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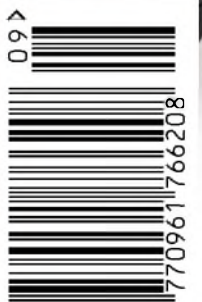


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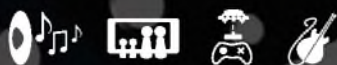
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Paul Rigby, Jon Myles, Martin Pipe,
David Tull, Jason Kennedy



Audio products can be eye-wateringly expensive, but we try to avoid the ultra high-end since it is more quirky than distinguished. This month, there is little esoterica in Hi-Fi World, but plenty of affordable products striving to offer great value.

Audiolab's 6000N streamer isn't definitive by any means – Naim will lose no sleep – but as reviewer Jason Kennedy notes, at modest price it brings you free music from Spotify. Seen like this the 6000N and a few price rivals that Jason lists don't just cost less than CD players, you end up not paying for CDs. The cost of listening to and enjoying music from around the world has never been pushed so low. Read more about Audiolab's 6000N on p10.

Loudspeakers are listened to by many people at Hi-Fi World – and if everyone says "yes", then yes it is! Jamo's modest C 95 II floorstanding loudspeakers got a big thumbs up this month because they had a fluid sound free from artifice that just seemed natural to us all. Measurement showed perfection was not quite – well – 'perfect', but there are subtle properties in loudspeakers not easily pinned down by measurement, meaning humans are always the best arbiter of quality. Best of all though the Jamos managed to deliver great sound at a great price. You can see and read about them on p16.

Much awaited and talked about – Technics SL-1500 latest budget Direct Drive turntable. Unlike the popular SL-1200GR, this new design comes as a package without removable arm, to swing in at under £1000. With Direct Drives like Lenco's L-3808 at half the price, Technics are facing serious competition. Can Japanese Technics hold their own in a market swamped by Chinese rivals? Can they retain loyal customers around the world, who came to love the now discontinued SL-1200 Mk2? For definitive measurement of their new Direct Drive motor and arm in the SL-1500, don't miss our in-depth review on p83.

Good audio products do not have to be "eye-wateringly expensive". I hope you find the affordable products in this issue interesting – they gave great results at a great price.

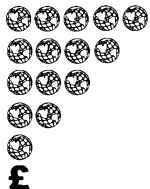
Noel Keywood
Editor



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verdicts



OUTSTANDING

EXCELLENT

GOOD

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amongst the best
extremely capable
worth auditioning
unremarkable
flawed
keenly priced

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

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

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

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

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



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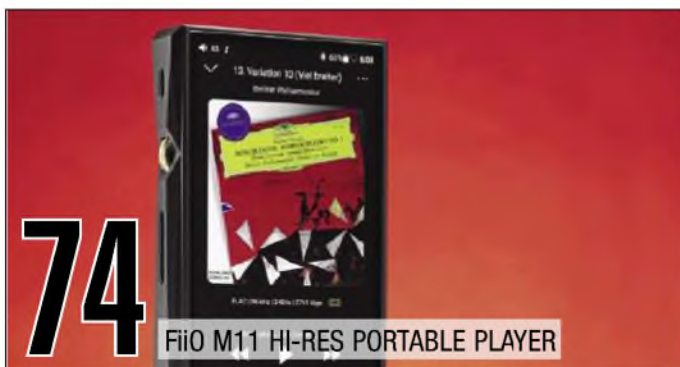
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Two Of The "Best" Reasons To Buy An Icon Audio Amplifier!



Two new integrated amplifiers similar looking but completely different, both with superlative reviews from the best British magazines. The Stereo 40 MK IV using the excellent KT88. With 2x50W output it makes an ideal replacement for all but the biggest solid state amplifiers with excellent power and control.

Our new Stereo 300 uses the 1930s WE 300B valve. This vintage "directly heated triode" is still around as it has very low distortion and excellent sonics enabling a deep insight into your recordings with its simplicity and low feedback.



Icon Audio is a unique British Company wholly owned by David Shaw. We are small and friendly and would love to hear from you by email or phone if you have any questions about our products or services. You are welcome to come for an audition by appointment. See our website for more details. Inquiries welcome from dealers and distributors worldwide.

email:news@hi-fiworld.co.uk

news

PRO-JECT GETS THE X-FACTOR

Visitors to the High End show in Munich might have spotted Pro-Ject's conservatively-smart X-1 and X-2 turntables generating interest on the Pro-Ject stand. Said spinners have now reached these shores, where they will sell

for £599 and £999 respectively.

The X1 is billed as "a cutting-edge turntable that brings high-end analogue technologies to a more affordable price-point". Its heavyweight MDF plinth houses the speed-control board (33/45/78rpm) that drives the suspended motor. The latter's pulley drives a purpose-made Acryl platter via a sub-platter sitting on a premium-grade main bearing. The X1's super-stiff 8.6in. tonearm features carbon/aluminium sandwich construction. Paying £699 secures an X1 pre-installed with Pro-Ject Pick-IT S2 MM cartridge.

The X2 features a similar speed-control system but with more substantial MDF plinth claimed to reduce "unwanted resonances to almost imperceptible levels". There are three height-adjustable feet and a wider-tube 9in. tonearm with

"accurate azimuth and VTA settings". The X2 ships ready-to-play with Ortofon 2M Silver cartridge, but a version without is £100 less.

Contact: *Henley Audio, 01235 511166. www.henleyaudio.co.uk.*



HI-FI NO-SHOW

It may have been in an advanced state of planning, but the London-based Festival of Sound will no longer be taking place this year owing to "economic and political uncertainty". Or, as the website puts it, 2019 will be a "fallow year".

Once known as the 'Indulgence Show', the enjoyable Hammersmith event combined live music, demos and lectures as well as showcasing a full gamut of gear enabling music to be enjoyed both at home and on the move.

The Festival of Sound has now been rescheduled for 2020 and organiser Vernon Hamblin hopes that it will be "bigger, bolder and better" than before. www.festivalofsound.co.uk



CHANGING YOUR NAIM

Since the early 1980s, Naim's NAIT integrated amplifiers have been appreciated for their no-nonsense design and a presentation that's powerful and musical.

Naim's basic principles have not changed over the years, but the tech certainly has. In the NAIT XS3 (£2,199) and SUPERNAIT 3 (£3,499) Naim has recognised the surge of interest in vinyl and built in phono stages as standard.

They say these phono stages are "based on classic Naim designs and crafted from superior components, expertly measured and batch-selected for optimum consistency and quality".

The power amplifier sections have, meanwhile, been upgraded for "greater pace...while retaining their musical performance".

Other features common to both new models include Class A headphone amplifiers, an ALPS 'Blue Velvet' volume control, reed-relay input-selection (four line inputs using phono and DIN sockets), ceramic insulators for the power transistors, a galvanically-isolated microprocessor-controlled section and microphony-isolating PCB mounts.

Exclusive to the SUPERNAIT 3 are Naim's 24V 'Discrete Regulator' module powering the pre-amp, a larger toroidal mains transformer in the power supply, more through-hole components in the signal path, hand-wired chassis-mounted input sockets and a balance control.

Naim Audio's Charlie Henderson claims the new NAITs are "the best-sounding integrated amplifiers Naim has produced – now with added love for vinyl!".

Contact: *Naim Audio, 01722 426600. www.naimaudio.com*





CHASING THE DRAGONFLY

The dedicated carry around both smartphone and purpose-designed personal music player. For the rest of us, just a smartphone. Thankfully, there's a decent compromise. This is the smartphone DAC/headphone amplifier, designed to plug into your device's USB port (Lightning, if you're Apple). Among the better-known of these bus-powered devices are Audioquest's DragonFly Black and Red (£69 and £149 respectively).

Now there are three – with the launch of the £270 DragonFly Cobalt. Its DAC chip is a ESS ES9038Q2M – a 32-bit Sabre 32 'reference DAC' found in upmarket portable players. The minimum-phase, slow roll-off filter, reckons Audioquest, results in "naturally-expressive sound that is always emotionally engaging and never fatiguing".

Other features of the MQA-ready Cobalt include firmware upgradability, Android/iOS compatibility and filtering that makes the Cobalt immune to RF noise from the host phone's Wi-Fi, Bluetooth, and cellular sections. It's supplied with a DragonTail female USB-A to male USB-C Adaptor.

Contact: *Audioquest, 01249 848 873. www.audioquest.com/dacs/dragonfly/dragonfly-cobalt*

MINDING THE GAP

Denon's DRA-800H 'network receiver' blurs the distinction between conventional hi-fi gear and home cinema. It's two-channel (subwoofers are catered for), has an MM phono stage and boasts a hi-res AK4458 DAC for external digital sources. There is a DAB+ tuner and VHF/FM too.

The DRA-800H makes provision for 'Zone 2' listening and supports the networked audio and HDMI connectivity of modern home-cinema gear. The former will pull music off DLNA servers and USB storage devices as well as services like Spotify, Tidal, Deezer, Amazon Prime, Pandora and Internet radio. Making this possible are Ethernet and Wi-Fi.

Five HDMI inputs (and one output) allow the DRA-800H to be used as an AV switching centre; it supports cutting-edge technologies like 4k, HDR and HDCP 2.3. Naturally, audio is extracted so you can enjoy it through your speakers; thanks to ARC, TV sound will be transformed!

Other features include 100 watts per channel, Bluetooth, tone controls, switching for two pairs of speakers, a headphone socket and the ability to be controlled by voice through Alexa, Google Assistant and Siri. Quite a package for £599.

Contact: *Denon, 02890 279830. www.denon.co.uk*



GIN MADE ME DO IT...

Melco has just announced its 'Melco Intelligent Music Library', a comprehensive search tool that enables users of its digital music libraries to find tracks for playback on any network music player or connected USB DAC. It includes a 'metadata engine' (SongKong for Melco) and uPnP server (MinimServer with Intelligent Browsing).

Melco has designed these software elements to integrate closely with each other; "the separation of metadata structure and uPnP server is the root cause of most problems experienced by users trying to find music on their servers" Melco explain. MIML is available as a firmware update for existing kit like the N1A, N1Z and N1H libraries and is also installed as standard on the new two-box N10 (£6,750) and one-box N100 (£1,800) models.

Finished in black, these space-efficient servers are complemented by the D100 audiophile CD loader/transport (£899) and E100 3TB audiophile storage drive (£899).

At the time of writing, Melco's Summer Gift Promotion is attempting to lure potential customers with goodies like iPods, 12-month Tidal and Qobuz accounts, Red Letter Day gift vouchers, Buffalo Technology 6TB drives...and gin.

Contact: *07899 896848 (ADMM, UK distributor); melco-audio-masters.com*

EXPENSIVE BUS RIDE

Kimber Kable's 'Select' Universal Serial Bus (USB) cables are aimed at "fans of computer audio aiming to get the very best out of their systems".

The shielding is bonded to the 'entry-level' (£562.50 for 0.5m) Select USB-Copper's connector shell with silver foil and is fashioned from silver-plated copper with low-density PTFE insulation; pure copper conductors, meanwhile, are used for power and ground.

A rung up the ladder is the Select USB-Hybrid (£750 for 0.5m) that uses pure silver with a low-density PTFE insulation for the all-important data lines. Power and ground are however copper.

Topping the trio is the £1,250 (0.5m) Kimber Select USB-Silver which employs pure silver conductors throughout.

All are available in lengths from 0.5m to 3m, terminated with USB connectors (Type A, B or C) to meet your needs.

Contact: *Russ Andrews, 01539 797300 www.russandrews.com*



DA2 DEBUT

Hot on the heels of the McIntosh C49 preamp described in last month's news is its bigger brother, the £9995 C53. Described by its New York manufacturer as "highly versatile" the C53 preamp is the first McIntosh product to feature the 'next-gen' DA2 hi-res DAC. Replaceable to accommodate unforeseen technologies the DA2 features an HDMI port with an Audio Return Channel (ARC) enabling, for example, TV sound to be heard at its best. Dolby and DTS multichannel formats from sources like DVD and Blu-ray are converted to stereo. The DA2 also features the digital connectivity of the C49's DA1 (two coaxial, two optical, one USB and a proprietary link for use with McIntosh's MCT-series SACD/CD transports).

Said USB port enables native DSD512/DXD 384kHz playback, courtesy of a balanced eight-channel (4 sections per channel) DAC with 32-bit PCM resolution.

Naturally, McIntosh hasn't forgotten analogue. The C53 boasts three balanced and four unbalanced connections, plus a phono stage with separate MM and MC inputs. Outputs include three variable balanced and unbalanced connections, along with one fixed unbalanced connection. Other C53 features include an eight-band

analogue equalizer with each band adjustable by ± 12 dB, a 'High Drive' headphone amplifier with 'Crossfeed Director' claimed to "bring an added dimension to the music", home-cinema passthrough, extensive control facilities and the 'classic' McIntosh look - black-glass frontage, blue meters, rotary knobs.

Contact: *Jordan Acoustics (McIntosh UK distributor), www.jordanacoustics.co.uk*

GETTING IT TAPED

Might analogue tape be due for a vinyl-scale revival? Probably not. Reel-to-reel never really went away, though; musicians and recording engineers liked its sound (and found that tape-emulation plug-ins just weren't the same) while serious hi-fi enthusiasts held onto their copies of master tapes.

The latter might be interested in New Jersey-based Merrill Audio's \$9,000 PURE Tape Head Preamp, which is intended for use with an existing deck. The latter is modified, so that the signals from the playback head are taken off-board instead of being routed to the deck's existing electronics. The Merrill preamp covers six combinations of tape speed and equalization characteristic - 9.5cm/s, 19cm/s and 38cm/s with NAB (US) equalization, 19cm/s and 38cm/s with IEC equalization and (for the really serious user) 76cm/s with IEC2 equalization.

Built into an elegant enclosure fitted with Isoacoustics GAIA III feet, the unit is of dual-mono construction and uses XLR balanced connections for input and output.

Other features include two gain settings (71dB and 65dB), less than 0.1dB of discrepancy between channels, an external power supply unit, a large LED display with brightness control and remote control. 'Tape Head Access' cards for the Ampex ATR 100, 102 and 104 decks are also available.

Contact: *Merrill Audio, 001 415 562 4434. merrillaudio.net*



THE FINAL COUNTDOWN

Introducing its B-Series range of earphones, Final (Japan) explained that "each model...has the potential to be someone's favourite and price should not influence the decision". Two Final-developed 'balanced-armature' drivers can be found inside each of the £439 B3's silver-finished stainless-steel housings. Final is proud of the B3's "impressive soundstage...top-end extension" and ability to communicate "the most delicate of sounds".

Thanks to its use of only one of these single balanced-armature drivers in each earpiece, the "understatedly-elegant" B2 - which Final reckons is capable of "a clean and neutral presentation" - sells for a significantly-lower £259.

The £599 B1, described as a "hybrid dual-driver earphone", features a stainless-steel housing finished in "mirrored rose gold". Its internal transducer complement comprises one balanced-armature driver and one dynamic driver - both of which were designed by Final in-house. It is claimed to deliver a "lively sound," coupled with "very high resolution".

The cables of all three models can be replaced - potentially good news for upgraders.

Contact: *KS Distribution, 01903 768919. www.ksdistribution.co.uk*



Stream Machine

Audiolab's 6000N budget streamer makes discs obsolete says Jason Kennedy. Ouch!

Streaming is where it's at with digital audio today. Vinyl may be making a comeback and sales of one box record players are remarkable – but if you want to hear digital music at its best, discs are no longer it.

The main barrier to uptake of streaming is complexity – and that you have to rip your CD collection to a hard drive if you want to stream

it. So many are cutting out the ownership element altogether: with lossless streaming services such as Qobuz and Tidal available – at a price – you don't need to buy and store discs anymore, CDs or LPs.

The Audiolab 6000N I am reviewing here is a wireless/wired streamer that lets you access various streaming services or music stored on a network drive at a low price few can match. The only alternatives

I could find were the Yamaha CD-NT670D (£299), Denon DNP800NE (£379) and Blueroom Node 2i (£499); some might include the Sonos Connect (£349) but not if sound quality is a factor. After or arguably before sound quality, the most important thing about a streamer is its control software – Sonos is successful in the streaming market through ease of use. Audiolab have avoided the pitfalls and cost of



building their own control app by using DTS Play-Fi, software created and maintained by an organisation with the resources to do the job consistently, if the 6000N is any indication.

Play-Fi provides access to internet radio, Qobuz, Tidal, Amazon Music (plus several US specific services) – and the free version of Spotify as well as Premium, a unique feature in the streaming world at this point. It allows numerous devices to be controlled in a multi-room situation, limitations being a maximum 24/192 bit/sample rate and no support for DSD.

The 6000N's claim to fame includes an ESS Sabre series DAC chip, full DLNA/UPnP compliance so it can (should) work with any PC or DLNA/UPnP equipped hard drive, and both analogue and digital outputs. It comes in a full width case (almost unheard of at this price) and has twin wi-fi antenna for robust wireless operation.

EASE OF USE

It took me a little while to get my head around Play-Fi, largely because it's different from other streaming platforms. That said, once I read the manual it became relatively straight-



DTS Play-Fi provides the control software and app for iOS or Android devices.

forward. Using the Play-Fi set up guide is confused by Americanisms such as 'dish' for router, so stick to the manual, especially the forthcoming revised manual which



REMOVE ALL CLICKS AND POPS



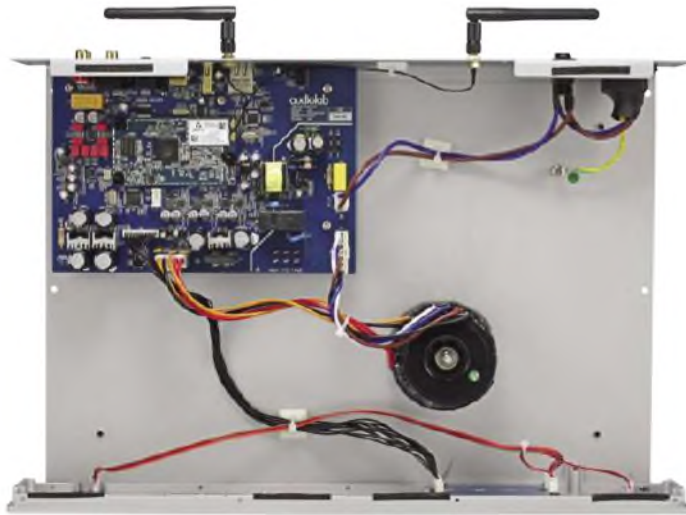
What is SugarCube™?

Everyone wants their record collection to sound the best it possibly can. Be it too many playbacks, parties or simply just wear and tear, records can become impossible to enjoy due to unwanted noise in the form of clicks and pops.

The SugarCube™ is a line of all-in-one vinyl noise removal components. The SugarCube SC-1 is the first audiophile-grade product to enable non-destructive click and pop removal on any vinyl LP record in real-time.

Try it now at your local hi-fi dealer!





A lot of empty space behind the facade shows the 6000N has been built to match the 6000A amplifier. It has a linear power supply with toroidal mains transformer (black).

I'm told will be a lot more comprehensive. It might include the fact that for full volume output at switch on you press the right two buttons for the desired amount of time, and that for best results – data rates above that of 16bit/48kHz – you must select 'Critical Listening' mode.

You may want to control volume from the app, this approach compromising sound quality compared to the volume control of an amplifier, but it's very easy. I can't see much benefit in limiting bit/sample rates however. The six front panel buttons act as presets for net radio stations.

The Play-Fi app isn't very good at using album art, avoiding it all together until you drill down a few pages or are in Play mode. Slicker apps tend to go large on this free source of great graphics, giving a stronger sense of flicking through a collection. But the alphabetical breakdown means finding artists or albums is pretty quick; there is no search function for local libraries.

SOUND QUALITY

The sound of the 6000N is more pumped up and forward than usual for a streamer, it's appealingly three dimensional however and seems quite smooth on initial listening. I found Lou Reed's Walk on the Wild Side to be good and spacious if a little lacking in fine detail, but the vocal had an almost exaggerated presence, as if the streamer was amping it up for effect. With a relaxed analogue original like this classic it wasn't a problem and the timing side of things, while not particularly

strong, was good enough to make it enjoyable.

Esperanza Spalding's Ebony



Analogue and digital outputs on the right, USB for the control bus and ethernet for wired set up. The set up button and ethernet activity light are also here as an aid to install.

MEASURED PERFORMANCE

Frequency response of Audiolab 6000N reached 16kHz (-1dB) at all sample rates up to 192kHz from a wired DLNA (Windows 10) server, as our analysis shows. This gives it a bandwidth slightly lower than that of CD (21kHz) in standard mode.

Distortion at peak output (0dB FS) measured 0.003% and at -60dB with 24bit a mediocre 0.15%, better than CD (0.22%) but not in contention with the 0.02% figure possible. The presence of noise and distortion resulted in a disappointing 97dB EIAJ Dynamic Range value with hi-res.

Although the 6000N can read hi-res files from a wired ethernet DNLA server, it gives mediocre performance figures. External music servers will give a similar result at best. NK

Frequency response (24/192)	4Hz-16kHz
Distortion (-60dB)	0.15%
Separation	94dB
Dynamic range	97dB
Noise	-96B
Output	2.1V

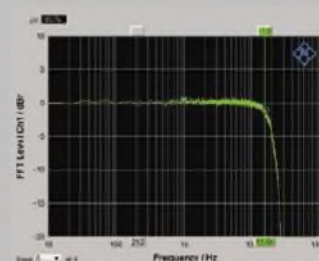
and Ivory was also very strongly projected and a little more fulsome than usual. It's the sort of sound that would suit a budget system a bit better than a revealing one such as the one I use for reviewing, but ultimately could be a bit cleaner around the edges.

Radiohead's Decks Dark served to illustrate that this Audiolab is not the most revealing but that it can present relatively complex material in a coherent manner without the digital glare associated with budget CD players.

CONCLUSION

The Audiolab 6000N is not the most refined sounding of streamers but it is well equipped on the features front and well built physically. In the right system, essentially an entry level one, it provides access to the many appealing aspects of streaming in a competitively priced package.

FREQUENCY RESPONSE



DISTORTION



AUDIOLAB 6000N
£449



EXCELLENT - extremely capable

VALUE - keenly priced

VERDICT

A lot of streamer for the money but sound quality is not as clean as possible. A good budget solution all the same.

FOR

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- not the most refined sound
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Low Blow

If you like punchy lows then Jamo's C 95 II floor standing loudspeaker may be for you, thinks Noel Keywood.

If you want strong bass a floor stander is a must. And if you want to go loud without strain, then same again. There are no shortage of floorstanders on the market as a result and most do a pretty good job – and that's the case with Jamo's C 95 II I am reviewing here, from their Concert series. It's a good loudspeaker combining old and new flavours I felt. Price a very reasonable £700.

As Jamo say, this is a two way design, meaning it has a bass/midrange unit – centre in the drive unit array – crossing over to a tweeter at top. The tweeter comprises a standard 1in (25mm) fabric dome surrounded by a static shallow flare horn, or waveguide; it may look like a concentric drive unit such as KEF's Uni-Q, but it is not. The bottom driver is a bass unit. At rear lies a large port to provide classic reflex loading.

Standing 982mm (39in) high, 215mm (8.5in) wide and 317mm (12.5in) deep the C 95 IIs don't intrude visually, especially with their dark tweed cloth grilles in place. Weighing 20kgs (44lbs) each they are fairly easy to move about. Jamo supply four stabilising feet with adjustable spikes, which was handy because the loudspeakers are best tilted back measurement showed, so the central bass/midrange driver fires upward slightly to ear height at the listening position. This isn't especially critical I found in set up listening tests, giving a slightly denser and more composed midband.

The drive units integrate well, measurement showed, so there's no great change in sound with

height (phasiness) but there is a large gap between the central bass/midrange driver and tweeter and this imposes a midrange dip, alternatively seen as raised bass and treble, or loudness effect. To ameliorate this Jamo have used a low crossover frequency of 1.5kHz where wavelengths are longer than the usual 3kHz. This puts more energy into the tweeter that it can – hopefully – handle.

The C 95 IIs are well made and finished, even around at the rear where a large bi-wire terminal set is fitted, solid chrome plated terminals accepting 4mm banana plugs, bare wire or spade connectors. The front grilles are held by magnets.

SOUND QUALITY

I connected the Jamo's to our Creek Evolution 100A amplifier, fed digital by an Oppo BDP-205D Universal player spinning CD, and also delivering hi-res from an Astell&Kern AK120 player connected optically. Loudspeaker leads were Chord Company Signature Reference.

Summarising what I heard before I start, these loudspeakers have subjectively obvious bass and treble, conversely meaning midrange is a little recessed. This sort of balance is being replaced by loudspeakers with more midband projection. But it has all been done well in the C 95 IIs – they come with plenty of plus points and were liked in the office whilst under review, so not just my opinion here!

Working through a series of high quality uncompressed CD review tracks I turned volume up to hear Dadawa speaking in Canton

Story – and clear she sounded. But when the drums came in I was almost knocked backward, bass is so prominent. Happily, the drum sequence had speed, power and dynamic fluidity that was impressive. But this contrast came from the Jamo's polite rendition of vocals causing me to turn volume up; speakers with better midrange presence less skew dynamic perspectives in such fashion.

What this track teased out was a lovely clear and colour free midband delivering Dadawa's soft vocals, but bass that became almost overwhelming when it appeared.

Similarly, Sinead O'Connor was a little distant singing Foggy Dew, whilst the Chieftains drums had powerful presence. Dramatic, that's for sure – and these speakers have a supple and fast low end that I suspect a lot of listeners will love. They get bass 'right' as it were. There's plenty of it, and great resolution too.

With Hugh Masekela's Stimella



A modern synthetic cone bass/midrange unit with alloy phase plug. Low colouration.

Vena II

Music in the blood



32-bit/384kHz DAC



Direct Stream Digital



Bluetooth (aptX & AAC)



USB, optical & coaxial digital inputs



RCA analogue inputs



MM phono stage



Dedicated headphone amp



Quad's versatile Vena II integrated amplifier has pure musicality coursing through its veins. Its smart, compact design packs in a wealth of technology, including a hi-res DAC with USB and Bluetooth connectivity, a range of analogue inputs and a phono stage for vinyl fans. Available in traditional Lancaster Grey or a range of premium wood-wrapped finishes, the Vena II delivers a sonic performance brimming with engaging musical energy and finely honed finesse.





A large rear port helps provide clean low bass. Below it sits a neat recessed bi-wire panel with solid chrome plated terminals.

the strong output of the tweeter brought a sibilant hiss to "stimella", but this apart the performance was fast, clean and clear at normal listening levels. When I turned volume right up though the word "stimella", with its high frequency 'st' sibilants, took on a obviously sharp quality with grilles off, ameliorated by putting the grilles on. I preferred the latter.

The powerful synth drum of Safri Duo's Samb Alegreo had enormous presence in our large room (6500 cu ft) so in smaller rooms it may be best to use foam bungs in the ports. The C 95 IIs

don't lack bottom end power, that's for sure.

