



## Do-it-all deck

Onkyo's bargain CD player  
& networked music streamer

## Philips X2

Stylish Fidelio cans for  
luxury home listening



# Hi-Fi Choice

**PASSION FOR SOUND**

Issue No. **394**

February 2015

# Totally Technics

Iconic audio brand returns with  
Premium Class C700 system

**WIN!**  
WIRELESS  
SPEAKERS  
with built-in  
CD, radio &  
iDock



# 40

**PRODUCTS ON TEST:**

Clearaudio,  
Dali, Pro-Ject,  
QED & Rega

**GROUP TEST**

## Take the stage

Six versatile phono stages to  
get your vinyl into the groove



## Gee whizz

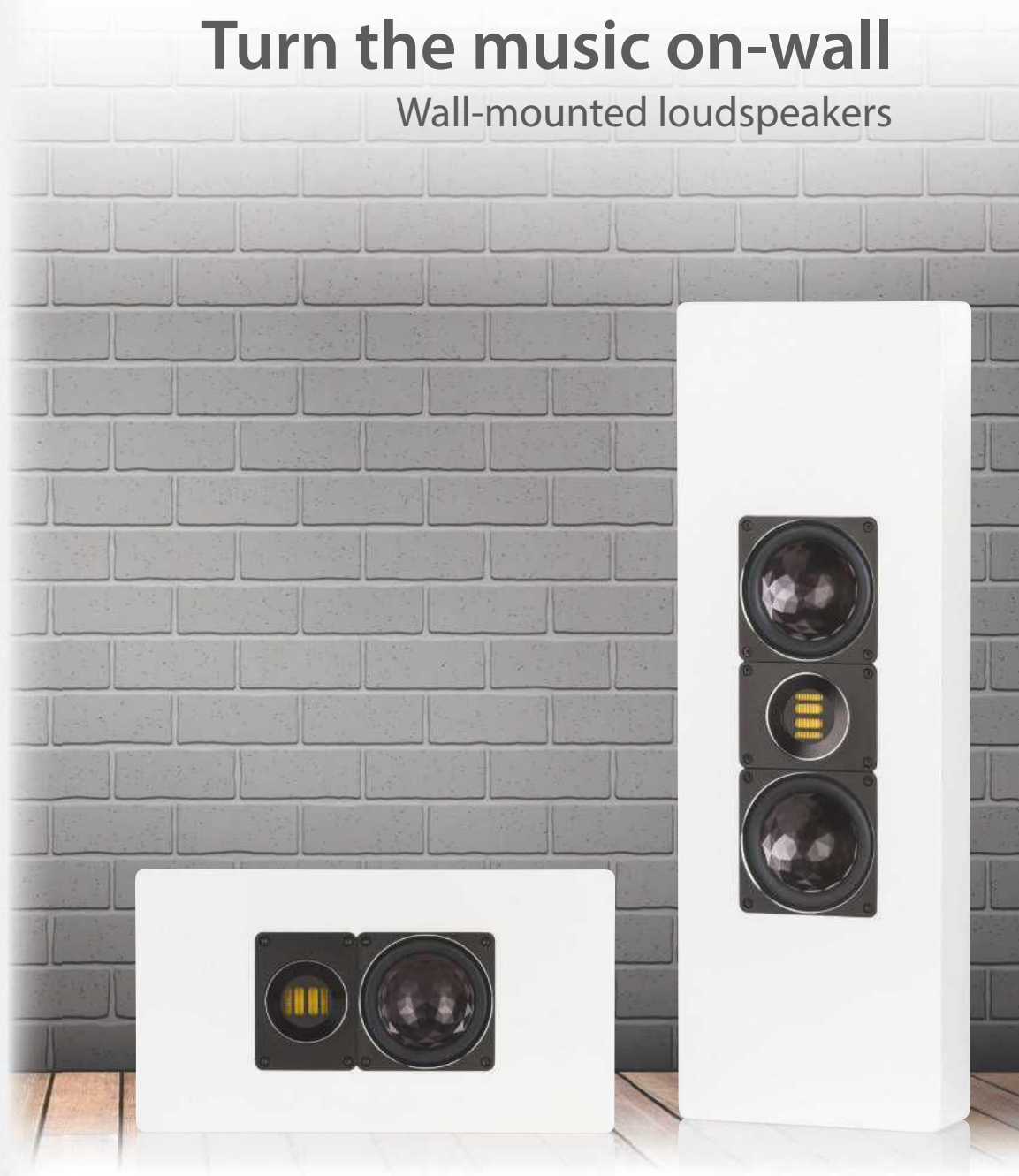
Arcam's A39 Class G  
amplifier gets a test drive



# On-wall

## Turn the music on-wall

Wall-mounted loudspeakers



# Hi-FiChoice

PASSION FOR SOUND

**110****QED**

XT40 speaker cable

**56****Cabasse**

Antigua MT32 loudspeaker

## Musicreviews

**100**Neil Young *Storytone*

### BADGES EXPLAINED

#### OUR AWARDS



**EDITOR'S CHOICE:**  
Awarded to those products that are judged to deliver outstanding performance



**RECOMMENDED:**  
Products that we feel meet a high standard of performance



**GROUP TEST WINNER:**  
Comparative tests can only have one winner, and this badge says it all!

# Welcome

www.hifichoice.co.uk Issue No. **394** February 2015



The Consumer Electronics Show 2015 kick started the new year in Las Vegas heralding in the latest technology coming our way. CES is a massive event that sees the world's greatest consumer electronics brands gather together to showcase innovations planned for release in 2015.

There was plenty on show for the audio fan, with many hi-fi brands choosing to announce new products. Creek Audio debuted its Evolution 100A integrated amp – see full review next month – and unveiled the Epos K3 floorstanding speakers from its sister company.

Cambridge Audio announced its new CX series range of high-performance components under its rebranded Cambridge logo, while Chord Electronics unveiled its new desktop Hugo TT DAC/headphone amplifier – read the full story on page 8. And hi-fi start-up Mosaic demoed its new high-resolution multi-room music system that looks sets to be a serious Sonos rival when the first speaker models appear early in the year.

Portable hi-res music is set to be big in 2015 with the introduction of Sony's NWZ-ZX2 luxury Walkman that adds a SD card and support for DSD and will cost £950 when it hits the streets in February. Meanwhile, Neil Young's eagerly anticipated Pono music player finally went on sale in selected US stores. We can't wait to hear it. There's plenty of new hi-fi to get excited about in the coming months, and you can read our CES Show Report next month for the full story.

**Lee Dunkley** Editor

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EDENBRIDGE, KENT TN8 6HF



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wireless  
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p120



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"Our story starts in 1857 when a printer devised a way of recording onto a soot-covered paper cylinder"

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**Never miss an issue – turn to p68 for our latest subs offer**

## Audio wizardry

Musical Fidelity's Merlin system has been designed with the magic of vinyl and digital streaming in mind



**PRICE:** £1,300 **AVAILABLE:** NOW  
**CONTACT:** 0208 9002866 **WEB:** MUSICALFIDELITY.COM

**DRIVEN BY THE** news of an 18-year high in vinyl sales, as reported by the BPI (British Phonographic Industry), UK hi-fi manufacturer Musical Fidelity announces the new LP-friendly Merlin 1 system. Designed to make playing vinyl as easy and enjoyable as any other audio format, it comprises a Merlin digital amplifier and Bluetooth aptX streamer, Round Table deck and Merlin 1 loudspeakers.

With an elegant-looking front panel and machined top, the Merlin amplifier and streamer claims 50W

(peak power) per channel and has two 24-bit/192kHz DACs and twin high-grade amplifier modules (running as separate monoblocs to minimise unwanted noise and distortion). There's also an inbuilt analogue-to-digital convertor (ADC) and a configurable output (analogue or digital), which allows the Merlin's inputs – comprising connected Bluetooth aptX devices and your favourite LPs via phono – to be ripped to a computer hard disk. Alternatively, it allows for the addition of a

subwoofer or connection to active loudspeakers. There's also an integrated headphone amp, based on Musical Fidelity's standalone V90-HPA model.

The minimalist-looking Round Table vinyl deck boasts a polished carbon tool steel bearing (promising an exceptional long life and friction-free performance), an inert chassis and suspension system and, says Musical Fidelity, a high-quality pick-up arm.

Rather than the normal flat front baffle, the Merlin 1 elliptical-shaped



desktop loudspeaker utilises Musical Fidelity's 35 years of experience designing dipole loudspeakers and, says the company, features instead a multi-stepped baffle, which combines with a single wide-dispersion BMR driver offering both low distortion and hi-fi sound quality. According to Musical Fidelity, the performance of the Merlin 1 loudspeaker gives the impression of a far larger system with a seemingly omnidirectional sound.

The Merlin 1 loudspeaker is available in red, silver or black; the Round Table deck has a choice of red or black finishes, while the Merlin amplifier and streamer is available in black, so customers can mix and match their system to their individual tastes. The Merlin 1 is available from Richer Sounds and other leading specialist hi-fi stores now.

## COMMENT

### THE VINYL COUNTDOWN

There's no doubt about it, 2014 was the year that vinyl fought back. From the astounding success of Record Store Day to the record sales figures released towards the end of the year that revealed that the black stuff was selling better than it had since 1996, there were plenty of reasons for vinylistas to celebrate.

We can waste time and space discussing the reasons for its resurgence, but we're not going to. Instead we'd like to focus on one of the often most overlooked charms of LPs – the novelty release. Whether it be picture discs that ruin your needle, coloured vinyl that sounds terrible or flexi discs that never work, no other format offers the opportunity to have fun quite like vinyl does. So in celebration of this, we thought we'd doff our hats to some of the strangest vinyl releases of last year.

The most high-profile oddity was one of the best-selling records of 2014. We talk, of course, of Jack White's Ultra edition of *Lazaretto*, which not only has tracks hidden under the label, plays from the inside out on one side and is the only album that plays at 33, 45 and 78rpm, but it also has a hologram of an angel in the run-out groove.

Though not as interesting musically, the 30th anniversary *Ghostbusters* soundtrack was certainly unique. Pressed onto white vinyl, the outer sleeve produces a sickly marshmallow scent whenever the disc is pulled out to be played.

For their Record Store Day release *Mess On A Mission*, Liars embedded their clear vinyl release with string, while Dads did the same with glitter for *Pretty Good*, Barren Harvest used leaves for *Subtle Cruelties* and *Worthless' Greener Grass* had liquid inside (below). In the interests of taste and decency we'll overlook the cuts that used hair and urine or the lead singer's blood and instead give a final mention to Emperor Yes' *An Island Called Earth* which was limited to a run of 100 green, yellow and orange discs containing sprinkled fragments of an asteroid that crashed into the earth during the 16th century... ▶





# Hugo family expands

Chord Electronics debuts new duo

**PRICE:** £995-£2,995 **AVAILABLE:** APRIL/FEBRUARY  
**CONTACT:** 01622 721444 **WEB:** CHORDELECTRONICS.CO.UK

**CHOOSING THE CONSUMER** electronics show (CES) in Las Vegas as a suitable launch pad, Chord Electronics has revealed details of a pair of new DACs that will be rather familiar. The first – the 2 Qute – has been added to the Chordette range and cleverly combines technology from the Hugo with the Qute EX to create a super DAC. Essentially a Hugo DAC in a Chordette chassis, all inputs support DSD64, while DSD128 and up to 32-bit/384kHz are available via coax or USB-B and 24/192 over optical. It costs just under £1,000 and will be in stores in April.

Offering the same support via the same inputs, the £2,995 Hugo TT is basically a desktop version of the portable Hugo that wowed us last year (*HFC* 386). It has a larger chassis, remote control and alphanumeric LED display, which provides input and sample rate data.



## IN BRIEF

### MERIDIAN AUDIO LAUNCHES MQA



● Towards the end of 2014 Meridian Audio unveiled a revolutionary audio technology that is claimed will reverse the trend of sacrificing quality for convenience. Called MQA or Music Quality Authenticated, the new tech claims to offer the finest in sound quality but in a file that is small and convenient enough to download or stream with ease. Details of precisely how this works remain thin on the ground, but Bob Stuart – Meridian Audio's founder and the brains behind MQA told *HFC*: "The announcement of MQA is really about the future of recorded music. Music is important to us all. When the sound is authentic it is more involving, we understand it better and enjoy it longer". **MUSICISCHANGING.COM**

## Onkyo turntable and amp

**PRICE:** £399/£199 **AVAILABLE:** NOW/FEBRUARY  
**CONTACT:** 08712 001996 **WEB:** ONKYO.CO.UK

Not content with wowing us with its C-N7050 networked CD player (see our review on page 60), Onkyo has announced details of a new turntable and budget amplifier.

The direct drive CP-1050 is constructed from vibration-damping MDF, with a diecast aluminium quartz-lock-controlled platter for precise stable rotation. It comes equipped with an aluminium S-shaped tonearm with detachable headshell compatible with cartridges between 5 and 10g, although a "quality" MM cartridge is supplied. There's also a button for changing speed, dust cover and gold-plated phono outputs. It's expected to retail for £399.

Perhaps with the turntable in mind, the A-9010 integrated stereo amplifier has been tuned specifically for the UK and features a MM phono equaliser. It delivers a claimed 44W per channel into an 8ohm load and boasts five analogue inputs, a line output and a set of phono inputs for hooking up your components. Additionally, there's independent headphone amplifier circuitry that's claimed to be powerful enough to



drive high-impedance headphones with ease. Sound quality is given a helping hand by Onkyo's WRAT (Wide Range Amp Technology) system, which is designed to

accurately control the speaker drivers even when impedance fluctuates and the load on the receiver increases. Most impressive of all is the price tag, a mere £199. ►

THEY DON'T FEEL  
WHAT YOU FEEL  
THEY DON'T SEE  
WHAT YOU SEE  
THEY DON'T HEAR  
WHAT YOU HEAR  
THEY DON'T HAVE  
**LEEMA**  
ACOUSTICS



NEW WEBSITE:-[WWW.LEEMA-ACOUSTICS.COM](http://WWW.LEEMA-ACOUSTICS.COM)  
AND NOW, YOU CAN FIND US ON FACEBOOK 

# Diamond 200 Series

**PRICE:** £150-£1,000 **AVAILABLE:** NOW  
**CONTACT:** 01480 447700 **WEB:** WHARFEDALE.CO.UK

**REPLACING THE 100** Series, Wharfedale has announced details of the Diamond 200 Series, consisting of two standmount speakers, three floorstanders and a centre for home cinema use. Kicking off the range is the Diamond 210 (£150), which is an ultra compact two-way standmount with a 100mm mid/bass driver. Next up is the Diamond 220 (replacing the Diamond 121), which costs £200, has a 130mm mid/bass driver and – like the 210 – claimed sensitivity of 86dB. The Diamond 230 is a 2.5-way floorstander costing £500 with a 165mm mid, 165mm bass and 25mm tweeter, and 88dB sensitivity. The step-up Diamond 240 is a £700 three-way floorstander with two 165mm bass drivers, a 130mm mid, 25mm tweeter and 89dB sensitivity, while the Diamond 250 (£1,000) ups the size of the bass drivers to 200mm. Full details of the range can be found on Wharfedale's website.



## IN BRIEF

### NOBLE AUDIO'S K10 UNIVERSAL



● Think your in-ear headphones are the bee's knees? It might be time to think again as Noble Audio has unveiled its latest universal-fit version of its Wizard flagship in-ear monitor – the K10. Boasting an astonishing 10 drivers, the four-way Kaiser 10 (as it is also known) is claimed to deliver a highly coherent presentation across a wide frequency range. The drivers are equally split between bass, midrange, mid/high, high and super-high frequencies, and work together in perfect unison to provide a quoted impedance of <35ohm.

Supplied accessories include a crush-proof case, 12 pairs of ear tips (four kinds in three sizes), detachable two-pin cable and a cleaning tool. The K10 is available now for £999. **NOBLEAUDIO.CO.UK**

## Explorer<sup>2</sup> portable DAC

**PRICE:** £199 **AVAILABLE:** NOW  
**CONTACT:** 01480 445678 **WEB:** MERIDIAN-AUDIO.COM

For those that demand the ultimate performance while on the move, Meridian Audio has released details of the aptly named Explorer<sup>2</sup> portable USB DAC. Designed and handmade in the UK, the compact unit weighs just 50g and also incorporates a headphone amplifier. Constructed from audiophile-grade components throughout, the Explorer<sup>2</sup> houses a six-layer circuit board that upsamples signals to 24-bit/192kHz, using technology derived from the company's Reference 800 Series. Meridian's proprietary apodising filter is additionally on hand to provide what's claimed to be a clearer, more transparent sound. Arguably most importantly of all, the Explorer<sup>2</sup>'s significantly more powerful digital signal processing enables it to decode and render the new MQA format (see news story on page 8) in order to deliver authenticated master-quality replay.

The portable DAC is asynchronous USB-2.0 compliant and will work with any computer with a USB port (drivers are provided for Mac, Windows and Linux). Meridian Audio's Rayner Sheridan told *HFC*: "Its ability to unlock MQA lossless audio files makes Explorer<sup>2</sup> the go-to USB DAC for those who want to hear their music exactly as it was recorded".







# 851N

## UP-SAMPLING NETWORK PLAYER

We've developed this flagship network player to fit seamlessly into the existing 851 Series allowing you to harmonise your networked lifestyle with your passion for audio perfection. It has 24-bit/384kHz audio upsampling from all sources, two high end Analog Devices DACs, and complete digital connectivity including 5 digital inputs, three USB inputs, an asynchronous USB Audio input, Spotify Connect, Airplay and optional Bluetooth.



YOUR MUSIC, OUR PASSION

[cambridgeaudio.com](http://cambridgeaudio.com)





**Style.  
Performance.  
Function.**

# ROKSAN

## K3 Integrated Amplifier & CD Player

Roksan's K3 Series of hi-fi electronics put sound quality first. But more than just sounding great, they're also effortlessly simple to use and come in a design that anyone would be proud to put at the centre of their music system.

The K3 Integrated Amplifier has been built with today's discerning audiophile in mind. Boasting five Line Level inputs, an exceptional Moving Magnet phono stage and superior aptX® Bluetooth technology; it is an ideal hub for all manner of audio sources. There is power and bass drive in abundance, with superb sound staging and engaging detail that is both refined and enjoyable.

The K3 CD Player is a high-quality source component that delivers a rich, almost analogue, sound performance that perfectly matches the Integrated Amplifier's delivery. When using these products together, you have a package that is truly unrivalled for the price.



Distributed by **Henley Designs Ltd.**

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# Teac Reference 101

Tiny system with USB DAC and Bluetooth for hi-res streaming

**PRICE:** £300 **AVAILABLE:** NOW  
**CONTACT:** +49 8142 4208141 **WEB:** TEAC-AUDIO.EU

**BEAUTIFUL THINGS DO** come in small packages it would appear, well at least they do if Teac has anything to do with it. The Japanese manufacturer has just announced the introduction of its first product in the new Reference 101 series, the HR-S101 package. Comprising the AI-101DA integrated amplifier with USB DAC and the two-way LS-101 loudspeakers, it's an ideal option for those that want hi-res audio, but are short on space. Wrapped up in an aluminium alloy body that's

the size of a book, the AI-101DA features a pair of optical ports, alongside USB and line-level inputs. Available in black or silver finishes, it can be stood horizontally or vertically and boasts a pair of 26W Class D power amplifiers. Hi-res audio can be streamed either via aptX Bluetooth or using a direct connection at 24-bit/192kHz. The rear-ported bass reflex loudspeakers are fitted with a 20mm treble driver alongside a 70mm mid/bass. The amp is also available separately for £250.

## Melco Digital Music Library

**PRICE:** £1,600/£6,200 **AVAILABLE:** NOW **WEB:** MELCO-AUDIO.COM

Leading Japanese computer peripheral manufacturer Buffalo Technology has given its audiophile division – known as Melco – a boost with the launch of its Digital Music Library range. Consisting of two products – the £1,600 N1A (below) and the £6,200 N1Z – the Melco Music Libraries (MML) are designed for audiophiles that want to store and playback their music files at the highest possible quality. Best of all for those that dislike using PCs, the two decks have been designed so that they can be operated



without the need for a network or a computer – simply hook them up to your network player and you're good to go. No configuration is required while storing or backing up of music can be done using an external drive connected to the USB 3.0 port on the rear.

The N1Z has a SSD (solid state drive) with 1Tb capacity and has two separate power supplies under the hood and TAOC-branded feet to provide insulation from external sources. Meanwhile, the N1A has a 4Tb HDD (hard-disk drive) that Melco claims to have selected for superior sound quality. It also has a USB port on the front for easy importing of music. Both units are hand-built in Japan and come with a personally signed certificate from the engineering team.



### IN BRIEF



#### B&O PLAY H8

● Not content with offering wireless operation, Danish hi-fi specialist B&O's BeoPlay H8 on-ear headphones boast active noise cancellation and a special touch interface that enables the user to control them with touch and swipe motions on the right ear cup. With dynamic 40mm transducers, they have a claimed battery life of 14 hours and frequency response of 20 to 22kHz. Wireless operation comes via Bluetooth and they can also be used for answering mobile calls. Available in a choice of finishes, they're on sale now for £399.

**BEOPLAY.COM/H8**

#### MCINTOSH MHP1000

● McIntosh Laboratory has made the move into headphones with the launch of the MHP1000. Carefully engineered to complement its own headphone amps, the circumaural, closed-back cans are claimed to deliver a smooth yet transparent, full bodied and non-fatiguing sound.

The natural soft leather cups house a dynamic 40mm, three-layer compound diaphragm with viscoelastic centre layer to provide a claimed frequency response of 5Hz to 20kHz and nominal impedance of 200ohms (making them compatible with McIntosh's headphone amps). Two natty blue detachable leads are included (1m with 3.5mm connector and 3m with 6.3mm) and the MHP1000 is available now for £1,995 in the UK from Jordan Acoustics.

**MCINTOSHLABS.COM**





# Webwatch

**Andrew Simpson** casts an expert eye over his pick of the best hi-fi websites and online content



## Lego lover

Forget the Millennium Falcon, this is the ultimate Lego creation. Built by Hayarobi, The Planet is a fully working deck crafted from 2,405 pieces and using a Lego battery pack. The only non-Lego piece is its pick-up! [youtu.be/NpeXTfG0Pm4](http://youtu.be/NpeXTfG0Pm4)



## Memory lane

Few audio companies can claim a hi-fi legacy like Yamaha, a story that begins back in 1954 and includes landmark products such as 1974's legendary NS-1000 studio monitor, so it's great to see its full hi-fi history now laid out via a fascinating timeline on its website at [bit.ly/1y2ZxNZ](http://bit.ly/1y2ZxNZ)



## Paul's posts

Boulder-based hi-fi specialist PS Audio knows how to get a system singing, and company founder/CEO Paul McGowan has been sharing his insights via daily blogs in recent weeks, from understanding ground loops to how power supplies work. [psaudio.com/community/pauls-posts](http://psaudio.com/community/pauls-posts)



## Welsh wonders

Leema Acoustics has overhauled its website, reflecting its merger with manufacturer Davlec. The image driven site blends easy navigation with a considered depth of product info and latest news, so there's plenty to enjoy: [leema-acoustics.com](http://leema-acoustics.com)



## Christmas cracker

Birmingham-based hi-fi dealer Audio Affair really got into the festive spirit last month by offering up a £50 gift voucher for the best Christmas themed photo of your latest hi-fi goodies, shared across Facebook and Twitter. [audioaffair.co.uk/blog/win-50-audio-affair-voucher](http://audioaffair.co.uk/blog/win-50-audio-affair-voucher)



## Crafting Roksan's K3

Since we announced the introduction of Roksan's K3 mid-market integrated amp and CD player last month, the London-based company has wasted no time in releasing this behind-the-scenes video glimpse into the craftsmanship that goes into each product. Whet your appetite at [bit.ly/1xJGX0o](http://bit.ly/1xJGX0o)

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## CHOICE TWEETS



### CLASSICALBUMSUNDAYS (@CLASSICALBUMSUN)

The 8 best vintage turntables and what to look out for when buying second hand <http://t.co/PHoA7XFYh3>



### DOLBY LABORATORIES (@DOLBY)

This "animated essay" breaks down all the moving parts that a loudspeaker needs to be, well, loud: <http://ow.ly/GywGh>



### FANTHORPES HI-FI (@FANTHORPESHIFI)

Our latest newsletter is out! In this edition we take a look at our top 10 products/ranges from 2014. [http://eepurl.com/\\_HIOD](http://eepurl.com/_HIOD)



### AUDIO AFFAIR (@AUDIOAFFAIR)

Ever heard of SME? Their turntables will knock your socks off! <http://fb.me/7hzJza6nK>



### MOORGATE ACOUSTICS (@KIPPER248)

What was your best gig of 2014? My own would be Rival Sons at Gorilla in Manchester or Blackberry Smoke in Birmingham. How about you?



### BRISTOL SHOW (@SVBRISTOLSHOW)

167 brands currently confirmed as exhibiting at the 2015 #BristolShow 20-22 Feb @MarriottBristol More info at <http://www.bristolshow.co.uk/>



### TIDAL (@TIDALHIFI)

TIDAL is now available on @linnproducts - read more at <http://tidalhifi.com/linn>



### HIFIX (@FRANKHARVEYHIFI)

SALE NOW ON: B&W P5 Mobile Premium Closed Back Headphones Get closer to your favourite music wherever you are... <http://fb.me/1MkZyUgW3>



### HENLEY DESIGNS LTD (@HENLEYDESIGNS1)

Want to upgrade your Debut Carbon turntable? Check out the BRAND NEW Speed Box DS Strobe... <http://fb.me/7n8ecaoZd>



### LINN RECORDS (@LINNRECORDS)

We are very happy to have 2 Grammy nominations @TheGRAMMYS with performances by @BenjaminZander and @DunedinConsort



### ABSOLUTE SOUNDS (@ABSOLUTE\_SOUNDS)

New Cool Lifestyle Product from Devialet at entry level price. <http://fb.me/4936ukAmX>



### MERIDIAN AUDIO (@MERIDIANAUDIO)

Introducing Explorer 2, the world's first MQA enabled product <http://bit.ly/1CNwBqN>



### VINYL ME, PLEASE (@VINYLMEPLEASE)

Are you on Instagram? We are too @VinylMePlease... follow if you like analog goodness



### RICHER SOUNDS (@RICHERSOUNDS)

#Richertips If vocals sound a little disjointed on your system, check the speaker phase. Red-Red and Black-Black on both speakers!



MERIDIAN

REDEFINE THE POSSIBLE

# Explorer<sup>2</sup>

Listening to music has  
never felt like this before.

Explorer<sup>2</sup> – the new pocket DAC with Meridian's unique resolution enhancement technologies – includes MQA®, the revolutionary British technology that's bringing a whole new meaning to the sound of music. MQA will change *everything*.

**MQA**  
musicischanging.com

From your Meridian partner  
Details at [meridian-audio.com](http://meridian-audio.com)





# Back on track

**James Parker** listens to 'the second Technics system': the £3,300 Premium Class C700 range, designed for lifestyle appeal

**S**o, Technics is back, and with something of a bang: not content with launching its massive, scary money Reference system – yours for a sniff under £37,100 – it's introducing the Premium Class C700 system we have here, as well as an online music store promising a wide range of both CD-quality and hi-res content.

More about the big bruiser of a system – and I mean big, given that the power amp weighs more than 50kg – and that music store later, the

system we have here may have been overshadowed by the "how much?!" reaction to the announcement of the Reference system, but looks likely to be the more popular of the two, not least because it's more affordable.

That said, a £3,297 system from a brand that's been out of the market for long enough to effectively be starting over is ambitious, and it's going to have its work cut out to succeed in an arena that's populated with products from brands with a more continuous pedigree.

Unlike the Reference system, which uses a controller/streamer connected to a power amp with onboard volume control via twin runs of Ethernet cable, and a pair of massive multi-driver floorstanding speakers, the C700 setup is more conventional.

The £849 ST-C700 network player combines DLNA streaming, the ability to play from a PC via asynchronous USB, iOS device and USB memory playback, Apple AirPlay and Bluetooth and built-in FM and DAB/DAB+ tuners. Meanwhile the

## ► DETAILS

**PRODUCT**  
Technics Premium Class C700 system

**ORIGIN**  
Japan

**TYPE**  
Amp, streamer and speaker package

**WEIGHT**  
ST-C700: 13kg,  
SU-C700: 8.3kg  
SB-C700: 8.5kg  
each

**DIMENSIONS**  
(WxHxD)  
ST-C700: 340 x 78 x 305mm,  
SU-C700: 340 x 132 x 325mm,  
SB-C700: 220 x 336 x 286mm

**FEATURES**  
• DLNA; Bluetooth; AirPlay streaming

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Technics UK

**TELEPHONE**  
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**WEBSITE**  
technics.com/uk





partnering £1,249 SU-C700 amp has four digital and two analogue inputs (including moving magnet phono), plus asynchronous USB, and delivers a fairly modest 45W per channel into 8ohm or 70W into 4ohm.

One interesting aspect of the design of the amp is the inclusion of Technics' Load Adaptive Phase Calibration, which enables it to sense the characteristics of the speakers it's hooked up to, and use a digital signal to deliver a flat response from them. This has less effect when the amp is

## It's clear the Technics can deliver excellent definition and good musical flow

used with the speakers designed for this system, since they're optimised for use with it, but the change with other speakers is remarkable, turning what sounds like a very flat and uninteresting amplifier into something with much more spark and vitality.

Also striking is its 'upside down' styling, with the input and volume controls above the power meters: it gives it a 'two box' look, it's as though there's a slimline preamp sitting on top of a compact power amplifier.

On the subject of size, the units are smaller than the norm, at just 340mm wide rather than the typical 430mm.

The speakers – the £1,199 SB-C700 – are standmounters, with a sculpted cabinet designed to damp down internal resonances, and use a flat coaxial driver designed to give a point source, with the bass tuned with a rear port. The mid/bass drive unit uses a light, rigid carbon-fibre skin over an aluminium honeycomb core, with a coupling cone behind it, and is combined with an aluminium-dome tweeter claimed to run up to 100Hz.

## Look to the future

The SL-C700 CD player is planned for release as part of the series in the next few months, but as yet there's no indication of price for this. Oh, and no news yet about any revival of Technics' famous turntables, though apparently chief engineer Tetsuya Itani does have some thoughts in this direction. No more than that, but never say never...

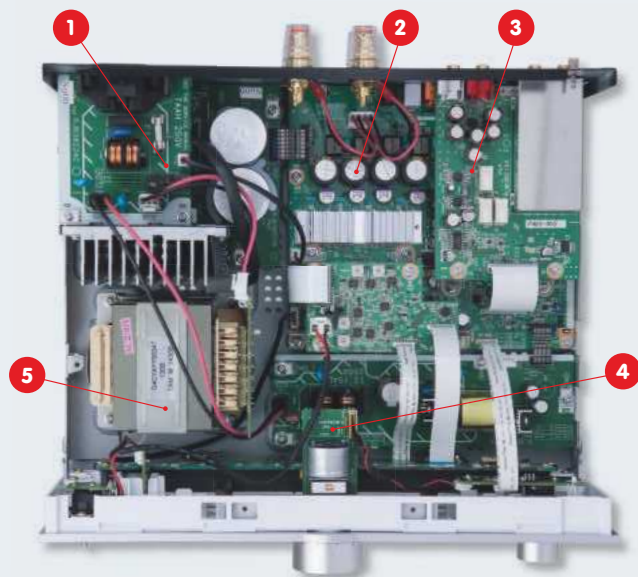
These components have much more of a sense of being designed for use either as a whole or individually in mixed-brand systems, whereas the R1 Reference models are clearly meant to work together: yes, if you use the C700 network player and amp

## CONNECTIONS



- 1 Moving magnet phono input
- 2 Analogue input with attenuator
- 3 Speaker binding posts
- 4 Ethernet port
- 5 Asynchronous USB-B port
- 6 DAB antenna
- 7 Digital coaxial, optical and USB-B inputs

## SU-C700



- 1 Discrete stabilised power supply
- 2 Digital amplifier stage
- 3 Digital signal processing stage
- 4 Motorised volume potentiometer
- 5 Mains power transformer

### REFERENCE POINT

It's over a decade since the plugs were pulled on Technics' mainstream audio products, leaving only its acclaimed DJ turntables, which eventually went out of production in 2010. So it was important for the brand to come back with a statement product, and the Reference R1 system is just that. It comprises a network player/controller,

the £6,499 SU-R1, a 150W per channel power amplifier, the £11,999 SE-R1, and the massive SB-R1 speakers, at £18,599 a pair. The controller is unusual in that it looks like a streamer/preamp, but the volume control is in the hands of a digital system just upstream of the PWM conversion in the power amp: separate left and right channel digital

connections, at 384kHz/24-bit, are used between it and the power amp.

The SB-R1 speakers in the Reference system use an Entasis cabinet design, maximising rigidity while avoiding parallel surfaces, and the coaxial drive unit is used purely as a mid/treble driver. The speaker also has four 16cm long-throw woofers.

together, you get whole system control either from the remote or via the Technics Music App on tablets or smartphones, but the same app will do everything but control input and volume should the ST-C700 be used with a third-party amp and speakers.

## Sound quality

The ST-C700 network player is able to play high-resolution files right up to DSD5.6 either from local sources such as USB memory or over a network – for example from a computer or NAS drive – so my listening extends all the way from plain old MP3 to high-resolution ones. And the overall impression is that Technics has got the sound of this system pretty much spot on: it certainly shows the benefits of higher-resolution files, and while the player's Re-Master system goes some way to make low-bitrate content more listenable, there are some limitations it can't overcome, and the sound with MP3 files tends to be rather lightweight and lacking in character.

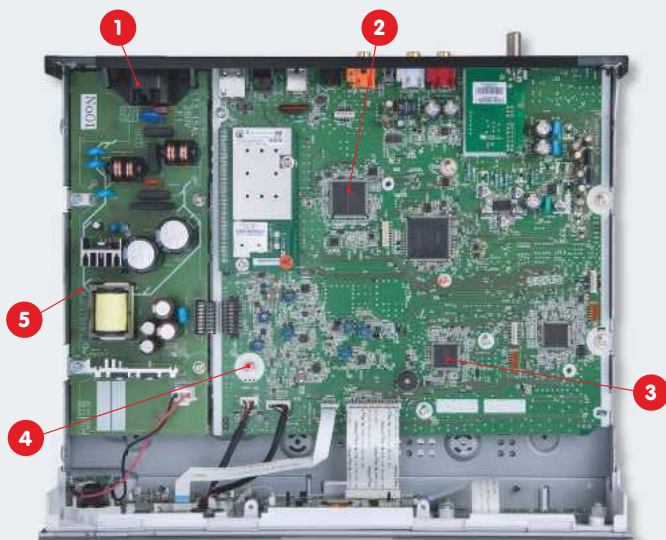
Switch to CD quality or better, and the sound is on much safer ground, with hi-res files having both excellent bass weight and fine detail. Playing Fleetwood Mac's *The Dance* live set, the Technics manages to deliver a sound with plenty of impact and drive, the performers deliver with fine clarity against the 'live' ambience.

However it must be noted that the SB-C700 speakers are rather fussy about positioning if they're to give of their best. I have them on hefty Atabyte-loaded 60cm Atacamas and toed in a little to give optimal imaging: for my usual listening sofa that is about the right height, but moving off-axis either vertically or horizontally results in significant loss of treble energy, making the sound dull down a bit and lose focus.

Get the setup right, however, and the Technics system has a real sense of working as a whole to deliver good listener involvement, while at the same time not pushing the bass to the point where it becomes overbearing, or the treble too bright and shrieky. The company says the initial launch target for its new systems is Europe, and that shows in the balance here: the sound is well mannered and controlled, rather than falling into any of the more obvious national audio stereotypes.

With the kind of close-miked, ultra-hi-fi recordings much favoured by Japanese audiophiles this set-up does sound predictably very fine indeed: play some tracks from Buddy Holly's *From The Original Master*

## ST-C700



- 1 Mains supply inlet
- 2 Micro controller for USB
- 3 Display processor
- 4 Earth point for main PCB
- 5 Selected power supply capacitors

### TECHNICS TRACKS

To support the launch of its first two systems of the new Technics era, Panasonic has announced the launch of Technics Tracks, a dedicated music download store. Offering what's said to be "an exceptional catalogue of 24-bit hi-resolution audio", the site is set to go live in the UK and Germany some time during early 2015, emphasising the

importance of Europe as the initial launch market for the Technics brand. Custom-built for Technics by 7digital, Technics Tracks is set to have "tens of thousands" of tracks in 24-bit/192kHz, backed up by an extensive catalogue in CD quality, and says it has an aggressive expansion plan over the coming months, including content

from all the major record companies and "an unprecedented number of independent labels".

Music purchased from the store will be placed in a cloud locker, allowing it to be downloaded to multiple devices. To find out when the service will be launched or to register for a free music track go to [www.technics.com/tracks](http://www.technics.com/tracks)

**SB-C700**



- 1 Bass reflex port
- 2 Speaker binding posts
- 3 19mm dome tweeter with 160mm bass driver

*Tapes* or jazz of the Holly Cole school, and it's clear the Technics can deliver both excellent definition and good musical flow. However, it's also impressive with a well-recorded orchestral or small-ensemble classical music, with good insight into instrumental timbres and textures, the speed and deftness needed to deliver the drive of a piece, and no shortage of presence and ambience.

That said, while the Technics system can let rip, I'd suggest you consider some alternative speakers if you want it to do so: good though the SB-C700s are, they have their limitations when it comes to ultimate extension and clout, and some experimentation with a pair of PMC GB1i floorstanders shows that the SU-C700 amplifier, despite its modest power on paper, has rather more to give than the Technics speakers allow it to reveal.

