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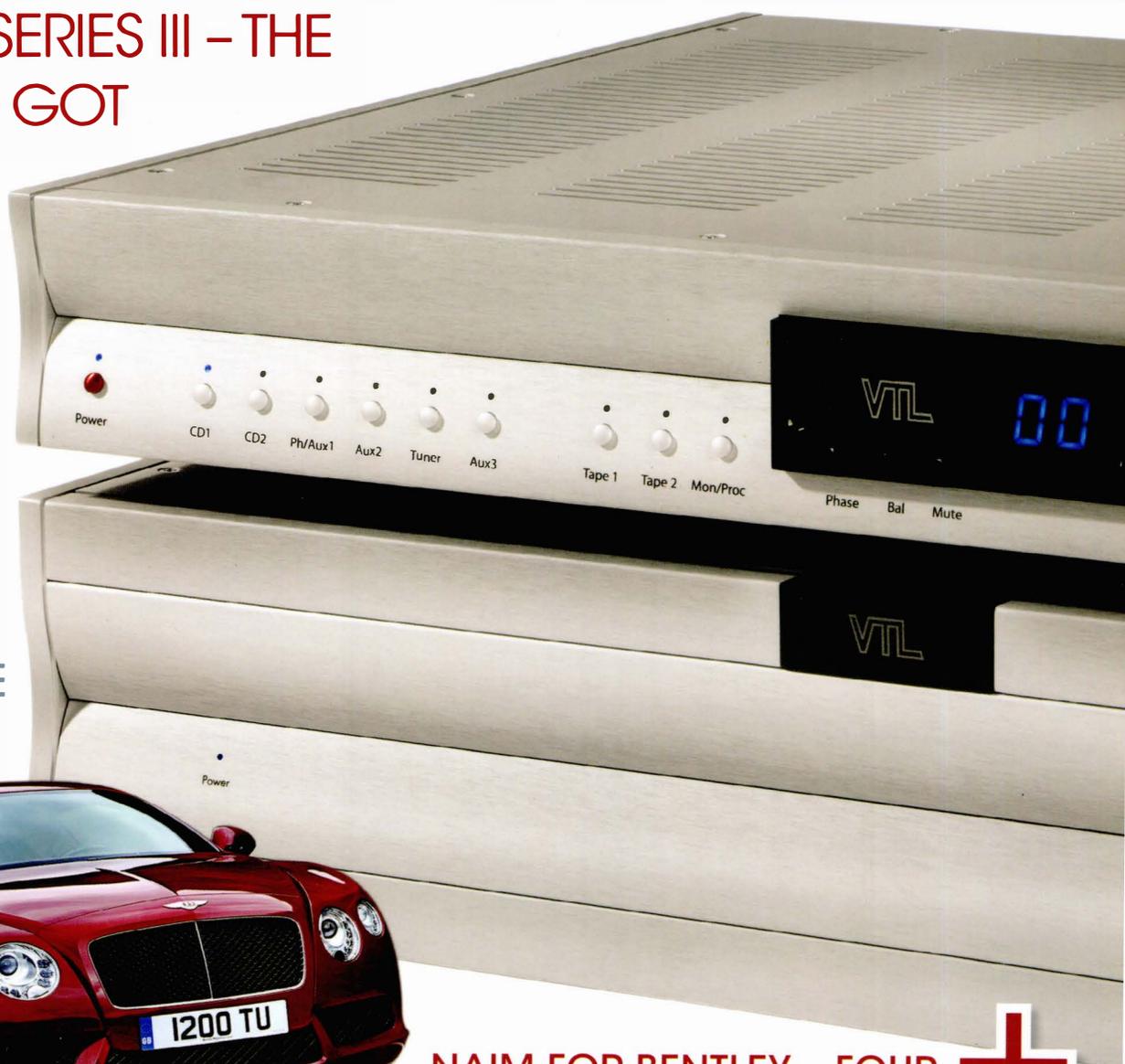
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97

QUE SERA, SERA

“Every particle of this speaker bespeaks the best of high-end.” *Alan Sircom - Hi-Fi +*

“The most musical effortless loudspeaker we’ve heard in years.”

Jason Kennedy - Hi-Fi Choice The Collection



Long established as a range of high-performance loudspeakers worthy of the names of the famous luthiers of Cremona, Sonus faber's phenomenal Guarneri, Amati and Stradivari redefined in their time the way a speaker matches its sonic presence to its aesthetics.

The Family has now matured with the latest generation starting with the monumental changes born with Guarneri evolution, and now **Amati Futura** looks as much to impending developments as does to an illustrious past.

Both the aesthetic and technical values of Sonus faber have sired this speaker, starting with a restyling that respects the lute-shaped form of the series, while refining it for even better performance.

But Sonus faber learns as much from its own efforts as it does the great woodworkers of yore: **Amati Futura** is one of the first models to exploit the Herculean R&D effort that was invested in the company's monumental flagship model, 'The Sonus faber', and refined it even further with the ground breaking Aida.

Like its recently-introduced siblings, **Amati Futura** represents what is possible, while respecting what has mattered.



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editorial

The hi-fi market is going through some interesting times right now. The market in the UK especially is very volatile. It's hard to predict whether next month will be up, down or sideways, as possibly reflects our ever-changing economic woes. But at a deeper level, there is also big change. Product categories are re-drawing themselves; we are seeing the rise of the big integrated amp in place of the multi-box pre/power combo right across the audio map. And perhaps more significantly, we are starting to see absolute state of the art audio electronics appearing at more wallet-friendly prices. The remarkable new HRT Music Streamer HD is the perfect example of that.

Recently, at an industry meeting, the annual UK sales figures for consumer electronics were released. Amid the gloom and doom and more doom, there were a few glimmers of hope – hi-fi sales were down, but not down as far as the home cinema market (the sales of TV sets dropped by a billion pounds in a year), and there were even some small upturns in the fortunes of audio; turntables once again bucked the trend, as people buy more vinyl and spend more money on the turntables they buy.

The other success story is headphones and headphone-related devices. The big story here was that the headphone market eclipsed the whole hi-fi and home cinema market by a not inconsiderable margin. Headphone sales now account for a fifth of a billion pounds alone. While a great deal of that market is driven by fashion rather than sound quality, it challenges the idea that people no longer care about music or the sound it makes.

I think the audiophile spirit is alive and well and living between the ears of people spending a lot of time and money listening to fantastic sound through their headphones. Was there a 'lost generation' of audiophiles, or were we just waiting for that generation to grow into their headphone amps? It's telling that one of the most significant product launches this year has been the Meridian Explorer portable headphone amplifier/DAC. There is an increasing maturity in the headphone world, and products like this reflect that.

Of course, it's difficult for older audiophiles to view this new paradigm with the same enthusiasm. But then again, they like things like turntables too. So perhaps there's hope yet!

Alan Sircom
editor@hifiplus.com

NEXT ISSUE ON SALE: UK APRIL 4, 2013 --- US MAY 9, 2013

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"...just music"

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Raidho acoustics

Best of SHOW

NEW: Raidho D-1, D-2 and D-3

"Best of Show - I thought about dividing this award among several very worthy contenders, but the truth is that one speaker sounded more like the absolute sound than any of the others - and not by a small margin.

That speaker is the new Raidho D1.

There has always been something simply magical about Raidho's quasi-ribbon tweeter; now, with the addition of a diamond/carbonite mid/bass that can better keep pace with the ribbon, this mini-monitor is capable of even greater jaw-dropping realism."

(Jonathan Valin, The Absolute Sound, April 2013)

RAIDHO C-SERIES

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Or email them to editor@hifiplus.com

incoming!

Speaker Upgrades

I found your article in Issue 93 on speaker upgrading particularly interesting, as earlier this year I went through a system simplification exercise (my old system was based on Innersound Eros electrostatics, you might just recall them?), and ended up with a Naim SuperUniti and a pair of Audiovector Si3 Supers. Having feared that, in simplifying, I might be going down rather than up the sound quality curve, I've actually been delighted that the new system is of really high quality, lifelike and dynamic, whilst also giving me the opportunity to dabble in a few high definition downloads. (I have broad tastes, but classical predominates). I seem to have found one of those 'sweet as a nut' combinations with no sins of commission, and only minor sins of omission.

So I'm tempted to leave well alone. But I was intrigued by the jump in quality you felt came from upgrading from the Supers to the Signatures. My question is, would it be sensible to consider such a move, given that (a) the cost of change, at £1,300, is quite a high proportion of the total price of the system, and (b) the level of Naim amplification incorporated in the SuperUniti (which I have no intention of changing) may not be sufficiently high quality to justify upgrading the speakers on the end of it beyond what I already have.

I'd be really interested in your thoughts, if any – I accept that you may not have heard the precise combinations, but I know you're pretty familiar with the Naim family of amplifiers.

Paul Graber, via email

If you have a system that works well, normally I'd suggest leave it well alone. In this case though, I'd say go for it. I happen to think the Naim SuperUniti is a magnificent unit and will happily take the upgrades presented by the Audiovectors shifting up a gear or two. If the Si3 make a lot of sense to you, the Si3 Signatures raise the game substantially without changing the fundamentals of the system.

Put simply, if you like what your current system does and just want a bit more, this is the way to do it. And I would suggest changes made to the loudspeaker offer significant returns on investment that are more difficult and expensive to achieve elsewhere in the system.

If you were to take a different path (and given how happy you are with your existing system, I'd exercise extreme caution in this endeavour), look at loudspeakers from the PMC Twenty line or models from Neat, Guru Pro or Kudos lines. These will be the closest match to your current loudspeakers, but offer an alternative route that you might find acceptable. However, why mess with a good thing?

Finally, if it is domestically acceptable and you haven't already gone down this line of reasoning, consider investing in some room treatment. This can realise remarkable performance upgrades to a system, especially in domestic settings – Ed.

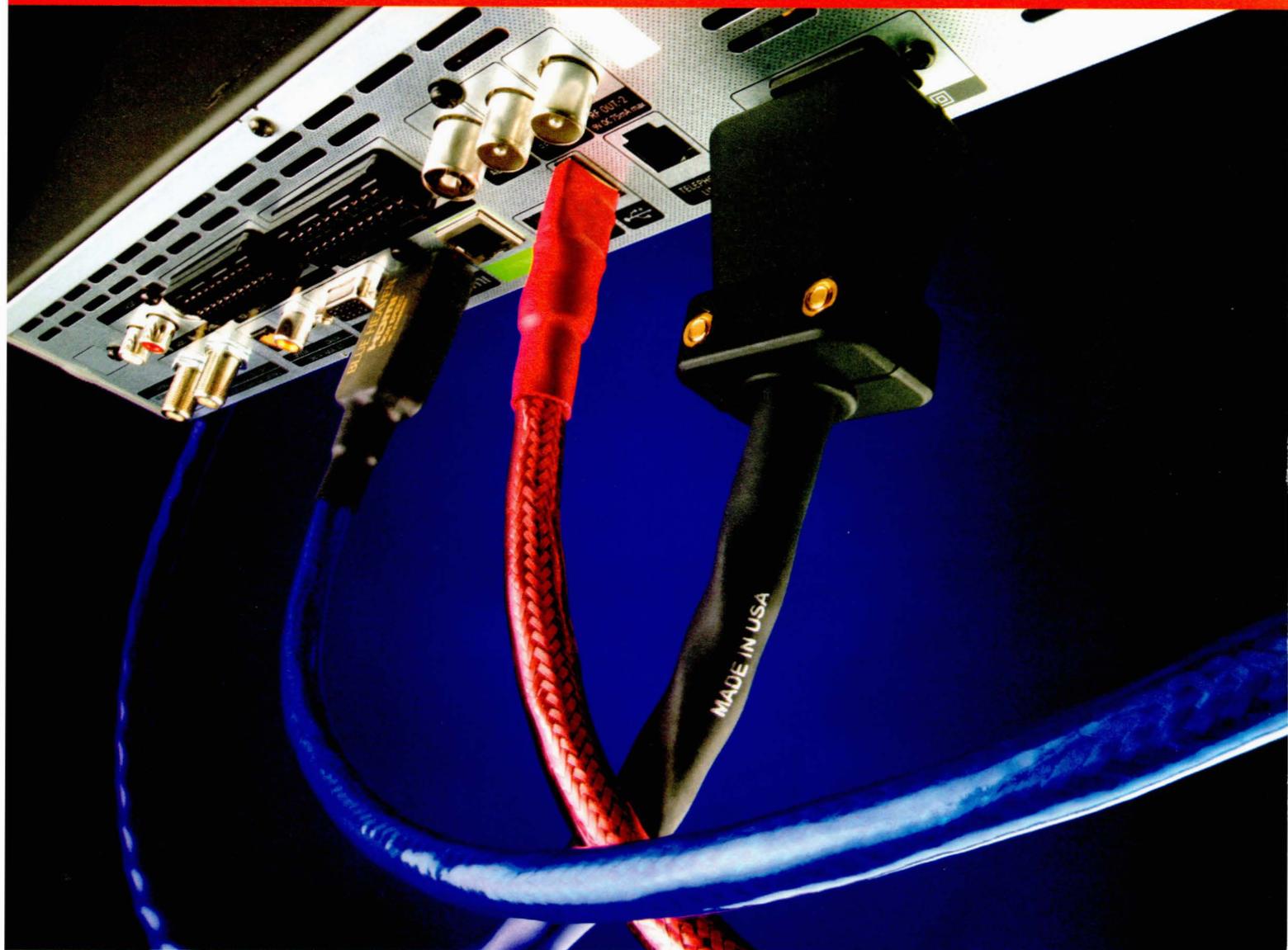
Throwing down the gauntlet

Thank for publishing my letter in December 2012 issue regarding my enjoyment of using an Ortofon 2M cartridge. I am delighted that people felt the need to reply to it as well, because if it made anyone listen to vinyl, sort out or improve their vinyl playback regardless of cost then it can only be a good thing. Without starting World War III, I would to say to Dieter Brendt that I am sure an all Brinkmann combination sounds amazing and superior to my set up... but at the price it bloody well should be!!

If Dieter lives in the UK, I would love to hear his system as I am sure it is impressive. The best turntable combination I have heard in a person's home was an Oracle Delphi with Air Tangent arm and Kotesu Red cartridge. In my opinion, that is a "high quality turntable arm and cartridge combination" and if he can better this then I will happy to tell him so. Likewise, Dieter is more than welcome to visit my home where I will cook one my legendary curries and he can hear my unconventional system where my speakers are raised from the floor, using coffee tables, isolation care of chopping boards, room tuning down to rolled up carpets and using a Japanese amplifier with tone discretely used for enjoyment (Spare me all this 'it degrades the sound' baloney... every album you own was not mixed or recorded in your home, so will sound different anyway).

I'm glad that Bowie is making music again but sad that HMV might not be around to stock his new album. The *Buddha of Suburbia* album sounds amazing on my system.

Nass Khan, via email ▶



“Born in the USA...”

The “one cable does it all” approach of HDMI might seem like simplicity itself – until you look inside that cable. With no fewer than 19 individual conductors, each with critical termination and transmission requirements, it should come as no surprise that not all HDMI cables are created equal.

With wide-bandwidth data, analog signals and even DC all running through the same connection, balancing those conflicting requirements and preventing interference is no simple task. The Blue Heaven HDMI cable uses Nordost’s proprietary Micro Mono-Filament, virtual air dielectric technology to create a precision wound cable with exceptional geometrical accuracy and consistency, electrical and mechanical characteristics.

Designed, manufactured and hand-terminated in the USA, the cable is double shielded and uses gold-plated, fully shielded, metal jacketed connectors to guarantee signal quality and connection integrity. This combination of superior technology and parts quality with painstaking attention to detail is what makes the difference. The result is clearly superior performance

that easily exceeds the HDMI standard and has gained the demanding DPL Seal Of Approval.

You want the best picture, the best sound and you need complete reliability. You want it all in one cable – a fit and forget solution. Well, now you can have it, because we have sweated the details. Nordost’s Blue Heaven isn’t like other HDMI cables – that is why it sets the gold-standard for audio and AV performance.

**Nordost Blue Heaven HDMI –
because the Devil is in the details.**

NORDOST
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► There's only wannabe HI-FI

Thanks to solid-state transistor-based audio power amplifier, the price of high-powered hi-fi amplifiers became much more affordable. But many hardcore audiophiles complained that transistor-based audio power amplifiers didn't sound as musical as their vacuum tube-based counterparts.

Even newer MOSFET devices – whose characteristic curves resembles that of a pentode tube – still didn't sound quite as musical. I wonder if there's a reason – hopefully a scientifically verifiable one – that explains why solid-state amplification (transistors and MOSFETS) don't sound as good as their vacuum tube counterparts?

The French amplifier manufacturer – Lavardin Technologies – discovered in 1997 a way to bring the solid-state amplification closer to their vacuum tube-based competition. The phenomena “Memory Distortion”, so they call it, is responsible for the shrillness and mechanical-sounding artefacts identified in solid-state amplifiers. Unfortunately these exotic amplifiers are so prohibitively expensive, especially when compared to vacuum tube-based amplifiers of similar power output and features. But despite of the obvious overpricing in electronics terms, why do these amps sound so good?

According to Lavardin, memory distortion has to do with the way musical signals have to slog their way through silicon – akin to being stuck in the mud. Transistors hold previous signals in memory – as in the electron's wave function. And these “residual memories” or remnants of an electron's previous state – maybe a few tiny fractions of a second before they distort the new incoming signals. The musical signals can't flee the silicon fast enough. But is this explanation sufficient from a scientific standpoint? After all, if “memory distortion” is about timing errors – assuming that the phenomenon is real in the first place – then why is it that there are several, albeit almost unrelated, ways of eliminating the symptoms caused by memory distortion?

James Henriot of Whest Audio also managed to do the same feat of making solid-state amplifiers more musical by eliminating “analog-domain jitter” via his Whest dap.10 processor. Which most users testify that the Whest dap.10 processor improves their already well-sorted CD playback system's sound quality by making it sound like a big analog open-reel tape, the one often used in better recording studios. This product seems like it makes your typical solid-state integrated amp sound like a good vacuum tube amp.

While a Frenchman named Yves-Bernard André of YBA also manages to do the same with his solid-state integrated designs by using various techniques holistically to eliminate the symptoms that make solid-state amplifiers sound ‘inferior’ to their vacuum tube counterparts, YBA products – as with most French integrated amps – are typically priced way above what a typical hifi enthusiast is willing to pay, Yves-Bernard André's holistic approach to designing his solid-state based audio components seems to have removed the symptoms of what we now know of as memory distortion.

LFD Mistral MOSFET-based integrated amplifiers also managed to eliminate the symptoms of memory distortion through attention in circuit

“Unfortunately these exotic amplifiers are so prohibitively expensive, especially when compared to vacuum tube-based amplifiers of similar power and features. But despite the obvious overpricing in electronics terms, why do these amps sound so good?”

layout. By orienting the resistors of their LFD Mistral integrated amps in phase on the master board. The resistors on both channels are identically oriented which they believe – and some owners of LFD Mistral integrated amps – is important to stereo imaging. So does the orientation of the wiring and the fuses. Unfortunately, this attention to detail in parts layout doesn't lend itself well to mass production machinery used in making mobile/cellular phones and i-Pods. But the resulting product is nonetheless spectacular. LFD Mistral integrated amplifiers are often compared to single-ended triode amplifiers in terms of sound quality.

Array is a young Dutch Hi-Fi company presenting remarkable technics in service of best sound and price in the High-End market. Both technicians found out that vacuum tube amplifiers carry a strange contradiction. They measure bad but sound fantastic. How is it possible that what one can hear as sounding natural, is not scientific measurable? Where is the magical parameter that can point out why almost any listener can tell you what is the most audiophile amplifier?

▶ Array discovered something they also call transistor memory distortion. Transistors have a characteristic sound depending on the working temperature. The active parts in transistors are so small that, because of the short but high current peak in music, warm up very fast. Upcoming signals pass in a zone that's still recovering from this sudden warming up, and therefore sound different as in other situations. Other than in transistors the amplifying parts in a vacuum tube are many times bigger, and already in a very hot state of working. Peaks won't be noticed that much. Like the other companies mentioned here, Array found a way to solve this Memory Distortion, and even so they keep their solution a secret.

However the fact is, technology has evolved to the point that if you know what you are doing you can make a solid state amp sound tube like, and a tube amp sound like solid state. What do tubes sound like? Their sound is most often termed 'liquid', 'warm' or 'lush'. Why? It's hard to explain or agree upon, but the human ear seems to find even harmonics pleasing and odd harmonics annoying. Due to their speed (or lack of it) tubes cannot generate large amounts of harmonics even if they wanted to.

Tubes also have a penchant of favouring even order harmonics and are less likely to produce odd ones. In fact tubes are so rich in second order harmonics that by the time they even reach the 3rd order ones they are greatly reduced by the natural character of the tube. These things give tubes the "warm" quality we admire. Transistors by comparison are far more limitless, and can (and do) go way out there harmonically, which while impressive can give them their cold and strident edge because they produce so many odd order harmonics.

If the Lavardin is accepted as the most (near perfect) neutral of any amps, and studios therefore use the Lavardin amps, why do the Hi-Fi magazines don't

"Why do Hi-Fi magazines never add information about the cost of the vacuum tubes? How often do the tubes have to be changed? It's rare to find a vacuum tube amp, good sounding, that's acceptable in an ordinary living room."

take this amp as a reference point? It is probably the best solid-state amplifier, hands down, and even when compared to the best vacuum tube amplifier (Leben CS-600) it's a good try. What about LFD, Pass Labs and Symphonic Line then?

How come this kind of solution concerning the memory distortion is still not generally "integrated" in all standard amplifiers? Why do Hi-Fi magazines never add information about the cost of the vacuum tubes? How often do the tubes have to be changed? It's rare to find a vacuum tube amp, good sounding, that's acceptable in an ordinary living room.

Why do I notice in every Hi-Fi magazine a kind of favouritism for certain products? Are they driven by marketing instead of neutrality? I can understand if we drop everything that's made in China, we support local labours and there's enough left over.

Why don't magazines chose a reference at a certain cost, so they never have to spend time in things that are far more expensive... And then try to get cheaper every time, instead of chasing the stars. We need another approach!

Why is there such a high appreciation for computer operated surround amplifiers, such as the Pioneer SC-LX86. Available at only a cost of £2,200 – and called a benchmark...

The only thing I understand by that is, never buy a Hi-Fi stereo amp, because they don't know how to do a decent job. Frankly, I have never liked it neither understood surround sound. For me at least what comes out of the TV is fine because I have always felt cinema was about the image, not the soundtrack. It puts too much emphasis on the sound and takes my attention away from the film.

What I'll never understand though is fivechannel stereo. Me, I sit in front of the musicians. There's no possible future for multi-channel stereo. In search for a new Hi-Fi-set, I decided for myself that I need an overlap over all Hi-Fi magazines at least of three reviews per Amplifier to make my own consensus. After all the effort I spend on reading Hi-Fi magazines I no longer have the hope to find the Hi-Fi Holy Grail! I have the feeling I'm chasing a rainbow. So yes, what we buy very much matters but how can one shop wisely? We run from one store to another, or we spend hours filtering the internet... All is only voodoo and wannabe...

Tony Foquet, via email +



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Hi-Fi Plus - Sept 2012

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FEATURE

The LeadingEdge Racks and Room Treatment – adopting a systematic approach to system

By Steve Dickinson

Having got the various LeadingEdge components into my own system and enjoyed their impact en masse, it was time to start thinking about their individual contributions. I experimented with removing, and refitting various of the bits & bobs which make up the entire setup. Remove the HiRez cones (between each platform and the electronics)

and music lost some of the key sense of timing and rhythm, and dynamics felt a little defused and deflated. Winding the Stop-Choc feet in so the table sat in contact with the support frame was, if anything, even more significant. Now the timing made no sense at all. The attack and fundamental on bass notes were oddly disconnected from the harmonics and the decay parts, a strange sense of dislocation, almost as

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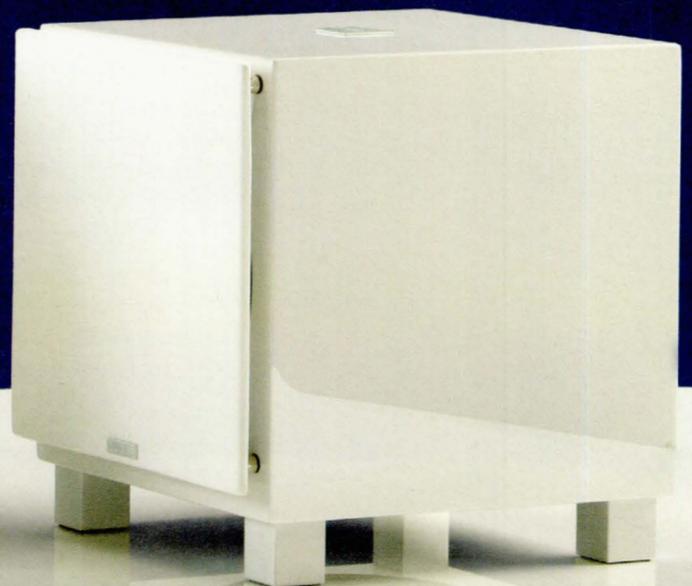
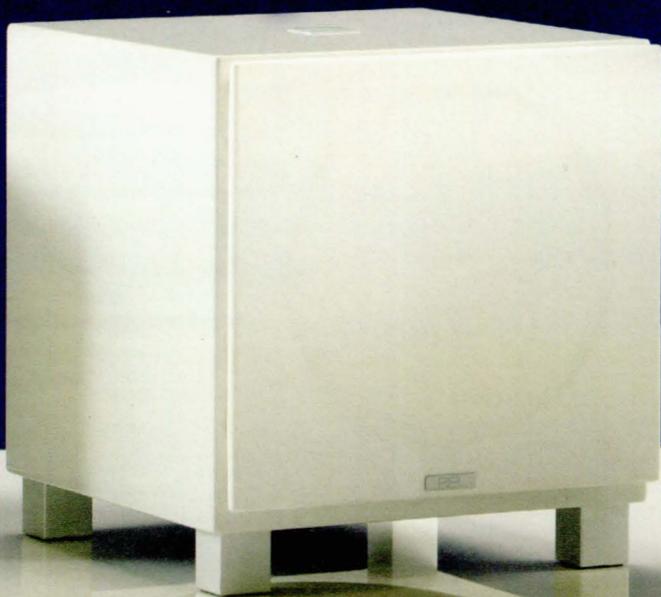


FEATURE / THE LEADING EDGE RACKS AND ROOM TREATMENT

thought they were two separate instruments. A strange and most unwelcome effect. Not surprisingly, the piece now failed to get or hold my attention, it had no sense of purpose or interest.

