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JULY 2019

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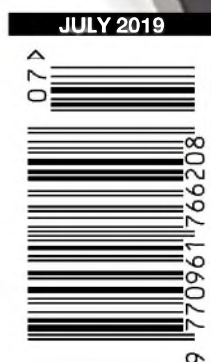


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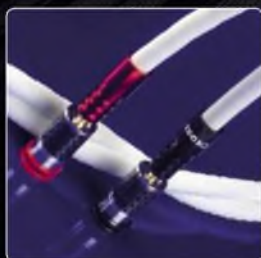
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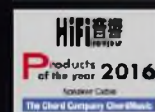
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Paul Rigby, Jon Myles, Martin Pipe, David Tutt



**N**ot many people are going to be able or perhaps willing to spend £25k on a valve amplifier. But all the same we couldn't resist reviewing McIntosh's fabulous – even monstrous – MC2152 valve power amplifier, together with its accompanying C70 preamplifier. Massively powerful, it moves their heritage forward in fascinating fashion,

complete with engaging light displays. Using a unique circuit design pioneered by Frank McIntosh back in the late 1940s, this amplifier uses modern parts to wring fantastic results from valves. Don't miss our exclusive review on p10 to see what McIntosh have achieved and where top-end amplification is alive today.

In Wharfedale's Denton 80th Anniversary loudspeaker, released 2012 our old Press Release shows, the company sought to re-create the basic balance of the past, if with modern parts for a better sound. Now Wharfedale have re-visited the historic Denton, five years later, to again re-interpret and update old values. Read our review on p29 to see what they offer in the new Denton 85th Anniversary loudspeaker.

Only a 'Universal disc player', a machine able to play all silver discs, can retrieve the audio from any disc in your collection, perhaps a DVD-A with hi-resolution digital on it. Oppo made the glorious BDP-205D that achieved this and sounded wonderful – but is no more. Pioneer recently released their UDP-LX500 Universal player that they think is a suitable replacement. Martin Pipe tells us what he thinks on p46.

Loudspeakers have been eclipsed by headphones – the market for them is enormous. Jon Myles looks and listens to Cowon's top quality X30 in-ear 'phones on p62 and Martin Pipe enjoys Focal's high-end all-enveloping Focal Stellias on p18 to bring you up to date on where this trend is heading. Quality – it's all in your head!

There's some re-visiting of the past in this issue, courtesy of McIntosh and Wharfedale, whilst headphones are strictly today. I hope you enjoy our coverage of 'old' and new.

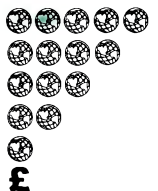
**Noel Keywood**  
**Editor**



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## verdicts



**OUTSTANDING**

**EXCELLENT**

**GOOD**

**MEDIOCRE**

**POOR**



**VALUE**

amongst the best  
extremely capable  
worth auditioning  
unremarkable  
flawed  
keenly priced

## testing (see [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk) for full explanations of all our tests)

To ensure the upmost accuracy in our product reviews, *Hi-Fi World* has extremely comprehensive in-house test facilities, and our test equipment - from big names like Rohde & Schwarz and Hewlett Packard - is amongst the most advanced in the world.

Loudspeakers are measured using a calibrated Bruel & Kjaer microphone feeding a Clio-based computer

analyser, using pulsed and gated sinewaves, in a large room to eliminate the room's influence. Pickup arm vibration is measured with a Bruel & Kjaer accelerometer.

No other UK hi-fi magazine has in-house testing, and none has access to such advanced tests across all types of equipment. That's why you can depend on *Hi-Fi World* reviews.



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“By any measure MKIV represents a significant upgrade on the MKIII” Paul Miller Hi Fi News



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email:news@hi-fiworld.co.uk

# news



## OUT OF THE GROOVE

If you want a 'plug-and-play' turntable that's more upmarket than most, then why not consider the 'DG-1 Dynamic Groove Record Player' from Vertere Acoustics? This striking £2,850 deck, from the British makers of the £23,500 Reference RG-1, is pitched at buyers who want "ease of setup and use, but not at the expense of future upgradeability". The "precision machined aluminium-alloy platter with bonded PETG record interface mat and...underside resonance control disc" is belt-driven from a 24-pole synchronous motor with two-speed "advanced microprocessor-generated electronic drive". Similarly high-tech is the plinth, which combines a "non-resonant, triple-sandwich cast-acrylic structure with a steel main chassis for rigidity". The DG-1's fascinating tonearm has nylon-thread bearings, and is flat - shades of a 1980s NAD design? Its three-layer structure is "non-resonant" and incorporates a flexible PCB to carry signals from the cartridge. This is an Audio Technica AT-VM520 but you'll have to pay an extra £100 if this is to be factory-fitted (and that 'out of the box' goal to be truly realised!).

Contact: Vertere, 0203 176 4888. [www.vertereacoustics.com](http://www.vertereacoustics.com)



## AMPED-UP CHORD

Chord Electronics has certainly been busy on the amplification front of late. As well as the Etude (reviewed this issue), we now have the £990 high-tech Huei phono stage and two high-end mono power amps – the Ultima 2 (750W, £18,360 each) and Ultima 3 (480W, £11,000 each).

Evidently styled after the Quteq DAC, the MM/MC-compatible Huei features ultra-low-noise microprocessor control of its main features. As a result, Chord was able to build in a memory function that will appeal to anyone who regularly-swaps cartridges.

To ensure compatibility with a wide range of carts, there are multiple options for impedance-matching and seven steps of switchable gain.

In connectivity terms, you get both balanced and unbalanced outputs, inputs being unbalanced only. Other goodies include an external power supply and switchable rumble filter.

The two new power amplifiers each feature 32 proprietary MOSFET power devices in their output stages. According to Chord, this necessitates "advanced and refined drive circuitry, suitably devoid of sound-degrading components". These are claimed to be "ultra low distortion, high-voltage amplifiers" employing "advanced feed-forward and feedback-compensation techniques" based on a technical paper by Dr. Malcolm J Hawksford.

Contact: Chord Electronics, 01622 721444. [www.chordelectronics.co.uk](http://www.chordelectronics.co.uk)



## KANN-DO SPIRIT

Hot on the heels of Astell&Kern's distinctive Kann portable high-resolution audio player is the Kann Kube. Sharing the original model's 'performance' aspirations, the \$1,499 (US) Kube features a quad-core CPU, a whopping 128GB of onboard storage and 7,400mAh of battery capacity delivering 9 hours playback from a single charge. ESS Sabre ES9038 PRO DACs, in a dual-mono configuration, drive amplifiers more potent than those of the original Kann.

Balanced headphones can be partnered with the Android-powered Kube, which boasts support for a variety of codecs (including DSD256, 32/384 PCM and MQA), an 'updated' user interface with 5in. screen and added flexibility via the 'Open App' service. The latter allows users to install support for the specific music-streaming services that interest them. The Kube is built into a "high-strength aluminium body with rectangular surface...and added aesthetic stability".

Contact: Astell&Kern, [www.astellkern.com](http://www.astellkern.com)



## THE BEST OF BOTH WORLDS?

A CD player did what it says on the tin...but not anymore. Welsh hi-fi manufacturer Leema Acoustics has launched the £2,295 Stream IV 'streaming CD player'. Described as "a versatile and extraordinarily good value machine that offers the myriad benefits of music streaming, seamlessly combined with high-performance CD playback", the Stream IV will



appeal to those with large CD collections and a desire to explore what streaming has to offer.

As far as the latter is concerned, the Stream IV supports Tidal, Spotify, Deezer and Qobuz. It also has a vTuner internet radio client, and will play music stored on USB drives, DLNA-compliant NAS servers and Dropbox/OneDrive accounts.

Other features include a high-quality ESS 9018 Sabre DAC, digital outputs for external DACs, Wi-Fi/Ethernet connectivity, a control app ('mconnect') and a high-quality Noratel linear power supply.

Leema has also announced a matching amplifier, the £2,295 Pulse IV, reckoning this will be an ideal hub for "contemporary music-listening" with its Essentials-derived MM/MC phono stage for vinyl playback, Bluetooth connectivity, amplifier claimed to deliver 80 watts per channel, seven digital inputs. Associated with the latter is an internal DAC that supports 32/384 PCM as well as DSD.

Contact: Leema Acoustics, 01938 559021. [www.leema-acoustics.com](http://www.leema-acoustics.com)



## POWER TOWER

Aimed at more sophisticated audio and AV systems is the serious-looking EVO3 Super Nova passive power-cleaning system from Isotek. According to its manufacturer, this £9,995 conditioner is "designed for primary components that typically have a constant current-draw...CD players, music servers, DACs, pre-amps, phono stages and so on". Each of the Super Nova's eight power outlets has its own dedicated power-cleaning system, and "over 100,000 amps (1840 joules) of protection".

The unit also features "ground filtering, which is fully-compliant with certification and safety standards", and protection from dangerous power surges and voltage spikes. Thanks to these measures, reckons Isotek, "each connected component's functional lifetime will increase".

Isotek also claims that "Super Nova not only adjusts to the connected load, but creates the ultimate barrier to differential-mode noise cross-contamination". All internal wiring features silver-plated ultra-pure OCC copper with IsoTek's VAD (Virtual Air Dielectric) technology, the PCBs featuring "double Oz copper". The Super Nova is available with UK, US or AU (Chinese) sockets.

Contact: Isotek, 01279 647039. [www.isoteksystems.com](http://www.isoteksystems.com)



## PERFECT FORM-ATION

New from Bowers & Wilkins is the five-strong Formation suite of wireless audio products. Core to all is 'Formation Wireless Technology' with a patented "Perfect Speaker Synchronisation" function capable of transferring audio between loudspeakers in under one microsecond at true 24-bit/96kHz resolution.

Among the five products in question are the full-range Formation Wedge (£900), a unique proposition with its 120-degree elliptical loudspeaker, and the £1000 Formation Bar. This features nine drive units to provide the wide soundstage and centre-channel necessary for authentic reproduction of movie sound tracks.

Partnering the Bar is the barrel-shaped £900 Formation Bass subwoofer with its opposed drivers, powerful amplifiers and Dynamic EQ for "outstanding performance without distortion".

Topping the range is the £3,499 Formation Duo, which uses the same top-mounted carbon-dome tweeter and 'Continuum Cone' mid/bass drive unit you'll find in the firm's wired loudspeakers. In a demo the Duos delivered dynamic and full-bodied reproduction from a wide range of music: it's definitely one of the best-sounding wireless systems we've heard.

To hear music from conventional sources there's Formation Audio (£600). This is a 24/96 'streaming transmitter' that turns any "traditional analogue component into a high-fidelity streaming device".

Contact: Bowers & Wilkins, 0800 232 1513. [www.bowers-wilkins.com](http://www.bowers-wilkins.com)



## TWO FROM TEAC

TEAC's retro-tinged TN-4D turntable incorporates phono stage circuitry; just plug it into any amplifier. Other features of the £600 TN-4D include a quartz-locked Direct-Drive motor with 33/45rpm speeds, tonearm with SAEC-designed knife-edge bearings, Sumiko Oyster MM cartridge in a SME-fit headshell and 16-bit USB conversion.



The TN-4D pairs well with TEAC's 'reference series' £1400 AX-505 – a stereo integrated amplifier that, despite its diminutive A4 footprint, is capable of delivering 115W to each channel. Responsible for this is TEAC-tuned Hypex Ncore amplification, claimed by TEAC to deliver "clear sound with dynamism and musical verve". Other features of the remote-controllable AX-505 include resistor-ladder volume control, toroidal-core power transformer, level meters and four analogue inputs.

Contact: TEAC, 0203 936 8088 [www.teac-audio.eu](http://www.teac-audio.eu)



## FACET-ING THE MUSIC

The unusual name of French brand Elipson's Prestige Facet range of speakers stems from the distinctive baffle-sculpting around the drive units. These unusual 'facets' are designed to improve the speaker's diffraction characteristics, and thus stereo imaging.

A bi-wireable 3-way floorstander, the £2,495 34F, now tops the range.

Responsible for its bass reproduction are two 25cm woofers, working in conjunction with rear-mounted ports. Midrange and treble are respectively-served by twin 17cm paper-coned midrange drivers and a 25mm silk dome tweeter. They're built into a carefully-damped enclosure, stiffened by cross-sectional bracing, for which an optional base plinth is available. Black, walnut and white finishes are available.

Contact: Elipson, +33 155091830. <http://www.elipson.com/gbl>

## STAR TURN

Auralic's £1,899 Altair G1 harnesses "software and hardware...to act as preamp, DAC, streamer and all-in-one digital source". It's built around Auralic's G1 chassis, with its 4-inch color display.

Other changes include ESS 9038Q2M digital-to-analogue converters to yield "more detail and perceived resolution than ever before".

Internal music storage is an option, while the streaming alternatives include Room Endpoint and subscription services like Tidal, Qobuz and Spotify Connect. Bluetooth, Airplay, DLNA and SongCast are supported too.

Auralic has also announced the £5,499 Sirius G2, an 'upsampling processor' that uses sophisticated FPGA-implemented digital technology to "optimize and improve the performance of any DAC...no matter the incoming resolution".

The Sirius G2 takes digital audio sources (up to 384kHz PCM or DSD512), processes them using proprietary 'Proteus G2 Co-Processing' techniques and outputs them in the format that best-suits the DAC. Features include digital filters, Auralic's 'Lightning Link' interface, jitter reduction, 20-band equaliser, speaker-placement compensation and functionality upgrades through firmware.

Contact: Auralic, 07590 106105. [www.auralic.com](http://www.auralic.com)



## CORRECTION CORNER

Here are a couple of pricing mistakes we have made recently.

Isotek's Evo3 Nova mains conditioner, reviewed in the May issue, sells for £5,995 and not the £5,595 quoted.

In June's edition we stated that iBasso's audiophile-tweaked 'S' successor to its IT01 has a £89 price tag. Not so – it's £179.



# New Classic

McIntosh release a massively powerful amplifier combination using their own classic circuitry. Noel Keywood explains – and listens.



In 1949 McIntosh of the USA came up with the 50W-1 tube (valve) power amplifier, a legendary design with a performance that set standards.

Not so well known in the UK because getting them across the Atlantic was a big deal back then. It's latest successor I'm reviewing here, the new MC2152 70th Anniversary Edition, keeps the challenge going:

complex output transformers and a unique output stage design, largely retained here. See McIntosh Output Stage for more detail on all this. The massive transformers of the MC2152 account for its 56.7kg (125 lbs) weight that for us was a three-person lift.

At 17.5in (445mm) wide the power amplifier's chassis has been proportioned to fit a 19in (483mm)

surplus power, it isn't a big issue, but you get a slightly tighter, drier sound from lower impedance taps because they give stronger electrical damping of the loudspeaker. Conversely, the higher impedance taps add (slightly) to bass fullness and can be preferred with acoustically over-damped loudspeakers (wall standers). These comments apply to all valve amps, not just the MC2152. There are



ships and planes will struggle with its size and weight. And loudspeakers will quake at its power output, claimed as 150 Watts (but we measured much more).

Yes, the beast you see in our pictures is as awesome as it looks and the price is awesome too – it comes at £16,000 when purchased separately. McIntosh's accompanying C70 preamplifier (£9,000) that we were given to drive it didn't lack size or complexity either, although with valves for amplification and transistors for control circuitry it is conceptually more a modern hybrid than a revamped classic. Our 70th Anniversary commemorative duo carry a £25,000 price tag.

The original 50W-1 power amplifier was distinguished by

rack, which most are. However, that has resulted in 28in (711mm) depth that is beyond most racks – at least, ones I have seen. Power tubes are eight KT88s working in pairs, with 6550s optional – no bias adjustment needed. The front preamp tubes are 12AX7s and 12AT7s. All these tubes are widely available and inexpensive, and a removable safety (heat) mesh cover is also provided.

The rear has a row of huge gold plated output terminals that suit 8 Ohm, 4 Ohm or 2 Ohm loudspeakers. Since most are nominally 6 Ohm nowadays this appears confusing but it is about optimum power transfer and best to use 4 Ohms, since most bass units are 4 Ohm. The 2 Ohm is for electrostatics. PMC loudspeakers come in at a high 10 Ohms so the 8 Ohm tap would best suit them. Because the MC2152 produces

socket unbalanced inputs and XLR balanced inputs.

The C70 matching preamplifier is equally 17.5in (445mm) wide and visually imposing. It boasts two sets of balanced line inputs, three unbalanced phono socket inputs, and a Phono stage for turntables with both moving magnet (MM) and moving coil (MC) inputs. In all there are seven inputs, chosen by a front panel rotary selector or remote control. Then there are two sets of balanced outputs (XLR), and two sets of unbalanced outputs (phono sockets). The power amplifier should be driven by the former: I used Chord Epic balanced cables to the MC 2152 power amplifier.

There are no digital inputs – at this level top quality external digital sources are expected. The C70 does fit a rack easily, being 18in (458mm) deep. However, height is significant at

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Let your music take centre stage with the new Pro-Ject Phono Box S2 Ultra, a fully discrete, audiophile-quality phono stage designed to deliver the full beauty of a vinyl record.

The Phono Box S2 Ultra delivers a true high-fidelity sound performance that belies its small form and attractive price. An array of features for easy pairing with any modern cartridge, be it MM or MC; alongside the pin-point accurate split RIAA equalisation circuit, as well as the introduction of a subsonic filter, ensures your music sounds right in any environment.

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- Audiophile phono stage in a compact chassis
- No Operational Amplifiers (op-amps) used
- Audiophile-grade polystyrene capacitors used inside
- Precise split RIAA equalisation
- Switchable Subsonic Filter
- Switchable input impedance, capacitance and gain
- Solid metal casing available in black or silver



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**Massive output terminals 2, 4 or 8 Ohm impedance loudspeakers, accepting bare wire, 4mm banana plugs or spades.**

6in (153mm). Inside a top window is one 12AT7 and five 12AX7s. However, inside there are arrays of chips for control electronics. The phono stage is likely solid-state since low noise with moving coil cartridges isn't possible from valves, unless an input transformer is used.

The C70 under remote or manual control switches the MC2152 on though a rear d.c. control link, although the power amplifier can be switched on manually. It (C70) has remote control of volume of course.

Switch on was an illuminating experience, this New York based company not wanting to play second fiddle to Times Square it seems. The C70 glass front panel lights up with intense green graphics, red LEDs showing input selection and volume level – as our pictures show.

What they don't show is the start up sequence of the C70 that's a light show in itself, or the orange LED light sequence beneath the frontal preamp valves of the power amplifier to indicate warm up. Once up and running those same preamp valves – all eight of them – then glow either green or blue – selectable with the left rotary switch on the power amp. There's an Off position if all this is too alarming!

Two pairs of sturdy phono sockets cater for MM and MC cartridge turntables, so one of each

could be used. Related to them are rotary input load selectors on the front panel – capacitance for MM and resistance for MC – so fine adjustment can be made to load, MC running from 50 Ohms minimum up to 500 Ohms for some high(ish) output MCs like Clearaudios. The default for MCs is 100 Ohms, which the C70 has.

In keeping with tradition there are bass and treble tone controls that work in switched steps, or can be switched out. The smallest step

was a quite audible +/-2dB on either control, with a well tailored plateau characteristic; up to 10dB boost or cut can be applied to bass and 12dB to treble measurement showed.

And there's a headphone socket with optional HDX crossfeed for a less in-head experience. Plugging in mutes the loudspeakers.

Vinylistas in particular will appreciate the existence of a stereo/mono button and a balance control integrated into the volume control.

**SOUND QUALITY**

The MC2152 was connected to our Martin Logan ESL-X hybrid electrostatic loudspeakers via Chord Company Signature cables, attached to the 2 Ohm tap. An Oppo BDP-205D Universal player was used to play CD, with hi-resolution digital fed in optically from an Astell&Kern AKI20 player. Also used was Arcam's CDS50, reading hi-res from a flash drive through its ESS ES9038



**A general purpose remote with volume and input switching.**



**Eight KT88 output valves, fronted by a row of small signal valves, here lit green by LEDs set beneath them. Blue is a switchable option.**



**Underneath the power amplifier sit eight (round black) smoothing capacitors, a choke and front display board at right.**

Sabre32 DAC, connected via Chord Company Epic balanced cables.

To spin LP I used our Timestep Evo modified Technics SL-1210 Mk2 Direct Drive turntable with SME309 arm, external linear power supply and Audio Technica VM750SH Shibata tipped MM cartridge, plus an Ortofon Cadenza Bronze MC cartridge.

An Isotek Evo3 Mosaic Genesis regenerated mains power supply fed the electrostatic supplies and Oppo player, the McIntoshs being connected to its high current filtered, un-regenerated output.

*McIntosh branded valves (tubes). At left a small-signal 12AX7 pre-amp., and at right a KT88 without USA on it because this is a GEC (UK) design. US 6550s are an option.*



*Inside the C70, a big C core mains transformer at left and much solid-state circuitry too.*



*Beneath the C70's top panel lie six 12AX7 preamplifier valves, visible beneath a clear window.*

and when those kettle drum strikes arrived they shook our room. Not just power here but a great sense of resonant insight: I could hear right into the instrument, showing me this amplifier has enormous low end timbral resolution; it doesn't produce that limpid simulacrum that comes from solid-state.

Being American my hastily written 'notes whilst playing' refer to the MC2152 sounding as large and powerful as a Mack truck, of the sort that do actually chase you (well, me) down US Freeways. And just as that big bonnet (hood) in your mirror is nicely ornamented but intimidating, so the MC2512 manages to give the same impression: you get all the fine detail, insight and 3D sound staging – with an iron fist behind it.

Working my way through our uncompressed, high dynamic range CD test tracks showed that this

McIntosh duo have solid-state cleanliness, backed by valve dynamics and sound staging: Skin was alive and almost threatening singing Skunk Anansie's 'Hedonism', set with clear perfection between our Martin Logan XStat electrostatic panels. The strong bass line of this track was big, resonant and powerful, but I was pushed back by her vocal power and the McIntosh's lucid delivery of subtle vocal inflexions.

Overall this duo is fast, has enormous sound staging and a massively powerful delivery. Nothing other than obviously impressive. But you don't get the creamier delivery that's commonly attributed to valve amplifiers.

As good as digital is becoming LP is still a force to be reckoned with, perhaps a force waiting to be surpassed, and the C70 teased a great sound from our resident

As you might well expect the MC2152 displayed visceral power but with valves and 220 Watts you get not only a sonic juggernaut in the room but massive sound staging, with that walk-in sense of space valves provide. Orchestral works picked out this quality well, the London Symphony Orchestra playing Mars, Bringer of War, from Holst's Planets, (hi-res 24/48) filling our listening room as if the whole orchestra had just turned up to play for me.

The LSO's sections, like brass, worked in their own clear space



*At left, two pairs of unbalanced and balanced outputs. At right balanced and unbalanced inputs, including MM / MC Phono stage.*

## MCINTOSH OUTPUT STAGE

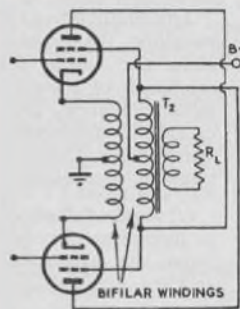
Under the skin the MC2152 has novel and sophisticated output transformers, bifilar wound and cross coupled, that in 1949 Frank McIntosh (and Gordon Gow) explained was a very efficient circuit that solved many problems, using it in their original 50W-1.

The MC2152 output transformers are of far greater size but they are key to performance and very difficult to build. Diagrams atop each output transformer make the point cross coupling is used, and also windings exist in both anode and cathode of each output tube, just like the original 50W-1.

McIntosh manage to apply quite a lot of feedback, making distortion and output impedance low. The output stage of the MC2152 is a cut above most others.

Bias is not adjustable, so either auto-bias is used or fixed bias (more power) with solid-state bias sensing and control. McIntosh extract huge power from KT88 power output valves working in push-pull pairs.

The original paper describing this amplifier's unique output stage, Audio Engineering December 1949, can be found on the net as a pdf at [www.cieri.net](http://www.cieri.net), and a comprehensive



Basic principles of McIntosh Amplifier.

description is available in the Radio Designers Handbook, p594 (Amazon, £188 used, £780 new). The book's diagram (1952) of the original output stage is shown here, for comparison with that on the MC2152 – at left.

Audio Technica VM750SH MM cartridge. It revealed its basic qualities of well defined but not heavy bass, but superb detail and clarity from the Shibata stylus, saxophone in Dire Straits Your Latest Trick (Mobile Fidelity, 180gm, 45rpm) hanging lucidly centre stage, the bass line striding along firmly behind. The haunting guitar surrounded by echo was vividly clear. Noise and hum were zero.

Swapping out the Audio Technica for our Ortofon Cadenza Bronze MC, that has quite high output as quality MCs go, demanded volume be turned up high; this isn't a preamp for very low output MCs. But importantly there was no hiss at high listening volume, even in front of the loudspeaker's XStat panels. Spinning The Syd Lawrence Orchestra's String Of Pearls (Chasing the Dragon, 180gm, 33rpm, 30ips master tape), solo trumpet stabbed out lively and fruity whilst drums pounded in the background with clear power; again the lovely resonant insight this duo captures from drums and timpani was obvious and entertaining. What ever I played the McIntosh duo threw it into our room with stunning



McIntosh depict their unique output stage on top of each transformer case.

clarity and shocking power.

There was no particular tonal character to be heard; the units are not soft or warm, quite the reverse. Transients were fast and hard edged, more like a modern solid-state power amplifier and the overall presentation quite dry compared to, say, my classic WAD 300B valve amplifier with auto-bias and little feedback.

## CONCLUSION

As appearance suggests, this McIntosh combination offers brutal ability. But the power-station output transformers of the MC2152 are quite apart from all else. Whilst you get the power of solid-state, the sound staging, vivid dynamics and timbral resolution is that of valves – or tubes should I say. Add in Times Square levels of illumination and the C70/MC2152 are truly amazing – a visual and audible display like no other. You just need a deep wallet.

## MEASURED PERFORMANCE

Power output of the MC2152 measured 220 Watts into 8, 4 and 2 Ohms at visual waveform clip – around 0.2% distortion. At 1% distortion it was 240 Watts.

An input of 2.2V and 4.4V (phono/XLR) is required for full output.

Distortion values were extraordinarily low, just 0.003% at 1W/1kHz rising to 0.03% just below full output. At 10kHz the figures were 0.01% (shown) and 0.1% respectively. At 40Hz just 0.09% at 150W – amazing.

Frequency response measured flat from 7Hz to 64kHz (shown). Below 7Hz gain rolls off quickly. There was minimal noise or hum; the MC2152 is effectively silent.

Output impedance measured 0.22 Ohms, giving an unusually high damping factor of 36.

The C70 preamplifier offers x5 gain XLR in-XLR out – enough for CD players and DACs (XLR 4V). Overload occurs at 16V out (XLR).

Gain from Line inputs to XLR out was x10, giving them 400mV input sensitivity. Frequency response measured flat from 7Hz-53kHz and distortion 0.002% at 2V out. Noise was around -96dB, according to which output was used (and its gain).

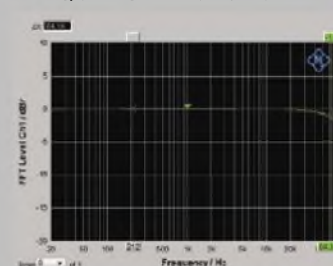
Frequency response of MM and MC phono inputs flat from 14Hz to 20kHz, a warp filter applying -10dB attenuation at 5Hz. Noise was very low at -83dB MM and -68dB MC.