## Conclusion

Unleash The Blockheads' engine room on the SB-C700s with a spot of *What A Waste* and while the sound is fast and agile, with Ian Dury's voice well realised in front of the band, there's something lacking in the clout department, and things get a bit ragged when the track gets busy; switch to the PMCs and the bass and drums snap into much tighter focus, and with much better power. In simple terms, it's all just that bit more convincingly rockier, suggesting that some floorstanders in the £800-£1,000 arena – such as the B&W 684 S2, for example – might be a better choice than the Technics offering.

This system has something of the curate's egg about it: the network music player is an excellent buy, not only because it sounds excellent

across a range of inputs and file formats, but because it also offers a degree of flexibility unmatched at the price, and neatly undercuts all but a very few similar players, while the amplifier is clearly very good, but faces stiff competition at its £1,249 price. There's not exactly a lack of choice when it comes to amplifiers at this level.

The speakers, however, are less of a happy story: yes, they're technically interesting, with that flat diaphragm coaxial drive unit and what Technics calls its 'Entasis' cabinet design, but they're just too fussy about their placement. Get it right, and sit in the ideal sweet spot, and they can sound lucid, dynamic and gutsy; move slightly off-axis and things take a definite turn for the worse.

Mind you, that's not exactly a surprise, given the number of times big Japanese audio companies have launched slightly disappointing speakers; when the Technics system plays to its strengths – the network player and amplifier – it's on much safer ground ●

## Hi-FiChoice

### OUR VERDICT

#### SOUND QUALITY



#### VALUE FOR MONEY



#### BUILD QUALITY



#### FEATURES



#### OVERALL



**LIKE:** The way the system works together; flexibility of the streaming player

**DISLIKE:** Overly directional nature of the speakers

**WE SAY:** An impressive debut that might struggle against some established rivals



At just under £3,300 including speakers, the complete system finds itself up against the likes of Naim's Unidilite, which at £1,995 has streaming, Spotify, DAB/FM tuners and a CD player, though lacks Bluetooth, AirPlay and asynchronous USB. But the £1,300 price difference would buy some very good speakers. At £849, the ST-C700 slots in between Cambridge Audio's StreamMagic models and the entry-level streamers from the likes of Cyrus, Linn, Marantz and Naim, and thanks to its flexibility is the strongest proposition in the whole C700 line.

## Q&A

### Michiko Ogawa

Technics project director



#### JP: What's the thinking behind the new Technics products?

**MO:** After Technics stopped making hi-fi products, a small group of engineers continued to work on developments in their spare time, drawing on technology such as that we'd developed for Panasonic Blu-ray players. It was kind of a 'skunkworks' project within Panasonic.

#### Do you see high-resolution audio as a growing trend?

Yes, and on a global scale: we think people are moving on from compressed music to hi-res audio, and that was a major reason for the Technics project. At the moment it's a transitional period, which is why we've included not just hi-res, but also other formats, too.

#### You've spoken about re-capturing the emotional connection with music, which you feel has been lost. Can you explain that a bit more?

We grow up discovering and being moved by new types of music, but as we get older we get distracted by everything else in our lives. The new Technics products aim to offer listeners the feeling of 'rediscovering music', by helping them to have such uniquely emotionally engaging experiences. We think people are returning to wanting to sit down and listen to music, rather than it just being in the background – it's for those listeners that the new products are designed.

#### So where does the new C700 range fit into that plan?

The target user for the Premium range is not just audiophiles, but music lovers, including people like me – women. We love music, but it's difficult for us to approach the audio field, so I would definitely like to expand our appeal to these sorts of customers.

#### Is there scope for more affordable products based on this technology?

It's certainly possible, and something that we are actively considering for the future development of the Technics brand.



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# How we test

Hi-Fi Choice employs the most rigorous test and measurement regime in the business. Here's how we do it...

## Unique group tests

Our *Group Tests* are supported by rigorous and exhaustive listening tests carried out by experts

### PHONO STAGE GROUP TEST

**AS GETTING TO** grips with the various settings that each of our phono stages offers requires repeated listening sessions with different cartridge types (high-output moving magnet and low-output moving coil), it isn't practical to carry out this month's *Group Test* with our usual listening panel present. This allows the process to be extended and a more tailored procedure applied.

Listening is carried out using carefully chosen pick-ups that each represent the best of the budget to mid-price breed, which are typical of the models that the phono stages in our group are likely to find themselves called into duty to serve. At £295, Ortofon's 2M Bronze with its

Nude Fine Line stylus is a superb cartridge that tracks well, while being consistent across all music and with good channel symmetry.

For MC duties, Denon's low-output £320 DL103R represents a classic cartridge that's brought up to date with its high purity 6N copper coils, making it popular with audiophiles as the mid-priced MC of choice, thanks to its excellent tracking ability. And with its claimed output of only 0.25mV, it helps to ensure our phono stages have their work cut out.

All of our phono preamps are put through the same cycle of music from four different test records, each of which has been chosen to reveal varying audio traits.



### BLIND LISTENING TESTS

This crucial process is very carefully controlled so that we get reliable and consistent results in a relaxed and friendly atmosphere. Our listeners must not feel that they're being tested, despite being unaware of the brand or price of the products they are auditioning.

The session begins by setting the volume level to an agreed point, one that all three panellists feel comfortable with, yet that is

high enough to make differences easily discernible. Then the choice of music is agreed – it needs to be familiar, but also well recorded and of sufficient variety to give meaningful listening comparisons. The chosen selection of music is played, and the panellists are encouraged to discuss their impressions of the sound of the product. This is then repeated, and periodically the panel listens to earlier products for reference purposes. The

consensus, or otherwise then forms the basis of our sound quality section.

At the end of the session, there's a final debrief when panellists discuss their findings. It's an exhaustive process, but carried out in this way is free from prejudices based on brand, price or appearance, while the different sensitivities of the listeners help to round out the analysis in order to make it more widely applicable.

### REFERENCE SYSTEM

**TURNTABLE**  
VPI Scout 1.1 with JMW tonearm  
**AMPLIFIER**  
Musical Fidelity M6PRE/M6PRX  
**LOUDSPEAKERS**  
Dynaudio Focus 260  
**CABLES**  
Crystal Cables/Van Damme

### TEST MUSIC

**THE HANDSOME FAMILY**  
*Singing Bones*  
Vinyl



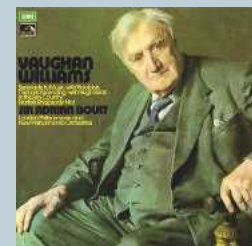
**PIXIES**  
*Doolittle*  
Vinyl



**ÁSGEIR TRAUSTI**  
*Dýrð í dauðabögn*  
Vinyl



**VAUGHN WILLIAMS**  
*The Lark Ascending* conducted by Sir Adrian Boult  
Vinyl







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KEF R500, Hi-Fi News & Record Review, November 2014



# KEF

# Group test



PHONO STAGES £200-£649

## Stage directions

**Andrew Simpson** gets in a spin with six mid-market phono stages that will take your vinyl to the next level

**THE HUMBLE PHONO** stage is something of an unsung hero among its hi-fi separates contemporaries, where main amplifiers and turntables usually get the limelight. But given these little boxes can carry out the lion's share of your total signal amplification from cartridge to speakers, the importance of the role they play in contributing to the overall sound quality cannot be overstated. You may have splashed your cash on the turntable of your dreams, but if its partnering phono stage isn't of sufficient quality then your lavish vinyl spinner will be held back, and precious audio

information lost in the chain. Help is at hand, as we put six lovingly crafted small (and one not so small) phono stages from entry-level models upwards to the test.

### Choice options

With a range of new budget moving coil pick-ups hitting the shelves that are designed to go toe to toe with the moving magnet types typically found at these price points, such as Ortofon's new Quintet series, it's sensible thinking to look for a phono stage that caters for both MM and MC types from the outset. That's why every model in our test covers both

bases, and with some offering more tailoring options than others.

The budget MyGroov lets you switch between each pick-up type with a flick of its front panel flywheel, making it a pain-free process, while those wanting a customisable pocket-sized approach may welcome Clearaudio's new V2. Lehmannaudio's and Pro-Ject's offerings come with similar price tags but are radically different, with solid state tech for the former and tubes for the latter. For Edwards Audio and Sonneteer, power supplies are key with both boasting toroidal transformers to show that they mean business. ▶



## ON TEST



**Clearaudio  
Nano Phono V2**  
£225 **p27**

Small in size but big on spec, this revised little unit from Clearaudio packs plenty of options into its solid case. For MM fans it's a breeze to use, while MC users can fit their own resistors for maximum tweaking.



**Edwards Audio  
MC1/PSU1**  
£500 **p29**

This twin box package gets an updated PSU in matching backlit livery and caters for both cartridge types via internal jumpers. Its spec is one of the best here, promising a sophisticated bang for your buck.



**Lehmannaudio  
Black Cube**  
£400 **p31**

The Black Cube's looks won't win it any design awards, but it's what's on the inside that really counts, and Lehmannaudio's pro audio backing and rich feature set make the Black Cube the dark horse of the group.



**Micromega  
MyGroov**  
£200 **p33**

With its simple settings the Micromega takes the pain out of vinyl replay. Easy to use and modern looking, the MyGroov follows the brand's My range ethos with a smooth user experience and a quality product.



**Pro-Ject  
Tube Box DS**  
£425 **p35**

It's impressive how much Pro-Ject has managed to squeeze into the DS. Tube fans and tweakers alike will delight at its little bottles and impressive feature set, including front-panel knob for setting load on the fly.



**Sonneteer  
Sedley USB**  
£649 **p37**

As the only full-width model on test, the Sedley is the heavyweight of the group, packing a large internal PSU. It has lots of cartridge settings and an internal ADC/DAC with USB port for digitising your vinyl.



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# Clearaudio

## Nano Phono V2 £225

It may be small in size but it's big on features, the nifty Nano shows that good things come in small packages

### DETAILS

**PRODUCT**  
Clearaudio  
Nano Phono V2

**ORIGIN**  
Germany

**TYPE**  
MM/MC phono  
stage

**WEIGHT**  
0.5kg

**DIMENSIONS**  
(WxHxD)  
85 x 25 x 106mm

**FEATURES**  
• Variable output  
and load options  
• Solid aluminium  
case  
• Manual relay  
loading system  
• Optional subsonic  
filter  
• Wall wart DC PSU

**DISTRIBUTOR**  
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**WEBSITE**  
clearaudio.de

**A**s the tiniest of all the models on test, the V2 is also one of the most substantially crafted. Its machined aluminium chassis feels brick solid, which should help keep resonance to a minimum. What's equally impressive is how much Clearaudio has managed to pack into the little case. You get hand-assembled dual mono circuits, using surface mount op-amps alongside a range of inputs, and £25 extra buys a version equipped with a headphone socket.

This new V2 offers a few updates over the original, starting with its revised bead-blasted case, which gains an on/off switch on its lid. The banana plug earth socket has been replaced by a more conventional threaded pin, and the mains lead to its wall wart transformer is now captive. Inside there's an updated circuit, which claims lower THD by a factor of 10, with improved signal-to-noise ratios for MCs.

To switch between MM and MC cartridges you need to move jumpers on the base with separate banks for left and right channels, while removing another pair of jumpers activates a subsonic filter. The V2's gain is varied by moving its knurled volume wheel, which glows a cool blue in use and ranges from +34dB to +48dB for

MMs and +54dB to +68dB for MCs. The MM input gives a fixed load/capacitance of 47kohm/220pF, while MC users can select from 51ohm/200ohm/402ohm/1kohm load settings, which are activated by inserting supplied resistors into sockets on the base. These are a bit fiddly to fit, and protrude from the unit's base unless you carefully bend them flat, but this does mean you're able to install third-party resistors tailored to your own pick-up.

### Sound quality

Small in size but big on sounds, the Nano makes no bones about bringing plenty of gusto to each performance as it throws itself into the music. With the Ortofon cartridge working the grooves, it ensures the dance beats of Ásgeir Trausti's *Leyndarmál* have plenty of weight in the midrange and energy in the bass.

With its gain set to just below its maximum level, the Clearaudio casts a sizeable soundstage front to back, which brings depth to the instruments in The Handsome Family track. The Nano's sense of clarity is also noteworthy, especially at this price point, although it doesn't image quite as well as some of the others in the test, such as the Lehmannaudio. Voices sound deep and strong and



### GERMAN ENGINEERING

Clearaudio may be pitching the Nano at the budget end of the market, but it comes from a manufacturer of substantial pedigree. Since company founder Peter Suchy and his team developed their first range of cartridges back in 1978 with pioneering boron cantilevers, Clearaudio has gone on to establish itself with a range that caters for every corner of the market.

Perhaps the ultimate expression of its art is its range-topping Statement turntable, which costs in the region of £89,000 and is formed from stainless steel, acrylic, aluminium and a bulletproof wood material called panzerholz. At 350kg and including its own stand, this behemoth employs Clearaudio's non-contact magnetic drive system and is partnered with its TT2 tangential tonearm, which takes 40 hours to assemble. Clearaudio also creates its own audiophile recordings and re-releases of classical LPs once produced for the Deutsche Grammophon label. See the range at: [analogshop.de](http://analogshop.de)

Rennie Sparks' vocal accompaniment is more pronounced than say the Pro-Ject, but loses some of its gentility as it's brought out with a little too much vigour.

With a pair of 51ohm resistors in place and its gain wound to maximum, the Nano lets me know that its MC circuits are equally capable when delivering the goods from the Denon pick-up. It gives the impression of having bags of headroom, especially when rocking with the Pixies' number. The dynamic swings when the lead guitar kicks in certainly don't phase the Nano as they rip through the soundstage with good extension, although they're not as visceral as the best on test ●

### HIFIChoice

#### OUR VERDICT

**SOUND QUALITY**

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

**LIKE:** Well made with plenty of features

**DISLIKE:** Self-fitting resistor system isn't that well designed

**WE SAY:** Little better of an entry-level phono stage with a big sound

**OVERALL**  
★★★★★



## Your listening room and jet engines share a problem – What?!

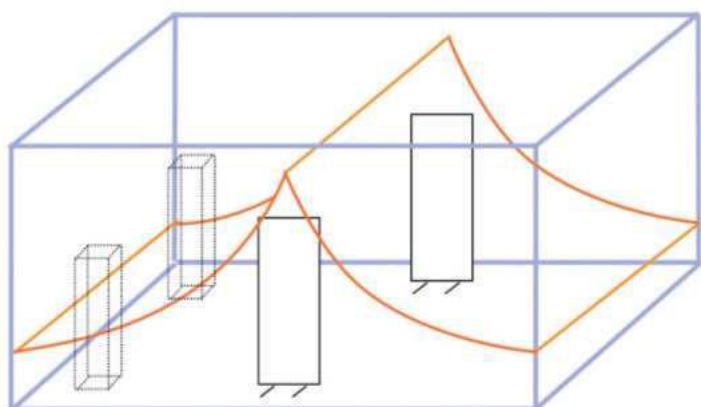
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Air movement reaches peak **velocity** in the middle of the room where the panels absorb energy across the full spectrum, not just at specific frequencies

**The solution** – When you energise the room with a music signal thousands of carefully-calculated micro-perforations in the **LeadingEdge** panels create turbulence as the air, slopping to and fro between walls, passes over their surfaces.

And jet engines? Similarly, in the Airbus compressor noise from the front fan is cut down with a special micro-perforated lining for the air intake.

We hear air **pressure** changes as excess bass at the room boundaries, where the air is at zero **particle velocity** and maximum pressure change. It reaches maximum velocity (and zero pressure change!) in the centre of the room where the perforations create **aerodynamic drag** and the panels absorb this velocity energy into an internal honeycomb.

**Aerodynamic drag** removes unwanted energy *across the spectrum* and is far more effective than conventional foam-filled panels that work only at narrow frequency bands.

Significantly, *the drag increases with the square of the velocity – when the velocity doubles, drag increases four times!*

In this way, the LeadingEdge panels are “reactive” – the more loose energy bouncing round the room, the more effective they become.

At shows and in their homes listeners have been truly astonished at the changes brought by the panels, revealing greatly more musical realism.

Every time we hear reactions like “Wow” and “That’s amazing!”

Panels are available in different sizes and three standard finishes: Cherry, White, and Light Oak though almost any finish can be ordered to match décor.

Panels may be free-standing and moved away when not required or fastened to the walls and made into a feature, perhaps finished in an exotic high gloss veneer.

An ideal solution is to place panels on the ceiling, where they absorb energy from all directions. In this room with 60% glass windows and hardwood floors the panels are a feature, with recessed lighting. The result is a quiet, comfortable room despite all those hard surfaces.



*Thousands of micro-perforations create aerodynamic drag and absorb energy into the internal labyrinth*



**Customers say** we make some of the best sounds in our studio they have ever heard, so you know we can do the same in your home. Our advice takes account of your best components and guides you where change is needed, in stages you can afford.

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**Just listen and you’ll know**

**Digital:** Aurender, Bel Canto, dCS, Resolution Audio, Vertex AQ dac. **Vinyl:** ClearAudio, Graham, Spiral Groove, Transfiguration.

**Tuners:** Magnum Dynalab. **Amplifiers:** Aesthetix, Bel Canto, CAT, GamuT, Sonneteer, Storm Audio, VTL.

**Loudspeakers:** Avalon, Kaiser Acoustics, NEAT, Totem. **Cables:** Chord Co., DNm, Nordost, Siltech, Tellurium, VertexAQ. **Mains:** Aletheia, Vertex AQ.

**Supports:** Arcici, Black Ravioli, Hi-Fi Racks, LeadingEdge, Stands Unique, Vertex AQ. **Room acoustics:** LeadingEdge







# Edwards Audio

## MC1/PSU1 £500

Sleek and stylish, this Surrey-based pairing includes a top-quality standalone PSU to really let the music flow

### DETAILS

**PRODUCT**  
Edwards Audio  
MC1/PSU1

**ORIGIN**  
UK

**TYPE**  
MM/MC phono  
stage with PSU

**WEIGHT**  
MC1: 0.5kg  
PSU1: 1kg

**DIMENSIONS**  
(WxHxD) for both:  
115 x 48 x 170mm

**FEATURES**  
• Optional  
upgraded DC power  
supply in matching  
casework  
• Pseudo balanced  
circuits

**DISTRIBUTOR**  
Talk Electronics Ltd

**TELEPHONE**  
01344 844204

**WEBSITE**  
talkelectronics.com

**B**illed as the company's entry-level MM/MC stage, there's nothing entry-level about the MC1's spec.

From its gold-plated, custom-made, double-sided PCBs to its use of 1% thin film MELF resistors from Vishay plus Panasonic low-impedance PSU capacitors, it's clear that every aspect has been carefully considered.

The MC1's circuitry is based on the company's pseudo balanced discrete input technology, with its circuit topology employing a fully discrete input gain stage followed by an op-amp based active bass and passive treble RIAA filter. Its buffered output section claims a very low output impedance, which the company says helps to reduce cable effects, while improving output current and drive.

The MC1 is essentially a simplified version of the MC1 Plus featured in HFC 381, which featured a whopping six gain and five load settings, accessed via a series of complex

internal jumpers. While you still need to remove the MC1's PCB to switch between MM and MC, its settings are stripped back with gain fixed at +40dB for MM cartridges and +63dB for medium-to-low output MCs. Load is also preset to 47kohm for MM cartridges and 100ohm for MCs, while its 10ohm source impedance should be sufficient to drive any cable/preamp combination.

### Sound quality

Similarly to the MC1 Plus we tested last year, this simplified version puts in an equally controlled and refined performance. Partnering it with its matching PSU1 also brings a number of improvements, making it sound cleaner, with darker backgrounds and better instrument separation. Not that in standard guise these elements are particularly lacking, but with the PSU1 it's taken to the next level. On the Vaughan Williams piece background noise is one of the lowest in the group, which means that the solo violin gets your full attention as it moves through the soundstage.

As the piece progresses, the Edwards gives the full orchestra plenty of space to let its notes swell within the mix, although its soundstage isn't quite as deep as say the Clearaudio's or as wide as the Lehmannaudio's but the music is presented with great clarity.

The Edwards has plenty of bass depth and presence, which really underpins the groove of the Ásgeir Trausti track, but on some recordings

### POWER PLAY

It's no secret that improving an audio product's power supply and placing it into its own shielded case, away from sensitive amplification and signal processing circuits can bring marked improvements to its sound quality, often exceeding your expectations.

Edwards Audio clearly subscribes to this thinking and even in standard guise, the MC1 gets a high-quality 18V DC split rail wall wart, that's well beyond the quality of your average off-the-shelf plug-in transformer. The PSU1 partnering the MC1 here is an altogether more substantial supply and comes housed in a matching backlit case. A custom wound 30VA toroidal transformer accounts for most of its 1kg heft and its split rail topology design also features gold-plated custom-made double-sided PCBs and thin film surface mount mini MELF resistors, plus low-impedance electrolytic capacitors throughout. The PSU1 also includes an earth lift switch to eliminate hum and a second output so you can power two Edwards Audio products from a single PSU1.

its bottom end can seem a bit too overwhelming compared with some of the other phono stages. With The Handsome Family track for example, the bass guitar imposes itself a little too much and tends to dominate the soundstage. With the phono stage switched to MC mode and its recommended 100ohm load a good match for the Denon cartridge, the music sounds better balanced, suggesting it is more sensitive to its partnering pick-ups than some of the other phono stages on test. Via this combination the music sounds smoother, especially on the rockier test tracks, although it doesn't have the attack of the Lehmannaudio and Clearaudio models ●



### HIFIChoice

#### OUR VERDICT

**SOUND QUALITY**  
★★★★★  
**VALUE FOR MONEY**  
★★★★★  
**BUILD QUALITY**  
★★★★★  
**FEATURES**  
★★★★★

**LIKE:** Great treble clarity; low noise; quality separate PSU  
**DISLIKE:** Bass integration could be better  
**WE SAY:** Classy looking pairing that's good value and works well with MCs

#### OVERALL

★★★★★

# *Imagine Being Much Closer to the Musicians with **SAMBA VS-1** - The Low Distortion Cable*



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## **MWA-RC Magnetic Wave Absorbers**



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**HI-FI Choice, October 2013**



These simple yet effective products from Oyaide in Japan have been designed to add further improvements to the equipment and cabling in your system.

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# Lehmannaudio

## Black Cube **£400**

With its utilitarian looks and pro audio backing, the Lehmannaudio's focus is on performance over style

### DETAILS

#### PRODUCT

Lehmannaudio  
Black Cube

#### ORIGIN

Germany

#### TYPE

MM/MC phono  
stage

#### WEIGHT

0.7kg

#### DIMENSIONS

(WxHxD)  
113 x 45 x 108mm

#### FEATURES

- Optional gain settings
- Fixed and customisable load settings
- External DC PSU
- Optional bass filter

#### DISTRIBUTOR

Henley Designs

#### TELEPHONE

01235 511166

#### WEBSITE

henleydesigns.co.uk

**C**ompared with the other models on test, the Black Cube won't win any awards for its looks. But within its staid casing lies a very clever product. Sitting above the entry-level £300 Black Cube Statement, the standard Black Cube offers a number of upgrades, including a low-noise 2x 15V DC standalone regulated PSU, with shielded umbilical cord and Neutrik plug, instead of the Statement's AC wall wart.

It uses a passive RIAA equalisation circuit, which some favour over active designs, located between two linear gain stages using low-loss precision MKP foil capacitors. All resistors are of the low-noise metal film variety and the switches for gain and load settings have gold-plated contacts.

On the base are small DIP switches to configure the Black Cube for a range of settings, with 47kohm (100pF) for MM and high-output MC pick-ups, and 100ohm/1kohm settings for low and mid output MCs, while a third setting lets you select a custom load by installing your own resistors on its dual mono circuit board.

The gold-plated RCA sockets are well spaced on the front and rear flanks of its non-magnetic alloy case, which has a special anti-resonance treatment applied to its top cover.

Removing the lid via four screws gives you access to more customisable features, including removing jumpers to adjust the MM's +46dB gain and MC's +66dB gain by -10dB each, with more jumper options to activate a bass roll-off filter and bridge its output capacitors.

### Sound quality

As soon as the needle hits the groove I can hear that the Lehmannaudio is able to conjure an expansive and open soundstage. But it's not just the size of the sonic landscape it paints which is of merit, where its strengths also lie is in how it lets instruments and voices work together as a cohesive whole, which really brings the music to life. The way Brett and Rennie Sparks' vocals in the Handsome Family track separate into the left and right channels before being joined back together at the centre of the soundstage largely passes me by with the other phono stages, as simply a quirk in the mix to keep me on my toes. But with the Lehmannaudio in the driving seat, I can hear how this technique subtly reveals each voice to complement the other as the Black Cube brings their unique tonalities to life, more so than any of the other phono preamps in this roundup.



## STUDIO MASTERS

Lehmannaudio's highly customisable DIY approach to tailoring the Black Cube's settings reveals the brand's history in the pro-audio sector. Norbert Lehmann was a young audio engineer in Cologne when he founded Lehmannaudio in 1988. His early inspiration stemming from hearing amplifiers with seemingly identical specs producing music that sounded worlds apart. Such contrasting sounds led him to dig deeper into exploring the intricacies of circuit details, power supplies and components before going on to create his own phono preamps.

Launched in 1995, his first audio product was the original Black Cube, which was updated in 2006. Remaining a benchmark in the company's portfolio, the Black Cube still carries elements of its pro-audio heritage inside its case via its input stages, which can also be found in top-notch mixing consoles and professional microphone preamps. Alongside its phono stage product line, Lehmannaudio also produces a range of dedicated headphone amps.

Perhaps revealing its pro audio origins, it majors on a clean sound and its talents are also shown in its ability to clearly define instruments. On the cheaper phono stages, such as the MyGroov and Clearaudio, lead guitars on the Pixies' track sound rich and suitably dense, but not that well separated. Via the Lehmannaudio each chord change and riff is better defined and revealing, with sharper leading edges and a more balanced sustain and decay. At the extremes and when being driven hard via the Ortofon cartridge, it can lean towards emphasising the sibilance in Frank Black's voice, but this is a very minor dent in what is otherwise a superb all-round performance ●

## HIFIChoice

### OUR VERDICT

#### SOUND QUALITY

★★★★★

**LIKE:** Open, detailed and lifelike sound

#### VALUE FOR MONEY

★★★★★

**DISLIKE:** Utilitarian case

#### BUILD QUALITY

★★★★★

**WESAY:** Get past its dull box, and this is a very capable phono stage that's unbeatable for the money

#### FEATURES

★★★★★

### OVERALL

★★★★★



---

MUSICAL FIDELITY

---

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# Micromega MyGroov £200

Want the flexibility of a simple MM/MC preamp without the hassle of fiddly settings? This could be your answer

## DETAILS

**PRODUCT**  
Micromega  
MyGroov

**ORIGIN**  
France

**TYPE**  
MM/MC phono  
stage

**WEIGHT**  
0.5kg

**DIMENSIONS**  
(WxHxD)  
150 x 35 x 140mm

**FEATURES**  
• Mute option  
• Onboard PSU  
• Front panel input  
selection dial

**DISTRIBUTOR**  
Wireworld UK

**TELEPHONE**  
0208 9919200

**WEBSITE**  
wireworldcable.  
co.uk

**T**his French company may seem like a newcomer on the hi-fi block of these shores, but it has actually been proudly designing and making digital and analogue audio equipment for over 20 years.

The MyGroov joins Micromega's 'My' range, sitting alongside a pair of bookshelf speakers with matching stands, integrated amplifier (HFC 389), DAC and MyZic headphone amp, with the latter two sharing the same chunky square case design as the MyGroov. The unit's textured black ABS chassis (which also comes in white) feels solid to the touch, with its embossed logo, rounded edges and horizontal aluminium rotary control adding some personality. As an entry-level product, perhaps aimed at those new to vinyl or recently returning after a long hiatus, the MyGroov is by far the easiest in the group to use. There's no fiddly DIP switches to get to grips with or resistors to install, nor do you have to go looking under its lid to change any settings. Instead, the front panel's knurled wheel lets you jog between off/MM/Mute/MC settings with corresponding LEDs showing which state the MyGroov is in, with red dictating off and mute, and white for when MM or MC settings are selected.

Its internal design sports an extremely fast, ultra low noise audio power supply with no electrolytic capacitors in the audio path or PSU. For MM pick-ups, load is a text book 47kohm, with a claimed +40dB gain, while the MC setting is preset to 100ohm load with gain at +60dB.

## Sound quality

As a starter phono stage to sit between an entry-level turntable and integrated amp, the Micromega's sound has a lot going for it. It's relatively mellow character will smooth out many rough edges and leave you to sit back and relax in its good-natured company. With the Pixies track, the raucous lead guitar is kept in check and prevented from becoming too hard edged or fatiguing, even from repeated plays at high volume. The flipside to this is that some of the track's energy is lost as the music sounds a bit too safe compared with the best phono stages in the group, which are able to let the guitar further off the leash while ensuring it still behaves itself.

Switching to the mid-tempo beats of the Ásgeir Trausti track ensures the music is warmly presented to get your foot tapping, as the MyGroov gets on with letting the rhythm flow. Where it falls down compared with its nearest

## FRENCH REVOLUTIONS

Capitalising on the thriving market for desktop hi-fi products that will be equally at home nestled up to a laptop as they will adorning a hi-fi rack, Micromega has its eye firmly on emerging audio markets. But for this Parisian company, life began in 1987 with the launch of its first CD player, the CDF1-Hitech, which was characterised by its *avant-garde* clear perspex top-loading mechanism that proffered more than a nod to the turntables of the time. The nineties saw the company branching out into high-end separate DACs and CD transports, including the Concept and Minium ranges.

In 2007 Micromega was bought by a French electrical company, headed up by hi-fi enthusiast Didier Hamdi who still owns the company today. Under a new business unit, its revised approach includes a commitment to try and repair all Micromega kit, whatever its age. With the creation of a new test room in 2011, the 'My' range took shape and sets out to introduce new audiences to the unique world of Micromega.

price rival (the Clearaudio), is in how it has a tendency to gloss over some of the detail rather than seek to extract it. Keyboards and percussion sound less focussed and accurately defined in the soundstage, as the music becomes a little muddled in the midrange. Across its two circuits, the MyGroov seems to fare better through its moving magnet input being fed by the Ortofon cartridge, as evidenced by Vaughan Williams' *The Lark Ascending*, which is given a far greater sense of scale and colour in this mode compared with its MC input being fed by the Denon. So it's certainly worth experimenting with alternative cartridges to find a suitable match that suits you ●



## HIFIChoice

### OUR VERDICT

#### SOUND QUALITY

★★★★★

**LIKE:** Easy to use; forgiving character

#### VALUE FOR MONEY

★★★★★

**DISLIKE:** Sound lacks detail

#### BUILD QUALITY

★★★★★

**WESAY:** Straightforward phono stage that blends simple features into a user-friendly package

#### FEATURES

★★★★★

#### OVERALL

★★★★★

★★★★★



## PDP 3000 HV

# DSD-PCM player with SACD disc mechanism



The PDP 3000 HV is the latest player in the HV series, and has been developed specifically to reproduce high-resolution audio data to uncompromising levels of quality. Its unique converter design consists of a **T+A** True 1-bit DSD converter for DSD data up to DSD 512, and a **T+A** 32-bit double-differential quadruple converter for PCM data up to 384 kSps.

The PDP 3000 HV is also designed to operate as a DAC, to allow external sources to exploit its extraordinary converter system, and therefore features seven digital inputs (incl. USB Class 2 mode).

The PDP 3000's high-quality SACD disc mechanism is fully shielded, and housed in a case machined from solid aluminum. The disc transport assembly is mounted on just two close-tolerance pushrods, which de-couple it completely from the heavy external case. The loading mechanism makes it easy to insert discs without damaging them; they are held securely in place by an anti-resonance puck.



Hand built in Germany, the PDP 3000 HV from T+A are available in the UK now.

For more information or to arrange a demonstration, please contact:

Dynaudio UK  
Tel: +44 (0)1353 721089  
Email: [info@dynaudio.co.uk](mailto:info@dynaudio.co.uk)





## Pro-Ject Tube Box DS £425

With its glowing bottles and settings galore, this little box blends a rich feature set with retro appeal

### DETAILS

**PRODUCT**  
Pro-Ject  
Tube Box DS

**ORIGIN**  
Austria

**TYPE**  
MM/MC phono  
stage

**WEIGHT**  
1.1kg

**DIMENSIONS**  
(WxHxD)  
103 x 72 x 144mm

**FEATURES**  
• Two ECC83 valves  
• Three gain  
settings  
• Stepless load from  
10 to 1,000ohm  
• Four input  
capacitance  
settings  
• Optional subsonic  
filter

**DISTRIBUTOR**  
Henley Designs

**TELEPHONE**  
01235 511166

**WEBSITE**  
henleydesigns.  
co.uk

**B**oasting no fewer than 11 compact models to choose from, Pro-Ject is quite clearly the king of the phono stage add-on market, with an offering to suit every budget and cartridge going. The DS is the most expensive valve-based phono preamp in the company's vast arsenal, and sits just below the Box range's flagship £650 transistor-based Phono Box RS (HFC 368).

Crucially, what sets the Tube Box DS apart from every other phono stage in our group is its use of valves in place of transistors in its output section, in the form of a pair of ECC-83 models with gold pins, which are employed within its dual-mono tube triode circuit. For many the sight of these little bottles will be enough to get their vinyl pulses racing, but Pro-Ject isn't ending the DS' feature set there. While MM pick-ups get the standard 47kohm loading, the DS' 4mm-thick alloy front panel also sports a rotary knob with infinite adjustment for MC pick-ups through 10 to 1000ohm.

Round the back are banks of jumpers to access a range of settings, with gain available at +40dB for MM pick-ups, +50dB for high output MCs and +60dB for medium-to-low output MCs. Input capacitance can also be adjusted to 47/147/267/367pF, while a final set of jumpers lets you bring in a subsonic filter below 20Hz.

Understanding all the jumper settings takes a bit of getting used to, and it's likely that you'll need to refer back to the supplied manual for guidance from time to time. But all in all, this is a highly versatile, well made and easy to operate product.

### Sound quality

While the Pro-Ject certainly lets its valves cast their analogue spell on the music, it becomes obvious quite quickly that it has been engineered to retain certain nuances that you'd also attribute to solid-state designs.

The dark and slow brooding tones of The Handsome Family track are where the Tube Box DS is most in its element, and there's a sense of rich romance in the vocals and trumpet that's absent from the Clearaudio and Edwards models. But aligned with this is a sense of instrument separation and bass control that's almost up there with the Sonneteer and Lehmannaudio offerings.

While the DS may not be as accurate in the imaging stakes as say the Lehmannaudio, the slightly warm tonality it brings to the music across both of its MM and MC circuits makes for an equally inviting listen. As the violin climbs the upper frequency

### LOT OF BOTTLE

Despite being largely replaced by solid state transistor designs from the seventies onwards, valve-based amplifiers have remained popular due to the unique analogue warmth they bring to the music, which has led to a renaissance in recent years.

The ECC-83 tube was developed around 1946 by RCA engineers in New Jersey and its popularity with valve amp enthusiasts has helped keep it in continuous production ever since. The original ECC-83, also known as the 12AX7, was based around bringing two 6AV6 triodes into one package. The 12AX7 is typically a high gain, low plate current triode best suited for low-level audio voltage amplification, such as in preamp stages, making it ideally suited to phono stages. The version employed in the Tube Box DS and cheaper Tube Box S is a low-noise 12AX7A variant. And with so many ECC-83 tubes to choose from, the DS brings with it the option for experimenting with valves from a range of suppliers, until you find a flavour that best suits your palate.

range in *The Lark Ascending*, the DS ensures these higher notes are wrapped in silky textures to prevent them from becoming sibilant or grainy, which makes the music sound all the more natural

While the Pro-Ject's soundstage doesn't push out as wide as some of the phono stages on test and nor is it as deep, its boundaries are well defined with instruments well spaced within it. On the Ásgeir Trausti track, everything is given space to breathe and there's no sense of any two sounds or instruments competing for your attention. Feed it some Pixies and things get a little more clouded and if pushed I'd welcome more body and grunt from the lead guitar ● ▶



### Hi-Fi Choice

#### OUR VERDICT

##### SOUND QUALITY

★★★★★

**LIKE:** Plenty of features; smooth valve sounds

##### VALUE FOR MONEY

★★★★★

**DISLIKE:** Could be more focussed

##### BUILD QUALITY

★★★★★

**WESAY:** Well built and fully loaded, the DS adds valve amp flair without breaking the bank

##### FEATURES

★★★★★

##### OVERALL

★★★★★



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# Sonneteer Sedley USB £649



From this British-based amplifier specialist comes a big phono stage packing a USB socket for digitising LPs

## DETAILS

**PRODUCT**  
Sonneteer  
Sedley USB

**ORIGIN**  
UK

**TYPE**  
MM/MC phono  
stage

**WEIGHT**  
6kg

**DIMENSIONS**  
(WxHxD)  
434 x 64 x 280mm

**FEATURES**  
• Five load settings  
• Range of  
capacitance  
settings  
• RIAA and IEC  
equalisation  
• Optional USB port

**DISTRIBUTOR**  
NuNu Distribution  
Ltd

**TELEPHONE**  
0203 5442338

**WEBSITE**  
nunudistribution.  
co.uk

**H**ailing from Esher in Surrey, Sonneteer has been flying its handmade-in-Britain flag since 1994. As the only full-width phono stage here, the Sedley stands out in the group as the Goliath of the gang. Unboxing it, you'd be forgiven for thinking you've been sent a hefty power amp by mistake as you wrestle its 6kg bulk from the packaging, its weight being accounted for by its steel case and a 160VA toroidal transformer inside.

