

## Teac UD-501 Dual-Monaural PCM/DSD USB Digital to Analog Converter

By [Michael Lavorgna](#) • Posted: Feb 28, 2013



**Device Type:** USB Digital to Analog Converter/Headphone Amplifier

**Input:** USB (Audio Class 2.0), (2) Coax S/PDIF, (2) Toslink

**Output:** 1 pair RCA, 1 pair XLR, 1 headphone jack (100 mW + 100 mW into 32 ohms)

**Dimensions :** 290 (W) x 81.2 (H) x 244 (D) mm, 11.4" (W) x 3.2" (H) x 9.6" (D)

**Weight:** 4.0kg (8 15/16 lb)

**Availability:** online and through Authorized Dealers

**Price:** \$849.00

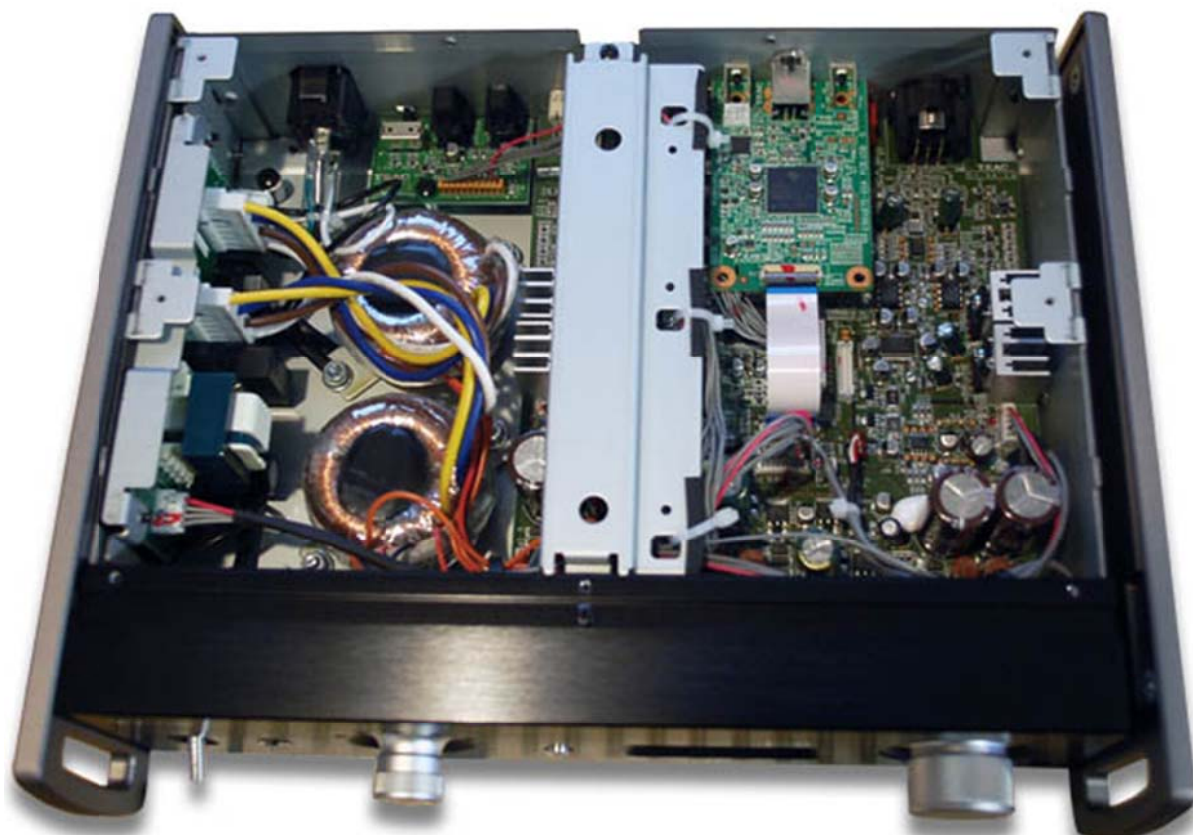
**Website:** [www.teac.com](http://www.teac.com)



### 64x DSD, 128x DSD, and DXD for under a Grand

The DSD wars are heating up. When I started my list of [DSD-ready DACs](#) back in November of 2011, there were a grand total of four DACs and two of them were from the same company. The big news back then was the Mytek DAC coming in at \$1,695 but if you look at that list today, you'll see more for less (and more). The Teac UD-501 is currently the least expensive DAC on that list but that doesn't mean you're necessarily getting less. As a matter of fact, the Teac offers up to double rate DSD (5.6MHz) and 384kHz PCM playback out of the box which certainly looks like a lot on paper. But what really matters isn't to be found on paper, and it isn't even necessarily only about how it sounds, it is all about how it makes us *feel*.