The MC2152 has exceptional measured performance and the C70 is also very good all round, except MC gain is on the low side. **NK**

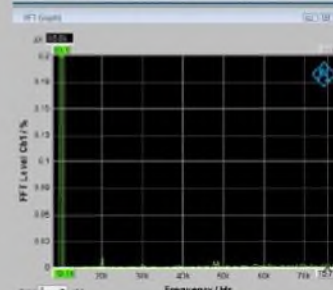
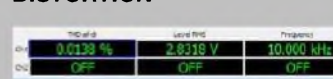
### MC2152 POWER AMPLIFIER

<b>Power</b>	<b>220W</b>
<b>Frequency response</b>	<b>7Hz-64kHz</b>
<b>Distortion (10kHz, 1W)</b>	<b>0.01%</b>
<b>Separation (1kHz)</b>	<b>85dB</b>
<b>Noise (IEC A)</b>	<b>-117dB</b>
<b>Sensitivity (phono/XLR)</b>	<b>2.1V / 4.2V</b>
<b>Damping factor</b>	<b>36</b>

### FREQUENCY RESPONSE



### DISTORTION



**MCINTOSH C70 PRE AMPLIFIER**  
£9,000

**MC2152 POWER AMPLIFIER**  
£16,000



**OUTSTANDING - amongst the best.**

### VERDICT

Massive power and punch. Overwhelms most else and has facilities and lights to match.

### FOR

- spacious, punchy sound
- massive volume
- remote control
- MM and MC phono stage

### AGAINST

- size and weight
- lots of heat

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# Closed thinking

Martin Pipe thinks £2800 for Focal's Stellia closed-back headphones is money well spent.

**R**egular readers will know that I have been enthusiastic about Focal's high-end headphones, which have set new standards for intimate musical enjoyment – as well they might, considering the sums of money involved.

Both models I've tried so far – Utopia and Clear – are of the circumaural (i.e. ear-enclosing) variety, but with an open back. Open back drivers perform very well subjectively and are comfortable to wear, but they let outside noise in and send inside noise out, which may annoy others.

The alternative is the closed-back design. They provide better acoustic isolation – great for studio

monitoring – and have stronger, deeper bass. But they sound 'enclosed'. Nevertheless I jumped at the chance to try a pair of no-compromise closed-back circumaural headphones from Focal.

At £2,800 the hand-built Stellias are not a casual purchase. Dripping with luxury, they look gorgeous in their cognac-and-mocha (okay, two-tone brown) finish. And you'll find that the overall package smacks of attention to detail as soon as you open the shipping box. Inside are the Stellias in a distinctive zip-up carrying case that could have been styled by a French fashion house. Even the instructions come in a purpose-designed wallet!

A separate compartment in the

box contains the leads – a 1.2m length terminated in a 3.5mm stereo jack plug suitable for personal players (a 6.3mm adaptor for home gear is also provided) and a 3m cable with 4-pin XLR intended for balanced headphone amps.

These leads connect to sockets built into the base of each Stellia cup via 3.5mm mono plugs, raising the possibility of aftermarket upgrades. The sockets feed carefully-matched transducers (within 0.5dB per stereo pair), that feature Focal's 40mm beryllium diaphragms coupled to low-mass frameless voice coils. The latter have a 35-ohm impedance, ensuring that – in conjunction with their 106dB/1mV sensitivity – the Stellias are easy to drive.

The logo on the side of each Stellia cup is actually a small vent "designed to provide decompression, as is the case in studios with small control rooms". Apparently, this benefits reproduction of "the lowest frequencies".

These 'phones weigh in at a solid 500gms, but I found sessions with them comfortable, thanks to a headband and yoke that adjust to fit around your head, and the use of memory foam in the earpads. Although covered by non-perforated full-grain leather, sweat wasn't a problem during the spring warmth of the review period!

Behind the driver lurk acoustic diffusers designed to break up standing-waves so that their energy doesn't return to the driver as unwanted time-delayed sound.

### PERFORMANCE

I partnered the Stellias with my Prism Callia and Chord Hugo TT, using the 3.5mm cable and 6.3mm adaptor. These DAC/headphone amplifiers were fed from a library of hi-res and CD-derived material via a Cambridge CXN. Also tried was my FiiO X3 personal player and a Samsung smartphone – the Stellia's electrical characteristics allowed these to be driven surprisingly well.

One thing became clear from the outset: the isolation afforded by the closed back removed outside distractions to the extent they could be ignored. As a result I did not need to run them so hard, giving a cleaner presentation. Subtle details – Daniel

Hannon's spoken contributions in Sweden (Fin de Siecle, CD rip), for example – emerged with uncanny insight and realism. With a DAC/headphone amp like the revealing Callia, I missed nothing.

The Stellias sound a little 'smoother' than the brilliant Utopias, but in compensation their bass goes deeper. This was evident with a recording (CD rip) of Bach organ pieces played on the Eule organ (when it was in Chelyabinsk's St. Alexander Church) by Vladimir

"these headphones were able to cope admirably with any music, which is surely the point of hi-fi.

Homyakov. The instrument's longer pipes, able to challenge most 'speakers, I experienced with guts and articulation. But key though the organ is, there's more to this recording; the sense of performance space created between the earpieces was 'you-are-there'.

Another CD rip enhanced by the Stellia's was Holst's The Planets, performed by the LSO under Sir Colin Davis. Even during the busier moments, I could isolate individual performers within a soundstage that was balanced and cohesive.

Next was a live Radio 3 concert featuring the BBC National Orchestra of Wales playing Mozart's Symphony No.40. Heard here via the 320kbps AAC stream that the

Beeb don't publicise enough, this also proved to be an engaging and full-bodied listen.

These headphones were able to cope admirably with any music, which is surely the point of hi-fi. The texture and warmth of the brooding electronic hauntology that is Pye Corner Audio's Sleep Games 2012 album (CD rip) were conveyed faithfully, as were the percussive nature and transient detail of more rhythmic fare like Steve Reich's for 18 Musicians, and Etape

2 from Kraftwerk's Tour de France Soundtracks.

It was difficult to fault the Stellias. The 3.5mm headphone lead was a little too short for my liking. That and the second-mortgage price...but quality doesn't come cheap!

### CONCLUSION

Once again, Focal have come up with the goods. The Stellias must surely rank among the best-sounding closed-back headphones that have yet been produced. Thanks to their isolation from the outside world, you're brought closer to the music than usual. They are in an exquisite and unashamedly luxurious package. Quite an achievement – if you can afford them!



The Stellias come in a luxurious package that includes two sets of cables and an elegant carrying case that can also accommodate a small personal player.

### FOCAL STELLIA £2,800



**OUTSTANDING** - amongst the best.

#### VERDICT

Stunning looks, build quality and sound. Closed-back headphones don't get much better than this!

#### FOR

- XLR and 3.5mm cables supplied
- comfortable to wear
- detailed, musical at both frequency extremes

#### AGAINST

- no 2.5mm balanced jack

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# Short ride in a fast machine

**Chord Electronics new solid-state amplifier technology is now available in their Étude stereo power amplifier. Martin Pipe likes its small dimensions and fast sound.**

**F**irst seen at the Munich High-End Show last year, the £3,900 Étude stereo power amplifier features the first radically-new Chord Electronics amplifier topology since the firm's 1989 beginnings as a manufacturer of amplifiers for the BBC.

The amplifier's underlying 'feedforward-feedback' principles for the reduction of distortion are

based on a paper by Dr. Malcolm J Hawksford, an Emeritus professor at Essex University. This paper, submitted to the Audio Engineering Society in 1980, predates Chord's birth by the best part of a decade! Later that decade, Bob Cordell of Bell Labs in the USA built a vertical-MOSFET amplifier of incredibly high performance around Dr. Hawksford's ideas and detailed his work in a 1984 AES paper.

Thirty or so years later, Chord Electronics' John Franks refined these ideas in the development of his "dual-feedforward error-correction" technology. These form the basis of not only the Étude, but Chord Electronics' flagship Ultima.

Like the esoteric Ultima models, the Étude has Class-AB sliding-bias output stages built around multiple custom-designed lateral-structure MOSFETs in



parallel (four devices per channel). Their individual operating conditions are constantly optimised by Franks' dual-feedforward circuitry to ensure that they behave linearly, thereby assuring distortion as low as 0.05% at full power, claimed to be 150 Watts

has managed to cram in three of these high-performance supplies. There's one for each active power rail, we are told, and a third for the auxiliary rails. The case has natural heat-dissipation properties, but a fan helps to keep things cool. At no time did its running intrude

bridging purposes where the phase of one channel has to be changed.

Secondly, they allow absolute phase to be changed, so cones go out instead of in, or vice-versa, which can be important when used in a multi-channel AV system to match the other 'speakers.

Also, some listeners insist absolute phase in a stereo system is important, so this can be changed.

And finally, should one channel of a stereo system be out of phase – unlikely and a fault – then flipping one switch can right the situation. If you're playing vinyl, a mistake may have been made in the cartridge wiring – possible where the cartridge pins are not colour-coded. Those using XLR interconnections might have an incorrectly-made cable, in which the '-' and '+' wires are transposed.

### PERFORMANCE

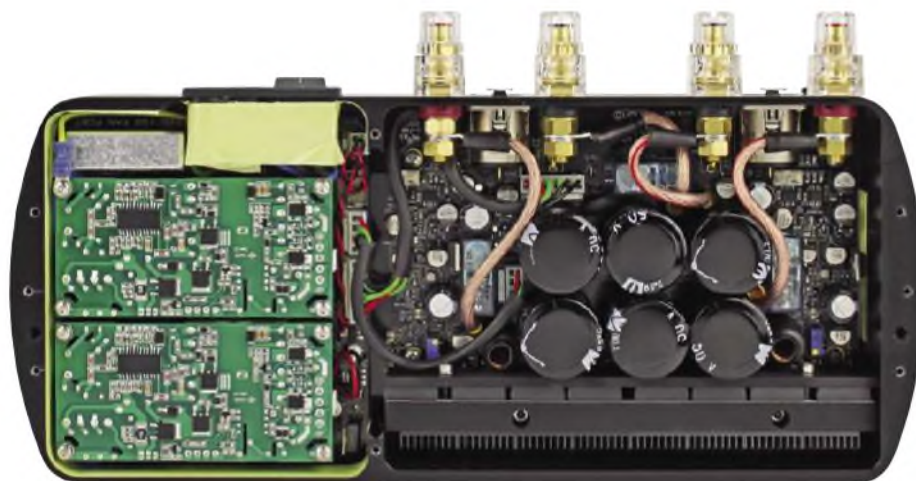
Blue LEDs confirm that the Étude is powered up, and within ten or so seconds of flipping its power

"we have here is a solid-state amp that transcends its modest physical dimensions in terms of the scale of music reproduction it can muster"

into 4 Ohms and no less than 300 Watts when monoblocked (see Measured Performance). Low output-impedance ensures good 'speaker drive capability, while a slew rate measured in the hundreds-of-volts per microsecond means the Étude should be a fast

on the enjoyment of music. Case dimensions are 335mm wide, 70mm high and 155mm deep, weight 3.45kgs.

The Étude fares well in connectivity terms. XLR (balanced) and RCA phono (unbalanced) inputs accept signals from a preamp,



***A lot has been crammed into the Étude – possible through extensive use of surface-mounted components on boards of robotic manufacture. In the left section of the case are switched-mode power supplies. The two power amplifiers occupy the larger remaining section. Eight power MOSFETs – four per channel – can be seen sandwiched against the heatsink (bottom of the picture).***

and rhythmically-agile amplifier.

John Franks (MD) was also responsible for designing the ultra-high frequency switched-mode power supplies that sustain the power amps.

Despite the small size of the trademark casework – which, as ever, is machined from a billet of solid aluminium for robustness and shielding – Chord Electronics

while the 'speaker outputs are on substantial WBT terminals that accept bare wire, spades or 4mm plugs. A standard switched IEC mains inlet, meanwhile, means that choice of mains leads is wide.

Also on the rear panel are phase-invert (actually 'polarity-invert') toggle switches. Chord Electronics told us these have numerous uses. Firstly, they are for

switch the protection relays bring the 'speakers into circuit. In my case, said speakers were Quadral Aurum Wotan VIII with ribbon tweeters. My source was a Chord Hugo TT DAC/preamp/headphone amplifier, fed with NAS and USB-sourced music via a digitally-interfaced Cambridge CXN streamer.

Initial impressions were of



The Étude's rear panel has both balanced (XLR) and unbalanced (phono) inputs. Only one can be used at a time as no switching is provided. Note also the chunky WBT speaker terminals, and the polarity-invert switches that enable the two amplifier channels to be bridged, converting the Étude into a claimed 300-Watt mono powerhouse.

"this is one hell of a rhythmic amplifier – snap and pace are both evident"

the solid grip the Étude has on bass drivers – even with older recordings that started life in the analogue domains of the 1960s and 1970s. Paul McCartney's bass on Please Please Me (remastered CD FLAC rip) was taut and easily-definable. So too was the funky Wyman bassline that carries the Stones-go-disco of Miss You (CD rip) – but not to the detriment of the other players.

A completely different composition, the jungle of Goldie's Inner City Life (CD rip) circa 1994, shows that sheer bottom-end depth isn't an issue; other electronic music merely reinforced my opinion.

The low end also happens to be clean, even at listening levels that might annoy your neighbours. That Goldie track, and its insistent electronic rhythms, also revealed the sheer speed and flow of the Étude. This is one hell of a rhythmic amplifier – snap and pace are both evident.

A switch to classical, specifically the LSO Live/Noseda recording of Britten's War Requiem (24-bit/48kHz FLAC), proved that Chord's little amp is capable of taking wide dynamic swings in its stride – the orchestra and choirs were given appropriate perspective and scale. At the same time, the Étude does justice to this dark piece's rich tonal palette with a neutral yet musical presentation.

For sheer resolving power, I turned to Keith Greeninger and Dayan Kai's stripped-back Looking For A Home (DSD64). The subtleties of this recording,

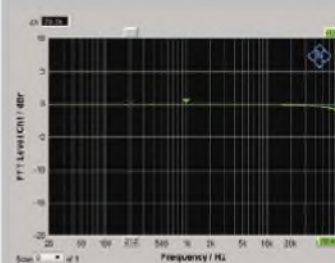
including the string chatter of the acoustic guitar and tiny vocal breaths, helped the Étude to impart a stunning sense of realism – this atmosphere was aided by an accurate ability to recreate the performance space between my speakers. It's difficult to find flaws with an amplifier like this.

## MEASURED PERFORMANCE

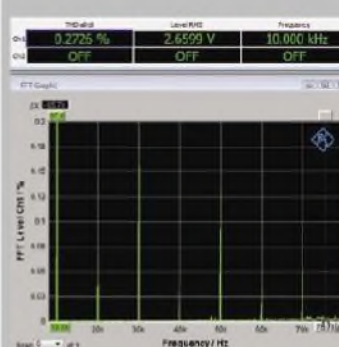
Power from the Chord Electronics Étude amplifier measured 74 Watts into 8 Ohms and 132 Watts into 4 Ohms, slightly less than the 150 Watts claimed. Mono blocked it will produce 264 Watts into 4 Ohms.

Both the phono socket and XLR socket inputs need 0.9V for full output, close to

### FREQUENCY RESPONSE



### DISTORTION



## CONCLUSION

The principles behind this amp may go back nearly 40 years, but good ideas can't be kept down – especially when Chord Electronics' engineering talents are allowed to bring them into the twenty-first century. Such work has paid off; what we have here is a solid-state amp that transcends its modest physical dimensions in terms of the scale of music reproduction it can muster. Its speed, meanwhile, makes for pace and timing that grip your attention and won't let go. Small, powerful and impressive.

the standard 1V, but all the same a preamplifier is necessary except with silver disc players (2V) having a volume control.

Distortion levels were low in the mid-band at 0.04% (1W) and 0.04% just below (-1dB) full output. There was some rise in distortion at high frequencies (10kHz) however, to 0.27% at 1W as shown in our analysis – not a low figure, so there might be some edge to the sound.

Frequency response measured flat from 6Hz to 80kHz (-1dB), changing little between 8 and 4 Ohms, any output network having little effect.

Output impedance measured a low 0.11 Ohms, giving a high Damping Factor of 73. Noise was low at -103dB IEC A weighted.

The Étude measured well enough, but it had more high frequency distortion than is common nowadays. **NK**

<b>Power</b>	<b>74W</b>
<b>Frequency response (-1dB)</b>	<b>6Hz-80kHz</b>
<b>Distortion (10kHz, 1W)</b>	<b>0.27%</b>
<b>Separation (1kHz)</b>	<b>90dB</b>
<b>Noise (IEC A)</b>	<b>-103dB</b>
<b>Sensitivity</b>	<b>900mV</b>
<b>Damping factor</b>	<b>73</b>

## CHORD ÉTUDE £3,900



**OUTSTANDING - amongst the best.**

### VERDICT

Great sound from a small package – but expensive.

### FOR

- rhythmically adept
- dynamic
- small and light

### AGAINST

- price

Chord Electronics  
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Swapping out a pair of basic loudspeaker cables and inserting the Shawline X between a Creek Evolution 100A integrated amplifier

and a pair of Spendor A1 loudspeakers showed a clear improvement. The Chord cable is clearly engineered to be of a balanced nature. John Martyn's 'Solid Air' had added depth and dynamics. The timbre of his guitar was more realistic, the fine details of his playing coming over with uncanny accuracy. It was as though I could hear deeper into the mix".

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## QUESTIONS

**[1] The conductors are –**

- [a] gold plated
- [b] tin plated
- [c] silver plated
- [d] chrome covered

**[2] The internal jacket is –**

- [a] Rayon
- [b] PVC
- [c] carbon-fibre
- [d] cotton

**[3] The shield is –**

- [a] iron wire mesh
- [b] knitted silk
- [c] woven rubidium
- [d] foil and braid

**[4] The insulation is –**

- [a] XLPE
- [b] gutta percha
- [c] glass fibre
- [d] impregnated paper

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**Wharfedale's latest 85th Anniversary Denton recalls power from the past says Noel Keywood.**

# Past power

It might look a bit antiquated – but it isn't. Within Wharfedale's traditional cabinet lie modern drivers and crossover, giving their new Denton 85th Anniversary (£550) loud-speaker an impressively modern performance. All within a compact, but not-small cabinet subtly tuned for good bass and high output.

By combining old values with new ones like this, the Denton may

seem like a peculiar hybrid to some of us in the UK, but it is likely aimed as much at the Chinese market where traditional British hi-fi is better recognised and valued than in its home market. Wharfedale's old Denton 80th Press Release brochure was sparse in appearance, the new one a lavish historical document complete with picture of propeller driven aircraft in background showing latest delivery method, back in the

1950s.

And as always we have the ladies making the parts, as they still do today in China, even if modern Chinese production lines are somewhat larger and more daunting than Marconi's pictured in this brochure. I wonder whether the Chinese relate to the shot better than us in the UK, with period Western dresses, hairstyles and what have you.

Wharfedale is now part of Chinese International Audio Group (IAG) so they understand the zeitgeist here better than I, which is why I suspect the latest Denton 85th Anniversary will be enjoyed more by others than Brits.

All may not be what it seems then! And I can say that of the new Denton in physical form. The bass unit has a modern synthetic Kevlar cone – now quoted as 165mm, up from 125mm of the 80th Edition. The tweeter remains a nominally 1in (25mm) textile dome with Ferrite magnet, now with a protective front grille. Increasing both cabinet volume and bass unit size improves both bass output and sensitivity – our measurements confirming this. The new Denton needs little power to go very loud, making amplifiers of 40 Watts plenty enough for most rooms; they can even be driven by a valve amplifier (4 Ohm tap). So inside the Denton is bang up to date.

Trad. appearance means it comes in a sturdy, squat cabinet measuring 340mm high, 240mm wide and 275mm deep, plus 12mm more for terminals. But it is solid and heavy at 9kgs, purposed for a strong shelf or stands; the Denton is certainly no mini. But at the same time cabinet volume is how you get decent bass, so size here isn't cosmetic but has purpose. 'Speakers of old might not have been tall and slim – they had bass instead!

A real wood veneer is used and the front panel is even surrounded by baffle trim – rarely seen nowadays. With grill on or off you get to see a Wharfedale badge. Both cabinet and bass unit size have increased over the 80th edition (reviewed in our November 2012 issue), and the tweeter is now offset to produce a 'handed pair' – giving left and right loudspeakers, tweeter on inside for best imaging.

At rear there are lovely heavy duty gold plated terminals, with removable links to allow bi-wiring. They accept bare wire, 4mm banana plugs or spades; easy to access and use.

**SOUND QUALITY**

The Denton 85s, as I'll call them, were distinctive in good ways, bad ways and good-and-bad ways – meaning I got a bit confused in the end! I'll explain later.

Initially I paired them with a safe combo of Creek Evolution 100A amplifier, driven via Chord Company

Epic balanced cables to the power amp section from an Audiolab 8300 CDQ player acting as preamp and CD player. An Astell&Kern AK-120 player delivered hi-res, connected to the 8300 CDQ digitally via a short QED Quartz glass optical cable. Loudspeaker cables were Chord Company Signatures.

Starting with high dynamic range (uncompressed) CDs, saxophone behind Hans Thessink singing Mississippi had a nice warm and fulsome presence, trundling along

"I haven't heard this sort of delivery for a long time and feel they brought an engaging sense of scale"

casually behind his vocals that stood out well. There was good dynamic separation between them and reverb around Hans Thessink's vocals was made obvious, giving a nice feeling of atmosphere and being-there. Guitar strings were crystalline in quality, forward in the mix and finger picking highlighted, making for a close-up feeling.

The bass line in John Campbell's Down in the Hole (CD) strode along firmly and had plenty of presence, showing an Olde-Worlde ability here: think fulsome and powerful. The Denton's sound large – larger than they appear. Distinctive in a good way.

Fleetwood Mac's Dreams (24/96) was dealt with less sympathetically. Steve Nicks vocals were sharp sounding and cymbal crashes from Mick Fleetwood's drum kit harsh. This track is a digital

transcription from analogue master tape that I use regularly and know is a bit hard and bright up top. The Denton 85s emphasised its problems, making for a not especially pleasant rendition; "unforgiving" my notes say. Distinctive in a bad way here.

Rimsky Korsakov's Snow Maiden from the Chicago Symphony Orchestra (24/96) came over as a lively performance with horns, violins well separated, and with entertainingly strong kettle drum strikes. Here the Denton 85s were deliciously resonant, enhanced by the cabinet in old-stye fashion. Distinctive in a good way again here; I haven't heard this sort of delivery for a long time and feel they brought an engaging sense of scale to orchestra, belying their small size.

Because the Denton 85s were quite obviously bright in their delivery with our easy-going Creek Evolution 100A I turned to our Icon Audio Stereo 30SE single-ended (30 Watt) valve amplifier. It made no difference: subjectively the balance was the same.

Moving on to vinyl I hooked up our Timestep Evo Technics SL-1200 Mk2 turntable with SME309 arm and Audio Technica VM750SH moving magnet (MM) cartridge, working through an Icon Audio PS3 Mk2 valve phono stage. Spinning Hugh Masekela's Uptownship (180gm, from Analogue Production) the Dentons sounded vividly clean and forthright,



**Lovely rear panel, veneered and with quality gold plated bi-wire terminals. The +ve link can be replaced with a resistor to lower treble, a tweak we applied.**

giving fantastic insight into the music. Now their strong treble served to highlight the ringing percussion. There was also resonant left to the drums, making them lively and exciting.

The fabulously recorded (2018) Big Band Spectacular LP from Chasing the Dragon, a live performance by the Syd Lawrence Orchestra direct to 30ips master tape, had Sing Sing Sing chiming out into our large 6500cu ft listening room at full scale – from a 30 Watt amplifier. The fast drumming was delivered with pace and power – I sat back and enjoyed a large band in front of me, brass blaring and cymbals ringing.



Wharfedale parts being made on a Marconi production line.

With this LP and others of high quality the Dentons were exciting. Their old-skool nature shone through to punch out a strong sound – the revealing tweeter acceptable as long as it was fed a good source. A cartridge with sophisticated stylus profile – Shibata in this case – was just such a source, but dodgy-digital was not.

Emphasised treble has made the new 85th Anniversary Edition more critical and less forgiving than the 80th Anniversary Edition. With Dire Straits Brothers In Arms LP (Mobile Fidelity, 180gm, 45rpm) repetitive cymbal strikes marking out the beat had very obvious presence, more so than I am used to from our reference Martin Logan X-Stat electrostatic panels. Alison Goldfrap's Ride a White Horse (12in 45rpm single) pounded out strongly, the synth bass beat having a resonant strength characteristic of an old-style loudspeaker – and all the better for it I felt. Unfortunately, emphasis of sharp vocal sibilants wasn't so good.

Slightly frustrated by the mix of good and bad I got tweaking. A 2 Ohm resistor to the treble unit, replacing the bi-wire positive (+) link,

gave a measured flat response but a warm-ish sound, whilst a 1 Ohm resistor was perfect – clear treble but not overwhelming. This gave me the Denton 85th I wanted to hear and is a very simple thing to do (such a tweak can be made to any bi-wirable loudspeaker). Hi-hats didn't overwhelm, cymbals didn't crash harshly and rim shots were clear but not destructive; ride cymbals fell back to accompany rather than dominate.

### CONCLUSION

The new Denton 85th Anniversary has bass powerful in a lively resonant sense that makes modern small loudspeakers sound restrained.



Wharfedale loudspeaker delivery by latest method (in the 1950s). See propeller in background.

Getting big kettle drum strikes and cross panned drum kit rolls to sound realistic isn't something small loudspeakers manage well, but the Denton 85s had no problem. As standard there was too much treble for me, but with a 1 Ohm resistor tweak it all fell into place: clear, full bodied, punchy and exciting beyond what you'd expect at either the price or the size.

### MEASURED PERFORMANCE

Frequency response, measured using third-octave analysis of pink noise, shows basically level output from 60Hz to 20kHz within +/-3dB limits the tweeter now giving more output than 80th Anniversary Edition, with a +2dB lift from 5kHz upward. There is no dip at crossover between the drive units, making detail more apparent. As before phase matching between drivers was good and dispersion wide so they differ little on and off axis. Our response is 20 degrees off-axis, tweeter on inside.

Bass output from the 'speaker has been smoothed and extended downward slightly, port tuning moving from 52Hz down to 40Hz. There is now a small peak in port output at 30Hz too. With bass level now lower the new Denton will not sound warm or bass heavy and less 'fulsome' close to a rear wall.

Sensitivity for a small loudspeaker was very high at 88dB, +2dB up on the earlier model, but this is achieved by using a 3.6 Ohm d.c.r. bass unit. Measured impedance is now an industry-standard 6 Ohms however; the old Denton 80th measured 8 Ohms. Such high sensitivity means amplifier of 40 Watts will go very loud; high power is

not needed.

The new Denton 85th Anniversary Edition will sound lighter and brighter than the 80th, due to raised tweeter output. It has smoother bass that runs deeper and will sound controlled when close to a wall. Sensitivity is very high too. Very good, but with overly strong treble. **NK**

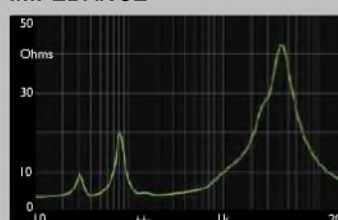
#### FREQUENCY RESPONSE

Green - driver output

Red - port output



#### IMPEDANCE



### WHARFEDALE DENTON 85 £550



**EXCELLENT - extremely capable.**

#### VERDICT

A small loudspeaker with a very big sound, if bright as standard.

