**LUXMAN LX-380**

Hybrid Valve Amplifier

- **PMC Twenty5 24**
  - Loudspeaker
- **AURALIC ALTAIR**
  - Streamer/DAC/Pre-Amp
- **T+A G 2000 R**
  - Turntable

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"the difference will be immediately evident, such is the transparency of the interconnects and loudspeaker leads."
Chord Signature Range Hi-Fi World Dec 2015
welcome

...they’ve all been looking in the wrong place perhaps. Whilst loudspeaker manufacturers vie with one another to deliver a knockout bow to passing bats, to increase sales in Transylvania perhaps, PMC voice their loudspeakers the other way around – to deliver obvious bass. Perhaps that’s where their rivals should also be looking at least it would seem so after listening to PMC’s twenty5 24 loudspeakers.

Jon Myles reviews on p17. These are bass machines worth hearing.

By happy happenstance – I think I can say! – the

PMCs worked wonderfully with Luxman’s LX 180 hybrid integrated valve amplifier I review on p10. This gorgeously built and finished amplifier doesn’t boast massive bass in its specification, but PMC’s twenty5 24s were just the solution. From not so many wonderful valve Watts I was regaled by a powerful delivery, full of life and dynamism from this pairing. You really have to listen to a uniquely different product like the Luxman to fully appreciate how lush and lovely music can sound.

I could almost use that description for the sound that issued forth from FiiO’s headphone amplifier when playing DSD from an iPhone, see p13. Yes, I never quite imagined doing this somehow an iPhone and DSD digital don’t go together, at least the way I see it. But by using a slew of clever techie ideas they can be persuaded to get along very well, to deliver quite extraordinary sound quality from the pocket.

Why are people talking about cassette again? Surely it isn’t going to make a comeback like the LP! Well, it could be. As vinyl sales continue to climb around the world and are now overtaking those of CD, people are eyeing the next big thing it seems. And I’m eyeing my Nakamichi: time for a service methinks. Our Readers Letters, on p28, continue to divine the future I could say.

Whatever is happening we cover it in Hi-Fi World including going backwards as we go forwards!

Noel Keyboard
Editor

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.

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verdicts

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John Myles, HiFi World

“If you’re looking for a major jump in your system’s performance, I’d suggest buying a pair of these instead of considering a hardware upgrade. Before you write this advice off to cable delusion, expectation bias, or the recent Mercury retrograde phase, please take note: I have never said this in TONE’s 11-year history”

Jeff Dorgay, Tone Audio

“Well, I have just stumbled upon a speaker cable that I’m very tempted to put in a class of its own.”

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PHANTOMS OF THE OPERA

Those clever people at Devialet have pulled off something of a coup by opening a new store in Paris’s famous Palais Garnier opera house – usually off-limits to commercial organisations.

The store features the French brand’s full range of amplifiers and active loudspeakers and is also the sole stockist of a special edition of the company’s Phantom Gold speaker named Devialet Gold Phantom Opera de Paris. It features a gold finish by the famous Ateliers Gohard – the people responsible for the restoration of the gold at the Palais Garnier and on other famous French buildings.

Hi-Fi World visited the store recently and was treated to an array of 16 Phantoms playing Bach and Pink Floyd – a truly stunning experience. So if you’re heading to the French capital pop in for a listen.

LEEMA PULSE IV

Anyone looking for digital, analogue and Bluetooth capability in an amplifier might do well to take a look at the new Pulse IV from Welsh manufacturer Leema.

Priced at £2295 it has a claimed output of 80 Watts per channel but also features an MM/MC phonostage, seven digital inputs fed into a 32-bit/384kHz-DSD capable Sabre DAC as well as being able to handle aptX Bluetooth from smartphones, tablets, computers and laptops.

The specifications look impressive at the price. We hope to bring you a review soon but for further details go to www.leema-acoustics.com.

BACK IN BLACK

It’s big and it’s black. Actually it is blacker than ever. KEF has announced a special edition of its award-winning R700 floorstanding loudspeaker.

Priced at £2200 the Black Edition is limited to 500 pairs and features a new deep gloss finish to the cabinets as well as a black trim ring around the Uni-Q driver and matching chrome plated terminals and feet.

The loudspeakers are available now and you can find out more at www.kef.com.
**Vinyl Surge**

The vinyl revival continues – with industry body the BPI (British Phonographic Industry) predicting UK vinyl sales will top 4 million for 2017. That is a significant increase on the 2016 total of 3.2 million which in itself was some 66.5 per cent up on the previous year.

Top-sellers are said to be Ed Sheeran’s ‘Divide’ album with the ever-bickering Noel and Liam Gallagher’s solo efforts following closely behind.

You cannot help but feel that if Oasis ever reformed those sales would go through the roof (but we aren’t holding our breath here).

**Water Music**

Not content with providing sound systems for the Bentley range of cars, Naim has now pushed the boat out by supplying bespoke audio solutions for luxury yachts.

The Salisbury-based company has joined forces with Plymouth’s Princess Yachts to fit its hi-fi systems into their rather opulent vessels.

The custom-integrated Naim for Princess audio system is based around its range of Uniti all-in-one players with a Uniti Atom amplifier fitted in the yacht’s sportbridge, saloon, cockpit and master stateroom.

**Neat Iota Xplorer**

County Durham’s expert loudspeaker manufacturer Neat is following up the success of its Iota Alpha mini-floorstander with a larger version.

The Iota Xplorer uses the same basic configuration of the Alpha – a top section housing Neat’s own PI-R3 170mm bass/midrange drive unit alongside an Air Motion Transformer (AMT) tweeter in a horizontal array – but has an enlarged lower cabinet incorporating two bass drive units. One unit is located on the bottom panel, facing the floor, whilst the second is located internally, directly above the first, in a sealed, isobaric arrangement, handling only low frequencies and acting as an integral subwoofer system.

For more information go to www.neatacoustics.com

**ECM embraces streaming**

Jazz and classical music specialist label ECM has announced its catalogue has now been made available to subscribers of major music streaming services such as Tidal, Spotify, Apple Music and Amazon. The roster includes significant releases from the likes of Keith Jarrett, Arvo Part and Jan Garbarek.

**Lyrical Beauty**

It’s called Lyric – and take one look at it and you’ll soon see the reason. Why? Well, it’s a wifi loudspeaker with a 22-inch translucent screen that actually displays the lyrics to the song in real time when you stream from your smart device.

Not just that but the font and style of the display actually changes depending on the genre of music being played.

The Lyric connects to the internet to scan a database of 2 million songs (with more being added regularly) and if it cannot find the relevant ones displays random graphics.

Hand-built in Japan (with only 15 a month currently being produced) the Lyric employs two specially-designed co-axial drivers plus a passive bass radiator for the sound driven by a 40Watt amplifier.

The price? A cool £4320. That said, it’s certainly impressive. Hi-Fi World was given an exclusive demonstration of one in London recently and we came away rather taken with the sound quality and graphics.

Place this on a table or shelf and your visitors won’t be able to take their eyes off it (we couldn’t!).

Watch out for a review in a future issue of Hi-Fi World or go to www.lyric-speaker.com for further information.
PRO-JECT ALL-IN-ONE
The vinyl revival has seen a number of new budget turntables arrive on the market – but Pro-ject’s Juke Box E could be one of the most interesting yet. Here’s a deck with a built-in moving-magnet phonostage, Bluetooth receiver pre-amp and power amplifier, all housed in one box. Simply add a pair of loudspeakers and you are away.

The unit is based on a modified version of the Pro-ject Primary with the same aluminium tonearm and an Ortofon OM 5E cartridge. The amplifier has an output of 50 Watts. It is available now priced at £370.

NEIL YOUNG FREE STREAMING
Canadian music legend Neil Young has been an enthusiastic backer of high-resolution music – and now he’s taken it a stage further.

He has released most of his back catalogue on-line to be streamed in either hi-res or CD quality.

The service is free for the moment and includes his music from the likes of The Squires in 1963 to his new album The Visitor – available in full 24bit/192kHz resolution.

Other highlights include the seminal collections Weld, Harvest and Ragged Glory which are all available in CD-resolution quality. For die-hard fans there are also unreleased tracks available to listen to.

It’s one interesting development in the internet streaming industry and we can’t help wonder if other artists might follow suit. Let’s hope so.

To sign-up for the music go to www.neilyoungarchives.com.

ROBERTS RADIO
Iconic British radio manufacturer Roberts has introduced a new model – featuring Bluetooth connectivity alongside internet radio, Spotify Connect, DLNA streaming and USB input.

The Stream 94i also has tone controls and a six-position equaliser to allow users to tweak the sound – useful if moving the unit from room to room.

It’s available now priced at £200. See www.robertsradio.com/uk for more information.

SONORO SOUNDS
German manufacturer Sonoro (not to be confused with Sonus) has announced a new range of affordable multi-room products.

The Sonoro Stream, Sonoro Relax and Sonoro Meisterstück offer a range of features and are priced at around £220, £330 and £900 respectively.

The Stream is an internet radio featuring both Bluetooth and wi-fi connectivity as well as in-built Spotify Connect for streaming music.

It uses a 7.5cm main driver with two passive radiators. The Relax is a more advanced version of Stream with the ability to store 10 Spotify playlists as well as 40 preset radio stations plus adding FM, DAB and internet radio.

The star of the show, though, is the Meisterstück – an all-in-one unit featuring four drivers and five Class D amplifiers which can play back from CD, USB or Bluetooth. More information is available at www.sonoro.de/en/

TEAC GOES COLOURFUL
Tired with plain black turntables? Teac may just have the answer in the shape of the TN 420 deck.

Undoubtedly colourful due to its tie-dye like finish which is achieved by a special printing process the belt-drive model also features an MDF chassis topped with an aluminium platter.

It also boasts both phono and line-level outputs as well as USB for recording vinyl to a computer or laptop.

It is available now priced at £330.
Go to www.teac.com for more information.
Its looks hark back to the past – but this new Luxman hybrid valve/transistor amplifier has a modern sound, finds Noel Keywood.

Pure Luxury

They don’t make ’em like they used to – until you see the new Luxman LX-380 valve amplifier from Japan that I’m reviewing here.

Japan went down the nostalgia road somewhat before the UK and this new amplifier mines Japan’s not-so-distant past beautifully. It doesn’t just look good, it feels solidly hewn and its controls are delicious to use. Luxman always produced great products – I’ve owned many – and this amplifier gets right back to the qualities that attracted me and so many others decades ago.

The LX-380 is not quite pure though; it is a hybrid. The pre-amplifier stages are solid-state; only the power amplifier is valve (tube) equipped, using 6L6GCs. These are compact tetrodes considered good for 30 Watts in guitar amplifiers where overload is tolerated, but for around 20 Watts in everyday audio use where long life from lower anode volts is preferred – and indeed Lux make this point in their user manual, ‘operating conditions of the output tubes having some allowance’ they say.

So the LX-380 delivers 20 Watts per channel. It may seem feeble against the 100 Watts or more we expect nowadays, but in conjunction with sensitive floorstanding loudspeakers (90dB from 1 Watt) it is more than enough for very high volume. If you don’t want to wake the dead then it will drive smaller loudspeakers nicely too but I’d recommend large standmounters as a minimum for reasonably high volume coupled with strong bass.

I’ve seen worries about the unreliability of valve amplifiers, the expense of running them and what have you. Yes, power output valves do need replacement after a few thousand hours of use but 6L6GCs are plentiful and around £42 for a matched pair – not a king’s ransom. Expect
Our underside view shows large yellow high-voltage film capacitors and large resistors typical of valve amplifiers. Switching is carried out by sealed small-signal relays.

A 6L6 output valve, sitting in a printed circuit board mounted ceramic socket – a common arrangement in modern valve amplifiers.

and quality of a resistive attenuator, including its immunity to overload, whilst also ensuring frequency response is unaffected by volume control position, as it unfortunately can be when a conventional volume control is used in a poorly designed circuit. To do this you must use logic to switch the relays – it is a complex but very purist way of changing volume.

Clever stuff then – electronically sophisticated and expensive to produce – but effective in theory and in practice our measurements showed. The volume control of the LX-380 is a great piece of modern audio engineering in an amplifier that's seemingly old by looks. This well illustrates what Luxman are offering here: the best of today with the best of yesterday. The past brought up to date.

Like all Luxman amplifiers this one carries a wealth of facilities. It has four Line inputs to accept CD, DVD players and what have you. They are very sensitive, suiting low output devices like low gain external phono stages and old portable players or analogue tuners with low output.

There is a phono stage for LP, front panel switched to suit MM or MC cartridges. The entire pre-amplifier is solid-state so you don’t get valves here.

Unlike most modern amplifiers this one has Record Out and Monitor input RCA (phono) sockets to handle external open-reel recorders or cassette decks – a real blast from the past! The valve power amplifier can be accessed direct from Main In sockets – useful for today’s portable players and DACs that have their own volume control and high output (1V or more).

Like amplifiers of yore, there are Bass and Treble tone controls, here with switched crossover frequencies. This makes fine adjustment of frequency extremes possible – great for subtly tailoring the sound of connected loudspeakers. In true audiophile fashion the tone control circuitry can be switched out with a Line Straight lever switch.

The front panel switches and controls do not appear to switch directly: rather they actuate relays, so there was a small kerfuffle when I flicked a lever, because this initiates mute/relay/ummute sequences. You get longer life and better sound quality over that life with this approach but not the instantaneous response of switching direct.

A solidly carved remote control unit alters volume and has a Mute function but does not select input or...
The REFERENCE 3s were powerful and punchy, detailed - and totally enjoyable. Outstanding - amongst the best.

KEF REFERENCE 3,
Hi-Fi World,
January 2017

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the other controls and has no On/Off function.

The rear panel carries two pairs of speaker sockets, for A and B loudspeaker pairs. Front panel switching selects A, B, or A+B together.

The rear panel carries chunky modern loudspeaker terminals – no sign of the horrible spring clips or shaky screw terminals of the past that allowed shorts and tarnished quickly. They accept spades, 4mm banana plugs or bare wires. All other inputs are unbalanced through the usual RCA type phono sockets; there are no balanced XLR connectors.

Internally there is one protection fuse within the mains transformer primary circuit but none in the secondary HT lines, to protect the output transformer primaries in event of tube failure – something I consider important. Since fuses and fuse holders are cheap I am surprised at this.

**SOUND QUALITY**

The Luxman sounded unhappy driving our in-house reference Martin Logan ESL-X hybrid electrostatic loudspeakers; bass was limited. This suggests however that the LX-380’s limited bass power of 8 Watts (see Measured Performance) needs to be understandably accommodated. Loudspeaker matching is an issue but I believe it will suit most conventional floorstanders.

Digital was fed in from an Oppo BDP-205D Universal disc player, meaning CD and hi-res from an optically attached Astell&Kern AK120 portable player. For LP I used our in-house reference Timestep Evo modified Technics SL-1210 Mk2 turntable with improved control circuits and linear external power supply, carrying an SME309 arm with Audio Technica VM750SH MM cartridge and, alternatively, an Ortofon Cadenza Bronze MC cartridge to assess both MM and MC inputs.

Spinning Josefine Cronholm’s ‘In Your Wild Garden’ (CD) the reason for buying a valve amplifier was thrown at me: her voice had enormous contrast against a silent background that made for a feeling of great dynamic power.

Valve amplifiers do this, they have seemingly muscular delivery that suggests big audio power even when only a few Watts are in action.

Then there was ease of delivery, a fluidity of event that makes for a lifelike presentation free of the mechanical sound from transistors.

"There was ease of delivery, a fluidity of event that makes for a lifelike presentation free of the mechanical sound from transistors."

Four 6L6 output valves and three ECC82 double triodes are visible, together with twin output transformers and one big mains transformer. Vertical daughter boards at front and rear carry preamp and support circuits.

"...vertical daughter boards at front and rear carry preamp and support circuits..."

primary feedback taps.

The result was an utterly gorgeous sound, vocalists having a lovely rounded presence and lively nature. Treble was as sweet as I could hope for, the emphasis of the PMC’s being reasonably obvious at times, but also contributing to conspicuous and precise stereo images across the soundstage.

The Berliner Philharmoniker playing Strauss’ ‘Don Quixote’ (24/96) stretched wide and filled our large listening room, massed horns having a lovely brassy quality and plenty of dynamic push. But when all fell silent for a solo violin the Luxman tracked this change beautifully, conveying its emotional impact in full.

Whatever I played, digital from the Oppo was graced by the Luxman’s signature sound – but so too was analogue from LP after switching from Line 1 to Phono and..."
A year after Eltax and Utopia, the latest addition to Focal’s high-end headphone line is built around a new generation of full-range ‘M’-shape dome speaker. Clear headphones reveal the tiniest details of musical creation. Made in France, Focal continues its quest for absolute sound with this new reference headphone. Clear promises listening worthy of the best loudspeakers.

Open Reference headphones

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pressing the Technics On button. With Audio Technica's VM750SH MM cartridge the bass line behind Mark Knopfler's 'Madame Geneva' was firm, expressive and easy to follow via the PMC loudspeakers. The whole delivery was liquidly smooth, atmospherically spacious and a performance to wallow in.

At high volume there was no hiss or hum, LP sounding as deeply silent as CD. I swapped the VM750SH for our Ortofon Cadenza Bronze MC cartridge and flicked the front panel lever switch to MC (no clicks or thumps).

Again, there was virtually no hiss and plenty of available gain — so no apparent matching problem. But the Cadenza was less glassy up top and a tad more malleable and considerably more powerful in its bass. The regal-like bass line of Dire Straits 'Ride Across The River' was expressed superbly well, sounding strong, deep and articulate. So in spite of poor measured figures I heard a great result here. The PMCs give strong bass without drawing bass current and this suited the LX-380 perfectly.

CONCLUSION
They don't make 'em like they used to; in the LX 380 they now make 'em better! You pay for this sort of quality and attention to detail but Luxman amplifiers always were more expensive than the herd. They have to be with all the facilities that come included. With our Timestep Five updated Technics SL 1210 M2 turntable and a new Audio Technica VM750SH MM cartridge, spinning LP in particular brought past wonders back to life in entirely modern form, giving a luscious sound. So if you haven't an easy to use amplifier built the way they were — with no digital in sight — the new LX-380 from Luxman is a must. Just use it with suitable loudspeakers to ensure strong bass.

MEASURED PERFORMANCE
The 6L6GC power amplifier output stage is quoted at 20 Watts and just about managed this within a 1% distortion limit. However, it was down to 8 Watts output absolute maximum (3% distortion) at 40Hz due to output transformer core saturation — quite a severe drop. Together with a damping factor of 1.7 the LX-380 will be no bass machine. However, with floorstanding loudspeakers of 90dB sensitivity — not uncommon — 5 Watts or so is enough for extremely high volume so the LX-380 is fine if used in an appropriate system.

Distortion was low, measuring 0.2% at 1 Watt and 1kHz, comprising mostly second harmonic. This figure rose slightly to 0.26% at 10kHz — still a good result. Distortion increased with rising output, hovering around 0.5% at full output (volume).

The output transformers swap power, which needs big cores, for bandwidth — easier to achieve with small cores and bobbins. Frequency response measured flat to a high 60kHz our analysis shows — very wide for a valve amplifier. It also reached flat down to 3Hz — not the best idea as core saturation occurs very early at such low frequencies. Digital usually contains no deep lows but LP can have strong warp signals at 5Hz; but a Subsonic filter is fitted.

Frequency response was unaffected by the 88dB stepped LECUA volume control that is placed within the preamplifier that is solid-state. Line input sensitivity was very high at 120mV and noise low at -95dB, with no hum. Phono stage equalisation was accurate, giving flat response from 10Hz to 20kHz with MM and MC. The Subsonic filter rolled off output below 100Hz, being -1dB down at 50Hz and -17dB down at 5kHz — plenty enough to suppress LP warp signals. The Bass tone control, set to 150Hz turnover, compensated for subjective lightening of bass reasonably well when turned up by a very small amount; it has fine resolution.

Phono input sensitivity was very high, 2mV MM and 0.12mV MC being enough for full output. Overload was high at 85mV and 11mV respectively and noise was also low at -82dB and -85dB respectively, the latter representing a super-low 0.07% equivalent input noise. The LX-380 measures well in all areas except bass power, where a limit of 8 Watts was out of keeping with all else. NK

FREQUENCY RESPONSE

DISTORTION

LUXMAN LX-380
£6,000

OUTSTANDING - amongst the best

VERDICT
An elegant integrated, hybrid valve amplifier packed with facilities — and a great sound. Low power, but must be heard.

FOR
- build and finish
- luscious sound
- ease of use

AGAINST
- no balanced input
- limited fuse protection
- low bass power

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The new DS2 boasts a whole new aesthetic appeal, with wooden side-panels flanking the 200mm wide aluminium/metal sandwich case. All DS2 products also benefit from superior technical designs, including new 4-layer PCB configurations, for extremely short signal paths with less interference and signal-loss. The quality also carries through to the pots, controls and enviable list of features each device in the range can boast.

VIEW THE FULL RANGE ONLINE NOW
Musical Transmission

PMC’s latest twenty5.24 floorstander uses transmission line loading to produce a big sound. Jon Myles turns up the volume.

PMC is one of few loudspeaker manufacturers able to straddle the worlds of both domestic hi-fi and professional studio equipment. The Biggleswade-based company’s products are used in Abbey Road Studios in West London as well as Kraftwerk’s Kling Klang Studio in Germany’s Dusseldorf.

Formed in 1991 as the Professional Monitor Company its first product was the BBS-A – snapped up by the BBC for use in its Maida Vale studios. It has also been used for mastering by Prince and Stevie Wonder.

For the home market though, PMC has built a loyal following for its hi-fi loudspeakers around its Advanced Transmission Line technology. This places the bass driver near one end of a long tunnel (the Advanced Transmission Line) which is heavily damped with acoustic material specified carefully to absorb the upper bass and higher frequencies radiating from the rear of the bass driver.

The lowest frequencies are allowed to pass down the line and emerge from the large vent in the same polarity as the driver’s frontal radiation - the vent effectively acting as a second bass driver.

It’s the technology employed in the latest PMC twenty5 series - including the £4470 twenty5.24 on review here. Standing 1015mm tall, the ‘speaker is nevertheless relatively slim with a width of just 192mm and a depth of 419mm. The cabinet itself is tilted slightly to help time align the drivers, and it features stiff high-mass stabilising bars.

The transmission line vents through two ports at the front that feature proprietary in-house designed Laminair wave guides developed using aerodynamic
Evocative styling
Contemporary features

Enjoy the warm, clear sound of valve amplification from all your audio devices with the new v40 from Blue Aura.

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The PMCs use a new Laminair vent developed from Formula 1 aerodynamic modelling to reduce turbulence from the air exiting the transmission line.

modelling techniques derived from Formula 1. PMC says these ports better control airflow to reduce turbulence and therefore increase efficiency, as well as giving faster bass and greater dynamic headroom.

All new drivers have also been employed. The mid/bass unit is a 170mm resin-bond, fine-weave glass fibre and pulp hybrid cone with a long throw voice coil. The tweeter is a 27mm soft dome driver made from Sononex, developed in collaboration with Norwegian drive unit specialists SEAS. At rear there’s a single pair of ‘speaker binding posts.

As well as the Amerton finish of our review pair, Oak, Walnut and Diamond Black are also available.

In terms of fit and finish the PMCs are superbly put together, from the crisp cabinet edges to the heavy, machined stabiliser bars that allow height adjustment of the spikes, making levelling easier.

SOUND QUALITY

While these loudspeakers might look slim, the sound they produce is exceptionally big. Connected to an Astin Trew AT2 2100 integrated amplifier with its smooth, accurate sound (see our review in this issue), the PMCs managed to fill our large listening room with ease.