Now take out the HiRez cones and everything makes somewhat less sense. Percussion lacks precision, and the playing of instruments is less subtly and skilfully wrought, with little or no sense of pattern. The overall effect is to make you wonder how well the musicians know this piece. Winding the Stop-Chocs in to their fullest extent degrades the sense of pitch and decay to notes quite significantly. Notes simply die, almost as if the sound box is half full of water. The pitch is also less well-defined. Bring the Stop Chocs back into play, and replace the HiRez cones, and the instruments are better defined, the placement of notes is more deft, the musicians are listening, and responding, to each other rather than simply getting through their part.

The Stop-Chocs seem to tighten everything up, while simultaneously opening everything wide for inspection. The music acquires a distinct sense of focus, even deliberately distorted ▶





guitar retains more of the shape of the note. Similarly, percussion has more point and purpose, it stops being mere background rhythm and makes a clear and positive contribution to the proceedings. The HiRez isolators and coupler work in a similar way, but this time it is often the dynamics which are the most obvious beneficiaries. These are, in many ways, complimentary effects and the benefits of both, used in combination, transcend their individual contributions; on reinstalling the Stop-Chocs and the HiRez cones, order was miraculously, and gratifyingly, restored.

The mini-panel 'side cheeks' simply sit alongside the equipment, on the support frame. They are intended to further isolate, electromagnetically and acoustically, the area the equipment sits in. Interestingly, they don't need loud or bombastic music to make their presence felt. Remove the mini-panels and music becomes fairly unremarkable. With the side panels replaced, it regains a level of interest and intrigue that is both more emphatic, and more engaging, you are suddenly much more interested in where a piece of music is going.

Schubert's 'der Doppelgänger' is a deceptively simple piece, but properly rendered it conveys a sense of threat, even menace, which can't be ignored. Without the mini-panels in place, it loses some of the sense of presence, of real musicians working together in a performance space, and it is that sense of intimacy, of sharing the moment, which creates much of the drama and tension. Panel-less, the drama dissolves into histrionics, shouting and gurning. Put the panels back in place and we're back in a world of mystery and intrigue. Larger scale choral music fares equally well, and they don't get much larger in scale than the 'Judex Crederis' from Berlioz' Te Deum. With the side panels in place, the vocal is emphatic, without sounding forced. Without, it's just loud and shouty. If I had to sum up the side panels' contribution succinctly, I'd say they create a little oasis of calm for the equipment to work in, so that any drama is in the music, not just an acoustic problem being re-radiated through the system.

It's not just that it makes sense of the music, and resolves meaning where once there was chaos, but it also draws out the beauty. Instruments are rich and sonorous, but not overdone or blowsy; there is a natural warmth and grainlessness to the presentation. Just once in a while, I found myself wanting the odd bit of grit in the oyster and, just perhaps, on those occasions I'd trade the last ounce of sophistication for the last little gobbet of rough and ready, down and dirty, foot-stomping, good-time music-making, but mostly, the Leading Edge table did everything I asked of it, and plenty I didn't even know I wanted, until I had it.

The second element in the Leading Edge approach deals with room acoustics but, again, not in an entirely conventional way. The Leading Edge panels, available in various different sizes and shapes house a clever cellular matrix of absorbing material. Their purpose is not so much to manage room reflections and resonances, as to control the movement of the air mass within the room.

In my small room, which is roughly square, I opted to try just a single panel, not wanting to overload things acoustically or visually. The panel worked most effectively when placed at one end, between and behind the loudspeakers. When I introduced it at first, I placed it at the side, in the conventional 'first reflection' position between

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Anna

Xpression



The new MC Anna from Ortofon sits at the highest echelon of Moving Coil cartridges. This state-of-the-art product is representative of numerous design elements and ideals pioneered by one of the world-leaders in analogue technologies. As a result, the MC Anna is truly capable of the highest degree of performance possible, and will provide a sound which is literally unsurpassed. The MC Anna is named after and inspired by the world-renowned operatic soprano, Anna Netrebko.

The stylish Xpression cartridge from Ortofon bridges the gap between SPU-type designs and High-End models like the MC Windfeld and MC Anna, which are designed for headshell mounting. The result is a high-performance moving coil cartridge with the convenience of a standard headshell connector. By using some of the best technologies available to them, Ortofon have made the Xpression into not just a convenient and attractive design, but also one of the finest sounding cartridges available on the market.

Cadenza Series



The Cadenza series represents another example of Ortofon's constant push toward technological perfection. By taking various design characteristics acquired through market leaders, such as the MC Jubilee and Kontrapunkt series, Ortofon have developed Cadenza to elevate any decent Hi-Fi system to a whole new level. The range consists of 5 different models, including a Mono version, but they all adhere to Ortofon's core principles of accurate information retrieval and phenomenal sound performance.

Ortofon is distributed in the UK by Henley Designs Ltd.

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► me and the loudspeakers. This had a noticeable, but not profound, effect, and plan 'B', down the end of the room was much, much more successful, the panel damping the motion of the air mass more effectively in that position. Also, note that this central/boundary position is where the air velocity will be highest, helping to explain just why it is so effective.

What the panels do with music is interesting and significant. It boils down to an improvement in the way the music hangs together. The effect may vary, from piece to piece, but it does seem to be associated with timing, at a fundamental level. Not so much the rhythm and metre of the music, but whether the various elements arrive at the right time, and in the right order. This isn't room-dependent, it was the same in my room as it was in RG's.

The panels create a stronger sense of music as a collaborative effort - a sense of players working together, not merely a collection of related sounds. Each component part has its own space and time, in which to make its contribution. The strident brass opening of Sibelius' Finlandia was instructive. Rather than the usual wall of sound, the impression was of several instruments playing en masse, and the timpani rolls were more clearly defined: the strike and the reverberation gained shape and location. This acoustic control isn't just about loud, bombastic stuff either, Fauré's Elegie is a simple cello solo with piano accompaniment. The opening figure is played through, then repeated, but more quietly. Without the panel, the difference is one of mere volume, with the panel, it became a question of intensity. Again, it's a question of communication through the music, by the musicians.

The LeadingEdge approach is interesting, effective, and hard to achieve by other means. Modest boxes can outperform even hugely more expensive alternatives, and the expensive stuff just gets better still. If that doesn't represent fair value. It also has the undeniable benefit of being attractively finished with a range of options including wood veneers or high-gloss lacquer, which bodes well for domestic acceptability.

The modular approach means you can build it up as funds permit; starting with a platform on top of existing supports is probably an easier entry point for many, which is helpful because it's an indisputably costly solution. For once, however, it's not that difficult to see where your money has been spent, and the results clearly justify the expense. I can't think of any hardware upgrade that would provide a similar increase in performance for the price, indeed, the sort of improvements we're talking about here simply don't come from the hardware itself. LeadingEdge offer a comprehensive, effective and complex solution - and why not? After all, we live in complex times. +

Leading Edge describes the panels' function as 'velocity choking'. In effect, the mass of air in the listening room is excited into motion by the loudspeakers. It's not simply a question of sound waves propagating, and reflecting off hard surfaces, but the volume of air sloshing around.

If you think about the propagation of sound, it consists of pressure waves moving through the air. It isn't therefore much of a leap to realise that, if the mass of air these pressure waves are moving through is itself moving back and forth, then this will affect the timing of the arrival of these pressure waves at the listening point. If the gross motion of the air can be damped in this way, then the motion from the pressure waves can work as intended.

The benefits of the LeadingEdge panels are not confined to music, either. When introduced, they immediately alter the acoustic qualities of the room, even for normal conversation.

UK RETAIL PRICE LIST

Rack System

Support Platform (inc. Coupler/Decouplers): £1300

Rack base: £850

Rack upright with shelf frame (240, 310, 380mm):

£900 per level

3 Shelf Rack System (616 x 410 x 310mm): £6,700-£9,000 depending on finish

3 Shelf Rack System Full Solution: £10,300-£13,500 depending on finish (including extra level, top cover and mini panels)

Acoustic Panels

Single-sided (from 600mm x 800mm): £1100

Double-sided with feet (from 600mm x 800mm): £1400

(Panels available in white, light oak or cherry as standard and three different heights - 800, 1100 and 1600mm. Double sided panels need at least eight inches of air behind them. They are ideal for free standing or hanging from ceilings. Specific sizes and (many, many) finishes are available to special order)

Further Information

Tel: +44 (0)1597 825993. URL: www.leadingedge-audio.com

Tel: +44 (0)24 7722 0650. URL: www.kogaudio.com

(Acoustic Panels Only)

The VTL TL7.5 Series III Line-stage (and MB450 Series III mono-blocs)

By Roy Gregory

When the VTL TL7.5 first appeared, way back in 2002, it marked a serious watershed in the evolution of valve electronics. For so long the poor and far from pretty relation of sleeker, more stylish solid-state electronics, the arrival of the 7.5 banished the oversized casework and perforated bent metal chassis aesthetic. In fact, it was externally indistinguishable from the solid-state competition. More importantly, it was operationally indistinguishable too, with a practicality and versatility that equaled the best; an elegant, twin-chassis package that oozed class.

Ten years on and the market for valve electronics has evolved – and so too has the 7.5, reaching Series III status. The competition has split, some playing catch up and trying to clean up their acts, others filing the contest under “too hard” and reverting to the retro path. Where does that leave the VTL? Still firmly atop the aesthetic and functional tree. The Series III is externally identical to the Series I and functionally identical too, aside from an internal switch that alters overall gain, testament to the clarity of form and purpose embodied in the original design. What have changed are important elements within the circuit itself, but to appreciate that evolution it's necessary to start with the original overall concept.

The TL7.5 should really be considered a hybrid design. It uses a two-box chassis, separating the audio signal path from the noisy power supplies and control/switching circuitry. The circuit in the VTL is fully complementary, with a single 12AU7 per channel being used for voltage gain, direct coupled to a FET-based buffer that supplies the necessary current. It's an arrangement that uses each technology for its strengths. Likewise, the substantial power supply was built around solid-state MOSFET regulation in a series-pass topology, avoiding the current limiting and lifespan issues that impact on the performance of tube-regulated supplies. The audio circuit was a model of simplicity, with very low global-feedback and using a single resistor ladder to provide both volume and balance control.

So, what's new? Let's start with the power supply. Experiments with a tube regulated supply yielded superior sonic results, but VTL were reluctant to rely on valves in this critical application. Examining the reasons for the superiority of the tube supply, they were able to develop a new, shunt-regulated MOSFET design that delivered better dynamics and signal performance than either the original MOSFET topology or the tube power supply.

The tube gain-stage was re-engineered for greater linearity, which allowed the elimination complete of global feedback, while the output buffer was also redesigned around new J-FET-like devices sourced from green technologies,



EQUIPMENT REVIEW / THE VTL TL7.5 SERIES

offering a more valve-like behavior coupled to greater extension, resolution and linearity. Finally, the bypass capacitors used throughout the circuit were completely reassessed. Currently fashionable Teflons were found to work well in the power supply, delivering excellent detail and resolution, but in the critical audio circuit, Polypropylene was preferred for its natural, unexaggerated balance. Roll these changes together and sonically, the TL7.5, whilst still recognizably the same animal, has taken a serious step forward in sonic and, more importantly, musical terms. I've been fortunate enough to have a 7.5 Series III in residence for quite a while, in conjunction with the MB450 Series III mono-blocs reviewed back in issue 88. In that

time it has become the go-to pre-amp in a whole range of reviews, reflecting both its sheer versatility and tractable nature: there's nothing you can't connect to the 7.5, and nothing you can't connect it to, given its full range of both single-ended and balanced inputs and outputs, combined with its capability to really drive long cables and handle wildly different input levels and system sensitivities. Four inputs can be switched from single-ended to balanced configuration, with two more and two tape loops operating in single-ended only. Input sensitivity can be individually trimmed to accommodate different source components and system phase can be reversed.

But what has made the VTL TL7.5 genuinely universal is its sheer invisibility. Once it's in the system, it simply gets on with the job. It's not that it doesn't have a character, it's more that you simply don't notice it. This is the Holy Grail of audio performance, and few components in my experience (and even fewer line-stages) perform this trick quite as well as the 7.5. The few that do are the keepers – the products that will stay in your system for a long, long time – something that's further underlined by the fact that VTL will upgrade any 7.5 to current status, a step that's well-worthwhile. ▶



EQUIPMENT REVIEW / THE VTL TL7.5 SERIES



What is it, in musical terms, which makes the TL7.5 such a significant advance over its predecessor? I can best describe it as a more concentrated performer. Whilst the character of any audio component can be broken down, discussed in terms of traditional audio categories, like transparency, dynamics and separation; and whilst all too often that dismantling of the audio performance mirrors similar disconnections perpetrated upon the musical performance, in the case of the TL7.5 the sound is so coherent and so holistic that it only really makes sense to consider the way these aspects combine or alloy to create the overall impression. Hence the term “concentrated”; by which I mean that there is a greater sense of centered presence and energy, a greater sense of physicality to each instrument. But it is not just about holding things closer, it’s also about holding them more stable. So the thing about the VTL is the way it locates an instrument, almost physically, within the soundstage and then keeps it there. What you don’t notice is the sheer stability of the event. You don’t notice that instruments don’t move with level or pitch. Whole sections of the orchestra don’t clamber forward into an undignified central scrum every time there’s a crescendo, individual voices or instruments don’t waver languidly within the mix. This absence of movement passes unnoticed, simply because you only become aware when things do move, when that movement destroys the spatial illusion, when instruments start to migrate and draw attention back to the speakers.

The other thing that happens as natural result of this grounded, concentrated presentation, is that there’s a greater differentiation of what is instrument and what isn’t – which in turn creates a greater sense of energy, of sheer musical power when the recording demands it. I’ve used the 450 Series III mono-blocks with a considerable range of driving pre-amps, but combine them with the TL7.5 Series III and the sudden surge of power is almost like you turbo charged the amps. This sense of unfettered musical impact is founded on the absolute integrity of the signal they’re being fed. This almost physical sense of presence might not match the micro-dynamic textures available

from the highest resolution devices, but this is a different kind of resolve – one that won’t brook any dilution or dismantling of the musical message in search of mere detail.

But don’t get the idea that the TL7.5 Series III is just about BIG and LOUD. So much of being truly invisible in the system is about getting out of the way, about allowing the expressive, fluid qualities in the playing to shine through, the emotion in a vocal, the way that two, or three, or four instruments combine and play off of each other. Of course, that doesn’t mean it can’t be loud too...

Play Elvis Costello’s ‘Little Triggers’ and there’s a centered impact to each drum beat, a tactile shape and momentum to the bass line, working together to underpin and reinforce the beautifully modulated and restrained vocal line. There’s a sheer substance to the sound that matches the power, purpose and attitude in the performance that real brings that bitter mix of sadness and anger alive. Likewise, the open air recording, the massed voices that open Peter Gabriel’s ‘Biko’ are spread wide in a massive, open space. This is people power plain and simple, the depth of the emotion, the sense of collective grief (and hope) heightened by the individual voices.

It's a powerful statement of musical intent that is matched by the entry of the deep, pulsing bass note, a beat that is tight and solid, with edges, a pitch and a separate space all of its own. As the music builds, layer on layer, the 7.5 holds the two acoustics, the two musical worlds separate and distinct, never allowing that powerful bass to spread, bleed or obscure the crowd of voices. It might seem a small thing but it adds real power and impact, a whole new dimension of distance, of contrast between those inside and those outside the events. Gabriel could have mixed the song as a straight studio track, but it works so much better this way. The beauty of the 7.5 is that it tells you that – and why that is.

TECHNICAL SPECIFICATIONS

Type: Tube-based fully complementary line-stage

Tube Complement: 2x 12AU7

Inputs: 4 pairs balanced/XLR or RCA single-ended. 4 pairs single-ended/RCA

Input Impedance: 50kOhms (20kOhms min)

Outputs: 2 pairs balanced XLR, 2 pairs single-ended RCA, 2 pairs single-ended RCA buffered Tape Out

Gain: <20dB

Output Impedance: 25 Ohms (150 Ohms max)

Dimensions (WxDxH): Control Chassis – 445 x 445 x 102 mm, Audio Chassis – 445 x 445 x 153 mm

Weight: 34kg (packed)

Price: £19,995

Manufacturer: VTL

URL: www.vtl.com

UK Distributor: Kog Audio

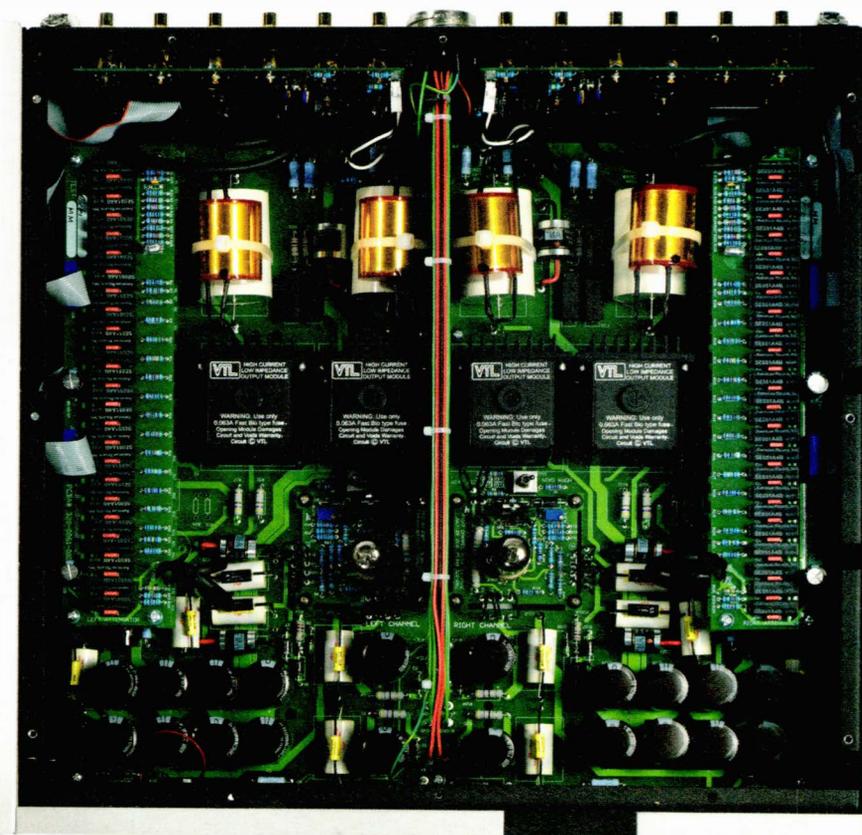
URL: www.kogaudio.com

Tel: +44 (0)24 7722 0650

(For full details of the MB450 Series III, please see Issue 88)

By allowing each voice or instrument in a recording its own space, its own existence, but by also preserving the relationship between the pieces and players, the TL7.5 brings the core of the music right to the surface, imbuing performances with a feeling of purpose and intent that heightens their power to move and immerse the listener.

This ability to both separate and yet bind the music's elements together is an awfully neat trick if you can pull it off, and in this musically vital respect the combination of 7.5 and MB450 is blessed indeed. In no small part that is down to the ability of the line-stage to meet the demands of any input, the power-amp to not just drive any speaker, but also adjust its damping factor to optimise the coupling. But as good as the 450 is – and it's a mightily impressive beast – there's no escaping the fact that it takes a whole step up in terms of power, impact and sheer musical authority when driven by the 7.5 Series III. With power available to handle any musical programme, the grip to hold things steady and the confidence to let them breathe, these Series III VTL products aren't just better than their predecessors, they represent a step up in audio terms but a step change in musical communication, especially when used together. If you want the music AND the message, and you want it right there right now, then the TL7.5 Series III is a great place to start, the MB450 Series IIIs the perfect partners. Costly to purchase and demanding to house they may be, but these electronics will deliver the warm, beating heart of a truly great system; for once, value really isn't an issue. +



HRT Music Streamer HD digital converter

By Alan Sircom

I'm not going to beat around the bush. Correctly fettled, this is the best DAC you can buy at this time. Not the best DAC for less than £500 or the best USB-powered DAC. It's not even the best DAC for something like the double the price. I've tried a lot of DACs, some costing a lot more than the HRT Music Streamer HD and – while they might be different, they are not better.

It's an USB-powered Asynchronous input DAC, which can work up to 24 bit, 192kHz precision in Class 2.0 USB Audio. It only has a single USB Type B input, but can output a balanced or a single-ended output, although it works in fully differential mode. It has vanishingly low levels of everything bad (noise floor, THD+N, jitter) and high levels of everything good (signal to noise ratio, flatness of frequency response). It doesn't upsample your music for you, re-convert its sample rate to another more internally-friendly one, it has at most two LEDs (neither of which are ever blue) glowing at once. The nearest concession to interactivity is the front-mounted toggle-switch that flips from Class 1.0 to Class 2.0 USB connectivity (as ever, Mac people are fine with Class 2.0, but PC and Linux users... it's driver time). It can – and should – be periodically updated with the latest firmware. And that's it. It weighs less than a trio of audiophile cones and costs less than many audiophile USB cables.

It's distanced from the audiophile zeitgeist in this respect. It's not in the least bit cable fussy – the giveaway USB in the box is more than good enough, and its output voltage and impedance make the use of fancy interconnect cables less of a priority, more of a present. If you want to make an audiophile song and dance about it, put a paperweight on the top to damp it down (sorry, losing my audiophile cred here – put a rare piece of hardwood that costs five times more than the DAC on top of it to re-un-tungulate the positively negative ions and ward off dark energy). It doesn't care. It just makes music happen.

“It's not in the least bit cable fussy – the giveaway USB in the box is more than good enough, and its output voltage and impedance make the use of fancy interconnect cables less of a priority, more of a present... It doesn't care. It just makes music happen.”

And boy does it make it happen. With the DAC correctly fettled (again), about 20 seconds into listening to the first piece of music, I lost interest in reviewing and just went into 'music lover' mode. And stayed there. Following that excellent 'Searching for Sugar Man' documentary, I acquired the two Rodriguez albums (Cold Fact and Coming From Reality) and I played them end to end. Then I played the equally rare Lou Bond, which drew me to Donny Hathaway, inexorably from there to two Roberta Flack albums in a row, then (naturally) to the Fugees, and on, and on. The next day was almost the same, broken only by shopping trips and a pressing desire to put something on page. The thing is, I don't know what to put on page here. It just does sound, and does it exceptionally well. You aren't aware of the detail resolution, the articulation, the imagery, soundstaging, solidity, dynamics (micro-, macro- or any other kind of 'o', including Bilko). They are just there, and being done so well it's only in those moments when you drag yourself away from the player to do some comparing that you get just how good it is at making itself invisible.

Of course there will be those who listen to the HRT and will prefer the sound of any one of dozens of top-end DACs currently available. That's not the point. The point of this is, this is a DAC that stands proud in such company

without sounding in any way out of place. If its closest rival from a musical standing is in excess of £2,000 and it really wouldn't sound far out of sorts being compared to a Bricasti or dCS, you know we are on to something good.

The 'correctly fettled' part is key, though. Used straight from your computer's USB host controller, this is a perfectly serviceable, perfectly blah DAC. It will not offend, but neither will it set the world alight. It's a bit 'meh!' This is because it draws 480mA from a line that tops out at 500mA. Put it through a powered hub (even a cheap powered hub) and you begin to see the glint in its eye. Put it through something like the AQVOX isolated linear power supply for USB and five seconds into the next track, you have achieved computer audio nirvana.

My worry is that, people being people, they will ignore the need for that extra juice box and never hear what their computer is capable of. My hope is that Kevin Halverson of HRT reads this and makes something similarly sized and mains powered to 'upgrade' the HD. While the jump up in performance can be achieved elsewhere, there are always those who think using something other than a HRT product to power another HRT product is either 'unsafe' or 'disloyal'. In which case, HRT needs to complete the job with an isolating power supply.

Let's be truly honest here. Part of being an audiophile is brand snobbery. There will be those who will never look at the HD because it's not made by their pet brand. There will be those who won't touch it because it's not got a 20A power socket and an inch-thick alloy front panel. And there will be those who don't get it because they simply wouldn't dream of spending less than four, five or even six figures on their digital source. Such is life. But if we are being truly honest, try and look past that, and think of this in the sort of systems it deserves to go in, in performance terms alone. Suddenly, you realise you aren't looking at a cheap DAC with high-end pretensions; it's the real deal.



“If you have shifted – or are planning to shift – to using a computer as a source, this must be in your cross-hairs, no matter what price-point you were considering prior to the launch of the Music Streamer HD.”

► This really is a game-changer. OK, if you are using a source that doesn't speak USB, then it's more someone else's game-changer, but if you have shifted – or are planning to shift – to using a computer as a source, this must be in your cross-hairs, no matter what price-point you were considering prior to the launch of the HD. The fact that it's a game-changer at a fraction of the price of those it stands toe-to-toe with is a mark of just how far and how fast our industry is changing.

