

Equipment Reviews

Soulution 560 Digital-to-Analog Converter

Details

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In high-end audio, price is always relevant -- except when it isn't. I've waffled so often on this subject that sometimes I'm no longer sure where I stand. A case in point: the Soulution 560 digital-to-analog converter, which retails for \$35,000 USD.

On one hand, *no* DAC should cost \$35,000. Taking into account any reasonable ratio of manufacturing cost to retail price, I have a hard time understanding how any DAC maker can justify that sort of price. A super-high-end DAC is maybe 50 pounds' worth of parts, including a nicely machined and finished case. For that kind of money, you can buy a couple of 200-plus-pound high-tech speakers -- 400 pounds of stuff *should* cost more than 50 pounds of stuff. After all, both represent *high-end* stuff. Besides, there are a number of terrific DACs available for less than five grand, and with much of the functionality of the Soulution 560. Wadia Digital's di322 is a great DAC for \$3500 -- precisely one-tenth the Soulution 560's price.



Yet here I am, writing about the Soulution 560 anyway, despite my reservations about its cost. To make matters worse, I have a strong desire -- based on its sound quality and all it can do -- to try to *justify* that price to you. We'll just have to see how this goes. As for whether or not I make that case, you're the judge.

Inside and out

The Solution 560 was designed to be the heart of a high-end stereo system, performing digital-to-analog conversion, digital switching, and volume-control duties. The 560's class-A output stage obviates the need for a preamplifier in an all-digital system -- Soudution says it's stable into any difficult load, and will drive long cable runs with ease. One feature I particularly like -- and one that illustrates the robustness of that class-A output stage -- is that the 560's RCA and XLR analog stereo outputs can be used simultaneously. This will be great for a biamplified system, or one that includes stereo subwoofers. Soudution says that the 560's analog output stage is configured in a dual-mono arrangement and is strictly separated from its digital circuits.



In addition to those analog outputs, the 560's rear panel is packed with other useful bits. On the left are the IEC inlet and the main power rocker switch. To their right are the Link-Out and Link-In connections, which allow the 560 to be controlled by a Soudution preamplifier. Next up is the RS-232 port. Then things get interesting: Instead of having only a USB input (like the Wadia di322) or only an Ethernet input (like the Merging NADAC), the 560 has both, to provide more configuration options for computer-based sources. Below these is a bank of additional digital input connections: S/PDIF (coaxial RCA), optical (TosLink), and AES/EBU (XLR). Next to these is another bank of connectors, in the form of digital outputs that mirror the input bank in terms of connectivity. The digital outputs could be used to configure a more complex system that includes a second DAC, or perhaps to feed a desktop system, or . . . the sky's the limit.

All of the 560's digital inputs accept resolutions up to 24-bit/192kHz. Regardless of resolution, these signals are interpolated by a 3rd order polynomial algorithm and upsampled to 24/384. The 560 will also accept DXD (352.8kHz) and DSD up to 5.62MHz. DSD data are converted to PCM during upsampling. The 560's DSP circuitry, which controls the volume and balance settings, is claimed to be implemented with 32-bit floating-point architecture, to prevent an increase in quantization noise.



The 560's DAC chip is the Burr-Brown 1792, seen in many high-end DACs, and Soudation says that the digital section is a dual-mono design. They also state that the DAC chip is used only for D-to-A conversion, and *not* for the upsampling function. DSP is used to correct for the phase shift caused by the required low-pass analog filter; Soudation calls this DSP their Zero-Phase-Technology. As a result, they say, the 560's analog output signal has less than 1 degree of phase shift from 20Hz to 100kHz.

On the left of the front panel is a display that shows the usual information: volume level, digital-signal resolution, and the input selected. To the display's right are three buttons: Power, Prog (program), and Mute. To *their* right is the Volume control, which is also used to access the menu system. One feature I found useful: You can easily set Start and Max volume levels. I liked knowing I'd have an appropriate volume level whenever I turned on the 560, regardless of the source component I last used or where the 560's volume control was set when I last turned it off. I also appreciated that I wasn't going to blow out my speakers' tweeters by mistakenly cranking the volume too high.



The Soudution 560 measures 17.2"W x 5.6"H x 17.5"D and weighs about 40 pounds. Its build quality is similar to what I saw in Soudution's 711 stereo power amplifier -- that is, perfect. Like the 711, the 560 is understated in appearance, and it exudes quality. I was disappointed only in its remote control. Although it's useful enough -- it can be used to adjust the volume, select a source, and power on/off -- it's a cheesy plastic thing that doesn't live up to the exemplary build quality of the 560 itself.