That transmission line and new mid/bass driver have been carefully judged, allowing the ‘speakers to produce clean and powerful bass. The electronic bass line of The Chemical Brothers’ ‘Block Rockin’ Beats’ (24/96) was authoritative and punchy much harder than I was expecting.

Yet bass form these ‘speakers was neither boomy or slow. Instead it had pace and agility - serving to push the track along at just the right speed. With acoustic instruments such as Jimmy Garrison’s bass on John Coltrane’s ‘Live At The Village Vanguard’ I could hear the body of the instrument and the resonance as notes decayed. PMCs are often described as a musician’s loudspeaker and I could see why here. The whole performance had a natural, realistic portrayal to it. Coltrane’s saxophone soaring above the backgroung musicians and out into the room with surrounding sound disconnected from the band.

The tweeter is incise, having a slight brightness to it that works to bring out the detail in many tracks. Conversely the mid/bass is softer without the forfright nature of some rivals. It’s a different balance to most loudspeakers, one that sounds subjectively exciting. Over a longer period this balance makes a lot of sense - the twenty5.24 were never tiring whatever music I played.

And they went loud with little effort. Turning up volume on the crescendos at the end of the third movement of ‘Beethoven’s 5th’ the power these loudspeakers produced almost knocked me off my feet. The orchestra simply thundered out of the ‘speakers in all its majestic glory. Classical music lovers will love these loudspeakers for the range of sound they can produce.

It doesn’t matter what genre you prefer, the new twenty5.24s replay it with life and musicality - and excellent timing even on dense, complex pieces such as Ornette Coleman’s ‘Free Jazz’ where they managed to unravel the two separate jazz combos (one through each ‘speaker) and lay out the various parts with clarity.

CONCLUSION

Thanks to their Advanced Transmission Line (loading the twenty5.24 produce big, bold bass that competes with larger loudspeakers possessing multiple drivers. They are distinctive - but that’s no bad thing if you are seeking something different, a sound that conveys all the emotion and craft in your favourite music.

MEASURED PERFORMANCE

Our frequency response analysis of PMC’s twenty5.24 shows a slow roll off in output in the upper midband that will soften its sound, making it less forthright but more amenable than a lot of current designs. The tweeter, however, has a strong presence, introducing treble lift of +2dB at 16kHz. This is enough to be audible, adding in brightness and sharpness to the high end, providing a strong sense of incision.

PMC ensure their loudspeakers produce strong bass and the twenty5.24’s large cabinet and vented bass system gave output down to a low 40Hz (green trace). The large area floor port (red trace) extended this down to 30Hz and its broad response suggests even bass quality free from resonance (boom).

Usually, a broad, flat port response like this reflects back into the impedance curve, suppressing residual peaks either side of the main port resonance – but not in this case. The impedance curve shows quite sharp bass port tuning at 38Hz, suppressing a strong fundamental resonance. This is an unusual result, showing the twenty5.24 differs from the norm and will have distinctive bass quality.

Sensitivity was good, measuring 87dB from one nominal Watt of input (2.8V), especially since overall impedance measured with pink noise was a high 10 Ohms, due to the use of an 8 Ohm bass unit (most are 4 Ohms these days). The impedance trace is peaky (reactive), making amplifier matching critical.

The twenty5.24 is well engineered but differs from most else. It will have strong and deep bass that measurement suggests will be even in nature. There will be a softer more amenable delivery than that of many modern loudspeakers, making it less bass/throught, but an easier listen. Upper treble will be obvious and likely sharp however. NIK
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Power Up!

From Northern Ireland comes a new mains block from specialist manufacturer Titan Audio. Jon Myles is impressed.

Northern Ireland-based Titan Audio takes the business of delivering power to your hi-fi system very seriously. So seriously that its engineers have collaborated with experts from Queen’s University in their home city of Belfast to refine their products – including the new entry-level Styx power block.

Priced at £150, the Styx is hand-built at Titan’s headquarters and features a number of innovative details. Take it out of the box and the build-quality is immediately impressive.

The block features six high-current sockets and an IEC inlet so users can choose their own power cord – with Titan (naturally) recommending its own Styx lead costing a reasonable £50.

House in an aluminium casing to reduce magnetic and RFI interference, there are also acrylic side panels which lift the Styx off the ground to stop mechanical vibrations entering the unit. The screws attaching the panels are made from Japanese high tensile steel and torqued to further reduce vibration.

Inside, oxygen-free copper wiring is used to connect the sockets – unusual at this price where busbars (solid metal bars) are usually used. Titan say this maintains consistent power output and claim the Styx has twice the current delivery of standard mains distribution blocks.

For added peace of mind the Styx also comes with a lifetime warranty – a standard feature across all of Titan’s product range.

**SOUND QUALITY**

I plugged a variety of components into the Styx, both CD players and amplifiers – including a high-powered McIntosh MC152 amplifier, Astin Trew AT2-2100 integrated and even a pair of KEF’s excellent LS50 Wireless loudspeakers (see reviews this issue).

The results were uniformly impressive. The amplifiers, especially, took on more authority with a seemingly tighter grip on the speakers which translated into added punch.

Playing New Order’s ‘Brotherhood’ through a pair of PMC D-twenty5.24 floorstanders the already prodigious low-end response gained even more power – Peter Hook’s melodic bass positively pumping out of the loudspeakers.

Front to back depth also improved giving an even more three-dimensional aspect to the music.

With the little KEF LS50s the sound grew in size and instrumental separation was improved, allowing me to pick out details I hadn’t heard before.

This effect remained true no matter what piece of equipment was plugged in. With an Oppo UDP-205 universal disc player CDs had a noticeably smoother and more refined sound – sounding almost analogue-like in their nature.

Going back to a standard mains block showed just what a difference the Styx was making - the music becoming less vibrant with a more shut-in feel. In fact, I couldn’t wait to plug the Styx back in so good were the improvements it brought.

**CONCLUSION**

Titan Audio’s Styx power block is something of a must if you are looking to wring that extra bit of performance from your system. It works equally well with budget as well as high-end equipment, is superbly engineered and, most importantly, adds extra musicality to the sound. At just £150 I’d say it’s something of a bargain.
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A Trew Romance
Astin Trew’s new integrated amplifier is a sonic star, says Jon Myles.

Astin Trew (or ASTINtrew as their logo has it) have been producing hi-fi since 1983. During that time, the company has established a strong reputation for building well-engineered, sweet-sounding electronics at realistic prices.

Based in the Welsh town of Haverfordwest the company designs and builds all its products in Britain. It also places a big focus on research and development, refusing to rush any new component to the market until it is sure they can measure up to their exacting standards.

So, when Astin Trew announced a new integrated amplifier we were keen to get our hands on it and duly received a pre-production sample of the AT2-2100.

In typical Astin Trew fashion this is a no-nonsense design – a basic but powerful integrated amplifier offering 90 Watts per channel into 8 Ohms and 130 Watts into 6 Ohms (see Measured Performance for full details). You do not get an internal DAC nor the likes of Bluetooth connectivity.

What you do get, however, is a handsome-looking product that at £1895 goes up against the likes of the Naim Nait XS2, Creek Audio’s Evolution 100A or Rotel’s Caspian M2.

Housed in a 200mm x 550mm x 500mm (H/W/D) steel cabinet with a milled aluminium fascia, the AT2-2100 uses dual mono power supplies with two 160VA transformers while the volume control is a ladder resistor network – a purist solution.

Connection options include five unbalanced RCA plus a pair of balanced XLRs. There’s also pre-amp button marked ‘Warm’ in the middle of this fascia. It adds in a little second harmonic distortion and, as the label suggests, does add some warmth to the sound (more of which later).

SOUND QUALITY
Pressing the Astin Trew into service with first a pair of Spendor A1 standmounts and then the larger PMC D-twenty5.24 floorstanders it was evident this amplifier has a seductive, smooth sound.

With John Coltrane’s ‘Live At The Village Vanguard’ I was struck by just how clean and open the soundstage was. Coltrane’s saxophone was possessed of real body and accurate timbre while the backing musicians were presented in their own space. Listening closely I could hear every part of Reggie Workman’s fingers on his bass in ‘Spiritual’.

This amplifier doesn’t major on huge bass, sharp treble or over-emphasised midband – instead it hangs everything together extremely well.
REVEALING EVERY DETAIL

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There are five RCA inputs as well as balanced XLRs, and pre-amp and sub-woofer outputs.

More impressive, though, was the way the AT2-2100 managed to convey the emotion in the music. This amplifier doesn’t major on huge bass, sharp treble or over-emphasised midband – instead it hangs everything together extremely well to give a mellifluous performance where the music just flows naturally.

It’s a quality that pays dividends on some harsher recordings such as ‘Definitely Maybe’ from Oasis. Here the Astin Trew took some of the zing from the guitars but without losing the impact.

There was an undubbed valve-like quality to the sound with the same richness and sense of musicality. Pressing the ‘Warm’ button, that came through more strongly it’s not exactly a night and day difference but the effect is noticeable.

Which setting you prefer will be down to individual taste and what you are playing, but the Warm setting works well to tame some of the harder-edged sounds of modern recordings.

Compared to the similarly priced Naim Nait X5? the Astin Trew sounds a little less dynamic, lacking the propulsive thrust of the former. However, it compensates with a silkier presentation that is rich in detail.

On Fleetwood Mac’s ‘The Chain’ (24/96) Stevie Nicks’s vocals were sweet sounding with no trace of shabbiness. Mick Fleetwood’s drums also came across with power – the rim shots especially having a kick to them.

Timing-wise this amplifier is also spot on. Even with the strong bass of the PMC loudspeakers it never sounded flabby or bloated, all the time keeping a firm grip on the drive units.

With The Clash’s version of the reggae classic ‘Time Is Tight’ Topper Headon’s kick drum was thrust into the room with his metronomic stick work was tight and composed so the track was propelled along in just the right fashion.

Higher up the scale the twin guitars of Joe Strummer and Mick Jones had both note and depth. Impressively, the Astin Trew captured the decay in the notes as they faded away without thinning the overall sound. Not all amplifiers manage this.

CONCLUSION

The Astin Trew AT2-2100 may not be loaded with features. Instead it is a dedicated audiophile design and an undubbed star I felt. It has the rich, authoritative sound of a valve amplifier yet it has transistor power able to drive even the most demanding of loudspeakers. So it is highly recommended; this is a special audiophile design.
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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 Tannoy Mercury 7.2 loudspeakers.

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

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

A pair of Quadral Argentum 520 loudspeakers are on their way to BOB PERRY, Letter of the Month winner in our January 2018 issue.

Letter of the Month

BACK TO CASSETTE

My vinyl front end is common enough, a Michell GyroDec SE, Rega RB100 with Michell Techno Weight, Goldring G2100 cartridge. The digital replay is Sony SCD-EX800 SACD player for DSD music, and acting as a transport is Audiolab Q DAC for 1-PCM music. Also much loved but now in semi-retirement since the arrival of the Q DAC is a beautiful John Shearme Phase Seven HDCD player (Hi-Fi World December 1999). I have changed nothing since adding the Q DAC five years ago and my wife and I ran out for hours listening to our sizable music collection. Then I had a thought.

Having moved house seven years ago, when setting up my system in its new “music studio” (previously a dining room), I decided to omit my Yamaha KX-580 cassette deck and leave it boxed up. I have since been digitally capturing vinyl onto my music server using a Terratec Piano PreAmp Vinyl ADC and Audacity software. The trouble with vinyl music to digital, it works up sounding less like vinyl and just like L-PCM. I may as well save coding time and buy the CD versions.

So this summer I have reinstated the KX-580 for replaying many old TDK SA and TDK MA vinyl recordings, and make some new vinyl compilations too. It took some experimentation with interconnects, but I settled on Supra EFF-I for record and replay. What a revelation! The cassette recordings sound really musical with no loss of clarity. In fact, the vinyl recordings on cassette sound more like DSD, and nothing like L-PCM.

One bit DSD follows the music waveform in a similar way to an analogue voltage from a cartridge or the electromagnetic domain of a tape feed. Up n bit or down n bit at high sample rate, DSD requiring little more than a low-pass filter. L-PCM spits a large amplitude number at each sample for the DAC to interpret, and then noise shaping and all sorts. I will not bother digitising LPs to L-PCM anymore.

A Yamaha KX-580 cassette deck. “Recordings sound really musical with no loss of clarity” says Dr. Russell Sceats.

Plus the C90 running time suits single LPs and double LPs. My wife is also very happy, since I now have the four original Pixies LPs on two cassettes, so she does not have to worry about loading and reloading the GyroDec for each side of Surfing Boss or Trompe le Monde. Just press play.

Debaser
Dr. Russell Sceats

I’m surprised that the Terratec is obviously designed in its sound, since it uses a Cirrus Logic 5341 ADC with 24bit resolution. I don’t know this chip but to date I have found 24bit ADCs do a reasonably good job with vinyl; it’s a 16-bit ADCs that make analogue sound like it’s emerging from a tin can. No wonder CD always sounded odd; it had no chance of sounding good. I am told by Rob Watts however (Chord Electronics DAC designer: Mojo, Hugo, Dave etc) that ADCs are still the weak link in the digital audio chain, so your experiences seem to bear him out. What hope is there for the rest of us!

As you find cassette a better option than 24bit digital then you will now be joining the steadily growing band of music lovers demanding we return to analogue. And as Sony reopen their Japanese vinyl pressing plant to meet growing demand for LP, will TDK, Maxell or Taiyo Yuden re-enter cassette tape manufacture? I also wonder whether Technics, after entirely re-working the Direct Drive turntable motor, might now re-work a new open-reel tape recorder. We would all like to own an RS-1500 upgrade methinks.

NK

REDOING ROOM

My question for you is regarding my Icon Audio Stereo 40 and Quadral Chromium 8 loudspeakers wired with Tellurium Q Black cables.

I really like the sound put out by these components (in fact they continually amaze me with the quality produced and can only imagine what a true high-end system must sound like!), but noticed in my room the bass from the Quadrahs was getting a little boomy at times.

I tried using foam hungs in the back ports and this did help a little but they still had a slight boomy sound on some music. So, after a bit of experimenting I found that if I moved the speaker cables from the Bohrm output to the 4 ohm output on the Icon Audio, it eliminated the boom completely!

I don’t blame any of the components here, they are really good, it is just the make up of my room (and as I can’t really afford to move house to improve the sound of my audio system, I have to adapt!) I just wanted to confirm, as you have far more experience with these items than I, that I won’t harm the amp or speakers by running them on the 4 ohm outputs?

I read all I could on the Internet but as always nothing listed accurately covered what I wanted to know. Think you for any help you can give me with this.

Andrew Burchtaell

Hi Andrew. Yes, the 4 Ohm tap has lower output impedance and offers better electrical damping it commonly gives a slightly ‘drier’ sound as a result, but also well suited the 4 Ohm bass units used in most modern loudspeakers. So you have made the right choice — and there is absolutely no problem in using the 4 Ohm tap. Valve amps are far more durable than transistor amps. NK.

The basic rule is to match the impedance but ideally a lower speaker impedance is better than a high one on any given valve output termination. The 4 ohm tap is controlling the bass drivers better as, if I remember the review of these speakers correctly they have an impedance that matches 4 ohm output better at bass frequencies. Hence the better sound you have found. DT

TECHNICS SL-15

I currently use a Technics SL 15 (with original cartridge and NOS stylus). Sounds fantastic with the rest of my QUAD system. However, it has developed a fault and I cannot seem to find someone to service these ‘specialist’ turntables. It was last serviced/repaired by Richard Penckhew of Vintage Audio in 2010 but I can no longer contact him.

Icon Audio Stereo 40 amplifier has tighter bass with the 4 Ohm output, Andrew Burchtaell tells us.
LETTERS & EMAILS

Drop me a message or call so we can discuss the fault then I may be able to give you better advice.

Dave Tutt
Tutt Technology
Chatham, Kent
dave.london@hotmail.com or telephone: 07759 105932

SONY PS-HX500

My interest was piqued when I saw, after reading your review, the letters regarding the Sony PS HX500 turntable, particularly the reader who has upgraded the cartridge to one of the new AT series of cartridges.

I read in the review that changing the cartridge is a bit of a pig so I contacted my local Sony Centre about changing the cartridge, only to be told that the guarantee would then be invalidated! So where do you go from there?

Regards
David Prior

Hi David. Thanks for that. Depressing that Sony expect users to stay with the fitted cartridge that is poor and severely limits performance of the package. That’s how you lose your reputation for producing quality products.

An AT3500 OEM cartridge at £15 or so (retail price) would have given a far better sound, showing just how cost-cut this turntable package is, in order to offer DSD digital output over a USB computer connection (just to PCs only). Best to be aware of issues like this that consume the build budget. In effect, fundamental sound quality, as determined by the cartridge, is traded against offering a beguiling extra – DSD digital to your computer.

All the same, this is obviously one popular turntable, as our review has produced endless comment. Just shows what brand name and brand value can do. I feel Sony need to put more thought and effort into products like this for their own sake though. Technics shiny new Direct Drive turntables, made in Japan to highest standards, will stand the test of time where the PS-HX500 will not.

NK

METRICS OF CABLES

I’ve recently upgraded my system and now run a Rega Elektrum & B&W CMA6 S2 speakers (On B&W FS-CM S2 stands), bi-wired with 2m lengths of Cable talk Concert 2 cable, which is now somewhat North of twenty years old, and cost me £15.5m at the time. I’m at a loss as to where I should be looking for new speaker cable in terms of type and price. Is there a rule of thumb regarding budget? For example should I be aiming to spend a certain percentage of the system cost, or doesn’t it work that way?

Another thing I’m not sure about are the relative merits of single wire and bi-wire cables. If I spend, for example, £20 per metre, what will give me better sound, twenty quid single wire, or twenty quid bi-wire cable? Maybe 20/m is laughably cheap, I’m really not sure. Can you help me please by making some recommendations? Thank you for your time and patience.

Regards,
Jeff Smith

Hi Jeff. There’s no rule of thumb on how much of your budget you should spend on cables. It’s more important to find ones that suit your ears and equipment. Both the Rega amplifier and B&W loudspeakers are good performers with punch but basically open sound.

Sony PS-HX500 turntable sends DSD to a PC. It has a high quality Analogue-to-Digital Convertor on-board.

As such I’d be looking for a loudspeaker cable that doesn’t impose too much character into the sound to let them work best together. I’d always recommend going for single-wired and then replacing the links at the back of your loudspeakers with jumpers constructed from the same cable. With £20 bi-wired you are in effect buying two lengths of a £10 cable. Spending £20 single-wired opens up more options and your equipment certainly deserves it.

Tellurium Q’s Blue immediately springs to mind which, at around £70 for a terminated 2 metre pair will be comfortably within your budget and significantly improve on your Cable Talk Concert 2s. It’s open, transparent with a good sense of control. Add a pair of Blue Punch Fuses and voilà.

Tellurium Q’s Blue cable, a great way to connect up your loudspeakers – at an affordable price.

Sony PS-HX500 turntable sends DSD to a PC. It has a high quality Analogue-to-Digital Convertor on-board.

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Tellurium Q’s Blue cable, a great way to connect up your loudspeakers – at an affordable price.
As ever there’s a matter of personal taste with cables so try them out first if you can. JM

BUDGET STREAMING

I have been a regular subscriber to Hi-Fi World since the first issue and, down the years, this has had a considerable influence on the equipment that I have collected – Leak Stereo 20, WAD6550, Garrard 401, Leak Troughline to name a few.

Although my preference is vinyl, I have, of necessity, a large CD collection. For a while, I have been considering dipping my toes into the waters of digital streaming. Your article in the June 2017 issue led me to realise that I could do this fairly easily, so I have now purchased a Yamaha WXAD-10 streamer and a WD My Cloud storage drive. I have now transferred most of my digital downloads and CDs on to the latter. That was time-consuming, but not difficult.

Thus far, I am impressed with the versatility of the WXAD-10. It offers access to myriad online radio stations, many with high quality sound, as well as all musical tastes, as well connecting seamlessly to my stored music on the My Cloud. The sound quality is very good, if not quite up to my beloved Troughline or CD player with Chord DAC, both of which I revert to for critical listening.

However, I have noted that the sound has become more open than it was straight out of the box. For more relaxed and varied listening, what is offered is the ability to dip into my music collection and play any track at the touch of a finger on my tablet, all for around £50. My only regret is that the Yamaha does not have the option of an external DAC but that would be wishful thinking at its price.

Changing the subject, but still in the vein of value for money, I recall that in the early days of Hi-Fi World there was very much a hands on approach with many DIY articles and even supplements. That element is less present nowadays and I, for one, hope that future issues address this omission. There are many kits out there - or modifications that offer something different from the norm and, potentially, better value. I am not suggesting that you re-enter the minefield of kit production, but that does not stop evaluations, reviews and a little more tinkering.

Paul Topping
Lancashire

Hi Paul. I’m delighted you have discovered the joys of streaming. The WXAD-10 is an excellent way to start. Remember, if you want to improve quality you can always upgrade the Yamaha to something like the Arcam rPlay with a digital output that can then be connected to the Chord DAC. JM

INEXACT AUDIO COPY

I have been copying my CDs onto a solid state hard drive by way of a Windows computer in small box put together for me by Trichord. When copying CDs I have a stand alone screen which I plug into the back of the box to see what is going on as I use Exact Audio Copy (EAC) for extraction. Regarding playback I use an Android tablet courtesy of J River and my armchair.

This system has worked reasonably well for the last three years or so – until now. Without boring you with too much detail I have found the recorded files are getting in a real jumble with some of the albums under the wrong names and even tracks in albums that do not belong there. Also, some albums have disappeared. EAC is not working as it should; it’s not picking up the CD images also any recorded CDs do not appear in the usual album and track listings but are in another folder.

I have not got the computer skills to sort these problems out – it’s way too complicated for me and I am fed up with the frustration of it. Can you suggest a much simpler system that would be suitable? I do like the convenience of the tablet whilst sitting down but I do not intend keeping this present system as I do need it to be much simpler for copying and storage of my CDs.

In the future I might try some of the high definition music files but streaming music would not be much good to me as it’s not cheap and during the Spring and Summer I am out a good deal and play my system very little.

My system comprises of Gyrodeck fitted with Origin Live Silver Mk 3 and Trichord phono stage, Astinrew Concord DAC, a pair Roger Sanders Eros electrostat speakers with Alecto amps. The right and left build were for me by Trichord. I use the Orca pre-amp and a speaker management system which enables the sound to be adjusted for one’s ears and the room. I have to say when it is up and running it sounds nearly as good as a wind up gramophone playing 78s through the old horn.

Sorry about this long-winded rigmarole but I do hope you can help with the above problem.

Kindest regards,
David Miller

“I am impressed with the versatility of Yamaha’s WXAD-10 streamer” says Paul Topping.

The Naim Uniti Core is an ideal way to store all your digital files.
Hi: Olle

Thanks for your views. When you buy an Audio Technica VM740ML please write to us so as to share your experience with others. Mike Tartaglia Kershaw has already done so and is very happy with his VM740ML.

Ah, the Denon DL-103 again! I would say this is a very different experience. It is full bodied, deeply experience sound and stage with fulsome bass. Definitely a lovely sound and fantastic at the price: people around MM will never sound quite like an MC: it is like comparing chalk with cheese. But MMs are less expensive, have replaceable stylus and don’t need a special preamplifier, all factors important to users that a simple MM/MC sound quality comparison does not take into account. NK

Hi Mike.

This is, in its underlying technological background, an eerily complex subject. All sorts of horrors can occur if you don’t terminate properly, such as reflections down the line, jitter, dropped bits (no, not those bits) and things that don’t work at night — when you get home and switch the hi-fi on that is.

