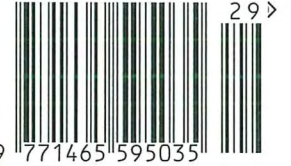


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Wadia 321 digital converter

by Jason Kennedy

Wadia was one of the first companies to make a decent CD player back in the early nineties. It achieved this by identifying that jitter was a major source of problem for digital audio, a fact that was subsequently taken onboard by the rest of the industry and is now a standard consideration when designing DACs. Wadia were prepared to think outside the box back then and has continued to do so with the Intuition power DAC, which is a combined converter and digital power amplifier in a very distinctive clamshell case. Wadia's first creation was a DAC, the Digimaster 2000 Decoding Computer and the technologies developed in that DAC remain at the core of Wadia's models to this day.

The Wadia 321 is enormous – it wouldn't fit on my Townshend Seismic rack because the 20 inch depth meant that the small feet fell off the edge. But it's a lovely piece of kit with high build quality and very attractive casework, large radius corners on the diecast aluminium surround, and a black glass top surface through which the Wadia logo glows in what is a distinctly Apple style. Inside the box there is a lot of space as you might imagine, but it has the same footprint as Wadia's m330 Media Server and a315 and a340 digital amplifiers that might be used to partner with it.

There is plenty of space on the back panel for a good array of in and outputs, these include coax and Toslink for S/PDIF connections and USB for computers and the like. Outputs are available in balanced and single ended form and both variations can be connected directly to a power amplifier, another feature that Wadia pioneered back in the day. The actual digital to analogue

converter consists of eight DAC channels which combine to produce a genuinely balanced output for minimum noise and maximum dynamic range.

The 321 is a couple of years old now and this shows in the absence of DSD, the current flavour of the month in converter compatibility. Instead, the 321 is a PCM based unit that's limited to 24-bit/192kHz, which are pretty standard numbers for any modern DAC. This is not commercially very attractive to a world obsessed by DSD, but it's important to remember that specs do not indicate sound quality. Editing is 'difficult' in DSD, which is part of its appeal to the purist of course, but in practice it means that any commercial release on the format will have been in PCM at an early stage of its creation. Moreover, DSD can have high frequency noise issues, and even if the actual noise is out of the audioband, as high sampling rates have shown us, what goes on up there can be heard by mere mortals who have maximum 20kHz high frequency hearing. The reason it doesn't offend many is that it is harmonious, and a bit like the harmonic distortion of valves; some feel that it adds to the end result.

Perhaps the 321's most serious omission is of a headphone output. As you will doubtless be aware the headphone market has exploded over the last few years and it must be quite difficult to sell a high end DAC that cannot drive them. Both the omission of a headphone amplifier and DSD support show just how fast moving this sector of the audio world has become, a 2015 version of the Wadia 321 would include such things as standard.*

The controls on the 321 include volume, input, and setup, the latter consisting of firmware version display and the option to disable auto power off which kicks in after 30 minutes if left enabled. I had expected an option to switch between fixed and volume controlled output, but that is just a matter of maxing the output. The only other features are display dim, mute, and phase control via the remote handset. The display is pretty informative for a DAC, showing input, sample rate, and volume level in large dot matrix characters. If you access this DAC using its USB software control panel (in the Windows driver) it's possible to change latency and sample rate. You can select whether the USB input handles the signal natively, maintaining the incoming sample rate, or upsamples it to 32/192 as is the case with S/PDIF inputs.

I used the Wadia 321 with a Melco N1A digital transport; this has both Ethernet and USB outputs and by sending the network connection via a streamer (in this instance a Moon MiND) it is possible to create a coaxial digital output from the same source. Having the two options proved quite revealing of the differences between the coax and USB inputs on the Wadia, which were not small, but I should add that USB travelled along cables from Vertere and CAD while the S/PDIF signal took the considerably pricier route of Chord Sarum Super ARAY.

With the coax input Joni Mitchell's rendition of 'The Man I Love' [*Gershwin's World*, Herbie Hancock, Decca] had all its poignancy thanks to excellent stage

depth and creamy mids and highs. There is a slight but discernible polish to the presentation that doesn't stop brass from rasping or guitars from screaming but takes away any remnants of dryness in the digital stream. So the snare drum has snap and the groove is good and taut on Herbie's version of 'It Ain't Necessarily So' from the same album. The piano is strong yet avoids the tendency to glare that some digital sources produce.