The Teac UD-501 is a dual mono design and packs a lot of technological punch into its narrow, stout A4-sized aluminum-wrapped and handle-equipped body. A pair of TI/BurrBrown PCM1795 32-bit DACs take care of the D to A conversion and the USB input is of the asynchronous variety meaning it controls the all-important system clock. There are a pair of toroidal-core power transformers and twin MUSES8920 op amps for the headphone output. That volume control you see on the right side is only for the headphone output as the UD-501 does not offer variable output for its RCA or XLR pairs.



Native DSD up to 128x DSD is handled via ASIO 2.1 for PC users and DoP (DSD over PCM) for Mac users. Since the UD-501 is USB 2.0 compliant, Mac users do not need to install any drivers. PC users have to download and install the Teac Windows drivers for playback of PCM rates over 24/96 as well as for DSD. There are pairs of Coax S/PDIF and Toslink inputs, RCA and balanced XLR outputs, and a 1/4" headphone jack around front. The front panel also houses the on/off switch, input selector knob that also steps through the Menu options once the Menu button is pressed, a display that shows your Menu options or file playback information (PCM or DSD and the sample rate), and a volume control for headphone level. The UD-501 comes in your choice of black or silver.

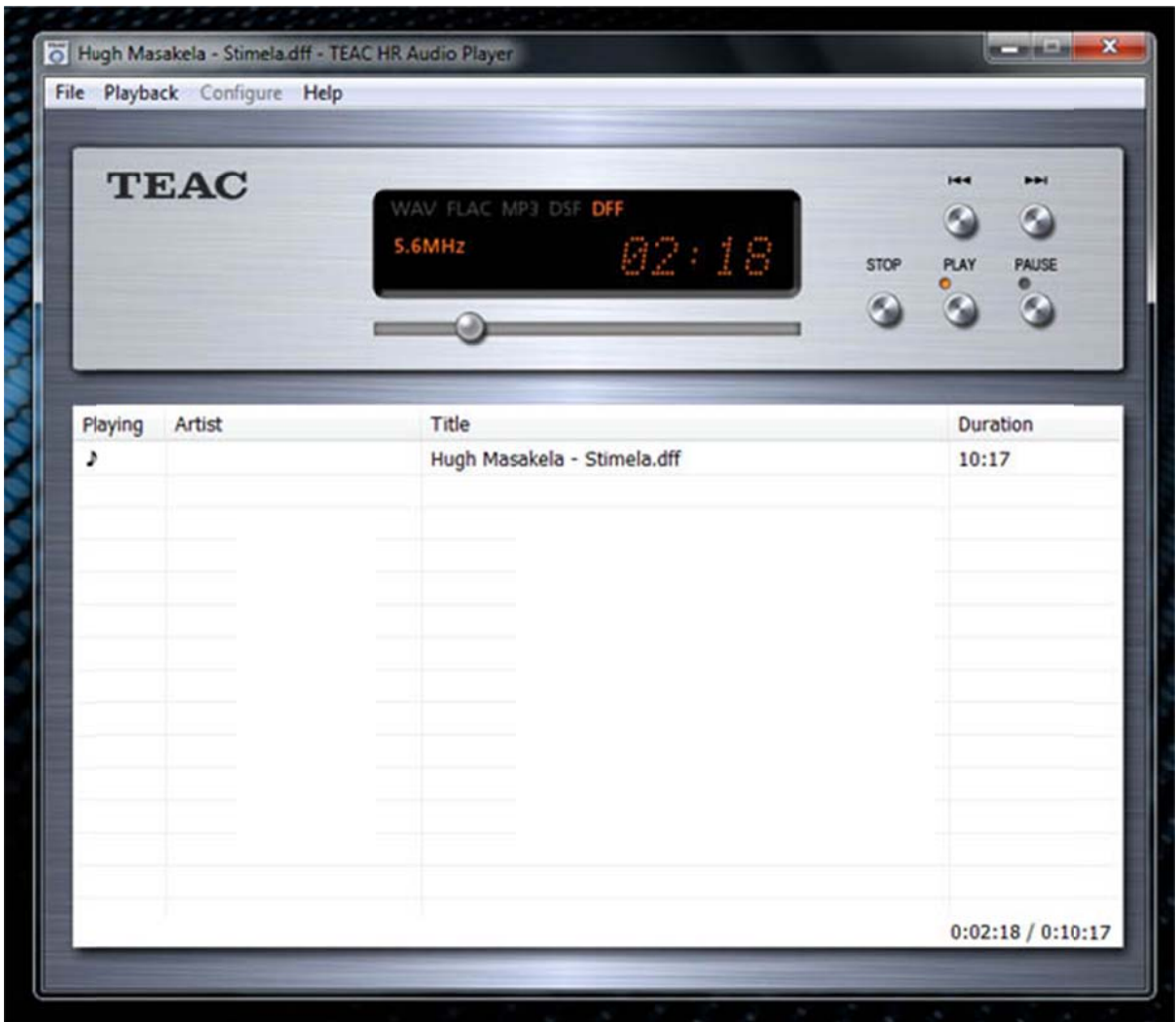
There are 2 types of user-selectable digital filters for PCM playback (Sharp and Slow or neither) and 4 types of cut-off finite impulse response (FIR) filters for DSD playback. The FIR filters differ in cutoff frequency and gain as follows: FIR Filter 1 Cutoff Frequency = 185kHz, Gain= -6.6dB, FIR Filter 2 (default) Cutoff Frequency = 90kHz, Gain= +0.3dB, FIR