You owe it to your music to hear the HRT Music Streamer HD. It's that good! +

TECHNICAL SPECIFICATIONS

Full Scale Output: 2.25 V RMS (RCA), 4.5V (XLR)
Output Impedance: 50 Ohm (RCA), 50+50 Ohm (XLR)
Frequency Response: (20 Hz / 20 kHz) -0 dB / -2 dB
Noise Floor (DC to 30 kHz):: 5 uV RMS (RCA), 9 uV (XLR)
S/N Ratio (DC to 30 kHz): 113 dB (RCA), 114 dB (XLR)
S/N Ratio (A-weighted): 119 dB (RCA), 122 dB (XLR)
THD+N (1 kHz Full Scale): .002%
THD+N (1kHz -20 dB): .0002%
Jitter contribution (DC to 30 kHz): >144 dB below full scale
Isolation: > 500M ohm
Sample Rate: up to 192 kHz
Bit Depth: up to 24 bit
USB transfer protocol: asynchronous
Power Requirements (USB Buss): 480 mA
Dimensions (WxDxH): 9.7 x 15.2 x 7.6cm
Price: £439

Manufactured by: High Resolution Technologies

URL: highresolutiontechnologies.com

Distributed by: Audiofreaks

URL: www.audiofreaks.co.uk

Tel: +44(0)208 948 4153



HRT MICROSTREAMER HEADPHONE AMPLIFIER/DAC

Along with the Music Streamer HD, HRT has a new £179 microStreamer. Following in the footsteps of the AudioQuest Dragonfly, but using a short USB cable instead of plugging directly to the computer, the diminutive silver rectangle is powered direct from your host computer. It's tiny, but surprisingly adept at its twin roles of driving a pair of headphones and acting as a DAC in its own right.

Its headphone output is the core of this device – get it wrong and everything else being good won't save it. Fortunately it is exceptionally good in this respect. Its two main benefits are that it is clean-sounding and it drives most headphones well. It's shouldn't be the kind of headphone amp that will drive a tough headphone load but it does. Its bass is particularly strong. I played Ben Harper's 'Excuse Me Mr', with its slow, flowing bass lines that can so easily over-burden a small headphone amplifier, but was met with satisfying depth and energy. I then moved through Chopin to Zadok the Priest and out through some smooth Dexter Gordon and some fine choral work. All of which the HRT sailed through.

We have an embarrassment of headphone amp riches this issue and it would be wrong not to compare them. The similarly specified Meridian Explorer is a strong contender; it's more expensive, but looks suave where the HRT is purposeful. The UK-based DAC is smoother in the mids and top, but the HRT has the better bass. There's not a lot between them. Meanwhile, the Just Audio headphone amp has the better of both of them in outright control over a pair of headphones and has an analogue volume control, but lacks the DAC option.

On balance, as an all-rounder, this is hard to beat.

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"Best of the Best 2011: Audio : Burmester Top Line
Together they produce a signal that rivals the worlds finest analog."
(Robb Report)

"Should you be a music lover that wants to cease the tiring practice of upgrading and simply enjoy nirvana
for a very long time, the o88 has the potential to become a family heirloom."
(Jeff Dorgay - Tone Audio)

"This is one of the very best and most complete CD players I have heard to date and certainly the best
single box design."
(Chris Thomas - HiFi + Magazine)

Naim for Bentley

By Chris Thomas

There are few things that would drag me out of bed at 5am. But, late last year, the 7.35 to Crewe from London Euston beckoned and soon I was being transported north to visit Bentley Motors, an unlikely venue perhaps for someone who usually spends his time listening to and writing about high-end audio, but this was something very different and certainly special.

Back in 2008 Naim Audio began collaboration with Bentley engineers to design and produce an in-car system that could be offered to Bentley customers as an upgrade option. With zero experience in this

area and a reputation for rather singular thinking, I was wondering what on earth Naim could have come up with that would satisfy the discriminating Bentley owner. The answer was of course to have a listen for myself, hence my early morning trip on the Virgin Pendolino clutching an invite to have a look at not only the Naim system but also the entire Bentley production line. As a bit of a car enthusiast myself, this really was exciting and much too good an opportunity to miss.

Some years ago image-conscious prestige car manufacturers decided that having a recognised high-end audio manufacturer design entertainment systems for their cars was a good thing from both a marketing and (hopefully) sonic point of view. Thus we saw Mark Levinson in Lexus, Linn in Aston Martin (now discontinued), Burmeister in the delicious Bugatti Veyron and as an



option in some Porsche models, plus many others. Now Bentley, obviously looking for a traditional British manufacturer to suit their brand image, found their way to Naim's front door in Salisbury. There is a certain irony here in that Bentley is owned by VAG, the German VW Group and since 2011 Naim became a part of Focal, the French company. Still it's the values that matter and as I was about to find out, Bentley is still very British and very traditional in the way it builds their cars and from what I can see, very little has changed at Naim either.

The huge Crewe factory complex employs 4,500 people and throughout the Second World War was used to produce the glorious Merlin Aero engine while Bentley car production was at Cricklewood in London. The timing of my visit dictated that I would only be allowed to watch the Mulsanne being built, as there was something special and rather secret going over at the GT line. Both models have the option of Naim entertainment systems although the fitting of the components is rather differently accommodated in all Bentley models including the Arnage, Azure, GT and Brooklands.

I have to say the Bentley production line is really something else with an atmosphere of quiet efficiency. From the hand assembled body and the micro detail that the specialised workers finish and prepare the metalwork with, through the paint shop, I followed the cars to the installation of the entire power train before work commenced on the interior. The upholstery and the wood departments were absolutely fascinating and real centres for traditional skills. I was also able to watch the components for the Naim system being pre-fitted to the doors along with a host of other electrics and the way that the entire entertainment system was integrated into the very limited space available within the car's shell. The speakers in the Mulsanne arrive from Naim pre-fitted in

shaped cabinets that slot precisely into the spaces allotted for them within the car. Those in the doors of the GT are not fitted in cabinets but bolted straight onto strengthened areas of the metalwork. When I saw this I realised that there was going to need to be very careful consideration of the system's crossover points indeed, to avoid the speaker driving the door. This is where so many supposedly in car high end systems are so disappointing and the work that Naim must have put into modelling the mechanical resonances within the car was absolutely critical. Considering the level of detailed analysis that must have been done it wasn't hard to see where the 18-month development period had gone. The speakers Naim supply are their BMR (Balanced Mode Radiators). Each Bentley model has its own configurations because, as you can imagine, the requirements and space allowance are quite different. Throughout the cars you will find 25mm tweeters and 80mm midrange drivers while below 450Hz bass frequencies are initially dealt with by 130mm bass units that eventually gives way to the 200mm subwoofers.



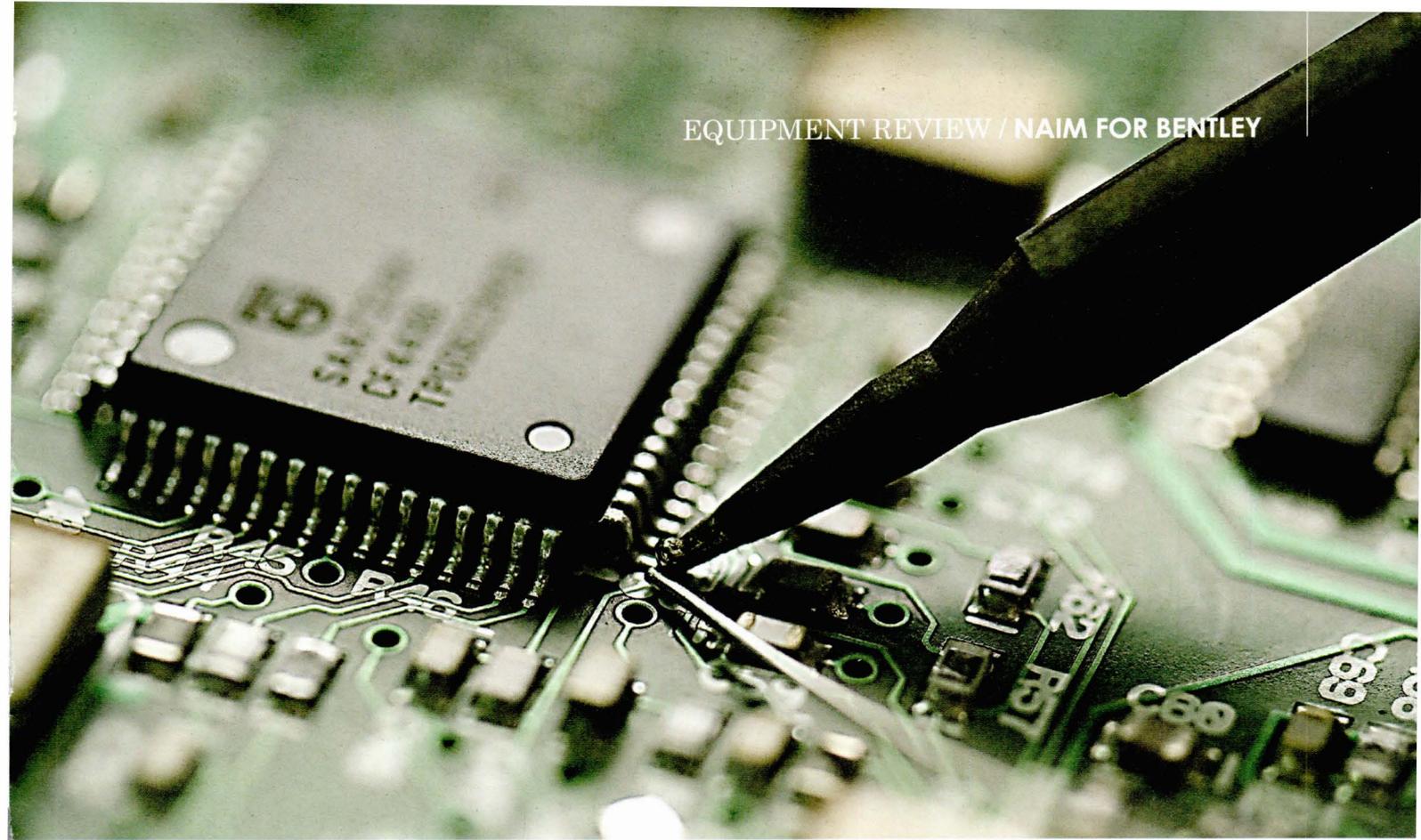
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www.passlabs.com



▶ Designing an amplifier to drive these multi-driver systems was something else that was completely new to Naim and the brief was staggering. With anything from eleven to fifteen speakers to keep control of and a power output requirement of well over 1000 watts this meant that Naim would have to operate well outside of its usual comfort-zone. It would also be building the World's most powerful in-car amplifier. It could only be achieved by utilising a double-sided, 6 layer circuit board, painstakingly assembled and computer optimised throughout. Not your usual Naim NAP amplifier by any means then and Bentley requirements were that it should be fan-less too. This unique multi-channel (depending on its installation) amplifier is designed by Naim but built outside Salisbury by a high-tech company abroad.

The Digital Signal Processor (DSP) can provide eight types of equalisation that can also incorporate sound level compensation for any speed and noise level and the system can be configured through individual programmes for specific material like Classical, Spoken Word etc. Most though will probably chose to use Naim's Audiophile Mode which will give the "purest" equalisation available for the best music playback whether that be from radio, iPod,

CD, SD card, USB memory stick or via the built-in Hard Drive. But Bentley knows its customers and these days they are not all Tweed suited gentry with a pair of Purdeys in the boot. Premier League footballers and young, successful owners from the music industry who want to re-finish their cars in chrome or camouflage and listen to thumping bass and crushingly repetitive songs about people shooting each other with automatic weapons will not be disappointed at the clean levels of bass that those two sub-woofers can pump out. All this is very easily accessed through the Bentley's central information touch-screen that handles all user interfaces like Navigation, Maps, Phone and displays all the car's comfort settings. But most of the major functions can also be accessed via the steering wheel. The Bentley visit had been really interesting but the best bit was still to come. After lunch I was presented with a fully-spec'd Continental GT V8 that I slightly drooled over before aiming it south towards London to get some real-world, on the road experience of just what Naim had come up with.

I have heard quite a few supposedly up-market in-car systems, often retro-fitted and without fail they have been not only unimpressive, but downright irritating. When the car is standing still they can sound reasonable but, as soon as you hit the road and the tyre and wind noise intervene, you find yourself continuously making adjustments to both the eq and the volume before eventually getting fed up with the whole thing and either switching off altogether or just listening to some talk radio. Subtlety, fine musical detail and anything that isn't writ large just vanish into a morass of noise and booming confusion. Integrated sound? Forget it.

I had only driven a very few miles when I began to appreciate that the cabin of the Bentley is a very, very nice place to be. It is sumptuously appointed and a totally relaxing environment. Everything about it just oozes quality, from the smell of the beautiful heated or air conditioned seats to the feel and touch of every knob and switch; it is altogether quite the magnificent tourer. The performance too is awesome through the silky 8-speed auto box if you ▶

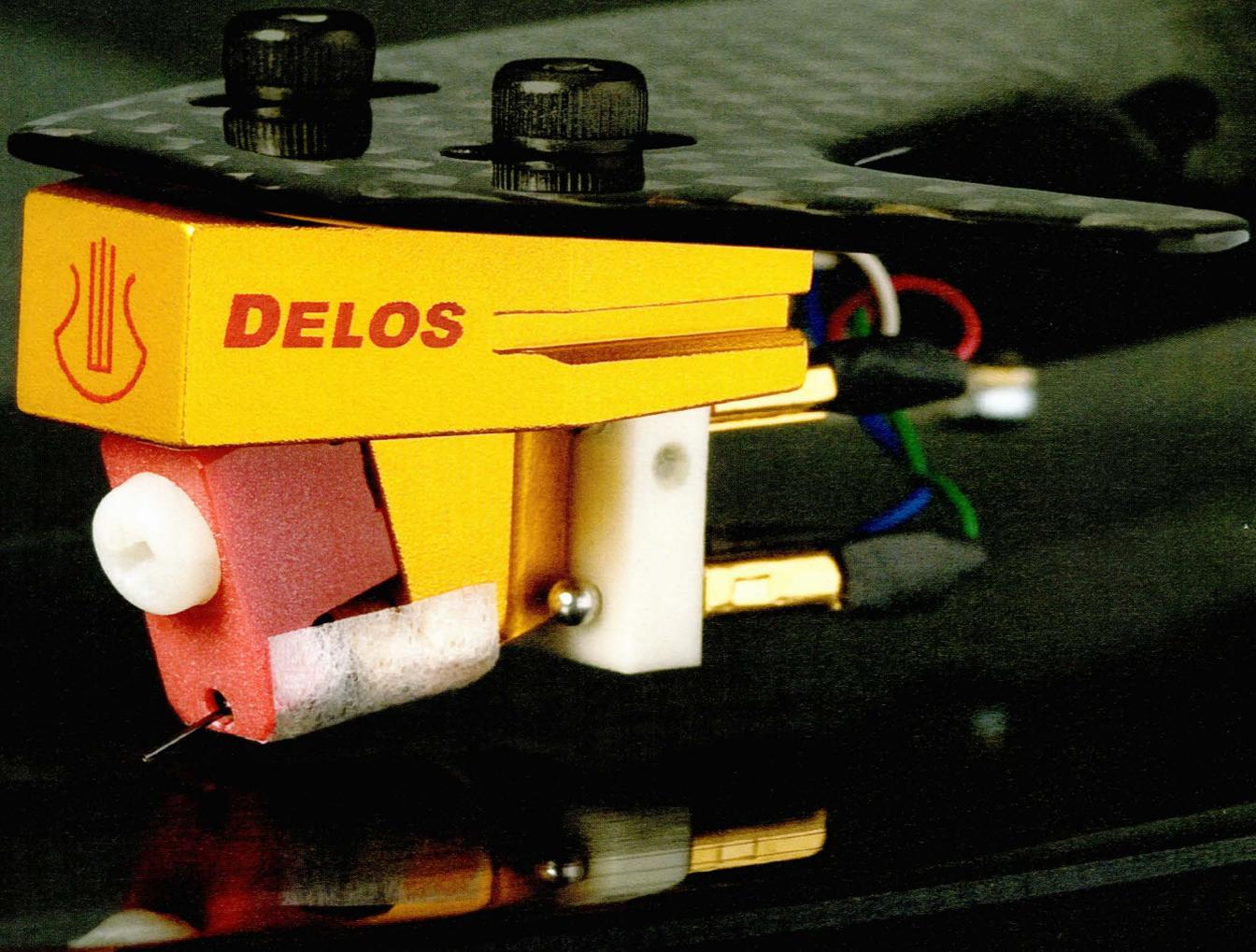


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► explore the throttle pedal, as is its stopping power through the optional carbon brakes. The exhaust note is a thing of beauty. The Naim system reflects this feeling of relaxed and controlled power in its performance. With 1100 watts to hand I was expecting the power, but the degree of finesse and delicacy which came as a surprise is extremely impressive and means that you can enjoy music at just about any level you chose. The bass is deep and tautly focussed, projecting out of the sub-woofers and into the car without booming or rattling the whole structure. There are no bits of trim buzzing away irritating you, instead there is a steady flow of almost creamy music and quite how Naim have achieved such a seamlessly integrated experience with so many speaker drivers in such a relatively confined place is mightily impressive.

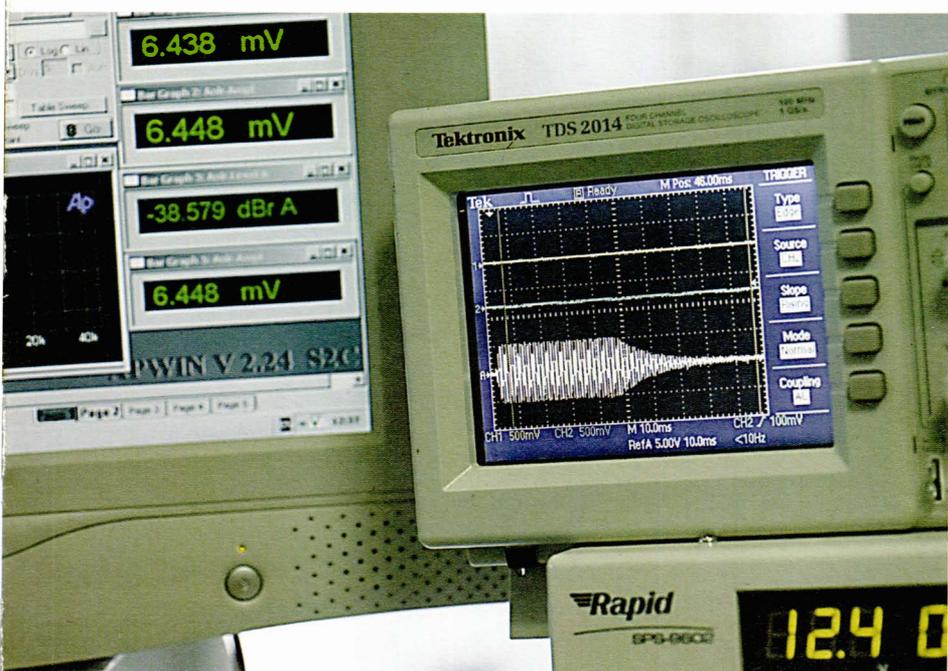
The delight of the car and the musical performance are brilliantly interwoven and what you get is the whole package. The astonishing fit and finish of the cabin is complimented superbly by the entertainment system and this provides a complete experience where it's impossible to imagine one without the other as the excellence of both blends to become one. Assessing an in-car audio system is very, very different from the domestic variety I normally comment on. Does it sound like a Naim system? I would say yes. It certainly has that feeling of musical drive and rhythmic movement - all Naim core values. But what continuously surprised me was just how much influence the Naim system had on the driving experience. This is, after all, Naim for Bentley. Pre-selecting the music by matching it to your journey becomes fun and I found myself really looking forward to the actual listening time en route. You can even make up a compilation on a memory stick or other portable device. There were some memorable trips during that week. The New Bossa Nova by Luciana Souza on the way up the M11 to Cambridge was inspiringly delicate rhythmically and tonally rich. Wafting

through the Suffolk countryside in the early morning with the mist rising from the fields to meet the winter sun while listening to Vaughan Williams Fantasia On A Theme By Thomas Tallis and placing the GT V8 on the road with small, economic inputs to the wheel and throttle, I found once again that the Naim system mirrored the car's poise and elegance perfectly. It is easy to overdrive this Bentley just as it is easy to push the volume of the system too far as it is so clean and stays so focussed. But I preferred a reasonable volume level and found that I could hear deep into the music and its textural, shifting variations. It was precisely the right music for the occasion. Now it had become part of the car and everything that the car was doing was somehow mirrored in the beauty of the music.

I don't know quite how Naim have achieved the amazing focus with which the music is presented to the driver and passengers, but I would imagine that should I ask them they would say it was good engineering. Certainly, in getting the presentation out of the bodywork and into the interior space they have succeeded in something I have never heard from any other in-car system. With a few subtle tweaks you can move the central focus of the sound to achieve the kind of surround effect that is impossible at home. At no time though does it sound over processed, disjointed or false. It just becomes more immersive and interesting and if it manages such a performance on music, it is captivating with the spoken word and I spent quite a while listening to afternoon plays on Radio 4 that hooked me so much that I often had to sit in the car at the end of my journey to hear them to the end.

For that week I got to enjoy music and driving in a completely different way. In-car entertainment for me has always been a pretty dire thing that promised much, but delivered little. Interesting that it took an audio company with amazing adaptability and a carmaker with real foresight to change that at a stroke.

What a car and what a system! +



Audio Research Reference DAC Digital Media Bridge

By Jason Kennedy

If ever there were a sign that the wind has changed direction, it's when an established brand with a reputation for building excellent – if slightly conservative – products decides to jump on the latest trend in the business.

Maybe I have the wrong impression of Audio Research, but I was quite surprised when it delivered a DAC that is also a streamer. The Reference DAC Digital Media Bridge (to give it its full title) is capable of playing almost all the digital formats in current use (except DSD), whether it be supplied by a CD transport, a computer or a NAS drive. It also has a volume control. It's a frenzy of features by high-end standards and one wonders whether it can do so many jobs as competently as the three separates it represents.

But this is a reference level component that has the same vacuum tube output stage and power supply as the Reference 5 SE line-stage preamplifier. It is built on the sonic qualities of the Audio Research DAC8 and incorporates technology from the Reference Anniversary preamplifier. It would seem that it's paperwork is very much in order as far as existing technology is concerned, so what does it bring to the picture in terms of more up to date requirements?

The answer is plenty. It has wired and wireless Ethernet access, it offers the V Tuner internet radio service, which covers pretty much everything out there, and has connections for S/PDIF cables of electrical and optical persuasions, AES/EBU is naturally onboard as well. There are USB connections for portable devices and for high speed computer connection plus another for USB sticks on the front panel.

The Reference DAC has a 3.5inch TFT display and both front panel and IR remote control switches to navigate around it. Any product that streams from a server needs something like this if you are going to be able to find the music you want to play, in truth it really needs an app for your iPhone or iPad, and at the time of reviewing this was still in the pipeline. Fortunately generic control apps like PlugPlayer will work too. The panel also shows you which of soft or sharp filter options have been selected and whether upsampling is engaged. It can perform positive integer upsampling up to 192kHz – in other words a 44.1kHz CD sample rate will only be upsampled to a maximum of 176.4kHz to avoid complex processing

which tends to muck up sound quality. The actual converter itself is capable of processing signals up to 24-bits/192kHz.

The analogue side of the equation is provided by a zero feedback triode output stage consisting of four 6H30 tubes with a 6550 and 6H30 in the power supply. It also has a volume control, but this fact is not mentioned in the literature and there is a suggestion in the manual that best results will be achieved with a dedicated preamplifier. It says to set the Reference DAC's output level to 60 in this situation.

Cut to the chase, the Reference DAC produced some of the most refined sounds I've encountered in all my years in the business. I started out using the coaxial output of a Naim UnitiServe, a source that allowed the DAC to deliver masses of detail in an effortless and melodic fashion. It is an uncannily relaxed converter and those looking for maximum dynamic impact may find it doesn't have quite enough leading edge definition for their tastes, however it doesn't take long before you are drawn into the music and start to enjoy the richness of detail that's on offer. It's by no means lacking in dynamics either, it's just that there's no digital grain or undue emphasis, it's devoid of that type of distortion, presumably because of that class A output stage. But there's more to it than that. Put on acoustic material and everything sounds right, there's just the right amount of space and a very natural sense of pace along with very convincing tonal rendering.

It images extremely well, there's a solidity to instruments and voices that places them firmly in the room, with the acoustic of the original recording all around them. You don't even have to play pure acoustic music to appreciate this, the kick drum on a track by Frank Zappa is reproduced realistically and with the full depth of the instrument in front of it.

Using a WD NAS drive via Ethernet things get better, the soundstage opens up further and the amount of decay that you can hear on well recorded instruments is simply extraordinary. Patricia Barber's version of 'Summertime' (from *A Distortion of Love*) has always been one of my favourite's but her voice with this DAC was simply intoxicating. The combination with low, deep sonorous double bass notes providing a strong contrast to great effect. The cymbal work on the second track was also very effective. It's difficult for digital systems to reveal the full envelope of instruments like this, but the Audio Research manages it effortlessly.

Of the two filter settings the sharp one suited my system and taste the best, the difference between the two is not dramatic but is pretty clear after a little while. It helps the converter to maintain the tension in some pieces but is by no means sharp in the usual sense. With contemporary music like that of Norwegian vibemaster Bugge Wesseltoft it reveals the shine of high notes on a piano and humanizes less natural electronic sounds to an extent that's very rare. His album *Duo* was made with German DJ Henrik Schwarze manipulating the sounds and adding digital effects to the mix, the result is surprisingly good soundstage depth and heaps of light and shade even though most of the reverb is added rather than natural. This DAC lets you forget about the gear and revel in both the sound and the music but always keeps the latter at the forefront.

The Reference DAC's display provides album art where it's available and has track title information as well as a progress bar for each piece of music. You can discover details like sample rate with a click of the remote handset and changing inputs is rather more intuitive this way than it is via the front panel.