#### FOR

- powerful resonant bass
- need little power
- go very loud

#### AGAINST

- strong treble

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Answers by: **NK** - Noel Keywood; **JM** - Jon Myles; **PR** - Paul Rigby; **MP** - Martin Pipe.



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## Letter of the Month

### BUYING PARTS

I saw in your recent issue (Letters, June 2019, p37) that Stan Abrahams says a BNC-to-phono adaptor is a cheaper choice than a complete BNC-to-phono digital cable and that it works well with no problems. But he uses what is a hi-fi component from Van den Hul then recommends eBay where this item comes at £1 he says. I do a lot of electrical work in West London as a professional electrician and have an account with RS Components. They stock this part, although not at the low price Stan quotes for eBay. You can buy a BNC-to-phono adaptor from them (stock no 790-2805) for £3.11.

You said in the past that there are no component suppliers left after Maplin closed down but I build my own cables and gear as a hobbyist and there are a few around. RS are not the same as Maplin but in some ways they are better with a bigger stock and you can just walk in and buy, although it is better not to as a component may not be in stock, which means a wasted journey. That's unless you just want to look around at some of the bits and bobs they sell – lots of tools and professional bits like good soldering irons. Not so cheap as Maplin but they last longer

and do a better job if you know how to use them.

I gave up on Maplin in the end because although it was cheap some of the stuff wasn't good enough for my customers and I could not risk using it. eBay might do it even cheaper but only if you want to wait for delivery and hope for the best.

Trouble with RS is you need to drive like I have to, to get to the Heathrow branch. It's not as easy as going into an old Maplin as I did long ago when I used their big branch in Hammersmith for tools and parts. Anyone who has worked around Heathrow will know the roads are busy or not working at all, especially on Friday when the jams build up and I just end up sitting there looking at rows of cars and lorries and wasting time. Everyone in London drives through this part of the world Friday night.

Long ago when I started my boss gave me a meter that looked very professional. I was gobsmacked to get it quite frankly because it was the best of the time, an Avo 8. Don't hear about Avo any more but they were the best. It was a meter with lots of scales and a long needle and I had to sort out what to select, not easy when you're a young

**RS** RF Adapter BNC Plug to RCA Socket



**"You can buy a BNC-to-phono adaptor from RS Components" says David Keenan. Call and collect from one of their branches, or use mail order. They have a good range of audio parts.**

beginner.

It's all different now but I bought a meter the other day that was a bit like the Avo, a Chauvin Arnoux (French?) at just over £200. It's quite useful at work but not when I am crawling around somewhere dark trying to sort things out. Then a modern back-lit powered meter with batteries is best.

When I get a call to North London or have some spare time and need some parts I use Cricklewood Electronics. They've been going for a

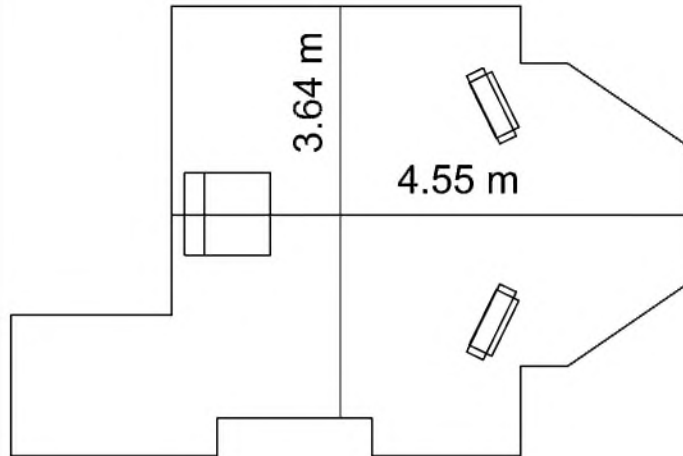
long time and are worth visiting. Like Maplin you can pick up parts quickly to get a job finished. I have to do this to stay alive and I can't be driving back to North London much, because the journey is too long and difficult from where I live in West Drayton.

Hope all this helps now that parts for those of us that are hobbyists are difficult to find – unless you buy on the internet and keep fingers crossed. Keep up the good work.

**David Keenan**  
West Drayton

Hi David. Thanks for the information. As I recall RS was once RadioSpares and had a trade counter in London's Tottenham Court Road – long before Maplin I believe. Good to hear that they are still going in different form nowadays. I use them for mail order like most others, since there are no branches near me and, like you say, the roads around Heathrow can be 'difficult' at times so I have yet to go the branch you use.

Other suppliers worth mentioning for audio parts are Canford (Sunderland) and Studio Spares (London), both of whom specialise in audio, the latter being good for acoustic products (tiles etc) and have a walk-in retail counter. Then there's CPC Farnell – but only to those within reach of their one outlet at Preston, Lancashire – otherwise you order on-line. Others are Hi-Fi Collective (UK) that sells specialised audio parts by



**"We have been building a new 15 ft x 13 ft (4.7m x 4.0m) study/listening room" says Mike Tartaglia Kershaw. There is a bay window behind Quad ESL63 electrostatic loudspeakers.**

mail order only, and Parts Express of the USA – but you have to watch out for transatlantic shipping costs with heavy items, and import duties.

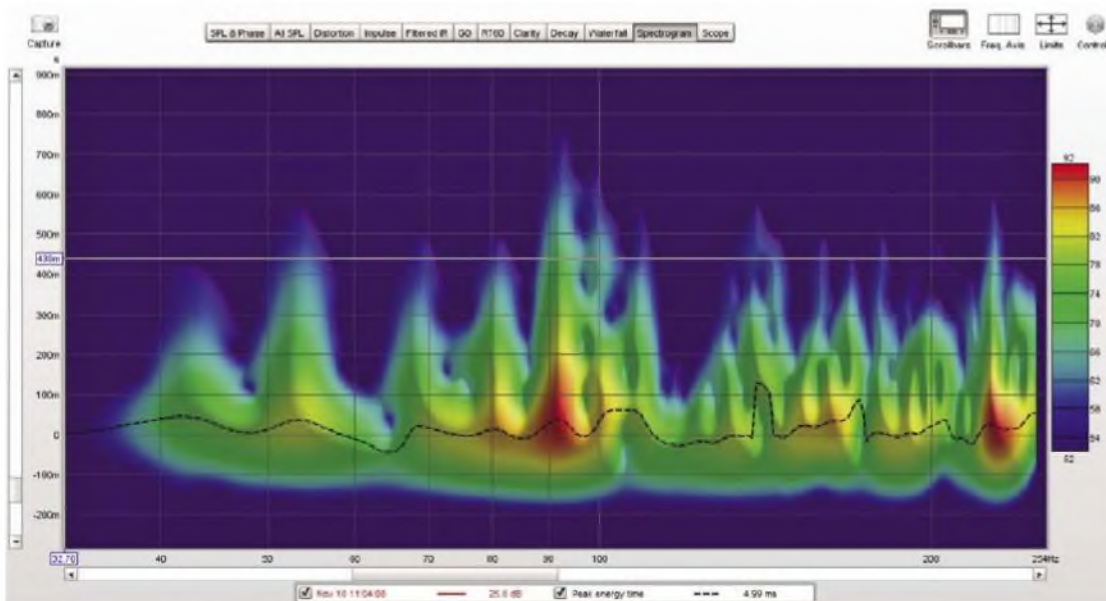
I will always miss Maplin and the store browsing experience. I don't know how many times items that intrigued me I bought on the spot. However, if you have the patience to browse and order on-line and, to some extent a wallet deep enough, then today's on-line suppliers like Farnell are an awesome place to go. Life hasn't stopped since Maplin closed, but it has become more difficult for hobbyists and anyone wanting to make their own cables and interconnects, which seem to get ever more complicated.

**NK**

### WIZARD PEAKS

I found your replies to the letters from Dr R J Simmons (Jan 2019) and Nicholas Hodgson (Feb 2019) about room sizes, and coupling the speakers to the room by careful positioning, very interesting. As you know we have been building a new 15 ft x 13 ft (4.7m x 4.0m) study/listening room. It is now complete and we are just settling in. There is a lot of 'careful positioning' going on at present but unfortunately one of my Quad ESL-63s seems to have developed a fault just after installation. The sound volume in one channel suddenly dropped by half. So the Monitor Audio Gold 200 speakers are now in action.

As you suggested in your reply I did use 'Amroc' free software when



**A spectrogram of Mike Tartaglia Kershaw's listening room, produced by Room Equalisation Wizard software.**



**Cambridge Audio Topaz budget CD player. "To say I am impressed is an understatement" says Mike Tartaglia Kershaw.**

planning the room, with a bay window to provide some space behind the electrostatics. I also used 'REW' (Room Equalisation Wizard) free software to measure in-room acoustics before the ESL-63 fault and I attach a spectrogram produced using a sweep tone in REW. I have not had time to absorb this information fully but it seems to show some 'peaks' (potential room boom?) and an interesting 'col' or 'suck out' between. I am not sure how to handle a 'suck out' but I will be moving speakers around and measuring again. It does seem from the graph that the ESL-63s are producing some bass as low as 35Hz with 'peaks' at 90Hz and 250Hz, and the 'suck out' at 110Hz. I have not measured the Monitor Audio 200s yet but they do seem, just listening to music, to excite a room 'mode' but only when I remove the rear port bungs, and this might be reinforced by the bay window? It seems placing speakers in a bay window may have unintended consequences?

Also, my Audiolab 8300CD stopped working it just went dead and the only sound coming out was a loud hiss (only 2 months old - but it was an 'open box' sale item). Good old Richer Sounds in Southampton lent me a brand new sealed box Cambridge Audio Topaz CD10 (£180) while it is in for repair. I wired this up to the Prima Luna Dialogue Premium HD and Monitor Audio Gold 200 speakers!! To say I am impressed is an understatement. Straight from the box the sound was clean and solid with firm bass and just a trace of hard treble on poor recordings. Within days the sound became fuller and more cohesive. I have even had moments of sheer pleasure and finesse on well recorded CDs such as John William's 'Cavatina Collection' double CD which has a real sense of spaciousness along with solid bass. I think this unit is worth testing and exceptional value for money. I would be interested to know if your ears find a bit of occasional magic in such a low cost player. The only downside seems to be a flimsy loading tray.

So, one exciting new room to investigate and enjoy, but two electronic failures. 2019 promises to be an interesting new year.

Best wishes,

**Mike Tartaglia Kershaw**

Hi Mike. I'll make some observations about your spectrogram from Room Equalisation Wizard, that may be useful.

You say your room is 15ft long, 13ft wide and I will assume a typical 9ft high. A room 15ft long has a lowest mode of 38Hz, so if you put the microphone at one end of the room and 'speakers at the other there should be a peak here. But there isn't!

I see no such peak in your analysis for two reasons. One is that your room is an irregular shape, not a symmetrical box and this will usefully de-tune main modes, meaning there will be no low end boom. The second is your loudspeakers are half way up the room and will not efficiently drive the length mode at this point. The third reason is that Quad ESL-63s resonate at 90Hz and bass rolls off below this frequency, so there is falling energy going into the room below 90Hz, as your spectrogram suggests.

At 13ft wide there will be a high pressure area at 43Hz either

side of the room but a suckout in the centre. You do have a peak at 43Hz but it is quite low. Ensure windows and door are closed when measuring.

If your room is 9ft high and you place a mic close to centre (4.5ft) centre of vertical axis you end up with a suckout at 63Hz, likely explaining your big suckout at that frequency. Move the mic down to floor level and run the analysis again to see if the dip disappears, to confirm this.

You cannot get rid of peaks and dips like this at the listening position; they're down to your physical position, and the loudspeaker's position, in a three-dimensional space. A heavy settee full of foam will help damp peaks however.

The hot spot (red) at 90Hz is quite likely due to panel resonance in the Quad. I would expect Monitor Audio Gold 200s with bungs removed will give stronger low bass than the Quads and this hot spot will disappear.

Also, if you place a bay window behind Quads (that fire backwards) hang heavy lined/interlined curtains behind, preferably floor to ceiling – as much surface area as possible. This gives you the option of absorbing rear radiation by drawing the curtains. Having a large area of reflective glass behind Quads is not a



**Quad ESL-63 open panel electrostatic loudspeaker. Needs space behind to 'breathe'.**

good idea.

I always go for big curtains because they give you variable room acoustics, as it were! And a nice quiet living space when drawn. Have fun.

**NK**

### MODERN MANUALS

I agree with you about the over-writing and complexity of modern manuals, but one thing that is even worse than these over-large multi-lingual word-mazes (when they are printed at all; don't get me started on on-line or PDF manuals...!) is the minimalist or non-existent manual – yes Apple, I'm looking at you!

What chance have beginners – such as older folk who have been bought one of these 'fancy gadgets' and then left on their own with them – got with this level of (non-) support? I have an 80-year-old (very non-technical) friend who is still trying to get to grips with his basic non-smartphone, simply because (a) the manual is printed in what seems like 2 or 3-point sized text, and (b) the buttons on the phone are not labelled or easy to distinguish/use with older, non-precise, fingers.

Sometimes, both with the big manuals and the we're-a-sales-leaflet-really manuals, far too many assumptions are made. Someone should really go through the step-by-step guides (under observation) who hasn't a clue about the equipment being operated, and all errors noted and allowed for in the revised text. It's a sort-of proof reading, and if there are still errors being made after this process then maybe the equipment is badly designed or too complex for the intended market; in other words, not fit for purpose.

This is not to deride specialist equipment, which is aimed at the technically minded and technically aware, which should have full specs (what technical person doesn't like

full specs?) and yet still be written in a clear and concise way (even technically savvy people can get confused by bad English, or horribly convoluted sentences).

It gets worse, as comprehension can be further hampered by instructions being poorly translated from another language. My AV equipment is a case in point; sometimes the English makes sense in a localised way, but overall the paragraph is baffling, and requires mental juggling to work out what is being imparted.

This also applies to on-screen text – be it my Fiio X3 and its not 100% clear menus (version 2.00 firmware I'm looking at you!), or Windows 10 and its links to help pages (wherever you are in the operating system) all linking to the same start page for Microsoft help – absolutely infuriating! At least link to the correct help page for what you're trying to do, not to a searchable index.

It's a good job most hi-fi isn't too complicated to set up and use...(!)

yours sincerely  
**John Malcolm**

*P.S. Talking of translation failures, what does the start-up phrase on my X3 'Born for Music and Happy' actually mean?*

Thanks for that John. A lot of the Japanese manuals, typically for AV receivers, have similar and idiomatic manga graphics, terse and awkward English phrasing and the all-important



**"My Fiio X3 and its not 100% clear menus (version 2.00 firmware I'm looking at you!)" notes John Malcolm.**

addendum marked by an asterisk where they tell you what doesn't work properly! I strongly suspect these manuals all come from one source in Japan, since their structure and diagrams are much alike. It was interesting to review an Arcam AV receiver some years ago and read their manual, which was a model of clarity by way of contrast. It can be done.

The complexity of AV receivers and their manuals is contributing to their demise I believe. Helped on the way by the death of the silver disc including Blu-ray and the rise of Netflix. We're all streaming nowadays it seems. Big manuals are yesterday.

**NK**

### EASTERN POWER

I am a reader from Hong Kong. I am about to upgrade my hi-fi system. I have a question on amplifier power. This is because you have used certain amplifier with only 75 watts per channel to test your speakers. My room is 200 sq ft. I am now considering two options: one set amplifier with 70-80 Watts per channel. Another is 600 Watts per channel. My target is Sopra No. 1 alike or, as first choice, a certain speaker which recommends amplifier to use of 50-200 Watts.

What is the difference to buy one of 75 Watts whereas the other is 600 Watts (if price is no consideration)? Originally, I think this is just a simple technical question, so I asked people with (electronics/sound engineering/hi-fi)



**The Arcam AVR-750 receiver had an easily understandable user manual written in the UK and was a model of clarity.**

backgrounds, but strangely the answers are not clear and unified (and empty!).

In my case, the 600 Watts supplier has offered me very, very substantial discount because they are selling to me the showroom power amplifiers (of less than one year) but with an all new



**Focal's Sopra No1 loudspeaker. Do I need 75 Watts or 600 Watts, asks Chan Chak Chung?**

pre-amplifier. It is about 40% something discount, compared to all new set. (let say this after discount price is \$x).

Then another audio supplier is offering me the 75 watts set at half the \$x! All the commodities are well known brands. How can I choose?

I hope I can obtain your advice.

Best regards.

**Chan Chak Chung  
Hong Kong**

Hi Chan. A room of 200 square feet (16ft x13ft?) is an absolutely normal sized living room and does not need high power: 75 Watts is more than enough. I have been over this many times in the past, using an oscilloscope to measure short musical peaks and it is difficult to swing more than 10 Volts (17 Watts into 6 Ohms) before the music becomes extremely loud, such that it penetrates the concrete floors of our office building and draws complaints from tenants. An extra twist of the volume control can get level up to 20V, meaning 67 Watts, but this is shatteringly loud and only tolerable for a short time. You will never use 600 Watts in Hong Kong – or risk being sent to mainland China!

If a loudspeaker produces a loud 86dB from 1 Watt at one metre, at 4m (12ft) listening distance, it will produce around 78dB in a reverberant room, measurement shows. A stereo pair increases this to 81dB and a step up in power of x25 to 25 Watts increases this figure by 14dB to 95dB sound pressure level at

the listening position – very loud. A step up in power to 75 Watts takes you to 100dB SPL and this causes hearing damage after 15 minutes. Generally 90dB at the listening position is plenty enough for most people so you don't need high power.

Both theory and measurement bear this out, even though a few still like to argue that more than 100 Watts is needed. Powerful amplifiers can seemingly have more grip and punch, but that is because they have big power supplies with high transient current delivery. Hi-fi amplifiers nowadays come with 'stiff' power supplies that largely negate this issue. So in a nutshell, go for quality rather than high power – and 75 Watts is more than enough; you do not need 600 Watts. **NK**

### TURNTABLE UPGRADE

I'm from Australia and I'd like your advice re. a dilemma. I've got a 1977 Linn LPI2 + 1987 Akito arm + 1987 Valhalla PSU which I have not used for years. As I'm now retired with a lot more time to indulge myself with, I was thinking of digitizing my vinyl collection, especially the 45 rpm albums that have never been released on CD. I've got computer sound cards with very good ADC, either a Lynx Two B (balanced) or a ESI Julia (balanced or unbalanced) as well as vinyl EQ software. I'm ready to use a stereo mic preamp to amplify the signal without EQ (microphones and MM cartridges have similar output) and then perform the EQ in the digital domain (digital EQ seems to me more accurate and easier to alter than the analogue equivalent but I might be wrong).

I know that the best result will be obtained with the best source signal i.e. a turntable + arm + cartridge combination. So, after this pretty long preamble, here are my questions (please keep in mind that my primary goal is to digitize my vinyl collection) – should I stick with the LPI2 as it is

(maybe with a check by the local Linn reseller) and which MM cartridge would you recommend me (current one is a Garrett Brothers P77 <http://garrott-brothers.com/p77i-cartridge>) – should I upgrade the LPI2?

I know it will be a very expensive process whatever the company I'll choose (Linn, Inspire HiFi, Origin live and many more). Should I go for a Technics SL-1200 to get a new sound (I have at this stage to confess that when I bought my second hand LPI2 in 1987 my only comparison was with a Rega 2 and with a quartz-locked ADC 1700)? It seems that you favour the Direct Drive ones. I wouldn't go for a turntable including a phono preamp + ADC 16/48 usb output.

Cheers,

**Jean-Christophe Xerri  
Australia**

Hi Jean-Christophe. In my limited experience to date, digital EQ offers no benefit over a conventional analogue phono stage, but then this may have been down to the ADC being used. You do need to use a high quality 24bit ADC, then have a listen and see what you think. Analogue EQ is so accurate nowadays, within +/-0.2dB or so, that the accuracy of digital EQ will make little subjective difference. It's a lot of faffing around for dubious benefit I suspect, but I could be wrong. If you have spare time, give it a go.

A worked out solution is available from Furutech in their ADL GT40a Stratos phono preamp with 24bit conversion – this is a suitable product for your purposes.

Direct Drive is more stable and assured than belt drive, but not necessarily better in terms of depth perspectives, stage size and what have you, this being down to other factors such as platter and plinth construction, isolation. A new Technics SL-1200GR will sound very different to your Linn, far more



**The ADL GT40a Stratos phono stage with 24bit conversion to digital. A great way to send LP to digital.**

concise, and with a drier air, due to its all-metal construction I suspect. Ask your local dealer or contact Sound Hi-Fi in the UK about all this if you wish to use an SME or Rega arm with it. **NK**

### STUDIO SOUND

In my role as a repairman I get all sorts of hardware from studios, including mixing desks and the inevitable digital interfaces for PC and Mac. Although the ADC is a prime source of somewhat strange sound including midrange muddle, high frequency distortion and clutter there is nothing quite as odd as the effects of a digital mixing desk. Even with 24/96k input stages once we get to the digital mix there is a whole range of issues that, even with the standard digital ultra clean sound it doesn't quite come out as the hi-fi world would like. I have a feeling that sometimes we are hearing frequency selective digital overload that occurs in the digital mix stages and may only last for a single sample. Put a 24 track mix into operation, be it on a proper mixing desk or the computer system, and we are asking a lot from the processing power of any hardware which I feel is beyond a measurable factor for manufacturers to either fix or even define.

In addition – and as you have said – many recording people, be they the one man band or small studio, have less than a decent understanding of what they are doing. It is quite remarkable that people making demo CDs have not played the resulting output on anything like the equipment that the average record company would use to audition; say a portable CD player. To say that their monitoring equipment is far away from truthful would be putting it mildly! Monitoring through your Marshall guitar amp is not going to work!

They may have never played a selection of commercial CDs through their studio PA and even if they do they will twist the output with graphics and all manner of damaging electronics before it comes out in a morass of either top or bottom heavy, compressed muddle that is obviously going to colour the sound of their subsequent mixes.

My job is often to advise, gently of course, on what they are doing wrong. 30 seconds is usually the longest demos get to spark interest at the record company so getting it wrong in the demo is going to put you straight in the bin! Next years Adele perhaps? Or not?

This obviously is a trait that occurs across much of the music industry, so new vinyl is likely to suffer in exactly the same way as new tunes. I have no



**Technics new SL-1200GR Direct Drive turntable, in tuned up form from Timestep. High precision from LP.**

doubt that some of the original masters are pretty poor and no amount of EQ or frequency selective compression or expansion will help to make it better. But if the only signal processing available prior to the cutting lathe is a digital desk or a rack mounted EQ module with +/- 20dB controls, with monitoring from the PA family rather than top notch hi-fi, then we are going to get new pressings in exactly the format that we are hearing now. We have a whole generation who only listen to – at best – CD quality on a stacking stereo and at worse think that a good sound is a MP3 download at 96k and almost-stereo. How can we expect better when this standard has satisfied a generation that's moved little beyond the 1970's music centre?

I get quite a few studio people looking for old analogue reel-to-reel tape decks so that their digital mix down gets some analogue feel, thanks to the

likes of an old Teac, Revox, Fostex – or if very lucky, Akai. Shame that, given the cheapness of the digital mixing desk, it does not have that analogue sound that adds warmth and brings the sound closer to that of an original vinyl presentation has. It will not, however, take away that overall digital sound and sometimes it is only adding a snippet of slew limiting and some 2nd harmonic distortion.

What we are actually asking for here is for everyone in the music business to have golden hi-fi ears that are not affected by cash constraints – and limitless time to examine what is happening, which is very unrealistic.

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# Perfect Piegas

Swiss manufacturer's new aluminium-clad Premium 701 loudspeakers are a joy, says Jon Myles.

**W**hile many loudspeakers are much of a muchness - wooden cabinet, various drivers and a crossover - the same cannot be said for Piega and its range of products. The Swiss company makes some seriously different transducers - and has done since foundation in 1986. It was one of the first manufacturers to embrace the use of a ribbon tweeter - rightly realising that it gave an enhanced high-end response.

Secondly, it has a firm belief in the use of aluminium for the cabinets due to its inherent strength and lack of resonance. All this came together in the Piega Classic 7.0 that I enthusiastically reviewed two years ago in our November 2017 issue.

Now, though, Piega has upped the ante with the Premium range - consisting of a standmount and two floorstanders. The flagship is the £5100 Premium 701 reviewed here.

It's tall but slim - measuring 106cm x 18cm x 23cm. But that doesn't tell the whole story. The aluminium cabinet is C-shaped so curves smoothly to the rear giving

the whole loudspeaker a rather elegant form.

Beneath the matching silver grille at the front (which takes some prising off) sit two 140mm drivers that operate in a two-and-a-half way configuration where the top one handles midrange and bass with the other dedicated to the low end only. Base plates with spikes have also been introduced to prevent interfering frequencies and aid stability.

Underneath the drivers is a bass reflex port to give some extra slam. But perhaps the most interesting factor is the new ribbon tweeter. If you consider Piega has been designing these sort of tweeters for more than 30 years then you'd expect they know what they're doing - and they proudly state this is their best yet.

Dubbed the LDR 3056 (hi-fi companies love acronyms) its thin membrane has a newly developed suspension system and is controlled by mass-free damping. Piega says that thanks to the optimised magnet system and a new foil layout, the tweeter offers higher efficiency, greater bandwidth and linearity.

Which is all very well - but getting a pair of mid/bass drivers to





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**The Piega 701s have a curved aluminium cabinet with a single pair of 'speaker binding posts at the rear. An elegant design that aids sound quality.**

interact well with a ribbon tweeter is not always as easy as it sounds. So has Piega managed it?

**SOUND QUALITY**

First of all, placing these loudspeakers in the listening room they looked very slim yet undeniably attractive. My first thoughts were that they may be a little lacking in subjective bass response exacerbated by the high-frequency response of that new ribbon tweeter.

I was wrong. These Piegas have a sense of ease and presence allied to a room-filling sound. Pairing them with a variety of amplifiers - from a high-end McIntosh pre-power valve combination to a more basic but still impressive Creek Evolution 100A integrated transistor - they were natural yet never missed out on the emotion of the music.

The ribbon tweeter means they are ideally placed firing straight down the room. Toe them in a little and the tweeter can become a little over dominant - although it never sounds harsh or edgy.

Position them correctly in your room, though, and they really sing and extract immense detail without over-emphasising any part of the frequency spectrum.

Take, for example, New Order's 'Weirdo' from their Brotherhood album. It can sound rather bass heavy on some 'speakers with a restrained top end.

However the Piegas opened everything up. The bass was taut yet even with a tactile feel to it. Farther up the electronic embellishments soared high into the room and the midrange was very smooth.

Turning to Sinead O'Connor's 'Nothing Compares To U' the new tweeter shows just how good it is. The Irish singer's sweet voice sounded completely natural and emotional - even her slight intakes of breath being audible.

But for all the delicacy on offer these Piegas can slam the music out when needed. With The Stone Roses' 'I Am The Resurrection' the incessant, pounding drum beat never lacked power. Nor did it overwhelm the track or its bass line - showing just how well-balanced the 701s are.

No, you don't get gigantic bass - as a play of Massive Attack's 'Angel' proved (see Measured Performance



**The new Linear Drive Ribbon has been designed to bring greater clarity to the high end.**

for more information). For that you'll need loudspeakers with larger drivers. But instead the Piegas provide a superb listening experience that are able to handle any genre of music and do it with aplomb.

**CONCLUSION**

These Piegas have everything going for them. Sophistication when needed but also the ability to rock out with excitement when it's needed. Add in their slim profile and solid cabinet and they really are very good.