Keb Mo's solitary vocals in Every Morning were laid back – not pushed out into the room; they were also a little box bound. But at the same time his slide guitar work was made delightfully obvious, finger picking of the strings delineated and crystal clear. Different perspectives from

triangle strikes rang out clearly though; the top end projects.

CONCLUSION

Emphasised bass and treble gave a sound balance with obvious low and highs. With tweed grilles on, upper treble is usefully tamed. Summarising, Jamo have engineered in fine bass quality and sparkling treble, allied to impressively neutral

"Jamo have engineered in fine bass quality and sparkling treble"

what is becoming common with loudspeakers having a flatter response.

Tchaikovsky's liting Waltz of the Flowers (24/96), from the Bruckner Orchestra, sounded smooth, clear and totally uncoloured. But it was a little held back, not lifting out into the room. Kettle drum also hung back in the box to a small degree. Occasional

midrange delivery. I enjoyed these loudspeakers as a result. Their tonal balance is a little inaccurate, tailored for a bit of added drama shall I say, but if you want powerful bass, shimmering treble and a lively quality that comes across as natural, these speakers are worth hearing, since what they do they do very well. Easily 5 Globes by popular consent at Hi-Fi World!

MEASURED PERFORMANCE

Jamo's Concert 9 C 95 II tweeter is distant from its bass/midrange driver and as a result gave differing results according to microphone position. With measuring microphone midway between tweeter and woofer, the conventional measurement axis, there is a roll off in output from the bass/midrange driver before the tweeter takes over above a low 1.2kHz. Then output increases to +2dB above level up to 500Hz.

The balance changed to become more even with the microphone aimed

at the upper bass/midrange unit and our analysis shows this. Treble still lifts, as does lower bass but the midband is reasonably smooth. The grille reduces this lift slightly by 1dB or so.

Bass reaches down to a low 35Hz, the large rear port tuned to 42Hz supporting output down to 30Hz. The C 95 II will give strong bass and the port provides good bass damping, so this is a loudspeaker well tailored to give strong but tuneful bass.

Sensitivity measured a high 88dB sound pressure level (loud) from one nominal Watt (2.8V) of input, meaning amplifiers of 40 Watts will go very loud. Not much more is needed and lower powers will probably be more than enough for most situations. An overall impedance value of 5 Ohms, measured using pink noise, is on the low side but acceptable as all modern transistor and valve amplifiers are designed to cope.

The impedance trace is conventional for a two-way, showing good bass damping with low residual peaking, low minima of 4 Ohms and a low crossover frequency of 1.2kHz for the tweeter where 3kHz is usual.

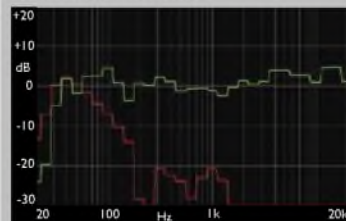
The C 95 II gives best result on the axis of its upper bass/midrange unit so should be tilted back to fire upward to typical seated ear height. It should be used with grille on to restrain treble.

NK

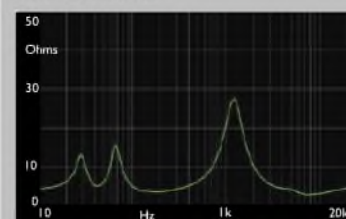
FREQUENCY RESPONSE

Green - driver output

Red - port output



IMPEDANCE



JAMO CONCERT 9 C 95 II £700



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Clean and clear - with strong bass and treble

FOR

- uncoloured
- strong, supple bass
- appearance

AGAINST

- not tonally neutral
- occasional sibilance

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Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of KEF Q150 bookshelf speaker

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

LETTER OF THE MONTH PRIZE



KEF Q150 BOOKSHELF SPEAKER

<https://uk.kef.com/products/q150-bookshelf-speaker>

[subject to availability - Satin Black / Satin White]

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

A KEF EGG WIRELESS DIGITAL MUSIC SYSTEM is on its way to STEVE CHAPMAN, Letter of the Month winner in our August 2019 issue.

Letter of the Month

FIT TO GO

Your Fit To Go article (August 2019 issue) resonated with me somewhat. My first serious tonearm was an SME 3009 that had a detachable headshell – heaven! Fitting a cartridge at around 20 years of age was indeed a walk in the park, compared to my next arm which was an Alphason Delta – no detachable headshell here. The die was cast for my current arm which is an SME V.

In the article you suggest using fine or snipe nose pliers. I prefer to use a small pair of locking arterial forceps, so there is no possibility of dropping the nut! See eBay for Medentra tweezers (£2.95).

I would like to see a pair of tapped threads in the cartridge body as an industry standard, it does make cartridge mounting easier.

Alignment over the years is probably the most written about parameter in tone arm setting up. I gave up some time ago on card protractors, preferring a Clearaudio Alignment protractor – see www.analogueseduction.net/clearaudio-upgrades-parts-accessories/clearaudio-high-precision-cartridge-alignment-gauge.html. It is pretty pricey now (£230). The downside is it can only

be used if you have access to the tonearm's pivot.

Another industry standard would be to have a sliding arm base such as the SMEs: this way you only adjust overhang.

Other tools I use are a x10 magnifying lens mainly to see that the stylus tip is sitting exactly on the cross wires of the protractor. It is also useful to use above the head shell when checking that the head shell is running true to the parallel lines on the protractor.

Because my turntable is in a darkish corner I use a small LED torch – useful to ensure the stylus tip is sitting exactly on the cross wires. With all the twisting, the overhang setting can



When fitting a cartridge "I prefer to use a small pair of locking arterial forceps" from Medentra says Mike Bickley.

be altered.

I do wonder sometimes how accurately cartridges are set up by reviewers: when I have used a card protractor, I could never seem to settle with the alignment – always going back and tweaking it. Even with fine adjustments the sound heard is altered considerably by a minor tweak to the

alignment. If access to the tone arm pivot isn't available then it leaves you with little choice to use a card alignment protractor.

I hope that this novel doesn't put anyone off aligning their cartridge: get it right, and it will reward you with hours of pleasure.

Regards

Mike Bickley.

Hi Mike. Thanks for the advice: locking surgical forceps are new to me – I try to keep away from operating theatres! Your stainless steel Medentras are cheap at £2.95 on eBay so look like a good solution. I also have jewellers' pliers for fine work. Another option is to use short nut runners / nut drivers. These will hold a nut but won't get into tight spaces.

As you say a large and preferably illuminated magnifying glass helps and Ikea have small LED table lamps that can illuminate dark corners.

LP is a very old analogue technology that suffers a lot of variation. When LP was in its prime, Benjamin Bauer of CBS Labs described issues such as 'lacquer spring-back'. After being cut by a heated stylus lacquers can't be pinned down to micro-metric

accuracy; there is variation and this falls through to the final stamped LP.

Just about all adjustments can and do alter sound: decide which one best suits you.

A reviewer – like any user – faces this variability and uncertainty; there are no deterministically correct solutions. At the same time set-up is fascinating and can be rewarding when done properly. **NK**

TECHNICS TECH

In the June 2019 issue of the magazine in the otherwise very good article about Technics SL-1200 series of turntables, Martin Pipe mentions SL-1200Mk5 and Mk5G models. I inform you that there was a Mk5 model, however the next model released some time later with improvements was the M5G with no "k" in its suffix. I state that with certainty because I own an M5G,



A Clearaudio turntable alignment protractor – preferred by Mike Bickley.

from when new. It has very good pitch stability, and that was the reason I bought it, but its tonearm causes more audible resonance than better designed tonearms I have heard on other turntables.

I bought a Funk Firm - Achromat Platter Mat for my M5G as a reviewer or owner had reported it as suitable for use on Technics platters and I hear some clearer definition of various instruments when using it. Any M5G users are welcome to comment.

I am tempted now to buy one of the new Technics GR model turntables for what may be audibly even better pitch stability – for LPs with perfectly located centre holes – and the possibly less resonant tonearm.



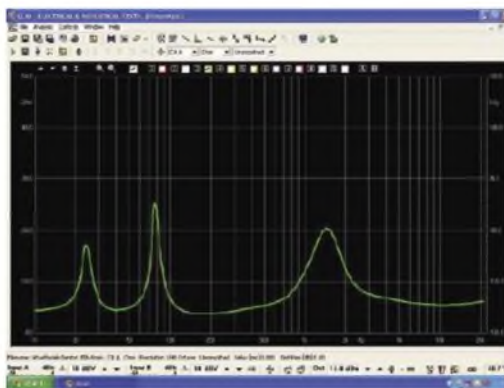
Technics SL-1200GR from Timestep. "I am tempted now to buy one of the new Technics GR model turntables" says Chris Taylor.

In the July 2019 issue your impedance plot published on page 31 for Wharfedale Denton 85th Anniversary Edition is identical to the impedance plot published on page 43 for Piega Premium 701, thus which loudspeaker is that impedance plot from please? Can we have the impedance plot published for the other loudspeaker?

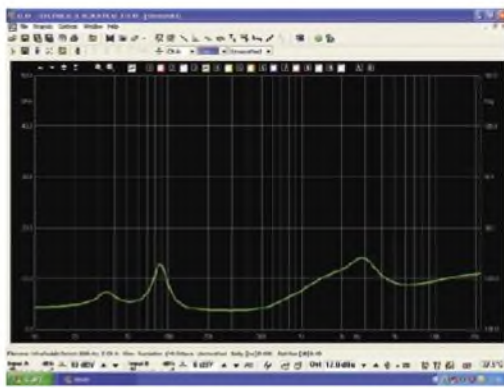
Thank you for continuing to publish an interesting magazine.
Yours sincerely
Chris Taylor

Hi Chris. Please accept my apologies for the duplication of impedance traces in our July 2019 issue. The Wharfedale Denton 85th Anniversary Edition impedance trace (p31) was wrong so we provide the correct version below, together with that of the 80th Anniversary Edition from our archives, for comparison.

As noted in the review text (Measured Performance) the port

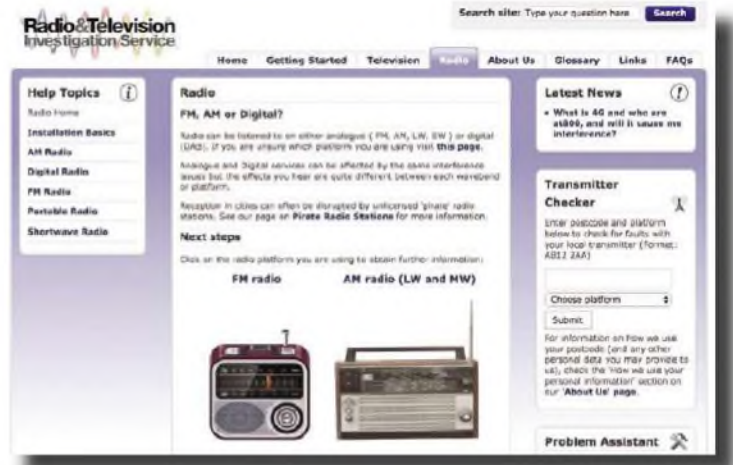


Wharfedale Denton 85th Anniversary Edition impedance.



Wharfedale Denton 80th Anniversary Edition impedance.

frequency moves from 52Hz down to 40Hz due to the use of a slightly larger cabinet with more volume, and a larger bass unit, giving stronger bass. Port frequency lies at the centre of the dip at left, between the sharp peaks at either side. It was Gilbert Briggs of Wharfedale who noted that the impedance curve says a lot about



The 'radioandtvhelp' website (www.radioandtvhelp.co.uk) has a useful transmitter checker that can explain UK reception problems.

a loudspeaker, if correctly interpreted. He would certainly have recognised these classic curves, nowadays collected in an instant by our Clio (Audiomatica, Italy) computer based loudspeaker measurement system.

LPs do need to be well centred to minimise low rate wow, as you say – a major effect. If an arm is swinging in-and-out visibly, once per revolution whilst playing, this produces vagueness of pitch, giving a soft focus effect. It's pleasant enough, which is why belt drives survive, but Technics Direct Drive decks offer harder temporal focus that is more correct.

Technics' new SL-1200GR, able to accept an SME or Rega arm, and fully loaded with stroboscope and cueing light is the one to go for. Look at Timestep tuned versions I suggest, as they have knowledge of Technics tech and can offer a GR with arm of choice. **NK**

FM ON THE MOVE

I presume Ray Spink's FM reception problem in your August 2019 issue is confined to his car, and the reception is fine on the kitchen portable? There is this page at https://www.radioandtvhelp.co.uk/interference/rtis_radio has a transmitter checker, which is useful. It may help him and others to make sense of reception problems.

Regards
Mike Bickley.

FUSES

I often read about the importance of mains cables and connectors, and their effects on sound quality. I may disagree with a lot of it, having tried various experiments over the past decades. But, while we do read reviews extolling the virtues of esoteric cables, there is seldom any mention of that humble component,

the fuse. Every item of hi-fi equipment comes with a mains lead terminated with a 13amp plug (in the UK) and every plug has a fuse rated at a few amps. Break open such a fuse and inside there is a thin bit of wire which melts when too high a current is drawn.

The question I have is this. How does such a thin piece of meltable wire stand in the great cable debate? Even the most powerful of amplifiers uses power which passes through a fuse, in fact through two or three in the average hi-fi system if one uses socket blocks/ mains conditioner etc And this after the power has passed through the consumer unit contact breakers along the path from the power station. I have never read any explanation of the use of fuses in a hi-fi system

Many thanks
Cliff Millward.
Tipton,
West Midlands

Hi Cliff. Yes, it is all very complicated, difficult to pin down and contentious as a result. As you and so many others note the path from power station to home is a long one – or it may not be! Some live at the end of long power lines loaded by industrial and agricultural equipment, others may live close to a power station where the feed is cleaner.

A mains regenerator such as the Power Inspired AG-1500 reviewed in our September 2018 issue or the Istotek Evo 3 Mosaic Genesis we use act as a buffer to distortion and noise, from all lines – long ones with potentially poor regulation and high noise, and short ones that appear better, but still suffer distortion from voltage regulation – typically 3% our measurements show. Fuses are just a part of this complex picture. **NK**

MOBILE JOY

A series of warm sunny days led me to thinking of reading hi-fi mags and listening to music on the garden swing. I have several mobile DACs and headphones and a FiiO X5 player – but I have got used to having my music laid out on a larger tablet or PC display using J River Media Centre. I find iPads and Android tablets work best as posh remote controls for a full hi-fi system but they are limited in input-output options and internal sound quality. Then I noticed a Fusion 5 Windows 10 tablet on Amazon for £160 with a full size USB socket.

Twenty four hours later I have J River Media Centre, and other assorted DAC driver software, installed on this tablet and driving my Chord Mcj0 and Meridian Explorer 2 DACs and Sennheiser HD415 and HD555 (HD558 is the latest version) headphones with a 64GB micro SD card full of music pinched from the FiiO X5. And the Meridian magic blue light is on showing it is processing an MQA music file at MQA Studio quality.

Oh, the marvels of modern science.

Mike Tartaglia Kershaw



Cut out mains issues by using a mains regenerator, such as the Isotek Evo 3 Mosaic Genesis we use to ensure local London rubbish isn't affecting our sound!

only SPDIF ones. The Oppo players can decode HDCD but don't have a USB output, only SPDIF ones. Which makes them unable to connect directly to an off-the-shelf laptop. To go around this limitation will need an SPDIF > USB converter, which will add to the cost and the more interfaces – more problems.

From his letter Gary already owns a laptop but without a disc drive. I would recommend Gary buy a fan-less laptop like the one used by Denis Holliday (next letter). Or he could install Fidelizer if running Windows. Basically Fidelizer lets you choose from three levels of optimising your computer for audio: Consumer, Audiophile and Purist. It suppresses non-audio related functions of Windows so that your computer is not curbed by non-audio tasks. There's a free, a US\$40 and a US\$70 versions of it.

He could install EAC (free software) on a laptop. EAC has the possibility to test a disc drive for bit-per-bit perfect transfer. He could then buy an external disc drive (and yes it's important to choose one mains powered instead of USB powered as the less signals on the USB bus the better) which has met the EAC criteria. These can be bought from \$20. He should set up the newly bought disc drive to comply



Power Inspired's AG1500 mains regenerator has massive power handling and worked well when we measured it.

RIPPING YARNS

Despite Gary Marinko (Perth Australia) expressing his wish not to buy another CD player (we'll assume that he will not buy anymore CDs and that he wants to listen to his music from his NAS instead), NK has proposed him the Cambridge CXC CD transport player or a second-hand Oppo Universal player in your June 2019 edition.

In Australia the Cambridge CXC is \$800. It doesn't support HDCD decoding and Gary, among his 1000 CDs collection, might have some HDCD encoded CDs. From the specs provided by Cambridge it has no USB output.



"Then I noticed a Fusion 5 Windows 10 tablet on Amazon for £160 with a full size USB socket" says Mike Tartaglia Kershaw.



Chord Electronics Hugo TT2. "What are the benefits of using hi-gain instead of low gain?" asks Matt Goodley.

with EAC recommendations and use dBPoweramp to rip CDs (the ripping basis of dBPoweramp is built onto the EAC software) to a NAS. Et voila!

Jean-Christophe JC Xerri
SMBS Recording Team Co-ordinator
Australia

Hi Jean Christophe. There are many ways to tackle this problem and your software suggestions are useful for PC owners. Whether a PC or Mac has S/PDIF depends on the model and input boards (PC). PC sound cards commonly have S/PDIF; Macs are losing it. A solution is an adaptor like Behringer U-Control UCA202 at just \$30 from Amazon.

I recommended a quality CD player optimised for audio, not a general purpose external computer disc drive as you suggest. You can of course go down this route if you so wish but you then lose use as an audiophile CD player and you also insert yet another cheap, noisy and un-reliable switch-mode power supply into the system which is not a good idea. I am constantly seeing blown switch-modes, as is Dave Tutt. Most are dreadfully designed. If you want cheap you will pay for it.

Cambridge Audio design and engineer their products in-house to a very high standard. I have visited them, seen their lab equipment (the best) and talk to their chief engineer, Dominic Baker. They do not buy in OEM designs as so many do nowadays. That's why their CXC

is the best option for Gary Marinko in my view. It's a genuinely good audiophile player. **NK**

RIPPING YARNS 2

You replied to Gary Marinko (Perth, Australia) in the June 2019 edition of *Hi-Fi World*. Gary's CD player had died and he was looking for advice on a CD unit to use for ripping his collection. You seem to have misunderstood Gary's letter as you replied that he should look at the Cambridge CXC CD player or an Oppo Blu-ray player.

I suspect Gary doesn't want to buy a new hi-fi component – he wanted advice on an external computer CD drive to connect to his laptop for ripping purposes.

I myself use the internal CD-Rom drive that came with my HP Windows 7 PC. If you use the excellent and free EAC (Exact Audio Copy) software for ripping then you will soon know if there is a problem with your rip.

Like many people these days I do not play my CD collection directly. I simply stream the flac rips I have made. I think that use of the EAC software is more important than the quality of the CD-ROM drive (any external drive should suffice for Gary).

Regards

Adam Tate
Herford,
Hertfordshire

Hi Adam. I recommended two good but inexpensive hi-fi players, not a computer drive. You can of course spin a CD in a computer with a drive

but they are becoming rare. I suggest an external CD player purposed for audio and from a reputable company like Cambridge Audio is the best choice, if not the cheapest. Otherwise an external disc drive is an obvious cheap solution. **NK**

HUGO TT2

I recently read your great review for the Chord Hugo TT2. I currently have one on order (long waiting list) and wanted to clarify a point on your review. I would be connecting the DAC to a power amp using XLR cables and using the pre amp on the Chord unit. You state that you used hi-gain mode on the unit rather than low-gain. Is this correct and if 'yes' what are the benefits of using hi-gain instead of low gain? Also, are there any risks in using hi-gain due to the high power output of the TT2?

Thanks in advance.

Matt Goodley

Hi Matt. To best utilise the extreme dynamic range of TT2 means using its low noise internal amplifiers. That's why I used hi-gain. However, when driving reasonably sensitive power amplifiers meeting the usual IV standard low-gain is more suitable. The hi-gain setting really is for use as a power amplifier with either sensitive loudspeakers or headphones, where high voltage swing is needed.

The TT2 won't deliver electrical power into a high impedance load; there's nothing to worry about here.

NK



WIN
A PAIR OF PSB ALPHA
5 LOUDSPEAKERS
WORTH £399 IN THIS
MONTH'S GREAT
GIVEAWAY!

www.psbSpeakers.com

Here's your chance to win a pair of PSB Alpha 5 loudspeakers we reviewed in the June 2019 issue. Read the review excerpts below and answer the questions.

"First off, these 'speakers are unusual in design. They place a small 19mm aluminium dome tweeter housed in a horn flare ('proprietary waveguide') beneath a 133mm mid/bass main driver. Mission produced a similar

tweeter below woofer arrangement long ago, arguing it made more sense by giving better dispersion of sound at the listening position – and that is what we found when measuring the PSBs.

The cabinet measures 305mm high, 178mm wide and 230mm deep. On the rear there is a small reflex port to augment the bass response, plus a single pair of gold-plated 'speaker terminals.

Pairing the PSBs with a Creek Evolution 100A integrated transistor amplifier and then an Icon Audio Stereo 30SE single-ended valve amplifier came as a bit of a surprise.

Yes, they are small but they have a punch and depth that belies their size I felt. Most impressive was the smoothness of their response and the overall sense of scale they

manage.

Placed close to a rear wall to allow the reflex port to do its work the bass response was impressive. With New Order's 'Bizarre Love Triangle' (24/96) I was instantly brought into the punch and passion of this track. The bass line came across with depth and vibrancy while higher registers sounded smooth without being harsh.

John Coltrane's 'Live At The Village Vanguard' kicked off with Elvin Jones's drums sounding deep and punchy, yet when Coltrane's saxophone came in there was wide separation between the instruments. Best of all, the band sounded as one, the players hanging in their own space".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 6th September 2019 to:

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QUESTIONS

- [1] The tweeter dome is made from -**
 [a] brass
 [b] paper
 [c] aluminium
 [d] plastic
- [2] They have -**
 [a] punch and depth
 [b] spherical casework
 [c] a weight problem
 [d] anorexia
- [3] Cabinet height is -**
 [a] 300m
 [b] 300in
 [c] 300angstroms
 [d] 305mm
- [4] Where were the players?**
 [a] next door
 [b] in their own space
 [c] on a train
 [d] absent

ENTRIES WILL BE ACCEPTED ON A POSTCARD ONLY
PLEASE ENSURE YOU PUT A TELEPHONE CONTACT NUMBER ON YOUR ENTRY

JUNE 2019 WINNER: PRO-JECT PHONO BOX S2 ULTRA
Mr. Paul Asbrey of Hull, East Yorkshire

Cambridge Value

Looking for some bargain hi-fi? Then Cambridge Audio's new CD player and amplifier might be right up your street, says Jon Myles.



Cambridge Audio produces new products at a dizzying rate. Barely a few months seems to go by without a new launch from the London company. They have all the bases covered in terms of price. At the top of their range there is the £4500 Edge A integrated amplifier and the Edge NQ combined pre-amplifier/network player for £3500.

But it's at the more affordable end of the market that Cambridge made its reputation – with solidly-engineered, good-sounding products that don't break the bank. I know this well as my brother's first amplifier was a Cambridge he still uses and enjoys, now in his second system.

Here I'm reviewing two new Cambridge products that go back to their budget roots, aimed at those looking to start their first system or

perhaps replace ageing components.

First there's the AX C35 CD player and then the AX A35 integrated amplifier that comes with a built-in phono stage (see Measured Performance for more details).

Combined price of the pair is £599.98 – just £299 each. That's a decent price these days when a set of cables or interconnects can cost more.

What do you get for your money? First off, the AX C35 is a standard-sized silver disc spinner that will play CDs as well as MP3 and WMA files from home recorded CD-R, CD-RW and CD-ROM discs. It also includes a dedicated digital output, allowing users to record from CD to a digital format, or connect a standalone DAC to improve sound quality.

The AX A35 integrated amplifier matches this CD spinner, sharing the same silver case and gently sculpted

underside. It is a classic Class A/B design – not Class D – with internal linear power supply, not a cheap switch-mode.

Cambridge rates power output at 35 Watts per channel (see Measured Performance for Hi-Fi World's definitive figures) – which might not sound a great deal but is enough to drive most loudspeakers to decent levels in a medium-sized room.

Both units come with dedicated remote controls that are functional and not over-cluttered – easy to use I found.

SOUND QUALITY

I hooked the Cambridge pair up to a set of Q Acoustics new Concept 300 standmounts (see review this issue), connecting the amplifier to the 'speakers via a pair of Titan Audio's new Nemesis cables. This is a test set-up – ideal to reveal





The AX A35 amplifier has a linear power supply with toroidal transformer (left) and vertical heat sink at centre. It is powerful enough to drive efficient loudspeakers.

to flow freely, helped by use of a neat linear power supply I suspect. The only thing missing is the sense of grunt and power that the likes of a Naim Supernait 2 can provide – but then again you are comparing a £3000-plus amplifier against one costing £299.

The AX C35 CD player is a rather different beast, however. It doesn't lack for dynamic range but – like CD players of old – has a slight air of sterility around it.

With Led Zeppelin's 'Whole Lotta Love' things started to sound a little digital and mechanical. Not in a bad way but without the fluidity that the AX A35 brings to the party.

Swapping it for an Audiolab 8300CD player made an immediate difference. Now the gruff vocals on Nick Cave's 'Where The Wild Roses Grow' alongside Kylie Minogue's silken tones really came across. There was no doubt this



A full set of analogue inputs, including Phono for a turntable, but no digital in the AX A35 amplifier.

just what the Cambridges can provide in terms of sound quality.

Right from the off it was evident that the AX A35 integrated is the star performer here. The reason? It has a natural agility and a good sense of poise about its sound. Through the Q Acoustics loudspeakers Lynyrd Skynyrd's 'Sweet Home Alabama' kicked-in well. The driving guitar line had plenty of detail with excellent leading edges to the notes. Both drums and bass came across in a natural fashion without any obvious faults. On Pink Floyd's 'Dark Side Of The Moon' I could hear well into the mix of the various tracks.

