

# HIFI CRITIC

AUDIO REVIEW MAGAZINE

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## USB CABLES COMPARED

We discover some quite obvious differences between some fifteen types of USB cables

## GATHERING MOMENTUM

Dan D'Agostino's striking new stereo Momentum amplifier

## BEAUTIFUL BODNAR?

A high value, high sensitivity single-driver speaker from Poland

## A FINE IDEA

This compact floorstander provides a new entry level to Avalon's range

## ULTIMATE VINYL?

CB finds that the Thrax Orpheus phono stage sets a new benchmark for vinyl replay

## DAB MYTHS

Under the shadow of an FM switch-off, the DAB steamroller lurches on

## MUSIC & MUCH MORE

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SP ACOUSTICS  
SP1 SIGNATURE

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ORTOFON ANNA

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DIGITAL MEDIA BRIDGE

METRUM HEX

CAD DAC 1543

CAMBRIDGE AUDIO  
DACMAGIC PLUS

BULLY SOUND BSC-100M

AVALON IDEA

NEAT IOTA

USB CABLES FROM AUDIOQUEST,  
CARDAS, CHORD, FURUTECH,  
KIMBER, QED, SUPRA and WIREWORLD





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As a journalist interested in news stories, I guess I should be grateful for the whole DAB saga and the threats of FM radio switch off, as the topic has kept me in stories since at least 1998, and still shows no sign of reaching any sort of conclusion. Some idea of the political chicanery surrounding the whole mess is found in Robert Sinden's feature starting on page 11, but the implications for us, as the PB consumers, are equally exasperating.

A decade or so back I bought myself an FM-only Magnum Dynalab tuner. I half expected it would become redundant within five or so years, as the DAB steamroller was well under way, but part of me couldn't really believe that any government would be stupid or vainglorious enough to switch off the FM network. Ten years on I can look back with a degree of smug satisfaction, that the purchase has been thoroughly worthwhile, and could well continue giving fine service for another decade.

I love radio, but only ever really listen regularly to the BBC's Radios 3 and 4. DAB does occasionally come in handy for excursions into 5 Live, but the various TV platforms and the internet cover the same ground these days, and actually do a rather better job.

DAB was always on a losing streak, because it got locked in to a very early form of digital compression, with no way of changing to keep up with the march of progress, which as anyone who uses a computer these days will know has been rapid and inexorable.

At the same time, FM radio still has a great deal on its side from so many points of view, it seems quite ridiculous to contemplate switching it off. And although I don't have the stats to prove it, I reckon far more FM than DAB radios are actually currently being made in one form or another. I daresay that very few actual hi-fi FM tuners are sold these days, but nearly all cars and mobile phones come complete with built-in FM tuners. And of course there's a vast population of existing tuners, table radios, clock radios and so on that continue to work perfectly well, many years after they were originally made.

Indeed, sitting beside my bed is a Hacker *Sovereign* that must be at least fifty years old, yet it still provides excellent service and rather impressive sound quality, and is used nearly every day. The crucial factor that those who decided we all wanted digital radio overlooked was that, unlike TV sets, cassette decks, CD players and (especially) computers, old radios simply don't die or even become obsolescent. They have no moving parts and simply carry on more or less forever. Let's just hope that they're allowed to.

*Paul Messenger*

**Editor**

The £12,000 Thrax *Orpheus* phono stage is a comprehensive, mains powered, standalone unit with both balanced and unbalanced input and output facilities. Like the Thrax *Dionysos* pre-amplifier (*HIFICRITIC Vol6 No3*) the casework is beautiful bead-blasted silky-finished aluminium with a stylish, deeply sculpted thick front panel. The side, back, top and bottom panels are also substantial. Five buttons in the depressed centre cover on/off, mute, phase, and input selection, confirmed by associated LEDs.