**MEASURED PERFORMANCE**

Frequency response of the Piega Premium 701, measured using third-octave analysis of pink noise, was level from 40Hz to 18kHz within +/-3dB limits - a very good result. Smoothness suggests low colouration and Piega have gone for tonal accuracy here, rather than enhancement: no raised treble or bass. However, the slow roll off down to 40Hz is best suited to positioning close to a rear wall, where the 'speaker will most effectively couple with low frequency room modes to raise bass through what is termed 'room gain'.

Manufacturers like to raise output from ribbon tweeters for obvious but clean treble - but not here.

The port is tuned to 40Hz our impedance curve shows, providing output down to 30Hz, so the 701 goes low. It is also well damped by the port so will come across as dry and well controlled in terms of bass quality.

Sensitivity was high at 88dB sound pressure level (SPL) produced from one nominal Watt (2.8V) of input. Amplifiers of 40 Watts per channel will go loud with these 'speakers. Measuring just 3 Ohms d.c.r. and with a measured impedance

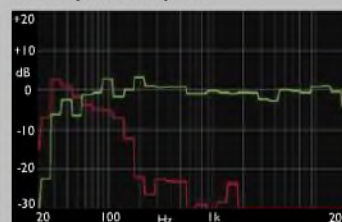
of 5.5 Ohms the 701 draws current to achieve high voltage sensitivity but that is common enough in modern loudspeakers and amplifiers can cope.

The Premium 701 has been tailored to deliver a smooth and accurate sound balance, with well proportioned bass when placed close to a rear wall. It measured well all round. **NK**

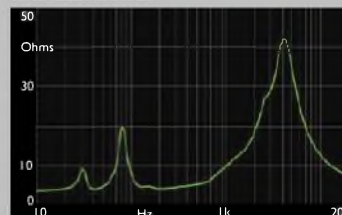
**FREQUENCY RESPONSE**

**Green - driver output**

**Red - port output**



**IMPEDANCE**



**PIEGA PREMIUM 701 £5100**



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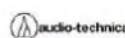
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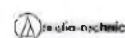
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# Universal Choice

**Martin Pipe gets to grips with Pioneer's UDP-LX500. A player for all seasons?**

**U**ntil quite recently, Oppo was the default choice when it came to high-performance Blu-ray and universal disc players. But despite having the quality market largely to itself, Oppo dropped a bomb last April. It announced that it would be ceasing development of disc players to concentrate on mobile phones. Since then, hi-fi and AV enthusiasts around the world have been seeking out worthy successors.

Recently, Pioneer launched two

new Ultra HD universal Blu-ray players – the UDP-LX500 (£900) and UDP-LX800 (£2000). Both LX500 and LX800 only have stereo analogue audio outputs; multichannel listening necessitates an HDMI connection to your AV receiver. I'll discuss this shortly.

Will these new Pioneers fill the gap once occupied by Oppo's offerings? The general consensus among home-cinema enthusiasts is that they do, but I will look at what the UDP-LX500 is like with music.

This machine is particularly

desirable as an audio source as it will play DVD-As and SACDs, both stereo and surround, in addition to Blu-ray audio discs. Music stored on USB devices, audio CDs and CD/DVD-ROMs are also within the LX500's grasp, while an on-board DLNA client will pick songs from your servers. Formats listed as compatible include MP3, FLAC, WAV, AAC, DSD64/128, MP3 and OGG Vorbis. The machine is compatible with hi-res FLAC/WAV files with 24-bit quantisation and sampling rates of up to 192kHz.

Needless to say, Pioneer's DLNA implementation also covers video (MPEG/WMV/MP4/AVI/FLV) and photos (JPG/GIF/PNG); the disc player will handle DVD-Video, video CDs and the full gamut of visual Blu-ray content – including 3D and 4k titles. Many user-recordable formats are catered for (CD-R/CD-RW/DVD-R/DVD-RW/DVD+RW) although DVD-RAM isn't on the list.

The LX500 is compatible with the latest and greatest video technologies such as Ultra-HD Blu-ray, 36-bit colour depth, HDR (high dynamic range) and low-latency Dolby Video; different visual 'preset modes' are provided for SDR (standard dynamic range) and HDR. It is of course compatible with the accompanying hi-res soundtracks (e.g. Dolby True HD and DTS Master Audio) as well as 'legacy' ones like DVD-type Dolby Digital and DTS.

The LX500 is definitely visually-smart in a conservative and understated way; it could easily be mistaken for a 1990s-vintage CD player, with its front-loading mech and fluorescent display. Only the USB socket gives the game away! It is however awkward to make out the black buttons on the black front panel. Until familiarity sets in, you might accidentally engage 'direct' mode – a video-free mode, optimised for music playback via the analogue audio outputs – when your intention was to eject a disc! To drive the sophisticated LX500 fully its remote control is essential.

There are two HDMI ports around the back. One will carry both sound and vision, while the other is sound-only. When I first installed the review sample, my AV receiver (an Onkyo TX-NR906) was resolutely silent. It turned out the previous user had disabled audio on the main HDMI port. I found an 'HDMI Mode' option in one of the settings menu had been set to 'separate'. After correcting this, all was well. Having separate audio and video HDMI outputs allegedly helps to maintain performance, and may also be of practical benefit if your amplification doesn't support the later versions of HDMI needed for 3D, 4k and so on.

There's an Ethernet jack (no wi-fi) for network playback and BD-Live functionality, a RS232 port for remote control, the aforementioned two-channel analogue audio output (no analogue video outputs) and a grounding terminal referred to as 'zero signal'. This 'barrel-only' (the



*In the middle is the transport, beneath which is a screened section containing the player and video circuitry. On the lower right is the switched-mode power supply; its opposite number is the audio board, which is based on the premium 'Velvet Sound' AK4490EQ DAC from AKM.*

centre-pin is unconnected) socket would be connected via a phono-to-phono cable to a spare input or output on the rear panel of your audio gear, bringing the LX500 to the latter's ground potential; I note that although the LX500 has an IEC mains socket, it lacks an earth pin and so it's 'floating'.

## USE AND PERFORMANCE

On the whole, the LX500 is straightforward to set up and use – the menu system seems to be logically-structured, just as it should be given all of the numerous cutting-edge options related to audio and video alone! I see that technological progress has manifested itself elsewhere – the user interface is a lot more responsive than earlier high-end players I've tried. Modern electronics is highly-integrated, with fewer chips doing more. Even so, I was surprised to note how much empty space there is in this player – which is heavy at 10kgs, on account of the metalwork that Pioneer has used to keep things stable.

Which brings us to the audio side of things. Oppo players were among the first to exploit the ESS Sabre range of audio DACs. In its LX500, Pioneer is championing an alternative high-performance device, AKM's two-channel premium 'Velvet Sound' AK4490EQ. This will accept 11.2MHz DSD and 768kHz/32-bit PCM signals, is claimed to offer a 120dB dynamic range and boasts five digital filter modes (Pioneer's

setup menus provide three – sharp, short and soft – that are, under most circumstances, too subtle to distinguish between). Mounted on an audio board, the chip is surrounded by high-quality surface-mounted passive components and NE5532 op amps – abundant in professional gear.

Let's start with the visuals. They are quite the best I've thus far seen from a domestic disc player. DVDs are given a new visual sheen, and even sub-standard discs (home movies, for example) look better, with more vivid colours and less digital noise. Regular Full-HD discs I tried were delivered with clarity and depth. The landscape-bending of *Inception* was, for instance, as astonishing as I remember from cinematic viewing. This player also did justice to the film's bombastic DTS HD-Master multichannel sound track; it swung dynamically as required and in sound staging terms managed to convince via my Onkyo receiver and Rogers 'speaker system.

There may not be multi-channel analogue outputs, but those with surround-sound DVD-A discs and



*The sensibly laid-out remote has a dated appearance. It's easy enough to use and the buttons are backlit for easy location in the dark.*



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Two HDMI outputs – allowing audio and video to be carried via separate digital paths – are provided, although the UDP-LX500 only caters for stereo analogue audio. The ‘zero signal’ is, basically, an earthing terminal. Conventional digital terminals are present for external DACs, and for non-disc playback there are Ethernet and USB ports. No digital inputs though; it cannot be used as a DAC.

SACDs will be able to enjoy them via HDMI if the LX500 is partnered with suitable off-board equipment. You can configure the player to send the disc’s audio bitstream to your amp via HDMI. Good news if it can deal with DSD natively – as my venerable Onkyo can! Some 24-bit transfers of old quadraphonic material were played. Among this was The Friends of Distinction cover of Light My Fire, from the 1969 album Highly Distinct – I’ve never heard it sound so gutsy...or soulful; it’s a little bright, but that’s probably down to the original recording. Its interesting (and highly discrete) quad mix emerged intact too. The player also did justice to the subtle 5.1 surround mix of reggae-tinged Message in a Bottle, from The Police compilation-SACD Every Breath You Take – The Classics. The all-important bass was well-defined, and backed up by percussion that was well-timed.

To check out the analogue two-channel performance, I drove a Chord Etude power amp (reviewed elsewhere this issue) and Quadral Aurum Wotan VIII speakers, via a ‘passive pot’ box (volume control). CD material initially impressed; a 2010 Chandos recording of the BBC Philharmonic playing works by Britten was given the necessary intensity, verve and excitement. In particular, the four Sea Interludes (from the opera Peter Grimes) are full of atmosphere and detailed across the tonal range. Oddly, the lush Trevor Horn production of Seal’s ‘The Beginning’ seemed a tad congested and lacking in guts although the lead vocal retained its emotional impact. Despite Pioneer’s claims, the DLNA player rejected DSD64 content. However, my 24/96 FLAC of Jethro Tull’s Thick as a Brick rewarded me with its analogue

warmth, strong dynamics and instrumental texture. Supertramp’s Breakfast in America, on Blu-ray audio, also sounded superb; standing out above all else is the sheer clarity.

**CONCLUSION**

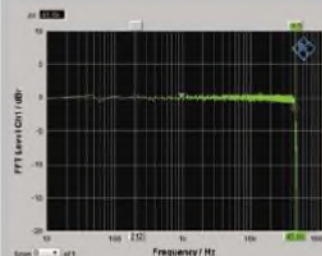
As a home cinema source, there is much to recommend the Pioneer UDP-LX500 – it doesn’t really have much competition. To get the

best from it, though, you’ll need a decent processor and amplification – especially when it comes to surround. The lack of multichannel analogue outputs means it’s not the best choice for owners of older gear (especially quadraphonic). In terms of its analogue terms, the UDP-LX500 puts up a good fight – but a decent purpose-designed CD player will be more transparent.

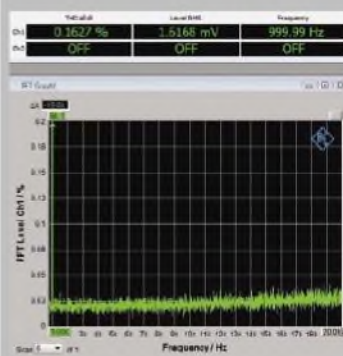
**MEASURED PERFORMANCE**

With CD frequency response measured flat to 21kHz and distortion at -60dB came in at 0.3%, a tad higher than the 0.22% that’s usual, mainly due to noise. As a result EIAJ Dynamic Range measured 97dB, a reasonable figure if below the 102dB possible from quality hi-fi DAC chips. Output from the phono sockets was high at 2.3V. With CD a decent performance all round.

**FREQUENCY RESPONSE**



**DISTORTION**



With hi-res read from a USB Flash Drive the picture changed in unusual fashion. With 24/192 WAV a Format Unsupported message appeared. However, 24/96 was played, yielding mediocre results. Distortion measured 0.16%, EIAJ Dynamic Range 102dB – no better than CD – whilst frequency response was flat to 46kHz, close to the theoretical limit. Curiously, output fell to 1.6V maximum, making it -3dB down on CD, suggesting a separate section for hi-res or USB processing level misaligned with the CD section.

In similar fashion SACD also gave 1.6V out at full scale, making it -3dB quieter than CD. Distortion at -60dB measured 0.33% and EIAJ Dynamic Range a poor 99dB, where 110dB is possible (Arcam CDS50). Frequency response extended to 35kHz before rolling down fast to 48kHz, suggesting the Pioneer internally converts DSD to 24/96 PCM; pure DSD processing does not give a brick-wall cut-off.

The UDP-LX500 offers mediocre audio quality in measured terms, little better than CD when playing hi-res from Flash Memory or DSD from SACD. **NK**

<b>Frequency response (-1dB)</b>	<b>4Hz-46kHz</b>
<b>Distortion (-60dB, 24bit)</b>	<b>0.16%</b>
<b>Dynamic range (EIAJ)</b>	<b>102dB</b>
<b>Output</b>	<b>2.3V</b>
<b>Noise</b>	<b>-100dB</b>

**PIONEER**  
**UDP-LX500 £900**

**EXCELLENT - extremely capable.**

**VALUE - keenly priced.**

**VERDICT**

Sure, it’s not perfect – the sadly-extinct Oppos are a hard act to follow. But if you want a flexible disc player that can handle just about anything, this Pioneer warrants serious consideration

**FOR**

- broad disc compatibility
- picture quality
- can sound convincing

**AGAINST**

- no analogue multichannel outputs
- DSD DLNA issues
- no analogue video outputs

Pioneer  
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# WORLD CLASSICS

Here is our list of the great and good from audio's glorious past, products that have earned their place in hi-fi history. You'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price.

## TURNTABLES

**EAT FORTE** 2009 £12,500  
Lavishly finished two box, two motor turntable with gorgeous Ikeda 407 tonearm bundled. Exceptionally stable and unfussy performer with a relaxed but highly enjoyable gait.



**FUNK FIRM VECTOR II** 2009 £860  
Innovative engineering gives a nimble, pacy and musical sound that's one of the best at the price.

**REGA P2** 2008 £300  
Excellent value for money engineering, easy set up and fine sound.

**MCINTOSH MT10** 2008 £8,995  
Big, expensive, controversially styled and glows more than some might consider necessary, but an astonishingly good performer.

**REGA P3-24** 2008 £405  
Seminal affordable audiophile deck with fine bonded tonearm. Tweakable, and really sings with optional £150 outboard power supply.

**ACOUSTIC SOLID ONE** 2007 £4,050  
Huge turntable, both in terms of sheer mass and sonic dynamics. Fit up to three arms and enjoy, just don't damage your back moving it...

**AVID VOLVERE SEQUEL** 2007 £4,600  
Stylish high end vinyl spinner with industrial strength build quality and a sound to match. Sound is edge-of-the-seat stuff.

**MICHELL GYRODEC SE** 2005 £1,115  
Design icon with superlative build. Sound is beautifully smooth, effortless and exceptionally expansive.

**MARANTZ TT-15S1** 2005 £1,299  
Cracking all in one deck/arm/cartridge combination, this must surely be the best sound/plug and play package at this price point.

**MICHELL TECNODEC** 2003 £579  
Superb introduction to Michell turntables - on a budget. Top quality build and elegant design mean it's still the class of the mid-price field.



**MICHELL ORBE** 1995 £2,500  
The top Michell disc spinner remains a superbly capable all rounder with powerful, spacious sound that's delicate and beguiling.

**SME MODEL 10A** 1995 £4,700  
Exquisitely engineered deck and SME V tonearm combo that's an extremely accomplished performer with classical music.

**LINN AXIS** 1987 £253  
Cut-price version of the Sondek with LVX arm. Elegant and decently performing package. Later version with Akito tonearm better.

**ROKSAN XERXES** 1984 £550  
Super tight and clean sound, with excellent transients. Less musical than the Sondek, but more neutral. Sagging plinth top-plates make them a dubious used buy.

**DUAL CS505** 1982 £75  
Simple high quality engineering and a respectable low mass tonearm made for a brilliant budget buy. Polished, smooth and slightly bland sound.

**MICHELL GYRODEC** 1981 £599  
Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved. Clean, solid and architectural sound.

**TOWNSHEND ROCK** 1979 £ N/A  
Novel machine has extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

**MARANTZ TT1000** 1978 £ N/A  
Beautiful seventies high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan.



**REGA PLANAR 3** 1978 £79  
Brilliantly simple but clean and musical performer, complete with Acos-derived S-shaped tonearm. 1983 saw the arrival of the RB300, which added detail at the expense of warmth. Superb budget buy.

**SONY PS-B80** 1978 £800  
First outing for Sony's impressive 'Botracer' electronic tonearm. Built like a tank with a clean and tidy sound, albeit lacking involvement. Scarily complicated and with no spares support - buy with caution!

**TRIO LO-7D** 1978 £600  
The best 'all-in-one' turntable package ever made. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

**ADC ACCUTRAC 4000** 1976 £300  
Bonkers 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

**PIONEER PLC-590** 1976 £600  
Sturdy and competent motor unit that performs well with a wide range of tonearms. Check very thoroughly before buying due to electronic complexity and use of some now-obsolete ICs.

**PIONEER PL12D** 1973 £36  
When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL112D was off the pace compared to rivals.



**TECHNICS SP10** 1973 £400  
Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SP10/II will give any modern a hard time, especially in respect of bass power and midband accuracy.

**LINN SONDEK LP12** 1973 £86  
For many, the Brit superdeck; constant mods meant that early ones sound warmer and more lyrical than modern versions. Recent 'SE' mods have brought it into the 21st century, albeit at a price.

**ARISTON RD11S** 1972 £94  
Modern evolution of Thorens' original belt drive paradigm, Scotland's original super-deck was warm and musical, albeit soft. Still capable of fine results today.

**GOLDRING LENCO GL75** 1970 £15.6S  
Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today.

**GARRARD 301/401** 1953 £19  
Tremendously strong and articulate with only a veiled treble to let it down.



**THORENS TD124** 1959 £ N/A  
The template for virtually every 1970s 'superdeck', this iconic design was the only real competition for Garrard's 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass.

**TONEARMS**

**REGA RB251** 2009 £136

Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a taut and detailed sound. A little lean for some tastes, but responds well to rewiring and counter-weight modification.

**HELIUS OMEGA** 2008 £1,595

Stylish and solid lump of arm with fabulous build quality, that turns in a dynamic and weighty performance.

**AUDIO ORIGAMI PU7** 2007 £1,300

The classic Syrnix PU3 updated to spectacular effect. Hand made to order, with any mass, length and colour you care for. Fit, finish and sound truly impressive.



**GRAHAM PHANTOM** 2006 £3,160

Sonically stunning arm with magnificent bass dexterity and soundstaging. Build quality up to SME standards, which is really saying something!

**TRI-PLANAR PRECISION** 2006 £3,600

Immaculate build, exquisite design and one of the most naturally musical and lucid sounds around.

**MICHELL TECNOARM A** 2003 £442

Clever reworking of the Rega theme, using blasting, drilling and rewiring!

**SME 309** 1989 £767

Mid-price SME comes complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

**NAIM ARO** 1987 £1,425

Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

**SME SERIES V** 1987 £2,390

Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

**NAIM ARO** 1986 £875

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



**ALPHASON HH10US** 1981 £150

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

**SME SERIES III** 1979 £113

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

**TECHNICS EPA-501** 1979 £ N/A

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

**LINN ITTOK LVII** 1978 £253

Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. The final LVIII version worth seeking out.

**AUDIO TECHNICA AT 1120** 1978 £75

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

**HADCOCK GH228** 1976 £46

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

**ACOS LUSTRE GST-1** 1975 £46

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

**SME 3009** 1959 £18

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

**PHONO STAGES**

**CREEK OBH-8 SE** 1996 £180

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

**MICHELL ISO** 1988 £ N/A

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



**LINN LINNK** 1984 £149

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

**INTEGRATED AMPLIFIERS**

**NAIM NAIT XS** 2009 £1,250

With much of the sound of the Supernait at half the price, this is powerful, articulate and smooth beyond class expectations.

**MUSICAL FIDELITY PRIMO** 2009 £7,900

Seriously expensive, but one listen explains why. Wonderfully exuberant sound that can only come from a top quality tube design.

**SUGDEN A21A S2** 2008 £1,469

Crystalline clarity, dizzying speed and forensic detailing. Power limited so needs sensitive speakers.

**CREEK OBH-22** 2008 £350

Brilliant value budget passive, with remote control, mute and input switching, plus an easy, a neutral sound.

**CAMBRIDGE 840A V2** 2007 £750

Version 2 addresses version 1's weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.

**SUGDEN IA4** 2007 £3,650

Goodly amount of Class A power, icy clarity and a breathtakingly fast, musical sound make this one of the very best super-integrateds.

**NUFORCE P-9** 2007 £2,200

Impressive two box preamp with superb resolution and an engaging sound.

**MELODY PURE BLACK 101D** 2007 £3,295

The clarity and openness of valves plus firm grip and fine detail make this a preamplifier masterclass.

**AUDIOLAB 8000S** 2006 £400

In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound.

**MCINTOSH MA6800** 1995 £3735

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

**DELTEC** 1987 £1900

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

**EXPOSURE VII/VIII** 1985 £625

Seminal pre-power, offering most of what Naim amps did with just that little bit extra smoothness. Lean, punchy and musical.



**AUDIOLAB 8000A** 1985 £495

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

**VTL MINIMAL/50W MONOBLOCK** 1985 £1,300

Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

**MUSICAL FIDELITY A1** 1985 £350

Beguiling Class A integrated with exquisite styling. Questionable reliability.

**MISSION CYRUS 2** 1984 £299

Classic 1980s minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.



**NAIM NAIT** 1984 £350

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

**CREEK CAS4040** 1983 £150

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

**MYST TMA3** 1983 £300

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

**ROTEL RA-820BX** 1983 £139  
Lively and clean budget integrated that arguably started the move to minimalism.

**NAD 3020** 1979 £69  
Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super-amp.

**ROGERS A75** 1978 £220  
Lots of sensible facilities, a goodly power output and nice sound in one box. The later A75II and A100 versions offered improved sonics and were seriously sweet.

**A&R A60** 1977 £115  
Sweet and musical feature-packed integrated; the Audiolab 8000A remains a classic.



**SUGDEN C51/P51** 1976 £130  
Soft sounding early Sugden combo with a plethora of facilities and filters. A sweet and endearing performer but lacking in power and poor load driving ability.

**SUGDEN A21** 1969 £ N/A  
Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

**ROGERS CADET III** 1965 £34  
Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves.

**CHAPMAN 305** 1960 £40  
Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper secondhand.

## POWER AMPLIFIERS

**ELECTROCOMPANET NEMO** 2009 £4,995 (EACH)  
Norwegian power station as cool as a glacier tonally, yet impresses with sheer physicality and fleetness of foot. 600W per channel.

**NUFORCE REFERENCE 9SE V2** 2006 £1,750  
Brilliant value for money monoblocks with massive power and super-clean, three dimensional sound.

**QUAD II-80** 2005 £6,000 PER PAIR

Quad's best ever power amplifier. Dramatic performer with silky but dark tonality, blistering dynamics, serious power and compellingly musical sound.



**QUAD 909** 2001 £900  
Current-dumper has a smooth and expansive character with enough wallop to drive most loads. Not the most musical, but superb value all the same.

**NAIM NAP 500** 2000 £17,950  
Flagship amplifier will drive just about any speaker with ease. Factor in the company's trademark pace, rhythm and timing and it all adds up to one effortlessly musical package.

**MARANTZ MODEL 9** 1997 £8000  
Authentic reproduction monoblocks still more than cut the sonic mustard. Highly expensive and highly sought after.

**MICHELL ALECTO** 1997 £1989  
Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!



**MUSICAL FIDELITY XA200** 1996 £1000  
200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.

**PIONEER M-73** 1988 £1,200  
Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the experience.

**KRELL KMA100 II** 1987 £5,750  
Monoblock version of the giant KSA-100 is one of the seminal 80s transistor power amplifiers. Massive wallop allied to clean and open Class A sound makes this one of the best amplifiers of its type.

**RADFORD STA25 RENAISSANCE** 1986 £977  
This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.

**QUAD 405** 1978 £115  
The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound. 6U6 and 7U7 continue the theme with greater detail and inclusion.

**HH ELECTRONICS TPA-50D AMPLIFIERS** 1973 £110  
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain.

**LECSOON AP1** 1973 £ N/A  
Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

**QUAD 303** 1968 £55  
Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

**LEAK STEREO 20** 1958 £31  
Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



**LEAK STEREO 60** 1958 £N/A  
Leak's biggest valve power amp offers 35 Watts per channel and more low end welly than the smaller Stereo 20. Despite concerns over reliability rarity value means high price.

**QUAD II** 1952 £22  
The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly.



**LEAK POINT ONE, TL10, TL12.1, TL/12 PLUS** 1949 £28  
Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical. Deeply impressive in fine fettle.

## PRE AMPLIFIERS

**AUDIOLAB 8000C** 1991 £499  
Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.



**CROFT MICRO** 1986 £150  
Budget valve pre-amp with exceptionally transparent performance.

**CONRAD JOHNSON MOTIV MC-8** 1986 £2,500  
Minimalist FET-based preamplifier is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden. Something of a curio, but worthwhile nonetheless.

**AUDIO RESEARCH SP-8** 1982 £1,400  
Beautifully designed and built high end tube pre-amplifier with deliciously sweet and smooth sound. Not the last word in incision or grip.

**LINN LK-1** 1986 £499  
A brave attempt to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not bad for under £100.

**NAIM NAC 32.5** 1978 £ N/A  
Classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

**LECSOON AC-1** 1973 £ N/A  
Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.

**QUAD 33** 1968 £43  
Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...



**LEAK POINT ONE STEREO** 1958 £ N/A  
Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!

**QUAD 22** 1958 £25  
The partner to the much vaunted Quad II monoblocks - cloudy and vague sound means it's for anacrophiles only.

**LOUDSPEAKERS**

**WHARFEDALE DIAMOND 10.3** 2010 £290  
Great small standmounters for audiophiles on a budget; dry punchy sound with impressive sound-staging at the price.



**YAMAHA SOAVO 1.1** 2009 £3,000  
Musical, transparent with impressive dynamics and cohesion. Excellent build and finish.

**USHER BE-10** 2009 £10,500  
Clever high end moving coil design with immense speed and dizzying clarity allied to epic punch. Needs the best ancillaries to fly, though...



**SPENDOR A5** 2009 £1,695  
Multi-talented floorstanders with generous scale and punch and Spendor's classic mid-range detail. Deliver a sound that thoroughly engages whatever you care to play.

**MONITOR AUDIO PL100** 2008 £2,300  
The flagship 'Platinum' series standmounter has a lovely warm and delicate sound with superlative treble



**MARTIN LOGAN SOURCE** 2008 £1,600  
Brilliant entry level electrostatics, giving a taste of loudspeaker esoterica for the price of most moving coil boxes. Tremendous clarity, evenness and delicacy, although not the world's most powerful sound.

**PMC OB11** 2008 £2,950  
Cleverly updated floorstanders give scale and solidity in slim and well finished package

**ISOPHON GALILEO** 2007 £2,100  
Big standmounters that really grip the music and offer quite startling dynamics and grip

**ONE THING AUDIO ESL57** 2007 £1,450  
One Thing Audio's modifications keep the good old ESL57 at the very top of the game.

**MOWGAN AUDIO MABON** 2007 £3,995  
Massively capable loudspeakers that offer dynamics, scale and clarity in an elegantly simple package. Wide range of finishes, too.

**B&W 686** 2007 £299  
Baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag

**B&O BEOLAB 9** 2007 £5,000  
Technically impressive and visually striking loudspeakers with sound quality that more than matches their looks.



**ISOPHON CASSIANO** 2007 £12,900  
Drive units featuring exotic materials allied to superlative build quality result in an immensely capable loudspeaker. Not an easy load to drive, however.