A 1.2Mb/s digital stream from CD has a fundamental frequency of 1.2MHz and, if pulse definition is to be maintained, needs 5x-sx10 analogue bandwidth — demanding a 10MHz cable. At these frequencies a 75 Ohm cable does ideally need to be terminated with 75 Ohm BNCs to work properly, avoiding reflections. Insufficient bandwidth will slow pulse transitions and, through time domain indeterminancy in the zero crossing point, increase jitter in receiving circuits. Jitter and reflections are minor in short domestic cables, but can become major in long recording-studio cables, for example. There are lots of caveats in here, including varying data rate changing the spectral content of digital, and re-clocking restoring pulse timing.

I doubt you would easily hear the difference between cables, linking a CD player to a DAC, but I would not like to bet on it. Generally, you get a clearer sound with ‘harder temporal definition from quality digital cables’ I find — as might be expected. Our measurements clearly show a balanced AES/EBU SPDIF link gives less noise and higher dynamic range than either an electrical cable BNC terminated or an optical cable — and AudioQuest even make a battery powered AES/EBU cable! NK

Our close up of an Audio Technica VM740ML stylus assembly shows its miniature V magnets just ahead of the cantilever hinge — a white rubber disc.

SHAPING SOUND

One of the best reads this year was “Shaping Sound with Geometry” in your December 2017 issue. Very interesting.

A stylus that can give more information about what is in the recorded grooves is of course something good. When we talk about information retrieval the old standard conical stylus cannot compare to Microline, Shibata etc. I have experience of conical, elliptical, Hyper-elliptical and Shibata and I prefer the conical stylus. Yes, you lose some of the information from the record but I think the sound is more musical. With a light tonearm I prefer the Shure M91 with the conical stylus.

And now let us talk about the fascinating new cartridges from Audio Technica. Let us compare them with the Denon DL-103. It has been in production since 1962 and you can buy it today. Amazing!

If we compare frequency response the Audio Technica is near ruler flat. And so is my Denon DL-103 with a load resistance of 100 Ohm, although there is a dip of 0.3 dB between 5 and 10 kHz. The DL-103 has the same tracking ability (300 Hz) as the Audio Technica. And this from a Moving Coil cartridge from 1962! The Audio Technica has lower distortion, lateral 0.6% vs 0.75% and vertical 0.3% vs 1.4%.

There is one thing one needs to know about the Denon DL-103. The specification says that the compliance is 5 which is very low but this is at 100 Hz. If you want to compare it to other cartridges you need to know the compliance at 10 Hz. If you measure the compliance of DL-103 at 10 Hz which is the norm you get a more user friendly lateral 13 and vertical 8. There is no problem to use a medium weight tonearm.

I think the DL-103 is a very good cartridge. Hi-Fi World says it is a popular and much loved budget MC with big bass, smooth treble and deep sound stage. I agree. Sometimes I can miss some of the ambience of the recording with the DL-103 but it is very true to the recorded sound.

On my Christmas wish list I wish to test where you compare the Audio Technica with the DL-103. A comparison with one of the best cartridges from 1962 with one of the best from 2017. Some might think this would be interesting reading. In the mean time I will probably buy the VM740ML and do the test myself.

Yours sincerely

Olle Janélv
Gotenburg
Sweden

Hi: Mike

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DSD from an iPhone? Yes, that’s a major claim Fllo (China) make for their recently released Q1 MkII headphone amplifier. I’m reviewing here. DSD offers better quality than standard digital (PCM). So this claim caught my eye.

An iPhone can only accept and play 24/48 hi-resolution (PCM) digital files. They give better sound than CD when listening on headphones – but not by much. DSD is an attractive alternative, but Apple don’t readily accept strange file formats or – especially – proprietary ones into their walled garden. DSD is a Sony-fied version of one-bit PDM digital – entirely different from PCM and almost as alien as Windows to any Apple based system. I thought my iPhone might block or blow up.

Happily it did neither. DSD slid through and into my Oppo PM1 planar magnetic headphones, or Philips Fidelio X1s from an iPhone 6S without too much fret or fuss. And what greeted me was a great sound – it was worrying good.

The new Q1 MkII headphone amplifier is purposed to suit iPhones and has been certified by Apple. It connects in digitally through the small Lightning socket on the base and routes the iPhone’s digital output through modern, high-quality audio circuits to deliver better sound quality via its own headphone output socket(s).

The case is small, 107mm long including the volume control but not connecting leads, 59mm wide and 12.5mm thick, designed to be strapped to the iPhone with rubber bands (supplied) if need be, forming a unit that’s just about pocketable. A user can play high-resolution audio files of the highest specifications from an iPhone whilst commuting or on the move – a nice idea.

It might be tiny – and light at 102gms on our scales – but this little unit packs in a lot of modern technology. Inside it uses a recent (2015) AKM (Japan) AK4452 digital-to-analogue converter specified at 115dB dynamic range, a figure our measurements verified. Importantly, it is fed by an XMOS digital processor that deals with the problem of sending DSD over a digital connection (USB) not purposed for such things. XMOS specialise in this malarkey and do a great job with high-quality audio.

Why bother? DSD offers a lovely sound that is open and spacious – free of the hard, mechanical quality typical of PCM. At the same time, for all those not bothered about playing DSD, the Q1 MkII will also handle standard digital (PCM) up to 32/384 resolution, above the usual 24/192 considered to be the upper quality limit. Our measurements showed it does a great job at this too, well conveying the benefits of hi-res digital by being free of noise and distortion.

The little Q1 MkII has two headphone outputs, one a normal unbalanced 3.5mm jack, the other a tiny 2.5mm balanced headphone jack. The latter offers better sound but is difficult to use: you need headphones wired to accept balanced input (separate leads to each earpiece) and a 2.5mm four pole plug is both miniature and fragile. I’ve broken a few in use and find them impractical.

Additionally, the Fllo has a Line output, but it gives the same voltage as headphone and is not fixed level like most, output being determined by volume so I don’t understand its purpose.

A small but firm-action volume control with in-built on-off switch feels good to the touch. Power comes from internal re-chargeable 1800mAh batteries, charged through its micro-USB connector; it charges from a computer or 5V power supply though not from a phone to preserve its battery life. Supplied leads enable connection to an iPhone or a computer. Small slide switches on the base set headphone output (GAIN) to High or Low and provide bass boost to pep up the weak bass from lightweight over-ear headphones.

As it stands the Q1 MkII provides higher quality than an iPhone’s own headphone socket. The latter provides 500mV maximum output (volume) and 103dB dynamic range; the Q1 MkII provides 1.5V...
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maximum volume and ±14dB dynamic range – quite a step up.

In absolute terms this puts the little Fiio right up with good quality mains powered DACs, if not in contention with the best that manage ±24dB dynamic range. It is still very good, if not comparable to the larger Chord Electronics Mojo. But this is when playing the best an iPhone can deliver; 74/48 PCM digital.

What about DSD? I started nut saying the Fiio can play DSD from an iPhone, as they claim. Well it can, but it can’t. To do so you have to load a DSD player into the ‘phone first, like Onkyo’s HF Player I used – and this costs £9.99 for the hi-res version (the standard player is free). Then hi-res PCM and DSD files can be loaded to the phone and played via the Fiio. It’s a bit of a fiddle, mostly because of the iTunes interface, but Onkyo’s player is better than the iPhone’s own iTunes player in ease of use and sound quality, so once the struggle to get it up and running is over, music play from the phone is both easier and more capable. It also offers a range of esoteric DSD options that were flagged up as in Beta test form (at Nov 2017) but I experienced no problems.

**SOUND QUALITY**

In a nutshell the Q1 MkII comes as full-bodied yet very smooth. Fiio have traditionally offered a gentler approach than Astell&Kern, whose players are dramatically snappier.

This little headphone amplifier has the smoother presentation of big mains-powered DACs like Audiolab’s M-DAC+ (ESS Sabre32 DAC), reflecting the way recent top AKM DAC chips have been hearing – and in contrast to Chord Electronics DACs like Hugo 2 and Mjino I have reviewed in earlier issues. Think hi-g, powerful yet silky smooth, verging on warm in basic presentation.

From Fleetwood Mac’s ‘Dreams’ (24/96) to The Doors ‘Lovel Her Matty’ (AAC) the Q1 had a generous, full-bodied sound underpinned by solid pace: ‘Lovel Her Matty’ drove through my headphones with the aura of a Mack truck in the fast lane. Interesting that this compressed track had the same hair nature as hi-res, even if the roughness of AAC was obvious.

So what you get is a barrel-chested sound from any music played, hi-res offering a greater range of contrast, subtleties and expression. With all FQs off bass was almost peculiarly strong – Queen’s ‘Radio Ga Ga’ (24/96) pounded at my ears with its heavy synth bass line, thrown at me from the Q1. The little Fiio is massive in its low end delivery, if not as tight as mains powered DACs. I had a sense of it being slightly overblown here – and all EQs were most definitely off.

The Q1 MkII showed its mettle with high resolution digital – but it was DSD that proved the clincher. Sent from the iPhone packed as DoP, rather than converted into PCM, cymbals rang as clanky metal items – I could hear the brasswork as it were – and there were long decay tails with ‘House of the Rising Sun’ (Cyndee Peters, DSD 5.6MHz). This performance was riveting in sound quality; there was a tremendous feeling of space around the performers, it was relaxed yet natural, instruments were precision imaged and there was so much timbral information – those cymbals – that it dripped with reality. This carried through with a wide range of DSD tracks (.dsf and .dff) some, like those from the Doors re-mastered from the analogue tapes sounding wholly different to earlier presentations; I was taken aback.

Connecting Oppo PM1s to the balanced output gave a slightly tidier sound with snapper outline, as if a little fuzz had been removed.

**CONCLUSION**

The little Q1 MkII was frighteningly good at times. Those times were playing DSD from my iPhone. But even with standard digital (PCM) of normal or high-resolution it gave great sound quality big bod-ed, smooth and easy, yet subtly fluid and detailed. Regaining in fact. To get the most from it you need to buy additional software, but this little unit has a low price that is out of all proportion to its high quality.

---

**MEASURED PERFORMANCE**

The tiny Q1 MkII headphone amplifier delivered 1.5V when set to H (High) and 0.76V when set to Low, from the standard 3.5mm headphone jack. Good figures in themselves if not a massive step up on the output of an iPad, for example, that offers 1V – or mobile ‘phones.

With a 24/192 digital input frequency response reached 40kHz (-1dB) before rolling off to the

**FREQUENCY RESPONSE**

**DISTORTION**

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**FIIO Q1II (2ND GEN) DAC AND HEADPHONE AMPLIFIER £89.00**

OUTSTANDING - amongst the best

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Playing DSD

Confused about the file format DSD, how to play it back and what are the benefits? Noel Keyword explains all.

DSD or Direct Stream Digital is a funny old technology – and a very confusing one. All the same, the ability to play DSD is slowly creeping into audio as a high-end feature, even though processing and playing it through a conventional PCM based digital audio system can be both confusing and difficult to achieve. Here’s a non-technical overview explaining what DSD offers and how to use it.

DSD has a reputation for good sound quality with audiophiles around the world. It offers a more ‘organic’ or natural sound free of the perceived hard, mechanical quality of conventional PCM. That is both the general perception and our own, based on using it.

Although technically there is argument about this, our measurements clearly show very low distortion and noise across the audio band, if deteriorating performance at high frequencies as its critics note. But as the ear is most sensitive up to 7kHz and insensitive above 10kHz, this may accord with what we hear.

It isn’t uncommon to hear DSD that seems only a little different to PCM, likely because it has been derived from poor PCM. Much recorded digital is poor PCM at source: a bad recording brightened by audibly discordant quantisation noise from a sonically inadequate digital converter (ADC), perhaps 16bit from the 1990s. But nowadays, as more effort is being put into mastering of what have become historic performances, the sonic benefits of DSD are becoming more obvious.

DSD sound quality varies then, according to the provenance of a recording.

So far I have used the acronym PCM twice and not explained that it is “standard digital”. This is what you get with CD and in all computer files, including WAV, FLAC, ALAC, MP3, AAC and absolutely all else; they are all PCM variants. DSD is a totally different form of digital and some even argue it isn’t digital – but I won’t go into this. DSD files come with the file identifier suffix .dsf, a basic file format without meta data, and .dsf+ − Sony’s later file format with meta data.

The problem with DSD is it’s very different. It is digital in that it comes as a stream of digits, but amplitude data is not numerically encoded, instead lying within the density of pulses in the stream. Such a pulse stream converts to analogue through a simple low pass filter – very elegant. The conceptual ‘simplicity’ of Pulse Density Modulation (PDM), DSD being Sony’s commercial variant, makes it very attractive for audio work.

DSD can be transmitted and stored, and easily converted to analogue – but it can’t be processed and computers have difficulty dealing with it because they are designed for PCM.

You cannot play DSD on a PC using Windows Media Player, nor on a Mac using the iTunes player – their free in-built players. You must first obtain and load a DSD capable player such as Foobar 2000, J River, or Onkyo HF Player, all requiring payment, or the free Tea/Sony music player or Pure Music player. These will all recognise a .dsf or .dsf+ file and play it; the progress bar will move and other things may light up or go round and round to indicate play – but you won’t hear anything. That’s because all digital-to-analogue converters in computers work with PCM only; they have no idea what DSD is and will stay resolutely silent, or you may get some hiss and faint music.

So don’t spend money on a software DSD player expecting to hear DSD until you have sorted out how it will be turned to analogue. This may well change in the near future because adding DSD decode to an audio DAC chip is relatively easy. Most high-quality audio DAC chips handle DSD as standard these days.
but the older and simpler designs used in computers do not, as there is no perceived need for DSD decode in mainstream computing. Consequently, conversion of DSD to analogue must happen outside the computer in an external DSD-capable device, raising another problem — how to get it there.

An SPDIF digital link can handle DSD but this is uncommon. Nowadays, USB (Universal Serial Bus) is used, but the transmission of DSD into DoP format for transmission over a USB link. The receiving device must be able to recognise this data as DoP (not PCM), in order to send it to a DSD DAC for conversion to analogue audio.

The advantage of this scheme is that DSD can be sent and received by both PCs and Macs, and bi-directional communication between host and device is retained – a feature of USB. A drawback is that a receiving device unable to recognise DoP (most) will reproduce noise with faint background music. As dCs note, the system at least fails ‘safe’ in this circumstance.

One misunderstanding I have seen in an internet forum is that this implies DSD is turned to PCM. It isn’t. Within a USB data frame both are just a series of pulses; they only become PCM or DSD when str-ped out and processed by an appropriate method.

DoP works very well. To use it you need a DSD player or computer that packages the stream into DoP so it can be sent over USB. In my review this month of FiiO’s Q1 MkII portable headphone amplifier it is Onkyo’s HF Player app downloaded to my iPhone that does this. An alternative and seemingly purer method of transmitting DSD is in ‘native’ mode, adding to the confusion surrounding this issue. This is for PCs only. Their audio driver can be upgraded to an ASIO driver from Steinberg to send/receive DSD as-is, not packed into USB audio data frames. Technically, the only benefit is lower data rate. Again, the receiving device must be able to both recognise and handle this data scheme. Macs cannot use this method because their audio drivers are inaccessible. Native isn’t common because of its difficulties. If you want to receive native DSD, a PC able to send it and a receiver able to recognise it are needed.

Finally, on the issue of sending DSD over a cable, a common fool-proof solution is to convert it to standard digital (PCM). This

For a wealth of DSD information go to DSD-Guide.com online.

Look at all the feet sticking out. This isn’t a millipede but a complex Sony DSD processing chip with arrays of connection points.

Introducing Mu-so Qb by Naim. The compact wireless music system designed by our specialist audio engineers in England. Offering versatile features and 300 watts of power, Mu-so Qb has to be heard to be believed. Why compromise?
A couple of years back, we reviewed the Hugo TT (Table Top) DAC/headphone amplifier. The TT can be connected to any amplifier on the market because it has a volume control. Few power amps match its distinctive styling so Chord have introduced the complementary T Toby. Like its DAC partner, it has both phono and XLR inputs — you can use both at the same time. I’d also advise disconnecting headphones from the Hugo TT, if listening via the T Toby and speakers. Left plugged in, my Focal Utopias acted as a rather muffled and insensitive stereo microphone whenever the Hugo TT was switched off — odd. Another annoyance is that although the power switch of the Hugo TT is conveniently on its front panel, the T Toby’s is inconveniently on the back! But apart from that, the two units go very well together.

The substantial loudspeaker output terminals accept bare wire, spaded or terminated in banana plugs. Inside, the T Toby is constructed to the impeccable standard we’ve come to expect from Chord. Despite what you might expect from such a compact package, the power amplifiers — 100 watts per channel into 4 ohms, with less than 0.02% distortion - are not Class D. Instead, Chord has specified a Class AB design, based on paralleled pairs of latest-generation power MOSFETs. These transistors are heatsinked by the unit’s generous metalwork. The power supply is a compact switch-mode design, eliminating the big transformer needed by a linear supply. This explains T Toby’s compact dimensions, along with use of the casework as a heatsink.

**SOUND QUALITY**

To assess the subjective performance of the T Toby, I used Quadral Aurum Wotan VIII speakers and the Hugo TT as a source. This was fed by a Cambridge CXN streamer, accessing CD rips and HD audio from USB drives or folders on a NAS.

Radio 3’s 320kbps AAC stream, as received via the CXN, revealed just how good the Beeb can sound over the ‘net. Lunchtime and evening concerts featuring material from — amongst others, Stravinsky, Beethoven and Dvorak — made for a compelling listen. The natural organic musical flow of the Hugo TT is complemented by the speed of the T Toby, leading to excellent reproduction of percussion and transient detail. It’s a salutary lesson for those who still believe that FM (admittedly better than DAB) is the final word when it comes to listening to Radio 3 at home.

The Hugo TT and T Toby are musical to an almost-analogue degree, but this partnership is no slouch in the analytical stakes either. Their resolving power means that if the BBC was ever to do the right thing and revive the summer’s worthwhile ‘Concert Sound’ lossless stream, you’d be able to tell it apart from AAC. The two also fared well with recorded classical music, like a mid-80s digital recording (CD rip) of Sibelius’ Symphony No. 2 in D major, Op. 43 (Vienna Philharmonic/Leonard Bernstein). It was clean, open and natural; the strings and brass, in particular, leaped out at me.

Pizzicato strings and delicate drum-rolls emerged from the soundstage. And when the music started speeding up in the scherzo of the third movement, as the symphony progressed towards its dramatic finale, clarity was maintained. There was not a trace of congestion!

The system’s resolving power was also evident after switching to a completely different musical style — Depeche Mode’s early albums (24bit/
The new 800 Series Diamond didn’t get better by chance. It got better by change. 868 changes to be precise.

Bowers & Wilkins

bowers-wilkins.com
"Pizzicato strings and delicate drum-rolls emerged from the soundstage."

The Ttoby’s power supply is built in, an IEC mains socket and adjacent but inconveniently located mains switch show. Robust quality speaker terminals and unbalanced (phono) and balanced (XLR) inputs are fitted. Only one can be connected though.

MEASURED PERFORMANCE

The Chord Electronics Ttoby power amplifier uses a switch-mode power supply and Chord Electronics Class A/B Mosfet output stage for compact case dimensions. It became very warm at idle; the case acts as a heat sink. Power measured 50 Watts into 8 Ohms and 90 Watts into 4 Ohms – enough to drive any modern loudspeaker to high volume, but a tad below the 100W claimed.

Ttoby managed low distortion, 0.01% at 1kHz and 0.07% at 10kHz, 1W, our analysis showing the latter. Whilst the harmonics are extended, their level is low and did not change in amplitude pattern with level – a good sign that suggests they will have little aural impact.

Frequency response analysis shows response into 4 Ohms, where it extends flat to 60kHz (-1dB). Into 8 Ohms this figure was 80kHz (-1dB).

Input sensitivity of both Line (phono socket) and Balanced (XLR socket) inputs was identical at 0.7V, where 1V is common for power amps – so the Ttoby is sensitive. Noise was low at -95dB.

The output damping factor of 60 was negative, voltage rising slightly into a low load. Cambridge amplifiers have exhibited this in the past. Output impedance is very low so the aural impact likely minimal.

Ttoby measured well in all areas, if shy of Chord Electronics own figures in power and bandwidth.

Chord Electronics

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LCDi4

HAVE YOU HEARD THE LIGHT?

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Designed to deliver a truly wide and accurate soundstage, superior transient response and bass response flat from 900Hz down to 5Hz, the single-driver LCDi4s offer a coherency of sound lacking in multi-driver designs.

Using the same ultra-thin diaphragm that is used in the LCD4s and all our patented technologies like the Fluxor magnets and Uniforce voice coil technology, the LCDi4 ushers in a new benchmark for realism in in-ear headphones. The distortion (THD) is less than 0.1% overall even at high volumes, an amazing achievement for in-ear headphone designs.

Weighing 12 grams per side, the headphones - handmade in our California lab - come with a new magnesium top housing and premium, braided cable made of silver-plated OCC copper with Kevlar threads for additional strength. A luxury leather travel case completes the LCDi4’s portable perfection.

Experience the LCDi4 now at

SELFRIDGES & Co • AUDIOSANCTUARY • Highend Headphones
Here’s your chance to win a pair of MarkAudio Sota Cesti B loudspeakers we reviewed last month. Read the review excerpt below and answer the questions.

“For a start these ‘speakers are handed. While the two drivers are arranged in the usual way, one above the other, the fascia has an asymmetrical waveguide CNC machined into it. With the guide facing outwards you get wider dispersion, while facing inwards gives a tighter, more focussed stereo image. I’d advise experimentation here as it’s very much a matter of personal taste, and is influenced by proximity to side walls.

Then there’s the drivers themselves. Instead of the usual mid/bass tweeter arrangement these are in fact two full-range units which differ only in size. The bottom is an 11cm Sota (State Of The Art) driver while the top measures 5cm.

Designed by MarkAudio founder Mark Fenlon and built in-house, they have a shallow cone profile and are constructed from an alloy. MarkAudio says that as the drivers are identical in construction they have the same dispersion characteristics – which is not the case for a traditional cone mid/bass plus dome tweeter. This makes the use a low order filter much more feasible.

The drivers have long stroke suspension and are also extremely low mass, Mark himself saying he comes from the Colin Chapman/Lotus school of engineering where the mantra “Simplify; then add lightness” held sway.”

Win a superb pair of MarkAudio Sota Cesti B loudspeakers worth £1,950 in this month’s great giveaway!

RULES AND CONDITIONS OF ENTRY
- ONLY ONE ENTRY PER HOUSEHOLD
- MULTIPLE ENTRIES WILL BE AUTOMATICALLY DISQUALIFIED
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entries will be accepted on a postcard only

NOVEMBER 2017 WINNERS: GOLDRING E3 CARTRIDGE
Mr. K Midgley of Conwy, Mr S. Dohery of London, Mr. D Priestley of Bradford, Dr. M. Malik of Surrey, Mr. P Sumpter of Keighley

QUESTIONS
[1] Are the ‘speakers
[a] handed
[b] footed
[c] beheaded
[d] ambidextrous

[2] What is machined in
[a] cut flip
[b] lubrication point
[c] asymmetric waveguide
[d] drain holes

[3] Is the cone profile
[a] hemispherical
[b] rectangular
[c] shallow
[d] convoluted

[4] The drivers are
[a] extremely low mass
[b] elephantine
[c] diaphanous
[d] plant
TURN TABLES

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

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

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

LINN LP12SE £3,800
The UK’s most iconic turntable, the legendary Sondek goes from strength to strength. New Keel sub-chassis and Radikal DC motor add precision and grip to one of the world’s most musical disc spinners. Expensive though.