Build quality is very impressive, especially considering the Sonneteer's price tag. The brushed alloy front panel sporting a single blue LED and laser-etched moniker is kept clutter free, as the unit's banks of DIP switches for configuring its settings are made accessible on its rear panel. These switches are simply numbered 1-10, so you'll need to consult the instruction manual each time you change its settings, unless you have a photographic memory!

Gain is set to +39dB for MM cartridges and +55.6dB for MCs, with 47k input loading for the former and 47/100/220/1000ohm on offer for the latter. You can select from a range of load capacitance values at 10/47/100/200pF, which can be combined with each other for even more flexibility. Users can also select

an IEC equalisation curve, which acts as a subsonic filter.

The Sedley USB's dual mono circuit is intentionally mirrored, with an active earth, which acts as a tracking circuit to help avoid any external earthing issues. Our test rig also gets a USB-B port, which adds £50 to the price of a standard Sedley and brings with it the ability to digitise your vinyl and output it to a computer, or pipe digital music into it.

## Sound quality

From the riotous rock of the Pixies, to the meandering melodies of *The Lark Ascending*, the Sedley is a very level-headed performer that seems unruffled by whatever you throw at it. In contrast to some of the phono stages on test that seem to favour certain types of music, it is able to get the best out of all the test material in equal measure.

On Ásgeir Trausti's *Leyndarmál* keyboard notes extend from the soundstage and hang in the air with natural grace. Bass is well rounded and without the bloom of the Edwards phono stage and yet more substantial than that of the Pro-Ject.

It presents the Pixies track with a fine blend of power and poise, ensuring that backing vocals and strings on *Monkey Gone To Heaven* get

## DIGITISE YOUR DISCS

While vinyl's resurgence means your turntable is guaranteed plenty of new material to keep it spinning, being able to turn your LPs into digital music files brings lots of benefits, from backing up your treasured collection to letting you enjoy it on your iPod. That Sonneteer fits a USB-B port to the Sedley for the price of a few LPs seems money well spent, considering a standalone analogue-to-digital converter such as NAD's PP4 costs £169.

The Sedley uses a Texas Instruments codec limited to 16-bit/48kHz. Not only does it let you output your LPs as digital files into its recommended Audacity (audacity.sourceforge.net) and LP Recorder (cfbsoftware.com) software, it also doubles up as a DAC and lets you play back files from your computer, simply by flicking a hidden switch on its underside. And because the Sedley's USB circuits are powered by your PC, keeping them separate from its own PSU and sensitive preamp circuitry, it doesn't need to be switched on when in DAC mode.

equal billing and aren't overpowered by the lead vocal and guitar.

Configured to MC mode and with the Denon calling the shots, the Sedley really excels as the soundstage and instruments within it gain more weight. In this mode *The Handsome Family* track has more impact across the midrange and upper bass, which makes some of the budget phono stages on test sound somewhat hollow in comparison. This trait is particularly evident in the louder sections of the Vaughan Williams piece, as the Sonneteer fills the soundstage with an almost impenetrable wall of strings that rise from an inky background and come to the fore on a grand scale ●

## Hi-Fi Choice

### OUR VERDICT

#### SOUND QUALITY

★★★★★

**LIKE:** Tank-like build; USB input; lovely sound

#### VALUE FOR MONEY

★★★★★

**DISLIKE:** A bit too well mannered at the extremes

#### BUILD QUALITY

★★★★★

**WE SAY:** Full-size phono stage gives a commanding performance that's hard to beat

#### FEATURES

★★★★★

### OVERALL

★★★★★





# Group test verdict

After countless laps around his wheel of steel, **Andrew Simpson** raises the needle to sum up the pros and cons of this month's six-strong shortlist

**WHILE IT MAY** seem like a cliché to say that each model offers a sonic presentation and feature set that will appeal to different tastes and systems, it's true. If you're just starting out on your vinyl journey and want a simple solution with a forgiving nature, the Micromega could be for you. But it's also the first to head for the hills because it's outclassed by the Clearaudio, which costs only £25 more. Among its peers at the £200 price point, the Nano V2 is hard to beat in terms of its full blooded sound, but it lacks finesse compared with more costly rivals and despite

being in Mk2 guise, its DIY resistor system isn't that user friendly. Next comes the stylish Edwards with its simplified feature set and quality PSU. It's a good all-round package that has great treble clarity and is exceptionally quiet while sounding even more sophisticated in MC mode, but its bass can be overpowering on some material.

Features and finish wise the Pro-Ject is great value for money. Soundwise it walks a fine line between solid state punch and the silky sweet tonality of tubes, although valve fans may crave more of the latter. Where it falls short

is in terms of instrument separation and imaging. It's a joy to listen to, but not quite as accurate as some of its similarly priced rivals.

And so to the Sonneteer, which rarely puts a foot wrong, and neither should it as the most expensive model. Its performance is powerful yet focussed, to ensure its energy is concentrated in the right areas without leaving anything out. What's more, its USB port is a bonus that many will welcome. What keeps it from the top spot is its tendency to sometimes err on the side of being too cautious.



**WINNER**

The Black Cube's no-frills looks certainly won't win it any beauty contests, but its sound is fantastically open and detailed, with an expansive soundstage that's easy to get lost in. Put simply, the offering from Lehmannaudio performs well beyond its price point.

Make/model	Clearaudio Nano Phono V2	Edwards Audio MC1/PSU1	Lehmannaudio Black Cube	Micromega MyGroov	Pro-Ject Tube Box DS	Sonneteer Sedley USB
<b>Price</b>	£225	£500	£400	£200	£425	£649
<b>Sound</b>	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
<b>Value</b>	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
<b>Build</b>	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
<b>Features</b>	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
<b>Overall</b>	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
	Solid little stage that's hard to beat at the price. Easy to use with MM cartridges	Sophisticated pairing with a top-quality standalone PSU. Works well with MCs	Get past its rather dull looks and it's an unbeatable phono stage at the price	Good starter stage that blends simple features into a user-friendly package	Well built and packed with features. This gives you a taste of the valve high life	Tank-like build, lots of settings and USB adds up to a lifetime of vinyl pleasure

## Key features

<b>MM/MC</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Gain settings</b>	Variable for MM/MC	Fixed for MM/MC	Variable for MM/MC	Fixed for MM/MC	Three	Fixed for MM/MC
<b>Load settings</b>	51/200/402/1k/47kohm	100ohm/47kohm	100/1k/47kom	100ohm/47kohm	10-1,000ohm variable	47/100/220/1k/47k
<b>USB output</b>	No	No	No	No	No	Yes
<b>Off-board power supply</b>	Yes	Yes	Yes	No	Yes	No

## TRY WITH THESE

### TURNTABLE: Analogue Works Turntable One From £799 HFC 388

This stunning deck is packed with sensible features to really get your records singing. With a low torque standalone AC motor, separate power supply unit and rubber damped alloy platter it'll bring out the best in your phono stage.



### MOVING COIL CARTRIDGE: Ortofon Quintet Blue £325 HFC 389

From one of the planet's biggest cartridge manufacturers, this mid-priced pick-up serves as a fantastic introduction into the world of MC cartridges. Its solid body makes it easy to install while offering features from Ortofon's premium models.



### INTEGRATED AMPLIFIER: Naim Nait 5si £950 HFC 378

This British-built integrated has a considerable pedigree owing to Naim's 40 year history of making fine high-end amps. Build quality is first class, with four line-level inputs and enough power on tap to deliver a highly musical sound that's hard to beat this side of £1k.



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# Watt's up?

If you're looking for a performance boost without the box swapping risks, **Ed Selley** thinks IsoTek could have just the solution

**T**he business of upgrading a system that has a synergy between components can be a slightly fraught experience. Even when you stay with the same manufacturers, the arrival of a new product can throw a previously happy relationship between existing products out of line. This can then demand further updates to cure and in some unhappy instances, leave you wishing you hadn't bothered. Equally, if you want a performance boost, you have to look at swapping a component out – or do you?

IsoTek has been in the business of providing another upgrade option since 2001. The company focuses on

the mains supply that a system receives and seeks to improve the quality of the electrical current your system takes in to assist with performance. This is focused on the removal of mains-borne interference. Depending on how power lines are rigged in your corner of the world, your power supply can find itself infested with electromagnetic and radio frequency interference. Even once it reaches your home, the proliferation of Ethernet over mains devices, baby monitors and white goods can throw a great deal of noise back onto your mains.

The Evo 3 Sigmas is actually a combination of two IsoTek

components – the Titan, which is designed for power amplification and the Nova optimised for source equipment. These functions are cut down in the Sigmas, but when you take into account what the Sigmas can do, this is more a reflection that the Titan and Nova are determinedly over specified than any sense of cost cutting in the Sigmas. As such, the Sigmas is fitted with six mains sockets. Two of these are intended for high-voltage applications such as power amplifiers, while the other four cater for source equipment.

The amount of power the Sigmas disposes of to do this is impressive. The two high-voltage sockets have a total of 3,680W available to them while the four low-voltage ones have a total of 2,300W on tap. As such, even though the Sigmas is very much in the centre of the IsoTek range, it can handle some distinctly high-end power requirements. The other arresting number from the specifications comes in terms of protection. By using an array of voltage-dependent resistors, it offers 108,000A of protection against surges, spikes and other nastiness.

## DETAILS

**PRODUCT**  
IsoTek Evo 3 Sigmas

**ORIGIN**  
UK

**TYPE**  
Mains conditioner

**WEIGHT**  
10kg

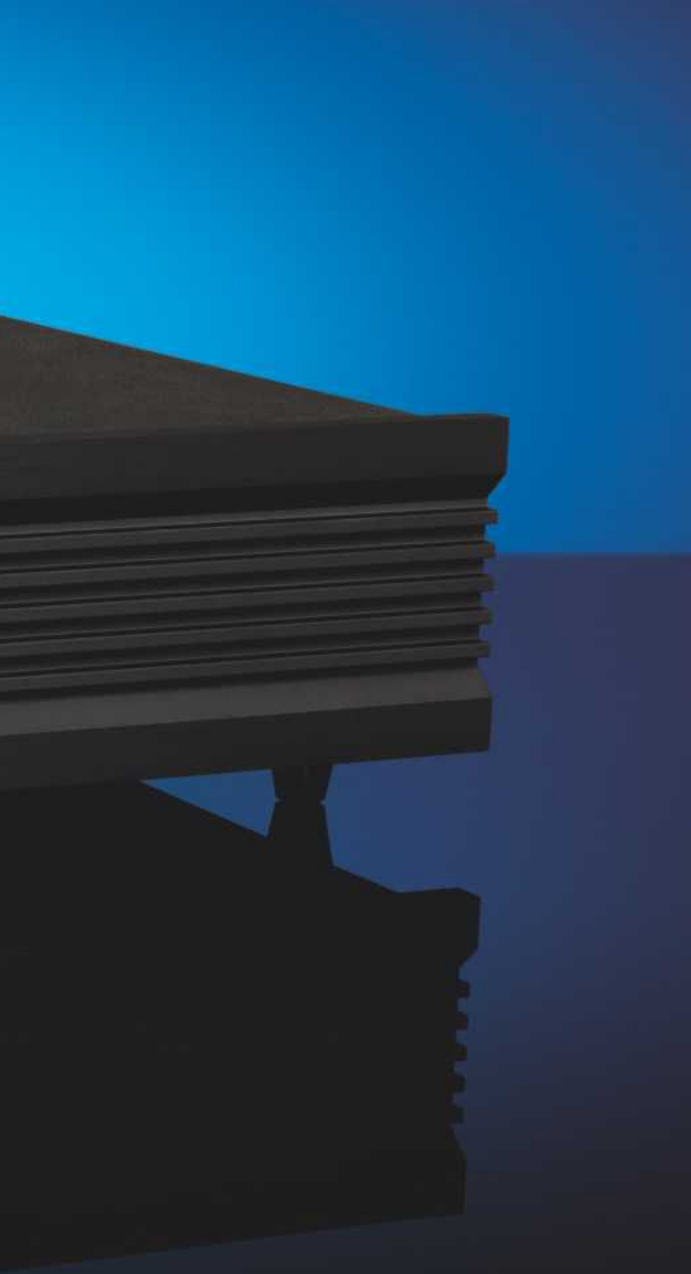
**DIMENSIONS**  
(WxHxD)  
444 x 85 x 305mm

**FEATURES**  
• Quoted power output: 3,680W (high current) and 2,300W (low current)  
• Six output sockets

**DISTRIBUTOR**  
Sound Foundations

**TELEPHONE**  
0118 981 4238

**WEBSITE**  
isoteksystems.com



The figures are certainly impressive, but there is so much more than just brute force to the design. Perhaps the most important aspect of the Sigmas – and certainly one that matters to the overall performance – is that it is made up of six individual filters. There is no connecting wiring between the sockets and each one has a dedicated filter network. This means that even if you have a component with some decidedly

**That display can be bright, but it can be turned off**

dubious behavioural characteristics connected to the IsoTek, those characteristics shouldn't have an adverse affect on anything else. Internally, it is wired with high-purity copper wiring while the circuit boards make use of gold-plated copper connectors for optimal signal transfer.

This attention to detail extends to the outside of the product, too. The Sigmas is finished to a standard that is extremely good even at the asking price. The casework is solid, exactly assembled and – as much as a power conditioner ever can be considered attractive – aesthetically pleasing with a clean and uncluttered appearance. The only slightly discordant note is the display that will either show watts being supplied or the total percentage of total power that the Sigmas is delivering. This is clear and easy to read, but also extremely bright. With the lights off in the listening room, the effect brings to mind an alien abduction and while it can be switched off, it can't be dimmed which is a little irritating, but not the end of the world.

This is perhaps the only design curiosity in an otherwise very well thought out product. As someone that has used an Evo 3 Aquarius for some time now, one of the most useful tweaks to the Sigmas is that the mains sockets are now at a 45° angle, which makes the 'flow' of cables out the back much easier than the 12 o'clock arrangement of the Aquarius and makes the installation of the Sigmas simplicity itself.

This ease of installation means that the performance of the system in question – a Naim Supernait 2 integrated amp, ND5 XS streamer with XP5 XS power supply, Arcam airDAC and Michell Gyrodec with Avid Pellar Phono stage – goes in with minimal fuss. Given the care Naim lavishes on its power supplies, particularly the external ones, I am

interested to see what the IsoTek can bring to a system of this nature.

### Sound quality

The good news is that the impressive technical specification of the Sigmas translates into performance gains and the really good news is that none of these gains change the basic character of the system. The Naim electronics keep their powerful, slightly dark presentation and the excellent detail retrieval takes another step forward as noise levels that were already low simply drop away to nothing. The bass response was never an area I felt

### If you are looking for a wholesale boost to your system, the Evo 3 Sigmas is it

short changed in, but now it has a little extra speed and agility over and above what it had before. Soundstage is not a concern of the Naim sound, but the Sigmas manages to create a sense of space to the performance that opens the presentation out without losing the sense of focus and drive that the system excels at. The effect is uncannily like the strapline for Berocca vitamin tablets – my system, but on a really good day.

One of the more unusual aspects of the Sigmas is that the improvements don't seem to negate the effects of other power products. When connected directly to the IsoTek, the ND5 XS streamer is unquestionably better than when hooked up to the mains, but connecting the XP5 XS power supply back up still reaps the benefits that it does when the Sigmas isn't used, and removes almost any sense of 'digital' to the presentation. This does mean that if you are unhappy with an aspect of your

### CONNECTIONS



- 1 IEC mains input socket
- 2 High-voltage sockets
- 3 Low-voltage sockets



## Q&A

Keith Martin

General manager, IsoTek Systems



**ES: Is there a cut-off rule of thumb for best use of the high voltage outputs over the low voltage ones?**

**KM:** The question of high current and medium current isn't just power consumption, it is how that power is consumed. For example a plasma will draw continuous current, thus the circuit would be different to that of a power amp (not class A), which needs to gulp current when the music is dynamic. So it's also a question of high-current and low impedance.

The medium-current side of the Sigmas auto adjusts to the load, so if you were to place a CD player (30W typical) next to a projector (300W typical) the circuit would auto adjust to give the best filter environment.

**Is there a system price point where you would recommend the Sigmas over the Aquarius and Solus?**

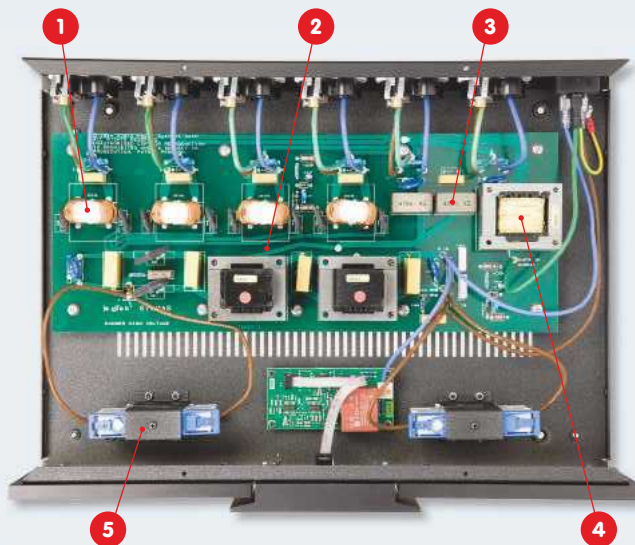
This is always a contentious question. We say between 10-20% of a system's value, however in some demos we've put in power conditioning systems costing double that of the system's value, and the system sounds more than twice as good!

But we'd say you're probably getting 80% of system potential without considering a good, properly designed (for purpose – for audio usage) power cleaning solution. It's similar to purchasing a sports car and not thinking about the road on which you drive it. Logic states driving it on grass won't be as good as flat tarmac!

**With the changes to what we connect to the mains, are there best practice principles to follow?**

The basic problems of common mode, and differential mode noise are always there. We have increased challenges by the increased use of Class D power supplies that disrupt the mains more (differential mode). The use of more and more electrical appliances in our homes. The use of wi-fi in our homes (common mode), some companies offer products to boost wi-fi signal by turning your ring main into a giant aerial – nice for common mode and RFI. Products will be released to deal with this, which will be backwards compatible with existing IsoTek systems.

## IN SIGHT



- 1 Bespoke high-current Common Mode radio frequency 10A choke
- 2 Bespoke high-current Common Mode wide bandwidth 20A choke
- 3 High-quality Evox Rifa paper capacitor
- 4 Bespoke Differential Mode 20A choke
- 5 Thermo magnetic fusing 10A (medium) and 16A (high)

system's performance, the Sigmas is unlikely to correct it and could theoretically exacerbate it – although in this case you'd surely be looking to change the equipment in question before you think of adding a product of this nature.

The other trait of the Sigmas that might be worth taking into account is that while I feel devices that run at standard mains voltages benefit quite considerably from its addition, I am less convinced the benefits on low voltage 'wall wart' type products are as clear cut. The Arcam airDAC I use mainly to allow streaming of the Tidal service to the system doesn't seem to show the same benefits as the main streamer. It certainly doesn't get any worse, but the performance is fairly consistent across connection to a standard mains gantry and the IsoTek. Neither is this limited to the Arcam. The Chord Hugo also behaves in much the same way (although as there are batteries in the Chord, this is less surprising). Given systems that run on lower overall voltages are popping up at higher price points, this might be something to take into account before choosing one.

The news for equipment that uses higher voltages is almost exclusively good, however, and even when the current demands are not very high – the Avid Pellar barely registers on the voltage consumption display – the benefits are immediate and effectively viceless. Neither are they limited to audio. Some tests with a Panasonic plasma TV (which is habitually connected to the Aquarius conditioner) see a small but useful drop in picture noise when connected to the Sigmas, which means that if

you have sockets going spare on your IsoTek, other bits of AV equipment will benefit from it.

## Conclusion

The Sigmas is not a magic bullet product. It won't correct glaring errors in the way a system performs and there are conditions – both in terms of product design and your location – where its impact will be lessened, but this should not take away from what it does. If you have a system that performs in the way you want it to and you want to try and make it better, the Sigmas delivers in spades. There are very few products that can deliver improvement across the board to a multiple unit system, but this is very definitely one of them. It is able to wring that little bit more out of a system and given its transparency and immense current delivery should be able to handle a few upgrades if you do decide to push the system further in the future. If you are looking for a wholesale boost to your system, you've just found it ●



The Sigmas is most closely competitive with the Isol-8 SubStation (reviewed HFC 344) and both products go about trying to achieve the same role and offer similar functionality. The Sigmas is less expensive than the Isol-8 and the single chassis design is more convenient in terms of placement. Both units are well finished, but the consumption display of the IsoTek, while a little bright is a useful feature to have. Both products have similar provisos in terms of what they can and can't do, but the IsoTek looks like the better value option in this context.

## Hi-Fi Choice

### OUR VERDICT

#### SOUND QUALITY

★★★★★

#### VALUE FOR MONEY

★★★★★

#### BUILD QUALITY

★★★★★

#### FEATURES

★★★★★

#### OVERALL

★★★★★

**LIKE:** Offers a boost to performance without changing character

**DISLIKE:** Less effective on some low-voltage components

**WE SAY:** This is a tremendously effective and very well implemented mains treatment system



Apprentice MM  
Phono stage  
HFC Recommended  
2014



# TALK

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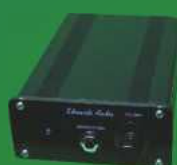
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HA1 headphone amplifier



# Gee whizz!

Arcam's new integrated amplifier promises superior sound and affordability thanks to Class G operation. **David Price** listens in

**W**hile the class system may no longer dominate British society the way it once did, it's still an inescapable fact of life if you are an amplifier. Despite the rapid march of technology, the huge advances in computerisation and the pushes forward achieved by ultra large-scale integration, there's just no getting away from it as far as hi-fi is concerned.

The problem is switching distortion, an unpleasant phenomenon caused by the need for output devices to run in Class AB (or B) mode switching at high speed. This happens because in a normal push-pull Class AB amplifier circuit, a transistor only conducts half (180°) of the signal waveform, leaving the paired transistor to cover the other half. The point where the two switch between one another is plagued by non-linearities, causing crossover distortion, which is

intrusive to the human ear. This is why the better hi-fi amplifiers tend to be biased closer to Class A.

This type of operation, where the transistors are always powered up, gives dramatically lower measured distortion as a rule. It's normally expensive, though, which is why you find it so often in high-end amplifiers, which cost many times the price of the Arcam FMJ A39 reviewed here. The sound is super smooth, clean and musical – not least because the circuits are relatively simple. The main downside, of course, is the huge amount of heat that is produced. With a bank of transistor output devices always fully energised, things don't stay cool by the pool!

Admittedly Class A solid-state amplifiers are not quite as toasty as a row of EL34 valves or suchlike, but still many would find the heat produced impractical. My own

## DETAILS

**PRODUCT**  
Arcam FMJ A39

**ORIGIN**  
UK/China

**TYPE**  
Integrated amplifier

**WEIGHT**  
11.5kg

**DIMENSIONS**  
(WxHxD)  
433 x 100 x 425mm

**FEATURES**  
• Quoted power:  
120W RMS per  
channel into 8ohms  
• 7x RCA phono  
line inputs; 1x  
3.5mm front panel  
input jack  
• 3.5mm  
headphone output

**DISTRIBUTOR**  
Arcam

**WEBSITE**  
arcam.co.uk

example of the venerable Class A Musical Fidelity A1, for example, runs rather hot with the top of the distinctive case hitting 68°C. It also consumes 80W continuously, which is effectively like having a bright light on all the time; larger Class A designs can gobble up to three times this much power. While it sounds great, it's clearly not ideal for everyone and indeed this particular amplifier is famous for its low power and lack of long-term reliability.

Like almost all other affordable solid-state amplifiers, Arcam designs have traditionally run in conventional Class AB, which has higher efficiency than Class A, but lower distortion than Class A. This is done by biasing both transistors to conduct a little at and near to zero signal output, while transitioning to Class B for higher signal currents. The company's new generation of higher-end amplifiers, however, turns off the non-conducting transistor much more slowly than in normal designs using a mix of positive and negative feedback in the output stage. This means that it operates in near Class A up to about 20W output, to all intents and purposes loud enough for most people.

Think of it like a hybrid car in some ways. The output stage's supply rail voltages are varied according to the signal level; it uses multiple power supplies rather than just a single one,





gradually bringing in the secondary supply as the dynamic load demands it. This makes for a cool running amplifier that sounds similar to a Class A design at real-world volumes. Arcam calls it a Class G amplifier, and it's traditionally seen in pretty high-end designs because of its relative complexity and cost. The company says it has been working on this system for many years, and it certainly sounds different to previous Arcam amplifiers and many rivals.

In other respects, the A39 is more traditional. It sports a good-quality toroidal power supply, acoustically damped chassis and a built-in moving magnet phono stage. Arcam says it

**The design is classic Arcam, mixing simplicity with style**

uses exclusively metal film resistors in the signal path, which have a much higher linearity than cheaper parts. Also, careful attention has been paid to every aspect of the PCB layout, it claims. It's a clean-looking device and decently well made too; you wouldn't know that production of this particular series of products has now switched to China. The controls respond positively, and it has a wide range of (analogue) inputs and, of course, twin switched speaker outlets. In use I have no reason to doubt the claimed power output rating of 120W per channel into 8ohms (and 240W into 4ohms), and even at high volume levels this powerful integrated runs as cool as a cucumber.

### Sound quality

No sooner have I queued up Suede's *Lazy* do I realise that this is a special sounding amplifier, and quite distinctive in its own way. In the broadest of senses, it's a typical Arcam product with quite a fulsome bass, an impressively wide soundstage that pushes well to the left and right of the loudspeakers and a midband that is unerringly smooth. Treble seals the deal; it's beautifully sweet and delicate by £1,500 integrated amplifier standards.

Of course, Arcam has been making amplifiers in this mould for many years – some would say right back to the original A&R Cambridge A60 of almost 40 years ago – but what separates the FMJ A39 from previous eras is its wonderfully lucid sound. The Suede track is pretty lousily recorded and heavily processed, but still the Arcam cuts right to the musical heart of the matter, serving up a wonderfully bouncy baseline that syncopates beautifully with the drummer's hi hat and snare drum playing. Good though they are, earlier generations simply aren't as adept at capturing the song's intricate

rhythms; this new amp is a real piece of work, as the Americans would say!

Not only is it a musical device, but it has an excellent tone too – one doesn't always follow the other. Arcams are often characterised as fairly warm sounding, but this adds sophistication and subtlety too. The song sounds sandpappy through most sub-£3,000 amplifiers, but the Arcam is able to skillfully pull out the lead vocalist and those heavily

**It can hold its head high in the company of any other design at the price**

processed guitars from the rest of the mix. At the same time it lets itself have great fun with that brilliant walking bass guitar work. The result is something that is never tiring to listen to, no matter how bad the recording; as such it should suit any of the current generation of modern, stark-sounding loudspeakers.

Its scale is vast, considering its price. Feed it some modern pop in the shape of Daft Punk's *Get Lucky* and the A39 is at once big, bold and powerful. It presents the music in a dynamic and gutsy way, yet again has great fun with Nile Rodgers' brilliant bass guitar work. Its emotional lucidity is excellent too at the price; able to carry the emotion inside the song, and in some respects it reminds me of the aforementioned Class A Musical Fidelity A1.

*Robbery, Assault And Battery* by Genesis is another musical treat; the amplifier seems able to swing large amounts of power at the drop of a hat, and remains totally unflustered while so doing. Even when pushing very hard and getting serious volumes out of it, the A39 remains completely in control. The amplifier sets up a

### CONNECTIONS



- 1 Earthing post for turntable
- 2 Twin switched speaker outputs
- 3 DC power socket
- 4 USB input
- 5 Analogue inputs
- 6 Phono MM inputs

## Q&A

**Nick Clarke**

Chief engineer, Arcam



**DP: What's the story behind Arcam and Class G?**

**NC:** Originally, we became interested in it for our AVR range of AV receivers, which require multiple high-power amplifiers in a small space. As we developed the technology over the past six years, we realised that we could also make a fantastic stereo amplifier with good efficiency and excellent current reserves. As with many topologies, the implementation is almost more important and it's in this area that we feel we have made the most progress. Class G requires additional transformer windings and a more complex power supply, which adds cost. In addition, there are numerous challenges regarding the current spikes from the lifter components – so you could end up trading crossover distortion for worse issues from the Class G circuitry if it's not done right.

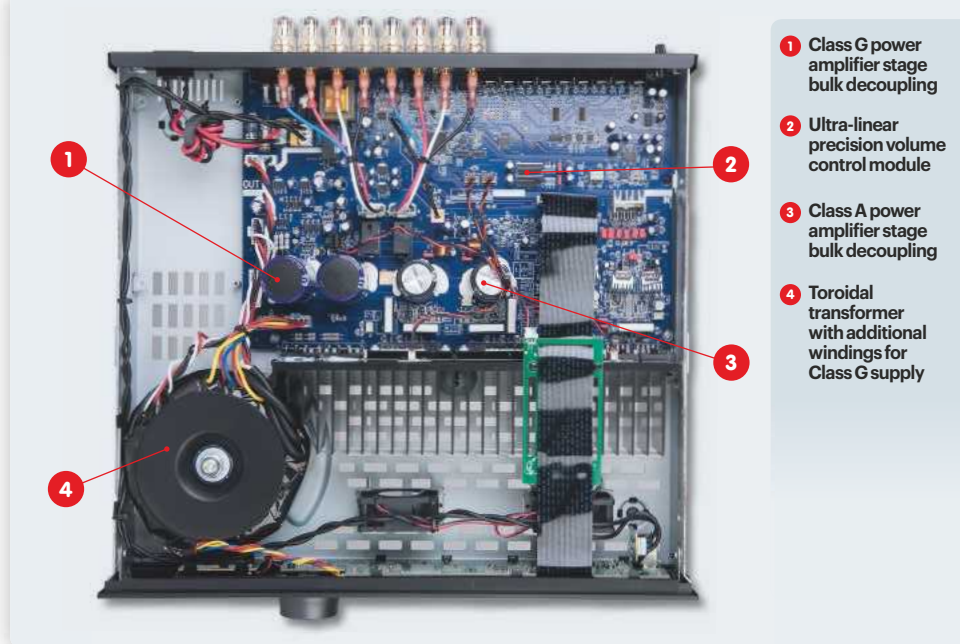
**Why doesn't the FMJ A39 have a moving coil cartridge option?**

As you know the A38 had an optional MM/MC module that could be fitted. The A39 has a standard MM/line input, switchable so the input is not lost if the end-user does not have a phono source and wants to use the input as a line input. We didn't offer any MM/MC functionality because we feel it is better for owners to invest in a standalone phono stage.

**How does the A39 differ technically from the pricier A49?**

The two designs are technically very similar in terms of the Class G amplification, but in the A49 we use three pairs of output transistors per channel as opposed to one pair in the A39. Finally, the A49 has a fully balanced preamp, which the A39 does not. Of course, you can expect more Class G products from Arcam in the future. Overall, we think we have a very neutral sound with the A39, as evidenced by the fact the amplifier is at home playing any genre of music, attached to any loudspeaker, including some normally difficult-to-drive designs.

## IN SIGHT



- 1 Class G power amplifier stage bulk decoupling
- 2 Ultra-linear precision volume control module
- 3 Class A power amplifier stage bulk decoupling
- 4 Toroidal transformer with additional windings for Class G supply

large and spacious recorded acoustic, inside which the midband bristles with detail, despite lacking the glassiness of some superficially more detailed rivals. Powerwise, you'll have to have a seriously large listening room and/or the auditory faculties of a post to want higher sound pressure levels; what is Arcam's FMJ A49 for one wonders?

If there's one area where one can criticise it, it's in its handling of stereo images. It's not bad for the price at all, it's just it doesn't match the amplifier's lofty high standards in other departments. In absolute terms images could do with being a little more precisely located and also it could push images forward better, and hang them back just a little more. Perhaps that's why you buy the A49? In truth though this does feel just a little churlish, as it is very similar to what you get from Exposure's *Group Test*-winning 3010S2, for example (HFC 373).

In the context of its group this amplifier sounds absolutely superb, and you'd be wise to give it an audition. What I really appreciate is its even-handedness, its sheer unflappability and generally pleasing and musical demeanour. Previous Arcam integrations have always auditioned very well, but there's been a sense that they're compromised sonically slightly in a bid to give a wider range of functionality and/or more power than their rivals. The FMJ A39 needs no allowances making for it; quite simply it's a sparkling sounding device and can hold its head

high in the company of any other design at the price, regardless of whether it's well specified or not.

## Conclusion

Going back as far as the A&R Cambridge A60 from the seventies, there has always been a sense that Arcam amplifiers are 'very good, but not for all'. Rather than delivering out-and-out sonic performance, they have proffered an attractive blend of crisp, smooth, enjoyable sound and lots of facilities; the caveat being that there is always a rival or two at the price that beats it on sound. Now though, the FMJ A39 doesn't need any extra provisos; it's right up there on the pace in sound quality terms, with no excuses necessary. But it continues to possess excellent build, facilities and styling too. In other words, it's one of the company's most competitive offers ever, and well worth auditioning ●



There are two strong sub-£2K contenders from Creek (*Destiny*) and Exposure (3010S2). The Exposure is arguably the better all rounder; the Creek's sound is mellifluous and smooth, but the 3010S2 gives greater power, punch, clarity and energy. If anything, the FMJ A39 sounds louder and punchier still, with a lovely, ballsy, bass; the Exposure is no shrinking violet, but runs out of steam at high levels sooner. In the midband, the Exposure is a little more opaque, slightly grainier and mushier, but you'd never call it harsh; it just doesn't have the silky clarity of the Arcam. It sets up an expansive stereo soundstage and seems a little more immediate and upfront than the Arcam. As ever, an audition is a good idea.

## Hi-Fi Choice

### OUR VERDICT

SOUND QUALITY



VALUE FOR MONEY



BUILD QUALITY



FEATURES



OVERALL



**LIKE:** Powerful, clean, smooth, musical sound; build

**DISLIKE:** Nothing at the price

**WE SAY:** Arcam's best ever mid-price integrated amplifier



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# Lust for lifestyle

Looking for a modern floorstander on a budget? **Lee Dunkley** checks out this bargain-priced model for its hi-fi credentials

**P**roving that you can balance good looks, price and performance, Roth has managed to carve out a respected name for itself with a range of TV soundbars, desktop speakers and DAB radios designed to be as much about style as they are listening to music. It's an impressive goal, and the undeniably fine build quality of its products is one that has held the AV company in good stead with its popular range of OLi loudspeaker models.

The OLi-RA3 is the baby in its two-strong floorstander range, and

terminals. Cabinet tuning claims to deliver bass down to 55Hz from the compact floorstander, but the trade off is the quoted 85dB sensitivity/efficiency figure, which suggests that it needs pairing with a reasonably powerful amplifier to give its best.

## Sound quality

Given the affordability of these easy-on-the-eye floorstanders, the OLi RA3's compact cabinets deliver a far bigger sound than you might expect

## The Roth's compact cabinets manage to shift a substantial chunk of air

has the same clean styling as the OLi-RA4 that appeared in our floorstanding loudspeaker *Group Test* in HFC 391. As well as mirroring its big brother, the style matches the rest of the range that incorporates two bookshelf models, alongside matching centre and sub should you wish to make your system a multi-channel home cinema setup.

Measuring 884mm tall, the OLi RA3 is among the most compact floorstanders I've seen. The modern rounded edge cabinets and clean lines look good to my tastes, and the gloss black or white flat finish is neat across the solidly constructed MDF cabinets. Speaker weight is substantial enough and a wooden plinth screws onto the bottom of each cabinet with metal spikes provided to help give more stability when positioned on carpets.

Behind the magnetised front speaker grilles you'll find a 25mm silk dome tweeter, two 135mm woven fibreglass mid/bass drive units that run in tandem, with a large bass reflex port at the back along with bi-wire speaker

## DETAILS

**PRODUCT**  
Roth OLi-RA3

**ORIGIN**  
UK/China

**TYPE**  
2-way floorstander

**WEIGHT**  
11.2kg

**DIMENSIONS**  
(WxHxD)  
180 x 884 x 212mm

**FEATURES**  
• 25mm silk dome tweeter  
• 2x 135mm woven fibreglass mid/bass driver cones  
• Quoted sensitivity: 85dB/1W/1m

**DISTRIBUTOR**  
Roth AV Ltd

**TELEPHONE**  
01753 682782

**WEBSITE**  
rothaudio.co.uk

and manage to shift a substantial chunk of air. The solid box shows little in the way of unpleasant cabinet resonances, and produces a decidedly likeable sound, albeit one that's presented in rather broad strokes and is not entirely neutral.

Bass level output is impressive at the size, and Laura Mvula's pacey rhythms come across convincingly listening to her *Green Garden* track, delivering enough infectious energy to project out into my medium-sized listening room. It's an effusive sound, but listen a little closer and vocals appear to be placed that bit further back in the mix, giving the Roth speakers a more relaxed or restrained presentation in the way mid-range frequencies are conveyed, and some of the track's acoustic atmosphere and openness is lost.

Lorde's *Royals* with its wandering bass line is handled well throughout, but the OLi RA3 sounds as though the treble has been rolled off just a bit too early, and ultimately lacks the sparkle to reveal the track's usual expansive soundstage. It's not offensive in any way, but the over politeness is unrewarding when it comes to a sense of front-to-back depth information, making the track feel rather one dimensional across the plane of the speakers. While this makes the RA3 more forgiving to the ear with compressed music like MP3 and AAC formats, music fans looking to reap the sonic rewards from their collection of high-resolution recordings will be left feeling shortchanged from the rolled off treble detail that undoubtedly affects clarity and stereo soundstaging.