**QUAD ESL-2905** 2006 £5,995  
The old 989 with all the bugs taken out, this gives a brilliantly neutral and open sound like only a top electrostatic can; still not a natural rock loudspeaker, though.

**B&W 801D** 2006 £10,500  
In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.



**REVOLVER CYGNIS** 2006 £5,999  
Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

**USHER BE-718** 2007 £1,600  
Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

**USHER S-520** 2006 £350  
Astonishingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions

**ACOUSTIC ENERGY AE1 CLASSIC** 2006 £845  
Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made



**MISSION X-SPACE** 1999 £499  
The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!

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

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



**CELESTION SL6** 1984 £350  
Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit course at high frequencies and limp in the bass. Speakers would never be the same again...

**HEYBROOK HB1** 1982 £130  
Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic



**QUAD ESL63** 1980 £1200  
An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics.

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

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

**YAMAHA NS1000** 1977 £532  
High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



**JR 149** 1977 £120  
Cylindrical speaker was ignored for decades but now back in fashion! Based on classic KEF T27/B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but has clarity and imaging.

**KEF R105** 1977 £785  
Three way Bextrene-based floorstander gave a truly wideband listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace.

**IMF TLS80** 1976 £550  
Warm and powerful 1970s behemoth with transmission loading and a mixture of KEF and Celestion drive units. Impressively physical wideband sound but rhythms not a forte.

**SPENDOR BC1** 1976 £240  
Celestion HF1300 tweeter meets bespoke Spendor Bextrene mid-bass unit. The result is a beautifully warm yet focussed sound. A little bass bloom necessitates careful low-stand mounting.



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

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

**BBC LS3/5A** 1972 £88  
Extremely low colouration design is amazing in some respects – articulation, stage depth, clarity – and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence.

**LEAK SANDWICH** 1961 £39 EACH  
Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.

**QUAD ESL57** 1956 £45 EACH

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

## SYSTEMS

**MERIDIAN SOOLOOS 2.1** 2010 £6,990  
Crisp styling, bright, colourful touchscreen, plus excellent search facilities. This is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers.



**NAIM UNITIQUE** 2010 £995  
Great little half width one-box system with truly impressive sound allied to a wealth of source options.

**ARCAM SOLO MINI** 2008 £650  
Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to its bigger brother.

**MERIDIAN F80** 2007 £1,500  
Fantastically built and versatile DVD/CD/DAB/FM/AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn't a 'proper' hi-fi product. Just listen.

**MARANTZ 'LEGEND'** 2007 £22,000  
The combination of SA-7S1 disc player, SC-7S2 preamp and MA-9S2 monoblocks delivers jaw-dropping performance.

**SHANLING MC-30** 2007 £650  
Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.



**AURA NOTE PREMIER** 2007 £1,500  
Lovely shiny CD/tuner/amplifier with fine sound quality and dynamic abilities.



**ARCAM SOLO NEO** 2006 £1,100  
Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

**PEACHTREE AUDIO IDECCO** £1,000  
Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.



## TUNERS

**ARCAM FMJ T32** 2009 £600  
Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.



**MAGNUM DYNALAB MD-100T** 2006 £1,895  
One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.

**MYRYAD MXT4000** 2005 £1,000  
Sumptuous sound and top-notch build quality make for a tempting AM/FM package. Warm and richly detailed on good-quality music broadcasts.

**NAIM NATO3** 1993 £595  
The warm, atmospheric sound is further proof of Naim's proficiency with tuners.

**CREEK CAS3140** 1985 £199  
Excellent detail, separation and dynamics – brilliantly musical at the price. T40 continued the theme...

**QUAD FM4** 1983 £240  
Supreme ergonomics allied to a pleasingly lyrical sound with plenty of sweetness and detail made this one of the best tuners around upon its launch.



**NAD 4040** 1979 £79  
Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica.

**MARANTZ ST-8** 1978 £353  
Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.

**YAMAHA CT7000** 1977 £444  
Combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

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



**ROGERS T75** 1977 £125  
Superb mid-price British audiophile design, complete with understated black fascia. Smooth and sweet with fine dimensionality.

**SANSUI TU-9900** 1976 £300  
A flagship Japanese tuner. It boasts superlative RF performance and an extremely smooth and lucid sound.



**TECHNICS ST-8080** 1976 £180  
Superb FM stage makes for a clean and smooth listen.

**REVOX B760** 1975 £520  
The Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?



**SEQUERRA MODEL 1** 1973 £1300  
Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio, including impressive multi-purpose oscilloscope display.

**LEAK TROUGHLINE** 1956 £25  
Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Deliciously lucid with true dimensionality.

## HEADPHONE AMPLIFIERS

**GRAHAM SLEE NOVO** 2009 £255

Dynamic headphone amplifier with a great sense of timing. Crisp, clear treble and warm midrange gives an involving sound.



**MUSICAL FIDELITY X-CAN V8** 2008 £350

Open and explicitly detailed sound plus serious bass wallop. A great partner for most mid-to-high end headphones.

## CD PLAYER/RECORDERS

**MUSICAL FIDELITY TRIVISTA** 2002 £4000

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

**MARANTZ SA-1** 2000 £5,000

The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



**SONY MDS-JE555ES** 2000 £900

The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.

**PIONEER PDR-555RW** 1999 £480

For a moment, this was the CD recorder to have. Clean and detailed.

**MARANTZ DR-17** 1999 £1100

Probably the best sounding CD recorder made; built like a brick with a true audiophile sound and HDCD compatibility.



**CAMBRIDGE AUDIO CD4SE** 1998 £200

A touch soft in the treble and tonally light, but outstanding in every other respect.

**SONY TCD-8 DATMAN** 1996 £599

Super clean sound makes this an amazing portable, but fragile.

**LINN KARIK III** 1995 £1775

The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

**NAIM CDS** 1990 £ N/A

Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.

**TECHNICS SL-P1200** 1987 £800

CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pro' use and laden with facilities - a great eighties icon.

**SONY CDP-R1/DAS-R1** 1987 £3,000

Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.

**MARANTZ CD73** 1983 £700

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



**MERIDIAN 207** 1988 £995

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

**CAMBRIDGE AUDIO CD1** 1986 £1500

Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.



**MERIDIAN MCD** 1984 £600

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

**SONY CDP-701ES** 1984 £890

Sony's first bespoke audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperbook-sized remote control.

**YAMAHA CD-X1** 1983 £340

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

**SONY CDP-101** 1982 £800

The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!



## ANALOGUE RECORDERS

**AIWA XD-009** 1989 £600

Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

**NAKAMICHI CR-7E** 1987 £800

The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



**SONY WM-D6C** 1985 £290

Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.

**PIONEER CTF-950** 1978 £400

Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless

**YAMAHA TC-800GL** 1977 £179

Early classic with ski-slope styling. Middling sonics by modern standards, but cool nonetheless!

**SONY TC-377** 1972 £N/A

A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards

**REVOX A77** 1968 £145

The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days

## COMPACT DISC TRANSPORTS

**ESOTERIC P0** 1997 £8,000

The best CD drive bar none. Brilliantly incisive, ridiculously over engineered.

**TEAC VRDS-T1** 1994 £600

Warm and expansive sound made this a mid price hit. Well built, with a slick mech.

**KENWOOD 9010** 1986 £600

The first discrete Jap transport was beautifully done and responds well to re-clocking

## DACs

**DCS ELGAR** 1997 £8500

Extremely open and natural performer, albeit extremely pricey - superb.

**DPA LITTLE BIT 3** 1996 £299

Rich, clean, rhythmic and punchy sound transforms budget CD players.

**CAMBRIDGE AUDIO DAC MAGIC** 1995 £99

Good value upgrade for budget CD players with extensive facilities and detailed sonics.

**PINK TRIANGLE DACAPO** 1993 £ N/A

Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard.

**QED DIGIT** 1991 £90

Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

## CABLES

**MISSING LINK CRYO REFERENCE 2008**

£495/0.5M

High end\* interconnects, with deliciously smooth, open and subtle sound without a hint of edge.

**TECHLINK WIRES XS** 2007 £20

Highly accomplished interconnects at an absurdly low price. Stunning value for money.

**VDH ULTIMATE THE FIRST** 2004 £250

Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space.



**WIREWORLD OASIS 5** 2003 £99/M

Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

**TCI CONSTRICTOR 13A-6 BLOCK** 2003 £120

Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

# Advent 201: USA cassette



**Martin Pipe discovers how Advent produced a home-grown all-American cassette deck at a time when Japanese Nakamichi was coming to dominate the field.**

Everyone remembers that Japanese firm Nakamichi was responsible for realising the full potential of Philips Compact Cassette – a recording medium that crammed four tracks onto tape one eighth of an inch wide, moving it past the heads at less than two inches per second. Nakamichi's iconic 1000 'Tri-Tracer', launched in 1973, was the first cassette deck to boast a logic-controlled 3-head transport, in which each head is optimised for its job. Not only did this enable the recording to be monitored as it was laid down on the tape, but a frequency response approaching 20kHz was

within reach if DuPont 'Crolyn' tape – chromium dioxide, another wonder of the era – was used. Dolby B and the Philips Dynamic Noise Limiter (DNL) circuitry, meanwhile, kept hiss down to levels lower than domestic open-reel users were used to.

However, the humble cassette's eventual equality with non-professional open-reel recorders has earlier roots.

Nakamichi's involvement with the cassette format started at least two years earlier. The company built cassette decks for other people as a Japanese Outside Equipment Manufacturer (OEM), supplying brands as diverse as Sweden's

Sonab, British firms Goodmans and Wharfedale and American hi-fi aristocracy in the form of Fisher.

The fruit of the latter partnership was the modestly-priced Fisher RC80, that appeared in 1971. The first stereo cassette deck with Dolby B and support for chrome tape, this narrow piano-key top-loader should have brought genuine respectability to Philips' cassette. Unfortunately, the performance and reliability of the RC80 left much to be desired.

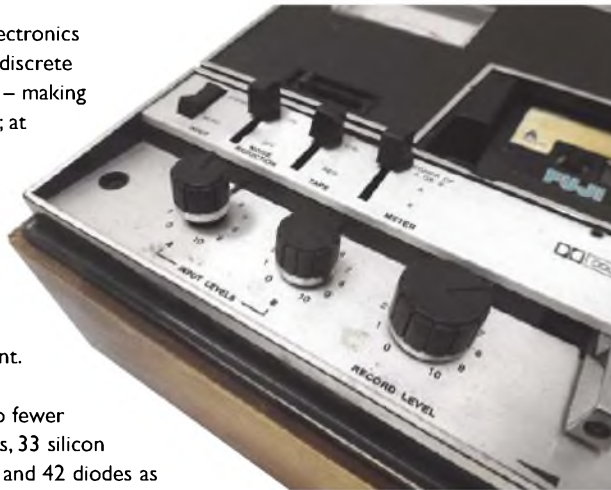
Many of its electromechanical innards were also used by another American firm, the Advent Corporation from Massachusetts. Their 1971-vintage Advent 200



– with its single VU meter that operated on the left channel, the right channel or the higher of the two – didn't set the world on fire either. However, the experience with cassette it gave Advent was to prove useful. Coming surprisingly soon after the 200 was the 201, a very different but audibly-superior deck.

Although the 201's Advent-designed electronics – and its awkward metering system – were similar, the deck was home-grown and radically new. The substantially-built tape transport mechanism came from New York-based Wollensak, being simple but effective. Its synchronous motor is coupled by idler to a massive flywheel – to reduce tape-scrape flutter – the

The electronics comprises discrete transistors – making it chip-free; at the time, integrated circuit chips for Dolby B were still in development. The board contains no fewer than 2 FETs, 33 silicon transistors and 42 diodes as well as many passive components. Chunky switches change the bias and equalisation characteristics associated with ferric (regular) and chrome

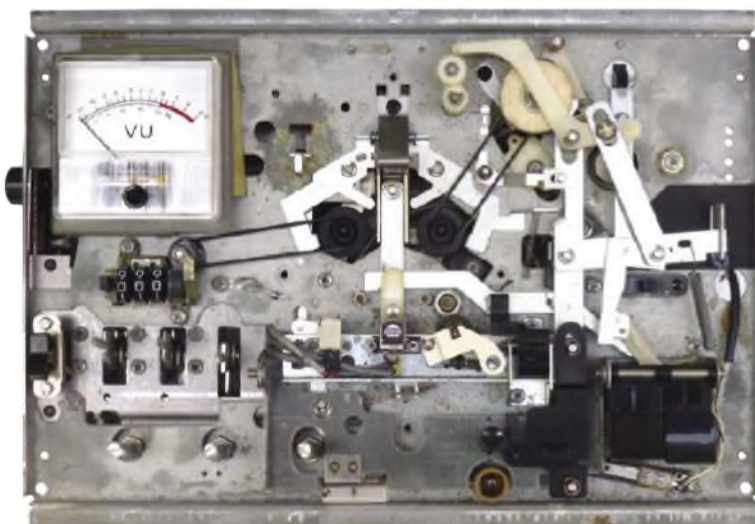


**The single VU meter is shared between channels, a switch determining which one. Note the use of separate left and right channel level adjusters, plus an overall 'master' control.**

and clear backlit VU meter that dominates the top-loading machine's fascia.

Switches of other design flip the input to mono – great if you're recording FM radio that's noisy in stereo, or a mono LP; doing so with the latter can reduce audible rumble.

Like later cassette decks, the 201 – that cost \$280 in 1971, making it one of the most expensive then available – was fitted with controls that adjusted left and right channels independently to achieve correct stereo balance, and a larger knob for overall level. The "uniquely-accurate" metering Advent designed "to register peaks as accurately as possible with a minimum of overshoot". But with just one meter you have to set the level of one channel, then the other



**Cassette – an audio product that relies on mechanical linkages, cams, pulleys and motors to do its job. The 201 is old-school technology at its best...**

centre of which forms the capstan. Fast-forward and rewind functions, operated by the same lever, drop the idlers beneath the relevant spool-carriers so they engage with the inner surface of the flywheel. Ingenious, reliable – and, above all, fast.

Pressing Playback also engages the forward hub, an integral clutch ensuring an appropriate degree of take-up torque. Selecting Playback also pushes the rubber pinch roller against the capstan, moving the tape inbetween at the correct 4.75cm/s. An appropriately-labelled Record button with safety interlock switches the machine from its default Play state into record mode, sturdy metalwork coupling this button to switches located on the single circuit board that contains the 201's electronics.

(CrO2) tapes, turn Dolby noise reduction on or off and determine which channel appears on the large



**Level and bias adjusters, accessible from the back of the machine, are provided to optimise ferric and chrome tapes for accurate Dolby tracking and frequency response with blank tapes.**



**The Wollensak mechanism is simple but effective – and very well made. This 201 doesn't have the original tape head – it has been replaced at some point.**

– inconvenient.

On the left side of the machine are line inputs and outputs, using RCA phono sockets, and an output level control. Another RCA socket provides 18V DC to an external microphone preamp; there's no on-board mic input – thus enabling the design budget to be concentrated on performance, but one had to be careful not to accidentally connect this 18V supply to an amplifier input!

Also missing is a headphone socket; Advent evidently assumed that the amplifier or receiver you'd be using would have one of those. The machine did however boast a button that, when pushed, replaced the input signal with one from an inbuilt oscillator – for recording a

detailed and well-written. Important if you'd like to buy this old deck and maintain it, perhaps to replay cassettes in an historic personal collection.

Other benefits – courtesy of Wollensak – included a tape counter and a responsive 'snap-action' Pause control that enabled the tape to be stopped and started with reassuring precision during recording and playback. No wonder this highly-original mechanism ended up in all manner of hardware, from the rarity that is a British cassette deck (the Dolby'd NEAL 103 and its successors, from 1970s Newcastle) to AV educational aids from the likes of Bell and Howell.

I've had an Advent 201 in my possession since 1984 or so – if I recall correctly, it came from a car boot sale.

This chance find became my first quality cassette deck, although at the time I was unaware of the important role it played in cassette history. I can't imagine that many 201s were sold on this side of the Atlantic. That said, Advent was sufficiently forward-thinking and export-focused to make its machine changeable from the

**It takes a lot of guts to say a new stereo cassette deck is the greatest ever made.**

**Wollensak can say it.**

The new Wollensak 4750 stereo cassette deck brings true hi-fidelity to cassette listening.

Here's why: It has one of the lowest wow and flutter characteristics of any deck available. The precise heavy-duty tape transport mechanism is considered by independent audio experts to be the finest in the industry. A mechanism that includes the only full-size flywheel and capstan available to assure constant tape speeds and eliminate sound distortion.

Record-playback frequency response is truly exceptional: 60 – 15,000 Hz – 3 db. Fast-forward and rewind speeds are about twice as fast as any other.

A massive, counter-balanced bi-peripheral drive means years of dependability. Interlocked controls allow you to go from one function to another without first going through a stop or neutral mode. The Wollensak 4750 features end-of-tape sensing, which stops the cassette, disengages the mechanism and prevents unnecessary wear. The Wollensak "Cassette Guardian" automatically rejects a stalled cassette in play or record position. The 4750 complements your present component system by providing cassette advantages. American designed, engineered and built. Styled in a hand-rubbed walnut base with Plexiglas® smoked dust cover.

All of these features add up to the truest stereo sound with reel-to-reel quality from a stereo cassette deck. Become a believer. Hear and compare the new Wollensak 4750 deck at your nearby dealer.

**Wollensak 3M**  
3M CENTER, ST. PAUL, MN 55101

Check No. 9 on Reader Service Card



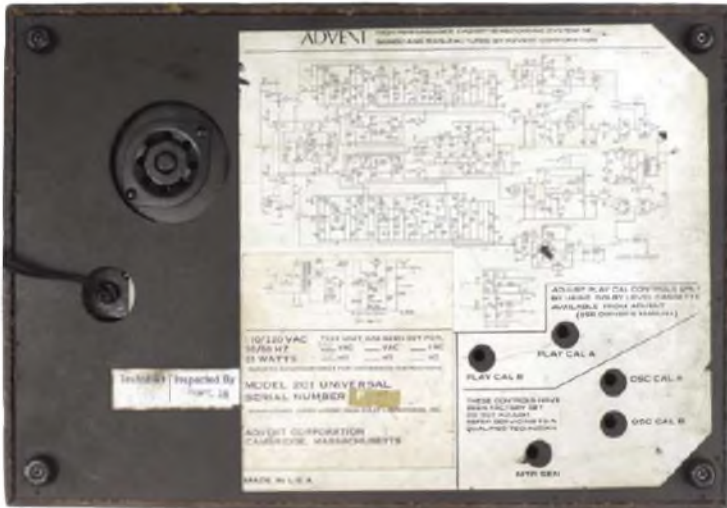
**Line inputs and outputs via phono sockets. A microphone pre-amplifier was a separate purchase, powered from the 18V DC phono socket. A level control adjusts the 201's output to suit an external amplifier, and an oscillator has been provided for calibration and line-up purposes.**

line-up tone on your cassette, or calibrating the machine. Accessible from the rear panel and base are, amongst other things, preset left/right channel adjustments for record/play levels and biasing for both normal and chrome tapes.

Attention was paid to appearance, with a real-wood veneer case and clear protective smoked-plastic lid. You even get a circuit diagram on the bottom; Advent's instruction and service manuals, found in PDF form on the internet whilst researching this article, are

American 120V mains voltage to the European 220V one simply by moving an internal wire from one terminal to another and changing the motor pulley 'step' to ensure the correct tape speed (the larger-diameter pulley is for 50Hz supplies).

I hadn't used mine for nearly thirty years, during which time it had been stashed away unceremoniously in lofts and sheds. It is a testimony to the design and build of this machine that it worked just as well as it did in the long-gone days before I went to college. Just to be on the safe



**For the benefit of service technicians, Advent slapped a circuit diagram on the 201's base; if my experiences are anything to go by though, reliability is so good it will seldom be needed. From here, other adjustments can be performed without the need to remove the machine from its case.**

side, though, it was checked and then slowly powered up with a variable transformer (variac). All of the rubber parts (idlers and belts – even the thin one that couples the supply reel table to the tape counter!) were intact, showing no signs of decay. In contrast, the rubber parts of some tape machines dating to this time (notably Philips and Ferrographs) turn into a black goo.

Reviewed alongside some of its contemporaries in the August 1971 edition of the popular American magazine *Audio*, the Advent 201 was said to have "the lowest distortion of any measured" and a "record/replay

frequency response of 40Hz to 15kHz +/-3dB". Those figures were pretty impressive by early 1970s standards; the first cassette machines struggled to reach 8kHz. The *Audio* writer enthused about the 201's "all-round high-quality construction, with excellent performance either with or without the Dolby system in use". Remember that tape technology had improved considerably between the early 1970s and the mid-1980s, ensuring that the recordings I made with my 201 on formulations like TDK AD and SA still sound remarkably-fresh today. Hooked up to a modern audio system, the 201 acquits itself well.

At the time, it had one of the lowest wow-and-flutter figures for a cassette machine – 0.15%, DIN weighted – meaning that sustained piano notes emerge relatively unscathed by pitch instability,

### Cassette Deck Survey

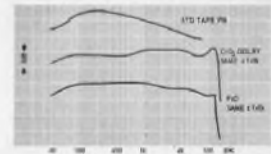
#### ADVENT 201

Controls: Stereo/mono rocker switch, noise-reduction (Dolby), CrO<sub>2</sub>, VU meter lever switches, power slide switch, record push button, individual record level controls for each channel, plus an inclusive control for use after balance is set; fast-forward and rewind lever, must be held in position during winding; pause lever; play and stop keys. Input and output phono jacks on left side panel, plus a covered phono jack providing +18 volts for accessory mic pre-amp; also output level control and Dolby calibrating-oscillator push button. Uses synchronous motor, heavy fly-wheel. Speed variation from 85 to 135 volts, -1.4 to +0.5 per cent. Uses one 3" meter; switch selects either channel or higher of both; meter characteristic rises 12 dB from 100 Hz to 10 kHz to indicate probability of overload more accurately. Employs 2 FETs, 33 transistors, 42 diodes. Push-pull bias oscillator for low distortion. Requires



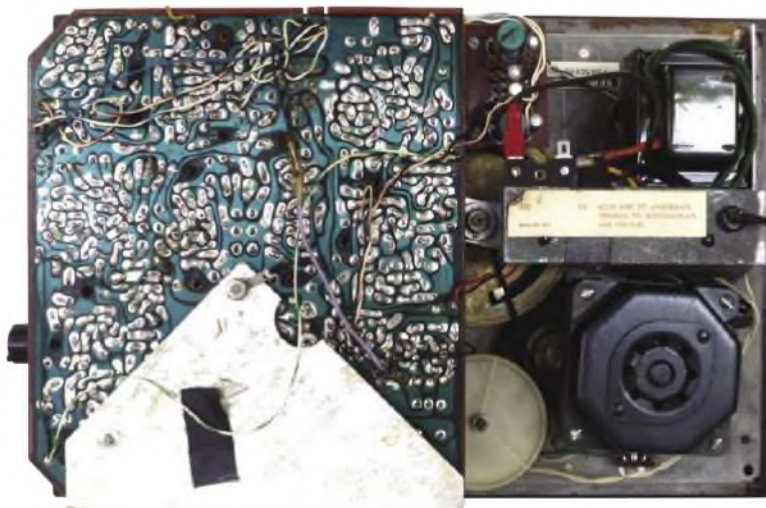
external mic preamp when recording from microphones (optional accessory, \$20.00) and has no headphone jack provision, although output can be monitored with high-impedance phones if desired.

This model has the lowest distortion of any measured, and record/play frequency response  $\pm 3$  dB from 40 to 15 kHz with CrO<sub>2</sub> tape. Response with FeO tape nearly the same, although drops 4 dB from 1000-Hz level at 10 kHz. Cassette compartment not provided with cover so as to give easy



access to cassette. An all-around high-quality construction with excellent performance either with or without the Dolby system in use. User's instruction book exceptionally complete in describing operation and the Dolby system. Another useful feature is the schematic on the bottom of the cabinet, along with description of servicing controls. Dolby recording-level controls accessible through openings in back of cabinet. Dolby test tape available (optional) for setting playback controls.

Check No. 18 on Reader Service Card



**The electronics are built onto a single circuit board. Here we also see the voltage selector and the synchronous motor of the unusual Wollensak tape mechanism. If you need to change mains voltage, you might need to change the pulley position – there are 50Hz and 60Hz steps – in order to achieve correct speed.**

provided decent cassettes are used. The frequency response is acceptable; it's a little lacking in treble sparkle as set, making the low-end exaggerated. Interestingly, Advent sold blank and pre-recorded cassettes to demonstrate the machine at its best.

I would say that on the whole, the sound quality of the Advent 201 lies somewhere between the 9.5cm/s and 19cm/s speeds of contemporary open-reel machines. Some American audiophiles had trouble distinguishing an Advent recording from the original source; quite an achievement. Although it is easily outclassed by later cassette decks – notably Nakamichi models, such as the mid-1980s BX300 – the 201's historical importance cannot be understated. Furthermore it's hard to think of a better cassette deck to partner with classic American gear!



## HEAVEN 17

Play to Win: The Virgin Albums  
Demon

The history of Heaven 17 is an interesting one. Two of the band's members were also the original members of Human League. Martyn Ware and Ian Craig Marsh left and formed Heaven 17 in 1980. The name was picked after a fictional band in Anthony Burgess's 'A Clockwork Orange'. They recruited Glenn Gregory for vocals – the original choice of lead singer for the Human League.

A vinyl treat for fans of this classic synth-pop outfit, the set includes all five albums the band created for Virgin. They include: 'Penthouse and Pavement' (1981), 'The Luxury Gap' (1983), 'How Men Are' (1984), 'Pleasure One' (1986) and 'Teddy Bear, Duke & Psycho' (1988). The lot are smuggled into a slip case.

As an addendum, there is also a 10CD box set out there that features a host of rarities and remixes so completists might

want to grab that release too.

In mastering terms, I could detect a touch – and just a touch – of compression. As if EQ had been added to hone the percussion and highlight detail. Similar to the work done on the vinyl edition of the stereo Beatles box set. Unnecessary of course, but it's there, although it's not intrusive. Nevertheless, the sound is expansive with a broad soundstage, detailed mids and punchy bass.

As an addendum, Demon has also reissued the 1996 album 'Bigger Than America' on coloured vinyl from the group, which is not part of the box set. The first time that this album has appeared on vinyl. I was worried that a digital original might sound a little harsh but was pleasantly surprised how open and expansive this LP sounded with no edge or stridency in the midrange. Indeed, the music output was balanced and relatively neutral in tone.

# AUDIOPHILE VINYL



## GENERATION X

Generation X  
Chrysalis

The band was formed in 1976 and, for some, will be known only as the launching pad for Billy Idol's solo career. That would be unfair, though. Generation X were never quite like other punk outfits of the time. They offered a broad array of stylings and were not afraid to roam in varying musical directions such as glam and hair metal. This may have confused some punk fans of the time. The music can be described as power-pop punk although some might not even call it punk. It certainly featured plenty of energy.

Initially released in 1978, with a cover shot by Gered Mankowitz, the band consisted of singer Billy Idol, Tony James (who would later play in the notorious outfit, Sigue Sigue Sputnik), guitarist Bob 'Derwood' Andrews and 18-year-old drummer, Mark Laff (who had previously drummed with Subway Sect).

This expanded set has been newly remastered from the original master tapes, which is good news for audiophiles. The first disc contains the original UK eleven track album, a second disc includes all the A- and B-sides of their singles from the period and a third disc contains eleven previously unreleased outtakes, a single mix and a number of mixes made by engineer Alan Winstanley.