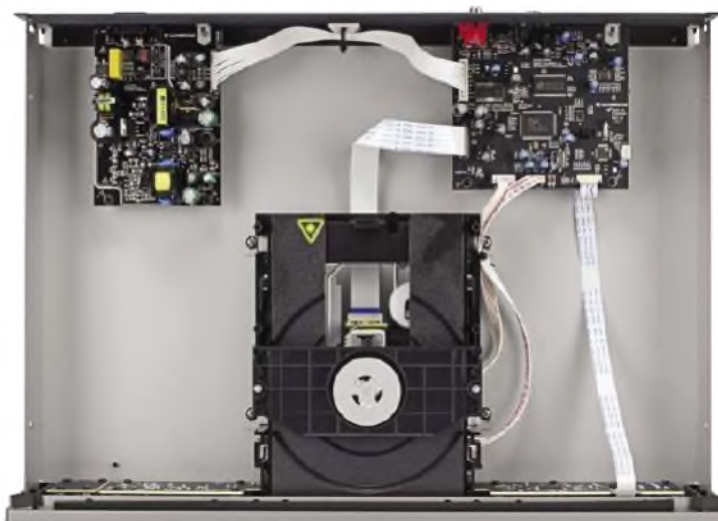
The amplifier has tone controls that when dialled in can give a rather obvious and palpable boost to bass. Playing James Blake's 'Limit To Your Love' through the Q Acoustics and a pair of Spondor AIs with the bass pushed up had a very obvious effect - but a somewhat false one. However, on repeated listening I found it a little boomy. This amplifier sounds best set 'flat' in its basic state – and at £299 it

excels. With Arvo Part's 'Tabula Rasa' the piano and violin had a natural, almost valve-like quality

The whole package has been engineered to provide a natural, fuss-free sound that allows music

combination worked much better – a testament to just how good the Cambridge amplifier is

But the AX C35 is no slouch overall. I dug out an old Marantz CD player and compared them



The AX C35 CD player has a switch-mode power supply (top left), eliminating the need for a large mains transformer. At right is a compact digital circuit board and at bottom the mechanical transport mechanism.

side to side – same cables, same loudspeakers and same set-up – and the Cambridge just about won the day. That said, it was a close-run listening session and at times I preferred the Marantz's fluidity.

I would not write the Cambridge CD spinner off however. It may not have the warmest sound but there's plenty of detail on offer. Playing New Order's 'Bizarre Love Triangle' Gillian Gilbert's keyboard work crackled while Stephen Morris's drums had a real thump to

them. The only thing lacking was the propulsive thrust of Peter Hook's bass lines. But overall the tune held together and kept my feet tapping.

There was also depth to the sound, music being projected with height and width – something that brought out the balanced nature of the Q Acoustics loudspeakers.

In the final analysis there's a lot to praise about these new Cambridge units. Both are well-engineered and handsome looking – and at £299.99 each are quite a

bargain in today's marketplace.

CONCLUSION

The new AX C35 CD player and AX A35 amplifier offer remarkable value for money. Yes, the CD player could possess a little more refinement but at the price it is hard to criticise.

The AX A35 amplifier, however, ticks all the boxes. Pair it with a sensitive set of loudspeakers (due to its limited power output) and you'll get a smooth, detailed and entertaining sound.



AX C35 CD player with electrical digital output at left, analogue outputs and 'calculator' mains input socket (right) – unlike the AX A35 amplifier that uses an IEC mains input.

MEASURED PERFORMANCE

The Cambridge Audio AX A35 amplifier produced 40 Watts into 8 Ohms under test, and 50 Watts into 4 Ohms – a small increase due to limited power supply regulation. It will go loud with loudspeakers of 86dB sensitivity and above but not party levels. With an output impedance of 0.12 Ohms and damping factor of 68 the A35 exerts good bass control.

The headphone output gave 18V maximum, likely linked to the loudspeaker output without attenuation; only 2V is needed here.

Distortion levels were low all round, across the frequency band and at low and high powers. Distortion at full output (-1dB) measured 0.002% in the midband. At high frequencies (10kHz) this rose to a still-low 0.02%, at 1 Watt and at full output.

Frequency response was wide, extending from 7Hz to 69kHz (-1dB limits) as our analysis shows. The tone controls have 10dB lift and cut (large), with a useful if subjectively obvious lowest setting of +/-2dB.

The phono stage was accurately RIAA equalised, so flat in response. A built-in warp filter cuts low bass below 40Hz, giving -13dB attenuation at 5Hz - enough to suppress loudspeaker cone flap. With high sensitivity, adequate overload (27mV) and low noise the MM phono stage worked well in measured terms.

Frequency response of the Cambridge Audio AX C35 CD player

measured flat from 4Hz to 21.7kHz our convolved impulse response shows, a standard and expected result from CD.

Distortion at peak output (0dB FS) measured 0.005% and at -60dB a slightly mediocre 0.3%, a little above the usual 0.22% due to noise. As a result EIAJ Dynamic Range was on the low side at 97dB, where 100dB is expected. Output was the usual 2.1V fixed – there is no volume control.

The AX C35 gave a fair result but it does not get the best from CD. NK

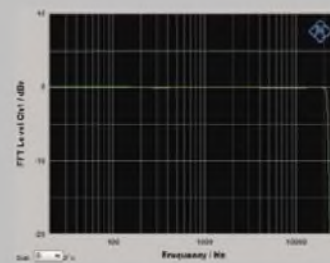
AX A35 AMPLIFIER
Power 40 Watts

CD/tuner/aux.
Frequency response 7Hz-69kHz
Separation 94dB
Noise (IEC A wtd) -101dB
Distortion (1W, 10kHz) 0.02%
Sensitivity 300mV
Damping factor 68

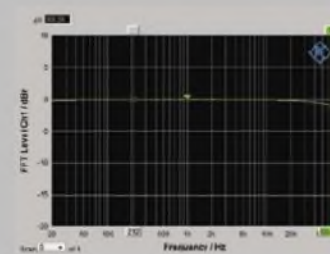
Phono (LP)
Frequency response 40Hz-20kHz
Separation 68dB
Noise -83dB
Distortion 0.05%
Sensitivity 3mV
Overload 27mV

AX C35 CD PLAYER
Frequency response 4Hz- 21.7kHz
Distortion (-60dB) 0.3%
Separation 98dB
Dynamic range 97dB
Noise -105dB
Output 2.1V

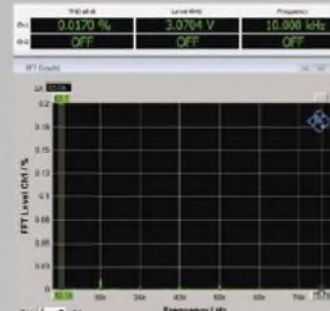
FREQUENCY RESPONSE CD



FREQUENCY RESPONSE AMP



DISTORTION AMP



CAMBRIDGE AUDIO AX C35
£299.99



EXCELLENT - extremely capable.

VALUE – keenly priced.

VERDICT
A bargain-priced CD spinner that has a toe-tapping quality to it.

FOR
- price
- build quality
- ease of use

AGAINST
- unsophisticated

CAMBRIDGE AUDIO AX A35
£299.99



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT
A fine amplifier at a bargain price. Modest power output but with suitable 'speakers sufficient.

FOR
- detail
- smooth midrange
- tone controls
- price

AGAINST
- not the most powerful

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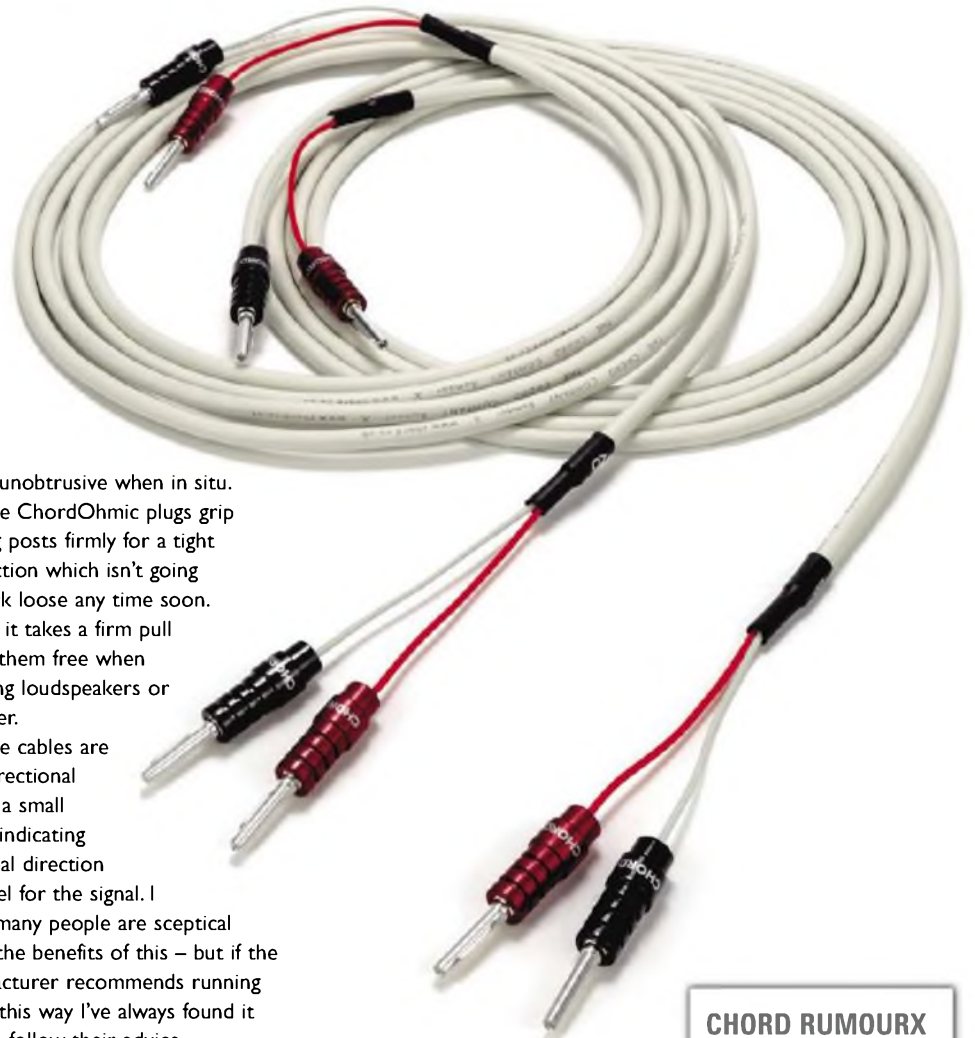
Spendor A-Line loudspeakers deliver sound with projection, character and sheer entertainment far beyond their modest dimensions. With their clear, open sound, they're outgoing, friendly and expressive, bringing a natural sense of life and articulation to your favourite music.

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X Marks The Spot

Chord Company's new RumourX loudspeaker cables make a big impression on Jon Myles.



An £18 per metre price-point for loudspeaker cables is a bit of a sweet spot for many buyers. It takes you into a new area compared to cheaper connections, by using better materials and construction.

If you've got a pair of basic 'speaker cables in a lower cost bracket, upgrading to something a little more exotic has the potential to wring extra performance from your amplifier and loudspeakers.

And this is what Chord Company's new RumourX is intended to do. They replace the existing Rumour cables and use design elements trickled down from their high-end SignatureXL leads.

Chief amongst these is the use of XLPE (cross-linked Polyethylene) as the dielectric that Chord Company say has superior phase properties to the PTFE (or Teflon) material used in the original.

Internally Chord uses silver-plated high purity copper conductors, twisted together to improve interference rejection and covered in a flexible white PVC outer jacket. They are fitted with the company's new classy-looking ChordOhmic banana plugs (spades are also available), designed to extract the most electrical and sonic benefits from cables using silver in their construction.

Taking these RumourXs from the box it was immediately noticeable just how thin they look. The diameter is just 6mm with an AWG of 16 – meaning they are easy to route and

pretty unobtrusive when in situ.

The ChordOhmic plugs grip binding posts firmly for a tight connection which isn't going to work loose any time soon. Indeed it takes a firm pull to get them free when changing loudspeakers or amplifier.

The cables are also directional – with a small arrow indicating the ideal direction of travel for the signal. I know many people are sceptical about the benefits of this – but if the manufacturer recommends running cables this way I've always found it best to follow their advice.

SOUND QUALITY

While the RumourX may look rather slim its sound is anything but. In true Chord fashion this cable has a crisp, sprightly and dynamic sound to it, with good punch in the lower registers.

Nothing is over-emphasised: everything is laid out with aplomb. On David Bowie's 'Heroes' the epic sweep of the song came across loud and clear through a pair of Focal Kanta No 1 standmount loudspeakers. There was rhythmic assurance to the presentation that translated into a good sense of drive.

Gentler music, such as Barb Jungr's 'Stockport To Memphis' (24/96) collection had excellent tonality, Jungr's smoky jazz voice hanging in the air between the 'speakers with excellent presence.

Detail was comparable to some cables costing a good deal more.

The RumourXs are not totally neutral, erring slightly towards a lively presentation that suits upbeat tracks particularly well. But that doesn't mean they can't do delicate when needed as a spin of Arvo Part's 'Tabula Rasa' proved. Here piano and strings came over with a haunting, calm quality with plenty of space around the instruments.

CONCLUSION

The original Rumour loudspeaker cables have been a mainstay of the Chord range for many years but these RumourXs are a worthy successor. They have a lively yet well-balanced sound that will suit many a system. Add in a realistic price and they make an excellent choice.

**CHORD RUMOURX
£18 PER METRE**



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

Dynamic, punchy yet possessing great poise and detail. Chord's RumourX is a cable with the ability to improve many a system.

FOR

- dynamic
- detailed
- well-balanced
- easy to route

AGAINST

- not entirely neutral

The Chord Company
+44 (0)1980 625700
www.chord.co.uk



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(NEW) NAIM
SUPERNAIT 3

SUPERNAIT 3 (TOP PICTURE)

EXAMPLE

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£699.80, then **£155.51** per
month for **18 months***

£3,499

0%

FINANCE AVAILABLE*

*Finance is subject to status & conditions.

(NEW) NAIM
NAIT XS 3

NAIT XS 3 (BOTTOM PICTURE)

EXAMPLE

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month for **12 months***

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signature

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per month for **30 months***

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0%

FINANCE AVAILABLE*

*Finance is subject to status & conditions.

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signature

EXAMPLE

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per month for **30 months***

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

TURNTABLES

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



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



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



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

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



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



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

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



TONEARMS

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

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

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



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

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



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

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

CARTRIDGES

AUDIO TECHNICA AT-DC9 MLIII MC £420
A fine sounding MC with strong bass and super fine treble from a great stylus – yet inexpensive.



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

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

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

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



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



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



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

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



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

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

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



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



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

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

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

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



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



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



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



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

TIMESTEP T-01MC £995
New, minimalist phono stage that sonically punches well above its weight.

PREAMPLIFIERS
ICON AUDIO LA-4 MKIII £1,400
Uses early 6SN7 triodes for liquid sound. Has plenty of gain and a remote control into the bargain.



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

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



INTEGRATED AMPLIFIERS
ARIANO PRO845SE £1,499
Pure single-ended valve magic. Low-powered but immediately gorgeous, easy-going yet forcefully dynamic at the same time.



AUDIO RESEARCH VS160 £3,500
Power house sound with enormous pace and punch from traditional U.S. muscle master Audio Research. Breathtaking, but expensive.



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

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



CYRUS RDAC £1,400
Trademark shoebox-sized Cyrus integrated now offering 88Watts per channel, plus DAC. Svelte delivery from a dainty case that fits in anywhere – and isn't Class D!

EXPOSURE 1010 £495
Entry-level integrated from Exposure has excellent upper mid-performance with an almost valve-like sound.



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



NAIM NAIT 5Si £925
Naim's fabled entry-level integrated amplifier is updated to si status. Demos Naim's superbly muscular sound at entry level.

SUGDEN A21SE £2,480
Class A amp with fantastic sound quality producing hard, sculpted images, deep detail and tight bass. Just don't expect disco-like sound levels!



POWER AMPLIFIERS

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

AUDIO RESEARCH VS115 £5,000
Oodles of power with enormous punch. Rafael Todes said it provided "shock and awe" while retaining incredible smoothness and texture.

ICON AUDIO MB845 MKII £7,600
With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.



ICON AUDIO MB81PP £15,000
Big Russian transmitter valves deliver 200W from these massive monoblock amplifiers. Frightening in every sense.

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



QUAD ELITE QMP MONOBLOCKS £2400 PR
The proverbial iron fist in a velvet glove. Plenty of power but delivered with an assured and confident nature. Smooth on top and easy on the ear but can rock out when needed.

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



LOUDSPEAKER FLOORSTANDER

B&W 803 D3 £12,500
B&W's updated statement floorstanders deliver depth and definition with breathtaking speed and authority, aided by a diamond coated tweeter. Expensive – but enormously impressive.

CASTLE AVON V £1,600
A big floorstander at a modest price that suits the average room. Refined ribbon treble and deep bass give it a great delivery.

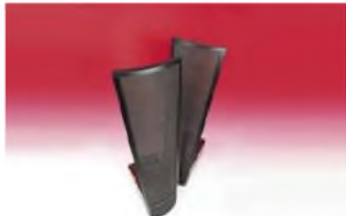


EMINENT TECHNOLOGY LFT-8B £2,500
Excellent U.S. planar magnetic loudspeaker at bargain price. Utterly superb - a must hear.

EPNS K2 £1,000
A fun sound that is tidy all round and very engaging, with solid bass. Music as you hope it to be.

FOCAL ARIA 926 £1,400
Simple, clean, neutral sound – easy going but well engineered and affordable.

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



MARTIN LOGAN ELECTROMOTION £2,500
Martin Logan's budget baby XStat hybrid electrostatic. Fits into any lounge to give electrostatic levels of clarity and imaging.



QUADRAL CHROMIUM STYLE 8 £1,700
A supremely smooth yet open sounding loudspeaker. Clean and detailed treble from a fine ribbon tweeter. Accurate yet informative and enjoyable. Pure class.

QUADRAL DRKAN VIII AKTIVS £6,200
Active loudspeaker with tight, powerful bass, perfect accuracy and detailed treble from a ribbon tweeter.



Q ACOUSTICS 2050i £480
A large floorstander at a budget price. Offers high sensitivity and big sound and has very few flaws for the price.

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



SPENDOR A3 £1,300
Fine little floorstander with a smooth, natural midband and even tonal balance. Ideal for smaller rooms.

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



TANNOY KENSINGTON £9,950
Big but not overpowering, punchy modern sound from classic cabinetry. Need little power to go very loud and suit a traditional home, or castle.



LOUDSPEAKERS STANDMOUNT

ACOUSTIC ENERGY NEO 1 V2 £225
Civilised sounding speaker with fast and tuneful bass.

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



ELAC BS243 £1,000
More transparent and spacious than they've a right to be at this price, these refined mid-price standmounters represent top value.



EMINENT TECHNOLOGY LFT-16A £1,200
U.S. planar magnetic bookshelf loudspeaker with unrivalled mid-band and treble. Hear it before all else.

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



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



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



PMC TWENTY.21 £1,575
Transmission line loaded standmount with a big box sound from a compact cabinet. Punches well above its weight.



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

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



HEADPHONE AMPLIFIERS

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

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



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



ICON AUDIO HP8 MKII £650
The HP8 MKII valve-based headphone amplifier brings the spacious sound of valves to headphones. And it matches 'em all.



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

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



UPPU HA-2 £250
Remarkable performance and sound from ESS Sabre32 DAC in a slim portable package.



CD PLAYERS

AUDIOLAB 8200C DQ £949
Inspired CD player and DAC with price-performance ratio like no other. Capable of matching designs costing much more.



CANOR CD2+ £3,100
Musically coherent and tuneful valve-driven CD player from Slovakia. Lovely liquid sound.



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

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



ESOTERIC K-03 £9,495
Sugar high-end silver disc spinner that is beyond criticism. Devoid of its own character but has a flawless presentation.



EXPOSURE 101 £395
Detailed player with fine sense of timing should be an automatic entry on any demo list at this price.

ELECTROCOMPANET EMP-1/S £4,650

Epic in scale, lavish in tone and exuberant in its musicality - this is a memorable SACD spinner. Quirky in operation and modest in finish, though.



OPPO BDP-105D £1200

Universal player and DAC that makes CD and Blu-ray (+DVD) sound deep, spacious and full bodied. Reference quality that's affordable.



REGA APOLLO-R £550

Rega comes up with a fine CD player again. Tremendous detail and an easy, unforced sound at all times. Few bells and whistles but made up for by its superb sonic ability.



ROKSAN KANDY K2 £900

A charmingly musical performer at the price - this is a surprisingly sophisticated CD player for the money.



TUNERS

CAMBRIDGE AUDIO AZUR 651T £299

Value-packed AM/FM/DAB and DAB+ ready tuner. Precise and detailed with excellent resolution of spoken word.



CREEK DESTINY 2 £550

Creek's tuner expertise shines through in the Destiny 2. This AM/FM receiver is wonderfully three-dimensional and smooth.



MAGNUM DYNALAB MD-90T £1,900

Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.



DACS

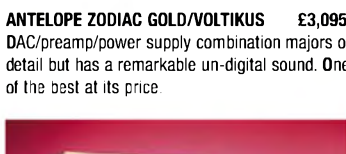
AUDIOLAB M-DAC £600

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



AUDIOLAB Q-DAC £250

Stripped-down version of Audiolab's M-DAC loses some features but retains much of the sound, making it a veritable bargain.



ANTELOPE ZODIAC GOLD/VOLTIKUS £3,095

DAC/preamp/power supply combination majors on detail but has a remarkable un-digital sound. One of the best at its price.



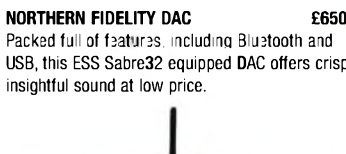
CHORD 20UTE HD £990

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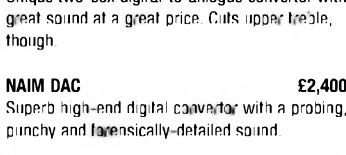
DCS DEBUSSY £8,000

DCS's bespoke 'Ring DAC' circuit gives a beautifully-fluid, almost analogue sound that encourages long listening sessions. Not cheap but worth every penny.



NORTHERN FIDELITY DAC £650

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



METRUM OCTAVE £729

Unique two-box digital-to-analogue converter with great sound at a great price. Cuts upper treble, though.



NAIM DAC £2,400

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TEAC UD-501 £699

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RESONESSENCE INVICTA MIRUS £4,499

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CAMBRIDGE AUDIO NP30 £399

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CONVERT TECHNOLOGIES PLATO £2999.00

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NAIM NDX £2,995

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NAIM ND5XS £2,175

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

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



DIGITAL SOURCES

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



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

LOTOO PAW GOLD £1,500
Reference quality sound; it's like carrying your hi-fi in your pocket. Equivalently large too, but stunning headphone quality.



NAIM HDX £4,405
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NAIM UNITILITE £1,995
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Superb design and great sound make for one of the best portable Bluetooth speaker/radios on the market. Not the cheapest – but worth every penny.



RIVER IBA-50 £69
Big, warm sound with plenty of volume and clean 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.



MAINS CABLES R US MD 27 £95
Offers a sprightly pace with a precise nature. Fast performance enhance frequencies and beautifully etched detail.



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TELLURIUM Q BLACK 280/3M
A deep, dark, velvety performer that's nevertheless highly musical, it represents excellent value as mid-price cables go.

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



HEADPHONES

AUDEZE LCD-3 £1,725
A planar magnetic 'phone that offers monitor quality. Strong sound with silky, dark quality that others struggle to match.



B&W P3 £170
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JAYS V-JAYS £49
Wonderful little budget over-ear portable 'phones with a clean, clear sound to beat the best of the rest at the price.



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OPPO PM-1 £950
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SENNHEISER HD700 £599
Tremendously fast with a strong, focussed, lower-frequency range and a firm bass punch.



YAMAHA HPH-MT220 £150
Purposed for indoor monitoring yet light and comfortable enough to be used on the move. Excellent sound quality married only by a slight warmth to vocals.

Fostex opens up

Martin Pipe checks out Fostex open-back TH909 headphones.

Fostex, which made its name in the field of small-studio multitrack recording, is fast becoming a headphone force to reckon with. The Japanese operation's closed-back TH900 and its Mk2 derivative, have attracted praise. We now have the 'premium flagship' TH909 I am reviewing here, which can be yours for £1,500.

The TH909 is, according to Fostex, essentially an open-back version of the TH900 Mk2. "While keeping the same sound characteristic", Fostex explains, "we further expanded and increased its sound field by...adjusting the acoustic circuit design". The pleasantly-styled new model, with its 'Japan Lacquer Bordeaux' housing-cover, bears a close family resemblance to the TH900. However, the outwardly-facing grilles of each earcup betray the TH909's 'open' design.

The cables are removable by a plug-



and-socket arrangement. For long life, contacts are rhodium-plated. As standard, Fostex supplies a chunky 3m cable terminated at the other end in a standard 6.3mm jack plug. Fine for 'normal' headphone amps – but what about the balanced connections currently vogue in the upper echelons of personal listening? The company's website reveals that TH900 cables are compatible with the TH909, and so the existing 3m ET-H3.0N7BL XLR cable (£260) can be used, but few portable players use XLR so an adaptor cable will be needed. There's no cable with a 3.5mm plug either, officially at any rate. If you want to partner the TH909 with a personal player you'll need an adaptor – hardly ideal.

There's better news elsewhere. The earpads that, according to Fostex "adopt a low-resilience cushion to achieve a comfortable fit and the best audio performance" are detachable. In the US, replacements (EX-EP-99) sell for a very reasonable \$80. Cables and earpads are the items most likely to deteriorate. That said, a sturdy carrying case isn't supplied in the rather large box. Instead, you get a bag-like affair – and a ST300 desktop stand, on which the TH909 is perched when not in use; it's evident that dust worries and portable use aren't on Fostex's radar.

The 50mm drivers push and pull diaphragms are made from a proprietary "Biodyna" material, described by Fostex as a "bio-cellulose and inorganic fibre

"impressive was the intimate performance space that the TH909 creates between your ears"

admixture". The implications are said to be a "wide dynamic range with low distortion...a rich low-frequency, natural mid-range and excellent reproduction of highs". Fostex claims a 5Hz-45kHz frequency response. Their 25 Ohm impedance is very low – most headphones fall into a 40-300 Ohm band – so they need a decent headphone amplifier.

PERFORMANCE

I tried the TH909 with Chord Toby TT and Prism Callia DAC/headphone



amplifiers, fed digitally from a Cambridge CXN v2 playing FLAC CD rips and hires music held on a NAS. Using a 3.5mm-to-6.3mm adaptor the TH909 worked fine with a FiiO X3 personal player. I encountered no problems with drive, headroom or dynamics – but an adaptor is a burden.

Initial listening impressions were of deep bass unexaggerated or overhung; the TH909s were particularly effective with pipe organs and modern electronic music such as Remurdered, from Mogwai's

and electronic percussion were nevertheless crisp and clean, while brass instruments like trumpets retained bite.

The urgency of, say, Steve Reich's Music For A Large Ensemble (ECM FLAC rip) or Radiohead's Burn the Witch (A Moon Shaped Pool, FLAC rip) was a delight to behold. Rhythms, for example the one that underpins the aforementioned Pixx track, flowed nicely.

Also impressive was the intimate performance space that the TH909 created between my ears. This convinced with evening concerts from BBC Radio 3 (320kbps AAC stream), including a performance of Mozart's Sinfonia Concertante, and the 24-bit LSO/Naseda recording of Britten's War Requiem. The TH909's excellent resolving power, dynamics and natural tonality did justice to these complex forms of music.

