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Jon Myles, Martin Pipe



I should know what's going on here, but sometimes – no, quite often – events have a way of leaving me non-plussed. As I pored over reader David Lord's impressively thorough look at the balanced connection of pick-up cartridges, why we need it and how to do it – see page 90 – an e-mail slid into my in-box from ex-contributor and hi-fi expert extraordinaire Richard Brice. Richard's role in this tale might not be obvious until you start to delve into what he has to offer in his software programme Stereo Sauce, which I review on page 22.

In the end both these men seek to get the best from LP through, ultimately, the moving coil cartridge. What I haven't told you yet is that in Part II of David Lord's article next month we will be publishing a super-quiet phono stage design he has built successfully and from Richard Brice I hope we will get another super-quiet phono stage – but this one has a digital output. The poor man is desperately trying to get a pre-production sample completed for us, so fingers crossed.

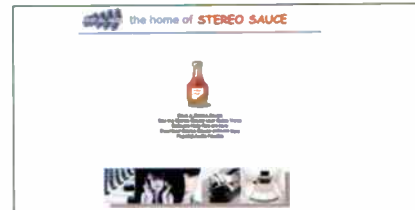
All of which is to say that I hope you enjoy this month's two intriguing LP articles – for want of a better description – and that next month you will enjoy us delving even deeper into vinyl replay.

I hardly dare mention the subject of digitally-applied RIAA correction – a blasphemy to those of the analogue faith – but I will mention it all the same. No, I haven't an open mind – but I'm trying! Richard Brice swears it works.

Digital is getting so complex we could not see how to cover it all in one "Beginners Guide to Digital" article that readers have asked us for. But after long discussion we did come up with what I believe is a great feature on running a modern digital system from your armchair, one that plays anything – MP3, CD, high-resolution – over a normal hi-fi. To the point, but jargon free, I feel Jon Myles succinctly describes its benefits whilst avoiding techno-babble. You can find it on page 57.

So whilst I watch another issue slowly put to bed – an issue I hope you enjoy for its left-field funnies as well as straight and serious reviews – I'm dreaming about the next issue and what we have in store for you.

Noel Keywood
Editor



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verdicts

●●●●●	OUTSTANDING
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●●●●●	GOOD
●●●●●	MEDIOCRE
●●●●●	POOR
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extremely capable
worth auditioning
unremarkable
flawed
keenly priced



testing (see www.hi-fiworld.co.uk for full explanations of all our tests)

To ensure the utmost 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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Revolution XT

Revolution in design. Revolution in sound.

Revolution XT lives up to its name, marking a major leap forward in loudspeaker design and the realisation of some of Tannoy's most radical and forward thinking technologies.

Retaining the classic trapezoid shape from its multi award-winning predecessor, the new Revolution XT cabinets now feature a radical reflex-coupled dual-cavity design. This optimises performance of the all-new Omnimagnet™ Dual Concentric™ driver across extremely low to mid-bass frequencies. The complex internal design is further perfected with an integrated plinth that provides a uniform and predictable low frequency interface to the listening environment, delivering the deepest bass notes with ease.

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DEBUT CARBON NEWS

The Debut Carbon DC takes the existing Debut Carbon design and replaces the captive mains lead with a detachable DC power supply adding convenience to the set-up and also allowing for the use of a new lower voltage motor.

The DC version also utilises an AC generator board that will give the Debut Carbon motor a cleaner electrical supply than its predecessor. On top of the seven high-gloss finishes the original Debut Carbon was available in, the Debut Carbon DC also comes in a high-gloss purple.

Finally, the Debut Carbon Phono USB integrated phono stage is designed to complement the pre-fitted Ortofon 2M Red cartridge. Now you can hook-up to a pair of powered speakers or go straight into a line input on an amplifier with no additional boxes or cables needed. The additional USB output means you can also transcribe your vinyl to a connected computer, allowing you to enjoy your vinyl in a digital format. The USB output runs alongside the analogue output so even when recording to PC you can still enjoy the record through your main hi-fi system.

The Debut Carbon DC is available in black, blue, green, light grey, purple, red, white and yellow for £325. The Debut Carbon Phono USB is available in black, red and white for £399.

Call 01235 511166 or log on to henleydesigns.co.uk for more information.



CHORD APP

Chord Electronics audio streamers, the DSX 1000 (£7,500) and the CodeX from the Choral Series (£4,500) have been given a new free control app, Chord 2 HD. The new app, which is available for both the iPad and iPhone, will initially be available on iOS 8.0 and above, with an Android version to follow. Chord 2HD brings a number of improvements over Chord's debut control app (Chord HD), which will remain available for older devices.

The new Chord 2 HD has been designed with a strong graphical focus with album artwork featuring throughout. A wide range of functionality has been added including a search function plus improved internet radio and media browsing.

Further features include volume control, playlist composition and editing and a cue in function. The app also allows users to 'push' local content on devices to Chord's streamers over a network, enabling the playback of visitors' audio content for example. The free app is available now from iTunes.

For more information, call 01622 721444 or go to www.chordelectronics.co.uk



MCINTOSH TRANSPORT

McIntosh has launched the MCT450, a new SACD/CD transport. It offers digital balanced (24bit/192kHz), coaxial (24bit/96kHz), optical (24bit/192kHz) and DIN outputs when connecting to partnering system components. The MCT450 employs a DIN output for connection to selected McIntosh models such as the new D150 digital preamp.

The transport is compatible with all common disc types including: SACD; CD; CD-R and CD-RW (MP3 and WMA). A twin-laser optical pick-up aids disc-reading, while 2x read speed provides improved data-reading from damaged discs.

Further features include a premium aluminium die-cast

CD tray plus power control and data ports to control the unit's operational state via other McIntosh system components. The entire unit is housed in a classic McIntosh-styled polished stainless steel chassis with a black-glass front panel and brushed-aluminium end caps. The MCT450 sells for £4,495.

Call 01202 911886 or go to www.mcintoshlabs.com for more information.

SONY'S NEW PORTABLE WIRELESS SPEAKERS

Within their compact designs, Sony's three new wireless speakers (SRS-X11/SRS-X33/SRS-X55) feature Bluetooth and NFC support enabling you to connect your smartphone, tablet or laptop to the speakers and stream your music wirelessly. You can also use them as speaker phones.

Both the SRS-X33 and SRS-X55 feature Sony's new LDAC audio technology which allows Bluetooth transmissions to carry up to three times more data than existing codecs, enabling you to minimise the compression of your music files when you stream them wirelessly. Sony's S-Master, DSEE (Digital Sound Enhancement Engine) and ClearAudio+ technology, together aim to improve sound quality still further.

Price for the SRS-X55 is £159, the X33 is £129 and the X11 is £69. Click on www.sony.co.uk for more information.



ONKYO MUSIC PLAYER

The new DAC-HA300 DAC/headphone amplifier/SD player from Onkyo includes a slot accommodating up to 128GB of music stored on microSD, an OLED screen and playback controls. The DAC-HA300 also serves as a self-contained media player and headphone amplifier, while a micro USB Type-B input enables asynchronous D/A conversion of hi-res audio from PC without need to install drivers.

The device also features a switching optical/coaxial/analogue input capable of accepting digital signals from connected devices up to a maximum 24bit/192kHz resolution.

The DA-HA300 dovetails with Onkyo's HF Player application for iOS and Android devices. When the DAC-HA300 is connected to the mobile handset, a free app upgrade to HD Player Pack enables output of hi-res PCM and 5.6MHz DSD files at native resolution to the DAC-HA300 for decoding and playback.

Constructed from durable aluminium and with a knurled volume control knob, bump protectors and positive action gain switch, it's available in black and priced at £499.

Call 08712 001996 or visit www.onkyo.co.uk for more information.

DENSEN DENDAC 50

Densen's new DenDAC50 uses an analogue Class A preamp stage, similar to the preamp stage found in the Densen B-275 pre-amp and based on Densen's 6W Class A amplifier stage. It contains a relay-driven attenuator, controlled by a microprocessor and offering a resolution of 200 steps.

Densen offers a USB, two sets of digital coax, SPDIF and two Toslink optical inputs plus an internal port that will allow you to mount a small PCB with a digital input. This is principally a future-proofing option to off-set upcoming, yet currently unknown, standards. The DenDAC 50 also contains three analogue preamp inputs. This allows analogue sources as tuners, TVs and tape decks to be connected. Pre-out outputs from the DAC allow connections to power-amps and other pre-amps. There is a fixed output, intended for preamps and a variable output allowing for connection to power-amps. Price is €4500 Mail to mail@densen.dk or click on www.densen.com for more information.

BBC LICENSED

Graham Audio has announced its BBC licensed LS5/8 Grade One monitor speaker. Designed in conjunction with Derek Hughes and Volt loudspeakers, the two-way passive loudspeaker features a bespoke 12" bass/mid unit and Audax tweeter matched to a handcrafted crossover built by Derek Hughes. The project was conceived to reintroduce the BBC design as a follow on from the Graham Audio LS5/9 monitor speaker.

The LS5/8 was originally issued as an 'active version' by the BBC using an in-house modified crossover card fitted to the vintage Quad 405 amplifier which bi-amped the speaker. The new LS5/8 uses the same birch ply construction as the LS5/9. The cabinets are dampened and upholstered and feature the BBC lossy design principle. All Graham Audio's speakers are hand built and available in cherry, rosewood and ebony finishes. Custom colours are also available to order. All loudspeakers come as matched pairs. Price is £6,995 in the cherry finish. For rosewood add £225. Click on www.grahamaudio.co.uk or call 01626 361168 for further details.



LG P7 SPEAKER

A fully portable Bluetooth-enabled speaker, the P7 from LG offers a ten hour battery life, weighing in at 800g and driven by 20W of power.

The P7 can be controlled by up to three devices using the LG Music Flow Player Bluetooth app, available on both Android and iOS devices. Features include tailored recommendations, playlist management, group play and quick launch access to Spotify, Deezer, Napster and Tunein radio.

For added convenience, multiple P7 speakers can be grouped together by selecting the 'Link' button within the Music Flow Player BT application. The speakers will pair together. Owners of LG's 2015 Smart TVs can also pair one or multiple P7 speakers together to produce their own surround sound home cinema set-up. Available in silver, black and white, the price is £130.



BLACK RHODIUM ARIA

Black Rhodium's new ARIA DCT++ CS interconnect is treated with DCT++-cryogenic treatment, involving temperature processing above and below room temperature. The DCT++ process alters the molecular structure of the cable to improve uniformity.

In addition to DCT++, ARIA DCT++ CS is also treated with the Crystal Sound Process, which refocuses the outermost skin of the conductor. The result is that the surface of the conductor is more closely packed and regular and has a continuity that aids conduction through removal of voids left by the drawing process.

'Transient Phase Distortion' is reduced by using thicker insulation than is usual in interconnect cables, increasing the distance between conductors. This reduces the magnetic field seen in each conductor wire as a result of the magnetic field created by the current in the other conductor wire.

Stereo terminated with rhodium-plated RCA connectors from £800 (for 0.5m), digital terminated with rhodium plated RCA connectors from £500 (for 0.5m), stereo pair terminated with rhodium plated XLR connectors £1000 (for 1m) and digital terminated with rhodium plated XLR connectors from £600 (for 1m).

Call 01332 342233 or visit www.blackrhodium.co.uk for more information.



NUPRIME UDSO

The American-based company NuPrime has released a USB-powered portable DAC and headphone amp. It is capable of decoding sample rates ranging from 44.1kHz to 384kHz (PCM) as well as native DSD decoding ranging from DSD 64 up to DSD 256. The uDSO is equipped with one coaxial S/PDIF and 2V RCA analogue outputs. The headphone circuit, built on a balanced design, provides the uDSO with the ability to drive almost any of today's headphones. Since no external power supply is required, you can employ the NuPrime uDSO with a laptop. Price is \$179.

Write to sales@nuprimeaudio.com or go to www.nuprimeaudio.com for more information.



QUADRAL ALUMA 2200

The new Aluma 2200 consists of four identical satellites that serve as the front and surround-sound speakers plus the horizontal centre speaker. Aluminium housed, the centre and satellite speakers use closed cabinets, whereas the compact Qube 7 active subwoofer has a bass reflex design. The integrated power amplifier produces a nominal output of 70W. Price is £550.

Click www.nunudistribution.co.uk or call 0203 5442338 for more information.

NOBLE AUDIO BLUETOOTH SYSTEM

Noble Audio, in-ear monitor specialist, has launched a new Bluetooth system (BTS) for wireless headphone users. It wirelessly connects phones, tablets, laptops and more to existing headphones.

The BTS is an external system weighing 10g and offering at least seven hours of continuous music playback or talk time. The BTS system features Bluetooth 4.0 and aptX CODEC technologies, as well as an omnidirectional microphone with push-button controls.

The BTS system charges in two hours over micro USB-B and has a range of up to ten metres. Further features include multipoint connectivity (connection to two devices simultaneously), auto pairing, battery life display information on most connected iOS and Android devices and push-button commands. It comes supplied with a 38cm cable compatible with Noble IEMs. Price is £69.

Write to contact@nobleaudio.com or click on www.nobleaudio.com for more information.



EVO3 SEQUEL

The new EVO3 Sequel power cable from Istock differs from the entry-level EVO3 Premier power cable by featuring optimised conductor strand geometry and active shielding. The Sequel comes in a standard length of 2m, compared to the Premier's 1.5m.

Like the Premier, it uses silver-plated oxygen-free copper conductors twisted together to aid EMI/RFI rejection, but in the Sequel the conductor geometry features optimised thickness of the individual strands. The Sequel also incorporates 'active' shielding under its PVC outer sheath, similar to that used in IsoTek's more costly cables.

The EVO3 Sequel is IsoTek's second-tier power cable, slotting in between the entry level EVO3 Premier and the mid-level EVO3 Elite. Price is £199.95 for a 2m terminated cable.

Click on www.isoteksystems.com or call 0118 981 4238 for more information.

Luna Landing



PrimaLuna's DiaLogue HP integrated amplifier aims to combine the great sound of valves with convenience and versatility. Jon Myles assesses its strengths.

PrimaLuna has made a name for itself since the company launched at the dawn of the millennium. Founder Herman van den Dungen's aim was to manufacture valve amplifiers that were both affordable and as reliable and simple to operate as their transistor counterparts.

Its initial series of integrateds

achieved that goal – the ProLogue One debut product garnering an enthusiastic recommendation from ourselves way back in 2004.

Since then the range has expanded to include pre-amps, power amplifiers and even CD players. Indeed, the ProLogue Premium CD player is a particular favourite of mine – combining valves with a very good DAC section and a sophis-

ticated USB input which utilises the M2Tech hiFace interface to produce a fluid and involving sound.

At the top of the PrimaLuna tree, though, is the DiaLogue range – and the new Premium HP is the flagship integrated amplifier priced at £3598.

The HP in the title stands for high power – and here things get interesting. Because the Premium is designed to be used with a variety of

output tubes.

In its standard form it comes supplied with eight EL34 valves. But buyers can instead opt for KT88s, KT120s or even KT150s if desired. As the DiaLogue features auto-biasing changing between differing tubes is as easy as flicking a switch on the side of the chassis. Choosing the wrong setting is said to do no damage to the amplifier – apart from in terms of performance.

In front of the output tubes sit six 12AU7 driver valves – which PrimaLuna claims gives lower distortion and greater bandwidth than the four used in their ProLogue models.

The DiaLogue also gives users the choice of using their chosen valves in either triode or ultralinear mode – which can be switched on the fly via the remote control for easy comparison.

Style-wise the DiaLogue is typical PrimaLuna – an understated black (or silver) chassis with a curved valve cover incorporating glass sides, and a rear housing that encloses the in-house, hand-wound transformers. Alongside the tubes sits a bank of small lights that illuminate when a valve needs replacing.

The front fascia features rotary volume and input selector controls, a headphone socket as well as the power-on indicator with two small lights above to indicate whether triode or ultralinear mode is in use.

Round the back are five unbalanced RCA inputs, a home theatre pass-through option as well as a subwoofer output and 4 and 8 Ohm loudspeaker outputs.

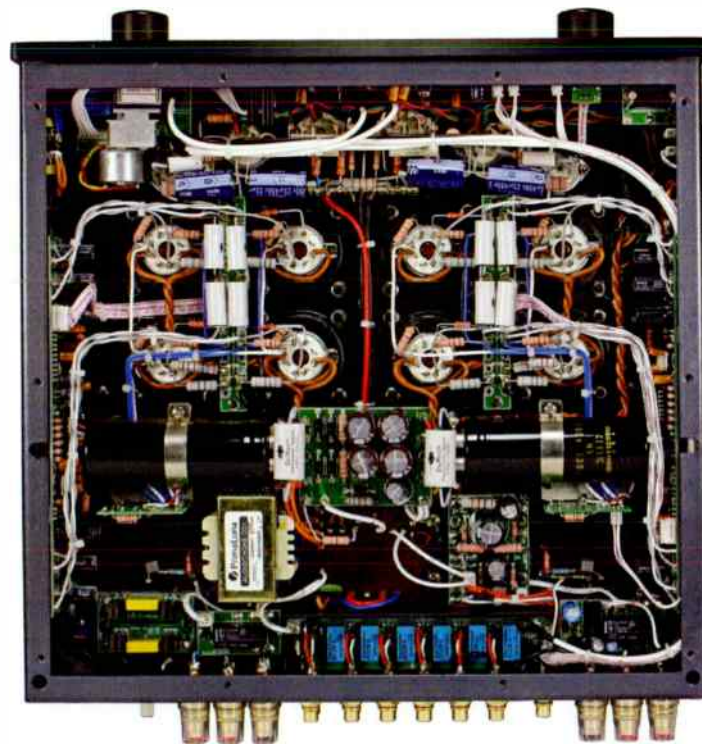
Inside PrimaLuna uses relay-based input selection alongside French-made SCR tinfoil capacitors in the critical signal paths and an ALPS Blue Velvet motorised volume control.

The fully-featured remote gives access to volume, input selection as well as ultralinear/triode switching and other functions.

Although relatively compact at 15.9" x 8.1" x 15.2" (WxHxD), the DiaLogue still weighs in at a hefty 30kgs (66.3lbs) – a testament to its substantial build quality.

SOUND QUALITY

Faced with the choice of valves we opted for the robust KT88s – whose output was more than enough to drive our reference Tannoy Definition DC10 Ti loudspeakers using the 4 Ohm 'speaker connections.



Internal wiring uses silver-plated, oxygen-free continuous crystal (OCC) copper with a Teflon dielectric while all inputs are relay-based to minimise crosstalk.

At switch-on the PrimaLuna defaults to ultralinear mode – which was how I started listening.

With Goldfrapp's 'Let It Take You' there was a dynamic, forward nature to the DiaLogue that is not what I'd always expect from a valve integrated.

Bass notes had emphasis while the rhythmic piano sounded vibrant. Here the PrimaLuna seemed tuned to impress with a determinedly exciting sound.

Switching to triode operation on the same track, things took a slight step back. There was not the same forcefulness, but the music was more relaxed, with a greater sense of organic flow. Here the piano had improved midrange tone and body while the bass – while not as prominent – sounded much more natural.

The same goes for the driving jazz of 'Rooster Was A Witness' from

the Neil Cowley Trio's 'The Face Of Mount Molehill' where the staccato drum backing is placed in perfect proportion to the rich keyboard melody. The DiaLogue also handles the switch from the quiet passages to the more raucous sections with aplomb – never seeming phased even when the volume is turned up.

The DiaLogue didn't grip the big Tannoy's with the conviction of a similarly-priced transistor amplifier but it makes up for that with a smooth musicality and – especially in triode mode – an easy-going nature that can be beguiling.

The lush jazz/electronica sounds of Jan Garbarek's 'In Praise Of Dreams' seem almost made for the PrimaLuna's talents. Garbarek's saxophone was tremendously well etched, while the subtle backing sounds were richly detailed without ever being too intrusive. All in all,



The PrimaLuna DiaLogue's rear panel includes five RCA inputs, a home theatre pass-through, subwoofer output and 4 and 8 Ohm loudspeaker outputs.

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HiFi World, Awards Edition Jan 2015



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it was a sonorous and sophisticated sound that swept over me in a wave.

Not that that means the DiaLogue can't put its foot down when required. Feeding it more raucous material it was not afraid to raise itself to the task.

On Skunk Anansie's 'Hedonism (Just Because You Feel Good)' Skin's voice is dripping with emotion while the drums had a real thwack to them. Importantly the instruments were portrayed in realistic proportion, with a lifelike soundstage and good sense of scale. Timing was also commendable, the DiaLogue tracking

To produce high power, two output pairs are used per channel - eight valves in all. We chose to use KT88s, seen here.



EL34 POWER OUTPUT VALVES

Swapping out the KT88s for EL34 power valves proved a fascinating experience. While I lost some of the former's glorious midband creaminess, the latter brought an extra degree of definition and detail to the sound.

On Antonio Forcione's 'Meet Me In London' there was an extra snap to the leading edges of the notes which strengthened vibrancy of the sound.

Sonic images were starker and the EL34s pushed the music a little further toward me than the KT88s. This characteristic would suit those looking to hear right into the mix of a recording.

They do lose a little in the low end though – not having quite the rounded, resonant character that the 88s bring to the party. Having said that, Squarepusher's 'Damogon Furies' didn't lack for bass power, sounding suitably forceful.

Switching between Ultralinear and Triode mode, I once again had a firm preference for the latter - the delivery sounding smoother and more organic. Having said that, if you are looking to play music seriously loud then Ultralinear undoubtedly carries more power.

So which valve to choose? It's impossible to make a definite recommendation – it all depends on which presentation you prefer and the kind of music you like to listen to.

But that's the beauty of the PrimaLuna DiaLogue; it gives you the choice and makes it easy to switch valves. And, of course, you could also buy both sets of tubes and swap between them depending on your mood!



the beat extremely well with a pleasing tempo to the overall sound.

In the final analysis the PrimaLuna perhaps isn't the creamiest valve amplifier you'll ever hear – others have a slightly richer midband and a more mellifluous overall sound.

But the DiaLogue, by contrast, is extremely adept at highlighting details in a recording. In New Order's 'The Perfect Kiss' I could hear the subtle cymbal taps that underlie the main electronic melody – something other valve amplifiers commonly fail to pick out. But it does so without losing any of the richness and depth that makes the track such a joy to listen to.

CONCLUSION

As easy to use and maintain valve amplifiers go the PrimaLuna DiaLogue takes some beating. The option to use a variety of output tubes also offers the user great flexibility in tailoring the sound to their personal taste – as does the ability to switch between triode and ultralinear mode. Add in fine build quality and it offers fine value for money at the price.

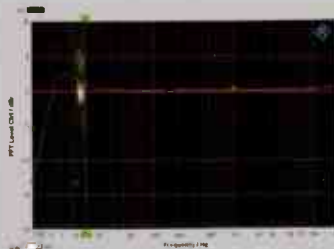


Ultra-linear or Triode mode can be selected from the remote control.

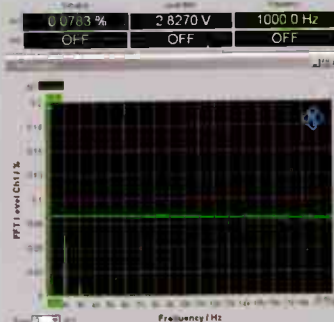
MEASURED PERFORMANCE

In Ultra Linear (UL) mode power measured 78 Watts into 8 Ohms for 1% distortion limit, and 72 Watts into 4 Ohms, so the 4 Ohm tap is slightly

FREQUENCY RESPONSE



DISTORTION



lower in coupling efficiency, since both should produce the same power. The amplifier meets its quoted power specification of 73 Watts (1% thd / KT88s). Full power was achieved at bass frequencies. Switching to triode mode the figure fell, as expected, to 36 Watts.

In the midband UL distortion was low at low power levels, measuring 0.08% at 1W, 1kHz for example. It rose steadily with increasing power output however, and was higher at low and high frequencies too. Bass distortion measured 0.4% at 1W, for example, but close to full output it had risen to 1%. Although this result isn't uncommon in valve amplifiers, better is possible, if from monoblock amplifiers with bigger output transformers. Triode mode was slightly more linear throughout its output range, and second harmonic predominated.

In Ultra Linear mode frequency response peaks up by +1.5dB at 40kHz our response analysis shows, and this causes rising upper treble in the audio band, suggesting a slightly bright sound. The effect was identical with 8 Ohm or 4 Ohm loads fed from their respective taps.

There was some low frequency peaking too, bass rising by +2dB at 8Hz and this also produced some in-band lift that will strengthen bass. Peaks like this subtly affect sound quality.

Circuit conditions changed for the better in Triode mode, frequency response becoming flat and smooth.

Damping factor was very low, measuring 1.5, so the HP will not exert much electrical damping, being best used with loudspeakers having good acoustic damping.

The DiaLogue Premium HP measures well, but it does not excel in Ultra Linear mode. It behaved better in triode mode and is likely to sound smoother and more balanced here. It offers plenty of power and valve flexibility in a smallish package, as valve amplifiers go, ignoring weight. NK

Power	78/36watts
Frequency response	14Hz-26kHz
Separation	80dB
Noise	-92dB
Distortion	0.1%
Sensitivity	400mV

**PRIMALUNA
DIALOGUE HP
£3598**

EXCELLENT - extremely capable.

VERDICT
Fine-sounding valve amplifier that offers great versatility along with easy maintenance.

FOR
- smooth triode sound
- choice of tubes
- autobias function

AGAINST
- ultralinear mode slightly forward
- bass not the deepest
- tough competition

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In Its Element

Leema's Elements CD is one of those rare things nowadays - a basic, no-nonsense silver disc spinner. Jon Myles puts it to the test.



Despite first making its name with the diminutive Xen mini-monitor loudspeaker some 17 years ago, Leema is probably best known nowadays for its comprehensive range of electronics.

Its Tucana and Antila amplifier and CD player have garnered consistently good reviews and brought the Welsh-based company a loyal following among audiophiles.

But bought together in their latest guises those two units would cost you upwards of £6000.

So for those looking to experience the Leema sound at a lower price point there's the Elements series - the manufacturer's entry-level series of components.

The full range includes an amplifier, phono stage, DAC, power amplifier, pre-amplifier and the

Elements CD player on review here which sells for £1295.

They differ from their more expensive brethren by being housed in compact half-width casings reminiscent of Cyrus.

That means the Elements CD measures a compact 217mm x 90mm x 375mm (W/H/D) although despite its small size it feels reassuringly

solid. The draw-loading transport mechanism slides in and out without any undue mechanical noise and disc reading is quick.

Inside the Elements features Leema's latest Quattro-Infinity DAC technology which utilises four 24bit/192kHz feeding balanced input analogue filters.

The sculpted metal front panel



The rear panel unusually features twin pairs of unbalanced RCA and balanced XLR outputs.

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VERDICT
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contains a blue display panel flanked by small control buttons for standby, scan, play/pause, stop/eject and repeat. The latter also gives access to Leema's proprietary LIPS system – which allows the CD to control other control other of the company's products when used together.