The recessed back panel has two pairs of single-ended RCA/phono sockets and one pair of XLR balanced connectors. I found the print here almost illegible unless the lighting and view angle is just so. Each input pair has three switches to select MM/MC, high or low gain, and choice of grounding option. Other switches select between the XLR and RCA outputs, and ground lift. The RCA inputs are wired in balanced differential mode unless the grounded option is chosen. Beneficially, both ground and live input connections are switched to avoid any external ground noise from an unused input, if more than one is in use. The usual IEC mains input is fitted, switched and filtered.

What makes this product cost so much? Admittedly it's very well made with a beautifully

finished case, but the components inside are what really count. First, it's designed to cater for both MC and MM cartridges, and the extra MC gain is provided by a top-of-the-line Lundahl transformer with an amorphous cobalt core. This is easily switched into circuit, and input impedance adjusts automatically to the cartridge used.

Input stage amplification uses a NOS Siemens *D3A* low noise pentode wired in triode configuration. This is followed by a passive RIAA filter executed using special coils wound by Sowter using Cardas high purity wire, and Jupiter *Beeswax* impregnated paper capacitors. A low noise Russian triode then drives a top quality Hashimoto output transformer. To obtain accurate RIAA equalization, very precise inductor values are required, alongside low hysteresis cores. Few manufacturers use such a configuration because producing a consistent product is very expensive.

The power supply also uses costly parts, starting with an air-gapped C-core transformer. This helps avoid core saturation caused by DC on the mains, and symmetric windings are arranged to cancel any stray electromagnetic fields. Valve rectification is employed, but instead of the normal electrolytic smoothing capacitors, a massive (17H) Lundahl choke works alongside a much smaller, high quality, long life, paper-in-oil capacitors. This configuration is claimed to block rectifier switching noise most effectively. The solid state regulators use FET shunt designs made using discrete components. Most of the active circuitry uses PCBs with various component technologies from surface-mount to hand-wired chassis-mounted capacitors. Build quality resembles precision instrumentation.

#### Lab report

The standard level 1kHz distortion measures -64dB on MM and -50dB on the MC input, which is satisfactory for the technology used. These figures increase to -42/-34dB at 20Hz and -46/-37dB at 20kHz MM/MC respectively, which are a little higher than we would like. Intermodulation at -30dB for both inputs is also quite high, but the primary 1kHz artefact of the 19/20kHz tone pair is not accompanied by a spread of harmonics, which is a good sign.

Channel separation is a constant 42dB from 20Hz-20kHz on MC; on MM it is a very respectable 72dB at 20Hz reducing to a still reasonable 56dB at 20kHz. Sensitivity is sensibly set at 5mV for MM and 0.5mV for MC. The signal-to-noise ratio is a very good -80dBA for MM and a still good -72dBA for MC. Driven from a 20ohms source impedance, the frequency response is flat through the midrange but falls slowly below 200Hz to -1dB at 100Hz and -3.5dB at 20Hz. Although the treble is quite flat all

# Ultimate Vinyl

THE THRAX ORPHEUS PHONO STAGE MIGHT BE EXPENSIVE, BUT CHRIS BRYANT DISCOVERS THAT IT SETS A NEW BENCHMARK FOR VINYL REPLAY



CHRIS BRYANT

the way to 20kHz, I would like to have seen a flatter response in the lower octaves, and the sound may consequently be a little dry.

### Sound Quality

The *Orpheus* was left to warm up for 24 hours before I lowered the stylus onto Bruch's Violin Concerto No1. I was immediately amazed. This 1968 disc is nothing special, but I was transfixed by the power and realism produced – it had so much more body, more focus and precision than anything I'd previously heard from this recording. Violins really did sound more 'live', and far closer to having someone playing in the room. This was a stunning revelation of tonal colour and vibrancy, in comparison with the 'digital greyness' of so many modern hi-fi products.