CONCLUSION

Although the TH909s lack the absolute finesse of the world's very best 'phones – notably Focal's Utopia that I use – enough detail is resolved to draw you into the music without unduly laying bare the flaws of the recording.

FOSTEX TH909
£1500



EXCELLENT - extremely capable.

VERDICT

Fine quality but few cable options.

FOR

- punchy bass without exaggeration
- cable and earpads replaceable
- comfortable to wear

AGAINST

- little consideration given to portable users
- recessed treble

Fostex
+44 (0)3301 222500
www.scvdistribution.co.uk/

Rave Tapes album; 24/96 FLAC. Their midrange is perhaps a little forward, which helps to highlight vocals in the mix; every word of Pixx's delicious slice of articulately-feminist guitar-tinged electro Andean Condor (Small Mercies, FLAC rip) was discernible.

Yet this key mid-range region was neither coloured or unnatural, as listening to speech on BBC Radio 4 (320kbps AAC stream) proved. Treble, although capable of filigree detail, was a tad subdued – bright these headphones are not! Hi-hats



Q Hits The Stands

The new Concept 300 loudspeakers from Q Acoustics come with their own stands for better sound. Jon Myles explains all.

Standmount loudspeakers have some definitive advantages over floorstanders – size (obviously), price (usually) and the fact that their smaller cabinet size gives a sense of cleanliness and focus to musical replay.

The larger any cabinet is the more likely it is to have internal vibrations – which can be hard to damp unless strongly, sternly constructed. Lacking large resonant panels, stand mounts are more rigid.

But by their very nature, a standmount loudspeaker requires a stand. Usually, they don't go hand in hand. You buy the standmount loudspeaker and then buy a stand to suit.

"There's seamless integration between the mid/bass unit and tweeter because they are placed so close together"

The new Concept 300 from Q Acoustics, however, turns that idea on its head. They come with dedicated stands. The loudspeaker and stand are designed to work together – and in a specific way (more of which later).

First of all the loudspeaker. It's a traditional two-way design with a 165mm impregnated coated paper cone and a large rubber surround. Above this sits the 28mm tweeter – made of super-fine strands of microfibre and decoupled from the cabinet by a rubber gasket. This

enables both drivers to be placed close together – getting close to a point-source model.

At the rear is a reflex port to enhance bass, plus a dual pair of 'speaker binding posts to allow bi-wiring. There's also a jumper connection that allows users to slightly adjust frequency response by +/- 0.5dB to accommodate room conditions. It's a subtle difference but is handy when trying out various positions in different rooms.

Inside, Q Acoustics use point-to-point bracing which adds support to the parts of the cabinet that need to be stiffened to make them quieter. There's also a soft, non-setting decoupling material called Gelcore that sits between the cabinet's

three layers of MDF. Any vibration transmitted through these layers is then dissipated into heat within the gel. Put together this is intended to ensure there is no cabinet vibration so the listener merely gets to hear the sound of the drivers – which should be the goal of any loudspeaker manufacturer.

But at £3000 the Q Acoustics also come with their own pair of stands. Named Tensigrity it is a tripod design using precision machined stainless steel rods for the load-bearing element and thin

stainless steel cables to maintain the position of the load-bearing rods. The result is an exceptionally rigid and self-supporting structure with a remarkably low surface area.

To support the loudspeakers there is a simple structure which also includes a separate isolation platform. If that all sounds complicated it isn't as difficult as it might seem – and the loudspeakers have a beautiful look to them as our pictures show.

SOUND QUALITY

Once set-up on their stands and placed firing straight down the room the Concept 300s sounded rather larger than their 220mm x 355mm x 400mm (W/H/D) size would lead you to believe.

Connected to a Creek 100A Evolution amplifier with a pair of Titan Audio's Nemesis flagship loudspeaker cables and fed both



The tweeter is placed close to the bass/mid driver to give an almost point source response.



exposure



exposure

Exposure Electronics Limited
Unit 18, Winston Business Centre, 43 Chartwell Road
Lancing, West Sussex, BN15 8TU, United Kingdom

www.exposurehifi.com



Two pairs of 'speaker binding posts allow for bi-wiring. A jumper connection alters frequency balance by +/- 0.5dB. Subtle but effective.

CD and high-resolution material the Concept 300s had an extremely balanced and impressive sound.

Bass on Led Zeppelin's 'When The Levee Breaks' was deep and powerful – but also extremely well-controlled. With the loudspeakers moved away from the rear walls for best overall response they came on song.

Playing Kraftwerk's live opus 'Minimum-Maximum' the electronic low-end notes leapt from the 'speakers with real punch. But they did not dominate, providing just the right foundation for the intricate melody above.

There was also seamless integration between the mid/bass unit and tweeter – helped by the fact they are placed so close together.

Playing Steve Earle's version of 'Way Down In The Hole' his gruff vocals resonated with a tonality that made the song come alive. Every inch of his raw delivery was evident. Even better was the separation between the guitar, bass and drums.

Here I could make out the pattern of every instrument – easily being able to identify each one's progress in fluid, organic fashion.

Pushing the volume up also showed the Concept 300s are able to go loud with ease. Our Creek Evolution 100A amplifier has plenty of grunt to it but the Q Acoustics handled it with ease, the cabinets never exhibiting any sign of strain at high volume.

It's important to understand just how integral the supplied stands are

to the overall sound. On a standard pair of 'speaker stands the sound scale became more restrained with less projection and an obvious narrowing of the stereo sound stage.

Not that the 300s sounded bad this way - but back on their own stands they sounded much better when playing Pink Floyd's 'Dark Side Of The Moon' where the opening cash register tones of 'Money' ricocheted around the listening room.

If there's any criticism to be made it's that the Concept 300s do not have a characterful sound through enhanced treble or deep rumbling bass. Instead they are neutral and less likely to stand out compared to some rivals.

However their intrinsic naturalness means they will give longer-term satisfaction compared to other, more strident designs.

CONCLUSION

Q Acoustics have engineered a special set of standmounts with the



The integral stands are made rigid by use of stainless steel tensioning cables. They are sturdy and help the Concept 300s come alive in their sound staging.

Concept 300s. The combination of stands and loudspeakers works extremely well. They have punch and power but also sound sophisticated. Yes, they are unusual looking but sound quality makes up for that in spades.

MEASURED PERFORMANCE

Q Acoustics Concept 300 measured flat across the audio band our analysis shows, with no dip at crossover between bass/midrange driver and tweeter at 1.5kHz. The treble unit integrated well both vertically and laterally, giving a consistent result at a wide range of listening positions – helped by close positioning of tweeter to

woofer. Treble rises slightly, to make highs obvious but not excessive, whilst lack of a crossover dip will ensure good delivery of detail. The Concept 300 is tailored for accuracy.

A small amount of lift, +2dB or so below 800Hz, will give the sound some body; bass extends down to 40Hz (-3dB) before falling away. The port (red trace) is tuned to 45Hz and provides supportive output down to 30Hz, so the Concept 300 goes low and will have a good sense of bottom-end power.

The impedance trace is fairly conventional for a two-way, although the high residual peaks either side of port resonance show the load is reactive – not ideal. Impedance measured 7.5 Ohms overall, using pink noise, quite a high value. As a result sensitivity was fair at 86dB sound pressure level – reasonably loud – from 1 Watt (2.8V) of input. Amplifiers of 60 Watts or more are needed to go loud.

The Concept 300 has been engineered to be accurate, yet with a full bodied sound and clear highs. Smoothness of response suggests low colouration. It needs some power though, like most loudspeakers of its size. **NK**

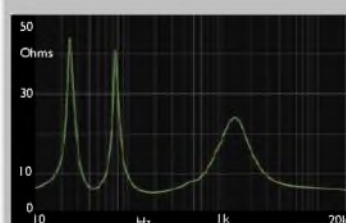
FREQUENCY RESPONSE

Green - driver output

Red - port output



IMPEDANCE



**Q ACOUSTICS
CONCEPT 300
£3000**



OUTSTANDING - amongst the best

VERDICT

A pair of elegant loudspeakers with dedicated stands that sound rich, punchy and musical.

FOR

- good bass for their size
- tonality
- dedicated stands

AGAINST

- unusual appearance

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Category	Entertainment
Updated	7 Dec. 2014
Version	1.0
Size	9 MB
Rating	Rated 4.5
Family Sharing	Yes
Compatibility	Requires iOS 5.0 or later. Compatible with iPhone, iPad, and iPod touch.
Language(s)	english

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£7,100 36 Months Warranty



**Monoblock Solid State Amplifier
McIntosh MC611** ON DEMO

- 600 watt quad balanced
- Monogrammed heatsink
- 2, 4 and 8 Ω outputs
- 55% increase in dynamic headroom compared to previous model

£19,995 /pair 36 Months Warranty



**Monoblock Vacuum Tube Amplifier
McIntosh MC2301** AVAILABLE TO ORDER

- 300 Watt Quad Balanced Monoblock
- Valve powered
- Unity Coupled Circuit output transformer
- Distortion free even at high levels
- Sentry Monitor short-circuit protection

£29,800 /pair 36 Months Warranty



FREE VINYL RECORDING WORKSHOPS IN-STORE



HTF Vinyl Recording Software

- The fastest and most efficient way to digitise your vinyl
- Convert to WAV, MP3, WMA, AAC/MP4 simultaneously
- Enter track meta-data during recording, including album artwork
- Record a full side of an album unattended with auto track split
- 192kHz 24 Bit
- Free training

Dozens Of Features



£25 /v.2.3

ON DEMO

Mytek Brooklyn Bridge

JUST LAUNCHED

- WiFi Streamer / DAC / Preamp all-in-one
- Reference headphone & phono stage
- Includes remote control
- Also available in silver



£2,595

24 Months Warranty



CALL US TO BOOK A DEMO TODAY

Technics Direct Drive Turntable SL-1000R / SP-10R

- Coreless direct drive
- Separate control unit
- Probably the best DD turntables in the world



SL-1000R
£13,995

SP-10R
£7,999

24 Months Warranty
Technics

AVAILABLE TO ORDER

Technics Direct Drive Turntable SL-1200G / 1200GR / 1210GR

- The legendary turntable reborn
- Coreless direct drive
- Free Ortofon 2M blue cartridge



24 Months Warranty Technics

SL-1200G
£2,649

SL-1200GR
£1,299

SL-1210GR
£1,299

CALL US TO BOOK A DEMO TODAY

Mytek Manhattan & Brooklyn DACs

In our opinion, the best digital-to-analogue converters on the market



24 Months Warranty



Manhattan DAC II
£4,995

Brooklyn DAC+
£1,749

Brooklyn ADC
£1,599

ON DEMO

SME Turntable Model 20/3 + Series V Arm

- Gold detailing
- Probably the best belt drive turntable in the world at this price point



£15,450

24 Months Warranty



JUST LAUNCHED

ON DEMO

SME Turntable Synergy + Series IV Arm

- Built-in NAGRA phono stage
- Ortofon's 'exclusive series' MC Windfeld Ti cartridge
- Internal crystal cables



£14,950

24 Months Warranty



ON DEMO

JUST LAUNCHED

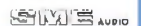
SME Turntable Model 10 Ltd Black

- Limited edition of 30 pieces
- Free Ortofon Cadenza black cartridge worth £1,825
- Includes M10 Tonearm



£6,195

24 Months Warranty



ON DEMO

JBL Passive Loudspeakers L100 Classic

JUST LAUNCHED



- Classic 70s look
- Frequency response 40Hz – 40kHz
- Vintage Quadrex foam grille
- JBL JS-120 floor stands available at £325.00

£3,995 /pair

36 Months Warranty



ON DEMO

Avantgarde Speakers UNO XD

- 2-way horns system speakers
- 18 Ohm high-impedance voice coil design, efficiency of 107 dB
- Active crossover programmable by built-in DSP



£24,000 /pair

36 Months Warranty



ON DEMO

Avantgarde Speakers DUO XD

- 2-way horns system speakers
- Powerful SUB231 XD subwoofer module
- Various colour combinations available
- Why not book an in-store demo today?



£31,000 /pair

36 Months Warranty



ON DEMO

Gold Note Belt Drive Turntable Pianosa

- Extra rigid & dampened
- High precision platter
- Available in black, white or walnut



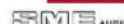
£2,227

24 Months Warranty



ON DEMO

SME Tonearms Series 309



Series 309

£2,450

Series IV

£3,550

Series V

£5,200

Series V-12

£7,550



ON DEMO

Audio-Technica Tonearm Lifter AT-6006R

- Automatically lifts tonearm before runout extending the life of your stylus
- Universal, works with any turntable



£112

24 Months Warranty



ON DEMO

Audio-Technica Cartridges AT-ART1000

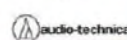
- Moving Coil
- Special line contact stylus

Available in-store only



£4,450

24 Months Warranty



ON DEMO

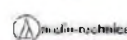
Audio-Technica Cartridges AT-ART9

- Flagship magnetic core MC type cartridge
- 15 Hz – 50kHz
- Special line contact stylus



£899

24 Months Warranty



BOTH UNITS ON DEMO IN-STORE

Phono Stage PH-10

Power Supply PSU-10



- 2 separate inputs
- 6 EQ curves
- 4 GAIN options
- For use with MM & MC cartridges

- Worldwide voltage
- Optional external power supply for Gold Note PH-10

PH-10 & PSU-10 also available in silver

£1,136

24 Months Warranty

£864

ON DEMO

Shelter Cartridges Model 9000

- Moving coil
- Elliptical stylus



£2,950

12 Months Warranty



ON DEMO

Audio Technica Headphones ATH-ANC100BT

- Wireless In-ear Noise-Cancelling



£89

24 Months Warranty



Signature amplifier



Martin Pipe looks at the 'KI'-tweaked version of Marantz's PM66-SE amplifier from 1997.

Marantz (named after its founder Saul B. Marantz) started life in early 1950s New York, and in the first thirty years or so of its existence the firm's golden-hued products had a distinctive style and sound. Tuners and the receivers (tuner-amplifiers) it was noted for sported a feature known as 'gyro-touch' tuning, a horizontal weighted edge-wheel for selecting radio stations. Some of its wooden-cased higher-end products even included a miniature oscilloscope that could be switched to visually-represent FM signal strength/multipath distortion, audio levels or channel separation. And by the 1970s it had a receiver (the iconic 2600) capable of chucking out 300W or so per channel.

By this time, Marantz gear was

being manufactured in Japan...and Belgium. The European connection became even stronger in 1980, when Philips took it over. Hardly surprisingly, given the Dutch giant's involvement with CD, Marantz was one of the first hi-fi manufacturers to have players on the market. Naturally, these players made considerable use of Philips chipsets. Across the 1980s and 1990s, Marantz was selling a wide range of budget and midrange gear – a far cry from the 'Consolette' pre-amp that was its founder's first product.

In 1997 – the year that Saul Marantz died – the £400 PM66-SE Ki integrated amplifier was introduced. This is a 'tweaked' version of the PM66-SE that was a competent

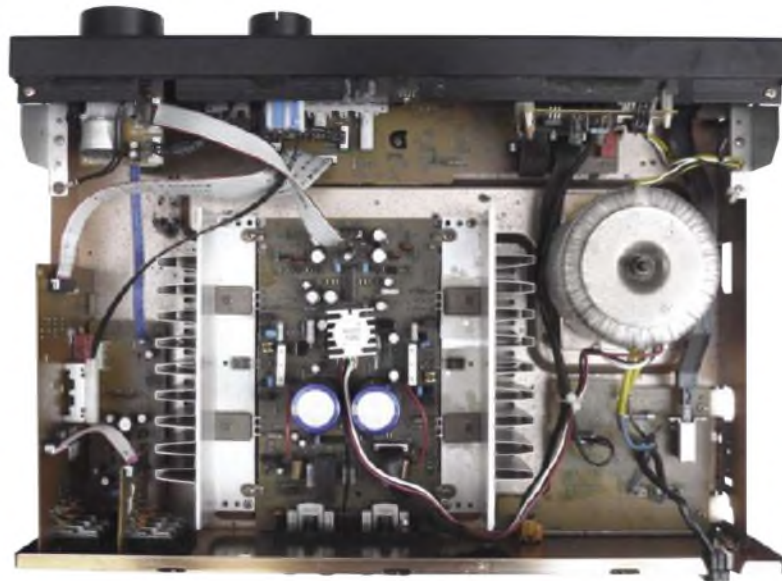


The PM66-SE Ki's moving-magnet phono stage was based on a NJM2068 dual op-amp, giving an introduction to the joys of vinyl.

£230 amp of modest specification and appearance. The Marantz visual heritage of the past – gold, chunky switches and that bold distinctive font were all absent. The no-nonsense and easy-to-use PM66-SE was capable of delivering 50 watts per channel to (8 Ohm) speakers, supported headphone listening, could accommodate two tape decks for dubbing (I'd like to see genuine tape loops on modern designs!) and even came with basic remote-control facilities. Its remote was covered in buttons – but few of them had any effect on the amplifier. They instead operated a selection of other Philips-era Marantz products. The remote changed volume or muted the sound altogether.

Tape apart, this modest Marantz amplifier catered for CD, tuner, aux and phono – all on gold-plated phono sockets! Specifying an MM stage for the PM66-SE, destined for a market distinguished by cut-throat competition, was a brave move given that CD was dominant at the time.

All of these functions came to the PM66-SE Ki, which boasts its elite status to the world with a little golden 'KI-Signature' plate on the front panel. If you haven't guessed by now, 'KI' refers to Ken Ishiwata, the legendary 'golden-eared' hi-fi engineer and Marantz brand ambassador (a role he relinquished only recently, after 41 years at the company). There were also well-received 'signature' CD players available from Marantz in the mid-to-late 1990s, some priced to match the PM66-SE Ki. Those who wanted hi-fi without the hassle could opt for one of these players when



Build quality is fairly typical of mass-produced hi-fi gear with SRBP circuit boards, ribbon cables and pressed-metal chassis parts.

buying the amp.

The PM66-SE 'tweaks' Ishiwata was responsible for are quite extensive, and go beyond the badge and use of chassis copper-plating – as well they might, given the £170 premium over the standard product. Most obviously, the conventional mains transformer was replaced by a more substantial toroidal variant.

There were other component changes, notably a switch to audiophile components (mostly capacitors) in key parts of the amp's circuitry. Interestingly, these changes are documented in the PM66-SE Ki service manual that you'll find on the Hi-Fi Engine website. If you own a PM66-SE, you could in theory

implement much of Ishiwata's fine-tuning; note, however, that as over twenty years has elapsed since the PM66-SE Ki was introduced the chance of obtaining key items like the



The volume control of the PM66-SE Ki (and the PM66-SE on which it's based) is motorised for armchair operation by remote control.



Ishiwata replaced the PM66-SE's conventional mains transformer with this expensive toroid – that likely accounted for a sizeable slice of the price difference.

mains transformer is remote – unless you can extract it from a scrap unit.

When it was launched, the PM66-SE Ki caused a stir. The subject of favourable comparison with more expensive amps, it won various awards, was regularly recommended by the hi-fi press and sold by the container load. Listeners praised its detail, presence and clarity.

And it still sounds pretty good by today's standards. Working in conjunction with a Cambridge CXN v2 and a pair of Rogers GS5s, my own unit – which was sold to me



Come Together
The Beatles
FLAC 192 kHz 24 Bit

4/5

4:16

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The Beatles
FLAC 192 kHz 24 Bit

4/5

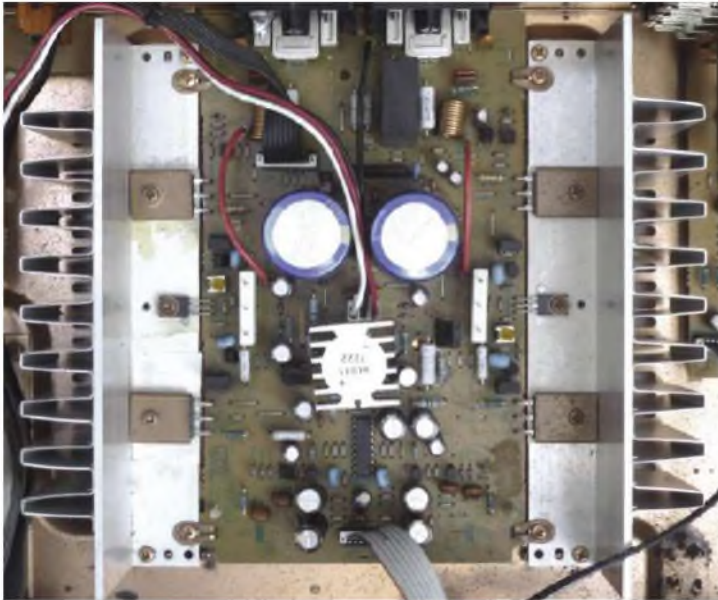
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The power amp, a conventional Class A/B design, is rated at 50 Watts into 8 ohms (70 Watts into 4 ohms) at total harmonic and intermodulation distortion levels of 0.008%.



One of Ken Ishiwata's tweaks was to plate the PM66-SE Ki chassis with copper – claimed to improve performance by reducing magnetically induced eddy currents.

cheaply as 'faulty' at a car boot sale (the output transistors of one channel had blown) - proved to be part of a musical combination. A performance of Tchaikovsky's Manfred Symphony (Concertgebouw/Chailly, Decca CD FLAC rip) was an immersive experience, with impressively-detailed instrumental renderings, a tight bass and believable imaging. Steve Reich's Music For A Large Ensemble (ECM CD rip), meanwhile, demonstrated a grasp of rhythm and flow. The sound only starts to come apart at higher listening levels, strain at the low end being evident.

The simple phono stage, based on a NJM2068 dual op-amp, proved to be merely adequate when listening to a selection of albums with my Valhalla-era Linn LP12/Basik Plus/Ortofon 540. This perhaps reflects



The PM66-SE Ki is resolutely an analogue-only design. It makes provision for two tape decks (with dubbing from one to the other), three play-only line-level sources (CD, tuner and auxiliary) and a turntable equipped with a MM cartridge.

the era's diminished interest in vinyl, the format having been relegated to secondary status by 16-bit digital. A Project Phono Box S2 Ultra fed to the PM66-SE Ki rewarded me with greater musical involvement.

The competence of this Ishiwata-modified design is such that the difference between the two phono stages was obvious. So, there's much to be said for this amp, which would be great for 'starter' or second-room systems. However the PM66-SE Ki isn't a particularly cheap second-hand buy. They tend to sell for £250 on eBay.

Service Manual

74PM66 / 12/9/98

Integrated Stereo Amplifier



REMARK:
This service manual explains the differences between the 74PM66/12/9/98 and the 74PM66/9/7/9/98 (K). Only the electrical differences are listed. The mechanical differences are not available as spare part.
All other information is described in the service manual of the model 74PM66/12/9/15/0 (Code number: 4822 725 51119). The dispatch of the parts for after sales service has to be referred to this service manual, with the first priority.
For this reason, please use this service manual, with referring to the model 74M66 service manual without fail.

PM66Ki is electrically equal to PM66SE except the following.

Position No.	Service code	Description
E001	4822 185 16788	Transformer 230 V
C703, C704	-	Removed
C705, C706	4822 124 80544	100µF 16V S&S cap
C709, C710	4822 121 16672	100µF Blue SE cap
C713, C714	4822 123 16671	100µF Blue SE cap
C715, C716	-	-
C801, C802	4822 124 80960	100µF 50V
C431, C434	4822 123 16669	100µF Blue SE cap
C435, C436, C440, C438	4822 124 80543	100µF 35V 60V

marantz®

model PM66Ki

482 225 24797
FORM (REV.) 1087/03

The service manual for the PM66-SE Ki outlines the principal electronic differences from the cheaper 'non-Ki' PM66-SE.

Mobile Mini

A tiny audio convertor that's simple and sounds good. Noel Keywood listens.

Pro-Ject DAC Box E mobile is a tiny external digital audio convertor for mobile 'phones and laptops, powered from them through its USB cable.

That means there's no power supply; it runs from the 'phone or computer batteries. Put this little lot together and you get a small box 70mm long, 30mm wide and 14mm deep, with one digital input, one headphone output – and nothing else! No lights, no controls or buttons – zilch.

With a low weight of 44gms on our scales, due to the use of an alloy

case and micro-miniature surface-mount (SMD) components inside, the DAC Box E mobile is easily pocketable.

Simplicity continues with its instructions, that are minimal, and cables – also minimal. The digital input is a USB C connector – yes, yet another USB connector – and Pro-Ject supply just one USB C-to-microUSB cable suitable for an Android 'phone and not much else. For connection to a computer a USB C-to-USB A cable is needed, or conceivably a USB C-to-USB C but I did not try this.

Since USB A has one serial data pair and one 5V supply pair the connection scheme is simple enough, as expected, even though a C socket has been fitted, presumably for its reversible connector. The issue here is that for connection to a computer or iPhone extra cables are needed. I fished out a short USB C-to-USB A socket adaptor cable, mated it with a USB A-to-USB A cable and got DAC Box E mobile up and running with both PC (Windows 10) and Mac (Sierra) straight away.

With PC you are limited to 96kHz sample rate maximum by





Audio output is from a 3.5mm stereo headphone jack, giving a loud 1V maximum. This is below the 2V or so common from portable players.

Windows unless a Steinberg driver is installed. My Mac identified it as a 'Primary Play interface' working up to 192kHz sample rate at 32bit depth maximum (this info being what the chip reports back to the Mac when it is initially addressed). Booting up Audirvana Plus I had music and then test tones whistling through without problem.

However, when it came to my iPhone with its standard Mac Lightning-to-USB A charging/download cable plugged into the same USB C adaptor there was stony silence – this combo does not work. Instead you need a Lightning-to-USB camera adaptor that is £29 from Apple or £12 from the 'net. I bought one from the Regent Street Apple store with parallel lighting output and it cost £39 no less! I spotted a Lightning to USB C cable whilst there, bought it for trial – and it does not work either: you must have the camera adaptor, adding to cost unless you happen to already have one.

Although the DAC Box E mobile played up to 24/192kHz PCM from my Mac, measurement showed it has the same frequency response as CD – as the spec confirms. However, with hi-res you get lower distortion and slightly wider dynamic range than CD.

There's plenty of volume, if not that of mains powered DACs, volume being controlled by the player, not this device. It doesn't accept DSD packaged via DoP; any DSD player must be turned to output un-fiddled-with PCM or you hear a lot of noise.

SOUND QUALITY

Connected to either my PC or Mac, what I liked immediately from DAC Box E mobile was its sweet tone. Where digital is not known for any intrinsic sense of 'niceness',

unlike analogue, both CD rips and high-resolution files played by Audirvana Plus were free from the slight greyness and hardness of digital from budget converters. The Henry Mancini orchestra playing Pink Panther Theme (CD,

uncompressed) sounded tidily composed and squeaky clean, fine taps against cymbals being obvious, whilst the brass sounded fruity and powerful, with plenty of heft on big-band climaxes.