“The cymbal work on the second track was also very effective. It's difficult for digital systems to reveal the full envelope of instruments like this, but the Audio Research manages it effortlessly.”

Hooking up a Mac Mini running Audirvana Plus software to the USB input (using ARC's driver software) also proved a rewarding experience. It's not in quite the same league as the options tried earlier but displays many of the converter's qualities of open, effortless and nicely timed sound quality. Imaging isn't as clear-cut but there is a strong sense of presence with some recordings, the most startling being Laura Marling's song 'Friends' from her latest album *A Creature I Don't Know*. This is a good vocal recording and the music isn't too dense but nonetheless it comes across in astonishingly real form, the USB 2.0 input may not be as strong as the Ethernet but neither is it a weak link.

The net radio is rather good too, it flows without interruption which isn't always the case and you can access on-demand material where stations provide it which some streamers cannot. I enjoyed some great tunes from BBC ▶



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► Radio 3's *Late Junction* including a pretty frantic track by a jazz band called Troika that never missed a beat, and it's the sort of material that can get tiring with less relaxed streamers. The only thing that I couldn't do with these shows was to stop or pause them.

My final choice of source was a USB stick in the front panel and this proved pretty stunning, I didn't make a direct comparison with the other alternatives but Yes' 'Roundabout' has rarely sounded as sweet. It had both drive and dynamics but ultimately turned me back on to a track that I've long enjoyed on vinyl. Something that the CD or even the SACD have never been able to do so effectively, and this is true even of discs played via the Reference DAC, they just don't have the ease and resolution of a good rip or high res file.

Audio Research has created a genuine bridge for digital audio whether it be on a CD transport a computer or a hard drive. It brings both refinement and high resolution to everything it plays and does so in a supremely engaging fashion. The fact that it can get such astonishing musical beauty out of files stored on a USB stick is remarkable and a sign that even in the high-end, the CD's days could be numbered. +

TECHNICAL SPECIFICATIONS

Gain: Max. Digital Gain: 25dB Balanced, 19dB SE.

Input Impedance: Digital: 75 ohms BNC, RCA, 110 ohms AES/EBU, OPT 660nm TOSLink fiber 44.1 to 96kHz

Output Impedance: 600 ohms Balanced, 300 ohms SE

Output Polarity: Non-inverting.

Rated Outputs: 2V RMS .5Hz to 100kHz into 200K ohm balanced load

Digital Sample Rates: 44.1kHz to 192kHz, SPDIF, USB 2.0 HS and Wired Ethernet. 96kHz max over Wireless Ethernet

Controls: Rotary volume selector (104 steps) and rotary input selector.

Compatible formats: MP3, AAC, WAV, WMA, FLAC, LPCM, WMA-9, ALAC, AIFF

Tube Complement: (4)-6H30 dual triodes, plus (1)-6550C and (1)-6H30 in power supply.

Dimensions WxHxD: 48 x 17.8 x 39.4cm

Handles extend 3.8cm forward of the front panel

Weight: 14.6 kg

Price: £13,998

Manufactured by: Audio Research Corporation

URL: www.audioresearch.com

Distributed by: Absolute Sounds

Tel: +44(0)208 971 3909

URL: www.absolutesounds.com

Meridian Audio Explorer USB digital converter/ headphone amplifier

By Alan Sircom

In the grand scheme of all things digital in our world, Meridian Audio has long been at the forefront. Back when CD first appeared, it was the first brand to realise its high-end potential. It created the algorithms behind lossless packing that helped define DVD and Blu-ray audio. When the migration to hard disk began, it was there with Sooloos (now simply called Meridian Digital Media Systems). But the portable audio world escaped Meridian Audio... until now.

Called the Explorer, the new USB powered device is as simple as it is elegant. Meridian has managed to use the extruded metal casework seen in its top-end 800 series devices, making clean rounded lines and a surprisingly weighty feel; unfashionable as this comparison might be, it's about the size and shape of a Bic disposable lighter, but with the weight and feel of a Ronson. The curved black plastic end pieces have the mini USB connector at one end and two mini-jack sized sockets at the other; the left-most is a combined Toslink S/PDIF and line level output, while the rightmost is a headphone mini-jack. The optical digital output might seem odd, given the prime use of the Explorer is to convert digital to analogue, but the DAC acts both as master clock to reclock the digital output, and downconverts any 192kHz datastreams to 96kHz to keep the signal within Toslink limits.

Internally, the slim PCB is every bit the audiophile product. Asynchronous USB input is handled by the popular XMOS L1 chip, the Class 2 USB input itself being all-but-completely galvanically isolated from the rest of the circuit via a six-layer PCB, the audio-grade resistors, capacitors and even the discrete clocks are all of the standard used by Meridian's 800 series, and it uses a PCM 5102 DAC, capable of running at 24bit, 192kHz precision. Although known as a 'digital' brand, Meridian's strengths here are in the "... to analogue" part, with a linear regulator chip and many of the sections of the output stage being made up of discrete components. And this makes itself very present in the sound quality.

Because it's a native Class Two USB device, PC users will need to download the appropriate USB driver software, but instructions are supplied in the natty presentation case the Explorer comes in (there's also a short USB lead and a little

"Called the Explorer, the new USB powered device is as simple as it is elegant. Meridian has managed to use the extruded metal casework seen in its top-end 800 series devices, making clean rounded lines and a surprisingly weighty feel."

velvet carry bag). The Class Two software is preinstalled on Macs, so you are good to go almost immediately. Although it leaves the line and digital pass untouched, the computer's on-board volume control drives the output of the headphones.

The DAC has three little white LEDs along its top to denote what sort of file size the listener is using: one light, 44.1/48kHz, two lights 88/96kHz, three 176.4/192kHz. When it comes to LEDs, 'white' is the new 'blue'!

In listening, this is every inch (well, both of them) a Meridian product in the sound quality stakes. It's easy sometimes to dismiss USB audio products from companies like Meridian as being 'just for portable use'. While this is an excellent portable device running off headphones, it's also a fine DAC in its own right. For the record, I used Focal Spirit Ones and Sony MDR-7506 headphones to excellent effect in the former case and plugged it into a Naim SuperNait and ProAc Studio 140s, using a long Vertere D-Fi mini-jack to two phono lead for the latter.

Principally, the DAC has a very satisfying presentation, with a rich and detailed midband, extending up to a clean and unfatiguing treble and down to a controlled and rich bass. This applied equally to both headphone and system, but especially to the headphone input. A perfect example of this was when listening to The Belcea String Quartet playing Dutilleux' 'Ansi Le Nuit' (EMI Classics). This modern quartet piece places a delicate



balance on the listener, between understanding the composition and not having it sound like the soundtrack of a 1970s Eastern European cartoon about tractors. The Explorer brought the music to life, and kept the Stasi at bay. A perhaps more sane example is 'Superstition' by Stevie Wonder on *Talking Book*. Wonder's sensational drum introduction to this classic track is a bell-weather to performance; if it sounds like a standard four-beat rhythm – or like mad chaos on the hi-hat – something's wrong, and it's usually wrong. This time... perfect. The complexity of the rhythm is all there, but it's not laid out like a science project. It's still very, very funky.

I ended with a quick spot of comparison, to the excellent, if more squared off, HRT microStreamer, which performs almost identical functions. In great fairness, the two are very close, and the differences are more horse-trading than one being dominant. In comparison, playing 'Trouble' by Ray LaMontagne, the HRT had a more precise and clearer bass line, while the Meridian was better at bringing out the sweetness and sonority of his voice. The former made me want to nod my head along to the music more, but the latter better brought out the emotion dripping from his voice and backing. There really isn't much in it, but I found myself returning to the Meridian as a result of that richness of tone. But the great thing about both is they are 'locally grown'; the Meridian designed and built on my side of the Atlantic, while the HRT can proudly run up the Stars and Stripes.

The Explorer does several things. It's made in the UK, reinforcing the concept that not everything at this kind of price must be made in the Far East. It's absolutely a Meridian product, in build, outlook and performance, and as such it potentially welcomes new blood into the world of top-quality audio. It also answers the question of what Meridian owners do for sound quality when they aren't sitting in front of their main Meridian system (don't discount this, Meridian Audio's customer base is one of the most loyal out there). And best of all, it sounds excellent. +

TECHNICAL SPECIFICATIONS

- 24bit/192kHz native conversion capability
- Separate low-jitter crystal oscillators for 44k1 and 48k based sample rates
- Asynchronous data transfer
- 6 layer PCB
- USB2 mini B socket – Plug and Play with MAC (Windows driver available)
- Direct-coupled outputs
- Variable line out – Full Analogue Volume Control for headphones or powered loudspeakers
- Headphone amp
- Fixed line out – 3.5mm connects directly to audio system
- Optical digital output – full resolution for receivers or DACS (up to 96kHz)
- Elegant metal case – durable and increases audio performance
- Lights to indicate incoming sample rate
- Soft convenient USB cable provided for ease of placement to protect computer mother board from mechanical stress
- Hand assembled at Meridian's UK headquarters

Price: £249

Manufactured by: Meridian Audio Ltd

URL: www.meridian-audio.com

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Monitor Audio GX50 loudspeaker

By Neil Gader



There's an embarrassment of riches in the sub-£1,000 loudspeaker category and, fortunately for me, I've been able to experience firsthand some of those bargains over the last few issues. For example, I recently wrote in *The Absolute Sound* about a pair of compacts, real performers both; the three-way Polk Audio LSiM and the three-way KEF R-300 with concentric midrange/tweeter. And currently on deck is the latest from Sonus faber, the Venere Model 1.5.

However, unique among these entrants and emblematic of the diversity in this segment is the Monitor Audio GX50. The smallest member in the GX Series, the GX50 is a two-way, stand-mount loudspeaker in a bass-reflex enclosure. Visually the GX50 strikes a premium pose from any angle. Aluminium trim rings circumscribe the drivers, and an inverted rubber surround rims the mid/bass. There are no visible screws or bolts to mar the effect (an access panel is cleverly hidden at the base of the speaker). The GX50 is a hybrid-driver design that features a 140mm mid/bass cone driver and a ribbon tweeter—the C-CAM ribbon transducer, which promises extension to 60kHz. It's also worth noting that these are not one-size-fits-all units—each driver in the GX range has been specifically designed and optimised for the model it is used in, taking into account cabinet volume, desired bass extension, and efficiency. The crossover point of the GX50 is specified at a relatively low 2.3kHz, with a slope of 18dB per octave for both high- and low-pass sections.

Construction quality and cabinet finish are as good as they get in this price segment. Tolerances appear tight—literally seamless, in fact. But breaking with tradition the GX Series doesn't secure the driver to the front baffle via a handful of screws. Rather, Monitor Audio employs an internal bolt-through method, which increases cabinet rigidity back-to-front and maintains consistent tension around the driver periphery thus improving driver/baffle decoupling in the bargain. The results speak (or don't speak) for themselves. The cabinet was effectively invisible throughout my listening sessions. The terminal plate on the back panel is a die-cast alloy with high-quality bi-wire terminals. All internal parts are wired with Monitor's Pureflow Silver cabling. The cabinet is 20mm-thick MDF throughout, with radial and cross-bracing techniques for rigidity and reduced cabinet coloration. The grilles affix magnetically, which preserves the clean, unbroken visuals of the front baffle.

Always interested in the challenges an engineer confronts in designing a coherent hybrid loudspeaker, I asked Monitor Audio's technical director Dean Hartley for his take on the subject. He pointed out that development of the GX Series was an extension of Monitor's work on the flagship Platinum Series in 2007, so the challenge of integrating moving coils and ribbons was not unfamiliar territory. Hartley added, "It's still a bit tricky with passive crossovers ▶



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► to achieve perfect alignment with regards to time. Rather than designing the crossover in the frequency domain, which is what some designers do (and forget about the time), we concentrate on this first. We then look to see if we can ensure there is uniform frequency response...The C-CAM drivers we use have very lightweight moving assemblies that yield good overall transient response. We then have to make sure we use powerful motors and optimize the driver's moving mass to yield the best transient response from the electro-mechanical section. We designed the ribbon tweeter to go down lower than most by using a special kind of flexible suspension system. This means we can drive it lower down and ensure that the integration with the mid/bass and also the off-axis response is better. Crossing a 140mm bass driver over to a ribbon at 4–5kHz is not practical, in our view. Of course, there is always going to be a small difference in transient response since the very low moving mass of the ribbon is impossible to perfectly match to a dynamic driver.”

Sonically I have to say, with small reservations, mission accomplished. The GX50 is a midrange-dominant loudspeaker that shines brilliantly on vocals, female especially as a cappella artist Laurel Massé proved repeatedly [Feather and Bone]. It relishes the delicacies of musical texture, air, and bloom. It's

very effective for its size in mid- and lower-level detail and dynamics with an engaging sense of “being there”—an attribute that encourages you want to keep listening. Tonally it can sound a little polite in the upper mids and there's a bit of extra brilliance in the sibilance range, but the openness of the ribbon tweeter more than makes up for these relatively minor colorations. The ribbon is, as I'd expected, sweet, smooth, and superbly detailed in the transient realm. In the case of piano reproduction, it combines a sense of speed and edge detail at the commencement of a note with little to no impression of woolen overhang or smudging at the note's conclusion. Although the GX50 is more a finesse loudspeaker than a headbanger's dream, that's not to say it ►

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▶ completely lacks low-end punch; there's genuine 60–70Hz capability here, and perceptibly a bit more further down. Its small mid/bass driver is articulate and more than capable of holding its own on tracks from the Rutter Requiem [Reference Recordings], many of which feature the undertow of a pipe organ beneath the large chorus.

Driver integration was essentially very good with only some minor height-related lobing in my smaller listening room. Importantly there was little sense of any “hare and turtle” discontinuity between the ribbon and the cone transducers. My take away from this is that they are somewhat height sensitive, so establishing the correct height for the small cabinet is important. In my smallish room, the ideal was positioning them at ear level to the listening position which means a stand around 26” tall. Monitor Audio offers a 24-incher for £350.

As previously alluded to, the GX50 tonal balance is on the lighter side. A track like “All The Roadrunning” is instructive in the way the GX50 captures the female voice more effectively than the deeper male voice. This duet features Emmylou Harris and Mark Knopfler, and it's clear from the outset that the reproduction of the barrel-chested Knopfler's vocal lacks the deeper resonances that characterize his dark, throaty voice. Yet Harris' vocal on the next verse is unwaveringly consistent with previous experiences I've had with this track and a variety of loudspeakers. Similarly the full breadth of soundboard radiation from a grand piano is somewhat truncated; the rippling waves of ambience that fill a symphony hall and reside around specific images and sections are there, but the foundational weight that defines the soundstage and extends it to the rafters is reduced.

Bass extension is where compromises are most keenly felt in smaller speakers. Giving the listener a healthy impression of bass from a diminutive transducer is the stock and trade of talented engineers. And with only minor reservations, Monitor Audio effectively walks the GX50 along this fine line. Most of us are aware that the full weight of an orchestra requires either really large drivers or a whole bunch of smaller ones. Beyond the stout but small mid/bass cone, the GX50 has only its port to rely on, and there are moments when its upper-bass emphasis can be both a good and a not-so- good thing. It can effectively convey the beat and drive of a rock rhythm section or a bass-viol ostinato, but, especially at higher volumes, it can also sound a bit labored and one-note in character. To be fair, this is the way it is with almost all small compacts. Monitor Audio has struck a fair balance.

The Monitor Audio GX50 was very much at home in my small room. Bear in mind that at under a foot in height it does have ultimate SPL limitations, so don't expect it to fill an auditorium. However, taken on its own terms, the GX50 is beguiling in its strengths and serious in its intentions, and with that ribbon tweeter adds a distinctively sweet flavour to the under-£1,000 category of loudspeakers. +

First published in The Absolute Sound



TECHNICAL SPECIFICATIONS

Type: Two way bass-reflex compact

Drivers: C-CAM ribbon tweeter,
140mm mid/bass

Frequency response: 55Hz– 60kHz

Impedance: 8 ohms

Sensitivity: 86dB

Dimensions (HxWxD): 30 x 17 x 26.4cm

Weight: 7.5kg

Price: £950 per pair

Manufactured by: Monitor Audio

Tel: +44(0)1268 740580

URL: www.monitoraudio.co.uk

Burmester 111 music server

By Alan Sircom

One of the big problems facing any music server maker is how do you get past iTunes? Apple's free elephant in the computer audio room is free, ubiquitous, free, robust, free and free. It's not perfect however. If I were working up a music server, I'd want something that defaults to being a CD player, but can easily rip discs, something that allows me to edit the metadata about the recording (including cover art) before I rip it, not after, something that allows me to adjust the rip process to suit pristine or trashed discs on the fly and a unit so essentially fit and forget that I could drive it from my iPad.

Meet the Burmester 111 musicserver. It does all those things. And more. It even comes with an iPad!

The 111 is a big, heavy and shiny box, as befitting a product in Burmester's Reference Line. Also as befitting Burmester – and especially Burmester's Reference Line – it is extremely well built. Nothing is left to chance, everything is made with the sort of engineering standards that don't happen in the home that often today. Or anywhere else for that matter; if Boeing hired some of Burmester's production team, there would be a lot more Dreamliners in the air. OK, so they might weigh 32x more, but they'd be capable of flying through a meteor storm without the least complaint. In fact, the front panel display is taken from an over-engineered, mission critical device used in the cockpits of aircraft, and is designed for ultra-reliability. Such is the way of Dieter Burmester.



How this relates to the audio world of servers and such is while other companies make recommendations about things like back-up and uninterruptable power supplies in server-side systems, Burmester just builds them into the unit. When you open the box, the three layers of packaging include the aforementioned iPad (and the slab-fronted sea-of-buttons Burmester remote), a pair of wifi aerials (and a custom made extender panel, if their reception is hampered by in close proximity to the 111) and a strange black plastic box with wires hanging out. This is the UPS battery, and must be loaded in the back (alongside the pre-configured two mirrored 3TB hard drives) before use. There is also an internal SSD that holds the 111's operating system.

UPS battery installation aside, the only noteworthy part of the set-up process is you need to put the 111 on your network. Because it uses the network simply for metadata population, finding music elsewhere on your system and iPad control, it doesn't need to be a belt-and-braces network install, but if you have your IP address handy or are capable of hard-wiring this into a network, you can be up and running in under half an hour. It's not a network player though; there are two digital outputs so you could run the signal into two separate rooms, but you cannot run multiple musical threads from each room. For that, you need something more DLNA friendly. There is a Samba share server, allowing music on the network to be pulled into the 111 and digital radio is supported.

Operation is a little odd, as it's divided between front panel and iPad (which is why the iPad is provided), especially as the on-screen display relies on hard-buttons on the sides of the screen and dial pressing on the two large chrome knobs. The oddness begins to resolve itself when you discover the 111 is potentially a dual or even triple role device, as it can be used as both a DAC and preamplifier in its own right, the latter in particular being very close in performance terms to devices like Burmester's own 077 preamp, thanks to its DC coupled, free from coupling capacitor output stage. You can configure the 111 as either a digital hub, a central digital/analogue nexus or 'just' a music server. Whichever way you pick, the iPad application needs to be used to rip CDs to disc – otherwise it simply plays them. As a CD player in its own right, it's no slouch; although it's comfortably bested by



a player in the company's own Top Line and beyond, that still puts it in exalted audio company. But it's a telling indictment of today's audio world that the CD performance of this multi-option device must be considered in afterthought, even if Burmester did no such thing in development.

Rumour has it the design team involved in the 111's digital control platform were also previously involved in the creation of the look and feel of iTunes, and it's great to happen on something that operates in a way you'd expect it to operate. The manuals supplied with the 111 are perhaps not so immediately instructive, however.

We are still just scratching the surface of the objective performance of the 111, and could spend thousands of words continuing to do just that. But that's not the way prospective ►

► Burmester buyers think. The minutiae of product design is academic, because the name bestows a certain level of quality above and beyond the name on the chips. The DAC circuit in this is very similar to that in the 113 DAC and a range of reference players; it auto-upsamples to 24/96 or 24/192 throughout. Curiously, it also has a volume normalisation system, but this only applies on playlists and works in the analogue domain; so it's output volume dependent, instead of using digital compression.

But, how well does it work? In a word, brilliantly! It rips to FLAC by default (WAV if you want to lose track of your metadata, MP3 and the rest if you want small file sizes) and if it detects a badly made or scratched disc – or you set it to slow-burn – it will take forever to rip it, but it will rip it right. I'm not entirely won over by the 'Animal Farm' argument ("All rips are equal, but some are more equal than others") on disc ripping, but the 111 does make those rips sound very good indeed. I don't want to say the 111 produces an 'analogue-y' sound, because that summons up images of smoke and mirrors, but the sound of the 111's rips are more like you'd want the music to sound were it not encumbered by the recording process itself.

This means that legendary early 1960s version of Stravinsky's Rite of Spring – conducted by Stravinsky himself – gets past the almost metronomic precision of the composer's timing and goes for the passion and fire. This is never something that could be lost on a recording, but it can be undermined slightly and here it's conveyed with passion and energy. This is music that should sizzle and sparkle, and it does just that here.

Moving to Lady Day's 'I'm a Fool to Love You' on *Lady in Satin*, that sound of a broken voice and a broken individual behind the voice is almost too much to bear through the 111. You can almost here her impending death rise out of that distinctive, yet by this time fractured vocal. Image separation and soundstaging were particularly impressive here, too, but as we moved over to some live soul from some dead guys (Donny Hathaway), that sense of both good stereo separation and cohesive overall sound became uppermost.

As with most Burmester CD sources, the 111 leans slightly to the side of tonal warmth and richness, rather than a cool delivery. It's full of energy and is possessed of a great deal of frequency extension at either end of the spectrum, but it's principally that enticing sound that its CD players do so well that works here.

Let's not dance around the topic too much. The Burmester Reference Line is not for the penny-pinching; it's for those who know the difference between 'value' and 'worth', and are willing to pay handsomely for worthy products. The

“Let's not dance around the topic too much. The Burmester Reference Line is not for the penny-pinching; it's for those who know the difference between 'value' and 'worth', and are willing to pay handsomely for worthy products.”

Reference Line equipment starts expensive and goes up from there. But such is the loyalty engendered by Burmester, there will be people who would never even dream of anything apart from a 111 to fill their music server needs. Fabulous rips, built like a tank made out of expensive watches, an interface that even Apple would approve of and a build quality that will last forever – the 111 proves quality doesn't come cheap. +

TECHNICAL SPECIFICATIONS

Min. 2 x 1 TB hard drive capacity for music data storage/data storage with two mirrored hard drives) configured in RAID 1

SSD drive for system storage

Supported audio formats: FLAC / wav / mp3 etc.

Sampling rate for D/A conversion can be selected from either 96 kHz/24 bit or 192 kHz/24 bit

7" display

UPnP server

Uninterruptible power supply (UPS)

Analog inputs: 3x XLR

Digital inputs: 3x RCA, 3x TOSLINK

Analogue outputs: 1x XLR stereo 1x RCA stereo 1x RCA tape out (fixed) 1x headphone jack

Digital outputs: 1x RCA 1x TOSLINK

Dimensions (WxHxD): 46x22x41cm

Weight: Approx. 28 kg (depending on configuration)

Supplied with Apple iPad (preconfigured)

Price: £26,000

Manufactured by: Burmester Audiosysteme GmbH

URL: www.burmester.de

Tel: +49 30 787 968 0

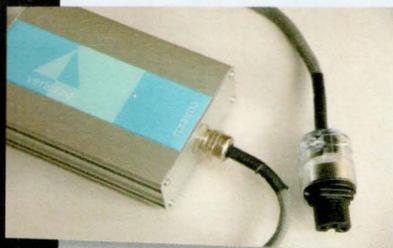
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IN simple terms Vertex AQ and its brother brands offer a systematic approach to helping your system make music better.

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Systematic – energy-absorbing material in the cable box is also used for the labyrinth in...



...the LeadingEdge platforms that form the equipment rack, with Mini Panels in the sides that absorb RFI/EMI and create a “quiet bubble” around equipment



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The results are a seamless, co-ordinated hierarchy of products and set-up techniques, covering AC power supply, equipment support, electro-magnetic shielding and room acoustic treatments. They create a set of guides and practical applications to improve the performance of any system.

All these techniques are used *inside* the Aletheia DAC and PSU to astonishing effect in liberating the sort of musical subtleties that create a moving musical performance.

Systematic design extends to the Kawero Chiara and Vivace loudspeakers from Kaiser Acoustics that benefit from Vertex treatment at the most crucial points – inside.

A new arrival in the family are the LeadingEdge panels with sophisticated Micro-Perforations that are “reactive” to problems specific to the room.

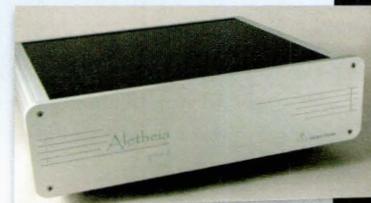
Placed at points of maximum sound velocity the perforations create turbulence, such that energy can be absorbed into the panels’ inner honeycomb to “quieten” the room. The improvements are astonishing.

It’s the Vertex AQ, Aletheia and LeadingEdge components that bring out the best in our systems and consistently earn us “best sound” compliments from show visitors. The source, amplifiers and speakers vary each time – but the praise is the same.

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Just listen and you’ll know



Aletheia PSU2 power supply has Vertex energy control and RFI/EMI shielding applied right down to individual circuit components. There is Vertex treatment to the Kawero Chiara loudspeaker cross-over and energy absorption in the cabinet and stand.



