the movie nitrates and found 20 minutes of music recorded for the film by composer Max Steiner, but never used, along with an alternate and deleted performance by 'Play it Sam' singer and pianist Dooley Wilson. The source original for 'As Time Goes By' is an audio gem.

Likewise, Sony Music's Lullaby Of Broadway, The Best Of Busby Berkeley At Warner Bros double CD [Sony Classical B003VKW0XG] includes song and dance routines from ten of Berkeley's musical extravaganzas from the 1930s. Audio quality is remarkable for the time. The music is great fun, too. The optical recording from 1937 captures Benny Goodman's awful singing on 'Hooray For Hollywood' in high audio quality. It was cut from the film. But thanks to Hollywood's optics we can now hear the notoriously grumpy BG trying to sound cheery. ()



#### **INTEGRATED AMPLIFIER**

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Supplied by: Absolute Sounds Ltd
Telephone: 0208 971 3909
Web: http://en.devialet.com, www.absolutesounds.com
Price: £6390 (£7390 with AIR)



# Devialet 170

Three years on from *HFN*'s inaugural review of the Devialet D-Premier amplifier, the technology has evolved into three new models with network and USB functionality Review & Lab: **Paul Miller** 

ome day, all amplifiers will look like the Devialet. They won't, of course, because our passion for music and hi-fi feeds on diversity, keeping vinyl thriving in an era of high-res downloads and tube amps glowing regardless of the advent of the transistor. We all have our preferences, but the stir created by Devialet's 170 at the recent Munich High End show affected enthusiasts of every hue.

When the D-Premier, Devialet's first amplifier, was launched several years ago [HFN Apr '10] it appeared to offer everything – tremendous power, direct digital inputs and a uniquely slim form factor. Its beautiful industrial design was matched by the elegance of its technology, a hybrid of Class A voltage amplification with precision digital Class D current dumpers. Its sound quality is now the stuff of audiophile legend.

#### THE PREMIER STANDARD

The D-Premier offered S/PDIF and AES/EBU digital inputs, analogue inputs that could be programmed for both line and phono sources (right down to custom loading options). It even had a proprietary Wi-Fi service built-in, capable of accepting 24-bit/48kHz audio streams. And pairs could be configured for intelligent, dualmono operation. But still the D-Premier amplifier was incomplete.

As the platform took shape in the mid-2000s, Devialet chose to implement HDMI as the digital interface of the future. Hindsight is a wonderful thing, but now we all know that *USB* is digital audio's all-conquering interface. A change to the D-Premier's real estate was inevitable, its inputs reshaped along with refinements to every facet of the amplifier's layout, from switchmode power supply to its DSP core. The result is three new amplifiers, the £4490 Devialet 110, the £6390 170 and £11,800 240.

RIGHT: Devialet's Analogue/Digital Hybrid output sits at the heart of the 170, surrounded by an equally innovative switchmode PSU (top left), network and USB inputs (bottom right)

The models are distinguished by power and by their feature set although all are equipped with those vital, future-proof USB and RJ45 ethernet connections.

The 110 is rated at 110W/6ohm, the 170 at 170W/6ohm and so on, with the 240 adaptable into a mono 500 variant at £20,900 per pair. The 110 and 170 both have Devialet's AIR (Asynchronous Intelligent Route) Wi-Fi module as a £1000 option while the 110 has a simpler MMonly phono option and lacks the bigger amp's digital and sub out features.

All versions are intimately configurable with recourse to Devialet's on-line 'Configurator' [see http://en.devialet.com/la-maison-online-en-us/configurateur-en-us/]. This is no simple input naming regime but a web script that allows you to define the nature of the three pairs of RCAs (analogue, digital input or output), the maximum power of the amplifier, your

Wi-Fi network settings for the AIR module, the behaviour of the circular display and even the function of the remote buttons. You don't need a 170 to visit the site yourself and explore the Configurator, but owners are able to save their personal settings onto an SD card. The card is loaded into a reader on the rear of the amp which recognises and adopts the settings the moment it's powered-up. You can even create your own welcome message...

#### **DARK CHROME**

While the bigger Devialet 240/500 models share the original chassis, albeit in the new dark chrome finish, to maintain the extra heat dissipation, the 110 and 170 are built into new alloy casings that look slimmer still. In part this is a clever illusion, the Wi-Fi antenna now moved from the top surface into two bays within a deeper, black-coated alloy baseplate [see picture









p25]. The body of the 110/170 is certainly less imposing and that stunning dark chrome is more durable than the old finish. Fingerprints, however, are still its enemy! Once again, the rear of the case breaks away to reveal a compact collection of inputs and outputs while the hallmark circular display is retained as your window on to the 170's world.

The new variation on Devialet's RF remote control [see picture, below] is also both lighter and slimmer but features the same three function buttons (it's also a lot easier to replace the battery). The central dial governs volume, although there's currently no visual feedback on the remote itself, while the buttons add source selection, mute, bass/treble and balance control. These are also used to navigate through the 170's multiple status displays which include thermal monitoring. network IP address and other details.

In practice and assuming you're using one of the digital inputs - USB, S/PDIF or network connections - then '0.0dB' volume on the 170's display realises exactly 100W/80hm with a peak level (0dBFs) digital signal. The volume scale is precise, so '-10dB' delivers exactly 10W/8ohm and '-20dB' exactly 1W/8ohm. I'd not recommend you move into the red zone (0dB to +30dB on Devialet's scale) with digital inputs but you can, with care, if you are pressing either the analogue line

or phono inputs into service. Ironically, because of the way the Class D current dumpers are mapped with direct digital inputs, you might actually squeeze slightly more power from the 170 from an analogue input [see Lab Report, p27].

#### **HI-RES STREAMING**

The new USB port is a Type B socket, so there's no facility to host USB sticks or drives. However, there's talk of the amplifier's SD card reader also being enabled to carry high-res music files, much like the Resonessence Labs DAC [see HFN Dec '12]. Nevertheless it's important to reiterate that, alongside the 'legacy' optical and coaxial S/PDIF and

AES/EBU inputs, all new Devialet amplifiers will now connect directly to your computer or home network, including wireless access where the AIR module is fitted.

so much more' The partnering AIR Wi-Fi streaming software, now in v2.0 guise, is available from Devialet's website alongside its iOS and Android apps which facilitate full remote control of the new amplifiers. The AIR software lets you wirelessly play music content stored on your Mac (from OSX 10.6) or Windows (Vista) computer in 'bit-perfect'

**ABOVE:** Sleek industrial design belies the 170's sophistication and versatility. Input, volume and compehensive status information is revealed on its distinctive 'porthole' display

mode up to a claimed 192kHz/24-bit resolution (this will be heavily networkdependent). The streamer is also compatible with media players including iTunes, VLC, WMP etc, plus Internet radio and online services such as Pandora, Spotify, Deezer, Qobuz, Wolgang's Vault, Tunein, Opeo and others.

#### A CHIP OFF THE BLOCK?

So is the 170 'better' than the D-Premier's I've been using these past three years? I

'The 170 is no

mere chip off the

block. It's more,

suppose the glib answer might be to suggest the 170 is simply a chip off the ADH block, with better bass control, more insight and transparency, simply a D-Premier plus. But it's not. It's more, so much more.

I'll dial back at this point to describe the system I've been using, actually the same set-up we used for our recent USB cable group test [HFN July '13] except that I could now directly pipe high-res audio from PC to amplifier to B&W 802 loudspeakers.

With the signal retained in

digital domain, this was as 'straight a binary wire with gain' that I might have wished for.

That the 170 also has a Wi-Fi AIR option will be of vital importance to many of Devialet's clientele. Indeed, it's just about the slickest and cleanest-

sounding solution I've used, but that's with a dedicated Wi-Fi network unencumbered by interference. The sheer convenience of parking the 170 up close and personal to the loudspeakers, using short cables and beaming music directly was very tempting indeed. But when push came to shove, ⊖

#### THE ROAD TO PARIS

When Hi-Fi News first met Devialet to explore the ADH amplifier concept [HFN Apr '10], its four creatives (marketing and engineering) were scattered across France. Just organising a meeting between themselves was a logistical exercise so they determined to find a headquarters in Paris. 'Anything would suffice,' said Manuel De La Fuente 'even if it was a rooftop garden. We found a sympathetic real estate agent who was prepared to take on the challenge, despite the fact we had no money!' In a remarkable tale of happenstance, Devialet's agent not only uncovered a substantial, vacant six-floor property a stone's throw from the Louvre but also discovered that the owner was a passionate audiophile. That property magnet not only bought a D-Premier but invested in the company and opened the doors to what is now La Maison, Paris, home to 40+ employees and Devialet's plush showroom/demo facility.



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ABOVE: The underside of the 170 is an alloy injection-moulding with apertures for the (ZigBee) Wi-Fi antenna. Though still 'square' the case is about 1/2 in smaller than the original D-Premier

'A luxuriant

smoothness extends

from deepest bass to

brightest treble'

and despite needing a PC in the room with short USB cables or Ethernet cable out to a NAS drive, the hard-wired options had Wi-Fi beat every time. And this magazine is always about the best that can be achieved, convenience be damned!

#### HARD-WIRED

With USB my preferred choice, and beta PC drivers working flawlessly, the 170 wove its addictive spell. Whether I was enjoying 'Hotel California' from The Eagles' 1994

live set *Hell Freezes* Over [Geffen UICY-1059], the 24-bit render of The Beatles' Abbey Road album or the new Linn label release, Emily Barker & The Red Clay Halo's Dear River [AKD405

96kHz/24-bit 'Studio Master'], the 170 'connected' those files to the speakers with complete mastery over their content.

Like the D-Premier, the 170 grips the loudspeaker with such unerring confidence that any colour, any spurious movement associated with driver or cabinet, is seemingly suppressed to a degree that I've not experienced with any other amplifier. The boxes fade from view and the music lives and breathes in front of you. Cymbal strikes are free of splashy overhang, powerful bass rhythms are delivered with a palpable thunder and massed strings stride into the room with vivid presence.

All this is essentially true of the D-Premier, but the 170 has something else, a luxuriant smoothness that extends from the deepest bass to the brightest treble, to voices and brass, to solo guitar and orchestral swells, to live or studio recordings. There's a quality to this smoothness that I recognise. It's exactly the same reduction in grain and instrument modulation and improvement in the blackness, the 'velvet' quality of silences, that I heard from amplifiers in

> the 1980s when various enlightened manufacturers were experimenting with localised RF filtering.

Sadly, this research was largely clobbered by subsequent EMC regulations, but in a

design with the potential for generating its own internal atmosphere of interference, Devialet's extensive board revisions have evidently reaped rewards. In similar vein, the D-Premier always benefited from a pure mains supply and was never employed in my room without a PS Audio regenerator. The 170 also gives off its very best when powered thus, but the difference is now not so marked. Frankly, it still sounds glorious fed 'raw' mains.

Listening to the very high-resolution Charlie Haden & John Taylor's Nightfall [192kHz/24-bit, Naim CD077], I was struck by the sheer silence of the background, →

#### DEVIALET ROUND TABLE

'The original aesthetic design of the D-Premier was set many years ago,' says Manuel De La Fuente, Devialet's sales director (pictured). 'We looked at a simple square form, a timeless shape with a mirror finish that expressed the unique specificity of the product. But when we began we had no idea of the scale of production we would be facing today. The new chassis retains all the original design cues of the D-Premier but everything has been re-thought, rationalised and improved. We have reduced the machining and assembly time of the amplifier by 6x over the D-Premier!'

'The internal refinements are extensive,' says Pierre-Emmanuel Calmel, Devialet's head of R&D. 'We have added extra 400MHz DSP and 3x the embedded memory to accommodate future projects, including room correction, speaker crossovers and multi-amplification. We would like to introduce new features every six months'.

'Also, the ADH core is 99% intact - we still use the PCM1792 DAC but with a much improved layout and better local heatsinking. The switchmode PSU has new rectifiers. transformers, MOSFETs and reservoir caps and has a far higher saturation current. The voltage/volume mapping has also been enhanced to improve performance and component lifetime. Of course, the HDMI input has now been replaced by a new six-layer board with USB and network connections. We use the latest XMOS solution for USB but a custom design for our Wiznet/ SHARC ethernet application. We also have a custom digital filter, yet to be implemented.'





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### INTERCONNECT



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7N purity, Multistrand Monocrystal™ Copper rope-lay weave single crystal grain-free conductors of 3.5sq mm X-section. Ultra low-loss Hi-Density Polyethylene (HDPE) dielectric. Outer jacket of Polyolefin 'elastomer' (or POE )- a low smoke, halogen-free', green-friendly' recyclable ROHs compatible material. Patented Vibrakill'™ layer. Tinned copper binding. Helical topology. Deep cotton bedding.



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7N purity, Multistranded Monocrystal™ Copper grain-free 'going' and Monocrystal™ Copper 'return/screen' conductors. Foamed Polyethylene Dielectric. Cryogenic Immersion (DCT™). 'Symmetrical/ balanced' configuration. Copper-Mylar separator. Ecosse MACH2 silver-plated Monocrystal™ RCA. Optional DIN



### La Prima Donna





7N purity, PerfectSurface™ Solidcore Silver (99.999997%) conductors. Ultra low loss Foamed Polyethylene dielectric. Double screen of 2 x silver plated-OFC + copper foil. Vibrakill™ Neoprene™ layer virtually eliminating the effects of microphony. 'Symmetrical / balanced' configuration. Teflon (PTFE) Separator. ECOSSE MACH3 Monocrystal™ RCA and XLR terminations.



### The Legend SE Mk2



7N purity, PerfectSurface™ Solidcore Monocrystal™ Silver (99.99997%) conductors. Teflon (PTFE) dielectric. Silver plated Ultra High Purity OFC screen + Aluminium Foil. Neoprene™ layer virtually eliminating the effects of microphony. 'Symmetrical/ balanced' configuration. Teflon Separator. Airspace Conductor Separators. ECOSSE MACH3 Monocrystal™ RCA and XLR terminations.

### DUDSPFAKER









GUIDE \*\*\*\*

7N purity, Multistrand Monocrystal™ Copper rope-lay weave single crystal grain-free conductors of 3.5sq mm X-section. Ultra low-loss Hi-Density Polyethylene (HDPE) dielectric. Outer jacket of Polyolefin 'elastomer' (or POE )- a low smoke, halogen-free', green-friendly' recyclable ROHs compatible material. Patented Vibrakill'™ layer. Tinned copper binding. Helical topology. Deep cotton bedding.







7N purity, PerfectSurface™ Solidcore Monocrystal™ Copper conductors. Helical topology. Ultra low-loss Polypropylene Dielectric. Cotton filler. Deep cottor





7N purity, Multistrand Monocrystal™ Copper rope-lay weave single crystal grain-free conductors of 3.5sq mm X-section. Ultra low-loss Hi-Density Polyethylene (HDPE) dielectric. Outer jacket of Polyolefin 'elastomer' (or POE)- a low smoke, halogen-free,' green-friendly' recyclable ROHs compatible material. Patented 'Vibrakill'™ layer. Tinned copper binding. Helical topology. Deep cotton bedding.









7N purity, Multistranded SUPER Monocrystal™ Copper conductors. 3sq mm X-section. Helical topology. Ultra low-loss Polyethylene dielectric. Cotton filler. Deep



7N purity, 6 x PerfectSurface™ Solidcore Monocrystal™ Silver conductors. Ultra low loss Foamed Polyethylene dielectric. Secondary matrix with patented Airspace™ Teflon (PTFE) dielectric. Teflon Separator. Vibrakill™ Neoprene™ layer virtually eliminating the effects of microphony. Deep cotton bedding.

## ■ MAINS POWERCHOR



## Big Red















7N purity, Multistrand Monocrystal™ Copper rope-lay weave single crystal grain-free conductors of 2.5mm x-section; Monocrystal™ rope–lay shielding braid; Aluminium Foil and Tinned-Copper double screen; Cotton fibre damping; Schurter™ Premier grade IEC with the High Current (HC) version; Monocrystal" Audiophile-grade IEC for the Super Current (SC) option; Furutech™ FI 20-R for ultimate Audiophile Reference grade -Ultra Current (UC) performance.



ABOVE: Three sets of RCA sockets are configurable as digital ins or line/phono analogue ins. Other digital ins include USB, ethernet (RJ45), AES/EBU (XLR), optical (Toslink and 3.5mm jack). Single sets of 4mm speaker cable binding posts are included alongside SD card (setup) and triggers (3.5mm jacks)

despite it being a render of an analogue tape, each key tailing off into a soft and gentle silence, coaxed by a lilting double bass. Then there was the 24-bit Abbey Road remaster, 'Come Together' which not only sounded 'all of a piece' but could hardly be described as a 'period piece' since the resonant grunge of Harrison's guitar and Starr's drums was laid bare with a sense of spaciousness and atmosphere that was barely creditable. Here was this liquid smoothness in action – the precision of the ADH technology delivered with a delicacy, a sensitivity and musical poise that is not only rare but arguably unique to the brand.

#### TEMPTING FATE

I thought I'd tempt fate with the new 24-bit/96kHz release of Rush's 2112 - Deluxe Edition [Universal UNI101]. I needn't have worried that this particular monument to anthemic rock would betray its age, for the opening synth announced a very familiar 20-minute journey that, while not the last word in dynamic expression or transparency, sounded wonderfully self-contained. Geddy Lee's distinctive voice was free of piercing hardness, Lifeson's accomplished fretwork and Peart's unmistakable drums and percussion all preserved within a surprisingly generous acoustic. Frankly, if the 170 can resolve this prog rock standard into its distinctive threads without dropping a stitch then I cannot imagine many other pieces of music likely to give it pause.

The 170 has another trick up its sleeve. Think you've heard how low your floorstanders can go or how rich that drum-roll might sound? So did I, and cued-up the movie soundtrack from 'The Day After Tomorrow' [Varèse Sarabande 066572] by way of confirmation. This orchestral score, by Harald Kloser, has a tympanic foundation

that rises from behind a wall of luscious strings and woodwind but that's so low, so deep, it typically escapes the attention of most amplifier/loudspeaker combinations.

The Devialet 170 squeezed what appeared to be near-subsonic bass from the 802s, as low as I'd heard from my B&W ASW850 sub with its 1000W amp and 15in woofer, but with a definition so robust you could saw it into 10ft lengths and use it for scaffolding. The scale, the depth and reach of this performance was truly awesome, a listening experience that was in every important respect - technical and emotional convincingly visceral.

#### A NEW STANDARD

I hope I've given you a flavour of the 170's special qualities, because it's rare to encounter a new audiophile technology that not only evolves but that also becomes more affordable. So is the 170 better than the D-Premier? With USB and wired network connections it's substantially more flexible if not quite as powerful. That's where the forthcoming 240 and mono 500s come into the picture but, for now, would I trade one for the other? Yes. Unequivocally so.  $\circ$ 

#### **HI-FI NEWS VERDICT**

With a growing corporate resource, Devialet has taken its revolutionary D-Premier amplifier, added all-important USB and network connections while refining just about every facet of the internal engineering solution. The result is a spectacular success and proof that breakthrough technologies can still make their mark in an audiophile world often reluctant to embrace change. The best just became more affordable.

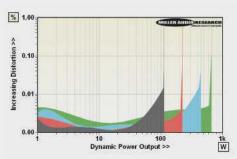
Sound Quality: 91%



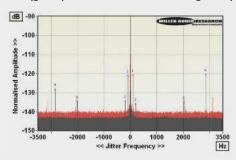
#### DEVIALET 170

As Devialet has re-mapped its ADH amplifier there is a slight difference in the power output and lowest distortion achievable between the 170's analogue and digital inputs. The vast majority of users will, I presume, engage with the amp digitally either via USB or wired/Wi-Fi network, in which case a OdBFs input realises exactly 100W/80hm and 200W/40hm at the '0.0dB' position (both at 0.0007% THD). Via the analogue input this increases to 120W/8ohm and 240W/4ohm, the nearperfect 'stiffness' of the power supply reflected in the 115W, 230W and 450W delivered under dynamic conditions into 8, 4 and 20hm loads. Note also how distortion barely increases with reducing load impedance [see Graph 1]. Couple this with the infinitesimally low 0.003ohm (3mohm) output impedance and, provided you don't use scrawny cables, the 170 will rule your loudspeakers with the proverbial rod of iron.

Through bass and mid frequencies, 'digital' distortion is half that for the analogue input, the former achieving 0.0005% as opposed to ~0.001% for the same 1kHz/10W/8ohm output. The opposite occurs at very high frequencies where the line input reaches 0.006%/20kHz and the digital inputs, regardless of sample rate, increase to 0.017% (10W/8ohm). The A-wtd S/N ratio is fabulously wide at 93dB and 98dB re. 0dBW (analogue) digital) or 118dB re. 100W/8ohm while the response(s) are flat to +0.14dB/20kHz, -0.6dB/45kHz and -1.6dB/85kHz (48kHz, 96kHz and 192kHz media). Jitter is very low and PSU-related at 53psec/10W [see Graph 2]. Readers may view comprehensive QC Suite test reports detailing the 170's analogue (power), S/PDIF, and USB performance by navigating to www.hifinews. co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 10hm (green) loads. THD is halved via digital inputs



ABOVE: High resolution 24-bit/48kHz jitter plots. USB input (red) versus S/PDIF input (black) at 10W/8ohm

#### **HI-FI NEWS SPECIFICATIONS**

Power output (<1% THD, 8/4ohm)	120W / 240W
<b>Dynamic power</b> (<1% THD, 8/4/2/10hm)	115W / 230W / 450W / 675W
Output impedance (20Hz–20kHz)	0.001-0.004ohm
Freq. resp. (20Hz-20kHz/90kHz)	-0.0 to +0.15dB / to -3.7dB
<b>Digital jitter</b> (S/PDIF / USB at 48kHz)	58psec / 53psec
A-wtd S/N ratio (re. OdBW/OdBFs)	93.2dB (Analogue) / 97.7dB (Dig)
<b>Distortion</b> (20Hz-20kHz; An/Dig 10W)	0.001-0.0059%/0.0005-0.017%
Power consumption (idle/rated o/p)	51W / 286W
Dimensions (WHD)	383x40x383mm

#### **LOUDSPEAKER**

Three-way standmount loudspeaker Made by: B&W Group Ltd. West Sussex Supplied by: B&W Group Ltd Telephone: 0800 232 1513 Web: www.bowers-wilkins.co.uk Price: £3000



# B&W CM10

This new floorstander follows B&W's CM range recipe but with a big helping of high-end 800 Series technology Review: Steve Harris Lab: Keith Howard

ver since the dramatic appearance of the Nautilus 801 in 1998, B&W's 800 Series has showcased innovations that could later be incorporated in less expensive ranges. Coming in below the 800 line today is the CM Series, which, as the company's web blurb puts it, 'uses Bowers & Wilkins refined driver technology to hone the loudspeakers down to their purest essentials. Ideal for home theatre or hi-fi'.

For the 800 Series itself, the next great leap forward after Nautilus came in 2005, with the new 800D flagship and its diamond dome tweeter. After this, the other 800 Series models were progressively replaced by new Diamond versions. Inevitably, those new models turned out to be much more expensive than their predecessors, and new speakers were needed to bridge the price gap. Now, though, B&W has launched a floorstander that extends the CM Series upwards and fits into the price slot vacated by the old 804S. This, of course, is the £3000 CM10, reviewed here.

#### SAVE THAT TWEETER!

Like the 804, the CM10 uses a separate tweeter module. The tweeter itself is new, and as with the one developed earlier for the PM1 [see p40], it's an intermediate design between the standard aluminium dome and B&W's diamond type. For the PM1 unit, an aluminum dome is braced by a carbon-fibre ring around the voice-coil. This has a higher moving mass and hence lower sensitivity than the standard aluminium dome. So, to maintain sensitivity for the CM10, B&W found a different solution.

This time, a standard 50um-thick dome with most of the centre removed forms a stiffening ring, equivalent to the PM1 tweeter's carbon brace, and on the front of this is stuck a full dome only 35µm thick. This gives a higher first breakup frequency, said to be 38kHz, yet with a similar moving mass, compared to the standard 50µm dome.

As with the 800 Series models, the tweeter is decoupled from its housing. A Nautilus tapered tube is screwed to the back of the magnet, and the combination is supported by isolating gel mounts. The tweeter housing is decoupled from the main cabinet by further gel elements encircling its mounting pillar.

One final tweeter innovation is nothing to do with sound quality. 'It is a sad fact,' says B&W's senior product manager Mike Gough, 'that retailers report a significant amount of malicious damage to the tweeter domes of demonstration products in the stores.' So B&W has added a strong steel mesh in front of the dome, which can only be removed using the tool provided!

Displaying the familar yellow cone of woven Kevlar, the midrange unit is of the 'surroundless' or FST type that first appeared in the Nautilus 800 Series [see boxout]. This FST driver is also used in the CM9 and even in the 683, top model in B&W's more mainstream 600 Series. But the CM10 still breaks new ground as it's the first speaker below the 800 Series to have an FST driver decoupled from the cabinet. Its gel mountings are suitably compressed by a tensioning rod running from the back panel.

As the CM10 was to be positioned above the three-way, twin-bass-unit CM9, it had to outperform the existing model in all important aspects. When it came to the bass, this meant enhancing the bottom end without making the speaker a great deal larger.

Just adding a third bass unit could have produced a speaker that was unacceptably tall. But with the CM10's tweeter-on-top format, the midrange compartment could be moved up to the top of the cabinet, freeing up more space for the bass enclosure section.

Along with a small increase in front-to-back depth, this was enough to give the necessary increase in internal volume for the three 165mm paper/Keylar-coned bass units, which are reflex-loaded by a B&W Flowport at the back. The cabinet itself is the same height at 990mm, but overall height is now 1087mm.

With these tall, slim and weighty speakers, safe stability is assured by using the supplied flat plinths, which simply bolt on underneath, and extend each speaker's footprint. Carpet-piercing spikes are provided,

**RIGHT:** With a new tweeter mounted in its own housing, the CM10 combines a 150mm FST Kevlar midrange unit with three parallel-connected 165mm paper/Kevlar bass units







#### THE FST DRIVER

Next year will be the 40th anniversary of B&W's first use of Kevlar. It was proved early on that woven Kevlar cones had an advantage over homogeneous plastic ones, giving less coloration from the reflections within the material. But there were still unwanted effects caused by the junction of the cone and the flexible roll surround. To overcome this, B&W developed its 'surroundless' Kevlar drive unit, which it called FST or Fixed Suspension Transducer. As the cone excursion in a midrange unit is relatively small, the surround could be replaced by a support ring of foamed material, chosen to have a mechanical impedance matching that of the cone, placed under the edge. Instead of flexing, the foam just compresses and stretches slightly with the cone movement. Energy from bending waves reaching the surround passes through into the speaker chassis to be dissipated harmlessly as heat, instead of reflecting back into the cone. The CM10's FST driver is decoupled from the cabinet, though in this speaker by means of a tensioning rod instead of a Nautilus tube.

'The CM10 really

brought out the

pure sound of that

gorgeous voice'

along with rubber feet as an alternative for use with polished wood floors. B&W's instructions tell you to place the CM10 at least 0.5m from back and side walls, and I found myself moving these speakers further out into the room than usual to get the best results. Once this is done. though, you will be rewarded with a very open stereo stage, with an even and seemingly undistorted bass.

#### A SMOOTH BALANCE

With the CM10s set up, I sat down to listen, initially using a Gato AMP-150 integrated amplifier. Like most speakers,

the CM10 has double terminals for bi-wiring or bi-amping, although they are supplied connected by links. When I tried removing the links, I found that in this case there were certain

benefits to be had from bi-wiring.

Making the comparison while listening to Myriam Alter's delightful Where Is There [Enja 9312] from 2007, I thought that there was a slightly freer-breathing and more dynamic quality to the bass. I also felt that there was an enhanced sense of space, with perhaps a little more air around the instruments and a more tactile quality to Joey Baron's gentle cymbals. After this I stuck to bi-wiring.

Turning to classical music, I was impressed by the CM10's ability to produce natural, free-sounding string timbres, whether in orchestral or chamber music. It could produce a very big sound when appropriate, conveying the huge acoustic around the Pacific

Symphony Orchestra as they played Respighi's Church Windows [Reference Recordings RR-15CD], but it did well on more intimate recordings too.

In the Mozart oboe quartet recording heard on The Art Of Janet Craxton [BBC Records BBC CD 635], there was a real feeling of bows on strings. From the same disc, the Poulenc sonata and Britten's Temporal Variations showed that the CM10 could reproduce the lower registers of a piano convincingly, in different acoustic settings.

One very attractive aspect of the CM10's sound was an ability to present

> acoustic instruments or voices, and the signature clues of the recorded acoustic, in pure and natural relief against an inkyblack background. Presumably this must be credited mainly to

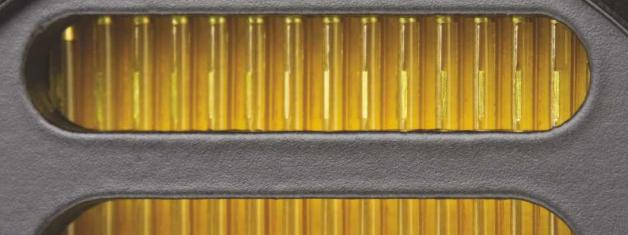
the FST midrange, and to its decoupled mounting which reduces unwanted output from the cabinet.

Listening to Rosa Passos and her beautiful 2005 solo album Rosa [Telarc CD-83646], I felt that the CM10 really brought out the pure sound of that gorgeous voice along with the rich timbres of her quitar, conveying the calm insulated silence of the studio as well as its subtly supportive acoustic.

Even on what might be called slightly quirky recordings, the speaker always maintained a feeling of smooth balance from top to bottom. It wasn't fazed by Chesky's 'church' recording, Entre Cada Palabra [JD301] from Marta Gomez. Here there was a fairly good sense of depth and scale, and the often unruly-sounding bass guitar was kept under control. →

# ELAC

sound lives



# JET set

The distinctive JET tweeter is a unique and instantly recognisable feature of ELAC loudspeakers. The folded foil diaphragm, designed and built by ELAC in Germany, "breathes" the air in and out. The result: Ultra smooth treble with stunning transparency.







Distributed by Hi-Fi Network Ltd.
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LEFT: Seen near top here is the end of the tensioning rod for the mid unit's decoupling. Moulding below combines B&W's dimpled, profiled Flowport vent with bi-wirable terminal panel

a sense of lively attack that hadn't been apparent before. This more zesty quality suited some music very well and it was apparent on that wonderfully straightforward and clean-sounding jazz recording from 1957, Art Pepper Meets The Rhythm Section [Contemporary 0025218633826], famously recorded using a few microphones in the record company's stock roomcum-studio.

#### **ENVELOPING WAVES**

It was easy to imagine the shelves full of brown cardboard boxes that provided such a benign acoustic. Here the bottom end had a fairly satisfying weight although on the double-bass sound I had the feeling that somehow I wanted more cohesion between the fundamental and the higher-range detail, the upper harmonics of the notes.

On more modern recordings, the CM10 showed no sign of running out of steam when powered by the Classé. With Simple Minds and Cry [Eagle EAGSACD196], the sound became truly enveloping as wave after wave of electronic sounds washed over you. The speakers were great on more visceral music too, and with Florence And The Machine's 'Dog Days Are Over' [Lungs, Island/Moshi Moshi], the stunning contrasts and massive drum sounds made it a glorious tour de force. 🖰

In fact, I was impressed by the CM10's ability to handle vocals, both male and female. It could be exquisite - as for example on a relatively late gem from the brilliant and accomplished Mel Tormé. On 'What Are You Doing The Rest Of Your Life' recorded live with Al Porcini and orchestra [The Very Best Of Mel Tormé, Rhino 5144215752] you could really feel the way he was holding the audience spellbound.

After spending some pleasant hours with the CM10 connected to the Gato AMP-150, I switched to the dependable Classé CAP-2100. It was instantly clear that the sound coming from the speakers had more punch, and there was

#### **HI-FI NEWS VERDICT**

Thanks to its pod-mounted tweeter and FST mid driver, the CM10 offers a beautifully clean, detailed midrange and treble, with a big, open and impressive soundstage. I would have liked to discover a more organic quality in the bass, though, and it needs a capable amp to give of its best. But, while facing stiff competition at this price point, the CM10 is a worthy stepping-stone to B&W's flagship 800 Series.

Sound Quality: 83%

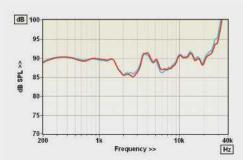


# REPORT

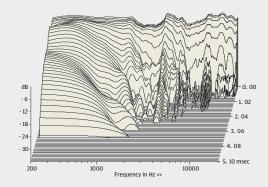
#### **B&W CM10**

B&W's provisional sensitivity for the CM10 is quoted at 90dB but our pink noise figure of 89.3dB, coupled with our 'music' figure of 88.9dB (based on the average programme spectrum specified in IEC 60268), suggests that 89dB would perhaps be more accurate. Despite the large cabinet, low impedance has been used to help achieve this sensitivity, the modulus dipping to a measured minimum value of 2.9ohm at 129Hz. In concert with high impedance phase angles at low frequency this gives rise to a minimum EPDR (equivalent peak dissipation resistance) of 1.2ohm at 95Hz, an indicator that the CM10 presents a notably challenging amplifier load, exacerbated by a further dip to 1.60hm at 559Hz.

On-axis frequency response was measured at 92.5cm above the cabinet base rather than on the tweeter axis (a little higher) as this produced a flatter frequency response [see Graph 1, below], which despite its undulations achieves better than average response error figures of ±3.2dB and ±3.0dB, respectively. The pair matching error of ±0.9dB over the same frequency range is also commendably low. Immediately above 20kHz the response begins a steep rise due to the first breakup mode of the aluminium tweeter at about 37kHz - significantly higher than achieved by conventional 25mm aluminium domes due to B&W's use of a stiffer dual-layer dome construction. Low frequency extension of 58Hz (-6dB re. 200Hz, determined using a diffraction corrected near-field measurement) is a little disappointing given the cabinet size. The cumulative spectral decay waterfall [Graph 2] shows what appear to be breakup modes of the FST midrange unit above 3kHz. KH



ABOVE: The CM10's forward response is flattest just below the tweeter axis. Note steep ultrasonic peak



ABOVE: Internal bracing keeps cabinet resonances damped although FST driver modes are visible >3kHz

#### **HI-FI NEWS SPECIFICATIONS**

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	89.5dB/89.4dB/88.9dB
Impedance modulus min/max (20Hz-20kHz)	2.9ohm @ 123Hz 22.8ohm @ 59Hz
Impedance phase min/max (20Hz-20kHz)	-68° @ 72Hz 47° @ 1.2kHz
Pair matching (200Hz–20kHz)	±0.9dB
LF/HF extension (–6dB ref 200Hz/10kHz)	58Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.4% / <0.1% / 0.1%
Dimensions (HWD)	992x200x337mm

#### **OUTBOARD DAC**

Outboard USB & S/PDIF DAC with variable balanced outs Made by: McIntosh Laboratory Inc. USA Supplied by: Jordan Acoustics Ltd Telephone: 01592 744779

Web: www.mcintoshlabs.com; www.jordanacoustics.co.uk



# McIntosh Dl00

Dubbed a 'digital preamp', McIntosh's D100 adds its classic twist to a now-familiar approach to control centres – but is it more 'digital' than 'preamp'?