Choir stretched out wide behind Mercedes Sosa singing Misa Criola (CD), acoustic guitar and flute floating nicely in space, with plenty of fleshed out body and solid power behind the slow drum strikes.

Connected to my iPhone, 24/48 hi-res files from an Onkyo HF player app were similarly crisp and clear, with plenty of body. Christine McVie's vocals were sweetly clear centre stage with Dreams, Mick Fleetwood's drum kit solid and well defined behind. Again, a lovely listen,

composed and easy, yet crisp too.

Korsakov's Dance of the Snow Maidens was laid out on a wide sound stage and sounded vivacious and dynamic, sudden orchestral interjections having thrust.

CONCLUSION

Pro-Ject's DAC Box E mobile is a simple, lightweight and portable DAC for mobile phones and computers. Technically it performs well and sounds good, but lack of connecting cables makes it challenge to get running. Hi-res quality was good but not top class.

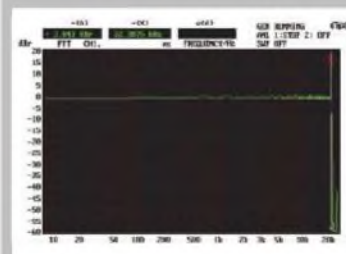


A USB C digital input socket – not more common microUSB – demands compatible cables that do not come supplied.

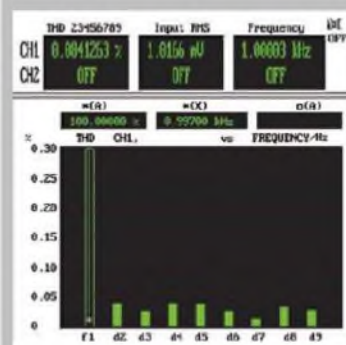
MEASURED PERFORMANCE

Frequency response of Pro-Ject DAC Box E mobile reached 22.4kHz (-1dB) at all sample rates up to 192kHz from a

FREQUENCY RESPONSE



DISTORTION



Mac. With PC the sample rate limit is that imposed by Windows (96kHz) and with iOS 48kHz, imposed by iOS, but frequency response remained the same.

Distortion at peak output (0dB FS) measured 0.002% and at -60dB with 24bit a good 0.08%, usefully better than CD (0.22%) if not up to the 0.02% figure possible with 24bit at -60dB. With reasonably low noise too EIAJ Dynamic Range measured a decent 104dB, just above CD – if again not up to full hi-res standards where better than 110dB is possible.

Pro-Ject's DAC Box E mobile turned in a tidy set of figures considering its modest ambitions, adequate to tease out some of the potential of hi-res files. **NK**

Frequency response (24/192)	4Hz-22.4kHz
Distortion (-60dB)	0.08%
Separation	92dB
Dynamic range	104dB
Noise	-102B
Output	1V

PRO-JECT DAC BOX E MOBILE
£85.00



EXCELLENT - extremely capable.

VALUE - keenly priced.

VERDICT

Small, light and fine sound – but awkward to connect.

FOR

- small and light
- simple
- good sound

AGAINST

- limited hi-res quality
- lack of connection cables
- brief instructions

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WORLD CLASSICS

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

TURNTABLES

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



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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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



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

SONY PS-R80 1978 £800
First outing for Sony's impressive 'Biotracer' electronic tonearm. Built like a tank with a clean and tidy sound, albeit lacking involvement. Scarily complicated and with no spares support - buy with caution!

TRIN LO-70 1978 £600
The best 'all-in-one' turntable package ever made. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

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

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

PIONEER PL120 1973 £36
When vinyl was the leading source, this bought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL112D was off the pace compared to rivals.



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

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

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

GOLDRING LENC0 GL75 1970 £15.6S
Simple, well engineered motor unit with soft, sweet sound and reasonable tonearm. Good spares and servicing support even today.

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



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

TONEARMS

REGA RB251 2009 £136
Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a taut and detailed sound. A little lean for some tastes, but responds well to rewiring and counter-weight modification.

HELIUS OMEGA 2008 £1,595
Stylish and solid lump of arm with fabulous build quality that turns in a dynamic and weighty performance.

AUDIO ORIGAMI PU7 2007 £1,300
The classic Syrnix PU3 updated to spectacular effect. Hand made to order, with any mass, length and colour you care for. Fit, finish and sound truly impressive.



GRAHAM PHANTOM 2006 £3,160
Sonically stunning arm with magnificent bass celerity and scudstaging. Build quality up to SME standards - which is really saying something!

TRI-PLANAR PRECISION 2006 £3,600
Immaculate build, exquisite design and one of the most naturally musical and lucid sounds around.

MICHELL TECNOARM A 2003 £442
Clever reworking of the Rega theme, using blasting drilling and rewiring!

SME 309 1989 £767
Mid-price SME comes complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

NAIM ARO 1987 £1,425
Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

SME SERIES V 1987 £2,390
Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

NAIM ARO 1986 £875
Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened frequency extremes.



ALPHASON HR100S 1981 £150
First class arm, practically up to present-day standards. Buy carefully, though, as there is no service available now. Totally under priced when new, exceptional.

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

TECHNICS EPA-501 1979 £ N/A
Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

LINN ITTOK LVII 1978 £253
Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. The final LVIII version worth seeking out.

AUDIO TECHNICA AT 1120 1978 £75
Fine finish can't compensate for this ultra low mass arm's limited sonics - a good starter arm if you've only got a few quid to spend.

HADCOCK GH228 1976 £46
Evergreen unipivot with lovely sweet, fluid sound. Excellent service backup.

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

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

PHONO STAGES

CREEK OBH-8 SE 1996 £180
Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring G1042 for an unbeatable budget combination.

MICHELL ISO 1988 £ N/A
This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in finesse.



LINN LINNK 1984 £149
Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, although off the pace these days.

INTEGRATED AMPLIFIERS

NAIM NAIT XS 2009 £1,250
With much of the sound of the Supernait at half the price, this is powerful, articulate and smooth beyond class expectations.

MUSICAL FIDELITY PRIMO 2009 £7,900
Seriously expensive, but one listen explains why. Wonderfully exuberant sound that can only come from a top quality tube design.

SUGDEN A21A S2 2008 £1,469
Crystalline clarity, dizzying speed and forensic detailing. Power limited so needs sensitive speakers.

CREEK OBH-22 2008 £350
Brilliant value budget passive, with remote control, mute and input switching, plus an easy, a neutral sound.

CAMBRIDGE 840A V2 2007 £750
Version 2 addresses version 1's weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.

SUGDEN IA4 2007 £3,650
Goodly amount of Class A power, icy clarity and a breathtakingly fast, musical sound make this one of the very best super-integrateds.

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

MELODY PURE BLACK 101D 2007 £3,295
The clarity and openness of valves plus firm grip and fine detail make this a preamplifier masterclass.

AUDIOLAB 8000S 2006 £400
In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound.

MCINTOSH MA6800 1995 £3735
Effortlessly sweet, strong and powerful with seminal styling to match.

DELTEC 1987 £1900
Fast, dry and with excellent transients, this first DPA integrated is the real deal for eighties obsessives. Ridiculously punchy 80W per channel from a tiny, half-size box. Radical, cool and more than a little strange.

EXPOSURE VII/VIII 1985 £625
Seminal pre-power, offering most of what Naim amps did with just that little bit extra smoothness. Lean, punchy and musical.



AUDIOLAB 8000A 1985 £495
Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.

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

MUSICAL FIDELITY A1 1985 £350
Beguiling Class A integrated with exquisite styling. Questionable reliability.

MISSION CYRUS 2 1984 £299
Classic 1980s minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.



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

CREEK CAS4040 1983 £150
More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

MYST TMA3 1983 £300
Madcap eighties minimalism, but a strong and tight performer all the same.

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

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

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

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



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

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

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

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

POWER AMPLIFIERS

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

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

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



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

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

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

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



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

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

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

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

QUAD 405 1978 £115
The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound, 606 and 707 continue the theme with greater detail and incisiveness.

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.

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

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

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



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

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



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

PRE AMPLIFIERS

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



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

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

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

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

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

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

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



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

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

LOUDSPEAKERS

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



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

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



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

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



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

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

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

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

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

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

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



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

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

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



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

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

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

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



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

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

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



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

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



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

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

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

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



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

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

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

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



HH ELECTRONICS TPA-50D AMPLIFIERS 1973 £110
 Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

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

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

QUAD ESL57 1956 £45 EACH
 Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midband performance, although frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and supertweeters.

SYSTEMS

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



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

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

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

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

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



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



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

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



TUNERS

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



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

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

NAIM NAT03 1993 £595
 The warm, atmospheric sound is further proof of Naim's proficiency with tuners.

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

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



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

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

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

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



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

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



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

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



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

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

HEADPHONE AMPLIFIERS

GRAHAM SLEE NOVO 2009 £255
Dynamic headphone amplifier with a great sense of timing. Crisp, clear treble and warm midrange gives an involving sound.



MUSICAL FIDELITY X-CAN V8 2008 £350
Open and explicitly detailed sound plus serious bass wallop. A great partner for most mid-to-high end headphones.

CD PLAYER/RECORDERS

MUSICAL FIDELITY TRIVISTA 2002 £4000
When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

MARANTZ SA-1 2000 £5,000
The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



SONY MDS-JE555ES 2000 £900
The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.

PIONEER PDR-555RW 1999 £480
For a moment, this was the CD recorder to have. Clean and detailed.

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



CAMBRIDGE AUDIO CD4SE 1998 £200
A touch soft in the treble and tonally light, but outstanding in every other respect.

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

LINN KARIK III 1995 £1775
The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

NAIM CDS 1990 £ N/A
Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.

TECHNICS SL-P1200 1987 £800
CD version of the Technics SL-1200 turntable. Massively built to withstand the rigours of 'pro' use and laden with facilities - a great eighties icon.

SONY CDP-R1/DAS-R1 1987 £3,000
Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.

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



MERIDIAN 207 1988 £995
Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

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



MERIDIAN MCD 1984 £600
The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.

SONY CDP-701ES 1984 £890
Sony's first bespoke audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperback-sized remote control.

YAMAHA CD-X1 1983 £340
Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

SONY CDP-101 1982 £800
The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!



ANALOGUE RECORDERS

AIWA XD-009 1989 £600
Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

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



SONY WM-D6C 1985 £290
Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.

PIONEER CTF-950 1978 £400
Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.

YAMAHA TC-800GL 1977 £179
Early classic with ski-slope styling. Middling sonics by modern standards, but cool nonetheless!

SONY TC-377 1972 £N/A
A competitor to the Akai 4000D open reel machine, the Sony offered better sound quality and is still no slouch by modern standards.

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

COMPACT DISC TRANSPORTS

ESOTERIC P0 1997 £8,000
The best CD drive bar none. Brilliantly incisive, ridiculously over-engineered.

TEAC VRDS-T1 1994 £600
Warm and expansive sound made this a mid-price hit. Well built, with a slick mech.

KENWOOD 9010 1986 £600
The first discrete Jap transport was beautifully done and responds well to re-clocking.

DACs

DCS ELGAR 1997 £8500
Extremely open and natural performer, albeit extremely pricey - superb.

DPA LITTLE BIT 3 1996 £299
Rich, clean, rhythmic and punchy sound transforms budget CD players.

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

PINK TRIANGLE DACAPO 1993 £ N/A
Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard.

QED DIGIT 1991 £90
Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

CABLES

MISSING LINK CRYO REFERENCE 2008 £495/0.5M
High end interconnects, with deliciously smooth, open and subtle sound without a hint of edge.

TECHLINK WIRES XS 2007 £20
Highly accomplished interconnects at an absurdly low price. Stunning value for money.

VDH ULTIMATE THE FIRST 2004 £250
Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space.



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

TCI CONSTRICTOR 13A-6 BLOCK 2003 £120

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



NAZARETH

Nazareth/Exercises/The Fool Circle Salvo

A new batch of vinyl LPs from Nazareth have been released from Salvo and

I managed to grab three often ignored titles to review and contrast. The group's break-out third LP, 'Razamanaz' is always noted by critics but the first two covered here are worthy of your full attention.

The band's self-titled debut from 1971 is an interesting affair because you can sense the band searching for a consistent style and direction. There's a welcome array of light and shade: hard rock, introspective rock, balladic moments and sometimes even slices of Status Quo-like boogie intrudes. That said, there's plenty of energy to add a hard-edged flavour.

Moving onto the second album 'Exercises' (1972), the commitment towards high energy rock has not yet been made. What we have here is a spot of introspection with acoustic tracks a-plenty, strings and excellent vocal harmonies that

touch upon Lindisfarne and The Moody Blues on occasion. Easily ignored and often criticised but there's plenty to like.

After this classic period Nazareth released albums like 'The Fool Circle' in 1981. It was criticised for moving too far in the other direction with, some say, an over-produced presentation allied with cack-handed songwriting. It's not a terrific album, the hard edge isn't there but the music is fun and melodic and really, it's not as bad as all that. If anything, this album really does square a circle because it returns to musical experimentation with a synth-based beat on 'Every Young Man's Dream' and reggae on 'We Are The People'

Mastering is good. Fairly neutral and detailed with a slightly warming area around the soundstage on the debut, open instrumentation – yet slightly restricted, muddy vocals on 'Exercises', but with a clean and detailed presentation from 'The Fool Circle'.

AUDIOPHILE VINYL



SONNY STITT

Lone Wolf: The Roost Alternates Run Out Groove

A man with a sax, Stitt was skilled on both tenor and alto – although if

you shoved an alto in his hands he would blow like Charlie Parker. That said, his Lester Young side would emerge if you replaced that with a tenor. His uptempo work could be dazzling and experimental – but I personally prefer his balladic approach which is both thoughtful and beautifully structured.

Stitt played with many of the greats from Billy Eckstine in the forties to Dizzy Gillespie and Bud Powell – then Gillespie again – in the fifties. During this time, before joining Miles Davis in 1960, Stitt collected a number of sessions on the Roost label (launched by producer, Teddy Reig) and the tracks here span 1952-1957. The trouble with Roost was cash and power. The company was a minor player – compared to the likes of Verve and Prestige, at any rate. So

getting Stitt's Roost sessions 'out there' and in shops was a tough call when the pockets were so shallow.

These limited-edition tracks are alternatives to the originals heard on albums such as '37 Minutes and 48 Second' (1956) and 'Sony Stitt with the New Yorkers' (1957). Tracks taken from the former album extend the playing time by almost eleven minutes, so there's plenty of new and interesting music to consider.

I find Stitt's playing bold, confident and packed with emotional vibrato yet clean and often spare. He doesn't waste a note.

This LP has been mastered in a relatively neutral and balanced manner to offer dynamic reach around the midrange and sparkle at the treble end. I get the feeling that the original masters were a touch lively. But there's nothing to fear here.

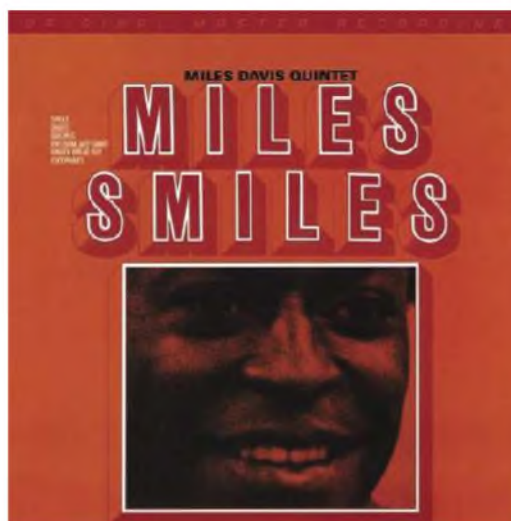
Often thoughtful and sometimes brooding when he played, Davis often had the feeling that Miles Davis self analysed while he played that famous, economical, 'cool', often muted, trumpet. As if he was making decisions on the fly. As if he might lift the entire jazz genre up and twist it into a brand new direction right there on the stage because he'd just come to some sort of realisation...right there on the stage. Listening to him live, I'm sure the listener believed he was capable of anything.

Davis chopped and changed his support line-up on regular occasions. Forever searching. Forever pushing the envelope. This album was released in 1967 and featured Davis' own quintet, the second incarnation of the quintet model. This time it featured Wayne Shorter on tenor sax, Herbie Hancock on piano, Ron Carter on bass and Tony Williams

on drums.

In mastering terms, this 2LP 45rpm cut is quiet – and it has to be. Williams' drums often set the canvas. For example, on 'Orbits' he forces a sheen of cymbal strikes to form a sort of constant undercoat to the middle and later parts of the track. That permanent shimmer can't do its job as effectively on a noisy cut. Mobile Fidelity has 'done good' therefore. Similarly, without sufficient instrumental separation, the Carter bass can be masked. Instead, the Mo-Fi cut allows the bass to help form a sort of grammar to the music.

You need to keep your eyes and ears on this album because it never settles. It's unexpected and keeps you on your toes. It's an adventure that, you tend to feel, has been created for the benefit of the quintet, not necessarily the audience, as a series of challenges and puzzles for each other and to force each other to stretch and move onwards.



MILES DAVIS

Miles Smiles
Mobile Fidelity

AUDIOPHILE VINYL

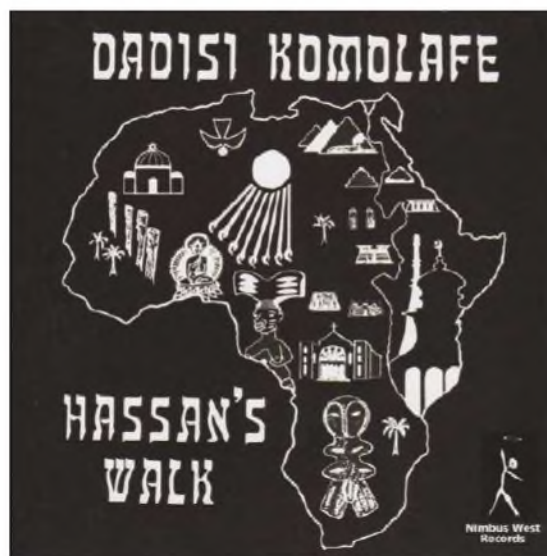
Originally released in 1983 on Nimbus West Records in Los Angeles, USA Pure Pleasure has offered jazz fans a real prize. If for no other reason that Nimbus releases have always been hard to track down. This particular album was a tough cookie to find in its original form. Nimbus centred around one Horace Tapscott, a black American jazz pianist and composer. He formed the Pan Afrikan Peoples Arkestra in 1961. Komolafe was wholly influenced by Tapscott and joined Tapscott's Cross Roads Art Academy, sponsored by the UGAMA (Union of God's Musicians and Artists Ascension) Foundation, a sort of community-based workshop.

And Dadisi Komolafe? Well his mother knew him best as Arthur... Arthur Wells. A man of the sax and also the flute. If you could find other Nimbus releases, you'd find him guesting on some of those too

– but this was his only lead LP and it features Roberto Miranda on bass, Sunship Theus on drums, Eric Tillman on piano, Rickey Kelly on vibes and Komolafe on his favoured flute and alto sax, to offer free-form explorations over steady beats.

There's plenty of air on this recording. Space spills in and around the artist and feels slightly out of control, as you would sense on a live concert recording. It's as if the adventurous, multi-layered and complex jazz presentation was being allowed to roam through the studio space. This dovetails with the feel from the players here.

There's no edge to the mids or bloom to the bass but the frequencies have that open-aired aspect to them. A bit on the fresh side if you will which, if anything, adds to the exciting and, if anything, risky feel to the presentation. This is music that could and does go anywhere, in any direction. It's quite a ride.



DADISI KOMOLAFE

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"There's no excuse for losing our collective musical heritage"



Noel Keywood

There was a fire in Los Angeles. Now there is fire in Los Angeles – and around the world. In that fire an estimated 10,000 music master tapes went up in flames, destroying the original recordings of an astonishing number of major artists, old and new. The fallout from that fire back in 2008 – over a decade ago – is now gathering pace with a group of artists suing Universal Music for their loss and others likely to join in a class-action case if this is granted under U.S. law.

I spotted the first investigative report by the New York Times last month – and it was almost too much to comprehend. They allege Universal Music sought to cover up the disastrous fire by not contacting those whose music master tapes had been destroyed, explaining why there was no fall out at the time. Only on publication of this report in June 2019 have artists around the world become aware of what has happened. "It was the biggest disaster in the history of the music business – and almost nobody knew" the headline said.

You can find this report at www.nytimes.com/2019/06/11/magazine/universal-fire-master-recordings.html It's one long read and there has been a follow up as more information filters out. There were so many tapes from so many artists, no one quite knows what was there and what was lost. In an interview with Bryan Adams recently he claims years of original studio tapes were lost – and he knew nothing about it, until this report appeared. He did however find some mix-down masters in his home, illustrating just how complex this whole issue of a master record has become.

Master and mix-down master? Original masters capture the artists in the studio, in live performance or

what historically was a multi-track professional analogue tape recorder, these days digital. In most cases the record company, not the artist, owns the original studio tapes and the rights to edit, distribute and sell the music on them. The artists do not walk away from the studio with a tape under their arm, something Taylor Swift is complaining about right now it seems.

The original master tape is the raw performance, warts and all. But it is still the primary record – what actually happened at the time in unadulterated form.

It seems that original masters were lost in the fire, but perhaps subsequent edited tapes too. There were just so many, gathered at studios not just in America but outside as well, including UK artists, that no definitive record exists either of the tapes, their nature or their content. There is now an ongoing attempt to compile this information, in so far as possible.

This event again raises the whole issue of primary record and how it can be preserved. Something we have covered repeatedly and know about from speaking to – er – Universal Music! I have been visiting Abbey Road Studios – now owned by Universal Music – since the 1980s and have seen the master tape recorders and been told about the difficulties of trying to preserve any primary master record in a form that can be stored and accessed for ever.

How do you store music for ever, such that it remains accessible to future generations – in original and un-degraded form? It seems that at present we do not know – or cannot agree – on how to do this. Amazing!

What a conundrum – but one we all face when storing data. In the early 1990s I bought a series of camcorders, the early ones recording to tiny DV digital video cassettes.

Realising at the time these things were fragile I carefully stored every camcorder so as to be able to play back these tapes. But will they ever work again after years of storage? If not could I or anyone ever fix them – probably not.

The music business is suffering this problem big time. Primary record means (historically) the original tape, but for it to be readable you need the original tape recorder – and studio recorders are monsters – be they old analogue machines like those from Revox or, in the USA, 3M who produced the 79 Series I talked about in my column last month. Recorders like this are so large and heavy they sit in a console. To store them and keep them in good working condition is both difficult and expensive.

It may be that we now have solid-state disc drives (memory) able to last indefinitely without failure. And 24/96 PCM seems a pretty good storage code to me. If I assume turning the world's back catalogue of music to 24/96 PCM and storing it in solid-state memory or – better – in the cloud (data warehouses), then someone – like Universal Music – must run tens of thousands of tapes, through restored tape recorders – analogue and digital – to produce a primary copy-record. The scale of an operation like this is immense.

The fire in Los Angeles was tragic. There's no excuse for losing primary record of our collective musical heritage. But at the same time it is an issue that perhaps should not be left to the record companies. There are competing claims for ownership here. The world at large claims ownership but Universal Music has it – legally and physically. Music master tapes have become a big issue. That fire started a lot of others. ●

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"Glen Campbell wrote jingles for Clairol hair products and candy bars"



Paul Rigby

We are so used to pigeon-holing music and everything and everyone around it. The music itself is categorised into genres (e.g. rock) and sub-genres (e.g. heavy metal) and even sub-sub-genres (e.g. thrash metal). It's partly an evolutionary thing and partly a guy/geek thing (but mostly an industry and retail thing – it helps the accounts department). We also like to pigeon-hole people: "Bill Bong? Oh yes, lead singer in the Roaring Nasties". Well that's him sorted then, put in a box and fixed with a metaphorical pin to an artistic cork board.

You talk to most musicians and they'll hate the fact that their music has been labelled at all. I concur whole-heartedly. Life is not like that. Life is chaotic and so, let me tell you, is art. May I remind you that music is not just songs and leathers and jeans and riffs and solos and all of that. They're just the ephemera. Shrapnel spinning away from the creative core. Music is Art. Musicians are Artists. Instruments are tools to that discipline. Like a paintbrush to a painter.

I emphasise the 'A' word because people often forget that art could even get within a 100 yards of, say, that scruffy looking punk band you like. People also forget that musicians are artists. They may be your heroes but their core is artistic.

Art is fluid, art changes as frequently as those bobbly blobs in a lava lamp. Art evolves and progresses and – despite many fans hating the very thought – changes.

David Bowie offered a clue in his song, Changes. "So I turned myself to face me/But I've never caught a

glimpse/How the others must see the faker/I'm much too fast to take that test".

You see? No? Well Bowie was an extreme example but the essence is that what you see on stage and what you hear on the album is yesterday's news, a 'fake' of the reality and yesterday's art. Bowie 'never caught a glimpse' because he had moved on before the pressing plant created the vinyl. Bowie changed in a dramatic form and frequently (a brave man was our Dave – most musicians want to change but are scared to lose their fanbase so they don't, but then their art stagnates and they become a parody of themselves).

I had a bunch of CDs hit my desk recently that illustrate this notion perfectly. The first is a magnificent 4CD box set (plus a DVD and booklet) from The Yardbirds called 'Live And Rare' (Repertoire). Featuring 70 remastered recordings, live concerts, BBC sessions and other broadcasts the group featured Eric Clapton, Jeff Beck and Jimmy Page. Not one man stood still, creatively. Everyone played with the band, took what they could from the experience and then moved onwards. Every man learned lessons from other Yardbird band members, used the time to open their minds in a creative sense and then "OK, I'm outta here".

The Pink Fairies can be seen on 'The Polydor Years' (Floating World), spanning 1971-1973 and featuring the albums 'Never Never Land', 'What a Bunch of Sweeties' and 'Kings of Oblivion'. Expert in wacko-jacko-psycho punk-style rock, the band acted as a hub for many years. A sort of creative forum that included Mick Farren from The Deviants, ex-members of Hawkwind, the Move, UFO and, would you believe, even

Marc Bolan and Peregrine Took. An anti-stability centre but exciting because of that. A chaotic soup, the band was a great place to create-and-go.

You may think that David Bowie was the only singer-songwriter to transform and evolve but others did that too. Maybe in a less visually arresting manner but still... Bob Dylan possibly had the most contentious artistic evolution as he moved from acoustic to rock. A laughingly simple non-event today that shook music's foundations in the sixties.

Even slightly more restrained, 'respectable' and conservative (with a small 'c') artists never stood still. Glen Campbell was one of those. His new, sadly posthumous release 'The Legacy', a 4CD box set of seventy-eight songs spanning his career reminds you of the man – but he was a chameleon. He changed and evolved with the best of 'em. He was a good actor (watch him in John Wayne's 'True Grit'; he also appeared with Steve McQueen in 'Baby the Rain Must Fall'). Glen Campbell wrote jingles for Clairol hair products and candy bars and he was part of the legendary Wrecking Crew, Phil Spector's house band. More than that, he was also a Beach Boy for a time when Brian Wilson couldn't tour – he did two group tours and wore a stripey shirt, for goodness sake.