These functions are replicated on the supplied system remote which also has the facility to turn the illuminated display off if preferred. On the subject of which, while the display is perfectly legible close-up it is a little hard to read across the room

The rear panel contains coaxial and optical S/PDIF outputs for using the Elements as a transport feeding an external DAC and, unusually, twin pairs of balanced XLR and unbalanced RCA connectors.

In regard to these the RCAs output is a lowish 1V – compared to the 2V on almost all other players (Red Book standard). This is done by design with Leema saying "In the Constellation amplifiers (Tucana etc), we attenuate the CD input by 6dB to obtain a better level match with other sources. As all inputs on the Elements range are identical, we chose to reduce the CD player output to 1V to better match other sources without attenuation" (see Measured Performance for more details on this).

Despite the slight niggles over the display the Elements is a well-built and handsome-looking unit whose small size could well appeal to those who prefer their hi-fi not to dominate their living space.



SOUND QUALITY

Connected to the punchy Creek Evolution 100A integrated amplifier driving our reference Tannoy Definition DC10 Ti loudspeakers the Leema immediately shows itself as a rather smooth performer.

It has an easy-going, fluid sound that never seems overly forced or digital.

On Alabama Shakes' 'Heartbreaker' Brittany Howard's vocals are suitably rich and emotional.

Refreshingly, the Elements also doesn't boom the bass out at you like some CD players. Not that it is lacking in low-end – but it's full, weighty and tuneful with no hint of flabbiness. It's a nice presentation that

makes music easy to listen to.

However, there's a sense that the Leema isn't quite extracting the same amount of detail that some other disc spinners manage.

Put on Apex Twin's 'Syro' and some of the subtle electronic details which give the tracks their essential atmosphere are slightly masked.

Similarly with Goldfrapp's 'You Never Know' the brief silences between the stop/start sections at the start of the song are not as inky black as they could be, which robs the song of some of its drama.

On the plus side, though, timing and tempo are extremely good with a nice rhythmic swing to the music. And while there's not a great depth to the sonic image – music never extends very much to the front or back but seems planted firmly between the 'speakers – stereo placement is always firm and solid.

Playing 'Rockferry', Duffy's distinctive voice was fixed dead centre in front of me, with good separation from the backing instruments, while that assured timing means the Leema has a toe-tapping element (no pun intended) to its sound.



Inside the Leema Elements uses a tray-loading CD mechanism and the company's latest Quattro-Infinity DAC technology.

CONCLUSION

Its lowish output aside, the Leema Elements CD is hard to dislike. It's not the most detailed or dynamic of players but makes up for that with a smooth presentation allied to assured timing and a sure-footed feel.

Its small form-factor is also a bonus for those looking for decent performance in a small package.

MEASURED PERFORMANCE

Our frequency response analysis, shows the Leema Elements CD extends smoothly to 21.4kHz, before output rolls down sharply due to the brickwall anti-

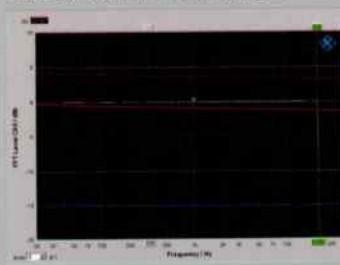
alias filters all CD players possess. Tonal balance of this player is accurate so it will not sound either warm or sharp.

Distortion levels were not especially low, XLR and Phono measuring 0.24% at -60dB against an average of 0.2% and a low of 0.18%. As a direct result EIAJ dynamic range was mediocre at 99dB, where 102dB is possible. The shortfall of 3dB is not massive by any means but the player falls below the best at the price.

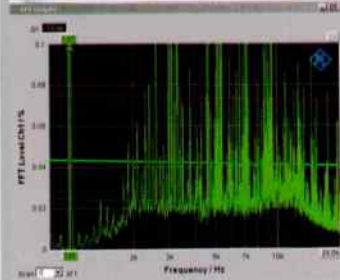
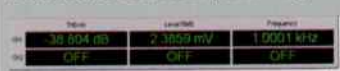
Output from the Phono sockets measured 1V and XLR gave 2.2V – both half normal; 2V/ 4V is expected. Low output likely explains the mediocre dynamic range value.

The Leema Elements CD was competent but unexceptional in its measured performance, low output being a peculiar limitation. **NK**

FREQUENCY RESPONSE



DYNAMIC RANGE (38.8+60)



Frequency response	4Hz-21.6kHz
Separation	116dB
Noise	-102dB
Distortion	0.24%
Dynamic range (EIAJ)	99dB
Output (Phono & XLR)	1V/2.2V

LEEMA ELEMENTS CD £1295



EXCELLENT - extremely capable.

VERDICT

Smooth sound with excellent timing. Lacks absolute definition and dynamics, however.

FOR

- timing
- smooth presentation
- compact case
- build quality

AGAINST

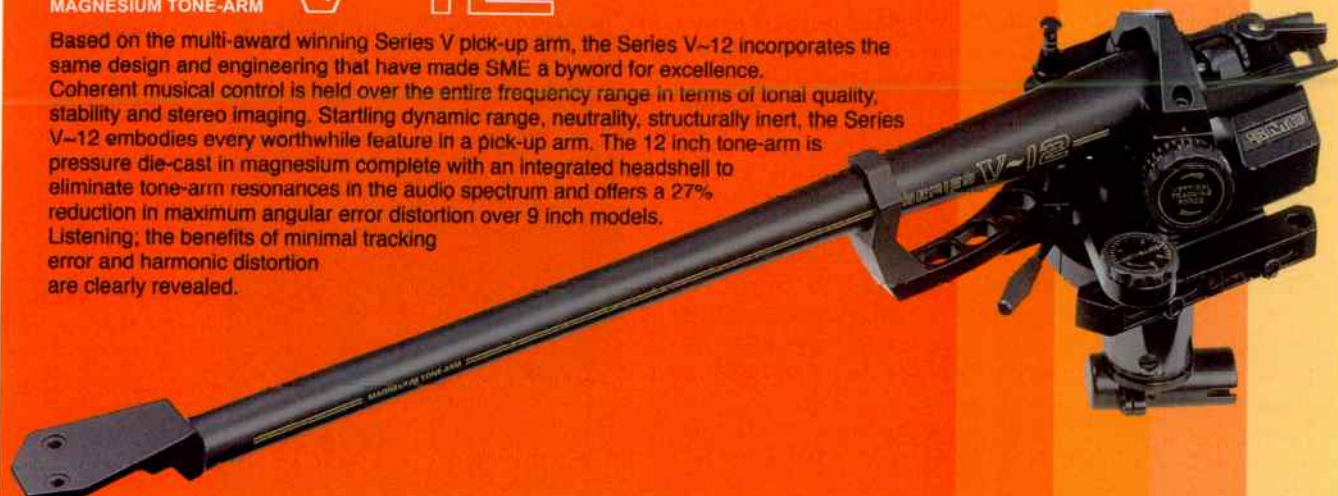
- low output
- not the most detailed
- dynamically restrained

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Duet DCT++ CS

Low Distortion Loudspeaker Cable



by Black Rhodium

"Compared to many high-end cables whose bulk and rigidity (or fragility) seem contrived to make their installation as arduous as possible, Black Rhodium's Duet DCT++ CS is a positive joy to hook up. But while the cable is unusually 'bendable' its sound has real spine – its bass powerful and robust while the treble is smooth rather than incisive or biting. Certainly one for the shortlist, the Duet's warm quality is suited to sharp-sounding systems."

Paul Miller, Hi-Fi News, March 2015



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Silver Service

Jon Myles plugs Tellurium Q's new Ultra Silver loudspeaker cables into his system – and comes away more than impressed.

Of all the cable manufacturers out there Tellurium Q is arguably the most secretive about the construction of its products.

While other companies are only too eager to wax lyrical about the various exotic materials and proprietary technologies they use, Tellurium Q stay resolutely silent – simply encouraging would-be purchasers to try them and make up their own minds.

So there's not much to tell you about the make-up of their latest Ultra Silver 'speaker cables – except they have the company's trademark ribbon design with the conductors enclosed in a thick mesh braid and terminated with sturdy Z plugs (spade termination is also available).

While this makes for a hefty construction it is conversely extremely flexible so easy to route around furniture or other obstructions.

Of the few things Tellurium Q will reveal about their cables is the fact that they are all engineered to combat the effects of phase distortion – an effect that can smear the sound and lead to errors in timing and accuracy.

That holds true across the entire range – but the difference with the Ultra Silver is that it has been voiced for greater detail and top end air and extension from, say, the Tellurium Q Black.

SOUND QUALITY

Did I say detail and extension? That's probably selling the Tellurium Qs a little short.

Plugged into a Sugden Sapphire FBA 800 amplifier the Ultra Silvers brought a level of clarity and resolution that was something of a revelation.

The Class A Sugden is no slouch in terms of detail but the Tellurium

Qs took its performance to another level.

Listening to the Cuban jazz of Robert Fonseca's 'Clandestino', the speed, control and timing of this busy track was impeccable. There was no muddying of the sound – instead a simple, pinpoint accuracy.

Fonseca's piano covers the full range and I heard it with all its rich, timbral weight; the soprano saxophone positively soared. The soundstage and focus was unerringly exact with no part of the sonic spectrum taking undue prominence over another. Instead, it was all in perfect balance.

On the ECM recording of Arvo Part's 'Tabula Rasa' the Ultra Silvers really do seem to have extended bandwidth, the reverberation of the strings having an ethereal quality I haven't really appreciated fully before. Listen to 'Cantus In Memory Of Benjamin Britten', the decay at the end of the track seemed to go on forever, so cleanly was it delineated.

Bass is perhaps leaner than on some other cables but it still manages to go deep. Playing The Chemical Brothers 'Block Rockin' Beats' my initial thoughts were that they might be a little light in the low end. But listening closer I realised the essential punch and power was still there – just without any of the unnatural boom that can often be mistaken for musical punch.

This quality also helped bring out extra detail in the midrange by laying a solid foundation that doesn't overwhelm. It also means the Tellurium Qs sound fast and pacy

when the music demands it – never letting the bass slur the tempo of a song.

The only caveat is that at £500 a metre the Ultra Silvers are not cheap – and with their extension and detail you'll really need a good system to hear exactly what they can do.

That aside, they really are exceptional.

CONCLUSION

I'm always wary of labelling any piece of equipment as the best I've heard – but it's hard to escape that conclusion in the case of the Tellurium Q Ultra Silvers.

They really do shine a new light on the sound – not just in terms of midrange detail and high-end extension, but also in the way they pull the various strands together into a coherent whole that times and flows just with absolute musical coherence.

No wonder Tellurium Q are so determined to keep the details of their design under wraps. After all, when they're this good why let anyone copy you?



**TELLURIUM Q
ULTRA SILVER
£500 PER METRE**



**OUTSTANDING - amongst
the best**

VERDICT

Exceptional cable that combines pinpoint timing with detail and frequency extension.

FOR

- timing
- coherence
- detail
- frequency extension
- build

AGAINST

- not cheap

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Blue For You

Blue Aura's slim X40 loudspeakers not only feature active operation – they also boast Bluetooth connectivity. Jon Myles listens in.

If there's one technology which is making ever greater in-roads into the mass hi-fi market then it has to be Bluetooth. Once seen as prone to glitches and inherently shaky, improvements in stability and sound quality mean it is now a fully-fledged and legitimate music-carrying medium.

No surprise then, that we are seeing an increasing number of Bluetooth-equipped headphones, amplifiers, network players, streamers and all-in-one systems. And now you can add floorstanding loudspeakers to that list in the shape of the X40s from Cambridgeshire-based company Blue Aura.

It makes a sensible proposition: after all, what's not to like about a pair of speakers you can stream your music to from a mobile, tablet or computer?

If you haven't heard the name before, Blue Aura was founded in 2010 to specialise in wireless and Bluetooth 'speaker systems and now boasts an impressive range of products, the X40s being one of its top models coming in at £699.

For that you get a pair of slim but attractively-styled loudspeakers standing 865mm tall but just 112mm wide and 145mm deep. The cabinet is made from MDF clad in a faux leather covering which adds an undeniable air of class to the package.

Behind the metal fascia grilles are a pair of 87mm paper cone mid/bass drivers coupled with a 20mm soft dome tweeter all powered by a Class D 35 Watts per channel amplifier.

The right 'speaker acts as the master and is connected to its partner by a supplied cable. Apart from Bluetooth with aptX, the X40s also feature a pair of standard RCA analogue inputs, a single optical digital input and also a sub(woofer) out for those wishing to add more bass. A simple but effective multi-function remote control completes the package.

SET-UP AND USE

Set-up is simplicity itself. Merely plug the attached wall wart-type power supply into the right 'speaker, connect it to the left loudspeaker via the supplied cable and then pair your Bluetooth device – be it mobile 'phone, tablet or laptop/desktop computer. I used the X40s with a variety of different devices - including both Apple and Android mobiles – and it found them all within seconds;



I never once experienced any drop-outs during the review period.

SOUND QUALITY

There's no denying that Blue Aura has designed the X40s with the lifestyle market in mind – with an obvious emphasis on looks and ease of use. But, thankfully, that doesn't mean sound quality has taken a back seat.

There's also no denying the fact that well-designed active 'speakers have some obvious advantages over their passive counterparts. Coupling

while that slight warmth gives the speakers an overall creamy, sophisticated sound.

Push them really hard and you will start to hear their limitations. Big orchestral crescendoes are a little short of the power really needed while at really high volumes the sound does start to harden and collapse.

And, obviously for a 'speaker this size, you are not going to get seismic bass. But anyone looking for that could easily take advantage of the subwoofer output to beef up the

Which is why I can see the X40s gaining a lot of converts – and I wouldn't be surprised if a fair few other manufacturers don't follow suit with their own, similar products.

"bass was firm and solid while that slight warmth gives the 'speakers a sophisticated sound"

the amplifier directly to the drive units means the designer can better integrate the parts to achieve the required sound – plus there are cost benefits in not having to house the amplifier in a separate metal box. The best of the bunch often have a power and punch not heard elsewhere.

And while the Blue Auras may be relatively slim, they are more than capable of throwing out a prodigious and convincing soundstage.

Playing ESG's 'A South Bronx Tale' via an iPhone 6 Plus, I found the bass was surprisingly firm with a nice bounce and definition to it. Higher registers were also pleasingly presented – with just the right amount of sparkle, without ever straying into edginess. In fact the Blue Auras sound gratifyingly clean and accurate.

If anything there's a slight warmth to the overall sound – which certainly helps on lower bit rate files by masking their deficiencies.

But with better quality material the X40s are good enough to show up the difference – especially if your device can take advantage of the aptX facility that adds extra air and definition to the sound. Listening to 'Spiritual' from John Coltrane's classic 'Live From the Village Vanguard' via an HTC Android device, the saxophone was sharp and detailed, the X40s

bringing out the leading edge of the notes.

Again, bass was firm and solid

low-end.

What the X40s are, though, is immense fun. Sitting on the sofa and streaming the punk/jazz hybrid of Acoustic Ladyland's 'Last Chance Disco' collection they really grabbed hold of Sebastian Rochford's pounding rhythms, driving the tracks along with a sure-footed assurance.

Yes, some £600 loudspeakers will offer deeper bass or a more exciting top end, but they won't have the Bluetooth versatility of the X40s and you'll still need an amplifier to drive them.



The rear of the master speaker (left) features a pair of RCA analogue inputs, an optical digital connection and a subwoofer output for those wanting more bass.

MEASURED PERFORMANCE

Frequency response of this little loudspeaker was impressively flat and even, showing effort has been put into the acoustic engineering, as well as all else. There is only the smallest dip in output at crossover around 3kHz so detail should be strong. At the same time the tweeter has not been peaked up to add bite or artificial enhancement of detail, so the X40 will sound tonally even in its presentation and balanced. Our result is off-axis, with the speaker pointed straight down a room and directly at listeners. On-axis there's just a small lift above 10kHz.

Bass extends down to 60Hz and then rolls down fast – there's little deep bass. The port peaks around 80Hz and does little to extended response downward. Although the X40 will not do subsonics it still goes quite low and bass will be sprightly. Placement against a wall will help lift low bass a little.

The S/PDIF digital input gave an

identical response to the analogue input.

Sensitivity was high, just 150mV giving 90dB sound pressure level (loud) at 1metre. Since most portable players can deliver double this (i.e. +6dB) the X40s can give 96dB with just about any player on the market, and this is very loud.

The X40s are well engineered to give an accurate sound, and they are sensitive. They will work best close to a rear wall. **NK**

FREQUENCY RESPONSE

Green - driver output

Red - port output



BLUE AURA X40
£599



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

A fine loudspeaker that mixes innovation with great sound and low price. Will appeal to many.

FOR

- Bluetooth
- slim design
- rich, warm sound

AGAINST

- not the deepest bass

Blue Aura
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Saucy sound

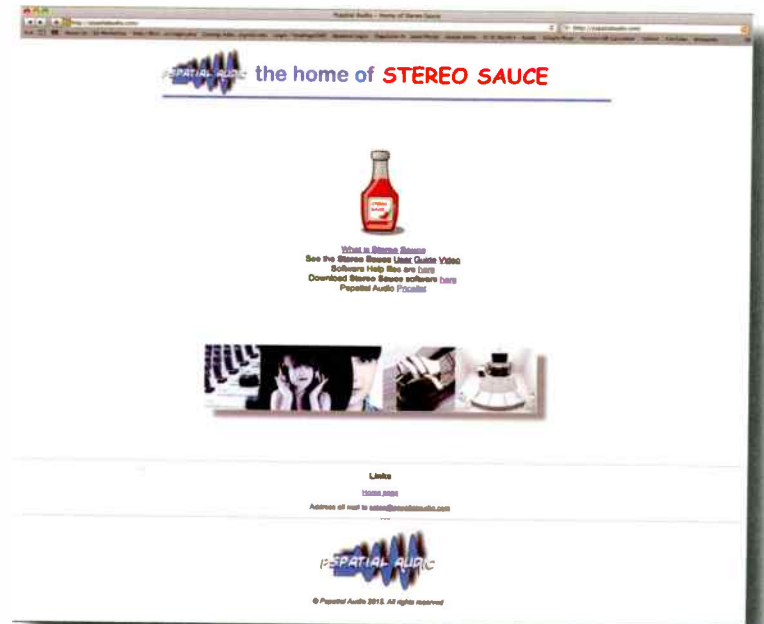
Noel Keywood tries out a software programme that manipulates stereo in many different and intriguing ways.

I think its best to explain the name Stereo Sauce to let you know what this review is all about. It's about 'stereo' meaning traditional two channel music, whilst 'sauce' is a play on words. It means two channel is the source, whilst this programme turns it into sauce – meaning a complex concoction! Get it? If you don't – don't worry. I had trouble too. Stereo Sauce is a bit of a brain teaser, not only in its name but in what it can do. But it is fascinating and fun. This computer programme from Pspatial Audio (<http://pspatialaudio.com>) can improve or convert stereo into many different forms. It turns headphone stereo into the sound you hear from a hi-fi in a room, it can convert stereo into surround-sound and it can modify or improve the stereo you get from LP, all through digital processing.

It does a lot more than this – and some of what it does is decidedly specialist – so I am going to describe only the more immediately obvious and attractive features of Stereo Sauce here, and leave some of the surround-sound, for example, to another time because it could fill a book.

And whilst I used Stereo Sauce successfully to ensure it works properly as described, the vinyl transcription function needs further review with special hardware. I will hopefully run through this again in more detail next month, if we get Pspatial's unique pre-amplifier in time.

The programme runs on Mac only, so PC users are left in the cold. Oh dear! It needs OS-X 10.7 (Lion) or higher, a multi-core Intel processor and 2GB RAM it is suggested. It comes in a number of differently purposed forms and



– importantly – there is a free fully featured demo version, limited by the fact that exported music files play for 2 minutes only. If you like what it does then there is a Home version for £29.00. There are also two 'pro' versions: Tonmeister and Audiophile, priced at £149.00 and £299.00 respectively – phew! This

will leave audiophiles gasping, so I will concentrate on the Home version.

Finally, to digitally equalise LP, as you can with Stereo Sauce, you need a phono stage without RIAA equalisation and such things don't exist, so a suitable phono stage is available – but this costs £2500. I will discuss this here, but review it in future.

Feature	Demo	Home	Tonmeister	Audiophile
FRANCINSTIEN FS1	yes	yes	yes	yes
Head Space	yes	yes	yes	yes
ARIA 51 (5.1 up-conversion)	yes ¹	yes	yes ¹	yes ¹
ARIA 20 (2.0 fold-down of ARIA 51)	yes	yes	yes	yes
RIAA correction	yes	yes	yes	yes
ANTI RIAA correction	yes	no	no	yes
Other phono EQs ⁶	yes	no	no	yes
Groove	yes ³	no	no	yes ²
Perfect Groove	yes ³	no	no	yes ²
FRANCINSTIEN	yes	yes	yes	yes
Bride of FRANCINSTIEN	yes	no	yes	yes
QS Quadraphonic decode ⁵	yes	no	no	yes
SQ Quadraphonic decode ⁵	yes	no	no	yes
UHI Ambisonics decode ⁵	yes	no	yes	yes
Blumlein δ (Binaural transcode)	yes	no	yes	yes
Crossed cardioid enhancement	yes	no	yes	yes
Klangwandler	yes	no	no	yes
Leq measurement	yes	no	yes	yes
Channel correlation data	yes	no	yes	yes
Track length limit	yes ⁷	no	no	no
Triangular PDF dither	yes	yes	yes	yes
Source sample rate	44.1 to 96kHz	44.1, 48kHz	44.1 to 96kHz	44.1 to 96kHz
Source bit depth	16 / 24 bit	16	16 / 24 bit	16 / 24 bit
Number of tracks	10 per filter	unlimited	unlimited	unlimited
Metadata detection	yes	yes	yes	yes
.WAV	yes	yes	yes	yes
Surround 6 channel files ⁴	yes	yes	yes	yes
Six mono files for 5.1	yes	no	yes	yes
Three stereo files for 5.1	yes	no	no	yes
.AIFF & .AIFF-C	yes	yes	yes	yes
.FLAC	yes	yes	yes	yes

This chart compares Home, Tonmeister and Audiophile options. Note that Home has been updated to 24bit processing.

To be clear, even when using this hardware phono stage, Stereo Sauce is all about manipulating computer music files, so if for example you want to use its digital equalisation function for LP you must first turn the LP to digital, then play it through the hi-fi via a digital file player of some description. This could be a streamer like the Cambridge Audio StreamMagic 6, a Naim UnitiLite, or in my case an Astell&Kern AK 120 portable player hooked up through its optical digital output. You could also play files off the computer through a DLNA ethernet link, or even a direct S/PDIF digital link if the computer is close to the hi-fi, or you have a portable laptop.

Before I go any further, here is a little background to put you in the picture. Pspatial Audio is the creation of Richard Brice, who has worked in audio, mainly on the studio side of things, all his life. Since this means in excess of 30 years you will find ideas in Stereo Sauce that go way back – unfinished technological business, as it were.

If you are under 30 years of age some of this is going to seem a tad mystical, and we will even be talking surround-sound as you don't know it: CBS SQ, Sansui QS and UH-J encoding, all of which dates back to 4-channel that appeared on LP in the 1970s.

But some of Richard Brice's concerns date back to before even his time, to EMI and stereo experiments carried out by Blumlein. Because Richard and I worked together before I started Hi-Fi World in 1991, I know where he is coming from in all this – and what he knows! He wrote a column for us in early issues and one of them, in the November 1993 issue describes Francinstien, whose functions now feature in Stereo Sauce.

Richard later went on to work with EMI on Sensaura surround-sound, so he has a long history in the business and is fluent both with recording technology and replay technology, especially top-end high fidelity.

Rather than list all the many functions available in each version, see the chart downloaded from the website, but this has now changed.

The Home version was limited to 16bit files, meaning CD quality, but this has now been changed to 24bit I am told. 16bit is not good enough to match the quality of a moving coil cartridge playing direct. Even current

24bit ADCs are noisy, but they get close to acceptable.

Testing for this review was done with the free Demo version so I worked in 24bit. Again, more of this later, because it can get very technical. I am looking mainly at the Home version here since, cost wise this is in most people's ball park.

The Home version has Francinstien, Head Space, Aria and RIAA correction. Audiophile adds in LP equalisation characteristics other than RIAA, Groove and Perfect Groove, Bride of Francinstien,

ripped from CD, or recorded from LP in the Home version.

Head Space is completely different to Francinstien. It imposes another process, that of the Head Related Transfer Function, onto the music so headphone listening sounds like listening to the hi-fi, meaning loudspeakers in a room. To be more precise, HRTF reverse compensates for the loss of aural ability you suffer when using headphones, because you cannot process inter-aural time delays, reflections from the shoulders or front/back positioning due to the



The Furutech Esprit preamplifier we used to convert LP to 24/96 high resolution digital. It fed a MacBook Pro via USB.

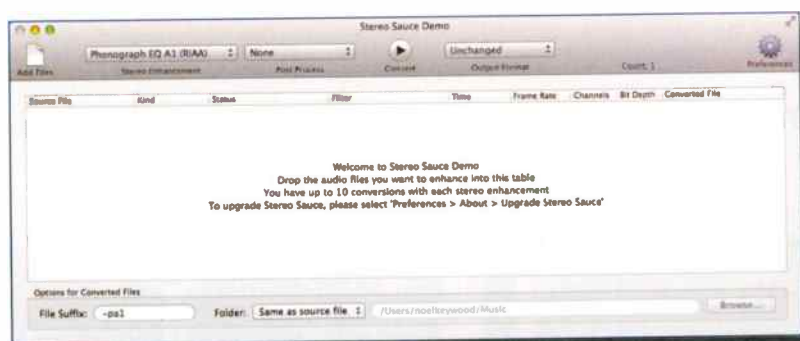
a swathe of old four-channel decode technologies and stereo enhancement. There is a Tonmeister version that omits some Audiophile features, as you can see in the chart.

HOME VERSION

The Home version shows the saucy side of Sauce: there is plenty in there

front/rear asymmetry introduced by the ear and used by the brain to determine front from rear.

Additionally, head space adds in a room acoustic, meaning reverb, of a typical studio control room it is said. Having been in many studio control rooms, I wince, but I suspect this is a notionally perfect one!



The user interface is stark, but simple. Add File at top left loads a digital file, you select a process then press the central Play button. The file is then altered accordingly – a new, updated version being generated.

and it is a rich mix!

Francinstien is a stereo image enhancer: it aligns the apparent position of high and low frequencies from singers and instruments across the sound stage, sharpening up image position. It is based upon psycho-acoustics, as is a lot of Richard's work. Francinstien works with files

So Head Space is all about headphone listening and will affect portable use. The idea is you process your music files through Head Space before loading them to the iPod (or whatever!) and they sound like your hi-fi.

Aria is where – technically – life gets very interesting. It is all about



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up-conversion of stereo to surround-sound, as in Dolby ProLogic II, but it generates a surround-sound file only playable in a surround-sound environment, an AV receiver or multi-channel preamp.

There is Aria 2 however, that produces in-head surround-sound no less! I've had this explained to me in detail in the past by Richard and the psycho-acoustics of it are fascinating.