As for the mastering? Excellent, in a word. There is a precise and exacting feel to this master. Notes start and stop in a jiffy, the transient performance is superb with a low noise backdrop that just enhances that choppy guitar, the clipped vocal performance and the frantic drumming. The clean and open nature of the mids allow a fully transparent view of the upper frequencies while the bass is focused, powerful and driving in nature. Great clarity all over, this is a very listenable reissue.

Classic krautrock all the way from Munich and all the way from 1970 when the band were initially formed. They were the first German group to use the Moog-synthesiser but that was partly because the main man, Florian Fricke (who died in 2001), had a healthy bank account. A rarity in music, as you know.

As this is 'Vol. 1', then you'd expect the group's earlier works and you'd be right to a degree. What you get here, remastered by Popol Vuh members Guido Hieronymus and Frank Fiedler, are 'Affenstunde' (1970, the debut), 'Hosianna Mantra' (1972, the third album), 'Einsjäger & Siebenjäger' (1974, the fifth album), 'Aguirre' (1975, a soundtrack) and 'Nosferatu' (1978, another soundtrack). Bonus cuts are included.

The general musical themes within the krautrock umbrella include ambient, soundscape, prog and world music.

In mastering terms, there is a slightly fuzzy aspect to the sound which betrays the electronic instruments used in this era. If you have ever seen a soft gauze filter placed over a Hollywood movie camera, intended to give the female lead a more romantic and softer look, then you'll know what I mean. The effect is definitely of the time and perfectly suitable and expected so even harsher, more cutting midrange synth crescendos have an ever so slightly rolled off treble feel to them. As I say, though, as expected so nothing to worry about.

In a similar way, the music doesn't contrast starkly with a no-noise backdrop as you might hear on modern recordings but tends to emerge from a soft cloud of synth-based, low level distortion. You've even hear some friendly feedback-type effects from the synths to add spice. You could say, therefore, that the mastering is wholly sympathetic. I approve.



## POPOL VUH

The Essential Album Collection  
Vol. 1  
BMG

# AUDIOPHILE VINYL

Who would have thought that an ex-Monkee would end up being a space cowboy? More than that, who would have thought that his solo albums would break new ground in the field of country rock? Then again, even before he joined The Monkees, he was the most talented and consistent song-writer of the bunch. This particular 1970 release roamed further afield as there is a bit more rock involved – with a distinctly groovy, even reggae edge to others. Country is still prominent, of course. You'll even find a countrified version of The Monkees song, 'Listen to the Band' on here.

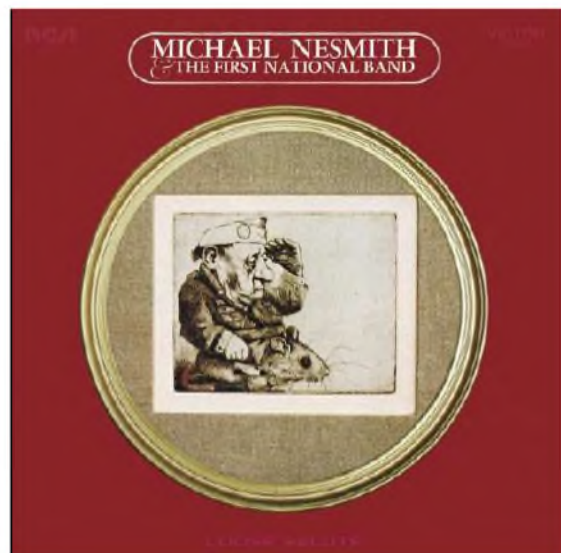
Joining him - this was a band after all - was John London on bass, John Ware on drums, O.J. "Red" Rhodes on pedal steel guitar plus Glen D. Hardin on piano.

Nesmith took over the producer's chair which allowed

him to place a tighter grip of the album's direction. It showed too, because the songs are quality, the band played well the variety keeps you guessing.

As for mastering? Well, let's back up a step and talk mechanics first. This edition is issued on clear vinyl which means that there's no magnetically active carbon black featured. This stuff does produce a noise all of its own (I've done plenty of tests to prove it) so removing it, although I'm sure the clear vinyl was an aesthetic decision only, does improve the sound. Oh the irony, eh?

Next, the master is sympathetic to the time period. The tonal presentation retains a slight sepia glow so the upper mids have not been compressed to hell to sharpen them up. A relief. The soundstage is broad and expansive and there's plenty of air around the instruments giving a relaxed and easy pace to the music.



## MICHAEL NESMITH & THE FIRST NATIONAL BAND

Loose Salute  
Music on Vinyl

# X Marks The Spot

**Cowon's new Plenue X30 in-ear monitors bring something new and exciting to the market, finds Jon Myles.**

**C**owon has built a well-deserved reputation for producing solidly built, good sounding high-resolution digital audio players (DAPs). The epitome of

these has to be the Plenue V. Priced at just £270 yet looking like something from a Star Trek film, with its sculpted body it was a truly special product (see Hi-Fi World review September 2018).

But to get the best out of a DAP you need a good set of headphones – which is where Cowon is heading with its new X30 in-ear monitors.

Fairly standard in looks, they are actually sophisticated in design.





**Cowon's X30s come with both balanced and unbalanced cables, as well as a variety of eartips to ensure a comfortable fit.**

For £405 you get an anodized metal body with two sets of cables – one unbalanced and another balanced for players that can support this feature.

Inside are three balanced armatures – one for the bass, one for the mid-band and the third for high frequencies. It's an unusual set-up few in-ear monitors use. To get the best from the design Cowon has developed a three-way crossover to separate the various frequencies – one that works well (more of which later).

The package comes with a

“Cowon has come up with something special here. There was a seamless integration between the low, mid and high frequencies - giving a fantastic sense of presence”

variety of ear-bud tips to suit individual ear canals and I found the medium tips suited me best. However, others may prefer the larger or smaller options – experimentation is the key here.

As a package the X30 is impressive. It comes with a leather carrying case for protection – and both the balanced and unbalanced

cables are refreshingly tangle free.

I used both out and about on my daily commute and neither proved problematic thanks to the 4-Wire silver-plated cable with detachable MMCX connector having a gold-plated plug.

### SOUND QUALITY

Cowon has come up with something special here. There was seamless integration between the low, mid and high frequencies – giving a fantastic sense of presence.

With The Libertines' 'Barbarians' from Anthems For Doomed Youth

the leading edge of the twin guitars shone brightly, decay sounding totally natural.

Beneath this bass and drums were full of power yet never overpowering. Cowon have got the crossover just right here – never easy with three balanced armature drivers.

Playing Keith Jarrett's 'Koln

Concert' – with its famous out-of-tune piano that meant he concentrated on the middle registers – also showed just how well the X30s communicate music. The rhythmic scale came across with aplomb, as did Jarrett's grunts and hands on the keys. Basically the X30s brought the whole track alive in the best way possible. All this was using the 'phones via their unbalanced cable.

Switching to an Astell&Kern player with balanced output things got even better; the difference was small but one worth hearing. Listening to Fleetwood Mac's 'The Chain' via the via balanced connection I couldn't help but feel the bass had a more forceful feel.

Even better was the Stone Roses' live version of 'Made Of Stone' (24/96) where John Squire's guitar solo sounded Jimi Hendrix-like in intensity. Compared to the unbalanced connection there was an appreciable difference. But that said these X30s work well on any DAP, iPhone or Android 'phone.

Their build quality is exceptional and it's allied to an alluring sound.

### CONCLUSION

Yes, £405 is not cheap for a pair of in-ear monitors. But the Cowon X30s justify their price. Outstanding bass, smooth mid-band and lovely high-frequencies. Add in both balanced and unbalanced cables plus solid build quality and the Plenué X30s are rather special.

### COWON PLENUÉ X30 £405



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- sophisticated crossover
- variety of ear-tips

#### AGAINST

- tough competition
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# "No wonder hearing 18 people playing vigorously should be so exciting"



Noel Keyword

**H**i-fi enthusiasts are a sad bunch who don't understand or appreciate music: they just want to listen to their latest purchase for stronger bass or more obvious treble. It's a common criticism. But not true. As musicianship and performance are better revealed they become more evocative and enjoyable. Recently I got to enjoy music I never really understood before.

Perhaps I should mention Ray McVay at this point – but I haven't got there yet. Instead I have become entranced by today's The Syd Lawrence Orchestra, their musicianship and their verve. Made obvious to me by an LP that I would have passed by if someone had not said "Noel, you should buy this one" at the Bristol Hi-Fi Show, earlier this year.

Big bands from the 1940s have escaped me. And probably would always have done had I not bought this amazing double-LP – Big Band Spectacular! – on a whim, or at a push, price £60. I feel even more ignorant about it all because I was invited to witness one of the live recording sessions by the record production company, Chasing the Dragon, in Hampstead, North West London, but could not make it. What they are doing is extraordinary, so back to Syd Lawrence.

Sound quality is so good on this LP, because of the way it has been produced, I almost feel I know each musician in The Syd Lawrence Orchestra, even though I have never met them or knew about them before.

The LP cover of course is able to convey who they are, unlike any other music format, and I found myself happily studying the photographs. Great to see their many instruments – trombones, trumpets, bassoons,

and much else that go to make up this 18 piece orchestra. Lots of happy musicians enjoying what they do.

I mention this because eighteen musicians all working together isn't common any more. Traditional Rock needs just four: one man hitting the drums, another on bass guitar, a rhythm guitar and a lead guitar, with someone – anyone – singing. That's a tight line-up and – as exemplified by The Beatles and The Rolling Stones – it makes money.

The odds are stacked against a live orchestra of any sort because of its size and associated cost. No Transit van, able to transport four Rock Stars and their kit. Instead you need a coach and a big stage to accommodate them all.

But hearing eighteen musicians playing vividly in front of me is a breath of fresh air after the lifeless and soul-less thing that much 'music' has become. Programmed synthesiser lines coupled with banal lyrics of manufactured pop have pushed real-life talented musicianship into the background. No wonder that suddenly hearing 18 people playing vigorously should stand out and be so exciting.

What Chasing the Dragon ([www.chasingthedragon.co.uk](http://www.chasingthedragon.co.uk)) have done here is to capture a live performance from rehearsed and experienced musicians – no studio mix downs to splice parts together, or artificially 'enhance' the sound.

And no digital either. Instead it is all recorded live to 30ips (inches per second) master tape – and believe me that's fast. It consumes masses of expensive analogue tape, 15ips being a more common choice for master recordings.

High quality live analogue recordings like this have spontaneous energy – and that helped draw me into the 'big band sound'. Chasing the Dragon have also made, and include, direct-to-disc cuts (it's a two-disc LP)

but I am still excitedly exploring the taped version that is very smooth. Direct-to-disc is so specialised we will cover it another time.

In retrospect, I realise that my few experiences of what a generation before me enjoyed I have never heard in good quality. Most recordings of the time – 1940s and '50s – weren't so good, sounding distant and vague. Old tape machines, old analogue tapes and distant microphones did their best to do the worst. Capturing the energy of a big band was always difficult and rarely done well. Surprising then that things seem to have turned around: The Syd Lawrence Orchestra tour and play today (see [www.syd-lawrence-orchestra.com](http://www.syd-lawrence-orchestra.com)).

This LP now appears frequently in my reviews. It has to. Being far and away better quality than most, on a flat and heavy disc of vinyl (180gms) it best shows what the products I'm reviewing are capable of, without imposing its own limitations. And as hi-fi progressively improves this is becoming ever more important.

Old LPs don't cut the mustard any more – just as old CDs sound awful – but more so! The world moves on relentlessly.

I must use high quality, modern recordings cut into vinyl by the latest methods to review phono stages and pickup cartridges, with their ever improving stylus tip geometries.

So Big Band Spectacular!, featuring The Syd Lawrence Orchestra, isn't a product of the past, but a modern re-take on big-band music using all the latest audiophile technology in the recording process and the replay process. All to bring the thrill of live performance into the home. And boy does it work!

Hi-fi enthusiasts are not a sad bunch at all. Quite the reverse. With LPs like this it seems to me they are likely the happiest bunch of all! ●

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mark levinson  
by HARMAN

# "there was an exclusion zone that challenged Chernobyl"



Paul Rigby

**A** music group is a funny and above all fragile thing. Made up of a suite of individuals of three or more, the band is often concocted from diverse personalities, talents and egos.

A group often depends on tension to succeed although, in music, you can't talk in terms of certainties. I always remember the jazz outfit, Oregon saying how good friends they all were. The guys in Queen also seemed to get on in broad terms.

Mostly, though, there are issues. If not seen immediately, then they are built up over time. Partly because successful groups tend to start young, grow up together, become mature adults and suddenly realise they have creative needs of their own.

Other ingredients are part of the mix, of course. Pressures of success, the need to maintain that success and external demands can produce ructions within a group dynamic. The Beatles is the classic case, of course. More recently, you had to duck out of the way of the shrapnel to avoid the conflagrations in New Order. Others who have succumbed include Oasis, Guns N'Roses, the Clash, The Police and let's not forget the disaster area that was The Eagles. For a time, there was an exclusion zone around the band that challenged that of Chernobyl.

When a break down occurs, the balance of the remaining band (if the unit does, in fact, survive) changes for good or ill. Sometimes the band evolves to find a new musical direction, a new song-writer emerges, the creative output improves or perhaps worsens.

For band directions to twist, turn and alter, a big emotional break up doesn't have to be the cause,

though. Some band members join/leave/join again and leave gain by mutual consent or because of other circumstances.

Yes, the latter might trigger some feelings of anger or resentment on either side at the time but the band is not fractured or dealt a death blow because of it (well, not immediately...sometimes the fuse towards destruction takes time to burn through). And yet musical changes heard as a result can be just as significant.

Which just goes to show how delicate is the creative balance in any one group. Take the talented artist Patrick Moraz. He was asked to join the prog rock group, Yes, when Rick Wakeman stormed off after the release of the album, 'Tales from Topographic Oceans'.

Moraz went on to take a full part in the brilliant Yes album, 'Relayer' (1974): my favourite Yes album of all time. Often complex in the extreme with convoluted time signatures to make your head spin, it was a joy to explore with Moraz's performance a signature part of it. The problem was that he didn't have the inherent showmanship personality and pizzazz of Wakeman. The latter was almost the face of Yes at that time. So Moraz left, Wakeman re-joined and Yes launched into shorter song forms. You can experience Moraz's skills on the newly reissued LP, the playful Latin and Brazilian styles of 'Out of The Sun' (Esoteric; 1977)

The case of Manfred Mann is even more interesting because this was a R&B band that only really sang pop songs to achieve chart success. As such, lead singer Paul Jones was perfect because he had the blues and pop chops for the job. Jones was tempted by the siren calls of a solo career blended with movie work and so Mike D'Arbo replaced

him (eventually).

D'Arbo was arguably a more rounded and commercial pop and rock vocalist, giving the group a wider spectrum of potential tonal colours. This change in direction brought out the best in band co-founder, Mike Hugg as a songwriter. In fact Hugg wasn't even seen as a song-writer until that point.

You see all of the above occurring on the band's 'Radio Days' (BBC/East Central One) suite of four separate CDs that covers BBC sessions, live sessions and studio rarities as well as the group's transition into Manfred Mann's Earth Band.

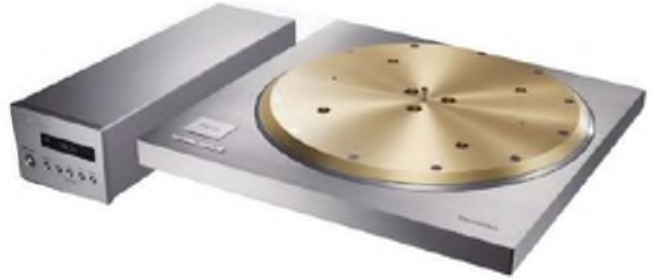
Then there's the case of Gene Clark, famously a part of the terribly unstable family known as The Byrds. Briefly the band's lead singer from 1964-1966 he eventually left because he hated flying and thus refused to tour on an extensive level. Possibly more, though, his prowess as a songwriter and the large income that it collected added to tensions and petty jealousies.

When he did leave, The Byrds continued but they also lost a critical songwriter and character and they were never quite the same after that point, eventually collapsing as an original unit and evolving into a country-rock band of a different stripe.

Clark meanwhile co-invented the country-rock sound and broadened a new style generally called Americana. Clark's 1967 LP '...with the Gosdin Brothers' has just been reissued on Floating World with two bonus tracks. It was a true exhibition of his status as a singer and songwriter.

Like a jelly, lay a hand on a rock band and it will shiver and shake and as the above shows, it doesn't take a great deal pressure to break it up. ●

# THE VINYL REVOLUTION



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**Hi Fi World said:**

This is a spinner of vinyl for the serious, where you just want to punch a button and get on with it. It offers a degree of unarguable perfection for professional studios and anyone working with vinyl. If you want such unerring focus on the basics of playing LP it's time to check the piggy bank.

**Hi Fi News said:**

Any great turntable gives you a certain frisson when you hear it. It's that old 'shivers down the spine' feeling, a sense of being let into a world to which you had previously not been privy. This is a remarkable turntable, and arguably the apex of vinyl playback. It's difficult to see how the SP-10R motor unit can be improved upon. It is a definitive statement of engineering prowess, and marks the return of direct drive to the top tier of turntables.

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# “The global appetite for vinyl outstrips supply”



Jon Myles

**T**he vinyl revival has become something of a cliché recently. It remains a niche market against streaming services and CD sales – yet there is another thing holding it back.

There were around 4.2 million vinyl records sold in the UK last year generating around 6.6 per cent of the music industry's income. Not too insignificant but nonetheless a rather small percentage.

However, there's another fly in the ointment. The demise of vinyl in the wake of the CD revolution – the latter being easier to press, easier to produce and, crucially, much cheaper – meant many LP plants closed down under the pressure of falling demand.

But now that the demand is returning they are struggling to cope. Most major and independent records in Europe are pressed by two plants – GZ media based in the Czech Republic and Record Industry in the Netherlands, with Pallas in Germany contributing. However, their combined capacity of more than 100,000 records per day is not enough to keep up with the global appetite for vinyl. In fact the global appetite for vinyl outstrips supply.

“It's actually too good” said Record Industry's owner Ton Vermeulen. “Demand is sky-high and we're having to turn people away, which I don't like doing”.

According to informed sources one new independent pressing plant in the UK has a backlog of orders lasting six months. Which is fine – but if you are waiting six months to get your hands on a pristine vinyl LP copy when the music is available on CD or already being streamed via Tidal, Spotify or Amazon it's rather a pain.

Record distributor and music author Graham Jones says it's a

“huge” problem. “There are not enough pressing plants in the world to cope with the demand for vinyl” he said.

Meanwhile, even the likes of Sony are responding. The Japanese arm of Sony Music recently announced it would open its own record-pressing plant to cope with the huge demand for vinyl in the country – after shutting it down in 1989 to concentrate on CDs.

But, at the moment, most of its output will be directed towards the domestic market. Given Sony's global reach, however, there is always the potential of it looking farther afield for other markets and opening other plants. And at the moment the scarcity of vinyl records means some limited edition releases can go for £40 and upwards – compared to less than £5 for a CD.

Meanwhile, on the back of all this the vinyl revival has also attracted the inevitable nasty elements. Bootlegging is back, with UK music trade body the British Phonographic Industry (BPI) seizing more than 87,000 counterfeit records worth £1.7 million in the past three years.

The fakes were (inevitably) sold on websites such as eBay and Amazon. The BPI said it had confiscated 14,000 items with a market value of roughly £200,000 this year as the problem continues to grow.

The problem is only expected to get worse as the vinyl revival continues and demand increases with the current – legitimate – plants unable to meet supply.

The obvious solution is for more labels to open their own pressing plants. But here lies the conundrum. Is the vinyl revival just a passing fad or a long-term sales machine which will generate profits over 10 to 20 years?

After all, establishing a vinyl production facility requires hundreds of thousands pounds of investment in equipment, recruitment and training of staff and then the hope that sales will continue to flow into the future to justify all this investment.

As we have seen with CD's demise in the face of streaming services this is never a given. However, the one thing vinyl does have to its advantage is sound quality, a broad range of decks ranging from the cheap (£100) to the truly high-end (name your price) and the very tactile experience of dropping the needle into those grooves.

Then, of course, there's also the tantalising thought of full 12-inch record covers coming back (Tales From Topographic Oceans anyone? Not the music, just the artwork!)

And, if more pressing plants opened, then the actual cost of vinyl may well come down to tempt more people into this wonderful world. But I suspect we'll need to see a good few more years of the vinyl revival for the necessary investment to be allocated by the major labels into setting up their own pressing plants. At the moment they may just see it as a passing fad and hold off until it becomes more established and rely on the few that already exist.

As for myself, I remain hopeful that vinyl sales continue to grow so that time eventually arrives. Because if it does it will bring the costs down and bring the joys of LPs – both in terms of sound quality and their tactile wonderfulness – to more people.

Then again, I may have to replace all my CDs with vinyl where once I replaced all my LPs with CDs. Still, that won't be too much of a sacrifice – apart from in terms of wall space! ●

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# "I have baked tape in a domestic oven"



Martin Pipe

Over the past few months, I have been discussing the benefits and practicalities of archiving old audio formats to digital. With analogue media, the onus to transfer prized recordings is very real as they deteriorate over time. Every time a record or tape is played, it wears out just that little bit more. By how much depends on how it's treated and the equipment you're using.

My preference is to transfer an analogue recording to digital, and then stow away the original somewhere out of harm's way. Digital audio technology is improving all the time; CD's 16-bit superseded the 14-bit PCM of early VCR-based formats before, in turn giving way to 24-bit and DSD. Now, 32-bit is a reality. The audible differences between them can be obvious.

You should dig out that carefully-stored tape or record and then re-transfer it with superior equipment and techniques, just as record companies periodically do. They don't however do this more often than is necessary, as some of their precious analogue master tapes (especially those from the 1960s and 1970s) are literally falling apart. And that's despite their storage in managed archive environments.

A related issue is the 'sticky shed syndrome' (SSS) that affects certain batches of tape, most notoriously 1970s-era Ampex 456. Huge quantities of this, and other SSS-prone tape, was used professionally - with worrying present-day implications for our cultural heritage.

Basically, the chemical compound that 'binds' the magnetic oxide to the plastic film (the 'tape' proper) absorbs water from the atmosphere and becomes unstable. Try to play the tape, and the oxide - on which your precious programme is carried - deposits itself on the delicate

heads and guides of your playback machine's tape path. I've experienced this problem with second-hand tape that I had re-used long before SSS was known about.

There are temporary fixes, which will enable you to make the tape stable enough to play it for transfer purposes. I have successfully 'baked' the tape in a domestic oven, using a thermometer to monitor temperature. Professional NAB spools - most of the affected tape was wound onto these - withstand this sort of treatment. It's not such a good idea for domestic-type plastic spools as they will warp.

Another approach that has been discussed on the various online groups is the application of certain compounds ('Nu Finish' car-polish, unavailable in the UK) to the tape using cotton swabs and judicious use of the deck's fast-wind functions. Whatever's in Nu Finish seems to stabilise the binder, to the extent that after its application the tape is allegedly 'saved' completely. It can then be played and recorded on, just like any non-SSS tape.

I plan to import some Nu Finish, and after trying it on some SSS tape I'll report my findings here.

All this stresses the importance of digitising recordings while you still can. My preference is to use the highest resolution possible - generally 24-bit - even if it's only destined for CD. This pays dividends if the digitised audio is processed en route to its destination.

However, many analogue-to-digital converters - notably the ones in budget turntables - are 16-bit with limited dynamic range. The digital maximum (0dB) level of most USB turntables is set low to prevent noise and low level digital rubbish from 16-bit becoming obvious. Those trying to digitise heavily-modulated 12in. singles may have noticed peak overload as a result; there are no record level

controls to avoid this.

Better to record LPs from an external 24bit converter then. Looking at the surface of a vinyl record will identify the heavily-modulated passages - use these to set recording level so that the peaks register at -2dB, thereby providing a modicum of headroom.

With tape, things aren't so easy; you may be forced to fast-forward through the tape and examine random sections to somehow find where the loud bits are.

Transferring from cassette? Professional recordings usually begin with a reference-tone recorded at a specific level - this can be very helpful when setting up your recording equipment. Some 'serious' hi-fi enthusiasts did the same, using the 'line-up' oscillators built into their tuners or tape recorders (interestingly the Advent 201 cassette deck, featured in this month's *Olde World*, has one).

Another important issue when it comes to replaying tape is the azimuth angle of the playback head. For the best results, this must match that of the machine that made the recording, otherwise treble is dulled and stereo imaging suffers.

Azimuth adjustment takes the form of a tiny screw on the head bracket. A quick and dirty means of checking for azimuth error is to switch your amp to mono when listening - ideally via headphones. Any errors yield an unpleasantly 'phasey' sound, bereft of treble sparkle. The azimuth screw can then be turned until these effects are minimised. Be sure to note the original position of the screw, though!

Mono switches, which basically 'sum' the stereo channels, are rare nowadays and so I built a little passive-switching box that sends the original stereo, mono, left-only or right-only signal to its outputs. Every recordist using a tape machine needs one! ●

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# "this Sansui makes radio sound real again"



Dave Tutt

I had the great fortune to have a Sansui TU-XI in the workshop recently with an issue in its AM radio section.

If you download the service manual you will see the Sansui is rather more than a cheap radio in a big box. To put it in perspective, it's closer to a communications receiver than a home tuner in the way it has functions – and facilities that you would probably never use. As a result the ability to pull in weak FM stations and still get a decent sound is a plus point – but what really shines is the reception of those regularly used stations that through many digital chip-set tuners, or for that matter digitally-tuned analogue tuners, come over as rather bland.

Sure the TU-XI doesn't have DAB but then you are looking at quality analogue reception – not a digital toy.

I have to say that this is quite probably the best tuner that has ever been at the Tutt workshops. The IF stages are leaps and bounds beyond what you find in general analogue tuners and from what I can tell they are properly buffered and correctly loaded such that there is no ringing or mis-matching. The result is a sound that has a clarity that I think is quite astounding – especially in a tuner that is approaching its 40th birthday.

I don't know if you are aware of the way that all through the transmission medium the analogue VHF/FM radio signal is bandwidth limited and compressed, as well as being digitised for distribution to distant transmitters. This has the effect of limiting the high frequencies and making the bottom end sound a little flat. Bass is usually there but the

dynamics are missing.

High frequencies have to be curtailed to fit in the FM channel spacing so the signal loses more here on its way through.

With the Sansui though it is as if both the extremes have been re-energised. I don't think I have heard a tuner other than this one that puts space around bass notes and cleans up the bottom end that is, in most tuners, either weak or results in male speech boom that, it seems, may not be in the transmission but an artifact of the tuner. Whichever is the case, the Sansui makes radio sound real again.

So what about the Sansui's AM section? The repair was a simple case of cleaning a dirty switch. Its AM bandwidth is switch-selected but with a dirty set of contacts there was nothing working in this section at all. I would imagine that in 40 years the amount of times the switch had been used was probably not much more than 100 and with less and less to listen to, AM is only going to be of interest for completeness nowadays.

You have to use switches to keep them working else they eventually oxidise and either become diodes, causing very odd effects, or go open circuit. With some cleaner applied, all was well.

So how about AM? Well, if you have any sort of modern lighting, either LED or fluorescent, then you will need to have both a proper earth and a long wire aerial outdoors as without them the signal from the in-built ferrite aerial isn't enough. Both these lighting systems radiate huge amounts of electrical noise which AM is very easily swamped by when an indoor ferrite aerial is used.