Don't expect your musical heroes to stand still. Wonder why if they ever do and be concerned, in fact. Don't criticise such movements, celebrate them and if you are ever lucky enough to meet that hero never, ever say to them "I used to like your music when you started out, why can't you make new music like that anymore?" ●

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

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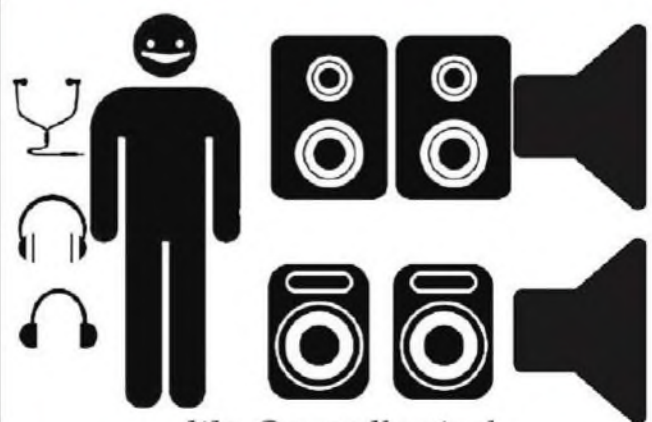
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“It was basically like nothing I’d ever seen before”



Jon Myles

Some bands reach a peak and then implode (sometimes quite messily) over musical differences or personality clashes. Others, however, go on for ever seemingly oblivious to their age.

In the first category The Beatles, The Sex Pistols and The Clash all spring to mind – the latter especially when main man Joe Strummer realised it was pointless going on without his songwriting partner Mick Jones.

For the latter there’s the obvious example of The Rolling Stones – who show no sign of slowing down after nearly 60 years despite age and various health problems.

But also bear in mind the likes of The Who, Fleetwood Mac and Status Quo who continue to tour rather fruitfully.

There’s also one other name that might not spring to mind at first but deserves a venerable mention – American metal-rockers and showmen Kiss.

It’s been 44 years since the self-styled ‘Hottest Band In The World’ formed in New York City and almost 20 years since they staged their initial farewell tour. Well, they haven’t said farewell. Far from it.

Because here they are back again on a new, supposedly final ‘End Of The Road’ tour – one which has already made something in the region of £40 million.

Yes, Kiss are now pensioners and you’d think long past hanging up their instruments and enjoying a nice retirement. But they are back.

And the amazing thing is that the basic formula that launched them to fame all that time ago hasn’t really changed over the years. In fact it hasn’t changed at all. Four men playing straight-ahead rock’n’roll and

clad in garish fancy dress-like metal outfits, face paint and stack-heeled boots while unleashing various special effects and knocking out their range of hits – of which there have been many.

Do they look silly? Well, to my eyes yes. It’s like a cartoon vision of a rock band made human in front of your very eyes. But they still have enough pulling power to pack thousands of fans into mega-arenas across Britain, Europe and the rest of the world. Yes, believe it or not heavy Rock is still out there and popular if perhaps past its historical sell-by date by a large margin. Or is this theatre? Perhaps both.

And they still do it with enough panache, tongue-in-cheek humour and verve to pull the whole thing off and leave the audience with smiles all over their faces as they leave.

Take the imposing figure of Gene Simmons. He’s not the most agile of bassists but it doesn’t seem to matter when he accompanies it by spitting fire, oozing fake blood from his mouth and taking flight to the ceiling of the venue. All this from a man approaching 70 (I honestly cannot remember my father performing these tricks at that age!).

There are stage-shaking firebombs and pyrotechnic infernos throughout – and a mix of songs with some obvious streamlined choruses of the pop-metal variety – ones you just cannot help but find yourself humming on the way home.

And let one other thing not be forgotten. While The Rolling Stones might be renowned for their slick marketing exercise (tongue-emblazoned clothing and all), Kiss were pioneers in terms of selling merchandise to fans.

The range of artefacts down the years has included band condoms

and coffins, meet and greet packages, training shoes, T-shirts, baseball caps, a Monopoly board game, gym bag and even air guitar strings. Basically, if it can be sold then Kiss will put their logo on it.

And then there’s the album sales – some 100 million to date and still counting. Well, they don’t have much competition do they?

I mention all this because I first saw Kiss as a callow youngster way back in the 1970s in Manchester (I snuck out of home against parental orders) and was actually blown away by the spectacle. It was like nothing I’d ever seen before and certainly took rock music into a new age of showmanship.

Before that I’d just been used to seeing four men playing guitar, bass and drums with a vocalist standing still on stage and belting out some songs.

This was something different. A bit mad – yes – but undeniably exciting and a real spectacle. Oh, and I did indeed buy the T-shirt and a poster!

That was many years ago and, to be honest, I’ve not paid much attention to Kiss nor listened to their music for a long, long time.

But seeing them again on this latest (maybe) final tour took me back to those days and made me appreciate their longevity and how they managed to bring something new, something exciting to live music.

You might not be a fan of the band’s music but at least salute the creativity at work. And their money-making ability; they are still raking it in where others are not.

As for the merchandise, though, I’ll probably give that a miss at my age. Swarovski Kiss-logo coffee tumbler for a mere £335? Nah! ●

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"Newspaper readers tend to be older citizens: the 'reporting' was barbed."



Martin Pipe

Of late I have been working in a technical capacity for the BBC – specifically, its R&D department. It is an honour to share lab-space with the brilliant scientists and engineers who have done so much for broadcasting. BBC R&D sets global standards, and has played a pivotal role in technologies like Nicam, teletext, RDS and digital radio/TV. It designed loudspeakers, still sought-after today, that are known by their BBC internal reference numbers – among them, the LS3/5a and LS5/9. The BBC often had no choice but to develop its own hardware, simply because it didn't exist.

The compact LS3/5a, for example, fulfilled the BBC's need for a capable monitor that would occupy minimal space within a crowded outside-broadcast vehicle. Designs are licensed to manufacturers, which supply external customers as well the BBC, thereby providing it with valuable income.

Broadcasting may be an established industry nowadays, but the BBC still has to originate cutting-edge tech at times. Such duties are written into Section 15 of the periodically-reviewed Royal Charter, the 'letters patent' that grant the BBC its unique status in British life.

Recent blanket press-coverage of the BBC concerns me – and I'm speaking here purely as someone who appreciates its services and peerless public-service ethos (these views are mine, and don't necessarily reflect the BBC's).

First came the BBC's decision to means-test licence fees for over-75s. Given that newspaper readers tend to be older citizens, the resultant 'reporting' was distinctly-barbed. Some of the anger generated by this

episode (and how it was covered) contaminated unrelated BBC 'Have Your Say' sections.

Adding to the BBC's woes was what one tabloid described as a "wages scandal" – how "loopholes" are used to "conceal millions...paid to its biggest stars".

Following the Tory debate, the London Evening Standard published an article that, to me at least, seemed to gleefully-trash the BBC while remarking how "streaming giants" are "stealing the shows". I get the impression that its author sees the BBC not as a public-service broadcaster with a mission to 'educate, inform and entertain', but as a mere purveyor of consumer-product like Netflix (over \$8bn in debt last autumn, according to Variety).

Indeed, the article didn't mention public-service broadcasting once. Nor did it point out an inconvenient truth – that the BBC manages to churn out quality drama and documentaries with budgets a fraction of what said giant American corporations – unencumbered by common-good public-service obligations – throw at their programming.

I've concentrated on television for a reason; the BBC's radio services, which I consider to be the best in the world, were apparently only mentioned so the author could swipe at its 'Sounds' app.

Newspapers (not necessarily those given away at Tube stations) tend to be 'consumed' by groups sharing their values. Readerships overlook bias that infects their news coverage, because it happens to coincide with their own views; these papers, and their associated online portals, are essentially 'echo-chambers'.

It is no coincidence that the BBC, which under the terms of the

forementioned Charter (section 6.1) must be neutral, is frequently-slammed for biased news. The right accuse it of being left-leaning, while the left accuse it of disseminating Tory propaganda verbatim. I interpret that as fair and balanced coverage overall!

The Beeb gets far more 'schtick' than other media; can you imagine the public outcry had the BBC been caught hacking into the voicemail of a dead child, paying people to sift through celebrity dustbins or buying snaps of bikini-clad royals from shamelessly-intrusive paparazzi photographers?

And that's the point. The BBC is, thanks to the way it's funded, accountable to each and every one of us. Some may hate to admit it, but deep inside we appreciate that the BBC's values are as sound as those speaker designs.

It's therefore correct to call the BBC to account when necessary. Jimmy Savile, 'Sachsgate' and (yes!) the wages of non-staffers like Gary Lineker spring to mind. The BBC was arguably forced into a corner, by the government to which the Standard's editor once belonged, when it comes to licences for the over-75s – ironically, those more likely to enjoy BBC services. It could however be argued that the BBC is fulfilling its public-service brief by directing the eligible towards pension credits...and thus free licences!

One-sided coverage of the BBC from media outlets that are, after all, 'the competition' weakens what is indisputably a national asset. Before politicising or indulging in cheap point-scoring we must, in the clichéd language so beloved of tabloids, be careful not to 'throw out the baby with the bath-water'. If the BBC is watered-down or disappears, the UK loses something unique. ●



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"the basic process of capacitor change is a change for the good"



Dave Tutt

Musical Fidelity A100 amps come my way quite often. Given that my local area in Kent is not exactly rich in hi-fi shops or for that matter a thriving audio community exchanging costly pieces of equipment and selling off that which is on the bottom end of the current upgrade chain, it is almost a strange amp to be so popular here. I would expect the Denons and the NADs and the Marantz – but not Musical Fidelity's A100. I can only assume that at the time the A100 was a particularly interesting amp and many of them found their way into the listening circles spread across Britain's South East and that they are now something of a cult. Perhaps not, but you never know as I have seen quite a few over the years – usually owned by people I wouldn't expect to have them. That maybe is creating an image of a stereotypical purchaser but the common personal circumstance is always much the same. The son or daughter or the brother with one of these has rescued it from the loft of a distant relative who brought it new and loved it. But it now has problems.

The A100 suffers due to the heat it creates, because it is biased further into Class A than other amps of a similar output, to give more classic Class A famed sound quality. Given that these amps are now getting on in years I find all sorts of faults but most can be cleared very easily just by changing all the capacitors associated with the power amp from input to output.

There is little point in being selective about these capacitor changes. All of those associated with the power amp are liable to be, if not dried out, then at least

under-performing. It is always best to replace them all in one operation. They all need to be higher temperature 105 degree types as the original 85 degree ones are not going to last all that long.

The preamp circuits tend to be fine and I have yet to find much wrong with the main smoothing capacitors in the power supply. I generally keep some appropriate main smoother types just in case but haven't – as yet – had to change any in this model. This is probably due to their close proximity to the fans which are pulling in cool air over them then passing it through the hot circuitry and away from the amps themselves.

Worst damage to the printed circuit board occurs around the 12v zener diode but unless there is anything else going wrong a clean up of the soldering, removal of the scorch marks on the board and it will run fine.

Biggest component supply issue I have found in the A100 is a lack of replacement fans. They are rather specific to the amp and I have had problems finding ones that fit when they fail. It's always one that fails – never both – although I always replace the pair. There will come a time when a different cooling scheme will be required but at the moment it isn't too much of a problem. The cooling is however very important and must be fitted. The mains switch was held in with superglue and a match of one unit, so that had to be changed too.

So with all those capacitors changed do they sound better? Different perhaps? Well it is always difficult to tell, as never having heard an original one that is factory fresh from the box, there is nothing to compare it with. A working but well used one isn't going to sound the same as it did 15 years ago,

such is the way components age – especially when subject to heat. So there is most likely a serious change over time that the owner might realise – but not something that would be immediately obvious with nothing to compare it against.

I can usually say that the basic process of capacitor change is a change for the good. There is something in the midrange and low treble that gains clarity that I have never studied too closely – but is there. Capacitors are about the only component in any audio device that have a definite sound. Caps can be selected to warm up a sound or to add detail. They can add bass end wallop too – all without altering the actual values of the initial design or for that matter changing the frequency response.

Sometimes it can be as simple as a single item that defines the sound. The A100 is not as warm a sounding amp as you might have expected from its biasing. It has quite a clear mid and top end but I have heard amps of more classic Class AB that have a similar sound, so the A100 isn't exactly unique. It isn't in the Technics Class AA or Quad 44/405 sound either.

With new capacitors you might be able to hear what they are doing, but only if you compare directly the before and after sound – which again isn't all that helpful since A-B comparison isn't possible. New capacitors take time to burn in so it might be a couple of hours or even weeks before the effectiveness of the replacement shows in the sound. That adds all sorts of consequences into the mix when you do repairs.

With their minimalist controls and unflashy finish Musical Fidelity A100s are not exactly an AV receiver – but they still seem to please my customers. ●

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On The M11

FiiO's complex M11 portable digital audio player is like the UK motorway, challenging but fast, thinks Noel Keywood.

There are portable players like my small and venerable Astell&Kern AK120 that just play from internally stored music – and there are portable players like the FiiO M11 I'm reviewing here that are more like mini-computers – able to access music streaming services on the 'net and much, much more. Add

in a full suite of connectivity options and top quality audio digital converter chips and you have the M11 in broad outline, a sophisticated portable digital audio player – price £450.

Fitted with a Samsung Exynos 7872 processor running customised Android 7 operating system that, together with all else like wi-fi and Bluetooth and a massive screen,

consumes current, there's a large 3800mAh battery onboard. To explain this is no small player, although at 220gms on our scales there are heavier ones around. At 71mm wide, 130mm high and 16mm deep it is pocketable – if not in a shirt top pocket unless you are a lumberjack.

A large battery takes time to charge, FiiO quoting 3 hours (max) on a 5V phone charger, which is about what I got. There are fast charge options though at 9V and 12V with a suitable supply (extra). Running time is quoted as 13 hours – but that's with the large screen off. The touch-screen screen is 117mm high and 58mm wide – nearly the size and resolution of a large mobile phone. But then because the player runs music apps like Deezer, QoBuz, Tidal and Amazon music – to name a few of the 14 options on our player – it needs display area to accommodate their layouts. To play stored music means using the music player app fitted, more of which later.

To go on-line wi-fi is used so there's a screen keyboard for password and data entry. Once connected to a home network the M11 can not only see 'net music servers and Google (this being Android) but also DNLA music servers on a home network, which usually means a PC. It saw music on my Windows 10 PC and played it without hassle. PCs run PCM up to 96kHz sample rate and I ran CD and 24/96 hi-res files from PC when listening but the player comes with a dedicated USB DAC driver for PC for higher resolution music play.

I also used the M11 as a headphone DAC with my 'old' Mac (Sierra, USB 2) and here it forced a 44.1kHz sample rate (no bit-depth info) that could not be changed at

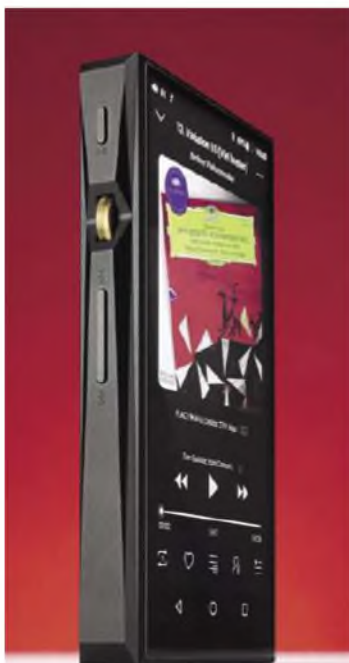




On the bottom face lie a conventional 3.5mm three-pole headphone jack that can be set to line output or deliver S/PDIF digital through an adaptor cable. Also, there's a USB C socket and 4.4mm four-pole balanced output (top) with 2.5mm (black) alongside.

the Mac, that declared it 'unmixable' – a new situation and declaration to me. USB C is a high data rate port with a complex USB 3 software stack in the M11 and it obviously decided my Mac unsuitable during polling, even though it works fine up to 384kHz PCM over USB 2. So although my Mac could deliver the music, the M11 set a CD-only sample rate limit. Weird.

With a new MacMini (Mojave) having USB 3 ports the M11 accepted and was driven up to 384kHz sample



The small rotary volume control has high resolution but takes a lot of turning. There are transport controls too.

rate, set by the Audio/Midi utility as always with a Mac. So Mac users may not get what they expect unless using the latest Mac/USB ports.

Connecting the M11 via wi-fi was quick and painless. So were all the other connection methods in my case and they should be to most users I believe.

A USB C-to-USB A cable is provided. USB C is a reversible socket that's easy to use and worked perfectly, ignoring the problems described above, offering either music file download from Mac or PC, or music play from computer to headphones as a DAC, with DAC mode selected in the audio settings menu. There is no S/PDIF digital input, nor an optical output, only electrical.

The analogue connection side of the M11 was also unusual. There's a 3.5mm stereo headphone socket, but also a larger 4.4mm 4-pole balanced output Bantam jack that is rare. And whilst this new socket is given full visual presence with a shiny brass surround, beside it lies a tiny black hole in the case, asymmetrically placed as a random after thought it appeared; it is a 2.5mm 4-pole balanced jack.

Fair enough: 2.5mm balanced jack plugs are so small and fragile they break and are impractical – I have always complained about them. But if you want to go balanced from the M11 then yet another unusual plug is needed, a 4.4mm Bantam 4-pole jack (not supplied). Since balanced working, where one headphone earpiece is

electrically isolated from the other (they don't share a return line) gives relatively small sound improvement this isn't a big issue, but I felt the player's balanced analogue output sockets were ineptly presented.

The 3.5mm stereo headphone socket can be set to provide Line output (2V fixed or variable level) so the M11 can act as a CD player – one able to deliver hi-res sound quality above that of CD.

The socket can also deliver an S/PDIF digital output when set to do so, via a supplied 3.5mm jack-to-line phono socket adaptor cable. This means it can drive an external mains powered DAC, the M11 acting as a digital transport in effect – how I use my AK120. Mains powered hi-fi DACs give better bass quality and low-end resolution than a portable working from batteries; best to connect digitally into a hi-fi DAC than from the M11's analogue Line output – this comment applying to all players.

Start up was a short 15 seconds before the basic user interface appeared. Selecting the music player app a track list of music comes up,



The top face carries a single on/off and wake-from-sleep button. Power up is quick at 15 seconds.



The microSD card carriers fit one way only and extraction is with the tool supplied.

X1

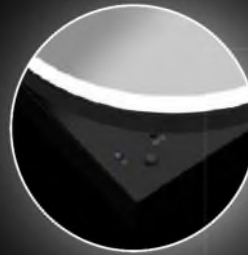
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AUDIO SYSTEMS

THE NEXT GENERATION OF AUDIOPHILE TURNTABLES

In 1991, Pro-Ject Audio Systems started a revolution in the Hi-Fi world with the introduction of the Pro-Ject 1 turntable. A new high-end, low budget turntable at a time when CD was king. Against all odds, we were creating interest in analogue audio at a time when others were turning their backs.

Flash-forward to the present day, with the introduction of our all-new X1 which reimagines the classic turntable design and elevates the sound performance to new heights. You will find no plastic here, only high-end, durable materials that boast an audiophile sonic performance at a fantastic price.

The X1 is available in three finishes to suit any home décor; a premium walnut wood veneer or luxurious black or white eight-layer gloss paint.



Electronic speed control
for 33, 45 and 78 RPM



8.6" carbon/aluminium
sandwich tonearm



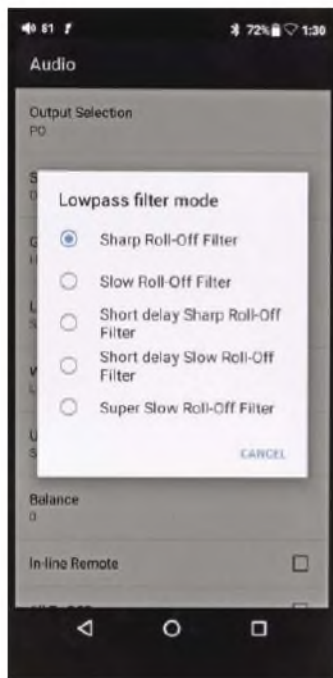
Pick-IT S2 MM cartridge
designed by Ortofon



Belt-driven acrylic
platter supplied



including that in 32GB of internal memory and any microSD card that has been inserted – up to 2TB maximum addressable. Where microSD card slots are usually open – just push a card in – Fiio have chosen to use two card carriers on this player opened by a small supplied tool; loose this and a paper clip works, if not so easily. Changing cards is a fiddly process and on the move difficult-to-impossible, since the tool, carrier and card have to be



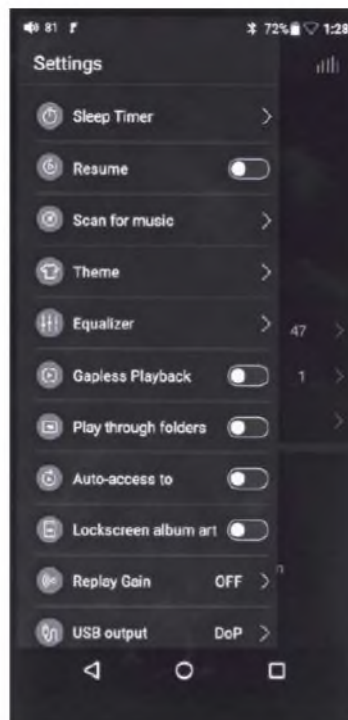
The M11's filter set, Sharp giving widest bandwidth and Super Slow narrowest, with warmest sound.

manipulated – which really needs a desktop and some care. Best done at home.

The music player app has an option-high interface with full cover artwork display and was not easy to use even when understood. It has a Settings menu in the operating system and a Settings menu in the music player, both denoted by a gear wheel – but they are different. Except that they were not, with audio settings in both.

Also irritating was the need to manually update the player from the player Settings menu every time a new card was loaded. The old music file lists were retained in memory but of course would not play once the card had gone. Players now commonly scan internal music files and update automatically, but the M11 does not, even when turned off and back on.

The Settings menus possess a wide array of options, including filters,



At left one of the home screens with Chrome web browser, clock and other facilities. The red FiiO Music app and grey Settings gear-wheel are important to music play. At right are Settings within the Music app. USB output can be set to send DSD (using DoP).

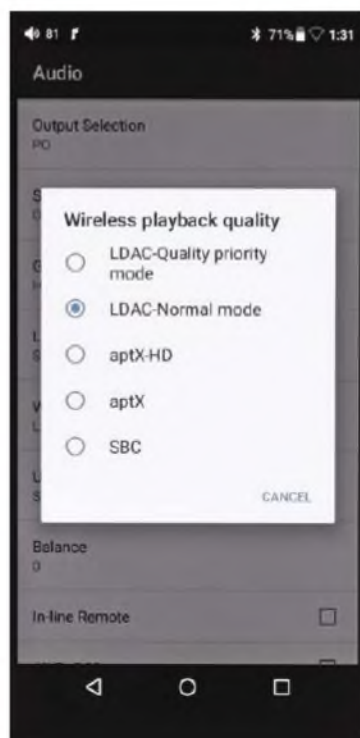
output level (low/high), an equaliser, volume control on Line output and much else.

SOUND QUALITY

The M11 plays most music formats including DSD and Diana Krall's Narrow Daylight in DSD64 (.dsf)

gave a suitable demonstration of this player's sound quality: think super smooth, gentle, organic and yet fulsome and powerful. That it's a player with a classy sound is undoubted.

Rock tracks like Queen's Radio Ga Ga had plenty of low end heft, the



A range of Wireless transmission standards are available to ensure compatibility (left). The main Play screen (right) is large, high resolution and displays cover artwork well.

SDS

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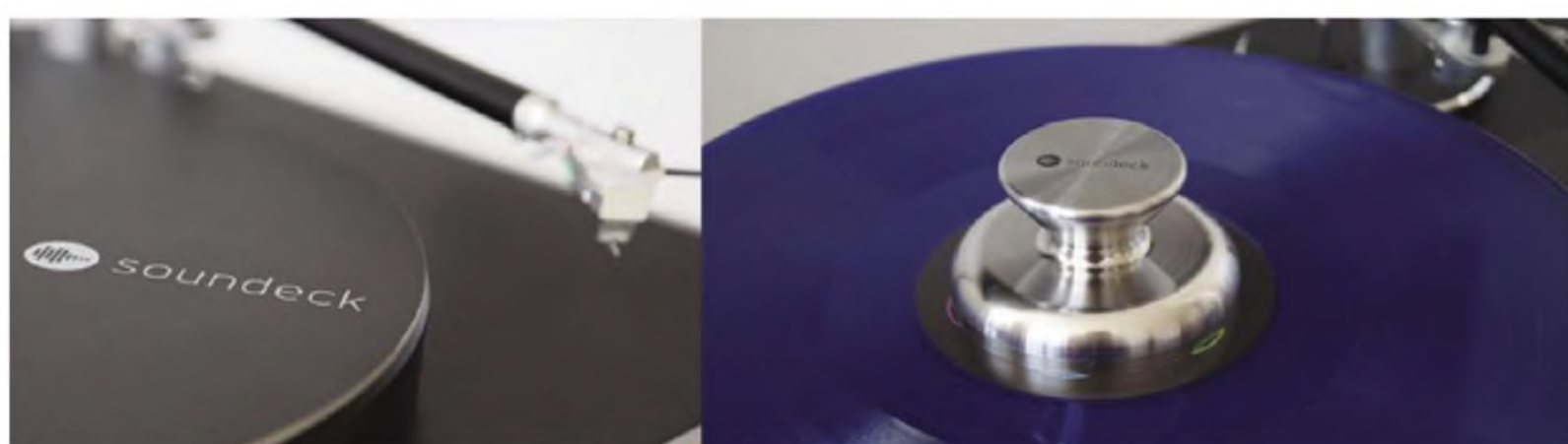
Sounddeck PM Platter Mats £90

Available in 295mm, 292mm or 285mm sizes to fit most turntables the Sounddeck PM converts vibrational energy into heat and so minimises interference from feedback and rumble - allowing your cartridge to track information in an LP's grooves with greater accuracy bringing enhanced detail across the frequency range.