And finally there is the package's finest achievement or greatest horror story – depending upon your outlook. I think a lot of modern techies won't get it at all and it had me in a lather too. Stereo Sauce can digitally equalise your LPs using what Richard Brice claims to be a superior digital methodology better than that found anywhere else. The suggestion is that you can hear your LPs better than ever before, due to the wonders of advanced digital processing.

The horror story in here is that you must first record your LPs 'flat' – meaning without RIAA equalisation – and, for all practical intents and purposes, there is currently no way of doing this. So you must buy a flat preamplifier and this Pspatialaudio can supply for £2500, with digital output.

The Home version of Stereo Sauce offered only 16bit quality, which limits LP quality to MM (moving magnet) cartridges that have intrinsically limited dynamic range, due to the considerable amounts of noise they generate. This does not apply to MC (moving coil) cartridges that have almost unlimited dynamic range. But now that Home processes 24bit it can be used with the special preamp and MCs.

As you can see there's an argument developing here (as in technical discussion) so I will stop at this point and explain what I did and what you may be able to do.

I used our cartridge measurement preamp, something I designed and built long ago, that has no RIAA equalisation (because post-equalisation is used to match that necessary for commercial test discs). It's output was fed into a Furutech Esprit preamp, via Line 1, that has an on-board 24/96 ADC.

Digital from the ADC was then recorded onto a MacBook Pro via USB, using the Audacity music editor. This set-up worked perfectly with

our Ortofon Cadenza Bronze MC cartridge, mounted in SME309 arm on Timestep Evo SL-1210 Mk2 DD turntable.

I did try feeding the Cadenza straight into the Furutech and using the digital Amplify function



Francinstien in original hardware form.

in Audacity to bring level up but inevitably there was a lot of hiss. However, with an MM cartridge like our Ortofon 2M Black the hiss subsided to a reasonably low level. So although this is not an ideal way of recording LP flat (without equalisation), it does work, at least well enough to run basic checks using the free Stereo Sauce download if you wish to do so. Oh what fun!

I recorded Mark Knopfler's 'True Love Will Never Fade', from the LP Kill to Get Crimson, because it is well recorded and cut to 200gm flat vinyl. With no equalisation I got a sharp sound with excess treble and little bass; this is what to expect with RIAA missing.

Once this has been saved in WAV, FLAC or AIFF form (I used WAV) it is then loaded into Stereo Sauce using the Add Files icon, or you can drag-and-drop. The programme processes it into a new file suffixed -pa, and it is saved back into the originating folder unless otherwise specified. In use it's probably best to set up an 'SS Processed' folder or such like, so you know exactly what is in it, keeping processed files separate from originals, to avoid confusion.

What I got was interesting. Transferred to an Astell&Kern AK120 and then run through our office system comprising Oppo BDP-104D Blu-ray player with ESS Sabre32 DAC, Sugden FBA-800 Class A amplifier and Tannoy DC10 Ti loudspeakers, which is where I usually play the LP, the presentation was quite different to that I am used to, through an

Icon Audio PS3 valve phono stage. It was drier, harder etched and more specific across the mid-band, clean in treble and less full bodied and warm in the bass. It wasn't the LP as I know it.

Because I used a special measuring preamp not designed for audio playback, I cannot make a definitive judgement on sound quality as yet, because my everyday analogue playback uses a valve phono stage whilst this digital system was all solid-state, and includes an ADC of course. Which is why I await the Stereo Sauce flat phono stage for a further review and will likely use an MC step-up transformer too. I have been told digital RIAA gives a different sound to conventional analogue equalisation and not everyone is happy it's better, but that's why Richard makes the point it isn't done properly, where in Stereo Sauce it is.

Processing this same digital file through Head Space did open out the sound on headphones and Aria 2 0 added a little depth, but then this depends upon what it can tease out of the original and I suspect the tack I used lacked out-of-phase data in the first place, being a modern very stereo-specific recording.

Also (via loudspeakers) I played 'True Love Will Never Fade' Stereo Sauce RIAA equalised, processed again through Bride of Francinstien to improve stereo imaging. If nothing else, this shows you how once a file becomes digital it can be processed in the most extraordinary fashion should you have the time and inclination, not to mention the computer power. The sound was focussed up as expected, at stage extremes.

CONCLUSION

Stereo Sauce was fascinating. It offers a lot of neat tricks that can be used to alter sound quality, on headphones and vinyl. The Home version in particular is good value, now it can process 24bit files. I suggest you give the demo a spin – and happy reading of Pspatial's website too!

NEXT MONTH

Next month we hope to be able to look more closely at digital RIAA equalisation of LPs, pending arrival of a flat preamplifier from Pspatial Audio.

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“Priced at £1499 the 100A is housed in the same slim-line cabinet as the company's 50A amplifier but inside things are significantly different. For a start the 100A has twice the power of its partner – pushing out 136 Watts per channel into an 8 Ohm

load and a massive 225 Watts into 4 Ohms.

To do so Creek has utilised a specially-designed Class G circuit which sees the amplifier running at a lower voltage for power levels up to 25 Watts and then switching to a secondary higher voltage above that level.

Round the back are five line-level inputs – although one of these can be converted to a phono stage with Creek's optional plug-in board. Completing the rear panel are a pair of balanced inputs, a ground post and two pairs of switchable loudspeaker binding posts which can be selected individually or used in tandem

– useful for those looking to bi-wire their 'speakers.

The front is pure Creek – a minimalist yet purposeful-looking brushed aluminium design bereft of unnecessary frippery. A rectangular OLED information display is flanked by eight backlit soft-touch control buttons with two metal rotary knobs on either side. To Creek's credit the controls are a joy to use – with the volume control in particular beautifully-weighted, making small adjustments in level tremendously easy”.

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QUESTIONS

[1] It produces how many Watts into 8 Ohms -

- [a] 100
- [b] 136
- [c] 12
- [d] 74

[2] What class of circuit is used -

- [a] Class A
- [b] Class A/B
- [c] Class G
- [d] Lower Class

[3] Is the front made of -

- [a] steel
- [b] wood
- [c] aluminium
- [d] plastic

[4] What sort of display is used -

- [a] glass
- [b] OLED
- [c] bright
- [d] holographic

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LETTER OF THE MONTH PRIZE



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Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of KEF Q100 loudspeakers.

Answers by: NK - Noel Keywood; JM - Jon Myles; PR - Paul Rigby; MP - Martin Pipe; RT - Rafael Todes;

For more advice see Letters from earlier issues at www.hi-fiworld.co.uk/letters

A pair of KEF Q100 loudspeakers are on their way to DAVID WOODS, Letter of the Month winner in our May 2015 issue.

Letter of the Month

OUT OF STEAM

Funny old hobby this hi-fi business! We spend large amounts of cash trying to achieve the impossible - replicating the experience of a live gig or classical concert, both of which use vast forces in enormous spaces - in our living rooms! Ludicrous! But there is no doubt that we are getting closer and closer to achieving this with hi-res downloads and vastly improved CD players and DACs.

I've been an aficionado of this hi-fi madness for well over 40 years and in this time have seen huge changes, some good and many not so (MP3 for example). I still enjoy a large amount of my music on LPs, having a huge collection (largely classical but love classic rock as well!) played on my heavily modified LP12 with DC drive, ebony plinth, Greenstreet sub-chassis etc, and an Origin Live Illustrious and Zyx Fuji played through top of the line Bobs Devices transformer and Audio-Note M3 phono stage.

CD is catered for by a Cyrus CDXtse with extra PSU and Chord Hugo - so I listen to mainly Linn Studio hi-res downloads through that - and very good they are too, as you confirm!

Pre-amp is your own World Audio transformer coupled preamp built with black gates, tantalums, stepped attenuator etc., AN silver cable and an Audio-Note M2 valve regulated HT supply.

Cabling is all high-end Chord Co and equivalent.



Zingali loudspeakers - made in Italy and stylish. These are Home Monitor 2.8s, similar to the Overture 3s owned by Anthony Parkin.

I use an Isotek Aquarius as well, which does its cleaning up the sound thing very effectively.

Speakers are Zingali Overture 3s - very popular with my wife because they look good!

Up until recently the power amp was a WAD 6550 built with top-end components (as per the pre-amp). Unfortunately in my 32 by 16 foot listening room the WAD runs out of steam quickly, making the sound shut-in and distorted (it's great at lower volumes).

As an experiment I bought a second hand Rega Maia which restored a lot of poise to the sound albeit with

some loss of clarity. I have considered Quad Platinums or even 11-40s but would value your opinion.

I want the Albert Hall in my living room! Sorry to ramble on and thanks for the help.

Anthony Parkin

Hi Anthony. That is a big room by any standard and I hesitate a little on this one. You see, to fill it with sound at concert level, which is what you appear to suggest, you will need not just a more powerful amplifier, but loudspeakers able to deliver high sound pressure levels without strain - and there aren't so many of

those about. Because it means a big loudspeaker.

In spite of what manufacturers claim, or appear to claim, about how loud their loudspeakers go, when I measure bass distortion of loudspeakers under review, 8in drive units start to distort quite strongly at low frequencies, typically 3% from drive unit and 8% from port (at 90dB SPL against the cone), whilst big 12in drive units consistently manage less than 1%. So let's say they produce 1/4 the distortion – 75% less. Since big drivers also dissipate a lot of heat in their bigger voice coils, this is the way to go.

All that is a pre-amble to explain why I hesitate to recommend you simply go out and buy a more powerful amplifier. I suspect your Zingali Overture 3s will start to struggle.

Now, if the Rega Maia power amplifier, which produces 85 Watts per channel, goes loud enough and the Zingalis sound fine then my fears are unfounded. In which case you either buy a modern 100W amplifier, of which there are many – think Creek Evolution 100A for example – or you consider a more powerful valve amplifier.

Traditional power output valves like KT88s deliver 40 Watts when operating as a push-pull pair so in parallel pairs they deliver 80 Watts – and this is about the power you seem to require. I love Quad II-eighties that use KT88s in an output pair and sound superb. They were designed by Tim de Paravicini of EAR



Zingali Overture 3s – "popular with my wife because they look good", says Anthony Parkin.



WAD 6550 valve amplifier produces 40W per channel but "runs out of steam quickly" in a big room, says Anthony Parkin.

fame and deliver far better results than rivals because of Tim's superb transformers and complex feedback arrangements.

Alternatives are available from Icon Audio who make some lovely high power amplifiers, and from Audio Research who, until recently, always used 6550s.

Now. Take a deep breath! If you really, really want concert hall levels in that room (as the Spice Girls might have said), you need big Tannoys. Something like the DC10 Tis we currently use to fill a 25ft x 18ft room, and terrorise our neighbours or any of the Prestige Series. The bigger the better – and Westminster Royal SEs would go down a treat. Remember that really big Tannoys develop huge volume from little power – you could keep the WAD6550, which is the important bit – but you may lose your wife when she sees the speakers! Your call. **NK**

ARM OR CARTRIDGE?

The vinyl in my collection is played on Systemdek XII with Origin Live Advanced Motor kit and Upgrade transformer. Turntable has the glass platter and I have a number of mats I experiment with. The tonearm is a Moth badged RB250 with Origin Live rear stub, currently carrying Audio Technica AT-F3/III cartridge. Amplifier is a World Designs KT88 plus their Phono3 (mc) and power supply. Speakers are Sonus Faber Concertinos.

Having recently disposed of some surplus small hi-fi items, I find myself with £500 to play with. Not wishing to add to my existing vinyl collection, I have been thinking what upgrade to my turntable I might achieve with this sum, and if this upgrade would yield a sonic improvement.

My mind immediately turned to a tone arm upgrade, with the Origin Live Onyx specifically in mind. When however I speak to two retailers I receive two totally opposed views. One agrees the Onyx arm would yield a considerable improvement, whilst the other suggested I forget the arm change and concentrate on a better cartridge. Can you help me please?

Kind regards and thank you

Michael Keck
Cambridge



Audio Technica AT-OC9 III is a well-developed and fine-sounding moving coil cartridge – a great upgrade for Michael Keck.

I agree with the other dealer, the one who thinks you should change the cartridge. A Rega RB250 arm still does a good job, even if Rega have tried to overcome criticism of its midband tonality within improved successors. It will handle a better unit than your current AT-F3/III.

The AT-F3/III moving coil cartridge was replaced some time ago by the AT-F7 and both lie at the bottom of Audio Technica's range. You need to look upward a little,



The FiiO X3 portable player has been upgraded and "looks hot" we say. However, although just £170 it isn't a match for the Astell&Kern Titan "which Amazon are flogging off at nearly half-price" says Simon Gregory.

to the much admired and popular AT-OC9. This has been progressively improved since its introduction and is now in III form as the AT-OC9III, or slightly less expensive MicroLine MLIII. It comes within your budget and is the one to go for, offering a firm, punchy sound with superb treble definition. Consider an arm change later on, when the piggy bank replenishes. **NK**

CARD SCAM

It appears that I have won the letter of the month for April 2015 – first thing I've ever won! Without being presumptuous I assume I have to claim the prize.

Many thanks to Noel for your supporting comments and you might like to know that I then went on to purchase an Astell&Kern 'Titan' model which Amazon are flogging off at nearly half-price.

This machine does take 128GB cards by the way although it is a bit slow when it has new tracks added and does the 'library update'. So – a potential and whopping 384GB in total! I've defaulted to 64GB cards anyway but it was an experiment worth doing as I had one to hand.

The FiiO X3 will also take 128GB cards as long as it is later firmware (3.30 I think), academic now as they've just replaced it with a new model I see.

Beware the 128GB card scam – anything under £70 is most definitely a fake, I've had one, so has someone else I know and both were from a well-known 'South American' supplier, both were bought at or around £70 as well (full refunds given in both cases).

They are easy to test using online software and that nearly always show 6.9GB as the real capacity, they are

pretty sophisticated in the way they fool your drives and they even persuade you to re-format in the vain hope it will suddenly work.

Kind regards,

Simon Gregory

Hi Simon. No, you don't have to claim the prize. We have your e-mail address – inevitably – will be in contact, and it is sent to you. It is a fairly straightforward process. The manufacturer who is providing the prize will contact you for a smooth delivery.

Your Titan at half price sounds like a great bargain. But FiiO X3's update looks hot and will likely carve a place for itself in what is now a very large market. The original has a large following – it offered a lot at low price, only the user interface was challenged; basic and unlovely in its

graphics and screen size/resolution. But you can't have everything. We look forward to reviewing the updated version that, if like its predecessor, will have a potent headphone amplifier and a digital output so it can be used as a hi-res digital transport.

A 128GB card is so big many players will not even address it. Even 64GB is too much for some. Best to buy many smaller cards and swap them in and out to vary the library. Big is not always better – especially when it isn't real. But thanks for the warning; buying from unknown sites, especially outside the UK where there is no practical legal redress, or agency like Trading Standards that can pursue vendors of fakes, is always dangerous.

NK

GO VALVE?

I am a very happy owner of a Musical Fidelity NuVista Power 300, Chord Electronics Blu/QDB76, Sonus Faber Electa Amator II, Tannoy ST100 Super Tweeter hi-fi system, all wired with Townshend Audio DCT cables and interconnects.

I just added a Musical Fidelity X-AS100 power amplifier, so I have bi-amplified my Electa Amator IIs, the NuVista on the bass and X-AS100 on the treble.

I have noticed a surprising increase in bass definition. However, on some tracks I am getting a more forward high frequency balance, the highs sounding less defined and more present.

I have read that valves and transistors are not a good match because of response, damping factor



Sonus Faber Electa Amator II loudspeakers bi-amplified by David Waterman using Musical Fidelity amplifiers.

and gain matching. Would a valve-based power amplifier for the treble smooth out the forward balance? Which valve amplifiers would you recommend to match the NuVista?

Regards

David Waterman

Hi David. You have used different amplifiers for bass and treble – never the best thing to do. I do not have the voltage gain figures for these amplifiers but suspect the X-AS100 has higher gain than the NuVista Power 300 so is feeding a stronger signal to the tweeter. I would suggest you first try reducing its output and adding an in-line attenuator to the input is technically the best solution. However, you need to lower output by a small amount, 1dB-3dB I suspect, and you need to experiment to see what suits. Unfortunately, commercial in-line attenuators start off at 10dB it seems from a web search – and this is too much.

So on to Plan B, which is to use a series resistor between amplifier and the treble terminals. I suggest you get four 1 Ohm, 1 Watt resistors, preferably carbon film, and try just one first. If this isn't enough, then add another in series. They are unlikely to get hot unless you play very loud. If they do get hot than use a higher power rating (5W-10W) resistor, but again use carbon film rather than wire wound if possible. If 1 Ohm is too much (i.e. treble becomes dull) then add another 1 Ohm in parallel, to get 0.5 Ohms.

Sorry to be technical, but there is no easy way to correct for gain differences in this situation. **NK**

RECORDING ANALOGUE

Having read the articles on recording analogue in the latest edition of *Hi-Fi World*, I thought you may like to know my slant on this.

I use a Xitel Inport, reviewed in these very pages some time ago I think. This get its signal from the 'Tape Out' on the amplifier; of course I can connect the phono stage direct to the Inport if I need to.

The advantage of using tape out is that I can record any analogue source which is connected to the amp – I just have to press the record button on the amp, this sends the signal to the inport.

The inport is then connected to the PC via a USB cable and is set up in the usual way in the 'Sound' tab on the Control Panel in Windows.

The software I use is LP Recorder and LP Ripper supplied by CFB

Software see <http://www.cfbsoftware.com/default.aspx> There is also a 'de-clicker' programme available as well. This was originally bundled with Inport.

Unlike Audacity, it is not freeware, total cost is around £58 for the two programmes. They are available as trial versions too.

The LP Recorder is delightfully simple to use: name the directory, name the file, set the levels and record. It records in WAV.

I have run the LP against a digital version and it's very hard to tell which is which, if of course the de-clicker is used then it's easy to tell the digital version.

With any recording system you cannot improve on the original, you may be able to adjust the recording tonally with Audacity to suit your tastes, but this is departing from the original recording.

The software I use may not have the sophistication of Audacity but the ease of use has a lot going for it, CFB Software's support is very good too.

I use the above Inport system to make superb recordings of FM broadcasts on Radio 3. VLC Media



Xitel Inport – a cheap way to turn analogue to digital.

Player can be used to record live HDS broadcasts online or any stream on the PC.

Regards

Michael Bickley

The Xitel website is merely a display page and has no active links; Amazon say they are awaiting stock. I wonder whether they are still trading. **NK**

TANNOY TREAT

I enjoyed Noel Keywood's review of the Tannoy DC10 Ti in the April issue. He refers to his April 2006 review of the Yorkminster which I've read many times since then.



Tannoy DC10 Ti loudspeaker. It needs a big room, like that used by Keith Jenkins.



Sugden FBA-800 Class A power amplifier. We use one to power Tannoy DC10 Tis and it is superb.



New from Audio Research is the lovely GS150 power amplifier shown here. It uses the couth sounding KT150 tube.

I've often wondered if I'd ever have the space and funds to accommodate a 'big banger'. Fortunately I now do. My lounge measures 26ft x 15ft x 8ft. Current speakers are Revel M20 Performas on their own stands driven by a ML390s/380/331 combination. Would the 380/331 be suitable partners for the DC10 Ti or should I consider valve amplification or perhaps the Sugden FBA-800 reviewed in the same issue? In his review of the Yorkminster Noel said that valve amps were a better match for this speaker.
Keith Jenkins
Llanbrynmair
Powys
Mid Wales

I assume you mean the Mark Levinson No331 power amplifier, that produces 100 Watts per channel, with a Mark Levinson No 380 preamp and Mark Levinson No390 CD player. If you are happy with them, then by all means use this system to drive the DC10 Tis. Your room is certainly big enough, although an 8ft ceiling

is low. But then, Tannoys better cope with low ceilings because they radiate less information upward than loudspeakers with dome tweeters,

like your Revel M20 Performas.

I have no experience of these amplifiers so cannot honestly tell you how they would compare with a Sugden. What I can say is that, by the highest standards, a Sugden is truly impressive. So you should if possible try to see if you can audition one.

I personally favour valve over transistor, but the presentation is different and again you need to see what you think about the relative merits of each type. Valve amps are more laid back, but also more spacious and easy going - organic if you like. Don't forget Audio Research, who very particularly and knowledgeably voice their valve amps to have the speed and incision of transistor amps, but with the stronger dynamics valves enjoy (when done properly). You won't need a lot of power though, so an Audio Research VSi60 would do, power wise. You may well like to drool over the new GS150 with KT150 power tubes, however. These are gorgeously smooth sounding modern-design tubes and we are hoping to review a GS150 soon. With the Tannoys the world is your oyster, since they will accept drive from just about any amplifier on the market. And in a room as large as yours, you will be suitably impressed by low end power like you've never heard it. Just as well you live in the middle of Wales! **NK**

MARANTZ UPGRADE

My system consists of a Naim 5i amplifier, Marantz CD63Ki CD player, NAD 402 tuner and Usher S520 speakers. It is supported by a Slate Age



An Audiolab Q-DAC. Now available at around £400, because a new model is due, this DAC is the best way to listen to the increasingly popular ESS Sabre32 DAC. A bargain - and a great Marantz CD63Ki upgrade for Dave.



Icon Audio's KT88-based Stereo 40 MKIII valve integrated amplifier would be a good bet to improve reader Rowland Cook's system.

equipment rack and speaker stands, connected with Kimber 4pr speaker cable and Kimber Timbre interconnect cable.

The system is quite detailed and musical sounding and I listen to mainly Jazz of all genres, as well as some world music.

However, now that my CD player is some fifteen years old I wondered if improvements could be had from a new CD player – and if so what sort of budget would be required to improve on the Marantz musical performance, or would one of the new breed of DACs be a better option e.g. Arcam ir DAC?

Dave

Hi Dave. I suggest you get an Audiolab Q-DAC and connect it to the digital output of your Marantz. Using an ESS Sabre32 DAC chip, aided by Audiolab's unique in-house designed filter set, this will provide a significant upgrade. You will get a larger sound, more full bodied and smoother. You will also get to hear further into your CDs, without hard or sharp treble throwing the sound at you. **NK**

VINYL DIRECT

I really like your magazine's interest in vinyl. However I've just read the review of the VPI Classic Direct turntable...£24,500 and you don't even get a mat or a dust cover, but you do get an undamped unipivot arm and a bargain basement look?

Mmm...sorry, I can't take it seriously – but it's the best laugh I've had in ages. All right, I haven't listened to it but, with my back, I can't justify a deck I can't lift, never mind about price.

Let me tell you a story. In 1980 when the old family record player broke and I could no longer play my LPs I went to see Graham Nalty (of Black Rhodium Cable fame). At that time Graham had a hi-fi shop in Curzon Street, Derby. He was a friend I'd met at a local social club and I trusted him to sort me out. I remember he smiled and said 'I've got just the thing for you!', and he showed me a brand spanking new Michel Focus One.

Nowadays, all budget to medium decks are based on that design, but back then it was revolutionary (pardon the pun!) space age stuff and, having sat and listened to it, I left having ordered one – along with a Sony amplifier and a pair of Monitor Audio speakers. I can't tell you how many LPs that deck played

over the years. However, I got caught up in the CD hype and around '95 it was given to my mother to make room for a CD player. She continued to use it until she fell ill recently with cancer and unfortunately passed away, whereupon I got it back.

Nowadays, I'm suffering a little with tinnitus and have a touch of high-frequency hyper-sensitivity and the CD system seems a little harsh. So I got out the old Focus One, removed the platter and bearing shaft, dropped in a couple of drops of machine oil and started to set it up. When I pushed the bearing spindle back home it popped out again all by itself and kept doing so until I span the platter on it to settle it down.

So! After all these years and all those records, that bearing was still airtight. I have always been impressed with that deck and arm even more so now. It still sounds lovely!

My 18 year old son came down to see what was going on and stood there with eyes going round and round watching the LP play. He bent over and inspected the deck carefully. After a long while he spoke: 'How do you skip a track?' he asked. So I opened the lid and moved the arm over a track and shut the lid. If only I'd had a camera to capture the look on his face....

I'm going to use a little inheritance to revamp my hi-fi system. My wife, myself and my son all play a lot of music and it would be a nice way to have something we all would use and be a remembrance of her. I wondered if valve amplification would get a smoother sound, more suited to my ears. I'd appreciate your opinion on that one.

Also, I do rather fancy an Orbe. It



"£24,500 and you don't even get a mat or a dust cover", says Rowland Cook. But you do get a superb Direct Drive motor!

Letters On-Line!

You can now read our Letters on-line, from the last issue back to March 2010. That's a treasure trove of information and advice to our readers, as well as a fascinating catalogue of reader's systems and views. There's mountains of buying information, all just a click away on your computer or i-Pad. Have fun!



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World Mail June 2011 issue

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Your experts are -
 DP David Price, editor; NK Noel Keywood, publisher; PR Paul Rigby, reviewer; TB Tony Bolton, reviewer; RT Rafael Todes, reviewer (Allerng String Quartet); AS Adam Smith, reviewer; DC Dave Cawley, Sound Hi-Fi, World Design, etc.

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Just go to www.hi-fiworld.co.uk and click on Letters in the left hand menu list, under the FEATURES category. This will take you to the individual months of issue. To see the full list set the 'Display' drop-down list to 'All'.

seems to me to be much better value for money than the VPI - Direct Drive or no.

Incidentally, I met up with my pal Graham recently and we sat once again listening to some of his cables at his Black Rhodium premises in Derby. I was amazed. If you'd ever said previously that I'd seriously consider cables at £1000 a matched pair I'd have fallen about laughing. I guess it's all in the listening.

regards

Rowland Cook

Hi Rowland. You don't say what Sony amplifier you have or what cartridge you are using, so I can only give general advice.

A valve amplifier gives a fuller bodied sound than a transistor amplifier, with more air and space and a better sense of depth. They are less clinical, less dry and less harsh too – although that depends upon the transistor amplifier, since good ones are smooth these days. I



This is the way professionals record music – through a Tascam DA-3000. "It is competitively priced" says Dave Morgan.

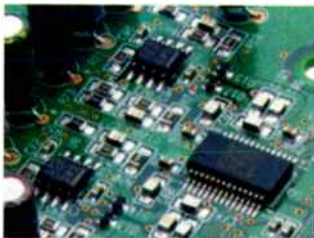
RECORDING NOISE

I read with interest your review of the Furutech GT40, which unfortunately was a bit let down by its noise figure due to the ADC used. However, in the professional area there are some interesting alternatives.

The Tascam UH7000 is a similar priced unit which uses separate Burr Brown ADC/DAC, PCM4220 and 1795

analogue domain, which is true if recording to PC, but then there is the Tascam DA-3000, which is a stand alone digital recorder in either 24/192 or DSD recording to SD or CF media, it even has a remote to make re-coding easy. As it is competitively priced it could be an interesting alternative to those who want to copy their analogue collection into a digital format easily.

Low Noise with Fully-Balanced Circuitry and High-Quality AD Converters



The internal circuit uses a fully-balanced structure that is completely resistant to noise from the inputs and outputs. This has a great effect on the output and input stage impacting the recorded audio. The input audio is digitalized by the BurrBrown PCM4202 ADC after it passes through the analog input circuit.