CD: Accoustic Arts, Bel Canto, dCS, Gamut, Resolution Audio, Vertex AQ dac-1. Vinyl: Aesthetix, Clearaudio, Graham, Spiral Groove, Transfiguration.
Tuners: Magnum Dynalab. Amplifiers: Accoustic Arts, Aesthetix, Bel Canto, CAT, Gamut, Sonneteer, Storm Audio, VTL.
Loudspeakers: Avalon, Gamut, Kawero!, NEAT, Totem. Cables: Chord Co., DNМ, Nordost, Siltech, Tellurium, VertexAQ.
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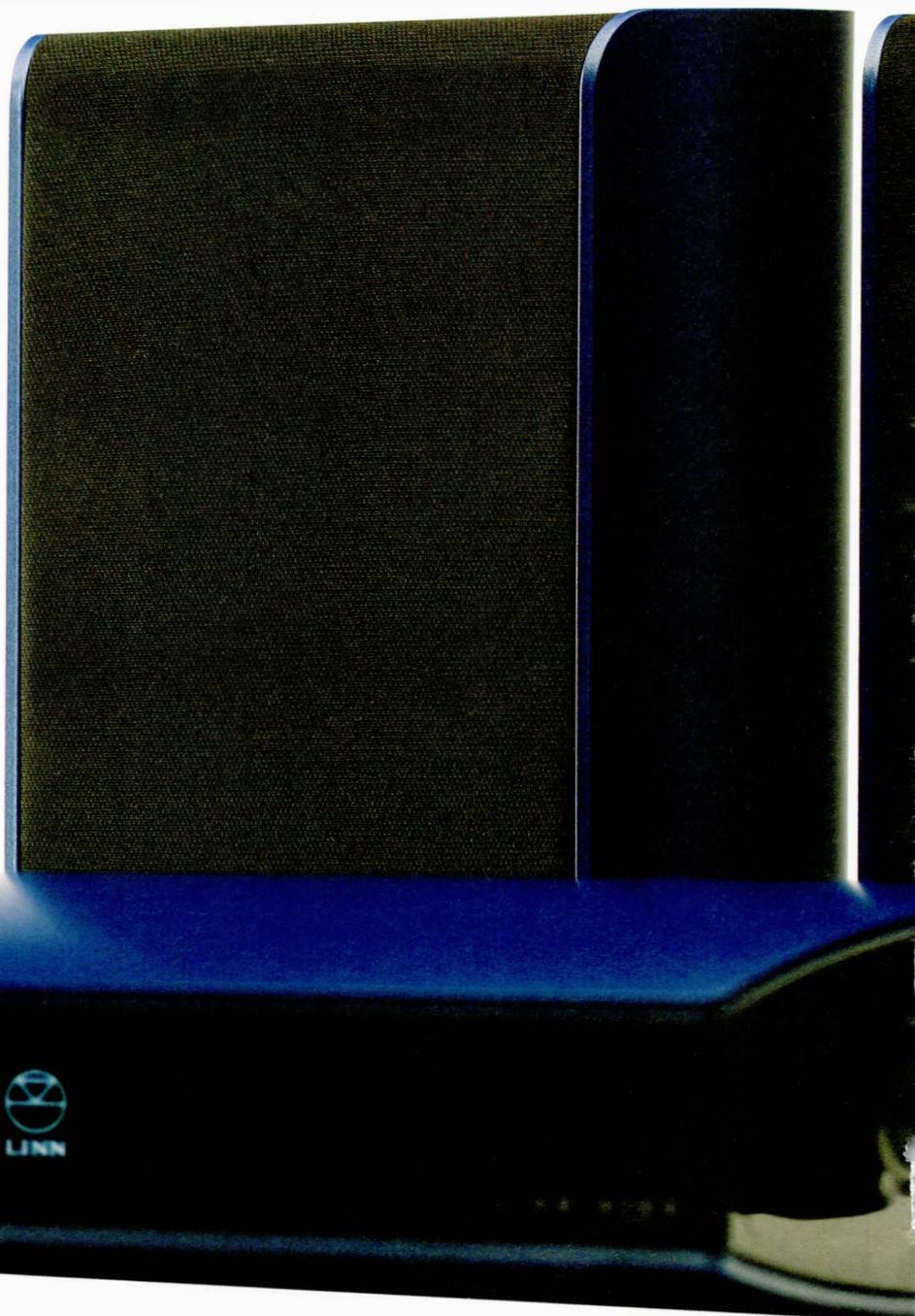


Linn Kiko network system

By Jason Kennedy

In these difficult days for the quality end of the audio industry, you can no longer get by on a glorious past. Ask people out in the real world what constitutes a decent sound system today and the chances are they will say Bose. If they're more savvy the name Sonos might crop up or the more aspirational might remember B&O as it's one of the few brands with some remnants of a high street presence.

Linn is seeking to get to the larger market by building lifestyle product and the Kiko is in the vanguard of this spearhead, it's a very attractive piece of kit. In fact it's three pieces of kit because the speakers are an intrinsic part of the package. They don't have regular cable terminals, but Speakon connectors for an umbilical connection to the central unit. This is because both amplifiers and crossover are in the part dubbed DSM, the drive units in each speaker are actively driven via the chunky supplied cables, these four litre enclosures are what Linn dubs Aktiv speakers. This approach is gaining ground with computer speakers for the obvious reason of practicality and space saving but this is the first time I've seen an active system of this sort. The Kiko speakers have a 100mm coated glass fibre woofer allied to a 25mm treated fabric dome tweeter in an



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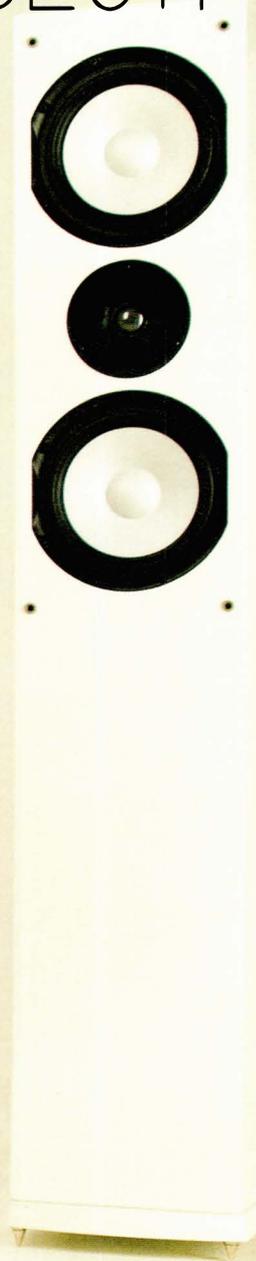
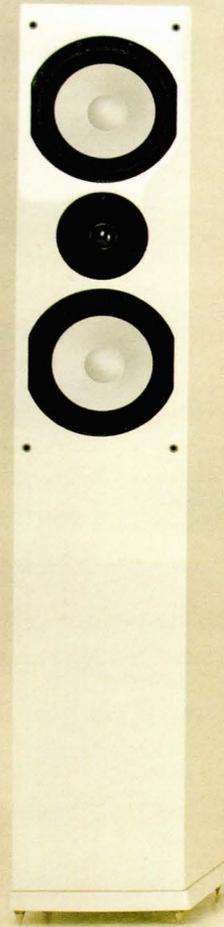
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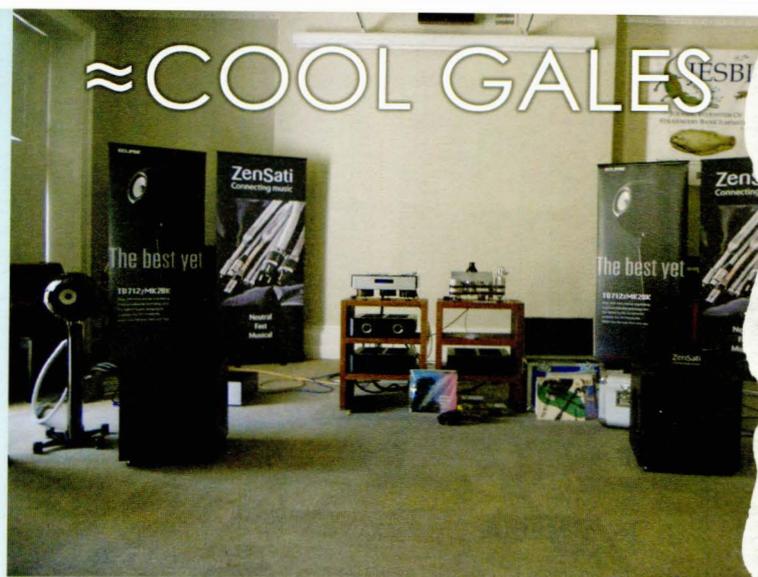
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▶ aluminium enclosure. You can't see it, but there is a reflex port in the front and the Speakon connection is hidden underneath.

The amps inside the Kiko DSM are 33 watt examples of the switching variety that Linn has refined so effectively for its separate products. Not exactly a powerhouse but that's clearly not what Kiko is about, its purpose is to play digital music of pretty much any kind from networked attached storage (NAS), a computer or a mobile device. It can do this at high resolution and can be controlled by Linn's own software on a touchscreen device like an iPad or iPhone.

The key piece of software from the wide array of alternatives on the Linn website is Kinsky which although initially a little unusual is fairly quickly assimilated and becomes second nature. It is very much playlist oriented, if you want to play an album you add the whole thing to the playlist and it will give each track a number that relates to the list not the original album, an approach that makes more sense if you are picking individual tracks and want to know when they will be played I guess. You add sources like net radio, albums or tracks from lists that can be brought up on the left hand side of the screen and pull them into the playlist on the right. I've never been much of a playlist user but Kinsky makes it dead easy. With net radio it can access listen again and podcasts and you can 'preset' a particular station by bookmarking it. The only fly in the ointment is that you need a computer rather than an iOS or Android device to access the BBC plugin that opens up the radio options found on the BBC's sites. By now you may have realised that some kind of graphic interface is essential for the easy operation of Kiko, there is a remote handset which is useful for quick volume changes and other basic operations but to get the most out of this box of tricks requires that you supply some extra hardware. A computer for instance will let you stream straight from YouTube, Spotify etc using Linn Songcast software which is quite handy, while an iOS device will let you choose tracks from a NAS drive or from those stored on the device itself. Playing iTunes from an iOS can be done with Airplay rather than via Kinsky.

The input array is very lifestyle. There are three HDMI AV inputs and one output, one pair of analogue inputs on RCA phono and one aux input via minijack for an iPod or mobile phone. For digital sources, there's an optical input and an RJ45 socket for Ethernet connection. The only notable absentee is a USB input for either direct iPod/iPhone connection or a PC.

The sound that this system makes is unusually laid back for a Linn DS. The few separate streamers I've heard are crisp and precise, but this is more like an LP12. It has some of that classic turntable's easy going musicality which

is quite an achievement given the differences. Inevitably even when you put the speaker close to a wall it has limited bass extension because of the speaker size, but it's not as great as one would expect thanks to the active element. But Kiko is not designed to be a main system that shakes the floor; it's intended for rooms where space is at a premium and dare I say it background music or sound to go with games, movies or computers are required. The way that most people use sound systems one suspects, philistines!

It is nonetheless capable of delivering the tension and life in a piece of music, it has plenty of detail and can bring out the energy of acoustic instruments.

As well as controlling what you play Kinsky also offers volume control via an on-screen scroll wheel which works very nicely, with fine gradations and mute with one tap. It also cues up new songs very quickly, as fast if not faster than a CD player. You want to keep playing stuff though, there's no inclination to jump from track to track because what it does well is reveal what's interesting about the music. This is something that ostensibly more revealing/hi-fi systems don't always get right, they present oodles of detail but lose the musical mojo in the process. Here I was entertained by the "If it ain't baroque don't fix ▶

▶ it" sounds of Haiku Salut and distracted by the snap of Steve Gadd's snare drum on The Gaddabouts' *My Heart*. The latter doesn't have as much of the high frequency sparkle that it usually does, Kiko's top end being on the warm side, the bass is more tame than taut for the same reason, you need high frequency harmonics to define the low end.

Kiko can whip up some drama with the right material, that old audiophile saw Rachmaninov's Symphonic Dances provided the impetus for this observation because the system delivered a lot of the scale and pace of this dynamic piece. I also tried out a rip of Steely Dan' 'Bad Sneakers' from the *Citizen* box set and it was pretty clear that the remastering process has done its usual trick and squeezed the sound for a bit more level. I think I'll stick with the vinyl.

The analogue input here does a good job of reflecting the character of the source you hook up. I added the remarkable CAD 1543 DAC and have to say that a good deal of its resolving power was apparent. It sounded as natural and analogue as can be which indicates that the amp and speakers are pretty clean and that the characteristics noted above reflect the processing and UPnP source as much as anything. I also enjoyed the ease of access that Kinsky gives to web radio if not the fact that adding stations not already listed requires using the separate Konfig app.

The Linn Kiko is a lovely piece of equipment that sounds as good as it looks, so long as you're into music rather than wide bandwidth. It has the ergonomics of a Sonos, but with far higher sound quality. That comes at a price, a price that is accounted for by its engineered, software engineered and made in Scotland genesis. If Linn is to make an impression on the wider world it has to hope that music lovers will value not only the sound but the origin of Kiko too boot. +

"The Linn Kiko is a lovely piece of equipment that sounds as good as it looks, so long as you're into music rather than wide bandwidth. It has the ergonomics of a Sonos, but with far higher sound quality. That comes at a price, a price that is accounted for by its engineered, software engineered and made in Scotland genesis."

TECHNICAL SPECIFICATIONS

Supported file types: FLAC, Apple Lossless (ALAC), WAV, MP3, WMA (except lossless), AIFF, AAC, OGG

Audio sample rates: 7.35 k, 8 k, 11.025 k, 12 k, 14.7 k, 16 k, 22.05 k, 24 k, 29.4 k, 32 k, 44.1 k, 48 k, 88.2 k, 96 k, 176.4 k, 192 k

Word depths: 16–24 bits

Compatible with UPnP™ media servers, AV 1.0 control points, Apple Airplay

Analog inputs: RCA Phono (pair)

HDMI in: 3 x HDMI Type A

HDMI out: HDMI Type A

S/PDIF In: RCA phono

Optical In: TOSLINK

Speaker outputs: 4 pole Neutrik Speakon

Ethernet: 100Base-T RJ45

Headphones: 3.5 mm stereo jack

Auxiliary input: 3.5 mm stereo jack

Power output: 33 W RMS per channel into 4 Ω

Kiko DSM

Size HxWxD: 75x280x270mm

Weight: 2.4kg

Kiko speakers

Size HxWxD: 260x146x187mm

Weight: 3.08kg

3m pair of Speakon terminated cables supplied

Price: £2,500

Manufacturer: Linn

URL: www.linn.co.uk

Tel: 0141 307 7777



... I shall define beauty to be a harmony of all the parts, in whatever subject it appears, fitted together with such proportion and connection, that nothing could be added, diminished or altered, but for the worse ~ Alberti

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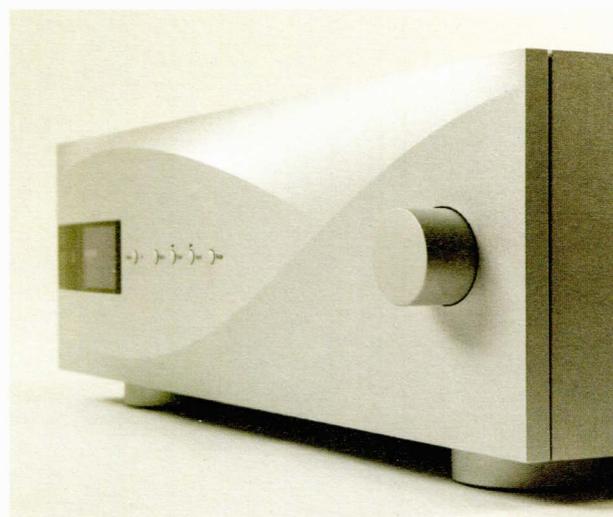
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Scheu Laufwerk Slate, Tacco II, MC Scheu S turntable system

By Alan Sircom

Even without looking at the name, you know this is German through and through. Just the first look at the turntable convinces you that you are in the presence of Big German Audio of the first water. It's big, bold and just the right side of sensible. And the arm looks like a magic wand... of course it's German.

Scheu Analog is a Berlin-based company. Originally started some 20 years ago by Thomas Scheu, the company transferred to his wife Ulla when Thomas passed away in late 2004. He left a legacy of solid turntables, arms and cartridges.

Of which Das Laufwerk (Laufwerk is German for 'drive-mechanism') turntable is the top of the tree. Well, two tops of the tree; there's a Laufwerk No 1, which uses two layers of acrylic and stainless steel columns to achieve a high mass design, and the No 2. This abandons the layered design and just goes for inert high mass in the shape of a dirty great triangle of acrylic. It's not that commonly known outside of the UK, but Scheu has taken this to the logical extreme, the high mass acrylic base becoming a healthy chunk of slate.

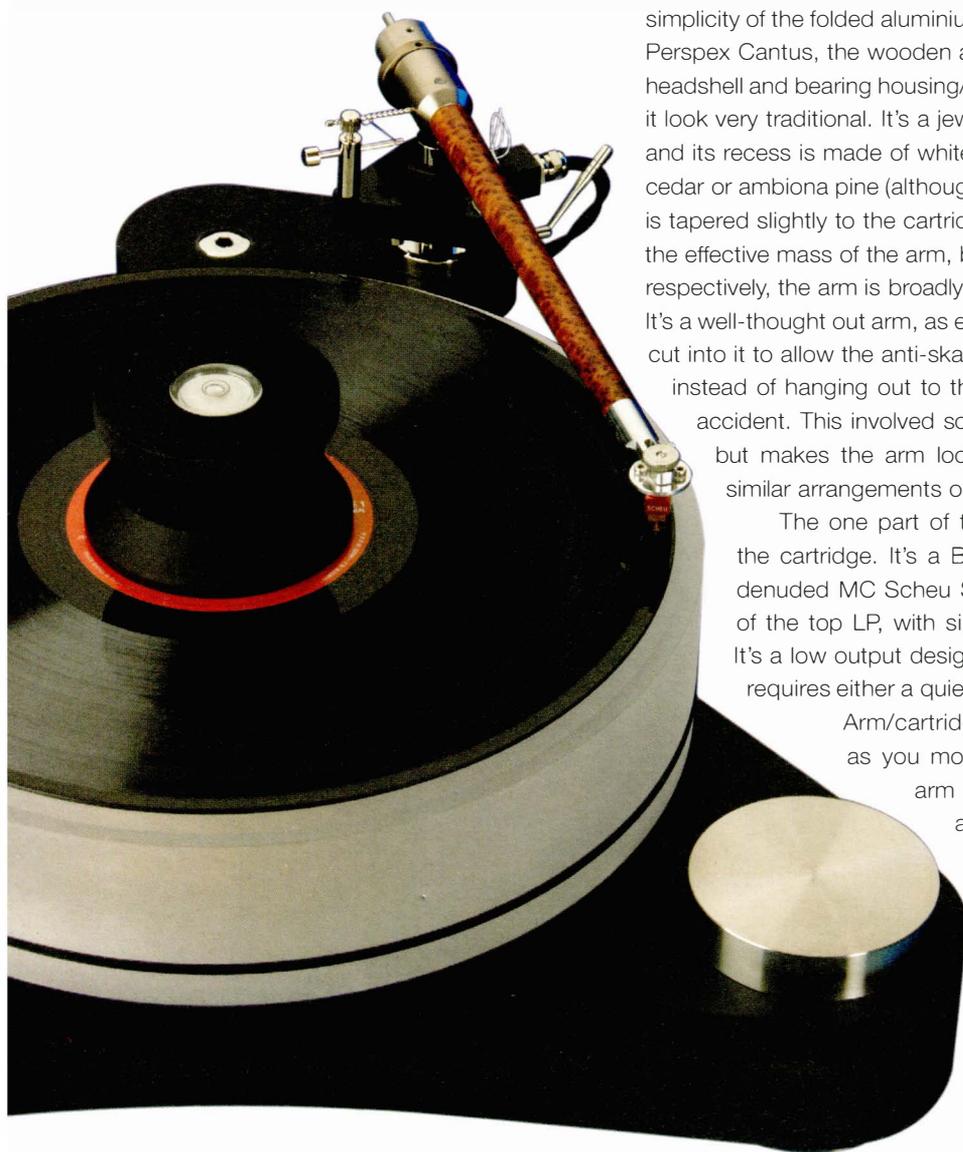
It uses an inverted bearing made of extremely hard ball-bearing steel, with a white ceramic ball resting on the top of the spindle. This is identical to the design laid down

by Thomas Scheu in the still current Premier turntable. However, the bearing chamber in the Laufwerk has an additional grade of damping and resonance built into the system by mass-loading the bearing chamber with lead shot. Although, because of RoHS, I suspect 'lead' is an euphemism for something less intrinsically leaddy.

Scheu considers the Laufwerk Slate a special edition of the No 2 deck and with good reason – the fundamentals are identical, only the mass and material of the chassis differs. However, Ivan at UK distributor Cool Gales thinks the



► *“The wooden arm wand of the Tacco Mk II and the tungsten headshell and bearing housing/counterweight/business end of the arm makes it look very traditional. It’s a jewel of an arm.”*



change in material changes the performance significantly enough to warrant it being a standalone turntable in its own right, and as the Scheu decks are hand-built, it's not a big deal. Whatever the chassis material, the rest of the deck remains functionally identical. It uses the same 80mm thick, 7.5kg acrylic platter (which you can get in both smoked or clear finish), a fully isolated off-board DC motor power supply (Cool Gales recommends a length of fishing line as a belt, although rubberised belts are available), and adjustable feet. It's very easy to level, thanks in part to an optional £100 record clamp, which also features a spirit level on the top (Linn users need not apply – it's massy enough to throw off the suspension). The tonearm sits on top of one of the levelling towers, and that means up to three arms can be used at the same time. As standard these come in acrylic, but bronze armboards are special orders.

The Tacco Mk II is at the acme of Scheu arm design. Interestingly, while many companies try to develop a similar line of arms – just adding more as you go up the range – there is almost no common family design between the three Scheu arms, although they are all unipivots. Unlike the Braun-like simplicity of the folded aluminium Classic Mk II or the modern lines of the clear Perspex Cantus, the wooden arm wand of the Tacco Mk II and the tungsten headshell and bearing housing/counterweight/business end of the arm makes it look very traditional. It's a jewel of an arm. Literally – the bearing tip is ruby and its recess is made of white sapphire. The wand itself is made from thuja cedar or ambionia pine (although other materials are available on request) and is tapered slightly to the cartridge end. The choice of wand material dictates the effective mass of the arm, but as in standard guise it's around 14g or 16g respectively, the arm is broadly compatible with almost all modern cartridges. It's a well-thought out arm, as evidenced by the way the arm mount has a hole cut into it to allow the anti-skate weighted line to stay close to the arm itself, instead of hanging out to the side of the arm where it can be moved by accident. This involved some recalculation of the anti-skate mechanics, but makes the arm look less Heath Robinson/Rube Goldberg than similar arrangements on other arms.

The one part of the deck that is sourced outside of Scheu is the cartridge. It's a Benz. Well, several Benz, rolled into one. The denuded MC Scheu S has the body of a Ruby, with the generator of the top LP, with silver coils and a Namiki micro-ridge stylus tip. It's a low output design, with an output voltage of just 0.35mV, so it requires either a quiet phono stage with lots of gain, or a step-up.

Arm/cartridge set-up is relatively straight-forward, as you mount the cartridge to a plate that bolts to the arm in place of a headshell, and this allows easy alignment. You will need the appropriate tools (or better yet, the appropriate installer to do it for you) to set alignment, azimuth, VTA, VTF and antiskate, and the design does not lend itself to on-the-fly adjustment of any of these parameters, so it's best considered a fit and forget device. In fact, that applies to the deck entire; if you are the 'jump up every three tracks and mess with something' kind of guy, the Scheu is not for you. ►



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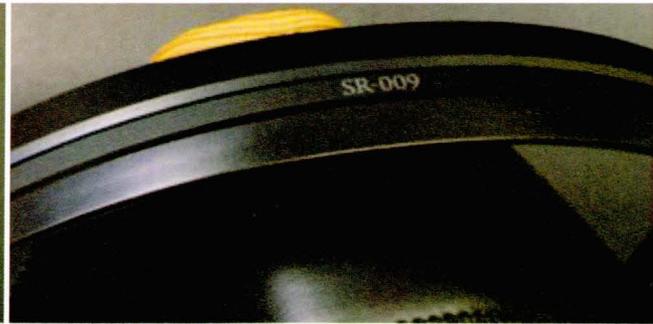
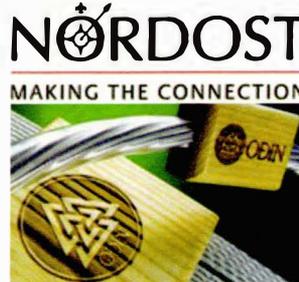
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Raidho acoustics



▶ On the other hand, if you are wanting a deck that combines the benefits of some of the big high mass designs, coupled with the fleetness of foot that comes with the sort of turntables the British often favour, the Scheu combination has a lot to offer. At the moment, most turntables tend to either go with the deep, controlled bass and expansive, extended treble of high-mass designs – sometimes at the expense of the midband – with the excellent mid-band and speed of light, suspended designs, with the loss of impact at the frequency extremes. The Scheu does both, and well. This seems to be a trend in European decks at this time, but it makes the turntable sound at once light and airy and powerful and dynamic. An almost perfect combination.

What this means is the deck goes beyond those test records you play to determine performance (one of mine seems to be *Sea Change* by Beck... I end up playing it early in almost every LP review), but also those records you don't play so often, because they don't sound so good. Things like *Music for Drumlanrig* on CRD, staple diet of the Flat Earth years but sounds thin, reedy and weedy now. The Scheu cannot remix this recording, but it does bring out the vital (especially on this recording) midrange well. Play the same on many high-mass decks and the top-end screeches unnecessarily. This deck brings a sense of order and balance to proceedings.