## Conclusion

As an introduction to floorstanding speakers, the Roth OLi RA3 makes a stylish start. There's plenty to like in this deceptively big sounding compact floorstander, and is worthy of audition at the price ●

## IN SIGHT



## Hi-Fi Choice

### OUR VERDICT

<b>SOUND QUALITY</b> ★★★★★	<b>LIKE:</b> Solid construction and stylish finish; punchy performance; price
<b>VALUE FOR MONEY</b> ★★★★★	<b>DISLIKE:</b> Recessed mid clarity; lack of treble detail
<b>BUILD QUALITY</b> ★★★★★	<b>WESAY:</b> Stylish entry-level floorstander that has a fun sound, but lacks some balance
<b>EASE OF DRIVE</b> ★★★★★	

### OVERALL





# Northern lights

**Chris Ward** discovers if Hegel's latest amplifier/DAC from Norway can brighten up those long winter nights

**S**candinavia is rightly celebrated for its broody TV detective shows, natty knitwear, unforgiving weather and gorgeous design aesthetic, but is also becoming known for hi-fi excellence. Norwegian manufacturer Hegel is part of a wave of Nordic names grabbing our attention, and this is its latest integrated amplifier, the H160.

Back in issue 391 we reviewed the manufacturer's H80 integrated amp and DAC and were left suitably impressed. Now it's the turn of the H80's bigger brother, which promises to improve upon the fine work of its sibling. The H160 is a little bit deeper and taller and considerably heavier,

hinting at some greater muscularity. The H160 looks and feels that little bit more beefy and appetising.

The same understated design ethos as its sibling remains, with a blue-lit LED display flanked by twin rotary controls that smoothly change source input and volume. It gains a headphone output stage and boasts a slightly different mix of input options. It only has one dedicated analogue RCA input alongside another fixed-level RCA input designed for home theatre applications (which can be reconfigured to be a regular RCA input if required). It also retains the H80's quality balanced analogue XLR input for those with balanced analogue sources.

## DETAILS

**PRODUCT**  
Hegel H160

**ORIGIN**  
Norway

**TYPE**  
Integrated amplifier with DAC

**WEIGHT**  
19kg

**DIMENSIONS**  
(WxHxD)  
430 x 120 x 410mm

**FEATURES**  
● Claimed power output: 2x 150W into 8ohms  
● Digital inputs: coaxial; 3x optical; USB; Ethernet  
● Analogue inputs: 2x RCAs (1x labelled fixed level for home theatre); balanced XLR  
● AKM4396 24-bit/192kHz DAC

**DISTRIBUTOR**  
Hegel Music Systems

**TELEPHONE**  
0047 22605660

**WEBSITE**  
[www.hegel.com](http://www.hegel.com)

On the digital front it boasts three optical inputs, one digital coaxial, a single USB input and an Ethernet port to hook it up to your home network to access stored music files and enable control via AirPlay.

Seen like this, the H160 is unashamedly a product of the 21st Century, inviting prospective owners to it as a digital hub that will enable you to just plug-and-play a host of digital sources alongside an analogue source or two. Digital processing maxes out at 24-bit/192kHz for optical and coaxial inputs with the 'non-asynchronous' USB input topping out at 24-bit/96kHz. AirPlay is currently limited to CD quality – 16-bit/44.1kHz.

Hegel has selected the AKM4396 chipset for DAC duties in the H160. This bodes well as it's a technical choice I have appreciated before. Control can be via AirPlay or the purposeful metal remote. As handsets go, this fully metal affair is as sturdy as they come and it still retains a deep coldness from Norway even after weeks of use!

## Sound quality

Connecting up a quality HDCD transport, MacBook Pro, external DAC and home router, I set about warming the H160 through with Aphex Twin's *Syro* on CD. Even before being fully run in the sound quality is





already promising. Playing the catchily titled *Minipops 67 – Source Field Mix*, the H160's representation of the razor-edged percussion, haunting synths and brooding bass lines instantly grab your attention. The sound is highly transparent with many layers of subtle, free flowing detail. The H160 has a similar house sound to its baby brother, but it feels more grown up, more self confident of its abilities. Bass is forceful, but lean and the amplifier's claimed high damping factor exerts a grip on my reference Cadence speakers that firmly shows them who's boss. But it exerts this control without ever creating a sterile, engineered sound

**This flexible integrated amplifier has a modest design**

quality that some muscly transistor designs can.

After a lengthy run in, I spin London Grammar's *Strong* on CD and hear a really assured performance. Bass has filled out a little and the midband feels more relaxed and fluid. There is something about Hegel's patented SoundEngine signal processing that feels like your music gets a gentle dry clean, taking out a tiny amount of digital haze in an almost analogue or valve-like way. Hannah Reid's voice is delivered with a silky yet highly present quality and is gently brought forward out of the plane of the main soundstage.

Where I felt that the H80's DAC might have occasionally aimed for detail as an end in itself, here the H160 probably strikes a more confident balance between explicit detail, depth of image and natural timing/rhythmic abilities. And it achieves this balance effortlessly in a totally unflustered way.

Swapping inputs, I feed the H160 a HDCD of Doug Macleod's *Black Nights* via the coaxial input. This is one of the best-recorded albums of recent years and the H160 lays out a transparent, wide and compelling soundstage. Doug's time-keeping foot stomps and percussive guitar licks underline the amp's fast, tight bass abilities. This is in excellent contrast to the H160's supreme lightness of touch around the shimmering drum brushing and his rich, expressive vocals. Even though the H160 packs a claimed 150W, I've heard fuller, more weighty renditions of this track from rival equipment, but there is something about the topology of Hegel's sound processing circuits and amplification that gets right to the heart of expressing the emotion of an artist's performance. Imagine all your favourite tracks had the smallest amount of reverb removed and this is something like the Hegel house

sound. And given this isn't happening, it seems to confirm the H160 is addressing distortion in different ways from the received wisdom.

Accessing a rip of Jim James' *State Of The Art* using the Ethernet network connection, I control the system via AirPlay from an iPhone. The track starts very quietly with understated piano and Jim's mournful voice, and the H160 renders this stripped-out delivery beautifully in the church-like, reverential acoustic. The H160 even

**I'm impressed by its ability to deliver a highly coherent, quality soundscape**

teases out the slightly clunky piano pedals adding to the music's mysterious vibe. As the track progressively builds, it shifts up through the gears, effortlessly expressing the hypnotic and propulsive heart of the song. In full flow and at some volume, the H160 does a sterling job of layering what becomes a highly intense piece of music. Crystal clear triangles ring through deep, funky bass riffs and deliberately overloaded vocals press forward and away from a distant drum kit. This is a track that can trip up weaker DACs, but not the H160.

The DAC feels extremely well integrated with the amplifier sections, getting that tricky balance between portraying vital low-level micro details and getting the broad brushstrokes of pace, rhythm and timing just right. The addition of AirPlay and extra digital inputs all in a single understated black box underlines that this is a modern product that is aiming to balance quality and convenience. Indeed, Hegel prides itself on working with modest audio files and sources and

## CONNECTIONS



- 1 Fixed and variable line-level outputs
- 2 Loudspeaker binding posts
- 3 Non-asynchronous digital input
- 4 Optical and coaxial digital inputs
- 5 Balanced XLR inputs
- 6 Analogue RCA inputs

## Q&A

### Anders Ertzeid

Sales manager,  
Hegel Music Systems



**CW: What are the main differences between the H80 and H160?**

**AE:** Apart from the increase in power and using a superior DAC, we wanted to see how we could improve the preamplifier even further. We ended up with significant improvement in both local power supplies and how the transformer was connected. This has resulted in the H160 being more gutsy with even less noise.

**Why does Hegel advocate using non-asynchronous USB?**

The H160's USB receiver is the same 'adaptive' technology as the H80. We actually prefer this approach to the more usual asynchronous USB technologies, which we believe create more jitter. And greater jitter would require far more re-clocking to address this problem.

**The DAC seems well integrated to the amp. Is this harder than it looks?**

Yes, very! And noise is the big issue here. Noise pollution comes from outside components like computers and Ethernet components, but noise can also radiate from large power supplies used for the power amp. The layout of the amp is critical here.

**Why does Hegel spend such a lot of time and energy reducing distortion and noise in their designs?**

Basically, distortion and noise are the only two ways to colour recorded sound. Distortion is the addition of extra sounds that can change the appearance of a performance. At best, it can make it difficult to recognise a particular artist's technique and at worst it can sound like someone is playing the guitar with gloves on. Add high-frequency distortion and your music will sound harsh or brittle.

Noise on the other hand covers up small details so you cannot hear anything with lower amplitude than the noise itself. Noise reduces the sense of space, and air in music and removes the 'black' between the singers. Worst of all, noise can also cover up distortion, making for a warm and fluffy sound that has little to do with the actual performance.

## IN SIGHT



- 1 Capacitor bank
- 2 SoundEngine module
- 3 Toroidal transformer with separate windings for preamplifier and DAC
- 4 AKM4396 DAC chip

getting them to sound as good as possible. Even playing rudimentary MP3 files via iTunes I'm really impressed by the H160's ability to consistently deliver a highly coherent, quality soundscape.

## Conclusion

The H160 is a proposition that smartly has a foot in two camps. Firstly, it is clearly aiming to be a high-quality audiophile component that achieves superior audio results by seamlessly integrating and optimising preamp, DAC, headphone amp and power amp duties in a single box, with some network and AirPlay functions added to help usability. But it also appeals to a new audience that doesn't want the clutter and complexity of too many ugly, separate components, but does want a quality output across music and AV sources and all at the swipe of an iPad. And it straddles these two audiences well.

With DAC technology moving at such a pace and high-resolution music sources still finding their feet, it is easy to view any in-built DAC as a legacy waiting to happen. But a well-integrated DAC is something that Hegel seems to do well.

I would still like to see the inclusion of some digital filter options to tweak the sound for different music genres, and the DAC only displays the bare minimum of info about your digital sources. Many audiophiles will probably not be swayed from buying a separate DAC and integrated amplifier with this budget to spend, but I would urge discerning listeners to compare and contrast this impressive single-box solution. It should be a decent contender.

If you're seeking a quality hi-fi experience and have limited space, or are under extreme partner pressure to create a minimalist living room yet still retain quality music playing, this is the kind of product you should be turning to. This amplifier belongs to a new breed that could be as confident with AV duties as music. Place this amplifier/DAC combo in a modern, understated living room under a slick 4K screen, plumb in a home network with hidden NAS drive, Blu-ray and games consoles and flank it with some capable stereo speakers, and you will have an elegant setup that will just work brilliantly.

In this respect the H160 could be described as a bridge product between pure audiophile needs and more of a minimalist lifestyle product. Each time I sample a Hegel product it appears the next one raises its game, with ever-greater assurance. I have few doubts that the next release that comes along will be even stronger, but this one will successfully deal with almost any challenge ●



**HOW IT COMPARES**  
Peachtree's Nova 220SE sets out a similar audio proposition to optimise DAC, integrated amp and some streaming duties in a sleek box with an intriguing blend of valve and Class D amplification. Both the Cyrus Lyric 05 and Cyrus 8 DAC-Qx Mk2 strike a similar balance between style, usability and performance around this price as well as bringing together a wealth of technical capabilities within a single understated box. Each one of these competitors probably offers more functionality, but the Hegel should edge it when it comes to the strongest musical abilities. Also, given you may be buying a product like this with your eyes as well as your ears, your choice could be even more personal.

## Hi-FiChoice

### OUR VERDICT

**SOUND QUALITY**



**VALUE FOR MONEY**



**BUILD QUALITY**



**FEATURES**



**OVERALL**



**LIKE:** Impressive transparency and grip; extensive digital connectivity

**DISLIKE:** Lack of digital filters and display info

**WE SAY:** Self-assured integrated amp that handles everything you throw at it with aplomb





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# Selective breeding

The latest iteration of the Cabasse Antigua has **Ed Selley** wondering if Darwin was right about all that natural selection stuff...

One of the more interesting points of debate in component design is whether it is better to update a range by producing a 'clean sheet' design that embodies some brand characteristics or to take a design and evolve it over a series of revisions to make it better each time. In speakers below £1,000 the majority seems to think it best to go with the former, but Cabasse has never been one to bow to convention and has been carefully honing its MT series of speakers. This version is the

## The Antigua MT32 now ranks among the best speakers Cabasse has to offer

sixth MT design and though visually similar to what has come before, there are some key differences.

Not all of these changes make it into the Antigua, which is the smaller of the two stereo speakers and is joined by a matching centre and sub. As a standmount, it doesn't benefit from the new port and plinth arrangements that have been applied to the larger Jersey floorstander, but the other changes are included. Most significant of these is an all-new crossover. This takes technology and theory from the magnificent and bonkers-looking L'Ocean coaxial spherical speaker. During the development process for L'Ocean, Cabasse developed a process called HDSE (homogenous distribution of sonic energy) to try to ensure as consistent as possible a performance in all listening positions. This avoids any obvious sweet spot and should make for a more even performance across a range of seating positions.

The Antigua makes use of the same HDSE principles in miniature – both in terms of size and the considerably

reduced number of drivers it has to handle – and this means that a key design principle of the range, the Spatial Coherent System, is present and should be more effectively perceived in more listening positions than the absolute sweet spot.

Other parts of the Antigua continue as before. The drivers are designed and built inhouse and Cabasse is most pleased with the tweeter. Labouring under the title of DOM37, it is exceptionally light at 0.1g and is again derived from the more expensive coaxial models. In the Antigua, this is partnered with a single 170mm mid/bass driver, which vents via a fairly sizeable front port.

'Fairly sizeable' is also an apt description for its dimensions. The 170mm driver standmount is a fairly well populated category, but the Cabasse is definitely towards the upper end of the size charts at the price. The general appearance doesn't really do anything to disguise its proportions either. The Cabasse is hardly an ugly speaker, but the look is more functional than pretty.

Part of this is down to the finish. Cabasse describes it as 'ebony' and says it contains many different shades for a more natural black, but to my eyes it looks black, with a curious, almost corduroy effect and as a result, not desperately inspiring. The other colour option is a walnut finish, which is far from the most inspiring I've ever seen, but does at least look a little less austere than the ebony.

The Antigua is well finished for the price and the general construction feels extremely solid. There are some nice touches like the big and well-spaced single wire speaker terminals that will accept pretty much any gauge of cabling up to transatlantic phone line without issue. There is a sense that for the reasonable asking price, Cabasse has focused on wrapping the best drivers it can in a

cabinet that gets the job done rather than reinventing the wheel.

## Sound quality

There are some genuinely positive aspects to the Antigua too. The front port contributes to a speaker that is entirely unfussy about placement and seems to have some very benign characteristics. Provided that a small degree of toe-in is applied, they can be placed a significant distance apart without affecting the soundstage and the sensitivity is good too. Cabasse claims a figure of 88dB and this seems believable in practise making the Antigua an easy load for all but the most breathless of amplifiers.

On the end of a Naim SuperNait 2, the Cabasse displays some genuinely likeable characteristics from the off. There is a cohesiveness to the way it makes music and consistency to how it sounds from a variety of listening positions that is impressive. Provided you sit anywhere between the speakers, the soundstage is well formed and even from left to right.

Within this soundstage, the Antigua manages to sound detailed and lively but simultaneously, extremely hard to provoke into harshness or aggression. With the magnificent *John Grant And The BBC Philharmonic Orchestra In Concert*, the Antigua handles the rough edges with a grace that manages to avoid losing any of the excitement and punch of the album. There is a sweetness to how it operates in the midrange that is enjoyable and extremely easy to listen to. There is no shortage of headroom either. It is both easy to drive to

## DETAILS

### PRODUCT

Cabasse Antigua MT32

### ORIGIN

France

### TYPE

2-way standmount loudspeaker

### WEIGHT

7.5kg

### DIMENSIONS

(WxHxD)  
220 x 410 x 300mm

### FEATURES

- DOM37 fabric tweeter
- 170mm mid/bass driver
- Quoted sensitivity: 88dB/1W/1m

### DISTRIBUTOR

Cabasse

### TELEPHONE

+33 298 058814

### WEBSITE

[cabasse.com](http://cabasse.com)

**The Ebony finish might not be to everyone's taste**



## Q&A

### Christophe Cabasse

Cabasse international sales & marketing director



**ES:** The MT32 is an evolution of the MT range. Was there a decision to build a speaker that's further evolved or is this based on the performance once designed?

**CC:** The MT (midrange-tweeter) range started in 1999 with the MT200, followed by MT222, MT360, MT3, MT30, MT31. So this is the sixth generation of Antigua, each generation offers upgrades, with new drivers and/or venting solutions, and/or crossovers. The product definition (its use, dimensions, number of ways, size of woofer(s) and price segment) remain the same. The challenge is to offer more at the same size and price.

### How easy is it to adapt tech from more expensive coaxial models?

Borrowing technology from expensive models and using them in entry-line systems is not easy if you look for more than just a marketing trick, but a true improvement in sound. Using the same diaphragm for the tweeter of the MT32 as used in La Sphère is a solution without extra cost that allows us to get dispersion characteristics that match our HDSE (Homogeneous Distribution of the Sonic Energy) requirements. The tweeter of La Sphère is far more expensive because it uses specific rare earth magnets mounted together for the HF and MF units, whereas the DOM37 tweeter (in MT32) uses ferrite as there is no space limitation. The other advantage of using this component is it ensures stable performance over decades.

### Are there any electronics you'd suggest to partner the Antigua?

We develop our speakers using various electronics (Cabasse amps are always used plus a variety of others) in order not to be fooled by a specific amplifier signature. We design our speakers to be as easy to drive as possible, in order to give consumers a wide choice of electronics, from valve to digital. We look more for a live-like sound than a clinical reproduction, even at low levels and this is probably why we mainly use European and British electronics.

## IN SIGHT



- 1 DOM37 tweeter
- 2 Single wired cable terminals
- 3 Forward-firing bass port
- 4 170cm mid/bass driver

boisterous volume levels and civilised once you push them there.

This cohesion and sense of fun does a neat trick of disguising the fact that for all the sizeable cabinet dimensions and hefty bass port, this is not an especially potent performer in the low end. The bass is tuneful and well integrated with the rest of the frequency response, but never goes quite as low as you might expect it to. Even when used at relatively high listening levels, the Antigua doesn't deliver quite the bass punch you might expect. While I will always choose a speaker that has good bass over plentiful depth, there are speakers that the Antigua pitches up against that are happy to do both. If your musical tastes tend away from the bombastic, you are unlikely to feel short changed, but for those who like a little electronica and hefty rock, the Antigua sometimes feels like it's holding back. Happily, I have no such complaints about the top end, which effortlessly covers the upper reaches of my hearing and manages to stay smooth and controlled right to the top of its extension.

Arguably, these traits have been largely present in the MT series since its first iteration, but where the MT32 moves on from earlier models is a greater willingness to get the head nodding and have a little fun. Neither is this behaviour only present when on the end of a Naim amp. Substituting Cambridge Audio's talented but rather straighter-laced Azur 851A amp still sees the Antigua willing to groove along. The deep south blues rock of Dr John's *Right Place, Wrong Time* has a simple sense of fun that is a real pleasure. When

you switch to something more sober and deliberate like Mark Lanegan's *Covers*, that wonderful midrange sweetness is retained, but the Cabasse refrains from forcing this relatively slow paced piece. The ability of the Antigua to find the emotion in a piece of music is a tricky idea to quantify, but after some time spent in its company, it is clear that it is seriously good at it.

## Conclusion

The extremely easy going and musical performance that the Antigua is capable of makes it possible for me to cut it more than a little slack as regards any lack of low-end urge. It is unfailingly happy with a massive selection of music and seems impressively agnostic as regards the equipment that you partner it with to achieve this. The Antigua MT32 is still far from the most attractive speaker in the price segment, but Cabasse's policy of continuous evolution ensures that it now ranks among the best it has to offer.



### HOW IT COMPARES

As one of the larger speakers available at the price, the Antigua makes for an interesting comparison to one of the smallest – Q Acoustics' excellent Concept 20. While the Antigua can feel like excellent drivers and a crossover in a sturdy but unremarkable box, the Concept 20 uses 'ordinary' drivers in a very clever cabinet. These diametrically opposed approaches result in cohesive and flexible performers. The Concept 20 provides a sense of neutrality that the Cabasse sometimes lacks, but the bigger Antigua has a larger listening sweet spot and thanks to the larger size is happier in larger rooms. Both are exceptionally musical speakers at the price.

## Hi-FiChoice

### OUR VERDICT

#### SOUND QUALITY



#### VALUE FOR MONEY



#### BUILD QUALITY



#### EASE OF DRIVE



#### OVERALL



**LIKE:** Spacious, even and refined sound; easy to drive and place

**DISLIKE:** Slight lack of bass weight; it's not the prettiest speaker

**WE SAY:** A very talented speaker that balances excitement and refinement in an easy to drive package



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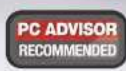
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# Play away

With CD playback and streamed music, this budget box proves to be an unexpectedly versatile digital front end, says **David Price**

**I**n hi-fi as in life, the laws of Darwinism apply – evolve or die. As compact disc software sales continue to slide southwards, companies wishing to support the ailing silver disc format have to come up with a new twist to keep us interested. To date, CD players have become CD transport-equipped DACs, but this Onkyo goes still further with its DLNA network music playing ability.

Whether you'd call it a network-equipped CD player, or a CD-equipped streamer doesn't really matter. What's important is that it brings together the key ways that most people currently consume digital audio into one compact and highly affordable box. It also adds internet radio, two USB inputs and iPod connectivity, meaning that it's a most flexible device. Digi-philes will also like the sound of the 5.6MHz

DSD functionality, in addition to the standard 24-bit/192kHz FLAC and WAV playback. There's even a smartphone app to make controlling it easier, too.

There are two absent friends, however. First, the C-N7050 isn't wi-fi equipped, meaning you'll need to connect it to your router via an Ethernet cable. In strict sonic terms of course this is no bad thing, but for a £350 mass-market product that is supposed to hold convenience as a watchword, there may be some buyers that shy away from it for this reason. Likewise, there is no aptX Bluetooth playback either. In my experience this isn't a particularly fine sounding way of listening to music, but there's no denying that it's more attractive than DLNA compatibility.

At the heart of the C-N7050 is a 32-bit Burr-Brown PCM1795 DAC, which delivers gapless streaming of

## DETAILS

**PRODUCT**  
Onkyo C-N7050

**ORIGIN**  
Japan/China

**TYPE**  
CD and network music player

**WEIGHT**  
6.4kg

**DIMENSIONS**  
(WxHxD)  
565 x 205 x 398mm

**FEATURES**  
• CD player with Burr-Brown PCM1795 DAC  
• Outputs: optical digital; coaxial digital  
• Inputs: 2x USB; Ethernet port

**DISTRIBUTOR**  
Onkyo UK

**TELEPHONE**  
08712 001996

**WEBSITE**  
onkyo.co.uk

both 2.8 and 5.6MHz Direct Stream Digital files, 24-bit/192kHz FLAC and WAV, and 24/96 Apple Lossless formats. Also supported are MP3, AAC, WMA, WMA Lossless and Ogg Vorbis files. This works with Onkyo's own VLSC (Vector Linear Shaping Circuitry) system, where audio data is converted between discrete sampling points, and these points are joined with analogue vectors in real time. It is claimed to substantially reduce digital noise.

The unit has all-metal construction with tidily pressed steel casework and a sleek brushed aluminium front panel. Onkyo says the C-N7050's case has been designed to minimise the effects of vibration, but in all honesty it's doesn't feel especially solid. Nonetheless, it's decent enough for a budget product and there are no complaints about the finish, which has fewer rough edges than most rivals at this price.

The buttons feel crisp and positive to the touch, and the disc tray moves out with a grace that puts several £1,000 CD players I've tested to shame. The blue fluorescent display looks a bit nineties though, and it isn't the easiest to read, but again it's adequate enough.

Connectivity is good; the front panel USB input gives direct-digital iPod, iPod touch, and iPhone play out, and the rear-panel USB port handles



compressed and lossless audio from mass-storage class devices. There are also optical and coaxial digital outputs round the back, as well as the usual RCA phono outputs. Onkyo's Remote Interactive sockets enable the operation of compatible components through a single remote control, and there's one supplied as well as a free downloadable Onkyo remote app.

### Sound quality

Considering the price of the Onkyo, and indeed its myriad abilities, you can't help but be impressed by how well it performs. A decade ago, it would be asking a lot from a £350 CD player to sound smooth, detailed,

**The highly versatile Onkyo looks far more expensive than its modest retail price suggests**

even and agile, but the C-N7050 does all of this and so much more. Regardless of source, when given a decent music file to play it produces an engaging performance that is totally devoid of what hardened hi-fi hacks call 'nasties'.

For example, Zero 7's *In The Waiting Line* presents itself in a thoroughly pleasing yet engaging manner. The track kicks off with a gentle groove driven by subtle keyboard work with drum machine hi-hats glistening behind. The Onkyo sounds subtle, delicate and immersive. Treble is unexpectedly smooth and completely devoid of grain in the upper registers, while the midband is spacious and expansive with lots of detail apparent. Stage depth isn't as good as you

### This machine is able to convey a fine sensation of the recorded acoustic

would expect from more expensive digital front ends, however, with a tendency to hang the soundstage around the plain of the loudspeakers. Yet the wealth of detail that this player throws out never fails to charm the listener.

The lead female vocal line is smooth too; the song's lyrical phrasing is conveyed in a highly believable way. Underneath this the bass guitar pushes things along with gusto; like the vocal phrasing it works in a pleasingly percussive manner and gives a sense of trajectory to the proceedings. The Onkyo bass isn't as powerful as you might hear from a similarly priced CD player such as the Cambridge Audio Azur 651C, but still there's a satisfyingly rhythmic gait to the proceedings. It makes the music enjoyably uplifting, and highly satisfying to listen to.

Switch to some less laid-back programme material such as *Los Endos* by Genesis, and this player's fine character still shines through, although it does become more apparent that it's a budget machine you're listening to. This isn't because of any harshness or undue distortion, rather you become aware it doesn't quite have the dynamic range of some more expensive designs. While it's really rather good at microdynamics, it fails to convey the absolute power of Phil Collins' crashing drum work; it doesn't have the out-and-out power of higher-end kit. Nevertheless you're again drawn into the enjoyable listening experience the Onkyo delivers; it never fails to lose your attention or make music sound sullen.

The slightly bright balance of this album doesn't upset the C-N7050 one jot. The fantastic hi-hat cymbal work is carried delicately with plenty of atmosphere; it decays gently into the back of the mix and never grates. The powerful multi-layered guitar work is faithful as are the keyboards, and the Onkyo proves able to string various strands of the mix together in a rhythmically coherent way. It's a complex track with a lot going on, but doesn't seem to phase it in the slightest. Once again there's a slight lack of bass weight, but this is absolutely excusable at this price. You wouldn't call it over-light, it's just that more expensive CD players and streamers do better.

A Deutsche Grammophon silver disc of Beethoven's *Pastoral Symphony* provides more insight into the player's essential nature. The gently lyrical first movement underlines its pleasingly wide soundstage and surprisingly incisive detailing. Despite its low price this machine seems to drill right down into the recording giving a fair sense of what is happening at the back of the concert ►

### CONNECTIONS



- 1 RCA analogue line inputs
- 2 Optical digital output
- 3 Remote Interactive sockets
- 4 USB port
- 5 Ethernet port
- 6 Coaxial digital output



## Q&A

**Kulwinder Singh Rai**

Onkyo PR/product consultant



**DP: Where does the C-N7050 fit in Onkyo's latest range?**

**KSR:** It's a compact disc player with built-in streaming functionality. Onkyo designed it primarily to be a companion to its range of integrated amplifiers, namely the A-9050/A-9030/9010, but it works pretty brilliantly with other makes of amplifier too. It is a product designed for the vast number of traditional buyers who still purchase CDs. Despite some media suggestions to the contrary, many people still want to – and do – own music physically. This product is for such folk, but they may also like the idea of hearing the hundreds of free internet radio channels at their disposal.

The C-N7050 gives customers the choice, and what's not to like about that?

**Is DSD functionality of real appeal in the great scheme of things?**

There's no sense in playing favourites with formats at this stage in the game, so Onkyo is happy to support as many kinds of hi-res format as we can, including FLAC and Apple Lossless. However, broadly speaking, we believe that a DSD recording will sound closer to what the artist originally intended, if things are done right at the recording stage. Overall, it is nice to be able to have the flexibility to play both DSD and PCM though, and that's what the C-N7050 offers. As long as there are customers out there who want to own music on physical formats such as CD and vinyl, we will cater for them, but we also want to give a wide range of digital music file functionality.



There are no direct rivals with streaming functionality built in. But if you have £330 to spend, you can buy yourself the highly competent Cambridge Audio Azur 651C. It does a fantastic job of playing old-fashioned silver discs. The Onkyo sounds good, but the Cambridge is better still. It's not quite as smooth as the C-N7050, but has a more gutsy sound. It is able to produce better dynamic contrasts and carry the music in an even more enjoyable way. Prospective purchasers will need to decide whether they want a virtuoso CD player like the Cambridge Audio or more of an all-rounder like the Onkyo. It's not an easy choice!



hall. It is able to convey a fine sensation of the recorded acoustic, and at the same time remains pleasingly tonally balanced.

The beautifully recorded *Snowflake* by Kate Bush at 24-bit/96kHz proves a real joy. The Onkyo's streaming capabilities are subtle enough to convey the delicacy of this superb song and its drama too. It's a sparse affair with at times only very light instrumentation, yet the C-N7050 never loses the rhythmic plot and keeps control of the flow of the song right through to the end. Kate Bush's icy voice is handled dexterously, and never descends into brightness unlike many budget digital audio sources. Again the soundstage is wide and capacious, but it isn't quite as immersive as it could be thanks to slightly curtailed stage depth. The Onkyo presents the music clearly and upfront although you would never call it bright across the midband or the treble; it remains surprisingly smooth even with quite demanding source material.

It's even a fine companion for an iPod, making Caravan's *9 Feet Under* surprisingly listenable from an iPod nano despite it being a 256kbps AAC file. Again the music bounces along with aplomb, throwing out unexpectedly confident and well located stereo images between my two loudspeakers. The slightly data-compressed nature of AAC doesn't seem to phase the Onkyo; it really is unexpectedly enjoyable to listen to. A similarly low-quality MP3 file of Daft Punk's *Get Lucky* via USB sees the C-N7050 thump out much of the prodigious bass found in this seminal dance track. Once again it

seems able to tease out the satisfying aspects of the music without getting overly analytical.

## Conclusion

Products aimed at the mass market with a prodigious feature count don't always work. In trying to offer too much, many seem to achieve too little; corners are often cut when showroom appeal plays such a big part. However this cannot be said of the Onkyo C-N7050; running the gamut of music files and sources, it proves to be a surprisingly enjoyable device to listen to. Tonally smooth, with a pleasing amount of air and space across the midband and treble, it also sports a fluid and articulate bass. This ties in with its innate rhythmic ability, that's able to really involve the listener in the music. Factor in respectable build quality and the aforementioned multitude of functions and it's hard to fault at the price. If you're looking for a do-it-all source that won't break the bank, this merits serious consideration ●

## Hi-Fi Choice

### OUR VERDICT

#### SOUND QUALITY

★★★★★

#### VALUE FOR MONEY

★★★★★

#### BUILD QUALITY

★★★★★

#### FEATURES

★★★★★

#### OVERALL

★★★★★

**LIKE:** Fine sound; great features; ease of use; decent build

**DISLIKE:** Anodyne styling; no aptX Bluetooth

**WE SAY:** Excellent affordable do-it-all digital source component



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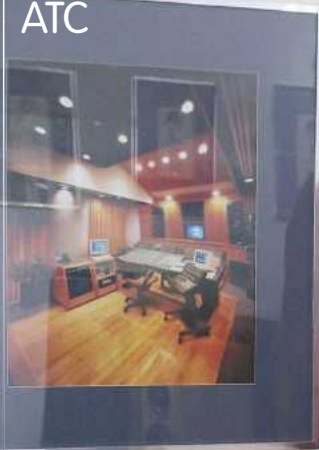


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# PLAIN SPEAKING

Billy Woodman presides over some towering audio engineering achievements

**David Price** visits ATC Loudspeakers and talks to its charismatic founder, Billy Woodman, about what makes a decent speaker

**B**illy Woodman is a legend in loudspeaker circles. Few characters have run successful hi-fi companies over four decades, in such a stable and unerring way. Some 40 years since he started Acoustic Transducer Company, it continues to expand and garner popularity in ever more distant parts of the world. Located in idyllic Cotswolds countryside near Stroud, ATC comes over as an informal, quirky and friendly company, yet it's also extremely serious about what it does. The same could also be said of Billy himself. As a student he wrote his thesis on drive unit engineering, and hasn't looked back since then.

**DP: What first gave you the idea to start your own transducer company?**

**BW:** It came out of working in Special Projects at Goodmans Loudspeakers in the early seventies. We developed a number of PA products – in fact the Audiomax loudspeaker series – which they decided not to do anything with, and it seemed a terrible shame not to use the technology.

Initially the company was set up to make transducers as good as you could engineer. There's nothing new under the sun so the

aim has always been to better engineer what's already there. We started off just making PA drivers; our first substantial customer was Martin Audio in London, building the systems for Supertramp (that was one of their principal customers). That system had all-ATC drivers in the midrange. I'd had the idea for the midrange dome when I was at university, and it was in 1976 that I made the first successful 3in dome, there were lots of papers at the time that said you couldn't make a device driven at its edge work consistently, successfully.

**Was it hard launching a loudspeaker brand back then?**

Think about hi-fi at the time; you had Quad, the LS3/5a, Spondors, and they were all good acoustic-quality loudspeakers with no dynamic range, so they wouldn't even replay a piano played at pianissimo. And yet the Americans had loudspeakers that were born out of the theatre, that ended up in studios, and then ended up in hi-fi, that had huge dynamic range and not particularly good acoustic quality. I thought there's got to be somewhere in the middle that you can reach, and the obvious thing to do is if you make the voice coil large enough you can make a

direct radiating device handle enough power to give you enough maximum sound pressure level. And the way to do that is to drive a dome, and although the development process was fairly tortuous the result has been sustained now for a long time.

It was a terrible story really because at that stage ATC didn't have any money, but I tooled it up in such a way so we could make it in reasonable numbers, but no one was interested, really. ProAc used it, Stuart Tyler started using it, and it was not until the advent of digital recording in studios that I could convince any studio to take it seriously. Engineers were made so uncomfortable at the time having to change their recording medium that they were also willing to change their monitoring – it's a terribly conservative business! That created the opportunity for ATC. It started with DJM Music in central London, where much of Elton John's recordings were done, and it slowly grew from there.

**When you started ATC, how did you envisage it evolving in the future?**

I was entirely driven by making high-quality components, but I didn't have any idea of having a long term vision in 1974! I was



(and am) very into drive units. There were no professional drive units made in the UK – you had Altec, JBL, Gauss – and there was an opening for a professional drive unit in England, that's how we started. If you made a good PA drive unit in the seventies, you had business!

### So you were the outsider, doing something distinctly different?

We had an entirely new philosophy. We had to get away from this idea that you could have a loudspeaker of 25W and start off with an efficiency of 88dB at 1W at 1m and be able to replay piano, it was just impossible. You need power to reproduce that huge dynamic range, piano's the worst probably – you're not listening loud, you need that huge dynamic range to reproduce that initial transient.

### There was a real loudspeaker orthodoxy in the seventies wasn't there, I imagine that you were given fairly short shrift?

That slowed down ATC's progress. We launched the S50 in 1977, but it wasn't until 1987 that ATC started being taken seriously in the hi-fi world with the SCM50. We were always busy doing other things. We're a broadly based company with a huge amount of engineering skill, so if the hi-fi market isn't working we can go off and work on

## The aim is to turn an electrical signal into an acoustic signal as precisely as possible

other projects. There's always things to do, providing you stay with your core skills it doesn't matter which market sector you're selling to. The pro drive unit market in those days was huge, and 75 percent of our production stayed in the UK. Nowadays it's just 10 or 12 percent, things have changed a lot since then because the market has become lowest common denominator and price driven. ATC can't function in that market, so we've concentrated for 20 years now on integrating all the electronics and components into systems. What really differentiates us from the competition is our ability to make components that are at least as good as, if not better than, anything else that's available.

### It's interesting that you've steadfastly stuck to a relatively conventional template for a loudspeaker...

I believe the only other loudspeaker transducing mechanism that will produce you the midrange clarity of our soft dome is an electrostatic. The difference is that one has got a huge dynamic range and the other one hasn't. When it's all said and done, any loudspeaker system is only as good as the

bits you start with, so we concentrate on making really good transducers, then integrating them becomes less of a problem because they're well behaved, predictable and all the rest of it. And if you think about it, that's what Peter Walker did at Quad; those ESL-57s were streets ahead of everyone else really.

### And why don't you constantly update your range?

You shouldn't keep redoing drive units, I think. It's so difficult to get a drive unit to work really well. Richard has just spent a huge amount of time on the new range of tweeters, and they've got distortion levels as good as some preamplifiers, so there isn't anything really that's going to be better than it. The 3in (76mm) dome came to be, because two inchers don't have enough bottom end response, and 3in is a really good compromise. It gives you exceptionally good dispersion, so that not only is it direct sound that you hear – which is one that you make all your phase and tonal judgements on – but it will also excite the reverberant field very evenly with frequency, so that all those fast transients will also be properly presented. Those things are fundamental, you can't mess around and say: "well this year we'll make a 6in midrange"!