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

PRO-JECT ESSENTIAL DIGITAL £300
A budget turntable that turns in a great analogue performance, but also has a 24-bit digital output. Send 24/192 across your lounge via optical cable to a DAC and get great audio quality. Or record it to your laptop.

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

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

REGA RP303 £300
A one-piece finished casting makes this arm’s structure almost anodised, sleek and dynamic, superb imaging, for MM and MC. Reference quality for peanuts.

SME 317S £1,600
Twelve inch magnesium alloy tapered arm base plus SME V bearings. An unusually yet smooth and relaxed sound. Superb value make this the package. Our editor’s steel.

SMF 309 £1100
A one-piece tapered arm finished like a camera and side to use. Superior SME quality and sound at an affordable price.

SMF V £1300
Offers rock steady timing and a sense of precision, plus rock solid dynamics, top dollar for deep pockets.

CARTRIDGES

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

AUDIO TECHNICA AT-F9/HU MC £150
Great value entry level Moving coil with detail and grip you just can’t get from similarly priced Moving Magnets.

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

BENT MICRO WOOD SL MC £945
Highly finished Swiss moving coil that plays music with reflexed precision.

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

TONEARMS

ORIGIN LIVE ENCOUNTER VK3C £1745
Origin Live combines carbon fibre and ebony to marvellous effect in its new 12-inch arm. Creamy and rich in presentation the Encounter-delivers deep into the mix for a satisfying listen.

HADDOCK GH-242 EXPORT £810
Consistently musical, lyrical sounding tonearm, but needs the right turntable.

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

FEBRUARY 2018 www.hi-fiworld.co.uk
LYRA TITAN I MC £3,500
Breathtaking speed and dynamics from LP helped by diamond coated, boron rod cantilever.

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

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

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

ORTOFON Cadenza Black MC £1,800
Ultra smooth and dimensional moving coil with bass and punch aplenty. Lovely stylus.

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

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

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

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

VAN DEN HUL DDT-II SPECIAL MC £995
Long-established cartridge from Holland with an open and dynamic sound.

PHONO PREAMPS

CAMBRIDGE AUDIO 651F £200
Clean, concise sound from MM and MC cartridges at a very low price. A real bargain.

ICON audio PS3 MKII £2,500
All MM/MC phono stage with MC transformer option, graced by big, spacious and relaxed sound.

LUXMAN EQ-500 PHONO STAGE £4,495
A fully-equipped phono stage from Japanese manufacturer Luxman that offers comprehensive cartridge matching allied to superb sound.

LEMA ACOUSTICS ELEMENTS ULTRA £1,199
Smooth and detailed sound with the ability to accommodate most modern cartridges. Exceptional value for money.

PRO-JECT TUBE BOX DS £425
Compact MM and MC phono stage with valve output circuit and a big sound.

QUAD QC24P £995
MM and MC, styles of gain, a volume control – and valves! Looks superb and sounds better: smooth, atmospheric and big bass.

TEMPEST T-01MC £995
New, minimalist phono stage that sonically punch-es well above its weight.

PREAMPLIFIERS

ICON AUDIO LA-4 MKII £1,400
Uses early 6507 triodes for liquid sound. Has plenty of gain and a remote control into the bargain.

MF AUDIO CLASSIC SILVER £4,500
One of the best phono stages we’ve heard at any price, this transformer-coupled marvel does very little wrong. It’s powerful, clean and open, yet delicate. Its sound is unmatched at or near the price.

MING DA MD7-SF £1,520
A valve phono amplifier with an open, effortless sound and a big soundstage. It has plenty of gain so will accept any source and drive any power amp. A real beauty.

INTEGRATED AMPLIFIERS

ARAS PR3045SE £1,499
Pure single-ended valve magic. Low-powered but immediately gorgeous, easy-going yet face-proof dynamic at the same time.

AUDIO RESEARCH VS100 £3,500
Fabulous sound with traditional tube and valve proprietary Audio Research. Breathtaking, but expensive.

CAMBRIDGE AUDIO AZUR 651A £350
Dual-mono construction and meaty toroidal power supply combine to produce a solid and ample sound with tones far beyond its price point.

CREEK EVOLUTION 100A £1,500
Superb build and smooth confident sound make this powerful amplifier a benchmark.

CYRUS 80AC £1,400
Trademark Cyrus-sized Cyrus integrated now offering 80 Watts per channel, plus DAC. Solid delivery from a reliable company that fills in anywhere – and isn’t Class D!

EXPOSURE 1010 £495
Entry-level integrated from Exposure has excellent value and performance with an almost valve-like sound.
**WORLD STANDARDS**

**ICON AUDIO STEREO 60 MKII** £2,800
Excellent tube integrated with plenty of power and an expansive soundstage, plus KT150 tube option and bass meter for easy adjustment.

**NAIM NAIT 5Si** £925
Naim’s latest entry level integrated amplifier is updated to 5Si status. Demo Naim’s superbly muscular sound at entry level.

**SUGDEN A21SE** £2,400
Class A amp with fantastic sound quality producing hard, sculpted images, deep detail and tight bass. Just don’t expect disco-like sound levels!

**QUAD II-EIGHTY MONOBLOCKS** £6,000 PR
Powerful and expansive sound from modern design monoblocks that also look lovely. Superb – used by us as a reference.

**LOUDSPEAKER FLOORSTANDER**

**NAIM ICON**
£9,950
Excellent bass and treble, with superb midrange imaging. A legend.

**Q ACOUSTICS 20S6i** £480
A large floorstander at a budget price. Offers high sensitivity and big sound and has very few flaws for the price.

**SPENDOR SP100 R2** £6,495
Relays looks but a sound that’s hard to match. Spender’s 12" bass unit provides massive low-end grunt with a room-filling sound.

**POWER AMPLIFIERS**

**AUDIOPHILE VS175** £7,498
Powerful, fast valve sound that makes everything else look weak at times. Needs careful matching but well worth the effort.

**EMINENT TECHNOLOGY LFT-88** £2,500
Excellent U.S. planar magnetic loudspeaker at bargain price. Utterly superb - a must hear.

**FOCAL ARIA 926** £1,490
Simple, clean, neutral sound – easy going but well engineered and affordable.

**ICônO AUDIO MB845 MKII** £7,600
With 120W from big B45 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.

**MCINTOSH MC-152** £4,995
Stunningly insightful sound with enormous bass punch from a uniquely designed transistor amp. Amazing audio, a league up, if expensive.

**QUAD ELECTRA GMP MONOBLOCKS** £3,400 PR
The power trio not in a price group. Plenty of power but delivered with an assured and confident nature. Smooth on top and easy on the ear, it can rock out when needed.

**QUADRAL ORKAN V7i / AKT VS** £6,200
Active loudspeaker with tight, powerful bass, perfect accuracy and detailed treble from a ribbon tweeter.

**LOUDSPEAKERS STANDMOUNT**

**ACOUSTIC ENERGY NED 1 V2** £225
Cubed sounding speaker with fast and tuneful bass.

**ACOUSTIC ENERGY AE1 CLASIC** £945
Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.

**MARTIN LOGAN SUMMIT X** £16,698
Matches Martin Logan’s XStat electrostatic panel to a powerful subwoofer to provide extended, powerful bass. Dramatic sonic purity. Awesome – all but unmatched.

**MARTIN LOGAN ELECTROMOTION** £2,500
Martin Logan’s budget baby XStat hybrid electrostatic fits into any room to give electrostatic levels of clarity and imaging.

**TANNOY DEFINITION DC10 Ti** £6,000
Enormous power with great projection. Glorious subsonics. Need little power to go very loud and have superb imaging into the bargain.

**TANNOY KENSINGTON** £9,950
Big but not overpowering, punchy modern sound from classic cabinet. Need little power to go very loud and suit a traditional room. A classic.

**LOUDSPEAKERS SUBWOOFER**

**SUMMIT ELECTROMOTION**
£1,000
Bright, sharp, very well-detailed sound. Offers real impact and definition. A giant killing subwoofer.

**SPENDOR SUB10** £1,600
Excellent subwoofer that can go deep and punchy with plenty of power and detail. A subwoofer that can really add to your system.

**ACOUSTIC ENERGY NED 1 SUB** £480
A very good subwoofer that can go deep and punchy with plenty of power and detail. A subwoofer that can really add to your system.
ELAC BS243 £1,000
More transparent and spacious than they've a right to be at this price, these refined mid-price standmounters represent top value.

WHARFEDALE DENTON £500
A beguiling mixture of retro looks with modern, high-technology drive units. The Denton has an easy-going, bg-heated sound with a touch of trad warmth that should appeal to many.

EMINENT TECHNOLOGY LFT-16A £1,200
U.S. piano magnetic bookshelf loudspeaker with unvailed mid-band and treble. Hear it before you buy.

WHARFEDALE DIAMOND 220 £200
Builds on the success of previous Diamond ranges with better bass, more detail and a greater sense of scale.

KEF LS50 £800
Supremely musical mini-monitors which sound much bigger than they look.

MARTIN LOGAN MOTION 35 £1,300
Folded AirMotion tweeter gives a taste of Martin Logan's electrostatic sound in a standmount. Different from the standard mini-monitor and all the better for it.

EPHANY EHP-02 £99
PP3 battery-powered portable gives great sound quality at an almost giveaway price. Happy with the output from an iPod or CD player; the little epohany is a true bargain.

ICON AUDIO HPA-MKII £650
The HPA MKII valve-based headphone amplifier brings the spacious sound of valves to headphones. And it matches 'em all.

MC TWENTY1 £1,575
Transmission line loaded standmount with a big box sound from a compact cabinet. Punches well above its weight.

FIDELITY AUDIO HPA 100 £350
Great little headphone amplifier with a lively yet refined and open sound.

MUSIC FIRST PHONE BOX £276
Brings a big stage, plenty of detail and rich, deep colours to the sonic spectrum.

Q ACOUSTICS 2020i £165
Great little bargain priced stand-mounts with a friendly, fun yet surprisingly refined sound. Hard to better for a pair of starter loudspeakers.

HEADPHONE AMPLIFIERS
CREEK OBH11 £150
Designed specifically for low to medium impedance (30 Ohm – 300 Ohm) headphones the little Creek has a marvelously well-judged sound.

CHORD MOJO £399
Class leading portable DAC and headphone amp with ability beyond all else. Big, open spacious sound.

CANOR CD2+ £3,100
Musically relaxed and faultless valve-shielded CD player from Slovakia. Lovely liquid sound.

CAMBRIDGE AUDIO AZUR 651C £410
Snaply modern presentation from this budget CD player. Cracking audiophile entry point for any digital fan.

CHORD RED REFERENCE MKIII £16,000
A unique and massive engineering exercise that could well be the best CD player available. Chord's PulseArray DAC technology produces a musical experience like few others. A true reference player.

ESOTERIC K-03 £9,495
Super high end silver disc player that is beyond comparison. Dream of the own manufacturer and has a flawless presentation.

CD PLAYERS
AUDIOLAB 6200CD £949
Inspired CD player and DAC with price-performance ratio like no other. Capable of matching designs costing much more.

EXPOSE 101 £335
Detailed playback with flat range of timbral sound be an automatic entry on any demo list at this price.

www.hi-fiworld.co.uk FEBRUARY 2018 HI-FI WORLD 47
ELECTROCOMPANIET EMP-1/S £4,650
Epic in scale, lavished in tone and exuberant in its musicality - this is a memorable SACD spinner. Quite in operation and modest in finish, though.

OPPO BDP-105D £1,200
Universal player and DAC that makes CD and Blu-ray (+DVD) sound deep, spacious and full bodied. Reference quality that’s affordable.

REGA APOLLO-R £550
Rega comes up with a fine CD player again. Tremendous detail and an easy, unforced sound at all times. Few blemishes but made up for by its superlative ability.

ROKSAN KANDY K2 £900
A charmingly musical performer at the price - this is a surprisingly sophisticated CD player for the money.

TUNERS
CAMBRIDGE AUDIO AZUR 651T £299
Value-packed AM/FM/DAB and DAB+ ready tuner. Precise and detailed with excellent resolution of spoken word.

CREEK DESTINY 2 £550
Creek’s tuner expertise shines through in the Destiny 2. This AM/FM receiver is wonderfully three-dimensional and smooth.

MAGNUNUM DYNALAB MD-90T £1,900
Exceptionally able, but commensurately priced, autophonic tuner that cannot fail to charm.

DACs
AUDIOLAB M-DAC £600
Excellent sound from ESS Sabre32 DAC and impressive flexibility with a unique range of filter options make this a stand-out product. Low price is the icing on the cake.

AUDIOLAB Q-DAC £250
Stripped-down version of Audiolab’s M-DAC uses some features but retains much of the sound, making it a veritable bargain.

ANTERLOPE ZODIAC GOLD/VOLTIKUS £3,095
DAC/preamp/power supply combination majors on detail but has a remarkable un-digital sound. One of the best at its price.

CHORD 2QUTE HD £990
Superb build quality and exceptional sound from this compact unit. Boasts the ability to handle DSD direct via USB and has an exceptional soundstage. One of the best DACs you can buy.

DCS DEBUSSY £8,000
DCS’s bespoke ‘Ring DAC’ circuit gives a beautifully fluid, almost analogue sound that encourages long listening sessions. Not cheap but worth every penny.

NORTHERN FIDELITY DAC £650
Packed full of features, including Bluetooth and USB, this ESS Sabre32-equipped DAC offers crisp, insightful sound at low price.

NORTHSTAR DAC £5,000
Exceptional value in a conceptual, high-end DAC. DSD and PCM, ‘pure’ and unprocessed, with all the options you need.

NAIM DAC £2,400
Superb high-end digital converter with a pleasing, tuneful and transiently detailed sound.

TEAC UD-501 £699
Feature-packed DAC with benefit of DSD playback. Superb sound means little to frown it at the price.

RESONENCE INVICTA MIRUS £4,499
One of the most highly spec’d DACs available, with a smooth yet enthralling presentation. Few approach it.

NETWORK PLAYERS
CHORD DSX100 £7,500
Chord’s proprietary DAC circuit shines in their top-of-the-range streamer. Near-through clarity with a sound rich in detail, dynamics and soundstage.

CAMBRIDGE AUDIO NP30 £999
Budget offering from Cambridge offers a great introduction to network streaming.

CYRUS STREAM X £1,400
Gorgeous sound quality even from compressed digital music. New control app makes everyday operation a doddle.

CONVERT TECHNOLOGIES PLATO £2999.00
A network player with amplifier that does it all, including turn LP to hi-resolution digital, and add cover artwork from the ‘net.

NAIM NOX £2,995
Clean, incisive and very detailed sound with Naim’s traditional pace and timing make this one of the best network music players around.

NAIM NOXS £2,175
Great sound quality with traditional Naim feel. A wonderful DAC with full 24/192 handling. Only the display could be better.
PORTABLE SPEAKERS

BAYAN SOUNDBOOK
Superb design and great sound make for one of the best portable Bluetooth speaker/radios on the market. Not the cheapest – but worth every penny.

RYVER IBA-50
£89
Big, warm sound with plenty of volume and clang at high levels. Muscular sound compared to many rivals.

CABLES

BLACK RHODIUM TWIST
£71/3M
Twisted to fight off radio frequency, the Black Rhodium speaker cable is easy on the ear with a fine sense of clarity and focus. A remarkable performer at the price.

DIgITAL SOURCES

ASTELL&KERN AK100 MKII
£569
Portable high-definition digital player with superb sound quality. Punchy and fast.

FIIO X3
£150
Fabulous value player with nice easy sound and full range of abilities. Small and light. For newbies.

LOTOD PAW GOLD
£1,500
Reference quality sound: it’s like carrying your hi-fi in your pocket. Equally large too, but stunning headphone quality.

NAIM NAC-N172 XS
£1,650
A pre-amp DAC/streamer package provides a taught, rock-solid presentation with a tonally rich midband and a superior sense of rhythm.

PRO-JECT STREAM BOX RS
£1,095
Unusual valve-based streamer/preamp with variety of inputs and a lovely liquid sound. Not the most detailed but compensates with sheer musical verve.

QUAD PLATINUM DMP
£2,500
Combined CD/network player has all the usual Quad elements but with added zest and detail that brings life to everything you care to play.

HEADPHONES

AUDEZE LCD-3
£1,725
A planar magnetic 'phone that offers monitor quality. Rolling sound with silky, dark quality that drives you to matches.

B&W P3
£170
Beautifully presented headphones from the loudspeaker specialists. Feed them a good quality source signal and they reward with excellent sound.

JAYS V-JAYS
£49
Wonderful little budget over-ear portable 'phones with a clean albeit sound to test the best of the rest at the price.

DIGITAL CABLES

MAINs CABLES R US NO.27
£95
Offers a sprightly pace with a precise nature. Fast performance enhance frequencies and beautifully etched detail.

NOBLE K10
£1,729
INC. FITTING
Custom fit in-ear phones with 10 drivers deliver a sound that’s out of this world. Personal and perfect.

CHORD SIGNATURE REFERENCE
£900
Majors on timing, detail and openness. Capable of getting the best from most systems and a recommended upgrade.

OPPO PM-1
£950
Planar magnetic phones with a warm, easy but big reveals that draws you in. Need a bit of drive, but deliver superb bass.

NAIM MDX
£4,405
Interesting one-box network-enabled hard-disk music system that goes super sonic together with impressive ease of use.

TELLURIAL Q BLACK
£804/3M
A deep, dark, velvety performer that’s nevertheless highly musical. It represents excellent value as mid price cables go.

TELLURIAL Q SILVER DIAMOND
£804/3M
An open, natural and transparent sound that is difficult to beat. From these great loudspeaker cables.

YAMAHA HP-TMT20
£150
Purposed for 

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100% Pure Valve Amplification

Loudspeakers your valve amplifier will love!

Valve amplifiers prefer speakers of simple design to get the best of their intimate, relaxed sound quality. This can be degraded by “difficult loads” and complex speaker crossovers. All our speakers have been carefully designed and tested using only valve amplifiers, so you can be sure of outstanding results.

MFV 15h. Huge sound from as little as 9w. Fabulous mid range - huge sound stage with the deepest bass. Large pressure driven horn. 10” Custom bass driver. 65cm w. 112h. 60d. 7/8”. £9999 pr inc Stands and covers.

FRM2. Two of our special 8” full range units for extended bass. Very versatile may be configured in several ways ideal for a large room. 9w+£2,499 pr.

FRM 2 Super. Piano black or red. 8” full range with seamless response from m full bass b/d extended treble from one unit with a fraction of normal power. £2,349.


MFV 3 std. Same as the Super but without the upgrades. Exceptional performance for the price! Only £1199 pr.

MFV 4. Smaller ‘foot stander’ 2 1/2 way for those wanting a very neutral sound from a compact speaker. £1099 pr. Only 26w x 87h x 88d.

MFV 5 Amazing monitor style speaker very clean neutral sound with excellent power handling, ideal for stand mounting £89.95 or 27w x 101h x 32d.

MFV 0 Where space is a problem our compact monitor delivers a surprisingly big presentation. £D/A SET pr or PP. 18w x 31h x 24d £599 pr.

FRM 1 Stand mount version of our FRM range speaker with seamless purity of our superb 8” full range driver. Uncluttered purity for small amplifiers and SET’s 30w 51h £1199 pr.

MFV LS3/5A. Our version of the vintage BBC monitor. Super accurate delivery for a small room Superb rosewood veneer £1599 pr.

A good loudspeaker is as good as the sum of its parts. Clockwise: Our full range unit with its huge rare earth magnet. Open rigid alloy basket. MFV series midbass driver with large alloy voice coil tube for excellent heat dissipation and finally, internal tracing to reduce resonance. It’s thin polymer component sheets fitted to several speakers to ensure each cabinet resonance. MFV series silk dome tweeter cones matched in pairs for super smooth treble.

We assemble our own drivers from the finest components.

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(+44) 0116 2440593 351 Aylestone Rd Leicester LE2 8TA UK
The new LS50 Wireless active loudspeakers from KEF are an all-in-one solution that take up little space but pack a mighty punch, says Jon Myles.

A decent hi-fi system can take up a lot of space in your living room, with source components, amplifier, loudspeakers and the like. But need it be so? Not according to KEF whose new LS50 Wireless loudspeakers junk the clutter without sacrificing sound quality.

How so? These are a pair of active standmount loudspeakers incorporating their own amplification as well as built-in Spotify and Tidal compatibility for accessing streaming services, the ability to find music on your own home network (from a NAS drive or computer) as well as being able to deliver tracks from smart devices via Bluetooth.

Based on the excellent-sounding KEF LS50 passive loudspeakers, these new actives are slightly larger to accommodate the electronics and heatsinking but are still relatively small at 30cm x 20cm x 30.8cm (H/W/D).

The drive units are the same though, in the shape of the tried and tested KEF Uni-Q array which uses a 25mm aluminium dome tweeter sitting in the centre of a 13cm magnesium/aluminium mid/bass cone to provide a point source arrangement.

A proprietary Tangerine waveguide is fitted in front of the tweeter that, KEF say, helps dispersion.

But it is on the inside where things get truly interesting. Each loudspeaker has an internal DAC for processing digital signals as well as amplification developed in co-operation with KEF’s sister company Gold Peak Electronics.

Designer Jack Oclee-Brown told me this involved extensive listening tests until the exact specifications were decided – which resulted in a Class D module being employed.
Introducing the Astell&Kern A&ultima SP1000, a new flagship player that changes what is possible from portable audio, in terms of both performance and desirability. The SP1000 takes the award-winning success of the AK380, launched two years ago, and raises the quality bar for high-resolution sound on the move.

Available now in Stainless Steel and Copper editions
MEASURED PERFORMANCE

The LS50 Wireless has a very smooth frequency response our analysis shows, free of variation except at 1.5kHz where a dip corresponds to a peak in port output, suggesting an internal cabinet mode responsible for phase cancellation – not uncommon in small cabinets. Subjectively this will not be easily audible.

The LS50's smoothness of output suggests very low colouration due to an absence of minor resonances. The slight downward tilt toward high frequencies ensures there's good body to the sound and the absence of a crossover dip and treble peaking tells of strong detail, yet smooth treble. This makes for amenable long term listening.

Set to Free Field (no close rear wall) and Stand Mounting bass is strong and extends smoothly down to 50Hz, the port (red trace) contributing to output around 40Hz. The speaker produces plentiful bass, but not subsonics. Selecting Desk mounting reduced upper bass and gave the flatter measured result. Selecting Wall reduced lower bass by a few dB.

The LS50s needed a low 93mV input to Aux to produce 90dB sound pressure level (very loud) so they can be connected to any mobile phone or tablet headphone output and reach full volume.

The LS50 Wireless will sound smooth, mild yet strong in bass output. Selecting Desk gives a drier bass delivery but one that is more accurate. In all, this is a very well developed loudspeaker of great ability, measurement shows. NK

SOUND QUALITY

Active loudspeakers have much going for them, not least the fact that the designers can precisely match the amplification to the characterists of the drive units. They also remove the influence of speaker cables on the sound.

Done well they have a punch and authority passive loudspeakers struggle to match – and that is exactly how these KEF's sound.

Despite their relatively small size they have a big soundstage, the internal amplifier configuration projecting music well into the room with excellent left to right dispersion.

Playing Massive Attack's 'Safe From Harm' (24/96) I couldn't help but be struck at how deep and insightful the bass sounded. There's no overhang or unsettling boom but just a clean, precise rendition of the notes.

The same goes for the mid-range and treble. With Arvo Part's haunting Tabula Rasa the Uni-Q driver brought out the space around the sparse piano parts while also retaining the natural decay of the notes.

