



## Rockna Wavedream Net & Wavedream DAC

Wednesday, October 26, 2016  
Jason Kennedy

Streaming audio is beginning to mature, there is a general consensus about how things should be done for best sound and ease of use, and even the spiky issue of which format to use is starting to become clear. But there are still two schools of thought, there's the Mac and DAC with USB connection and the network connected NAS drive and streaming device with onboard DAC. This latter approach is what started it all and it has some big names behind it, Linn and Naim being the most obvious in the UK. It also tends to sound better because the hardware is dedicated to audio and thus designed to keep noise at bay alongside all the other problems that afflict digital systems.

But it's more expensive to get into and ultimately less flexible, you can't add new streaming services to an audio streamer but you can do anything with a PC. Rockna takes this second approach but builds its own version of a PC in the Wavedream Net, this doesn't look or act like a computer in the normal sense but it runs software designed for that platform, Roon, and can be controlled by the same application on a tablet. It doesn't however send out signal via USB, rather Rockna's creator has followed where a few others have lead and used an HDMI output that's dedicated to its Wavedream DAC. The Net has conventional digital outputs including coaxial and AES/EBU but its designer Nicolae Jitariu included the HDMI option because it allows the Net to transmit an I2S signal directly to the DAC.

I2S is the form that digital signals are in when they being processed within a digital audio component, be it a CD player or a DAC, a form that has to be converted to PCM or DSD in order to be transmitted via the traditional digital connections (coax, optical etc). By eliminating the conversion at both ends of a digital connection this approach should mean a more transparent digital link.

The Wavedream Net has an onboard drive for music storage but uses a memory based playback buffer to isolate this crucial stage from the relatively noisy character of spinning discs. It can do this with material stored on external drives as well and has both USB and network connections to hook them up. And it can deal with pretty big numbers in terms of high res files, PCM up to 32/384 and quad DSD, eg 11.28MHz, and this can be transmitted natively over the HD-Link HDMI connection. Just to complete the picture the Wavedream Net is also a CD player with a front panel loading tray, not something you find on many, if any conventional audio servers although Melcos allow this with a separate drive.

The UK distributor supplies the Wavedream Net with Roon server software that provides a very attractive interface and clearly decent playback software, I wasn't able to compare it with alternatives like JRiver but this is something that could be done. Nicolae actually recommends the HQ audio player that seems to be gaining in popularity but Roon has Mac like aesthetics and ease of use, and when combined with Tidal gives you a library that goes on forever.

The Wavedream DAC is pretty radical too, for a start it incorporates Jitariu's proprietary R2R ladder DAC modules with switchable dither and a clock system dubbed Femtovox that claims to have "probably" the lowest jitter "where it actually matters", at the point of digital to analogue conversion. It has custom upsampling filter options that can be selected via the front panel and include linear, minimum phase and hybrid phase as well as a non upsampled op-



tion in the NOS vein. Experimentation showed the Hybrid option to offer the best combination of resolution and timing but this may vary in other systems and is a useful feature. If that were not enough it incorporates volume control with half decibel steps and alternative clock settings. The Wavedream DAC can be purchased in two variants, single ended or balanced out which has twice as many R2R DACs, I used the single ended outputs of the 'bigger' model for the most part in this review.

Ladder DACs are the preserve of high end converters, unlike the majority they don't use conventional converter chips but are discrete devices built from the ground up by companies like MSB and of course Rockna among others. Unlike chip based DACs which are delta/sigma one-bit designs ladder DACs are multibit types, an older but highly respected approach to D/A conversion. The consensus seems to be that the more actual DACs you use the better the sound, hence the higher price of the balanced output version of the Wavedream, but if my experiences are anything to go by the single ended, two module ladder DAC is more than remarkable.

I started out using the Wavedream Net and DAC via the recommended HDMI connection, but the only cable supplied was the freebie supplied with Sky boxes, so quite possibly a limiting factor. At present so few brands use HDMI for audio that the only decent cables are made for video so it wasn't possible to obtain one at short notice, I have no doubt however that just as with all other audio connections this cable will be critical to the end result. Nonetheless the sound produced by this pairing was amongst the most transparent I have ever heard in digital audio, the immediacy in particular was stunning, it made pretty well everything I played sound alive in a way that some very well regarded digital systems have not matched. It delivers oodles of detail and reveals aspects of recordings that I was surprised to hear, both good and bad. Compression for instance is rather obvious, but this is usually the case with revealing equipment and the payback comes with better recordings or perhaps more subtly compressionones which sound astonishingly real. Suzanne Vega's live version of 'Small Blue Thing' was very crisp and had an electric atmosphere, I suspect the cable has a slightly sharpening



effect. Using the coax output with Chord Co Sarum provided a more full bodied result that had excellent dynamics but not quite the depth of detail, it did prove very engaging however and that counts pretty high in my book.

Going back to the I2S over HDMI you get less welly which could mean less bloom or tighter bass, I got the impression overall that this connection delivered a more accurate result even if that doesn't necessarily mean more appealing. The quicksilver speed and lightness of touch is very easy to enjoy however and I found myself loading more and more music onto the Wavedream Net to find out what it would sound like. You can have it take music from an external drive and not lose much in terms of resolution because of the memory play element. The way it finds new detail of virtually everything is quite inspiring, with some pieces it's like removing the proverbial veil to see what's underneath.

Going from the HDMI on the Net to the USB output of a CAD CAT transport (a PC based server that runs JRiver and JPlay) into the Wavedream DAC produced a more relaxed sound as it usually does but that isn't a realistic comparison because of the connection change. Back with the Net and playing the oft thin sounding *Astral Weeks* (24/192) made for a surprisingly natural result, the vocal was particularly good as is the double bass that anchors the track. More modern recordings clearly had some advantages when they were well done, *Psychic* by Darkside is an electronic album that sounds like the band name and builds up slowly in a cavernous soundstage with a big bass heartbeat, power is not in shortage thanks to this pairing's ability to define leading edges across the band. The more familiar *Graceland* has reverb aplenty in the context of vibrant instrument tone and plenty of texture while Radiohead's compressed and distorted instruments sound more real beside Yorke's voice which seems more beautiful, it's the contrast that does it.



The Wavedream DAC works exceptionally well with a good USB source but things get even more interesting with the I2S connection, it is clearly a game changer in digital interconnect terms and goes some way to ameliorating cable differences. I have no doubt that a decent HDMI would provide a more refined result but what it does with a Sky freeby is quite astonishing. It's a pity that there is no standard for I2S connections as that would mean you could mix and match transports and DACs, but the Rockna pairing is very well built and thought out, especially when you add an appealing control interface like Roon. If you are looking for a complete digital front end that will hold its own against the best in class you could do a lot worse than the Wavedream team.

#### Distributor

BD Audio Ltd  
T +44(0) 1684 560853  
www.bd-audio.co.uk