### In terms of cabinet design, has anything changed since 1977 when you made your first speakers?

Fundamentally it hasn't. As new technology and materials become available we do different things, but that's often to do more with style and presentation rather than the underlying acoustic engineering. We try to minimise the number of sources, especially. When it comes to the midrange you won't see any speaker that uses multiple drivers, we carry through to the lower mid. Cabinet width is defined by the bass driver size, and I think it's simply fashion that drives the narrow slim trend in speaker design. And cost-effectiveness too, because people use the same chassis across four models sometimes. We've always found you get better results minimising the number of drive units, and you get a much better response. You need to sit a long way away from a multi-drive unit design in order to get a coherent presentation.

### Do you pay attention to the apparent demands of the consumer market, or have you tried to plough your own furrow there?

If you're going to have any legs, then you need to have a mind of your own. Other than being aware of the technical developments of other manufacturers, the fashion's not that important really. You can't ignore it, but must be driven first and foremost by a logical and pragmatic engineering approach. Also, taste is hugely different around the world. A lot of the

## THE HISTORY OF ATC

The Acoustic Transducer Company was founded by Australian Billy Woodman in England in 1974. As its name suggests, the company started off by making loudspeaker drive units – specifically the 12in PA75-314 bass driver, which was widely recognised for its excellent power handling and efficiency characteristics. ATC then launched its SM 75-150s soft dome midrange driver, and it was this that has become iconic for the company. It was technically advanced and offered excellent dispersion, bandwidth and distortion characteristics. It is still in production to this day – albeit in highly improved form – and forms the centrepiece of the company's domestic and professional loudspeaker range.

By the eighties, ATC had started making what it called 'systems', by which it meant complete loudspeakers with drive units set into cabinets, as opposed to drivers. It's a testament to the company's drive unit manufacturing roots that it still talks in these terms. ATC 'systems' found themselves being bought by the likes of Pink Floyd and Supertramp. Work on active loudspeakers began, and the EC23 Active Crossover was the result. Amplifiers were then built in to the SCM50 and SCM100 speakers, making tri-amped active systems. It's only relatively recently that ATC has focused on the domestic hi-fi market; the nineties saw the company begin to make a name for itself in this sector. Meanwhile the company continues to sell to the pro audio industry, to clients such as Sony Music and Telarc.



These hand-made drive units are about to be fitted into the cabinets in ATC's Cotswolds-based factory



Every part of each product is meticulously produced using carefully chosen components, then manually tested



Billy says the new tweeter (one of a few drive units ATC makes) has exceptionally good dispersion characteristics





**The factory has a relaxed atmosphere that even includes furry friends!**

emerging economies are fairly conservative. They're quite happy in the Far East, for example, for a rosewood, rectangular box.

**So the midrange dome is the absolute cornerstone of the ATC engineering approach, in a three-way system?**

You can make loudspeakers very consistently if you only ask them to do a 'decade', 20Hz to 200Hz, 200Hz to 2k, 2k to 20kHz, and in two-way speakers you're always fighting to get that last bit of response out of your bass/mid driver, consistently. That's why three-way systems are mostly the best, will give you the best performance. With a four-way, it's a bad enough problem having two crossovers, let alone three. The more you have, the worse your problem. The ATC fingerprint is a three-way loudspeaker with our own bespoke midrange dome – the properties of that midrange dome, its versatility, means we can build such a wide range of speakers. It's used in the SCM40, a £3,500 loudspeaker with a sensitivity of 85dB, up to the ATC Studio SCM300 which is 94dB efficient and found in huge control rooms. That's achievable with a single midrange part, which is key to achieving a

good phase response and tonal balance in the midrange.

It's effectively an evolutionary process, there has been some changes to the magnet over the years, and the waveguide profile has changed to improve off-axis response, and the adhesive used has changed. But it has been a great mainstay in the professional market because someone can go and mix on a pair of SCM25s and take them back to a studio where they've got SCM300s, and the balance and tonality will be entirely recognisable. Engineers who have used ATC will happily say that they can do a final mix or master on either. That was never the case before, that's why there were always so many small loudspeakers floating around studios. I think you'd be surprised; if you listen to a pair of SCM7s or SCM11s, then listen to SCM50s, you'd have no doubt that they were the same family of loudspeakers.

**You talk about 'neutral' fidelity, what do you mean by that?**

The aim is to turn an electrical signal into an acoustic signal as precisely as possible. The differences that are produced we make sure are benign, so they don't give a disturbing

character. All the engineers here keep working on developing new parts, and as we make improvements in materials and methods we incorporate them. We've never been known for making a big song and dance about things unless the change is enormous; usually all these changes are incremental. By the end of a model's production run, all the changes will have been incorporated. We're very confident that if you give an ATC speaker a fair hearing it will represent itself well. I think a hell of a lot of people know us because of our transducers, as much as our speaker systems.

**So what would you say is the essence of ATC as a company?**

We're one of the only loudspeaker companies left that is truly concerned about transducer design, and the neutral sound that comes from it. That's a mistake that lots of loudspeaker manufacturers make I think, they lack consistency in their product thinking. They make this, then they make a small range of it, and then they go off on a tangent and do something so vastly different that you wonder if it has come out of the same philosophical stall. ATC has a strong idea of how things should be. If a company becomes market driven, you get driven off course, you turn over a lot more money. We're more of an old-fashioned company in the respect that we operate more like a

**You must be driven first and foremost by a logical and pragmatic engineering approach**

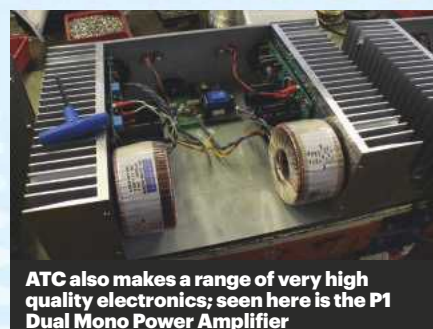
family business than a large corporation, it's a long-term sustainable business. We've never ever been flavour of the month, we've always been floating just under the surface, I'm much happier there actually! We haven't tried to achieve and then force growth artificially. If you're to move large volumes you have no choice but to have an active marketing department, whereas ATC has grown organically. The sales are on the strength of the products. That's why over the years we've sold to Yamaha and we've sold to Pioneer and other people because it's not worth their while to enter it; it's a finite market and we have a healthy share of it ●



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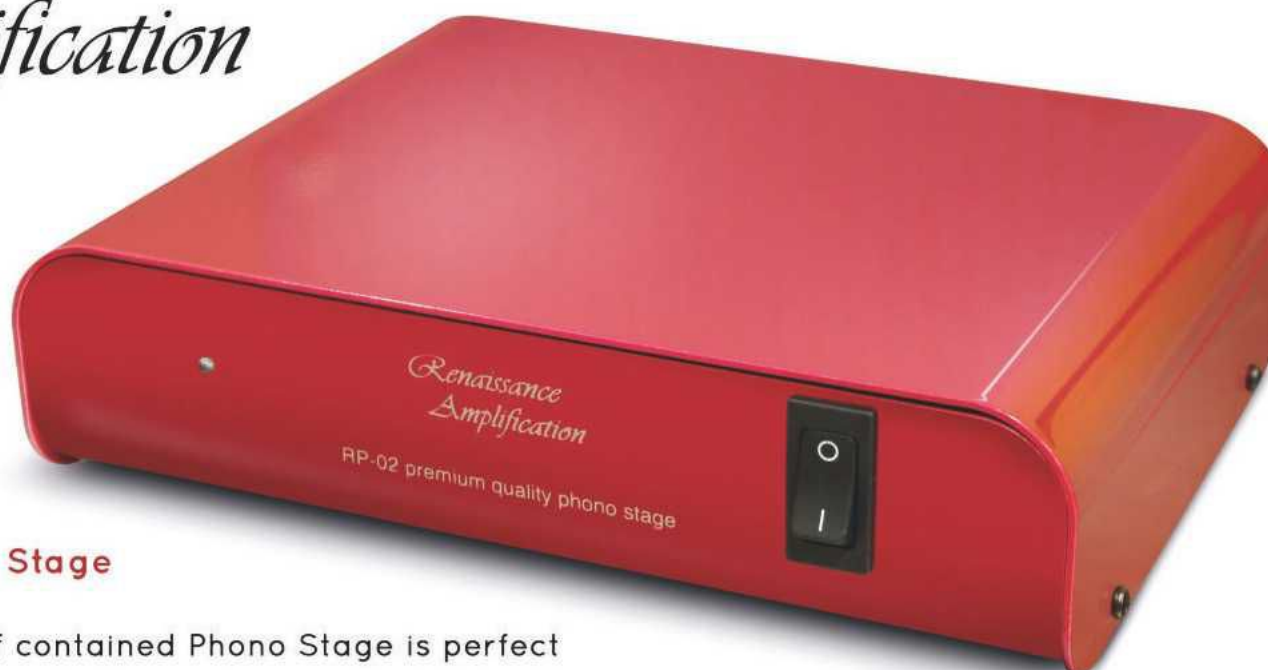
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## THIS MONTH



**ED SELLEY**

**EXPERTISE: REVIEWER**

For the best part of 10 years, Ed was developing and supporting products from some of the biggest names in audio. He enjoys blogging about his favourite tunes, too.



**NIGEL WILLIAMSON**

**EXPERTISE: REVIEWER**

As one of HFC's chief music reviewers Nigel certainly knows a decent tune when he hears one, which is why he's the perfect choice for any music matter queries.



**ANDREW SIMPSON**

**EXPERTISE: REVIEWER**

Andrew's been passionate about hi-fi since he was a wee nipper. When not obsessing over his next upgrade, he can be usually found under the bonnet of his 1973 MG Midget.



**DAVID PRICE**

**EXPERTISE: REVIEWER**

DP has spent much longer than he'd care to admit buying and upgrading his own hi-fi system, not to mention reviewing thousands of separates over the years.



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## LETTER OF THE MONTH

### ➤ iTunes top up

I am a happy user of iTunes as my music library – all ALAC – and thought your article was spot on (Getting the best out of iTunes, HFC 391), its user interface is excellent. Here are a couple of additional tips from a seasoned user.

If you use an external drive, try to make sure it is up and running before you start iTunes or it changes back to its default file path – any music you rip before you notice won't be on your NAS. When you correct the path, you'll have to wait a few minutes while your 'new' library is updated and all will be in the right place. To stop

this happening, set your Mac or PC to start up the NAS when you log in.

Secondly, I don't think that your article differentiated sufficiently between creating and organising your library and playing stuff from it: I use iTunes for the former and a combination of Squeezebox, Logitech Media Server running on my Synology NAS, and the excellent iPeng app on my iPad to browse the library and control playback. This combination gives me all of the advantages of iTunes as a library manager and also allows me to play back FLAC files which, as you point out, iTunes won't.

*Nigel Bell, by email*

**AS:** Hi Nigel, glad you found the guide useful and top marks for helping readers avoid a potential pitfall that could cause many a library to become unintentionally scattered across many a hard drive, or worse still, seemingly lost. The guide intentionally focuses on getting the best out of the iTunes interface alongside its filing system, although as you correctly point out, there's no reason why you can't call upon its librarian to give organised files to a variety of music managers better equipped to handle alternative file types (like FLAC) and geared towards a more bespoke system approach like your own.

And for me, this really underlines the purpose of the guide and position of iTunes

software in the grand scheme of all things digital audio. As an all-in-one solution it frankly falls short of many rivals, but its value lies in how it lets you pick the features you want to use, while ignoring the ones that you don't and going elsewhere for something more suitable.

I unashamedly use iTunes on my Windows-based PC to feed various iOS devices for music on the move, but for my home system I find JRiver so much more sonically rewarding and audiophile focussed. Thus iTunes

### I use iTunes along with Squeezebox, Logitech Media Server and iPeng

isn't the perfect solution for audiophiles, but nor should it be dismissed entirely.

### ➤ Time for a refresh

I bought an iRDAC advertised on the *Reader Classified* pages of the September edition. The advert was still there in the October issue and once again appears in the November one, and I know the guy only had one.

Last month I called another chap about his Nordost Red Dawn interconnects (October issue). He told me they had been sold three months ago but the ad kept appearing.

I used to see repeat adverts and assume it was because they hadn't sold first time ▶

Make sure your hard drive or NAS is plugged into your PC before starting up iTunes



around; now I suspect that it's just that they're unwanted repeats.

Do you have and communicate an expiry policy? Do you ask people to tell you when their item has sold so you don't readvertise incorrectly? Should you not tell people ads will only appear for one issue unless they write/call/email to relist? I think you should do something as it's a waste of time for successful sellers to keep fending off repeat enquiries and for frustrated potential purchasers.

Matt, by email

**JDW:** Hi Matt, much as we'd like to, we simply don't have the time to be able to check the status of each and every advertisement that runs on the Classified pages. Apologies if you have had your time wasted, but this is a free service and unless people inform us that an item is no longer for sale there is not much we can do about it. However, we have taken your comments on board and have re-designed the Classified pages to show fewer entries from now on. Hopefully this will mean less repeats and more bargains worth sniffing out.

➤ **Playing politics**  
I have just read the piece by David Price in the December issue (Fight the power, Opinion page). While I am used to articles trying to sell



DP suggests that Audio-Technica's AT-33E will get Michael's GyroDec to sing

the merits of a £2,000 power cable I had not expected to see a mindless rant about the EU. In a UKIP leaflet, or in the pages of the *Daily Mail* perhaps, but not in your excellent magazine.

Nigel, by email

**DP:** Hi Nigel, The rules and regulations we all have to follow used to be made solely by our

## Can you help me find a cartridge for my GyroDec turntable?

elected representatives in Westminster, but we are now increasingly seeing European Commission edicts telling us what we can and cannot do – such as the banning of the sale of conventional 100W domestic light bulbs, for example. My point was that when this begins to affect hi-fi – something none of us had ever expected the European Union to encroach upon – we can do practically nothing to register our disapproval except shout loud. In the days when every moronic law we lived under was down to an elected British Tory or Labour government, we could of course vote them out at the next election if we were angry enough, but there is no such sanction now with the EU.

I feel this is a legitimate point to make in a hi-fi magazine when it intersects with hi-fi. If future EU legislation bans valve amplifiers – or even Class A or Class AB solid state

designs at some point – on the specious grounds of excessive power consumption, then we will have no one to blame except ourselves, because we laid back supinely, preferring to make glib comments about the *Daily Mail* instead. One interesting parallel is the classic car scene; a recent EU proposal wanted to enforce the return of all classic cars to standard (as they left the factory) spec. This would have meant that all the upgrades that owners had made to their cars to make them usable and safe(r) on modern roads would have had to be reversed. For example, owners would have had to junk their safer disc brake conversions and radial tyres for the original drums and crossplys, and alternators downgraded to dynamos. This was clearly nonsensical and classic car magazines took a stand across Europe and forced a change in the proposed legislation. We should never give politicians (of any nationality or origin, Westminster or EU) an easy time; I don't think I am in a minority of people across the whole of Europe in distrusting them all.

➤ **Needle craft**  
I have an SME V-equipped GyroDec, bought long ago when I was part of the hi-fi industry, designing and manufacturing kit that, at the time, was fairly well received, given that it was the output of a very small company.

I am now looking for a new cartridge. The Denon DL304 I have has 'tight' bass – a term I have always found equating

## TWITTER QUERIES

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The 8 best vintage turntables and what to look out for when buying second hand  
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**Andy I taylor** @  
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**Brian Pointer** @  
bpointer212 Dec 29  
@ClassicAlbumSun  
@HiFiChoiceMag Seeing the Rega Planar 3 brings back fond memories of one of the best turntables I've owned

**Hi-Fi Choice** @  
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@bpointer212  
@ClassicAlbumSun owning a Rega Planar is an essential part of every vinyl fan's turntable journey! Still a fantastic used buy

**Brian Pointer** @  
bpointer212 Dec 29  
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@ClassicAlbumSun Agree 100%, I'm seriously thinking of purchasing a used one to go with my vintage #NAD 3020

**Hi-Fi Choice** @  
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@ClassicAlbumSun they're worth snapping up for the arms alone... not that we're trying to sway your thinking...

**Brian Pointer** @  
bpointer212 Dec 29  
@HiFiChoiceMag  
@ClassicAlbumSun It wouldn't take much, the sound quality speaks for itself.

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to the word 'no'. I much prefer the sound of MC cartridges, and I have enjoyed a Goldbug Briar for many years, until the suspension collapsed and the 'specialist' told me it wasn't a good cartridge anyway – it was good enough once I had sold it to one of his pals to



DP is concerned that if we're not careful, EU politicians may have a say on hi-fi specs



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repair and resell for four times what I paid for it! I also had a Coral MC82 with the VdH stylus and that was a real surprise – a lovely rich, but detailed sound – unfortunately that became damaged.

I listen to all types of music really, but powerful (over produced) seventies rock and pop and romantic classical complete with organ are my real favourites. I need a cartridge with a solid bottom end, even a bit of 'bloom', and I've found it isn't exactly easy to get demos.

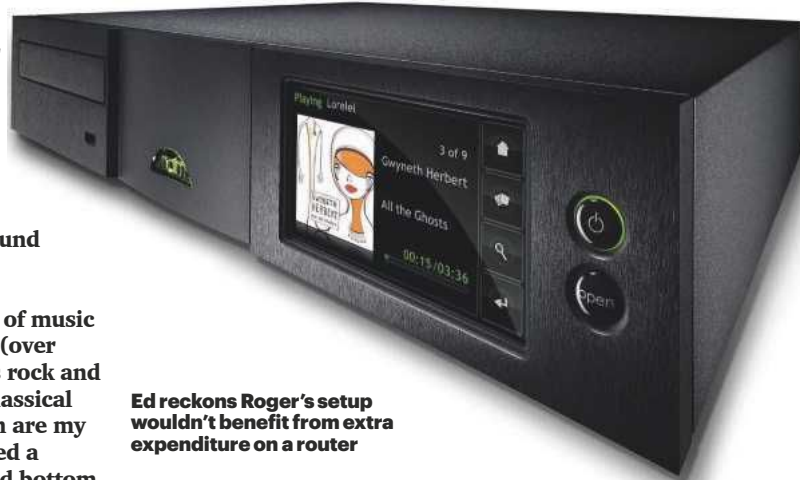
Of the many cartridges your magazine has had experience of over the years, are there any that might fit the bill? I'd love a Koetsu Red, which would be perfect – apart from the crazy price. If the maximum budget was up to about £500, what would you suggest? Many thanks for your assistance.

Michael Merry

**DP:** Hello Michael, properly fettled your Michell GyroDec is capable of superb sound with a tonearm such as the SME Series V fitted, and is also capable of tracking any cartridge, of course.

## Can you suggest anything I can do to make my setup sound better?

Indeed, it's particularly good with moving coils. Sadly, at the budget you specify there isn't a huge amount of choice. My recommendation would be an Audio-Technica AT-33E which can be bought new and imported from Japan via companies such as Sound Hi-Fi for around the sort of money you're looking at spending. It sounds nothing like its AT-OC9 sister – confusingly – being one of the sweetest MCs around at anywhere near the price. It's not quite as warm and romantic as the Koetsu, but in other respects actually betters it; certainly the treble is more delicate and better finessed, and the bass has a gentle bloom yet is nicely fluid. It lacks the Red's



Ed reckons Roger's setup wouldn't benefit from extra expenditure on a router

magic, but then it lacks most of the Red's price tag too! I'd recommend you try to hear one, as it's a truly musical device and I have personally used one in an SME V-equipped Gyro with very good results.

**ES:** For £500, I would be making a beeline towards the Ortofon Quintet Bronze. I've recently experienced the Black version in a recent *Beautiful System* feature and thought it was excellent. Ortofon models have traditionally sat happily in SME arms too.

### ➤ Sweet streams

I am the owner of a Naim system, with my source being a Naim HDX-SSD, which plays music files provided by a Netgear ReadyNAS Duo. All my CDs have been ripped by the HDX in WAV file format and sent to the NAS for storage. The NAS is connected by standard Ethernet cable to a BT broadband router. CAT5 cable is connected to the router, which passes under the floor some 18m to a D-Link Ethernet switch (nothing fancy) then finally: via a meter of standard Ethernet cable to the HDX.

Do you think that it is possible to improve the sound quality if any part of this chain is upgraded? I do not want to spend unnecessarily, if I will only get minimal improvement. I would be very reluctant to start crawling under the floor to replace the CAT5 cable with all the added expense, unless it made a significant

difference. If you think performance could be improved by the addition of a more superior router, how would I be able to link both the new and the older BT router via one telephone/broadband connection?

In short: I have a top-of-the-range Naim network streaming device/player together with high performance amplification etc. and am concerned that the digital source signals to it may be sub-standard or compromised in some way. I would be very interested in your views. Thanks

Roger Hooton

**ES:** Hi Roger, my more neurotic colleagues might disagree but I'm going to stick my head above the parapet and say no. I don't think that there is any point spending out in this direction and would urge you to buy some more music and enjoy it instead

### ➤ Not all white

I must reply to the article by Nigel, specifically his siting of the latest release by Jack White. I noted that Nigel's review of the album was via CD and not the vinyl version. I bought the vinyl issue and can confirm that this is one of the worst releases that I have ever bought, it is very poorly pressed and the actual recording quality is rather poor. While Mr White wishes us to believe he is a pioneer in quality, his release is anything but, sounding closed and dull. More effort spent on quality and less on silly gimmicks, backwards ▶

## HINTS & TIPS

### CLEANING A STYLUS

Cartridges are delicate measuring instruments and have to be treated carefully. The cantilever and suspension are very easily damaged when cleaning the stylus tip if this is done incorrectly.

If you are using a stylus cleaning brush, start by ensuring that the tonearm is clipped in its rest. Then always starting from the rear (the end with the connector pins), gently brush towards the front in a single stroke. Make sure to use the tip of the brush only for cleaning and do not push the brush too hard up against the body of the cartridge. Do not be tempted to brush the stylus sideways in order to remove a stubborn bit of fluff – just repeat the back to front brushing process until the tip is clean.

Liquid stylus cleaners use a brush to apply the cleaning fluid and should be used in the same way as with a plain brush, except that a few drops of the cleaning fluid are applied to the bristles of the brush before cleaning.

If you have some stylus cleaning putty or sticky polymer cleaner, carefully lower the stylus tip into the surface of the putty or polymer, without moving it in any direction other than vertically, and then lift it off again. The dirt should then remain on the surface of the cleaner.

### TIDYING CABLES

You've spent a tidy sum on your hi-fi system, so why spoil the look of it with a bird's nest of wires extending around the back and sides of your system? Whether it's a medley of mains cables or strings of signal leads, they all deserve to be regimented into some sort of order and, preferably, not readily visible.

Mains cables usually extend from the rear of each item of equipment and often, bespoke hi-fi racks have special channels at the back to route the cables through. Make the extra effort to utilise these when first installing each item of audio – it will be much harder to do so later. Also try and keep the mains leads away from the interconnects in order to avoid a potential source of hum. A mains distribution block placed strategically at the back will mean that only one wire need emerge from the back of the system to plug in to a wall socket.

Interconnect cables, being thinner than mains leads, can be easily tangled as you move kit around to find the best placement. Wait until you have situated each item before attempting to connect it up. Various cable ties are available – one of our favourites is a helical spiral of plastic that wraps around wires to keep them neat.



# Spendor D7

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Is the way Jack White recorded *Lazaretto* alienating listeners?

playing sides, are what is really needed when spending substantial sums on vinyl. I recently bought *Dear River* by Emily Barker (Linn Records), which is superlative and comes with a free 24/192 download (Mr White offering instead merely an MP3).

Just because an artist espouses their desire for analogue quality, beauty is in the ear of the beholder not the provider.

*David Young, Letchworth*

**NW:** Yes, David, you are correct; I reviewed the CD version of Jack White's *Lazaretto*. But I was then intrigued – as I subsequently wrote in my column – by the 'extras' that were only available with the 'Ultra' vinyl version, including two hidden tracks pressed underneath the centre label of both sides. One of the hidden tracks plays at 78rpm and the other at 45rpm, making it almost certainly the first ever three-speed LP. Then there was the additional innovation of the record playing 'inside out', starting on the inner groove and playing until it hits a locked groove on the outside edge of the LP. All rather gimmicky, I tend to agree, but also good fun. But you are not the first person to complain that the sound reproduction is poor. I am reliably told that the reason it sounds so 'odd' to our digitally attuned ears is that White insisted on mastering the vinyl version tape-to-tape without any compression.

### ✉ Match me up

A house rearrangement gave me the opportunity to relocate and reawaken my little used system (and my interest in it) based around turntable, A&R Cambridge A60 amp, and Arcam 5 CD. The speakers (Wharfedale NXT planars, not brilliant but acceptable to my wife) were left in place and an old pair

### I'm missing the 'oomph' that I used to feel with my old setup

of ARC 050s substituted. I soon discovered that the CD's transport was at best erratic, and the amp's balance control needed a good dose of switch cleaner to function, so decided to start afresh.

I now have a Cyrus 6x amp and 6 SE2 CD player, one reason being that they have to reside in a rather compact (but sturdy) unit! It's all sounding pretty good, but when the music gets complex, I feel there's a certain mushiness to the sound – I'm missing the 'oomph' that I used to feel when listening to the setup I had when first married, with my Nightingale speakers (fabulous, but unacceptable size-wise), Linn/Grace/Mission turntable setup. I suspect the speakers (which after all have spent about 20 years in my attic!), so am

looking for suggestions to match the Cyrus setup, with a budget of up to £1k – preferably restricted to those within reach of the wilds of South Wales for listening tests! Music tastes span pretty well everything.

The Mission cartridge wore out many years ago, so the Linn is now running with an Audio-Technica ATF-5/OCC – itself pretty old, but I think I'll be pushing my luck to hope to upgrade the turntable as well just yet!

*Mike Roberts, Cardiff*

**DP:** Hi Mike, you're right to identify the speakers as the source of your woes. Like cars, speakers age; the drive unit surrounds lose their springiness at the rubber

atrophies, the drivers become loose and the wiring oxidises at certain points. This is all fixable of course, and worth it if you have a pair of high-end classics, but in your case I would simply plump for a box-fresh pair of new floorstanders. My choice – having listened to most rivals over the past few years – would be Cambridge Audio Aeromax 6s at £900 (HFC 391). These have a superbly open and musical sound at the price, a taut bass, smooth treble and detailed midband that seamlessly melts into the higher and lower regions. They're pretty efficient too, and have a slightly warm tonality that would make them an ideal sonic match for your Cyrus electronics. Come back to us when you need advice for your turntable tweaking...



Cambridge Audio's Aeromax 6 floorstander could well be the answer for Mike

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# The only way is up?

Vinyl's resurgence has been widely reported, but is it sustainable and can a creaking infrastructure cope with the demand? **Lee Dunkley** has his concerns

**A**s vinyl sales continue to hit the headlines with figures reaching levels not seen since 1996, demand for music on the black stuff appears to be soaring. There can't be too many *Hi-Fi Choice* readers out there that are surprised by the news, with more turntables on offer geared to every kind of budget than in the format's heyday, but it has taken some music fans by surprise. What's worrying about the trend is the fact that the record manufacturing industry itself is out of step. According to a recent newspaper article, the long player has become so popular that the increasing demand has the potential to outstrip capacity, as the resurging wave has caught the vinyl-pressing industry off guard.

As any hi-fi fan knows, vinyl never really went away and the process of manufacturing a record remains pretty much unchanged since the end of the forties – see *Guide to... The History of Audio Recording* – part 1, starting on page 116. Once you have the master of the original recording, it is cut into a lacquer of malleable plastic with a special lathe that carves out the grooves. When this is completed the acetated disc is treated with atomised silver and dipped in a chemical solution to create what is known as the father disc. A metal mother disc is then cast from the father disc and used to create mirror image stamper (or son) discs that are then used on the presses to stamp out the grooves onto a disc of heated vinyl.

Many pressing plants shut their doors years ago when the format was in serious decline, following the introduction and meteoric rise of the shiny silver disc through the eighties and nineties; I talk of course of the seemingly unstoppable (then, at least) Compact Disc. Although a number of these vinyl-pressing plants are now back in business, they're using the same machines they were back then. Even with reconditioning, the presses have a finite life span and as with everything they reach their limits sooner or later. What is considered a fairly new pressing machine today was most likely originally built 20 or 30 years ago, and the search for presses in good working condition to keep up with growing consumer demand is being forced further afield, and so consequently prices go up.

With awareness growing thanks to events like Record Store Day and the demand for vinyl increasing, the number of pressing plants remains finite, ultimately limiting the industry's opportunity to grow. No one is building new presses any more because they simply cost

too much; up to 20 times the price of an old one, and a second-hand press can cost as much as £20,000, which is more than double what it was 10 years ago.

It used to be that a plant could turn over a run on an album in about four weeks, but backlogs has meant that this time span is more likely to be three months now, and sometimes longer. Demand is becoming so high that record companies are increasingly having to book up to a year in advance for a production run, even if they don't yet know what it is they're releasing. And some albums from major artists have been delayed for release because the vinyl version wouldn't be available in time, which is only likely to become a more regular scenario as music fans desire more wax in the future.

But it's not just new music releases that are keeping the vinyl printing presses busy. The interest in pristine versions of classic albums is also a growing market for many that are looking to replace an old vinyl version or wanting to hear the albums they couldn't afford the first time around repressed on audiophile-grade 180g vinyl.

## For the record

Despite the upward trend in vinyl sales, its market share is still miniscule when compared with CDs and downloads – accounting for around just 2% of the UK's recorded music market according to figures published by the BPI. Nevertheless sales are up five times on where they were just five years ago, which is a noteworthy increase. Whether this is due to a change in buying habits or an attempt by record companies to target better-off groups of consumers by finally making more records available to those that have felt uncatered for by its lack of availability, I can only guess. But, I for one am happy to have a greater choice of vinyl in my life again. My only concern is whether the continued growth is sustainable, as it already appears to be struggling under the weight of demand and ageing machinery. Nevertheless, I look forward to reading the vinyl sales figures at the end of this year. Let's hope that the upwards trend continues ●



**Portishead's *Dummy* recently celebrated its 20th anniversary with a special vinyl repressing**



**LEE DUNKLEY**  
*Hi-Fi Choice* editor



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AC/HFP/81

# The tide is turning

**David Price** reckons the rise of serious-sounding streaming services could finally bring hi-fi the new lease of life it so richly deserves. Let's hope he's right...

**A**round 40 years ago, as *Hi-Fi Choice* magazine began to carve a niche for itself on newsagents' shelves, there were two 'new' technologies seeping on to the market. One was a new paradigm in the way we listened to music and the other was a 10-year old format that had finally begun to catch on despite relatively little effort from its creator. The former got acres of column inches, not just in the hi-fi press but in the mainstream media, the latter was widely derided.

As it transpired, the former lost and the latter won. Quadraphonic was a brilliant, brave new world of sound that people simply weren't ready for – and arguably still aren't – while Compact Cassette was a humble dictation medium invented by Philips and mocked by tape purists for its lo-fi sound. In 1975, cassette finally began to make its mark, while quadraphonic enjoyed its last hurrah before it was unceremoniously dropped by the music buying public.

This teaches us a lesson – given the choice of a whiz-bang technology that promises a new dimension in sound and a cheap and cheerful format that's easy to use, normal people (as opposed to audiophiles), will plump for the latter.

Still, 1975 is perhaps best remembered for vinyl LP, because it was this year that it achieved its greatest ever number of sales – boosted in no small part by Mike Oldfield's *Tubular Bells*. The next landmark year for music

## What the hi-fi world needs is the modern digital equivalent of chrome tape

to its heart. No, not Compact Disc – I speak of course of Compact Cassette. That humble, maligned format that people were scoffing at in 1975 was huge, and had come of age as a pre-recorded music carrier.

Cassette became a sound sensation for two reasons. First was the ease of use, low cost and portability; all these factors resided under the umbrella of convenience. CD was convenient too, of course, but less so – its disc surface was exposed, and it was initially very expensive. Second was that it sounded good. True, it wasn't as good as LP, but by the mid eighties it was pretty darn respectable. Whereas the first pre-recorded cassettes were done on ferric tape and didn't even have Dolby Noise Reduction, by 1988 almost every last one of them used high bias tape with Dolby B NR. The duplicating machines were much higher quality too, and the result was that anyone with a high-end tape deck could get a great sound. As some of us still remember, top Nakamichis outperformed CD players in the sonic stakes.

Neither the music nor the hi-fi industry needs to hire Sherlock Holmes to deduce that cassette succeeded because of the combination of its convenience and its sound. Had either of these factors been worse, it would never have attained the level of success it did.

Therein lies the lesson.

The problem we have been living through of late is that – while the music industry continues to motor along nicely – specialist hi-fi is becoming an increasingly niche pursuit. It's almost as if the well of new recruits is drying up, as ever more young people simply don't understand serious sound. Why? Because they get their music digitally, and increasingly stream it. That ticks the convenience box that cassette did, but the sound is poor; most of it is compressed 192kps AAC or worse, analogous to those early cassettes.

What the hi-fi world needs is the modern digital equivalent of Dolby and chrome tape – namely full CD-quality uncompressed files. When people are able to listen to better quality music they will enjoy it more and consume less of the low-quality stuff. Those prodigious cassette sales of the eighties tell us that – it's about hitting on that magic combination of convenience and sound.

Happily, this is finally beginning to happen. As Spotify, Google Play Music, etc. prosper, we're seeing new higher resolution streaming services open up. Qobuz and now Tidal are offering proper CD-quality sound for around £20 a month. The latter promises no less than 25 million-plus tracks to listen to, and the service also offers offline download functionality, and has extensive curation facilities via a slick user interface, also via iOS and Android apps.

Hi-res downloads are great, but will always be for geeks and/or perfectionists, and the world just isn't full of such people. Instead, what we need is a good baseline quality, and until recently we had lost that. How can you expect to sell people expensive hi-fi systems when most – if not all – of the music they ever listen to is compressed AAC or MP3? Finally the hi-fi industry has a lifeline; its oxygen supply was slowly dwindling but now seems to have been restored.

How many expensive 50in flatscreen TVs would Sony sell if we could only ever watch Freeview through them? It's a well-known fact that DVD and then Blu-ray and HD TV have driven sales of televisions, and the same applies to hi-fi too; supply serious-sounding software and the hardware sales will follow. Here's hoping we have finally witnessed the turning of the tide! ●



**There are plenty of lessons to be learnt from the cassette, and finally they're sinking in**



**DAVID PRICE**  
Hi-Fi Choice writer





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# Must the show go on?

The fact that Queen continue to perform without talismanic frontman Freddie Mercury is just plain wrong argues **Nigel Williamson** and he should know best, just ask The Doors...

**D**id anybody else think there was something odd about Queen leading the country's 2015 New Year celebrations with a show broadcast live on the BBC to an audience of millions?

Freddie Mercury, the group's original singer who wrote all their best-known songs including *Bohemian Rhapsody* and *We Are The Champions*, has now been dead for 23 years. To fill his leather trousers, the group's Brian May and drummer Roger Taylor have recruited former TV talent-show contestant, Adam Lambert, who gave a suitably camp performance and certainly looked the part. He even sported a tattoo depicting the 'Q' logo that Mercury designed for Queen's first album (released, incidentally, almost a decade before Lambert was born). Now the Lambert-fronted Queen are on an arena tour of Britain and clearly people want to see them; a reported 160,000 tickets have been sold and when I looked on Ticketmaster, seats to catch their show at the O2 were on offer at £80 each.

But can Queen be Queen without Freddie Mercury? I'd argue emphatically not. "Freddie is like a myth. It's like he's not real," Lambert revealingly told one interviewer, as if he was playing the Tin Man in *The Wizard Of Oz*. But Freddie was real, Queen are not the Munchkins and the only myth is that someone else can take Mercury's place.

## Can you imagine an American Idol wannabe as lead singer in Nirvana?

Without Mercury, it's not Queen but a tribute band like the Bootleg Beatles or the Counterfeit Stones, even if there are a couple of the original members in the lineup as part of the homage.

There is nothing wrong with musical nostalgia, of course. Natalie Cole once recorded a 'virtual duet' with her deceased father Nat King Cole, and a few years ago I saw an 'Elvis Presley In Concert' show at Wembley Arena, which featured footage of Elvis singing on a giant video screen backed live by his original band and backing singers. There was one fabulous moment when the celluloid Elvis declared, "Play it, James", and there was the great James Burton in the flesh to play the guitar solo. But the magic only worked because it was the real Elvis – albeit only on film – rather than an impersonator.

Of course, there are a number of bands that have successfully changed their lead singer over the years. After the death of Bon Scott, AC/DC replaced him with Brian Johnson; when Peter Gabriel went solo, Phil Collins became the lead singer of Genesis; and Pink Floyd survived the loss of Syd Barrett, as Roger Waters and Dave

Gilmour assumed the vocal duties. But they all became different bands after losing their original vocalists.

Only the name remained the same as they created fresh material and a distinctive new style unassociated with their former incarnations. That is patently not what is happening with Queen and Adam Lambert.

Could we imagine Roxy Music with a talent show contestant taking Bryan Ferry's part? Or Dave Grohl disbanding the Foo Fighters and reforming Nirvana with an *American Idol* wannabe as the new Kurt Cobain? Of course not. When Robert Plant announced that he would not participate in a long-term reunion of Led Zeppelin after their one-off comeback at the O2 in 2008, Jimmy Page and John Paul Jones tried out various other singers, but jettisoned the plan when they realised the idea of a Plant-free Zeppelin was an insult to their collective history.