Filter 3 Cutoff Frequency = 85kHz, Gain= -1.5dB, and FIR Filter 4 Cutoff Frequency = 94kHz, Gain= -3.3dB.



You can also choose to upsample PCM data to 192kHz for lower sample rate PCM files (its disabled when playing back 192kHz, 352.8kHz, 384kHz, and DSD data). You can also specify the line output as RCA, XLR, or both and there are two settings for the XLR outputs one with pin 2 hot and one with pin 3 hot. You can also have just the line level as output, just the headphones, or both. The USB input receives power from the USB bus and this can be defeated as well if you decide to use one of the S/PDIF inputs instead. Since DXD and DSD playback is only supported via USB, I'd say it makes good sense to go USB.

You can dim the display or turn it off altogether and even show the "Mode" which displays different data for PCM (upconverter status, digital filter setting) and DSD (reception method and which FIR filter is engaged). Finally there's a switch around back for "Automatic Power Save" that puts in the UD-501 in standby mode when it has not received a signal for a while (the manual doesn't state this duration and I'm too impatient to time it).



### Teac High Res/DSD Audio Player

Teac offers a free media player that supports 64x and 128x DSD and DXD playback. I downloaded the Windows app (there's also a Mac version) from the Teac website along with the Teac Asio drivers. The Teac App is a snap to get working—just install the Asio drivers and the app, select the Teac Asio Driver in the Configuration menu and you are good to go. The Teac player is fairly basic but gets the job done. You load up tracks and play 'em. I did not spend much time with the Teac app and for all of my listening notes that follow I used my MacBook Pro and Audirvana Plus (running DoP for DSD playback).

### Feeling Music

Listening to music is above all else an emotional experience. I know that notion troubles some people but that's just the way it is. Sensual pleasures are hard-wired to our emotions whether we like it or not and I for one, like it. So when we listen to music on a hi-fi we want to be emotionally engaged. Sure we can intellectualize by dissecting this experience into multi-various parts and attach more and less importance to this or that aspect of sound reproduction but in the end, listening to music is all about being there. Using this as a gauge, the Teac UD-501 is for me a very suitable musical suitor.

Overall, the UD-501 (I wish it had a sexier name and I'd be tempted to name mine something like *Ursula Dear* if I owned one) plays music with an even, steady, and decisive hand. It nails the beat. There's nothing about its presentation that draws particular attention to itself even when we go looking for the bits that comprise the whole. Bass response is fitfully physical and well formed, the spatial presentation is on the muscular side as opposed to billowy with a very natural sense of space around instruments with sounds emanating from deep (where appropriate) silence. There's a rich and plump mid-range and sweet, resolving highs. Vocals of all stripes sound particularly lovely and enticing. You might say that the UD-501 leans toward the darker, richer, and fuller side of things especially if you compare it to something like the Mytek Stereo 192-DSD DAC (see [review](#)) which wears its incisive resolution in a more obvious manner.