Setup and use

I tried the Soudution 560 in a number of configurations, using both the TosLink and coaxial outputs of my Oppo Digital BDP-103 universal Blu-ray player. Using Oppo's Media Control app, I sent the 560 files from the 1TB external hard drive on which I store my music collection, linked to the Oppo via USB. Also routed through the Oppo was music from the Tidal streaming service (the Oppo is connected to my network). I also connected my Apple MacBook laptop to the Soudution with a Thunderbolt-to-Ethernet adapter and Ethernet cable, as well as from the MacBook's USB connection. I selected the Soudution 560 for the sound output in my MacBook's Audio MIDI Setup, and used iTunes and JRiver Media Center 21 to play music files stored on my computer's hard drive.

Sound

I first played the title track of Donald Fagen's *Morph the Cat* (16/44.1 AIFF, Reprise). The Soudution 560 had a smoothness that I described in a phone call to Doug Schneider as "analog." I then thought that this descriptor, at least as applied to digital sound, has become largely meaningless. Most digital sound, as reproduced by a reasonably high-end system, lacks the blatant digital artifacts that were easily apparent as recently as ten years ago.

I listened to “Morph the Cat” again. The drums were certainly punchy, as usual, and the bass guitar was unusually articulate and weighty -- but again, not completely unlike what I’ve heard from some other components. Then Fagen began to sing -- and this was where my “analog” comment had come from. Fagen’s voice was simply *clearer* than I’d heard it before. At 1:22 into the track, Fagen hits a note that sounds just slightly out of his comfort range. Through the 560, I could more easily hear this than ever before. It was obvious, not something I had to strain to hear. It wasn’t irritating or anything -- just there, easily audible.



I then played “Stone,” from Alessia Cara’s *Know It All* (16/44.1 FLAC, Def Jam). The drums were so solid, so physical, that I had to turn up the volume to hear how the sound would hold together at higher SPLs. Of course, having the Magico Q7 Mk II speakers and Solution’s 711 stereo amplifier in the chain made this exercise a breeze. The percussion was epic in its impact and solidity. The music is good, but the *sound* was amazingly good for a pop recording, especially in the reproduction of Cara’s voice. This track sounds slightly less processed and pop-ish than one of my daughter’s favorite tracks by Cara, “Seventeen,” and more clearly reveals the nature of this young artist’s vocal production. Although she’s a bit overshadowed by the percussion, I could see her singing in my room, such was the solidity of the image and the tonal completeness of the sound. More important, I could hear Cara infusing the words with thoughtful inflections -- something you don’t often hear in recordings of this genre.

I could hear more deeply still into Cara’s voice in “Scars to your Beautiful,” especially in this track’s first 20 seconds. Cara’s quick inhalation before each phrase was very audible, almost touchable, it seemed. Such detail made me wish that Cara had recorded this song -- and all of *Know It All* -- in an acoustic version. I think she could easily pull it off. My point here is that the 560 let me hear deeply into this pop recording, identifying the pop elements, but also the genuine artistry underlying this overproduced confection. The Souldution revealed everything -- or at least more in these tracks than I’d ever heard.



“Please Read the Letter,” from Robert Plant and Alison Krauss’s *Raising Sand* (24/96 AIFF, Rounder), was amazingly forthright. It was obvious to me that Plant’s voice had been mixed to be more pronounced than Krauss’s -- I’d noticed this before, but now it was obvious in a way that made me question the mastering of the recording. If I concentrated on Krauss’s voice, I could follow her performance, but I wanted her level brought up just a bit. I next loaded the same track from Tidal (16/44.1 FLAC, Rounder), and the difference in resolution was easy to hear. In Tidal’s CD-quality version, the percussion sounded looser, with less impact, and the voices were less distinct from each other. This was one of the few times in recent memory when I was disappointed in the sound coming from Tidal. The 560 just sounded so good with the hi-rez file that going directly to a lower-rez version of the same recording was almost jarring. The 560 let me easily hear differences among various versions of the same recordings.

Comparison

I compared the Soudation 560 to the [Merging NADAC \(/index.php/equipment-menu/637-merging-nadac-st-2-digital-to-analog-converter\)](#) (\$10,500), an excellent model I reviewed in March. I said in my review of it that the Merging is well-built for its price, but the Soudation 560 is larger and more heavily constructed, as it should be -- the 560 costs more than three times the NADAC’s price. I can see some slight discontinuities where the NADAC’s panels meet, but the Soudation 560’s joins are basically perfect. One department in which both models fall short, even in comparison to the [Wadia di322 \(/index.php/equipment-menu/611-wadia-di322-digital-to-analog-converter\)](#), is that of remote controls: the Merging has none, and Soudation’s looks like something that would come with an inexpensive BD player. Still, each is a topflight, attractively styled component that would look right at home in a super-high-end system.

I listened to the playlist of tracks I used in March to compare the Merging NADAC with the Wadia di322. I used the coaxial inputs of both DACs to connect them to my Oppo BDP-103 BD player, and matched levels with my Apple iPhone 6's SPL meter app. I fed files from Tidal to both DACs, and from the 1TB external hard drive on which most of my music collection is stored, beginning with "North Dakota," from Lyle Lovett's *Joshua Judges Ruth* (16/44.1 FLAC, MCA).