How about the Doors without Jim Morrison? Actually that one has been tried, when in 2002 the group's original guitarist Robbie Krieger and keyboardist Ray Manzarek reformed The Doors with ex-Cult lead singer Ian Astbury. The Doors drummer John Densmore asked them not to use the name and when they persisted took legal action, arguing that calling themselves The Doors was "misleading" and that he had been forced to act "to protect the integrity of the great work all four of us created together."

## Can I get a witness?

Morrison's family supported him in the case and when it came before the courts in 2004, I was flown first-class to Los Angeles and put on the stand as an 'expert witness'. Under cross-examination I explained at length why Jim Morrison was irreplaceable as The Doors' lead singer and that any band with someone else singing his songs should really find another name. The trial lasted for three months and the entire legal process dragged on for several years before the Supreme Court of California ruled that The Doors *sans* Jim Morrison was, indeed, not The Doors.

Ten years on I feel exactly the same way about Queen without Freddie Mercury. But if any *HFC* reader is going to see them on their current tour and wants to tell me I'm wrong, I shall be delighted to hear from you! ●



Apparently this reality TV star is the new Freddie Mercury



NIGEL WILLIAMSON  
Hi-Fi Choice writer

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# Source of our sorrows

By simplifying a system's performance to the 'source is king' argument **Jimmy Hughes** wonders if we're missing the point and not really seeing (or hearing) the bigger picture

**T**he *Guardian* of 21 August 2014 carried an article investigating whether or not expert listeners could hear a difference between MP3, CD and 24-bit hi-res audio. Don't be shocked, but it seems the answer is, er – not really.

The importance of source quality hardly needs emphasising. In the seventies, Linn helped establish the source as the arbiter of good sound. Before, most of us regarded the loudspeaker as the dominant component. But Linn argued that the source was king, and virtually everyone now accepts this. Undoubtedly, there's an inescapable logic to Linn's argument. It's a bit like saying the lens is the most important part of a camera. But – is it? Let's just say there are far too many terrible-sounding hi-fi systems with top-quality source components out there...

Over estimating the importance of the source is a bit like having leaky tyres on your car, and thinking the solution is getting a more powerful air pump. It may help make your tyres feel firm, but it's the wrong solution. Ultimately, you need to get the leaks sorted.

If the 'leaks' really are bad, you probably won't notice much difference between air pumps. So when people say they can't hear any benefit with better source material, it indicates something is wrong elsewhere. The important thing is to locate these areas of weakness and fix them.

## As hi-fi has got smaller the need for quality sources has grown more acute

For me, a really good system is one that does justice to most types of music, while engaging you emotionally, and drawing you into the performance. To do this, it must highlight what's right with your recordings, rather than emphasising what's wrong with them.

A shellac 78 disc played on a good horn-gramophone can deliver amazing presence and immediacy, despite the limitations of the source. Alas, hearing old recordings played on a modern hi-fi system, one is often more aware of limitations and faults than virtues – background noise, limited frequency range, restricted dynamics, and no stereo width or depth. But are we actually hearing the true quality of these recordings?

Since the sixties, hi-fi has got smaller and neater. As this happened, the need for high-quality sources has grown ever more acute. The rot probably set in with the introduction of stereo in the late fifties. In the mono era, many enthusiasts would have used a single large efficient loudspeaker. But stereo forced most of us to compromise with smaller enclosures – it's no accident that the first

hi-fidelity 'bookshelf' speakers date from the early sixties. Played singly in mono, you would readily hear how limited such speakers sounded. But, stereo let them flatter to deceive.

Compact inefficient speakers lack the effortless room-filling clarity and presence of large enclosures, but stereo disguises this. For some listeners, the twin-channel effect was so important, they preferred stereo from two smaller speakers of lesser quality to mono from a superior single speaker.

## The bigger picture

Camera lenses have improved dramatically in the last 100 years, no question. Yet one can look at old photographs shot a century ago and be stunned by their sharpness, tonality, and high quality. The explanation? They would have been shot on large-format cameras that were less dependent on lens quality (in absolute terms) because the information was spread over big negatives. This reduced the burden on the lens.

One key difference between sound and vision is that we can easily look at old photographic prints to judge how good the technical quality was, but it's very difficult to do something similar with old hi-fi. We can't easily locate the sonic equivalent of a vintage photographic print. So, few of us know first-hand how a mono system with a large efficient loudspeaker from the fifties actually sounded. Sure, there are modern replicas, but we can't be 100 percent sure they sound authentic.

Nevertheless, if you ever get to hear a big efficient horn loudspeaker, the experience will hopefully highlight the way most modern inefficient speakers emasculate the music, relying on amplifier muscle to try and create a big room-filling sound.

An old 'mono era' speaker lays bare the flaw in the 'source is king' orthodoxy, demonstrating just how much dynamic attack, tonal colour, and expressive nuance is lost by not having an efficient acoustic coupling between transducer and the air in the room.

I wonder if anyone will still be hosting 'can you hear the difference?' listening sessions 40 years from now. Maybe in the future we'll all be debating the sonic benefits of a new gizmo that hardwires the music directly to our brains. And still people will be saying "there's not much difference" ●



**A big efficient horn speaker, Klipsch's La Scala highlights some weaknesses of modern speakers**



**JIMMY HUGHES**  
Hi-Fi Choice writer





If music be the food of love, the Pie & Vinyl record café is the place to be. **Simon Berkovitch** tucks in

**T**he idea behind Pie & Vinyl is simple, a combination of “our love and passion for music with one of England’s favourite old-fashioned comfort foods”, reads the enterprise’s mission statement. So, now we’ve got your attention...

“We wanted to create an experience. It’s my idea of heaven,” explains Pie & Vinyl’s founder and co-owner Steven Courtneil as he introduces some of the team behind this Victorian-themed feast for all the senses. Two smiling Robs – Rob Litchfield, co-owner who looks after the kitchen, and Rob Addison, retail general manager – offer a warm welcome as I begin to tuck in.

You’ll find Pie & Vinyl on Castle Road in the bohemian quarter of Southsea, a short stroll from the University. The stylish café and kitchen is on one side of the shop. It’s lunchtime: a mouth-watering smell of food hovers, distracting me from the job at hand. All produce is fresh and cooked on-premises. The other side of the shop is home to new vinyl, local CDs and tapes and handcrafted merchandise. Quirky Victoriana lines the walls. Rock ‘n’ roll-themed Christmas cards have just landed and festive faces of Nick Cave and Jack White peep upwards from a window table.

“We’ve evolved to selling merch... T-shirts, totes, caps and sweatshirts... socks and pants at Christmas... and now cards,” Steven explains. “We work with a lot of local artists. We’ve even launched our own coffee brand...”

Pie & Vinyl opened in 2012, for Record Store Day. “We’ve done three now, and it’s bigger

and better each year,” Steven says. “This year we had people queuing outside the shop from five o’clock the previous afternoon. There’s food and arts and crafts stalls down Castle Road, which is closed for the day in cooperation with the council.”

The Victorian theme of Pie & Vinyl – Audio-Technica’s Independent Record Store of the Year for 2013 – fits this street like a glove. “Southsea is the cultural arts area of Portsmouth. The Victorian street tapped into

**“We’re hoping to release pies with edible download codes on the pastry”**

our branding. All the nick-nacks in the shop have a Portsmouth connection. We’re proud to live here.” Creativity runs through the area like a ley line: both Charles Dickens and Peter Sellers were born here; Arthur Conan Doyle wrote the first Sherlock Holmes stories here. And now Pie & Vinyl acts as a conduit for Portsmouth and Southsea’s fertile music scene. It promotes shows and started its own label a couple of years ago. “We try and expose local artists and get them distributed nationally; people we believe in and enjoy,” says Steven.

To date, the label has put out an LP from The B Of The Bang and a couple of cassettes from The Boy I Used To Be and RickyFitts. A compilation tape of Portsmouth’s hottest bands

is in the pipeline, and the label is working with “gospel gothic electro” act Sasha. “We are looking to release quite a few bits next year, including T-shirts with download codes in the labels and even pie releases, with edible download codes on the pastry.”

### Return of the black stuff

As the name suggests, the music side of the store is all about vinyl. “Vinyl has come back,” Steven says. Encouragingly, recently published industry stats tell us UK sales for 2014 have been the highest since 1996. It’s all new stock here, a conscious decision, Steven tells me, to “get away from the *High Fidelity*, second-hand aesthetic”.

“People stopped [buying vinyl] because the format wasn’t available in the nineties. They never stopped loving it, though. Eighteen to 25-year-olds haven’t had the chance to buy it before. They’re amazed there’s a side A and a side B. When I was growing up, I used to do the ‘gamble purchase’: go by the cover or a recommendation from the *NME*. It’s a real privilege to recommend releases to people.”

His desire to proselytise informs Pie & Vinyl’s Record Club. “For customers who want to buy new releases, it’s hard to know where to start. We recommend 6 Music. But once a quarter we send out our own recommendation. We’d like to do this once a month, ideally.”

Music’s been in Steven’s blood “since I was eight”, he tells me. He’s had a diverse career – from footballer to creative at Estée Lauder, where he met co-owner Rob and came up





Part café, part record store, all style and substance



Will work for food: fresh from the Pie & Vinyl kitchen

with the concept for the store. Setting up shop, "I was encouraged with vinyl coming back," he says. "It is only going to get bigger, and the expansion continues apace." The record store has already grown in size, having absorbed the shop next door, giving both the vinyl and the café space to stretch their legs. The extra room means that there's now more scope for in-store events, such as gigs and film nights (see opposite). "We do a lot of in-stores. Plenty of touring bands come through the city. The customers love it." It's an intimate experience: "Naming no names," Steven says with a smile, "some big artists who've played here get pretty nervous being so close up to the audience." Popular events have included The Feeling, indie legends The Wedding Present and even Frank Turner ("The night before, he played the 02!"). You'll find some big names as punters, as well: Phill Jupitus is a regular; Johnny Marr and Damon Albarn have both been spotted digging the crates.

### Pie-fi choice

Another string to Pie & Vinyl's bow is the recently launched Pie & Hi-Fi. It's just down the road in SHOP, a multi-company space, having outgrown the limited space in the record store. Offering reconditioned, used turntables amps and speakers – from the past to the present – the store offers a three-month warranty on all of its separates. There's an extra incentive for new converts to both vinyl and the wonderful world of hi-fi: if you buy a complete system (turntable, amp and speakers), you'll also get a free £20 Pie & Vinyl gift voucher to spend on glorious black wax. (As well as vintage kit, Pie & Hi-Fi now also stocks a range of new Crosley and Rega turntables.)

"A lot of people come in and buy their first record player and then their first records," Steven says. "People like the aesthetics of the original machines, but I'd love to get some Pie



Steven and celebrity shopper Phil Jupitus



It's only the best heavy vinyl reissue stock in the racks here

& Vinyl Rega RP1s printed... a black platter with a Pie & Vinyl font."

Pie & Hi-Fi also offers a repair service, can order replacement styli, and stocks all manner of essential accessories that can make an unsung contribution to your listening pleasure – such as record brushes, anti-static cleaning cloths, slipmats, record-cleaning fluid, speaker wire and phono leads. Your repairs are in a safe pair of hands, Steven explains. "Chris, who is now retired, used to work at Goodmans in Havant. He's worked for loads of big hi-fi brands. He goes round car-boot sales, buys kit and fixes it up. He's a real enthusiast and works with us exclusively. We get in separates from the fifties to the nineties, all sorts of things, cassette players, 8-Tracks..."

With its handpicked vinyl, record label, film nights, subscription service, in-store gigs, hi-fi, music promotion, merch, coffee and fine food, the Pie & Vinyl experience is a satisfyingly diverse one. It's Portsmouth and Southsea that acts as the glue. "Local community ties everything together," says Steve. "People from Portsmouth are very passionate. We try and fight the stigma that Portsmouth seems to have nationally. It's an interesting mix and there's a lot of potential for great art. There's plenty flourishing here. We have a passion for the area and want to see it reach its potential."

Some partnerships are just made for each other. Let no man tear asunder fish and chips, strawberries and cream, Nancy Sinatra and Lee Hazlewood, and Morecambe and Wise. And after visiting Southsea's cosy Pie & Vinyl, you can definitely add those ingredients to that list. Delicious pies (you can take my word for it) plus excellent record shop – seriously, what's there not to like in *that* equation? ●

### PIE AND MOVIES

**Pie & Vinyl's monthly music-themed movie nights leave Southsea's film fans hungry for more**

The monthly in-store event danced to a haunting melody on Halloween, as Pie & Vinyl screened 2012's acclaimed British psychological horror flick *Berberian Sound Studio*, starring actor Toby Jones.

The unsettling 2012 film, set in a seventies Italian horror film's Foley studio, makes an excellent choice for Halloween, featuring a suitably eerie original soundtrack by cult Warp outfit Broadcast, also available to buy in the shop. Largely composed before the tragic death of founder member Trish Keenan, the musical score is a tribute to some of the great European horror movies of the period, using eclectic instrumentation such as synths, Mellotron and flutes.

"It's a pretty amazing film," Pie & Vinyl says, "and is sure to leave you feeling lost, confused, scared, psychedelically damaged and entertained."

No fright night is complete without a mouth-watering menu, and Pie & Vinyl doesn't disappoint. Frighteningly tasty sounding Halloween specials were concocted for the night: hungry film fans could sink their teeth into a choice of Halloween Heat (spicy pumpkin), Chicken and Shriek (leek), Wildgloom (mushroom) and Asparagus, and Moo & Boo! (steak and scary Stilton) pies – all washed down by an array of hot and cold horror-themed drinks.

The popular Pie & Film nights kicked off in April as part of the run up to Record Store Day. Vinyl enthusiast Graham Jones' *Last Shop Standing* (2012) hugely entertaining docu-film about the rise and fall and rise again of British record shops was the debut screening, complete with a talk and Q&A from the author and director – and a tantalisingly tasty menu, of course. "The film is free, but people book a meal," explains Steven. "There's only seating for about 30 people. It's another experience. The *Flaming Lips' Christmas on Mars* will be our festive showing."

Other music-themed flicks shown in the shop so far have included the official White Stripes' tour film *Under Great White Northern Lights* (2009) and *Slint: The Breadcrumb Trail* (2014), a 90-minute documentary about the making of the legendary American alternative band's influential 1991 album *Spiderland*. Vinyl from the featured artists is made available on the night and the Slint event even offered "free drinks for anyone who dresses up as Will Oldham" (*Spiderland's* cover photographer) – which is a look more appropriate for Halloween...



The recent arthouse classic was Pie & Vinyl's spooky movie for Halloween



# The Italian job

**Robert Harris** tells the romantic tale of the small group of Italian classical music lovers who came up with their own stunning amplifier

**D**uring the mid nineties, the mid-priced amplifier market was amply catered for, with established good quality British designs alongside a number of Japanese heavy hitters.

Into this saturated market a small newly formed Italian company would enter. Based in picturesque Tuscany, Audio Analogue launched two versions of the Puccini, a modestly proportioned integrated that took markets across the world by storm.

This achievement was all the more impressive as Audio Analogue began as a collaboration between three audio enthusiasts; Santo Pratico, Federico Paoletti, and Claudio Bertini, none of which had extensive experience in the field of large-scale audio manufacturing! Seemingly out

of nowhere, this unknown brand became an exemplar of audiophilia at real-world prices.





A purist design with uncompromising sonic aspirations, the Puccini's near complete use of integrated circuits was distinctly unusual. Integrated circuits acquired a bad reputation in the eighties, due to their casual application in a host of mid-fi systems and separates. And yet cost effectiveness is of fundamental importance in most designs, which often make use of discrete components challenging due to their typically greater expense. When designing a budget amp with discrete components, quality is constrained by cost or sacrifices have to be made elsewhere.

Rather than grappling with the cost, Federico and Santo attempted to

maximise the benefit of integrated circuits, which combine a large number of passive and active components on a single piece of silicon. Using mass produced chips brings component cost down to a fractional sum.

The Puccini phono stage uses a 5532 IC, while a TLE2072 looks after line-stage preamp duties. The NE5534's configuration, for driving the output transistors, was the most novel aspect of early models. The chip's output signal feeds its power supply. This 'bootstrapping' technique allows the chip to almost double its maximum rating, to generate sufficient voltage to drive TIP142/TIP147 output transistors in a Darlington configuration, which in turn provides a good current capability for speakers.

## History of the Puccini

1995	1996	1997	1999
<p>The amp is completed on Christmas day. Michael Jackson's <i>Earth Song</i> is the Xmas No.1.</p> 	<p>The Puccini launches. Meanwhile, Alanis Morissette's <i>Jagged Little Pill</i> rules the album charts</p> 	<p>The Puccini is distributed in the UK, as Oasis rule the album charts with <i>Be Here Now</i></p> 	<p>The Puccini SE is replaced with the SE Remote. Depressingly, Shania Twain's <i>Come On Over</i> is the best selling LP of the year</p> 



In the flesh, the Puccini comes in a well built, conservative but attractively rounded metal case, conveying a sense of quality and minimalism. An internally switchable MM/MC phono stage, four line inputs, and one tape loop, complete this rather tidy package. Despite its sparse facilities, the only thing audiophiles seemed to grumble about was the absence of a pre-out, which limited upgradeability.

The amp initially retailed at £475, and sold for closer to £550 by the end of its run in the early nothings.

Many listeners and critics were astounded by its sheer musicality. Its unforced organic sound had a tendency to make the competition sound hard and uncommunicative. Acoustic instrumentation and the human voice were rendered to such a high standard that the Puccini competed with the best at twice the price. The phono stage sounds as good as the line stage, which made for a pleasant surprise at a time when they were increasingly being dropped.

The standard (and later SE) Puccinis were known for possessing a softer

## Even its name attests to the maker's love of lyrical/acoustical forms of music

sweeter sound than would normally be expected from a transistor amplifier, particularly at their respective price points. While it wasn't quite a substitute for the virtues of a good tube amp, it was one of the first moderately priced transistor amps to possess an absence of the granular character that blights many otherwise decent alternatives.

Many claim that the Puccini favours classical, folk and mellow jazz. Santo affirms the amps were not voiced with the rocker in mind: "We are all classical music lovers and tried to make this transpire in the Puccini". Many amps at the price already excelled at pace, rhythm, and timing, making it a worthy alternative. But it's unfair to suggest it is dreadful with rock, just a bit too polite.

The standard Puccini had its critics. Bass output was not powerful, and its ability to convey macro dynamics was not as authoritative as some would have wished. However, its reputation as a weak amplifier was not wholly deserved. On one hand, it has a relatively small 150 VA toroidal mains transformer. Nonetheless, it features

separate supplies for each channel, with 40,000uF capacitance to assist in providing a current reserve sufficient for the demands of music signals with strong transients. Its damping factor of 100 is also respectable.

Audio Analogue does not state an output for the Puccini at 4ohms, perhaps because lower impedances can be challenging territory. According to Federico's measurements, the amp produces 70W at 4ohms, and output continues to rise down to almost 2ohms. This should allow it to be used with some low-ish impedance speakers possessing a relatively easy load. Large neutral standmounters with generous lower bass output, or floorstander equivalents with tight bass match well.

The use of just two transistors (per channel) in the Darlington output stage, causes the Puccini's premature current limiting. As luck would have it, the designers had planned a Puccini robustus, with the PCB design for the original amp including capacity for double the amount of output transistors, and so the Puccini SE arrived in the autumn of 1996.

A prime selling point was dual mono construction, with separate 150 VA mains transformers for each channel, roughly doubling the current on tap. 0.1% Welwyn resistors and Wima capacitors in critical areas of the circuit maximised the benefits of introducing such costly components. Externally, front panel thickness increased to 10mm, and the binding posts were doubled for bi-wiring.

In many regions there was an approximate 1.5x price difference between the two models. However, the SE was priced in the UK at around £600, which made it quite a bargain.

Output rises from 40W to 50W at 8ohms, which is relatively marginal, unless using lower impedance speakers. The real benefit was with respect to load tolerance and bass control, with slightly more detailing and speed. The Puccini SE offers a more convincing macro dynamic performance, and conveys louder forms of music with a greater sense of solidity. It can be driven that bit harder, and teases more bass out of current-hungry bookshelf speakers.

Many favoured the SE, as the more

## THE REMOTE VERSION

The standard Puccini SE was phased out when the Puccini SE Remote was launched at the end of 1999. This £795 model was a popular choice with customers. It used 200 VA toroidal mains transformers (a third more capacity), a weighty brass remote control and motor driven volume controller. The (non-SE) Remote Puccini was similarly revised, but continued to use one 150 VA power transformer and a broadly similar quality standard of componentry to that of the original Puccini. Most significantly, the Remote Puccinis featured a wholly discrete low feedback signal path, the early versions of which were well received by reviewers in 2000/01, but criticised by one of the designers of the non-remote models.

The remote versions are easy to distinguish from their predecessors, due to a column of six LEDs between the source and volume knobs. The circuitry was revised thrice. According to Audio Analogue, the first SE remote control version (v. 3 or 3.1) features the code 'R3E' at the end of serial numbers. A revised remote version (v. 4.3), issued in 2000, features the code 'R43S' at the end of serial numbers. The final version of the Remote SE (v. 5.0), issued circa 2001/2, features the code 'R50S' in the same location.

rounded of the two, although some argued that the drier sound of the SE lacked the musicality of the original. These differences were not dramatic however, with the SE not straying far from the mould of the original.

## Passion for music

At a time when discrete componentry was a big selling point, the Puccini offered a lesson in the importance of circuit design, rejecting the intense focus on individuated componentry, for a holistic cost-based approach, to get the best from modest outlays. The passion of the enthusiast, building exotic products in their home, is evident in the Puccini, with even its name, attesting to the maker's love of lyrical/acoustical forms of music. However, in terms of the delivery of the product, this passion was funnelled through a muted professionalism that's more commonly found with mature manufacturers.

Arguably, the Puccini's ability to impress lay in reconciling opposites: subjectivist versus objectivist approaches to sound design; achieving high-end performance at real-world prices; providing some of the sonic benefits of valves, with reliably cool-running cost-effective solid state amplification.

The early models pop up with a surprising infrequency considering their commercial success – owners holding onto them for the long haul surely constituting the strongest recommendation of all ●

The Puccini became a star around the world



# The art of Seduction

With an enviable portfolio, gorgeous premises and love of vinyl, Analogue Seduction has **Ed Selley** smitten

**A** common criticism levelled at dealers is that their portfolios often prevent would-be customers from listening to key rival products back to back as they don't stock both. This is unavoidable – it is physically impossible for every product to be in stock in the same premises – but infuriating nonetheless. If this is a concern for you, though, you really ought to pay a visit to Gary Penska at Analogue Seduction.

Now approaching its 10th year of trading, Analogue Seduction is possessed of a brand list that reads like a *Who's Who* of the movers and shakers in audio. Thanks to a dedicated warehouse, the vast

majority of the portfolio is in stock and ready to go. Having previously occupied a high-street location, Gary has now moved the store to a fabulous former rectory, which has been the subject of a lengthy and exacting refit.

As the name suggests, Analogue Seduction is a vinyl lover's paradise and has pretty much any turntable you care to think of. This isn't at the expense of digital, however, and although I request an analogue bias from the three systems I ask Gary to demonstrate, digital also gets a look in, too. In the company of Gary's colleague Terry Field, I sit down to experience the Analogue Seduction approach to making music.

## THE EXPERTS



### Analogue Seduction

The Manor House, Manor View, Whittlesey,  
Peterborough, Cambridgeshire, PE7 1TF  
01733 350878 [analogueseduction.net](http://analogueseduction.net)

[rega.co.uk](http://rega.co.uk)  
[avidhifi.co.uk](http://avidhifi.co.uk)  
[ayre.com](http://ayre.com)  
[pmc-speakers.com](http://pmc-speakers.com)  
[clearaudio.de](http://clearaudio.de)  
[dynaudio.com](http://dynaudio.com)  
[chordelectronics.co.uk](http://chordelectronics.co.uk)



## System test music



**LOUIS ARMSTRONG  
& DUKE ELLINGTON**  
*The Complete  
Sessions*  
Vinyl 180g



**BALTIC FLEET**  
*Towers*  
Vinyl



**JOE BONAMASSA**  
*Live At The Royal  
Albert Hall*  
WAV 16/44





### System 1 – The only way is Essex

**OUR STARTING POINT** is notable for being one of the simplest and most affordable systems I have ever been demonstrated. Rega is a key brand for Analogue Seduction and this compact trio represents the first foray into hi-fi for many customers. The RP1 is the least expensive turntable and all the things that make a Rega a Rega are here. The result is a simple deck, but one that feels sturdy and easy to use. The RB101 tonearm is simpler than its more famous (and pricier) brethren, but it still looks and feels like a Rega arm should. The demo example is fitted with the company's own Carbon cartridge, which exudes the same purposeful simplicity in miniature. This RP1 is finished off with a clamp from the extensive range of Analogue Seduction's accessories, which looks fantastic and works a treat.

#### Watts up Doc?

A firm HFC favourite, the Brio R integrated produces a robust 50W, which is enough for most sane requirements and most importantly in the context of this system an onboard phono stage. This moving magnet design is far more than a convenience feature and Terry feels you'd have to budget significantly more to better its performance.

With the reputation and standing that Rega has for its turntables, it is often easy to forget its speakers. The RS1 is the smallest in the range and

is a classic two-way standmount. The 5in mid/bass driver and 20mm tweeter are bespoke units produced for Rega. The result is a compact and attractive speaker that finishes a system that promises much despite the small footprint and low price.

We kick off listening to *The Complete Louis Armstrong Duke Ellington Sessions*, which features a collection of musicians at the peak of their performance and is an absolute delight to listen to. With the opening *Duke's Place*, the Rega trio reveals a number of surprising and impressive

### There is more punch and impact than you'd ever give the Rega RS1 credit for

attributes. The first is that even though the RS1 is hardly a whopper and the Analogue Seduction demo room is fairly large, the sound fills the room and never sounds like it is under the slightest duress.

Beyond simple volume though, the sound is packed with detail and presence that is far removed from a perception of budget hi-fi. Ellington's piano is tangibly real, its relationship with the partnering instruments and Armstrong is completely self-explanatory. I have heard this album dozens of times on some mighty rigs, but this little system doesn't leave me feeling short changed. Contrary to

normal practice, we leave the record playing for a couple of extra tracks.

Switching to the bleak instrumentals of Baltic Fleet's *Towers*, the Rega is unfazed by the change. The timing and drive is deft and effortlessly powerful and makes for a performance that engages you rather than slipping into the background. Calling on more power from the Brio R doesn't result in any hardening up or stridency, just all the headroom you'd need. The driving bassline of the title track is perhaps the final joker in the Rega's pack. A standmount with a 5in driver is never going to be subsonic, but there is more punch and impact than you'd ever give the RS1 credit for.

In this day and age, it would be slightly foolish to call £1,200 cheap, but equally there are very few ways that you can look at this trio of components and not acknowledge that they are sensational value for money. What enthuses Terry most of all is that this system offers immense initial listening pleasure, but will then respond positively to upgrades and tweaks as and when you want to apply them. By all accounts, that makes it a bit of a bargain.

**For sheer bang for buck, the compact Rega system takes some beating**

- 1 REGA RP1 WITH REGA CARBON MM CARTRIDGE INCLUDED £229
  - 2 REGA BRIO R INTEGRATED AMPLIFIER WITH BUILT-IN PHONO STAGE £548
  - 3 REGA RS1 STANDMOUNT SPEAKERS £438
- VAN DEN HUL CS122 SPEAKER CABLES 5.0M PAIR £278
- TOTAL £1,493**





### System 2 – Walking in the Ayre

**IT MIGHT BE** a big jump in price, but the next setup takes us from the first rung on the Rega ladder to the last. The electronics also take a sympathetic jump introducing us to more members of the Analogue Seduction brand lineup both well known and more unusual.

It is a testament to the Rega brand identity that although the RP1 and RP10 are unlikely to share a single component in common, they manage to have a strong family resemblance. Of course, the RP10 is a radically more sophisticated proposition. The ceramic platter, the lovely RB2000 tonearm and the wacky but rather brilliant 'skeleton' onto which you can drop a plinth cutout to still allow a lid to be fitted are all genuinely clever features. Like the RP1, this RP10 is also finished off with a Rega cartridge, in this case the range-topping Apheta.

The phono stage comes courtesy of another of Gary's analogue brands. Avid has been determinedly expanding into areas beyond turntables and now has a full range of phono stages of which the Pellere is the second most expensive. Like the flagship Pulsare II, it is a two-box design and shares the same immensely solid build. A wide range of settings are available via switches on the underside as are potentially vast amounts of gain.

#### Fresh Ayre

As the Ayre AX-5 disposes of 125W, this gain should not be too vital. The Colorado-based concern ploughs its own furrow in design terms and the AX-5 combines the attributes of the company's pre and power devices into a single chassis. Given the relatively lofty price, it might seem unusual to combine it with the PMC twenty.24, but as Terry explains, the PMC really only comes into its own when driven by a more capable amplifier such as this. Contentious or not, it is always good to see the twenty series in action as it ranks as one of the best proportioned speakers out there in my opinion.

The chances are, though, that you won't have bought any of these pieces of kit for their looks. While they are all perfectly lovely to look at, the performance is lovelier still. Returning to the Armstrong/Ellington work reveals that as well as the entirely anticipated jump in scale, there is a sense that the

recording is even more fluid and natural. The dynamic range at both ends of the frequency spectrum seems more effortless and potent. When Armstrong's trumpet joins the performance for the first time, it does so with the sort of level you might more reasonably expect from the same instrument actually being played in the room. The fine detail that is hinted at in the first system is now woven effortlessly into the performance. Those long evolved and exactly engineered transmission lines are in their element giving deep, clean and detailed bass.

Interested to see just how much headroom, this system has, I switch to one of my absolute favourite pressings, *Fink Meets The Royal Concertgebouw Orchestra* and let it fly. The slow but inexorable build of the opening *Berlin Sunrise* is handled with an effortlessness that lends some credence to the idea of partnering the PMCs with a more expensive amp. The Ayre is self effacing to the point of modesty, but exerts absolute grip on the twenty.24 that enables it to show all of its considerable strength across a wide variety of music.

The system as a whole has a deeply impressive ability to generate forensic levels of detail, but at the same time flatter all but the most flawed of pressings. It takes an outing of Royal Blood's debut effort – a fine album but not one that is every likely to trouble the audiophile top 10 – before I even begin to dent this exceptional poise and control. The Rega and Avid combination works almost without embellishment, but there is a sense that nothing in that record groove is going unnoticed. This is a significant jump in price over the first system, but the step up in the performance and impact that this setup can generate makes it seem entirely logical in practise. At the moment we are still paddling in the shallow end of what Analogue Seduction can do.

- 1 REGA RP10 WITH APHETA MC CARTRIDGE INCLUDED £3,598**
- 2 AVID PELLERE PHONO STAGE PREAMPLIFIER £2,500**
- 3 AYRE ACOUSTICS AX-5 INTEGRATED AMPLIFIER £7,895**
- 4 PMC TWENTY.24 FLOORSTANDING LOUDSPEAKERS £3,400**
- VAN DEN HUL MAGNUM SPEAKER CABLES (5.0M PAIR) £530**
- AVID BALANCED XLR INTERCONNECTS 2.0M £1,500**
- TOTAL £19,423**



**British analogue combines with American muscle to great effect**



**The PMC reveals in the quality of the source equipment and really shines**



## System 3 – Supersize me

**FINALLY WE COME** to the elephant in the room. Given the size and complexity, it has been in situ throughout listening, offering a glimpse into just how far Gary's product lineup extends. The combination of Danish speaker come skyscraper, polished British electronics and German analogue expertise doesn't come cheap but you probably knew that already.

The Clearaudio Innovation turntable fronting the system is a striking-looking device, but like all Clearaudio products form follows function. The different materials that form the 'layers' quell unwanted vibration while the almost gill-like 'frills' on the Stradivari cartridge also handle stray resonances. It uses the 12in universal tonearm instead of the parallel trackers, which for me at least makes it rather better looking and significantly less terrifying to use. As a show of their enthusiasm for it, the Avid Pellere phono from the previous system is retained.

The digital component and amplification comes courtesy of Chord Electronics. The DSX1000 UPnP streamer is a 24/192-capable device that also handles DSD natively via Ethernet. Control and horsepower are supplied by a combination of the vast CPA5000 preamp and even more enormous SPM6000 monoblocks. The power amplifiers boast 750W into 8ohms, which might sound like overkill but are just what the doctor ordered.

### Have it large

This is because the Dynaudio Evidence Platinum is big. Really big. They stand a whisker under 2m tall and weigh a hernia-inducing 115kg each. It disposes of four 18cm bass drivers, two 15cm midrange drivers and a pair of 'Esostar' tweeters.

Rather counter-intuitively, the first instinct when we return once again to Armstrong and Ellington is that the system as a whole doesn't sound that big. Where this huge setup comes into its own is with the tricky to define but easy to experience

sense of presence. There is simply a better sense of the space the recording was made in and an effortlessness that only 750W can bring to proceedings.

Be under no illusions though, ask this system to give you some serious scale and it delivers with astonishing effect. Gary selects the Joe Bonamassa rip and the way the system goes about *High Water Everywhere* is as thrilling and visceral as any collection of electronics I've heard. The bass is real pin-you-to-your-seat stuff that is beyond the realm of most serious subwoofers. This integrates perfectly into the rest of the frequency response. The height of the Dynaudios suggests there will be a sense of music going over your head, but this isn't the case and instead there is a vast but conventionally proportioned soundstage. There is also a finesse and delicacy that sets this system apart from many large speaker arrangements. The Evidence is fearsomely powerful when you need it to be but never at the expense of a single voice sounding as it should.

The Clearaudio is one of the most unambiguously accurate turntables I've ever listened to. You might argue it lacks a little romance, but as a means of enjoying music regardless of the medium it takes some beating.

If you have the space and the wallet for it, there is very little out there that can challenge the sheer thrill that this system generates so effortlessly.

**1 CLEARAUDIO INNOVATION TURNTABLE WITH 12IN UNIVERSAL TONE ARM WITH VTA ADJUSTER £10,170**

**2 CLEARAUDIO STRADIVARI V2 MC CARTRIDGE £2,575**

**3 AVID PELLERE PHONO STAGE PREAMPLIFIER £2,500**

**4 CHORD ELECTRONICS SPM6000 MONO BLOCK POWER AMPLIFIERS £27,900**

**5 CHORD ELECTRONICS DSX1000 STREAMER NETWORK PLAYER £7,500**

**6 CHORD ELECTRONICS CPA5000 PREAMPLIFIER £11,850**

**7 DYNAUDIO EVIDENCE PLATINUM FLOORSTANDING LOUSPEAKERS £58,500**

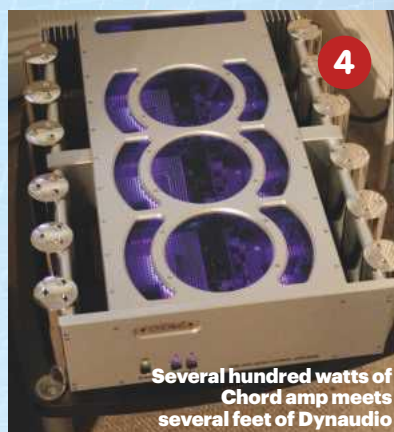
**VAN DEN HUL THE ROCK BALANCED XLR INTERCONNECTS £1,075**

**VAN DEN HUL THE AIR 3T SPEAKER CABLE 3.0M £1,182**

**TOTAL £123,252**



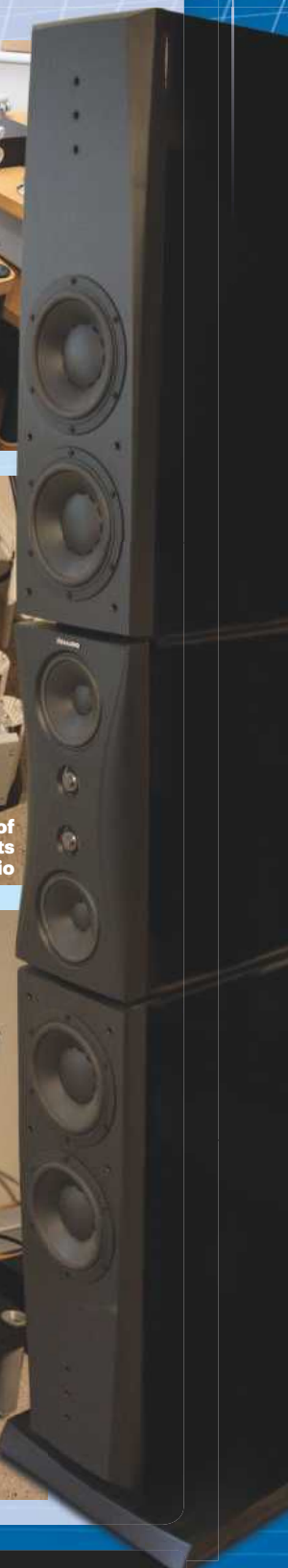
Clearaudio brings German engineering excellence to vinyl



Several hundred watts of Chord amp meets several feet of Dynaudio



Chord's mastery of digital is highlighted in the mighty DSX1000



Over the course of Dealer Visits, I have listened to systems at similar price points to the first and third systems I encountered at Analogue Seduction. What sets Gary and his team apart is that they have never before been under the same roof. It is one thing to have a large

brand portfolio, but Analogue Seduction knows its inside out and is determined to offer the same levels of support at both ends of the price spectrum.

The result of this knowledge is a store that produces systems as beautiful as the surroundings and can do so at

pretty much any price point. There is little that can touch the visceral thrill of those mighty Dynaudios, but equally I can't think of more satisfying ways to spend £1,200 than the Rega system. Regardless of your budget, Analogue Seduction has you covered.