Review: Ken Kessler Lab: Paul Miller

y commission for this review came with a cavaet: 'Ken, McIntosh calls this a "digital preamplifier", but it's really an outboard S/PDIF and USB DAC with a digitally-governed variable output. A digital preamp might still offer analogue inputs.'

No real argument from me, but then that's one of those 'neither one thing nor the other' situations. It begs the question: does adding a volume control to a DAC with multiple inputs and analogue outputs make it a preamplifier, or is it still just a DAC? As in the Twix adverts, you can call it whatever you wish. I'd rather not lose sight of the fact that McIntosh's D100 is exactly what it says it is, provided you can live without any analogue inputs.

#### IT'S PUKKA McINTOSH

You might feel we're being a touch OCD by going on about it, but think of all the analogue 'legacy' products that are out there, even for those who embraced digital the way a crack addict sucks his pipe: FM tuners, tape decks, phono stages, etc. It reminds me of my recent, similar contretemps with the young designer of a \$6000 headphone amplifier with six inputs but no line *output*, who didn't understand why I was confounded by his willingness to hamstring a product, denying its appeal to an entire market sector.

Enough. Neither the lack of an analogue input, nor a sexy, direct-iPod/iPhone input incapacitates this product because: 1) it's pukka McIntosh with the aesthetic form that makes the brand the most instantlyrecognisable make ever; 2) it has both fixed and variable single-ended and balanced outputs to feed any power amplifier (which is what a preamp should do) or another preamp; and 3) it provides five digital inputs in a sensible quantity: two coaxial, two Toslink optical and one USB.

RIGHT: Mac's 'Quad Balanced' analogue output (top of left-hand PCB) is driven via a stateof-the-art eight-channel ES9018S DAC (square IC, bottom right of left-hand PCB). The right-hand PCBs are for power supply and digital processing

Buried in that paragraph is McIntosh's get-out clause if they continue to be harried by those who miss an analogue input: just feed either of the fixed outputs to your existing analogue preamp and treat this as an all-bells-and-whistles DAC. Which. I, er, believe is where we came in...

Back to the rear panel: I can already hear some wag kvetching about the lack of AT&T, BNC and other digital inputs, but let's get real for once. This joyous little box costs a sane (by high-end standards) £2995. It is comprehensively remotecontrolled, it offers the above-listed means of ingress and egress, and includes socketry for power control output, rear panel data ports and rear panel IR sensor input. Which provides us with another clue to McIntosh's intent: this is ideal for custom-install and AV set-ups.

Sitting there almost unnoticed, in the lower left-hand corner, is the secret weapon possessed by this unit. Unlike many manufacturers who have gone over to 3.5mm stereo headphone sockets, Mac provides a receptacle for a proper 1/4 in jack. This feature would prove to be, from my viewpoint, the D100's saving grace.

Because the D100 is so compact and light – around 6kg – I schlepped it all over the house, using it with my home cinema, in my main listening room and on my desk. Installed between an iMac and a Quad 909, feeding Pioneer SP-BS22-LR or LS3/5As, the D100 became my digital command centre for a couple of weeks. But it was the headphone socket that kept calling to me.

I had no problem with either coax or Toslink from the PC, while the iMac-to-USB connection showed up immediately in the 'System Preferences' box under 'Sound' as quick an installation as the Micromega MyDAC that's now a permanent fixture on my desk. I used a Kimber optical cable and whatever USB cable was hanging out of the back of the Mac.

One problem that affected me (and editor Paul) when using PCs cleared up slightly with the iMac. We both found the display was stuck on 192kHz/32-bit regardless of the USB input, but with the iMac and both iTunes and Fidelia, most





of the readouts were spot-on. Oddly, I had a few 192/32 recordings that read 192/16, but this, however, didn't affect my reviewing, as I used the iMac for nearly all of the listening sessions, primarily with the Fidelia library filled with 192kHz material. (And, no, it wasn't lost on me that McIntosh hi-fi products have an affinity for the Copertino house with a similar name.)

#### IT'S DOWNRIGHT COCKY

Due to sheer laziness, the first cut I tried was on the aforementioned

CD. Phil Everly's Star Spangled Springer [BGO BGOCD0148], a forgotten masterpiece from 1973 produced by Duane Eddy, arranged by Warren Zevon and featuring James Burton, Buddy Emmons, Victor Feldman and other

studio luminaries. It's gentle country rock, showcasing one of the finest voices that's ever been recorded.

It just happened to be in the iMac, and I clicked 'play' on iTunes without actually looking at what it was. Phil's gorgeous vocals – admittedly minus his sibling's support - sounded sweet, natural, lifelike. The opener is the original version of 'The Air That I Breathe', later a massive hit for

The Hollies, and it's filled with delicate details - guitar picking, gentle percussion, lush strings entering a little over one minute in, all arrayed behind Phil. It is a far less melodramatic version, and therefore more intimate.

Although it lacks the sheer mass of The Hollies' rendition, like the colossal drums, the harmonies behind Everly are arranged in a distinctive and unusual manner that contrasts immediately with the UK remake. The singing borders on the sacred, transforming the entire work into

> something as close to a spiritual as is 'Let It Be'.

With such a fragile session, it could have been catastrophic: all edginess and sizzle and sibilance. Instead, I heard silk. But what I was failing to discern – at least, that

is, with any repeatability and uncertainty was a massive difference between the Mac and the MyDAC. As the sessions proceeded, I also found it hard to determine conclusively any sonic differences between the inputs, let alone the various track types, sampling rates and other variables.

In my arsenal were songs and albums downloaded as bonuses with the McCartney box sets, high-res equivalents of ABOVE: If this seems minimalist, it's due to the relegation of many functions to the remote; left rotary chooses source, right sets level, buttons operate mute, standby and menu access

LPs from Yep Roc (who provide downloads free when you buy the vinyl), a few from Chesky, downloads of Eric Clapton's Slowhand and Led Zeppelin's Mothership, purchases from Amazon in MP3 form and from iTunes.

While I was forming an opinion of the device's *overall* capabilities, the subtleties were proving to be too subtle. Partly out of desperation, partly because even McIntosh has highlighted this alternative role for the D100 in its brochure, I turned to the headphone socket. I wanted to eliminate all extraneous sounds, the influence of the partnering products - just the D100 and the sources at my disposal.

To my great delight, it worked beautifully with the Sennheiser HD414s I keep as a reality check, some old Grado RS-1s ... indeed, with every pair of cans I tried, from B&W to MartinLogan to Focal. Now I was ready to rock.

Led Zep's 'Good Times Bad Times' is, according to the D100's screen, a 192kHz/16bit via Fidelia, but it's also the same when played via iTunes at 44.1. (To hell with it, KK, just listen.) It was unmistakable from the outset. The sense of air two seconds in, when heard via the higher-res version through Fidelia, created a space way beyond the earphones' cups. iTunes kept it in my head.

Bottom end: tighter on the MyDAC, with more weight, but no less rhythmic and 'massive'. Guitar-work: more crisp, decidedly more malevolent, via Fidelia. And that Norse-god drumming! iTunes squished it, Fidelia freed it. The McIntosh D100 was proving to be revealing, decisive, open and downright cocky.

'All Down The Line' is a freebie alternate take from amazon.com, a bonus from some Rolling Stones purchase, and an MP3 track I thought was kinda thin. Played judiciously through the D100, it acquired the right 

#### **MAC'S LEGACY**

In its 60-year history, McIntosh has changed hands only four times, attesting to the brand's stability. That may seem excessive, but note that none of its owners has tried to prise McIntosh out of Binghamton, NY, nor forced it to abandon a five-star service department, the familiar so-old-that-it's-new post-retro styling, nor even a proclivity for glass front panels. What has changed is that McIntosh no longer shares information with the cutting-edge digital R&D departments of Denon and Marantz, its former siblings while under the aegis of D&M Holdings.

'The Dl00 was

proving to

be revealing.

decisive, open'

McIntosh is now part of Fine Sounds, the Italian-owned stable that includes Sonus faber, Audio Research and Sumiko, as well as what might prove to be a perfect surrogate for Denon and Marantz in the digital arena: Wadia. The latter is currently undergoing a re-birth, and if it regains its digital supremacy, surely its sisters will benefit? This is not to suggest that McIntosh lacks its own digital wizards, but some of the quirks - like no dedicated iPod/iPhone dock - are puzzling indeed. This just may be the first control unit in six decades where McIntosh left stuff out, instead of including more than you actually need.



## A new angle on LP reproduction

The Lyra Delos moving coil cartridge.

Designed by Jonathan Carr and hand built by Japanese master craftsman Yoshinori Mishima.

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#### OUTBOARD DAC



ABOVE: USB, two coaxial S/PDIF and two optical Toslink digital inputs are joined by both fixed and variable analogue outputs on RCA and balanced XLR connections

a Keith Richards-powered track. Refinement is not even part of the equation. Frenetic playing coalesces into a buzz-saw whole, but (perhaps thanks to the headphones and the amp driving them) it's easy to focus on any single instrument without divorcing one's ears from the rest.

#### PRICING DILEMMA

A track of which I'm particularly fond is the theme music from Justified, Gangstagrass's 'Long Hard Times To Come'. I couldn't find it on a CD, so I bought it as an Amazon MP3 download, one of truly sinister import, especially if you've seen the TV show - 'Redneck Noir', so to speak. It is, like the group's name suggests, a creepy amalgam of rap and bluegrass, and the performance is as arresting as the theme song for The Sopranos.

Lush backing vocals behind a spitting lead vocal, banjo, fiddle and all of the usual instruments one associates with mountain folk of dubious origin, steady hand-claps and minimal drumming serving as a beat track: this is all as atmospheric as the show it announces. You can smell the moonshine. For an MP3 track, the experience was convincing enough to cause one to reassess prejudices about various forms of encoding - through the D100, the impact was visceral, (But I admit that my addiction to the show may have influenced my reaction.)

Not so the gimmicky tracks on Dr Chesky's Sensational, Fantastic And Simply Amazing Binaural Sound Show, which I have as a 192kHz recording from a USB stick handed to me by Dave Chesky at the Munich High End Show. The CD itself is dazzling, but this? I played 'Edgar



The Barber', listening to the sound of scissors, through different front ends, cables, inputs. The D100 - via the Sennheiser HD414s – allowed me to create a pecking order that left no doubt about either the formats, or the D100's capacity as a damned fine DAC.

We thus find ourselves with a dilemma created entirely by the new wave of dirt-cheap DACs from Audioquest, Musical Fidelity, Micromega and others who provide minimalist digital thrills for under £300. The dilemma is: do you spend £3k on this, or keep your existing analogue preamp and purchase two MyDACs or five Dragonflies?

As one who has used McIntosh preamps for over 20 years, I fell under the D100's spell on nostalgia grounds alone. But - again, the missing analogue input aside - I found myself seduced by the resolution from format to format, even though the display might contradict my computer, and though the sound erred toward the soft.

But I kept looking at the price tag and figured, what the hell – you can afford to hang onto your analogue preamp and run them side-by-side.  $\circ$ 

#### HI-FI NEWS VERDICT

Far be it for me to tell McIntosh how to equip a preamp, but the lack of an analogue input limits the D100's appeal to digital-only systems. That aside, the D100 is a ball to use, it sounds more 'analogue' than I anticipated, and it excels as a delightful, upscale headphone amp – which makes it as 'contemporary' as the next episode of Newsnight. In this guise it's a gem, if you can forgo analogue sources.

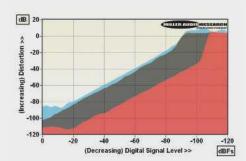
Sound Quality: 78%



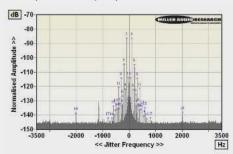
#### McINTOSH D100

It's surprising that more manufacturers do not add a volume control to their USB DACs, creating a 'digital preamp' that will drive power amplifiers directly. The D100's maximum 16V variable balanced output (4.4V fixed) is more than sufficient for the task, although the 540ohm source impedance is perhaps a little high. The DAC's frequency response extends out to -1.1dB/45kHz with 96kHz media but there's a more pronounced, and arguably quite sensible, roll-off thereafter that reaches -11.5dB/90kHz with 192kHz media. The A-wtd S/N ratio is very wide at ~116dB via both S/PDIF and USB inputs and distortion very low at 0.0003-0.0009% through mid and treble frequencies at maximum output via S/PDIF [see Graph 1, below].

Beyond this, the D100 has a few 'issues'. THD increases at low frequencies to 0.007% at 20Hz which, although not 'high', indicates a degree of PSU-related stress that's also reflected in a slight increase in output impedance of 610ohm/20Hz and, of greater concern, a considerable 2610psec of ±100Hz/ ±200Hz etc rectifier switching intermodulation/jitter [see Graph 2, below]. The latter will likely have a subjective effect, warming but softening the perception of bass detail. Jitter was sufficiently high via the USB input that I was unable to obtain a stable measurement. Moreover, although the USB's excellent A-wtd S/N ratio suggests that 24-bit data is not reduced to 16-bit, signals below a mere -90dBFs are evidently truncated via the PC USB 2.0 drivers [see Graph 1, below]. The display also reads '192kHz/32-bit' regardless of input resolution... Readers may view comprehensive QC Suite test reports for the McIntosh D100's S/PDIF and USB inputs by navigating to www.hifinews. co.uk and clicking on the red 'download' button. PM



ABOVE: Distortion vs. 24-bit/48kHz digital signal level over a 120dB dynamic range. S/PDIF input (1kHz, red) and USB input (1kHz, black; 20kHz, blue)



ABOVE: High resolution jitter spectrum from 24-bit/ 48kHz data over S/PDIF (USB was indeterminate)

#### **HI-FI NEWS SPECIFICATIONS**

Maximum output level (Balanced)	4.44Vrms at 540ohm
A-wtd S/N ratio (S/PDIF / USB)	116.5dB / 115.4dB
<b>Distortion</b> (1kHz, 0dBFs/–30dBFs)	0.00027% / 0.0004%
Dist. & Noise (20kHz, 0dBFs/–30dBFs)	0.00085% / 0.0004%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0dB to -0.17dB/-1.1dB/-11.5dB
Digital jitter (48kHz/96kHz/USB)	2610psec / 1380psec / see text
Resolution @ -100dB (S/PDIF / USB)	±0.1dB / see text
Power consumption	9W
Dimensions (WHD)	445x98x406mm

#### CARTRIDGE

Medium-output moving-coil pick-up Made by: Linn Products Ltd. Glasgow Supplied by: Linn Products Ltd Telephone: 0141 307 7777 Web: www.linn.co.uk Price: £2960



# Linn Kandid

Glasgow's most famous turntable brand has just updated its popular and long-lived Akiva moving-coil cartridge – so is the difference clear to hear?

Review: Nick Tate Lab: Paul Miller

ew flagship moving-coil cartridges from Linn don't come along too often, but when they do they're usually excellent. So the release of the Kandid is likely to get lots of Linn lovers hot under the collar, as it's a device purposed to work hand-in-glove with the Sondek LP12 turntable and Ekos SE tonearm combination. It replaces the Akiva, which has flown the marque's flag for MCs for a good few years now.

The Kandid differs from its predecessor in several significant ways, the most visually conspicuous of which is its new 'naked' generator assembly. It has long been known that cartridge bodies induce coloration. To this end, designers have periodically experimented with all sorts of housing materials, from resin to metal to wood, but the Kandid dispenses with a conventional body altogether. Instead it's a skeletal design with its generator uncovered. Potentially, this makes installation hazardous as it's not just the stylus and cantilever you've got to worry about; but the Kandid's clever stylus quard is more like a 'body quard', which makes fitting it a relatively easy process.

The chassis is aircraft-grade aluminium, and sports the three-point mounting hole system first seen in the Troika a quarter of a century ago (you can use just the main two holes if not fitting it to a Linn or Naim arm).



Out of the generator assembly protrudes a boron cantilever

tipped with a 3x70µm nude line contact stylus; the angle at which this sits has been changed from the Akiva's 23° to 20°, so as to bring the front and rear magnets inside the generator into perfect alignment when the correct tracking weight is applied. A plastic front yoke screw is fitted, rather than metal (which might interfere magnetically with the pickup coils) – and this also allows the arm counterweight to be set closer to the bearings. The Kandid is easy to align

LEFT: Linn's partially exposed MC generator is mounted onto a machined, one-piece alloy body/mounting-plate design to match the Ekos

in the headshell, and its captive cartridge leads make fitting to a Linn arm easy. Recommended tracking force is 1.72-1.77g (I found the cartridge worked best at the recommended 1.75g). While the Kandid is a far less attractive looking affair than the svelte, black bodied Akiva, it shows every sign of being as meticulously hand-built.

### ON A MISSION

Linn pick-ups have historically been on the incisive side - indeed fans of softer and sweeter devices such as Koetsus may call them 'forensic', in a disparaging way. Suffice to say that the new transducer isn't a radical departure, inasmuch as it doesn't attempt to seduce the listener with a silky suaveness – rather, it gets right into the groove and pulls out the music with breathtaking insight. The result is a seat-ofthe-pants listen, but it's important to note that this MC displays great delicacy too you would never call it a headbanger.

Whatever you choose to play, the Kandid shows the same basic instinct to push the song along, as if on a mission to drive the musical point home. Yet this doesn't come from any jarring tonal brightness - admittedly it's a wee bit well lit towards the top of the audio band, but this doesn't manifest itself unpleasantly. Rather, it 'sparkles up' duller recordings, breathing life into them without making

#### A LYRA CONNECTION?

The person responsible for the new Kandid is Linn's Senior Product Design Engineer David Williamson, although there has been speculation that the design was done in conjunction with Lyra of Japan. The Kandid does indeed share certain design similarities with the latest Lyra moving-coils: for example, the 'naked' generator assembly and specially angled cantilever are Jonathan Carr favourites - and seen in the new Lyra Delos [HFN May '13]. Also, while the Kandid is very much a recognisably Linn-sounding device, it is not too dissimilar to the Lyra family sound. However, a Linn spokesman has told HFN that any possible work with outside companies 'is confidential', and Linn does not reveal 'when and who it partners with', and stressed that all engineering concepts, product development and intellectual property 'is from and remains within Linn'.

brighter ones in any way unpalatable. Indeed, the Kandid doesn't discriminate for or against any one musical genre.

This said, one could never claim that it delights in dog-eared discs. My 'well campaigned' original issue of Deodato's Midnight Cruiser [Warner Bros 56848] sounds like it has been to one too many parties (which it has), and the Linn doesn't mask this as might, say, a Koetsu or van den Hul. Yet no sooner had the lead-in groove run its natural course the cacophony of surface noise melted away as the Kandid began to sing like a bird before breakfast.

### PINNED TO THE WALL

Happily, my copy of Tom Tom Club's eponymous LP [ILPM 9686] has stood the test of time better, and the beautiful but bonkers 'Genius Of Love' sounded just that. The tightly

syncopated drum and bass quitar work of Chris Frantz and Tina Weymouth was gripping, edge-ofthe-seat stuff. Even though the track plods along at only

a moderate pace, the Kandid was a veritable energy rush – digging deep and throwing out masses of detail. Yet it all fitted together in a natural, believable way.

Unlike some more analytical MCs, it wasn't as if the pick-up was doing an audit of what was in the groove. Rather, it was letting the musicianship flood out in a delightfully enjoyable manner. Indeed, the great thing about a truly top-notch cartridge such as this is that you can 'wander around' inside the mix, listening to all the various strands and how they fit together, yet also defocus and change your depth of field to enjoy things as a cohesive whole. With the Kandid, this was as easy as pie.

You'd never call this cartridge sumptuous: it isn't tonally rich in a euphonic way, although placement in the still ever-so-slightly-warm Sondek does invest it with a little more body in the upper bass and



ABOVE: 3x70µm nude line contact stylus and solid boron rod cantilever. Colour-coded connections exit on flying leads while the body has three pre-tapped mounting holes

lower midband. But wherever it finds itself, the bass sounds taut and tuneful, without any hint of overhang, midband is transparent and three-dimensional, and the treble crisp, delicate and detailed

'The Kandid was

a veritable energy

rush, digging

deep into details'

almost to a fault.

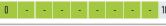
Listening to the Kandid isn't like putting your 3D goggles on: this cartridge gives a deep and wide soundstage.

but not one that's out of this world. What it is brilliant at is locating instruments in space: as Chick Corea's Return To Forever [ECM 1022ST] showed, they might as well be nailed to the back of your listening room wall.  $\circ$ 

### **HI-FI NEWS VERDICT**

Proving itself to be a deeply capable MC over the years, Linn's Akiva was always going to be a hard act to follow. But the new Kandid betters it across the board, bringing greater insight and grip, while improving still further on its predecessor's musicality. Recordings appear in pin-sharp focus, yet the cartridge seems to enjoy itself immensely while doing so. An excellent new moving-coil, well worth hearing.

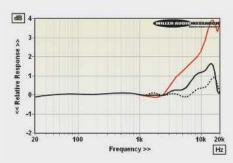
Sound Quality: 84%



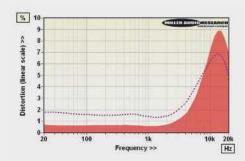
### **LINN KANDID**

Noting the similarities between Linn's flagship cartridge technology and Japanese-brand Lyra's, comparisons between that company's Delos MC [see HFN May '13] and the new Kandid prove instructive. Both MCs offer the same tracking performance – good to nearly 80µm on the left and 75µm on the right channel - and able to challenge the +15dB/300Hz groove at 0.8/1.7% THD (L/R) at 1.75g downforce, and both have a similar ~20cu dynamic compliance although the Kandid is some 2g lighter to ensure the arm/cartridge resonance is better managed in the Ekos SE tonearm. The Kandid's 'body' is also made of the same aluminium alloy as the Ekos's headshell.

Linn rates the Kandid's output as 0.4mV while, in practice, it's much closer to the Lyra Delos's 0.65 mV at 0.6 mV ( $600 \mu V$ at 1kHz/5cm/sec) with an acceptable 0.5dB channel imbalance. Unequalised distortion is low at ~2.5% (1kHz/5cm/sec) and is primarily 2nd harmonic but, versus frequency, shows a more pronounced rise to 9-10% (lateral, -8dB) and 5-7% (vertical, -8dB) at 12-14kHz [see Graph 2, below]. This will be of little subjective consequence as the 2nd, 3rd (etc) harmonics are well outside of the audio band, but it is a reflection of the Kandid's extended response which shows a 'bright' presence and upper treble output [see Graph 1]. The treble rise is stronger with L+R cuts, influencing the projection of female vocals for example, than peripheral L-R information. Our sample also possessed a 'hotter' right channel [red trace, Graph 1]. Readers may view a comprehensive QC Suite test report for the Linn Kandid MC pick-up by navigating to www.hifinews.co.uk and clicking on the red 'Download' button. PM



ABOVE: Frequency response curves (-8dB re. 5cm/ sec) lateral (L+R, solid) versus vertical (L-R, dashed)



ABOVE: Lateral (L+R, solid) and vertical (L-R, dashed) tracing and generator distortion (2nd-4th harmonics) vs. frequency from 20Hz-20kHz (-8dB re. 5cm/sec)

### HI-FI NEWS SPECIFICATIONS

Generator type/weight	Moving coil / 5.7g
Recommended tracking force	1.7-1.8mN (1.75 mN)
Sensitivity/balance (re. 5cm/sec)	600μV / 0.46dB
Compliance (vertical/lateral)	22cu / 18cu
Vertical tracking angle	24 degrees
L/R Tracking ability	80μm / 75μm
L/R Distortion (–8dB, 20Hz-20kHz)	0.89-9.6% / 0.57-8.8%
L/R Frequency resp. (20Hz-20kHz)	-0.6 to +1.6dB / -0.2 to +3.7dB
Stereo separation (1kHz / 20kHz)	34dB / 21dB



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audition five compact monitors side by side

## STANDMOUNT DUDSPEAKERS

TESTED THIS **MONTH** 

£1995 ELAC BS 403 £1479 **MAD 1920S** £1900 PMC TWENTY.22 £1925 **SONUS FABER VENERE 2.0** £1349



Cutting-edge gear, cherry-picked by the Hi-Fi News editor



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### CD PLAYERS • TURNTABLES • CARTRIDGES • LOUDSPEAKERS • AMPLIFIERS • HEADPHONES • STREAMERS •

n a modest-sized listening space : it's folly to shoehorn-in large floorstanding speakers that can swamp the room with too much bass energy and muddy the sound. For many enthusiasts, then, a good quality 'bookshelf' speaker is the sensible option, placed on stands that present the speaker at the correct height. Our group test this month features five well appointed models from £1350-£2000, all with carefully considered enclosure designs and drive units befitting their added-value prices.

To affirm the wide tonal variety different loudspeakers deliver there's nothing more illuminating than to hear a selection side by side in quick succession. Here we have five compact designs aimed at quality-conscious music lovers who won't mind paying a little more for something that's beautifully finished, and designed to offer better sound quality than budget designs built strictly to a price.

B&W's PM1 is a beautifullymade mini-monitor employing an elaborately constructed enclosure and hi-tech drivers, its tweeter mounted in a tapered tube as seen in the company's flagship 800 Series and Nautilus models.

From Germany we have Elac's miniature BS 403, which sports the marque's latest design of Air Motion Transformer tweeter coupled with a 15cm mid/woofer in a vented enclosure. Made in the UK is My Audio Design's 1920S whose ultracompact design was inspired by the BBC LS3/5A mini-monitor, says the company. Also from the UK we have PMC's twenty.22 designed by company owner Peter Thomas, an ex-BBC engineer who champions transmission line enclosures. Finally there's the Sonus faber Venere 2.0. an affordable standmount from the Italian company famous for its luxurious speaker designs.

### **SYSTEM AND MUSIC**

For the listening tests the speakers were auditioned 'blind', driven by a Mark Levinson No.383 amplifier. The source was a T+A DAC 8, its asynchronous USB input fed from a Mac mini running JRiver Media Center playback software under Windows 8. We normalised the volume level by playing a pink noise signal and monitoring the speakers' broad midrange output via an SPL meter at the listening position.

Music tracks included the late Radka Toneff's 'The Moon Is A Harsh Mistress', a delightfully simple recording of female voice and piano from the album Fairy Tales [Odin CD-03] and Sting singing The Police's 'Roxanne' from his intimate live set ...All This Time [A&M Records 493 156-2]. Far less intimate – a rock band recorded in what was the Hammersmith Odeon in 1977 - is Frank Zappa's 'Pink Napkins' from the Shut Up 'n Play Yer Guitar box set [EMI CDS 7 90084 2]. Classical pieces included an excerpt from Vivaldi's Concerto in C performed by Rachel Podger with the Holland Baroque Society [24-bit/192kHz download from Channel Classics1 and Eiji Oue conducting the Minnesota Orchestra in 'Dance of the Tumblers' from Nikolai Rimsky-Korsakov's The Snow Maiden, a challenging recording made by Reference Recordings [Exotic Dances From The Opera - 24-bit/96kHz download from HDtracks].

REVIEWS BY JOHN BAMFORD LAB REPORTS BY KEITH HOWARD

CD PLAYERS • TURNTABLES • CARTRIDGES • LOUDSPEAKERS • AMPLIFIERS • HEADPHONES • STREAMERS •

### **GROUP TEST**

Two-way standmount loudspeaker Made by: B&W Group Ltd, West Sussex Supplied by: B&W Group Ltd Telephone: 0800 232 1513 Web: www.bowers-wilkins.co.uk Price: £1995



### B&W PM1

owers & Wilkins' PM1 is an ultra-compact audiophile design containing DNA from the brand's high-end Nautilus and 800 Series models. Its enclosure is extremely robust, employing the company's elaborate 'Matrix' grid of interlocking internal panels for strength and rigidity.

In the PM1 further stiffness is provided by its moulded baffle and curved top plate structure, the cabinet luxuriously finished with a rubberised surface and capped with gloss Mocha wood side panels. A matching stand is available at £400.

In its Nautilus-style tapered tweeter pod, designed to dissipate unwanted backward radiation, the PM1 sports its new tweeter design, where the 25mm aluminium dome has a wound ring of carbon fibre behind it for additional stiffness. B&W claims this pushes the breakup frequency to above 40kHz.

The PM1's mid/woofer driver is a 130mm long throw Kevlar unit employing a mushroom-shaped EVA polymer centre plug designed to reduce cone resonances and provide a smooth response, suited to the low roll-off rate of the speaker's minimal component crossover. The curved profile port, dimpled to cushion airflow, and heavy duty twin binding posts at the rear (with linking wires supplied) are further evidence of the fine attention to design details.

### TANGIBLE IMAGING

The diminutive PM1 sounded smooth and refined, and delivered surprisingly weighty bass, although



it did sound a little compressed and 'sat on' in the lower registers.

Imaging was excellent, the Holland Baroque Quartet reproduced with a tangible sense of three-dimensionality. What the sound lacked when heard alongside others in the group was a bit of sparkle and 'snap'. Certainly it was lucid and easy on the ear, but it was criticised for being a bit too smooth and rather slow and stodgy. 'The brass doesn't sound very brassy,' commented one of our listeners a trumpet player – when hearing Rimsky-Korsakov's Snow Maiden.

Sting's live performance of 'Roxanne' proved particularly revealing of the speaker's limitations. The bold acoustic bass appeared boomy and plodding. and Sting's voice was chesty and 'cupped', as if he was suffering from a mild cold. What the PM1 did provide, despite its ultra-compact size, was a reasonable sense of scale and occasion thanks to its generous bass output and fine imaging.

Sound Quality: 76%

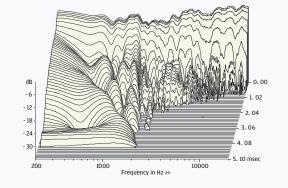




B&W claims 84dB sensitivity for its PM1 which accords well with our pink noise figure of 83.6dB. Nominal impedance is 80hm but a claimed minimum of 5.1ohm suggests a 6ohm rating is more appropriate, particularly given our measured minimum of 4.4ohm. LF phase angles reduce the EPDR (equivalent peak dissipation resistance) to a low of 2.4ohm at 127Hz, making the PM1 quite a friendly amplifier load.

On-axis frequency response has a broad suck-out centred on 1.5kHz followed by a rise beyond 3kHz, so off-axis listening may give the most neutral tonal balance. Response errors were moderate, though, at ±4.1dB and ±4.3dB and pair matching good at ±0.9dB. Bass extension is best in group at 51Hz (-6dB re. 200Hz) while the ultrasonic response extends beyond 40kHz. The CSD waterfall [Graph, opposite] shows fast initial decay and mostly good control of breakup resonances. KH





Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	85.2dB / 83.6dB / 83.0dB
Impedance modulus min/max (20Hz-20kHz)	4.4ohm @ 195Hz 35ohm @ 2.1kHz
Impedance phase min/max (20Hz–20kHz)	–51° @ 101Hz 54° @ 24Hz
Pair matching (200Hz–20kHz)	±0.9dB
LF/HF extension (-6dB ref 200Hz/10kHz)	51Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	1.3% / 0.3% / <0.1%
Dimensions (HWD)	331x191x250mm
\ /	



Two-way standmount loudspeaker Made by: ELAC Electroacustic GmbH, Germany Supplied by: Hi-Fi Network Ltd. Gloucs. Telephone: 01285 643088 Web: www.elac.com; www.hifi-network.com

### **GROUP TEST**

## Elac BS 403

lac is one of only a handful of companies worldwide making Air Motion Transformer tweeters, first developed by Dr Oskar Heil in the 1970s, which employ a folded polymer sheet structured around aluminium struts in a highpower magnetic field. Elac calls its transducer the JET.

Elac introduced its Line 400 range of speakers at last year's Munich High End show, with samples first arriving in the UK at the beginning of this year. They feature newly developed drivers, the latest JET 5 tweeters and bass/mid drivers with die-cast aluminium mounting plates and baskets.

The BS 403 is an ultra-compact two-way with a downward-facing port that fires to a base-plate, the idea being to make the character of the reflex loading predictable. The bass/mid driver in the BS 403 is a 150mm unit with a crystal patterned cone formed of a paper and aluminium sandwich and employing an extra strut at the centre of the coil former, which attaches to the rear of the cone in addition to the usual voice coil connection.

Elac makes a £399 universal stand that's a perfect partner for the BS 403, the LS 70/II, available in black, white and titan grey finishes. This can be damped with sand filling.

### FAST AND EXPLICIT

From the opening bars of Zappa's 'Pink Napkins' the sense of acoustic was notable for its openness and three-dimensionality, the BS 403



universally praised for its clarity and high resolution. Bass was a little boxy - as it was with all these mini-monitors – but not so cloudy or compressed as to cause undue criticism from the listening panel.

In fact with our big orchestral track the little Elac sounded all of a piece, the sparkling tambourine and triangle hovering above the soundstage in holographic fashion, and it made a creditable stab at recreating the 'oomph' of the timpani during the challenging sections of the Rimsky-Korsakov.

Where the MAD tended to coarsen under duress the Elac remained refined-sounding; and where the B&W and Sonus faber tended to blunt the leading edges of transients the Elac sounded fast and explicit. 'It's much more like we're there,' said our panel when hearing the Holland Baroque performance. The BS 403 was judged to deliver the best reproduction of Sting's voice from our group of speakers. That tweeter sounded gorgeous!



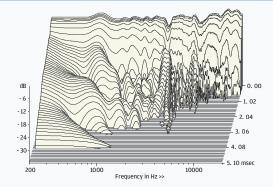




Elac claims 86dB sensitivity for the BS 403 which accords well with our pink noise figure of 85.7dB. As the 4ohm nominal rating suggests, low impedance helps achieve this, the modulus dropping to a minimum of 3.10hm at 584Hz. Impedance phase angles are high enough to dip the EPDR to 1.5ohm at 790Hz and 1.6ohm at 136Hz, making the BS 403 quite a challenging amplifier load.

Its on-axis frequency response is the flattest of the group, reflected in modest error figures of ±3.6dB and ±3.0dB, albeit with some excess energy in the top audible octave. Pair matching was less impressive at ±1.9dB but the largest disparities occurred in a narrow range between 3kHz and 4kHz. Bass extension of 65Hz reflects the small cabinet: the JET tweeter easily reaching above 40kHz. The cumulative spectral decay waterfall shows fast initial decay but with a breakup mode in the area of largest pair matching error. KH





<b>Sensitivity</b> (SPL/1m/2.83Vrms – Mean/IEC/Music)	86.5dB / 85.7dB / 85.3dB
Impedance modulus min/max (20Hz–20kHz)	3.1ohm @ 584Hz 16.1ohm @ 31Hz
Impedance phase min/max (20Hz–20kHz)	–50° @ 102Hz 43° @ 996Hz
Pair matching (200Hz–20kHz)	±1.9dB
LF/HF extension (-6dB ref 200Hz/10kHz)	65Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	1.1% / 0.4% / 0.1%
Dimensions (HWD)	308x166x294mm



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Two-way standmount loudspeaker Made by: My Audio Design, Croydon Supplied by: MAD Telephone: 0208 123 9789 Web: www.madengland.com

### MAD 1920S

un by founder Timothy Jung, My Audio Design (MAD) has a workshop in Sussex where it makes cables and loudspeakers. Its admin office has recently been relocated to Wales.