The NADAC's very low noise floor let Lovett's expressive voice come through with flowing ease. The tonally dense, weighty sound was devoid of harshness and super-easy to listen to, reminding me of why I'd enjoyed so many long listening sessions with the NADAC. The piano, in particular, was beautifully rendered by the Merging, with full-size scale and accurate tonality. Up next was the Soudation. With the Lovett song playing, I immediately noticed that the shakers at the very start of the track had a touch more presence. This was very easy to hear, and made the sound more lifelike. The piano had more sparkle in the higher registers. Amazingly, Lovett's voice was even clearer than I'd heard it through the NADAC.

Then, through the NADAC, I played a Tidal stream of "The Forge of Angels," from Enya's *Dark Sky Island* (16/44.1 FLAC, Warner Bros.). A huge soundstage blossomed before me -- the music had great physical presence in my room, letting me feel the pulsing keyboards at my listening seat. My notes say, "Man, this is digital sound to die for!" Through the 560, the beginning of this track was as startling as it had just sounded through the NADAC, and the soundstage was just as huge. With the Enya tracks there was less of a difference between these two DACs than there'd been with the Lovett, though I did hear one significant improvement with the Soudation 560: The upper range of Enya's voice had more sparkle, as did the keyboards. There was now a touch more life in the lower to mid-treble; it added an intensity to the sound that I found quite appealing.

As good as the Merging NADAC is -- and it's very good -- the Soudution 560 was, overall, better. I preferred it with every track I played, though the differences with some tracks were more apparent than with others -- often the case with comparisons such as these.

DSD vs. DSD-to-PCM

My final comparison was of a DSD file listened to through both DACs. The Merging NADAC processes DSD natively; the Soudution 560 converts DSD to PCM. The latter method is frowned on by some audiophiles, but many manufacturers claim that converting DSD to PCM yields the better sound. I tried to hear the differences, if any -- at least through these two products.

I listened to soloist Rachel Podger and Arte dei Suonatori performing the *Allegro* of Vivaldi's Violin Concerto in G Major, Op.4 No.3, recorded in 2003 in the Church of the High Catholic Seminary, in Poland (DSD64, Channel Classics). The NADAC was impressive with this music, producing a dense tonality and a spirited, lively reproduction of the strings. The Merging vigorously conveyed the energy of this track; its reproduction of it sounded completely natural, with no hard digital edges. In short, the NADAC accomplished a seeming juxtaposition: it was lifelike, but never veered into embellishment.

The 560 countered with a hugely energetic sound of its own. It was a match for the NADAC in rhythmic drive and tonal density, its soundstage was just as huge, and, as with the NADAC, there were no hard edges or other artifacts to make me want to cut the listening session short.

This comparison was almost too close to call at first. I had to go back and forth several times before I could confidently identify specific differences. Finally, though, I noticed -- as I noted with strict PCM tracks again and again -- slightly more body and sparkle in the mid-treble with the 560; specifically, the decays of the sounds of Podger's violin were more distinctly enunciated. In short, when I played PCM files, the differences were easily in the 560's favor. The NADAC almost closed the gap with DSD -- which, for \$10,500 vs. the Soudution's \$35,000, is no mean feat.

Conclusion

The Soudution 560 is the total package. Its feature set will let it easily fill the role of centerpiece of an all-digital system. Its two sets of analog outputs can be used simultaneously, and its many digital outputs open up a number of interesting system-configuration scenarios. Except for its remote control, its build quality and ergonomics are in keeping with its high price of \$35,000.

Overall, the 560 easily produced the best sound I've heard in my system. It made me forget the debate of analog vs. digital, and encouraged me to just explore my music collection and forge ahead to discover new music.

But that price . . . I'd be remiss if I didn't remind you that you can attain really terrific digital sound, as well as much, if not all, of the 560's functionality, with a far less costly DAC. That's probably what you'd have to do anyway -- and I'm in the same boat. However, some audiophiles just want the best, period, and they have the cash to buy it. Maybe they've been in this audiophile game long enough, and now want to

assemble that last, great stereo system, then leave nothing on the table. For them, the Soulution 560 is a final-destination product -- and if *you're* one of those folks, the 560 is easily worth \$35,000, just to know you have the best. From what I've heard of it, it will be hard, if not impossible, to eclipse.

... Jeff Fritz

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Associated Equipment

- **Speakers** -- Magico Q7 Mk II, Rockport Technologies Cygnus
- **Amplifier** -- Soulution 711
- **Sources** -- Apple MacBook Air running OS 10.10.5, iTunes, JRiver Media Center 21; Wadia Digital di322 DAC; Merging NADAC DAC; Oppo Digital BDP-103 universal BD player with Tidal streaming service and 1TB hard drive accessed through Oppo's Media Control app
- **Cables** -- Nordost Valhalla interconnects, speaker cables, power cords

Soulution 560 Digital-to-Analog Converter

Price: \$35,000 USD.

Warranty: Five years parts and labor.

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