There are two observations worth making, though. The DC motor is powerful enough to spin up the high-mass platter without causing a fuss, but it's best if its given some help up front – a judicious push on the platter brings the deck up to speed faster and without what seems like a very short-term speed hunt over than first half a second or so. Also, the cartridge, while good, is not for me. While it has the smoothness of a good Benz, it's perhaps too satiny and makes the overall performance almost soft-toned. I think this is more a personal choice than a criticism; I am more of a Koetsu admirer than a Koetsu lover, after all, and what some find as 'richly musical', I find 'rose-tinted'. And

I'm kind of fully Benz'd to the max with the SLR I use. But if you listen to the full-up Scheu and find it a bit 'voluptuous', try it with a different cartridge. But it's a mark of just how honest the deck and arm are that the cartridge can make that big a difference.

In fact my biggest criticism is my lousy German. I had a whole series of bad puns lined up, based on the concept that 'Scheu' rhymes with 'shoe' ("... if the Scheu fits" being the most clunky). But it rhymes with 'boy', and that gives me next to nothing to work with. Of course, the implications of this are that if most of my criticism is based on not being able to crack a funny about the brand name, you can be pretty damn sure the deck itself is an absolute honey. And this deck certainly fits that description. Puns or not.

The Laufwerk Slate is an excellent deck, the Tacco II arm is an excellent arm, the MC Scheu S is a good+ cartridge, but the whole is even better than the sum of the parts. For myself, I'd probably choose a cartridge with more pep in its step (a top Lyra, for example), if only because both deck and arm are capable of extracting a massive amount of information off the groove, presenting a platform as neutral across the mid and top as it is deep at the bottom. Most of all, it sounds like a high-end deck that accidentally shrunk the price tag (and nothing else) in the wash. If you are looking for a lightweight upgrade on a Rega, jog on, but if you are wanting a lot of what the really big and heavy guns in the turntable world, without your bank balance taking a pounding in the process, this should be close to the top of your list. +

TECHNICAL SPECIFICATIONS

Slate chassis with stainless steel adjustable feet/tonearm bases
 Height-adjustable spike-shaped steel feet
 Can support up to three tonearms
 Armboards for various tone arms, available in acrylic, brass or bronze
 Inverted bearing
 80mm high, 7.5kg acrylic platter
 Electronically regulated DC motor Microcontroller with digital 4-Q
 PI-controller
 Overload protection by integrated speed-dependent current-limitation
 Fine-speed adjustment +3% for 33 and 45 rpm. for belt, tape or string-drive
Dimensions (WxDxH): 48x42x19cm
Weight: approximately 38kg
Price: £6,995 (deck only)
Scheu Tacco II unipivot arm (see text): £2,295
MC Scheu S cartridge (see text): £1,495

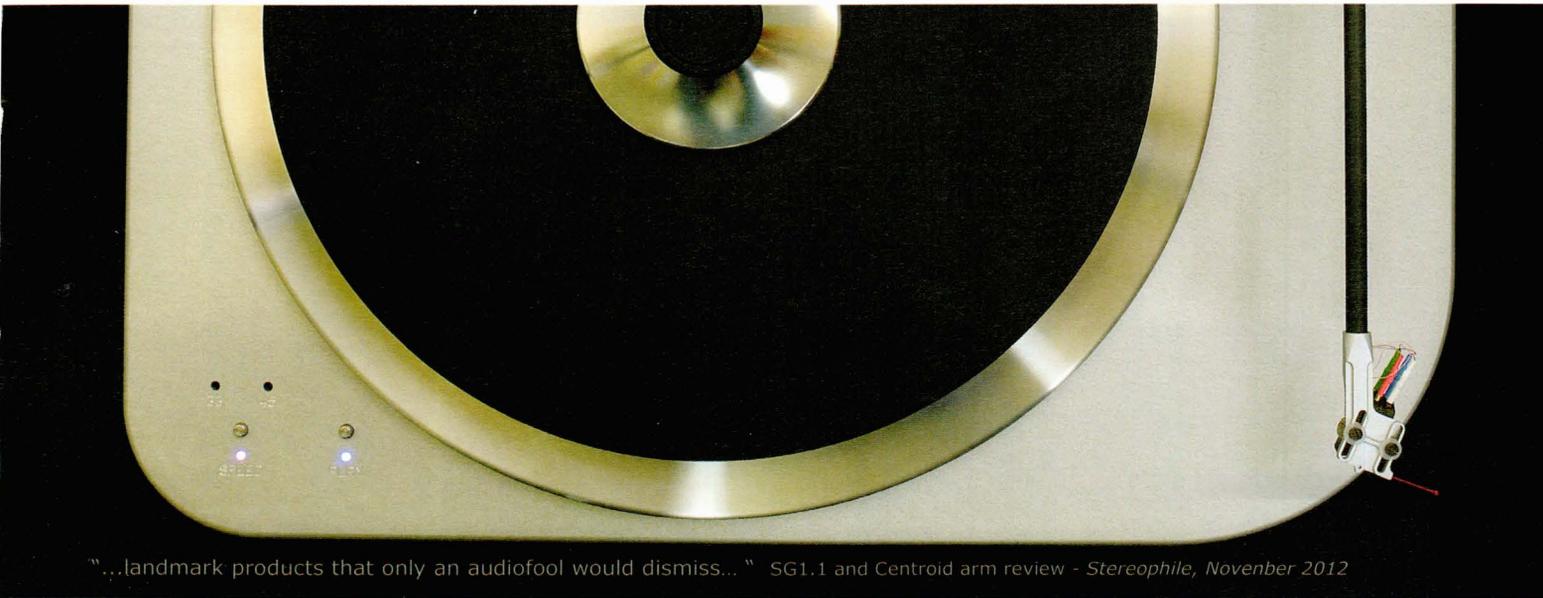
Manufactured by: Scheu Analog
URL: www.scheu-analog.de

Distributed by: Cool Gales
URL: www.coolgales.com
Tel: (UK only): 0800 043 6710



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"...landmark products that only an audiofool would dismiss..." SG1.1 and Centroid arm review - *Stereophile*, November 2012



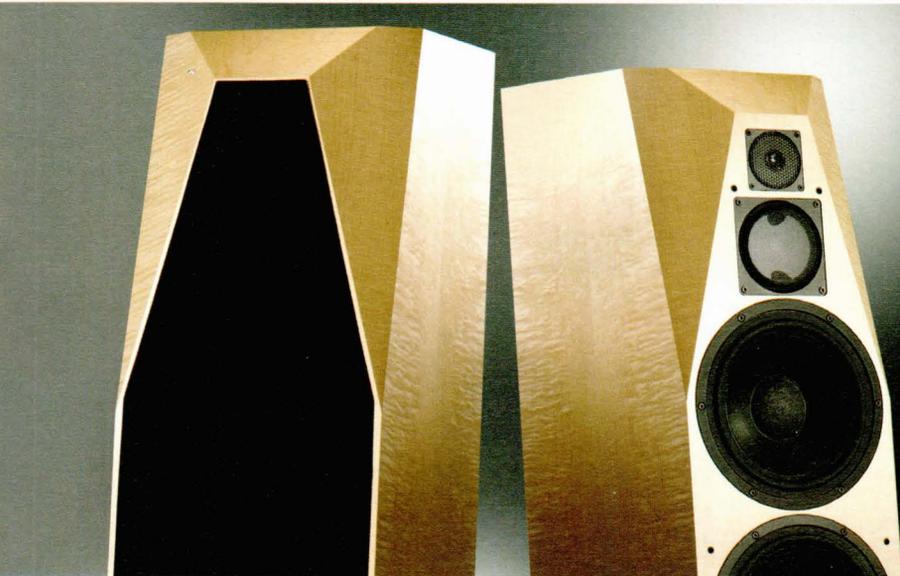
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"Frankly ? These are the best speaker cables I've ever heard."
Tellurium Q Graphite review - HiFi World, March 2012



"Undeniably expensive it may be, but it is still cheap at the price, simply because musical performance like this was almost unattainable at any price before it arrived."
Avalon Time review - Hifi+, Issue 71



Cherry on the icing on the cake... getting even more from the Wilson Benesch Cardinal Loudspeaker

By Roy Gregory

I spent many pages in Issue 96 heaping praise on Wilson Benesch's new flagship, full-range loudspeaker, the Cardinal. You could argue that they hit a new triple high for UK speaker designs, of engineering excellence, price and performance. But, as genuinely impressive as they are, there are two simple and (at least in the context of their £55,000 price tag) affordable ways to further improve their performance – significantly!

The first of these is entirely to do with set-up: partly what you do, and partly what you do it with. Those massive hand wheels on the rear corners of the speaker plinths are there for a reason – to allow you to level the speaker. It is essential that you do so. With a speaker this tall and narrow, any angular difference between the two enclosures will be clearly audible in the soundstage presentation. You need to get the speakers exactly vertical and precisely toed in, ideally pointing at the shoulder width of a seated listener. Once you've done that (and assuming that you've already optimised their placement) you should also check their rake angle. I found a slight down angle/forward tilt really locked things in – but again, you must make sure that it is identical for both speakers. Get all the angles correct and that's when the speakers simply disappear, the sound coming from the space between and behind them, rather than from the cabinets themselves. But you'll also notice a worthwhile improvement in substance and dynamic impact. Singers are more present ▶

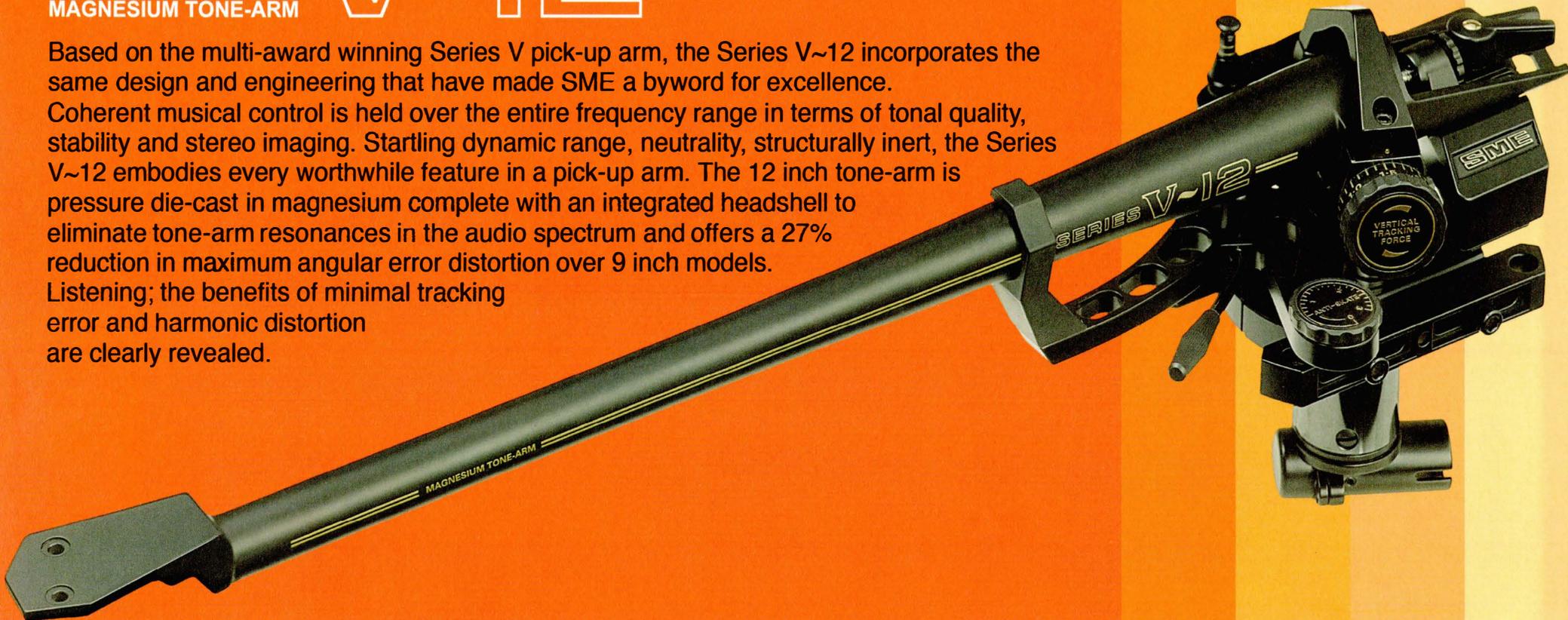
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SME

“The best pick-up arm in the world”

▶ and more believable. The space around and between musicians and instruments is more clearly defined and drums in particular have more body, volume and weight.

The other aspect of set-up involves those four sets of speaker terminals on the Cardinal's underside. Given that few if any listeners will be running quad-wired cable sets, it looks like jumpers are going to be an essential component. Make sure that you use identical jumpers across the various legs of the crossover, and that they are made of the same wire as your speaker cables. With a speaker design in which the engineering is this coherent, any unnecessary discontinuities in the rest of the set up are painfully apparent. You'll only achieve the full measure of the Cardinals' integration if you make sure you take these small, extra steps. They may appear trivial in cost or material terms but they can still do considerable harm if they are not attended to.

One of the Cardinal's most remarkable qualities is its seamless sense of integration. The sound is incredibly consistent from top to bottom, with no audible breaks, discontinuities or changes in character. Instead, they sound like a single driver. But, to achieve that you must pay attention to the steps outlined above. Positional precision will result in that completely coherent soundfield, behind and separate from the speakers; cable coherence banishes any shifts in tonal balance or energy levels. But less than ideal arrangements in either of these regards and the blemishes are all too obvious. If the sound clings to the speakers, if instruments sound like they are living inside them, then look to the vertical angle and toe-in. If the treble sounds even slightly fuzzy or spot-lit, it's almost certainly related to the jumpers being used. However, get these details right and you'll be rewarded with a sound that really does have a space, a life and an energy all of its own, apparently free and independent



of the system reproducing it – which makes for a system that's much more convincing and far more enjoyable.

Given how good the Cardinals will already be sounding, the next step might seem like overkill, but believe me when I say, once you hear it, it will be a no-brainer. If you really want to hear what these speakers can do, then add a Torus Infrasonic Generator. Given the size (and price) of the Cardinal, you might well wonder why you should need to add a sub-woofer, and what exactly a sub-woofer can add anyway? Well, the answer to that is that the Torus is no ordinary sub-woofer, its combination of an remarkably stiff, light, large-diameter diaphragm and soft suspension with an incredibly powerful, mechanically grounded, push-pull drive system and external amplifier delivers astonishingly clean, fast and well-defined bass fundamentals from a package that is compact, elegant and at £6,400, refreshingly affordable for the performance on offer. I reviewed the Torus (along with the small, three-way Trinity loudspeaker) back in Issue 59, giving it one of that year's Awards. In ▶



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► fact, if I had the luxury of a settled system, the Torus would be an essential part of it. Instead, I'll have to settle for it being an essential add-on for the Cardinal.

Because Wilson Benesch weren't prepared to go for the "big-driver and added padding" solution to low frequency weight, the Cardinal depends on speed and precision to deliver its bottom-end substance, a balance it strikes with remarkable success. Indeed, simply listening to the Cardinal won't leave you feeling short-changed – until you hear it with the Torus! The main cabinets might boast a -3dB point at an impressive 25Hz, but there's no mistaking what the Torus adds to the party! Play the moody, somber opening to Rachmaninov's 'Isle Of The Dead' (Jurowski/LPO 0004) and the cardinals give you a convincing sense of space and presence, but add the Torus and the acoustic simply expands, taking on a new height and greater space between and around instruments. The bass notes offer more texture and timbre, with a blossoming of tonal colour across the rest of the orchestra. All of which is to be expected from an orchestral heavyweight like this. But what you probably aren't expecting is the shift in pace and timing. Using the Torus makes the Cardinal on its own sound clipped and hurried. Adding the bass unit brings a stability and anchored sense of timing that allows the music to swell and breath, to take on a more stately and far more effective tempo, transforming the emotional intensity and impact of this live performance.

The Torus couldn't do all that unless it integrated really well. The good news is that it does so – and does so very easily. It's preferred positioning, central between the speakers and the same distance from the listener to its center as to the speaker baffles, certainly helps, but there's more to it than that. The unit's clever design, super stiff cone and astonishing level of control are what allow it to keep up with the Cardinal, while the lack of boxy colouration further aids the seamless integration; if you want to know just how seamless, try it on something small and intimate.

Mathilde Santing's album *Water Under The Bridge* (WEA WX18 – 240683) is full of delicate, intricate yet joyously upbeat pop. The track '(I'm Not Mending) Broken Hearts' is a perfect case in point. With a rolling, rollicking rhythm, sudden switches in density and instrumentation and a complex arrangement underpinning Santing's fragile vocal, it's tailor made to reveal the first hint of clumsiness or excess weight anywhere in the system. But once again, adding the Torus brings the song to life, adding shape and texture to the tactile bass line, vibrance to the sax and presence to the drum kit. But what really impresses is how much more solid, separate and naturally expressive the voice becomes, how much more explicit the rhythmic patterns. Listen longer and you realize that what the Torus has done is pick out the cymbal work and percussion motifs that accent the shifts in pace and tempo. Suddenly, what was simply noise takes on definition and a proper place in the mix. They say that you'll hear a good sub-woofer in the system's treble response and (in the words of the song) – if so, there goes your proof.

The wrong side of £6K might seem like a lot of money for a small increase in bandwidth for what might already be considered a full-bandwidth design. But that £6K will turn the £55K you've already invested in the Cardinals from seriously impressive to somewhere beyond your wildest dreams. If you want a system that really can sound live, that lets you forget the means of reproduction and simply lose yourself in the music, the Cardinal/Torus combination does just that. It does it without fear or favour, bringing out the best in recordings rather than fastening on their weaknesses. What the Torus does for the Cardinal is allow it to let go – in the best possible sense. As a listener, it will do the same for you, which places its contribution pretty much beyond price. The Cardinal is great, the Torus is great too – but together, the whole is so much greater than the sum of the parts. +

TECHNICAL SPECIFICATIONS

Type: Sealed chamber infrasonic generator

Driver: 450mm dual motor, carbon-fibre cone with mechanical ground post

Bandwidth: 10 – 150Hz

Amplifier: 200 Watt bi-polar, DC coupled

Weight: 32kg (Torus)

Dimensions (WxHxD): 450mm diameter, 330mm high

Price: £6,420

Manufacturer: Wilson Benesch Ltd

Tel: +44 (0)114 285 2656

URL: www.wilson-benesch.com

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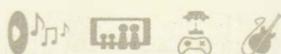
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EQUIPMENT REVIEW

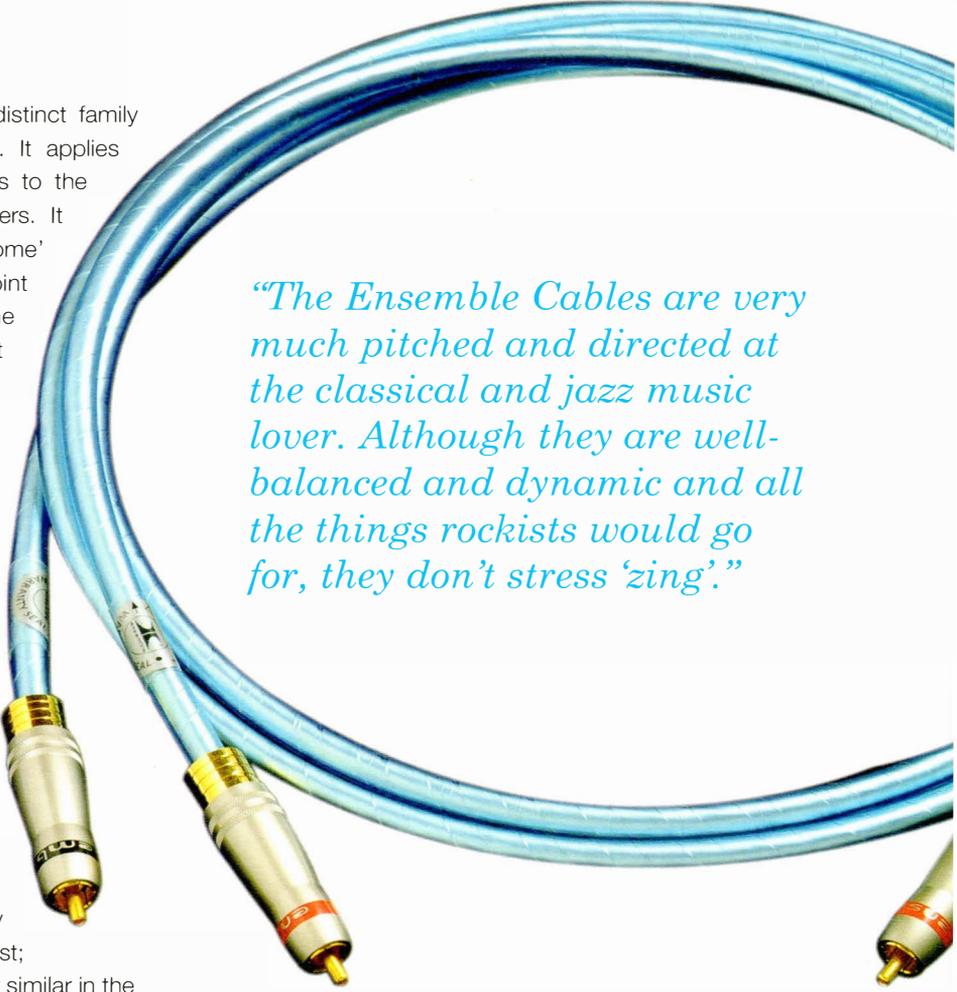
Ensemble Luminoso and Espressivo cables

By Alan Sircom

Ensemble's products have a very distinct family sound, which applies everywhere. It applies as much to the cables as it does to the amplifiers, speakers and CD players. It also has an 'all roads lead to Rome' signature; once you try one, you tend to point yourself in a very Ensemble-related direction. The trouble is, the entry point has always been a bit 'spendy'. Until now.

Luminoso and Espressivo form Ensemble's new cable line. Luminoso is used to build loudspeaker and power cords, while Espressivo forms the interconnect ranges. It's – in Ensemble terms at least – 'entry level' (this is hand-made in Switzerland, remember...). Luminoso is made up of three 2.08mm² high-purity copper conductors in a helical array. These are individually screened with two shields overall. Espressivo is formed from five 0.34mm² conductors (also high purity copper), again in a helical array, individually shielded, with two overall shields. Ensemble has made a big thing of low dielectric dissipation and good mechanical damping throughout. It is also one of the very few brands to announce the results of a spark test; it is rated to 1,500V, and rather than use PVC or similar in the cable, the turquoise cable is actually very green. This is going to sound alpha-geek, but it feels nice in the hands too. It's a solid wire that you aren't going to put too much of a bend into. Naturally, the terminators are first-class, too.

We received two power cords, a phono interconnect and a short run of speaker cables, just enough to test it both as a complete system rewire and as individual cables. And once again, the Ensemble 'all roads...' thing happens again, albeit mainly from the interconnect and speaker cable. It seems as if once you 'get' the sound of one, you get the sound of the others. The power cord, in fairness, doesn't have the same re-acquainting you with your music immediacy of the interconnect and speaker cables; it's more of a supporting



"The Ensemble Cables are very much pitched and directed at the classical and jazz music lover. Although they are well-balanced and dynamic and all the things rockists would go for, they don't stress 'zing'."

cast member than the star of the show. But when all your ducks are in a Ensemble-shaped row, it does pull the sound together beautifully.

The Ensemble cables are very much pitched and directed at the classical and jazz music lover. Although they are well-balanced and dynamic and all the things rockists would go for, they don't stress 'zing' and energy that is often needed to deal with the endless leading edges of music with a solid four-on-the-floor beat. It more expresses the beauty of the sound, rather than its energy, and there isn't much beauty to be found in a Ramones CD. ▶

► What it does well is capture the sense of scale of a musical event; the tonal shading, the timbre of the instruments, the sense of excitement as the soloist stands on the podium. The Ensemble cables are masters at presenting the shape and feel of an orchestra, the flow of the music and the resonance of the body of a violin or a singer. It all makes for a wonderful impression of the musical performance.

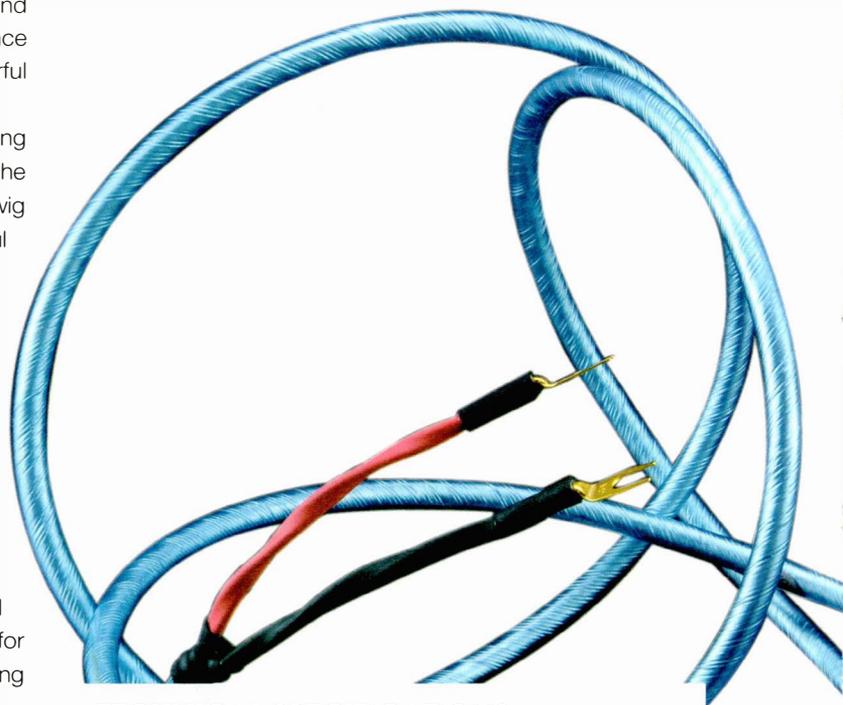
I even found myself listening to Wagner without trying to conquer Poland. Specifically, the second act of the Furtwängler version of *Tristan und Isolde* with Ludwig Suthaus and Kirsten Flagstad from 1952. This masterful mono recording often shows the mettle of a system, because the lack of stereo soundstage coupled with one of the most precise conductors and several of the best lungs ever recorded really highlights how good a tonally poised a system can sound, and how bad it can sound when slightly off kilter. Fitting the Ensemble cables into a tried and trusted (and now sadly, largely discontinued) system of Lyngdorf, Sugden and Avalon that all worked reasonably well together before the Ensemble incursion (it was using Cardas Clear before), the tone shifted from overall balance with some top end shimmer to musical beauty. There's nothing wrong with either, but one goes for neutrality and the other for fire. Ironic then that the one going for neutrality isn't the one from Switzerland!