Compared to the original passive LS50s these active versions have a touch more dynamism to them which works superbly with upper tempo music. Using the Bluetooth facility via an iPhone 7 Plus, the electronic synth bass of Lady Gaga's 'Bad Romance' throbbed with power yet never overwhelmed the vocals. Instead the whole track hinging together beautifully combining a great sense of timing with superb detail.

For the mid/bass unit with separate Class A/B amplification driving the tweeter. It contains 200 Watts per channel feeding into the former with 30 Watts per channel going into the latter – giving a healthy dose of power.

The speakers operate in a master/slave configuration with the right-hand unit containing the inputs and connected to its partner by a (supplied) cable. Take a look at the back of the master loudspeaker and you'll find analogue stereo inputs (RCA phone sockets), plus digital optical SPDIF and USB type A inputs, as well as an ethernet socket for connecting to a home network. The internal DAC is capable of handling 24-bit/192kHz files through the USB and network connections with the optical going up to 96kHz signals.

Each loudspeaker also has controls for adjusting the sound for different speaker placements with options for close to wall or free space positioning. Download the free KEF app for tablets or smartphones and there are even more options for tailoring the sound.

And, of course, while they may be dubbed Wireless that's not quite accurate – you'll still need to plug each unit into a power outlet and connect them together.

CONCLUSION

KEF has fashioned something special with the LS50 Wireless pairing. For £2000 you are getting an excellent loudspeaker with a streamer, DAC, preamp and amplification built-in which won't take up too much room but more importantly sounds superbly entertaining. Simply plug in, listen and enjoy.

The top of the master speaker has touch sensitive controls for selecting inputs.

Such was the performance on offer I couldn't help but turn the volume up – and the KEFs didn't complain. Even at, frankly, ear-splitting levels they stayed composed and controlled – a testament to how well active loudspeakers can sound.

Those looking for the sub-sonic bass and overall scale that larger floorstanding loudspeakers can provide won't find it here. But the LS50s are so well judged that you'll never think of what is missing but simply revel in the overall sound on offer.
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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 S, 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.
Excellent XTs

QED’s new XT25 budget loudspeaker cables offer outstanding value for money, says Jon Myles.

During the past 12 months I’ve had the pleasure of listening to a number of excellent loudspeaker cables from the likes of Chord, Tellurium Q, Black Rhodium and Atlas.

Another stand-out has been QED’s flagship Supremus – a cable that managed to match more expensive rivals. It sill costs £150 per metre so isn’t in everyone’s price range. Luckily, Woking-based QED has a number of less expensive alternatives in its range, including the new XT25.

Priced at £70 for a 3 metre pair, and cold-welded with QED’s Airloc 4mm banana plugs or spades, this loudspeaker cable falls very much into the budget mid-range category. Despite that it boasts many features trickled down from QED’s higher ranges.

Chief of these is the use of a combination of the company’s X-Tube and Aircore technologies – where the 99.999% oxygen-free copper conductors are arranged around a central hollow insulating rod.

A low-loss, low-density polyethylene (LDPE) dielectric is also employed alongside careful spacing of the conductors to give low capacitance – which QED says has been preferred during repeated listening tests.

An aluminium Mylar wrap is used to shield the cables from EMI/RFI interference – an increasing problem from the use of wi-fi and smart devices within the home.

Despite all this the XT25 is surprisingly thin and plant - meaning it is easy to route even in the tightest of spaces. The Airloc plugs are also well-made, fitting securely into an amplifier’s outputs.

**SOUND QUALITY**

Plugged into a Naim Atom streamer/amplifier the QEDs present a nicely balanced and well-detailed sound. On The Smiths’ “How Soon Is Now” they did an excellent job of conveying Johnny Marr’s layered guitar parts. Morrissey’s vocals sounded expressively emotional but were also intelligible and with nice solidity.

Moving to The Killers and their ‘Hot Fuss’ CD, bass guitar was tight and tuneful, never sounding boomy, even through a revealing pair of PMC loudspeakers. Up top cymbals had a nice zing, making them stand out – but they were neither bright nor unpleasant.

These cables won’t unearth all the detail that more expensive cables can manage (QED’s more expensive XT40s, for example, will give you a bit more) but they are a definite upgrade on basic speaker leads and match or better almost anything else at this price.

Listening to Steve Earle’s ‘Washington Square Serenade’ the XT25s captured the bite of the guitars, as well as the rasp of Earle’s voice. They also made the music hang together in a toe-tapping fashion that had me listening to the CD all the way from beginning to end. And that’s just what a good speaker cable should do.

**CONCLUSION**

The XT25 offers a fine upgrade to basic loudspeaker cables – sounding more authoritative, detailed and open than its price would suggest. Slot this into a budget or mid-priced system and the resultant improvement in quality cannot help but make you smile. At £70 for a terminated 3 metre pair they offer remarkable value for money.

---

QED XT25 £70 (PER TERMINATED 3M PAIR)

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VC's KD-720 was a budget cassette deck (£85) sold between 1978 and 1980. A replacement for the basic CD-I740, the KD-720 was highly successful – not least because it was regularly recommended by consumer organisations and hi-fi press. Many were sold, especially here in Britain, and to this day they regularly crop up at car-boot sales and on eBay. It even formed the centre piece of an upmarket disco console, where it was used to insert ‘jingles’ or record segues of the music guaranteed to get you ‘on the floor’ (the ‘70s were of course disco’s heyday!). Despite this ubiquity, there’s little information about this cassette deck online. Not even the mighty www.hifiengine.com site holds any information about this model, and the archives at JVC (UK) were unable to help.

So what made the KD-720 a winning design? For a start, it met the DIN 45500 specifications for hi-fi equipment, as a sticker adjacent to the Dolby logo proudly acclaims. Although seen as a bare minimum, this simple sticker inspired consumer confidence. The machine’s separate bias and equalisation flip-switches enabled it to be broadly-compatible with all of the tapes then on the market – ferric/Type 1 (‘normal’), chrome/Type 2 (CrO2/SA’) and a short-lived hybrid of the two known as ‘ferrichrome’ or Type 3 (‘Fe-Cr’).SA’ is Super Avilyn, Japanese tape manufacturer TDK’s ‘pseudochrome’ Type 2 formulation which was a ‘safe’ choice for the KD-720. There’s no fine-bias tweak, though, and this machine was on the drawing-board long before the much-hyped metal tape (Type 4) came onto the scene. It can however still play metal tapes recorded elsewhere, provided the EQ switch is in the ‘SA/ CrO2’ (70µs) position.

The aforementioned Dolby logo – along with a switch and green LED – point to the presence of the all-conquering noise reduction system. Another LED – red this time – indicates when the deck is in its recording mode. And that’s where the KD-720 really scores; JVC’s attentions to detail impress even now. The backlight ‘old-school’ VU meters, which like the controls are angled to aid readability, are larger and of more practical value than ones fitted to much more expensive decks. They are monitored, when setting recording level with the adjacent slider controls. JVC’s only omission here is an LED to indicate the musical ‘peaks’ that electromechanical meters are simply too slow to register.

JVC built the KD-720 around a solidly-engineered transport fitted with a single motor and two heads that are accessible for cleaning. Of these the ‘Chronios’ record/play’ component ranks alongside the ‘permalloy’ heads fitted to the deck’s budget contemporaries. The transport’s piano keys have a delightfully positive feel, and include a ‘pause’ key you can press when the phone starts ringing, the radio DJ starts speaking or the piece of music you’re recording comes to an end. Add to this the headphone socket, provision for microphones and tape counter; and you have everything that was essential for everyday use.

Plugging mikes in ‘over-rides’ the ‘normal’ inputs – on which subject, phone and DIN sockets are specified to ease interfacing the deck to as wide a range of equipment as possible. It’s a shame the KD-720 makes no provision for use with a timer, but you can’t have everything in JVC’s entry-level deck!

The machine’s mechanism features a full auto-stop system.
Kanta inaugurates a new vision of the Premium loudspeaker. Completely dedicated to performance, for the first time it combines a Flax sandwich cone speaker driver with a legendary Beryllium tweeter. It delivers a precise, detailed sound that brims with warmth and musicality. With its incredible style and its broad range of finishes, Kanta delights the eyes as much as the ears...

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The basic design and uncluttered internal layout of the KD720 makes it relatively easy to service. As discovered, fast wind was sluggish and it took a while for playback to be brought up to speed. The cure was a new main (flywheel) drive belt – this can be seen in the picture. To ease alignment, the screening of the main circuit board is stamped with identification-legends near the holes that provide access to the associated presets.

– in other words, the transport shuts down after fast forward and rewind, as well as record and play (with lesser top-loaders, auto-stop operates only with the latter operations). A reed switch works with a magnet fitted to the tape-counter pulley – it activates a solenoid coupled to the stop key. A large and heavy dynamically-balanced flywheel, coupled by flat belt to a servo-controlled DC motor, helps to ‘iron out’ speed irregularities, ensuring that short-term pitch stability will be good with decent cassettes. It’s good that JVC paid attention to ‘hidden’ details like these, as they are important when it comes to performance. A better use of the customer’s money than skin-deep ‘gimmicks’...

Also telling in this respect are the internals. Removing the base reveals that the KD-720 is built to last – its mechanism is a complex arrangement of substantial pulleys, springs, levers, idlers and cams – and though has been given to servicing. My sample – picked up for £8 at a car boot sale – only needed a new main drive-belt to restore it to full working order. It’s yet another testimony to the strength of the engineering that made Japan such an industrial powerhouse back then. In contrast to the extensive disassembly work required with some of the newer high-end decks I’ve attended to, replacing the KD-720’s belt proved to be a straightforward ten-minute operation. The electronics are screened to prevent pickup of mains hum, and sensibly JVC has labelled the internal presets for the benefit of those who may be required to calibrate the machine.

And sound quality? Actually, it’s not bad at all, especially considering the machine’s vintage. Pre-recorded tapes lack treble crispness, but that’s not exactly unusual; head azimuth may have been slightly out. Quality media, recorded on high-quality 3-head decks from decent sources, fares much better. The low-end is surprisingly articulate, and some Bach organ works got the depth they needed. This sort of music also showed the strength of that mechanism and its flywheel, which is more substantial than the ones listed to machines far more expensive than the KD-720. Not once did I hear any tell-tale pitch wavering!

With complex rock and orchestral material, the soundstage could sound rather congested – but I’ve heard far worse!

Turning to recording – with mid-80s TDK SA tape – the KD-720 turned in a fair performance. Its only downside was notable treble compression and a reduction in high-end energy that could be partially-compensated for by switching the EQ to its ‘norm’ (120μs) position during playback. BASF Chrome Maxima, on the other hand, sounded a little ‘bright’; this points to slight under-biasing. However, the EQ switch could be kept in its ‘CrOn/SA’ position – this aided signal-to-noise ratio. Recordings made on a TDK ‘D’ tape were rather dull, but that’s to be expected from budget tape. ‘New old stock’ Maxell UD-XLI, a far more expensive Type I blank, didn’t suffer from this quite as much. And Fe-Cr tapes? If you can find one, please let me know!

Cassettes are currently enjoying something of a revival, even if decent blanks are hard to come by at a sensible price nowadays (hint: ‘used’ tape is very cheap – just reuse that!). Admittedly the KD-720 does not represent the last word in cassette performance, but it will give results that are nevertheless very acceptable. As a relatively-simple design, though, it’s going to be easier to maintain and keep going than an all-singing, all-dancing 3-head front-loader dependent on obscure proprietary chips that will be very difficult to find should they need replacing. And it’s ‘fun’! I enjoyed using my KD-720 to make up compilation cassettes of material from vinyl and CD – and yes, that pause button came in very useful!
Audiophile CD

G

o on, how many of you know this band, then? There may be a few aficionados out there but I'll bet you're in the minority. If that's the case then you're missing out, people. They were a British outfit, active during the 70s that pushed out a mixture of rock, a bit of pop and jazz. Populated by Stephen Amazing (Steve Field to his mother, no bass guitar – and previously of Clark Hutchinson), Andy Clark (also from Clark Hutchinson – guess which bit he was – on keyboards) and Jim Copley (major session drummer for the likes of Jeff Beck, Ian Gillan and more, on drums) plus David Bunce (ala Zak Starstosky, guitarist, also a producer and member of Driving Sideways).

This album emerged from a visit by Jeff Beck himself during a studio rehearsal session Apparently the rather exuberant Beck “kicked the door down” on the way back from a gig with David Bowie and was impressed. He would subsequently produce and play guitar on the self-titled debut and the sequel, 'This Way'.

The songs themselves feature a decidedly West Coast smooth and easy vibe while the music has an underlying funk, bass being prominent to emphasise the fact while the synth and Beck’s lead guitar added drive and instrumental wonder to many a track sequence.

As for mastering? There’s a fair bit of compression then cast all over the soundstage. I had to lower my gain quite a bit to arrive at a listenable volume. This adds lift to the upper mids and a glare within guitar crescendos. The sound’s inherent smooth nature is its sonic saviour, though.

You can hear more guitar greats from this label via The Gary Moore Band ('Grinding Stone', 1973); Blood Sweat & Tears ('In Concert', 1976), ZZ Top ('Antenna', 1993) and Hot Tuna (Live at New Orleans House', 1959).

There are, as the CD puts it “33 slabs of undead rock’n’roll” here with suitably resplendent artwork to back it all up.

You get the obviously named tracks from highly respected artists such as LaVern Baker’s ‘Voodoo Voodoo’, Bo Diddley and his ‘Bo Meets the Monster’ and Screaming Jay Hawkins’ ‘Little Demon’.

The sheer joy of compilations like this though is to hear more obscure but resplendent tracks such as Snarkey Todd & The Monster’s ‘Horror Show’, The Spooks’ ‘The Spook Walks’ and the gloriously named Frank N Stein & The Tomstones’ Graveyard Giggle.

Additional gems include Screaming Lord Sutch & The Savages with ‘Til The Following Night’ Sutch, before his Monster Raving Looney political career, was a centre of hot British talent promotion. He regularly featured superb musicians including supreme talent from the likes of Ritchie Blackmore to Nicky Hopkins, Jimmy Page, Noel Redding and more.

On the subject of sheer talent, also check out Johnny Fuller, a West Coast bluesman, here singing ‘Haunted House’ but known for his recordings that also covered gospel, R&B and more.

For mastering, the tracks remain a relatively high compression rate, although some are more extreme than others: understandable with such a wide spread of sources and time periods and expected because we’re talking mass market, in your face’ single tracks here.

Also on Jasmine is ‘The Complete Recordings 1960-1962’ of Mark Winter; ‘The Return of Bill Black’s Combo’ including two albums and singles the early years of Jimmy Gilmour & The Fraybells’ plus ‘Link Wray & The Wraymen’s ‘Jack The Ripper’ 1957-1962’.

Upp/This Way

Jasmine

Monsters, Vampires, Voodoos & Spooks

Various

33 Slabs of Undead Rock 'n' Roll

Jasmine Records Presents

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It's the first time this album has appeared on CD. It is a bit of a 'lost' album that — according to the fans out there — was killed off by the advent of punk. Being released in 1978 they might have a point. A straight-ahead British rock album, it features London-born French himself who some might remember from his days fronting Atomic Rooster, Cactus and Leaf Hound. On this one, he's joined by ex-Small Faces/Faces man, Kenney Jones (whose next stop after this album was a stint with The Who), Dave Markee (a staple with Eric Clapton and Brian 'Thin Lizzy' Robertson, Micky Moody (Juicy Lucy and Whitesnake), Tim Hinkley (Bo Street Runners (!)), Peter Wingfield on keyboards. Even smiling Joe Brown appears with his banjo, for goodness sake.

"I worked with Geoff Haslam, the producer who had done a grown job on the 'Or 'N'Sweaty' Cactus album. It was Geoffrey who helped me source the musicians. I was absolutely thrilled to bits that he got guys in the calibre of Brian Robertson, Dave Markee and Kenney Jones, said French.

An album full of solid performances, throughout, it has been unfairly ignored by history and needs more attention by British rock fans who will love the energy, passion and musical talents of all involved.

In mastering terms, the music offers a very respectable presentation for a CD with a broad soundstage highlighting a relatively large amount of air and space. As such, the music flows in a relaxed and easy going atmosphere.

More Repertoire releases this month includes Climax Blues Band 'Live at the BBC, 1970-1978', The Blues Band 'Live Album' plus two tracks from Chris Farlowe 'Live at the BBC' plus 'From Here to Mama Rosa with the Hill' (1970) plus bonus tracks.

You might not know Melvin Sparks, but does Grant Green ring any bells? If you know the soul jazz guitar of Green then Sparks' style, at the very least, will be more familiar to you. Sparks was not the largest name in the jazz canon but this guy knew his stuff and had a wide appreciation of music, giving him a full and varied style. He sat in with B.B. King, he played guitar for Little Richard and Sam Cooke and you’ll even see his name on sessions with Sonny Stitt and Lou Donaldson. His first solo work, 'Spark!' was released by Westbound in 1970 and he continued to release album works right through into the Noughties until his death in 2011.

This CD release is a bit special because it contains an unreleased album. Coming just after the release of his patchy album release, '75' which was issued, unsurprisingly, in 1975, this work was recorded and an acetate was even created from it but it was never formally released onto the market.

Around this time, jazz players had big problems. No one wanted to know trad jazz. Jazz artists tried to mix it up by turning to fusion, played with R&B singers and, with this unreleased album, adding disco flavours. It worked (and then some) for the supreme jazz guitarist, George Benson, but never quite hit the mark for Sparks. There’s a thought that an artistic dispute scuppered any possible success he might have had with the album at the time.

For the mastering, there is an admirable dynamic performance on offer here with a broad and spacious soundstage displaying a fascinating performance. Mids are relatively insightful with a bass response that has both guts and drive. The use of the original master has certainly paid off here.
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"These are not malicious robots that demand Arnie’s intervention"

Noel Keywood

In last month’s issue I could not help but notice how many times the topic of product quality, lifetime and disposability came up. OK, not so uncommon – we live in a consumerist throw-away society: I’ve got a big 28in Samsung computer monitor beside me right now, just a few years old, that is about to hit the bin. Also last month we carried a poignant letter from a reader who started out in his youth – as I did – building valve amplifiers, saying he didn’t understand electronic products any more. Say hello to the future.

A major driver behind increasing complexity and diminishing serviceability is price. Machines can build 100 amplifier boards in a few hours, with little human intervention. When Harold Leak wanted to build 100 amplifiers in 1955 he needed to use a small team of skilled people who sat at benches with soldering irons, each likely building two per day at best.

The difference in cost between these two assembly methods is so great it is all but impossible to pass on to potential buyers. It’s why hi-fi was once a high cost luxury product until the Far East with low cost labour, then even lower cost automated assembly, like the Panasert machines used by Panasonic (Japan) in the 1970s, came onto the market with such force. Britain was nowhere in this picture at the time (and isn’t anywhere in particular today).

I got to see all this first hand in Japan during the late 1970s, when Matsushita (Panasonic) laid on Press trips to their factories – notorious for gruelling daily schedules that had us journos getting up at ungodly hours, stuffing onto coaches in the dark, and walking around vast factories and into product briefings all day. Followed by Sushi on a conveyor belt!

By the early 1990s Deltac Precision Audio in Cardiff, Wales, UK, had bought a Philips ‘pink and glass’ machine that similarly populated circuit boards automatically. Rob Watts, founder and MD, explained at the time that these machines and the special micro-miniature ‘Surface Mount’ (SMD) components they used had advantages for a audio work.

Wind the clock on two decades or so and robotic manufacturer, where machines do all the work, has become commonplace. Recently I looked into what it would cost to get a small batch of phono preamplifier boards built by robot and found that Newbury Electronics (UK) could spit them out so quickly and cheaply it made little sense for me to hand solder even one prototype. I was shocked!

If such a board goes wrong, it costs so little it makes no economic sense to repair. Worse, because of the way it is built, humans cannot easily repair such boards in any case – another reason to just throw it away.

What we have here is creeping automation, the advance of the robots. These are not malicious ones that demand the intervention of Arnold Schwarzenegger in the Terminator films so much as ones that, in replacing humans, destroy jobs. So no lines of dexterous workers soldering any more to boost the family income, or perhaps, even survive.

The atar of competition at which we worship, where ever lower price is used to defeat rivals’, seemingly to everyone’s mutual benefit as it broadens widget (iPhone etc) availability does, in practise, remove low skilled work for people. That’s a brutal reality.

From what I see, the argument that jobs are transferred elsewhere, to those who design, build and service the robots, or tend them, doesn’t wash. The whole point is to reduce cost, amortised cost would not go down if the process was overburdened by other expense, such as programming costs. Indeed, I was fascinated to find that I had to design my own board using a programme (e.g. K:Card) a machine could follow.

If I wanted to commercialise the phone stage (I don’t) that, by the way, is fully discrete and fully balanced, each circuit board would cost £20–£30 on a reasonable quantity was ordered. Move the order to the Far East where such robotic manufacture is common, increase the order quantity and aim for global distribution and you can start to see the making of a decent business proposition – which is another story.

What this shows is if you want to produce a competitive audio product nowadays you have little option other than to go down this route. It’s how most modern audio products are built and in future, as complex digital chips are purposed for automated manufacture, the only way anyone will be able to go. Hand solder a product? No chance. There will be no alternative romantic option of a hand built product that can be repaired and re-used to avoid landfill.

I tried to repair my Samsung monitor. Blown parts in the power supply were replaced, only to find big, complex chips further downstream had also gone skyward; repair would he impossibly difficult and made no sense.

Tomorrow will be a disposable one for most of us, whether we like it or not. Which is entirely the wrong phrase because everyone likes low price so we all do like it.

But for sound quality I still prefer a nice simple little valve amplifier like the Mullard 33 that both reader Pat Rickwood and I once built. Hours of simple fun followed by a great end result.
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"I’m talking to you about my childhood, about the quality of the TV shows"

I t’s easy to browse through a magazine but a mad more challenging to browse through a CD. I was doing that recently with a new release from Jasmine (www.jasmine-records.co.uk) called ‘Classic TV Themes of the 50s & 60s’. Subtitled ‘Danger Men, Mavericks, Thrillers and Twilight Zones’.

I found myself dwelling upon the back of the CD, reading names of old TV programmes. The issue was that I would read one TV title and that would whisk me back to a strong memory from the distant past. Even though a lot of these titles are American-centric, I remember watching ‘I Love Lucy’ on TV with my family as a child. It would be on around 5pm...maybe 6pm on a weekday, I recall. My mother, being a rabid Hollywood fan, lapped up the performances from ex-Hollywood star Lucille Ball. All I remember was a lot of shonky talking from Ball and the cast and not particularly funny jokes.

Also on the CD is the theme from the ‘Twilight Zone’, a series that remains fascinating. I have the complete series DVD box sets here and now and still admire series creator Rod Serling’s writing prowess.

Other programmes I remember included Mavericks, Laramie, Drash Shore’s Chevy Show and Cheyenne.

You see, though! You see what I’m doing! I listened to this CD, I read about the TV programmes and I’m talking to you about my childhood, about the quality of the TV shows, retail information and social history for goodness sake! What about the music? Will that even get a mention?

And this is the issue I wanted to talk about. Whether you’re taking TV themes or original soundtracks from a film, the onscreen action and our memories from that tend to dominate. All too often, the quality of the actual music runs in a poor second or third. And it’s not really fair!

Why? Because there is so much top quality music out there that falls into this genre. Whether you’re talking Oscar-nominated film soundtracks or terribly obscure library music from Italian TV, there is a wealth of incredible music that most music fans ignore.

Of course, there are many people out there who do appreciate such works, yet some specialise in this type of music, sometimes to the exclusion of everything else. I’m likely not appealing to you guys, if you’re more worried about quality than content – especially historical content – so you can relax. But for the rest, what about the new CDs from the Soundtrack Factory (www.discovery-records.com), for example?