MAD's entry-level standmount is the 1920 (£1620). The 'S' version featured here is nominally identical save for a more elaborate cabinet construction, with finishes in high-gloss red, white or black and bespoke. The company calls its layering of damping compounds and materials of varying density DRC (Damping Resonance Control) and SWC (Standing Wave Control). The vented enclosure has a rear port.

The 1920S's 22mm silk domed tweeter with neodymium magnet and paper coned 145mm mid/ bass driver are from Wavecor Ltd, a Chinese manufacturer founded in 2005 by Danish ex-Vifa engineer Allan Isaksen. The drivers cross over at 2kHz, the dividing network being point-to-point wired using silver solder. Internal wiring is the company's Silver Signature and Diamond Silver SPL Series cables with Teflon insulation. The speaker's grille is best left in place since it is profiled to obviate the step at the edges of the cabinet's inset baffle.

### TEXTURE LACKING

The 1920S sounded commendably airy and 'open' despite its lack of presence band energy – see Lab Report. Where the B&W and Sonus faber were smooth and relaxed in demeanour the MAD 1920S



appeared vibrant and spirited, more in the manner of the PMC and Elac models in our group.

The image of Radka Toneff was entirely believable thanks to the speaker's animated exuberance, although her voice sounded a little 'cardboardy' and veiled – and the speaker seemed to struggle with dynamic crescendos, the piano then appearing rather clanky.

The audience applause in Sting's live 'Roxanne' was not at all convincing and when the 1920S was auditioned alongside the other speakers in our group it sounded as if Sting's vocal had been recorded using a different microphone.

His voice was thin and nasal, lacking chesty 'body', and there was little in the way of description of timbre and texture in the accompanying instruments. The ultra-compact MAD also struggled to reproduce the scale of the Minnesota SO despite the speaker delivering reasonably weighty bass for its very small size.



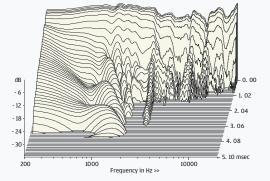




MAD claims 90dB sensitivity for the 1920S but our pink noise figure of 87.7dB suggests that this is 2dB optimistic. No impedance is specified but the measured minimum of 2.7ohm would stretch even a 40hm rating, Moreover, impedance phase angles drop the EPDR to 1.4ohm at 157Hz and 715Hz, making the 1920S the toughest amplifier load of the group.

Measured on the tweeter axis but with the grille fitted (because its frame is profiled to prevent reflection from the edges of the recessed baffle) frequency response is dominated by a ~5dB suckout from 3kHz to 10kHz which will bleed vitality from the sound. Response errors of ±4.7dB and ±5.2dB would be much reduced without this but pair matching was first rate at ±0.8dB. Bass extension was good for the box size at 56Hz (-6dB re. 200Hz) but bass distortion was high. The CSD waterfall is mostly clean but for a breakup resonance at about 3kHz. KH





Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	86.6dB / 87.7dB / 87.6dB
Impedance modulus min/max (20Hz-20kHz)	2.7ohm @ 470Hz 22.3ohm @ 37Hz
Impedance phase min/max (20Hz-20kHz)	-60° @ 114Hz 42° @ 29Hz
Pair matching (200Hz–20kHz)	±0.8dB
LF/HF extension (-6dB ref 200Hz/10kHz)	56Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	2.6%   0.4%   0.6%
Dimensions (HWD)	280x190x230mm





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Jeff Dorgay, TONEAudio July 2012

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Jeff Dorgay, TONEAudio December 2010



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Two-way standmount loudspeaker Made by: The Professional Monitor Co. Ltd, Luton Supplied by: PMC Ltd Telephone: 0870 4441044 Web: www.pmc-speakers.com

### **GROUP TEST**

## PMC twenty.22

uton-based loudspeaker manufacturer PMC introduced its 'twenty series' models to celebrate the company's 20th anniversary in 2011. There are five models in the range: two floorstanders, a centre channel speaker and two standmounts: the ultra-compact twenty.21 [HFN Apr '12] and this slightly larger twenty.22. Except for the centre speaker, all of the models' cabinets are sloped at a 5° angle in parallelogram form to afford a degree of time alignment between the drivers, while optional black metal stands (£295) complement this angle.

Internally the enclosures feature PMC's hallmark 'Advanced Transmission Line' (ATL) whereby the bass driver is located near one end of a long tunnel damped with absorptive material which vents at the bottom of the front baffle. In the twenty.22 the ATL's effective length is 2.0m, while the bass driver features a cast alloy chassis and 170mm doped paper cone that is made in-house. It crosses over at 1.8kHz to a 27mm Sonolex fabric dome tweeter made to PMC's design by SEAS, fitted with a dispersion grille and ferrofluid cooling. The cabinets are made from 18mm Medite finished in oak, walnut or amarone veneers or highly polished 'Diamond Black'.

### TELLING REALITY

Thanks to an open-mouthed and vivid sound character the image created by the PMC was enormous. 'The singer seems to have gained



a couple of feet in height,' commented our listeners when hearing Radka Toneff - ironic since she was undoubtedly sitting at the piano, but you get the drift. As with the Elac BS 403, the sound was vibrant and 'fresh', the scale and sonority of the piano and the space it occupied in the venue reproduced with convincing weight and body.

The reproduction of the audience's applause in the live Sting recording was particularly telling: uncannily real and threedimensional. Sting's bass was tuneful and notably well-controlled. Similarly the rolling fretless bass playing in Zappa's 'Pink Napkins' was clearly depicted by the twenty.22 where the B&W and Sonus faber speakers were less explicit and more mellow. In particular the vibrancy of the cymbals helped to define the size of the Odeon arena.

And it sounded like we'd moved 20 rows forward in the hall when hearing the Minnesota Orchestra's vigorous Snow Maiden rendition.

Sound Quality: 80%

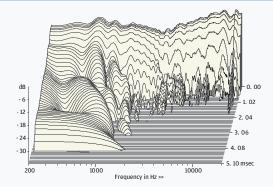




PMC claims 90dB sensitivity for its twenty.22 but our pink noise figure of 87.0dB suggests that this is fully 3dB optimistic. As payback, the impedance falls to 5.3ohm minimum – slightly too low to justify the 8ohm nominal figure but still good news for partnering amplifiers – and modest phase angles drop the EPDR to a low of 3.0ohm at 736Hz, making this the friendliest load in the group.

The on-axis frequency response is dominated by a dip between 2kHz and 4kHz that is followed by rising output into the high treble, suggesting that off-axis listening will give a more neutral tonal balance. Response errors are ±5.8dB and ±5.1dB as a result and the pair matching is also a little disappointing at ±1.4dB but with the largest disparities occurring above 15kHz. Given the cabinet size 58Hz bass extension is modest and the nearfield response shows a lift at 100Hz. The CSD waterfall is commendably clean. KH





Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	89.3dB / 87.0dB / 85.9dB
Impedance modulus min/max (20Hz–20kHz)	5.3ohm @ 235Hz 32.5ohm @ 2.3kHz
Impedance phase min/max (20Hz–20kHz)	-46° @ 3.8kHz 48° @ 1.4kHz
Pair matching (200Hz–20kHz)	±1.4dB
LF/HF extension (-6dB ref 200Hz/10kHz)	58Hz / 36.4kHz/38.0kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	0.5% / 0.9% / 0.2%
Dimensions (HWD)	410x184x367mm

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The new MC Anna from Ortofon sits at the highest echelon of Moving Coil cartridges. This state-of-the-art product is representative of numerous design elements and ideals pioneered by one of the world-leaders in analogue technologies. As a result, the MC Anna is truly capable of the highest degree of performance possible, and will provide a sound which is literally unsurpassed. The MC Anna is named after and inspired by the world-renowned operatic soprano, Anna Netrebko.



The stylish Xpression cartridge from Ortofon bridges the gap between SPU-type designs and High-End models like the MC Windfeld and MC Anna, which are designed for headshell mounting. The result is a high-performance moving coil cartridge with the convenience of a standard headshell connector. By using some of the best technologies available to them, Ortofon have made the Xpression into not just a convenient and attractive design, but also one of the finest sounding cartridges available on the market.

## Cadenza Series











The Cadenza series represents another example of Ortofon's constant push toward technological perfection.

By taking various design characteristics acquired through market leaders, such as the MC Jubilee and Kontrapunkt series, Ortofon have developed Cadenza to elevate any decent Hi-Fi system to a whole new level.

The range consists of 5 different models, including a Mono version, but they all adhere to Ortofon's core principles of accurate information retrieval and phenomenal sound performance.



Two-way standmount loudspeaker Made by: Sonus faber, Italy Supplied by: Absolute Sounds Ltd. UK Telephone: 0208 971 3909 Web: www.sonusfaber.com; www.absolutesounds.com

### **GROUP TEST**

Sonus faber Venere 2.0

esigned in Sonus faber's headquarters near Venice, the Venere range offers extremely high value thanks to volume manufacturing in China. Quality of finish - in gloss black or white lacquer, with wood side panels available at a small premium - is exemplary. Two floorstanders, two standmounts, a centre speaker and a wall-mount design make up the range – this 2.0 model is the larger of the two standmounts. The optional stand (£349) also represents exceptional value with its stylish and carefully considered design, tempered glass base plate and adjustable aluminium footers. It bolts to the underside of the speaker cabinet.

The Veneres' drivers employ cones and domes manufactured by the German DKM group. In the 2.0 the mid/bass driver is a 180mm 'Curv' thermo-moulded polypropylene/textile composite cone, crossing over at 2kHz to a 29mm silk dome tweeter.

Avoiding parallel surfaces, the MDF enclosures have arched side panels and an upswept top plate with tempered glass inset panel, while the sloping baffle is deeply sculpted to create a waveguide for the tweeter and inset woofer. The reflex enclosure vents through a slot at the bottom of the baffle.

### SOFT TRANSIENTS

The Sonus faber was one of the largest-sounding monitors of the group, rivalled only by the PMC in the manner by which it served up an impressive low-end 'oomph'. Of



course the bass didn't extend to very low registers but was satisfyingly full and weighty.

With Sting's live 'Roxanne' the applause sounded rather 'wooden' and the plucking of the acoustic guitar's strings appeared noticeably softened, lacking the leading-edge bite depicted by the PMC and Elac. The Venere 2.0 does, however, sound smooth and refined at the top-end, high frequencies rarely grating, but the sound lacks a degree of dynamic realism.

With our string quartet and challenging orchestral recordings the Sonus faber delivered a pleasingly wide but slightly diffuse sound image. 'Those wooden instruments appear to have turned to Bakelite,' said one of our listeners when hearing the Vivaldi concerto, disturbed by the speaker's tendency to veil transients. The image of a string quartet performing in an acoustic space was commendably three-dimensional but the sound was undeniably sugar-coated.

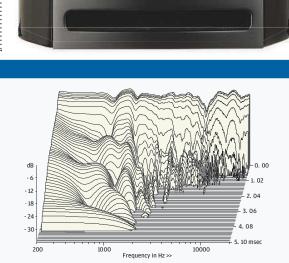
Sound Quality: 78%



### LAB REPORT

At the time of writing, Sonus faber had offered no specification for the Venere 2.0's sensitivity or nominal impedance but 85dB and 6ohm would be the right figures according to our measurements. Pink noise sensitivity was 85.3dB and the modulus dipped to a low of 5.10hm. Modest impedance phase angles yield a minimum EPDR of 2.80hm at 323Hz, making the Venere 2.0 an easy load to drive.

On-axis frequency response is flat in trend but for a narrow 7dB notch of unknown origin at about 7kHz. But for this the response errors would be much lower than ±4.6dB and ±4.7dB respectively. Pair matching is slightly disappointing at ±1.8dB but the largest disparities occur above 15kHz. A bass extension of 63Hz (-6dB re. 200Hz) is also mildly disappointing given the cabinet size but the CSD waterfall shows fast initial decay and well suppressed breakup modes, even at the 7kHz response notch. KH



<b>Sensitivity</b> (SPL/1m/2.83Vrms – Mean/IEC/Music)	85.2dB / 85.3dB / 85.2dB
Impedance modulus min/max (20Hz–20kHz)	5.1ohm @ 182Hz 40.3ohm @ 2.3kHz
Impedance phase min/max (20Hz–20kHz)	-34° @ 103Hz 50° @ 1.1kHz
Pair matching (200Hz–20kHz)	±1.8dB
LF/HF extension (-6dB ref 200Hz/10kHz)	63Hz / 33.9kHz/32.6kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL at 1m)	0.5%   0.2%   0.2%
Dimensions (HWD)	449x246x336mm

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## GROUP TEST VERDIC

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espite their compact form factors, all of the speakers in our group test were praised by our listeners for their room-filling capabilities. Of course they didn't serve up room-shaking thunder from the timpani of the Minnesota Orchestra at full throttle, or the fretless bass playing in Frank Zappa's rock band, nevertheless they all performed better than their diminutive proportions might have suggested. They sounded satisfyingly musical and transparent to our selection of different recording styles, offering good midrange clarity and detail.

After a group of audio-loving friends (none of whom work in the hi-fi industry) had visited for a day, during which the speakers were swapped around in random fashion,

further experiments I made proved that the subjective performance of each speaker could easily be altered by switching the digital filter settings on the T+A DAC 8 used for our tests.

I mention this for two reasons. Firstly it proved all the speakers were sufficiently transparent to reveal what was happening upstream in a replay chain. Secondly, whether you like a speaker's sound will not only depend on how it interacts with your room but also the sonic fingerprint of the system driving it. Remember, when you're comparing A with B it's essential to ensure identical listening conditions and sound pressure level.

**RIGHT:** Elac's JET 5 tweeter adds class to its miniature BS 403. PMC's twenty.22 and Sonus faber's Venere 2.0 offer differing sonic perspectives: we're impressed by both of these speakers

My Audio Design's 1920S was applauded for its up-beat and vivacious music making but our listeners noted that it became a little muddled during crescendos. It sounds great if you don't push it too hard. While a dedicated stand is currently under development by MAD the company recommends stands from Track Audio (which are what we used) or Hi-Fi Racks.

### PACKS A PUNCH

'The Elac BS

403 astonished

us with its open

transparency'

B&W's beautiful little PM1 sounds extremely classy and is exquisitely finished. It packs quite a bass punch too, but our listeners thought it

> rather smooth and over-polite, lacking expressiveness and 'drama'. On the evidence of our listening tests you shouldn't partner it with smoochy-sounding

electronics, rather a front-end and amplifier that provide ultra-crisp sounds to add some sparkle.

Sonus faber's budget-priced Venere models clearly offer truly exceptional value. Our review sample of the Venere 2.0 was in gloss black (if you fancy a more

: luxurious version with a polished wood enclosure it costs £200 extra at £1549). Rather like the B&W, the Sonus faber sounded slightly 'romantic', more easy-listening than a vivid studio monitor - but this might be precisely what you're looking for in a compact standmount for a family room. Certainly it can be highly recommended.

So too can the costlier PMC twenty.22, which was universally admired by our listeners for its dynamic and vivid sound quality, with notably clear and detailed bass. If your budget is tight, as well as the space in your room, you might care to compare the twenty.22 with PMC's even smaller twenty.21 model (£1485) that has been praised in these pages by Ken Kessler [HFN Apr '12] as something of a mini-marvel.

### AND THE WINNER IS...

Finally the Elac BS 403 astonished our audiophiles with its open and transparent sound. One of our listeners – who has plenty of space and who currently owns an aging pair of floorstanders – is considering buying a pair, so impressed was he by the naturalness and clarity of the BS 403's midrange and treble. Certainly it's outstanding for the money.  $\circ$ 





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### **INTEGRATED AMPLIFIER**

Price: £9900

## T+A PA 3000 HV

Following our June review of T+A's no-holds-barred MP 3000 HV digital media player, we assess the matching amplifier from the company's new 'High Voltage' Series Review: John Bamford Lab: Paul Miller

hen German specialist manufacturers choose to go for broke you can assume meticulous attention to detail and fabulous quality of construction. You can usually anticipate eye-watering price tags too. But compared with exotic high-end electronics from boutique manufacturers, T+A's extravagantly built high-end components might even be considered 'bargain-priced', thanks to the company's manufacturing facilities affording economies of scale.

T+A's extensive portfolio encompasses a plethora of 'real world' products including all-in-one music and AV systems. However, the company is no stranger to high-end audio - demonstrated by its flagship V-Series components, which include hybrid valve/solid-state integrated and pre/power amplifiers heralded by the enormous (and utterly fabulous) M10 monoblock that we featured on our front cover during last summer [HFN Sept '12].

Employing valves in its input section, MOSFETs for its driver stage and bipolar transistors to deliver in excess of half a kilowatt into 8ohm, it demonstrated that when this company chooses to design something without compromise it doesn't do anything by halves.

### PERFECT PARTNERS

As outlined in our review of T+A's new MP 3000 HV digital media player [HFN Jun '13] - which has a high-end DAC at its core and a plethora of digital inputs, with built-in CD drive, a UPnP network client for computersourced music streaming, internet radio functionality, and an FM tuner included for good measure - the company has spent the last couple of years developing a completely new range of all-solid-state electronics: its 'HV Series'.

The PA 3000 HV integrated amplifier is housed in an outwardly identical chassis

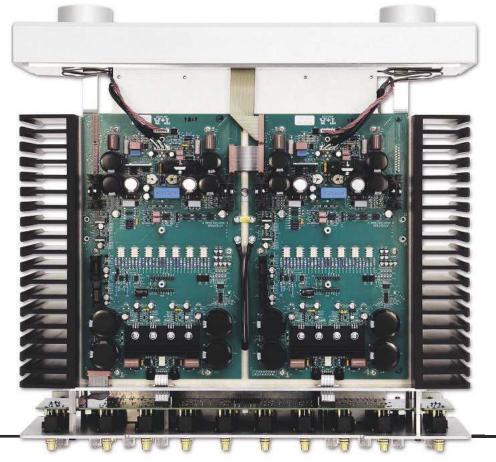
**RIGHT:** Above the section carrying the power amplifier and huge 1000VA toroidal transformer we see T+A's 'HV' preamplifier stage with its relay-switched precision-resistor volume control

to the media player, while pre- and power amplifier 'HV' models are also scheduled for release in the not-too-distant future.

The cases are all-aluminium and of symmetrical (mirror-image) construction. In the PA 3000 HV individual sub-assemblies are housed in their own sealed chambers. An upper compartment houses the preamplifier and voltage amplifier stages, while the electronic control processor and circuitry for driving the display screen which is fed by a separate power supply arrangement – sits in a recess machined out of the 40mm-thick aluminium front panel. A 10mm-thick dividing wall shields the top section from the left/right current amplifier stages and the unit's massive power supply is in a lower compartment. The PA 3000 HV's topology is based on a cascode differential amplifier and is entirely discrete, with galvanic isolation between the voltage and current amplifier stages. All stages are driven at an unusually high voltage - hence the 'HV' [see PM's boxout].

All input switching functions are carried out by sealed gold-contact relays integrated within the circuits to keep wiring to a minimum and signal paths as short as possible. The electronic volume control employs discrete resistors and gold-contact relays to provide gain adjustment in 1dB increments.

At the rear there are six line inputs, inputs 1-4 being switchable between single-ended (RCA) and balanced (XLR) operation. Input 4 can also be configured as a pass-through for integrating with surround decoders in multichannel rigs. Two sets of rhodium-plated speaker terminals are provided which can be







configured for bi-wiring or for driving a second pair of speakers. This is done via the amplifier's setup menu, where you can also name inputs, set trigger functions if required, and control the display brightness of the front panel VFD. A LAN socket is provided on the rear panel for computer control via automation systems.

All key functions can be controlled via the chunky aluminium handset supplied with the amplifier, while if you partner it with T+A's matching MP 3000 HV and connect the two components' E-Bus sockets with a CAT 5 cable you'll find yourself controlling your entire system with the company's splendid FD 100 handset as supplied with the media player. This is a bi-directional RF handset incorporating a small LCD screen that displays colour album artwork when 'streaming' and comes with a charging base into which it can be parked at night.

### FEARFULLY POWERFUL

The company may claim the feedback-less Class A design of its amplifier achieves tonal characteristics similar to those produced by valves, but I'd argue it doesn't

deliver anything like what most audiophiles would describe as a traditional 'tubey' sound. The PA 3000 HV is a subjectively fast and vivid-sounding amplifier that dispenses tight, punchy and fearfully powerful bass.

It is also ultra-revealing. It takes no prisoners here – you'll need to feed it with an ultra-clean and civilised-sounding source to avoid fatigue, since it doesn't prettify the sonic picture or mask any annoying parts of an inferior system's (or recording's) sound. Indeed, it is spectacularly explicit.

I'd begun my listening by plumbing it into my resident system, replacing my Levinson No.383 amplifier [see http://www.hifinews. co.uk/news/article/

meet-the-team;-john-bamford/9884]. The source was T+A's DAC 8 of which I'm so enamoured [HFN Oct '12]. Playing a selection of familiar pieces used as reference tests – CD-resolution classics from Sheffield Lab and hi-res downloads from 2L, Channel Classics and Reference

ABOVE: Large VFD includes touch-sensitive controls, while rotary source selector and volume control knobs employ needle roller bearings to provide a luxurious feel

Recordings – disclosed the T+A amplifier's incredible resolution and subjectively grippy bass control.

With tracks from *The Sheffield Jazz Experience* compilation album [Sheffield Lab SL10046-2-G], such as Dave Grusin's 'Captain Bacardi' and 'Things Change'

by David Benoit with horn player Jerry Hey, I thought the sound rather stark and matterof-fact. The way in which the PA 3000 HV described dynamic shifts in the music was revelatory compared

with my classic Levinson amp which appeared blurred and lazy by comparison, the vice-like grip of the T+A seeming to strip away any overhang of transients to produce a startlingly clear sonic picture of the musicians in space.

### BLACK AND WHITE?

'Put the two HV

components

together and it's

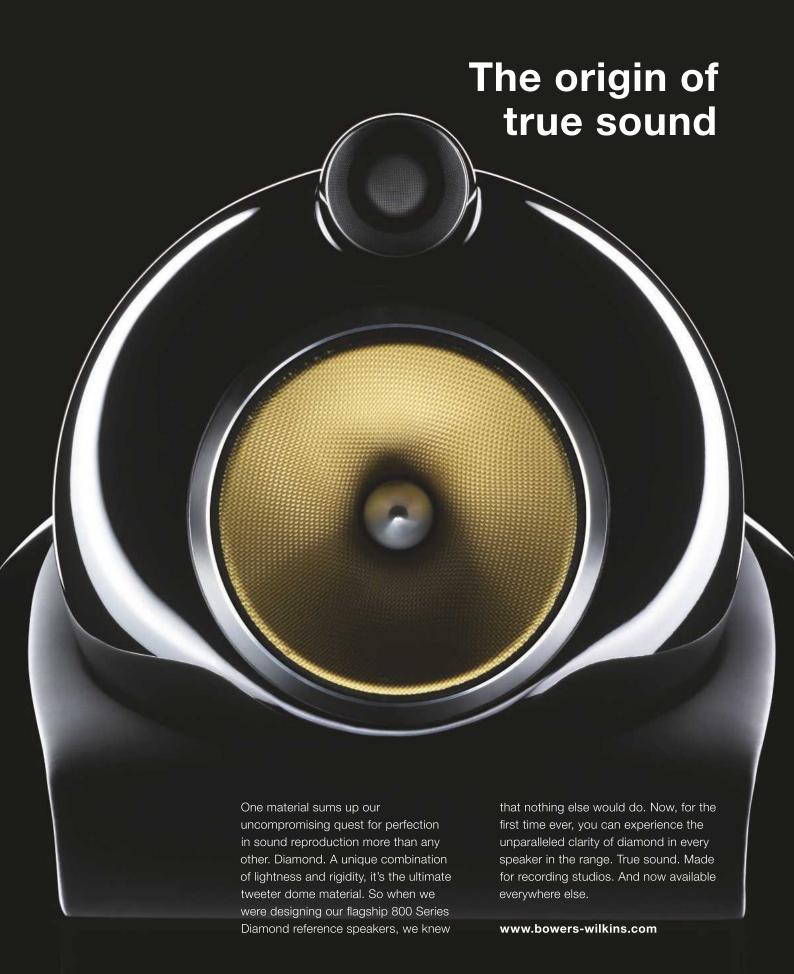
just stupendous'

The sound appeared 'wide open' at both frequency extremes, so that the thwack of kick drums and tom-toms were visceral and the resonances of cymbal crashes were crystal clear. Certainly there was nothing in the way of 'electronic haze' or treble hardness that solid-state detractors might point a finger at, while the amplifier's subjectively black background allowed the image to extend way back from the plane of the loudspeakers.

Yet despite all this cleanliness and clarity, curiously it could appear rather monochromatic and soulless, the amplifier's absence of 'character' making performances seem somewhat sterile.

### HIGH VOLTAGE

Not for T+A the time-worn moniker of SE or LE (Special or Limited Edition), for the 'HV' suffix that appends its latest range stands, quite simply, for 'High Voltage'. Both pre and power sections of the PA 3000 HV employ specially selected FETs (J-FETs and MOSFETs respectively) that are designed to run at far higher voltages than conventional 'audio' transistors. The preamp PSU rails are closer to that of a very high, typically bridged, power amplifier at 80V while the power stage itself has 360V rails, the sort of value more commonly associated with the HT supply of a tube amplifier. This doesn't mean the PA 3000 HV will perform or 'sound' like an archetypal valve amp but, as no more than 20% of the available voltage swing will ever be applied to the loudspeaker, it does allow T+A to position this range over the most linear portion of the FET's operating 'curve'. The result should be an amplifier whose distortion does not change significantly with power output. Has T+A succeeded? See our Lab Report on p55 for the verdict. PM



### INTEGRATED AMPLIFIER



ABOVE: Note the dual-mono construction. There are six line inputs, four with balanced (XLR) options, plus a recorder in/out. Both balanced and single-ended (RCA) pre-outs are provided as well, along with two sets of speaker terminals for bi-wiring

However, when partnered with T+A's matching MP 3000 HV media player the PA 3000 HV amp sounded noticeably more colourful and full-bodied through the midrange. As I'd observed previously, when making A/B comparisons between T+A's DAC 8 and its new HV media player, the latter sounds appreciably warmer and richer – the midrange in particular appearing more fleshedout and less stark.

Pair the two HV components and the result is utterly stupendous: startling dynamics, holographic imaging and stunning transparency.

### ALL OUT IN THE OPEN

Driving my Townshend Galahad speakers the MP/PA 3000 HV combination demonstrated a fabulous ability to separate instruments and paint a threedimensional picture of a recording venue. During the first part of Stravinsky's Rite of Spring, recorded in 1993 by the Cleveland Orchestra under Lorin Maazel [Telarc CD-82001], the woodwinds and strings were beautifully separated, with palpable space in the auditorium. In particular the amplifier rendered the brass in an appropriately aggressive, startling and unsettling manner although, again, it avoided the white hot, over-bright glare that is an all too common trait of lesser solidstate amplifiers.

When I listen to Reference Recordings' Testament album featuring the Dallas Wind Symphony and the Turtle Creek Chorale [RR-49CD] using my Levinson No.383, the amplifier's luxurious smoothness and overly mellow warmth tends to congeal the massed voices. The PA 3000 HV does not sound artificially

sweet and is noticeably less cloying, with a far better ability to maintain clear delineation of instruments and voices. Stereo imaging is exceptional, with outstanding inner detailing. Its clarity will likely drive a detail freak into ecstasy.

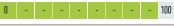
Equally, the PA 3000 HV all too readily exposes the upstream source components and limitations in poor recordings. I'm stating the obvious here, but this is of course the dichotomy of ultra-revealing hi-fi. T+A's HV amplifier doesn't 'editorialise', so if you live on a diet of dynamically-compressed rock/ pop recordings you'll likely find it less than rewarding, the unvarnished truth soon becoming fatiguing.

It doesn't have 'musicality' (audiophile-speak, I contend, for masking nasties and making a large majority of recordings palatable) but it will make top-notch recordings sound uncannily lifelike. You might need to strap yourself down in your listening seat and be prepared for a major adrenalin rush. 🖰

### HI-FI NEWS VERDICT

As we said about T+A's HV media player, in the arena of high-end audio this amplifier powerhouse warrants consideration not least for its superlative build and sophisticated engineering. Its ultra-clean sound might be judged to lack some charm and romance, but with sympathetic partnering system components - such as its matching MP 3000 HV front-end - it will thrill and captivate. Add speakers to taste...

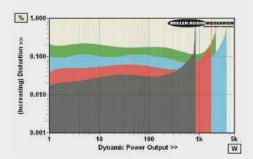
Sound Quality: 88%



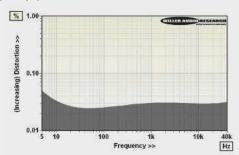
### T+A PA 3000 HV

The core aim of T+A's 'High Voltage' FET amplifier stages is to linearise performance over their full dynamic range, that range representing less than 20% of the available PSU rail voltage. Gratifyingly, our test results confirm this, for while there's some upward drift in distortion with temperature (a function of the limited feedback) from 0.02% cold to 0.026% after 30 minutes at 10W/8ohm, distortion is otherwise held to within 0.018% to 0.04% from 1W to its rated 300W output. In practice, the PA 3000 HV delivers rather more - closer to 2x350W/600W into 8/40hm loads, increasing to 410W, 780W and 1.5kW into 8, 4 and 20hm under dynamic conditions. Current-limiting protects the output at 940W/10hm but, as Graph 1 illustrates, the trend of distortion versus output is very uniform indeed up to and beyond its rated specification. Distortion is not especially low, it has to be said (another function of the low feedback) but it's lower than any likely partnering loudspeaker and, again, impressively consistent with frequency [see Graph 2, below].

Output impedance is similarly uniform at 0.05-0.06ohm across the audio band, its response stretching from 2Hz-75kHz (re. -1dB into 8ohm) and its S/N ratio remarkably unaffected by hum or other PSU noise at 86dB (re. 0dBW). Finally, just how accurate is that power meter? Scaled into 4ohm, the 0.1W, 1W and 10W positions are spot-on but 100W/40hm (delivered) pops up at about 110-120W on T+A's log scale. Also, the 1000W/40hm end stop would be nigh-on impossible to achieve with the PA 3000 HV offering a 'mere' 780W/40hm under dynamic conditions! Readers may view an in-depth QC Suite report for T+A's PA 3000 HV amp by navigating to www. hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads



ABOVE: Distortion versus extended frequency from 5Hz-40kHz at 10W/8ohm. Trend is very uniform

### **HI-FI NEWS SPECIFICATIONS**

Power output (<1% THD, 8/4ohm)	350W / 600W
<b>Dynamic power</b> (<1% THD, 8/4/2/10hm)	410W   780W   1.47kW   940W
Output impedance (20Hz-20kHz)	0.049-0.058ohm
Frequency response (20Hz-100kHz)	-0.10dB to -1.8dB
Input sensitivity (for OdBW/300W)	26mV / 464mV (balanced)
A-wtd S/N ratio (re. OdBW/300W)	85.7dB / 110.5dB
<b>Distortion</b> (20Hz-20kHz re. 10W/80hm)	0.024-0.030%
Power consumption (Idle/Rated o/p)	155W/980W
Dimensions (WHD) / Weight	460x170x460mm / 38kg

Outboard USB & S/PDIF DAC Made by: Astin Trew, Oxfordshire Supplied by: Air Audio Ltd, t/a Astin Trew Telephone: 01491 629 629 Web: www.astintrew.co.uk Price: £3780-£4200



## Astin Trew Concord DAC 1

Everybody's doing it: launching a versatile hi-res capable DAC. What then of this small British specialist brand's flagship converter? Is a tube stage a real asset?

Review: Nick Tate Lab: Paul Miller

fter a small flourish in the late 1980s, digital-to-analogue converters almost disappeared from the hi-fi map until recently, but with the advent of computer audio and a welter of other new digital sources, suddenly DACs are back. So much so that practically every manufacturer now seems to be launching one: it's become a virtual rite of passage and your product portfolio isn't complete without it.

Astin Trew, as a purveyor of quirky but popular CD players up to now, was a prime candidate for this. Traditionally, its silver-disc spinners have garnered a lot of support among the sort of buyer who plumps for a softer, warmer sound than most - and this has established the brand in those terms. Buying a digital product with this name on isn't going to get you something that will peel the paint off your sitting-room walls as you listen.

### À LA CARTE OPTIONS

One immediately identifiable factor in this, albeit not a determining one, is the fitment of a tube-buffered output stage – as here in the Concord DAC 1.

Of course, a DAC is only as useful as its inputs, and here Astin Trew has gone to town with a number of ways to hook it up to the outside world. The stock Concord costs a chunky £3780 with AES/EBU, S/PDIF (on RCA and BNC) and optical inputs - plus RCA and balanced analogue XLR outputs. Then there's the option of an asynchronous USB input, which is a cool £320 extra, and adding FireWire on top adds another £100. This makes the full spec'd model £4200: a not inconsiderable sum, and taking you into true high-end territory.

It accepts data up to 24-bit/192kHz resolution via asynchronous USB, FireWire and coaxial S/PDIF and 96kHz via optical. The manufacturer says it is designed with

RIGHT: Power supply (bottom PCB), digital input and processing (top left) and the DAC plus hybrid analogue output stages (top right) are all neatly separated. Electro Harmonix 6922EH triodes are used for the single-ended RCA output

a modular construction to accommodate future hardware and software upgrades. with the assertion that it 'will never become a redundant investment'. Should you wish to look backwards to the old world of physical media, Astin Trew will happily sell you its matching CDT 1 compact disc transport, which feeds the Concord 1's I2S input.

The DAC stage was designed in conjunction with Trichord Research, and is based around two Burr-Brown PCM1794 DAC chips running in dual mono configuration. Company supremo Michael Osborn says that he tried countless DAC options, and these were 'the best sounding when implemented correctly'. There are six power supplies using 'very low noise, low impedance circuits' - both digital

and analogue boards have their own transformer windings and regulators to supply the individual stages. This works in conjunction with an input filter to isolate the DAC circuitry from incoming mains noise. Galvanic isolation is used to diminish earth or ground line noise. For the USB input, an XMOS chipset is used because it's the 'industry standard and allows us to use external clocks of very high quality'.