Noise is a problem in Analogue-to-Digital Convertors (ADCs), degrading digital sound quality. Tascam make an issue of this in their DA-3000, using a Burr-Brown PCM4202 for low noise, they say.

suggest you audition a valve amplifier first: they can vary different to each other. A safe bet is to look for a good KT88 based amplifier and Icon Audio in Leicestershire may well be a good choice for you. If your cartridge has seen better days – and remember they wear out – consider an Ortofon 2M Black (I assume you are using an MM here of course). I hope that helps. **NK**

respectively, and consequently has much better noise figures. Admittedly this has micline inputs rather than phonoline which the former may be of limited interest to your readers but it does address the other functionality well and if you have a peek inside this unit you will appreciate you are getting a lot for your money.

I note you say that digital recording isn't as easy as it used to be in the

I realize the professional arena can be somewhat daunting, just looking at the rear panel of the DA 3000 alone is enough to justify this, but not all functionality needs to be assimilated and there is some interesting hi-fi alternative kit for those who would like to venture into this market.

Dave Morgan
Suffolk

Thanks Dave - that is very interesting. ADCs are a big issue in the recording business but less so in hi-fi replay where recording has been banished! Consequently, their weaknesses go unappreciated: 24/192 is hi-res wherever it came from, when in fact what you actually get is 15bit, or 15/192 from a mediocre ADC. Doesn't sound so good does it! I hope we can get a Tascam in for review – sounds very interesting. Also interesting on this front is the recent release by ESS of a SabreJ2 DAC with 121dB dynamic range. This may well give us decent digital!

NK



The Furutech GT40 is a great way to turn analogue to 24/192 digital, from a Line source like VHF radio, or from LP played by MM or MC cartridges; it caters for both. But it is "a bit let down by its noise figure" says Dave Morgan.

Small talk

Martin Pipe explores the many virtues of TEAC's AI-301DA

Once upon a time, Teac meant tape decks – enormous entities spinning reels of analogue goodness. The goodness continues with their high quality products of today – and here is one of them, the mini AI-301DA Class D amplifier with high quality digital connectivity.

You can connect a CD player (or transport) to the substantially-built AI-301DA, Teac's latest stereo amp/DAC/headphone amp combo of bijou proportions. It boasts two sets of analogue inputs plus optical and coaxial digital inputs. These conventional inputs can also be fed with other sources – radio tuners, digital TV set-top boxes, tape decks (Teac or otherwise) or phono stages (one isn't built in). In other words, you can still enjoy all of your existing music.

But what of the new stuff? This characteristically Teac-styled unit has integrated Bluetooth v2.1 (with apt-X support) for drawing music from a smart device, plus a jitter-killing

asynchronous USB port that allows the AI-301DA to act as a high-grade computer-audio playback device.

The unit is compatible with both Windows (which needs ASIO drivers, downloadable from the Teac website) and Mac (which doesn't). I was impressed with how easy it was to get everything going with a Windows 7 PC.

You can also download a simple drag-and-drop 'HR Audio Player' program (Windows/Mac) that enables DSD files (2.8MHz and 5.6MHz) to be streamed and played natively, courtesy of a technology called 'DSD over PCM'. This doesn't convert DSD into PCM; instead, the raw DSD data is inserted into the PCM frames – thereby getting over the PCM-only USB limitation of the average operating system. The AI-301DA recognises that it's receiving DSD rather than PCM data and decodes it accordingly. This is undoubtedly a very clever solution.

Needless to say, the AI-301DA is also conversant with PCM. It will

accept 16, 24 and 32-bit resolutions, combined with sampling rates all the way to 384kHz. In other words, it's ready for all key digital audio standards. HR Audio Player, by the way, supports not only DSD (.dsf, .dff) and PCM (.wav) but also MP3 (up to 320kbps) and FLAC (up to 32/384). If you want to play other formats, your existing software (e.g. iTunes or VLC) can be used. Unlike the higher-end Teac products, though, there's no means (like LEDs) of confirming what sort of data is being received.

Inside, conversion from digital to analogue is achieved with a Burr-Brown PCM1795 chip. Selection between sources is possible from the supplied remote, or a single button on the front panel that cycles through them (it's held down to initiate Bluetooth 'pairing').

The amplifier, which will deliver 22 watts of usable power into each 8 Ohm speaker load (double that for 4 Ohms), is built around Bang and Olufsen's respected ICEpower' low



distortion variation of the efficient Class-D theme. Their outputs are available via a decent pair of speaker terminals, which are augmented by a line output phono-socket for an active subwoofer.

For headphone listening, via a proper 6.3mm socket of the sort that graced its tape hardware, Teac has specified dedicated amplifiers. Free of coupling capacitors, they're capable of delivering 100mW into 32-ohm headphones. You need control over their volume, and the AI-301DA does this with a conventional motorised potentiometer – better than relying on DSP to do the job!

SOUND QUALITY

I initially partnered the AI-301DA with a pair of Wharfedale Diamond 220s, playing music from a Sony CD transport and, via Bluetooth, a Samsung Galaxy S4 Mini. My Windows 7 computer was loaded with HR Audio Player and a number of hi-res DSD and PCM files. I also tried an A.C. Ryan streamer (connected digitally) to access audio files held on a NAS and Rogers GS6 floorstanding speakers. Several pairs of headphones, ranging from the ES-HF300s produced by Teac's Onkyo stablemate to JBL's S700s.

The first thing you notice is a cleanliness and precision that border on the analytical, a trait no doubt of the ICEpower amplification. This was particularly evident with a CD collection of classic '80s house-music cuts (Farley Jackmaster Funk, Adonis, Marshall Jefferson etc.). The hi-hats and snares of the all-important electronic percussion were bestowed with a rhythmic attack that compels you to move, while pianos flowed along nicely. The analytical edge can lay bare problems like the residual

tape hiss that was evident on those low-budget analogue-era house tracks.

Although the Diamonds are great little speakers, their range cannot meet dance music's lower-octave demands. After switching to the larger Rogers, the AI-301DA's bass department exceeded expectations – this, after all, is a comparatively low-powered amp. It was certainly capable of surprising depth and weight when needed; it's the treble that suffers first when the AI-301DA

is pushed too hard, a definite grittiness setting in.

From Chicago to the American South I ventured next, courtesy of Jim White's 'Still Waters' (from 'The Mysterious Tale of How I Shouted Wrong-Eyed Jesus' CD). The basslines of this darkly-beautiful country-gothic sonic tapestry are articulated well enough and there's some well-defined imaging, but it's the sheer delicacy of the acoustic strings surrounding White's haunting and understated vocal that stands out.



A rather busy interior! Thanks to efficient Class D amplification, less power is wasted so there's no need for massive heatsinks. Note the motorised volume control (bottom right) and USB interface PCB (top).



A good selection of inputs and outputs that cover analogue, digital and 'smart' sources. Note how the speaker terminals, which will accept banana plugs or bare wire, dwarf all else in this small case. The integrated Bluetooth aerial can be seen bottom right.

traditional philosophy
modern design



Triode 25

Class AB Push-Pull amplifier

The Triode 25 is a Class AB Push-Pull integrated amplifier that utilises four EL34 tubes in the output stage for increased power output from a valve design. It can operate in two modes (Triode and Pentode) and has a switchable feedback level to suit the sound performance of any system. The additional manual bias adjustment ensures long-life and optimum performance from the supplied valves.

On top of four Line level inputs, the USB Type-B input is DSD compatible and can also handle studio-quality 32-bit/384kHz audio files.

The Triode 25 offers a perfect combination of tradition and modernity.



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"exceptionally-good unit at its price point, combining a sound that punches above its weight with source flexibility"

CD is only part of the story. There's also Bluetooth. This is easy to use, and being able to beam music from your phone is of obvious practical advantage.

Tracks held on my device in FLAC form emerged with most of their musicality intact, although a perceptible amount of detail seems to go AWOL. Relative to direct CD replay, the guitar-excursions of Can's 'Oh Yeah' (from 'Tago Mago') lose some of their edge and immediacy.

High-resolution tracks, played into the AI-301DA via HR Audio Player also fared well.

Johann Friedrich Fasch's 'Recorder Concerto in F Major'

(Linn 24-bit download) presented an uncluttered soundstage, a rich variety of tonal colour and impressive rendering.

Such detail was also evident on DSD tracks, such as Garrett Brennan's 'Alta Powder Day' (2.8MHz DSD64 DSF Blue Coast download). There's a tangible 'airiness' and you can pick up the delicate subtleties that take you into the heart of the performance.

So far, I've concentrated on speakers. Listening through 'cans', though, is on the whole also a worthwhile experience.

There's plenty of drive, and you'll get much of what you would expect from a good budget headphone amp



The unobtrusive remote handset performs three operations as far as the AI-301DA is concerned - stand-by, changing volume/mute and source selection. It will, however, also operate some TEAC CD players

although trying different 'phones confirms a very slight bias towards the presence region.

CONCLUSION

The AI-301DA is an exceptionally-good unit at its price point, combining a sound that punches above its weight with source flexibility.

If you spend a lot of time around your computer (possibly through work?) you could do much worse than this affordable Teac and a good budget pair of bookshelf speakers.

MEASURED PERFORMANCE

The Teac AI-301DA Class D Icepower amplifier produced 24 Watts into 8 Ohms under test, and 47 Watts into 4 Ohms - double the 8 Ohm value. The doubling was due to excellent power supply regulation. This feature, together with a high damping factor of 50, suggests the Teac will have strong and dry bass.

Since most loudspeakers are nominally 6 Ohms the Teac gives around 40 Watts in real life - plenty enough for high volume. The unit does not meet Teac's claimed spec of 60 Watts into 4 Ohms however.

Distortion levels were remarkably low for Class D - Icepower has improved greatly - measuring just 0.03% at high frequencies into a taxing low 4 Ohm load, so treble will be smooth and free of digital hardness.

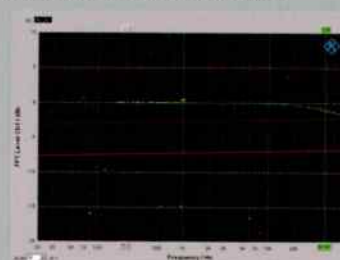
Frequency response reached 46kHz into 8 Ohms and dropped just a little to 38kHz into 4 Ohms, so the treble sag of Class D into low loads has been banished too.

The co-axial S/PDIF digital input worked right up to 192kHz sample rate, but the optical managed only 96kHz maximum. Distortion from CD (16bit) was a low 0.22% at -60dB, and from 24bit 0.02%, almost as low as it gets - an excellent result from the Burr Brown PCM1795 DAC. As a result, EIAJ dynamic range was a high 118dB -

excellent, if not up with the best (123dB, ESS Sabre32).

The USB link worked to 384kHz (MacBook Pro with Mavericks) and gave the same result with 24/192 WAV test files as the S/PDIF digital input. The full dynamic range of 118dB was maintained - good through USB which sometimes adds translation noise.

FREQUENCY RESPONSE



DISTORTION



Bluetooth frequency response was flat to 20kHz - very CD like, as usual from Bluetooth. Compression noise was well controlled, an EIAJ dynamic Range value of 98dB being close to CD (102dB). Bluetooth can sound clean or noisy (papery), and in this case it is the former. Bluetooth pairing was awkward and at times difficult.

The AI-301DA measured well all round. It has a very good Class D amplifier that will sound smooth and amenable, and the digital sections all gave excellent results. It doesn't produce the 60 Watts claimed, but this is a tad academic as it comes close. **NK**

Power 24watts

ANALOGUE (Aux 1)
Frequency response 4Hz-46kHz
Separation 88dB
Noise -98dB
Distortion 0.03%
Sensitivity 80mV
Damping factor 50

DIGITAL (Coax)
Frequency response (-1dB)
CD 4Hz-30kHz
Distortion (%) 16/24
0dB 0.002/0.002
-60dB 0.22/0.02
Separation (1kHz) 72dB
Noise (IEC A) -117dB
Dynamic range 118dB

TEAC AI-301DA AMPLIFIER £400



OUTSTANDING - amongst the best.

VERDICT

Features and a creditable sound - small can be beautiful!

FOR

- exceptional flexibility
- well-balanced sound
- native DSD playback with free PC/Mac player

AGAINST

- gritty if driven hard
- treble a tad clinical
- no indication of input signal

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Our SuperUniti all-in-one player will unleash your digital music, from high-resolution audio files to Spotify playlists. Its analogue heart is an integrated amplifier backed by over 40 years of engineering knowledge to offer countless years of musical enjoyment. Just add speakers.



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Go Deeper

Wigwam Show 2015

Noel Keywood heads north in the rain to see a unique show - one held by HiFi Wigwam forum members.



Every year a UK forum, HiFi Wigwam, hold a unique show where members gather in Scalford Hall, Leicestershire, to demo their many and varied systems to other members and enthusiasts – and this is a peculiar show that I love and wouldn't miss.

Just as well, because it's held in March – Sunday 29th in this year of 2015 to be precise – when Britain's weather is at its worst – and this year didn't disappoint. On a gale lashed, rain soaked day I found myself enjoying the wonder's of Britain's oldest motorway, the M1, that's in a permanent state of

repair – or is that disrepair? – to get from London, north to the town of Melton Mowbray, around-about the centre of Britain they'll likely tell you (!), just outside of which lies Scalford Hall.

The show's very popular, so even arriving at 10 a.m. in driving rain, parking was on muddy verges only, because the hotel car parks were full. There's a good reason for this: the hi-fi systems on display are all unique, put together with painstaking care using the most esoteric of items, and they are all playing to anyone that wants to listen, one system per room. This draws crowds, because you get to hear real hi-fi up

close and can chat to the owner.

I could hardly get into many rooms this year they were so packed and photography was difficult, but the friendly, non-commercial nature of the show still shone through and one system in particular shocked me – see the Quad Experiment.

Most of the systems sounded good, some of the ad-hoc cobble-ups being best, but at Scalford you can hear hi-fi no show exhibitor would ever or could ever put together, as you'll find out here. Every year I dread the journey, but every year I return thinking it was more than worth it – and this year was no exception!

Garrard 301 and 401 turntables are enduringly popular now with UK enthusiasts and many of the rooms had them. Here's a nice example, an Audio Grail restored 301 fitted with both SME312 and Ortofon arms, and special platter mat being shown by PMAC in The Private Dining Room.



Valve amplifiers and low power horn loudspeakers fitted with sensitive full range Fostex drive units are popular and here's a nice example, run by Keith (MF1000) in The Rutland Room. You can see the cream coloured cone of the Fostex unit with the big horn mouth below it (these are short 1/4 wave horns). To augment bass there's a KEF B139 equipped subwoofer that was doing a fine job when I was there, giving the system excellent bottom-end heft. There are Ming-Da MC845 monoblock valve amps, a Ming Da MC7R preamp and a Roksan Attesa CD player too.



Now this doesn't look much - and it isn't! But what the heck - it managed to sound lovely all the same, smooth and easy but dynamic and lively too. It obviously cost Dave (Room 223) very little and he had fun assembling and tweaking it. What you can see here is a battered Wharfedale Dovedale 3 (of a pair), with new rubber cone surrounds I was told. To its left there's a Philips CD723 player with home made valve output stage; to its right and behind is a home tweaked valve phono preamplifier and this is fed by a Luxman turntable, just visible far right. Out of the shot is his amplifier, a 3W ECL86 television audio output amplifier cobbled onto a rough chassis. Such artistry!

A Garrard 401 with Trans-Fi Terminator parallel tracking air-bearing tone arm no less - what a combo! It was in Room 203 of member Gingermrkettle. This lovely air-suspended arm (we are talking aquarium pumps here!) fed a World Design Phono 3 valve preamp, Pre3 and WD88VA valve power amplifier that I must say, in totally biased fashion, are superb valve products you build yourself, the KT88 based power amplifier driving a pair of Quad ESL-63 electrostatic loudspeakers. All of which makes ginger Mr Kettle a top man, as Beobloke would say.



Tucked away in a large attic room was the 'Quad experiment' you see below – and this was far and away the most dramatic sounding exhibit of the show, and would hold up as one of the most amazing sounding hi-fi systems ever. It comprised four Quad ESL-57 electrostatic loudspeakers, standing on their ends so the vertical treble panel becomes horizontal (don't ask). Each is fed by a Class D power amp module. The Left channel signal is fed across the sound stage, to the right three loudspeakers, progressively attenuated and time delayed. The Right signal is similarly fed across the sound stage in the other direction, also progressively attenuated and delayed.

I think the idea was to strengthen the solidity of the stage images and add depth (I did ask creators Paul Rensa, Paul Ogle and Ian Wright, but the room was noisy and perhaps I didn't quite get it all!). Whatever – from about 20ft back the stage size and imaging were quite literally awesome, in scale, intensity and solidity. The sound was box-free of course, expanding out to fill the end of the room. Bass was strong – but only when there was bass in the music. There was no residual box boom or waffle.

You won't hear anything like this at a commercial show of course, which is a shame: this system was stunning.



Another big surprise – the Windsor room was full of professional studio equipment, music being played from high speed studio master tapes through a pair of massive Rogers LS 5/8 studio monitors driven by Quad 405 2 power amplifiers via a Music First Audio preamp. The tape machines are, left to right, a Nagra T, a Studer A80 and Sony APR-5003. The Rogers were very bass heavy, making for a ponderous presentation, but otherwise the tapes gave lovely results.



On the ground floor was this attractive and nice sounding system being run by Chelseadave in the Colman Room. It comprised AvantGarde Fino horns, Shindo and Southern Star amplification and a Clara Clarity turntable.

Here's a lovely Pioneer PL-L1 parallel tracking turntable from exhibitor Beobloke, namely Adam Smith, once assistant editor at Hi-Fi World, no less, and enthusiastic Wigwammer. Adam also had a micro-cassette deck from Sanyo, the RD-XM1, that he'd recently bought in a clearance lot, because nobody understood or knew what to do with such a thing, and a stonking great Mordaunt Short subwoofer he had designed when employed by them that managed to make the small room shake beneath Pentachord A speakers.



DECENT AUDIO

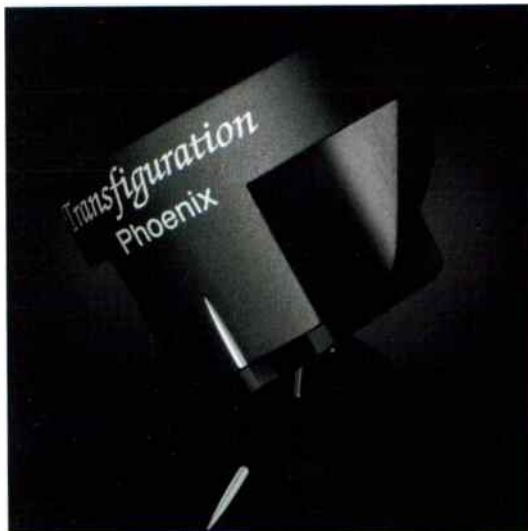
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Michael Fremer, *Stereophile* October 2014.

'It was a joyful sound.'

Steve Harris, *HiFi News* November 2014
'Outstanding Product' rating

Monkey Business

Jon Myles gets ready for summer with Wise Primate's new portable Bluetooth loudspeaker.

With summer on the way (hopefully) thoughts turn to the great outdoors. And what better way to enjoy music in the sunshine than with a portable Bluetooth loudspeaker?

The market in these has boomed over the past few years, with a host of new companies joining traditional hi-fi manufacturers in producing an ever-growing range of devices.

One of the latest is the Boomer from Edinburgh-based company Wise Primate – which also makes a smaller 'speaker branded the Howler, as well as a pack of twin travel earphones.

It's a compact unit measuring 6" x 2.5" x 2" (W/D/H) but is fairly sturdily constructed for its £35 asking price with a rubberised main cabinet and a red-coloured wrap-around grille. Behind that lie two small drivers while three large buttons on the top to control volume and play/pause.

Round the back are single 3.5mm line-in and line-out connections meaning you can connect external devices or even hook the Boomer up to an existing hi-fi to act as a Bluetooth receiver. Charging is via a mini USB port with a claimed 8 hour battery life which was actually exceeded slightly in testing. The only other control is a rear-mounted on/off switch.

As an added feature the unit also features an in-built microphone – meaning it can be used to take 'phone calls and also act as a hands-free conference call centre for multiple participants.

As is pretty standard nowadays, the Boomer paired seamlessly with both iOS and Android devices and the connection never faltered during extended listening sessions both inside and outdoors.



SOUND QUALITY

The packaging of the Boomer proudly proclaims that it goes "shockingly loud". Which, to its credit, it does for its size.

Unfortunately, it also does so with a rather shocking absence of low-end information. Instead most of the information lies in the mids and treble. This does make the Boomer sound pleasantly detailed – but it also robs it of musical impact.

Playing Bruce Springsteen's 'Badlands', while the guitars and saxophone are nicely etched there was a lack of body to the rhythm section which translates into an overall lightweight sound.

Using the line-in input this trait was even more pronounced, suggesting the Boomer has been optimised for Bluetooth operation.

On the plus side, however, that claim of decent sound levels is amply achieved. The relatively robust construction means the volume can

be pushed up without any of the rattles and vibration some other units around this price display. There's easily enough level for use outdoors in the garden or to fill a medium-sized kitchen.

In the end, though, the Boomer suffers from its overall lack of bass. It's not bad – but there are other affordable Bluetooth loudspeakers out there that offer more.

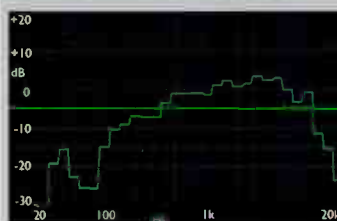
CONCLUSION

The Wise Primate Boomer is well-constructed, looks classy and can go loud with ease. However it is bass-shy and so lacks the all-round ability of some of its better rivals.

MEASURED PERFORMANCE

This little speaker fires high frequencies forward and lows downward, where a plane surface (e.g. a desk) is meant to provide bass support. Measuring the

FREQUENCY RESPONSE



Boomer free-field on a stand with no support, or on a desk, however made little difference. Our frequency response analysis clearly shows the Boomer does not produce low bass, rolling off in output below 400Hz – a comparatively high frequency. No matter where we placed it to boost bass, the most promising being on a desk against a wall (2D reflecting surfaces) no better could be achieved than that shown here. Results were identical from either Bluetooth or analogue inputs. NK

WISE PRIMATE BOOMER £35



MEDIOCRE - unremarkable

VERDICT

A stylish portable Bluetooth whose sound unfortunately doesn't manage match its looks. Rival products do it better.

FOR

- well-built
- goes loud
- conference call facility

AGAINST

- lack of bass
- average line-in sound
- better options available

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Thorens TD125

Martin Pipe revisits the first Thorens turntable with electronics inside

Cast your mind back to 1968, the year Martin Luther King was assassinated in Memphis. The

Beatles released the sprawling double-LP that was to become known as the 'White Album', notorious gangsters the Kray Twins were arrested in a London dawn raid and Dad's Army, a popular TV repeat even today, aired for the first time. Oh, and TD125 from Swiss turntable giants Thorens saw the light of day.

This turntable displaced the much-respected TD124 from the top of the Thorens range (discounting the ultra-rare TD224 autochanger). Instead of the latter's complex mechanics – a hybrid of belt and idler drive – the internally-simpler TD125 relied on clever electronics to maintain the correct platter speed.

It was more expensive; at launch it sold for £69 11s 2d with the dreaded Purchase Tax. That's around £1000 of today's money. With tax, a Series II TD124 would have set you back £46 15s 10d. To herald its inclusion of the latest technology that added nearly a week's average wages to the pricing, the styling of the TD125 was radically-different to that of its 1957-vintage predecessor. Here was a deck that screamed 'MODERN' at you.

A side-by-side comparison reveals these obvious differences. The TD125 has fewer organic curves, a brushed-aluminium finish that complemented the solid-state amps that were becoming fashionable during the late 1960s and main controls that have been sculpted into rectangular 'slabs'. The exception is a red knurled wheel that moves in a horizontal slot to vary the pitch by plus or minus 2%; not quite the

range of the TD124's old-fashioned rotary knob.

Above this is a neon-lit strobe with 33 and 45rpm sections for checking speed.

The TD124's spirit-level, alas, disappeared. And that's not the only omission. Although three speeds were offered, Thorens plumped – inexplicably! – for 16rpm in addition to the usual 33 and 45 speeds.

16rpm records were very rare; only talking books and a handful of other recordings that prioritised playing time over sound quality, were released in this format. Admittedly, the TD124 had this seldom-used speed too, but it also gave you the arguably more useful ability to play 78s. I can imagine that most of the TD125s sold over the years never had their speed selector moved to its leftmost position.

That said, I'm currently investigating a practical use for the TD125's ability to play at 16rpm; if this idea works, expect to read about it in HFW soon. You can be assured that the TD125 was one of the best ever turntables to offer this low speed. However, it is possible to modify the deck so that the 16rpm setting works at 78rpm. In May 1969, Thorens issued a Technical Note explaining how this could be accomplished (Google: "TD125 78").

Even without its 3.2kg 12in.

platter, a plinth or tonearm, the TD125 managed to tip the scales at 10kg or so. That's an indication of the build quality; the TD125, which shares its year of introduction with the author's, was clearly built to last. Indeed, many are still doing sterling service today.

The TD125, like many other Thorens decks, has a 'two-piece' platter design. Lift off the dynamically-balanced outer platter, fashioned from a non-ferrous alloy to minimise magnetic interaction with your cartridge, and you'll find a 160mm inner sub-platter. This is built around a hardened record-spindle/shaft



The TD125's neon-lit stroboscope enables you to tweak the red knurled knob of the pitch control until the platter rotates at the 'correct' speed – the 'dots' will appear stationary. One set of markings covers 16rpm and 33rpm; the other is intended for 45rpm.



that slips into a substantial chassis-mounted bearing.

A nice touch is the integrated 45rpm adaptor. Normally, that 'disc' you see around the spindle is 'flush' against the mat. Flip it over, though, and an extrusion of appropriate diameter means you'll be able to play all those ex-jukebox seven inch singles!

On the sub-platter's underside, meanwhile, are the strobe markings. There are two sets – to accommodate 50Hz or 60Hz mains, which powers the neon strobe bulb via a resistor – and the positioning of a metal plate, visible when the outer platter is removed, determines which are used. The sub-platter couples to the motor – a 16-pole synchronous type – via a precision-ground belt. Driving the motor is a variable low-frequency sine-wave oscillator, rather than the mains directly.

Unlike most other turntables with electronically-driven motors, the TD125 doesn't use any kind of feedback system to regulate speed. It's based instead on a classic 'Wien-bridge' oscillator; the 6-volt lamp-bulb in its circuit doesn't actually glow and instead serves as a stabilising component in its feedback loop. This oscillator works at three different frequencies (20Hz, 40Hz and 55Hz) which correspond to the desired platter speeds. The aforementioned 78rpm modification simply makes the oscillator work at a higher frequency (95Hz). The oscillator feeds two push-pull amplifiers, one via a 90-degree phase-shift network, in order to derive the signals needed to drive the motor. On the circuit-board



This is the powerhouse of the TD125, a synchronous AC motor. For later versions of its replacement, the TD126, Thorens was to move to a DC motor with servo speed control. Thorens had obviously learnt from its mistakes; the TD126's 78rpm speed is more useful than its predecessor's 16rpm. The TD125 can, however, be modified to play 78s.

are gold-plated pads that make contact with contacts coupled to the speed-selector slider. Very simple by today's standards but all it works very well. There are, however, no fewer than nine 'presets' for the service technician to get right.