On piano it sounds rich and full, flowing well with great perspectives, balance, and staging. The midrange is very lively and dynamic, tonally very pure, and reproduces stringed instruments with a more of a sense of 'being there' than I've experienced from any consumer replay medium previously. The treble is also excellent: devoid of grain, with great detail, precise focus and an airy realism I've rarely heard from a hi-fi system before. Image stability is also exceptional with finely etched focus within the expansive sound stage. It's very analytical and transparent, had really good width and depth, creating an interesting illusion of live performance.

Choral music also works so well that the *Orpheus* creates a great sense of the space around the performers, as well as reproducing the purity and beauty of voices. The timing ability is also excellent, so excellent in fact that when I went back to the fairly decent digital set up I had been happily listening to previously, I thought it must be broken because it sounded so painfully bland.

The *Orpheus* has excellent bass: solid and forceful with fine tactility and resolution. It's able to separate out complex multiple strands while translating awkward pitch changes admirably. It may not quite have the low end bang and very low bass extension of some of the best solid state competition, but that is about all there is on the downside.

Irrespective of the music played, it had the ability to extract fresh sounds and bring my attention to new phrasing and a fresh sense of rhythm pulled from well known pieces. It is also great on rock and pop material, often managing to reveal fresh information from 50 year old pop grooves. It is simply a revelation.

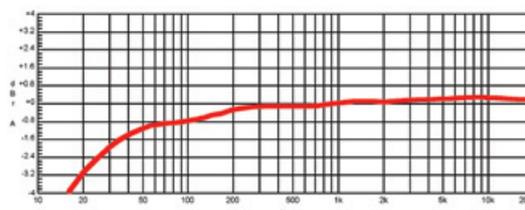
A top quality mains cable is mandatory for a product of this quality, and I did find I could easily organise the sound by changing this lead. Therefore, despite its clever transformer and power supply, it's still not quite immune from the vagaries of the mains

supply. Finally, the feet: the attached hard plastic feet proved quite good, but I found further improvements in structure, focus and staging using three Synergistic Research *MIGs* on an Isoblue rack.

### Conclusions

At £12,000 I anticipated exceptional performance, but ultimately was almost overwhelmed by the *Orpheus*' prodigious sonic capabilities. There is nothing wholly revolutionary about this amplifier, as it employs existing, accessible technologies. Yet through careful research the designers have crafted and assembled something quite exceptional. Its stunning sound quality encouraged me to abandon digital replay entirely while it remained in my possession. The best vinyl reproduction requires quite extreme esoteric design and exotic components, a path the *Orpheus* follows faithfully to achieve the amazingly high score of 225. The best phono stage I have so far encountered has to be at or very near the top of my very short list of truly great products, and may be highly recommended.

Thrax Orpheus MC RIAA Frequency Response



### PHONO STAGE TEST RESULTS

Make Thrax	Date 10/11/12		
Model Orpheus Phono Amplifier	Ser. No. 121105		
Distortion, THD inc noise	20Hz	1kHz	20kHz
At IHF 2.0V out			
Disc mm	-42 dB	-64 dB	-46 dB
Disc mc	-34 dB	-50 dB	-37 dB
Channel separation			
Disc mm	72 dB	61 dB	56 dB
Disc mc	42 dB	42 dB	42 dB
Frequency response (ref: RIAA)			
Disc mm	-2.8 dB	0 dB	0.2 dB
Disc mc	-2.5 dB	0 dB	0.1 dB
Overall disc deviation 20Hz-20kHz			-4.5 dB
Intermodulation Distortion			
19kHz/20kHz 1:1	2V output	1kHz difference tone	
Disc mm		-30 dB	
Disc mc		-30 dB	
Signal to noise ratio			
Disc mm		-80 dB	
Disc mc		-72 dB	
Overload margin mc	24 dB	30 db	30 dB
Output impedance			
SE		850 Ohms	
Balanced		Ohms	
Input Data	Socket	Sensitivity	Loading
Disc mm	phono	5 mV	47k ohms pf
Disc mc (low output setting)	phono	0.5 mV	40 ohms nf
DC offset	Left 0 mV	Right 0 mV	
Size W x H x D	434 mm	115 mm	398 mm
Price		£12,000	

### Review System

Bully Sound *BSC100* and D'Agostino *Momentum* power amps; Audio Research *REF5 SE* and Townshend *Allegri* control units; Linn *LP12/Radikall Keel*, Naim *ARO*, Ortofon *Anna, Rondo Blue*, Koetsu *Urushi Vermilion* vinyl sources; Wilson Audio *Sophia 3*, Supravox *215-2000 EXC* speakers; van den Hul *D501S* phono interconnect and Transparent *XLmm2* cables.