Along with the careful attention to power supplies and noise isolation, Astin Trew adds its own analogue output stages, run in Class A mode. The unbalanced line output is buffered through a pair of Electro-Harmonix 6922 dual triode tubes; there's a dealer fit option of JAN Philips (or JAN Sylvania) 6922s should you so wish. This is under-run, so should last 'thousands of





hours'. Solid-state circuitry with carefully selected parts is used for the balanced outputs, and Michael Osborn says months were spent trying different permutations of components and internal wiring. Finally, the casework has substantial internal bracing and damping materials, including isolation feet – even the analogue circuit board floats on silicone isolators.

In use, the Concord feels nice enough, but doesn't have the swishness of, say,

Marantz's NA-11S1 [HFN Jul '131. Finish is to a high but not impeccable standard, and there's a choice of silver and black finishes, with either gold or black chrome control knobs as an option. Happily the case

is decently devoid of resonant surfaces, and it's simple enough to operate. The sampling frequency LEDs are a welcome fitment, especially if you're not entirely confident about what your computer is sending out of its USB socket!

### SUBTLE DIFFERENCES

### Whichever output option you use, the

Concord presents itself as an open and breezy-sounding DAC that likes to make music without tying itself in knots trying to excavate the last nth degree of detail. Tonally, there's definitely a difference between the thermionically modified RCA line output and the straight-through balanced XLR out, but it's relatively subtle and the choice of output stage doesn't mask what's essentially a very easy listening digital source.

For example, feed it with a CD of Freeez's beautiful early '80s jazz-funk

> tinged Southern Freeez album [SFE017], and the RCA output sounds lovely when fed by TEAC P30 transport – albeit in a slightly louche, mellow and relaxed sort of way. Where the Marantz NA-11S1, for

example, would dig deep into the core of the mix, and relentlessly and forensically throw out every last atom lurking within, the Concord is happier to follow an easier, breezier path. It majors on the floaty lead vocals and delicate keyboard work, rather than getting your senses working overtime slinging out every last percussive detail at you. Plenty of information still comes through, but the general mood is one of gentle contemplation and subtle

ABOVE: It's no looker, but this DAC is nevertheless functional. A bank of LEDs shows sampling frequency, and this is set between the on/off switch and a six-way input selector

understatement. The same track via the balanced outputs makes for a little more upfront presentation. Bass is slightly tighter, stronger and more propulsive, the more searching midband seems to take a step forward out of the loudspeakers while its treble is that little more incisive sounding and spacious.

By the same token, the subtle de-focusing the unbalanced tube option provides is just as listenable – switching back you're aware that things have got a little softer, more 'sepia-tinged', but through many amplifiers and loudspeakers that isn't necessarily a bad thing.

### SATISFYING LISTENING

I think it's fair to say that this DAC is voiced for a certain sound that's almost contrived in the way it takes a step back from the harsh reality of many 16-bit CD transfers. To call it 'euphonic' would be going too far, as the tube buffering is nowhere near as invasive as you might think, but it does just take the edge off.

The retro electronica of Nu Era's Microchip Angel [OMNI LP6] was a little more testing, blessed as it is with masses of analogue keyboard bass, and this is where that gentle sweetness and soft focus with the RCA output is less welcome. The direct XLR takes you closer to the mixing desk, making for a grippier, more syncopated sound, satisfying clean and propulsive. Even via XLR, the Astin Trew DAC isn't the tightest around in the lower regions again the Marantz or the slightly pricier Linn Akurate DSM streamer/DAC/preamp communicate more yet overhang less. Still, the Concord 1 acquits itself enjoyably once again, working to give the lead melody line a really good airing, although the drum machine track isn't quite as well catered for. The overall effect is satisfyingly musical, communicating the passion of the →

### BEHIND THE BRAND

Many manufacturers have been around since the start of the hi-fi boom back in the 1970s, but not Michael Osborn of Astin Trew. At the tender age of 57, he's still damp behind the ears having been in the business for only some seven years. Still, it was a desire to work for himself, and having an industrial design background, that let him put his passion for music into practice and make hardware. He's not one of those, 'we make the best hi-fi in the world' types - he's a little calmer, quieter, more self-deprecating than many audio entrepreneurs. His products straddle the affordable and the audiophile markets, with the new Concord range pushing the brand upwards. All share a natural, organic sort of sound. 'We always go for something essentially neutral in balance, but veering slightly towards warm,' he says. He believes hi-fi should 'draw you in and keep you immersed in the soul of the music', and flags up 'the individual tonality of each instrument and voice' as the key when tuning his products. He does a lot of that, he says. That comes with the territory, and it's only hard slogging that gives brands like Astin Trew any sort of traction.

'With the John

Coltrane classic

it captured the

mood so well'



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### OUTBOARD DAC



ABOVE: Balanced (XLR) and single-ended (RCA) analogue outs are joined by AES/EBU (XLR) and USB digital ins alongside I2S plus optical and coaxial (RCA and BNC) S/PDIF

performance if not its every last dot and comma of detail.

Indeed, you might say that a key strength of this product is the way it makes relatively average recordings and/or lower resolution material so satisfying. A FLAC rip of R.E.M's 'Near Wild Heaven' from the Out Of Time DVD-A [Rhino 73951] via Audirvana Plus on a MacBook Pro proved most enjoyable, if less detailed than with the Marantz NA-11S1 streamer. There was less of a feeling of being able to hear the four walls of the vocal booth, for example, Rather, the Concord 1 worked harder at conveying Peter Buck's loving melodic guitar work and Mike Mills' plaintive vocals.

### **GREAT FOR SMOOTH JAZZ**

There was definitely a heightened sense of depth over the cooking 16bit CD version, with some satisfying air and space around lead and backing vocals, but the contrast was still a little less stark than with other more analytical sounding digital converters. There are times when the richness of the Concord 1 imposes itself just a touch too much; the violins of the Avison Ensemble in Correlli Concerti Grossi [Linn CKD 411] via 24/96 FLAC seemed a little warm, lacking the wiry edge that you'd expect from gut strings.

At the same time, while it conjured up a pleasingly spacious recorded acoustic, it didn't reach out as wide, or fall back as much, as some. Nor could you ever call this the most dynamic sounding DAC around: even via the direct XLR outs, it doesn't quite bounce up and down like a tennis player at his peak – preferring instead to work on making a rhythmically satisfying sound that saunters along in an unashamedly happy way.

It is with smooth jazz music that the Concord 1 really finds its purpose in life - it wouldn't sound

out of place in a cool London jazz club, such was its rendition of John Coltrane and Johnny Hartman's eponymous late-1950s classic [Impulse!/MCA MCD 05661]. A humble 16-bit CD rendering of this recording could have been the very thing it was designed for – not because of any glass-like clarity or firecracker dynamics, simply because it captured the music's mood so well. The texture of the vocals was excellent, and the gentle, insistent rhythms of 'They Say It's Wonderful' were mesmerising.

Admittedly it's a fabulous recording and therefore an easy ride, but this converter still does more than many others at evoking the spirit and feel of the event.

So while Astin Trew's Concord 1 DAC is not the ultimate analytical tool, it has a knack of making every digital source it plays just plain enjoyable in an unselfconscious, rather innocent way. Via either output option, it serves up a smooth, sophisticated jazz-bar sort of sound. Although not brimming with fine detail, it nevertheless does a great job of getting across the musical fundamentals. Everything it plays just sounds agreeable.  $\oplus$ 

### HI-FI NEWS VERDICT

There are so many DACs now on the market that there's no room for yet another generic design. Fortunately this isn't one of them although it doesn't dazzle with cutting edge tech, the company has obviously taken care to get the sound that it wants. If you're interested in a digital device with X-ray vision, then this isn't it, but as something that reliably conveys what's going on in the music, it's highly accomplished.

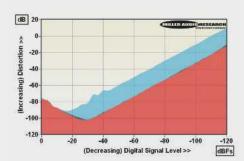
Sound Quality: 78%



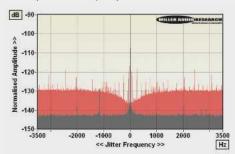
### ASTIN TREW CONCORD DAC 1

Tested via its balanced XLR output, which avoids the 6922EH tube stage, the Concord DAC1's solid-state buffer nonetheless showed some signs of stress over the top 30dB of its dynamic range as distortion increased from a mere 0.00025% at -30dBFs to 0.0033% at -10dBFs and a full 0.01% at its OdBFs/4.1V maximum output. This is clearly illustrated in the THD vs. digital level trend [see Graph 1, below] as is the near-identical performance of USB (black) and S/PDIF (red) digital inputs. Distortion and requantisation noise also clearly increases with frequency, to the tune of 25dB (x18) below -30dBFs at 20kHz [blue trace, Graph 1]. These are all analogue trends, a function of the output stage, although in the digital domain it's the USB input that delivers the cleaner spectra and reduced jitter - just 10psec versus ~170psec for S/PDIF [see Graph 2, below].

Otherwise the performance of USB and S/PDIF are very closely matched from their wide 115dB A-wtd S/N ratios (maintained by AT's choice of a superior Thesycon/XMOS USB front-end) and excellent low-level linearity (±0.1dB over a 100dB range), attributable to the pair of Burr-Brown PCM1794 DACs. Midrange stereo separation is good enough at 110dB and channel balance fractionally off-kilter at 0.11dB but the response of the Concord DAC 1 is both flat and extended to the tune of -0.2dB/20kHz (44.1k/48kHz media), -1.1dB/45kHz (96kHz media) and -3.8dB/90kHz (192kHz media). Note that the balanced outputs are phase-inverting. Readers are invited to view comprehensive QC Suite test reports for the Astin Trew Concord DAC 1's S/PDIF and USB inputs by navigating to www. hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Distortion vs. 24-bit/48kHz digital signal level over a 120dB dynamic range. S/PDIF input (1kHz, red) and USB input (1kHz, black; 20kHz, blue)



ABOVE: High res. jitter spectrum from 24-bit/48kHz data over S/PDIF (red) and USB (superior - black)

### **HI-FI NEWS SPECIFICATIONS**

Maximum output level (Balanced)	4.10Vrms at 50ohm
A-wtd S/N ratio (S/PDIF / USB)	115.2dB / 115.0dB
Distortion (1kHz, 0dBFs/-30dBFs)	0.010% / 0.00025%
Dist. & Noise (20kHz, 0dBFs/–30dBFs)	0.015% / 0.0017%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0dB to -0.23dB/-1.1dB/-3.8dB
Digital jitter (48kHz/96kHz/USB)	166psec / 180psec / 10psec
Resolution @ -100dB (S/PDIF / USB)	±0.1dB / ±0.1dB
Power consumption	21W
Dimensions (WHD)	430x120x280mm

Mono power amplifier. Rated at 480W/8ohm Made by: Chord Electronics Ltd. Kent Supplied by: Chord Electronics Ltd Telephone: 01622 721444 Web: www.chordelectronics.co.uk Price: £9090 (each)



## Chord SPM 1400 MkII

Chord has upgraded its standard series power amps to MkII guise. We give the flagship monoblock SPM 1400 MkII a good workout to see if they still hit all the right chords Review: Richard Stevenson Lab: Paul Miller

like a good upgrade, especially when it is applied to a product I already favour. I have seen, heard and lusted after the sumptuous styling of Chord's SPM 1400 monoblock power amps for many years. Yes, the outrageous SPM 14000s remain the dream super-amp but the 1400s seemed like an amp I might actually one day be able to afford. Well, maybe. Here they are in a revised and upgraded MkII quise and, at £18,180 the pair, I still have a lot of saving up to do.

From the outside the unique Chord styling remains relatively unchanged throughout the MkII range, albeit now enhanced with a more contemporary and cleaner-looking front panel. Gone are the offset buttons for speaker switching and power, with their obvious LED indicators, replaced with a symmetrical design featuring possibly the wackiest power switch ever to grace a amplifier.

The button, if you can call it that, is a freely rotating translucent ball. In standby mode it lights up vivid red, turning green for ten seconds or so during power-up and finally a bright blue-green colour when the amp is ready to rock. Its ultimate funkiness was a little diminished on our review sample by fine scratch marks on the ball (from rotating in the metal housing I assume) that the bright illumination only served to highlight.

Thankfully they were only noticeable really close up, and you are unlikely to be looking that close anyway. When the amp is running, your attention will be diverted by the SPM 1400 MkII's dazzling display of internal LED lighting. Shining brightly through the top-plate grilles the vivid array of blue and green LEDs would not look out of place on a dedicated gaming PC. Further, the light overspill through the vents at the top and bottom casts interesting patterns on your rack and ceiling. It's like having all the 'bling' of

**RIGHT:** Interior is dominated not by a huge toroidal mains transformer but by Chord's trademark switchmode power supply. The MOSFET amp is mounted onto the rear heatsink a McIntosh power amp done with British class and style. More products should have LED lighting inside like the Chords - although an LED-off switch might have been nice for those with a more reserved illuminatory disposition.

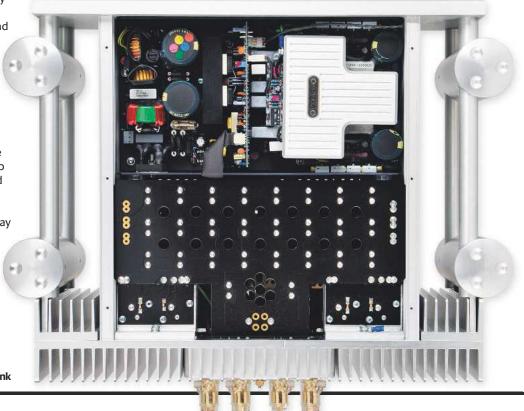
### **CHUNKINESS REDEFINED**

The main chassis is exactly the same as the original 1400's and is a masterpiece of industrial design in machined aluminium. As a handy by-product the side 'rails' make the amps incredibly easy to handle and move around despite their 18kg weight. The rear connections plate is a new item that serves to redefine one's opinion on the word 'chunky'. It's a monster with some of the finest speaker terminals I have ever tightened. These are a British designed binding post made by CHK in China. Mind you, the first thing you will notice is that there are two sets of inputs and outputs... yet this is a mono amplifier.

The marketing-based reasoning behind this is twofold. Firstly it allows easy connection of two pairs of speakers in traditional A/B manner. Secondly, the right side offers speaker outputs in phase with the input, while the left hand terminals invert the phase. This, says Chord, allows customers to choose their phase preference without the 'hardship' of connecting plus cables to minus terminals and vice versa. It does mean you will need to swap cable polarity on the second set of speakers if you want them in phase with the first for bi-wiring though.

The more logical reason is that the new stereo terminal panel cost a fortune to design, tool and manufacture so Chord was determined to use it across the entire SPM MkII range. Fair enough.

Under the casework the SPM 1400 MkIIs use Chord's renowned MOSFET power stages along with the company's proprietary aerospace-derived high





frequency power supply design [see box out]. Together these are slated to deliver a speaker-frightening 480W/channel. If the sheer number of 400+W amps that come my way is anything to go by, loudspeaker manufacturers had better start engineering speakers to handle considerably more peak power than they currently do.

In addition to the eye-watering power figures there is a new power-control and sequencing board for simpler operation, refinements to the filter components and a plethora of circuit board and earthing changes to improve high-current power flow. Driver circuitry has been upgraded and the peak current reserves have been boosted with new capacitor technology. Clearly we are looking at multiple tweaks and fettles over the original SPM 1400 rather than wholesale changes – but if it ain't broke there's no need to fix it.

Powering up and down is pop- and click-free; the amps themselves exhibit no transformer hum and there is very little background hiss from the speakers when playing silence. At idle they run very cool indeed and kept my electricity monitor

showing a smiley face. Mind you, they do get a bit toasty after a six-hour marathon at serious levels when the missus is out.

### IN PERFECT BALANCE

It took me a while to get a definitive handle on the new Chords. They are supremely neutral, delivering quite

outstanding detail and insight without any overt character to hang a review on. These are not power amps to make a statement with gungho bass or a top-end that flosses your teeth

at ten paces. They are very evenly balanced with a gloriously clean midband and good extension in both directions without any excess. The result is perhaps the perfect balance for an audiophile hi-fi power amplifier: natural, spacious, insightful and with outstanding control over the loudspeaker. I want to say they are like 'an open window' to the music, but my cliché filter won't allow me.

ABOVE: Cleaner-looking front panel of the Mkll features a single power switch in the form of a rotating translucent ball, which turns to blue from red via green to indicate the amp is ready

With Robert Plant's arguably best solo CD, *Manic Nirvana* [Es Paranza 7567-91336-2], the opening drum sequence on

'The crowd howls

around you as the

guitars peel from

Marshall stacks'

'Big Love' kicks in with an infectious beat that the Chords pitch to perfection. Each drum strike has superb attack and detailed decay with a tangible texture to each note. My first impressions were one

of a slight dryness to the bass but the more I listened the more I concluded they were simply being more faithful to the recording than I am used to.

They don't plumb the depths of LF response nor hit you with a viceral wave of bass energy – both of which I admit a fondness for – yet the integration of the drums and bass guitar within the track is just so 'right'. There is an enviable sophistication to the Chord's sound. (Personally I like my amplifiers a bit more dirty and excessive-sounding, particularly at the bottom end.)

No such reservations by track four, 'I Cried' (the track, not the Chords moving me to tears). Reminiscent of the more retrospective tunes on Led Zeppelin IV, the Chords deliver the track's acoustic guitar with sensational realism born of accurate detailing of each plucked string. The leading edge of each note is fast and dynamic, the sustain is warm and organic, and the separation of individual notes all but describes with micrometer precision the finger position on the fret board. The imaging is wide yet not artificially so. The  $\hookrightarrow$ 

### DYNAMIC COUPLING

We asked John Franks, Chord's Chief Designer, about the innovative engineering behind its bespoke power supplies. 'All Chord amplifiers are designed around an advanced switched-mode power supply technology [in this instance, circa 87kHz for a 1-4kW capacity], originally developed where quality and power was needed in a very space-efficient design.' The supply is self-monitoring and necessarily core to the amps' performance [see Lab Report, p63]. Chord's 'Dynamic Coupling' system is employed to balance the supply's positive and negative rails via a bifilar-wound inductor (a transformer) between the secondaries of the two main power transformers and their secondary rectifiers. The choke's bifilar winding ensures that demand on the positive rail, for example, is reflected onto the negative, drawing power through the choke and normalising the load. Because neither rail is left 'flapping in the wind' this reduces PSU-related noise that might otherwise be injected into the ground plane. PM





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### MONO POWER AMPLIFIER



ABOVE: Unmarked, but explained in the manual, the right-hand RCA and XLR input(s) provide a non-inverting output, the left-hand RCA/XLR inputs an inverting output. Only one input may be used but the 4mm speaker outlets are paralleled for bi-wiring

guitar and the high-hat are placed to the sides and Plant's vocals are set firmly centre stage.

'Liar's Dance' is the CD's masterpiece track with hard-struck acoustic guitar chords defining the rhythm of the piece. Each note is intensely detailed, with great projection from the speakers. Plant's voice comes in with urgency, transporting you into the song by the heart rather than the ears. You can't help but push up the volume... the Chords just keep on giving, in scale and engagement.

It's not until the following track, the fast-paced and complex 'Watching You' that things get a little guirky at high volumes. The natural and slightly lean bass results in a mildly mid forward stance at these three-digit SPLs, making the crashy top end of the track a little edgy and uncomfortable.

### 1980 AND YOU ARE THERE

In an altogether more sedate listening session the 1400s pulled off a spectacular run of goosebumps with track after track of Leonard Cohen's Dear Heather CD [Sony BMG COL514768]. The amp's grip and control refine the recording's rather compressed and excessive bass while the lucid midband puts Cohen and Sharon Robinson's vocals firmly in the room. The moody track 'The Letters' is delivered with outstanding intonation of Cohen's voice, from its gravelly depths to the immaculate enunciation of sibilant syllables. Robinson's voice is craft sweeter that a pot of honey on a summer's day and when the two harmonise the result is simply angelic.

Such is the SPM 1400's insight I found myself firing up the GyroDec and digging out Whitesnake's Live... in the Heart of the City [EMI Liberty SNAKE 11]. This is the band's seminal live recording at the Hammersmith Odeon in 1980 and the Chords take on the challenge of reproducing the slow blues title track - 'Ain't No Love in...' - like they had been there. Benefiting from the scale of my big Tannoy Dimension TD12s, Coverdale's voice is etched in the huge dynamic of the soundstage with the crowd howling around you and the guitars peeling from the Marshall stacks.

Every note is articulated with not just precision but real passion. Passion that clearly details the sheer musicianship of every artist on stage and the heart and soul they were putting into the performance that night. The communication of the event is breathtaking. By the blues guitar solo and the crowd singing the chorus it is difficult to believe you are not actually standing right there. Right there surrounded by a fug of smoke, lost in the moment and playing air guitar like your life depended on it. Stunning. ()

### **HI-FI NEWS VERDICT**

Beautiful to behold by both eye and ear, Chord's MkII SPM 1400 monoblocks offer spectacular insight into music. Majoring on clarity, timing and delivering natural realism like few other power amps at any price, they tick every box in the audiophile hi-fi check list. Neutral, detailed and with breathtaking resolution. Only those with a penchant for lung-crushing bass could possibly find them wanting.

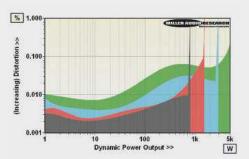
Sound Quality: 83%



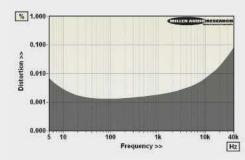
### CHORD SPM 1400 MkII

If proof were needed of the efficacy of Chord's 'dynamically coupled' switched-mode power supply [see boxout, p61] then this is provided in the transient output capability of the SPM 1400 MkII. Already fabulously powerful, and besting its 480W/800W specification at 620W/1.08kW into 8/4ohm loads, there's sufficient headroom to accommodate a full 810W, 1.55W and 2.94kW into 8, 4 and 20hm under dynamic, musiclike conditions at <1% THD. This monoblock gets far closer than most at doubling its output into each halving of load impedance, only stopping at 5.08kW/10hm (an astonishing 71A at just 0.2% THD) once Chord's electronic protection waves the white flag [see Graph 1, below]. In practice, the amp will drive any speaker likely to cross its path to destruction, along with your ears, so kindly take care with the volume control.

Interestingly, there's a marked reduction in distortion as the amp warms up, falling from 0.0033% when cold to 0.0018% after 30 minutes at 10W/8ohm. Beyond 2-3W output there's also an almost linear increase in THD with power, from 0.001% at 1W to 0.002% at 10W and 0.004% at 100W (etc) through the midrange. THD is impressively 'flat' and innocuously 2nd harmonic across much of the audio range but increases guite steeply above 10kHz to 0.018% at 20kHz/10W to 0.08% at 40kHz/10W [see Graph 2]. The response has a sympathetic HF roll-off from -0.14dB/20kHz to -2.8dB/100kHz and while the A-wtd S/N is just slightly below average at 80dB (re. 0dBW), it's in a league of its own as far as huge switchmode types are concerned. Readers may view an in-depth QC Suite report for Chord's SPM 1400 MkII monoblock amp by navigating to www. hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Excellent load tolerance



ABOVE: Distortion vs. extended frequency from 5Hz-40kHz at 10W/80hm. THD increases through treble

### **HI-FI NEWS SPECIFICATIONS**

Power output (<1% THD, 8/4ohm)	620W / 1080W
Dynamic power (<1% THD, 8/4/2/10hm)	810W / 1.55W / 2.94kW / 5.1kW
Output impedance (20Hz-20kHz)	0.022-0.081ohm
Frequency response (20Hz–100kHz)	+0.01dB to -2.8dB
Input sensitivity (for OdBW/480W)	88mV / 1915mV (balanced)
A-wtd S/N ratio (re. OdBW/480W)	79.7dB / 106.5dB
<b>Distortion</b> (20Hz-20kHz re. 10W/8ohm)	0.0013-0.018%
Power consumption (Idle/Rated o/p)	86W/780W (2W standby)
Dimensions (WHD) / Weight	420x150x355mm / 24kg (each)

### **HEADPHONES**

Semi-open, circumaural headphone Made by: Philips Audio Business Group, Hong Kong Supplied by: Philips Consumer Lifestyle UK Telephone: 0906 101 0017 Web: www.philips.co.uk



Philips Fidelio L2

Philips has 'breathed on' its Fidelio L1 to produce the revised L2. Is it a move in the right direction? Review & Lab: Keith Howard

t seems only yesterday that I was reviewing the Fidelio L1, Philips' concerted attempt to muscle in on the lucrative premium headphone market [HFN Sept '12]. But already we have an L2 model – albeit newly minted – that aims to raise Philips' game in this vibrant and highly competitive market sector.

So new is the L2, in fact, that at the time of preparing this review I had less than complete details of precisely what has been done to hone it. But the Lab Report clarifies that Philips has increased sensitivity over the L1 and had a rethink on tonal balance.

### A CHANGE OF HEART

'Clean and modern looking it certainly is,' I said of the L1, 'but it is neither as boldly hi-tech in appearance as the much costlier Sennheiser HD 800, nor as garish as the countless candy-coloured cans now on sale. Instead, the L1 prefers an understated aesthetic that won't shock your granny.'

Well, if this first production sample of the L2 is fully representative, Philips has apparently concluded that its first effort was too conservative. As before, black and silver-grey predominate, but the plug-in connecting leads, the plastic screws on which each capsule pivots inside its yoke, and the stitching of the headband's leather cover are now all bright orange. Loath as I am to diss the national colour of Philips' homeland, the overall effect strikes me as cheapening rather than invigorating.

A novel feature I haven't seen before on a headphone - or was I blind to it on the L1? - is the provision of a linear scale on the inner surface Marita Hillian School 1985 of the slide-out portion of the capsule yokes, which can be viewed through an open window at either end of the headband. Whether this is actually of much use in adjusting the headphone for different users is a moot point but it does at least illustrate fresh thinking. The capsules themselves are quite small, though, just as they were in the L1, so despite the modest overall weight, the soft earpads filled with memory foam and the low head clamping force, large pinnae may still feel cramped. Mine did.

The L2 was supplied with two connecting leads - one with an inline volume control, one without - each about 1.2m in length and terminated in minijacks. That at the headphone end has a D-shaped cross-section to match the socket housing on the left capsule. As 1.2m is

rather short for use with a hi-fi system I presume that an extension will be included. A gold-plated adapter is supplied to convert the minijack termination into a ¼in plug, and there's a soft carrying pouch for which the capsules fold flat.

THAT'S BETTER

Despite Philips' claim to have used a Golden Ears panel to sign off the L1's sound quality, I criticised it for excess bass output - a characteristic hardly unusual in modern headphones but no less undesirable because of its ubiquity. So the first thing I was keen to find out about the

Initial listening to pink noise while the L2s were running-in suggested the latter, but the lab testing indicates that actually there has been a trimming back of the bass output, albeit not sufficient to prevent there still being an LF hump in the diffusefield corrected response. In other words, Philips has compromised.

L2 was whether this tonal imbalance has been addressed or perpetuated.

And the compromise is effective: although the LF output is still on the generous side, the sound is no longer overwhelmed by excessive bass as it was with the L1. Overall the L2 is much cleaner sounding as a result - albeit still short of the best in its price range.

The bass transformation was obvious on the very first track I played, the 24/96 download of Fred Simon's 'Poetspeak' [Naim Label]. Utterly devoid of sonic fireworks, this relaxed, contemplative jazz piano trio piece demands agile bass and a crisp, clean treble if it is to be, as it should, Badedas bath soothing but not

### LITTLE OR LARGE?

Numerous factors play into the design decision of what capsule size to use in circumaural headphones. Supra-aural headphones, where the capsule rests on the ear, can have capsules that are smaller than the external ear flap (pinna) but clearly that's not the case with a circumaural design, where the earpads surround the ear. As the L2 is intended for use on the hoof as well as at home, there's an obvious imperative to keep the entire headphone as small as possible so that it can be easily carried, in a pocket, say. Restricting the volume of air contained within the capsule also tends to push any resonant modes within the air space to higher frequencies, although it may also hamper bass extension. As far as comfort goes, small capsules help keep down the headphone's overall weight but larger ones prevent annoying constriction or crushing of the pinnae.



'The L2's bass

transformation

was obvious from

my very first track'

in the least soporific. The L2 put in a good showing here: the lower registers of the double-bass were perhaps a little too strong and textures still thickened somewhat by the remaining bass boost, while the treble - like all headphone treble didn't really scintillate and shimmer

on cymbals. But overall the tonal balance was good if warm, and the transparency benefited too. Although the L2 is not the most analytical of

headphones, compared to the L1 it's a distinct improvement.

### OIL ON TROUBLED WATERS

A piece that gave the L1 trouble was the 24/96 free download of the Maestoso from Beethoven's Piano Sonata No 32, played by Tor Espen Aspaas [2L Records]. The wide dynamic range and notable clarity of this recording were befuddled by that excessive bass with the L1. Happily, via the L2, although there isn't the 'you are there' clarity of the best headphones, the glutinous character of the L1 gives way to a more benign softening and warming of the sound. On the powerful chords the left hand no longer overwhelms, and there is sufficient transparency to enjoy the mesmeric effect of the swirling harmonic interplay between the piano strings.

You wouldn't expect, from what I've said thus far, that the L2 is able to clarify the turbid waters of many old rock recordings, and so it proves. Philips' latest has neither the meticulously neutral tonal balance

nor the inherent resolving power to transform the experience of listening to oldies like Led Zeppelin's 'What Is And What Should Never Be' or Free's 'I'll Be Creepin'' - but that is true not just of many other headphones but many hi-fi systems per se. These tracks sound OK via

the L2 but not revelatory.

No, to hear the L2 at its best it is essential to select more crystalline, even tonally somewhat lean, source

material - items like the 24/96 download of 'I Had The Craziest Dream' from Jimmy Cobb's In The Key Of Blue [HDtracks]. The trumpet sound here can stray into harshness on tonally neutral systems with anything less than vice-like control, but the L2 poured soothing oil on what might otherwise have been troubled waters. (b)

### **HI-FI NEWS VERDICT**

Significantly improved on its forebear the L1, the Fidelio L2 is actually the headphone the L1 should have been from the outset. Scaling back the L1's bass excess has liberated the L2's sound quality, aided perhaps by the enhanced sensitivity. The L2 is still not the most comfortable headphone to wear because of its small capsules but it now delivers tonally better balanced and more engaging music.

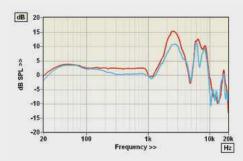
Sound Quality: 80%



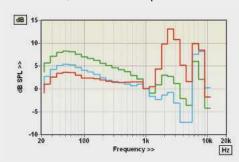
### PHILIPS FIDELIO L2

No specification was available for this early sample of the L2 but it is clear from comparing its test results with those of the L1 we measured last year that changes have been made to the drive units. Whereas the L1 recorded an averaged sensitivity for the two capsules of 109.7dB (1V input at 1kHz) and an impedance ranging from a minimum of 28.5ohm to a maximum of 31.2ohm (20Hz-20kHz), equivalent figures for the new L2 were 114.8dB and 17.9ohm min to 20.9ohm max. In other words, capsule impedance has been lowered to boost sensitivity. The 5.1dB increase is greater than you'd expect due purely to the reduction in impedance but that may be explained by a reduction in moving mass resulting from a lighter voice coil. In the context of home listening using a proper headphone amplifier the sensitivity increase is largely irrelevant but it will allow the L2 to achieve higher output levels when used with mobile devices instead.

Because the variation in impedance is proportionately larger now than with the L1, its frequency response [see Graph 1, below] is more prone to modification by the finite source impedance of the partnering amp, but a 0.45dB total error for a 10ohm source or 0.80dB for a 30ohm source is not a significant issue. Comparison of the frequency response measurements of the L1 and L2 – especially the diffuse-field corrected third-octave response [Graph 2, below] - suggests that not much has changed above 1kHz, whereas below 1kHz it is clear that the L1's progressive rise in output has been trimmed back, from a maximum of +14.2dB at 40Hz to +8.3dB at 50Hz in the L2. The inevitable result will be that the L2 sounds less oppressively bass-heavy. Capsule matching error of ±5.1dB is higher than we recorded for the L1 but still a good result, much of it arising from different interactions with the left and right artificial pinnae. KH



ABOVE: Distortion still increases slightly at bass frequencies and capsule matching is not quite as good as the L1, but the bass response is far flatter



ABOVE: Third-octave freq. resp. (red = uncorrected; cyan = FF corrected; green = DF corrected)

### **HI-FI NEWS SPECIFICATIONS**

Sensitivity (SPL at 1kHz for 1Vrms input)	114.8dB
Impedance modulus min/max (20Hz-20kHz)	17.9ohm @ 8.2kHz 20.9ohm @ 41Hz
Capsule matching (40Hz-10kHz)	±5.1dB
LF extension (–6dB ref. 200Hz)	15Hz
Distortion 100Hz/1kHz (for 90dB SPL)	0.9% / 0.2%
Weight (inc cable and 0.25in connector)	274g



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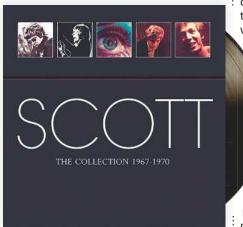
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BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Chris Heard hip-hops for once (surprise!), bops with Ry Cooder till he drops, likes the Tolkien-esque nonsense of Queen and welcomes the reappraisal of Scott Walker

cott Walker's first four solo albums recorded on Philips between 1967 and 1969, including the legendary Scott 4, represent the highpoint of one of rock's most single-minded artistic visions. They are now packaged together alongside his 1970 record, 'Til The Band Comes In, as part of a terrific box set, Scott Walker The Collection 1967-1970. Remastered and pressed on 180g vinyl, the albums mark Walker's flight from the relative straitjacket of his group The Walker Brothers (in itself, responsible for grandiose pop of the highest order) in favour of a more literary direction in which he would embrace a romantic European notion drawing on baroque classicism, the great existential philosophers, bohemian theatricality and - perhaps most significantly of all - the 20th century Belgian songwriter Jacques Brel.

Walker's takes on French-language Brel standards are among the most evocative of all his recordings during this golden period, conjuring a lost world of decadent '30s Berlin cabaret, or Paris in the Belle Époque. Alongside all the Brel stuff (found on Scott, Scott 2 and Scott 3 but absent from Scott 4 onwards), Walker's own compositions point to a rare ability to tell a moving human story - be it of love, of war, or death - in a narrative style that apes the classic European novels. At its best on 'Montague Terrace (In Blue)', 'Plastic People', 'The Bridge', 'It's Raining Today', 'Angels Of Ashes', 'The Seventh Seal' et al it is the pop equivalent of a Tolstoy or a Balzac. Walker's soaring baritone carries



The 5LP box set represents a visionary artist, Scott Walker



De La Soul's 3 Feet High And Rising: 'the Sergeant Pepper of hip-hop?'

these atmospheric string-laden vignettes of a mythical lost Mitteleuropa - all drunken Russian soldiers and consumptive courtesans - like a Grimms fairy-tale for grown-ups.