PCM playback sounds just wonderful and inviting and I found myself exploring my music library unhindered by the temptation for sound effects and with complete disregard for bit and/or sample rates. Of course well-recorded HD tracks sounded exceptionally good and DXD courtesy of 2L's [free downloads](#) sounded even better as did DSD. To my ears, after having heard more than a half dozen DSD-capable DACs, DSD continues to entice in ways that PCM just don't. There's a naturalness, ease and silky-smoothness to the overall presentation that PCM seems to lop off. Also the way in which music springs out of silence strikes me as sounding much more real, more dimensional, with DSD. And here, the UD-501 shines nearly as brightly as the Mytek but I'd give the Mytek a bit of an edge in terms of ultimate resolution. The Mytek startles a bit more with an uncanny sense of hearing into the recording whereas the Teac doesn't go in quite as deep.



Listening to double rate DSD through the headphone output of the UD-501 will make any DSD doubter doubtless. Its so good I almost felt guilty. But back to content we can actually get our hands on, regular single rate DSD sounds just lovely as does PCM of all varieties.

Driving my Audio Technica ATH-W1000 headphones, I was lost in the music regardless of its pedigree so much so that I could have completely lost myself in music-logic, letting one album inform the next and so on. The Teac's presentation hit all the right notes and more than any one aspect of its performance it was the musical performance itself that drew me in. Time and time again.

I mainly listened to the UD-501 with my Pass INT-30A integrated amp through the balanced connections using the Kimber Kable Select KS 1126 Balanced ICs but I did try the single-ended RCA outputs and as with DSD, if you can go balanced [DSD], go balanced [DSD]. I heard more dynamic snap, resolution and air through the balanced connection. I also took my Leben CS-300XS for a single-ended spin. Since we're talking about any number of variables including cables and amplifiers, this was more about fun (apologies) than testing the UD-501's single-ended versus balanced connections but what became evident is I preferred both and would say that the Teac can live comfortably in either scenario. With the Leben, the overall presentation leaned even more toward the darker side and it seems to me that a Leben customer could enjoy the Teac's leanings even though this combination is not the last word in resolution and detail. Overall the sound has a more burnished glow as opposed to white light.

A comparison that strikes me as hardly worthy of discussion is which of the included filters I preferred since this is clearly a matter of personal preference and these options are available to every owner and the only way to know which you prefer is to listen. That said, I did find subtle sonic differences with the "Sharp" and "Slow" filters for PCM (I preferred the Slow filter since the Sharp seemed to be overly analytical), as well as the DSD FIR filters (I preferred Filter 2 which sounded the most resolute while retaining a nice tonal fatness) so there is some flexibility in terms of shaping the Teac's sound to your liking. There is some output level variation between the different FIR filters so don't be fooled by louder masquerading as better. Or, if louder sounds better, by all means have at it! I also found that I preferred upsampling turned on for PCM playback where lower resolution files sounded more airy and spacious when upsampled to 24/192. Again, since this option is engaged or disengaged with the push of a button and turn of a knob, owners can decide for themselves whether to engage or not.



### **It Feels Like More**

I debated delaying this review so I could spend more time listening to the Teac UD-501, perhaps finding something more, ah hem, critical to talk about. I could point out that I've heard airier presentations with a larger perceived sound stage, or that I've heard DACs with greater resolution that pay more attention to micro detail, and even more refined-sounding DACs, but the Teac's overall presentation, its way with music from CD-quality, to higher resolution PCM, DXD, and DSD up to 128x DSD was all simply inviting and involving. The UD-501 invites you into each musical performance making it downright difficult to leave.

For those looking for a DSD-capable DAC without the need for preamplifier functionality but with the need for addictively engaging music, the Teac UD-501 comes very highly recommended.

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### [Associated Equipment](#)

Also on hand and in use during the Teac UD-501 review: iFi iDAC, Mytek Stereo 192-DSD DAC, Emotiva XDA-2 Differential Reference DAC, Parasound Zdac, HRT Stream HD, Meridian Explorer.