# POSTCARD RECORDS

It's Postcard Records' 35th birthday. **JT Rathbone** and **Simon Berkovitch** raise a glass and crank up *The Sound of Young Scotland* to celebrate

**W**ith *The Possibilities Are Endless* – a moving, critically acclaimed documentary film about songwriter Edwyn Collins' extraordinary readjustment to life after a debilitating stroke in 2005 – now available on DVD and Blu-ray, it seems timely to revisit his stunning early records with Orange Juice, released on the label that he and Alan Horne launched together in early 1980: Postcard Records.

Orange Juice and Josef K, along with their temporary labelmates Aztec Camera and The Go-Betweens, combined hints of The Byrds, Buzzcocks

and The Velvet Underground with elements of soul and funk to create strong, lovingly crafted songs that were built to last.

The two prime players in the saga were as alike as they were opposites: the punk and soul-loving – but non-musical – Alan Horne's highly strung puppet master perfectly complementing Edwyn Collins, the musically gifted troubadour.

Although Horne may have called the shots, it was his Postcard partner who provided the initial creative impetus. Collins coined the name and devised the distinctive 'cat and drum' logo. Indeed, the whole venture was originally launched

as a vehicle for Orange Juice releases, with other acts almost an afterthought.

When Orange Juice's quirky debut single, *Falling And Laughing* appeared in February 1980, it quickly sent ripples through the burgeoning independent music scene, inevitably reaching the ears of Rough Trade's label head Geoff Travis. After some cat and mouse games between Horne and Travis, a special manufacturing and distribution deal was drawn up, which meant that the young label's 45s reached a far wider network of shops.

With Josef K and Aztec Camera added to the roster, along with a

one-off single with Antipodean favourites The Go-Betweens, Postcard soon harboured a reputation for fresh, guitar-driven, offbeat pop songs, many of which figured strongly in the early indie charts of music weeklies *Sounds* and *NME*.

A string of classic singles and critical acclaim wasn't enough to keep things afloat for long, unfortunately, and soon after the departure of Orange Juice, the label ceased to exist in late 1981, after just 12 seminal releases. The music's influence has never wavered, though, and further generations of musicians have been simply thrilled by the power of those dozen records.



# Orange Juice

Irresistible Glasgow popsters who pioneered the eighties indie sound

**A**lthough seen by casual listeners as an eighties' one hit wonder, the music and image of early Orange Juice was widely imitated throughout that decade and beyond, and before their move from Postcard to Polydor they could do little wrong in the eyes of a besotted music press.

The definitive first lineup, that did much to define their record label and its 'Sound of Young Scotland', were together barely three years, and their catalogue of six singles and one excellent album is tantalisingly small.

Friends and music obsessives James Kirk and Steven Daly met Edwyn Collins in 1977. After adding David McClymont the next year, the band slowly morphed from the punky Nu-Sonics (named after the cheaply produced guitar of the same name) into the more funky, jangly and almost unfashionably melodic Orange Juice.

After a tentative ear-catching debut, *Falling And Laughing*

(1980), their second single, the strident, irresistible *Blue Boy* was a big hit on the fledgling independent charts. Fourth 45 *Poor Old Soul* was Postcard's biggest seller to date, narrowly missing the national Top 75. The major label sharks were soon snapping around their heels.

An album recorded for Rough Trade finally surfaced on Polydor

## The Orange Juice catalogue is tantalisingly small

in early 1982, by which time Daly and Kirk had left the band. The big hit finally came with *Rip It Up*, (1982), which reached number 39 in the charts and featured a new lineup including Malcolm Ross from the recently imploded Josef K on guitar. The record was the first hit to feature a Roland TB-303 synthesiser. Two albums featuring the Postcard-era material emerged in the nineties.

**Despite a cerebral haemorrhage, Edwyn Collins still performs**



# Josef K

Moody, funky post-punkers who influenced a generation beyond

**T**he coolest cats on Glasgow's coolest label actually hailed from Edinburgh. The band that changed their name from TV Art in 1979, just in time for their first single, differed from their labelmates in other respects, too.

While Orange Juice and Aztec Camera were often poppy and bright, the band led by Paul Haig and Malcolm Ross were a darker, edgier affair with more in common with Joy Division and Echo & the Bunnymen.

They certainly weren't bereft of pop sensibilities. As classic singles *It's Kinda Funny* and *Sorry For Laughing* attest, they could be overtly tuneful even at their most neurotic. And if Orange Juice aspired to sound like the perfect cross between the Velvet Underground and Chic, Josef K occasionally sounded like James Brown fronting Television!

They had already cut one 45, *Chance Meeting*, for Steven

Daly's short-lived Absolute label before Alan Horne, initially reluctant to sign them on account of their doomy air, brought them to Postcard to join their regular gigging mates, Orange Juice.

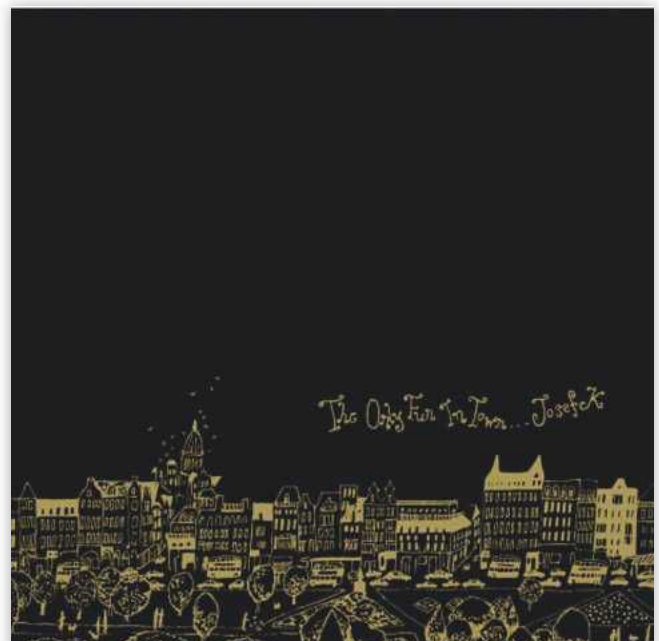
The quirky, original *Radio Drill Time* was soon followed by the

## They sounded like James Brown fronting Television

sombre and quite stunning *It's Kinda Funny*. The band then released their finest 45 to date, *Sorry For Laughing*, and its hypnotic punk-funk flip *Revelation* in between recording their lone album – twice.

At the second time of asking they were finally satisfied, and *The Only Fun In Town* became the only LP released in Postcard's lifetime. Barely a month after its release, Josef K called it a day.

**The band took their name from the Kafka book *The Trial***



# The Go-Betweens

Hip and literate: Australia's answer to The Modern Lovers

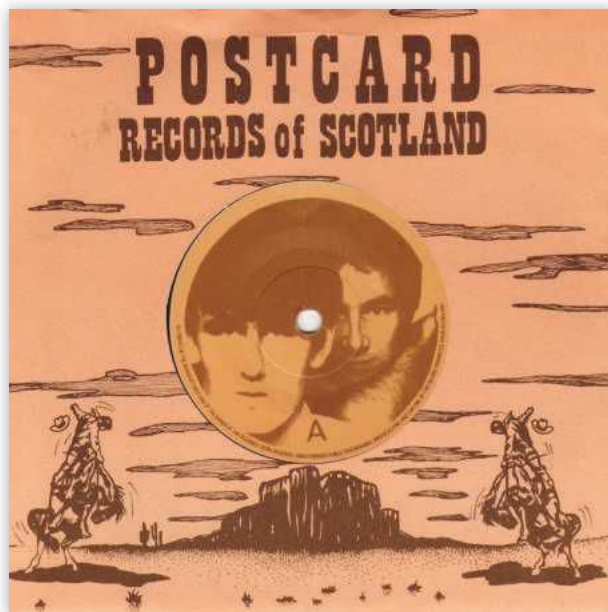
In many ways, Postcard was the perfect label for The Go-Betweens. This hip, literate, sixties-influenced combo had already released two cult independent singles in Brisbane, Australia. The first of which, *Lee Remick*, was a big favourite of Alan Horne, with Edwyn Collins and Orange Juice being fans of its B-side, *Karen*.

Songwriters Robert Forster and Grant McLennan shared many of the Glasgow gang's influences, in particular The Velvet Underground, Television and the early Modern Lovers. Forster once claimed in an interview that they were trying to achieve a perfect combination of Patti Smith and The Monkees.

Residing in London in early 1980, they were summoned north of the border by Horne to record a single: *I Need Two Heads* backed with *Stop Before You Say It*. Both sides were cut

at a marathon two-day session which also provided the A-side of the aforementioned Josef K's Postcard debut and Orange Juice's sophomore outing.

It would be their only Postcard release, but they returned to the UK two years later to continue a fine run of critically acclaimed records.



## Aztec Camera

The boy wonder who brought the acoustic guitar back into the frame

Roddy Frame was only 16 when he enlisted school friend Campbell Owens into his East Kilbride combo to form the first definitive lineup of Aztec Camera.

Proficient on guitar since his early teens, he had developed a virtuosity that stunned his contemporaries and older musicians alike. After seeing an early live gig, Josef K's Malcolm Ross dragged cohorts Collins and Horne along to marvel at the band and secure their services for the label.

Incredibly, Frame's songwriting was developing almost as fast as his fluid and jazzy guitar style, and the two songs that formed the band's first record in March 1981 belied their author's youth.

The breezy *Just Like Gold* was the top side, but the majestic, mini-epic *We Could Send Letters* was the song that pricked up many journalists'

ears. B-side once again outshone A-side on their second – and Postcard's last – release. *Lost Outside The Tunnel* possessed the same air

of melancholy and mystery and is a lost classic of its era.

At Frame's insistence, the singles have never been reissued, digitally or otherwise.



### ► SHOPPING LIST

They were big indie sellers in their day, but some of the label's offerings are getting harder to find. Here are eight gems well worth hunting down



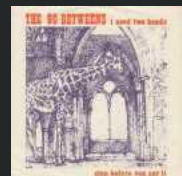
**Aztec Camera**  
*Mattress Of Wire*  
The original label's last release – and the only one to feature a conventional picture sleeve.



**Josef K**  
*Sorry For Laughing*  
Only a few dozen test pressings of this legendary, unreleased LP exist. A legit vinyl issue finally surfaced in 2013.



**Aztec Camera**  
*Just Like Gold*  
Another classy debut that's starting to get scarce. One of three of the label's 45s to come with an actual postcard.



**The Go-Betweens**  
*I Need Two Heads*  
This far rarer Australian issue surfaced on Missing Link shortly after the UK version in a unique picture sleeve.



**Josef K**  
*It's Kinda Funny*  
The group's majestic second single for the label. First issues feature a photocopied band photo in a re-sealable bag.



**Orange Juice**  
*Falling And Laughing*  
The band and label's debut, just 963 were pressed. Mint examples fetch hundreds of pounds.



**Fire Engines**  
*Get Up And Use Me*  
This stunning single was nearly a Postcard release, instead emerging on the group's imprint: Codex Communications.



**Orange Juice**  
*The Felicity Flexi Session*  
A four-track, limited cassette flashback to the Postcard era that came with early copies of *Rip it Up*.



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**100 Keith Jarrett  
Charlie Haden**  
Last Dance



**100 Mary J Blige**  
The London Sessions



**101 Giuliano Carmignola**  
Bach Violin Concertos

# Musicreviews

**ALBUM  
OF THE  
MONTH**

## Joni Mitchell

### Love Has Many Faces

★★★★★

4 CD box set **Rhino**

**THE GREAT TROUBADOURS** who defined modern songwriting in the sixties and seventies have responded in different ways to aging and the decline in creative inspiration that so often accompanies it. Some have taken to the road on a 'never ending tour', recording new material at only sporadic intervals between periods of writers' block. Others have thrown themselves at their fading muse, releasing a bewildering array of often perplexing albums. Joni Mitchell has taken a different path and pursued it with dignity. Having spent more than 30 years writing some of the most insightful, sophisticated and acute songs ever to dissect the human condition, she concluded at the age of 55 that she had said all she wanted to say.

Reluctant to repeat herself with diminishing returns, after 1998's *Taming The Tiger*, she announced her retirement and channelled her energy into painting. She briefly returned on 2007's *Shine* (released bizarrely via Starbucks), but has otherwise stuck to her guns. She has also largely resisted the temptation to milk her back catalogue, which is why this four-disc set is so welcome.

Far more than a conventional career retrospective and subtitled "a quartet, a ballet, waiting to be danced", Mitchell spent two years curating *Love Has Many Faces* as the soundtrack to an as yet unrealised ballet in four acts, each disc grouping together a dozen or so themed compositions drawn from different stages of her career. Her first three acoustic folk albums of 1968-70 are ignored, except for the inclusion of *Both Sides Now*, which means there's no room for *Big Yellow Taxi*, *Woodstock* or *Chelsea Morning*, none of which fitted her choreographed vision. But orchestrated songs sit alongside synth arrangements and complex jazz numbers and stark piano ballads as the idealistic young Joni of the seventies converses with the older, mature woman of the nineties, all crisply remastered to create a unified dynamic, throwing up some wonderfully surprising juxtapositions as she guides us on a narrative journey through love's innocence and experience, vicissitudes and pleasures. The deluxe package, designed by Mitchell, also includes a book with lyrics, paintings, and autobiographical text. She promises that one day the ballet will be staged, too. In the meantime, this is an exquisite collection that presents one of the great oeuvres of 20th century songwriting in a fresh context, which encourages us to hear familiar material with new ears. **NW**







## Neil Young

Storytone

★★★★★

Two CDs

Warners



**THE EVER-PROLIFIC YOUNG** had an unexpected jolt of emotional inspiration for his 13th album of the millennium, after leaving his wife of 37 years for Daryl Hannah. The 10 songs range from romantic odes to new love (*Tumbleweed*) to bittersweet reminiscing (*Plastic Flowers*). Whether you find it heartfelt and aching or mawkishly sentimental will depend on what you make of his cranky decision that his 70th year is time to tear up his life and start over.

## The second disc presents a dose of schlock Young hasn't deployed since *Harvest*

We get two different versions of the album. The first disc contains solo acoustic versions, raw and unvarnished accompanied by just guitar, piano and harmonica. The second disc presents the same songs with grandiloquent orchestral arrangements and a dose of schlock Young hasn't deployed since *A Man Needs A Maid* on 1972's *Harvest*. He also adds horns and a choir, and the effect is as messily intriguing as his personal life appears to be. **NW**



## Thompson Family

★★★★★

CD

Concord

**IF FAMILY ALBUMS** conjure up smug images of the Von Trapps and *The Sound Of Music*, think again as ex-Fairport Convention man Richard Thompson is joined by ex-wife Linda, three children and a nephew on an album of folk-rock delights that proves that musical talent flows copiously down the bloodlines. All are accomplished songwriters in their own right and the familial contributions range from dark and compelling (Richard's *One Life At A Time*) to breezy folk-pop (daughter Kami's *Careful*) via gorgeous folk ballads (Linda's *Bonny Boys*) and plaintive country waltzes (son Teddy's title track). **NW**



## The Orb History Of The Future Part 2

★★★★★

Three CDs & DVD

Mutante

**PROBABLY BEST KNOWN** for blissed out ambient hits *Little Fluffy Clouds* and *Blue Room*, The Orb's Dr Alex Paterson and Jimmy Cauty have released a variety of electronica cuts that aren't just designed for chill out rooms and meditation. *History* includes some of the lesser-known material the pair has produced since the nineties, with everyone from Youth, Thomas Fehlmann and Lee 'Scratch' Perry. Though the quality of recordings varies according to when and where they were made, the one constant is the mixture of beautiful, ethereal strings mixed with supremely heavy bass to give your system a proper workout. **JDW**



## Mary J Blige

The London Sessions

★★★★★

CD

Capitol Records

**NEW YORK'S SOUL** hip-hop queen recently transplanted herself to London in an attempt to reinvent her sound with an injection from local artists, including Disclosure, Naughty Boy, Emeli Sandé and Sam Smith. And for the most part, the experiment works, with a clutch of songs marrying quirky house beats to her impeccable vocal stylings.

The album combines an impressively varied mix of styles, (from doo-wop with a soul beat to sub-bass with house piano stabs), but cementing it all is her voice. Insistent, plaintive, and occasionally pulling out an awesome raw gospel wail that's never over used, she may have found a new direction, but she's still very much Mary. **DO**



Do you agree with our reviewers? Decide for yourself and listen to some of this month's tunes at [www.hifichoice.co.uk](http://www.hifichoice.co.uk)

## AUDIOFILE VINYL

★★★★★

### Keith Jarrett, Charlie Haden Last Dance

2x 180g vinyl

HOT PICK

ECM



**WITH THE SAD** passing of Charlie Haden earlier this year, the title of this release proved somewhat prophetic. While these musicians have worked extensively

in the past in bigger bands, *Last Dance* and *Jasmine* (released in 2012) were made by just the two of them alone in 2007. They had been playing together on and off since the sixties, so it's safe to say that they were familiar with one another's styles, and this makes their playing seem effortless yet interlocked in an almost psychic fashion.

It's probably the closest that Jarrett has got to pianist Bill Evans when he had bassist Scott LaFaro in the sixties, but Haden has a softer sound that contrasts with the piano even when it's being played gently. And for the most part the love songs here inspire that sort of playing. The exception is *Dance Of The Infidels*, which injects a bit more pace and shows that both players are in tune at pretty much any tempo.

ECM does not release much material on vinyl so it's a treat to have this record sounding so open and tonally rich on the king of formats, it serves to bring out the nuances of the playing and the perfect sense of timing that both musicians bring to the material. **JK**



## HIGH RESOLUTION DOWNLOADS



**Barb Jung**  
Just Like A Woman  
– Hymn To Nina



ALAC/FLAC 24/88.2kHz

Linn Records

**JUNGR CERTAINLY ISN'T** afraid to tackle icons, but taking on Nina Simone's repertoire requires a special sort of courage. She doesn't try to convey the vulnerability, or her volatility – this is very much a reinterpretation of tunes that uses Simone's indomitable spirit as a jumping off point to new sounds and new feelings. And for the most part she carries it off, her smoky, breathy voice leading the often boldly idiosyncratic arrangements. **DO**



**Jef Neve**  
One



FLAC 24/44.1kHz

B&W Society of Sound

**THE BELGIAN JAZZ** pianist's latest is an intense record, mixing mostly original tunes with a few covers including Joni Mitchell's *A Case Of You* and Billy Strayhorn's *Lush Life*. His style ranges from the impressionistic, decorating sparse, passages with lushly romantic flourishes to busy and intense, filling all the corners with shards of insistent notes. But he's always lyrical, teasing out beautifully evocative melodies on virtually every track. **DO**



A fine recording of a beautifully executed performance

HOT PICK

## Giuliano Carmignola

Bach Violin Concertos  
Concerto Köln



CD

DG Archiv

**CARMIGNOLA PLAYS VERY** accurately, and the solo part is very well executed, technically. But there's also a welcome edge to the playing that really lifts the music out of the routine. Rhythms are springy and buoyant, and the interpretations have plenty of fire and life. We get the two regular solo concertos, plus the double and two 'reconstructions' of lost originals from Bach's harpsichord concertos – including a gritty probing account of the great D minor concerto BWV 1052. Archiv's recording is crisp and immediate, with lots of bite. Yet the upper partials avoid edginess, and tonally the sound is natural and well balanced; close, but with space around the instruments. **JH**



**Pierre Monteux**  
The RCA Recordings  
made between 1941  
and 1961



40 CDs

Sony/RCA Red Seal

**THIS SUMPTUOUS BOX** includes pretty much everything Pierre Monteux recorded for RCA. Many of the things in this box are extremely rare, and were almost impossible to find on vinyl. So it's lovely to be able to have everything lovingly recreated, complete with original LP artwork. Given the spread of dates, there's a fair variation in sound quality. But even the earliest mono recordings are surprisingly focused and very listenable. Monteux's strong direction and impeccable musicianship, plus Sony's lavish production fully deserves 5 stars, but in hi-fi terms some allowance for the age of the material should be made. **JH**

## BLU-RAY DVD ★★★★★

**Rolling Stones**  
Hampton Coliseum

Blu-ray

Eagle Vision



Mick looks energetic in his garish garb on this footage from Virginia in 1981, but he's by far the most animated of the group. Keith has the eyes of a man in need of rehab and Woodie is at least

in the moment, Bill has a shiny leisure suit but that's the limit of his involvement. But they play some hot blues licks between them and do a good job with the hits. It's great to hear tunes like *Beast Of Burden* and *When The Whip Comes Down*, which bring out a bit more spark than the classics. Not their finest hour, but a finer one than they have had for a long time. **JK**

## DEMO DISCS



An industry insider reveals the music they use to develop their products, this month **Kevin Edwards**, MD of Talk Electronics



**JS Bach**  
Orchestral Suites 3&4

I use this because I know the recording venue well and it gives me a good idea of how 'real' things should sound, space around things, etc.



**Chuck Mangione**  
Live at the Hollywood Bowl

Most budget systems fail to get the feeling of this performance like our Apprentice TT/IA1/Apprentice SP system does.



**Friday Night in San Francisco**  
Al Di Meola/John McLaughlin/Paco de Lucia

Great for musicality and a real sense of performance. It was a design goal with our TT2/IA2/SP2 system.



**Christy Baron**  
I Thought of You

This is quite simply a fabulous disc. Christy's very pure female vocals, should be without any edginess, smooth but not all mushy and lost in the mix.

## HI-RES HIGHLIGHTS

Our pick of the best hi-res downloads released over the past month...



For the first time, the famed Radiophonic Workshop (HFC 379) is releasing a hi-res 24/48 album. Called *Radiophonic Workshop*, it's available via B&W's Society of

Sound ([bowers-wilkins.com/radiophonic](http://bowers-wilkins.com/radiophonic)). High Res Audio ([highresaudio.com](http://highresaudio.com)) has a treat for Rolling Stones fans with a wealth of albums including *Beggars Banquet*, *Aftermath* and *Live 1965* recently added. Finally, Linn Records ([linnrecords.com](http://linnrecords.com)) has Mozart's *Divertimenti* by SCO Winds, Brahms and Schumann's *Lieder* by Ann Murray and Malcolm M and the Scottish Ensemble's interpretation of Tchaikovsky's *Serenade* all coming out during February.

# Minitest

PLATTER MATS £12-£250

## Mat's the way I like it

An integral part of getting the best possible sound from your turntable, **Neville Roberts** takes four mats out for a spin

**T**urntable platter mats have to perform more functions than you might imagine.

First and foremost, they need to support the record and isolate it from external influences. They also need to transmit the rotational energy from the turntable platter to the record and lastly, provide a mechanical interface to couple the disc to the platter. It goes without saying that they should do all this without damaging the vinyl.

Some turntable manufacturers supply suitable mats with their products while others prefer the vinyl to sit directly on the platter. What type of mat to fit and, indeed, whether to fit one at all will depend on a huge range of issues, including personal preference. Two important factors to consider are the material the platter is made from and how it is supported on the turntable. The platters themselves can be made from glass, acrylic or metal. Many metal

ones have a rubber or plastic mat bonded to their surface. The centre spindle can be in a bearing that is directly connected to the plinth or supported on a sub-plinth and arm-board coupled to the main plinth by springs.

The products reviewed here cover a wide selection of prices. They're made from different materials, ranging from a soft foam to hard graphite. They are all tested on a turntable with an acrylic platter fitted.

## Analogue Works Foam Turntable Gimp Mat

PRICE: £12 TELEPHONE: 01536 762211 WEBSITE: [divineaudio.co.uk](http://divineaudio.co.uk)

### DETAILS

**PRODUCT**  
Foam mat

**ORIGIN**  
UK

**THICKNESS**  
3mm

**FEATURES**  
Non-absorbent  
polyethylene closed  
cell foam  
construction

**DISTRIBUTOR**  
Divine Audio

**THIS IS THE** least expensive turntable mat reviewed here. The company's aim is to create a range of good-value solutions that offer a significant sonic upgrade over standard felt mats. The Gimp range includes five different mat options: cork and nitrile lightweight, cork and nitrile heavyweight, silicone, neoprene and the one reviewed here – a non-absorbent polyethylene closed cell foam mat. The five different materials are the result of extensive research undertaken by the company to offer mats to suit all needs that are a 'Good Idea, Modestly Priced', hence Gimp!

The foam mat was originally designed for use on heavy aluminium platters, it should also be suitable for use on many heavyweight turntables. It is mid-grey in colour and very lightweight. It has a 298mm diameter and is a standard 3mm thick, meaning that fitting it will probably be a straight swap with any existing mat.

It has a high-friction surface that means there's negligible slippage, and a record clamp is not required.

### Take control

Listening to Vivaldi's *Concerto For Oboe In A minor* played by Concerto Amsterdam, the oboe in the first movement is clearly positioned in front of the orchestra. The string continuo, although behind the oboe as it should be, has great presence and clarity. For vocals, I turn to The King's Singers' *It's A Great Little World*, which further demonstrates clear vocal individuality from each singer. The driving bass line on the B side of Laurent Garnier's *Tales of a Kleptomaniac (Back To My Roots)* is very tight and punchy. I also sense a reduction in background noise



compared with playing the same records without the mat. The overall impression is of a well-controlled sound with a firm bass response ●

### VERDICT

Superb value for money mat that offers sonic improvements for heavyweight platters



## Analogue Studio

### Cork and Rubber Turntable Mat

PRICE: £27 TELEPHONE: 01733 350878 WEBSITE: [analogueseduction.net](http://analogueseduction.net)



#### DETAILS

**PRODUCT**  
Cork and rubber mat

**ORIGIN**  
UK

**THICKNESS**  
3mm

**FEATURES**  
Cork and rubber granules composition

**DISTRIBUTOR**  
Analogue Seduction

**THERE'S A WIDE** selection of composition mats on the market that are made out of cork and rubber and this is a fine example. The mat is 295mm in diameter and made from a combination of cork and rubber granules. This composite layer mat should suit most turntables and has been specifically designed to absorb resonances and vibrations.

As the mat is 3mm thick, which is similar in thickness to other mats that are often supplied with turntables, it may be that the VTA will not be affected, so no adjustment of the tonearm height will be necessary.

A good feature of this mat compared with some other cork and rubber options is the recess in the centre to accommodate the label area of the record. This ensures that the mat is supporting the playing surface and not any thick centre label.

The mat's surface is gentle on the vinyl and also grips well on the record. This will eliminate any

slippage of the record on the turntable. This could make the use of a record clamp unnecessary if you previously had to use one on a hard platter surface to prevent slippage.

#### Perfect harmony

I find this mat provides a genuine improvement in both instrument positioning and focus. Again, with the Vivaldi recording the oboist stands confidently at the front of the string continuo. In particular, the strings sound very natural and have a fantastic presence in my listening

room. The bass response of the Laurent Garnier track is clean and well controlled. While each singer still retains his individuality, The King's Singers seem a tad more harmonious. This superb clarity indicates to me that the mat is effectively reducing unwanted reflections of record vibrations back into the cartridge ●

#### VERDICT

A really great value upgrade that provides significant audible improvements.



## Clearaudio

### Harmo-Nicer Turntable Mat

PRICE: £50 TELEPHONE: 01189 814238 WEBSITE: [soundfoundations.co.uk](http://soundfoundations.co.uk)

#### DETAILS

**PRODUCT**  
Vinyl mat

**ORIGIN**  
Germany

**THICKNESS**  
2.4mm

**FEATURES**  
Fabricated from vinyl material

**DISTRIBUTOR**  
Sound Foundations

**DESIGNED TO PROVIDE** a sonic coupling between the record and the platter, the Harmo-Nicer mat is made from vinyl. Being of the same material as the LP itself, it should be a good impedance match. As well as the sonic properties, Clearaudio considers that vinyl should provide the best surface to keep a record secure.

The Harmo-Nicer is supplied in a standard-looking 12in record sleeve and has a recessed area in the centre to accommodate the label area of the album. This is very important for a firm turntable mat as some LPs have quite a thick label and without the recess the playing area can end up being suspended in mid-air. This area is itself labelled with a warning not to use it for playback, which is important, but does rather spoil its looks. The underside is smooth; the upper side has a fine textured finish designed to hold the record firmly in place and interact with the record groove in order to offer a vibration-

free contact between record and mat and reduce surface noise.

#### For the record

The 292mm diameter mat is the thinnest here, which is good news for tonearms with limited VTA adjustment capabilities. It weighs in at 190g – just over the weight of an audiophile record.

Sonically, I find using the Harmo-Nicer results in excellent detail. The Vivaldi piece presents itself with great clarity and crispness at the top end, but perhaps does not quite produce

the level of refinement that is offered by the other mats on test here. The individual voices of The King's Singers retain their great distinctiveness and give a brisk and rousing performance. Meanwhile, the pounding Laurent Garnier bass is certainly punchy and firm. Finally the noise floor is reduced when the mat is installed ●

#### VERDICT

This mat delivers great clarity and crispness and lowers the noise floor





# ISOkinetik

## High Density Graphite Mat

PRICE: £250 TELEPHONE: 0208 2418890 WEBSITE: isokinetik.co.uk

### DETAILS

**PRODUCT**  
Graphite mat

**ORIGIN**  
UK

**THICKNESS**  
6mm

**FEATURES**  
730g high-density  
carbon construction

**DISTRIBUTOR**  
ISOkinetik

**THIS IS A** rather unusual turntable mat from ISOkinetik, which has been developed using High Density Graphite (HDG) – a material that the company has already successfully used in several other damping products. The mat is supplied in a blue canvas bag for extra protection during transit

HDG is formed of microscopic spheres of carbon that have a high capacity for dissipating vibrations, making it an ideal material for use as a mat. Unwanted vibrations can come from the turntable itself and can also be generated as a result of playing the record, so by dispersing these vibrations in the mat, they are stopped from entering into the audio system.

The mat itself is 6mm thick and weighs in at a whopping 730g – that's the equivalent of four 180g audiophile records! Given its thickness, it is highly likely that the

tonearm will need to be raised to maintain the correct VTA of the stylus. You should, therefore, check that you can adjust your tonearm height by this amount before purchase. It's certainly not cheap, which is due to the high price of good-quality HDG and the specialised machining costs associated with using the material. A 3mm version is due out soon, which will be more affordable.

### Weighty performer

I notice an immediate improvement in the immediacy of the music and a deftness and delicacy to the sound with the Vivaldi recording. Bass response is punchy and tight, as



clearly demonstrated by the Laurent Garnier track. The King's Singers' sparkle and their enjoyment of the song are infectious – everything is altogether more refined, but is closely matched by more affordable mats ●

### VERDICT

Although expensive, it performs extremely well and yields noticeable sonic benefits



## Mini test verdict

**ALL OF THE MATS** demonstrate that there are some clear improvements to be had and each has its own merits. As with so many of our roundups, arriving at an outright winner is difficult as the choice depends on many factors, including the turntable it is used on and personal preferences. Of course, another issue will inevitably be the depth of your pocket.

The Analogue Works Foam Gimp Mat is superb value for money and will be an ideal partner for heavyweight turntables. The cork and rubber mat from Analogue Studio is a fine example of this type and this material has a good proven track record for delivering sonic benefits. This mat is no exception and gives a well-balanced sound with great

instrument focus. The Harmo-Nicer from Clearaudio is an interesting option which, being made from vinyl, is designed to provide good acoustic coupling of the record to the platter, but the label does rather spoil the look of the turntable when no record is being played. However, the prize for an original material goes to the HDG mat from ISOkinetik. This mat certainly delivers on sound quality, but it is quite an expensive option due to the cost of the raw material and the manufacturing processes involved.

Both the Harmo-Nicer and the HDG mats may still benefit from the use of a record clamp to reduce the

chance of record slippage as they are rigid models with hard surfaces. Another issue with the HDG mat, if it is to be used on a deck with a sprung sub-plinth, is to check that the weight of the mat is within the range of the springs.



Taking both sonic benefits together with value for money, the winner is the cork and rubber composition mat from Analogue Studio, thanks to its clean and controlled bass response, a natural-sounding top end and well-defined instrument positioning.



Generally speaking, glass platters will benefit from a softer mat material as this will tend to dampen out any brightness and colouration that may occur. Acrylic platters may also benefit from the addition of a mat, although some people prefer the sound when the record is sitting directly on the platter.

When you fit a new mat on a turntable, even if you are replacing an existing one, it is very likely that it will change the height of the record

relative to the tonearm. Therefore, the VTA of the stylus will have changed and so the tonearm height should be adjusted to allow for this.

Turntable mats can help eliminate any slippage of the record on the platter while playing. To check for any slippage, put a tiny mark on the edge of a record, line it up with a mark on the platter and then play the record. If there is slippage, it doesn't take long for the marks to become misaligned.

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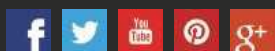
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**WHAT HI-FI?**



# Philips

## Fidelio X2 headphone



**AS A COMPANY** that has a finger in virtually every category of electronics going, Philips has devoted an impressive amount of time to its Fidelio sub brand of audio products. The X2 replaces the X1 and competes at the same keenly contested price point. The X2 does not appear radically different to its sibling and remains a full-size headphone for home use.

It is built around a pair of 50mm dynamic drivers selected for their suitability. These use neodymium magnets and a technology that Philips calls Layered Motion Control that creates a sandwich driver where two layers of polymer encase a gel core to offer a smoother frequency response and less aggression or harshness when pushed. The result does not appear to be any harder to drive than a conventional single layer type as the X2 and doesn't seem terribly insensitive in practise.

The enclosure needed to encase a 50mm driver would be fairly substantial as it is but in the X2, the requirements are larger still as each driver is canted over 15° from vertical as Philips says this better matches the geometry of the human ear. In the flesh, this angled fitment is hard to spot and doesn't feel any different on the ear. The housing is then open backed, which means the headphone leaks noise in use although not outrageously so.

### Creature comforts

In comfort terms, this is a fairly solid piece of design. Philips has used memory foam on the earpads, but has avoided going for a very springy version of the material to prevent the slightly oppressive and clammy feeling that such designs can suffer from. This is helped by an outer jacket of breathable velour, which looks a little more kitsch than leather but is very comfortable. The housings are mounted on a high arched headband which uses an inner 'hammock' (or band to the rest of us), which is apparently extremely adaptable to the shape of your head, but in truth doesn't

really make that much of a difference. The end result is a big yet comfortable headphone that feels reasonably if not exceptionally well assembled for the price. The fact that black is the only colour used makes it look a little hulking but the comfort features work well and other than a lack of horizontal pivot, the cans are easy to get sat correctly on the head.

Connected to a Chord Hugo taking a mix of lossless and high-res files from a Lenovo laptop, the X2 puts in a performance that meets many of the promises of the design. It is an extremely refined headphone that even when fed fairly thin and aggressive recordings manages to stay smooth and controlled at high listening levels. The claimed frequency response of 5Hz-40kHz is quoted without any details of roll off, but in practice translates to a sound that is even and well integrated across the frequency range.

One of the more likeable aspects of this civility is that it doesn't translate into the X2 being dull or sluggish. With the boisterous live *Dark Side Of The Mule*, the recent live album from Gov't Mule, it pounds its way through the performance with a sense of energy and fun that is vital to the nature of the band and their performance. The large open-backed

housings do an impressive job of generating a sense of space and soundstage to the performance.

Compared with the smaller, less expensive (and it must be said, cruder) Grado SR225e (HFC 393), the X2 provides a 'big picture' sort of performance. Fine details at all points of the frequency response that the Grado brings to the attention are rather less well defined in the X2, but while this means it might not be the better choice for forensic editing work, it does have its strengths. The refinement coupled with the good levels of comfort make it an easy headphone to wear and listen to for long periods of time.

### Head of the class?

There is no shortage of competition for the Philips at the asking price and given the increasing popularity of 'hybrid' headphones that offer the option of being used out and about, the X2 is a more specialised proposition. That said, it is a good example of Philips taking some clever design ideas and using them to provide real-world ability and user friendliness. If you need a comfortable and forgiving pair of headphones and can live without the last ounce of detail, this is a decent place to start looking. **ES**

#### DETAILS

**PRICE**  
£300

**TELEPHONE**  
0207 9490241

**WEBSITE**  
philips.co.uk

#### OUR VERDICT



# ortofon

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All Quintet cartridges use the same ABS thermoplastic bodies and neodymium magnets, but each model in the range has its own sonic expression that reflects its status. From the well-rounded **Quintet Red**, through the smooth **Quintet Blue** and spacious yet dynamic **Quintet Bronze** up to the pure audio excellence of the **Quintet Black**, this series offers something for every discerning listener at a very attractive price.

The Quintet Series also includes a true-mono cartridge, for accurate reproduction of older mono recordings.



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# Dali

## Kubik One soundbar



### WALL-MOUNTABLE AND WITH

dual optical, RCA stereo phono, micro USB, mini jack and aptX Bluetooth, Dali refers to the Kubik One as an “audiophile all-in-one sound system” even though it’s clearly a soundbar. It has premium quality aesthetics and comes with a black, white or red grille, plus there are optional coloured replacements available. To give it its due, Denmark-based Dali has an enviable, 30 year track record in the loudspeaker market, and has garnered high praise for its other Kubik active models.

The Kubik One is a stereo closed-box enclosure with four separately powered drivers – two soft textile 25mm dome tweeters and two 5.25in wood fibre cone mid/bass units. The amplifier is Class D and the claimed frequency range is 48Hz – 22kHz with the crossover set to 3kHz. You can introduce your own subwoofer using the line out, which sits in a recessed cavity on the rear with the other wired inputs (except the front-mounted 3.5m jack).