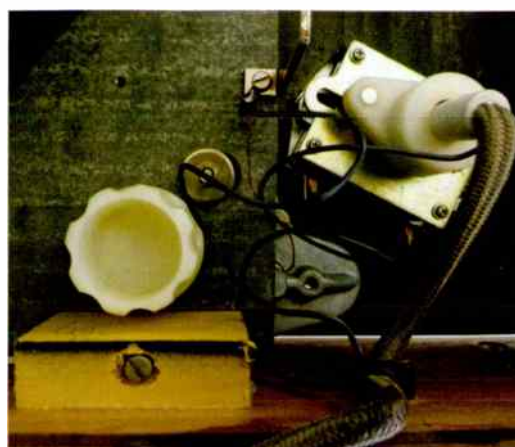
For each turntable speed, the frequency and voltage adjustment for the two motor-drive amplifier outputs must be adjusted correctly. It's amazing how 'clean' those sine waves look when viewed on a scope screen, certainly after a service; well, garbage in, garbage out! Linn used a conceptually-similar system in its Valhalla upgrade for the LP12, only it's more complex oscillator arrangement employed a rock-steady crystal instead of the TD125's potentially drift-prone R-C time-constants.

Early versions of the TD125 had their electronics fashioned from discrete components. This was the Mark I, which was in production between 1968 and 1972. Available to go with it was a teak plinth with optional Perspex lid. It was supplied with an arm board to which you fitted the tonearm of your choice – typically an SME3009 or Acos Lustre GST-1 (a more advanced version of the arm fitted to some early Rega decks).

In 1972, the MkII version was launched – this kept going until 1976, when the TD125 was replaced by the TD126. The motor speed control circuit was redesigned around op-amp integrated circuits. Its motor pulley now incorporated a clutch mechanism to minimise belt-stretch, improve starting characteristics and eliminate 'shudder'.

Also modified was the 'business end' of the bearing shaft, which tapers to a point (shades of Linn!) rather than its predecessor's ball.

The TD125 Mk. II also marked an expanded family. It was available 'ready-built' in a plinth (the TD125AB) complete with the Thorens TPI6 tonearm. This version had another rectangular control, for cueing. A rarity was the special 'LB' (long base) version, which was optimised for use with 12in. tonearms like the SME 3012.



Here we can see one of the TD125's suspension adjusters (left) and the ground/signal wiring for the tonearm (right).

All TD125s are of the 'sprung-subchassis' design originally conceived by AR's Edgar Villchur in 1961. A heavy (7kg) alloy diecast subchassis – on which the turntable and tonearm are mounted – is suspended from the main chassis that's attached to the plinth using springs. The motor, mains transformer and drive electronics are fitted to the main chassis, which is made from pressed steel, at three sprung points. As a result of this system, there is less unwanted transmission of motor and transformer vibrations and thus the minimum of audible rumble (Thorens claimed a signal-to-noise ratio of -68dB weighted DIN).

Sprung-subchassis turntables are also less vulnerable to external shocks. Many other turntables have adopted this system; other Thorens models apart, the list of contemporaries includes Ariston, Linn, Philips and FONS. The concept lives on to this day.

In the late 1980s, I owned a classic TD125/SME 3009 II combo – it gave me much listening pleasure, until I changed to the Kenwood KD600 covered in an earlier Olde Worlde. Eventually, I sold mine to a friend for a mere £50 (!).

A few years ago, another friend gave me his TD125/Acos Lustre GST-1. It had developed erratic pitch stability and rather than getting the deck repaired he had replaced it with a new Pro-Ject deck.

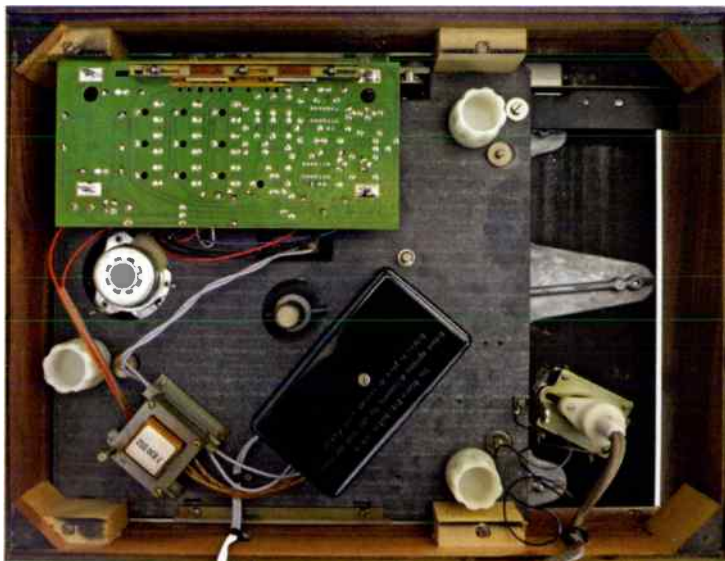
Shortly before condemning it, he had tried a new drive belt (these are widely available) meaning that I didn't have to replace this item. All of the PCB switch contacts and the pitch slider were cleaned. The power supply's electrolytic capacitors were also replaced – always a good idea!

Helpfully, service manuals (and for that matter user guides) for MkI and MkII versions are freely available from the excellent www.vinylengine.com website. This documentation also covers important issues like maintenance/lubrication, suspension adjustment, aligning the electronics and conversion between 50Hz and 60Hz – useful if you're importing or emigrating!

With electronic dance and pop this isn't perhaps the best turntable system. It lacks the top-end precision, speed and bass weight needed to do such genres justice. In passing, though, I also tried a Shure M75ED cartridge of similar vintage that also came with the 'table. It partially-balanced these shortcomings, adding an upfront character that complemented the music being played. The GST-1, we



Seen by some as a 'poor man's' alternative to the ubiquitous SME 3009 S2, the Japanese-made Acos Lustre GST-1 is of a completely different design. Dating back to the early 1970s, this nicely-made S-shaped tonearm still works well with compatible cartridges (typically high-compliance MM designs). Its features include removable headshell, magnetic bias-compensation and, by the standards of the time, user-friendly setup.



The layout of the TD125's interior is neat and uncluttered. Under the black cover are the mains switch (engaged from the deck-plate control via a linkage), mains voltage selector and fuses. The mains transformer forms part of a DC supply that powers the motor-drive electronics – turntable speed is independent of mains frequency. The circuit board contains the oscillator – note the switches and presets.

though; use the original as a template. It secures to the deck's subchassis with three screws.

The good news is that TD125s are common sights at audio jumbles and on eBay. Spare parts – blank/drilled armboards, deck bearings, drive belts, control boards, motors, plinths and platters – also crop up regularly at such sources.

Some third-party vendors also support the TD125 in terms of servicing and aftermarket upgrades.

So why is this deck so resilient? In its 1970s heyday, the TD125 was a popular choice amongst serious enthusiasts. And its longevity means that many have survived the intervening years. You can usually expect to pay between £100 and £200 for one – considerably more if an SME or Lustre tonearm is fitted. With the Thorens arm (which, in my experiences with the TD165 are anything to go by, is better than some suggest), somewhere in the region of £150 is believable. It's a pretty good price for a nicely-styled and well-engineered deck that's easy to live with.

should note, is only suitable for high-compliance cartridges.

But with orchestral music (say, a DG LP of Delibes' familiar 'Coppelia Ballettsuite' - the 1961 recording of the Berlin Philharmoniker under von Karajan) this particular combo came into its own. With a Roksan K2 BT amp, Rogers GS6 speakers and a stable mounting platform, I was rewarded with a solid image, fine tonal balance and excavation of detail. Painstakingly-crafted rock, like 10cc's 'Deceptive Bends', fared well too. All pretty good for equipment that's nearly half of a century old! It would

be interesting to try a more modern tonearm and cartridge, although a 'vintage' audiophile might consider such modification sacrilege. Some TD125 owners have reported good results with a wide range of ancillaries – from an Alphason Delta with Grado Sonata to a modified Jelco SA-370H with Denon DL-103R). You'll probably need to find or make a new armboard,



The TD125's sub-platter is driven via a precision-ground belt from a 16-pole synchronous motor driven by a variable low-frequency oscillator. Note that in the Mark 2 version shown here the motor pulley contains a clutch - near its base, you can see the felt pad that forms part of its design.



Inspire Hi-Fi

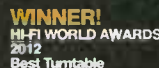
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Rediscover Your Music!

Streaming music to your hi-fi doesn't have to be difficult – and it helps you rediscover your collection. Jon Myles guides you through the practicalities and explains why it could be the best move you've ever made.



Ever fancied having your own personal jukebox? One that contains thousands of your favourite tracks all available at the touch of a button – and better still doesn't demand feeding with coins every time you want to hear them?

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Instead you enter a wonderful world of discovery, suddenly coming across long-forgotten favourites – alongside some long-forgotten stinkers too! – rediscovering tracks and albums you hadn't played in an age, but now wish you had.

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It's relatively easy to do and once the system is up and running you'll be enjoying it for years to come.

So here's the Hi-Fi World guide to setting up a home streaming system, one dedicated to playing music and nothing else. We've deliberately made this as simple as possible and stripped out all the jargon that can sometimes deter people from taking the plunge into streaming – but see the box-outs for further details of some of the areas involved.

THE BASICS

If you've been tempted to dip your toes into streaming music but have been put off by some of the jargon and seeming complexity – then don't be. Essentially, it's a simple task.

You'll need four things to start with: an existing hi-fi system, a network, a streamer and a network-attached storage device (NAS).

NETWORK: Not sure what a network is or how it works? Well, if you've got e-mails and the internet then you've got a network and that's all you need to know.

NAS: The NAS drive is a slim box that acts as the storage device for

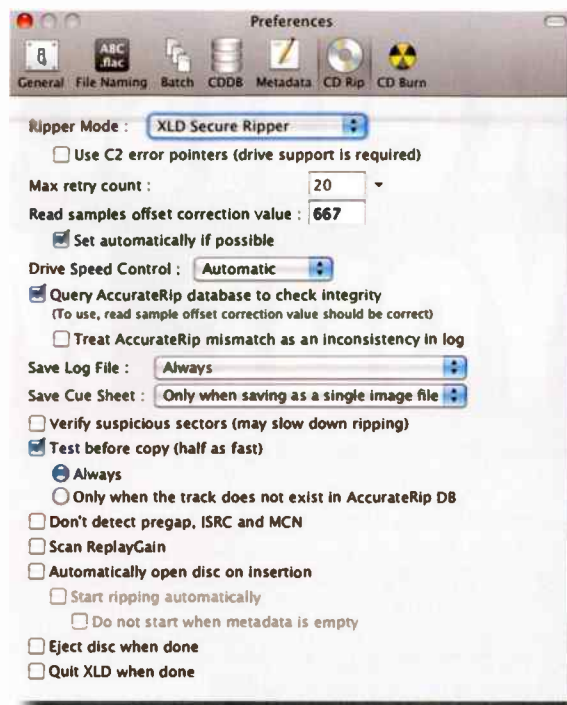
for thousands of CDs. Cost? Less than £100. All NAS drives have software built-in that allow them to communicate with your streamer.

STREAMER: The streamer is the source component for your hi-fi. Think of it as the same as a CD player, record deck or tuner. Connected to your existing set-up, it retrieves music from the NAS drive.

Here again prices vary, decent models starting at around the £200 mark, while high-end companies such as Linn, Chord and Naim have models costing thousands of pounds. That might seem expensive, but if you view the streamer as a source component on the same level as a CD player or record deck, then it begins to make sense.

SET-UP

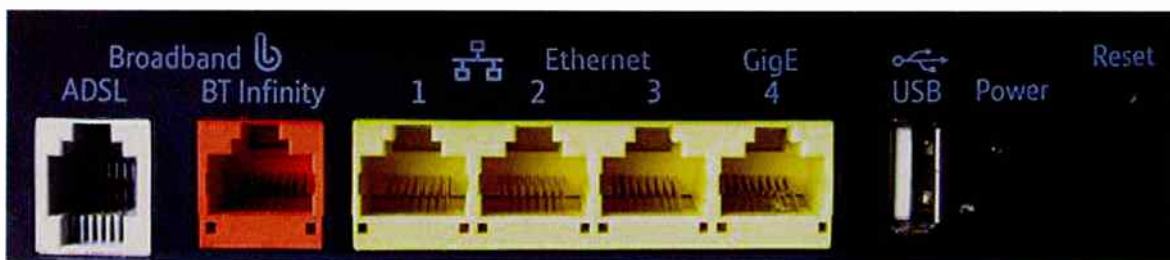
Once you've selected your streamer



XLD is a free Mac programme that rips CDs, maintaining – even improving – their sound quality.

or BT broadband then the chances are you have wireless capability which means your NAS drive and streamer can communicate with each other without the need for a physical connection. Here, merely connect your NAS to your internet provider's router via the supplied ethernet cable and turn it on.

Next plug in the streamer and connect it to your amplifier or preamp just as you would a CD player or tuner. The streamer will probably require you to enter the



Network? You probably have one without knowing it, within a BT Homehub, used by most UK homes. It connects to the internet via a telephone line, through the ADSL socket at left. Your computer will be connected to one of the yellow Ethernet sockets, so you can get the internet. Just hook up the NAS drive to any other Ethernet socket for a fast, stable and reliable wired connection. But if you want to put the NAS drive under the stairs or in the loft, use wi-fi instead.

your music collection. Some are no bigger than a paperback book and they range in price from around £80 to many hundreds depending on make and storage capacity.

I use a Western Digital model with 2 terabytes of storage, enough

and NAS they need to be installed – and this is where things get slightly more involved.

First of all do you want to go wired or wireless? Most people have a wireless network at home nowadays. If you are with Sky, Virgin

security code for your network (if you have one) but should then be up and running.

Alternatively you can go down the wired road, where both the NAS drive and streamer are wired into the network router. This obviously

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dBpoweramp offers a free no-obligation, fully functional trial for 21 days, is free from spyware, malware and Trojans, our installer does not bundle other programs. Supports FLAC, mp3, m4a (Apple Lossless, AAC for iTunes & iPod), Windows Media Audio (wma), Wave and AIFF.

dbpoweramp is a popular CD ripping programme for PCs and does a good job of maintaining quality.

means more cabling, but does have advantages and some manufacturers' streamers, including those from Linn and Chord, will only work this way (see box out for more details).

SO WHERE'S MY MUSIC?

Now it's a matter of getting your CDs onto the NAS drive, which means copying (ripping) them onto a computer first. Any computer with a CD drive can do this, making bit-perfect copies of your music collection.

But to get best quality you'll need to download a dedicated CD ripping programme. The good news is there are free ones that do an excellent job.

For Mac I'd recommend XLD, while Windows users need look no further than Exact Audio Copy – although some people prefer the paid-for dBpoweramp utility.

Crucially, all three will attach what's called metadata to the music. These are tags that include the name of the artist, album and each individual track, as well as other

information such as year of release, genre and the CD artwork – all needed for your NAS drive to organise the music so it can be found easily.

Once ripping software has been installed, insert the CD into your computer, open the programme and then decide whether you want to rip the disc in WAV or FLAC format (see box out) before pressing go. An average CD will take around five minutes to convert and save onto your computer, but this varies according to how much music is on the disc and its condition. Damaged CDs can take longer or, occasionally, fail to rip entirely, although this is unusual.

Once done it's best to save the ripped FLAC or WAV files in a folder on your desktop labelled with the artist and album name before moving onto the next CD.

WHAT FORMAT?

You'll hear lots of talk about which format to rip your CDs into but essentially there are two main choices: WAV or FLAC.

There's still no end of debate about which sounds best and both have their adherents. Having regularly used both, however, I've yet to be able to discern any noticeable difference in sound quality between them even using some of the costliest streamers on the market at the moment.

Both are lossless formats – meaning that unlike MP3 files, none of the sonic information from the CD is thrown away. Instead you get a perfect copy of the original.

WAV uses more storage space on your NAS drive, but if you've anything over 1 terabyte available that really shouldn't be a problem. It lacks metadata and cover artwork, unlike FLAC.

It's entirely your choice which you use. FLAC is probably the most popular. But the best advice is to pick one format or the other from the start and stick to it from then on.



After that it's merely a matter of copying the saved folders onto your storage device. Almost all NAS drives come with software that enables your Mac or PC to connect to them – wired or wirelessly – and moving files is a simple drag and drop operation.

After that the files can be safely

WIRED OR WIRELESS?

A majority of streamers will support both wired or wireless operation. There are exceptions, though. All Linn's products, for example, are wired only. The company says it prefers this as it gives greater stability and is more robust when transmitting high-resolution files.

The downside is it will mean running cables either under carpets, along skirting boards or even through walls.

Wireless connection is more convenient and in most cases is easily capable of handling even high-resolution files, up to 24bit/192kHz.

However do remember that the greater the distance between your NAS drive and the streamer the weaker the signal becomes – and obstacles such as walls and windows can also affect signal strength. Also, the more traffic a wireless network is carrying the shakier it becomes.

So if you have a whole family toting iPhones and laptops or logging into an on-line Xbox game then you might find your music occasionally stalling.

Some people go as far as establishing their own dedicated wireless network purely for music to avoid this and you can also do the same on a wired network. But that's an article for another day.



Naim's Unilite supports both wired and wireless streaming. Most hi-fi manufacturers recommend wired connection for greater stability – but wireless networks are easily capable of handling 24bit/192kHz files.

EASIER STILL

If you want to make ripping and streaming even easier there's a number of products out there that can help.

Companies such as RipNAS, Vortexbox, Computer Audio Design and Naim among others make combined ripper/storage devices that will both copy your CDs and store them onto an internal hard disk automatically. There's no need to bring your computer into play as the units take over all the functions – simply slot your CD in, wait for it to be copied and then take it out.

These substantially simplify the task but inevitably cost a bit more as they also include a CD drive. The Vortexbox Essential, for example, equipped with 500Gb worth of storage – enough for approximately 1200 CDs – costs £310 while a 1 terabyte ripNAS will set you back around £1000.

In comparison, a 3 terabyte Western Digital NAS drive can be had for a £115 but doesn't have the same in-built convenience.



Devices like the RipNAS will both rip and then store CDs to a hard disk - meaning there's no need for a computer when digitising your music collection. It'll cost you more than a standard NAS drive but the convenience is useful.

now, mainly due to the convenience. In fact, I haven't slotted a CD into my player for the past 12 months. Instead new ones are ripped to the NAS immediately and then stored away in the loft.

GOING FORWARD

By necessity, this is a basic guide to setting up a home music streaming network, but hopefully you may be encouraged to give it a go.

Obviously, if you've a large number of CDs then transferring them all to a NAS drive can seem a daunting prospect. But you don't have to do them all at once. Just a few a week will suffice to gradually build up your NAS-based collection and a streaming solution can happily sit alongside a CD player in the system while you go along.

And once set-up other options become available. With a NAS drive you have the option of downloading and playing back high-resolution albums, be they 24bit/96kHz or 24/192.

Most streamers also come equipped with internet radio, giving access to thousands of stations around the world. The sound quality of many of these may not be the highest but they are a wonderful way of listening to new music and finding new artists.

Not only rediscovering your own music, then, but discovering new music too!



Synology DS214se NAS drive with DLNA media file compatibility. It can hold up to 12TB – 60,000 hi-res songs, no less! But it costs less than £150 in basic form.

biographical details and suggestions of similar albums which may interest you. It makes it possible to discover a whole new world of music while listening to your favourite artist.

All this without leaving your seat to eject a CD or search for another one. It's all there on the screen in front of you.

And as you flick through album covers or search artist names you'll be amazed how many forgotten gems you comes across – especially if you have a particularly large music collection.

I set-up my streaming system two years ago and have never listened to as much music as I do

deleted from your main computer as they are safely stored on the NAS drive.

PLAYBACK!

With your music transferred to the NAS drive, streamer in situ and hi-fi switched on, it's time to sit back and enjoy.

Almost all streamers are supplied with a remote control but they really come into their own when used with an individual manufacturer's purpose-built app for smartphones or tablets.

These will enable you to play, pause and skip tracks, view album artwork and search music by artist, album and even genre. Many also boast other features such as compiling playlists of your favourite tracks which can be saved for future use. Many connect to on-line databases with artist discographies,



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Marantz PM6005

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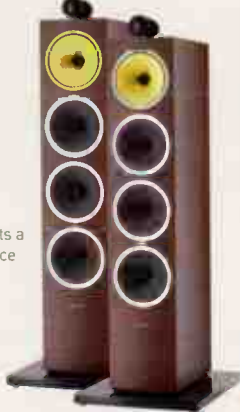
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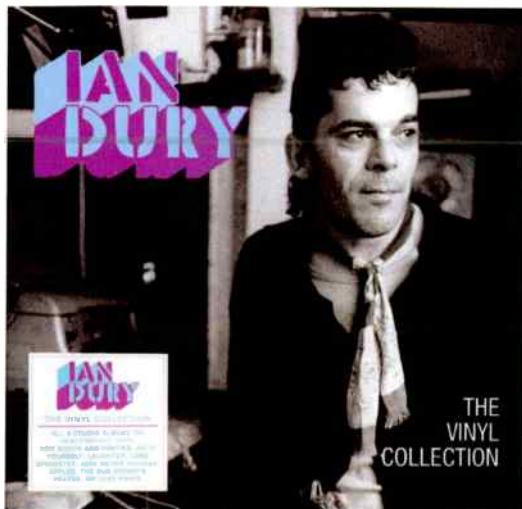
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IAN DURY & THE BLOCKHEADS

The Vinyl Collection
Edsel

He was quite a man. An intellectual with a heavy cockney accent. A graduate of the Royal College Of Art and subsequent art teacher at Canterbury Art College. A man who remained disabled from polio but, far from hiding the fact, flaunted it to his audiences, as he stalked the stage, oozing charisma.

He was an 'old man' of 28 when his first band Kilburn & The High Roads disbanded and Ian Dury joined Stiff Records to form The Blockheads.

Mixing music hall with disco and punk, as well as a unique sense of humour, he would enjoy a rack of Top Ten hits in the UK – but all of these facets would prevent him becoming a major star abroad.

This superb set features all of Dury's work, originally released between 1977 to 1997 under his own name and with the Blockheads and the Music Students.

The 180g vinyl pack include

'New Boots And Panties!!' (1977), 'Do It Yourself' (1979), 'Laughter' (1980), 'Lord Upminster' (1981), '4000 Weeks' Holiday' (1984), 'Apples' (1989), 'The Bus Driver's Prayer And Other Stories' (1992) and 'Mr Love Pants' (1997). The latter two albums appear on vinyl for the first time.

One word of caution for this particular set is that Dury had a habit of leaving singles off his albums.

Hence, a lot of well-known hits are not present on this box set.

The CD version of this collection does feature an extra disc of hits tracks, however: fourteen in total.

An alternative is to pick up a straight hits/singles CD package off Amazon for around £6-£7.

Analogue fans can keep it groove-centered, however, by picking up the old 1982-era 'Greatest Hits' vinyl release which I've see on the internet for as little as £2.



DONNA SUMMER

Donna: The Vinyl Collection
Driven By the Music

She was a disco queen. No, really, she was. More so than many other performers who were also honoured with that title, because Donna Summer was one of the few who had any sort of extended career. In fact, if you look at the amount of hits that she enjoyed, there was only the Bee Gees who could seriously rival her. She could also not only write a good ditty but her ability to choose the best collaborators held her in good stead. Not only that, she could move from gospel power to sultry eroticism at the flick of a vocal chord.

This limited edition vinyl LP box set collects the six albums originally released on Geffen Records and Atlantic Records. In fact, Summer was the first artist signed to Geffen. She tweaked her style toward R&B for 'The Wanderer' (1980), but then returned to dance in 'Donna

Summer' (1982), working with Quincy Jones. She returned to R&B with 'Cats Without Claws' (1984) and 'All Systems Go' (1987) as her career slowed. 'Another Place And Time' (1989) and 'Mistaken Identity' (1991) were lesser works but still of interest to fans.

The box set features all of these albums plus, as a box set bonus, you also get the initially shelved 1981 album 'I'm A Rainbow' that was last released in 1996 but now receives its vinyl debut in a gatefold sleeve.

Also included within the box is a 12in x12in booklet, featuring newly authored liner notes by US writers Christian John Wikane and Justin 'Musicology' Kantor, with brand new interviews, as well as extracts from archive interviews with Donna Summer by Christian John Wikane.

A top quality set – I'm now waiting for a similar treatment for her Casablanca material.

From Italian-based punk specialists, Rave Up (www.raveuprecords.com) comes this compact eight-tracker. Most of the band met at a John Cale gig at the CBGB club. One of their number, Bill Arning, was the president of the fan club for opening act The Mumps. The rest of the band would join at a later Patti Smith poetry reading.

From there on in, songs would be created and rehearsed producing: 'The Quake' based on the religion of the Quaker school that two of the band attended, 'Captain Kelly' about a failed fire alarm, 'Zero Cool' inspired by Roddy McDowell's catch phrase in the hipster cult film 'The Cool Ones', 'Realworldfun' about being submerged in the world of kitsch television reruns, 'Channel 13' reflecting the surreality of everyday life, 'We're All Damaged' which is what it says on the tin and 'Christmas Weather', about

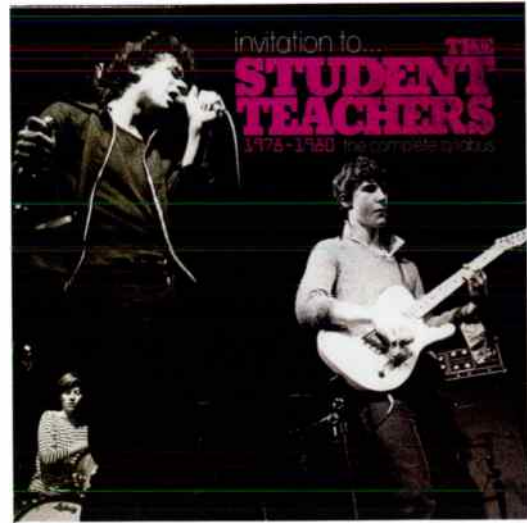
a real-life car accident that the band survived together. Their first gig was at that afore-mentioned Quaker school.

In play, the band promote the more melodic and structured side of punk. This is not the wild thrash, overly amateur, crashing chord posturing of your basic punk trio.

What you have here are a band that can write songs. Think more along the lines of The Buzzcocks or XTC. Hence, 'Christmas Weather' not only offers a quite well-developed writing style but adds some early synth backing for good measure.

The same could be said of 'Channel 13' which is notable for a swinging electric guitar, and 'What I Can't Feel' that squeezes more pop-style punk into the traditional three minute slot.