Now 70 and still pushing boundaries in the studio, he belongs to a rare and declining species of long-term songwriters who have remained uncompromising in their will to pursue their own artistic 'truth', regardless of what the world or the record company thinks. For my money, this five-LP set from Universal Records gets right to the heart of one of the world's most brilliant and enigmatic musicians during the most fertile part of his 50-year career.

### **HOPPING CROSSOVER MONSTER**

Hip-hop is a genre that, understandably, doesn't get too much space given over to it in the pages of HFN – after all, you wouldn't expect your Private Eye to start

listing the latest soap plots, or see a Page Three model disrobed in the pages of the Telegraph. But if any album from this once most vibrant of subcultures deserves some serious audiophile analysis, it is De La Soul's 1989 crossover monster 3 Feet High And Rising [Rhino, 180g]. Described by New York's Village Voice magazine as 'the Sergeant Pepper of hip-hop', 3 Feet High... is to its world what Thriller is to pop or Kind Of Blue to modern jazz: a seminal and durable record that took a style of music in a new direction and, in doing so, created

something unique and timeless. Its genius

### CHRIS HEARD

Chris Heard is a music journalist and a vinyl fanatic. He runs an online record store, Classic LPs, specialising in vinyl reissues and new releases, and a physical shop, Carnival Records, purveying 10,000plus records amid the splendour of the Malvern Hills. Visit www.classiclps.co.uk and www.carnivalrecords.co.uk.



lies partly in the positive, funny and upbeat messages that flew in the face of most gangster-inspired hip-hop of its time and evoked a spirit reminiscent of the hippie era (hence the term 'Daisy Age').

It is choc-full of bold, witty tunes - 'The Magic Number', 'Eye Know', 'Potholes In My Lawn', 'Jenifa Taught Me', etc - and a flurry of imaginative samples, from Hall and Oates and Steely Dan to Billy Joel, The Turtles and even a teach-yourself-French record. The mood is playful, and the musicality lighter and more jazz-influenced than much of what preceded it, paving the way for a fresher hip-hop template sourced from elements other than hard funk. If you buy only one rap album on 180g vinyl this year, make it this one.

In a great summer for reissued hip-hop LPs worthy of note, Cypress Hill's darkly epic 1993 double album Black Sunday (3.4 million US sales) is released by Columbia, featuring the mini-masterpieces 'Insane In The Brain', 'I Wanna Get High', 'A To The K' and 'I Ain't Goin' Out Like That'.

### CLASSIC ROCK TRACKS

While any serious record collection is defined to some degree by its reach and eclecticism, it also needs a sprinkle of those staple mainstream titles to cement it all together – the Born In The USAs and the Hotel Californias and the Regatta De Blancs that turn a shelf teetering on brooding elitism into a fun and accessible place. The Cars Greatest Hits [Friday Music, 180g] has great singalong tracks such as 'Just What I Needed', 'My Best Friend's Girl' and 'Good Times Roll' - big, ballsy FM radio-friendly rockers in the late 1970s that many Americans thought constituted punk rock.

More realistically, they emanated from the same school of blue-collar US rock 'n' roll that gave the world John Cougar, Tom Petty and the Boss (albeit unleashed in the post-punk age). By any definition, these are classic American rock singles: the sound of a polished but still earthy band - take a bow, producer Roy Thomas Baker - a good half-decade before their slightly



Queen II 'veers off towards fantasy territory' - a Hollywood Records LP

overwrought single 'Drive' and its imagerydrenched association with a global tragedy would define them for a generation of music fans.

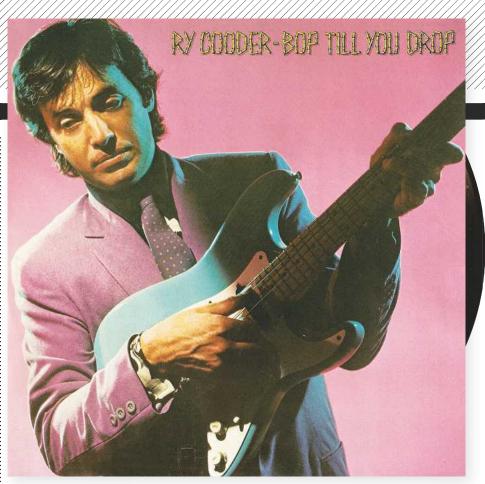
### **CHARMED BY QUEEN**

Queen's exceptional early catalogue was first made available on high-end remastered vinyl three or four years ago on a US reissue imprint, and now the first batch of classics is back on the market. If push comes to shove, I would always plump for the glam-metal bombast of 1974's Sheer Heart Attack, but there are pleasures to be found on all of the band's records in the golden period up to about 1977/78. I have a bit of a soft spot for Queen II, also from 1974 [Hollywood Records, 180q], which is something of an anomaly in the group's canon in that, uniquely, it veers off towards fantasy territory ('Ogre Battle', 'The Fairy-Feller's Master Stroke', 'The March Of The Black Queen') on its 'black' side... oh dear!

There is an element of charm in this naïve Tolkien-esque nonsense, and in some ways it was very much a record of its time; it also delights in that great Mick Rock cover shot. Thankfully, though, it seems Freddie and the boys had bigger fish to fry, and the frantic coda of album-closer 'Seven Seas Of Rhye' showed Queen's true rock mettle, setting them on the path that



Laura Marling's new album was also reviewed by Johnny Black in June



would lead within a couple of short years to righteous domination.

### **COODER IN THE FRAME**

Ry Cooder's spirited collection of blues and R'n'B standards, Bop Till You Drop, made history on its release in 1979 by becoming the first digitally-recorded album to be released by a major music company (Warners, which has now reissued the title on remastered 180g vinyl). Recorded on a newly-invented 32-track machine manufactured by 3M, Cooder's ninth album:

marked a departure of sorts from his growing repertoire of self-authored rootsy Americana in order to retrace his love of basic, pared-down rock 'n 'roll. So it is that the quitar-toting maestro covers Fontella Bass's

1965 Chess stomper 'Don't Mess Up A Good Thing' (with Chaka Khan), and the Doc Pomus/Mort Shuman-penned 1961 Elvis hit 'Little Sister', along with countrysoul artist Arthur Alexander's 'Go Home Girl' and a raft of obscure-ish blues gems.

While the album inevitably lacks the originality of Cooder's excellent earlier works such as Into The Purple Valley and Chicken Skin Music, it nevertheless frames his reference points and anticipates the breadth of styles that Cooder would go on to pursue with his helming of the Buena Vista Social Club project and his more recent Mexican-flavoured Latino workouts. Alongside Bop Till You Drop, Warners has

The 1999 Ry Cooder album Bop Till You Drop is reissued by Warners: it 'retraces a love of basic rock 'n 'roll'

also reissued the 1980 ten-track follow-up Borderline, which finds Cooder edging ever closer to the shores of Cuba and Spanish America.

### LAURA NO-BRAINER

'Why is Marling

the indie-folk

queen of all she

surveys?'

Laura Marling's Once I Was An Eagle [Virgin], is inviting further comparisons with some of the greats - Joni Mitchell,

> Sandy Denny, and more contemporarily PJ Harvey - and it seems that, against all likelihood, the hype is probably justified.

So what is it about the 23-yearold Hampshire-born

daughter of a Baronet and former squeeze of Marcus Mumford that has marked her out as the chosen one, the indie-folk queen of all she surveys? Simply, it's all in the voice and the songs; delivered with an earnestness, vitality and authenticity that reminds us of music's true female pioneers.

In this rarefied company, Marling recently relocated to the US - has notched up four critically-lauded records in just five years, an extraordinary achievement of both output and quality in an age in which the notion of the album itself has become devalued and degraded. If you own Marling's previous three LPs, this is a no-brainer. If not, give it a go.  $\circ$ 

## Inyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

## Gorillaz: Plastic Beach

This 16-track romp through pop, rap and electronica was to enter the UK and US charts at No 2. Steve Sutherland revisits Plastic Beach as the LP is released on 180q vinyl

he way I remember it, I nearly forgot to ask. The changing rooms by the Market Road AstroTurf pitch were noisy at the best of times, but we – that's the NME Sunday League footy team I was player-managing, had just got through to the final of the Music League Cup, beating our arch rivals BWAG - that's the Bengali Workers' Action Group - one-nil in extra time. Our shaven-headed, steely-eyed, kung-fu-practising six-footsomething centre forward, E, a traffic controller at Heathrow by day, had lobbed their keeper from 25 yards and was now busy telling anyone who'd listen that he'd felt God flow right through him as he took the shot. It was that kind of team, and he wasn't called E for nothing...

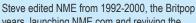
Anyway, as I recall it, warm cans of beer were being guzzled and generally chucked around as we hastily changed to head out

for our habitual Sunday lunchtime pint or two, and Phil, our captain, was halfway out the door when I remembered. Phil, by the way, was - still is, I reckon - Phil Daniels, the ace character actor who'd become the midfield general, skipper and ferocious barker in our team after a bloke called Alan Edwards who played full back and ran a PR

company Phil's wife Jan worked for, introduced him to us on one auspicious Autumn afternoon.

Phil was playing his way back to peak fitness after breaking a leg and was not

supposed to be participating in any sport of any calibre more dangerous than golf due to the insurance stipulations around his myriad theatrical and TV engagements.



years, launching NME.com and reviving the NME Awards. Previously he was Assistant Editor on Melody Maker. Among his many adventures he has been physically threatened by Axl Rose, hung out awhile with Jerry Garcia and had a drink or two with Keith Richards...



But Phil was gagging for a game and was, it must be said, pretty bloody good so he was in (Alan, by the way, broke his wrist one Sunday, was out for three months, returned and broke his other wrist after just 15 minutes in his first game back so that was the end of Al).

Anyway, as I say, Phil was halfway out

'Damon was said to

be something of a

monstrous control

freak until that point'

the door when I remembered that Karen Johnson, who did the press for Blur and knew that I knew Phil, asked me if I'd ask him if it was OK for Damon to give him a call. The band

were big fans it seems, especially of the movie Quadrophenia in which Phil had so brilliantly played the rebellious Jimmy, and Meantime, an amazingly arch play which director Mike Leigh had made for TV and which starred the fab britpack trio of Phil, Tim Roth and Gary Oldman.

So I said to Phil that these geezers were interested in hooking up with him, that they were good eggs and that I thought he'd probably get on pretty well with them, Damon being a Chelsea supporter and all. So Phil said, 'Sure, give 'em my number.' And that's how 'Parklife' came to be and why I sometimes get credited with inventing Britpop.

### PLAYING THE CELEBRITY

Now, the reason I'm telling you this story is not just to show off, honest. I was thinking about how to introduce you to the Gorillaz' Plastic Beach when it occurred to me that the whole project could feasibly be said to harken back to that fateful Sunday lunchtime in 1993.

Up until that point, and a couple of years beyond, Damon was said to be something of a monstrous control freak, getting a bit carried away with all the riches and fame and suchlike and playing the celebrity part to the extent that, finally, Graham Coxon had a bit of a breakdown and quit the band.



Damon Albarn in 2010 fronting Gorillaz at the Roskilde Festival in Denmark where the band premiered material from the Plastic Beach album, which was released earlier that year



Priced £17.99, the 180g re-release of Plastic Beach on Parlophone is available for order online from www.classiclps.co.uk

Blur blundered on without him for a while but Damon's heart wasn't really in it so he put the band on ice and looked for other ways in which he could make his music without having to cope with all the hassle of being a pop star. And that's when, with his cartoonist pal Jamie Hewlett, he came up with the utterly mental idea of creating Gorillaz, a group of makebelieve rockin' rebels consisting of singer 2D, bassist Murdoc, guitarist Noodle and drummer Russell – creations which, like Phil Daniels' character in 'Parklife', could convey Damon's artistic vision without putting him out on the firing line.

### HAND-PICKED TALENT

What Damon had learned from 'Parklife', I think, was that he was capable of creating brilliant music which sometimes surpassed his own capabilities - a lesson which has allowed him to do loads of interesting stuff that doesn't rely on him performing per se. Stuff like the Dr Dee Elizabethan opera, stuff like Plastic Beach.

The third LP by Gorillaz and, in my opinion, the best, *Plastic Beach* was released in March 2010, inspired by the way The Who had produced Quadrophenia - it was their music but they weren't actually in the movie. By this stage, Gorillaz had even outgrown the cartoon band schtick and were now more a hand-picked mass collaboration of diverse talents, orchestrated and conducted by Damon around a concept where our trash, our detritus, is the foundation of a new, warped ecosystem.

Damon called it a 'pop record' in his interviews at the time and he was right in the sense that Plastic Beach, for all its strangeness, is utterly accessible. But it's also unlike anything anyone had ever heard before. Gangsta rapper Snoop Dogg welcomes us to the album, then comes the wonderful 'White Flag', a genius synthesis of cutting-edge rappers Bashy



and Kano with the echoes of centuries-old music courtesy of the Lebanese National Orchestra for Oriental Arabic Music. 'Superfast Jellyfish' finds Super Furry Animal Gruff Rhys sparring on a radio jingle with daisy age hip-hop pioneers De La Soul, while 'Stylo' - the album's first single began a recording relationship between Damon and soul legend Bobby Womack which recently culminated in the erstwhile Britpopper producing Womack's very wellreceived comeback album The Bravest Man In The Universe. Mos Def also features on 'Stylo' and, just to show off his contacts a little, Damon talked Bruce Willis into appearing in the video.

### **CURT LINES**

Just as you think it can't get any weirder - it does! One of the world's most entertaining professional curmudgeons -Mr Mark E Smith of The Fall – slouches in to snarl a few curt lines on 'Glitter Freeze' and then grumpy old Lou Reed brings some louche gravitas to 'Some Kind Of Nature'. Plus there's the title track, 'Plastic Beach', which reunites Mick Jones with his old Clash team-mate Paul Simonon who'd been involved with Damon, three years earlier, in another collaborative project, The Good, The Bad & The Queen.

Finally there's 'Empire Ants' and 'To Binge' which boast the considerable talents of one of Damon's favourite hot new bands

at the time, Swedish electro-poppers Little Dragon. It's an eclectic mix, to be sure, but one that never fails to work under Damon's unifying vision.

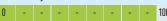
Since the release of Plastic Beach, Gorillaz have been on hiatus with Damon and Hewlett reportedly having some sort of tiff. Damon's working on a new Blur album and his first solo LP - two projects which will bung him right back centre stage. I'm of course looking forward to both immensely but, blimey, they'll have to be complete corkers to top the work we're celebrating right here.  $\circ$ 

### RE-RELEASE VERDICT

From the simple Middle Eastern string and percussion arrangements of 'White Flag' to the future-funk of 'Stylo' (not to mention the veritable armada of special guests assembled by Albarn for the project) there is something in this release for everyone.

Whether 16 tracks spread over four sides of vinyl falls into the trap of diluting what might have been a super-strong single LP is now moot, as sales on release in 2010 proved. This 180g vinyl edition boasts a gatefold sleeve showcasing Jamie Hewlett's artwork in all its splendour. HFN

Sound Quality: 86%





## Herbie Hancock Head Hunters

The 12th studio album by jazz musician Herbie Hancock was to see him finally bring into focus the ideas he had forged in a series of earlier experimental, but commercially unsuccessful, LPs. The result was to send shock waves through the jazz world...

Words: Chris Heard

any jazz purists hated it, while soul lovers took immediately to its funky grooves and futuristic rhythms. Head Hunters, Herbie Hancock's 1973 masterpiece, was a defining moment in jazz, heralding the start of the jazz-funk movement as it made jazz listeners out of R'n'B fans, and vice versa.

The feel of the record, centred around Hancock's playing on synthesiser, clavinet and Fender Rhodes piano, had a huge influence not only on jazz but also on soul, funk and – a few years down the line - the cut-and-paste sonic universe of hip-hop. Its four epic cuts were later to be sampled by everyone from Nas and 2Pac to George Michael, Madonna and PJ Harvey.

The LP also firmly established Hancock as a musical pioneer, an artist unafraid to follow his singular vision and throw off the shackles of expectation. In embracing funk and free-jazz, Hancock made a hugely popular crossover album that reached non-traditional audiences and turned Head Hunters into one of the best-selling jazz albums of all time.

#### CHILD PRODIGY

Hancock, a child piano prodigy and former member of Miles Davis's second great quintet during the 1960s, had already experimented with electronic instrumentation on a trio of early '70s records; Mwandishi, Crossings and Sextant, letting his septet's keyboard player



Hancock plays a Roland AX-7 keytar on stage in the Netherlands in 2006

The 45rpm release of 'Chameleon' demonstrated Columbia's belief in Hancock's crossover potential



have done with his electric piano. Imitating a guitar, he used a clavinet with wah-wah pedal for rhythm accompaniment riffs to get a funky, biting sound.

While steeped in the sensibilities of jazz, not least in the way the record would veer off into long improvisations, the beats of Head

Hunters were rooted in the soft fertile soil of funk, soul and R'n'B, taking their cues from the Blaxploitation groove of soul artists such as

James Brown, Curtis Mayfield and Sly Stone (track three of four is named 'Sly' in tribute to the Texas-born psych-funk pioneer).

Hancock had been a proponent of the avant-garde, both as part of Miles Davis's group and as a solo artist, but now he was ready to locate something a little more sonically down-and-dirty. Describing his change of direction on Head

Hunters, Hancock said: 'I began to feel that I had been spending so much time exploring the upper atmosphere of music and the more ethereal kind of far-out spacey stuff.

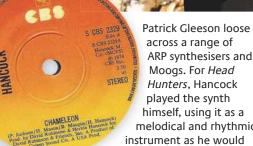
'Now there was this need to take some more of the earth and to feel a little more tethered; a connection to the earth...' Hancock put together a

new band - The Headhunters retaining multi-reedist Bennie Maupin from his former sextet and adding bassist Paul Jackson,

percussionist Bill Summers and drummer Harvey Mason.

#### **DEFLANTLY FUNKY**

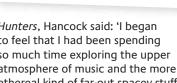
Chicago-born Hancock was 33 years old when he formed the defiantly funky quintet, bristling with grooves that would send shockwaves through the jazz scene. While other so-called fusion artists - Miles Davis, Deodato, The Crusaders, Donald →



Hancock pictured in 1972, the year before his involvement with Buddist chanting would pave the way for the focused sound of

Head Hunters

**Bennie** Maupin, a crucial member of the Head Hunters line-up who would help Hancock write the jazz standard 'Chameleon'





"I'd love to have

played with Jimi

Hendrix, but I was

never called"

#### VINYL ICONS

#### **PRODUCTION NOTES**

Recording sessions took place in September 1973 at Wally Heider's studios and Different Fur Trading Co in San Francisco ahead of the album's release on October the 13th.

It was co-produced by Hancock and David Rubinson, employing the talents of engineers that included Fred Catero, Jeremy Aztkin, Dane Butcher and John Viera.

Rubinson had been at home behind the mixing console since the 1960s, helming albums by artists from the burgeoning counter-culture movement such as Moby Grape, Santana and Taj Mahal.

Wally Heider's studios had also been an integral part of the west coast hippie scene, becoming the venue for early recordings by Neil Young, Crosby Stills And Nash and The Grateful Dead among others.

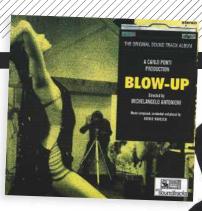
The Different Fur studio was owned by Hancock's former keyboard man Patrick Gleeson, whose expertise in eight-track recording and the Moog synthesiser had led



to early '70s sessions with Jefferson Starship. Other acts to have graced its environs include Phil Collins and Stevie Wonder.

Head Hunters was cut in a few takes, with Hancock handling all synthesiser parts himself (on previous albums he had shared these duties with Gleeson), working his magic on ARP Odyssey and Soloist synths and a Fender Rhodes electric piano.

One of the most memorable elements of Head Hunters is percussionist Bill Summers blowing into a beer bottle in imitation of hindewhu - a style of singing/whistleplaying found in the Pygmy music of Central Africa - to herald the start of 'Watermelon Man', Hancock's own 1962 jazz standard.



Byrd – seemed intent on crossing a bridge between jazz and rock elements, Hancock's focus was all about the soul.

He already had form, writing the proto-dancefloor groove of 'Watermelon Man' (a hit for Mongo Santamaria) more than a decade earlier, and later scoring the 1966 movie Blow-Up, in which Hancock's irresistibly funky 'Bring Down The Birds' offered a glimpse of what was to come.

#### SOMETHING DIFFERENT

Hancock had been looking for something different for some time. While working as a session player in New York during the 1960s, he

was in demand for all manner of studio workouts, except heavy rock and soul. 'I'd love to have played with someone like Sly Stone or Jimi Hendrix, but I was never called,' he said.

The pianist later moved to LA and became a follower of Japanese Buddhist chanting, helping him to lock into a personal discipline that would pave the way for the focused sound of Head Hunters.

In 1973, he said: 'It was while I was chanting and meditating one day last year that I suddenly had a vision of myself as a musical snob. Until that moment I had never questioned myself about my approach to music.

'As a jazz purist I had accepted that my artistic purpose was to disquise familiar material by adding my own creative touch. Now I realised there was actually nothing wrong with more basic music that communicates honest truth to the masses and leaves them happier for hearing it.'

Suddenly, Hancock felt his assumptions had limited his musical choices – from his stint working with:

Miles Davis (from 1963-1968), and in his days as a Blue Note session man in the early to mid-1960s.

As part of Davis's quintet, alongside Wayne Shorter, Ron Carter and Tony Williams, Hancock had helped to define the role of a jazz rhythm section and was an architect of the 'post-bop' sound - a form of small-combo jazz dating from : the mid-1960s that assimilated

influences from hard bop, modal jazz, the avant-garde and free jazz.

'I'm not prostituting myself by getting off in

a different way now,' he said. 'It's a matter of redirecting my energies to an equally valid end. We have mixed this album to capture more pop and soul qualities. The music

has a stronger beat, simpler melodies and is generally more funky than what I'd been doing recently.'

#### **FOOT TAPPING**

'Hancock forged

ahead, despite

charges that he'd

sold out'

Although Hancock's experimental early '70s albums are now seen as respected attempts at jazz-fusion, they received mixed reviews and sold poorly. Bemoaning a lack of understanding of his avant-garde work, Hancock forged ahead with Head Hunters, despite charges from the jazz fraternity that he

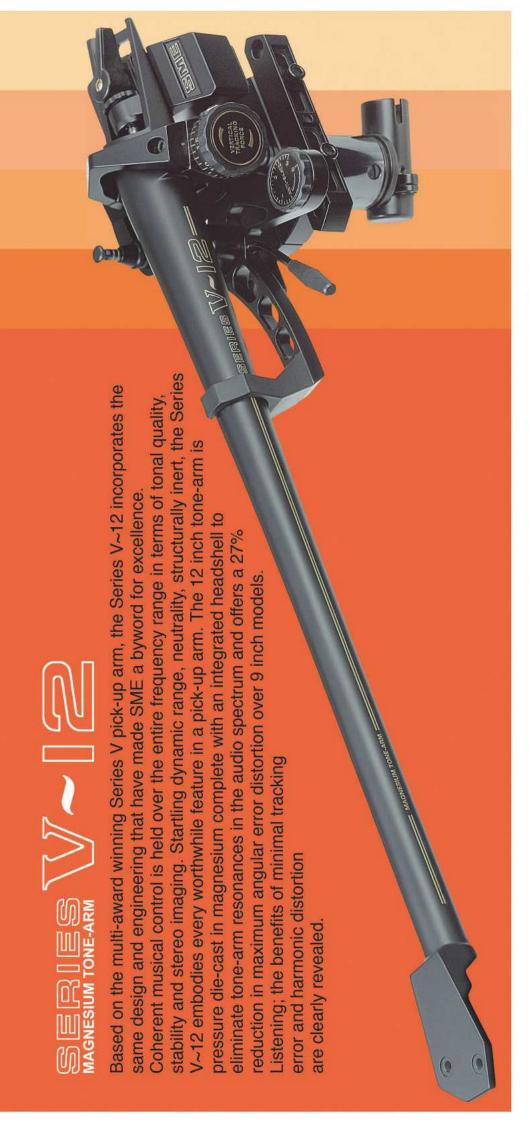
had 'sold out'.  $\ominus$ 

Herbie (sitting, far left) with his 1975 line-up of musicians

The movie Blow-Up from 1966, based loosely on the life of photographer David Bailey, was scored by Hancock

In 1979, singing via a Sennheiser vocoder, seen to his left



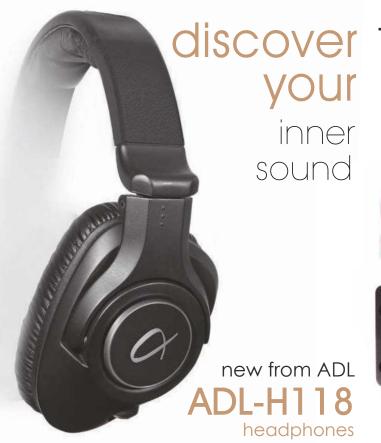




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#### Drummer and percussionist Harvey Mason in 2004

The album starts with the 15-minute 'Chameleon', a widely recognised jazz standard that has become part of the night's set for many a small jazz ensemble. Its head-nodding, foot-tapping groove has been replicated by myriad artists, among them Maceo Parker, Buddy Rich and Maynard Ferguson.

Composed by Hancock in collaboration with Bennie Maupin, it features solos by Hancock and Maupin, with its signature funky bassline played by Hancock on an ARP Odyssey.

#### HARD POP HIT

Next up, 'Watermelon Man' is a hit from Hancock's hard bop days, originally appearing on his debut 1962 album Takin' Off (with improvisations from Freddie Hubbard and Dexter Gordon). It was radically reworked for the LP by Hancock and Mason and features heavy use of African percussion.

'Sly', a tune in honour of the Family Stone frontman, is followed by album-closer 'Vein Melter', a slow-burner mainly featuring Hancock and Maupin, with Hancock mostly playing Fender Rhodes and occasionally bringing in some heavily-effected synth parts.

In 2007 Hancock's 12th studio album - his second for Columbia - was added to the National Recording Registry at the Library of Congress which collects 'culturally, historically or aesthetically important' sound recordings from the 20th Century.

Four years ago Hancock performed at the We Are One concert, marking the start of inaugural celebrations for US President Barack Obama's first term of office. And in 2011 he was named Unesco goodwill ambassador for the promotion of intercultural dialogue – not a bad gig for the former lowa college engineering graduate who changed the face of jazz.  $^{\circlearrowleft}$ 



#### ORIGINAL LP

Released on CBS/Columbia in the UK [S 65928] and US [KC 32731] on October the 13th, 1973, Head Hunters' memorable sleeve was designed by Victor Moscoso, a 76-year-old Spanish artist famous for his psychedelic rock posters, adverts and underground comics penned at the height of the counter-culture movement in San Francisco during the late 1960s to early 1970s.

The striking image is based on an African mask associated with the Baoule tribe from Cote d'Ivoire. These 'Goli' masks were called on in times of danger and at funeral ceremonies, and the spirituality of the image chimes very much with Hancock's interest in African culture in this period of his career. This is evident in part from the use of African percussion on 'Watermelon Man' (shekere, balafon, agogo, cabasa, surdo and gankogui among others). At the same time the sleeve is also playful in that it is based in part on tapehead demagnetisers used during reel-to-reel audio tape recording.

Heavily-edited versions of 'Chameleon' and 'Vein Melter' were released on a 45rpm single - an unusual step for a jazz artist during the mid-'70s but a statement of Columbia's belief in the record's crossover potential (albeit with 'Chameleon''s funky 15-minute majesty collapsed into in a very radio-friendly two-anda-half minutes). The single, [CBS 2329/Columbia 446002], released in January 1974, can be hard to track down and is valued at about £6. The original UK LP itself goes for about £15 in tip-top condition (a little less for the US pressing).

#### **QUADRAPHONIC RELEASES**

After its initial appearance the LP was mixed into quadraphonic on both vinyl and eight-track tape. The quad mix features some audio which is not heard in the stereo version, such as a two-second keyboard melody at the beginning of 'Sly', edited out of the original straight stereo album mix.

Alternate Format

Discograpi

A couple of years earlier Hancock's label CBS had announced the arrival of its SQ (Stereo Quadraphonic) brand - a matrix four-channel system for vinyl. Mid-'70s CBS quad titles, by the likes of Hancock, Santana. Paul Simon and others, became some of the earliest commercial rock experiments in audiophile enhancement and precursors to the SACD digital format (more of which later). As the SQ record track was broader than a conventional stereo track, maximum plaving time on the LP was lower than that of a traditional pressing.

Quadraphonic eight-track tapes, mainly aimed at the car stereo equipment market, were made in discrete four-channel stereo, giving the CBS quadraphonic project a high status among audiophiles.



#### **CD ISSUE**

Head Hunters continued to be re-pressed on vinyl throughout the 1970s and into the 1980s as its timeless jazz-funk ensnared generations of new admirers, and the album went digital in the mid-1980s with a first CD issue on Columbia in 1985 [CK 32731]. Notably, the first US CD issue bears the words 'now made in the USA' on the back cover, while the booklet states that it is 'manufactured in Japan by CBS/ Sony...' (the latter is likely to be a printing oversight).

In 1992 this item was remastered and enhanced for a Columbia Legacy edition in the UK and US [CK 47478] as part of the Columbia Jazz Contemporary Masters series. This underlined Head Hunters' reputation as being one of the most influential albums in the entire Columbia catalogue.

At the time of the 1992 reissue it was the biggest-selling jazz album of all time, and had inspired not only jazz artists but also those involved in soul, funk and hip-hop.

The CD had another makeover in 1997, with a Japanese remaster as well as releases in Russia and European territories. Some four years later the item appeared as a series of multichannel SACD releases, in the UK and Europe. and in Japan on SME Records [SRGS 4510]. The treatment afforded Head Hunters at this time continued to demonstrate its standing as a record of such musicality that it demanded once more to be heard at the optimum audio quality.



#### **MUSICAL LEGACY**

The emergence of hip-hop as a serious art form throughout the 1980s and 1990s steered Head Hunters' credibility into an entirely new dimension. Hancock had always been a keyboard pioneer, and his own early 1980s excursions into electro (notably with the single 'Rockit', featuring scratching and other turntablist techniques while being accompanied by a groundbreaking music video) were themselves a big influence on the B-boys and beatmakers of New York City and beyond.

As sampling and programming technology and culture became more widespread, hip-hop producers turned their attentions to classic soul, rock and movie soundtrack LPs in search of 'breaks' of percussion, melody or perhaps dialogue to re-appropriate for use in their own work.

So it was that Head Hunters and in particular its opening brace of cuts - were sampled frequently, by artists including 2Pac, Nas, Coolio, Beck, Digable Planets and LL Cool J - not to mention Madonna and George Michael.

# Red Rocks, Colorado, USA

Said to be a place where Native American Indians once held ceremonies, this unique venue carved from the landscape by nature is now one of those 'visit before you die' rock 'n' roll shrines. **Steve Sutherland** has the story of the venue they call Red Rocks



he riot kicked off just before seven. According to police reports about 1000 fans showed up to the long-soldout show without tickets and having peacefully gathered on the hills around the amphitheatre, suddenly made an attempt, en masse to scale the back walls. The cops responded by deploying helicopters to swoop in low and dump tear gas on the intruders whose immediate response was to battle back with bottles, rocks and cans.

Carnage ensued. The First Aid stations were overwhelmed with folks battered, bruised and needing treatment for broken limbs while the paying crowd inside was trapped to choke on gas. The support act - a chap called Livingstone Taylor, the not so well known brother of the hippie phenomenon James scarpered before the scheduled end to his set but the headliners, bless 'em, manned up and pretty much behaved like nothing untoward was happening at all.

Apart from the singer making a wry statement - 'Welcome to World War Three' – the band soldiered on and the crowd got what they came for. 'You feel such a twit if you can't handle a situation,' the singer told the Los Angeles Free Press backstage

A wide angle shot of the Red Rocks Amphitheatre taken before a Lyle Lovett concert on July the 18th, 2008. Originally the place was known as the 'Garden of the Angels' but was always referred to by locals as Red **Rocks** 

August 1987 and the venue is packed with 'Deadheads' waiting for The Grateful Dead to take to the stage. Currently there is seating for 9450 people

after the embattled show, 'So you struggle on. I mean that stuff [the gas] is really nasty. It's still very painful. I sucked it right down to the bottom, breathing very deeply. It's even painful now, it's like having bad indigestion.

'But the embarrassment of stopping is far worse than the mild pain of having a bit of tear gas down your lungs...'

#### **ROCK BOTTOM**

Stiff upper lip. The show must go on. Stirring stuff. Except... well, they didn't. The shows, I mean. The riot, which took place on June the 10th 1971, meant that all rock concerts were banned from the Red Rocks Amphitheatre near Morrison, Colorado for the next five years - a draconian decision by the Mayor of Denver, one William H McNicols, Jr, which was only remedied by a local promoter called Barry Fey who had brought Led Zeppelin, The Rolling Stones and The Who through the Mid West, successfully challenging the ban in court.

From then on, it was business as usual for a unique venue which some claim has been hosting performances for millennia. The first performers were reputedly the local Ute Native American Indian tribe who had used the natural bowl dramatically carved by the elements out of red sandstone to host their ceremonies for untold centuries Then, in the 1905, a gentleman called John Brisden Walker sold Cosmopolitan magazine to William Randolph Hearst, raising the funds for the erection of a temporary platform under the outcrops. Here, on the 31st of May 1906, he staged The Grand Opening Of The Garden Of The Titans featuring a long forgotten brass band ensemble led by one Pietro Satriano.

outdoor arena was the stunning backdrop for many an inspired



production, famous opera singer Mary Garden pronouncing it the finest venue she'd encountered in her illustrious career. In 1928, the amphitheatre was sold to the City of Denver for \$54,133, its mayor, Benjamin F Stapleton, hiring George Cranmer as Parks Manager.

Cranmer had many boulders dynamited to make the 9450 capacity auditorium, which continues to serve to this day. The work took six years, mostly carried out by the Civilian Conservation Corps, a work relief programme instigated as part of President Roosevelt's New Deal which provided employment for unskilled, unmarried young men.

#### **ROCK ON...**

Formally dedicated in 1941, Red Rocks began staging regular concerts six years later, the first performance of each season being the non-denominational Sunrise Service every Easter Sunday.

Rock arrived at the Rocks in the shape of The Beatles who played the venue to a near capacity audience (7000 screaming punters) during their first US tour. The date was the 26th of August 1964.

The group needed to draw on oxygen canisters placed around the stage to compensate for breathlessness due to the thin atmosphere and played the gig scared of sniper fire from the surrounding rocks after receiving local death threats.



The Grateful Dead's Jerry Garcia on stage during the 1987 gig

June that year

The **Beatles** land in the US in 1964. They played Red Rocks on the 26th of August



her piano. Jimi Hendrix graced the venue in 1968, as part of his triumphant US tour with Vanilla Fudge and Soft Machine.

Post-riot, the Rocks became the highlight of just about every tour

running through the Mid West. Comedian/actor/ banjo superstar Steve Martin recorded part of his best-selling A Wild And Crazy Guy LP there in

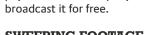
1978 and then, five years later, U2 brought their War Tour to Denver and recorded a show which went a long way to cementing their image as the biggest and best live band of the early 1980s.