### Keep it tidy

The micro USB is compatible with PCs and Macs (plus an iPad if using an Apple camera connector) but its location makes it awkward to access if the soundbar (sorry all-in-one system) is wall mounted. If you are sticking it up on a wall, you can tidy up and flatten the cables under a removable strip. Also in the recess are slider switches for setting the bass (with options for three room sizes), an auto power mode (allowing the unit to go in to sleep

mode if left idle) and a gain adjust knob, for equalising the analogue and digital outputs.

The central strip consists of operational controls on top and discreet LED buttons that light up depending on the mode or status. The blister-button remote control makes operation simple enough. I have no trouble getting a MacBook Air and iPhone 5 to cosy up in sequence to the Kubik One using Bluetooth and the rear sockets are spaced far enough apart to allow the use of good quality, thick cables.

### It gives a clean presentation with impressive sonic imaging

I won’t dwell too long on it but if you were to use the Kubik One as a soundbar you can rest assured that it does a pretty good job in that department. It doesn’t have built-in Dolby Digital decoding, but does a sterling job with the PCM version of *Game of Thrones*. During a battle scene on a beach the thuds, clangs, landing of blows, shouting and wind blowing all have a convincingly meaty resonance. Dialogue is a little bit on the thin side, as it is with daytime shows such as *Pointless* and *Sky News*.

Musically though, the Kubik One really shows its muscle, especially with a stereo analogue signal from a CD player. The echo of Chris Jones’ opening verse at the start of *Wake Up Darlin’ Cory* is deft and refined and sounds highly polished with such clarity that between verses you can

clearly hear his intake of breath. The guitar twangs nicely, its notes resonate energetically and hang transiently. The bass has decent punch albeit a little lacking in extension, but is well balanced with the higher frequencies.

Simply having aptX on board is no guarantee of performance, but streamed over Bluetooth from a laptop, a 24/96 download of Fleetwood Mac’s *Little Lies* is sumptuously clear with terrific detail to the vocals. The introductory bass to Michael’s *Billie Jean* (another terrific hi-res 24/192 download) is likewise purposeful and well defined. The shaking rattle and rhythm guitar kick in strongly and the vocals are smooth including the shrieking of the upper registers. It’s a clean presentation with impressive sonic imaging in terms of width and depth, and has plenty of excitement.

### I have the power

When it comes to power, the Kubik One is no shrinking violet, and can effortlessly fill a small to medium sized room, but starts to distort at something near party volume levels. Kept just below this you can happily listen to music, album after album, without testing the endurance of your aural receptors.

For a music system with wireless connectivity the Kubik One is not cheap and it has neither the power nor the finesse of the similarly priced and spectacularly good Naim mu-so. But mu-so is a table top product, and as a lifestyle soundbar the Kubik One has some impressive benefits and at least delivers on its promise to produce very good results. **AJ**

### DETAILS

**PRICE**  
£800

**TELEPHONE**  
0845 6443537

**WEBSITE**  
dali-uk.co.uk

### OUR VERDICT





# Atacama

## Helix Eco 3.0 MMS equipment support

**SPECIFICALLY DESIGNED FOR** storing micro multimedia audio equipment, the Helix Eco 3.0 is made from a 40mm-thick carbon-treated bamboo resin composite material and each shelf is cut, finished and hand polished in the UK-based factory. The company uses bamboo as it gives superior sonic qualities when compared with traditional hardwood and veneered supports – the micro growth pore structure offers the advantage of both vibration-absorbing and sound-dampening properties.

The rack comprises three fixed-height shelves supported by a side column in a cantilever configuration that incorporates an outer shroud. This has been designed to hide cables and is available in satin black finish as

standard and silver metallic or diamond white for an additional cost of £20. It is also equipped with four adjustable chrome glide feet for easy positioning and set up. The rack measures 500 x 850 x 450mm (WxHxD), each shelf is 300 x 40 x 400mm and they are spaced 195mm apart and 245mm from the base.

### Take the strain

The support is supplied in two boxes (one for the wooden shelves and one for the heavy metalwork) and is straightforward to assemble with the supplied instructions. The shelves are supported on gel pads fitted to pairs of angled support arms that locate into machined slots in the underside of each shelf. The resultant rack is very sturdy indeed and each shelf can support loads up to 7.5Kg.

Sonically, the Helix Eco 3.0 performs very well as one might expect from the rigid design. Bass is really tight and well controlled and the top end is clear with excellent detail. Overall, the sound is very musical with sharp instrument focus. This rack is extremely well manufactured and is sonically well designed. It is excellent value for money and its good looks will enable it to fit in well with most domestic settings. **NR**



### DETAILS

**PRICE**  
From £300

**TELEPHONE**  
01455 283251

**WEBSITE**  
atacama-audio.co.uk

### OUR VERDICT



# QED

## XT40 speaker cable

**WHEN IT COMES** to cost-effective speaker cables, QED is one of the brands most likely to come to mind for many hi-fi fans. The cable maker has been around since 1973 and was among the first to challenge our understanding of the influence cables have in our setup with the introduction of its 79-strand speaker cable in 1978.

The XT40 looks like a viable challenger to any entry-level speaker cable offering, and will enable hi fans with conventional speaker placement to cable up a system for around £100 using a 3m pair of wires fitted with 4mm gold-plated plugs and sturdy Airloc ABS outer barrels. Posher 4mm Airloc plugs with metalouters (as shown) can also be fitted, but push the price up by around £20.

Part of QED's Reference Series, the XT40 uses a pure 'Five Nines' (99.999%) oxygen-free copper woven braid around a hollow polyethylene

core that QED calls Aircore. Housed inside a soft PVC outer jacket, the cable has a 4mm<sup>2</sup> cross section and boasts low resistance for longer runs.

### Ear for detail

There's plenty of zing and upper detail to make listening easy, and London Grammar's *Strong* has tremendous presence with the expansive soundstage extending wide of the speaker's footprint. It doesn't quite manage to pull out high levels of detail at the very top end, and lacks the absolute sparkle of cables further up QED's range, but there is still bags of detail on offer.

Bass is gutsy and fulsome, and has terrific energy and pacy rhythm on Laura Mvula's *That's Alright*. It's not as forward sounding as some in the way it presents her vocals, but its laidback copper cable characteristic makes it only marginally less easy to hear into the layers of the recording.

There's no standout characteristic in this well balanced cable other than the way it handles all elements of the music so evenly. Everything about the XT40 is clear and engaging; from its packaging to cable construction and, most important of all, its superb performance at the price. **LD**



### DETAILS

**PRICE**  
£10 per metre, unterminated

**TELEPHONE**  
01279 501111

**WEBSITE**  
qed.co.uk

### OUR VERDICT



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# MCRU

## Silver Plated Bussmann Fuses

**IF YOU HAVE** taken the trouble to fit good-quality, heavy-duty mains leads to your audio equipment, it's important not to overlook the quality of the fuse fitted in the mains plug. If you are using a standard 'kettle' lead, the chances are that the mains plug is fitted with a cheap 10p fuse anyway.

A fuse is intended to be the weak link in the mains supply that will break the circuit in the event of any fault. Given that most audio equipment will have its own mains fuse fitted of the correct value, many people argue that having another fuse in the mains plug, which is effectively in series with the equipment fuse, is unnecessary. However, more of an issue is the fact that such cheap fuses will have poor quality end caps, meaning that they are a potential source of noise due to poor connections. Swapping the

fuses in your mains plugs with a good quality replacement will reduce the risk of another source of noise entering your system.

### An offer you can't re-fuse

You can spend a surprisingly large sum on some top-of-the-range audiophile fuses, but there are also some very reasonably priced fuses out there, including the ones reviewed here, available from MCRU. These fuses are based on the Cooper Bussmann range, which has a good reputation for making high-quality UK plug fuses. MCRU has had the end caps silver plated, which should significantly improve conductivity and reduce contact resistance.

The fuses are available in the standard range of 3A, 5A, 10A and 13A. Given that all my equipment is individually fused, I decided to fit the 13A fuses in my mains plugs, on the



basis that this value will offer the least possible resistance of the entire range. I should stress that you should always make sure that this approach is safe in your setup and that your equipment is fitted with its own appropriate value fuse; otherwise choose one of the lower value fuses.

After replacing the fuses in my plugs (many of which have less-than-pristine looking end caps!), I can perceive audible improvements in terms of fullness of sound and realism. Impressive stuff. **NR**

### DETAILS

#### PRICE

99p

#### TELEPHONE

07908 056978

#### WEBSITE

mcru.co.uk

#### OUR VERDICT



# Fidelity Audio

## CU and CUX interconnects

**BASED IN DONCASTER**, Fidelity Audio has many years' experience of providing upgrades to audio components to improve the performance of off-the-shelf systems. In addition, it produces its own range of power supplies, mains purifiers, preamps and headphone amplifiers. It has now expanded its range to include audiophile interconnects, including the entry-level CU and CUX analogue cables.

Both cables use gold-plated, solid-core, high-purity copper conductors and are fitted with the new KLEI Copper Harmony RCA plugs. These plugs feature a single-point earth connection and yet have a good, firm connection to the socket. The KLEI plugs are soldered with high-quality silver/gold/copper solder (1.8%Cu / 9.5%Ag / 0.1%Au). The conductors of these hand-made cables are sheathed in an anti-microphonic

material in order to reduce mechanical vibration. Such vibrations, whether externally produced or internally generated, can pollute the audio signal. Each of the CU interconnects employs two conductors, while the CUX use four.

### Perfect pair?

Both pairs of cables are run-in using a cable burn-in CD before auditioning. Starting off with the CU cables connected to my CD player, I listen to an AVIE recording of Vivaldi Concertos performed by La Serenissima entitled *The French Connection*. The attack of the strings in the *Paris Concerto No.5* is conveyed beautifully with all the excitement I expect from this recording. Swapping to the CUX cables seems to provide

slightly more headroom to the overall performance.

Switching to Gordon Giltrap's more upbeat *Airwaves* CD demonstrates good musicality. Once again, I feel the performance of *Heroes* is more expressive with the CUX. There is a greater sense of spaciousness with an excellent bass response.

These cables are very well made and surprisingly flexible, considering that they contain solid core conductors. **NR**



### DETAILS

#### PRICE

CU: £179; CUX: £279 for 0.5m

#### TELEPHONE

01302 563124

#### WEBSITE

fidelityaudio.co.uk

#### OUR VERDICT



# Mass Fidelity

## Relay Bluetooth DAC



**FOR A PIECE** of software originally designed to replace RS232 cables, Bluetooth has come an awfully long way in the last few years. In a world of competing formats and rival standards it exists as a pretty much universally supported open standard that enjoys almost continuous improvement. The recent update to the format to allow the use of the aptX codec enables a CD-sized 16/44.1 signal to be streamed, which has meant we've seen the arrival of a number of hi-fi products making use of the standard.

Mass Fidelity is a Canadian company and its Relay DAC is an aptX-capable design that decodes via a Burr-Brown PCM 5102 and Cirrus Logic processor. AAC decoding is also supported, which means that the Relay is backwards compatible with less capable variants of Bluetooth as well.

The Relay gets off to an excellent start thanks to its truly lovely build quality. The chassis is machined aluminium and while not very large, feels solid and well finished. It might be one of the cheapest items I've encountered that manages to convey a high-end feel to it. This effort extends to the internals as well. Mass Fidelity has gone to great efforts to ensure that the range and stability of the Bluetooth signal is as good as possible and this is the first device claiming a 10m range that I've tested that has actually achieved that promise. Additionally, the Relay comes with a good quality RCA-to-RCA and RCA-to-3.5mm interconnect supplied.

### Hidden extras

In connectivity terms, it initially looks like Mass Fidelity has dropped the ball as the rear panel only sports a pair of RCA phono suggesting that only an analogue output is present. Unusually however, if you hold down the power button for five seconds, these outputs convert to a pair of S/PDIF connections allowing the Relay to be connected directly to a DAC. While this still isn't ideal if you need an optical connection, it is rather clever. The Relay is simplicity

itself to get going. Only the slightly limited amount of information available from the single LED – it is impossible to confirm if you have an aptX connection for example – and a tendency to go into standby a little too quickly when there is no audio signal really count against it.

With the painless setup completed and a mixture of FLAC files and the Tidal streaming service on offer, the Relay manages to get an awful lot right. With the rear outputs set to analogue, the performance with lossless files delivers on the promise of aptX. There is nothing in the way of audible compression or elevated noise floor, suggesting that the work Mass Fidelity has put into the Relay has been worthwhile. This means that Röyksopp's *The Inevitable End*, is delivered with plenty of detail and an impressive sense of scale. The pounding bassline of *Monument* is deep, well defined and very powerful.

Across this and more refined music, the Relay is consistently forgiving even with less than stellar mastering. It has the useful ability to pick out fine detail while simultaneously avoiding harshness and aggression.

The splendid but flawed Royal Blood debut album benefits from this helping of civility and still retains the slight brutality that makes it what it is. Being extremely critical, the performance can lack a little sense

of soundstage across the speakers – it can sound a little left/right – and compared with Arcam's rBlink, it can sound a little less musical. Where the Arcam is a device that generally gets the head nodding, the Relay is slightly more matter of fact.

Switching the outputs to digital and connecting the Relay to a Naim ND5XS reveals it to be entirely transparent as one might hope. Used in this way it effectively becomes a (beautifully made) Bluetooth dongle and will perform exactly as the DAC it is connected to does. The output is stable and none of the digital inputs I connect it to experience any signs of dropout or locking issues, which suggests that however the switch between analogue and digital is implemented, it doesn't show any signs of being a bodge job.

### All right on the night

The Mass Fidelity Relay is an exceptionally well thought out piece of equipment that gets an awful lot right. If you have an aptX Bluetooth source, you can secure a performance that is competitive with UPnP and AirPlay and that has to rank as one of the most stable and effective Bluetooth implementations I've had the pleasure to use. It may face some rather stiff competition, but the Relay is entirely capable of holding its own. **ES**

#### DETAILS

**PRICE**  
£180

**TELEPHONE**  
01825 750858

**WEBSITE**  
anthemavs.co.uk

#### OUR VERDICT



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Benz Micro L04, boxed plenty of life left used 499  
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Clearaudio Innovation Compact, good condition dem 1999  
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Conrad Johnson Premier Six phono preamplifier used Call  
Garrard 401, Slate Audio plinth dem 599  
Garrard 401, SME 3009 dem 599  
Garrard 301, Decca arm and cart used 799  
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Project RPM 4 Turntable/Arm with cover, great! used 249  
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Rega RP3 Elys2 cartridge, excellent boxed used 399  
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Graham Slee Gram Amp2 dem 119  
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SME 3009/3, excellent boxed used 249  
SME 3012, excellent used 799  
SME V12, nr mint boxed dem Call  
STD305, vgc, no arm used 99  
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Thorens TD160, Audio Technica arm, boxed used 249  
Thorens TD209 turntable package dem 699  
Thorens TD2030 Blue turntable new 999  
Thorens TD125 c/w SME3009, excellent used 399  
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Townshend Elite Rock o/w Excalibur, boxed excellent used 799  
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VDH Colibri M/C cartridge dem 2999  
VDH Condor M/C cartridge new 1999  
VPI Scout, JMW arm excellent used Call  
VTL TP2.5 phono stage (new) new 1749  
Wilson Benesch Act 1 Tonearm, nr mint superb used 799

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Arcam T61, vgc+ used 79  
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Creek T43 FM tuner new 99  
Denon TU-1800DAB used 179  
Denon TU-S10 used 199  
NAIM NAT03, excellent used 199  
NAIM NAT101 & SNAPS, excellent £500 NAIM service used 899  
Nakamichi B2, excellent used 149  
Nakamichi 580, near mint boxed used 249  
Nakamichi RX505 and 202 used Call  
Pure T01ES DAB Tuner used 89  
Quad FM3, vgc used 79  
Quad FM4, late grey version, excellent used 179  
Rotel RT1080, excellent used 149  
Yamaha CT7000, vgc used 499

## Amplifiers

AMR 777 Integrated dem 199  
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Anthem Integrated 2 Valve Integrated used 499  
Art Audio Jota 520b, excellent used 3999  
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Audio Analogue Puccini SE amp. Black dem 379  
Audio Analogue Maestro Integrated dem Call  
Audio Project ap60 integrated dem Call  
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Creek Destiny Integrated dem 699  
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Icon Audio, MC34 boxed used 299  
Krell FPB600, excellent used 2999  
Leben CS300, excellent boxed used 899  
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Linn Kolektor Preamplifier used 299  
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Micromega IA100, great integrated, boxed dem 599  
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Musical Fidelity M3i, excellent boxed, REDUCED used 199  
Musical Fidelity M1PWR, excellent boxed used 399  
Musical Fidelity X-T100 Integrated used 249  
NAIM NAC82, excellent boxed dem 249  
NAIM NAP250, olive excellent boxed used 899  
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Prima Luna Prologue Premium Preamplifier used 1199  
Puresound L300 valve preamp dem 3599  
Quad 606 Power excellent boxed used 399  
Quad 66 Preamp, excellent remote used 349  
Quad 99 Pre/Power, excellent, remote, Quadlink used 649  
Quad 405, from used 199  
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Quad 34/306 late grey versions used 399  
Rega Brio 3, excellent boxed used 229  
Resolution Audio Opus 21 S80 Integrated dem Call  
Roksan Kandy K2 Power, nr mint boxed dem 499  
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Sugden Masterclass Integrated in Titanium dem 2749  
Sugden A21SE in Titanium, boxed, excellent used 1399  
Tag McLaren 60iRV, excellent boxed used 299  
TEAC Distinction A1000 Integrated, ex demo dem 599  
Union Research Simply Italy Integrated dem 999  
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Yamaha AS500, excellent boxed used 179  
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## Digital

Arcam CD72, excellent remote boxed dem 1999  
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Arcam Alpha Plus, excellent dem Call  
Atoll 100SE DAC dem 379  
Audio Alchemy digital transmission interface/psu dem Call  
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Ayre CX7 EMP, excellent boxed used 1199  
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Bryston DAC/Streamer dem Call  
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CEC TL51XR, lovely belt drive unit dem 499  
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Chord Qute EX DAC, excellent boxed used 2499  
Consonance CD120 Linear dem 1999  
Consonance CD2.2, new sealed used 1299  
Consonance Droplet, vgc+ dem 1799  
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EAR Acute 3, mint boxed dem 499  
Exposure 2010CD, remote dem 2999  
Goldenote Koala, near mint boxed dem 699  
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Leema Elements CD player sealed box dem 299  
Linn Karik 3, excellent boxed remote dem 7749  
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Mynad Z20DAC, excellent boxed used 899  
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NAIM CD5i, excellent boxed used 499  
NAIM CD53, excellent boxed, remote used 1199  
NAIM CD53, excellent boxed, remote used 349  
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NAIM CD3.5, vgc used 599  
NAIM DVD5, excellent boxed used 599  
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Rega Saturn, excellent boxed used 599  
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Rotel RCD02, vgc used 79  
Sugden Masterclass CD original version used 999  
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Technics SL-PS900, remote manual used 149  
Tube Technology Fulcrum CD transport dem 699  
Tube Technology Fulcrum DAC (inc DAC64 chip) dem 899  
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NAIM XPS DR, ex demo dem 2599  
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## Loudspeakers

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Acoustic Energy AE 1 Mk11 in Gloss black dem 799  
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Art Audio Stiletto in Maple dem 599  
Aspara Acoustics HL6 in Oak new 1999  
Audio Physic Tempo in Cherry, fair dem 699  
Aurum Cantus Music Goddess in Gloss black dem 699  
Audiomaster LS3/5a, vgc used Call  
B&W CDM1, vgc+ used 249  
B&W DM601s3, vgc+ used 249  
B&W DM602s3, vgc+ used 349  
B&W DM602s3, vgc+ used 349  
Castle Harlech, excellent boxed used 399  
Diapason Ares dem 999  
Elac BS243, excellent boxed monitor used 699  
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Gradient Intro, excellent condition, bargain used 249  
Heco Celan 500 in Silver dem 499  
Heco Celan 300 in Mahogany dem 399  
Heco Statement in gloss black, £3k new dem 1499  
Kef Q100, brand new, sealed box new 249  
Kudos C10, boxed vgc and cheap used 999  
Leema Xandia Mk1 in black new 2499  
Leema Acoustics Xero, vgc+ boxed, REDUCED used 299  
Leema Xero in Mahogany dem 349  
Linn Kan, boxed, fair used 199  
Linn Sara in cherry with stands/grills used 349  
Linn Index with KuStone stands, vgc+ used 99  
Living Voice IBX R2 in stunning Zebano, excellent used 2249  
Magneplanar MG1.6, superb, boxed used 999  
Mark & Daniel Maximus with treble extenders £2500ish dem 999  
Mark and Daniel Topaz in White inc. Marble cabinets dem 749  
Mark and Daniel Mini in Grey inc. Marble cabinets. dem 699  
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Monitor Audio PL300, mint crated dem 3999  
Monitor Audio GX50, near mint boxed used 599  
Monitor Audio RX6, near mint boxed used 449  
Monitor Audio GX300, near mint boxed dem 1999  
Monopulse Model S new 699  
Monopulse Model A speakers new 1499  
Monopulse Model C new 399  
NAIM Ovator S400, excellent dem Call  
NAIM Credo, excellent used 399  
NAIM SBL, vgc+ used 699  
Nola KO speakers in black dem 3999  
Nola Contender in Cherry dem 1499  
Nola Micro Grand Reference inc stands, £15k new dem 5995  
PMC Twenty 21 and 22 excellent boxed used Call  
PMC OB1, excellent boxed in oak used 1199  
PMC OB1, excellent boxed in oak used 1199  
Proac D28, good condition in cherry boxed used 1999  
Proac D18, good condition in cherry boxed used 1399  
Proac Studio 140 mk2, nr mint boxed dem 1199  
Proac Studio 110, excellent boxed used 499  
Proac Studio 115, excellent boxed dem 749  
Quad 21L Floorstander used 199  
Quad ESL63, good condition used 399  
Quad ESL67, good condition used 399  
Quad 11L2, excellent boxed used 249  
Red Rose Rosebud £2.5k new with (used) stands dem 799  
Revel M22, excellent boxed new 599  
Revolver RW45 floorstander in Cherry dem 699  
Revolver Cygnis Gold in Black, £14k new dem 4995  
Revolver Cygnis in Maple/Black, £6k new dem 2495  
Revolver Music 1, vgc+ boxed dem 349  
Sonus Faber Elipsa, superb boxed used 5999  
Sonus Faber Cremona Auditor, boxed used 1199  
Spendor SP31p, excellent boxed used 799  
Spendor S8e, cherry, excellent condition used 849  
Sunfire True Sub Subwoofer dem 399  
Thiel CS7.2, vgc, just refurbished... used 2499  
Totem Mani Signature, boxed near mint used 2999  
Totem Mite in black dem 449  
Totem Rokk in mahogany, excellent used 249  
Totem Stif, near mint boxed new 999  
Usher Mini Dancer 1, vgc boxed dem 1799  
Velodyne DD18 sub in black dem 1999  
Veritas H3 (Lowther drivers) in gloss black, 100db dem 2999  
Yamaha NS1000, good condition for age dem 799

## Special system deals

Audio Analogue Primo CD/Amp combo dem 499  
Consonance Ping CD/AMP dem 599  
Linn Klassik Movie 05, excellent boxed used 699  
NAIM Uniti 2, Uniti Lite and UnitiQute all mint dem Call  
Orelle EVO Cd and amp was £2700 used 799  
QUAD 77 CD, Pre and 707 power used 899  
Shanling MC30, excellent boxed used 349

**Tel: 01642 267012 or 0845 6019390 Email: choice@2ndhandhifi.co.uk**



# The History of Audio Recording

Recorded music is a part of our everyday lives, but when did it all start and how has it evolved over the decades? It's time to go on an audio adventure ...

**W**e are surrounded by music wherever we are. It is a constant companion; some desirable and perhaps some less so! It's with you in the car driving to work, at the supermarket doing your shopping, on the television, and now you can even walk along the road listening to your iPod. When you think about it, this is all thanks to recorded sound and would have been all but impossible 150 years ago.

The recording industry appears to have a momentum all of its own and in recent decades, there has been an acceleration in the rate of innovations confronting us, catapulting us all into the digital era. We now seem to be confronted by a bewildering array of jargon-rich technological solutions for music storage – but what does it all mean and what is 'best'? Let's start by rolling the clock back and finding out where it all began.

The story starts way back in 1857 when a Parisian printer named Édouard-Léon Scott de Martinville

devised a way of recording sound onto a soot-covered paper cylinder called the phonautograph as a series of wavy lines. Unfortunately, from our point of view, he didn't think of a way of playing it back! He was a printer by trade, but he was also an inventor. He was interested in human anatomy and this led him to devise a system to record sound based on the human ear. He used an elastic membrane as an artificial eardrum and a series of levers as the ossicles to move a stylus pressing on a paper, wood or glass surface covered in lampblack (the soot derived from a candle flame).

## Black to the future

On 25 March 1857, he obtained a French patent for the phonautograph, detailing his plan to record sound waves on lampblack glass plates using a funnel, two membranes separated by an airtight space and a stylus or stiff brush bristle attached to the second membrane. At the end of the patent document, Scott attached

two plates of phonautograms "dating back three years," supposedly his very first experiments.

Although Scott's device made a visual image of sound waves on a cylinder, it did not play or reproduce any sounds. His experiments led him to develop a rotating cylinder covered with lampblack or blackened paper that recorded the wavy lines from the vibrating diaphragm and bristle. He also used flat discs to trace the lateral motions of his bristle, as Emile Berliner would later do with his gramophone. Scott died on 26 April 1879, two years after Edison's invention of the phonograph. Despite his claims that he was the true inventor of the phonograph, Scott was never able to do what Edison managed to achieve, which was to make indentations on a cylinder that could vibrate a diaphragm to reproduce the original sound waves.

However, there is a postscript to the story of Édouard-Léon Scott de Martinville. One of Scott's set of papers that were presented to the French

## Timeline of audio recording

Edison records *Mary Had a Little Lamb* on a tinfoil-covered metal cylinder

The 'Flower' horn and spring driven motor developed

Victor uses painting of dog 'Nipper' listening to His Masters Voice

Victor sells over 1 million copies of *Dardanella*

Western Electric develops an electrical recording system

Alan Blumlein experiments with binaural sound for EMI

1850

1860

1870

1880

1890

1900

1910

1920

1930



Sound waves drawn in soot on a cylinder by Leon Scott



Emile Berliner records sound on a zinc disk

Columbia Phonograph formed

The Gramophone Co. sells 7in 2min disks at 50 cents

10in laterally cut disc records introduced

Columbia launches the two-sided record



Dr Lee De Forest invents the Audion amplifying tube

Record speed standardised at 78.26rpm

Shellac for 78rpm records replaced with synthetic resins

Commercial production of phonograph cylinders ends



**Emile Berliner poses with the Gramophone that he patented back in 1887**

Academy of Sciences in July 1861 included a page of diagrams explaining how to read his waveforms and some samples of his phonautograms, including a recording of *Au Clair De La Lune*. Thanks to the use of modern technology, this waveform was successfully converted into an audio file and played back in 2008.

### Beating Edison to it

Although it was first thought to be a 10-second recording of a woman singing this French folk song, it was later found to be a 20-second recording of a man, which was probably Scott himself, singing the song slowly. It is now the earliest known recording of singing in existence and it is now available on the web to download! This recording predates by 28 years the 1888 Edison wax cylinder phonograph recordings, which were previously considered to be the earliest recordings.

While Scott was busy drawing lines in soot, the German-born American

inventor Emile Berliner had also been developing the concept of recording sound waves as wiggly lines.

In 1886, Berliner had begun experimenting with various methods of sound recording. He also focused on using a horizontally modulated line like Scott, but used this to trace a line on a cylinder coated with an opaque material such as lampblack. This was fixed with varnish and used to photoengrave a corresponding groove into the surface of a metal playback cylinder. This was the subject of his first patent for what he called the Gramophone in 1887. Berliner realised that a disc format would make the photoengraving step much less difficult and offer the prospect of making multiple copies of the result by a simple process such as stamping. By 1888, he was using a more direct method of recording using

### Commercial recording started with wax cylinders in the 1890s

a stylus cutting a line through a thin layer of wax coated onto a zinc disc. This was etched in acid to convert the line of bared metal into a groove.

In parallel with Berliner, Thomas Edison invented the phonograph in 1877. His phonograph originally recorded sound onto a tinfoil sheet phonograph cylinder, which could both record and reproduce sounds. His first



**Edison's Fireside phonograph and tinfoil cylinders**

recording of the human voice (the well-known *Mary Had A Little Lamb*) was recorded on a tinfoil cylinder phonograph. These cylinders had a limited life, however, and this led him to develop a system where a recording could be used to make a negative mould, which was then coated with wax inside the cylindrical mould to make a positive copy. The wax contracted on cooling, allowing it to be removed from the mould.

### Re-record not fade away

The following year, Edison launched the Edison Speaking Phonograph Company, which produced recording and playback machines. These were initially designed for use as dictation machines for business purposes, but were later used for recording music for domestic entertainment purposes.

By the mid-1890s, both the Edison cylinder phonographs and Berliner disc gramophones were being produced. A



**3M introduces plastic recording tape**

**RIAA equalisation standard adopted**

**First stereo LP produced**

**Leak introduces the Stereo 30 transistorised amplifier**

**Launch of Quadraphonic open reel tape (Q4)**

**Direct to disc audiophile records produced**

**DBX-encoded records introduced**

**Launch of the Super Audio CD (SACD)**

1940

1950

1960

1970

1980

1990

2000

2010

**Columbia Records introduces the Vinylite 12in microgroove 33 $\frac{1}{3}$ rpm**

**Decca and EMI independently work on developing stereo**

**RCA Victor launches the 45rpm vinyl single**

**Launch of the stereo 8-track cartridge and the compact audio cassette**

**Hi-fi separates developed**

**Launch of the Sony Walkman**



**Quadraphonic records launched**

**Launch of the Compact Disc**



**Launch of Digital Audio Tape (DAT) recorders and Sony Minidiscs**

**Emergence of Blu-ray disc technology**

**Apple launches the iPod**



notable advance in design at this time was brought about by the invention of the spring motor-powered record player, which was first used by Eldridge Johnson in a hand-cranked motorised gramophone for Berliner in 1896. Berliner and Johnson eventually joined forces to form the Victor Talking Machine Company in 1901.

In 1901, 10in laterally cut disc records were introduced (as opposed to the 'hill and dale' vertically modulated grooves of phonograph cylinders), followed in 1903 by 12in records that could play for longer than four minutes. To play these records, the Victor M (Monarch) was launched in 1901. By 1905 the Victor III Victrola became one of the industry's leading disc phonographs with its tapered arm, brass horn and upgraded double-spring motor. The cabinet was made of oak and was larger than its predecessors. By the end of its production in the early twenties, its price had been increased from \$40 to \$45. By now, the 78rpm record had become the industry standard and the commercial production of cylinders for entertainment use ended in 1929.

## Stacks of wax

Before leaving cylinder phonographs, it is worth mentioning the early recording media. Technically speaking, the first media would have been the soot-covered paper cylinder used by Scott, but this was not really a viable medium for long-term storage of audio waves. Then there was the tinfoil or other metal cylinders. Commercial recording really started with wax cylinders in the 1890s, although these did have a limited life. In 1902, Edison used a black wax to make cylinders that played for two minutes. By 1908, he had introduced a four-minute 'Amberol' cylinder that was made of a more brittle, black wax-like compound that was harder than the original 1902 black wax and so lasted longer. However, wax clearly had its problems and so Edison produced his 'Blue Amberol' cylinders in 1912 that used a blue-tinted celluloid reinforced with a Plaster of Paris core. Not only did these cylinders have a much longer life, but the sound quality was significantly superior to wax and they were able to manage hundreds of playings with only a moderate increase in surface noise.

The earliest disc records from around 1889 were made of various materials including a hard vulcanised rubber. However, from 1895, a shellac-based compound was introduced and became the standard material for records. They were typically composed of about one-third shellac and two-thirds

mineral filler. The filler was made up of finely ground limestone and slate with cotton fibres to add tensile strength, together with carbon black to make the record more attractive. A mould release lubricant was also added to facilitate manufacture.

Later, by 1948, Columbia Records had developed its 12in long-playing record made from vinyl, rotating at 33rpm and giving about 20-30 minutes a side. This saw the downfall of shellac as a medium and vinyl is still the medium of choice today.

Another important development at this time was Dr Lee De Forest's invention of the Audion tube in 1906, which led to his invention of the De

## In parallel with Berliner, Thomas Edison invented the phonograph in 1877

Forest valve (known as the triode since 1919). Without this, no further development in recording techniques would have been possible as the limits of purely mechanical recording and playback had been reached. By the twenties, innovation in electrical recording and amplification systems, together with the advent of magnetic recording, had become the driving force behind the recording industry.

During the forties, 3M introduced a plastic recording tape coated with magnetic oxide and the Ampex Corporation led the way in high-quality tape recorders, known as reel-to-reel



A close up of the grooves of a shellac 78 disc



## Shellac was adopted for records in 1895

machines. These, together with LP records, dominated the market for the remainder of most of the century and were effectively based on the original work of the aforementioned Édouard-Léon Scott, with sound waves being recorded as deviations of a groove (as in records) or variable magnetic intensity (as with recording tape).

## Two channels are better than one

Meanwhile, in 1931, Alan Blumlein developed a system whereby instruments could be perceived to be coming from a specific location across a soundstage – a system that he called binaural sound. This was later to be known as stereophonic sound. This was not just a case of having two audio channels that were played perfectly in sync with each other, there was also the issue of being able to play the recording on a mono system. For audio tapes, this was easy – you simply recorded two tracks on the tape and played them back with a matching tape head. For mono, the two outputs from the tape head could be connected in parallel. However, for a record, you couldn't have two concentric grooves. Instead, Blumlein devised a way of recording each channel on the two walls of a groove that were at right angles to each other and 45° to the vertical. A stereo cartridge would have the pickup coils also mounted at right angles to each other to enable the two channels to be extracted separately. However, a mono cartridge would only be looking at the horizontal component of the movement of the stylus. This effectively combined the two channels in a clean mono mix with no unwanted colouration.

Blumlein's patent for binaural sound in 1931 covered stereo records, stereo films and also surround sound. In January 1934, Blumlein used his stereo-cutting equipment at Abbey Road to record Sir Thomas Beecham conducting the London Philharmonic Orchestra, as it rehearsed Mozart's *Jupiter Symphony*. All this led to the first commercially available stereo LPs becoming available in 1958, which could also be played back on mono equipment ●

**NEXT MONTH:** Part two of the history of recording explores digital audio and the revolution of music on the go



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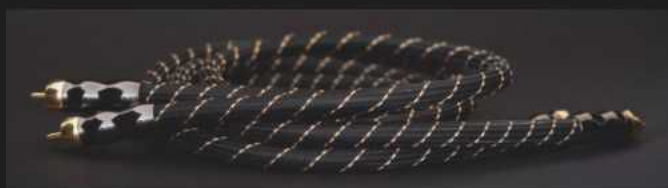
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## COMPETITION



**WIN:**

# Philips Fidelio DTM9030 speaker system

Stunning active loudspeakers with aptX, CD and tuner, but no wires...

**I**t wasn't so long ago that Philips was celebrated as an audio innovator in much the same way that Apple is today. Lest we forget, Compact Cassette and Compact Disc owe much of their success to the nous of the Dutch manufacturer. Though more recently the company is better known for other areas of home entertainment, the Fidelio range ushered in a new line of audio components dedicated to music fans. Not content with producing some stunning, class-leading headphones and Bluetooth portable speakers, Philips has thrown its considerable weight behind loudspeakers, or more precisely wireless loudspeakers. We talk, of course of the stunning Fidelio DTM9030.

Manufactured from wood with a high-gloss finish, these active two-way speakers come with a pair of 80W Class D amplifiers under the hood, offering a variety of sources

including aptX Bluetooth, CD, RDS FM tuner alongside coaxial and optical digital inputs. There's a Lightning connector, as well as a 30-pin iPod dock and a more conventional 3.5mm analogue line input. One of the speakers effectively acts as the master, with the other as the slave, meaning you run the supplied speaker cable from the former to the latter and plug the master into the mains. It's really that simple.

The loudspeakers feature a 25mm soft dome tweeter and a pair of 100mm polypropylene mid/bass drivers, while there's a rear-firing bass port. There's a CD player, FM tuner and DAC built in, meaning that all you need to do is pair your media player via Bluetooth, or hookup your iPod and you're ready to enjoy your music.

When we tested the Fidelio DTM9030 back in the September 2014 issue, we were blown away by its sonic prowess, noting: "This

system can go loud in a medium-sized room and it doesn't fall apart at anywhere approaching high volume levels, either. Bass is reasonably extended and surprisingly tuneful, and it integrates well with what is a well turned out tweeter".

We found that across all sources the Fidelio speaker system was an entertaining and enjoyable partner, which treads a well-judged path between being a truly convenient audio system and a hi-fi system that's capable of making fantastic-sounding music. But don't take our word for it, why not try and win one for yourself and see (or should that be hear?) what all the fuss is about?

To be in with a chance of making our review sample your very own, answer the simple question below, stick it in the post and hope that the hi-fi gods are smiling on you. Good luck!

**TO BE IN WITH A CHANCE OF WINNING, ANSWER THIS SIMPLE QUESTION:**

**Where is the Fidelio's bass reflex port located?**

- A) On the underside
- B) One the front
- C) On the rear

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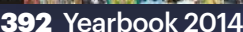
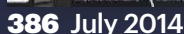
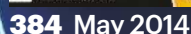
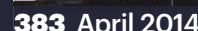
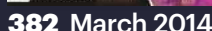
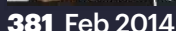
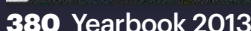
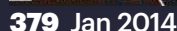
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