Moving away from mono, I still found the classical and jazz ends of the spectrum, and often smaller concertos, sonatas and lieder, rather than the big sweeping spectacle. When I went for the *sturm und drang* bits of the classical canon, the Ensemble cables were more than capable, but it was the freedom to listen to soloists seemingly unencumbered by the sort of background hash of the recording process that brought me further and further into the music.

Finally, I settled on a Bill Evans and Jim Hall album – *Undercurrent*. This subtle slice of piano and guitar jazz is a bell-weather for good audio systems. Get it right and it's two masters of improvisation riffing off one another. Get it wrong and it's bland jazz noodling with an excellent album cover. It doesn't matter about bandwidth, or dynamics or anything else, if the system fails to gel (and it frequently does) this sounds flat and dull. On the Ensemble Luminoso and Espressivo, it was first-rate jazz improvisation, a sense of control and order over the system, giving the music the chance to rise to the occasion. End of story.

I suspect the reason for these cables is to be the first taste of an Ensemble-based future for many listeners, and if that is the case, these cables more than achieve their goal. They are expressive, musical and very, very easy to live with. OK, so if you are still in your death metal phase, put the Ensemble, er, ensemble on the back burner for a decade or

so. But if you want to extract that bit more musical beauty and insight out of your music (except perhaps death metal), then look no further. +



TECHNICAL SPECIFICATIONS

LUMINOSO power and speaker cable

3 x AWG 14 (2.08 mm²) conductors in helical array, individually screened plus 2 x overall shields

Diameter: 11 mm

Bending radius: 8.5 cm

Resistivity: 0.0073 Ω / m

Capacitance: 155 pF / m (1 kHz)

ESPRESSIVO interconnect (RCA / XLR)

5 x 0.34 mm² (≈ AWG 22) conductors in helical array, individually screened plus 2 x overall shields

Diameter: 8.2 mm

Bending radius: 6 cm

Resistivity: (single conductor) 0.049 Ω / m

Capacitance: (single conductor) 90 pF / m (1 kHz)

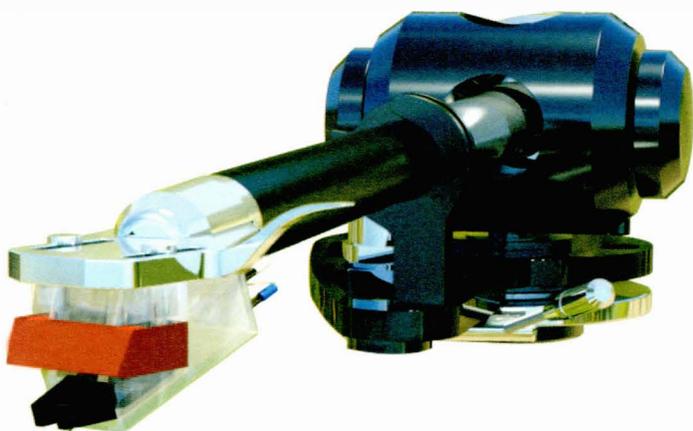
System as tested (2x 1.5m power cord, 1x 1.5m phono-phono interconnect pair, 2x 3m spade connector set): £2,050

Manufactured by: Ensemble AG

URL: www.ensembleaudio.com

Tel: +41 61 461 9191

The secret to raising your cartridge performance to the same level as one costing up to 70 times the price



2012 Tonearm of the Year award - The Absolute Sound Magazine



2012 Tonearm of the Year award

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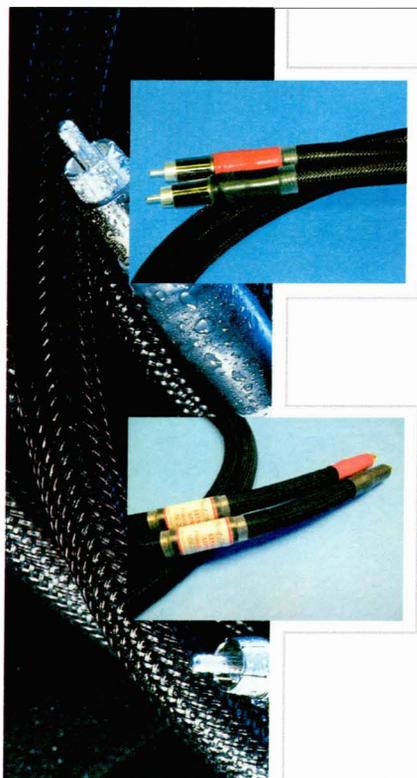
To find out why these claims are not so wild, please read www.tonearm.co.uk

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FEATURE

Classic Album Living Room at Vintage



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EQUIPMENT REVIEW

CLASSIC ALBUM LIVING ROOM AT VINTAGE



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EQUIPMENT REVIEW

Kaiser Kawero! Vivace loudspeaker



The Kaiser Kawero! Vivace is a speaker that is designed to be used in a living room. It has a sleek design and is available in a range of colors. The speaker is designed to provide clear, crisp sound and is suitable for use in a variety of environments.

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EQUIPMENT REVIEW

ASR Emitter II Exclusive integrated amplifier



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iFi Micro iCAN Headphone Amplifier

By Chris Martens

Some audiophiles assume that price and performance go hand in hand in the world of audio components; in short, they assume you can't possibly enjoy upper-tier sound quality without paying an ultra-premium price. Well, I've got what may be shocking news for those accustomed to pre-judging components by their price tags. The good people at iFi Micro have – with the help of the design team at Abbingdon Music Research – created a £225 headphone amplifier called the iCAN that flat out demands to be taken seriously, and for all the right reasons. We'll talk about the iCAN's sound in a moment, but first let's start with the basics.

The iCAN is small (28 x 68 x 158mm) and lightweight (216g) that is intended for desktop use, and that is powered by what at first appears to be an unassuming wall wart-type power supply. As it happens, though, the wall-wart houses what iFi terms a ULN (ultra low-noise) switched mode power supply purpose-built for audio applications – a supply that not only is quieter than most other SMPS designs, but also is quieter than many costly linear power supplies.

On the inside, the iCAN features a directly coupled, Class A amplifier section that uses what iFi calls a "tri-brid" circuit said to combine the best of bi-polar, J-FET, and "Advanced Discrete" devices. In practical terms, the little amp proves to have the heart of a lion, putting out a healthy 400mW at 32 Ohms, while also claiming vanishingly low-distortion (< 0.003% THD) and unexpectedly wide bandwidth (0.5Hz – 500kHz, -3dB).



These would be exemplary specifications in an amp several times the iCAN's price, so I deem them to be crazy good for an amp that can be had for roughly the price of an iPod Classic.

The iCAN is surprisingly full-featured. The rear panel of the amp sports an inlet socket for the power supply, plus two stereo analog inputs, while the faceplate presents a volume knob, a 1/4-inch headphone jack, and mini-toggle switches that control two special, iFi-developed sound enhancement features.

The first sound enhancement feature, called "XBass", is a headphone-specific bass EQ system that offers two degrees of bass lift, plus a "Direct" (or bypass) setting that provides no boost at all. iFi created this circuit to address the problem of otherwise excellent headphones that exhibit small or, in some cases, not-so-small degrees of low-end roll-off. Thus, the XBass system aims to restore missing low-end response for 'phones that need a judicious touch of bass lift, while the "Direct" setting works best for 'phones that already provide flat bass response. I used the "Direct" setting for most of my listening, but the circuit did help some bass-shy 'phones achieve greater depth and did so without spoiling the clarity of the rest of the audio spectrum.

The second enhancement feature, called the "3D Holographic Sound" system, tackles the familiar headphone problem of soundstages that remain stuck "inside the listener's head." In a background paper on the 3D system, ►



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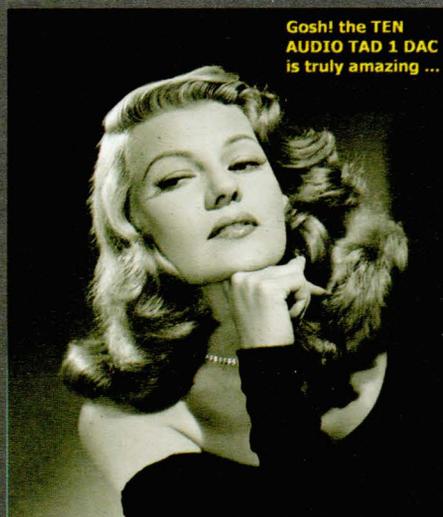
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“Quite frankly, the aptly-named iCAN really can drive pretty much any headphone you’d care to throw at it, up to and including the notoriously power-hungry HiFiMAN HE-6s.”

► iFi’s Thorsten Loesch said that, “to us it was unthinkable to offer a dedicated headphone amplifier and not address this fundamental flaw.” iFi designers were aware of various left/right-channel “crossfeed” circuits that attempted to solve this problem in the past, but they wanted a different and better solution for the iCAN – one that would “provide a stereo image that is truly out of your head, offer realistic depth and width to the sound image, do so without introducing colorations of loss of resolution, and do so using only analogue circuitry...” Accordingly, the system provides two settings that claim to shift perceived soundstages from “inside your head, to in your room” creating – to a degree – the illusion of performers “playing in front of you.”

Does the 3D Holographic Sound system work as advertised? I give iFi’s 3D system high marks for pulling soundstages outside the listener’s head, but somewhat lower marks when it comes to placing soundstages out in front of the listener. Even so, iFi’s 3D system is one of the most effective and least “gimmicky” of its kind that I’ve yet heard. One tip I would offer is to make sure you try both 3D enhancement settings (comparing to the “Direct” sound as you go along); one setting gently expands soundstage depth, width, and cohesiveness, while the other helps tighten overly diffuse soundstages while enhancing image focus and specificity.

My point is that both XBass and 3D Holographic Sound systems are pragmatic solutions to real-world sonic problems. If you like what the circuits do, then by all means use and enjoy them; if not, just engage the “Direct”

switches and carry on in purist mode – simple as that.

How does the iCAN sound? It sounds surprisingly muscular and dynamically alive – especially so for an amp in its price class. Many lower cost headphone amps have merits but also a few caveats, especially in terms of somewhat limited capabilities for driving today’s most demanding and amplifier-sensitive headphones. But it is in precisely this area that the iCAN excels; quite frankly, the aptly-named iCAN really can drive pretty much any headphone you’d care to throw at it, up to and including the notoriously power-hungry HiFiMAN HE-6s. I mention this point because the superb but demanding HE-6 is widely considered one of the most difficult-to-drive headphones on the planet. Imagine my surprise, then, when the little iCAN grabbed hold of the HE-6s (and every other headphone I tried) and simply made them sing in a rich, vigorous, and dynamically expressive way. With the iCAN in play, there will be no sonic whimpering, whining, or pouty bouts of edginess or stridency. Instead, there’s just rich, free-flowing power and plenty of it. Granted, if you push volume levels to the extreme with the HE-6 (not recommended in the hope of preventing hearing damage), you might hear signs of clipping from the iCAN, but at more sane volume levels it’s a stouthearted powerhouse of an amp. ►

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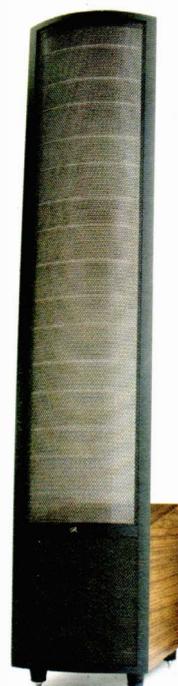
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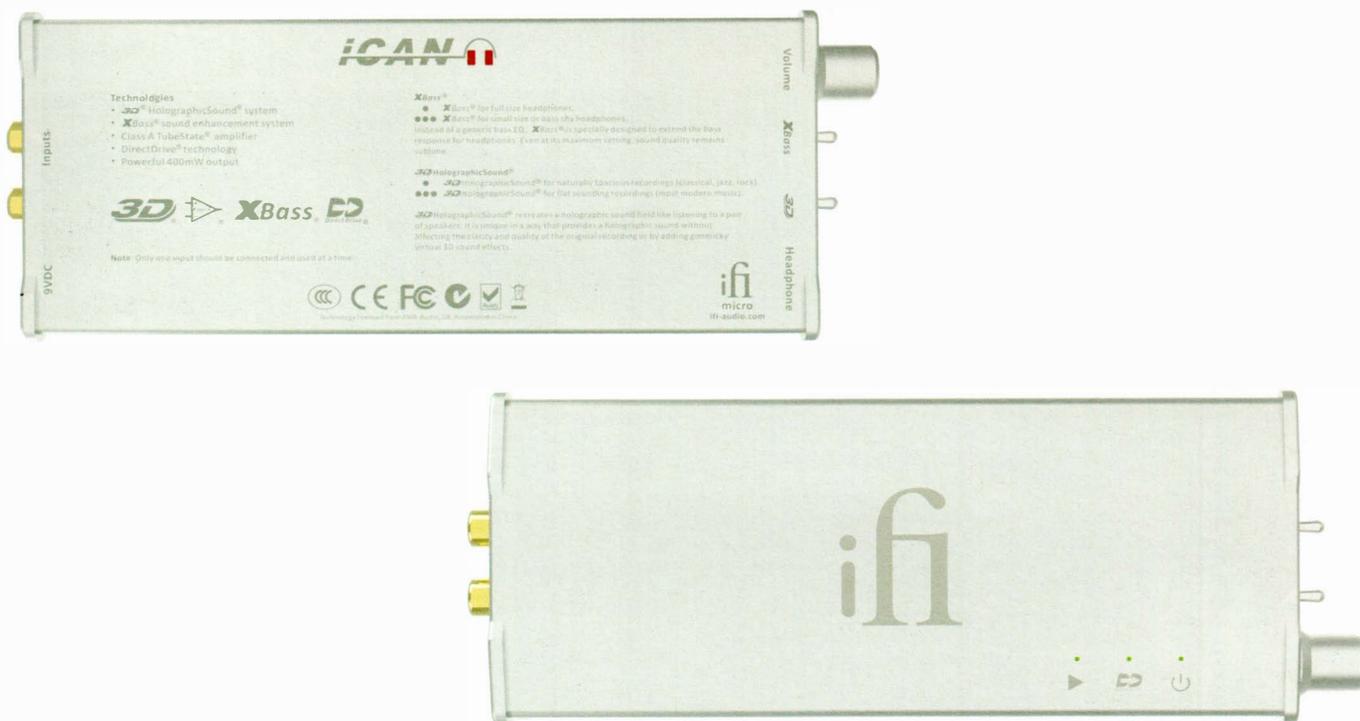
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▶ To hear what I mean, try this acid test: plug a pair of HiFiMAN HE-6's (or other tricky-to-drive 'phones) into the iCAN and then put on a compelling electric blues track like Hadden Sayer's "Back to the Blues" from Hard Dollar and note what happens. You'll find that Sayer's warm but also slightly gritty-sounding vocals are just as rich and evocative as could be, while his scorching hot electric guitar solos have real fire and expressiveness. At the same time, Ruthie Foster's earthy yet achingly beautiful vocals form a perfect complement, in part because they are infused with the iCAN's uncanny qualities of warmth, three-dimensionality and depth. But perhaps the most surprising part of all is that the electric bass and kick drum have serious extension, weight, definition, and slam. As you listen to the iCAN, then, you might feel – as I did – that its sound would be praiseworthy in an amp two to four times its price. It's that good.

In terms of timbre and overall presentation, the iCAN has a contemporary amp's emphasis on wide bandwidth and extension at the frequency extremes, but tempered with what I consider a characteristically British emphasis on such essential musical priorities as natural warmth, smoothness, midrange subtlety and finesse, and over-arching three-dimensionality.

While there might be a few comparably priced amps that could give you slightly more detail or more crisply delineated transient sounds, you will be hard pressed to name a like-priced competitor that can even come close to the iCAN in terms of real-world power, versatility, or overall musicality.

I consider the iCAN a new benchmark in its price class and would add that it makes a perfect entry point for high-enders who would like to experiment with top-tier headphones, yet without investing an arm and a leg in dedicated headphone electronics. Enthusiastically recommended. +

TECHNICAL SPECIFICATIONS

Accessories: Low-noise wall-wart-type power supply, 1/4-inch phone jack to 3.5mm mini-jack adaptor, two interconnect cables (1 terminated with RCA plugs, 1 terminated with 3.5mm mini-plugs), four adhesive rubber feet

Inputs: Two stereo analog inputs (1 via RCA jacks, 1 via 3.5mm stereo mini jack)

Output: One stereo headphone output (via 1/4-inch phone jack)

Frequency Response: 0.5Hz to 500kHz (-3dB)

Total Harmonic Distortion: <0.003% (400mV/150R)

Power Output: >400mW @ 32 Ohms

Dimensions (H x W x D): 28x68x158mm

Weight: 216 grams (0.48 lbs.)

Price: £225

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Bob Archer, CEPro



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Brandon Saltalamacchia, Tech Reviews (UK)



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Steve Guttenberg, The Audiophile, CNET



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Brent Butterworth, Sound & Vision

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REL R-528SE subwoofer

By Alan Sircom

It's getting hard to keep up with REL's subwoofer output of late. Now split between three ranges (or 'Serie') – T, R and Gibraltar – there's some overlap across the 10 strong range. The REL R-528SE is a perfect example of this. The new top of the Serie R line, the R-528SE could easily be dismissed as a R-528 with added bling, but in fact is closer to a Gibraltar G-1 sub, both in design and sound.

On paper, though, the similarities between the R-528 and the SE are not immediately apparent. It's a high-gloss black cube sitting on four triangular spiked feet with a 300mm powered driver facing forward behind a grille and a similarly sized passive radiator firing down into the floor. Both are identically sized and weigh almost the same. There's even a notionally similar Class D 500W power output from the on-board amplifier. The cynical might think the only difference between them from first looks is the nickel-plated chrome REL logo, side name badges and feet.

The cynical would be wrong. The cabinet bracing has been extensively modified, the front-firing 300mm drive unit is now identical to the carbon fibre unit used passively (in the existing R-528, it's one of the company's Heavy 12 drivers) and the amplifier's circuit topology has been mildly revised, although I suspect the driver change and the cabinet reshuffle have been the principle changes.

REL subs are always fast – it's one of the reasons they consistently score well in hi-fi magazines, they are some of the only bass-bringers that can keep up with snappy little sealed box speakers with ultralight 100mm mid-woofers. But more importantly in the R-528SE, it's clean with that too. It's the control of the bass – rather than the depth of it – that separates the whopping G1 from the Serie R in many respects. That it goes down to 15Hz really won't make a whole heap of difference in most rooms and with most pieces of music. And it's that clean control over the bass is where the R-528SE scores above its already good Serie R stablemates.

The way we set up a sub in hi-fi is all about subtlety; if you can hear it making bass sounds, it's set too high. Bring down the sound until you can only hear the sub by its absence (when you turn it off) and the level is about right. Consequently, it's a relatively hard ▶





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▶ concept to justify in theory; spending £1,799 on a subwoofer that you aren't hearing, except when you begin to hear what kind of liberating effect it has on the mids and upper registers of your loudspeakers. Curiously, the tighter the sub, the more free sounding the loudspeakers and the R-528SE brings that freedom easily.

It's not hard to spot, once you get past the almost instinctual desire to check out the bass from a bass loudspeaker. For example, take listening to the king of all whiners, Neil Young singing 'Heart of Gold' on *Harvest* from the recently released four CD set. Although excellent, there's not a great deal of deep, low bass going on there, but Kermit's – sorry Neil's – voice just begins to soar better than it does without the sub. And this through a pair of ProAc original Studio 140s, which do deliver good bass in their own right. Ditto Martha Argerich playing preludes by Chopin; in most of those cases, the left hand rarely reaches down to the bottom octave, but it's not the bottom octave that makes the difference. It's the way the speaker better copes with her forceful middle-registers playing instead.

There are two schools of thought with regard to installing a sub in a hi-fi system. The first is to install one that is the right size for the system; the next is to go for the biggest possible sub money and room size will allow. Both arguments have their merits; a smaller subwoofer is usually faster and more controllable than a bigger one and that helps make it blend with the speakers better, the bigger ones have better deep bass and larger amplifiers for greater depth. The reality is probably somewhere between these two poles, and the R-528SE makes that argument perfectly. The control it has over the bottom end is prodigious, and it's closer to the Gibraltar than the Serie R. That control makes it integrate with the main loudspeakers perfectly.

Don't mistake this for lightness, though. If you go home cinema and play this with the likes of *Avengers Assemble* in full throw, Hulk! Smash! gets a whole new meaning. That's



the thing about the REL R-528SE, it's a wolf in wolf's clothing, if you want it to be. It can go deep and loud, but it's capable of the subtlety needed to make piano preludes dance off the keyboard. In short, it's highly recommended. +

TECHNICAL SPECIFICATIONS

Type: Front-firing active woofer, down-firing passive radiator
Inputs: Hi Level Neutrik Speakon, Lo Level single phono, LFE phono
Active drive unit: 300mm carbon-fibre driver with aluminium chassis
Passive radiator unit: 300mm carbon-fibre
Power output: 500w (RMS)
Lower frequency response: 21Hz at -6dB
Gain control range: 80dB
Dimensions (WxHxD): 39x45x44cm
Weight: 26.3kg
Price: £1,799

Manufactured by: REL Acoustics
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Purist Audio Design Genesis Praesto Revision interconnects

By Alan Sircom

Like all Purist Audio Design cables, its lower priced Genesis interconnect has recently undergone what the company calls its Praesto Revision (Purist is clearly up for a spot of Latin). This took the previous cables and uprated the metallurgy, shielding and consistency of appearance of the range. Purist's founder, Jim Aud, is convinced stray magnetic fields are the cause of a lot of audio's problems and as such rather than using pure metal conductors, Purist features strands of a copper, silver and gold alloy, with a similar foil shield and drain wire, a Teflon dielectric, a nice braided jacket and what look like rhodium plugs. The cable is cryo-treated three times. Purist recommends a 200-hour burn in on music programme; burning in devices as short cuts are strongly discouraged. As this was a single cable instead of a complete system, I left it cooking between an old CD player and preamp in the loft, chewing on a diet of Jeff Wayne's *War of the Worlds* for a month.

These are good cables. So good in fact, I started this review thinking they were the Proteus Provectus that costs 10 times as much as the Genesis cables! At that price point they weren't going to play the 'exceptional' card, but they were good. I thought they were a bit 'spendy' for the performance they offer at more than two grand.

So, at £214, they are a steal!

The Genesis cables have excellent bass, clean extended treble and the bit in between is in the good to very good range. It's very grain-free and very 'quietening', across the board. It's like that moment when the lights go down and the audience is stilled, before the performance begins. It's not 'all top, all bottom and nothing in between' but Genesis is more Tchaikovsky than Brahms, say; more Dizzy than Miles, more Kurt Cobain than Kurt Wagner. It's an exciting sounding cable, perhaps best suited for entry level trying for full-range speakers rather than the mid-range extension programme we often pass off as a loudspeaker here.

I will rectify the error of my ways and run in the real £2,000 Proteus Provectus cables for a review in a later issue. For now though, the Genesis does give a real taste of the high-end, without the high-end price tag. +



"I started this review thinking they were the Proteus Provectus that costs 10 times as much as the Genesis cables!"

TECHNICAL SPECIFICATIONS

Conductor: Stranded, silver, copper and gold alloy

Shielding: Foil, with drain wire

Dielectric: Teflon

Gauge: 24 AWG

Capacitance: 121pF/m ±15% (pin-to-shield)

Resistance: 14.2mW/m (conductor)

Price: £214/m pair

Manufactured by: Purist Audio Design

URL: www.puristaudiodesign.com

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Just Audio μ HA-120Ds portable Headphone DAC

By Alan Sircom

Unlike the HRT and Meridian featured in this issue, the Just Audio μ HA-120Ds doesn't easily lend itself to being just (no pun intended) a DAC. It's basically a headphone amp on the move. It's not much to look at; a small box, with a small volume knob, a yellow LED and two minijack sockets at one end, a USB another LED and a pair of DIP switches at the other. It can be used with a line level input or fed digitally from the USB host controller. With the volume turned to the max (and you open the product and flip the internal maximum gain jumpers), it can double up as a line-level digital converter.

The DAC/amp features Just Audio's Audio Power Source Selection on the DIP switches at the back. In the majority of cases, set it to Batt and fast charging and the amplifier will have the headroom to drive most cans, for 40 hours at a time. To tame beast headphones, set it to USB and normal and the internal power gets a swift kick in the batteries.

No one-chip pony, this sports a Wolfson DAC running up 24/96 precision (isochronous USB, Class 2.0). It uses an Analog Devices op-amp to drive as standard or you can choose from a list of different op-amps for full alpha-nerdy geekitude.

It grabs hold of your headphones and drives them like they should be driven. No coloration, no distortions or deviations, just transparent, hard-driving without hard-sounding, headphone sound. When you hear that kind of transparency and accuracy, it's hard not to be swayed.