It isn't so much the AM technology that is the issue but more the transmission frequency at which modern lighting system radiate.

In my area – Kent – the only AM signal that is present even with the Sansui's superb phase locked loop detector system is Smooth radio on 1242kHz. Bandwidth of the station seems limited even at the Sansui's widest IF setting, probably stopping around 8kHz – anything much beyond that was LED power supply noise I found.

Switching off the lights in the workshop helped but this is RF and could travel 50 metres from any direction to interfere. Close enough to be from any of my neighbours.

The lack of top-end didn't stop my enjoyment of the station but it would depend on your location to know if you could use it on AM. No other stations were found but the level of mush indicated they were being swamped; low power stations couldn't get through. That's why an outdoor wire aerial is best.

I must thank the Sansui's owner Nigel for the opportunity to investigate this great piece of kit. I was a little concerned that the AM section might have needed components that were no longer available but of course with great design and manufacture comes a care that is no longer part of the way things are made. Much of the RF and IF stages would be scrap without one or two key components.

What if Sansui had known that this design would still be producing fantastic sound, better than most other VHF/FM tuners for the past 40 years? Well, they are no more. All the same, if hi-fi VHF/FM tuners were still on sale today I would have to recommend this one. ●

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# WORLD STANDARDS

Your guide to the best products we've heard that are currently on sale in the UK...

## TURNTABLES

**AVID INGENIUM** £800  
Great bass response and upper midrange detail allied to clarity makes this a must-hear at its price-point.



**CLEARAUDIO INNOVATION** £6400  
Expensive, but offers great results from a finely honed and beautifully finished belt drive turntable, with servo control from the platter to keep a grip on tempo like few others. Can be fitted with a Clearaudio tangential arm, or any conventional design. Awesome.



**INSPIRE MONARCH** £4,350  
A rebuild from the ground up Technics Direct Drive, having blistering pace and dynamics allied with smoothness, sophistication and purity of tone. A true reference.



**LINN LP12SE** £3,600  
The UK's most iconic turntable, the legendary Sondek goes from strength to strength. New Keel sub-chassis and Radical DC motor add precision and grip to one of the world's most musical disc spinners. Expensive though.

**MICHELL GYRO DEC** £1700  
Wonderful styling coupled with great build and finish make this turntable a delight for friends and family. It has an attractive clear acrylic dust cover, and you can mount just about any arm. A current design standard.



**PRO-JECT ESSENTIAL DIGITAL** £300  
A budget turntable that turns in a great analogue performance, but also has a hi-res digital output. Send 24/96 across your lounge via optical cable to a DAC and get great audio quality. Or record LP to your laptop.



**REGA RP3** £550  
The first of the super-quality Regas, little compromised by price and featuring Rega's outstanding RB303 tonearm, suitable for MM and MC cartridges. A standard at the price point.

**TIMESTEP EVO** £2100  
The famous Technics SL-1210 MkII Direct Drive but with improved plinth, isolation, main bearing and power supply, plus an SME arm (add £1500). DD convenience, rock steady pitch and fab sound at a great price. Our in-house reference.



## TONEARMS

**ORIGIN LIVE ENCOUNTER MK3C** £1,745  
Origin Live combines carbon fibre and ebony to marvellous effect in its new 12-inch arm. Creamy and rich in presentation, the Encounter delves deep into the mix for a satisfying listen.

**HADCOCK GH-242 EXPORT** £810  
Consummately musical, lyrical sounding tonearm, but needs the right turntable.

**ORIGIN LIVE ONYX** £450  
Easy, smooth, creamy nature that reminds you why you're listening to vinyl in the first place. Essential audition at the price.



**REGA RB303** £300  
A one piece tapered casting makes this arm's structure almost unrivalled. Great dynamics and superb imaging, for MM and MC. Reference quality for peanuts.

**SME 312S** £1,600  
Twelve inch magnesium alloy tapered arm tube plus SME V bearings. An insightful yet smooth and relaxed sound. Superlative build completes the package. Our Editor's steed.



**SME 309** £1500  
A one-piece tapered 9in arm finished like a camera and slick to use. Superlative SME quality and sound at affordable price.

**SME V** £3000  
Offers rapid fire timing and a sense of precision, plus rock solid dynamics. Top dollar for deep pockets.

## CARTRIDGES

**AUDIO TECHNICA AT-OC9 MLIII MC** £420  
A fine sounding MC with strong bass and super fine treble from a great stylus – yet inexpensive.



**AUDIO TECHNICA AT-F3/III MC** £150  
Great value entry level moving coil with detail and grip you just can't get from similarly priced moving magnets.

**BENZ MICRO ACE SL MC** £595  
Smooth, lucid and full-bodied, award-winning, hand-made cartridge from Switzerland.

**BENZ MICRO WOOD SL MC E945**  
Highly finished Swiss moving coil that plays music with riflebolt precision.

**DENON DL-103** £180  
A popular and much loved budget MC with big bass, smooth treble and deep sound stage. Fantastic value.



**LYRA TITAN I MC** £3,500  
Breathtaking speed and dynamics from LP, helped by diamond coated, boron rod cantilever.



**ORTOFON 2M MONO SE MM** £80  
A mono cartridge purposed for The Beatles in Mono microgroove LPs. Fitted with a top quality Shibata tip. Fab for the four.



**ORTOFON 2M BLACK MM** £400  
As good as it gets from MM. Fabulous detail and insight from a Shibata stylus, good bass and excellent tracking.

**ORTOFON CADENZA BRONZE MC** £1,400  
A mid-price MC with a slightly livelier presentation than the super smooth Cadenza Black. High-end sound at midband price – great value.



**ORTOFON CADENZA BLACK MC** £1,800  
Ultra smooth and dimensional moving coil with bass and punch aplenty. Lovely stylus.

**ORTOFON A95 MC** £3,750  
Fast and extremely detailed, this is an MC cartridge that sets standards.

**REGA CARBON MM** £35  
Budget price for a competent cartridge with a fairly unflappable nature. Ideal for beginners.



**GOLDRING 1012GX MM** £250  
A glorious sounding cartridge with solid bass and strong dynamic punch, plus excellent treble from its Fritz Geiger stylus. Fun and affordable.



**SHURE M97XE** £80  
Big warm sound, but great tracking and bullet proof stylus protection from damped guard. A survivor

**VAN DEN HUL DDT-II SPECIAL MC** £995  
Long-established cartridge from Holland with an open and dynamic sound.

**PHONO PREAMPS**

**CAMBRIDGE AUDIO 651P** £200  
Clean, concise sound from MM and MC cartridges at a very low price. A real bargain.

**ICON AUDIO PS3 MKII** £2,500  
All valve MM phono stage with MC transformer option, graced by big, spacious and relaxed sound.



**LUXMAN EQ-500 PHONOSTAGE** £4,495  
A fully-equipped phono stage from Japanese manufacturer Luxman that offers comprehensive cartridge matching allied to superb sound



**LEEMA ACOUSTICS ELEMENTS ULTRA** £1,199  
Smooth and detailed sound with the ability to accommodate most modern cartridges. Exceptional value for money.



**PRO-JECT TUBE BOX DS** £425  
Compact MM and MC phono stage with valve output circuit and a big sound.



**QUAD QC24P** £995  
MM and MC, oodles of gain, a volume control – and valves! Looks superb and sounds even better: smooth, atmospheric and big bass.

**TIMESTEP T-01MC** £995  
New, minimalist phono stage that sonically punches well above its weight.

**PREAMPLIFIERS**

**ICON AUDIO LA-4 MKIII** £1,400  
Uses early 6SN7 triodes for liquid sound. Has plenty of gain and a remote control into the bargain



**MF AUDIO CLASSIC SILVER** £4,500  
One of the best preamplifiers we've heard at any price, this transformer-coupled marvel does very little wrong. It's powerful, clean and open, yet delicate. Its sound is unmatched at or near the price.

**MING DA MD7-SE** £1,520  
A valve preamplifier with an open, effortless sound and a big soundstage. It has plenty of gain so will accept any source and drive any power amp. A real beauty.



**INTEGRATED AMPLIFIERS**

**ARIAND PRO845SE** £1,499  
Pure single-ended valve magic. Low-powered but immediately gorgeous, easy-going yet forcefully dynamic at the same time.



**AUDIO RESEARCH VS160** £3,500  
Power house sound with enormous pace and punch from traditional U.S. muscle master Audio Research. Breathtaking, but expensive.



**CAMBRIDGE AUDIO AZUR 651A** £350  
Dual-mono construction and meaty toroidal power supply combine to produce a solid and sharp sound with sonics far beyond its price point

**CREEK EVOLUTION 100A** £1,500  
Superb build and smooth confident sound make this powerful amplifier a benchmark.



**CYRUS 8DAC** £1,400  
Trademark shoebox-sized Cyrus integrated now offering 88Watts per channel, plus DAC. Svelte delivery from a dainty case that fits in anywhere – and isn't Class D!

**EXPOSURE 1010** £495  
Entry-level integrated from Exposure has excellent upper mid-performance with an almost valve-like sound.



**ICON AUDIO STEREO 60 MKIII** £2,800  
Excellent tube integrated with plenty of power and an expansive soundstage, plus KT150 tube option and bias meter for easy adjustment.



**NAIM NAIT 5Si** £925  
Naim's fabled entry-level integrated amplifier is updated to si status. Demos Naim's superbly muscular sound at entry level.

**SUGDEN A21SE** £2,480  
Class A amp with fantastic sound quality producing hard, sculpted images, deep detail and tight bass. Just don't expect disco-like sound levels!



**POWER AMPLIFIERS**

**AUDIO RESEARCH VS175** £7,498  
Powerful, fast valve sound that makes everything else look weak at times. Needs careful matching but well worth the effort.

**AUDIO RESEARCH VS115** £5,000  
Oodles of power with enormous punch. Rafael Todes said it provided "shock and awe" while retaining incredible smoothness and texture.

**ICON AUDIO MB845 MKII** £7,600  
With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.



**ICON AUDIO MB81PP** £15,000  
Big Russian transmitter valves deliver 200W from these massive monoblock amplifiers. Frightening in every sense.

**MCINTOSH MC-152** £4,995  
Stunningly insightful sound with enormous bass punch from a uniquely designed transistor amp. Amazing audio, a league up, if expensive.



**QUAD ELITE QMP MONOBLOCKS** £2400 PR  
The proverbial iron fist in a velvet glove. Plenty of power but delivered with an assured and confident nature. Smooth on top and easy on the ear but can rock out when needed.

**QUAD II-EIGHTY MONOBLOCKS** £6,000 PR  
Powerful and expansive sound from modern design monoblocks that also look lovely. Superb – used by us as a reference.



**LOUDSPEAKER FLOORSTANDER**

**B&W 803 D3** £12,500  
B&W's updated statement floorstanders deliver depth and definition with breathtaking speed and authority, aided by a diamond coated tweeter. Expensive – but enormously impressive.

**CASTLE AVON V** £1,600  
A big floorstander at a modest price that suits the average room. Refined ribbon treble and deep bass give it a great delivery.



**EMINENT TECHNOLOGY LFT-8B** £2,500  
Excellent U.S. planar magnetic loudspeaker at bargain price. Utterly superb - a must hear.

**EPOS K2** £1,000  
A fun sound that is tidy all round and very engaging, with solid bass. Music as you hope it to be.

**FOCAL ARIA 926** £1,400  
Simple, clean, neutral sound – easy going but well engineered and affordable.

**MARTIN LOGAN SUMMIT X** £16,698  
Matches Martin Logan's XStat electrostatic panel to a powerful subwoofer to provide extended, powerful bass. Dramatic sonic purity. Awesome – all but unmatched.



**MARTIN LOGAN ELECTROMOTION** £2,500  
Martin Logan's budget baby XStat hybrid electrostatic. Fits into any lounge to give electrostatic levels of clarity and imaging.



**QUADRAL CHROMIUM STYLE 8** £1,700  
A supremely smooth yet open sounding loudspeaker. Clean and detailed treble from a fine ribbon tweeter. Accurate yet informative and enjoyable. Pure class.

**QUADRAL ORKAN VIII AKTIVS** £6,200  
Active loudspeaker with tight, powerful bass, perfect accuracy and detailed treble from a ribbon tweeter.



**Q ACOUSTICS 2050i** £480  
A large floorstander at a budget price. Offers high sensitivity and big sound and has very few flaws for the price.

**SPENDOR SP100 R2** £6,495  
Retro looks but a sound that's hard to match. Sendor's 12" bass unit provides massive low-end grunt with a room-filling sound.



**SPENDOR A3** £1,300  
Fine little floorstander with a smooth, natural midband and even tonal balance. Ideal for smaller rooms.

**TANNOY DEFINITION DC10 Ti** £6,000  
Enormous power with great projection. Glorious subsonics too. Need little power to go very loud and have superb finish into the bargain.



**TANNOY KENSINGTON** £9,950  
Big but not overpowering, punchy modern sound from classic cabinetry. Need little power to go very loud and suit a traditional home, or castle.



**LOUDSPEAKERS STANDMOUNT**

**ACOUSTIC ENERGY NEO 1 V2** £225  
Civilised sounding speaker with fast and tuneful bass.

**ACOUSTIC ENERGY AE1 CLASSIC** £845  
Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.



**ELAC BS243** £1,000  
More transparent and spacious than they've a right to be at this price, these refined mid-price standmounters represent top value.



**EMINENT TECHNOLOGY LFT-16A** £1,200  
U.S. planar magnetic bookshelf loudspeaker with unrivalled mid-band and treble. Hear it before all else.

**WHARFEDALE DIAMOND 220** £200  
Builds on the success of previous Diamond ranges with better bass, more detail and a greater sense of scale.



**KEF LS50** £800  
Supremely musical mini-monitors which sound much bigger than they look.



**MARTIN LOGAN MOTION 35** £1,300  
Folded Air-Motion tweeter gives a taste of Martin Logan's electrostatic sound in a standmount. Different from the standard mini-monitor and all the better for it.



**PMC TWENTY.21** £1,575  
Transmission line loaded standmount with a big box sound from a compact cabinet. Punches well above its weight.



**Q ACOUSTICS 2020i** £165  
Great little bargain-priced stand-mounts with a friendly, fun yet surprisingly refined sound. Hard to better for a pair of starter loudspeakers.

**WHARFEDALE DENTON** £500  
A beguiling mixture of retro looks with modern, high-technology drive units. The Denton has an easy-going, big-hearted sound with a touch of trad warmth that should appeal to many.



## HEADPHONE AMPLIFIERS

**CREEK OBH11** £150  
Designed specifically for low to medium impedance (30 Ohm – 300 Ohm) headphones the little Creek has a marvelously well-judged sound.

**CHORD MOJO** £399  
Class leading portable DAC and headphone amp with ability beyond all else. Big, open spacious sound.



**EPIPHANY EHP-02** £99  
PP3 battery-powered portable gives great sound quality at an almost giveaway price. Happy with the output from an iPod or CD player, the little epiphany is a true bargain.



**ICON AUDIO HP8 MKII** £650  
The HP8 MKII valve-based headphone amplifier brings the spacious sound of valves to headphones. And it matches 'em all.



**FIDELITY AUDIO HPA 100** £350  
Great little headphone amplifier with a lively yet refined and open sound.

**MUSIC FIRST PHONE BOX** £276  
Brings a big stage, plenty of detail and rich, deep colours to the sonic spectrum.



**OPPO HA-2** £250  
Remarkable performance and sound from ESS Sabre32 DAC in a slim portable package.



## CD PLAYERS

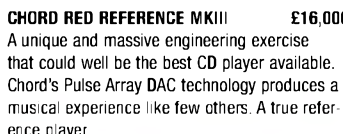
**AUDIOLAB 8200CD0** £949  
Inspired CD player and DAC with price-performance ratio like no other. Capable of matching designs costing much more.



**CANOR CD2+** £3,100  
Musically coherent and tuneful valve-driven CD player from Slovakia. Lovely liquid sound.



**CAMBRIDGE AUDIO AZUR 651C** £410  
Snappy modern presentation from this budget CD player. Cracking audiophile entry point for any digital fan.



**ESOTERIC K-03** £9,495  
Superb high-end silver disc spinner that is beyond criticism. Devoid of its own character but has a flawless presentation.



**EXPOSURE 101** £395  
Detailed player with fine sense of timing should be an automatic entry on any demo list at this price.

**ELECTROCOMPANET EMP-1/S** £4,650  
Epic in scale, lavish in tone and exuberant in its musicality - this is a memorable SACD spinner. Quirky in operation and modest in finish, though.



**OPPO BDP-105D** £1200  
Universal player and DAC that makes CD and Blu-ray (+DVD) sound deep, spacious and full bodied. Reference quality that's affordable.



**REGA APOLLO-R** £550  
Rega comes up with a fine CD player again. Tremendous detail and an easy, unforced sound at all times. Few bells and whistles but made up for by its superb sonic ability.



**ROKSAN KANDY K2** £900  
A charmingly musical performer at the price - this is a surprisingly sophisticated CD player for the money.

**TUNERS**

**CAMBRIDGE AUDIO AZUR 651T** £299  
Value-packed AM/FM/DAB and DAB+ ready tuner. Precise and detailed with excellent resolution of spoken word.



**CREEK DESTINY 2** £550  
Creek's tuner expertise shines through in the Destiny 2. This AM/FM receiver is wonderfully three-dimensional and smooth.



**MAGNUM DYNALAB MD-90T** £1,900  
Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.



**DACS**

**AUDIOLAB M-DAC** £600  
Excellent sound from ESS Sabre32 DAC and impressive flexibility with a unique range of filter options make this a stand-out product. Low price is the icing on the cake.



**AUDIOLAB Q-DAC** £250  
Stripped-down version of Audiolab's M-DAC loses some features but retains much of the sound, making it a veritable bargain.

**ANTELOPE ZODIAC GOLD/VOLTIKUS** £3,095  
DAC/preamp/power supply combination majors on detail but has a remarkable un-digital sound. One of the best at its price.



**CHORD 2QUTE HD** £990  
Superb build quality and exceptional sound from this compact unit. Boasts the ability to handle DSD direct via USB and has an exceptional soundstage. One of the best DACs you can buy.



**DCS DEBUSSY** £8,000  
DCS's bespoke 'Ring DAC' circuit gives a beautifully-fluid, almost analogue sound that encourages long listening sessions. Not cheap but worth every penny.

**NORTHERN FIDELITY DAC** £650  
Packed full of features, including Bluetooth and USB, this ESS Sabre32 equipped DAC offers crisp, insightful sound at low price.



**METRUM OCTAVE** £729  
Unique two-box digital-to-analogue converter with great sound at a great price. Cuts upper treble, though.

**NAIM DAC** £2,400  
Superb high-end digital converter with a probing, punchy and forensically-detailed sound.



**TEAC UD-501** £699  
Feature-packed DAC with benefit of DSD playback. Superb sound means little to touch it at the price.



**RESONESSENCE INVICTA MIRUS** £4,499  
One of the most highly spec'd DACs available, with a smooth yet entrancing presentation. Few approach it.



**NETWORK PLAYERS**

**CHORD DSX100** £7,500  
Chord's proprietary DAC circuit shines in their top-of-the-range streamer. Hear-through clarity with a sound rich in detail, dynamics and soundstage.



**CAMBRIDGE AUDIO NP30** £399  
Budget offering from Cambridge offers a great introduction to network streaming.

**CYRUS STREAM X** £1,400  
Gorgeous sound quality even from compressed digital music. New control app makes everyday operation a doddle.



**CONVERT TECHNOLOGIES PLATO** £2999.00  
A network player with amplifier that does it all, including turn LP to hi-resolution digital, and add cover artwork from the 'net.



**NAIM NDX** £2,995  
Clean, incisive and very detailed sound with Naim's traditional pace and timing make this one of the best network music players around.

**NAIM ND5XS** £2,175  
Great sound quality with traditional Naim heft. A wonderful DAC with full 24/192 handling. Only the discplay could be better.

**NAIM NAC-N172 XS** £1,650

A pre-amp/DAC/streamer package provides a taught, rock-solid presentation with a tonally rich midband and a superior sense of rhythm.



**PRO-JECT STREAM BOX RS** £1,095

Unusual valve-based streamer/preamp with variety of inputs and a lovely liquid sound. Not the most detailed but compensates with sheer musical verve.

**QUAD PLATINUM DMP** £2,500

Combined CD/network player has all the usual Quad elements but with added zest and detail that brings life to everything you care to play.



**DIGITAL SOURCES**

**ASTELL&KERN AK100 MKII** £569

Portable high-definition digital player with superb sound quality. Punchy and fast.



**FiiO X3** £150

Fabulous value player with nice easy sound and full range of abilities. Small and light. For newbies.

**LOTOO PAW GOLD** £1,500

Reference quality sound; it's like carrying your hi-fi in your pocket. Equivalently large too, but stunning headphone quality.



**NAIM HDX** £4,405

Interesting one-box network-enabled hard-disk music system that gives superb sonics together with impressive ease of use.

**NAIM UNITILITE** £1,995

A 50W amplifier with traditional Naim heft, a CD player and vht/fm radio, plus network input and Bluetooth make this a great all-in-one.



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Superb design and great sound make for one of the best portable Bluetooth speaker/radios on the market. Not the cheapest – but worth every penny.



**IRIVER IBA-50** £69

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**CABLES**

**BLACK RHODIUM TWIST** £71/3M

Twisted to fight off radio frequency, the Black Rhodium speaker cable is easy on the ear with a fine sense of clarity and focus. A remarkable performer at the price.



**MAINS CABLES R US NO.27** £95

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**CHORD SIGNATURE REFERENCE** £900

Majors on timing, detail and openness. Capable of getting the best from most systems and a recommended upgrade.



**TELLURIUM Q BLACK** 280/3M

A deep, dark, velvety performer that's nevertheless highly musical, it represents excellent value as mid-price cables go.

**TELLURIUM Q SILVER DIAMOND** £804/M

An open, natural and transparent sound that is difficult to beat, from these great loudspeaker cables.



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**AUDEZE LCD-3** £1,725

A planar magnetic 'phone that offers monitor quality. Strong sound with silky, dark quality that others struggle to match.



**B&W P3** £170

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**JAYS V-JAYS** £49

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**NOBLE K10 INC. FITTING** £1,279

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**OPPO PM-1** £950

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**SENNHEISER HD700** £599

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**YAMAHA HPH-MT220** £150

Purposed for indoor monitoring yet light and comfortable enough to be used on the move. Excellent sound quality marred only by a slight warmth to vocals.

# vinyl section

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JULY 2019

[www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk)

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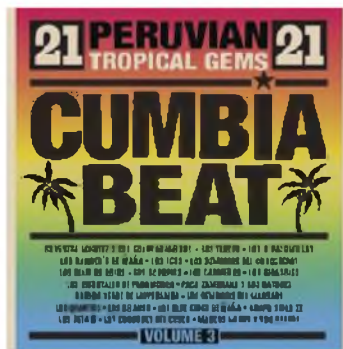
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Jordan Mooney was at the centre of UK punk. Paul Rigby reads her story.

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Venom's 'Welcome to Hell'. Paul Rigby on Thrash Metal.

## news

### MUNSTER

Direct from the Spanish audiophile label, under the Vampi Soul imprint, is 'Cumbia Beat Vol.3'. A compilation featuring Los Gianos, Los Ecos, Los Tantos and more. Great energy and twangy guitars!



### R...O...C...K

From the subtly monikered Mammoth Weed Wizard Bastard comes 'Yn Oi I Annwan' (*New Heavy Sounds*; [www.newheavysounds.com](http://www.newheavysounds.com), it's Welsh for 'Return to the Underworld') is the final part of a similarly themed trilogy of cosmic doom!!! Grimy, muddy, sludgy, clawing, gooey, quicksand-pulling doom rock... with Moog sound effects. What could be better?

Mike Rutherford is the only original member on the new 'Out of the Blue' from Mike + The Mechanics, revisiting their catalogue in new ways plus the odd original. Sounding a little oddly positioned and forced.



Gang of Four's 'Happy Now' (Gillmusic) is the ninth album by this legendary post punk outfit providing excellent songs, jagged and fractured sonics that still hit a groove. Great to see the political protest edge featured too.

### DONNA!

A 30th anniversary of Donna Summer's 'Another Place and Time' (Crimson; 1989) features an additional disc of extended 12" and 7" mixes plus a 30th anniversary mimimix. Arguably her best album from the eighties, if featuring a core Stock/Aitken/Waterman production that was high energy and largely aimed at the dance floor. A successful Moroder evolution.

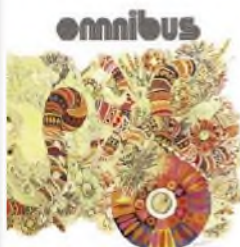


### WAH WAH

Psyche-garage band from New Jersey, 'Omnibus' (1970; [www.wah-wahsupersonic.com](http://www.wah-wahsupersonic.com)) from Omnibus offers a distinctly Jim Morrison lead vocal and an open, high-energy backing. Beautifully packaged with an additional 12" disc of studio acetate rarities, a 7" of two previously unreleased tracks, a concert poster reproduction and 8-page booklet. Blimey!

The Athenians' 'Steppin' Out With The Athenians' offers this Scottish beat/R&B groups single collection from 1964 and 1965 plus rarities. This is hardcore beat. Beat with a R&B edge, full of force and energy.

'The Storm' from The Storm is a Spanish outing of rock from 1974 which will cost you around £300 now on its original BASF label. Highly recommended if you like your hard rock in the classic style.







## BEAR FAMILY

From The Petards is 'Pet Arts' (1971; [www.bear-family.com](http://www.bear-family.com)), originally released on Liberty. Of its time, this German rock outing included simple rhythmic choruses, crunchy, dense guitars and big beats.

George Faith's 'To Be a Lover' (1978) on the Cree imprint offers a brilliant collaboration with Lee 'Scratch' Perry. There's a real dub bass beat in here plastered with EQ treatments. Trippy stuff.

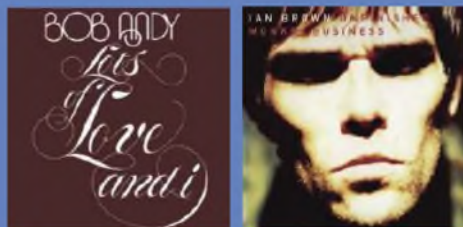
## DEMON

From Demon ([www.demonmusicgroup.co.uk](http://www.demonmusicgroup.co.uk)) is Freda Payne's 'Band of Gold' (1970), her debut album for Invictus. A superb slice of soul.

Also from Demon is T.Rex's 'bump'n'grind', an excellent twelve song collection of session takes, working versions and mixes from original master tapes from 1972-1976.

Two old Brunswick classics now. Firstly Jackie Wilson's 'Higher and Higher' (1967) featuring the hit title song. A great example of the Brunswick sound. Also look out for Barbara Acklin's debut, 'Love Makes a Woman' (1968). A sort of Dionne Warwick-style singer, she hit the ground running here. This is one of the all-time great soul albums.

Also look out for Status Quo's 'Quid Pro Quo' (2011), a Record Store special including pop-up gatefold artwork on blue vinyl.



## MUSIC ON VINYL

Just a couple from this prolific label ([www.musiconvinyl.com](http://www.musiconvinyl.com)) includes Bob Andy's reggae outing from 1977. 'Lots of Love and I' has been reissued for the first time in over thirty years.

Also look out for Ian Brown's 'Unfinished Monkey Business' (1997) which features ok song writing and ok vocals with ok instrumental backing and is...ok.