Under A Blood Red Sky was recorded on the 5th of June 1983. The band had scouted out the venue on a previous visit to Denver a couple of years earlier during their Boy tour. After their show at the Rainbow Music Hall, they visited the amphitheatre and band manager

Paul McGuinness, impressed by the epic vista, determined to film there as a way of promoting U2 to the masses. Back in the UK, he contacted Malcolm Gerrie,

> producer of ace TV show The Tube, and talked about shooting an hour-long video special to be featured on the programme, the attraction

for Channel 4 being that U2 would pay and the TV company could broadcast it for free.





A partnership of U2, Island records and promoter Barry Fey stumped up £250,000 between them for extra lighting, a mobile studio, the hire of director Gavin Taylor, producer Steve Lillywhite to manage the sound, and helicopters to film sweeping footage of the surrounding grandeur. All was set...  $\ominus$ 



'Both support

bands cancelled.

considering the

situation unsafe'

### **CLASSIC VENUES**



'It was so cold

that The Edge

had trouble

playing his guitar'

And then it rained. And rained, And rained some more, to the extent that both support bands - The Alarm and The Divinyls - cancelled, considering the situation unsafe.

Still some fans hiked to the gig through the deluge and Bono served them hot drinks and told them the show would be general admission and to ignore what it said on their tickets, just get as close to the stage as they could.

#### AMAZING EFFECTS

Barry Fey was all for cancellation, considering the show too risky an

enterprise under such weather conditions, but the band pressed on, Bono taking to local radio to let fans know the band would play and that, for those

who just couldn't make it, U2 would be playing the next night at the CU Events Center

With Red Rocks about half full. the show kicked off just as the rain abated and turned to misty drizzle creating amazing effects for the camera crew. It was so cold that The Edge had trouble playing his guitar and he nearly passed out at the sight of his lead singer getting so carried away that he climbed up a slippery lighting rig, slick with the rain, to wave a white flag.

The 20-song show was first aired in early July on NBC's radio station The Source under the name War Is Declared, a broadcast sponsored by

Budweiser and the US Army. Then TV channels followed suit, MTV in particular focusing on the performance of 'Sunday Bloody Sunday' which was selected as the official video of the gig. The Tube, hampered by union disagreements, eventually showed ten minutes.

In November, U2 released a mini LP called Under A Blood Red Sky which featured two songs from the Red Rocks show - 'Gloria' and 'Party Girl' – and the full concert video, U2 Live At Red Rocks: Under A Blood Red Sky, was released to the public in May 1984 to instant critical

appreciation.

Other artists swiftly took note. Stevie Nicks released an hour-long DVD of her Red Rocks show in 1986, the Moody

Blues filmed their performance with the Colorado Symphony orchestra there in 1992, Neil Young released an album, Road Rock Vol 1 and an accompanying DVD from his Red Rocks Silver And Gold Tour show in 2000, and just last year British band Mumford & Sons recorded their August Red Rocks show for a fulllength concert DVD.

#### **ROCK TRADITION**

There's a tradition that every performer who appears at Red Rocks is presented with a mounted chunk of sandstone from the hills around the venue; a treasured collectable among performers like Willie Nelson

who, in August 2003, surpassed The Grateful Dead's record for most shows played there.

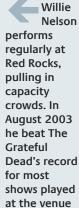
In fact, the amphitheatre is such a favourite with fans and artists alike that industry magazine Pollstar recently decided, after the venue was voted Best Small Outdoor Venue for the 11th year running, that the award should just be called the Red Rocks Award and they removed the venue from the annual running.

#### **VENUE TO VISIT**

Red Rocks is definitely one of those 'visit before you die' rock 'n' roll shrines. This writer was lucky enough to witness INXS there back in the '80s and I've hankered to go back and visit ever since.

Oh, yeah. So who were the band the fans were rioting over in the intro? Would you





Brit band Mumford & Sons who recorded a full-length concert DVD at the venue in August last year. They finished their two-hour set with a cover of The Beatles' 'A Little Help From My Friends'





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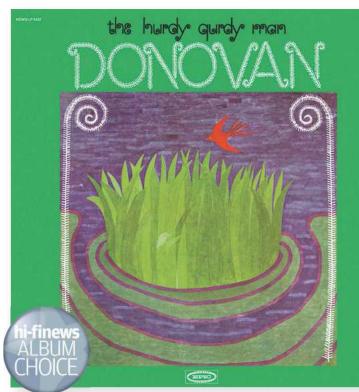
The Hurdy Gurdy Man

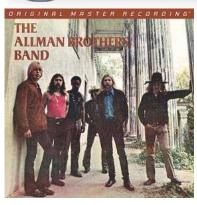
Sundazed LP 5432 (mono)

As with two of this month's SACD releases, it's a mono-fest, as if Phil Spector is guiding us from behind bars. But Donovan's LPs were sufficiently different in mono to justify this, one of three LPs just reissued by Sundazed. The title track is a complex masterpiece that managed to be a hit single, while Side 2's opener, 'Jennifer Juniper', is a hippy ditty perfect for 1968. The rest? A melange of folk, pop and pyschedelia that justify the efforts of Donovan's revivalists - no Dylan wannabe he. For those on a budget, the brand-new 4CD set Breezes of Patchouli - His Studio Recordings 1966-1969 contains this in stereo with four other complete albums, singles and rarities [EMI 50999 928605 2 0]. KK

Sound Quality: 88%







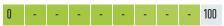
### THE ALLMAN BROTHERS BAND

The Allman Brothers Band

Mobile Fidelity MFSL 1-397

While the SACD of this debut album merited 88% in my HFN review last month, the nature of the band, as well as the period during which it seems locked, point towards LP as the preferred medium. If one format can sound 'earthier' than another, chalk that up as another characteristic of the vinyl disc that doesn't quite come across with digital formats. That said, the SACD was an absolute stunner, but this edition seems a bit more 'right'. We are, after all, talking about the greatest exponents ever of Southern blues-rock, and for my money, 'It's Not My Cross To Bear' and 'Whipping Post' warrant a 12in slab of plastic. It's 1969 once again... sigh. KK

Sound Quality: 90%





#### TEN YEARS AFTER

A Space In Time

Audio Fidelity AFZLP 122 (180g vinyl)

For fans of TYA who predate Woodstock, and who think of them primarily as a showcase for the recently departed Alvin Lee's hyperactive lead guitar work, underpinned by the blues, this 1971 release was a bit of a departure. They toned things down a bit, probably feeling that they'd taken 200mph plucking to its limits, and as a result, earned their biggest ever hit with this LP's 'I'd Love To Change The World.' Appropriately anthemic in the manner of the then zeitgeist, it was countered by material like the more characteristic 'Baby Won't You Let Me Rock 'n' Roll You'. Whatever the calming effect, there was still plenty of Lee to dazzle us. KK

Sound Quality: 87%







Belly Of The Sun

Pure Pleasure PPAN BST35072 (two discs, 180g vinyl) Wilson's delivery is like a wine that recalls tastes other than the grapes in the bottle: a hint of Nina Simone here, a glimpse of Roberta Flack there. Her gift here is reinventing a number of pop and rock classics that you just don't expect to hear delivered by a distaff singer with such a light touch. Even her rather raucous take of Robert Johnson's 'Hot Tamales' and a chain-gang rendition of Mississippi Fred McDowell's 'You've Got To Move' ooze finesse, while she reinvents 'Wichita Lineman' and 'Shelter From The Storm' as if she'd never heard Glen Campbell's or Bob Dylan's versions. As for The Band's 'The Weight', it almost serves as a warning. KK

Sound Quality: 89%

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#### DIOPHILE: DIGITAL



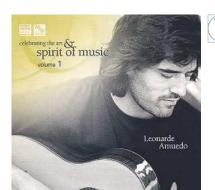












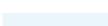
#### LEONARDE AMUEDO

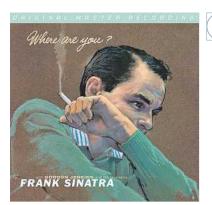
Celebrating The Art & Spirit Of Music, Vol 1

STS-Digital/Onda Ligera STS611124 (SACD)

Nothing wrong with 'old school' audiophilia if you're in the mood for what was once called 'New Age Music'. This acoustic guitar/ percussion/piano/vibraphone set might even inspire you to dig out the fondue and a bottle of Chardonnay, or your VHS copy of A Man And A Woman, but the reality is that the sound is so delicious you'll forgive the mannered, delicate content, like Forcione or Feliciano on Mogadon, High-end names including Siltech, Marantz and Grado are involved in the project, so it's a genuine sonic spectacular, while the content is so genteel that it could make a Class D amplifier sound like single-ended triodes. Soothing, but eerily sophisticated. KK

Sound Quality: 89%





#### FRANK SINATRA

Where Are You?

Mobile Fidelity UDSACD 2109 (mono, SACD)

Great opportunity to 1) wave your vinyl flag or 2) wave your SACD flag. The recent LP of this mono album from 1957 [HFN Jun '13] warranted 90%, but the SACD sounds different enough to beg the question as to which is the more 'correct'. What's undeniable is that both sound superb, the LP smoother, the SACD more analytical. Whether that sways you toward one format or the other is wholly down to your preferences and your system's tonal character, but regardless, you'll hear prime Sinatra in vivid mono, with magnificent takes of 'Autumn Leaves' and 'Laura', aided and abetted by Gordon Jenkins and his orchestra. A mono SACD - heh, heh, heh! KK

Sound Quality: 88%





#### HARRY BELAFONTE

Calypso

Audio Fidelity AFZ 138 (mono, SACD)

Like the Sinatra title reviewed here, another mono classic in the most satisfying high-res format in use today. This, of course, features the immortal 'Day O' (aka 'The Banana Boat Song'), an appropriate opener to the first-ever LP to exceed one million sales. It was Belafonte's third, his second No 1, and it remains an audiophile fave despite being in mono, while not actually sounding as spectacular as his 1959 live recording in Carnegie Hall. Musically, it's a mix of the genre championed by the title and Jamaican 'mento' music, and it serves as milestone in 'world music' history. Just don't expect it to thrill your ears the way its reputation promises. KK

Sound Quality: 86%

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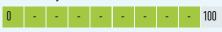
#### PAUL McCARTNEY & WINGS

Wings Over America

MPL/Concord Music Group HRM-3431-00 (three CDs + DVD)

Yes, it's beginning to look like every deluxe Macca reissue earns automatic 'best of the month' kudos, but this deserves it as much for the package as the musical content. WOA was a milestone in that it was a triple LP which established Wings as a real, live touring band, while demonstrating that the ex-Beatle hadn't lost his chops. Issued in 1976, it contained a full two-hour-plus concert, and presented a contemporary picture of the artist, though in retrospect it's only a so-so collection of tunes. Here it is presented on two remastered CDs, the third CD comprising extra tracks from the tour, with a DVD containing a TV special. Add to this four sublime books and loads of memorabilia, and you have a Macca must. KK

Sound Quality: 87%







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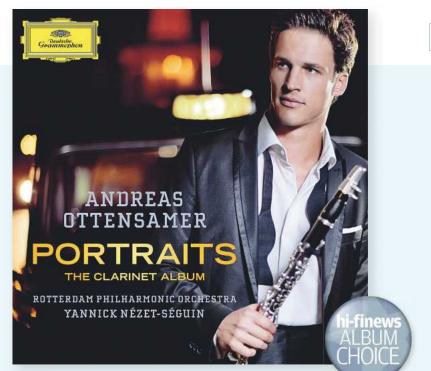












#### ANDREAS OTTENSAMER

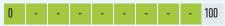
Portraits: The Clarinet Album: with Rotterdam PO/Yannick Nézet-Séguin (96kHz/24-bit; FLAC)

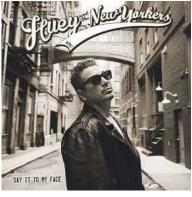
www.highresaudio.com; DG/Mercury 481 0131

A raucous Gershwin Prelude segues into Copland's moody Concerto one of his best pieces - then timetravels via Debussy ('La fille aux cheveux de lin') and Amy Beach (her romantic Berceuse) to 19th century concertos by Cimarosa and Spohr. **Short transcriptions and concertos** alternate in what may add up to a stylistically incoherent whole but one which affords the young **Austrian Andreas Ottensamer, now** principal clarinettist with the Berlin

Philharmonic, a chance to illustrate his captivating skills in both jazzy and classical genres. His liquid sounds, wide colour palette and sense of timing sets this version of the Copland above any competition (even the recent Michael Collins/Chandos pales) and the Rotterdam Orchestra surprises in its exuberant embrace of the two American pieces. Bold, close-mic'd sound from De Doelen concert-hall. CB

Sound Quality: 90%





#### HUEY AND THE NEW YORKERS Say It To My Face (44.1kHz/24-bit; ALAC/FLAC/WAV)

www.naimlabel.com; Naimcd180

A fine example of how rock can benefit from retention rather than wholesale flattening of dynamics, Fun Lovin' Criminals frontman, Radio 2 DJ, TV panellist, writer and former marine Huey Morgan pours his life experience into a rich album, not so much 'solo' as with a group of longterm friends ('my gang'). It's tight and well-crafted stuff, diverse too, channelling somewhere between Graham Parker and Dr Feelgood on the opener, but dropping Morgan's vocals to a Robbie Robertson growl over the bulk, whether the funked-up drive of 'Dirty Bird' (kick-arse kick drum and bass), the blissed-out 'The White Guard', the pensive country-edged 'Shaniqua' or the lonely acoustic guitar of 'She Gone'. Only occasionally does the ensemble overwhelm the snap-tight production (notably on 'New York Bluez'), and even then it overflows with the joys of music-making. JF

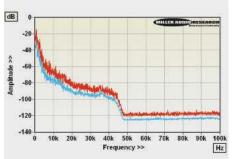
Sound Quality: 90%

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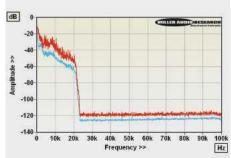
Following our Investigation feature [HFN, Jun '11] where we examined the claimed quality of high-resolution downloads, Hi-Fi News & Record Review is now measuring the true sample rate and bit-depth of the HD music downloads reviewed on these pages. These unique reviews will be a regular source of information for those seeking new and re-mastered recordings offered at high sample rates and with the promise of delivering the very best sound quality. (Note: asterisk in headings denotes technical reservation explained below.) PM

#### LAB REPORT



The ultrasonic noise at 20-40kHz seen here is not tape noise but accompanies the close-miked clarinet, and is possibly distortion or noise from a downstream limiter. Otherwise this rendering looks like a native 96kHz file. PM

#### LAB REPORT



Full of energy, this 44.1kHz rendering would certainly have benefited from the extra bandwidth afforded by a 96kHz master. The difference between peak (red) and RMS (blue) spectra illustrates its adequate dynamic range. PM







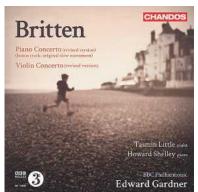
















#### **MOZART**

Sinfonia concertante, K364; Concertone K190; Pierre Amoyal, et al/Lausanne CO (88.2kHz/24-bit; FLAC)

www.highresaudio.com; Warner Classics 2564652158 The French violinist, now 64, has appeared on various record labels since his Erato debut in 1973; in 2002 he founded and leads - the Camerata de Lausanne. Co-soloists here are viola player Yuko Shimizu (K364) and Ami Oike in the unfairly neglected Concertone for two violins (which also has important solo oboe and cello parts). These partnering string soloists are spaced not too far in from Amoyal: not in the right channel, thank goodness! The sound is generally vibrant and clear with plenty of ambience around the orchestra. One jarring entry, 2m 09s into track 2 warranted re-editing; and cadenzas were, I suspect, pasted in separately. These are well prepared performances which reminded me somewhat of the 1971/73 ASMIF/Argo LP counterparts, if more robust. At 55m, short measure for £17, and no booklet. CB

#### Sound Quality: 80%



### BRITTEN

Piano and Violin Concertos; Howard Shelley, Tasmin Little, BBC PO/Edward Gardner (96kHz/24-bit; FLAC)

www.highresaudio.com; Chandos CHAN 10764

The young Britten's Piano Concerto was thought too clever by half when introduced in 1938, and he replaced the third movement in 1945 – the original is a bonus track here. The first LP version (EMI, 1957) was with Jacques Abram, pianist in Utah and NY premieres. The definitive composerconducted 1970 Decca was with Sviatoslav Richter, no less. The far superior Violin Concerto fared rather better – although The Times' review in 1940 found 'little achieved from so large a display'. Neither work has secured a real concert-hall footing, and while the Piano Concerto remains resistible (in spite of Shelley's valiant work) I'd buy the coupling not least for Little's lovely account of the Passacaglia. The recordings sound well in the capacious acoustic of MediaCity Salford. It costs less at The Classical Shop and there you get the booklet too. CB

#### Sound Quality: 80%



Despite my slight reservation about the upturn in ultrasonic noise before the Nyquist cut-off (a feature of downsampled DSD files), this looks like a native 96kHz recording. String harmonics extend well beyond 20kHz. PM

Frequency

# eric clapton OLD SOCK

#### **ERIC CLAPTON**

Old Sock (96kHz/24-bit; ALAC/FLAC)

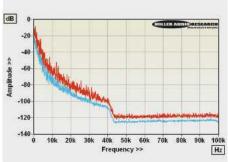
www.highresaudio.com; Universal/Polydor 3733098 An appropriate title for this mish-mash of styles and songs, delivered perhaps too effortlessly by the venerable quitar god as he plucks well-ripened plums from his portfolio of styles. He Marley ups Taj Mahal's 'Further On Down The Road' and carbon-copies Peter Tosh's country-reggae crossover 'Till Your Well Runs Dry'. Then he backs up to the 1930s for four tracks: a softly-softly 'The Folks Who Live On The Hill'; a sloppy duet with Paul McCartney on 'All of Me'; a slide-quitar moan through Lead Belly's 'Goodnight Irene'; and a downright dreary 'Our Love Is Here To Stay'. There's livelier stuff, including two original compositions, while the highlight is perhaps an unexpected cover of Gary Moore's 'Still Got The Blues' with Stevie Winwood guest-grinding the Hammond organ. It's all warmly recorded and listener-friendly, but pipe and slippers are in place throughout. JF

#### Sound Quality: 85%

100

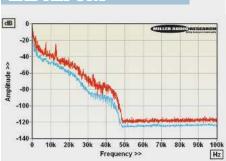


#### LAB REPORT



This is a true 88.2kHz LPCM recording and not a downsample from an SACD or DSD file. The solo violin produces some very strong harmonics extending out to 30kHz, fully justifying the use of this elevated sample rate. PM

#### LAB REPORT



Even the quieter, bluesy tracks are recorded at high level while still putting out an unlikely spectrum of ultrasonic energy. The bursts of 20-40kHz noise are more likely distortion from in-line compressors than musical harmonics. PM















Warp And Weft

Bella Union BELLAV412

Nine albums into her pretty-much flawless career, there's no longer any shock of the new in encountering Veirs' heart-fluttering voice, subtly woven musical tapestries and idiosyncratically brilliant lyrics, but the thrill of them all combined remains. This album finds her renewed, pushing the boundaries as she did on her earliest releases, to create songs that inhabit the heart and haunt the imagination. 'Dorothy Of The Island' is, objectively, nothing new for her in terms of its sonic landscape, but the impact of its lyric is huge. 'Shape Shifter' is simply gorgeous, 'Sadako Folding Cranes' will tear your heart apart and the jazzy drift of 'White Cherry' proves Veirs can tackle any style and make it her own. JBk







Feelin' American

Light Organ Records 25396 04542

Although he's based in Vancouver, there's a distinctly '70s British post-punk vibe about James Younger's debut album, but maybe that shouldn't be a surprise given that he was born in Manchester and only went West when he turned 21. He's a terrifically tight, but not at all flashy, quitarist who favours beautifully structured twin-guitar harmonised leads and writes songs that would have sounded great on an early Elvis Costello album. Fans of Nick Lowe, Del Amitri and Tom Petty will also tune in immediately to Younger's catchy but hardhitting pop-rock with its occasional hints of twitchy reggiefied funk. Buy it now and you'll feel smug when he goes gigantic. JBk

Sound Quality: 88%



**BARENAKED LADIES** 

**Grinning Streak** 

Fontana/Universal 1570782942

I was all set to find the latest Barenaked Ladies album disappointing. After all, these Canadian witticism-fuelled pop harmony merchants have been 25 years in the business, so they should have settled down into comfortable middle age, aiming for the nostalgia market. So I was somewhat stunned to be confronted by a mindfunk industrial rhythm track underpinning the opener, 'Limits', which also features an unexpectedly angular jazzy piano break in the middle. It's still Barenaked Ladies, with the emphasis on cleverly interlocking vocal melodies and lyrics laced with black humour, but it's also stunningly modern: and that's not an easy trick to pull off. JBk



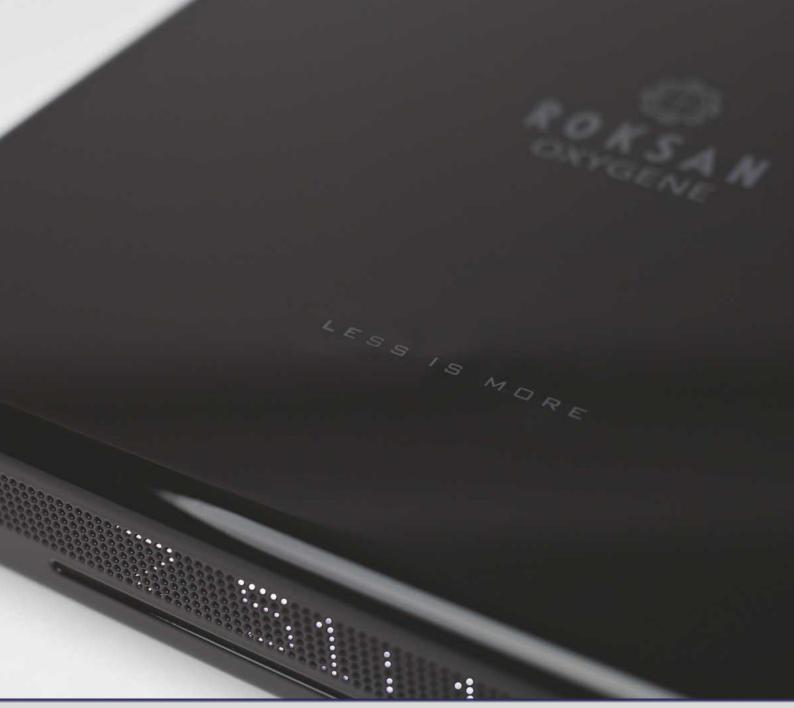




Rogues Records RR003CD

It's a very rare treat to find a young musician ploughing his own furrow with no regard for the current music scene and Ben J Wood from Yeovil in Somerset is definitely one of those. This debut, recorded in his garage with a bunch of instruments and a great grasp of midi sequencing, sounds like something that might have been recorded at almost any time except now. Cuts like 'The Wildlife' and 'Pilot Light' sound like they leapt fully-formed straight from his brain into whatever his chosen recording medium may have been, while the cool sophistication of 'Time Trials' is informed by, but worlds away from, the ersatz hipness of modern r'n'b. A bright future beckons. JBk

Sound Quality: 85%



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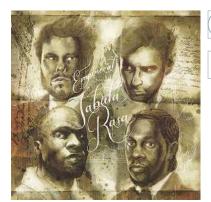












#### **EMPIRICAL** Tabula Rasa

Naim Label naimcd 193 (two discs)

Empirical's first incarnation was as a hard-bop quintet, but it was soon reborn as a piano-less quartet, headed by brilliant and forceful alto saxophonist Nathaniel Facey, with Lewis Wright on vibes. During a scholarship tenure at London's Trinity Laban Conservatoire, Empirical collaborated with the Benyounes String Quartet, and this led to new compositional directions and to the classical players' appearance on Tabula Rasa. Each of the 14 tracks on this double CD is themed on a story or a character, creating fascinating new soundscapes on the way. On tracks like 'The Prophet' or 'The World In His Mind' the combination of sax, vibes and strings is magical. SH

Sound Quality: 85%





#### MICHAEL JANISCH

Jazz For Babies: The Saxophone Album

About to become a father, bassist Michael Janisch couldn't find any good jazz records that were calm and quiet enough to play to a baby in the womb or 'soothe a fretful infant off to sleep'. Hence the JFB series, each CD filled with slow, relaxing standards and featuring a different lead instrument: here the saxophone of Paul Booth. A very slow and gentle 'Favourite Things' might not prepare young ears for Coltrane. But it makes a genteel contrast with America's 'Baby Loves Jazz,' which animates singalong music with crass characterisations like Duck Ellington and Mingus Mouse. 'Soporific' is usually a condemnation, but it's a positive comment here. SH

Sound Quality: 80%





#### DAVID MURRAY INFINITY QUARTET

Be My Monster Love

Long known as a founder of the World Saxophone Quartet and for his own Octet, Murray reached another audience in the late '90s when he made Dark Star with The Grateful Dead as a tribute to Jerry Garcia. This new quartet, named to recall his Studio Infinity loft in 1970s New York, has Jaribu Shahid on bass and Nasheet Waits on drums, alongside Marc Cary who was Abbey Lincoln's pianist for many years. But here the title track's uncompromising and even outrageous vocalist is Macy Gray, who first worked with Murray in Questlove's Afro Picks. Gregory Porter is outstanding too, especially in 'About The Children,' with lyrics by Abiodun Oyewole of The Last Poets. SH

Sound Quality: 85%

100

#### KEITH JARRETT, GARY PEACOCK, JACK DeJOHNETTE

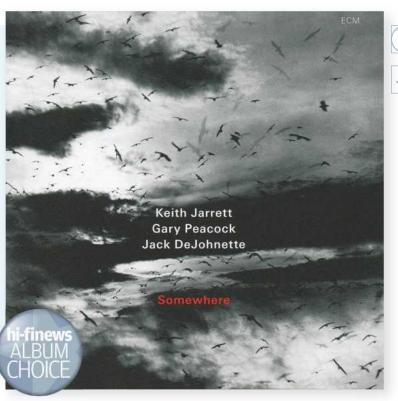
Somewhere

ECM 276 6370

Back in 1983, Jarrett had already enjoyed a stellar jazz career and was uniquely successful as a solo pianist. Then came what would soon become known as 'The Standards Trio', with Peacock and DeJohnette. Their first sessions produced enough material for three albums, and the first two to be released were indeed Standards by title and content. It was with Changes, that the trio brought forth originals that seemed to reveal limitless new possibilities. Somewhere, recorded live in Lucerne in 2009, is the group's first release since that year, when ECM put out Yesterdays (actually recorded on tour in 2001). And the trio sounds as fresh as ever. SH

Sound Quality: 90%





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Email your article, along with images, to letters@hifinews.com or post it to Hi-Fi News magazine, AVTech Media Ltd, Hadlow House, 9 High Street, Green Street Green, Orpington, Kent BR6 6BG. Don't forget to provide us with your address and telephone contact number. The closing date for the competition is August 1, 2013. The best entries will be published from the October issue onwards and the winners will be offered the opportunity to join the Hi-Fi News team. Good luck, now get writing...

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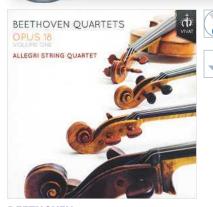


#### JS BACH

Violin Concertos BWV1041-1042, 1053 and 1060 Viktoria Mullova, Accademia Bizantina/Ottavio Dantone

In top form, and throwing aside any traces of the cool distancing for which she is sometimes criticised, Viktoria Mullova couples two of Bach's violin concertos with transcribed versions of the C minor work for two harpsichords (BWV1060) and the Harpsichord Concerto in E (BWV1053). Sessions took place last December in Ravenna. The CD comes hard on the heels of an excellent Freiburg Baroque/ Harmonia Mundi disc with BWV1041-43: a different musical approach with perhaps longer phrasing but far heavier - as opposed to the sprightly and imaginatively phrased accompaniments with Dantone (his silvery continuo a delight). Highly individual! CB

Sound Quality: 95%





Vivat VIVAT 103 (downloads up to 192kHz/24-bit resolution) Formed in 1953 – their first recordings were oddments for an HMV History of Music LP series - The Allegri Quartet has developed over the years and now has female viola and cello desks. There's plenty to read at www.allegriquartet.org.uk and less recent recordings are at Naim Label. Tony Faulkner has engineered these early Beethoven quartets at Stoke d'Abernon's Menuhin Hall as part of a planned complete cycle. Playing with impeccable intonation and ensemble, the Allegri keeps expression within a Haydn-referenced ambience (contrast the Hagen Qt in the C-minor quartet, on DG). A promising start. CB

Sound Quality: 72%



**PROKOFIEV** Piano Sonatas 1-5 Peter Donohoe

Somm SOMMCD 249

In 1991 Peter Donohoe set down detailed readings of the Prokofiev 'War trilogy' for EMI - beautifully recorded too, at Warwick Arts Centre - and has now undertaken a complete cycle for Somm. The Boosey & Hawkes edition is his, with forewords; CD booklet annotation is by the pianist too. Whereas Nos 6-8 were all large-scale works, in this earlier group Sonatas 1 (a student work sounding like Rachmaninov - whom Prokofiev later deplored) and 3 are in short single-movement form. The considerable pianistic demands are met by this masterly musician - Donohoe plays a Steinway at the University of Southampton. CB

Sound Quality: 88%







Speakers Corner Decca SXL2028

Long gone are the golden days of Decca recording chamber music in Vienna, notably with the variously sized Vienna Octet (!) comprising VPO principals led by Willi Boskovsky (his brother Alfred the clarinettist). This inimitably stylish account of the Schubert Octet was taped in the Sofiensaal in 1958, John Culshaw producing and with James Brown as engineer. My early copy came as part of a 4LP box set [SXL 6238-41] and now reveals 'vinyl roar' but tremendous energy is packed into the grooves. SC's 180g transfer cleans the upper reaches at a slight cost of openness in the soundstage. CB

Sound Quality: 75%

0	-	-	-	-	-	-	-	-	100





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# Printing hi-fi

While electronics and software continue to develop at a pace, propelling hi-fi deeper into the virtual world, Paul Miller suggests that similar leaps in hardware are necessary to keep on track

ear by year, decade by decade, the quality of domestic hi-fi equipment just gets better and better. There are a few exceptions (I could name one or two tube amps we've tested in our 'Vintage Review' series that might give some modern examples pause for thought), but on the whole today's enthusiast is far better served than a Hi-Fi News reader from the 1970s.

Nevertheless, it's equally clear that some hi-fi pathways are evolving a lot quicker than others. Digital audio has come a long way in the 30 years since CD was launched thanks to vastly improved silicon, elevated sample and bit rates plus ongoing advancements in the sophistication and elegance of the underlying software. But I'd argue that hi-fi hardware that relies on the physical properties of materials, its machining and assembly has not progressed at such a generous pace.

#### LET'S GET PHYSICAL

Loudspeakers, for example, have certainly benefited from more advanced driver materials and a greater understanding of their behaviour in use [B&W's CM10 provides an illustration of this on p28]. The use of constrained layer

damping and similarly more advanced cabinet materials and methods of construction have all added to the incremental improvements in quality that we enjoy today. But despite new ferromagnetic

alloys, coil, former, suspension and cone materials, moving-coil drivers are still immediately identifiable with their forebears of decades past.

Much the same is true of turntables, tonearms and pick-ups. In fact one of the biggest leaps in performance linked



ABOVE: VPI's JMW-3D unipivot tonearm with outriggers, counterweight and cabling added

to improved materials and manufacturing came with the introduction of SME's onepiece diecast magnesium Series V tonearm along with Rega's rather more affordable RB300 in 1983 [see Audio Milestones, HFN Nov '12]. It took two years just to develop the diecasting for Rega's silicon alloy tube and bearing housing, but the result was the most affordable 'jointless' tonearm produced thus far.

#### 3D PRINTING REVOLUTION

'VPI has "printed"

a single-piece

unipivot tonearm

in epoxy'

Fast forward 30 years and VPI Industries Inc, the New Jersey-based purveyors of all things vinyl, has dipped into the rapidly-

expanding world of 3D printing to produce its own, one-piece unipivot tonearm.

In case you've not seen examples of this technology, 3D printing is used to build solid models of modestly complex shapes.

The technology is perfect for the rapid prototyping of cases or other 3D models before commiting to full-scale production. Many manufacturers have been caught out by inaccurate 3D CAD renderings in the past. Also, leaving a 3D printer to do the hard work sure beats the old 'knife

and block of polystyrene' approach to checking that Parts A, B and C do indeed fit together...

Various printing techniques are available, most 'growing' the 3D shape as a series of thin layers (down to 20µm) via a specialised 'ink jet' that ejects a molten polymer. Other materials, including metal alloys, photo-sensitive polymers and even paper are employed alongside the raft of thermoplastics. Naturally, a group of lunatics has already posted the 3D printing file for a functioning hand gun on the Interweb, although regular bullets are required for it to do any damage.

More constructive uses for the technology include the ability to print artificial hip and other joints that are accurately modelled from CT scans of the patient. I'd also classify the VPI JMW-3D tonearm as a thoroughly positive application of this revolution, allowing a single 'print' of the headshell, fingerlift, tonearm tube, pivot housing and counterweight extension in a non-crystalline epoxy resin. The arm is much lighter than if it were fashioned from metal and very rigid too, requiring the addition of wiring, unipivot thrust pad, stabilising and counterweights to complete the package. The VPI JMW-3D is available in 9, 10 and 12in versions.  $\odot$ 



### Technology journalist

### Reverse karaoke

Danish company Bang & Olufsen reminds us it's no slouch when it comes to innovation while a recent visit to a live concert has **Barry Fox** fearing that our musical ears are being re-shaped

ang & Olufsen struggled for years to shake off the 'looks great but not real hi-fi' label. The tag was largely unjustified as B&O did much for real hi-fi, especially in the area of parallel tracker turntables and cartridges designed by S K Pramanik. Pram's styli accurately reproduced the 45kHz audio signals on JVC's CD-4 'quadraphonic' LPs and re-wrote the rules for high frequency tracking.

Later B&O cornered the market for top-end TVs. Now, competition from Loewe, and TP Vision the Philips-Chinese joint venture, has encouraged B&O to look again at its audio roots. So I jumped at the chance of seeing a 'remarkable new concept in audio' and 'unique experience' unveiled to the world by Chief Executive Tue Mantoni at London's famed Café Royal.

Truth be told, the event was a bit of a let-down, with the 'new concept'

being a subwoofer and satellite surround system all too hurriedly demonstrated. This was a pity because the new Beolab 14 system has some interesting tech under the bonnet.

'The new Beolab 14 system has some interesting tech under the bonnet'

There are two versions: the 4.1 costing £2495, with subwoofer and four satellite speakers, for use with B&O TVs



ABOVE: The Beolab 14 system from B&O

whose on-board speakers function as the centre speaker; and the 5.1 at £2799 with a subwoofer and five satellite speakers for use with all other brands of TV.