If it had a big name on the front, it would cost more and bring less to the party. There are a lot of expensive headphone amps and the μ HA-120Ds brings many of them to book. Good hi-fi just got a lot smaller and cheaper. Wow! +

TECHNICAL SPECIFICATIONS

Configuration: Symmetrical Discrete Class AB (Stereo Drive) Class AB

Continuous Power: 120mWrms into 32ohm Load, 56mWrms into 300ohm Load

Maximum Output Swing: +/-110mA (each Channel)

Output Impedance: <0.1ohm || 10ohm (jumper selectable) THD+N: <0.004%

Dynamic Range: 110dBA

Bandwidth (-1dB): 10Hz - 40kHz

Maximum Gain: 6dB (x2) || 12dB (x4)

Operation Time: Up to 40 Hours Battery Operation Time

- Status LED Blinks at approx 50% Remaining Capacity

Configuration: Filtered Power & Impedance Matched

Data Bus Sample Rates: 44.1kHz/48kHz/96kHz Bit Depth:

16-bit/24-bit THD+N: <0.008% (24-bit 96kHz) Dynamic

Range: 107dBA (24-bit 96kHz)

Interface: USB2.0 (or above)

MS Windows: Windows XP 32/64-bit | Windows 7 32/64-bit (ASIO/WASAPI)

MAC: OSX 10.5 onwards

Physical Dimensions: 32mm x 52mm x 85mm (H x W x D)

Weight: 130g (+/-1g)

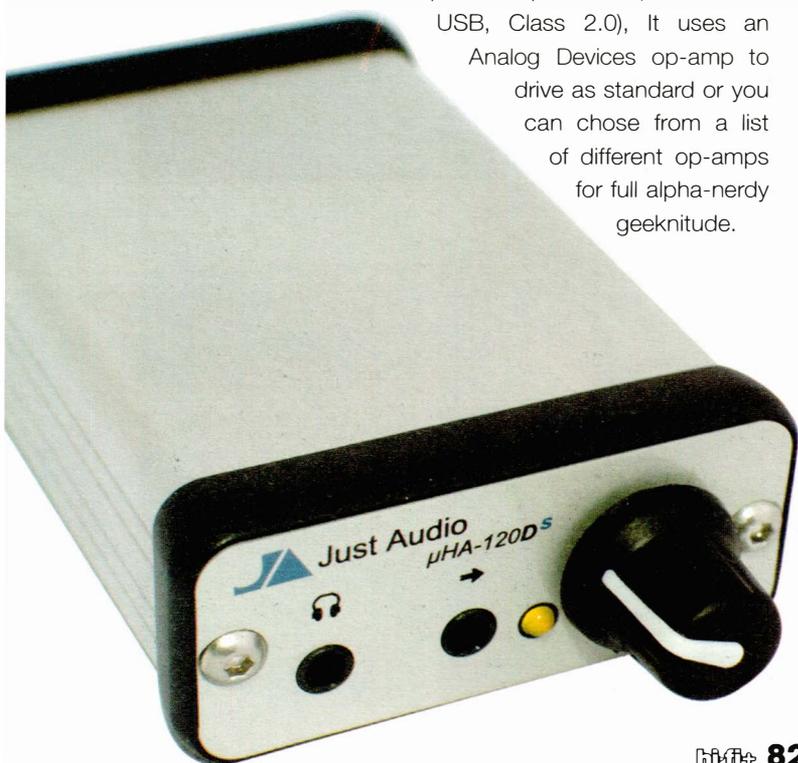
Finish: Soft Silver

Price: £320

Manufactured by: Just Audio

URL: www.justaudio.co.uk

Email: Justin@justaudio.co.uk





WALLS OF
SOUND



IN SEARCH OF THE PERFECT LOUDSPEAKER?

CHAPTER 1: A BOX OR A WALL?

Distortion

Well over 99% of all loudspeakers are developed and sold as boxes. However, Newton's Laws state: "action and reaction are equal and opposite", which means that as much sound energy is produced from the rear of the speaker cone as the front. The question is, what happens to the rear energy? In a box, it can react with the speaker cone in a negative way, and this creates distortion. Some energy also escapes through the sides of the box, causing 'boxy colouration'

If a loudspeaker is mounted in a cavity wall, the rear energy escapes into the cavity, without affecting the speaker cone at all. It can also be demonstrated that a cavity wall, unlike a speaker box, causes no resistance to the movement of the cone, creating very deep bass. In short, the speaker reacts precisely to the signal fed to it – the perfect loudspeaker.

Vibration

The more solid the housing the speaker is in, the better. Vibration in a panel will ruin an otherwise very good loudspeaker. Your money is often spent trying to create a vibration-free box. A masonry or brick cavity wall is ideal, because it will not vibrate and will be the perfect 'anchor'. This ensures perfect transients and clarity.

Efficiency

A loudspeaker in a box loses efficiency because of diffraction. This is the tendency of low frequencies to radiate through 360 degrees, losing low frequency energy behind the speaker. This means more amplifier power is needed (+6db, or x 4) together with an increase in distortion

Mounting a speaker in a wall means that all low frequency energy has to project forward, meaning higher efficiency, and lower distortion.

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Alan Sircom, *HiFi+* Jul-Aug 2012

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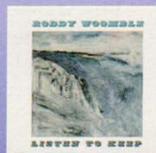
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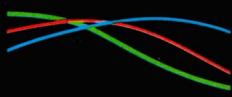
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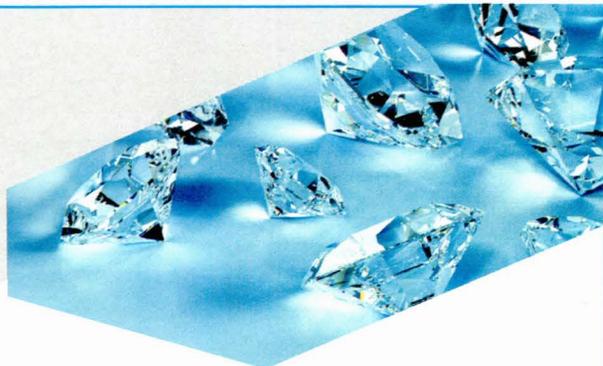
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record reviews

How To Read Them

The information contained in the record reviews is presented in the following way. Albums are identified by label and – where possible – serial number. Beneath this you will find one or more icons which denote the available formats for the recording. The first icon refers to the format reviewed.

The ratings at the bottom of each review reflect the reviewer's opinion of the recording quality, and musical merits of the album. You'll soon realise that a great many musically significant albums offer less than wonderful sound. Don't let it put you off! For your information, the scale rates a standard, good quality pop recording as slightly below average.

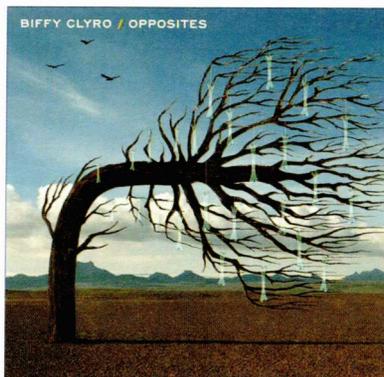
This issue's featured reviewers are:

DD – Dennis D Davis

AS – Alan Sircom

PT – Pete Trewin

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Biffy Clyro

Opposites

14th Floor

A word of warning to CD buyers. There are two versions of this album, and the multi-disc set contains almost a whole album of tracks, for a few pounds more. Ignore the cheap pack, buy the box.

This is Biffy Clyro's magnum opus; a pair of albums, 20 tracks of opposing concept albums. Fortunately, the two albums barely register 0.1 Bellamys on the Muse-Pretentiometer.

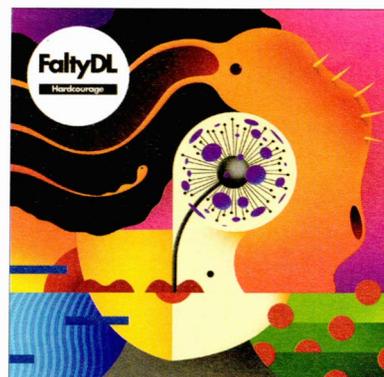
The two albums are distinctly different: *The Land at the End of Our Toes* is more contemplative and mellow, while *The Sand at the Core of Our Bones* is more traditionally metal Biffy rock-out tracks. They are also thematically different; *The Land...* is in retrospect and down-beat, *The Sand...* looks forward. Frontman Simon Neil's accent is becoming oddly Transatlantic, but the old experimental dynamic performance and interesting use of instruments (bagpipes! kazoo! A mariachi band!). Ultimately, it's hard not to like this.

While it stays the right side of lumbering expansive self-obsessed widdly-wee navel gazing, it's a lot to take in on a single sitting. If you are a Biffy neophyte, try *Only Revolutions* or *Puzzle* instead. This is an album that takes its time to burn into your psyche, but burn in it does. **AS**

RECORDING



MUSIC



Hardcourage

FaltyDL

Ninja Tune

Drew Lustman (FaltyDL) has been making a name for himself in the club scene, with some twisty takes on house, garage and electronica. But this, his third album and first on Ninja Tune, shows increasing maturity and a distinct move away from crunking it up for the sake of the crunk.

It could be easy to dismiss this genre of chilled out dance music in the face of dubstep and the fashionable coldness of The XX and their entourage of wannabes, but this is intelligent, layered and very listenable dance music, ideal for a spot of post-club chilling.

It's also extremely well cut. Ninja Tune is remarkably consistent in making a good sound from its stable, but this is ahead of the curve. Take 'She Sleeps' for example; there's a clever underpinning of really deep bass that is crying out for big and good loudspeakers. Meanwhile 'Straight & Arrow' will test how your system starts and stops, in a very Four Tet manner.

The best track on the album though is 'Kenny rolls One', which begins in a scary jazz-fusion place, but quickly develops into a smooth, rolling funk. If you are prepared to consider that a bank of synths and drum machines can sound good, this is well worth checking out. **AS**

RECORDING



MUSIC



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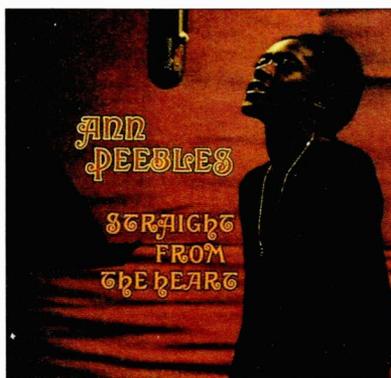


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Ann Peebles

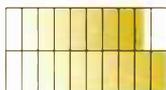
Straight From The Heart

Hi/Speakers Corner SHL 32065

If I had to pick Peebles' best album I am torn between *I Can't Stand The Rain* and this wonderful album. While the title track of *Rain* was Peebles' greatest hit, *Heart* edges out that album for uniformity of great songs. Recorded in 1972, this record exemplified how Hi Records had snatched the Memphis soul label crown away from Stax. The death of Stax superstar Otis Redding in 1967 started a decline of Stax's fortunes and by 1975 the label was bankrupt. Hi Records became the Memphis Soul label of the 1970s and this record is one of its finest.

The importance of Hi Records to soul music is obscured today by the contemporaneous rise of Aretha Franklin in nearby Muscle Shoals, Alabama, forever eclipsing Peebles' contributions. Yet all you need to do is listen to any one of the cuts on this LP to recognize what a magnificent gift Peebles shared with Aretha and what an outstanding job Al Green did in creating the unique Memphis sound with his Hi Records label. Peebles had the stones to be in your face but also the soul to break your heart. Mastered by Kevin Gray and pressed at Pallas, this record shines as never before. Bravo to Speakers Corner for helping revive the Hi Records label and this great record. **DD**

RECORDING



MUSIC



Big Brother & The Holding Company

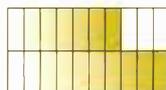
CD

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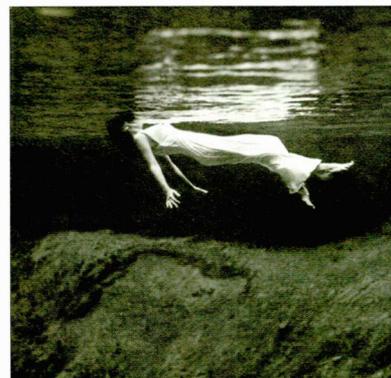
Her name is not in the record title, but even if you weren't born yet in the 1960s you know this is a Janis Joplin album. Big Brother and Janis had soared to fame the year before with their appearance at the 1967 Monterey Pop Festival and this mega-hit recorded in 1968 proved how fragile success is, as Janis split off from Big Brother to chase her own star. Yet for many, this record remains the best Joplin album available. The album includes three live songs recorded at the Fillmore East, sandwiching four studio recordings.

Cheap Thrills includes some of Joplin's best-remembered performances. Add to that the iconic Robert Crumb cover art, and you have one of the great artifacts of the 60's San Francisco scene. The album sold bazillions of copies and finding a crisp early stereo pressing does not present much of a challenge. Sony Legacy has recently released the very rare mono version on vinyl, but for me the prize is this stereo digital version remastered by Steve Hoffman at Stephen Marsh Mastering. You don't buy *Cheap Thrills* for the recording, because the sound is not stellar. However, this first class mastering by Hoffman captures all the energy of the performance and brings out new details obscured in the original. **DD**

RECORDING



MUSIC



Bill Evans and Jim Hall

Undercurrent

United Artist/Pure Pleasure Uajs 15003

Unlike classical recordings, jazz recordings with only two players are rare. One of the very best examples of this rare breed is *Undercurrent*, which is exceptional in every way. The first and superior of two collaborations between Evans and Hall, this intimate recording manages to create musical interest through finesse where most jazz duos resort to fire. Only the greatest talents can match two instruments as similar as piano and guitar without sounding monotonous. None of the six songs of the album are in any way boring despite the thin instrumentation. Hall and Evans, jazz giants each in their own right, play as one. Add to the mix one of the most striking album covers ever and this is an essential album.

Bill Schwartau recorded the session in 1962 at Sound Makers Studio in New York City. Although neither studio nor engineer is a household name, the results were uniformly first class. Mastered for this release by house engineer Ron McMaster of Capitol Mastering the, the sound comes close to the original. The original fold out cover with no credits marring the front cover is reproduced, except for the use of a glossy stock rather than the original matte cover. Excellent reissue. **DD**

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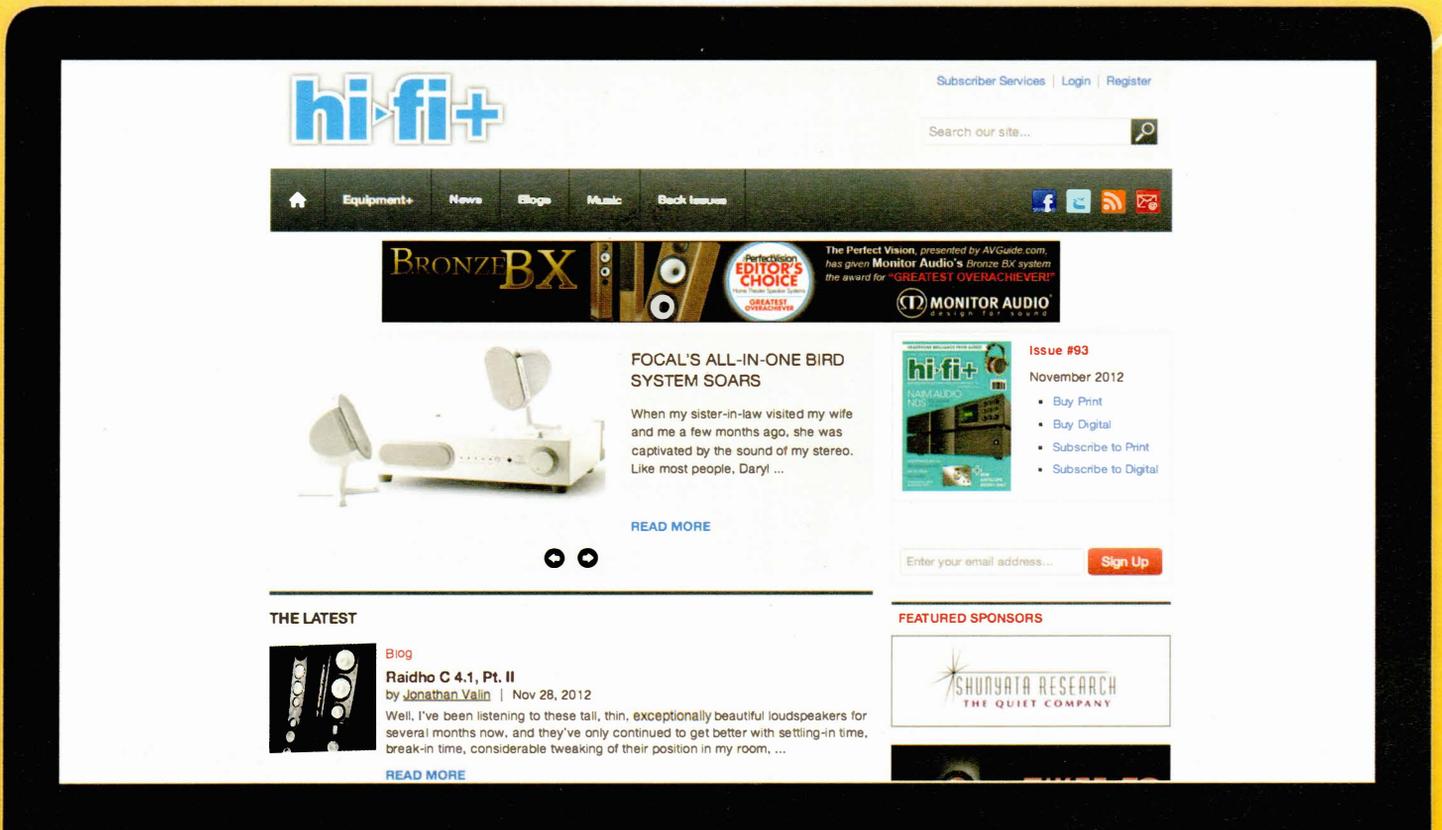
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hi-fi+ new website

At long last! Hi-Fi Plus has rebooted its website. The new Hi-Fi Plus website is the go-to URL for all the best the magazine has to offer and more, including news, reviews, features, show reports all the latest music, and even some unique made-for-the-net features too. Plus, it's the perfect place to subscribe to the magazine, obtain back issues and lots, lots more.

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Every Home Should Have One Stupidity – Dr Feelgood

By Alan Sircom

We've been concentrating on box sets, but recent news has called for a brief hiatus to focus instead on what might at first seem like an almost forgotten live album from a mid-1970s pub rock band from Canvey Island, in Essex. Except that pub-rock band is Dr Feelgood.

Stupidity was the band's third album, its first live album and the first live album on the UK charts ever to make Number One, week one. Not even the Who's epic *Live At Leeds* did that. And it did it without the then-obligatory flurry of singles and a complete absence of decorative band members. These were four geezers you might meet in a pub; singer and harmonica player Lee Brilleaux and guitarist Wilko Johnson, backed by John B Sparks on bass and 'The Big Figure' (John Martin) on drums.

Dr Feelgood was all about R'n'B. Solid, down home solid four-on-the-floor white boy singing the blues. There was nothing pretentious, nothing fake about the Feelgoods. They grew up in the Delta. OK, so it was the Thames Delta, but they grew up in sight of the oil refineries of Canvey Island, not one of the most salubrious parts of the South East of England. And the music they made was raw, and driven. It's sweaty pub music played by sweaty blokes down the pub.

By 1975, the Feelgoods were ready to hit the studio, and two great studio albums in quick succession – *Down By The Jetty* and *Malpractice*. The first is recorded in 'mono'; in fact, it's a stereo album, but to try to give the raw energy of the band, the stereo mix is so narrow, it's near enough mono. Both albums – especially *Down By The Jetty* – are worth checking out.

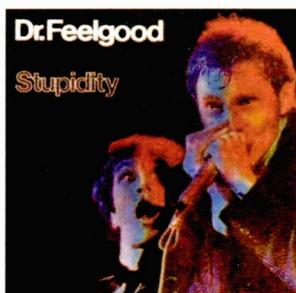
But the Feelgoods were always a live act, and the live album *Stupidity* does it all right. The original album set was recorded at a single night at Sheffield City Hall (the re-released album adds extra tracks from a later gig at (of course) the Southend Kursaal. It's a combination of classic rock 'n' roll tracks by Chuck Berry and Bo Diddley and self-penned numbers like 'She Does It Right'

and 'Roxette'. It's in no way an audiophile release – although there is a raw charm from the no-overdubs, plug in and go sound and the filed down, honed over hundreds of gigs almost brutal economy of the playing. You can here Brilleaux staring down the audience. It's best on the original United Artists vinyl, because at some point in the LP's history, it will have been a beer mat for a can of lager.

The sound is dominated by Johnson's razor sharp guitar chops. A unique combined rhythm/lead style, influenced by Mick Green of the Pirates, it's the motive force of the band. That Telecaster through a solid-state amp sound also echoes through punk and especially New Wave, but no-one could do it like Wilko. Guitar geeks all know it was done without a plectrum, and the myth goes he fitted a red pick guard in place of the white one the guitar came with, because of all the blood stains. It still sounds like an onslaught.

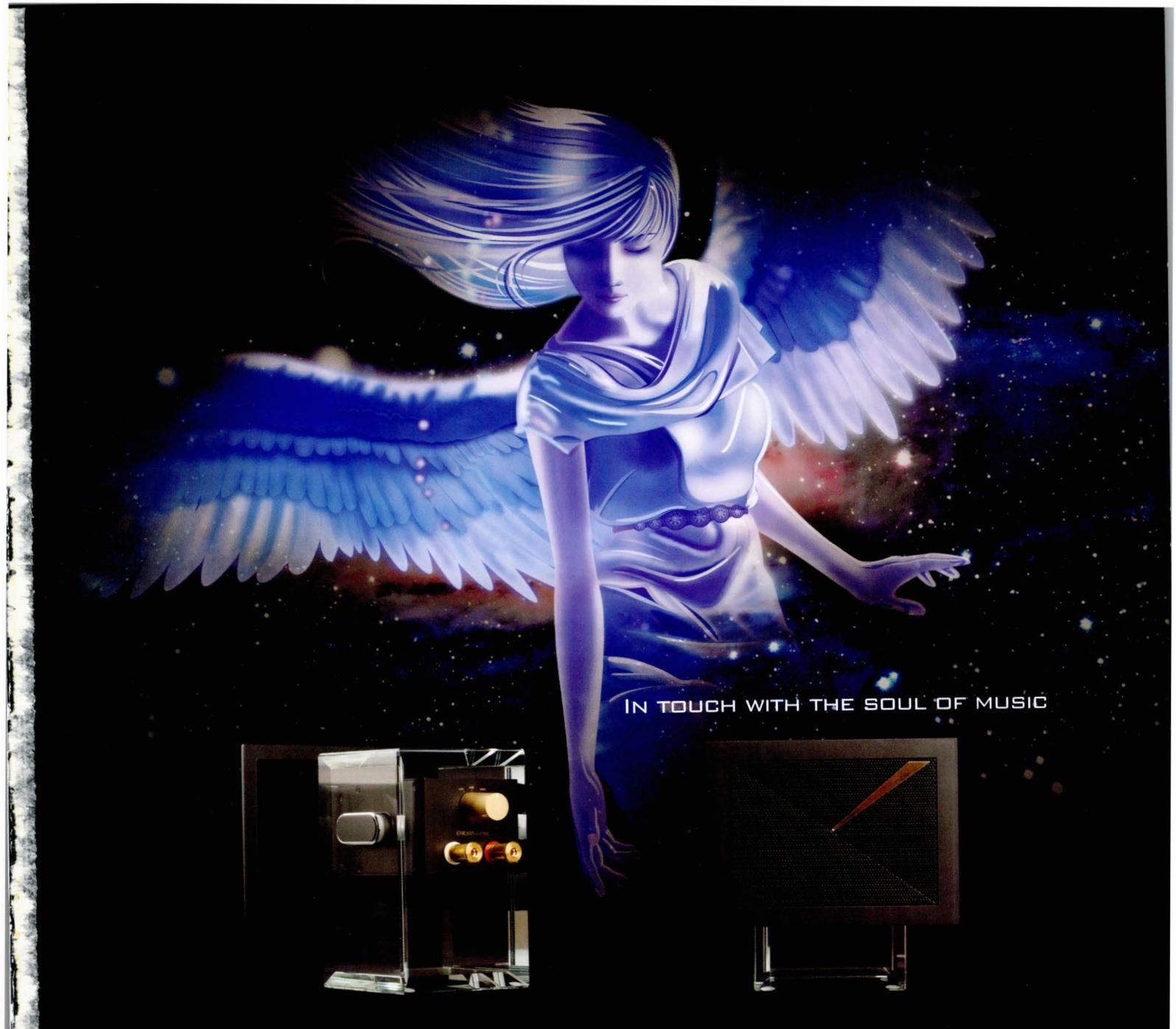
A year later, the line-up changed after conflicts between Johnson and Brilleaux boiled over. Brilleaux stayed with the band until his death in 1994, aged just 41. Johnson went on to be guitarist with Ian Dury and the Blockheads (forming a life-long friendship and working relationship with bassist Norman Watt-Roy in the process) and then building a long solo career.

So, why the sudden about-face from the usual box-set round-up? Wilko Johnson was diagnosed with terminal pancreatic cancer just before Christmas 2012, and has refused treatment. Instead he has fully embraced the last phase of his life, embarked on a sell-out farewell tour and even is working on a final album. This isn't – and shouldn't be – an obituary before the man passes, just a chance to listen to a bloody good album, full of no-nonsense energy. Enjoy! +



STUPIDITY – DR FEELGOOD

Released: September 1975 (LP), 1991 (Extended CD)
Recorded: May 23, 1975 at Sheffield City Hall (LP edition)
Additional tracks recorded: November 8, 1975 at Southend Kursaal
Engineer: Vic Maile/The Island Mobile
Produced by: the Band
Label (original): United Artists.
(presently): Grand Records GRANDCD 21



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