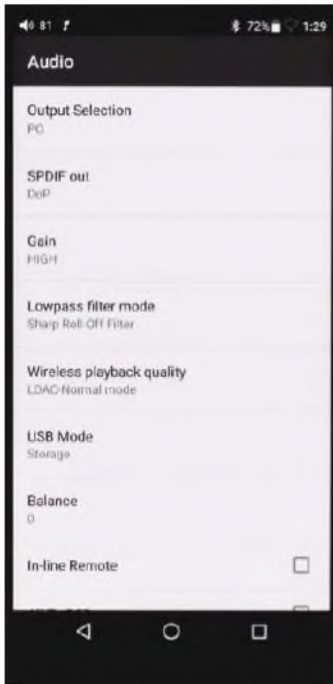


Sounddeck DPS Damping Puck £90

The 500g SDS damping puck is immaculately machined from two pieces of stainless steel, it's bonded together with a thin layer of sound-absorbing polymer forming a constrained layer. 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. There's also an aluminium version which weighs 152g.



www.sounddeck.co.uk



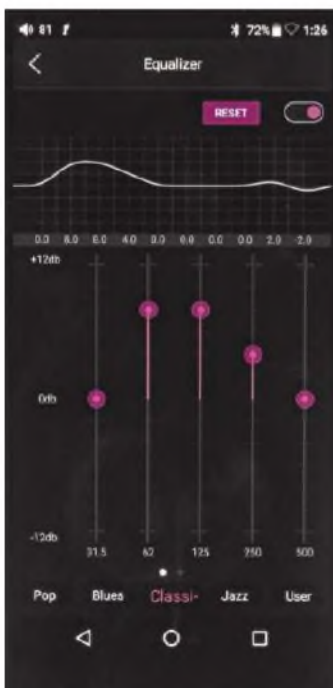
The Audio menu in basic Settings where USB can be set to DAC or Storage.



Album artworks look crisp and clear on the scrolling display.

background synth pushing through strongly.

If anything the M11 is on the soft side; even with tracks like Fleetwood Mac's Dreams (24/96) I preferred the Sharp filter to the softer Super-Slow filter options just to inject a little more sparkle – even though this track has emphasised treble through high resolution DACs like Audiolab's M-DAC+ that I use as a reference. Yet M11 delivers a sense of



A colourful graphic equaliser option with informative response graph.

atmospheric insight with no hash to flatten perspectives and it was here

MEASURED PERFORMANCE

Frequency response of the FiiO M11 (Sharp filter) reached 71kHz (-1dB) at 192kHz sample rate, rolling off steeply at 96kHz, the upper theoretical limit (see HR). The Super-Slow filter gave -3dB attenuation at 71kHz, not affecting audio up to 20kHz, and nor did the other filters so their audible impact will be slight, likely imperceptible with hi-res.

With CD (44.1kHz sample rate) the Sharp filter gave usual 21kHz bandwidth, whilst Super-Slow filter rolled off upper treble to -2dB at 20kHz and will soften the sound (see SS). It isn't brickwall either - unusual.

Distortion at peak output (0dB FS) measured 0.002% and at -60dB with 24bit a very low 0.012%. With both low distortion and noise EIAJ Dynamic Range measured a very high 120dB – up with the very best.

The M11 provides superb measured performance, equivalent to top quality hi-fi DACs and above most portable players. Class leading. NK

Frequency response (24/192)	4Hz-71kHz
Distortion (-60dB)	0.012%
Separation	94dB
Dynamic range (EIAJ)	120dB
Noise	-118B
Output	2.6V

that FiiO's always-impressive audio engineering showed through.

This translated well to classical music, choir sounding expansive with Mahler's Symphony No8 from the Chicago Symphony Orchestra (24/96), kettle drum strikes having plenty of weight, whilst horns and strings came over as slickly smooth.

CONCLUSION

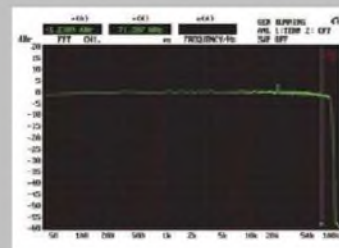
The M11 is a large and complex player that I found challenging to use. Its USB 3/C socket software stack was not Mac friendly or intelligent; life was easier interfacing with a Windows 10 PC.

The operating system's user interface was complex and time consuming, as was that of the music player app; the microSD card slots were an operation too far.

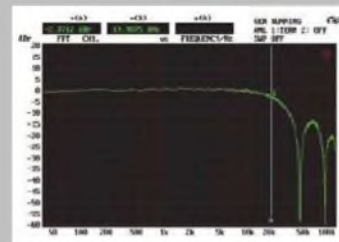
Yet sound quality was superb in its own way and of course you can stream from 'net music servers – something simpler players cannot do.

If you want it all in latest form the M11 is impressive, but it isn't for those who prefer simplicity.

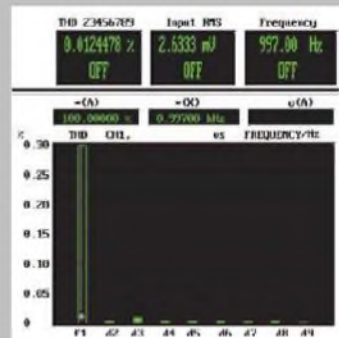
FREQUENCY RESPONSE HR



FREQUENCY RESPONSE SS



DISTORTION



FiiO M11 £449

EXCELLENT - extremely capable.

VERDICT

A technologically sophisticated player with great sound, but difficult to use.

FOR

- warm smooth sound
- 'net music streaming
- massive file capacity

AGAINST

- complex user interface
- poor with USB 2 on Mac
- large

Advanced MP3 players
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vinyl section

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A modern MM/MC stage with valve output impresses Noel Keywood.

AUDIOPHILE BOOK 93
Paul Rigby looks at the life of Bill Haley, as told by his son.

news



DEMON

A typical varied batch from this UK audiophile outfit includes Young-Holt Unlimited's 'Soulful Strut' (1968) – although this jazz outing is basically instrumental versions of Barbra Acklin tracks.

William DeVaughn with 'Be Thankful for What You Got' (1974) scored a massive title-track R&B/soul hit that summer. A cool, rolling groove, DeVaughn offers a smooth, easy vocal.

Look out for the Sainsbury's exclusive version of T.Rex's Gold with two, gold vinyl discs included.

Also offering 'Gold' is the Average White Band, on gold vinyl discs spanning twenty tracks.

'Rock Around The Clock' spans two discs and thirty tracks and includes Chuck Berry, Eddie Cochran and more.

'90s Dance Anthems' is a 2LP compilation of likely suspects including Fatboy Slim, Ultra Nate and Robert Miles spouting classic dance tracks.

MUNSTER

This Spanish label continues to improve, having an eclectic mix of albums on offer including the fascinating English R&B outfit, The Tomcats (who would become the psychedelic outfit July), and who found early success in Spain. Taking tracks from 1964-1966, this high energy double album features EP tracks and demos.

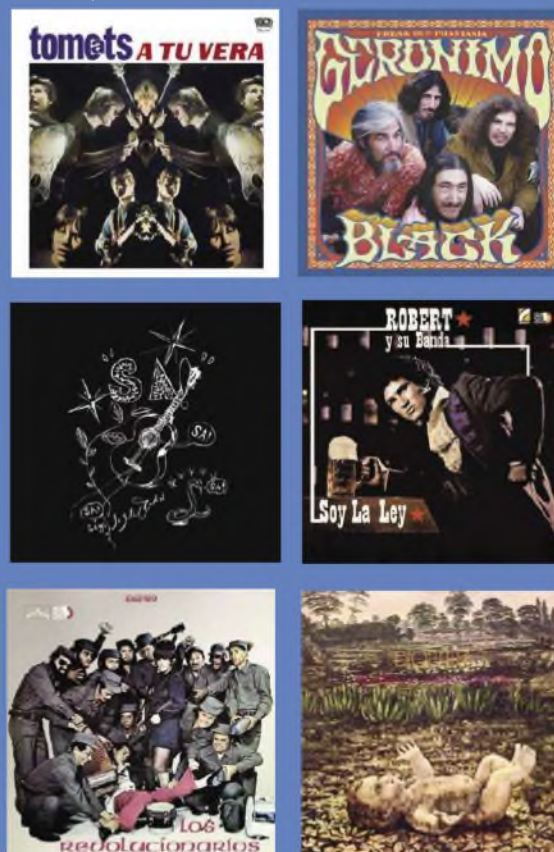
One for Zappa fans, this unreleased late-60s LP of sessions from Geronimo Black features ex-Mothers Jimmy Carl Black, Bunk Gardner, Ray Collins and Denny Walley, plus lots of additional talent. 'Freak Out Phantasia' includes a CD with four bonus tracks, while the album is packed with hard prog/fusion wonders. A gem of a release.

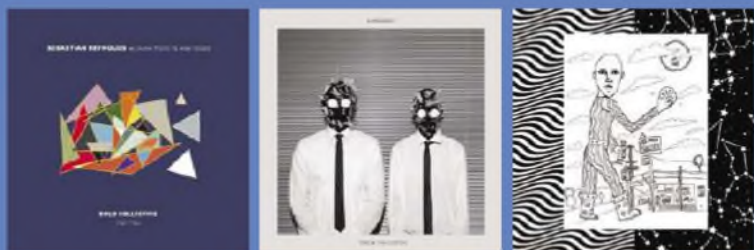
Cult singer-songwriter, Jonathan Richman's 'SA!' extends the strange but charming man's boundaries in this 2018 license from Blue Arrow. Produced by his former Modern Lovers bandmate Jerry Harrison, it examines the Indian raga to delightful effect.

Also look out for Robert y su Banda's 'Soy La Ley' (1978) – a rare salsa cut featuring the original version of Joe Arroyo's hit 'Rebelión'.

Los Revolucionarios' self-titled album (1972) featuring hard and hot salsa via Alfredo Gutiérrez.

Also Pau Riba's rare psyche folk-rock 1969/1970 release, 'Dioptria' accompanied by the band, Om. Originally two separate LPs, now a double album (which was the original intention).





BANDCAMP BEAUTIES

Sebastian Reynolds, Anne Müller & Alex Stolze's 'Solo Collective - Part Two' (<http://solocollective.bandcamp.com>) provides neoclassical ambience, folkish insight and delicate minor chords. Sublime.

Mndsgn Snaxx (www.stonesthrow.com). Fourteen short tracks featuring ye olde trip hop. OK, 'beats' as the fashion now demands. Beautiful, lovely, wonderful and pithy.

'Traum Und Existenz' from Kompromat (<http://kompromat-official.bandcamp.com>) offers German pop-techno in a Daft Punk mode. Lively and head-noddingly melodic.

COMPS

Instant Replay (www.eccrecords.co.uk) is a 3LP, various artists compilation featuring Eliza Carthy, Green Gartside and more spouting multi-genre covers created between 1971 and 1981 from Marvin Gaye to The Clash. Fun and frolics plus a USB with extra music and content.



Different. The Hackney Colliery Band's 'Collaborations - Volume One' combines brass band tones with modern music constructions and vocal styles with Angélique Kidjo, James Taylor and more. Inventive and fresh.

BC35 features members of the Swans, Sonic Youth and Alice Donut who performed or mixed and matched to perform together. Featuring a free 7", it celebrates thirty-five years of Brooklyn's BC recording studio. Imagination runneth over.



FOREIGNER

A new double album, 'Live at the Rainbow '78' (Rhino), features a 27 April 1978 concert at the famous London venue. The band featured Mick Jones (lead guitar, keyboards, backing vocals), Lou Gramm (lead vocals, percussion), Ian McDonald (guitars, keyboards, sax, flute, backing vocals), Al Greenwood (keyboards, synthesiser), Ed Gagliardi (bass, backing vocals) and Dennis Elliott (drums, backing vocals), played after the release of their self-titled album. Now newly mixed and re-mastered. As for the mastering? Yes, there could be greater dynamic reach and midrange space on offer but this live album remains remarkably consistent with no sonic nasties to get in the way. A sterling effort and a well recorded live release.



...AND FINALLY

The National's 'I Am Easy To Find' (4AD; <http://4ad.com>) uses the latest marketing fad: women. You remember them. They're in the news, they're cool, they're for you and for #MeToo. Clogged with sincerity, this indie rock outing drags female artists off the street to use as 'right on' wallpaper.

Miel de Botton's 'Surrender to the Feeling' (Absolute) is another sort of Me Too. A dated, derivative, factory-fed 'me too', high clarity vocal of immense diction over a conveyor-belt, building trance beat. I'm sure I reviewed this in 1995.

The jazz/electronica of Laurence Pike's 'Holy Spring' (<http://theleaflabel.com>) is all about texture and rhythm and how you play with both, often with nuance and subtlety. Nice.

Robag Wruhme's 'Venn Tolep' and free 7" single, no less ([Pampa; http://pamparecords.com](http://pamparecords.com)) offers stripped, click/beep beats on a bed of ambience with lots of salad dressing.

The Bogs Of Aughiska's self-titled album (<http://lonevigilrecordings.bigcartel.com>) is a swathe of dark ambience from western Ireland. Pagan, mystical, ruminative and pensive.

Vocalist in Tesseract, Daniel Tompkins' debut LP 'Castles' (<http://kscopemusic.com>) offers a blend of power and electro-pop with rock grandeur. One for the fans.

The Skints' 'Swimming Lessons' (<http://mrbongo.com>) offers punk Post-it notes attached to reggae tones and toasty raps, keeping the tone light yet rhythmic.





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Technics Tech



Technics bring their Direct Drive tech to a budget plug-'n-play package. Noel Keywood spins vinyl to check it out.

As the idea of listening to music in an original format – meaning LP here, not tape – gains ground, Technics are pushing hard to make sure their his-

torical influence isn't forgotten. Not difficult you might think when their SL-1200 Direct Drive turntable introduced in 1972 reached into millions of homes worldwide to become a legend. But today they face a market

teeming with competitors at cut down prices. The new SL-1500C I'm reviewing here is a starter package aimed at getting those legendary qualities into an affordable and competitive product.

ortofon

accuracy in sound



2M

The 2M Series, named after the abbreviation of Moving Magnet (MM) technology, is an affordable range of pick-up cartridges with first-class audio design principles throughout. Featuring Ortofon's trademarked split-pole pin technology for a flat frequency response, all 2M cartridges have a high output for easy integration into any turntable system.

Ortofon's philosophy is to play the record sound as accurately as possible, without colouring the sound in any way. Both the 2M Bronze and 2M Black have diamonds which are cut and polished to the highest standards of the industry. The 2M Bronze and 2M Black also have interchangeable stylus units, and replacement styli are readily available in the UK.

The 2M range has been structured in the same way as the popular Rondo and Cadenza Moving Coil series, with ascending quality as you move from Red - Blue - Bronze - Black. The spectacular 2M Black has become the flagship of 2M, and all Ortofon moving magnet cartridges. 2M was also the last product designed by Ortofon's former chief engineer, Per Windfield, who developed the 2M series over the final 2 years of his 30 year tenure with Ortofon.



Red

A hugely popular all-purpose cartridge with a Tipped Elliptical stylus that delivers an open, dynamic sound with a slight touch of warmth.



Blue

An affordable step up in the range, which adds a greater resolution, dynamics, and detailed sound thanks to the Nude Elliptical stylus.



Bronze

Featuring a superior body, the Bronze picks up even the highest frequency information for a rich, detailed and deep soundstage, and can be further upgraded with ease.



Black

The musician's choice and flagship of the range, the 2M Black features a Nude Shibata stylus which guarantees a true-to-life sound performance. This is truly the best MM has to offer.



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Quite a lot has changed in this model. The original SL-1200 and its modern replacements, the SL-1200G and SL-1200GR are manual; the new SL-1500C has automatic arm lift at the end of a record to prevent the irritating click-click-click of arm in run-out groove that will drive you mad if you don't do something, meaning jump over the room and carefully push the cue lever – an exertion too far for iPhone users! In a nod to modern convenience and because rivals such as Lenco and Dual are now going auto with budget Direct Drives from China, Technics have brought this convenience to the SL-1500C. There's a small Off switch at rear in case some records trigger it early – unlikely.

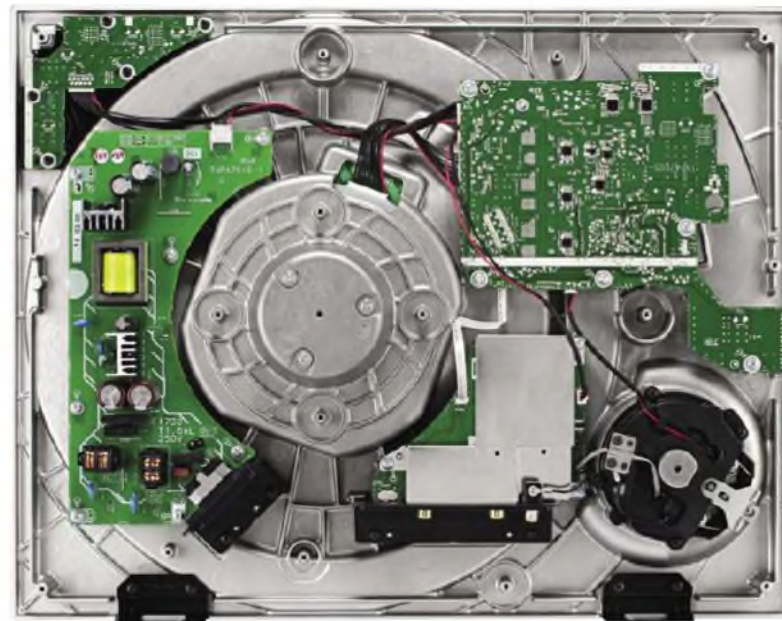
Gone are the lights and glitz – no stroboscope or cue light as carried by the SL-1200G for example. Instead you get a plug-and-play package that will interface with any amplifier through its Line input because a phono stage is included, as is an Ortofon 2M Red budget moving magnet (MM) cartridge. There are still three speeds, 33, 45 and 78rpm;



Ortofon's budget 2M Red moving magnet (MM) cartridge comes as part of the package. Note the downward tilt of the headshell top face.

they are not adjustable as on the other models but were accurately set, measurement showed.

Technics have paid some



A complex and rigid base plate supports Technics Direct Drive motor. At left is a universal switch-mode power supply and at top right the motor control board. Below sits a screened phono stage board.

attention to the arm: it is now aimed at audiophiles rather than the DJ market. Surprising is the addition of arm height adjustment (6mm), complete with height scale and lock on the pillar. The usual procedure is to set the arm horizontal and leave it, but some audiophiles like to adjust height to change vertical tracking angle / stylus rake angle, to fine tune a cartridge. With a standard

230mm (9in) long aluminium arm – as this one is – 6mm of height adjustment results of a small 1.5 degree total angle change (+/-0.75 degrees), where 5 degrees or so are needed to really change things, so more cosmetic than practical I feel – but that's always the case with arm height adjustment. Pushing the

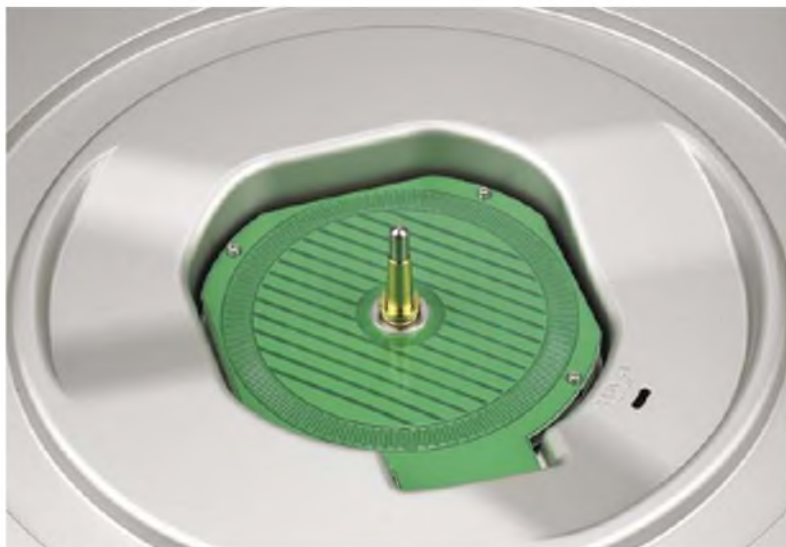
small lever to Unlock, the arm must be pulled directly up or down; the knurled ring does not turn a screw thread to do this.

Technics headshell has a conventional bayonet fitting and is removable; no end of tweaky replacement shells are available. The headshell (7gm) supplied is rigid and with the usual tracking angle adjustment slots, plus in-built finger lift for all those who are steady enough to manually cue down, or use the damped lift/lower platform with its little lever. But a combination of downward tilting top face and low arm rest give an unfortunate appearance of droop when in its rest, the stylus almost contacting the plinth with arm set at its lowest position (as delivered to us).

I recalled seeing this peculiar problem on the Lenco L-3808, reviewed in our June 2017 issue.



All connections sit within a recess, to lessen rear space needed. There is a Direct output (no phono stage) and Line output (phono stage), switch selectable. Mains power enters direct through an IEC mains connector (no external power supply).



Technics Direct Drive motor with its speed sensing servo-feedback system and pancake drive coils sits on a circuit board beneath the platter. The platter (rotor) carries magnets driven by the pancake (stator) motor coils, served by modern BLDC chips.

where I said "In its rest, the arm slants alarmingly downward toward the plinth surface. Its rest is too low. With arm on LP it still tilted down. Looking closely, part of this is genuine down-tilt of the arm tube, and part visual effect from a downward tilting upper face on the head shell. This needs sorting so the arm tube and head shell are truly parallel to the surface of the LP".

Not only does the SL-1500C have the same problem – it has the same headshell! Made in Malaysia,



The arm has gimbal bearings and a calibrated counterweight. Its height lock lever sits just behind the circular black side-force dial.

it says on the rear, it is likely built to Technic's specs by an OEM. The motor, plinth and phono stage all appear unique to Technics, but the arm is unfortunately similar to Lenco's L-3808 in head shell and its appearance of droop, due to

"The SL-1500C looks good, feels good and has an air of quality about it"

headshell design and low arm rest which is not adjustable. Both arm rest and headshell need improvement.

Because the SL-1500C has a solid plinth with no bouncy suspension system, and it weighs a hefty 9.9kgs, it holds steady when cueing. The four feet are solid – no internal suspension system – but adjust for height so the unit can be set level. A small spirit level is best used for this.

Dimensions are 453mm (18in) wide, 169mm (7in) high and 372mm (15in) deep so like all turntables, if you shelf mount it the shelf must be deep. All connections sit within a recess so cables, including the IEC mains connector, don't protrude at rear – a nice touch. Dedicated wall shelves are available for suspension-less turntables and a good way to keep the arm in the groove if you have suspended wooden floors that bounce.

Technics provide a hinged dust cover that lifts to 41cms high, so clearance between shelves in a shelf system with shelf above should be 42cms or so

Set up was absolutely standard. The arm is balanced by a calibrated counterweight, accepting cartridges of 5.6–12gms – sufficient to cover all modern cartridges. An auxiliary

weight provided increases this to 16.4gms with the 7gm headshell, or 25gms total – but Ortofon's SPU weighs 30gms so not enough for this classic one-piece. There is a bias force dial and the damped cue platform is adjustable in height.

At the rear lie direct phono socket outputs and Line out, a switch selecting the latter. The internal phono stage feeding Line out is MM only.

Power is from a direct mains connection via a standard IEC connector, feeding an internal universal (110-240V 50/60Hz) switch-mode power supply, consuming 8 Watts when on and 0.5W when off.

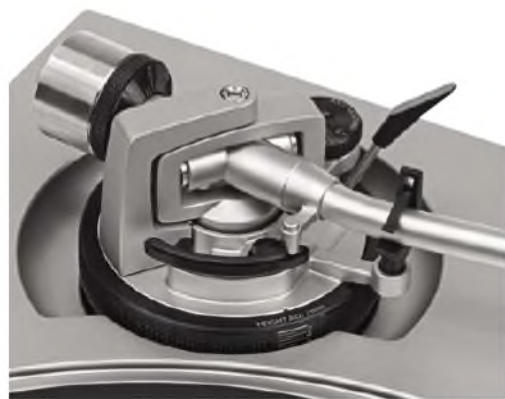
Technics fit an Ortofon 2M Red budget moving magnet (MM) cartridge, although at £95 when bought individually it is a few steps above Audio Technica's AT-3500 common in this role. It also has



A big start/stop button in trad. Technics style. At right are illuminated speed select buttons – 33, 45 and 78rpm.

a brighter sound and lacks vinyl warmth. The stylus is elliptical and tracking force 1.8gms recommended, 2gms maximum.

Build quality and finish were good, arm apart. The platter starts and stops quickly, even though it now has a heavy platter.



The arm sits on a large circular black base that moves vertically, position being shown by a metric scale – seen here.

SOUND QUALITY

I connected the SL-1500C Line out to Line in of our Creek Evolution 100A amplifier, feeding Martin Logan ESL-X hybrid electrostatic loudspeakers through Chord Company cables.

The rhythmic confidence and temporal progress of Hugh Masekela's Uptownship flagged up Direct Drive straight away. Trumpet and percussion were forward and vivacious. With this fabulously well recorded and dynamic track on an Analogue Productions 180gm LP (33rpm) that I use often and know well, there was a flattening of perspectives and a hardness of tone that wasn't too analogue like. Very upfront, apparently clean and clear but a little distant from silky or relaxing – even as budget turntables go.

Synthesiser based music becomes more temporally solid with Direct-Drive and I heard that clearly with Alison Goldfrap's Lovely to CU, from the LP Supernature. Metronomic percussion took hard form and had an insistent quality that drove the track along. No belt drive vagueness here!

The easy going Brothers in Arms LP from Mobile Fidelity, a 45rpm/180gm re-master from the analogue tapes, had fairly obvious bass lines due to raised bass in the phono amplifier, but nothing excessive. Otherwise this LP came over as fulsome and laconic as always.

After spinning a host of LPs it was Neil Young's After the Goldrush (180gm re-master from the analogue tapes) that best showed there was some treble glare and a slightly hard quality in the sound. So I swapped the Ortofon 2M Red for an Audio

Technica VM95ML (MicroLine stylus) in Audio Technica headshell. This brought a softer and easier sound, free of glare, and with more internal detail to strummed and plucked strings from Neil Young's acoustic guitar. All round there was more going on at high frequencies, although the sound wasn't so forcefully explicit.

The arm is not pin-point in its sound stage imaging, yet at the same time it did put up a big wide stage between our Martin Logan's XStat electrostatic panels. You get all the wonder of vinyl if not in honed form. I'm told by Sound Hi-Fi who have inspected the SL-1500C that the arm cannot be changed, as it can on Technics more expensive (slightly) models.

As a package Technics SL-1500C

offers a modern take, shall I say, on vinyl. Think confident timing, obvious bass and an upfront portrayal. There's little warm romance but a cartridge change can alter this.

CONCLUSION

In a nutshell, Technics new SL-1500C budget Direct Drive turntable has a wonderful motor and platter assembly – but a mediocre arm. Ortofon's 2M Red cartridge is what it is and can be changed, as can the cosmetically unfortunate headshell, but the arm cannot be changed. It is satisfactory for purpose but could easily be made better with internal damping, better headshell and arm rest.