In fact, 'Looks' reminds me of late period Damned in terms of its maturity and presentation. Punk fans would do well to investigate.



THE STUDENT TEACHERS

1978-1980: The Complete Syllabus
Rave Up

AUDIOPHILE VINYL

The new decade began with Johnny Winter in full stride as 1970 saw the addition of Rick Derrings and the McCoys as his sidemen and collaborators. Winter's first two albums for Columbia had been heavy on the blues focus. For this strangely titled album, he swerved a touch and took his style into more of a rock-oriented mode, in both his singing and his selection of material.

The blues had not been abandoned. Instead, this album produced hard rock with a blues edge. Not only that, though. Essential for the commerciality of this album, Winter added a certain smoothness that was lacking in his earlier work.

In fact, that commercial element was enhanced by Derringer as both a guitarist and songwriter. It was down to him that the Winter blues virtuosity

was balanced by perfectly placed guitar hooks. In fact, as the two guitarists got together, it was plain to see that both complemented each other perfectly.

Actually, as you steadily move through this record, it's hard to find any weak parts to it.

On the face of it, the fact that this record was not the expected commercial success was not down to the band or Winter. No fault can be placed at their door.

If there was an issue, then it was the creative state of the scene at the time. Competition was just incredibly high, so 'And' was buried and kept off the radio

What you end up with, then, is a bit of a treasure trove. A record to discover for yourself. One that, in any other musical period, probably would have been elevated to 'classic' status.

Do yourself a favour and pick up a copy. If you do, you're in for a treat.



JOHNNY WINTER

And
Music On Vinyl

"I wonder how long it will be before cables develop a life of their own"



Noel Keywood

Some time ago I noticed that my camera USB cable didn't fit an AK100 portable player in for review. I peered at the AK100's socket and the tiny plug on my lead and they looked sort-of the same – well similar – but one would not fit t'other. Odd, I thought.

I found a cable that did fit, plugged it in and got under way with another review, puzzled by this but preoccupied with something a tad more interesting...

But a thought nagged me – how could two connectors look so alike? I suspected rival cable standards, such as USB and HDMI, spawning similar but different plugs, adding to the general confusion that surrounds modern digital.

As time progressed this issue became worse, ever more frustrating as I pulled leads from a bag to find a fit – so I started to pay more attention to the subject. As I did, it looked steadily less sensible to me: there are two USB plugs, Mini and Micro, that are all but the same size as each other, do the same job but don't interchange due to minor differences. Why? This seemed a crassly absurd way to increase inconvenience and confusion in a place already known for it. Not to be outdone by USB (these things are standards set up by committees), HDMI also have Mini and Micro plugs – no wonder I can never find the right plug!

And why, I wondered, when USB is an extraordinarily simple two-wire serial link with bi-directional communication, does it need Type A and Type B plugs? The distinction between host and peripheral is made obsolete by two way communication through one signal line, surely? But USB works through hideously complicated logic stacks, and it's best not to criticise what you don't fully

understand I thought to myself. Now it seems I was wrong.

I have just ploughed through an interesting look at the replacement for this shambles, a new iteration of USB 3 complete with new plug – and lo and behold it seems USB 2 as it ended up had become an acknowledged mess. Although "old" USB 3 replaced USB 2 in 2010, whilst speed was hiked the socketry problems remained.

Well, now there is a new USB 3 universal plug and an all-new interconnect that we will likely be seeing a lot more of in audio, because it is being almost universally adopted. What I am talking about is USB 3 through a new Type C connector. It sounds daunting, so let me talk about its good points first.

The Type C plug is small(ish), measuring 3mm high and 8mm wide and as such is meant to suit both large products and small portables, lessening the need for the many sizes used at present. I say "lessening the need" because the new Type C is still larger than an old Micro B (2mm x 6mm) that Astell&Kern and most others choose for small portables, so they could remain with Micro B all the same because it is compatible and simple.

The new, small Type C plug is reversible so it can be plugged in either way around – a great convenience when you are ferreting around at the back of a computer, in the dark, fighting a tangle of wires whilst trying to get plug into socket. USB have taken a leaf out of Apple's book here, who demonstrated how much easier this made life with their Lightning and Thunderbolt plugs. The drawback is that it doubles the number of pins needed in a plug.

And finally there are no A and B plugs, which again should greatly lessen the number of leads we all need to keep. It seems that Type

A (host) and Type B (peripheral) plugs were unnecessary, except to establish host as a (5V) power source. New USB 3 negotiates all this when plugged in: host or peripheral can be a power source. So with identical Type C connectors at both ends, the cable will go in either way around, as will the plugs – marvellous!

The promise here is that we will be able to use this new wonder cable to connect up just about any device to any other device. It's too good to be true isn't it?

I have my doubts. With 24 pins in every plug and many comms lines in every cable, this new form of USB 3 is far more complex than USB 2. The negotiations needed for this must work or some weird hang-ups are likely – and the peripheral must do a lot of talking, meaning it must carry a lot of on-board logic. It's a complex system with leeway for error. Budget peripherals will likely remain dumb.

But Apple computer have no doubts and have used USB 3/Type C on their new MacBook computer instead of Lightning or Thunderbolt. That is a surprise.

And finally, cables can now, optionally, be made active and "intelligent", carrying an on-board chip able to declare their power handling ability and other properties, so host and peripheral can adjust d.c. power transfer to suit the cable, as well as negotiate Vendor Defined Messaging and sideband use (e.g. for audio).

I wonder how long it will be before cables develop a life of their own as a result of this. Will my bag of cables now have to have to be divided into different grades of intelligence? And will the new sideband lines be made from OFC for better audio? Oh dear. Once it was just plug size I worried about! ●

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"Trusted labels have a reputation for taking a chance on new artists"



Paul Rigby

Every record label wants respect. It's odd, though, because most labels have a better chance of obtaining that as long as they don't get too big. Then they become a sprawling 'major' who, supposedly, disregards the common man, only cares about money and supports cash-in releases instead of worthy projects – or developing talent, patiently, over several years.

On the other hand, they can't be too small, either. If they are then they, again supposedly, have no personality, they are suspiciously under-powered in terms of releases and roster size, there is precious little proof of quality and there's a greater possibility that the owner is using it as a temporary hobby and won't support it next week. There's a sweet spot, therefore.

Many have achieved respect, though. Some have been so well regarded, in fact, that the label has become almost more important than the artists. A rare thing – but it is great for the artists on that label's roster.

By that I mean whatever the label issues, that label's fans would – or will – buy it. Ideal if you are a debut artist who normally struggles to get attention. You are liable to get swept up in the enthusiasm for the label and achieve, therefore, a wider than normal hearing. Result.

So, in the past, we've had the likes of Chess, Stax and Motown. In the more recent past, we'd had Stiff. More recently still we've had 4AD and Warp and now there's the likes of Ninja Tune, Bo'Veevil and ECM.

ECM is a great example to examine further because they've just released a batch of new CDs which illustrate my point well.

I have six here, in fact. Firstly, each one looks just right. You never feel that you're being ripped off in terms of packaging because they include a

strong CD case with a slip cover that enhances the sleeve art.

Trusted labels also tend to have a reputation of not only taking a chance on little known, niche or new artists, but producing a high percentage of exciting creative musicians that are duly lionised. It's the same here, with this new batch.

Two of the CDs have been released by giants in the jazz field. So we have Jack Dejonette (who worked with Miles Davis) releasing a CD with Muhal Richard Adams, Larry Gray, Roscoe Mitchell and Henry Threadgill, entitled 'Live At The Chicago Festival'. Then there's the late Kenny Wheeler's 'Songs for Quintet'.

The more general music listener, though, will be rather lost when I mention names such as Jakon Bro, Anouar Brahem, Sinikka Langeland and Cymin Samawatie, who appear on the remaining four CDs.

To further illustrate, Sinikka Langeland (who has released 'The Half Finished Heaven') is a Norwegian folk singer, composer, jazz improviser and kantele player. Now, is this the sort of person that you'd actively seek out? Maybe, maybe not – but I'm sure that many more people will listen to her work now that she is available on ECM, than would have otherwise have been the case. And they'll be glad of that because she produces quite beautiful, rather pastoral, peaceful works that float over your consciousness.

There's also Anouar Brahem who has taken the Arabic, lute-like, stringed instrument – the oud – and turned it into an imaginative solo instrument.

With his 'Souvenance' he takes a jazz-classical pathway that mixes piano, bass clarinet, bass and oud to give a guitar-like lead in an adventurous, soundscape, often backed by an orchestra.

Then there's Jakob Bro and

'Gelion'. Low key and almost ghostly, Bro's guitar work is nothing if not textured, with slow moving chords. Again, another artist that, in the normal course of events, most people may have missed – but the ECM totem allows people to find this sort of talent.

To finish this intriguing quartet, there is German-Iranian singer Cymin Samawatie and her band Cyminology in which Persian poetry influences their compositions and improvisation.

In addition to the vocals, the backing features, piano, bass, drums and percussion, with a touch of viola. If you detach yourself and allow yourself to float free, the resultant jazz improv feel takes you into a variety of tonal and musical directions.

I can believe that, on their own, without that important ECM tag, I would have been slightly wary of these CDs and, possibly unfairly, have given each one short shrift, passing them by without too much thought. Well, I've got a lot of music to get through and, hey, there's already little time to fit everything in.

Because ECM is on the sleeve, though, these artists avail themselves to be discovered more readily and regularly.

So you can see just how lucky those labels are that achieve the sweet spot of being followed for who they are, the material they produce and the artists they support.

It's a self-fulfilling prophecy, though, because such labels then tend to attract the better talent out there and the talent who want to be treated properly and want their work presented correctly.

Such artists tend, on the whole, to be the most exciting, most innovative and, above all, the most listenable of their contemporaries. ●

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"Best-selling singer Taylor Swift recently pulled all her music from Spotify"



Jon Myles

Where are the music stars of the future? By that, I don't mean those yet to be discovered but the bands and individuals of today who will be still drawing in the crowds in years to come.

I ask because glancing through a recent Sunday newspaper I was astonished at the number of acts from years ago still making a lucrative living on the live circuit.

The likes of Madness, Groove Armada, Manic Street Preachers, The Proclaimers and Emmylou Harris to name just a few are currently being lined-up for festival appearances around the UK this summer. And no doubt when the Rolling Stones announce their inevitable next tour it'll sell out in minutes.

Much of this can be put down to how we consume music these days and how rapidly it is changing. At one time a new album by the likes of Madness, the Manic Street Preachers and especially the Stones would have been an event – one poured over in countless reviews and accompanied by fans dashing down to HMV or Tower Records to get their hands on the product. They were the main revenue earners for the artists.

That has all changed. The rise of digital downloads of individual tracks and streaming services like Spotify, Deezer, Tidal et al mean that quite frequently even best-selling musicians are struggling to make a living from actual music sales.

The royalties these services pay artists for streaming their catalogue is already a source of discontent, musicians saying their output is being seriously undervalued. Best-selling singer Taylor Swift recently pulled all her music from Spotify saying she wasn't prepared to contribute her life's work to an

experiment that fails to adequately compensate the creators of music.

Not that her move seems to have done Spotify much harm as its recent valuation of more than \$8 billion proves, making it one of the highest-valued private technology companies in the world – despite the fact that up to 2013 it had failed to turn a profit.

It seems unlikely we will ever see another 'Thriller' or 'Dark Side Of The Moon' racking up combined worldwide sales of an estimated 100 million and bringing vast fortunes for their creators.

Instead the real cash is to be made through live appearances where fans are happy to pay £50 and more for tickets. Where once groups toured to promote an album, now they increasingly use an album to promote a tour.

Apple's decision to distribute U2's 'Songs Of Innocence' for free to iTunes users has obviously done no harm to sales of tickets for the band's forthcoming world tour. Whatever Apple paid Bono and pals, the likelihood is that they'll net even more from the live dates – with some tickets for the London 02 leg of the jamboree costing £360 each. Multiply that by getting on for 50 dates in 20 cities and you can see where the money is nowadays.

None of this is likely to change any time soon. Indeed – as I've said before – streaming of individual tracks instead of buying physical media is only likely to become more prevalent.

Apple's impending launch of its rebranded Beats streaming service means there will soon be a massive new competitor on the block. Even those who have so far avoided the likes of Spotify and Deezer will soon find they have a streaming service built into their iTunes library on a mobile phone, laptop

or desktop. That's an estimated 800 million people. If only 10 per cent of that potential market took up the streaming option, Apple's new service would dwarf Spotify at a stroke and might even see it seriously dent sales of downloads from its own vastly profitable iTunes store.

Does any of this matter? Probably not in the long run. The manner in which we listen to music has always changed, radio broadcasts giving way to vinyl, and then CDs supplanting LPs as the medium of choice for the masses. Now it's the silver disc that is facing a sharp decline in the face of new technology. This time, though, the transition has implications that stretch beyond the mere technological.

The demise of physical format sales – CD or vinyl – means the days of those classic albums that resonate down the years and are frequently rediscovered by new generations may be numbered. Individual tracks will be more the order of the day – for which artists will be paid mere pennies each time a consumer chooses to listen to them.

For some bands that could mean they won't be earning enough to even recoup the recording costs, never mind make enough money to sustain themselves. Which will mean it'll be harder for musicians to sustain careers spanning any significant length of time.

I sincerely hope not because there are still many superb artists out there making innovative and exciting music. But if the revenue flow which sustains that creativity becomes too constricted, the supply of newcomers could be numbered. And without new bands and artists the music market starts to become a very mundane place indeed. ●

"Multichannel audio has seen a resurgence of interest in quadraphonics"



Martin Pipe

On Saturday March 14th, BBC Radio 3's flagship new-music programme Hear and Now presented two forty-minute pieces by the Spanish avant-garde sound artist Francisco Lopez, live from Cafe Oto in east London. Painstakingly constructed from field recordings made in harsh natural and industrial environments around the world, these specially-composed works were unsettling and immersive in equal measure.

What was particularly unusual is that they were "mixed and diffused in quadraphonic sound" to the assembled audience through speakers placed in the four corners of the room.

Most believe that quadraphonic (4.0) sound – two speakers in front, and two speakers behind, to give a 'wrap-around' effect – was both born and buried in the 1970s. Popular history rejects it as a spectacular failure. Too many formats, poor performance (especially the separation between channels, from most 'stereo-compatible' formats), frequently-gimmicky recordings and the need for lots of expensive extra boxes at an economically-uncertain time helped to seal its fate.

But thanks to the rise of multichannel audio in the home, there has been a resurgence of interest in quadraphonics.

The BBC has a lot of 'previous' in here, having developed its own formats (e.g., Matrix-H) for the encoding and transmission of quad material over stereo radio networks in the 1970s.

Over the years, the BBC has broadcast and recorded much surround material, from Proms concerts to Shakespeare adaptations. Radio 3 listeners, if they tuned in via DAB or FM that Saturday night, would have only heard the

Lopez pieces in stereo. But in the knowledge that there are considerably more surround-sound systems in home use than there ever were in the 1970s, it was available to home listeners in quad too.

So, what was involved? You had to connect your PC via HDMI to your audio system and go to a special BBC R+D website (<http://rdmedia.bbc.co.uk/radio3/>). The BBC told me that the 320kbps stream employed a 48kHz sampling-rate and the multichannel AAC-LC codec.

Among previous BBC surround broadcasts available through the magic of online streaming were Michael Morpurgo's WWI drama *Private Peaceful*, a clever 2003 adaptation of Dylan Thomas' *Under Milk Wood*, a 2011 broadcast of *Nine Lessons and Carols*, and a few Proms concerts.

The Proms were carried as 5.1 soundtracks (only four channels were active; in the BBC's opinion a centre-channel can spoil the front image and the sub isn't necessary for music), alongside the relevant HD channel's pictures – and could thus be accessed by any viewer who had their set-top box or TV connected to their surround audio.

The web player, however, required interested parties to mess around with PCs and driver settings. The BBC would do well to remember that not everyone has a laptop or keeps their computer in the same room as their AV equipment.

In my view, it's about time the BBC took a user-friendlier approach. I asked the BBC if the Hear and Now broadcast could have been offered for download as a 4.0-channel .ac3 or DTS-WAV audio file. This could then be transferred to a USB stick for playback on compatible multichannel AV equipment. I was told that doing so was "not in the scope of our

experiment".

What about compatible 'matrix' encoding of quad material for transmission via existing radio channels, and decoding (e.g. Dolby Pro-Logic II) by an AV receiver or amp? The BBC told me that there were "quality" limitations and explained that its intention was to "explore how open web standards could be used to deliver programmes with surround sound".

All well and good, but shouldn't licence payers be able to enjoy as much as possible and with minimal hassle, the programmes they're paying for? Offer the four-channel webplayer stream to those in a practical position to take advantage of it, but matrix-encode the FM/DAB/iPlayer versions so that listeners can at least get a fair taste of the surround experience? But there's an alternative staring the BBC's techies in the face – its established broadcast TV platforms.

The BBC could schedule a version for broadcast after normal TV hours (on, say, BBC Four HD) for the benefit of those using PVRs equipped with digital audio outputs connected to their AV gear. Here, the AC3 surround audio could be accompanied by low-bitrate video (i.e. a still image announcing the play's production and technical details). A recording of a broadcast, publicised by radio announcements/Radio Times/website, would be scheduled by the listener via the EPG.

It could then be played at a more convenient time through the listener's AV system – all they'd need to do is ensure the right soundtrack is selected. When I suggested this to the BBC, it told me the aim of its experiments was to investigate how surround-sound could be carried via open web standards.

And that's where the BBC still is after quite some time. ●

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Head Candy

ADL looks to build on the success of its first headphone with a new up-market model. Jon Myles listens in.

Alpha Design Labs (ADL) new H128 features custom-made drivers actuated by 40mm high-flux neodymium magnets and a special ring structure between the diaphragms, to help keep high frequencies in phase.

All of the drivers metal parts are also cryogenically frozen before putting them through a demagnetisation treatment.

The padded earpieces are finished in leatherette and sculpted to provide a firm seal and improve bass response.

Two cables are included in the box – a 3m one with a gold-plated 6.3mm plug that unscrews to reveal a 3.5mm connector plus a special 1.3m Alpha Process-treated iHP35X lead said to offer superior sound. Both connect to a mini-XLR on the underside of the left earpiece.

Weight is a claimed 320g with cable, while headband pressure is put at approximately 4.5 Newton.

Comfort-wise the ADLs were easy to wear over even extended listening periods, although the 'cups' are not the largest and people with larger ears than mine might find them too small.

SOUND QUALITY

Plugged into the Moon Neo 430HA headphone amplifier (see Hi-Fi World, May 2015) via the 1.3m lead it was apparent the H128s have a distinctively different sound to the earlier H118s. The bass has the same pleasing weight and balance but there's a more emphasis to the upper mids and treble, that gives a greater sense of snap to the sound.

Alison Krauss's voice on 'Raising Sand' is startlingly clear – so much so that I could easily make out her sharp intakes of breath between individual phrases.

Similarly Noel Gallagher's guitar work on 'Rock 'N' Roll' star had a distinct searing edge to it – not harsh

but just enough to bring out the excitement in the track.

Turning to the Leftfield's classic 'Leftism' dance collection, the ADLs kept the lower registers of 'Release The Pressure' in good check, maintaining good timing but never allowing the electronic bass to dominate what was going on higher up the musical scale.

The H128s were also extremely impressive at providing that 'out of head' experience. Unlike some rivals there was never sense of music being projected into the ears but more a feeling of it floating free of the earcups.

Playing The Orb's 'Towers Of Dub' and the effects shifted seamlessly from one side to the other while the music sounded as though it was floating around my head. Detail here was also good with the ADLs picking up those all-important subtle background sounds.

CONCLUSION

The H128s are an exciting listen with a firm bass but a slightly prominent midband and treble. Consequently they sound detailed and fast but sacrifice some of the smoothness of the company's original H118s. If you're



tempted by the ADLs I'd recommend hearing them both side-by-side before making your mind up.

MEASURED PERFORMANCE

The ADL H128s have a smooth response pattern, our analysis shows, with strong

FREQUENCY RESPONSE



bass down to 60Hz. There is a notable lift up at high frequencies, enough to give the H128s strong treble by current standards. Few headphones peak so strongly in the treble.

Impedance measured a high 80 Ohms. Sensitivity was fair at 91dB SPL (loud) from a small 1mW of input power, the weakest portable can deliver.

The H128s will sound smooth with clean bass, strong midrange insight but very strong treble. **NK**

ADL H128 £295



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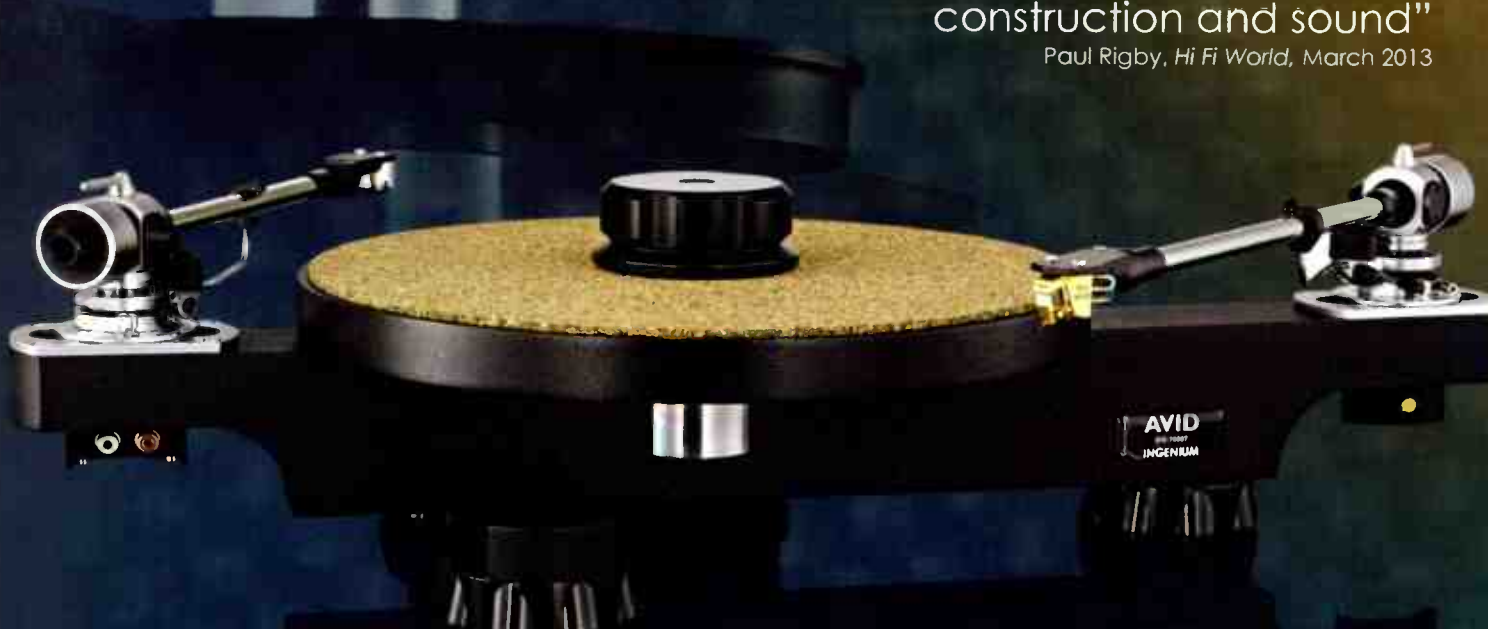
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Jeff Dorgay, Tone Audio Magazine, January 2013



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Paul Rigby, Hi Fi World, March 2013



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World Radio History



Neat's new Motive SX3 standmount offers a big sound from a small enclosure. Jon Myles takes a listen.

Small & Neat

Neat might not be the most high-profile of British loudspeaker manufacturers – but the company has built up a loyal following since launching its first products back in the late 1980s.

Operating out of County Durham, the company's main men are Bob Sturgeon and Paul Ryder – who both happen to be accomplished musicians as well as loudspeaker designers.

So it's no surprise that Neat's various transducers have won repeated plaudits for their innate musicality and ability to carry a tune.

While its products now range from the truly diminutive Iota to the range-topping (and expensive) multi-driver Ultimatum XL10, one of its mainstays since its debut in 2005 has been the Motive series, comprising three floorstanders, a standmount and a centre channel 'speaker.

These have now been relaunched in SX versions. Changes include

revised cabinet construction and – most importantly – a new tweeter.

The smallest of these is the £1085 Neat Motive SX3 reviewed here, measuring 325mm x 160mm x 200mm (HxVxD) and weighing in at 6kg per loudspeaker.

A traditional two-way bass-reflex design, mid/bass duties are handled by a 134mm main driver while the Motive's titanium tweeter has been replaced by a new unit featuring a 25mm inverted dome whose diaphragm is made from anodised

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Q uintet

Since 1948 Ortofon have introduced nearly 100 different moving coil pick-up cartridges to the hi-fi market. Their latest models in this long and proud heritage are the Quintet Series.

All Quintet cartridges use the same ABS thermoplastic bodies and neodymium magnets, but each model in the range has its own sonic expression that reflects its status. From the well-rounded **Quintet Red**, through the smooth **Quintet Blue** and spacious yet dynamic **Quintet Bronze** up to the pure audio excellence of the **Quintet Black**, this series offers something for every discerning listener at a very attractive price.

The Quintet Series also includes a true-mono cartridge, for accurate reproduction of older mono recordings.



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aluminium.

Neat says this was chosen after lengthy experimentation with various materials and gives a smoother response, as well as providing a seamless transition with the mid/bass.

The rear panel features a single pair of gold-plated 'speaker terminals' so biwiring is not supported. A small reflex port is situated below.

Standard finishes are natural oak, American walnut, black oak and satin white, while other options are available to special order.

SOUND QUALITY

Neat loudspeakers have a long-standing reputation for working well with Naim electronics – so I quickly paired the SX3 with the excellent Supernait 2 connected with Tellurium Q's exceptionally open Ultra Silver cables (see review elsewhere this issue).

It was immediately obvious there's a natural synergy at work here. The Neat doesn't go exceptionally low in the bass but it is well-defined and clear which suits the Naim amplifier's relatively low damping factor well.

What you get is an inherently musical, fun and fast presentation that sounds extremely insightful.

Uptempo material such as the electropop of Charli XCX's 'Sucker' has tremendous vibrancy – the synth lines were bright and clean, while the bass track simply charged along. That small enclosure might not produce prodigious low-end but nor does it exhibit any overhang, meaning the music isn't slowed by smeared timing.

The Neats also handle dynamics well. On 'Mars' from Holst's 'Planet Suite' the orchestral crescendos were portrayed with realistic scale and depth, while the complex arrangements never sounded congested or overly compressed. Part of this is down to the excellence of the new tweeter, which while clear and open never sounded unduly bright or harsh.

In contrast, the mid/bass driver could sound a little unruly at times. It doesn't have quite the sophistication of the tweeter with a slight coarsening of the sound on smoother and well-recorded material such as Eleanor McEvoy's 'Yola' where you don't get quite the resolution some rivals can provide.

Having said that the two units do blend together with rare assurance – seemingly devoid of any midband suck-out.