How many of you know that the original release of the cult classic film, ‘Cape Fear’ (pre-de Niro) starring Robert Mitchum was penned by the wholly wonderful Bernard Herrmann? The same guy who wrote the music for Hitchcock’s ‘Psycho’, Welles’ ‘Citizen Kane’ and had a direct influence on The Beatles’ string work on the hit single, ‘Eleanor Rigby’?

Also on Soundtrack Factory is the soundtrack of Carol Reed’s classic, ‘The Third Man’, often called the best British film ever (despite – cough – starring two American movie stars), with its incredibly effective expressionist photography. Anton Karas’ immensely hummable theme is featured here along with other renditions from the likes of Chet Atkins and Earl Bostic.

The music itself, the actual work, is ripe for high praise. It’s often ignored, though. Yes, you do find other artists who recognise it for what it is. The Bostic and Atkins remains of The Third Man theme are two examples alongside the recently released SF comedy film, Barbarella soundtrack ‘re-imagining’ from The Italian Sure Academy (on Avant, also www.discovery-records.com) but I prefer to adore the original work.

Ripe for such admiration is the prolific Ennio Morricone. Famous for his spagetti western soundtracks, Morricone has penned over 500 scores. Some of them terribly obscure (fans will talk about his classic works, like Italian softporn films, for example). In fact, Music On Vinyl (www.musiconvinyl.com) has released three new LPs from the man’s nineties phase; ‘Richard III’, ‘City of Joy’ and ‘La Notte & Il Momento’. Morricone displays a genius in orchestration, melody but also how he uses off-the-wall instrumentation and voices.

It’s this innovation that is often to be found in soundtracks of all types and just one more reason why this genre of music needs further attention from music fans. Why not give it a try! Pick a favourite film or TV show, find out the composer of the music from the same and investigate his other works. You might be surprised how quickly you become a fan.
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I'm no big fan of the BBC licence fee in its present form. For one, it is a regressive tax whereby everybody pays the same, meaning those house-holds on the lowest incomes are proportionately harder hit than their higher-off counterparts.

Secondly, in these days of multi-channel TV with the likes of Netflix, Amazon, Sky, YouTube and others providing content every bit – and often better – than the UK's state broadcaster it is starting to look increasingly anachronistic.

When the Office of National Statistics reclassified the licence fee to that of a tax in 2016 it noted "in line with the definition of a tax, the licence fee is a compulsory payment which is not paid solely for access to BBC service. A licence is required to receive ITV, Channel 4, Channel 5, satellite, cable".

In other words if anyone wants to receive a TV signal then they have to pay the BBC. It's a little like saying I have to pay a tax to Sainsbury's even though I shop at Waitrose, Asda or Tesco. That may be a slightly crude analogy but it does hold true.

The BBC has also, perhaps not surprisingly, spent significant amounts of money lobbying government for the present means of funding to be retained. Suggestions that the service should move to a subscription model have been dismissed out of hand by the corporation on the basis that it would reduce the quality of its output. This is rather a disingenuous argument as their main fear is that they will lose revenue if people just pay for what they want to see.

All of this explains my dislike of the current funding model for the BBC. But, then, something comes along that makes me question my own criticisms.

Which is exactly what the BBC's World Service radio programme 'The Music Of Time - Chile' did. I came across it one Sunday morning while unable to sleep - and this gem of a documentary introduced music I'd never heard before that was both powerful and politically relevant.

It revolved around what the Chileans call Nueva Canción Chilena (New Chilean Song), a folk genre that was born out of the country's social struggles.

Its main proponents helped Salvador Allende become Latin America's first democratically elected leader, until in 1973 General Pinochet seized power in a military coup.

After that the musicians found themselves enemies of a totalitarian state. Many were exiled, others imprisoned and some even murdered. In the days following the coup Victor Jara was taken to the Estadio Chile stadium, tortured and then killed at the hands of the military regime.

Presenter Wyre Davies gave a beautifully nuanced history of Nueva Cancion - explaining where it came from, how musicians such as Violeta Parra and Victor Jara had travelled the country collecting traditional melodies and songs and seeking inspiration to create songs with social themes which would resonate with the Chilean population.

Interspersed with the interviews were great performances from the artists that – despite me not understanding a word of Chilean Spanish – resonated with their humanity, at times anger but ultimately hope for the future.

There were also some fascinating facts to emerge – such as the phrase that 'The People United Will Never Be Defeated!' actually first emerged from a Chilean folk song.

Wyre Davies's conclusion as to how the struggles of the artists and their constant musical criticisms of the Pinochet regime helped in its eventual overthrow was truly heart-lifting.

The day after hearing all this I downloaded some of the tracks featured in the programme and was transferred into a different world with a full understanding of what the music meant and how it was inspired. Violeta Parra's body of work is especially beautiful. She was an accomplished acoustic guitarist and also possessed a beguiling, haunting voice. This is music at its passionate best.

'The Music Of Time - Chile' is still available on the BBC's iPlayer app and there are four more episodes of this show to come, featuring different countries – and how music played a part in their social and political history. I'll certainly be listening into each one of them from now and I'd urge you to do the same.

Which does make me feel that perhaps the BBC and its funding model is perhaps not as bad as I thought – when they produce this type of thoughtful, brilliant and illuminating content.
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"My Sony TC-366 reel-to-reel recorder is almost as old as I am"

Most of the domestic quarter-inch reel-to-reel machines sold between the 1960s and the 1980s ended up being used purely to record music from records or the radio. A rummage around any decent audiobin will usually turn up such home-made tapes. Usually, the contents are identified on the library box – if there is one! And hopefully the tape format, primarily meaning speed and number of tracks, possibly playback EQ, also Noise Reduction if used. Here’s some guidance on what can be a confusing subject.

The 7.5ips (inches per second) tape speed tended to be used for music if quality was paramount, although 7ips was popular for uninterrupted recordings of long programmes like concerts. At 7.5ips, a 7-in spool containing 1,800 feet of long-play tape will provide approximately 45 minutes of recording per track – double that for the slower speed.

With a machine that is a half-track model, the two stereo tracks are recorded across the width of the tape – meaning it can be used in one direction only. This is to the wide tracks, though, you get decent performance (low noise and resilience to ‘dropouts’).

Stereo radio broadcasters used half-track recording, at 7.5ips or 15ips; larger 10-5-Inch NAB spools (you’ll often find these at audio enthusiast events too) were favoured here.

If you have a 4-track machine, open reel or cassette, a typical stereo album will fit on each side of a tape. Owing to Philips desire for compatibility betweenmono and stereo hardware you couldn’t record different material independently on each of a cassette’s four tracks, as home musicians wished to do.

However, in the 1980s and 1990s, musicians could buy Portastudio type four-track cassette recorders (which, by the way, are great for recording quadraphonic material!) and these tapes can turn up for sale. But with quarter-track reel-to-reel, you don’t have such limitations. You can record a mono album on each track. That 1800ft tape could hold, for example, 7.5ips recordings of the first four Beatles albums (Please Please Me, With The Beatles, A Hard Days Night soundtrack and Beatles For Sale) in their original mono form. That would be a nice find at a car boot!

At the other end of the scale, quadraphonic decks (like the Teac A3340, itself a popular choice with home-recording musicians and small studios) can record on all four tracks simultaneously.

This Teac offers a neat ‘simul-sync’ feature whereby the recording head corresponding to one of the tracks is routed to a playback preamplifier. This eliminates the ‘delay’ introduced by the spacing between the record and playback heads, enabling a musician to ‘play along’ to a previously recorded track while recording the new contribution to another track. Some of the results can be quite impressive (especially if noise reduction is used).

A flipped half-track stereo tape will also play backwards. Musicians (among them The Beatles) used this property to great effect, especially with echo!

Half track tapes will play acceptably well on a quarter-track machine, but not vice versa. Each half-track head will partially ‘read’ two of the four tracks, with the practical upshot that you’ll usually hear something intelligible, accompanied by another programme in ‘goosedegook’ form.

Some of these second hand tapes from car boot sales or audiobin can be rewarding. Listen (among them Radio 3 concerts featuring world-famous orchestras and conductors) and a fascinating insight into their recordists’ tastes and hi-fi habits.

It’s odd to find LPs recorded on tape that was more expensive than the records, but if they were ‘virgin’ copies they’d be free of wear and unpleasant ‘pops’ and crackles. Sometimes these recordings reveal faults with turntables, such as rumble and mistracking! Evidently, the idea of ‘source first’ had not registered with whoever had recorded such tapes.

Some less valuable tapes will end up being bulk-erased and passed on – together with a Sony TC-366 stereo 4-track deck from the early 1970s, I’d speculate – to a lad that has started getting into music production.

Stills like tape splicing which endless loops need, have been lost in the era of ‘cut-and-paste’ digital editing. A half-track machine like an old Revox A77, a machine familiar to countless musicians opens up the realms of reverse playback.

But my Sony TC-366 reel to reel recorder that is almost as old as I am – and needed nothing more than a quick service and new take up reel drive belt to restore to full working order – would be a great first step for anyone interested in old analogue recording and editing techniques. It can also replay many car boot and audiobin tapes – always low cost – with interesting results, but it cannot cope with all for the reasons I have described. Open reel tape recorders, now regaining popularity, were – fundamentally – complex professional workhorses with a variety of specifications. Domestic versions mimicked their complexity; old tapes you buy now may be a challenge to play properly.

Martin Pipe
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"reel-to-reel machines can be a bit of a challenge for space, spares and time"

T
thought I should start this month’s column by bringing you up to date with the Teac x2000 open-reel tape machine I’m bringing back to life.

After fitting new belts for the capstans we had tape motion – but there were still a few issues. Running the tape was okay but it would start to loop between the pinch rollers and thus lose contact with the heads. Swapping the pinch rollers helped a little but it seemed there was no basic tension – or for that matter very much pickup. Two presets on the power printed circuit board needed adjusting slightly.

As I didn’t find any electronic failures I guess it was just drawn to drift caused by age. With any machine that has had mechanical work the electronic control system is bound to complain a little. The tape picked up smoothly and the tension arms raised to a more standard play angle once the presets had been adjusted.

It was such a little adjustment that the preset positions didn’t actually look any different when finished. Anyway, once put back together the tape mechanism worked well.

These machines have more bass than some other, often older designs where it is muddy due to excessive biasing. This Teac has a clean, well balanced sound when using Maxell tape, with no obvious detrimental characteristics that would suggest degradation from a copying process.

The x2000 has dbx noise reduction, a widescreen system with compression and expansion across the whole audible range, compared with Dolby B or C that reverses higher frequencies only dbx uses EQ to limit the adverse effects of the process. Simple 2:1 compression and expansion (companding) processes can cause the bass to modulate the whole of the audio content which is audible as a pumping sound. It is a rather unpleasant effort but was largely absent in this machine thanks to the pre and post EQ function.

This also means that frequency response irregularities, usually at the ends of the audio bandwidth are not exaggerated by the noise reduction so it is a perfectly reasonable process to use.

There are a few things about dbx you might not like though, according to preference: keeping it off and hearing a small amount of tape noise, or putting it on and living with some of the issues within any noise reduction process. I don’t have any particular feelings about this.

When I go back to my old recordings must have been compressed by such noise reduction so I have to de-compress (expand) using the same system, or the tunes sound very odd! 12dB of midrange EQ boost and 2:1 compression makes recordings without the opposite process used during playback sound like the source was bass and treble light and the rest processed through an old AM radio!

The x2000 is now back with its owner. We did an exchange when he collected: I got a Teac x10 which is similar but without dbx or an electronic digital tape counter. Simpler in manufacture then but it seems with rather more faults – electronic control involves this time. Rewind and Fast Forward were poor because the 24 Volt motors were both trying to drive at the same time even though one was supposed to be providing just back tension. Similar motor control issues affected Play.

A capstan belt was also required, but there’s only one on this model even though the dual capstan mechanism is much the same.

Testing the control circuitry was pretty much inconclusive, so I was faced with a blanket replacement task. So this machine is now on the bench and undergoing component replacements. Perhaps I’ll have more to say about it soon.

Additionally, this month has seen some interesting arrivals at the workshop. If the Teac x10 and an Altec GX400 with physical damage were not enough, I have six others! There are two Sony TC-177 recorders with belt and smoke issues, a Philips N5170 that is dead, a pair of mono Ferrograph Series 7 machines and a Ferrograph Lincoln 7 stereo. That many reel-to-reel machines at once can be a bit of a challenge for space, spares and time. They should keep me busy for the next month or so.

A Philips DV 9365A DVD player arrived recently by courier. It had undergone some modification work to improve its SACD and CD playing performance. On arrival though it was dead – but then being over 12 years old perhaps this is to be expected; a new power supply is underway. With over £1000 of modifications to it to improve the sound I have to say that buying a £1500 SACD player would have probably been more cost effective. Fitting a linear power supply for just the 15 Volt rails, as well as a relocking circuit, doesn’t seem a great way to improve things – different rather than better!

So now have to build a linear 5 / 3.3 Volt equivalent supply that fits the box and can run the digital circuits in what remains of the original player. I have no idea what the current demand of either of these two supplies is so there will be something of an educated guess and some over engineering to start with. This will then bring the thing back to life – hopefully! With fewer specialised mechanical parts it’s easier to fix than all the tape machines flooding in.
WORLD CLASSICS

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

**TURNTABLES**

**FAT FORTY** 2009 £12,500

Laudably finished two box, two motor turntable with gorgeous £400 tonearm bundled. Exceptionally stable and unfussy performer with a relaxed but highly enjoyable gait.

**FUNK FIRM VECTOR II** 2009 £980

Innovative engineering gives a nimble, pacey and musical sound that’s one of the best at the price.

**REGA P2** 2008 £300

Excellent value for money engineering, easy set up and fine sound.

**MCINTOSH MT10** 2008 £8,995

Big, expensive, controversially styled and grossly more than some might consider necessary, but an astonishingly good performer.

**REGA P3-24** 2008 £405

Semi-prof affordable audiophile deck with fine featured tonearm. Tweakable, and really sings with options £150 onboard "power" supply.

**ACOUSTIC SOLID ONE** 2007 £4,050

Huge turntable, both in terms of sheer mass and sonic dynamic. Fit up to three arms and enjoy, just don’t damage your back moving it!

**AVID VOLVERE SEQUEL** 2007 £4,600

Stylish high end vinyl player with industrial strength built quality and a sound to match. Sound is edge of the seat stuff.

**MICHELL ORBIE** 1995 £2,500

The top Michell disc spinner remains a superbly capable all-rounder with powerful, spacious sound that’s delicate and beguiling.

**SME MODEL 10A** 1995 £4,700

Exceptionally engineered deck and SME V tonearm coma that’s an extremely accomplished performer with classical music.

**LINN AXIS** 1987 £253

Cut-price version of the Sondek with UK arm. Elegant and deftly performing package. Later version with Audio Tonearm better.

**TECHNICS SL-1200** 1987 £800

CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pr or use and laden with hallmarks - a great eighties con

**ROKSAN XEROS** 1984 £550

Super tight and clean sound with excellent transients. Uses musical as the Sondek, but more neutral. Sapping pitch of tops makes them a "outboard buy".

**NUAL CSS505** 1982 £75

Simple high quality engineering and a respectable low mass tonearm made for a premium budget buy. Polished smooth and slightly bland sound.

**MICHELL GYRODEC** 1981 £599

Thanks to its stunning visuals, the bold design wasn’t accorded the respect it deserved. Clean, solid and architectural sound.

**TOWNSEND ROCK** 1979 £1,000

Novo: machine has extremely clean and fluid sound. Suavely modified through the years, and capable of superb results today.

**MARANTZ TT1000** 1978 £1,000

Result for seventy-some high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan.

**TRIO LD-70** 1978 £800

The best all-in-one turntable package ever made. Clean, powerful and three-dimensional sound ultimately limited by the tonearm.

**ACO ACCUTRAC 4000** 1976 £300

By the mid-seventies direct drive that uses a ultra red beam to allow full saturation and programming. More of a visual and operational delight than a sonic dream.

**PIONEER PL-590** 1976 £600

Slidy and contented motor unit that performs well with a wide range of tonearms. Check very thoroughly before buying due to electronic complexity and use of some now obsolete ICs.

**PIONEER PL-120** 1973 £36

When was the leading source turntable to set new standards of audio performance and stability to the class, plus a low friction S-shaped tonearm. Later PL-110 was off the pace compared to rivals.

**TECHNICS SP10** 1971 £400

Semi-prof Japanese engineering, doesn’t demand plinths, but a well matched £1,299 will give any modern a hard time especially in respect of bass power and midband accuracy.

**LINN SONIKER LP12** 1971 £16

For many the first superdecks. Both models meant that early ones sound warmer and more price than modern versions. Recent SE mods have brought it into the 21st century still at the price.

**ARISTON M11** 1972 £14

Modern evolution of Tinytex's original £99.50 paradigm. Continually upgraded with direct midrange, warm and analog, phase and pitch. Still reliable if field tested today.

**GOLDING LENGO GL15** 1970 £15.65

Simple well engineered motor unit with soft, sweet sound and reasonable tonearm. Good scores and servicing support until today.

**GARRARD 301/401** 1953 £19

Tremendously strong and articulate with a valved tuning to let it down.

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**We do not sell these products. It is for your information only.**
THORENS TD124 1959 £N/A
The template for virtually every 1970s ‘superdeck’, this conic design was the only real competition for Garrard’s 301. It was sweeter and more lyric, yet lighter and less impactful in the bass.

TONEARMS
REGA RB251 2009 £136
Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a built and detailed sound. A little less for some tastes, but responds well to reworking and counterweight modification.

RENFUS DMFSA 2008 £1,595
Stylish and light arm of thrumous build quality that turns in a dynamic and weighty performance.

AUDIO ORIGAMI P7 2007 £1,100
The classic Synchro P7 updated to spectacular effect. Hand made, this varies, with any mass, length and colour you care for. Fit, finish and sound truly superb.

Graham Phantom 2006 £1,050
Gloriously stunning arm with magnificent tone quality and outstanding build quality up to SME standards, which is really saying something!

Tri Pianaro Precision 2006 £5,000
Immaculate build, exquisite design and one of the most naturally musical and liquid sounds around.

Micheli Tecnarm A 2003 £1,427
Great reworking of the Rega theme, using binding, drilling and reaming!

SME 309 1999 £797
Mid-price SME comes complete with real cut aluminium arm and detachable handwheel. Tightly neutral sound with good tonality, but lacks the SME’s pace and precision.

NAIM ARO 1987 £1,475
Charismatic design is poor in frequency extremes but excels in the midrange. Truly natural and insightful.

SM6 SERIES V 1987 £2,300
Von-like here with incredible weight, well defined midband and beautiful sound, although some don’t like its matter of factness!

NAIM ARO 1986 £875
Truly endearing and charismatic performer – wonderfully engaging midband makeup for extended frequency extremes.

SME SERIES III 1979 £1,113
Clever variable mass design complete with titanium nitride tube fitted to be all things to all men, and failed. Charming nonetheless, with a warm and inoffensive sound.

TECHNICS FPA-501 1979 £N/A
Popular partner for late seventies Technics motor units. Nice build and titanium nitride tube can’t compensate for middling sound.

Linn ITTOK VII 1978 £253
Japanese design to Linn opens space for a musical, rhythmic sound with real dynamics. The line VII version worth seeking out.

Audio Technica AT 1120 1978 £75
Fine leads can’t compensate for this ultra low mass arm’s limited sonic - a good starter arm if you’ve only got a few quid to spend.

HADCOCK G2A29 1976 £46
Evergreen unipolar with lovely sweet, fluid sound. Excellent service backup.

ACOS LUSTRE GST-1 1975 £46
The archetypal S-shaped seventies arm: good, provocative and involving sound in its day, but ragged and undynamic now.

SME 3009 1959 £18
Once state of the art, but long since retired. Musically enough, but lacks at high frequency extremes and veiled in the midband. Legendary serviceability and stunning build has made it a cult, used prices unhealthy.

Phono stages
Credek OBH 2-SF 1986 £180
Punchy, rhythmic character with some of detail mixes in a great budget audio via a classic partner with a Goldring G1342 for an unbeatable budget combination.

MICHEL ISD 1988 £N/A
This from Evans-designed black box started the trend for high-performance affordable phono stages. Charismatic, musical and punchy - a lack in fineness.

Credek OBH 2 2008 £350
Rolling value budget passive, with remote control, mute and input switching, plus an easy, neutral sound.

Cambridge 840A V2 2007 £750
Version 2 addresses version 1’s weaknesses to turn in a tightly accompanied performance, offering power, finesse and detail.

SUGDEN MAA 2007 £3,650
Goodly amount of Class A power, dirty bloody and a breathtakingly fast, musical sound place this at the very best super-integrators.

NFORCE P-9 2007 £2,200
Impressive two box preamp with super resolution and an engaging sound.

Melody Pure Black 1101 2007 £2,975
The clarity and smoothness of values plus firm grip and low distortion make it a prismatic preamplifer.

Audiolab 8000S 2006 £400
In another life this was four times the price, making it a stand out bargain now. Very clean, powerful and tidy sound.

MCINTOSH MA900 1995 £375
Effortlessly sweet and powerful with semi-regular styling to match.

DETECT 1987 £1,190
Fast, dry and with excellent transparency this fast and dead integrated is ideal for high sensitivity sources. Disastrously punchy for low channel from a tiny small box. Radical, cool and more than a little strange.

EXPOSURE V/VIII 1985 £625
Semi-real pre-amp offering most of what Naim does with just half the cost, ultra smoothness, ease, punchy and musical.

Audiolab 8000A 1985 £495
Smooth integrated with clean audio/DC rating stage and budget pre-source too. Post ’93 versions is too used buy.

VTL MINIMAL/50W MONOBLOC 1985 £1,300
Rugged, professional build and finish allied to a lively and punchy sound (with a limited power) make them an excellent used buy.

Musical Fidelity A1 1985 £350
Regaining Class A integrated with exquisite styling. Questionable reliability.

Mission Cyrus 2 1984 £299
Classic 1980s minimalist combines amazing sonic output, open, lively sound. Further upgradeable with PSX power supply.

Integrated amplifiers
NAIM NAIT XS 2009 £1,750
With much of the sound of the Supernait at half the price: this is powerful, articulate and smooth beyond class expectations.

Musical Fidelity Primo 2009 £7,900
Sensationally expensive, but one listen explains why. Wonderful exuberant sound that can only come from a top quality tube design.

SUGDEN MAA 2008 £1,489
Crystal clear, dizzying speed and fantastic detailing. Power limited so needs sensitive speakers.

Credek OBH 22 2008 £350
Rolling value budget passive, with remote control, mute and input switching, plus an easy, neutral sound.

NAIM NAIT 1984 £350
Superb rhythms and dynamics make it true musical, but tonally monochromatic. Fine phono stage, very low power.

Credek CAS4040 1983 £150
More musical than any budget amp before it. CAS41100 loses tube contrast, gains grip.
**CLASSICS**

**MYSF TMa3** 1983 £360
Madcap eighties minimalism, but a strong and tight performer all the same.

**ROTEL RA-402X/RX** 1983 £130
Lively and clean budget integrated that arguably started the move to minimalism.

**NAD 3020** 1979 £99
Brilliantly smooth, sweet and punchy at the price and even has a better phone stage than you'd expect. The archetypal budget super-amp.

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

**ASA 480** 1977 £115
Sweet and musical feature-packed integrated, the Audiolab 8800A remains a classic.

**SUGDEN CS1/P51** 1976 £130
Soft sounding early Sugden combo with a plethora of facilities and filters. A sweet and endearing performer but lacking in power and poor load driving ability.

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

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

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

**POWER AMPLIFIERS**

**ELECTROCOMPANION NEMO** 2009 £4,995 (EACH)
Norwegian power station as cool as a cucumber, but yet impresses with sheer physicality and feetness of foot. 600W per channel.