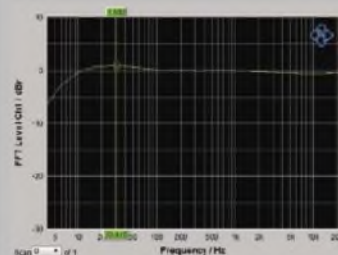
The SL-1500C looks good, feels good and has an air of quality about it, but the arm lets the package down in feel.

MEASURED PERFORMANCE

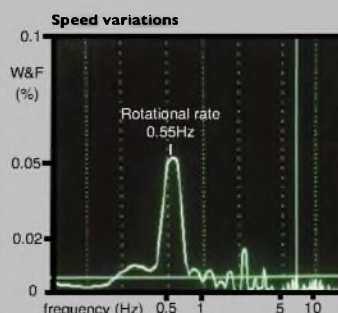
Speed accuracy was near perfect and speed variation very low, measuring 0.05% (weighted) at rotational frequency (0.55Hz/33rpm) our analysis shows; there was no wander of speed over time (24 hrs). This is a European (German) DIN figure derived from DIN 45-452 test disc. With Japanese JIS weightings, that give better figures than DIN and are used by Technics, wow and flutter measured 0.03% (weighted), matching and validating their quoted value. The SL-1500C has superb speed stability – better than all else, whatever figures are used.

Our analysis identifies a cogging component at 6.6Hz (0.55rpm x 12pole), but it has been suppressed to inconse-

FREQUENCY RESPONSE



SPEED VARIATION (W&F)



quential level.

The arm has a pronounced main bending mode at 300Hz, analysis with a Bruel&Kjaer accelerometer attached to the headshell showed. The arm tube is not especially well damped but in line with expected from a budget arm. Some coloration will result.

The internal phono stage had a low gain of x77 (38dB) at 1kHz (x100 is a target figure) and 7.3V out maximum, making input overload 95mV – far above the 30mV an Ortofon 2M Red can deliver. Gain of x77 gives 400mV out from 5mV in, sufficient for most amplifier Line inputs.

Frequency response (equalisation accuracy) has been tailored to give slight bass boost (+1dB) our analysis shows, enough to give subtly stronger bass than rivals.

Ortofon's 2M Red cartridge measured flat to 12.5kHz; our AT VM95 ML alternative rolled down slightly but reached 16kHz (Adjust+ test disc, pink noise). Tracking was good at 70µm max on Clearaudio's test disc, confirming Ortofon's quoted value.

The Technics SL-1500C was as speed stable as their more expensive models, and above most else. The arm is a so-so budget design without merit. Ortofon's 2M Red budget MM cartridge does a good job, having flat frequency response plus adequate tracking ability.

Speed error	+0.1%
Wow (unwtd)	0.08%
Flutter	0.04%
Wow & Flutter (wtd)	0.05%

TECHNICS SL-1500C £899



EXCELLENT - extremely capable.

VERDICT

Sophisticated turntable, mediocre arm, capable cartridge.

FOR

- forward and revealing
- rock stable speed
- auto stop

AGAINST

- resonant arm
- low arm rest
- lacks typical vinyl sound

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Today + Yesterday

A hybrid transistor and valve phono stage for all cartridges, MM and MC. Noel Keywood listens to EAT's E-Glo Petit.

A high technology phono stage with valves is the best way to summarise the E-Glo Petit from EAT (European Audio Team) of Austria. Inside lie circuit boards built by robots, able to lay down micro-miniature components humans can't cope with, yet at the same time they've managed to get a pair of valves in too. You get modern precision from today, with atmospheric sound from yesterday. And for all cartridges, moving magnet

(MM) to moving coil (MC), including the most exotic low output MCs. Price £1250.

To do all this in a small case is the Petit's forte and requires quite a lot of modern electronic trickery. Whenever valves are involved big power supplies are needed – but not here. EAT have got a pair of valves working from a small external wall-wart supply that delivers in just 18V d.c (1A). Petit offers valve sound from a small and compact unit measuring just 226mm wide, 262mm

deep and 78mm high. OK, it isn't as small as possible, but it is small for a hybrid valve phono stage.

'Hybrid' because this is not an all-valve phono stage, it is a transistor stage with valve output line drivers, known as cathode followers. The idea isn't uncommon, and it gives a fine result when done well, with good sound allied to small size and low noise. If you want an all-valve phono stage like our Icon Audio PS3 MkII that I inevitably used as a comparison, it is larger and double the price, to





Neat circuit boards carrying soldered-on switches, rotary and lever style – hence top panel controls. The valves with finned heatsinks are at top.

get the Petit into context.

The Petit has one pair of phono socket inputs, and one pair of phono socket outputs. It can't switch between permanently connected MM and MC turntables, but it can be quickly set to match any cartridge – MM or MC – from a single turntable, accommodating a change of cartridge in headshell as a most-likely example. There are no balanced outputs, nor rarer balanced inputs; this is a straightforward unbalanced design with phono sockets only, no XLRs. There is no output volume control so it cannot drive a power amplifier directly – a preamp is needed or it feeds a conventional integrated amplifier. And no digital either, nor remote control.

The long row of vertical lever switches are unusual and a bit technical in the way they present all the many options needed to match in a cartridge. To immediate right of the power switch at left is an impedance selector marked $\Omega/k\Omega$ (Ohms/kOhms) – MC and MM in effect.

Set to Ω for MC cartridges the rotary switch at left can select load values of 10, 18, 43, 75, 150, 300, 600, 1200 Ohms. The standard quoted load for MC is 100 Ohms, so lack of this value may cause some confusion: 75 or 150 will suit. MC load is, as

a rule of thumb, ten times that of generator impedance – it isn't critical – so the 10 Ohm value will suit a 1 Ohm (very low output) cartridge. Most MC cartridges are 10 Ohms or thereabouts, which is why 75 or 150 Ohms will suit. Some cartridges such as Clearaudios have a 50 Ohm

cartridges (but not MCs) can also be set to 50, 150, 270, 370, 520, 620pF. Best to start out at 50pF and experiment, higher values raising the upper midband to give brighter sound, whilst rolling off high treble.

Another (biased) lever switch clicks through a wide range of gain values from 40dB for high output MM cartridges all the way up to 70dB for low output MC cartridges. This is a broad enough gain range to cover all cartridges on the market, making the Petit able to match anything available, old or new.

The chassis is very well finished in matt silver grey with gloss wooden side cheeks. Two circular covers sit atop the 12AX7 valves and each has a clip-on finned heatsink to improve heat dissipation. Low power triodes like the 12AX7 have long life of 10,000 hours and don't run hot, just slightly warm. They're common and inexpensive too, costing around £12 each.

The small external wall-wart power supply has an unusually short lead just 120cms (3ft 11in) long, barely able to reach a nearby wall socket from a shelf, demanding a mains extension lead or close supply. It has no identifying/connecting name either, so will get lost amongst all the others we all have. A unique label like 'EAT Petit' is needed.

The top mounted switches and control knobs demand positioning in the open, beside a turntable – making for a combo wider than most racks.



A simple rear panel carrying solid gold plated phono socket inputs and outputs. The unit is 'Handcrafted in EU, Czech Republic'.

generator, so the 600 or 1200 Ohm values suit.

Lots of MC options then but really only low (10 Ω), normal (100 Ω) and high (1000 Ω) are necessary

Set to k Ω for MM cartridges there is a similarly wide range of load values: 30, 36, 42, 47, 53, 59, 65, 75kOhms. Of these 47k is standard and best used; the others are for experiment. Load capacitance, which affects frequency response of MM

SOUND QUALITY

I used the E-Glo Petit with our Timestep Evo modified Technics SL-1200Mk2 fitted with SME309 arm and Ortofon Cadenza Bronze MC cartridge, a headshell change giving an Audio Technica VM750SH MM. The Petit's output went to a Creek Evolution 100A amplifier feeding Martin Logan ESL-X hybrid electrostatic loudspeakers through Chord Company Signature Reference cables.

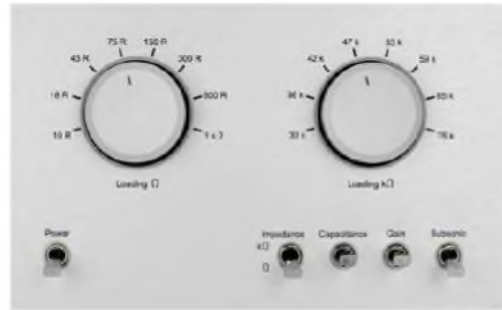
Mains regeneration to eliminate local distortions came from an Isotek Evo 3 Mosaic Genesis supply. There's no ground lift on the Petit; it is not connected to earth through its power lead but it does connect input earth to output earth – likely to introduce hum if other components are earthed.

In sound the Petit exceeded my expectations. It has all the sonic insight of a very good solid-state design, but enough of the atmosphere and low end weight that valves enjoy. Making Alison Goldfrap sound wonderfully breathy centre stage, every little intonation obvious, whilst the powerful synth lines had both weight and speed. Yes, speed: this little unit is not laconic or laid back,

By the time I got to Neil Young's Tell me Why, from After the Goldrush (no, not After the Goldfish you silly spell checker) – an 180gm, all analogue re-master – traits were coming into focus. Young's acoustic guitar was vivid and had solid sense of body, but there was some solid-state hardness compared to our all-valve Icon Audio PS3 MkII. You get more insight and resolution, but less relaxation and stage depth.

However, at an absolute level the Petit not only had pristine clarity and strong yet supple bass, it was also svelte in delivery. Even with old recordings like Janis Joplin's Me and Bobby McGee (Mobile Fidelity re-master, 180gm 45rpm) it lifted Joplin out to make her gravelly vocals obvious yet palatable.

With the very latest and greatest new recordings like Big Band Spectacular, with The Syd Lawrence Orchestra, I had a vividly lit orchestra before me, with fast drumming and blaring saxophones put up in full scale. Knockout spectacular!



Top panel controls. At left is a rotary MC (Ω) load switch and at right an MM ($k\Omega$) load switch. Lever switches below select MM capacitance, gain and Subsonic filter.

CONCLUSION

There's no doubt that sonically this is a great phono stage. It has enormous insight and fantastic resolution; you get to hear everything. It also has fine tonal balance, with strong yet supple bass and obvious yet sweet treble. I've never heard our lovely Ortofon Cadenza Bronze MC sound so good! At the price it is in effect a bargain, even if at a practical level it could be easier and better.



Clip on heatsinks help cool the valves, but they only run warm in any case.

instead it races along supported by strong low end power – and a vivid, vivacious midband squeakily clear of smear or overhang. I called it "manicured" in my notes.

All these qualities were obvious with Hugh Masekela's Hope (Analogue Productions, 180gm), the track Lady had Masekela's trumpet and vocals blare out, whilst kick drum was firm and discrete – standing well apart – as did his support vocalists. It was a great sound – both lively and enormously detailed. Even the fine clicking of sticks was obvious and discrete.

At this point and after many LPs I was marvelling at the sense of intense insight the Petit offers and its impressive resolution and symbiotic presentation of our Ortofon Cadenza Bronze MC cartridge. It captured the sweet but clear treble of the Bronze better than most: when Mark Knopfler's guitar strings chimed out in True Love Will Never Fade, from his LP Kill to Get Crimson, I was entranced! Lucidly clear and fresh, like morning sun.

MEASURED PERFORMANCE

Gain values measured as stated, except the maximum gain of 70dB (x3162) wasn't achieved, a value of x2513 amounting to 68dB – still enough for very low output moving coil (MC) cartridges.

The Petit overloads at 9V out, like most solid-state phono stages, the valves making no difference (no gain). This results in acceptable input overload values of 90mV with gain set to 40 for

MM, down to 4mV with gain set to 70 for low output MC.

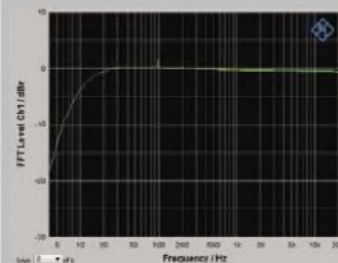
Frequency response measured flat from 16Hz to 20kHz with the highest gain of 70dB our analysis shows and was identical at lower gain values.

Steep reduction in gain below 20Hz gives -14dB attenuation at 5Hz, providing effective warp filtering to prevent loudspeaker cone flap. The Subsonic filter improves on this by increasing attenuation at 5Hz to a very high -40dB. With slight lift above 25Hz with subsonic filter in or out bass will be subjectively strong.

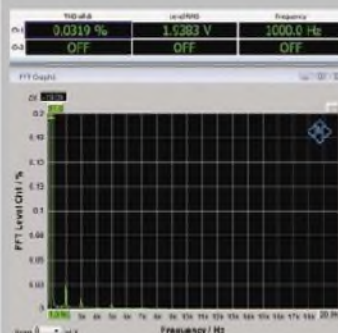
Noise measured a low 0.16 μ V (input noise) for both MC and MM. With MC 0.08 μ V is possible making the Petit 6dB noisier, but the difference is between no noise or a faint background hiss at the loudspeakers. So low noise, but not the best possible, the valves likely being responsible.

A fine set of results from a well tailored valve-output phono stage able to work with all cartridges. NK

FREQUENCY RESPONSE



DISTORTION



PHONO (MM/MC)

Frequency response	25Hz-20kHz
Distortion (1kHz, 5mV in)	0.03%
Separation (1kHz)	67dB
Noise (IEC A)	-93dB / -82dB
Gain (MM, MC) x100 (40dB) / x2513 (68dB)	
Overload	4-90mV in / 9V out

EAT E-GLO PETIT £1249



OUTSTANDING - amongst the best.

VALUE - keenly priced

VERDICT
Wonderful sound quality from both MC and MM cartridges at decent price, but technically geeky.

FOR
- clear, revealing sound
- matches all cartridges
- quiet

AGAINST
- awkward to place and use
- poor instructions
- no ground lift switch

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Rock Shock

Paul Rigby reviews a book on early Rock legend Bill Haley.

The Bill Haley Story:
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Bill Haley was a weak man and serial absent father who constantly and consistently shirked his responsibilities and ran away from his obligations.

His judgement was not only imperfect, it could be labelled as incompetent as he not only consistently made poor decisions in his choice of career advisors but took disastrous business decisions in which he lost large amounts of money over and over again. Lessons were never learned.

He was a shallow man who seemed more enamoured by fame than the music he played yet he had an ear for new trends when he chose to apply it.

He was an alcoholic which triggered increasing physical and mental issues as he grew older. He could be abusive. He suffered violent blackouts. The man was a flailing, out of control mess who was lucky to escape the clutches of the IRS, the clutches of the mob and the clutches of his two ex-wives.

He was also insecure and lonely, which may have been the source for much of the above. That's the conclusion I have after reading this book.

It's a hell of a story. And this is the wrong book to tell it. Why? Because this book is not about Bill Haley at all. Haley is in it, yes. His life is documented – sure – but Haley is almost used to introduce and provide

a plot frame for the real star of the story. This book is really about his second wife, Joan Barbara 'Cuppy' Cupchak and her family. She is the primary focus of this book. She is the only person in this book who comes out of the story with any credit at all.

She is the only personality who is sufficiently mined and examined in psychological terms. She is the only person we get to really know in this tome. She is the real tragic heroine on this book. And if she isn't there in person, she often is in spirit in the shape of one of her children, sired by Bill Haley himself. Failing either of those, 'Cuppy' is reflected within Haley himself, as Haley commits yet another grievous injustice upon his second wife.

In short, Bill Haley's personality is so retarded in this tome, he ends up as a co-star in his own biography. Of course, Bill Haley stands as an iconic pioneering figure in rock'n'roll history. Selling seventy-five million records, with four Top 40 hits to his credit, Haley is seen by many as the man who lit the blue touch paper to a musical revolution.

Yet this book, his book supposedly, is patchy to say the least. Frustrating even. Mainly because every new episode leaves you with a list of questions. Every chapter introduces new characters new events and new problems and every single time, you are left with questions, questions, questions.



Although author, Peter Benjaminson, had his hand on the tiller of the content of this book it is Billy Haley Sr's son, Bill Haley Jr who forms the core of the book and the source of the research.

Maybe that's why the text reads like a Jekyll & Hyde production. One moment, the text jumps and flies around your head like a typewriter on a big spring, the next it flows in a coherent and sensible manner. Is that possibly because the book consists of Haley Jr's haphazard research connected by Benjaminson's own text fills? I don't know, but I do know that the book itself is disjointed.

The book packs in a list of facts which are rushed through and ticked off like a list. Many of these facts are interesting, alarming, amazing and fascinating. Trouble is, you often want to pull the author back and ask him to stop, explain and elaborate. But no. He fails to look at an issue from all sides.

This fault is repeated throughout the book. It declares itself as Haley Sr's "first complete biography" but it is not. It begs accusations of misrepresentation.

As is it, this Bill Haley Sr book is an unsatisfying, frantic, choppy, haphazard highlights package.

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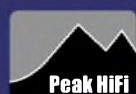
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WANTED: TOP quality Hi Fi separates and complete systems, Naim, Linn, Cyrus, PMC, Audio Research etc, fast, friendly response and willing to travel/pay cash. Please call me on 0781 5892458 or Email me at pogsonp@aol.com

AZURA HORNS AHI 60. Unused pair. £850. Sony SCD-XB780, boxed, unused, £180. Job lot speakers, £1100: Peerless 10" 4off, Scanspeak 8" 4off, tweeter 2off. Collection only. Gloucester. Roy. Email: epsilon@pobroadband.co.uk

NEAT MOTIVE I Loudspeakers. Cherrywood veneer. Excellent speakers, excellent sound. £475. Tel: Evan 07957384795 (London)

ARCAYDIS EB15 bookshelf speakers, (see Hi-Fi World May 2018 issue), mint, boxed, £275. Pair speaker stands Acoustics 3000T, black, £50, plus 4 shelf rack, £45. All mint. Sensible offers please. Tel: Pete 0115 975 4070 (Nottingham)

EAR 834L Line pre-amp by Tim de Paravicini. Excellent and well looked after condition. £650. Tel: 07505 057 414 or Email: zylandaroya@yahoo.com

CANADIAN GUTWIRE Synchrony 3 metre length speaker cables. Superb - totally new condition. £700. (Synchrony Interconnects available separately). Email: stephen.adolphus@gmail.com Tel: 07787 574784.

MERIDIAN 566 DAC/ Processor. Great condition. Upgrade your system on the cheap. £250. Cash only please. Buyer collects. Tel: Terry 01934 811 235 or 07868 480 165 (Weston-super-Mare)

WALKER CJ55 turntable with Hadcock Soundtracer arm. Linn and ADC cartridges. Owned from new, in mint condition. Collection only. £375. Salisbury. Tel: 07979 705 644 or Email: colinpetersmail1954@gmail.com

ISOTEK MULTI-WAY Gemini Orion mains distribution box 4 Plug outlets original box & manual Block as new, one owner only. Asking £120. Tel: John 01483472650 Woking, Surrey

MUSICAL FIDELITY A5 CD player Musical Fidelity A3.2 Pre and Power Amplifiers, £380 each or three for £950 excellent condition with boxes and manuals Hornchurch Essex, Email: bernkarm@yahoo.co.uk or Tel: 07710095413.

AVID PULSARE II 2 box phono stage, silver in perfect condition. Very little use, boxed, manual and all accessories plus a custom made tubulus silver umbilical chord. Selling due to downsizing. £2995 ovno. Demonstration on request. Contact Neil on 07818 848715 or neilpage37@yahoo.com

WANTED. BOXED with owners manual. Does any enthusiast have for sale a Nakamichi ST7E tuner with original box and manual. Fair price paid. Tel. Keith. 07919061178 or Email: kejjab@googlemail.com.

BEN DUNCAN pure power mains conditioner as sold by the HiFi News Accessory Club, bought from new. 1000VA. As new. Very heavy, hence collect only. £150. Enquiries to: michael.bickley@hotmail.co.uk

GARRARD 401 chassis, no plinth. In good condition all round and full working order. Prefer buyer to collect or arrange collection, but can post at cost if needed. £500 no offers / no timewasters / no paypal. Call 0207 499 8729 Camb.

VINTAGE VERY rare Audio Research SP6A valve pre-amp (not hybrid) with added remote volume. £595ono also Meridian rare black 101B pre, 104 tuner, 105 (2xmono amps each with power supply) so stacked 3 high in pairs £650 ono. Southport Tel: 01704 628968 or 07968769595

DENON PMA 520 AE amplifier, remote, £65. Audio cassettes, 150, sealed, many types, makes. Koss K6 1970's headphones, immaculate, £30. QED two way tape switching unit, £30. Quad 44, £250. Tel: 01708 457 691

TARGET HI-FI stand. 6 shelves. Metal construction with glass shelves. Spikes and shoes incl. Top shelf adjustable (for levelling of deck etc). North Yorkshire-Collection only. £149. Tel: 01287639179

LEAK TROUGHLINE and Hi-Fi World valve decoder set up by Tim de Paravicini less than a year ago, one of the finest tuners anywhere! £700. Tel: 07940 507215 or Email: rtodes@gmail.com

EPOS M12-2 loudspeakers, excellent condition, boxed, cherry finish, £200. Epos ST12 dedicated loudspeaker stands, £20. Tel: 07864 034 087 (Eastbourne)

ACOUSTIC ENERGY AE109, walnut finish. Sadly, unwanted prize. Immaculate condition. Collection only. £300 ono. North Wales. Tel: 01745 822 992

WANTED: VINTAGE Rogers A100 integrated amplifier or Rogers A75 Series 2 amplifier. Working or not but complete. About £50 plus agreed carriage. Tel: Gareth 01938 553 559 (Welshpool)

WANTED: REPLACEMENT remote control Aiwa RC-ZAT-D4. System: XR-MD100. For disabled person London E6 East Ham/Beckton area. Urgent requirement. Could collect? Tel: 020 7476 3247 and ansaphone.

NEXT MONTH OCTOBER 2019 ISSUE



QUADRAL AURUM ORKAN 9 LOUDSPEAKERS

Quadral loudspeakers are a great favourite with us. Slickly engineered in Germany, smooth and accurate yet with wonderful treble from a ribbon tweeter. Pure class. Next month we'll be bringing you their new Aurum Orkan 9 floor stander that promises more Quadral quality. Don't miss it in our next great issue.

Also, we hope to bring you –

PROJECT X1 TURNTABLE
TRIANGLE ESPRIT TITUS EZ SPEAKERS
MEZE AUDIO EMPYREAN HEADPHONES
NAIM MUSO 2ND GENERATION SPEAKER
MIYAJIMA SABOTEN L STEREO CARTRIDGE
TELLURIUM ULTRA BLACK II SPEAKER CABLE

...and much more.

This is a selection of what we hope to bring you, not a complete list. We regret that due to a wide range of issues, we cannot guarantee that all products listed above will appear.

**PICK UP THE OCTOBER 2019 ISSUE OF HI-FI WORLD ON SALE AUGUST 30TH 2019,
OR SUBSCRIBE AND GET IT DELIVERED TO YOUR DOOR: SEE PAGE 14**

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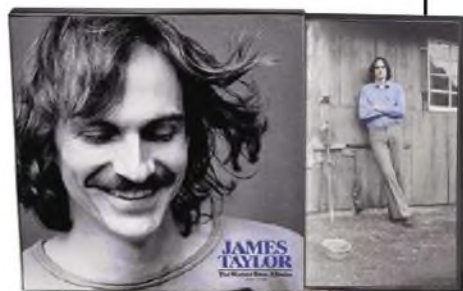
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NOVEMBER - 3RD SEPTEMBER

DECEMBER - 8TH OCTOBER

JAMES TAYLOR

MUD SLIDE SLIM AND THE BLUE HORIZON RHINO



The thing about James Taylor, the perception of the man, is that he was the original singer-songwriter. Maybe that tag needs some modification. A singer-songwriter in the modern sense. One that adds a measure of sensitivity to his presentation and performance. One that infused his work with emotion and a sense of delicacy.

Taylor is having none of that.

"If I look at people that I think were the sort of pioneers of that style I think of people like Woody Guthrie and Bob Dylan. But I did my version of it. People like Eric Andersen or Tim Hardin... there were a lot of people that influenced me. I'm sort of surprised that people would credit me with inventing that. Joni Mitchell was already doing it when I came out of the box, so was Randy Newman. So I can't really take credit for it".

Which is true. Yet the tag often arises and you can see why. Taylor's star really began to rise in the early 70s when he moved to the Warner Bros label. While 'Sweet Baby James' was a seminal LP release, I would argue that the album that helped to properly define him and arguably an entire musical genre, was 'Mud Slide Slim and the Blue Horizon'. Partly because the music industry and the public were ready for him and responded to the release.

This album is where many observers saw Taylor almost as a sort of rallying point to gather around after the trauma of the sixties' political upheavals, the assassinations, Vietnam and so on. His work seemed to be a balm. "There are a number of different angles that a song comes from" he admitted to the Internet website Stereogum "and sometimes they're soothing or comforting, sometimes they're celebratory with a party or festival sensibility. But I definitely do have this thing in my writing that looks to comfort, looks to soothe or to heal".

Now this important album from the early portion of Taylor's career can be heard for yourself because Rhino has released all six

albums. Mastered by Bernie Grundman (so you're in good hands here), the sound offers a low noise, detailed, zero compressed, slightly warm and cuddly presentation.

This collection brings several albums back into print on vinyl for the first time in many years. Each album in the set has been remastered, a process overseen by Peter Asher, who signed Taylor to the Beatles' Apple Records label in 1968, worked as his manager for 25 years and originally produced several of these albums. Presented in a sleeve out case, the set features 'Sweet Baby James' (1970), 'Mud Slide Slim and the Blue Horizon' (1971), 'One Man Dog' (1972), 'Walking Man' (1974), 'Gorilla' (1975), and 'In the Pocket' (1976).

This collection includes well implemented cover versions but also plenty of guest appearances. 'Rock 'n' Roll Music Is Now' from 'Walking Man', for example, features backing vocals by Paul and Linda McCartney and 'Don't Be Sad 'Cause Your Sun Is Down' from 'In the Pocket' is a song Taylor wrote and recorded with Stevie Wonder.

Taylor also has a bit of a reputation for his female collaborations. On 'Mud Slide Slim...' he worked with Carole King on his interpretation of her song 'You've Got a Friend' but asked Joni Mitchell to sing backing vocals. "...it's true, I suppose," he said. "Joni (Mitchell) and Carly – Carole had the most effect on me. All three of those remarkable talents had a profound impact. I had a deep musical conversation with all of them. We shared a musical language. It's a lovely thing to do. To share music like that is an extremely deep connection. It has meant a lot. But I think that Carole and I, we played in each other's bands and on each other's albums.

That's true of Joni and Carly too but Carole was there in my band with me. We were never a romantic couple, we were never intimately involved but musically we were really close. That's something that I wouldn't trade for anything. It was pretty wonderful working with Carole".

Taylor's six albums for Warner Bros. were distinctive and illustrative of a time and a place. That he could play a part in the gradual healing of the people in his audience was a special thing. I know his fans were and continue to be forever grateful. **PR**

"I would say that Carole King had the most effect on me. We shared a musical language".



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