That also translates into good stereo placement. Images projected well into the room and extended realistically beyond the edges of the cabinets.

On Kraftwerk's atmospheric 'Minimum-Maximum' I got a good sense of the ambience of the live venues, the varying tempos of the intricate musical strands meshing well into a believable whole.

When the sound of a car door shutting and engine starting heralds

the opening of 'Autobahn' it actually comes over as startlingly realistic.

The SX3s do, though, need a decent amount of power to go loud. Neat quotes a sensitivity of 86dB, but our tests put it at a low 83dB (see Measured Performance). They were more than happy on the end of the Naim but low-powered SET devotees need not apply.

Partner them carefully and the Neat SX3s are an essentially enjoyable loudspeaker that bring a sense of vibrancy and coherence to anything you play through them.

They may not be the most tonally accurate loudspeakers available at the price but they more than make up for that with their timing, brio and sheer joie-de-vivre. And, after all, that's what we listen to music for in the first place.

CONCLUSION

The Neat SX3s are a small but potent pair of loudspeakers. They have a foot-tapping rhythmicity which has the ability to get you bouncing around the room with a big smile on your face. Add in great detail for their size and they come very highly recommended indeed.

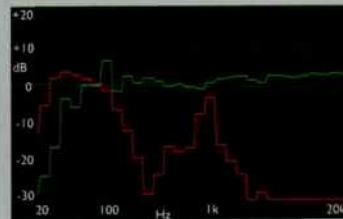
MEASURED PERFORMANCE

Our frequency response analysis shows the Motive SX3 has an unusual plateau lift in output above 1kHz, of up to +2dB across the whole audio band right up to 20kHz. There is no significant dip at crossover between the drive units at 3kHz to ameliorate the plateau lift.

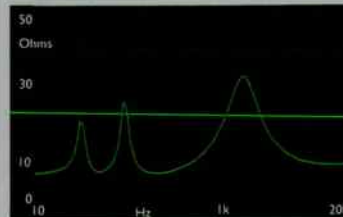
As a result the Motive SX3 will sound a little shiny bright, very detailed, perhaps fast and certainly insightful. It will likely also have well defined stereo

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



images. There is no peaking of any sort and the tweeter looks especially smooth in output so highs will probably be easy on the ear.

Peaking up output from the bass/midrange unit above 1kHz, a breakup region, to achieve this unusual response is uncommon and may coarsen the midband.

Bass output extends down to 40Hz before rolling off sharply, but the small rear port extends this down a little. The port applies broad damping to the bass unit suggesting the Motive will produce well defined bass with little overhang. It will suit near-wall placement.

A 6.6 Ohm (dcr) bass unit is used, quite a high value. As a result overall impedance measures 10.5 Ohms, far above most loudspeakers. As a direct result voltage sensitivity was low at 83dB sound pressure level from one nominal Watt (2.84V) input power, meaning the Neat will need volume turned up and must be used with relatively powerful amplifiers of 60 Watts or more (into 8 Ohms).

The Motive SX3 measures well enough but it is a slightly unusual design that will have a quite particular sound.

NK

NEAT SX3 £1085



OUTSTANDING - amongst the best

VERDICT

A great small standmounter that majors on musical communication. Needs decent power but rewards with a fast, upbeat and addictive presentation.

FOR

- detail
- timing
- refined tweeter

AGAINST

- no low bass
- needs power

Neat Acoustics
+44 (0) 1833 631021
www.neat.co.uk

vinyl section

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JUNE 2015

www.hi-fiworld.co.uk**INSPIRE ROKSAN XERXES TURNTABLE 82**

Noel Keywood gets to grips with Inspire's latest re-build of a Roksan Xerxes turntable with Artemiz arm.

SCHIIT MANI PHONOSTAGE 86

A new budget phonostage impresses Paul Rigby.

BALANCED CARTRIDGES 90

David Lord looks at how to go balanced with your cartridge.

news

MO-FI FINE

New releases from US-based audiophile outfit Mobile Fidelity (www.mofi.com) include the Grateful Dead's 'American Beauty' (1970). A restrained yet powerful release and their best studio outing. Also out is 'Workingman's Dead' (1970), reflecting the increasing darkness of the hippie movement at the end of The Summer Of Love. This acoustic outing is often heartbreaking in its presentation.

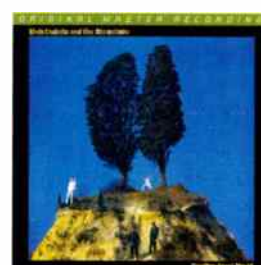
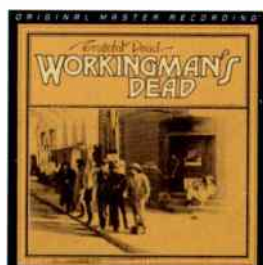
Also look out for Miles Davis' 'Sorcerer' a brilliantly cerebral, quietly toned affair. So, so subtle. Plus Elvis Costello & The Attractions' 'Goodbye Cruel World' which offers great songs killed on the spot by dated 'trendy' synth arrangements.




THE PLEASURE TONE

Two LPs from UK audiophile outfit Pure Pleasure. The first is the mighty 'Give Me The Night' (1980) from George Benson. His best and most successful commercial album with Quincy Jones' fingerprints all over it. Benson gives an excellent vocal performance alongside his proven guitar talents. Ah, if only Benson had stuck with Jones from this moment on.

Also look out for Cesaria Evora's 'Cafe Atlantico', which occupies a Latin American musical landscape taking Cuban and Brazilian inspirations. Her vocal exhibitions can be emotionally wrenching but the LP offers a moody, tasteful, style that will appeal to lovers of world music.



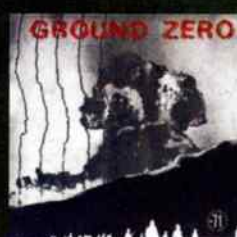
IT'S A RAVE!

Punk and early electro from Italian based Rave-Up www.raveuprecords.com begins with the minimalist Jacket Weather and 'When Shadows Move' from 1982-1983 (plus a 2012 bonus track). Combining bass with basic Casio tones and a wonderfully edgy vocal.

Deca, via Federico De Caroli's, sees 'Modulectron', an anthology of unreleased material recorded between 1984-1986. Italian electronic music of Tangerine Dream flavours

Ohio-based System 56's self-titled LP took early Ultravox and Gary Numan as inspirations. This early eighties collection is highly recommended if they are yours too.

Also look out for Ground Zero's self-titled album, Boston punk from 1979-1980 and Luke Mucus and the Phlegm, a bunch of young punk teenagers from the midwest. It's quality stuff, though. Punk fans need to bend an ear.



HIP-ROCK

Lots of rock and lots of hip-hop from Music On Vinyl (www.musiconvinyl.com). The hybrid of the two includes Korn's 'Untouchables'. An impressively lean album, a good vocal performance but lyrically weak while 'Take A Look In The Mirror' (2003) sounds different while sounding the same. A nice trick. It's brief, punchy and over before you know it.

'Come On Feel the Lemonheads' was an unruly Lemonheads LP, lacking focus but is still a triumph because it includes superb power pop and country-rock. Full of hooks and simple arrangements. It's an album to explore and discover sonic gems

It's like a template of grunge, a DIY album of the same taking serious guidance from Nirvana and Pearl Jam. That's Bush's 'Sixteen Stone'. Other than that, there's no free-form excitement. Every track is just too polished.

Look out for 'Legend Of The Wu-Tang Clan' by the same. A 2LP, numbered hits package with transparent vinyl. Also, it may be a glued together live album from 1987 but Husker Du's 'The Living End' is a nice live collection, nevertheless.



...AND FINALLY

From Sun Color is 'S.C.A.P Vol. I: Parallel Tracks' (www.scraprecs.tumblr.com), a fun and frolic-like exposition of bubbly electronica and bouncy, jaunty noises. Jolly stuff.

NRVS LVRS has released 'The Golden West' (*Hz Castle; fortherabbits.wordpress.com/tag/hz-castle-records*), a sturdy electro-indie outing fronted by male and/or appealing, rather child-like, female vocal. Solid, solid songs. One to watch.

Fawn Spots' 'From Safer Place' (Critical Heights; criticalheights.com). Honest to goodness noisy guitar indie outfit with shouty vocals and melodic arrangements. Nice contrasts boys.

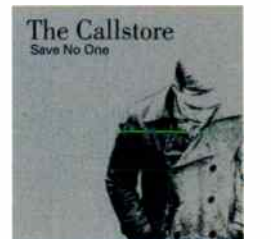
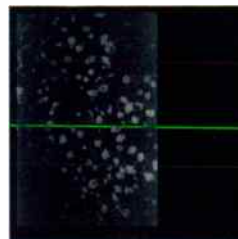
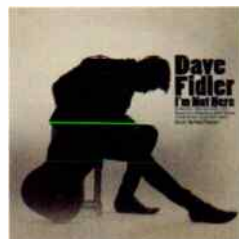
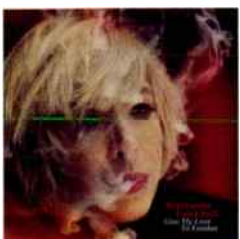
From Fire (www.firerecords.com) is Noveller's 'Fantastic Planet', an electric guitar 'project' from Sarah Lipstate who builds organic soundscapes backed by synth foundations.

Mishka Shubaly 'Coward's Path' (Invisible Hands; www.invisiblehands.co.uk). Singer-songwriter's tales of emerging from his alcoholism. A brave release.

Marianne Faithfull's new LP, 'Give My Love To London' (*Naive; <http://www.naive.fr/en/>*) includes contributions from Brian Eno, Anna Calvi, Ed Harcourt, Roger Waters, Nick Cave and Steve Earle! Phew! It's a little cracker: strong offering authority and autobiographical.

Singer-songwriter Dave Fidler, 'I'm Not Here' (www.davefidler.com) offers bland vocals and songs but, when he puts his guitar into fourth gear, he comes alive. Needs more of that, though.

Two from Talitres (www.talitres.com), Motorama's 'Poverty' presents eighties' style jangly guitar with a lolling bass guitar and a veiled, fog-like male vocal. Quite hypnotic. Meanwhile, The Callstore's 'Save No One' is a bit like a cross between Nick Cave and The Wedding Present. Fast and frantic backing over a simple, bass-like drawl. Poor quality singing voice but the whole thing kinda works. Kinda.



Pure Inspiration

Inspire's Roksan Xerxes rebuild makes an already good turntable even better, says Noel Keywood.



Inspire take perfectly good turntables – and make them better! Most amazing is their Monarch, a completely re-built Technics Direct Drive. What I'm looking at here though is something simpler and less expensive, a fettled and re-clothed Roksan Xerxes belt drive turntable. As you can see it looks lovely and underneath the skin I found it works very

well too, even if the original Roksan was a little idiosyncratic – and the flavour remains.

The basic Xerxes is a two-speed belt drive turntable with external XP-S power supply. Speed switching between 33 and 45rpm is carried out on the supply unit with a push button: a green LED lights for 33rpm and a red one for 45rpm. On/off, meaning platter start/stop, is a small

rocker switch at the rear of the supply unit and this is an awkward feature of this package. It means the power supply must be accessible to change speed and I had to reach around to its rear to start or stop the platter. But I guess if you have an original Xerxes then you've grown to accept this.

The attractive, two-tier plinth is Inspire's design, replacing Roksan's

original that, Inspire say, has a tendency to sag. The bottom tier is of MDF, the top one of 'rigid marine birch ply'. Sorbothane shock absorbers are used as the main feet, and Sorbothane washers between the tiers provide vibration absorption and damping.

Inspire say they re-build just about all the plinth, re-fitting the main bearing, motor and of course the original two-part platter with its relatively small diameter spindle. The plinth can be made either to the original size, so the dust cover can be used, or to a new smaller size that we received that looks better Inspire say, and will take the latest Xerxes 20+ lid. Price is £595 for either version – note that you have to supply an old turntable for conversion; it is not included in the price.

Veneer choices are Maple, as in our sample, or Cherry, Walnut, Light American Oak or Santos Rosewood. Quality of finish was superb; Inspire's workmanship is thorough and they have a good grasp of the technical side of things, as well as the woodwork, as I was to find out when testing and using this Xerxes, that was once "an old black one in poor condition" Inspire said. It looked effectively brand new to me and perhaps it worked so well because it had been run in.

Roksan's original owners' manual for this turntable is very tweaky, describing a wide range of adjustments not required on most other turntables such as a Rega for example. This looked a bit daunting for anyone who simply wants to plug and play. Inspire said they had fully and correctly adjusted our sample and it seemed correctly aligned and

worked well; nothing touched or buzzed and all arm alignments were correct, as was tracking force etc.

A Roksan Artemiz arm was fitted, and again this is a somewhat specialised and tweaky design with a novel pendulum counterweight, but once set up it is easy enough to use. Our sample came with no finger lift and I found it difficult to manoeuvre as a result; I always use a finger lift since they make use easy, and have minimal affect on the sound compared to the resonant structure of a headshell – I hand cue.

An Ortofon Quintet Black budget moving coil cartridge had been fitted. A point to note here is that the Black had steadily and quite strongly falling treble under measurement and an audibly warm sound as a result that isn't, I feel, either accurate or especially attractive. I favour a smooth and



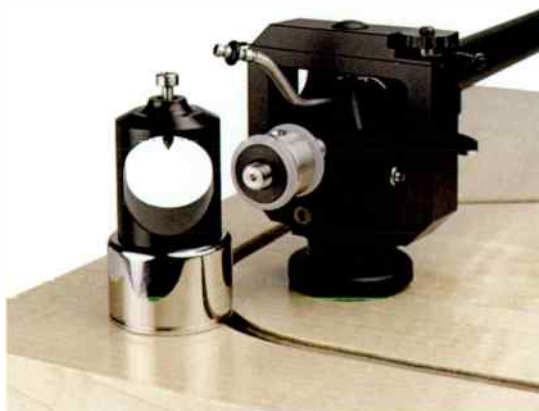
The belt-drive mechanism sits inside a completely rebuilt plinth assembly.

that just as our prior measurement had suggested it was on the mild side, with clean treble but an overall warm texture and very heavy bass. I could hear the turntable's speed stability shine through all the same, heard as a rock-steady confidence and purity



The Roksan Artemiz arm includes a rather novel pendulum counterweight.

The counterweight slides onto the rear of the arm and can be adjusted by the screw on the top of its housing. Unusual but effective.



easy presentation and appreciate that a heavily damped mechanical system can behave like this (this is time domain optimisation, not frequency domain), but the Quintet Black takes this too far for my taste.

SOUND QUALITY

Spinning my way through a range of LPs with the Quintet confirmed

of tone.

Swapping over to our Ortofon Cadenza Bronze moving coil cartridge tightened up bass and improved its timing. It also showed that the Inspire had a beautifully clean and dynamically lively midband that pushed out Kate Bush's voice singing 'King of the Mountain', from Aerial (200gm pressing). The opening bass line really was monstrously strong over our big Tannoy DC10 Tis (one port damped with a bung); I was quite taken aback after our Timestep Technics with SME309 arm. However, there was less bass definition and control. Connected up to a Luxman LA-550X amplifier (see review next month) the package was also



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Inspire re-build just about all the plinth, re-fitting the main bearing, motor and platter.

remarkably quiet, with no hum or hiss, with the arm lifted off the vinyl.

Pressing the speed button down to 45rpm (red LED) I put on the long synth intro of Alison Goldfrapp's 12in 45rpm 'Ride A White Horse'. The Inspire lapped this up, again showing

'Victim', where the opening guitar all but jumped out of our speakers.

CONCLUSION

For £595 I thought this was a lovely package. Perhaps best of all – dare I say it – it looks good.

The Maple veneer of our sample was bright and modern.

It also felt good, the upper plinth tier sitting firm whilst I used the lift/lower. The Xerxes and Artemiz worked well, but they are idiosyncratic – characterful in nature and sound quality shall I say.

But overall, sound quality of this package was very good. It was quite obviously speed stable, having rock-steady pitch and pure tone, and a confidence of delivery that belt drives often lack.

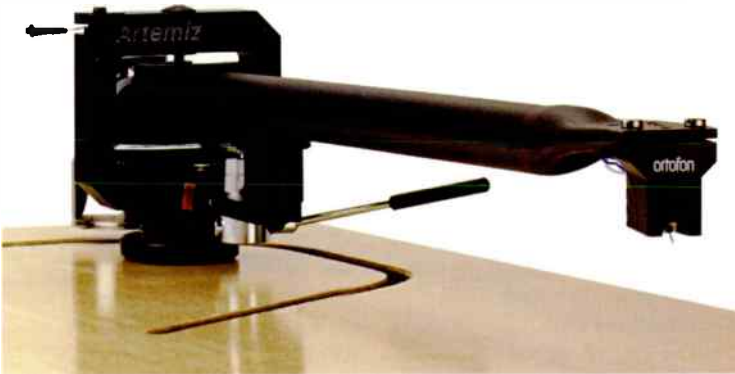
The Inspire plinth enhanced the Xerxes excellent timing with sharp dynamic contrasts that gave the package a great sense of life.



Power comes from a dedicated Roksan off-board supply.

The sound wasn't as smooth and svelte as possible, rather it was viscerally punchy, and nicely paced. In other words – exciting!

A great sound then from an attractive modern plinth of excellent construction from Inspire.



The Inspire comes with a Roksan Artemiz arm.

it was wonderfully tight in timing, with absolutely no slur. The plinth did also give impressively well defined dynamics; the Xerxes had a sense of orderly precision but was as punchy as Tyson Fury, the sinuous synth work delivered with obvious strength, right out into the room.

The Scissors Sisters 'Laura' again came across as wonderfully clear and strongly expressed. After this ended the Inspire Xerxes moved crisply into the opening guitar work of 'Take Your Mama'. This up-tempo number was jubilant in every sense, the Inspire giving a lovely open quality, with plenty of verve and pace. Funny how good vinyl can be, how viscerally exciting it gets – and the Inspire Xerxes had oodles of all this. I suspect the arm was adding a bit of midband shout at times; it had almost megaphonic projection but it was aurally engaging with 'Music is the

MEASURED PERFORMANCE

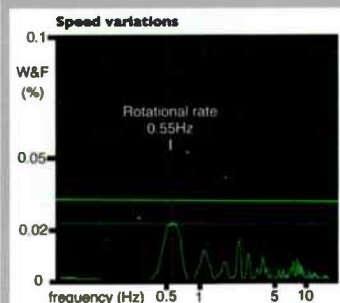
The Inspire Roksan Xerxes was remarkably speed stable, surprisingly so for a belt drive, our sample equalling Direct Drive. Speed accuracy was almost perfect, the platter running just fractionally below 33.3rpm, by an amount that would not audibly lower pitch.

There was little drift in speed too – a crucial factor. This resulted in a low

wow value (a rate of speed change from 0.1-10Hz) of 0.1% being measured, where 0.2%-0.3% is common for belt drive. Our analysis clearly shows very low speed variation at the rotational rate of 0.55Hz (33rpm), where most speed variation is usually seen (using a centred test disc). Otherwise, there are no obvious wow components in this analysis to 20Hz and as a result the total Wow & Flutter figure, DIN weighted, measured a very low 0.06%.

The Inspire Roksan delivered superb speed accuracy and stability, so will give rock-steady pitch. **NK**

WOW AND FLUTTER



Speed accuracy	-0.06%
Drift	0.13%
Wow	0.1%
Flutter	0.06%
Total W&W wtd	0.06%

INSPIRE ROKSAN XERXES £595



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

A well built and finished plinth that sounded good too, making the most of a Roksan Xerxes turntable and Artemiz arm.

FOR

- contemporary style
- good sound quality
- adjustability

AGAINST

- awkward controls
- tweaky
- no finger lift

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Schiit music

American outfit, Schiit, has released a new budget phono amp. Paul Rigby reviews the Mani.



OK, I'll pause a second while you think of 101 additional different jokes surrounding the name, which is apparently German and pronounced 'Shih-tah'. Aimed squarely at the budget or entry-level user looking to investigate this new fangled format called vinyl, the Mani is a basic and easy to use phono amp that, although designed and built (not just assembled) in the USA, arrives with a Chinese-made wall wart power supply.

Spanning 127x89x318mm and weighing in at 450g, the solidly constructed, silver coloured miniature amplifier supports MM and, admirably, MC cartridges (although load options are few).

The Mani provides four

switchable gain modes, accessible via a small cluster of fiddly DIP switches, situated under the chassis: 30dB, 42dB, 47dB and 59dB.

The front of the box is a simple affair that is dominated by a blindingly bright power light while the rear provides the usual phono amplifier connections and a toggle power switch plus grounding point and access socket for the wall wart power supply.

SOUND QUALITY

At this price point, most users will tote an MM-based turntable but I did briefly test it with my Benz Glider MC while spinning a slice of prog rock and Yes' 'Yours Is No Disgrace'. Despite a relative lack of dynamic extension and upper midrange insight, the Benz offered an

admirably ordered soundstage and bass definition.

Switching to more realistic testing conditions and the Rega RP3/Elsys2 MM, it was noticeable how relatively high the gain was on the Schiit compared to my reference Cambridge. Popping the volume down a touch, I was able to enjoy the open and airy midrange which added distinct length on the treble tails during cymbal strikes. This was helped by the welcome instrumental separation, possibly a result of reduced noise during the design, as seen in our tests. Certainly, the vocals from Jon Anderson were smooth and the accompanied vocal harmonies were sweet and easy on the ear.

The Schiit could also get down and dirty and, again supported by our tests, the phono amp was able to squeeze extra bass from the tiny Roth speaker cabinets giving the Chris Squire bass a more meaty, emboldened bite, while the acoustic guitar strums from Steve Howe had an open, rather exposed, string effect. That is, the guitar sounded more like a group of strings being strummed than one tone being produced en masse.



The usual phono amp connections are available. Nice to see a firm, decisive toggled power switch (right).



For the price, the Mani offers an admirably low noise design.

Moving to 'Mars, the Bringer of War' from Holst's 'The Planets', it was evident just how scratchy those introductory strings were, adding more portent to the oncoming onslaught, while the following, strong string effect managed to retain a smooth presentation, despite the impact of its entrance.

The enhanced separation added complexity and depth to the soundstage also helped to control the brass in the upper mid region, reducing listening fatigue.

Users who purchase an introductory budget system often have one eye on the upgrade path further down the line so, with this in mind, I installed a pair of the newly introduced Q Acoustics 3020 stand mounted speakers (£190) which

would, in fact, be part of an ideal upgrade path for this very system. The Mani could relax a tad with these speakers because they were easier to run, it also allowed me to lower the volume on the amplifier which helped to de-stress the presentation a touch.

Running Holst through this new pair of transducers showed that the introductory string scratches were almost insect-like in their progress producing involuntary itching from this reviewer. Similarly, the clarity and transparency of brass within the upper mids was impressive as was the bass response.

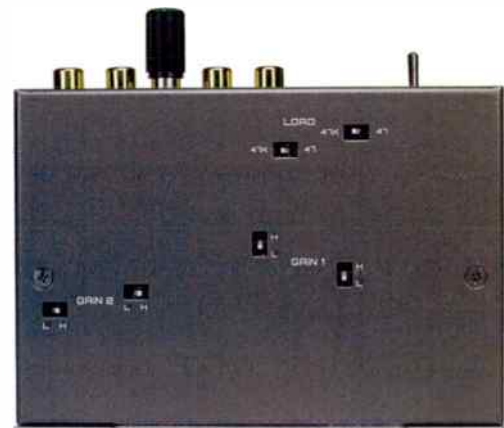
CONCLUSION

Despite the glaring power light that threatens to burn any passing retina

(a piece of tape should be used to cover the offending article), this compact and easy to use phono amp offers good value for money and excellent sound quality, for the price. Also, the Q Acoustics speaker test shows that there is plenty of good music to be squeezed from the Mani which bodes well for its inclusion as part of a system targeted for future upgrades.

SYSTEM USED

Avid Acutus turntable, SME IV arm, Benz Glider MC cartridge
 Rega RP3 turntable, RB303 arm & Elys2 MM cartridge
 Cambridge 540P Phono Amplifier (MM)
 Trichord Dino phono amp (MC)
 Cambridge Azur 651A Integrated Amplifier
 Roth OLi RA1 speakers
 Q Acoustics 3020 Speakers & Q Acoustics Stands
 Black Rhodium Twist Speaker Cables
 Tellurium Q interconnects



The fiddly DIP switches provide gain and load options for both MM and MC cartridges.

MEASURED PERFORMANCE

The Mani comes set with normal MM gain of x132 (42dB) set (Gain 1 Low/Gain 2 High), our measurements showed. Switching Gain 2 to L (low) gave a very low x33 (30dB) gain but might be usable when feeding high sensitivity amplifiers like Naims. The need for Low is to avoid (output) overload distortion, since the Mani can swing only a low 3.5V out. This gives an effective input overload value of just 14mV as set for MM, and an Ortofon 2M Red can output 35mV, so distortion may be apparent.

With Gain 1 and 2 set to High (H) gain measured x950 (60dB), enough for most MC cartridges, if not super low output types. Again, this depends upon the sensitivity (voltage gain) of any accompanying amplifier. Overload was 4mV, again low but likely good enough to avoid obvious continual distortion.

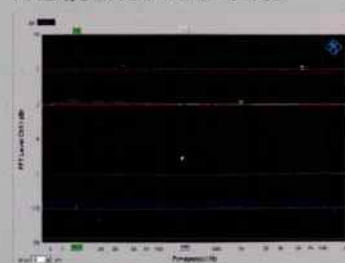
Equalisation was very accurate, our frequency response analysis shows, a small amount of bass lift being just enough to ensure the Mani has heft, and does not sound bass light.

Noise was low-ish, working out at 0.2µV equivalent input noise with MC (H/H gain settings).

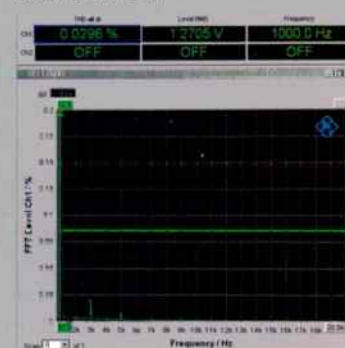
This is a surprisingly well designed amplifier. It's only weakness is low overload levels, and MC noise is a bit high, +6dB up on what is possible, but in practice these limitations are acceptable in a budget design I feel. **NK**

Disc	
Frequency response	4Hz-20kHz
Separation	72dB
Noise (e.i.n.)	0.2µV
Distortion	0.03%
Gain (dB)	30/42/60
Overload	3.5V out

FREQUENCY RESPONSE



DISTORTION



SCHIIT MANI £120



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

For the price, the Schiit Mani produces a low noise, open, relaxed sound that will enhance any budget system.

FOR

-overall sound quality
 -ease of use
 -compact

AGAINST

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A Matter Of Balance

Reader David Lord explains why it's worth using a balanced connection between one's MC pick-up cartridge and pre-amp, and describes how to achieve this at minimal cost.

SME IV arm, used by David Lord – and easy to connect up balanced.