The audio connections from TV to the subwoofer and satellites are all analogue, rather than digital optical or HDMI. The line audio signal is up to 6.5V instead of the usual 2V. 'So the signal is 10dB hotter,' says Geoff Martin, officially titled B&O's Tonmeister. All the signal processing is done in the subwoofer box but each speaker has its own in-built temperature sensor and these are continually monitored by the sub. 'So if one of the speakers overheats, all the speakers turn down by the same amount,' explains Geoff Martin. 'So you don't get image swing.'

#### **CHOICE CUTS**

What really surprised was the choice of audio demo material; movie trailers for the Life Of Pi and Les Misérables, and an action

clip from Tron Legacy. The only music was from a limited edition version of 'highlights' from the Les Misérables soundtrack on an audio-only Bluray, which Universal Music produced in collaboration with

B&O. The 'Ultra High-Quality Audio' BD is 24-bit PCM stereo and surround, and DTS HD Master surround, but no Dolby - which is ironical after Universal sought help from Dolby for its Open Day at Abbey Road to stimulate interest in higher quality audio.

Les Mis was recorded with the decidedly unusual technique of forcing actors who often can't sing to sing live while acting, with piano accompaniment piped into their ears. Grand orchestral accompaniment was later dubbed over the amateur voices to create reverse karaoke.

This, I fear, is another example of the way our musical ears are being re-shaped. All stage musicals are now spot-miked,



ABOVE: The LIO rehearse with conductor Paul Bateman before the Cadogan concert

with radio microphones hidden in the performers' hair or spectacles. Although sometimes, as in hot-ticket show The Book Of Mormon, the effect can be offensively loud and viciously spikey, the audio lift is usually so subtle that it passes unnoticed. So music theatre-goers have grown to expect strong sound from distance voices.

#### ROCK FOLLIES

London's Cadogan Hall has such a fine acoustic that a recent recreation of Benny Goodman's Carnegie Hall concert managed wonderfully without any band amplification. Soon afterwards. the excellent London International Orchestra, conducted by Paul Bateman, featured soprano Lesley Garrett and baritone Jason Howard.

Both performers are seasoned opera singers with powerful voices that need no electronic assistance. But for the Cadogan concert someone thought it necessary to give them microphones, and pipe their voices through on-stage speakers and floor-mounted rock-style monitor 'wedges'.

Afterwards I asked a member of the orchestra, why. 'I suppose it's because of the kind music they were singing,' he told me. 'Show songs from South Pacific and Carousel as well as Mozart and Verdi people just expect it.' ⊕



### Journalist for top American audio-video publications

# Vintage gear blues

'All of a sudden my

bargain antique

had begun to get

expensive'

While buying vintage audio kit blind certainly has its thrills, there can be downsides too, especially when that pre-cherished bargain turns into a money pit. Barry Willis details one such venture...

ictured far right is Pioneer's mighty RT-909 flagship open-reel machine from the early 1980s. With two-speed operation, auto-reverse record and play, and capacity for professional 10.5in reels, it's arguably the best tape recorder the company ever made. There are usually several for sale on eBay in the US at around \$500. Every once in a while a rare black-clad Swiss-made version pops up in perfect working condition - in the mid-four figures.

Its styling and technology were shared by many products in Pioneer's mid-'80s line-up, including the smaller RT-701 and some excellent cassette decks such as the CTF-900 and CTF-950. To my knowledge, these products were the first to combine polished aluminium with a blue alphanumeric display - a design that became more or less an industry standard that still looks current.

#### **ESTATE SALE**

The specimen in the picture was found at an estate sale for a mere \$20. In storage

for more than 20 years, it was in nearpristine condition, with no discernible head wear, and came supplied with hub adaptors and two large reels of tape. It powered up - a promising sign

with any old gear – but couldn't move the tape. Removing the cover revealed the cause: a drive belt that had melted onto the capstan motor's pulley and the drive mechanism's flywheel. Ever-reliable eBay was a source for a reasonably priced replacement belt, just \$14, while a user manual was also found online.

Restoring the machine got seriously underway once the old belt's gummy residue had been fully removed - lots of acetone - and the new one installed.





ABOVE: The melted pinch rollers (left) and the author's Pioneer RT-909, released in the early '80s

Electro-mechanical devices don't take kindly to prolonged storage. Like cars and motorcycles - and human bodies - they need to be powered up and put through their paces periodically to keep them in working condition.

Electrolytic power supply capacitors can dry out if not charged regularly, a common cause of disappointment with old power amps and receivers. Fortunately there didn't seem to be much problem with the Pioneer's electronics, but it

needed extensive lubrication, and its switches, controls and relays were all oxidized, a condition that engendered unpredictably intermittent operation. The machine would

move tape perfectly in one direction, but bog down in reverse, or play fine in both directions only to refuse to rewind or fastforward, all due to oxidized switch and relay contacts.

It was maddening to get it to the point of apparently satisfactory performance, only to try it two days later and discover that one or more functions still weren't right. But I was persistent, with curative effects. I was ready to calibrate the machine (necessary accessories, all at

hand: Nortronics AT-120 alignment tape, Leader LFM-3610 wow and flutter meter, wideband dual-trace oscilloscope) when I decided to clean the rock-hard pinch rollers. Here is where my grand plan collapsed - or more accurately, melted – because a tiny amount of industry-standard rubber cleaner turned the rollers into the room-temperature equivalent of hot tar. Apparently they were as chemically unstable as the drive belt had been; a minute amount of solvent turned them into nasty goo. What a mess.

#### **TECHNO SCULPTURE**

No problem, I assumed, launching a Google search for cheap replacement parts. No! Factory-original pinch rollers are no longer available, but aftermarket replacements are – at \$135 per pair. Suddenly my bargain antique had begun to get expensive.

I am undecided as to whether this might be a good use of funds, but meanwhile the Pioneer RT-909 makes a nice piece of techno-sculpture. It also fulfills plenty of requirements for the audio-obsessive: it doesn't work, original parts are vanishing, it's a fringe-element format with a delicate medium, and once fully restored will be played rarely, if only as a reminder of how good things sounded 30 years ago.  $\oplus$ 



### lım Lesurt Science Journalist

# Jamming tomorrow?

The winners will be those with mobile phones, but there will be losers too and if you like to listen to radio broadcasts and music via Freeview you may well be one of them, as **Jim Lesurf** explains...

overnment, politicians, and even the BBC routinely spout various claims about how many people in the UK use 'digital' to listen to radio. Presumably this is to argue in favour of the government being able to flog off the VHF radio band ASAP! Of course, they tend to become a tad vague when it comes to what. exactly, they mean by 'digital', perhaps in the hope that the general public will assume it is a synonym for DAB.

This is important because many people use the internet to listen to radio and enjoy music. Others use satellite TV or Digital Terrestrial TV (DTTV), which is more usually known as 'Freeview'.

Of these options, the cheapest to run as far as the user is concerned is Freeview. The service is popular and, for

**ABOVE: DTTV transmitters to use channels** above channel 58 when 4G is in operation (yellow = channel 59, red = channel 60). Those below 10W have been omitted

one reason or another, there are still those who simply cannot access either satellite or the internet. Alas, the roll-out of '4G', which is the next generation of standards for mobile phone communication technology, is sure to cause problems for Freeview users. Estimates range from the hundreds of thousands up to over a million households being affected by the roll-out. And your home may be one of them.

#### **BLANK SCREENS**

Up until now, the only impact has been that in some areas of the country the TV transmission frequencies have been reshuffled to 'clear' the upper end of the UHF band for 4G. Rescanning TV receivers can be a nuisance, particularly if you have more than one of them. But more serious problems may arise when 4G commences. The reasons are complex, but it boils down to a basic clash in signals. The new 4G base stations will radiate high power signals that in some places may overpower TV reception. And if you use a loft 'TV'

preamp or distribution amp, it may become overloaded. The result could be that your TV has a blank screen.

The 4G companies have got together and set up a new organisation called 'AT800' to try and

handle the problem. The organisation has promised to hand out UHF filters in the affected areas, rather like free sweeties, and claims these will fix almost all the anticipated issues. But will they? And what will 'almost all' mean in practice? How many people will still be staring at a blank screen or lose many of the stations they regularly tune in to?

The 4G problems may be particularly hard to solve in areas where UHF TV channels 59/60 will still be in use. The map shown at the bottom left of this page will enable you to check if you are in one of the 'hard case' regions, because that may become 'hard cheese' in due course!

AT800 is running 'pilots' to test its theories. So far, it claims fewer problems than expected. But then I wouldn't expect them to say differently. So far it has simply published its own conclusions and a few snippets of info said to back these up. Alas, when asked for the real data and the full details of how its tests and measurements were done, AT800 has not responded. This makes it hard to make an independent judgement as to what will actually happen when 4G comes to your area.

#### TAKING IT FOR GRANTED

My impression is that Ofcom, the UK government and the telephone companies are quietly taking it for granted that over time they will be able to shepherd the population like unprotesting sheep towards a mix of satellite, DAB, and the internet. The snags are that these cost more than

'A million UK homes

could be affected

by the roll-out.

Including yours...

Freeview and not everyone has access to them. The real advantage of DTTV has been its wide coverage.

As an engineer who happily uses DTTV for enjoying things like Prom

concerts and programmes about music of all kinds, I can't say I'm happy with the manner in which we are all being treated. And Ofcom already appears to be considering a repeat of the process in a few years' time, increasing the amounts of 4G on UHF and squeezing Freeview further. You should be able to decide for yourself if this is going to be acceptable given that the radio spectrum is a natural resource. But how can you do that if the facts you need to know in order to make an informed choice are covered by 'commercial confidentiality'? ()





## Technology, Design & Emotion

The multi-award winning Caspian M2 Series of high-fidelity electronics from Roksan Audio are an engineering marvel. The Integrated Amplifier has been meticulously designed to ensure it uncovers even the most delicate detail and presents it majestically. The CD Player's decoupled laser mechanism, super precision master clock and multiple independent circuits create a seamless, harmonic musical experience that is second to none. The more recent addition of a two-channel stereo power amplifier completes the much-desired system by adding further control and musicality.

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## teve Harris

**Contributing Editor** 

# Not just for dummies

With headphone listeners now the majority and digital audio bringing ever more possibilities for improved signal processing, **Steve Harris** reckons the day of realistic 3D sound could soon arrive

'alking in to this year's High End show in Munich [see HFN Aug '13], it was great to bump into David Chesky, there to spread the word about Chesky Records and HDtracks. His own latest offering as composer and musician is The New York Rags, an astonishing collection of 18 virtuoso solo piano rags 'inspired by life in the bustling and intense metropolis of New York city.'

You can now buy this in MP3 form on Amazon, but that's not how it should be heard. Like all Chesky Records' projects since mid 2012, The New York Rags has been recorded in Binaural+.

Binaural or dummy-head recording is the most obvious way of recording in stereo. You just put left and right microphones in the places where the listeners' ears would be, in the 'ears' of a plastic dummy head. When played back through headphones, the original sound perspectives are re-created.

What could be more logical? The drawback is that such recordings won't work properly on loudspeakers.

This is where Chesky's Binaural+ claims a breakthrough [see HFN Nov '12 and Mar '13], thanks to Professor

Edgar Choueiri of Princeton University. In the past, says Choueiri, the crosstalk filters that could make binaural recordings effective on speakers also 'caused so much coloration to the

'An MP3-accepting, anti-audiophile would find the fidelity objectionable'

sound that even an MP3-accepting, antiaudiophile would have found the tonal fidelity highly objectionable.' But, he goes on, recent research has led to filters that 'not only bring out the thrilling 3D realism of binaural recordings through a pair of loudspeakers far better than most headphones can, but can do so with utmost tonal transparency.'





ABOVE: The New York Rags, recorded in Binaural+ (left) and the JVC binaural disc from 1976

Chesky's pitch is that Binaural+ recordings, made in 24-bit/192kHz and processed with advanced crosstalk filters, will sound great on conventional speakers now, but also, in the future, they will give real 3D sound when used with products that have Choueiri's BACCH 3D processor, like the Jawbone Jambox portable.

#### **DOUBLE TAKE**

Does all this sound a bit familiar? Let me quote from a cassette-radio brochure of

> 1976, describing the JVC Biphonic replay system which complemented JVC's Binaural dummyhead recording microphones and headphones: 'It has long been possible to capture the

spatial feeling of a natural sound field by using what's known as a "dummy head". Binaural effects were lost, however, when such recordings were played through speakers. This was because of a number of technical problems involving phase, etc. These problems have been solved by JVC. Our new Biphonic Processor lets you escape the isolation and listening

fatigue of headphones and still enjoy the spaciousness of binaural recordings.

One person who would have been keenly interested but won't, sadly, be reading this, is the late infra-bass pioneer and 3D-sound experimenter Graham Holliman, who passed away in January. Graham established his infra-bass speaker as a working principle back in the 1970s, and once digital multi-track recording became available, began to develop his own techniques for 3D sound from two speakers. He pulled off some convincing demonstrations but then was dogged by equipment problems, and, in the end, his efforts remained a work in progress.

All those years ago, JVC's Biphonic followed its CD-4 quadraphonic into oblivion. Things are different today. Headphone listeners are now the majority while digital audio opened a new universe of possibilities for signal processing. QSS, for example, can produce something approaching surround-sound from two speakers.

And perhaps we are getting closer now to the dream of realistic 3D sound, especially as hi-res consumer audio is a reality. It's only a shame that Chesky's HDtracks hi-res download service cannot be accessed easily outside the USA.  $\circ$ 









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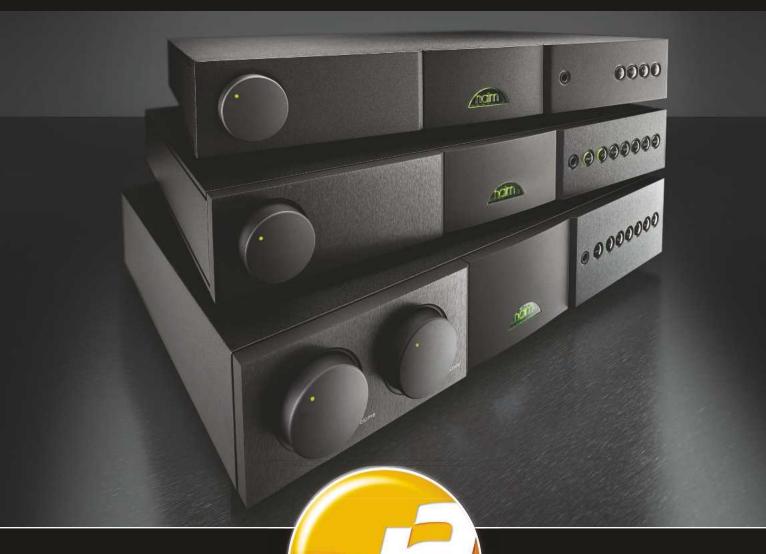
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### **RE-BUILT IN BRITAIN!**

#### NAKAMICHI DECK SAVED FROM THE GRAVE

I found the letter from reader Gordon Brown in the July issue on the subject of cassettes, decks and their performance compared with that of LPs very interesting. When CD first appeared the players were quite expensive. As I already owned a Nakamichi BX-300E, which not only produced amazing recordings but to my ears gave better sound with pre-recorded tapes of albums than did the LP versions, it was several years before I embraced the 'silver disc'. Still, I found copies made of CDs on the BX-300E virtually identical to the originals - even when using ferric tapes!

A few years back I spent a lot of money having the Nakamichi's drive mechanism brought up to date, only to have the deck fail after a few months. So I consigned it to the loft. Last year I wanted to play some tapes but found that my remaining cassette deck - a Sony – had also given up the ghost. So I decided to see if it was possible to get the Nakamichi repaired.

It turned out that a motor had failed and a spare was no longer available. However, the Nakamichi service agents, Bowers & Wilkins in Worthing, took the trouble of rebuilding the motor. How often does this happen these days? They told me that they only did this because my deck was almost as good as the legendary Dragon and so well worth preserving. Thanks to B&W I can now play all my tapes going back to the early '60s.

Also in the July issue I enjoyed Barry Willis's 'Opinion' piece on the benefits of mono over stereo. It reminded me of a similar experience I had when helping an elderly lady with very poor eyesight who was finding the picture on her TV difficult to see.

The TV was not well set up, so I decided to adjust the picture. Of course, the first thing you do is kill the colour. 'That's much better!' she exclaimed, before I'd gone any further. So I left her with a black and white picture.

The next time I visited her, some kind friend had restored the colour with the result that she was once again having difficulty seeing the picture. Comments anyone?

John Collins, via email

Tim Jarman replies: The BX-300 was a good choice in the Nakamichi range. To my mind the more basic decks weren't really anything special while the bigger stuff could be too complicated for day-to-day use.

Cassette deck maintenance is all about 'make do and mend' these days. with motor rebuilds not uncommon. Belts that stretch and become entangled in the works, so stalling the motor, is one recurrent issue. It's wise to keep an eye on such things to avoid potentially expensive repair bills later.



ABOVE: The BX-300E - the flagship deck in Nakamichi's BX series - was a three-head design featuring separate record and playback heads. It was launched back in 1984

# Many a good da of music enjoyed

MEMORIES OF THE SPENDOR BC3 FROM ACROSS THE POND

I love your history of audio articles, especially those that bring back old memories. I had a good friend in Philadelphia in the 1970s who obtained a set of BC3s [HFN Jun '13]. There was many a good day of music, audio and simple friendship centred around that system.

I noted Peter Thomas's remark about many big '70s speakers needing large modern amplifiers to sound their best. I can't recall the amplifier my friend used back then but I know it was nothing like the amps of today. So I suspect that I, like many others, have never heard the full potential of the BC3. I remember reading an article in Wireless World at that time, recommending





ABOVE: The Spendor BC3 (left) showing the woofer at the bottom and (right) the current Spendor SP100R2

every amplifier be tested on a BC3 saying that if it can drive a BC3 well, it can drive anything.

I also noted Phillip Swift's comment pointing out the similarity of the BC3 woofer and that used in the current SP100R2. It reminded me that the basic design of the BC3 woofer was quite remarkable in its useable bandwidth.

Allen Edelstein New Jersey, USA

Steve Harris replies: It was Peter Thomas of PMC who kindly loaned us the BC3s. To recap, here's some of what he said when talking about his amazing speaker collection [see HFN Jun '12]. 'In the 1960s, you'd had valve amps which had no damping factor at all... bass performance was determined solely by the speaker, not by any control coming from the amplifier.

'Then transistor amps came along. The early ones had a capacitor in the output to get rid of the DC, and that could roll the bottom end off, and also change the damping factor with frequency. Then, with DC-coupled amps, the damping factor went from [around] 20 to over 100, and the speaker's character changed again.'

### Turn down the bias, Ken

ISN'T IT ABOUT TIME KK STARTED LISTENING TO EQUIPMENT FROM A RANGE OF DISTRIBUTORS?

Being a long-time aficionado of your wonderful magazine, I cannot help but acknowledge a certain deep attachment and respect for the thoughts of chairman Ken. His equipment reviews, record reviews and 'Off the Leash' commentaries are my first port of call in your magazine every month. Indeed, my current (all vinyl) system, which is based heavily on Audio Research Reference series electronics, was born out of Ken's remarks and recommendations in past issues of Hi-Fi News. Although he's slightly older than myself, both Ken's taste in music and his passions seem to mirror my own.

However, after reading the July 2013 issue, I am forced to ask the question: how biased is Ken? The last five issues have seen him review the Constellation Virgo/Centaur. Krell S-550i, TechDAS Air Force One, Micromega MyDAC, Audio Research Reference CD9, Nagra VPS, Euro Audio Team E-Go, Wilson Audio Alexia, Audio Research REF 10...

So, what's my problem? Well, apart from the fact it appears that Ken gets to pick the 'cream of the hi-fi crop' to audition, all the equipment listed apart from the Nagra is imported by Ricardo Franassovici of Absolute Sounds. Now, there's nothing wrong with this. A lot of my ARC stuff is also from Ricardo. But Ken, get a grip. Turn down the bias adjustment a tad and listen to kit from other distributors. Dr Medwyn Williams, Wales

Ken Kessler replies: Sir, you do me a disservice. Four points will explain...

- 1) I do not get to choose what I review, so remarks about me picking the 'cream of the crop' are way off the mark. On the contrary, I've missed a number of products I would have loved to review, like Nagra's valve integrated, to which the Editor might say, 'Well, you can't review everything you want.'
- 2) The Editor, and he alone, assigns reviews, which it always has been since PM took over the reins seven years ago. (Note, too, that if I turn down a review, it's my earnings that I'm throwing away, as I am a freelance, paid by the article.)
- 3) Absolute Sounds handles over 20 brands, nearly all regarded as 'A-list', so Hi-Fi News needs to cover many of them. This just happens to be a fecund period.
- 4) Looking at my list of reviews over the past few years I note that you've ignored the following brands' products which I also covered: McIntosh, Leema, EAR, Lector, Sim, Roksan, Pathos, Belles, Lavry, Quad, VTL, Nola, Marantz, Plinius, Almarro, Perreaux, JBL, PMC, etc, etc. If one wishes to accuse me of bias, then I admit to a prejudice toward dependable manufacturers, and to decent music played by real musicians rather than by computer geeks or fashion victims.



ABOVE: Reader Medwyn's vinyl-based system with components from ARC, B&W and SME 

# Lanes On Your

Since its origins in the early

1980's, Ethernet, and the Local

Area Network (LAN) systems

it enables, has become the

copper plumbing of the digital

age. Originally deployed only

over coaxial cable, the Ethernet

protocols (IEEE 802.3) now

also apply to fibre-optic and

"Category" (Cat 5, 5e, 6, 6e, 7)

cables. These 8-conductor (4

twisted pairs) Cat cables are the

8 lanes which stream or transport

your digital entertainment to

equipment a foot away or several

AudioQuest refers to its

Cat 7 cables as the RJ/E Series ...

RJ for the RJ45 connector

standard to the application,

and E for Ethernet. For

AudioQuest, the highest Cat 7

standard (with all 4 pairs

using correctly differentiated

twist rates and individually

shielded) is only the solid

foundation to which AQ then

adds better materials and

leading-edge

additional

rooms aways.

pre-terminated

unique-to-AQ

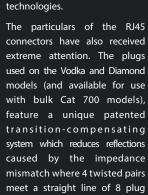
















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### Can you avoid transcoding

READER WONDERS IF THIS IS POSSIBLE WITH dCS VIVALDI DUE TO RING DAC TECHNOLOGY

In Paul Miller's review of the dCS Vivaldi system [see HFN Feb '13] he states that for best SACD playback one should avoid transcoding. That is, keep the DSD as DSD. Is this truly possible? It is my understanding that in the case of the dCS system all signals are converted to analogue using the Ring DAC and thus all signals are ultimately converted to approximately 5-bit/2.8MHz PCM.

The SACD signal is a DSD one, which I believe most people refer to as a pulse-width modulation (PWM) signal. Thus, it seems that this is ultimately transcoded by the dCS Vivaldi. Have I got this wrong?

Once again, thanks for publishing such a wonderful audio magazine..

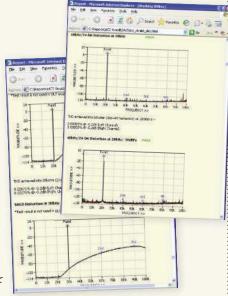
Tony Plachy, New York

Paul Miller replies: You are quite right, Tony, in that I do suggest Vivaldi owners 'keep LPCM as LPCM and SACD/DSD as DSD'. The Vivaldi is so comprehensibly flexible that it allows DSD data from SACDs to be transcoded up to 24-bit/352.8kHz DXD, and vice-versa, with a choice of various digital filters.

However, as the Ring DAC itself is not directly mapped by the native LPCM/ DXD or DSD streams then it seems sensible to avoid any intermediate format conversion. This observation was certainly reinforced during my own



ABOVE: The multi-box Vivaldi (from top to bottom) - CD/SACD transport, DAC, upsampler and dual-mode clock



ABOVE: HFN online lab reports illustrate the spectral differences between LPCM (top) and DSD/SACD source material

listening tests although this is not to say some owners wouldn't prefer the sound of all their media converted to 1-bit/2.8MHz DSD by way of default.

But what about DSD and the Ring DAC itself? Strictly speaking, as DSD is a pure 1-bit 'Bit Stream' then it is better represented as PDM (Pulse Density Modulation) than PWM (Pulse Width Modulation). Sadly in my view, there are no PDM DACs like Philips' SAA7323 or the DAC7 chipset left on the market but dCS's Ring DAC does get close.

In practice, it aims to combine the monotonic conversion of a PDM DAC with the operation of today's PWM bitstream-style converters. Instead of truncating LPCM data to a stream of single bits or downsampling DSD to 24bit/176.4kHz (for example), dCS adapts the wordlength to an average of 4.6 bits whose 24 possible values govern the DAC's 48 'identical' current sources.

Note that by truncating the wordlength to 4.6 bits, the original LPCM sample rate would be increased although, in the Ring DAC application, the DSD rate is unchanged. Noise-shaping is employed to manage the requantisation errors but my lab report downloads, above, clearly show the difference in spectral output between native LPCM and DSD (SACD) source material via the Vivaldi.



Not only are wires still very much the lowest-distortion highest-performance way to send both analog and digital audio information, but when it comes to sending power, "wireless" is just a nifty science project, not part of a home entertainment rig.

The challenge of not adding distortion as AC power goes from the wall to the electronics, and the challenge of not adding distortion as audio power is sent to a loudspeaker, are almost the same. The amount of energy transferred through these cables, and the size of the associated magnetic fields, puts them in a different class from all other audio and video cables.

Speaker cables need to maintain perfect integrity across the audio band and then some, while AC cables only have to try to be perfect in a narrower band. AC cable design is therefore a subset of speaker cable design because AC cables are subject to almost all the same distortion mechanisms, and benefit from almost all the same damage minimizing techniques.

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## Putting the record straight.

WHEN IS AN ALBUM 'NEW', A HI-RES DOWNLOAD MYSTERY SORTED, AND DOES JOHN BAMFORD HAVE HIS WIRES CROSSED?

As a subscriber for many years, I felt I must write to say how delighted I am to see that I'm not the only 'old fogey' who spends much of his time living in the past. Your writer Richard Stevenson, in his appraisal of Cyrus Audio's glossy 30th anniversary system in the May issue, chose to spin up the Icelandic singer Emiliana Torrini's 'new album' Love In The Time Of Science.

Hah hah... Good one. Richard. The album was released in November 1999.

Mind you, though nearly 14 years old I suppose it does qualify as being very modern. As a child of the 1960s my music collection is heavily biased towards experimental jazz rock and progressive works from the 1970s. Consequently I tend to consider any albums released after 1980 as 'quite recent'. It's a truism that as one gets older time seems to accelerate.

While I'm tapping away at my keyboard I feel I should further point out that while reviewing the Siltech SAGA amplifier in the June issue I suspect John Bamford was listening to his system with the channels inadvertently reversed! When playing a track from Eleanor McEvoy's album If You Leave he talks about the organ positioned stage left and guitarist Jimmy Smyth's guitar licks stage right, '...clearly occupying their own space in the sound image'.

I listened to the track recently but on my system the guitar was on the left and the organ clearly on the right. I spent the next hour ripping my system apart and carefully checking every connection

and I'm convinced my system is correct. So JB had his left and right channels the wrong way around.

I must say that I look forward to Hi-Fi News dropping through my letter box every month. It keeps me entertained for hours, providing so much food for thought regarding this fascinating hobby of ours.

Adrian, via email

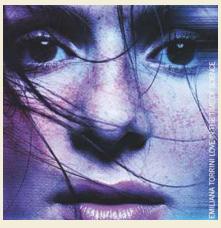
John Bamford replies: Well spotted, Adrian. But fear not: neither of us has his channels reversed. When an actor is standing 'stage right' he is on the right of the stage as he faces the audience. So when a musician is positioned stage right in a recording you will hear him from your left speaker.

Sorry if this has caused you to rip your system apart and put it all back together again. But think positively: a little system housekeeping – breaking and re-making all those connections – is always a good thing to do once in a while.

It's pleasing to hear that *Hi-Fi News* continues to entertain every month. As we are clearly of similar age I too tend to view any album released after 1980 as 'of the modern era' and albums from the 1970s as 'classics'. C'est la vie.

Tell me one thing, on p57 of the June issue Mr Stevenson is ploughing his way through the Metrum Acoustics Hex DAC and refers to 'the superb 96kHz/24-bit version of 'Did I Hurt You' by Eleanor McEvoy. I am not aware of such a version. Any clues as to its provenance?

Mick O'Gorman, via email



**ABOVE: Icelandic singer Emiliana Torrini's** Love In The Time Of Science, released in 1999

Richard Stevenson replies: Firstly, let me deal with the Torrini release. Good call Adrian! I had not seen the Torrini CD until a few days before the review of the Metrum and bought it assuming it was new material without checking the date. In fact, I still would have assumed this to be the case had you not pointed it out! The sound is fresh, up-tempo and somewhat more 'chill out session' than much of her later work, which is considerably more bluesy and introspective. Fisherman's Woman was my first Torrini album and I was captivated by her breathy vocal and impassioned lyrics.

As for Eleanor McEvoy's 'Did I Hurt You', this came from a 96kHz/24-bit download of the album Alone from HDtracks in the US. This particular album was released in 2011 and offers a dozen pared-down versions of McEvoy favourites.

EAGLE-EYED READER SPOTS A RIGHT ROYAL ERROR IN A CAPTION FROM OUR RECENT EMI 'INVESTIGATION' FEATURE

Surely the photo on page 17 of your June issue captioned: 'A manager inspects a pressing' shows George, Duke of Kent? I would hardly expect a factory manager to wear a carnation in his button hole, even in the 1930s! And the disc that he is holding is certainly a royal record judging from its label.

John Coad, via email

John Bamford replies: My goodness, John, your powers of observation serve you and fellow HFN readers well! I have subsequently checked with the EMI Group Archive Trust, to whom we are indebted for supplying the selection of historical photographs harvested from EMI's library, and – yes indeed – you are absolutely correct. Its records show that the photograph was taken during a visit to the Blyth Road record pressing plant in Hayes by His Royal Highness Prince George of Wales, indicating that the photograph was taken before October 1934, after which he was known as George, Duke of Kent until his death in 1942.



ABOVE: George, Duke of Kent (left) known as Prince George of Wales before late 1934

### '80s politics, music and KK

Why do we have to be subjected to the political views of Ken Kessler? From the outset Margaret Thatcher was a phoney. She didn't 'save the country', to quote Ken. She wasted most of the income from North Sea oil in pursuit of policies that culminated in the crash of 2008. Have you all turned into right-wing Americans, or is that your intended audience?

David Mansell, via email

No, sorry, I'm not having it. While I appreciate that to some extent the 1980s were a musical wasteland -'acts that spent more time on their hair than their music' as Ken Kessler said in his July review of Yazoo's Upstairs At Eric's – but the band in question were one of the few bright sparks in that gloom-filled decade. Alison Movet was then, and is still now, one the greatest vocalists I have heard. She is a national treasure and no less a vocal talent than Aretha back then and Adele now.

The album warrants a 90% Sound Scoring from Ken for Alison Moyet's contribution and 1% for the rest, so I hereby request and require a recount. She is the vocal equivalent of the pre-eminent midrange of the LS3/5A, where the rest is incidental.

Ian M, via email

As much as I respect Ken Kessler (and the HFN team) I take great issue with the comments he has been making recently about the 1980s Romantic movement. Some people are big fans and I personally find everything you hated musically about Yazoo's Upstairs At Eric's, which you used when reviewing the Nagra VPS phono stage [HFN May '13], enthralling and captivating. Indeed, it's the type of music I spend most of my time enjoying. You should remember that every genre has a fan.

I wasn't going to write in and respond - leave one man to his opinion and all that - but the line 'If the opening to "Situation" doesn't make you want to murder some "new Romantic", then you're a better man than me' went too far. Even as a 'joke' this is unacceptable.

Max Welsh, via email



ABOVE: The US release of Upstairs At Eric's saw the UK band's name changed to 'Yaz'

Ken Kessler replies: Nothing I can say will change your minds, but here goes...

1) Re: Thatcher and 2008's meltdown, To my mind. Maggie dragged the UK into the 20th Century... from the 18th. I shan't tell you my opinions on Gordon Brown as I fear you may disagree further.

2) Re: Yazoo, I defy you to listen to that album in its entirety and still tell me it's something other than repetitive, artless, synth drivel. And yet I ended my review describing Ms Moyet as 'divine'.

3) Re: murder. I take my music seriously, but I make my points hyperbolically. Mr Welsh writes while subject to an immutable, inescapable truth: people always assume the music of their formative years is the greatest ever, eg, my old man rated Glenn Miller above everything. Mine was The Beatles, so I rest my case. So I pity those who will say to their partners in their dotage, 'They're playing our song!' And it's noise from Rage Against The Machine.

Paul Miller replies: For as long as our Ken has been writing for HFN - the best part of 30 years - he has courted controversy. Love him or loathe him, you certainly cannot ignore him which is why he remains such a treasure and why so many readers dial into his pages to be entertained and annoyed in equal measure! As a rule, I do not allow any discussion of sex, religion or politics to enter our reviews but for the Opinion pages, and KK's 'Off The Leash' in particular, these guidelines may be relaxed for effect. Drawing the line on humour is evidently trickier...





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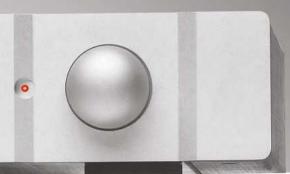


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## Sony TA-1120A amplifier

Unveiled in 1965, this Sony integrated was the first ever Japanese amp to be built using all-silicon transistors. But how does it measure up today? Time to find out...

Review: Tim Jarman Lab: Paul Miller

efore you go further, take a look at the pictures of the Sony TA-1120A on this and the following few pages. To dismiss it as just another mid '70s Japanese integrated amp would be to pay it the greatest of compliments, for this groundbreaking model first appeared a decade earlier, in late 1965.

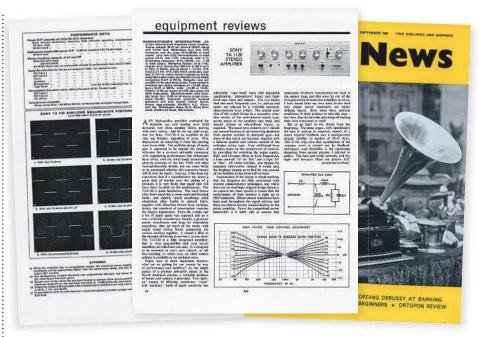
From around that time until 1970, Sony enjoyed a surge of creativity which many would say is without equal today. In a few short years it introduced revolutionary products like a practical domestic video tape recorder, pocket-sized audio cassette recorder, the Trinitron colour TV system and a clock radio with a digital display – not to mention countless other model lines that would fast become hugely popular household items.