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# Subjective Sounds

PAUL MESSENGER

## HIFICRITIC

AUDIO AND MUSIC JOURNAL

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Our independence from product advertising allows us to criticise and comment without fear or favour. The HIFICRITIC team scrutinises interesting and internationally important issues and equipment in depth and detail, technically and subjectively, and provides comprehensive investigations into the key issues facing high quality stereo music recording and reproduction today.

*Martin Colloms, Publisher*

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My limited experiences with room treatment techniques have hitherto been rather disappointing. I do use some melamine foam panels between a couple of beams on the ceiling, and across a large bow window behind my main listening zone, in order to minimise midband coloration and improve stereo imaging, but more dramatic attempts to modify the behaviour of the room have not been too successful thus far.

The whole issue of room treatment is controversial. Some reckon that less is more, and that one shouldn't remove any energy from the system. Others point to the fact that recording and broadcast studios use all manner of treatments to cope with the idiosyncrasies of their rooms.

Irrespective of one's views, there's no denying that the room has a significant role in the sound of a system, and my personal scepticism was well and truly tested when a friendly Dane named Ole Lund Christensen dropped off some of his large Mumax (musicus maximus!) *AMA2* panels for me to try. At £999 for two Air Motion Absorber panels they're not exactly cheap, but then neither are high quality hi-fi cables these days.

The panels are by no means universally applicable, but they do seem effective at countering the effects of unwanted room modes. They're not unattractive to look at, but because they're 195cm tall and 66cm wide (effectively doubling the latter, as they're normally sold as freestanding hinged pairs) they're unavoidably intrusive, especially as they're intended to be sited well clear of a wall – a key disadvantage, especially as the speakers themselves must naturally be still further out into the room.

It's all to do with interfering with the velocity components of the sound energy, and as I understand it the panels need to be well out from a wall in order to affect the low frequency sound waves. Furthermore, the materials used have been carefully selected: one crucial element is a special paint that reduces the absorption at mid and high frequencies, so that the panels operate evenly right across the frequency band.

Although there's no denying their intrusiveness, these panels do really work, quite dramatically so in fact. To assess them I first brought in a pair of Spendor *BCI*s, a free space design with a magical midband but a known mid-bass excess. To my surprise, putting two (or three) *AMM2*s behind the speakers totally changed both the balance and the stereo imaging of the speakers. In this case it wasn't necessarily an improvement, but that's not relevant: what's much more significant is that the change was far more dramatic than, for example, changing cables or support furniture.

The previous and significant 50Hz peak was reduced by a hefty 5dB, which is clearly a good thing, though the somewhat smaller 100Hz peak was increased by around 4dB. In effect, the room mode interaction of the speakers was changed considerably (though it's difficult to say whether this represented a net improvement on the *BCI*'s already good behaviour). Although not susceptible to measurement analysis, the change in imaging was no less dramatic, as the addition of the panels considerably enhanced soundstage precision and instrumental focus. Broadly similar effects were also found using a pair of Nightingale dipole speakers, which certainly seemed improved by the panels.

There's clearly scope for much more work on these Mumax panels, as I want to investigate different speakers and *AMA2* positioning. Pro tem I'll merely say that they do work, and are one of the most interesting hi-fi 'components' I've come across recently. Check out [www.actem.de](http://www.actem.de) for more info (assuming Christensen gets around to updating his website soon).