Professional sound engineers use balanced connections between microphones, mixing desks, recorders and other equipment. The prime advantage is to ensure a high degree of rejection of hum and noise, from ground loops and induction into the cables. This is particularly necessary with low-level microphone signals, for example in studios or on-stage, that are electrically noisy environments. Line level signals are less at risk if cable runs are short, but often this isn't the case in a pro set-up where the wiring may run around a large building.

Despite the generally short cable lengths in the home, it's also quite common nowadays in domestic audio for the option of balanced connections to be provided, even on modestly priced equipment. The pundits are seemingly in agreement that there can be benefits in terms of a rather more solid sound, but for the most part this facility is available only at line level, for example between a CD player and amplifier: it's seldom

the case that a balanced input is provided for the low level signal from a pick-up cartridge.

This is odd when you think about it, because it is the one area in domestic hi-fi where the advantages of hum and noise rejection from balanced operation would appear to be most useful – particularly with moving coil cartridges. Consider: the output from a modern high-grade MC cartridge at 1kHz at 5cm/sec recorded velocity is typically 500 microvolts, whereas that from a CD player at a comparable recorded level

is 500 millivolts – no less than 1000 times or 60dB greater.

Worse still, the phono pre-amp has to incorporate RIAA equalisation which gives a bass boost of something like 17dB at 50Hz, so the sensitivity of the phono input to any mains hum which may be induced into the connection between it and the cartridge is 77dB or about 7000 times greater than that at line level.

Most vinyl enthusiasts manage well enough with an unbalanced pick-up input. But if you turn up your amp's gain much beyond the setting normally

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Studiospares 540-401 lightweight balanced microphone cable can be used for a balanced connection.



Fig 1 - A lead made by David Lord with XLR at one end (left) and Amphenol 62GB at the other (right).

used for listening, and with the pick-up at rest, you will hear a fair amount of hum, hiss and general grunge, especially if you are using a low output MC.

This was certainly my experience with MC pick-ups in the dim and distant past, so when I joined the vinyl revivalists in earnest about 15 years ago, I decided to look into the possibility of having a balanced connection from my new MC cartridge.

The simplest approach would have been to buy a phono pre-amp with the necessary facility, but at the time the only one I could find available with a balanced input was one made by Chord, and it cost £2000. No doubt this was/is an excellent bit of kit, but the expense and limiting myself from the outset to only one choice caused me to think in terms of DIY where I could at least experiment.

Nowadays there are (a few) more options if you want to purchase a phono pre-amp ready to run in balanced input mode, but as I shall now explain, there are various ways of experimenting with a balanced connection from your pick-up without spending very much if you are prepared to indulge in just a little soldering.



A 5 pin Neutrik XLR plug, with matching chassis socket, is the best choice of connector.

BALANCED TONEARM WIRING

Whether you go the purchase or DIY route, you will have to ensure your pick-up arm is suitably wired. The essential requirement is for the output from the cartridge pins to be kept electrically separate from the screening of the cable and arm/turntable earth connection. This means the left and right leads must be twin-core plus screen, rather than the more usual single core coaxial type.

The arm on the Michell Gyrodec in my main system is an SME IV, which conveniently has a five-pin plug in its base connected to the four cartridge pins, plus a separate earth connection to the arm body. The standard lead which comes with the arm does in fact use twin core screened cable, with the screens brought out separately to a flying lead, and another flying lead for the earth connection. The cartridge pins are connected via the twin cores to the phono plugs, so that at a pinch it is possible to use the standard SME wiring loom for a balanced connection. However this is not entirely satisfactory because it means the shells of the phono plugs will be "live" instead of earthed as in the normal, unbalanced mode. Moreover any commercial phono pre-amp with a balanced input facility is likely to use XLR style connectors, not phono plugs and sockets.

I could simply have cut off the phono plugs on the lead supplied with my SME IV and replaced them with something more suitable. However, I thought such an act of vandalism might be something I would later regret.

An alternative would have been to buy another lead from SME. They

have told me they will fit XLR or other plugs to special order, but if you want a complete new lead that will be a bit over the £374 cost of a spare standard lead – and you have to supply SME with the new plugs! So when I bought the arm I opted to purchase a spare SME 5-pin socket to fit the plug at the arm base, so I could make up my own lead when I started to experiment with balanced operation.

Finding some suitably flexible and lightweight twin-core screened cable isn't that easy, but Studiospares (www.Studiospares.com) supply some good quality small diameter microphone cable at £1.07 a metre plus VAT – cat 540-401 in black. This is fine for starters at least, but recently I decided to upgrade to the Van den Hul "silver hybrid" cable used by SME for the lead supplied with the SME IV. I feel this has resulted in a marginal increase in clarity of sound; however it costs £75 a metre unterminated from SME's Spares Dept., and you'll need three metres. Even so, this still costs quite a bit less than buying a custom-made lead from SME.



Fig 2 - Cardas make nice gold plated DIN plugs and sockets: David Lord recommends plug MDIN-R for a Rega arm.

Because I was planning to go the DIY route the choice of connector to the pre-amp was mine to make, and it seemed to me that the best option was to use a single 5-pin XLR plug and socket combination, rather than two separate 3-pin XLRs and a loose earth wire. This way all the connections needed could be made via one locking, high quality connector. I soldered the lead screens to pin 1 and the four cartridge connections to pins 2-5, while the turntable/arm earth wire

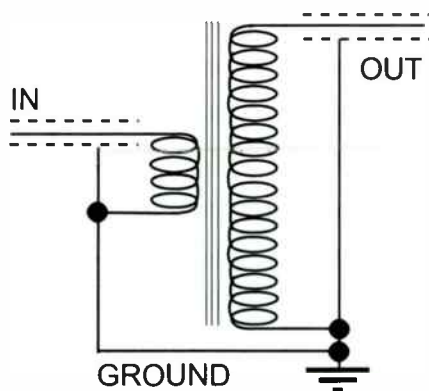


Fig 3 - A transformer unbalanced input, where one signal line is grounded.

low level audio connections and they are truly excellent, but they work out at about £50 for a mating pair. 5-pin XLRs and Amphenol 62GBs can be purchased from RS Components (rswww.com). Fig 1 shows a lead using the cable from Studiospares made up with an XLR at one end and a 62GB at the other.

As well as the SME IV arm, I own a Rega RB250 which is installed on a vintage Thorens TD150 used with the secondary system I have in my attic workshop/man-cave. It is well worth replacing the very basic lead supplied with the RB250, so while you are about it you might as well ensure it can be wired for balanced operation.

Fig 4 - A transformer balanced input, where a primary centre-tap is grounded.

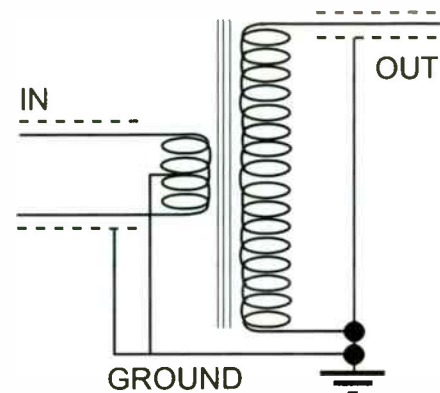


Fig 5 - Sowter Model No 1990 MC transformers in the preamp chassis – tubular screening cans at right.

went to the XLR shell.

With all the experimenting I have done, this has proven a very convenient and reliable means of quickly swapping between various different pre-amps, rather than fiddling with a plug for each channel plus a flying lead for the earth. Indeed, this is a vast improvement on the prevailing standard for pick-up connections, and if I ruled the world I would insist that henceforth all manufacturers of hi-fi equipment changed to the 5-pin XLR for phono inputs. Fortunately for the rest of you, I don't (rule the world, that is), but I do commend the use of 5-pin XLRs which only cost about £12 for a mating pair.

Better still are the 6-pin Mil-spec type 62GB plugs and sockets made by Amphenol. I have also used these for

I took out the existing plug with the fixed leads at the base of the arm, and substituted it with a nice little gold-plated 5pin DIN plug which is made by Cardas – see fig 2. You need plug type MDIN-R, which has a collar to fit the RB250: it costs £12.99 from Duo-phonic who advertise on eBay. They also provide suitable sockets to match. Replacing the plug is not difficult, but it requires care re-soldering the fine wires leading from the cartridge: this is not a job for the terminally cack-handed!

TRANSFORMER INPUTS

Having prepared the arm wiring, we can now turn our attention to the means of providing a balanced input to the phono pre-amp. The simplest way is to use a transformer with

a centre-tapped primary winding at the input to the pre. Because a transformer is often used at this point to raise the output level from a moving coil cartridge to something like that from a moving magnet cartridge, it is very easy in this case to arrange for a balanced connection: Fig 3 shows the normal unbalanced input with one end of the primary going to earth, and Fig 4 balanced with the earth going to the centre-tap instead. In one of the valve phono pre-amps I've built, I used a pair of E A Sowter's model 1990 transformers (www.sowter.co.uk). These have two primary windings which can be connected in series or parallel, with voltage gains of x10 and x20 respectively: I used the former so the join formed the centre-tap I needed.

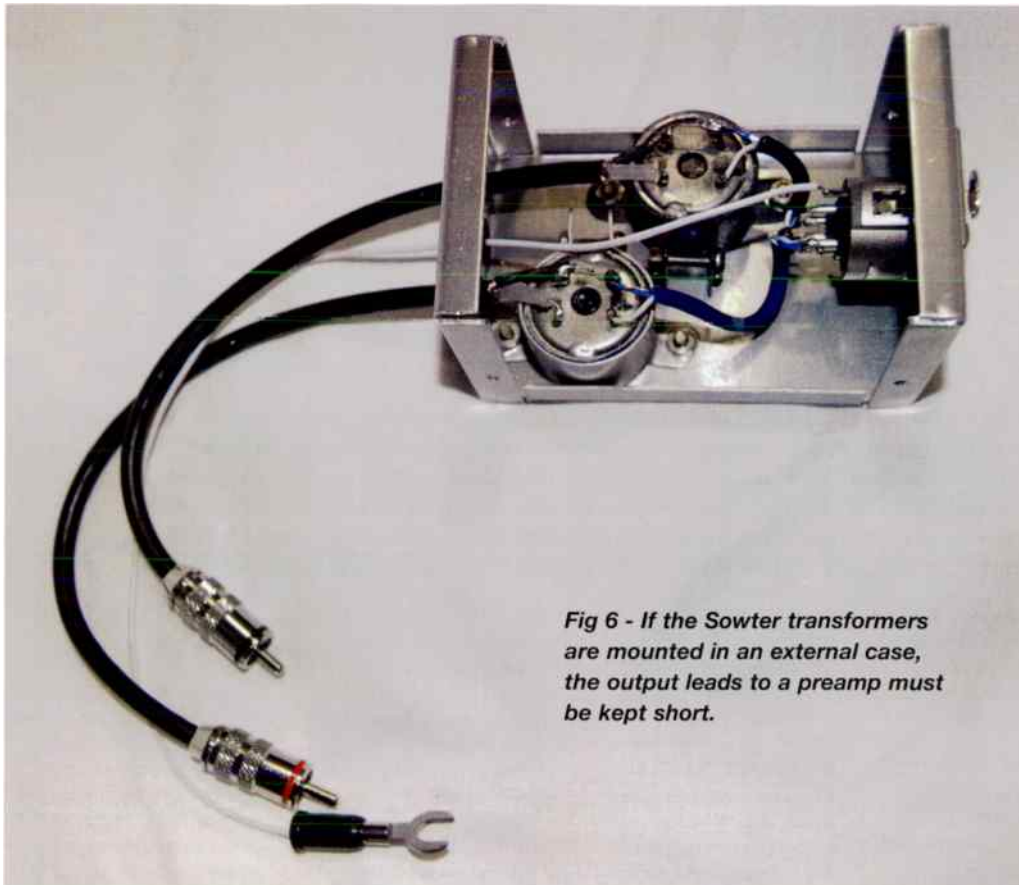


Fig 6 - If the Sowter transformers are mounted in an external case, the output leads to a preamp must be kept short.

The 1990s have an excellently wide bandwidth performance and they cost a very reasonable £71.26 each. You'll need two for stereo of course. Ideally they should be installed within the pre-amp, as shown in Fig 5. Alternatively they can be housed in a small external case, but if so the leads to the pre-amp's MM input must then be kept as short as possible – see Fig 6.

What if you already have transformers, but with no centre-tap? All may not be lost, providing the primary windings can be kept electrically isolated and one end is not irrevocably connected to earth. In this case, you can try "quasi-balancing" by placing a couple of

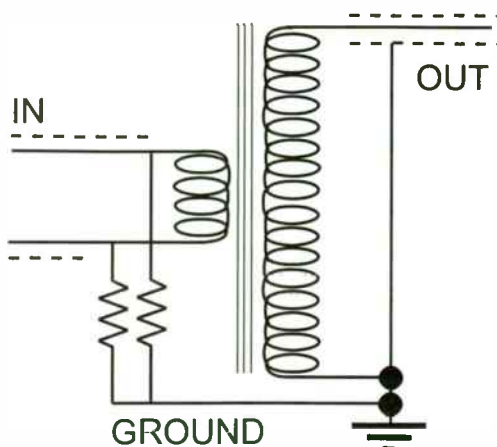


Fig 7 - A quasi-balanced input using balancing resistors to form a virtual centre tap.

identical resistors in series across the primary (say 200 ohms each), and connecting the join between them to earth – see Fig 7. But you may find it even more satisfactory to leave the primary windings floating, with no connection to earth at all – see Fig 8.

These arrangements have similar benefits to a fully balanced connection, in that any hum or noise induced into each of the two cores of the leads should be of the same amplitude and phase. Thus

when these spurious signals arrive at the primary they will not be detected, whereas the differential signal from the cartridge will register. I have experimented with both such connections, at an early stage when I only had some old transformers available intended for use with ribbon microphones. These had no centre-tap, so I

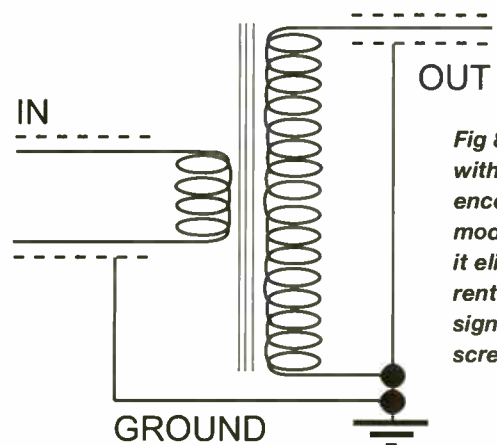


Fig 8 - A floating input with no ground reference to allow common mode cancellation, but it eliminates earth currents (hum) from the signal lines and is RF screened.

first tried the quasi-balanced approach with two resistors. However the floating connection turned out to be better in practice.

Transformers are not the only means of balancing the input to a phono pre-amp: it's also possible to do so electronically. Next month I will outline an easy means of achieving this, together with a circuit for a simple, complete phono pre-amp with a balanced input.

NEXT MONTH

In Part II David Lord gives circuit diagram and details of a super quiet phono stage with balanced input that you can build. Don't miss it.

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ROKSAN KANDY L3 power amp. Great sounding 125 watts per channel 8 ohm or 185 watts 4 ohm. Little used. World Favourite. £250 07793749178 London kingjuancho@yahoo.com

AUDIOPHILLO 2 with pure power USB/SPDIF converter £475 (purchased one year ago for ££765) Contact John on 01202 515474 or e-mail johnlangley17@talktalk.net

ELAC FS207.2 fabulous sounding and looking speakers with ribbon tweeters work well with valve and solid state amps. £300 spent upgrading crossovers internal wiring. £400 07793749178 London kingjuancho@yahoo.com

AKG K550 open type headphones (£150), £60. Denon AH-D2000 closed type headphones (£270), £110. Focal Spirit One headphones (£200), £80. Grado Prestige SR225i open type headphones (£200), £95. Sennheiser HD598 open type headphones (£200), £85. All in excellent condition and original packaging. Tel/text Richard on (07772) 711432/01494 521359 (Bucks) or email richard.schofield@kcl.ac.uk.

AUDIO RESEARCH LS25 preamp excellent condition. Boxed, instructions remote, spare valves. £1650. JBE Series 3 Welsh Slate Turntable, Mission 774 tonearm with Benz Micro Gold m/c cartridge £600. 07930 121847.

KIMBER KCAG 0.5M interconnect with Ultra Plate phono plugs, deep cryogenic treatment, super burn in enhancement and a minizapp filter attached. RRP £740 - £295 cash collected, £310 cheque posted. Tel: 01902 884694 Email: jukey39@yahoo.co.uk

PASS ALEPH5 in excellent condition. With original manual and packing. Superb Class A sound, drives any speaker including electrostatics. £980. Contact George 01223-890278 or Email: george.m.brooke@gmail.com.

PREAMPLIFIER: MUSICAL Fidelity A308cr Dual Mono preamplifier £600 (silver) Rather less than 100 hours use from new, still immaculate with original box, remote and user manual. Protected from new in an audio rack in my smoke and pet free home. Happy to demonstrate (please bring power amp, mine sold). Mike (Cheshire) 07500804700 imeldayates@hotmail.com

NAKAMICHI DRAGON just had £487 B & W service stunning £1395 Accuphase DP-65V heavyweight high end CD player with remote £1500. Other high end gear available. Tel David on 07554016461 Hampshire

WANTED QUAD 44 preamp grey with phono sockets, non workers considered. Contact Mike 01758 613790.

CUSTOM DESIGN wall mounted turntable support Black metal frame Toughened glass shelf Complete with all fixings In as new condition Offers please Tel. 01293 524587 Mob. 07951596593 West Sussex

2 WAY horn loudspeaker Mordant Short MSB200 mid/bass. Tweeter Morel 2019 (width 265mm, depth 465mm, height 770mm with Linn cable 4x5 metres attached to speakers direct, £100.00 + p&p. Email: peterscott341@tiscali.co.uk Tel 01606784767, Cheshire

LEAK SANDWICH loudspeakers £60 Leak Stereo 30 amplifier, boxed, £60, Thorens TD150 deck with Pickering V15 cartridge (lidless) £70. Pioneer TX6200 tuner £25. All excellent condition for age. Tel: 02476 592585 or Email: martin_mason@talk21.com

CD PLAYER: Musical Fidelity A308cr 24 Bit Upsampling CD player £500 (silver) Rather less than 100 hours use from new, still immaculate with original box, remote and user manual. Protected from new in an audio rack in my smoke and pet free home. Happy to demonstrate (please bring power amp, mine sold). Mike (Cheshire) 07500804700 imeldayates@hotmail.com

NAIM HEADLINE 2 and NAPSC 2 excellent condition quick sale £400 Tel 07805 196354

CHORD COMPANY Chameleon plus 1 metre interconnect. Hardly used. Price £50. Tel: Julian 0113 2933 478

CLASSIC CONTACTS

When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all these companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

GT AUDIO

(Graham Tricker, Bucks)
Classic tuners, radios and amplifiers restored, repaired.
Tel: 01895 833099
Mob: 07960 962579
www.gtaudio.com

TECHNICAL AND GENERAL

(East Sussex)
Turntable parts - wide range of spares and accessories, plus arms and cartridges. Tel: 01892 654534

CARTRIDGE MAN

(Len Gregory, London)
Specialist cartridge re-tipping service and repairs. High quality special cartridges.
Tel: 020 8688 6565
Email: thecartridgeman@talktalk.net
www.thecartridgeman.com

Dr MARTIN BASTIN

(Shropshire) Garrard 301/401 restoration, renovation and service. Special plinths; rumble cures, etc.
Tel: 01584 823446

CLASSIC NAKAMICHI

(Paul Wilkins, Worthing, West Sussex). Restore, Repair & Service Nakamichi Cassette Decks. Tel: 01903 695695
Email: paul@bowersandwilkins.co.uk
www.bowersandwilkins.co.uk

ARKLESS ELECTRONICS

(Northumberland)
Specialist in repairs, restoration and modifications to all amplifiers, valve or solid state, ancient and modern.
Tel.: 01670 530674
Email: info@arklesselectronics.com
www.arklesselectronics.com

CLASSIQUE SOUNDS

(Paul Greenfield, Leicester)
ESL-57s restored, rebuilt, fully renovated or improved. Leak, Quad valves amps etc.
Tel: 0845 123 5137/
Mob: 0116 2835821
Email: classique_sounds@yahoo.co.uk
www.flashbacksales.co.uk/classique

ATV AUDIO

(Henry Dulat, Surrey)
Repairs, restorations and upgrades to valve and transistor amps and all analogue audio including Revox.
Tel: 01372 456921 Mobile: 07730 134973

REVOX

(Brian Reeves, Cheshire)
Revox tape recorder spares, service and repair. Accessories also available.
Tel: 0161 499 2349
Email: brian@revoxservice.co.uk
www.revox.freeuk.com

ONE THING

(Coventry) Specialist in electrostatic panel manufacture and repair. Can refurbish ESL 57s and 63s as well as Leak Troughlines and Quad IIs.
Email: one.thing@ntlworld.com
www.onethingaudio.com

EXPERT STYLUS COMPANY

(Wyndham Hodgson, Surrey) Stylus replacement service for all types of cartridge. Including precise profiling for 78s. Tel: 01372 276604
Email: w.hodgson@btclick.com

OCTAVE AUDIO WOODWORKING

(Bristol) Unit 2, 16 Midland Street, St Phillips. Bristol.
Tel: 0117 925 6015
www.octave-aw.co.uk

WEMBLEY LOUDSPEAKER

(Paul MacCallam, London)
Comprehensive loudspeaker servicing.
Tel: 020 8 743 4567
Email: paul@wembleyloudspeaker.co.uk
www.wembleyloudspeaker.com

LORICRAFT AUDIO

(Terry O'Sullivan, Bucks)
Garrard 301/401 and their own 501 repair, spares and service.:
Tel: 01488 72267
www.garrard501.com

QUAD ELECTROACOUSTICS (Cambs)

Quad's service department, able to repair almost all Quad products, from the very first. (Also Audiolab, Mission & Wharfedale).
Tel: 0845 4580011
www.quad-hifi.co.uk

SOWTER TRANSFORMERS

(Brian Sowter, Ipswich)
Large range of audio transformers for valve amps, cartridges, line drive, interstage plus all associated services.
Tel: 01473 252794
www.sowter.co.uk

LOCKWOOD AUDIO

(London)
Tannoy loudspeaker parts, restoration and repair. Also Epos and TDL loudspeakers.
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(Martin Pipe, Southend-On-Sea)
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www.tekktalk.co.uk

NEXT MONTH JULY 2015 ISSUE

CAMBRIDGE 851N NETWORK PLAYER

Cambridge Audio's 851N is the company's new flagship network player - featuring 24-bit/384kHz upsampling from all sources, native 24-bit/192kHz playback, USB, digital audio inputs and streaming over wi-fi including Spotify Connect and Apple AirPlay. It can also decode DSD files and comes with its own dedicated control app. Read our in-depth review in next month's issue to find out.

...and more to bring you -

LUXMAN L-550AX SOLID STATE INTEGRATED AMPLIFIER
COWAN SP2 WIRELESS STEREO SPEAKER WITH BLUETOOTH 4.0
ARCAM ARC-A49BK INTEGRATED AMP
GRACE M920 HEADPHONE AMPLIFIER
TASCAM DR-22L PORTABLE RECORDER
MITCHELL & JOHNSON TUNER/DAB RADIO

...and more to come



This is a selection of what we hope to bring you, not a complete list. We regret that due to a wide range of issues, such as failure under review, we cannot guarantee that all products listed above will appear.

**PICK UP THE JULY 2015 ISSUE OF HI-FI WORLD ON SALE MAY 29TH 2015,
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T.REX

ELECTRIC WARRIOR 1971



"Even the more innocent music constructions are twisted and corrupted by Bolan into something campy and sordid"

Slipping easily from being a British folk-rock combo called Tyrannosaurus Rex to becoming the principle force in glam rock as T.Rex, the core of both was guitarist/vocalist Marc Bolan.

T.Rex had a distinctive sound that centred around a distorted, dirty guitar that contrasted with Bolan's ethereal, rather hippy-esque lyrical content, especially in his more balladic songs. Although he produced notable albums, his particular forte was the pop single. The stream of Top Ten hits that sprinkled the charts during the seventies included four Number One singles.

"I don't contrive my success in the sense of going into a studio to make hit singles" said Bolan. "I've no idea what makes a hit single anyway. I go in and do what I like – just the funkiest thing I have goes into a single. I get a few people in the business come up and give me a nudge and say 'Go on, Bole, you've got it made – you're a sly one', but I really don't have any kind of secret formula. I just don't think like that".

While in the UK he would become a superstar, he would have less success in the USA. Nevertheless, despite his death in a car accident in 1977, his influence on music has remained within several genres from punk to hard rock.

This album could be said to have really got the glam rock genre going with gusto. Yes, there are elements of the album which connected to the early Tyrannosaurus Rex period in terms of acoustic-driven ballads, but this LP is primarily a swinging, hip-shaking party record that reflects the early, catchy essence of rock 'n' roll – but also that essential connection between rock and sex.

Even the more innocent music constructions are twisted and corrupted by Bolan into something campy and sordid. There's a theatricality about the production as a whole, in fact.

The latter was more the domain of producer Tony Visconti, who gave the album a spacious echo-driven ambience. If that description makes this album sound like a vacuous nonentity, lacking in substance then, well, that's exactly what this album is.

But, in a good way. That is, the album celebrates that status. It's a throwaway, but Bolan uses the lack of seriousness to experiment in imagery, fantasies and wordplay. It's a sort of real-time experimentation that not only keeps the album fresh and lively but also playful. That lack of solemnity in his work was intentional.

As Bolan said "I mean, I am my own fantasy. I am the 'Cosmic Dancer' who dances his way out of the womb and into the tomb on 'Electric Warrior'. I'm not frightened to get up there and groove about in front of six million people on TV because it doesn't look cool. That's the way I would do it at home. It's not serious. I'm serious about the music but I'm not serious about the fantasy."

'Electric Warrior' itself was not a creation of discipline and regulation, "It's probably the loosest album I've ever recorded because it was done between gigs in America and I was essentially concerned with putting down rough tracks to establish a sound – but they felt so good that we kept them after for the finished track."

If you would like a new issue of this album and/or have yet to taste the delights of T.Rex in general, and wish to sample more virgin vinyl delights from the same, then you can with a new boxed vinyl edition from Edsel.

'T.Rex: The Vinyl Collection' is an eight album box set featuring 'T.Rex', 'Electric Warrior', 'The Slider', 'Tanx', 'Zinc Alloy & The Hidden Riders of Tomorrow', 'Bolan's Zip Gun', 'Futuristic Dragon' and 'Dandy In the Underworld'.

There is an important point for prospective buyers of this vinyl box set. Ostensibly, it is available in two versions: a black vinyl version presented in a silver box and a coloured vinyl version, limited to 500 copies and available in a gold box.

In general terms, the latter is viewed as the rarer and more desirable of the two but, unless you are planning to store it, unopened, for the future, I would stick to the black version.

As with any coloured vinyl, you are ostensibly playing both vinyl and pigment which reduces the audiophile quotient of the medium and increases noise. **PR**

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