Image depth is particularly good, the 321 recreates properly three dimensional sounds in a soundstage that reflects the nature of the recording. So the brass, piano, and rhythm section on *Gershwin's World* is properly in the room, while the solo piano on Javier Perianes rendition of Manuel Blasco de Nebra's Piano Sonatas 1-6 Op.1 [Harmonia Mundi] is in the space behind the speakers with all the reverberation characteristics of the room it was recorded in.

Image depth is the main area where better digital devices show their strength, it is not, after all, just a case of there being more 'air' or openness in the sound; there is more space for the instruments and voices to take shape within. This means you hear more of the character of each and there is less tendency for one to mask or muddle another. The importance of this ability becomes clearer with denser music. Almost any DAC can make a voice and guitar sound good, but when there is an orchestra or a jazz band playing complicated rhythms only the better devices can present the music in an engaging way that let's you hear what each element is doing in the context of a coherent whole.

With the USB input the Wadia is not quite so strong, the degree of resolution is lower, and the image loses some of its depth. There is plenty of ▶



"This means you hear more of the character of each and there is less tendency for one to mask or muddle another."





► height, and width and depth is still good, but the comparison with coax shows that it could be better. That said, I did enjoy all sorts of music with this input, from Boris Blank's 'Electrified' (*Electrified*, Polydor) with its deep, powerful bass, to the full-scale orchestra of Mozart's 'Violin concerto in D major' (Marianne Thorsen, TrondheimSolistene 2L). This last exemplified the openness that this DAC brings to USB sources but also its relatively flat, diffuse nature compared to the coaxial alternative. As noted, I tried different USB cables to see if this might be altered, but it remained much the same. I also tried a different, much more down to earth Ethernet cable to the streamer, but the dimensionality remained much stronger with coax. The thing that could make the difference is the USB source, and the Melco is very good in this regard, but it can be bettered by its brother, the N1Z, for instance.

Fortunately, both inputs deliver a degree of musicality that makes you want to listen regardless of the presentation. Coax is an easier listen with dense material, but the Melco is not exactly taxing either.

I also contrasted the Wadia's direct output with routing it through a preamplifier – my trusty Townshend Allegri. This revealed that digital volume controls still have their limits, and whacking the DAC's output up to max and using the preamp brought quite significant rewards in terms of dynamics, drive, and solidity of stereo image. My most positive experiences with this converter were had with the Allegri in line. And they were very positive indeed. This DAC is not just good at resolving differences between inputs, it's even better at getting to the heart of the musical matter. Some DACs are incredibly transparent, but a shade amusical; this Wadia is revealing of all the elements that make a piece of music come alive in front of you. It has high resolution - in the full meaning of the word - so whether you want to play Debussy or Daft Punk it can do so in a spine tingling fashion. It may not have all of this season's most fashionable accoutrements, but it will make your music no less enjoyable than DACs that do, and possibly, dare I say it, more so because of their absence. +

**As we were going to press Wadia announced that its upcoming and not-yet-released di322 DAC will feature both DSD compatibility and a headphone amplifier. We hope to test the new di322 as soon as the product is released.*

TECHNICAL SPECIFICATIONS

Type: Solid-state high-resolution PCM digital-to-analogue converter/preamplifier.

Digital Inputs: Two Coaxial, two Toslink, and one USB 2.0

Analogue Outputs: One stereo single-ended (via RCA jacks), one balanced (via XLR connectors). Both outputs are level variable

DAC Resolution/Supported Digital Formats: All PCM from 44.1 kHz to 192kHz with word lengths up to 24-bit

Frequency Response: 4Hz – 20kHz, ± 0.1dB

Distortion (THD): 0.002%

Output Voltage: 8Vrms at maximum

User Interface: Wadia remote control, dot matrix display

Dimensions (HxWxD): 86 × 454 × 508mm

Weight: 11.4kg

Price: £2,798

Manufacturer: Wadia Digital LLC

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URL: www.wadia.com

UK Distributor: Absolute Sounds

Tel: 020 8971 3909

URL: www.absolutesounds.com