## ...AND FINALLY

Member of the Submotion Orchestra Taz Modi's 'Reclaimed Goods' ([Reclaimed; www.tazmodi.com](http://Reclaimed; www.tazmodi.com)) offers piano (sometimes treated), strings and electronics, producing a looping, rhythmic and funky ambience.

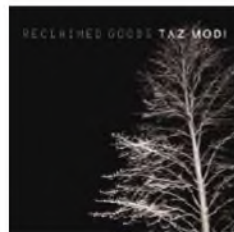
Now aged 85, Ernstalbrecht Stiebler's 'Zwischen den Tönen' (Edition Telemark; [www.edition-telemark.de](http://www.edition-telemark.de)) constructs chamber ensembles to issue tones that are, at once, meditative and disturbing

Sparks' 'No. 1 in Heaven' ([Lil'Beethoven; www.allsparks.com](http://Lil'Beethoven; www.allsparks.com)) was the rock-to-electro transition via Giorgio Moroder. A smash hit spawning four hits including 'Beat The Clock'. Includes a second disc of alternative/rare versions.

Sarah Tandy's jazz debut, 'Infection in the Sentence' ([Jazzre:freshed; sarahandy.bandcamp.com](http://Jazzre:freshed; sarahandy.bandcamp.com)) sees Tandy's piano in the thick of a 5-piece of adventurous and energetic vibes

Singer-wongwriter, Jono-Olov Woxlin's 'Let It All In And Let It All Go' (Nobel; [www.nobelrecords.se](http://www.nobelrecords.se)) offers an old fashioned, earnest delivery Very folkie-protester-in-the-sixties in tone. Old fashioned song quality too

K.O.G & The Zongo Brigade's debut, 'Wahala Wahala' ([Heavenly Sweetness, heavenly-sweetness.com](http://Heavenly Sweetness; heavenly-sweetness.com)), sees this Afro-fusion 8-piece offering high energy, rhythmic beats with bouncy guitars and brass outbursts.



C'mon Tigre's 'Racines' ([www.cmontigre.com](http://www.cmontigre.com)) is beautifully packaged, featuring two discs and an 84-page book. It offers a fusion of jazz, blokey Portishead-type vocals and trip hop electro vibes

Finally, Thylacine's 'Roads Vol 1' (Intuitive) combines electronica combining synth washes over big beats and floaty female vocals. Derivative – but quality derivative.



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# CADENZA

The Cadenza Series of high-end Moving Coil (MC) cartridges allow you to get the most from your vinyl records. By carefully implementing cobalt-iron pole pieces, using new improved winding processes on the armature, and employing an extruded aluminium housing - amongst other changes - the Cadenza Series is able to out-perform all those that came before it.

The name *Cadenza* comes from the Italian word for cadence, which refers to a soloist during an orchestra performance where they play alone in an elaborate manner. It therefore seemed fitting that such a capable and nuanced cartridge series should use the same name.

Like other modern ranges, the Cadenza Series is structured in Ortofon's preferred colour-tier nomenclature; so there are Red, Blue, Bronze, and Black variants available to suit varying budgets and tastes.



## Red

This MC cartridge and introduction to the series features a Nude Fine Line stylus which delivers open, dynamic sound with a touch of warmth.



## Blue

Featuring greater dynamics and resolution, the sound is more open and reproduces more accurate details thanks to the Nude FG 70 stylus.



## Bronze

A step up in the range, this cartridge boasts a Replicant 100 stylus to produce stereo imaging capabilities that illuminate the farthest corners of the soundstage.



## Black

Flagship of the range, the Cadenza Black is simply the best and features a Nude Shibata stylus which guarantees amazing tonal neutrality, dynamics and purity of sound.



# Simple truth

**Cambridge Audio's Alva Direct Drive turntable package is easy to use and has Bluetooth connection. Noel Keywood sees the sense.**

**A** simple turntable that ticks all the boxes – that's Cambridge Audio's Alva turntable I'm reviewing here. Direct Drive to the spinning platter, a quality Rega one-piece arm and a high out-

put moving coil (MC) cartridge feeding a built-in phono stage – connect to any amplifier with no kerfuffle. High performance allied to simplicity, but at a price of £1500 – high in what is now a cut-throat market.

A seemingly small and

unexpected twist is that the Alva has a Bluetooth radio link for short range transmission to any similarly equipped hi-fi. Curious to think about but a lot of sense. The Alva is very simple to install and operate – and with Bluetooth it can go anywhere,

but of course the hi-fi must be able to receive Bluetooth and that still isn't so common outside Cambridge Audio products.

Alva is about as easy as it gets to unpack and set up. I get the feeling that Cambridge Audio understand that newcomers to vinyl, who want to spin the original source of great music, can feel challenged by the archaic technicalities and religion surrounding turntables. So in physical form Alva looks simple, the handbook tries hard to keep it that way – if with some vagueness on tracking force – and there is even a set-up video on Cambridge Audio's website.

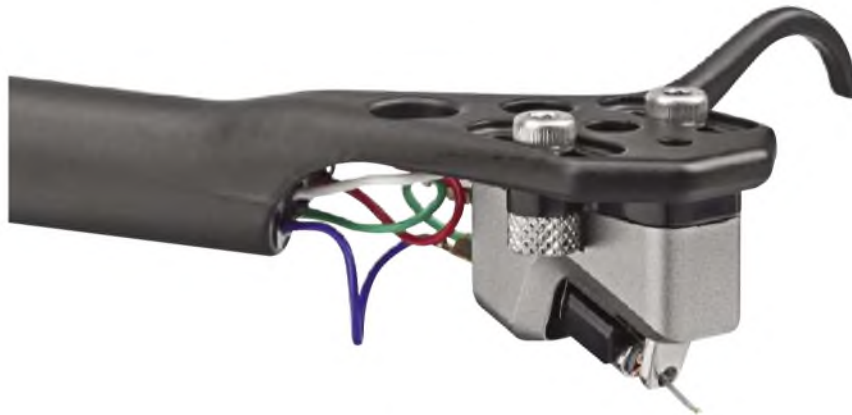
Being Direct Drive the platter is placed over the motor spindle: there's no belt, nor any transit

material is POM moulding plastic that is quite dead sounding, as a platter needs to be, and it is heavy too, which makes for slow-ish start up of a few seconds, but by keeping motor torque down the infamous cogging of Direct Drives is eliminated – as our measurements confirmed.

Staying with the theme of elegant simplicity, there is no external power supply. Mains power plugs straight into the rear via the usual IEC three-pin connector, 100-240V at 6W, or 0.5W standby. Also missing is a Direct output bypassing the internal phono stage,



**The arm has a small slider to set bias, a damped cue platform and secure arm clip that prevents accidental bounce-out.**



**The Rega headshell with Cambridge Audio's naked moving coil cartridge neatly attached.**

somewhere – but no digital output. With Bluetooth the thinking is you don't need it I suppose.

Which brings me to the fact that being Direct Drive the motor is anchored in a heavy 11kg, non-resonant chassis that sits on rubber strips – there are no adjustable rubber feet. It measures 435mm wide, 368mm (14in) deep and 139mm high (lid closed). Like all suspension-less turntables, Alva needs a flat and horizontal surface to sit on, one that is also reasonably rigid and vibration free, as well as not affected by floor bounce. A dedicated wall shelf is ideal, providing the wall is brick/breeze block, or perhaps a heavy floor table on a bit of floor that doesn't bounce, like between a chimney breast and



**The rear panel has a pair of analogue phono socket outputs for connection to the line inputs (Aux) of any amplifier. A Bluetooth pairing button and blue LED indicator sits to their right.**

screws. Nor a platter mat or puck. Unfortunately, LPs can slip on a hard shiny surface like this one so a mat of some sort is needed, preferably with a puck. A light and thin felt or cork mat would do, held underneath by double-sided tape. The platter

seen in Pro-ject turntables for example. Balancing this is the fact that Cambridge Audio fit a very good internal phono stage of their own design and since Bluetooth digital is on-board there is an analogue-to-digital convertor (ADC) in there

side wall (yes, I suffer all this!). The plus point of a solid chassis is that it makes the turntable easy to use, since it holds steady when cueing the arm.

The arm is Rega's sturdy RB220, but a variant with adjustable bias.



**The arm is a Rega RB220 variant with manual cueing platform and bias adjustment, plus a secure arm clip. This is a one-piece arm without removable headshell, to aid rigidity.**

It's a wonderfully built yet elegantly simple one-piece arm of great rigidity, but cartridge fitment is difficult. So the Alva comes with cartridge fitted. There is no auto mechanism of any sort; the arm is operated manually.

However, it transports with counterweight removed, as is common to protect the arm bearings, so you still have to screw on Rega's counterweight and set both downforce and bias force.

And here things got 'interesting'. The instructions and video depict an



**An on/off button at left with integral blue LED, plus 33/45rpm speed select buttons.**

Ortofon uber-budget plastic gauge (Turntable World has them for £7.50) but no such thing is supplied – nor is the cartridge made by Ortofon! So a downforce gauge is needed: ask the dealer, likely Richer Sounds, or go to eBay. Tracking force can be found in

"A sense of creamy silence that classical fans will appreciate was obvious"

the tech Spec: it is 2gms.

The cartridge is a skeleton moving coil (MC) where you get to see the fine wires entering the stylus assembly, with a micro-miniature coil at the end of the cantilever. Wonderful to see – intriguing – and with the cachet of a top quality cartridge. But with MCs, if the stylus gets bent it must be sent back for repair or exchanged; unlike a simpler moving magnet (MM) type the stylus is not user-replacable. Since the cartridge costs around £450 repair will not be cheap – not ideal for those new to vinyl.

Sumiko's Blue Point is the go-to for a budget OEM (outside equipment manufacturer) MC cartridge and this one looks like a Sumiko Blue Point high output design. They do the job, but are workmanlike. Cambridge Audio's version has an elliptical stylus and did not track well, because that is the flip side of the coin with high output moving coils; the extra coil turns needed add mass to the moving parts. A budget Audio Technica VM-95ML (£150) or SH with their advanced stylus shapes would better suit I feel; after a short while I changed to an Audio Technica

VM740ML (£295).

There are two speeds – 33 and 45rpm – and a hinged clear acrylic dust cover, but no stroboscope or cue light, like the Technics SL-1200GR. Instead you get conversion to digital through a 24bit ADC and transmission via Bluetooth (aptX, aptX HD, SBC). The latter paired with a Quad Vena II amplifier once I remembered to un-pair my iPhone!

## SOUND QUALITY

I first connected the Alva to our Creek Evolution 100A amplifier via Chord Company phono cables, later to Quad's Vena II via Bluetooth. Loudspeakers were our Martin Logan ESL-X hybrid electrostatics linked in with Chord Company Signature cables. An Isotek Evo3 Mosaic Genesis re-generated mains power supply was also used to ensure a clean mains feed.

Spinning In the Mood, from The Syd Lawrence Orchestra



**The light, plastic bodied, naked high-output moving coil cartridge that comes fitted.**

– a wonderful modern audiophile recording on 30ips master tape transferred to 180gm vinyl from Chasing the Dragon – I was greeted by a surprisingly conservative sound: vague in the midband and soft up top – see Measured Performance. It was nice enough, vigorous in pacing and with a firm acoustic bass line, and perhaps what Cambridge Audio think is appropriate voicing to suit expectations of a warm sound by

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LEHMANN  
MUSICAL  
SURROUNDINGS  
PARASOUND  
PRO-JECT  
PURE SOUND  
QUAD  
ROTHWELL  
TOM EVANS  
TRICHORD  
WHEAT AUDIO

## CABLES

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IXOS  
KUBALA-SOSNA  
PEERLESS  
PRO-JECT  
QED  
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ZENSATI

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new users.

But it was not what this LP has in its grooves. I changed the cartridge to an Audio Technica VM740ML MM and suddenly daylight appeared. Now the orchestra, in its pulsive power and timbrally luscious glory jumped out, trombones and trumpets having a vivid presence on the sound stage in front of me.

The qualities of the rest of the turntable then became apparent – it has a confidently smooth rendition with easily assured pace: drums and acoustic bass had both a firm presence and temporal grip.

Hugh Masekela's Uptownship (180gm vinyl), another superb recording from Analogue Production, also cruised along with steady confidence, lacking the slightly vague or watery pitch of belt drives. Cymbals stood out with a ringing sonority that made me muse about how vinyl can sound so sweet up top when everything goes right, in this case the arm's rigid head platform providing a firm base for Audio Technica's VM740ML, letting its MicroLine stylus dig deep. Masekela's trumpet had well lit presence, fine percussion was teased out in rich detail and the bass line sounded firm.

Swapping out the Creek Evolution 100A amplifier for Quad's Vena II connected via Bluetooth, with the Alva far away and unconnected to



**The tapered motor shaft on which the platter sits. No belt or speed change mechanism to worry about.**

anything except the mains was eerie! How can this happen? Sound quality didn't degrade but it did change: there was fuller bass, but I suspect this was down to the Vena II amplifier, not the turntable's Bluetooth link. Playing with volume right up then lifting the arm showed there was no hiss, even with my ear against the XStat electrostatic panel – very impressive. Cambridge Audio have engineered this link very well.

Bluetooth sound quality was superb, although I noticed a peculiar

lack of sharp ticks and pops, as if a noise-gate was in action (see Measured Performance). This gave a sense of creamy silence that classical fans will appreciate and was obvious with Marianne Thorsen playing Mozart Violin Concertos on 2L's 180gm LP that has a slightly bright balance. Played direct into the Creek by the VM740ML cartridge that is what I heard, but via Bluetooth there was a peculiar sense of warmth, yet no lack of treble.

Another eerie occurrence was latency: lift arm from record and music keeps playing! Not for long – I'd guess 0.5 seconds.

## CONCLUSION

Cambridge Audio's Alva turntable is easy to set up and reasonably easy to use, providing you are able and willing to hand cue a pickup arm; quality automatics and semi-automatics are now re-appearing at lower cost.

As a package it is let down by the cartridge that undermines its potential; budget alternatives like Audio Technica's VM95ML (£180) manage better than the moving coil (£450) fitted. Factor in the presence of Technics glamorous SL-1200GR or forthcoming SL-1500C and Alva looks challenged. As a quality turntable with Bluetooth it is still very good; I enjoyed using it once the cartridge had been changed.

## MEASURED PERFORMANCE

Speed accuracy was near perfect at +0.1% fast with wander around nominal also low at 0.1% – something Direct Drives are good at. All the same there was some rotational-rate (33rpm/0.55Hz) wow our analysis shows, if low at 0.1%. This analysis also shows absence of cogging, usually seen as a sharp peak at 6.6Hz (12 poles x 0.55Hz).

The arm was vibration free, measurement with a Bruel&Kjaer accelerometer showed.

The phono stage has a gain of x129 (x100 is common for MM) and flat frequency response, but with a steep warp filter at 20Hz. Input noise was very low at 0.1µV and overload high at 60mV in / 7.8V out.

The 24/48 Bluetooth stage has similar frequency response our analysis shows, except for a steep anti-alias filter at 18kHz, an internal Bluetooth limit to constrain data rate. The 0dB digital threshold has been set low to 16mV, causing the link to overload when playing the 90µ and 100µ tracks of Clearaudio's

LPT 83063 tracking test disc with an Audio Technica VM740ML MM cartridge. However, the MC fitted mistracks above 60µ so it suits, but more capable alternatives do not.

The Bluetooth noise floor was -95dB down below a 9mV input – very low suggesting 24bit resolution – and distortion also minimal at 0.04%.

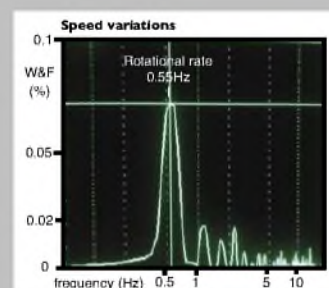
Frequency response of the fitted Sumiko MC cartridge measured -3dB down at 10kHz – a significant drop and rare nowadays. It will give a warm sound. Under the same test conditions the Audio Technica VM740ML we fitted was flat to 10kHz and had some upper treble lift – a large difference.

The turntable, arm and phono stage measured very well but the fitted MC cartridge was poor by today's standards, in terms of frequency response and tracking ability. **NK**

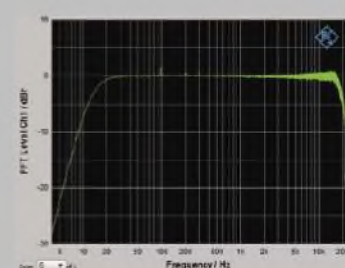
<b>Speed error</b>	<b>+0.1%</b>
<b>Wow</b>	<b>0.1%</b>
<b>Flutter</b>	<b>0.04%</b>

<b>Wow &amp; Flutter (unwtd)</b>	<b>0.1%</b>
<b>Wow &amp; Flutter (wtd)</b>	<b>0.07%</b>

### SPEED STABILITY



### FREQUENCY RESPONSE BT



## CAMBRIDGE AUDIO ALVA £1500



**EXCELLENT - extremely capable.**

### VERDICT

Good arm and turntable, but poor cartridge.

### FOR

- Bluetooth radio link
- easy set up
- easy to use

### AGAINST

- poor cartridge
- manual operation only
- expensive

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April 2018



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# TQ to DIN

Paul Rigby reviews Tellurium Q's Statement high-end DIN-to-Phono tonearm cable.



**H**ere's a recent addition to Tellurium Q's Statement range of cables, a DIN-to-phono connector purposed for pickup arms using a DIN output. And it isn't cheap – Statement quality here comes with a £3600 price tag.

As ever with cables from Tellurium Q, the company say little about their construction, but I was fortunate to get a few views on Statement build-technology. According to Geoff Merrigan, TQ's head honcho, "People assume that to get the best performance the 'fastest' conductor – pure silver or something even better has to be used. Which is also one of the reasons for the pointless chasing of nines as I call it – copper to 99.9999999% purity – as if that is the single most important factor for a cable! Surprisingly, to get the most natural sound, it is not just about merely conduction. This is the reason: any conductor from any cable manufacturer on this planet will act as an electronic filter and

by that I mean that the various frequencies relative to one another get shifted with each material they pass through and are also affected by insulators, geometries, shielding etc. It really is a finely tuned balancing act to make sure that you get a natural, transparent transmission. This takes a lot more research than people would imagine. Even down to the solder we use".

One design point to note here, the DIN plug is straight and not angled. Clearance below is something to watch out for.

## SOUND QUALITY

Playing a duet by Bing Crosby and Mitzzy Gaynor, 'You're the Top', I was impressed by its musical flow and ease. The reason lay in a blend between tonal balance and timing. My brain and ears felt that music sounded 'right' here and, thus relaxed to enjoy.

In basic terms, the soundstage offered a secure frequency discipline. There was no pinching treble here, no midrange edge and no bass bloom. This cable had the basics

sorted. Once the foundations of the overall sound are secure then you can build upon them. Playing catch-up to correct simple faults always results in sonic compromise. None of that was experienced here.

Detail was impressive. Cymbal taps offered body and a presence with a beginning, a middle and an end. I could hear effort and pressure, bringing a sense of realism that was impressive.

On a more high energy track like The Kinks' 'The Village Green Preservation Society', overall balance within the mix was superb. Bass had a massy, hefty and strong kick, while delicate midrange effects such as the string reverb from the rhythm guitar, remained intact.

## CONCLUSION

This tonearm cable, being closer to the source than other Statement cables, has a critical job – one it passes with flying colours, lowering noise, increasing dynamic reach and enhancing the structure of the soundstage. It's a useful if expensive upgrade for any compatible tonearm.

**TELLURIUM Q  
DIN-TO-PHONO  
STATEMENT  
CABLE £3,600**



**OUTSTANDING - amongst  
the best.**

### VERDICT

Provides a rich, mature and multi-layered sound that will enhance any tonearm and turntable.

### FOR

- mature midrange tone
- neutral presentation
- imagery

### AGAINST

- price

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# Punk princess

Jordan Mooney was at the centre of UK punk. Paul Rigby reads her story.

**Defying Gravity: Jordan's Story**  
 Jordon Mooney & Cathi Unsworth  
 Omnibus Press  
 Price: £20



"Vivienne designed a T-shirt saying 'She's dead, I'm alive, I'm yours' that went on immediate sale at Seditionaries. She explained at the time: 'You care about some people more than others, more about Sid than Nancy'. She was also aware that the general public would probably find it distasteful – and I did it for that reason too, because I like to upset people".

"As well as this she made a Sid Action Man with a Swastika vest, laid him in a little coffin and put him on display in the shop. Whatever you think about this now, it fitted right in with the times. This was the season that would become known as the Winter of Discontent".

'Nancy' was Nancy Spungen, American girlfriend of Sid Vicious, bass player in The Sex Pistols punk rock group. The above text refers to her death in New York's Chelsea Hotel as a result of a knife wound. 'Vivienne' was and is Vivienne Westwood, famed clothes designer, while Seditionaries was the shop formerly known as Sex, some say the centre of the birth of punk.

For this new book, this shop largely serves as a hub around which the story of punk, its many and varied casts of characters revolves.

If you could ever append the title of 'audiophile' to a book, then this would be it. It is a story direct from the source and, as such, is 100% pure as primary material. Its importance is obvious because Jordan Mooney was right at the centre of the entire movement.

The 448 pages of text and images within might not be the history of punk and its aftermath but it's a history. More importantly, it's a first-hand history and, as such, is a very personal account replete with personal bias, personal experiences and a very focused and precise narrative path. During the narrative, you hang on for dear life as the chaos ensues, fame is sought and won, lives are enriched, ruined and lost, blood is let, careers are made and dashed and too many end their tales in sadness.

Jordan was famed for her no compromise fashion sense. She was an iconic punk mannequin for the media but also a direct and sometimes fearful individual when approached in person.

We learn of her family and her lively background, her dancing skills and ambitions, a fearful accident, her singularity in terms of fashion, the early fixation on David Bowie and her gradual and close association with Vivienne Westwood and Malcolm McLaren who managed the Sex shop but also the band, The Sex

Pistols.

We also follow Jordan as she becomes a friend of director Derek Jarman, her involvement in the contentious film 'Jubilee', her meetings with Andy Warhol, her management and musical involvement with the band, Adam & the Ants and a whole lot more.

The book itself is so honest it's almost raw, while the involvement of Unsworth as her editorial guide is a good one because she stays invisible.

Whether it was Unsworth or Jordan who decided upon the editorial design is uncertain but I enjoyed the flow of the book. Jordan talks from a first person point of view but, at regular points throughout, a wide selection of famed personalities interject, as if their faces emerged from a cloud floating at the side of Jordan's head, to comment as if in real-time conversation. In addition, mini-profiles are printed for many who fulfil walk-on parts in the story.

This is not just a great book – and it is a great book – it is a real page turner. More than that, it is an important resource in the story of punk. In short, it is a 100%, stone cold, 24 karat classic. Buy it or regret it. **PR**

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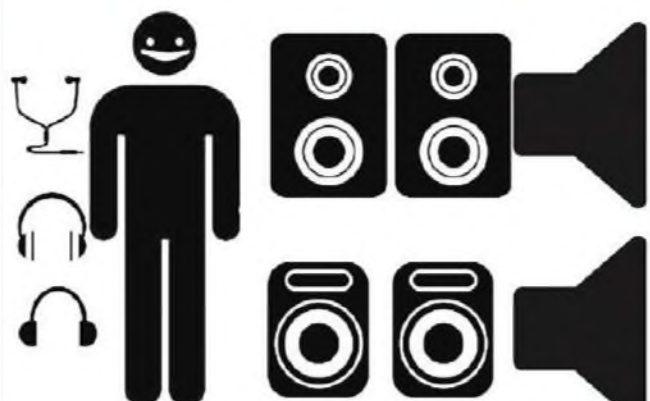
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HEADPHONES

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Focal's new Kanta No1 bookshelf loudspeaker offers "a precise, detailed sound, brimming with warmth and musicality" they say. Featuring the company's proprietary Beryllium dome tweeter and natural Flax midrange/bass driver that we've found give excellent results together, will the new Kanta No1 brim with warmth and musicality? Find out in our August 2019 issue.

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# VENOM

## WELCOME TO HELL BMG



"So we had three days and we recorded all of Welcome to Hell"

In the last issue of this respected journal, I rambled on about the brief appearance of a uniquely British heavy rock phenomenon, the New Wave of British Heavy Metal (NWOBHM) and how it allowed heavy rock to evolve and move forwards by adopting elements from punk rock, which was active at the time.

This particular album and group were inextricably linked to that movement, which got under way around 1979. The year this band was formed. In Newcastle-upon-Tyne, to be exact.

Lead singer, Cronos was quoted as believing the time had come: "People credit us with starting a movement and all, but the truth is I think it was inevitable. Punk had died. Metal was lame. There could only be one new way to do this – for metal bands to get some f\*\*\*\*\*g balls again".

In fact, the band's first album, 'Welcome to Hell' (1981), is considered a major influence on thrash metal and extreme metal which would follow soon after NWOBHM died a death. Metallica, Behemoth, Celtic Frost and Mayhem would all convey their respect in terms of influence.

Creating 'Welcome to Hell' was apparently a bit of a surprise, even to the band "... because I worked at the studio, I convinced the engineer and studio boss to work for free" said Cronos. "So I was able to scam Venom into the studio for free to get some demos done. Now I'm then playin' them for the record company and they were like 'No. It's lousy.' So eventually the record company said 'Look. There's three days spare. Go in and see what you can do'. So we had three days and we recorded all of 'Welcome to Hell'.... demos, as far as we were concerned. Next week we got the record company saying 'We will release this as it is now as an album – or forget it'. We were like, 'It's demos! We've got to do it properly. Give at least a week or something'. It was not to be.

A succinct album history, I'm sure you'll agree. Nevertheless, the rather obstreperous label executive did the band a favour because the resultant raw sound, with stripped production values and now understandably less-than-considered performances was what

made the final LP so revolutionary. 'It's so bad its good', as it were. And doing so, the band almost accidentally opened a brand new door into a host of new heavy metal sub-genres: black metal, thrash et al.

Now you can find this important album within a large box set called 'In Nomine Satanas' that features the original recordings, on the Neat label, from their 1981 debut 'Welcome To Hell' to 'Eine Kleine Nachtmusik' and the live recording of their appearance at the Hammersmith Odeon in 1985.

All of the albums are remastered from the original tapes with embossed covers, posters and inserts – as on their original first editions. Coloured vinyl is seen throughout. There's also a book, a double vinyl pack of rare demos, a Planchette shaped 7" picture disc single, a 'Seven Dates Of Hell' tour poster, reproduction 'Seven Dates Of Hell' tour programme and Venom's legions back patch. The first 300 orders from the official store will also receive a signed art card.

As for the mastering of 'Welcome to Hell'? For music that produces so much noise, it's remarkable how little has been produced by the mastering and pressing. The demo approach has achieved its own level of sonic purity because there's no obvious EQ added to the mix. This is a very neutral mastering performance, although imagery is intriguing. For example, the general cut of the album itself is almost wholly focused around the 'stereo' image, giving a mono cut feel to it.

We already know that this album was basically a collection of demos. The entire album may have been taped onto one track, for all we know. I'd love to know the precise recording history behind this one.

The next LPs, 'Black Metal' and 'At War With Satan' do move the soundstage left and right to a degree. They're still a bit on the shy side but a more expansive vocal performance is a notable result of this broadening effect. Maybe the original idea on 'Welcome to Hell' was to produce a claustrophobic, intrusive and tense presentation.

Apart from that, there's no nasty frequency excursions here. Everything is where it should be so listening pleasure is not strained at all and detail is plentiful. **PR**

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