#### STEP-AHEAD DESIGN

Add to this list the TA-1120 stereo amplifier, a step-ahead design which combined power, quality, reliability and compactness in a way that had not been seen before, but which in a few years would become ubiquitous across the ranges of Japan's major hi-fi brands.

In 1968 the original TA-1120 was replaced by the TA-1120A, as tested here, the addition of a headphone socket and the removal of a 'safety' indicator light being the only obvious external clues as to





**ABOVE:** Review of the Sony TA-1120 by Reg Williamson in the Sept. 1967 issue of *Hi-Fi News* (our last B&W cover). Serious Japanese kit was not common at this time, but that would soon change...

which model is which. Revisions were also made to the preamplifier circuit and it is in this form that Sony's first big hi-fi amplifier of the modern era continued in production until it was retired in 1971.

It was possible to build a whole system around the TA-1120A using only Sony equipment. A high quality turntable comprising a TTS-3000 motor unit, PUA-286 tonearm and TAC-3 plinth could be used as one source, with the ST-5000F FM stereo tuner (whose styling matched that of the TA-1120A) as another. A stereo open-reel tape recorder could also be picked from the many models listed in the Sony catalogue. This was an arena in which the company had been particularly active during the 1960s.

To complete the system the three-way SS-3100 loudspeaker was offered, which could either be used in the conventional manner or as part of a tri-amped active system. To do this, the TA-1120A needed to be augmented with the TA-4300 active crossover unit and two TA-3120 power amplifiers to give the necessary three

channels of stereo amplification. The power and flexibility of this arrangement was unprecedented in the late 1960s, with only bulk, cost and complexity counting against it. For those who wanted fewer boxes rather than more, the TA-1120A and ST-5000F were offered as a receiver known as the STR-6120. This unit sacrificed nothing in facilities or quality and was only marginally larger than the amplifier.

#### **SOURCE SELECTOR**

The unusual positioning of the source selector on the TA-1120A gives an insight into how the amplifier was laid out internally. The main selector lever gives a choice of phono 1 (MM) or tuner, along with a central position that selects a rotary control giving four further options, which were judged at the time to be needed less frequently. These were a microphone, tape

FAR LEFT: German Sony catalogue from 1971 shows the TA-1120A (top left) alongside other amps now added to the range, including the half-width TA-3060 power amp (bottom right)





head, second MM turntable and line-level auxiliary input, which can be used today to connect a CD player to the Sony.

A modern amplifier would see each source given its own dedicated input stage, but when the TA-1120A was designed and built the low noise transistors needed for this were exotic and expensive. Hence, all the low-level sources were handled by a single versatile preamp stage. The characteristics of this stage were altered automatically by the selection of different negative feedback profiles: RIAA for phono 1 and phono 2, NAB for the tape head and flat for the microphone.

The tape head EQ could be adjusted to compensate for different gap widths via a variable filter that operated at 10kHz using two small controls that were located on the underside of the amplifier chassis.

The two high level inputs (tuner and aux) bypassed the first preamplifier stage altogether but controls were provided to trim the sensitivity of each to suit the source components used. To further add to the complication of deciding which signal made it through to the loudspeakers, a

tape loop was also fitted. This operated at standard line level for all versions and was duplicated by a correctly attenuated DIN connector for those models sold in the European markets. With three source selection controls to juggle, the TA-1120A must have been rather a daunting prospect for the novice user.

#### TONE CONTROLS

'The way the Sony

rendered vocals

was clean and

free of muddle'

The tone controls were also evidence of the sophistication of the design. Bass and treble were both set by rotaries, making it possible to note the preferred setting for

> a particular record or tape and so return to it quickly and accurately at some later date. High quality film capacitors, of the type still in use today, abounded in the implementation of this function, but it was

still possible to bypass the tone control section completely if desired. Additional switched filters at 50Hz (rumble) and 9kHz (scratch) were also fitted but these could be bypassed too.

The TA-1120A sports a standard ¼in headphone socket but, unusually, whereas most amps derive this output from the

ABOVE: The 'A' version of the TA-1120 is identified by the inclusion of a headphone socket on its fascia. It set the aesthetic template emulated by amplifiers for the next decade

power amplifier via a passive attenuator, the Sony's is driven directly from the output of the preamplifier. The advantage of this approach is that any noise and distortion generated in the power amplifier does not colour the sound when heard through headphones, which can be any modern design or, of course, Sony's DR-5A of the period.

It was the design of the power amplifier stage that most challenged engineers working on transistor amps in the 1960s. Suitable devices for large outputs were only just becoming available and were often fragile and difficult to use compared with valves. To obtain a claimed 50W into 80hm Sony used an unusually high supply voltage of 93V to feed the TA-1120A's output stage, which meant the power supply needed a bulky reservoir capacitor.

As a pioneer in the field, it is hardly surprising that Sony made its own transistors for the TA-1120A with four 2SD45s per channel in parallel pairs providing the necessary grunt. Since transistors are intolerant of heat and overload, a circuit was fitted that monitored the temperature of one 2SD45 in each channel and shut down the power amplifier if things got too hot.

Transistors can be wrecked in milliseconds however, and thermal inertia meant that this arrangement could never be fully effective. But AC capacitor coupling to the loudspeakers (necessary ⊝

LEFT: Pages devoted to the TA-1120A from Stereo High Fidelity Components - a full colour catalogue published by Sony in 1966. Here the metal chassis is encased in a wooden sleeve



	A second	The state of the s	
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#### **VINTAGE HI-FI**

since complementary pairs of matched power transistors were not available at this time) offered a certain degree of natural protection. With this type of amplifier, loudspeaker leads that short are not necessarily the instant death sentence that they can be with ostensibly more modern DC-coupled designs!

#### TIM LISTENS

Fiddling the switches and dials to bring the aux input into play allowed me to use my trusty Cyrus CD8 SE 2 CD player as the source for the listening test. Unlike some British equipment of this period, the RCA sockets fitted to the TA-1120A are of the shame shape as the those currently used and far enough apart to accommodate the bulky plugs common to modern cables. So connecting up the Cyrus to the Sony with Chord Calypso presented no bother at all.

The amp's speaker outputs comprise a set of heavily chromed nuts into which (slightly undersized) banana plugs can be inserted. So again, modern cables can be used, in my case Chord Odyssey 2, linked to a pair of Monitor Audio PL100 standmount : speakers [HFN Aug '12].

The Sony feels like a modern amp when it comes to using it, the big brown plastic paddles of the lever switches being the only parts which appear at all dated. However, turn the volume

control and nothing much happens until you get half way up the scale, at which point it begins to operate normally. The very opposite is the case with the Sony

TA-88 of 1971 [see HFN Apr '12], where most of the action occurs just off the bottom stops. Comparisons with the TA-88 are interesting. This DC-coupled model proved to have a fast, airy and nimble sound. 'With more

Not so the TA-1120A, which as well as being considerably more powerful is altogether heavier and richer sounding. This effect made itself felt across

a number of discs. Just one example was the title track of Don Henley's The End Of The Innocence [Geffen 924 217-2], where the piano line which underpins the track

**ABOVE:** An interior view shows the modular construction, generous use of film capacitors (red) and a specially designed mains transformer (rear, centre). Only the untidy wiring looks dated

was elevated beyond its usual prominence and came to rather dominate the rest of the proceedings. It also tended to smear the tempo of the music - an odd effect since this is normally one of the strongest aspects of top-end Japanese gear.

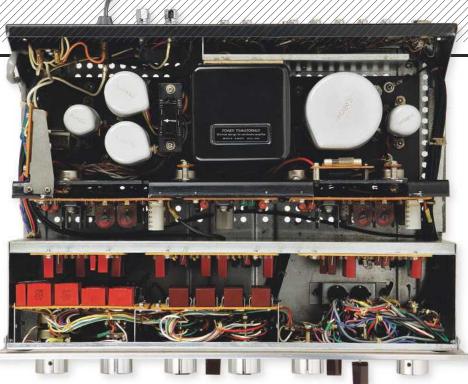
Meanwhile, the extreme treble present in the percussion on the Henley track was characteristic of another shortfall in the amp's presentation. As was the case with a number of discs played, the top-end could sound slightly dirty and diffuse, lacking the crystal-clear sparkle that one has come to expect from recordings on CD.

#### **IMPRESSIVELY QUIET**

On the plus side, the way the Sony rendered vocals, both male and female, struck me as being pleasingly clean and free of muddle. What's more, the amp was impressively quiet for a '60s design. Normally one would expect to hear a trace of hum and hiss between tracks or when the music is quiet, but this was not the case. On more than one occasion I found myself listening closely at the tweeters to confirm that the unit was actually working, which it always was.

With more complex mixes, like the heavily processed works of Enya with reverb and other studio effects used ⊝

LEFT: German Sony catalogue from 1969 details the specifications of the TA-1120A, which is pictured below a TA-2000 preamp. This would be partnered with the TA-3120A power amp





complex mixes

the Sony also

came up trumps'

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#### VINTAGE HI-FI



ABOVE: Only the two ¼in mic sockets differentiate the rear panel of the TA-1120A from many a modern amplifer. The pre/power amp links are absent in this picture

liberally to give the recordings their distinctive ethereal feel the Sony also came up trumps. It made a fair fist of 'On My Way Home' from the The Memory Of Trees album [WEA 0630-12879-2], delivering a reasonably coherent soundstage that remained solidly located between and around the loudspeakers. On this particular occasion the lower midband warmth that had been observed previously was not such an impediment to complete musical enjoyment.

#### **SERIOUS HI-FI**

The mechanical 'one note at a time' effect, which has sometimes been identified as a trait of Japanese equipment, was certainly not present, although I would concede that the TA-1120A is not quite as fluid in its presentation as some of its elite European competition.

Nevertheless, only a subtle lack of smoothness in some of the minor instrumental contributions noticeably separated Sony's first word in serious transistor hi-fi from what I would expect from a quality

Sony has developed the world's finest audio transistors... here's the proof

**ABOVE:** Original ad for the TA-1120 aimed at the US market, from 1966

integrated amplifier today.

The TA-1120A is a sturdy and reliable design, which makes it quite possible to buy a good secondhand one fairly easily today. Be on the look out for blanket component replacement as an attempt by a previous owner to 'upgrade' the performance. This is quite unnecessary given the quality of the original parts and dilutes the amplifier's original character.

All the original transistor types used in the TA-1120A are now unobtainable, but most are easily replaced by equivalents if faulty. Excessive noise from either channel is the likely symptom of this in an otherwise functional amplifier. Also note that the unit won't work if the little pigtail, which links the pre and power amplifier, is missing.

Since interest in big Japanese amplifiers of this period is growing, prices are rising and these units are no longer available as cheaply as they used to be. But the snobbery which is unfairly attached to combination units means that the STR-6120 receiver is a less expensive option – if you can find one!  $\circ$ 

#### **HI-FI NEWS VERDICT**

Exquisite build quality, plenty of power and strong audio performance make the Sony TA-1120A a vintage gem. Being slightly quirky in both sound and ergonomics, it is perhaps more an amp for the serious collector than the everyday user, but I have no doubt that a good clean used sample would give another 40 years' service provided it's treated kindly. It will be hard for me to give this one back...

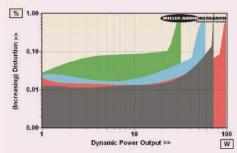
Sound Quality: 74%



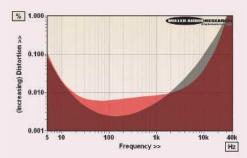
#### SONY TA-1120A (Vintage)

When the redoubtable Reg Williamson first reviewed Sony's TA-1120 [HFN Sep '67] he accurately described its power amp as 'a development of the quasi-complementary, series pushpull output stage' and went on to rate its continuous power output as '2x48W for 0.5% THD into 7.5ohm'. Fast forward 46 vears and our immaculate 'A' sample actually achieved 2x58W for 0.5% THD into 80hm (2x60W at <1% THD), a performance comfortably in excess of its original 2x50W rating. There's a mild improvement to 70W/40hm and a maximum dynamic output of close to 100W/4ohm. Because of the fragility of Sony's own planar N-type transistors, the amp had a fast-acting protection circuit that switched off the driver and output devices when the current 'rises above an acceptable limit'. My measurements suggest this is around 5.7A [see Graph 1].

While Sony specified distortion at 'less than 0.5%, 20Hz-80kHz at 35W' HFN was unable to verify this in the day. In practice it looks as if the TA-1120A was linearised through bass and midband frequencies by lashings of feedback, achieving as low as 0.0025% at 10W/8ohm and typically <0.02% from 1W-35W. Nevertheless as compensation falls with frequency so distortion rises, and quite alarmingly so in this case to 0.1%/10kHz, 0.4%/20kHz and 1.9%/40kHz at just 10W/80hm [see Graph 2]. Interestingly, THD also increased under dynamic (music-like) conditions to 0.015% at 10W/80hm. The A-wtd S/N is about 5-10dB below today's 'average' at 78.5dB (re. 0dBW) but still perfectly acceptable. Readers may access the QC Suite test report for this vintage Sony TA-1120A amplifier (including high/low filter response shapes) by navigating to www.hifinews. co.uk and clicking on the red 'Download' button. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 10hm (green) speaker loads



ABOVE: THD vs. extended frequency (5Hz-40kHz at 10W/8ohm; left, black/right, red). Note steep HF rise

#### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	60W / 70W
Dynamic power (<1%THD, 8/4/2/10hm)	72W   99W   59W   32W
Output impedance (20Hz–20kHz)	0.089-0.123ohm
Frequency response (20Hz-100kHz)	+0.4 to -12.1dB
Input sensitivity (for OdBW/35W)	42mV / 248mV
A-wtd S/N ratio (re. 0dBW/35W)	78.5dB / 94.0dB
Distortion (20Hz-20kHz, 10W/8ohm)	0.0025-0.37%
Power consumption (idle/rated o/p)	27W/140W
Dimensions (WHD)	400x145x310mm





#### CHAPTER 3: THE W.A.F. (WIFE ACCEPTANCE FACTOR)

"You're contemplating full-range monitors, she's contemplating divorce!"

Before Walls of Sound began I designed large, state-ofthe-art transmission line loudspeakers for myself and others. These sat either side of my fireplace and impressed all male friends who came to visit. Female friends, however, were less than impressed.

The situation came to a head when I employed an interior designer to recommend colours and fabrics for my renovated house. She entered my lounge, took one look at my speakers and said "Well, those will have to go for starters!" I had to admit that she was right.

The problem was I must have my music and I love deep bass, so Mini monitors were out of the question. How about building a full-range speaker into the cavity walls of the house?

"IF YOU CAN FIND A CONVENTIONAL LOUDSPEAKER THAT DOES BETTER WHATEVER THE PRICE, I'D BE SURPRISED." I studied all available literature on loudspeaker design but there was nothing on building high-end loudspeakers into walls. Undaunted, I went ahead with state-of-the-art componentry.

Finally finished, with serious misgivings about the concept, I switched on, telling myself the sound quality was certain to be inferior to my transmission lines but sacrifices had to be made for the fairer sex. I have never been more wrong.

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Alan Sircom, HiFi+ Jul-Aug 2012



ALPHA 10 DRT • DAB TUNER • ARCAM • UK

## **Arcam Alpha 10 DRT**

In late 1998 Arcam announced a new addition to its its entry level Alpha range. Dressed in livery similar to other components in the series, the 10 DRT was a new type of radio. Steve Harris on the first hi-fi DAB tuner to make it to the UK market...

omestic digital audio began with the iconic Compact Disc, which after a slightly slow start became a tremendous success. Digital radio arrived in the UK a decade later, but this time things didn't go so smoothly.

On the 9th of July 1998, the BBC hosted a DAB press conference, heralded then as 'the most important day in radio history since 1922' and showing prototype in-car DAB radios from major brands. But it's only now, 15 years on, that DAB is actually becoming standard in most new cars. 'It's been a difficult birth,' says John Dawson, who was then managing director at Arcam. He ought to know, as he was there at the bedside.

Those early DAB car radios made very little impact on the market. But later in 1998, Arcam was able to announce the world's first DAB hi-fi tuner, the Arcam Alpha 10 DRT. It was only the first by a whisker, and its life was relatively short. But the Alpha 10 DRT really was a milestone, proving to the audio world that DAB was a reality.





**ABOVE: The** Alpha 10 DRT cost a penny short of £800 when released and was the fruit of Arcam's close collaboration with Roke Manor Research

LEFT: Arcam's John Dawson. who agreed with colleagues to explore the feasibilty of creating a hi-fi DAB tuner. Other Arcam 'firsts' were the first domestic add-on DAC (the Black Box) and the only UK-built Dolby S cassette deck (Delta 100)

Behind the scenes, DAB receiver electronics had been developed in Germany by Grundig and Bosch. A third German company, Siemens, was also interested in producing a DAB solution, but in this case the work was done in the UK by Roke Manor Research, which was also owned by Siemens.

With collaboration on the software by a small company in Chepstow called Ensigma, Roke created a DAB module named the Gold Card. Well before that BBC launch, this was being offered to manufacturers who wanted to create a DAB product.

#### **DEVELOPMENT KIT**

For Dawson, the DAB story started when Roke Manor Research gave a presentation to the British Federation of Audio, whose membership then included most of the larger UK hi-fi makers.

'I followed that up and asked for

I was the only BFA guy that did!' he says. 'But it piqued my interest, and I agreed it with my colleagues at work that we'd look into it.

'So we got the development kit - I've probably still got it lurking in a corner somewhere! - and I can remember setting this thing up at home, playing out Radio 3, and it was pretty good! You needed a laptop to run it. But there was some promise there, we thought.

'The complete module they were offering was quite expensive, in fact very expensive. It needed a very high-spec RF front end, working at both Band 3 (around 200MHz) and L band (1.5GHz), because at the time it was thought DAB would utilise the latter in addition to Band 3.

There were no suitable RF ICs then, so it was done in discrete components, and all this added to the cost. Then there was an expensive high frequency A/D, followed by the DAB baseband chip, a development kit from them. I think : by Hitachi in this case, plus memory, power supplies and housekeeping. Anyway, it was promising, but we probably wouldn't sell huge numbers. So how could we develop a platform without spending a small fortune? But coming back from the Bristol show in February 1998, I had a bright idea.

'We'd just done a new amplifier called the Alpha 10. And I'd caused to be put into that quite a comprehensive display, a two-line VFD with 20 by two characters. And the minimum requirement for DAB was two lines of 16 characters.

'The amplifier had a big knob on the front and some buttons, and we thought we could probably re-purpose the whole front panel without tooling up a new one. And put the tuner guts in the same box, even though it was quite a big box. And that's what we did.

'That way, we were able to build something around their module, and use some of our code to make it all work. We worked closely with Dominic Banham, a very bright quy at Roke. And that's how the whole thing started.'

#### **AMP HERITAGE**

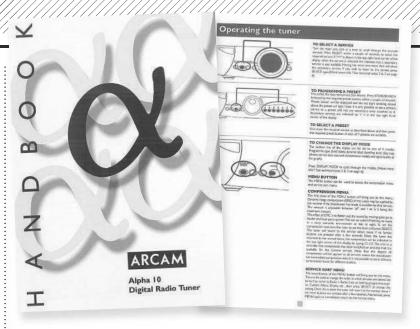
Inside the Alpha 10 DRT, the digital output from the Roke Gold Card went to a Crystal Delta-Sigma DAC, followed by Arcam's own analogue output stage. As well as two pairs of analogue outputs there was a digital output for those who wanted to use an external DAC instead.

Thanks to its amplifier heritage, the front panel had rather more controls than you'd expect. What had been a volume control was now used for station selection, although

**RIGHT:** Original 10 DRT user manual explains how to select a service using the round knob on the tuner's fascia. While Roke provided the DAB module, Arcam had to make it work, and put a lot of effort into developing software that would make the DAB tuner easy to use

**BELOW: By** spring 1998, the **BBC** could claim that its terrestrial transmitters gave DAB coverage for 60% of the UK population. This included the country's main motorway routes





"We sold it at £800,

and frankly our

profit margin was

about nothing!"'

it didn't work in quite the same way as an analogue 'tuning knob'.

Once you'd switched on, and the tuner had searched for available services, you could scroll through them with the rotary control. The two-line display gave the name of the selected service, with scrolling radio text below. The central array of seven buttons that had been the

Alpha 10 amp's source selectors now became station presets.

Buttons to the left provided programming and search functions. and there was

also an Engineering Mode, in which the display would show transmitter ID, data rate and signal strength. On the right, what had been the Alpha amp's speaker switching buttons were cunningly replaced by a miniature rotary volume control for the adjacent headphone output, and a button marked Bypass.

This allowed you to continue using an existing FM tuner on the same amplifier input. By selecting Bypass, an FM tuner connected to a pair of inputs on the back of the Alpha 10 DRT would be routed straight through to the amplifier.

#### **FUTURE IS DIGITAL**

Hi-fi reviewers were able to get some experience of home DAB before the Alpha 10 DRT was ready, though not with a finished consumer product. Writing in Hi-Fi News, November 1998, the very issue which included the first news item on the Alpha 10 DRT,

Eric Braithwaite described his experiences with a specially-loaned Roke Manor Gold Card, running from a laptop and feeding its digital output to his Audiolab DAC.

In comparison with FM, Eric wrote, 'Treble had greater clarity, and bass on the whole. better definition... The timbre of instruments generally (courtesy of

> Radio 3), unlike some reports of car tuners, appeared to be as accurate as from a good FM tuner.'

Eric had also borrowed one

of the BBC's demonstration tuners (with analogue output) and found it 'somewhat warmer and more "rounded" overall'. He concluded: 'This writer looks forward to the digital future of radio.'

Later, review reactions were rather more mixed to say the least, but this wasn't really Arcam's fault. When Eric Braithwaite reported, in Hi-Fi News January 1999, on a listening session held at a London dealer, he was scathing about the sound he heard. But the poor results were probably due to a combination of reception problems at the location and shortcomings of the broadcast signals at the time.

'You know, the 256kbps live Radio 3 type broadcast was something special,' says John Dawson, 'but while you had a multiplex which could hold probably four to six channels at a high data rate, people had in mind that they would launch lots of new stations, ⇒

#### **AUDIO MILESTONES**

as that was the way to get it to go forward. Something had to give! So there were compromises in terms of the data rate. Which were audible!

'So that, for us, was a bit of a turn-off. It didn't stop us doing the job, but it meant that it was unlikely to go forward as fast as we'd have liked, with a high-end audience. Occasionally we used to get people grumbling at us, saying that it was our fault, while the broadcasters, as always, chased quantity over quality.

'Though I should add, in mitigation, that they all had to look very closely at their production chains. A lot of that occasionally dreadful quality you heard could be ascribed to multiple encodes and recodes in the studio, as much as to the final push out over the air.

'Quentin Howard, the head of Digital One, said he'd worked out that at the worst, something that went out over the air could have had up to 60 encodes and recodes before it went out! At which point it would be garbage.

'For example, somebody would send in a one or two channel commentary over ISDN at 128kbps or 64kbps MP3. That would go into a studio system and be decoded. It would then be recoded not as a WAV file, but quite possibly to 256kbps MP2. Then that would be brought out to do something else and they'd re-encode again. It could go through umpteen processes.

'There was a recommendation, too, that you should never have more than three encodes and recodes before it went out, on air



RIGHT: 'Is DAB going to knock FM for six?' - the March 1999 issue of Hi-Fi Choice brings readers up to date with DAB developments with the spotlight firmly on the 10 DRT as the first hi-fi DAB tuner on the UK market

**BELOW: With** buttons cunningly re-purposed and the volume knob now used for tuning, the DAB tuner's front panel, controls and display originated with the Alpha 10 amp

to preserve reasonable quality. But that's still three! I know the BBC eventually canned their 256k-type hard drives - basically, because storage had got cheaper - and went to uncompressed.'

#### BETTER IN MONO

So the final bit-rate of the broadcast didn't tell you everything about the quality of the broadcast?

issue that probably

something would sound better in mono, but they felt they had to do it as stereo. Ordinary studio speech stuff and so on.

'FM will sound

blurry around the edges, but DAB at its worst could be quite unpleasantly unforgiving. I do say at its worst, because it could also be super. We

shouldn't concentrate entirely on data rates, but it is a fact that when the system was conceived, the best algorithm available was MPEG 1 Layer 2 - which is of course what was used on a lot of DVDs and is still used on TV broadcast - and it was envisaged at 256kbps, at which point it's fairly benign. So halving that is pretty obnoxious.'

With the BBC network already 'Not remotely! There was also the : up and running, commercial DAB

'Broadcasters.

as always,

chased quantity

over quality'

broadcasting under the banner of Digital One began on the 15th of November 1999. For the broadcasters, the pressing need was to get the cost of

DAB receivers down, so that DAB could reach a mass audience. Like the early in-car players, the Arcam was too expensive to sell in any significant numbers, although it cost far less than its first competitors, the Grundig-based Cymbol and the Bosch-based TAG McLaren. The Alpha 10 DRT sold to keen early adopters and to the broadcasters themselves.

'We had some business with both Digital One and the BBC,' says Dawson. 'We were the only people at the time to bring one to market and have it reasonably well debugged. I think in the end we sold about 1500 of them. But we sold them at £800, and frankly our profit margin was about nothing!

'There was a lot of pressure, particularly from the Digital One people, to get something going that was lower-cost. I sat in lots of meetings, some under Chatham House Rules, arguing while various →











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#### **AUDIO MILESTONES**

executives said "Why can't you do it for £100?" Because you can't, not at the moment! So I'd have a polite shouting match with someone like Jenny Abramsky of the BBC, trying to explain the realities of the hardware side, versus what they thought things should be charged at.

#### **ROKE AND A HARD PLACE**

'Our initial handicap was that the Roke modules were so expensive. We purchased them ready built and tested for about £200, and you can imagine, with an £800 retail price, that leaves you nothing for everything else. There's a £20 display in it for a start!

'A bit later in the day, when Roke hadn't landed a big customer - we were the biggest – and they decided to exit the business, we had to build the modules ourselves under licence. :

They handed over the paperwork and IP rights to us and, you know, it still cost a lot of money! I think even then it cost us £120 to build a module.

'But we used this

version of the Roke module until we found one from Radioscape. This was a lot less expensive (but still £50 or £60) and helped us lower the cost of later tuners like the DT81.

'There was clearly a business case for making modules for the industry, and Charlie Brennan [Arcam's current MD] and I actually wrote a business plan. I suspect a little bit of that went into what became Frontier Silicon. But there you go!'

By 2001 the price breakthrough that had been so urgently sought by the broadcasters could begin to happen. Frontier Silicon, a



new company set up in that year, launched a low-cost digital radio chip called the Chorus 1. This used the intellectual property of

**Imagination** Technologies, which incidentally had just acquired Ensigma. After this, Imagination's Pure brand would became the dominant force in

the DAB market, launching the first DAB radio at under £100 in 2002.

#### INTO HISTORY...

Now seeming almost quaint, the Alpha 10 DRT passed into history, but it had played its part. And the project brought some long-term benefits to Arcam too.

'It meant we were able to put DAB in all our products pretty early. For example, the DT26 had the Alpha 10 innards packaged up into the very nice FMJ box. I think we sold it for about £1000 instead of £800 for the standard Alpha 10 DAB. We

**ABOVE: Interview** with John Dawson from the October 1999 issue of HFN. nine months after Eric Braithwaite's 'hands-on' review of a 'development prototype' of the 10 DRT (centre)

#### BELOW LEFT:

The DT26 DAB tuner, launched as part of Arcam's FMJ range and the DT81, which formed part of the company's later **DiVA series** 

introduced the DT81 version after that, probably in about early 2002. That was then £649.

'DAB is de riqueur now, of course, you can't ship anything in the UK without it. It wouldn't be difficult to do it today, but at the time it was a useful learning curve to have ridden up. Early on, when we getting the show on the road, I remember we were hosting Quentin Howard, and in the car when we were picking him up from the station, he said to me, "Why did you get into this stuff?"

'I just turned to him and said "Actually, Quentin, because I'm a bit of a nutter!"

'And we did it because we could, and we fancied doing it. We fancied having a go!' (b)

#### ARCAM ALPHA 10 DAB TUNER TIMELINE

1987 Eureka-147 consortium established

1994 Eureka-147's DAB specification accepted by the European Telecommunications Standards Institute

1995 DAB specification agreed as a world standard

1995 BBC switches on its national digital radio multiplex

1997 Roke Manor Research develops Gold Card module

1998 BBC launch event highlights in-car DAB receivers

1998 Arcam announces Alpha 10 DRT DAB home hi-fi tuner

1999 Alpha 10 DRT goes on sale at £800

1999 Digital One national commercial Digital Radio multiplex launched

2000 Videologic (later Pure) launches DRX-601e tuner at £299

2001 Arcam announces next generation DT81 DAB tuner at £650

2002 Pure Evoke-1 DAB radio goes on sale at £100



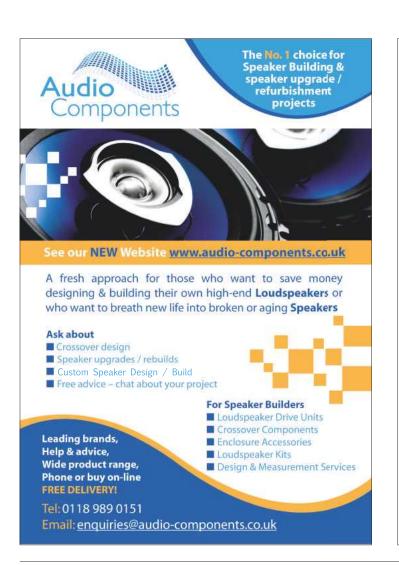
'By 2001 the price

breakthrough

sought began to

happen'







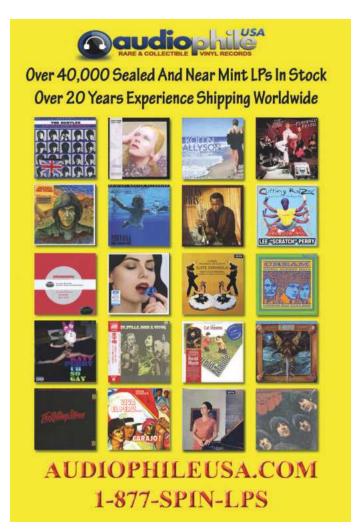


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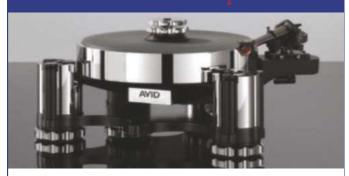


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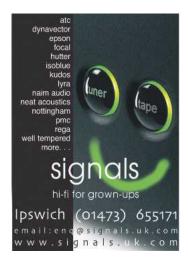


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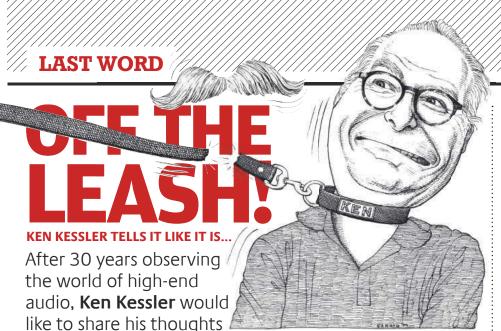
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'If someone wants

something badly

enough, they'll find

a way to afford it'

s 2013 marks a milestone in my life, I couldn't let it pass without comment. No, I'm not after a gold watch from *HFN*, but it's certainly an ideal opportunity to stop, look back and moan like the grumpy old man I've become.

My first appearance in this magazine occurred in 1983, during a spell while I worked for a sister publication that an earlier owner, Link House, shut down after a year. When Stereo - The Magazine folded, I was absorbed into HFN.

#### WALKMAN AND MIX TAPES

Stereo – The Magazine was conceived to present hi-fi to a younger audience, leaving the high-end to Hi-Fi News & Record Review. At the time, the Walkman was on the ascent, : I have no idea at all if that magazine creating a youth market.

In its wake came CD, which begat cool portables, while oddities like Audio-Technica's Soundburger portable LP spinner presaged the world we now live in, with convenience and

musical omnipresence to the fore... with LPs, : small journal at a time when few magazines no less! Tell your grandchildren that mobile DJs are nothing new.

It was also the era of the 'mix tape', when younger music lovers created their own anthologies on cassettes. And while their 1983 hardware may seem primitive, the attitude is the same: choose only the tracks you like, instead of suffering an entire album : portability, which reached critical mass

with qualitative dips. The main difference - now that decent headphones have supplanted earbuds – is that today's itinerant revellers have no need to carry tapes.

Sadly, Link House, like all publishers in the days before the internet, could be cavalier about new titles, because magazines were expected to show huge profits within six issues of their launch. Stereo – The Magazine was axed after a dozen, but then you can't blame Link House because 1) it truly was ten years ahead of general gadget mags, which studiously ignore hi-fi above budget level, and 2) it was 17 years ahead of the iPod. Who could have known just what was around the corner?

What a missed opportunity, though.

succeeded in introducing even one teenager to decent sound, but he or she would now be contemplating 50. Yet as sad as was the loss of Stereo - The Magazine, it was a

had global influence. Postage costs were prohibitive, there were no websites for instant cultural exchange – only the UK newsstand hi-fi titles and US 'undergrounds' had impact beyond their home turf.

Again, with the 20/20 hindsight: running concurrently with the ascent of

with the iPod and the obviation of the need for physical software, was a far more important opportunity that the hi-fi industry mishandled to its continued detriment, as it did the iPod. As last month's column disclosed, the luxury sector outside of highend audio has dipped its toe belatedly in audiophile waters. How shameful it is that the entire high-end audio industry, which produces only preposterously expensive kit, failed to prepare for, let alone invite this.

Back in the '80s there was a sea change in how luxury objects were perceived, marketed or, more importantly, craved. Watching the series Mad Men will reveal to you how parochial were attitudes toward life's finer offerings before the 1980s, how obscure were now commonly recognised names like Cartier, Montblanc or even Rolex.

Fifty years ago, Cartier would only have been known to aristos or celebs, Montblanc to fountain pen aficionados, and Rolexes to professionals buying robust diving or pilots' watches. The 1980s - love 'em or loathe 'em (and I loathe 'em because of Spandau Ballet) – taught the masses that there were finer objects to aspire to in one's material life. (Please, can we leave out spiritual-vsmaterial life approaches? Let's just accept that People Like Things.) Yes, bling was a vulgar by-product, but tastes were elevated.

#### HI-FI INDUSTRY'S CRIME?

Aside from expensive cars, which were familiar to every seven-year-old because they're highly visible and have always been promoted by motorsport, the upscale items we now take for granted were known only to a microscopically small portion of society. It had nothing to do with money, but with presentation and education. Price? If someone wants something badly enough, they'll find a way to afford it. But if they don't even know it exists? Fageddaboudit.

Before even one of you zaps me an email about the price of Rolex watches, read my lips: then, as now, they cost less than most high-end hi-fi. The hi-fi industry's crime? It wilfully pursued excessively high prices, while ignoring the attendant service, retail experience and perceived value that Cartier, et al have always assumed. Tragically, for the most part, it still does.  $\circ$ 

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