**NUFORCE REFERENCE GSE v2** 2006 £1,750
Brilliant value for money monoblocks with massive power and super-clean, three-dimensional sound.

**QUAD II-80** 2005 £6,000 PER PAIR
Quad's best ever power amplifier. Dramatic performer with silky but dark tonality, blistering dynamics, serious power and compellingly musical sound.

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

**MARANTZ MODEL 9** 1987 £8000
Authentic reproduction monaurals still more than cut the sonic mustard. Highly expensive and highly sought after.

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

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

**PIONEER M-72** 1980 £1,200
Monster stomper from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sound, a real test bed for the pick on high speed dance music. Rosewood side cheeks and black brushed aluminum completes the experience.

**KRELL KMA100II** 1987 £5,750
Monoblock version of the giant KSA-100 is one of the semi-illus transistor power amplifiers. Massive wattage aimed to clean and open Class A sound makes this one of the best amplifiers of its type.

**RADFORD STA52 RENAISSANCE** 1986 £977
This reworking of Radford's original late varieties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.

**QUAD 405** 1978 £115
The first of the current dumpers is a classic design with smooth, effortless power and a decently musical sound. 686 and 707 continue the theme with greater detail and incision.

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

**LESEON AP1** 1973 £N/A
Madcap cylindrical styling allied to its ‘tower of power’ pretensions, but it wasn’t poor but a decently clean sounding when working.

**QUAD 303** 1968 £55
Quiet proof build, but woolly sound. Off the pace, but underyong nonetheless. Some poor smoking s/p owners swear by them!

**LEAK STEREO 20** 1958 £31
Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding it rebuit sympathetically, impressively musical and full.

**LEAK STEREO 60** 1958 £N/A
Leak’s biggest valve power amp offers 35 Watts per channel and more low end weight than the smaller Stereo 30. Despite concerns over reliability, rarely value areas range high price.

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

**LEAK POINT ONE, TL10, TL12, TL12 PLUS** 1949 £28
Early classics that are getting expensive. Overselling is in the figures before one using original parts if possible. Surprisingly crisp and musical. Deeply impressive in a little fibre.

**Audiolab 8800C** 1999 £1409
Totally grey but fine phone input and great facilities move it an excellent general purpose too.

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

**CONRAD JOHNSON MOTIV MC-8** 1986 £2,500
Minimalist FET-based preamplifier is brilliantly neutral and smooth with a lively, tight balance in the mould of Sugden's diming into a pair, but worse nonetheless.

**AUDIOPHILE SP-9** 1982 £1,400
Beautifully designed and built high-end tube pre-amplifier with deliciously sweet and smooth sound. Not the last word in mass production.

**LINN LX-1** 1986 £499
A brave attempt to bring remote controlled user-friendliness to the main-stream audiophile at the.
### LOUDSPEAKERS

<table>
<thead>
<tr>
<th><strong>Model</strong></th>
<th><strong>Year</strong></th>
<th><strong>Price</strong></th>
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<tr>
<td><strong>WHARFEDALE DIAMOND 10.3</strong></td>
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<td><strong>Kef 105</strong></td>
<td>1977</td>
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**MISSON X-SPACE** 1989 £498

The first phase production sub and sat system using X/T panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!

**REVOLUTION CYGNUS** 2006 £5,999

Revolver roll out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

**MISSION 752** 1995 £495

Cracking Henry Atkinson-designed floorstanders combined HDA drive units and metal dome tweeters with awesomely warm woofers. Design and build characteristics mean star ratings.

**REVISIONS SL** 1995 £250

Single box two way design compatible with aluminium dome tweeter and granite bass unit with the potential for an eighteenth loudspeaker. Very open and clean sounding, albeit at high frequencies and with a future. Speaks would never be the same again...

**︰** 1992 £130

More compact, simply designed standmounters with an amenity which is just too much to resist. Sound better than usual for the price.

**︰** 2000 £1,200

An update of the ESL37, with smaller cabinets. Until the ESL, the best of the Quad electronics.

**︰** 1980 £375

Back in the day, it was an innovative product and one of the first of the polypropylene designs. Warm, smooth, clean and powerful sound.

**︰** 1978 £125

Astonishingly expensive range of standmounters that offer detail and dynamics well beyond their price and dimensions.

**︰** 1977 £532

High-tech high resolution and hard-wearing drivers and bristles 12" woofers in massive sealed mirror image boxes. Stunning speakers and wowing all at a price to supersede transparency and usability.

**︰** 1977 £785

Large cones with plenty of bass, great AMG design, but not really on the radar. A very realist and pure sounding design, but rhythmically well off the pace.

**︰** 1977 £498

Massively capable loudspeakers that offer dynamics, scale and clarity in an elegant, simple package. Wide range of finishes, too.
Hi-Fi Classics

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

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

Hi Electronics TPA-500 Amplifiers 1973 £110
Simple design with easily available components, solid build quality and fine sound make for a surprisingly good buy. Not exactly stylish, however.

BIC LS3/5A 1972 £38
Extremely low colouration design is amazing in some respects – articulation, stage depth, clarity – and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence.

LEAK SANDWICH 1961 £39
Warm sounding inbaffle taffy that, with a reasonably powerful amplifier can sound quite satisfying.

QUAD ESL57 1956 £45
Wonderfully open and neutral sound puts box inaudiophiles to shame. Properly serviced they give superb mid-band performance, although frequency extremes are less impressive. Ideally, use in stacked pairs or with subwoofers and superwoofers.

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

NAIM UNITIQUE 2010 £965
Great little half width one-box system with truly impressive sound allied to a wealth of source options.

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

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

SNAILING MC-30 2007 £650
Quite possibly the closest all-in-one around with fine performance from the CD player, tuner and MF3 player input. Very low power, though.

AURA NOTE PREMIER 2007 £1,000
Lovely shiny CD/tuner/amplifier with fine sound quality and dynamic abilities.

MARANTZ L’EGEND 2007 £22,000
The combination of SA-761 disc player, SC-752 preamp and MA-952 monoblocks delivers jaw-dropping performance.

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

PEACHTREE AUDIO IDECCO 2005 £1,000
Excellent sounding iPod dock, impressive DAC and pre-amp section make this an excellent one box style system.

ARCAM FMJ T32 2009 £150
Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound /factor in its fine build and it’s a super-value package.

Creek CAS140 1985 £199
Excellent detail, separation and dynamics brilliantly musical at the price. T40 continued the theme.

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

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

MARANTZ ST-8 1978 £353
Marantz’s finest radio moment. Warm, organic sound puts an anilloscope for checking the signal strength and multipath.

YAMAHA CT7000 1984 £444
Contains alert ergonomics, high sensitivity and an excellent, detailed sound.

SONY ST-5900 1984 £132
One of the first Dolby FM-equipped tuners, a format that came to nothing. Still, it was Sony’s most expensive tuner to date, and boasted good sound quality with brilliant ergonomics.

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

SANSHI T2-9900 1976 £300
A flagship Japanese tuner, it boasts superlative RF performance and an extremely smooth and loud sound.

TECHNICS ST-8000 1976 £180
Superb FM stage makes for a clean and smooth listen.

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

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

LEAK TROUGHLINE 1956 £25
Series 1 is an interesting ornament but limited to 20-100MHz only, it and its are arguably the best-sounding tuners ever. Adaptation for stereo easy via phone multiplate socket. Distinctively laid with true dimensionality.
HEADPHONE AMPLIFIERS

**GRAHAM SLE NOVO** 2009 £255
Dynamic headphone amplifier with a great sense of timing. Clear, clean treble and warm midrange gives an engaging sound.

**MUSICAL FIDELITY X CAN VR** 2008 £350
Open and exactly detailed sound plus serious bass wallop. A great partner for most mid to high end headphones.

**CD PLAYER/RECORDERS**

**MUSICAL FIDELITY TRISTATA** 2002 £4000
When playing SACDs, the tallest, most lurid and lyrical digital or DAC we've heard. Old tech meets new. 16 bit/192 digital 86 sound is up in the £1000 class, but future classic.

**MARANTZ SA 1** 2005 £5000
The greatest argument for SACDs. The design is utterly mesmerising but the initial excitement wanes to a more measured approach.

**SONY MDS-J555ES** 2000 £900
The best sounding MD deck ever, thanks to awesome build and heroic ATAC-DSP Type II coding.

**PIONEER PD-555R** 1999 £480
For a moment, this was the CD recorder to have. Clean and detail.

**MARANTZ DR-17** 1999 £1100
Probably the best sounding CD recorder made, built like a brick with a true audiophile sound and HDCD compatibility.

**CAMBRIDGE AUDIO CD4SE** 1998 £200
A touch soft in the treble and tonally light, but out standing in every other aspect.

**SONY TCD-8 DATMAN** 1996 £599
Super clean sound makes this an amazing portable, but fragile.

**LINN KARIK II** 1995 £1775
The final Karik was a gem. Superb transport gives a brilliantly tight, crisply dynamic sound, almost totally devoid of treble.

**NAIM CDS** 1990 £290
Classical Philips 16x4 chip with attention to power supplies equals gin-inducing sounds.

**MARANTZ CD73** 1983 £700
A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 DAC, superb musical.

**MERIDIAN 207** 1988 £995
Beautifully built two box with pre-amp stage. Very musical although not as refined as modern DAT/orieng at the time.

**SONY CDP-R4/DAS-R1** 1987 £3000
Sony's first laser was right first time. Tonaly lean, but probably the most detailed and architectural sounding machine of the eighties.

**CAMBRIDGE AUDIO CD1** 1986 £1500
Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter.Lean but tight and musical performer.

**MERIDIAN MCD** 1984 £600
The first British audioophile machine was a sweeter, more detailed Philips CD103, 14x4 never sounded so good, until the MCD Pro arrived a year later.

**SONY CDP-701FS** 1984 £990
Sony's first bespoke audioophile machine used a 16x2 DAC to provide a convincingly realistic sound. Superb build quality added to the pure unadulterated luxury of a bookshelf-sized remote control.

**YAMAHA CD-X1** 1983 £340
Nicely built 16x2 machine with a very sharp and detailed sound, sometimes too much so. Excellent ergonomics, unseen at most every other unit of the time.

**SONY CDP-101** 1982 £800
The first Japanese CD player was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you get a remote control.

**ANALOGUE RECORDERS**

**AIWA X-300** 1986 £600
Aiwa’s Nix beaters didn’t, but it wasn’t half bad nonetheless. Massive spec even included a 16x4 DAC.

**NAKAMICHI CR-7F** 1987 £800
The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.

**SONY WM-D6C** 1985 £290
Single cassette transport on a pair with a Frost watch, single reverse/normal head better than most two. Rare, sublime.

**PIONEER CT-F950** 1978 £400
Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.

**YAMAHA TC-800GL** 1977 £179
Early classic with six-in-one styling. A midrange sonic performance of modern standards, but not one to challenge.

**SONY TC-377** 1972 £0
A competitor to the Akai 4000D open reel machine, the Sony offered superior sound quality and is still unassailed by modern standards.

**REVOX A77** 1968 £145
The first domestic open reel that the tape used at home. Superbly made, but sonically all the pace these days.

**COMPACT DISC TRANSPORTS**

**FOGTRAC PD** 1997 £5990
The best CD drive ever. Brilliantly accurate, ridiculously over engineered.

**FAC VRDS T1** 1994 £600
Warm and expansive sound makes this a mid price hit. Well build with a slick mechn.

**KENWOOD 9010** 1996 £600
The first discrete 24bit transport was brilliantly done and responds well to re-clocking.

**DACS**

**DCS ELIGAR** 1997 £8500
Extremely open and natural performer. All the extreme power in a superb.

**DPA LITTLE BIT 3** 1996 £299
A new, simple and punchy sound transforms budget CD players.

**CAMBRIDGE AUDIO DAC MAGIC** 1995 £99
Good value upgrade for budget CD players, with extensive facilities and detailed sound.

**PINK TRIANGLE DACPAO** 1993 £195
Explicable, the warmest and most lyrical 16bit digital audio we have ever heard.

**OFT DIGIT** 1991 £90
Budget addleg performer with highly advanced Pigmon ADC upgrades makes a smooth but now past it.

**CABLES**

**MISSING LINK CD/MD REFERENCE 2008** £400/0.5M
High end interconnects, with delicate signal, sharp, open and subtle sound without a hint of edge.

**TECHNICS WIREWS 2007** £20
Highly accomplished interconnects at an absurdly low price. Stunning value for money.

**VDF (ULTIMATE THE FIRST 2004** £259
Carbon interconnects that help you forget the electronics and concentrate on the music. Miserable transparency. Tight and tural bass. Mixed with air and space.

**WIREWORLD OASIS 5** 2003 £99/M
Excellent mid-price design with a very natural, silky and soulful sound. Superb value for money.

**TCHI CONSTRUCTOR 13A-6 BLOCK** 2003 £130
Top quality affordable mains inter block, with the build and good sound. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

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www.hi-fiworld.co.uk  FEBRUARY 2018 HI-FI WORLD 79
Auralic has been gaining praise for the past eight years with its range of advanced digital music products. We were so impressed with its Aries wireless streaming bridge it was nominated Best Network Player for 2017 (see Hi-Fi World January 2018 issue).

Good as it is, though, the Aries needs to be connected to a DAC; it has no in-built digital-to-analogue converter. So enter the Auralic Altair costing £1749. It replicates the functionality of the Aries (£1495) but also has a DAC, adds pre-amp capability and a headphone amplifier.

Housed in a single slim 6.5cm x 33cm x 23cm (H/W/D) chassis the Altair can stream digital audio files via shared network folders, UPnP/ DLNA servers and the likes of Tidal and Qobuz subscription services. It is also Bluetooth equipped and able to receive music wirelessly from smart devices – typically a mobile phone – or computers. An added feature is a dealer-fitted 2.5” hard disk or solid state drive for internal storage of files.

The rear panel carries AES/EBU, co-axial, optical (Toslink) and USB 2.0 digital inputs, alongside balanced XLR and unbalanced RCA phono socket outputs. All the major music file formats are supported up to 32bit/384kHz PCM, as well as DSD64, 128 and 256. The only thing missing is MQA - although the jury is still out on whether it will take-off.

Inside the box the Altair uses a highly-regarded ESS Sabre32 Series DAC driven by Auralic’s Femto master clock technology to reduce jitter. There is a linear power supply with a custom toroidal transformer - accounting for much of the unit’s 7lb weight.

On the front is a long display screen, headphone jack and a single rotary control for volume and accessing all the various functions. One of these is a set of four digital filters - Precise, Dynamic, Balance and Smooth (more of which later). Users can also control the Altair through the supplied remote control or, as I did, Auralic’s free Lightning DS app (iOS only at present).

Set-up is simple with the Auralic finding my wi-fi network and all stored music within a matter of minutes once the two aerials were attached to the rear. The connection stayed stable throughout the review period. You can also use the Aries wired if desired – if your wi-fi network is a little flaky perhaps – but I had no trouble streaming hi-res PCM and DSD files wirelessly.

SOUND QUALITY

Starting off by streaming a 24/96 rip of Richard Dawson’s latest ‘Peasant’ album the Altair revealed itself to be precise and detailed with the welcome ability to pick out subtle...

Four digital filters are available - Precise, Dynamic, Balance and Smooth. All can be selected from the front panel.
The rear panel carries a mains power switch, an array of digital inputs and both phono socket and XLR (balanced) outputs.

I tried them all with Led Zeppelin’s ‘When The Levee Breaks’ which has a dense mix featuring a pounding rhythm section, wailing harmonica and intricate guitar work. The differences were subtle but on the whole I preferred the smooth setting - with Precise sounding a little more harsh with cymbals and Balance just a shade too polite. It’s horses for courses, though, and others may disagree.

Whatever the choice, though, the Auralic’s basic character remains the same and it is one that is thoroughly engaging.

I recall marvelling at how good Daft Punk’s ‘Random Access Memories’ (Studio Masters Edition - 24bit/88kHz) sounded through an Auralic Aries feeding a Chord 2Qute DAC (combined price £2495). The Altair matched that – but at significantly lower cost. The same low noise floor brought instruments to the fore and there was similarly a sense of vibrancy to the sound.

I put together a quality system around the Altair, connecting it to a Naim Nap 100 power amplifier and a pair of Neat’s Iota Alpha loudspeakers. At a total cost of £3894 this was one fun combination with firm bass and great midrange detail, keeping me playing track after track. What more could anyone want?

**CONCLUSION**

Auralic have a deserved reputation for high quality digital at a realistic price – and the Altair is proof of that. It’s a multi-purpose component offering flexibility, performance and ease-of-use that can act as the centre of any digital music system. Just add decent loudspeakers and a power amplifier for a top-notch system.

**MEASURED PERFORMANCE**

The Altair has at heart an ESS Sabre digital-to-analogue converter (DAC), supported by a linear power supply (i.e. not switch-mode). Auralic claim 124dB dynamic range – a very high value – and this is possible from the Sabre32 Series measurements show. However, the Altair falls slightly short at 121dB from both Phono socket and XLR socket outputs. It’s not a significant shortfall in sonic terms and the Altair is still up with the best in this important aspect.

Distortion was a low 0.02% at -60dB with 24bit digital and 0.21% with 16bit (CD), the latter value being determined by 16bit quantisation noise, not the DAC. These figures were measured from both S/PDIF (coax, optical, AES) and USB inputs. The optical input is able to process 192kHz sample rate digital.

Output from the Phono sockets measured 2.2V and from the XLR sockets 4.5V – both typical values. Frequency response measured flat to 70kHz, contracting to 48kHz in Balance mode. The filters changed measured frequency response little, and not at all within the 20Hz-20kHz audio band, even with CD’s 44.1kHz sample rate, so the audible difference between filters will be slight.

The Altair measured well and will give sound quality up with the best.

**FREQUENCY RESPONSE**

Frequency response (-1dB)

| 4Hz-70kHz |

**DISTORTION**

Distortion (10k, 1W, 4 Ohms): 0.02%  
Dynamic range: 121dB  
Noise: -120dB  
Output: 2.2V / 4.5V  

**REVIEW**

**AURALIC ALTAIR**

**£1749**

**OUTSTANDING** - amongst the best

**VALUE** - keenly priced

**VERDICT**

All-in-one DAC/streamer/preamp that sets a new standard at its price. Offers flexibility with superb sound quality.

**FOR**

- multi-purpose
- superb sound from its Sabre DAC
- option of internal storage
- easy to use
- price

**AGAINST**

- no MQA

Auralic  
www.auralic.com
THE SELF PRESERVATION SOCIETY
Nothing to do with the film 'The Italian Job', but ECC 100 (www.ecc100.co.uk) releasing a 3LP compilation – reworking songs from the late sixties and early seventies. Including Eliza Carthy, Jackie Oates, Julie Tippett and Marry Waterson, songs include classics such as Focus’ ‘Hocus Pocus’, Genesis’ ‘I Know What I Like (In Your Wardrobe)’ and the Zombies’ ‘She’s Not There’. Includes a USB with extra tracks and other content.

MUSIC ON VINYL
Out now via MOV (www.musiconvinyl.com) is Buddy Guy and Junior Wells’ ‘Play the Blues’ (1972). Produced by Eric Clapton, Tom Dowd and Ahmet Ertegun and starring J. Geils, Clapton himself, and Dr John plus others, this is an excellent LP that works well, despite the extended original gestation.

Also look out for Shocking Blue’s 1973 release, ‘Ham’, the all noise metal from Life of Agony and ‘Ugly’ (1995) which threatens as much as it entertains and Ringo Starr’s ‘Time Takes Time’ (1992), his then best release for many years, a Beatles-centric LP produced by Don Was.

DEMON COMPS
The compilation theme continues with Demon's (www.demonmusicgroup.co.uk) ‘Winter Wonderland’ (featuring seasonal hits from Brenda Lee, Dean Martin and Bing Crosby), ‘The 70s Pop Annual’ (including tracks from the Sweet, Suzi Quatro and The Jacksons) and ‘The 80s Pop Annual’ (including tracks from Wham!, Adam & the Ants plus Irene Cara).

AT THE MOVIES
The soundtrack imprint from ‘Music on Vinyl’ includes ‘Fargo Year 3’ via Jeff Russo. A numbered double album gatefold in blue and red vinyl with an eight-page booklet.

‘War for the Planet of the Apes’ has been produced by Michael Giacchino on red vinyl. Also a double album but on red vinyl only and limited to 1,000 copies.

Finally, look out for Dark Tower by Tom Holkenborg (also known as Junkie XL). Limited to 1,000 copies, this double album gatefold includes a four-page booklet and blue and black mixed vinyl.
RHINO RIP IT UP
The rise and rise of Talk Talk begins with the oddly derivative, New Romantic/Roxy Music edge to the debut LP, ‘The Party’s Over’ (1982). There was still plenty to like here though and things merely improved with 1984’s ‘It’s My Life’ that upped the quality of the songwriting.

Rhino’s also offering three Alice Cooper LPs including the 1969 debut, ‘Pretties for You’ that had yet to enter his signature malformed rock, but explored reasonably produced psychedelia instead. 1981’s ‘Special Forces’ (Cooper was into militaria at the time) offers a stripped down yet patchy rock output. Love it or leave it (1971) is of a different stripe, though. This coherent third LP enters Cooper’s trashy rock world for the first time in his career.

SIREENA
From Sireena (www.sireena.de) is On The Frontier’s ‘Shoot’ and featured ex-Yardbirds/Renaissance member Jim McCarty, guitarist Dave Greene (Raw Material), bassist Bill Russell and ex-Manfred Man drummer Craig Collinge. Short-lived project with plenty of prog, jazz, country and psyche flavours.

Also check out Nattefrost’s ‘Skaldic Themes’, an attractive, soaring and layered suite of electronic music.

KSCOPE
From Godsticks is ‘Faced With Rage’ (Kscope, www.kspmemusic.com) reflecting that high energy punchy prog heard via Pineapple Thief and the like — but on a more aggressive level.

No-Man’s ‘Returning Jesus’ (2001) is out again. Featuring Porcupine Tree’s Steven Wilson once more, plus Tim Bowness (Colin Edwin and Steve Jansen guest).

Anathema’s songwriter, Daniel Cavanagh, has issued a piano-centred solo work, ‘Monochrome’, packed with melodic prog.

...AND FINALLY
They’re a jazz trio: keyboardist Jamie Saft, bassist Steve Swallow and drummer Bobby Previte offer ‘Loneliness Road’ (RareNoiseRecords; www.rarenoisererords.com) but provide three tracks with vocals by Iggy Pop. Less shocking, more brooding.

From Dougha is ‘Hidden Tapes and the Golden Tide’ (Do Make Merge, dough.bandcamp.com) Resembling classic jingly-guitar, 80s indie, it’s infused with sparkling vocals and uplifting melodies. Lovely.

Proto Idiot’s ‘Leisure Opportunity’ (sloveny.com, sloveny.bandcamp.com) has a pop-punk aura. Fegy rhythms, noisy guitars, humour (!), staccato vocals, lots of confidence, swagger and innocence.


Dub Pistols’ ‘Crazy Diamonds’ (PIAS) offer a new slice of dance-rap-reggae that’s uplifting and relevant, spilling over with energy.

Charles Howl’s ‘My Idol Family’ (Oh Many, www.ohmany.co.uk) has that slighty arty rock sound with fragile and sensitive vocals that demand you sit and listen in silence. Just in case you might scare them away.
A class apart

T+A’s latest G 2000 R turntable equipped with a moving coil cartridge and excellent tonearm is a testament to the benefits of good German engineering, finds Noel Keywood.

T+A intensely engineer their products to top German standards; I’ve been to the factory and met the founders. No floppy stuff there! No surprise then that the G 2000 R turntable in this review is built to impressive standards, has a superb quality of finish and – beneath the surface – relies on finely honed technology.

That is not to say it’s design is cut of the ordinary however, being a two-speed belt drive built onto a heavy, sturdy plinth using an isolation absorber T+A say, not a spring suspension system. Like my Garrard 401 it relies on sheer mass for isolation, much of which is provided by any support surface – shelf or table – able to withstand its considerable weight of 14kgs (31lbs).

Whilst the turntable is engineered by T+A, the arm is a wrapped carbon-fibre design – a tweaked Clearaudio Verify it appears. Our review sample came as a package, this arm carrying a Clearaudio MC-2 moving coil (MC) cartridge, as well as T+A’s optional phono stage fitted internally. So specified, the G 2000 R is purposed to feed the Line input of an amplifier; it has no alternative Direct output, unlike many turntables, so an external phono stage can’t be hooked up at a later date. But then, what you get with the G 2000 R is a very high standard of performance in the first place, reflected in the price – and lessening any need for upgrade.

Working backward as it were the Clearaudio MC-2 cartridge is the crown jewel of the package and largely determines sound quality; the arm and turntable must get the best from it by not introducing their own particular problems – and that is how I approached this package – from the front backwards. Other arms and cartridges are available options, as is the internal phono preamp.

Measurement showed the MC-2 moving coil is what Clearaudio and T+A claim, a precision engineered device with a very high standard of performance. Channels are closely matched they say, and that is exactly what I found – better matching than usual. The Microline stylus, fitted to a boron rod cantilever, traced inner grooves with little loss, so it read short wavelengths and fine detail...
very well. Distortion was low and tonal balance supremely accurate: this design has no treble lift to add zest, nor treble loss to add warmth; it just gets the sound right. Throw in excellent tracking ability and you have a cartridge that, with ceramic coated magnesium-alloy body possessing threaded screw holes and easy to align block-shape is quite a proposition. Bought alone the MC-2 can be had for £720; I'd have priced it at £11k minimum. Of course, MC cartridges are like fine wines: they can be good but they may not suit your taste – and I'm no great lover of Boron cantilevers (or tweeters), feeling they sound a bit cold; Would this one be so? More later.

The arm has a lightweight vestigial head shell platform, attached to a wrapped carbon fibre arm tube that is stiff and light. I like to hand cue and the flat finger lift wasn't ideal for this, raised curve shapes being preferable since they give more clearance above the LP surface and by curving over the finger don't slip from it. The damped lift/lower platform, that most people will use, worked well however. The downforce and anti-skate mechanisms are uncalibrated, so a downforce gauge is needed and anti-skate set according to a routine in the manual. It's a fairly simple arm then, if well built and finished.

The turntable uses a synchronous motor fed by a quartz-referenced a.c. source. T+A say, coupling to a zinc hub through a short ground belt. Atop the hub sits a heavy platter of pressure die-cast aluminium fitted with a thick silicone rubber mat. Speed change is electronic, selected by front panel push buttons. Much is made of the turntable and pinion structure being damped and resonant free.

There is no conventional all-enclosing hinged dust cover, just a formed acrylic sheet that is less expensive, acting as a cover. It must be put aside when using the turntable to access the space is needed.

The optional PH-G-R MC phono stage module has four banks of DIP switches, accessed from beneath the turntable, to adjust sensitivity and load (15 Ohms up to 650 Ohms), allowing the turntable to optimally match other MC pickup cartridges, but if you want to swap to MM this board must be changed for an MM board. DIP switches are cheap and have limited life so are not an ideal solution to switching low-level signals.

There are no markings, on circuit board or base plate, to identify the purpose of the four switch banks – instead this is in the owner's manual only.

A universal MM/MMC board with by-pass switch would be better. In its favour, however, the MC board had massive gain range of x228 up to x3735, able to cope with all MC cartridges, and very low noise too (see Measured Performance for full details).

**SOUND QUALITY**

I connected the G 2000 R straight into our Icon Audio Stereo 30 SE single-ended valve amplifier driving Martin Logan ESL-X hybrid electrostatic loudspeakers.

As vinyl playing goes this is a simple system able to reveal the wonders of LP - and that's how it turned out. T+A have made the turntable silent in every way (no hiss, nor hum) and I could wind volume up to maximum and hear nothing - stony silence.

Placing needle into groove I was greeted by an even, correct and perfectly balanced sound from all the LPs that slid onto and off the platter.

Exactly as claimed and as our measurements confirmed, the Clearaudio MC-2 cartridge was coolly correct yet concise and insightful. I noticed straight away that images were centralised perfectly between the loudspeakers due to the unit's precise channel balance. There was no hint of skew in tonal balance either, the sound coming across generally as smooth and neutral.

And this last word just about sums up what I heard overall, a sound from LP that approached that from CD, yet without digits of course (quantisation noise etc). Bass thundered out nicely from 12in 45rpm singles like Billy Ocean's 'Get Outta My Dreams, Get Into My Car' - if not with the muscular slam of my Ortofon Cardeza Bronze in SME3/2 arm on Garrard 401 turntable. There was fine detail retrieval, though, unaccompanied by top-end emphasis or spit, the long reverb used to
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portrait an invisible woman in Jackie Leven’s ‘Young Male Suicide Blessed by Invisible Woman’ being a tad more obvious in its modulation and echo trail. I only ran into a problem with Neil Young’s ‘Tell Me Why’ from After the Gold Rush (re-mastered, 180g vinyl) where forward vocal harmonies sounded harsh and not as I know them; immediate comparison with the Cadenza Bronze in SME309 via an Iron Audio PST phono stage was more insightful and lacked harshness.

You can hear cartridge cantilevers, especially ruby and diamond coated types, but the boron rod of the MC 2 was difficult to pin down. It was fast and concise, a tad less sonorous and a little more mechanical than my Cadenza Bronze (that Ortofon label ‘romantic’) and there was not the fine resolution and insight of our Ortofon A95 – but that the less expensive MC 2 can be compared is a tribute to it. All the same, listening to Marianne Thorsen playing violin at centre stage, on 2L’s LP of Mozart’s Piano Concerto’s (DDX recording, 180g vinyl), her violin sounded briskly clear and fine string detail was abundant.

A strong sense of temporal stability was obvious, if not the metronomic precision of our Timestep Evo modified Technics Direct Drive. At the same time the G 2000 R had solid pitch and not the slightly vague pitch of most belt drives. The Verify arm comes across as smooth and colour free, if not...
The vibrations grooves

Soundeck process has record, 292mm

HI-FI headphone amplifier. single WDHD3S choke WDPSU3 Requires inputs single WDPre3 Requires transformers equalization WDPhono3 relay or amplifier. ultralinear WDKEL84 relay or amplifier. ultralinear WDKT88

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Visit soundeck.co.uk for information and links to hifi reviews.

Sounddeck PM £90

The perfect way to enhance your turntable including Linn or Technics. Available in 295mm, 292mm or 285mm sizes Sounddeck PM uses an aluminium laminate which converts vibrational energy into negligible amounts of heat which lets the stylus process information in the grooves without interference from feedback and rumble. While the stylus is collecting vibrations and sending them up to the cartridge it is also forcing vibrations back into the record, these are collected and recycled through the system creating secondary noise which has to be processed by the system. The Sounddeck PM absorbs this noise so the system can process pure music without all the background mush - resulting in a cleaner sound.

Sounddeck DP Damping Puck £115

Available in polished stainless steel 745Grams or aluminium 262grams

The Sounddeck DPS damping puck is machined from two pieces of stainless steel bonded together with a layer of polymer. It sits firmly over the top of a turntable’s spindle - holding the vinyl securely to the platter to extract a larger soundstage, firmer bass and extra detail.

Sounddeck DF £48 (set of 4)

Available in 75mm Squares or 80mm Circles

Sounddeck damping feet are 3mm thick vibration absorbing steel pads which isolate speakers, amps, turntables and components from vibration and feedback. They prevent speakers from driving the frontboards or shelving which enables them to operate in a vibration free environment resulting in a cleaner sound. They are also supplied with soft neoprene pads to prevent marking shelves or floors.
Mayhem and fun

The latest in a new series of music-related books. Paul Rigby looks at tomes that go that bit further than the rest.

**A POTPOURRI OF MELODIES AND MAYHEM:**
LATIN AMERICAN AND CANADIAN ROCK, POP, BEAT, R&B, FOLK, GARAGE, PSYCH AND PROG
1963-1976
Author: Vernon Joynson
Price: £55

Joynson is back with another magnificent and hefty tome. Although, as usual, I suspect that half of the writing time was spent penning the title: it’s another mighty one folks. Presented in soft back and spanning a quite enormous 886 pages, the focus is similar to the last Joynson book reviewed in these pages, ‘A Melange Of Musical PipeDreams And Pandemonium’, in that: it focuses on two or more seemingly diverse and unrelated territories. In that case it was Australia, New Zealand, Africa and Turkey. Here, it’s Latin America and Canada.

I did ask Joynson about this head scratching territorial jumble around the time of the release of the last tome and I assume that his answer then is also relevant to this new book. Basically, he wants to squeeze as much into a single book as possible. He might say that it adds value but I suspect that the production budget has a greater say in things.

In those terms, that’s fine and I applaud Joynson in ‘finding a way’ to display his meticulous information to the world. His own company, Borderline, is a tiny publishing house where money is always in short supply. If the price to pay for the existence of these fascinating books is a slightly odd contents list, then so be it.

That contents list is a little eccentric at times, the initial 296 pages of Latin American information being followed by 337 pages of Canadian (including French Canadian) releases. There are also entries from artists who were from neither of these territories but may have been based in one or the other.

Then, slightly bizarrely, you get a discography of the reissue record label Gear Fab, which I always considered an American concern – hey ho – plus a final twenty page selection of Stop Press entries that adds more Latin American information. Obviously a last minute entry then.

Including twelve pages of colour illustrations featuring a host of speedily attired LP covers, the book offers its information within a familiar format. Familiar to fans of Borderline books, that is. Covering the genres listed above, each band/artist features a biography with details of the members of the band, if applicable, the album and singles releases produced by the same, format information (I’ve even seen information for CD-ROM), years of release, catalogue numbers, what compilations they might have appeared on and any available images and LP cover pictures that can also be shoe-horned in. You’ll also find, where available, juicy bits of artist history that might not be wholly music related - but that adds flavour to the artist. Leonard Cohen’s bankruptcy details are one example. All of the above information is densely and closely typed and is also completely engrossing.

Slightly quirky and unconventional it might be but this joyous and joyful book is not only comprehensive in its coverage but offers a gamut of enlightening and surprising record releases. As a bit of a music geek, if not freak, being in the company of Joynson means being in the company of a like mind.

Hence, you enter into his book and find yourself completely at ease. I was going to suggest that this book will offer hours of fun and exploratory enjoyment but, who am I kidding here, that should be years of fun and enjoyment! Great value, heaving with precious rarity information, A Potpourri Of...(yada, yada, yada) is a complete winner!

Call 01323 732469 or click on www.fminor.com for more information.
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**Midland Audio Xmas - New year sale Starts on 27th December at 9.00**

### Ex-demo and second hand items

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### Analogue

| Audio Research PH9 xdemo | 7498 | 5999 |
| Bergmann Magne xdemo | 8500 | 4499 |
| Bergmann Sindre xdemo | 14250 | 7499 |
| Burmester 100 phono stage xdemo | 11540 | 6999 |
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| Wilson Sasha II xdemo | 39000 | 27500 |
| Yamaha WX030 wireless speaker S/H | 195 | 99 |

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| 47 Laboratory Kishermon 3m BNIB | 800 | 499 |
| 47 Laboratory OTA Kit 4708 BNIB | 800 | 499 |
| Analysis Plus Oval 12.2 x3m xdemo | 230 | 129 |
| Analysis Plus Oval Digital 2m BNC digital | 99 | 49 |
| ASC tube traps xdemo | 680 | 249 |
| Audioquest Leopard 1.2 arm cable BNIB | 699 | 479 |
| Finite Elemente Pagode signature xdemo | 2290 | 1499 |
| Magnum Dynalab MD108 mk1 S/H | 6995 | 2995 |
| MIT shotgun online S3.3IC 1m pair RCA | 1100 | 399 |
| Musical Fidelity Stable 1 platform BNIB | 199 | 99 |
| PS Audio Perfectwave 5.1 BNIB | 220 | 149 |
| Revalation Audio Labs Prophecy Firewire | 499 | 199 |
| Russ Andrews BMU1500 S/H | 1600 | 1199 |
| Van den Hul CS122 2x2.5m | 180 | 99 |
| Van Den Hul D352 hybrid 2x2.5m | 220 | 119 |
| Velodyne Impact 12 subwoofer xdemo | 499 | 299 |
| XLOER SWY 5m subwoofer cable NOS | 299 | 149 |
| XLOER 6.0m RCA digital NOS | 99 | 20 |
| XLO Pro 100 2x3m speaker cable NOS | 399 | 99 |

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Look, no wires!

With Pro-Ject’s Phono Box BT E, reckons Martin Pipe, your vinyl can reach out into new territory

There is something a little disconcerting when you see an LP playing on a turntable, whilst its sound pours forth from a wireless Bluetooth speaker on the opposite side of the room – or, for that matter, another room altogether! Yet that’s exactly what the Pro-Ject Phono Box BT E is designed to make happen.

We’ve seen a number of affordable turntables with Bluetooth built in (Ion, Teac, Audio-Technica and Pro-Ject’s own VT-E BT spring to mind), transmitting wirelessly across a room to a Bluetooth receiver. But I haven’t thus far seen an independent phono stage with the technology.

The Pro-Ject Phono Box BT E is built into a compact enclosure. It matches MM (and high-output MC) cartridges only. It’s Bluetooth wireless output can be driven by a phono input, or a line source fed from a 3.5mm socket. Flipping between the two is a rear-panel switch (wrongly labelled on our sample – something that, importer Henley Designs assures us, will be fixed). Such provision is useful, as you’ll be able to listen to other sources through your Bluetooth audio system. It also means that any conventional audio system into which you place the BT E – there’s a line-level 3.5mm output, enabling it to be used as a conventional phono stage – doesn’t ‘lose’ an input. The switch is passive, and so your line level source can be routed to the output even when the BT E isn’t powered up by the accompanying ‘wall wart’. When the unit is active, the line-out and Bluetooth are available simultaneously; something that, with appropriate configuration of equipment, allows us to compare ‘direct’ and Bluetoothed paths. Unfortunately, there’s no level adjustment, of the sort built into the wonderful little ART USB Phono Plus we reviewed last month so full dynamic range might not be available.

There are no LEDs to indicate audio level or power status. And Bluetooth pairing doesn’t involve pressing buttons. Switch on the unit, and then your Bluetooth audio gear. The latter will ‘lock’ into it, and start playing whatever music is being fed into the BT E. Yes, it’s as simple as that! In response to these comments Henley Designs’ Simon Powell told me that “the E Line is designed to be both ‘plug and play’, and ultra-affordable. By making the pairing process automatic and eliminating the need for LEDs they can make this product ultra-competitive”.

Inside the unit, the phono stage is fully-enclosed within a metal screen that’s soldered to the circuit board. This prevents any external noise, notably from the Bluetooth module, from causing audible interference.

On the subject of Bluetooth, Pro-Ject have specified the SBC (sub-band codec) rather than apt-X: the sampling rate, meanwhile, is 44.1kHz.

SOUND QUALITY

Bluetooth receivers are built into a bewildering variety of audio products these days. I tried a Cambridge G2 Bluetooth speaker, a Otone Soundbase (a TV stand with speakers built-in) and a Chord Hugo TT DAC with Bluetooth support, feeding Chord TToby power amp and Quadral Aurum Wotan VIII speakers.

In order to facilitate comparison between the ‘direct’ and Bluetoothed audio signal from my turntable (a Technics SL-1210 Mk2, fitted with an Audio-Technica AT440MLb cartridge) extra gear was pressed into service. This consisted of a passive variable attenuator for the BT E’s analogue output, and a switch-box that allowed...
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it to be instantaneously-substituted for the Hugo TT. It was possible to set this attenuator and the Hugo TT’s volume control for identical sound levels.

My first discovery was that the 3.5mm Line output’s polarity was ‘reversed’. A test LP with channel-identification track showed that the Bluetooth output is correct, however! Hopefully, Pro-Ject will fix this anomaly at the same time as the incorrect input-switch labelling.

Such niggles apart, the Phono Box BT E did a good job. I had no issues getting it to communicate reliably with my Bluetooth gear; although the range in my home was rather limited – after seven or so metres, dropouts became objectionable on my Cambridge G7. As a phono stage, it yielded a creditable performance.

Using the BT E as a turntable preamp, the four varied ‘movements’ of Mike Oldfield’s Platinum suite (Virgin V2141) fared well. Oldfield’s guitars (prominent in the first two parts) could easily be followed, although a little remoteness was evident towards the end of the second. Charleston, the third movement, marks a change in style; the brass parts at its core were given bite, while the rhythms flow naturally.

Plunging into bass territory, I found that the BT E could be a little inhibited – compared to the similarly-priced ART USB Phono Plus. This means that the ‘throb’ of bass guitars and synthesizers don’t quite have the impact they’re entitled to. But definition at this end of the spectrum wasn’t sacrificed. Take for example Legacy, from Electronic Realizations for Rock Orchestras (Passport 9799 752) by Synergy (one of keyboardist Larry Fast’s alter egos). The synthesis here is delicious – deftly controlled and tuneful. There’s just not much of it.

And so to Bluetooth. Relative to ‘direct’ listening, I found that Luther Vandross’ vocals in I Wanted Your Love (Fpir 1760R) sounded a little ‘edgier’. The guitar of this smooth dance number seemed to have taken a step back into the mix too.

Classical music is perhaps more revealing of Bluetooth’s less than natural compression. Vivaldi’s Concerto in C for Bassoon and Strings (AV Digital DCA 545 – Three Bassoon Concertos – English Chamber Orchestra/Philip Ledger; Daniel Smith, hssn())? is a case in point. Heard via the direct path, depth and space are much in evidence. Ampie room was given to the solo instrument, while the orchestral strings were conveyed with surprising delicacy. Those fineries are ‘smoothed over’ via Bluetooth, and there’s also a contraction in teristic giving a small shell reduction in output below 1kHz that will cancel the BT E sound light in balance. There is a useful roll off in subsonic gain, enough to attenuate dealer’s warps signals.

Gain was on the low side for MM at x70, from Phono In to Line Out (3.5m stereo jack) where x100 is common. A figure of 2.5µV equivalent input noise was a few db above the common 1.5µV/2µV range for MM but since MM cartridge generate more hiss (Johnson noise) than MM input electronics this isn’t an issue. Distortion was low at 0.09% and overload satisfactory at 33mV in/2.3V out.

The BT E measured reasonably well, but it is a budget product and not super-accurate in RIAA equalisation. NK

Our response analysis shows slightly low gain in the RIAA 318µS charac-
FREQUENCY RESPONSE

The inside of the Pro-Ject Phono Box BT E. A metal box shields its sensitive analogue electronics to interference from the Bluetooth radio transmitter. It interfaces to the phono stage via three wires soldered to a 3.5mm socket.

Bluetooth audio products, those musical subtleties are unlikely to be audible in the first place!

CONCLUSION

The Phono Box BT E does not offer the last word in performance, but then again it doesn’t claim to – and looks at the low price. If you’re after a sweetly put stage that will do justice to a budget turntable and like the idea of streaming your music to – say – a Bluetooth speaker in an adjacent kitchen, then it will fit the bill nicely. The line input is a neat touch. The ‘sillies’ we discovered are going to be corrected, I was told. In all then, there’s plenty on offer here.

The inside of the Pro-Ject Phono Box BT E...

PRO-JECT PHONO BOX BT E £89

GOOD - worth auditioning

VERDICT

A neat way of bringing vinyl into the Bluetooth age, if you don’t want to splash out on a new deck.

FOR

- Bluetooth from phono or line sources
- easy to use and set up
- a fair musical portrayal

AGAINST

- lack of bass depth
- analogue outputs reversed and incorrect switch labelling

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THE ALAN PARSONS PROJECT

EYE IN THE SKY
1982

The Project was an odd bod idea. It wasn't really a band. Not quite, at any rate. It was more a concept that Parsons oversaw. This was typical Parsons. A guy who always saw big pictures — as his time at EMI as producer and engineer proved. He'd worked on 'Abbey Road' with the Beatles, with McCartney on several Wings albums, Al Stewart and more. Pink Floyd's masterpiece, 'Dark Side of the Moon' was his masterpiece and the reason Parsons is so revered.

His own Project albums mostly saw him develop an over-arching theme, yes, he played about and did a bit of singing but it was the songwriter, Eric Woolfson, who was the prince of creative force behind the Project's albums, in company with the likes of Arthur Brown, Colin Blunstone (Zombies) and Allan Clarke (Hollies).

This album was released in 1982 and was the band's most successful album, establishing Parsons' pop oeuvre — at best — soft rock credentials with its Top Three hit title track.

The LP focuses on an omniscient spy but the concept was fairly light in touch and could easily be forgotten while the gentle, sweet and luxuriant sounds exuded. There is a sense of pop-based coherence here that elevates this LP into classic status without any trouble at all.

Parsons did muse upon the origination of the LP and the source of the LP's title, "I think Eric, after 'A Turn of The Friendly Card' album, an obsession with gambling and I think the strongest image, lyrically, is probably a hidden camera, a casse camera or a surveillance camera and I think that's what 'The Eye in The Sky' is.'

The hit title song from the album, very nearly wasn't: "When he played me the song, originally, with the band there, we struggled for a long time to try and get the right feel for it and I've never been allowed to forget the fact that I was ready to drop the song and say, 'No, this isn't going to work. We should drop it and go on to something else.' We just couldn't get a good feel for it, it didn't gel and then suddenly we hit upon this chugging feel, doom, doom, doom, doom, doom, which worked great and we proceeded with it."

Anyone looking to re-acquaint themselves with this album would be advised to check out the Legacy Recordings, thirty-fifth anniversary edition of the release as a deluxe collector's box set featuring rare and unreleased material. It includes three CD's featuring the original album plus bonus tracks, Eric Woolfson's songwriting diaries, previously unreleased bonus material and a surround sound and stereo HD version of the original album on Blu-ray.

Also included are two vinyl LP's (the original album newly struck at half speed on four sides at 45rpm at Abbey Road Studios by Miles Showell), a flexi-disc replica of an original 1982 promo, a 60-page hardback book featuring newly-written essays, previously unreleased images recently discovered in Eric Woolfson's personal archive and new interviews.

Alan Parsons commented: "It was a wonderful experience to hear all the multitrack tape tracks from 'Eye In The Sky again' and for the first time in nearly 35 years, in their raw unmixed form. Hearing the various elements, performances and moments of magic that were selected for the final mixes of the songs was an amazing experience. Of course not everything we recorded back then is heard on the final mixes but the included bonus tracks in the box set give an interesting insight into not was used on the final mixes."

To finish, Parsons had a quick comment for hi-fi fans: "Audiophiles will be pleased to know that there is a brand new 5.1 surround sound mix — which I am extremely pleased with incidentally — and also a Hi-Def stereo version taken from the original analogue stereo master tape which was recorded simultaneously alongside the digital mix."

The mastering on the principle format in the box set, the vinyl discs, offers a beautiful performance that offers low noise playback. Top quality midrange insight not only provides impressive sense of clarity, but brings texture and focus to the vocal performance, combined with a relaxed yet matty bass. Quality sound with a treasure trove of rarities in and around a classic original album. What more do you need?

PR

"There is a sense of pop-based coherence here that elevates this LP into classic status"
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