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NUPRIME IDA-16 INTEGRATED AMPLIFIER/DAC

Next Generation
by Vade Forrester, Apr 16th, 2015
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Digital-to-analog converters
Products: NuPrime Audio IDA-16

NuForce made quite a splash when it entered the high-end arena several years ago, particularly with its switching amplifiers. The company then gradually expanded its product range downward to include $100 DACs and $500 integrated amplifiers. However, NuForce co-founder Jason Lim wanted to focus on the upper end of the market; thus, with the backing of the OEM factory, he has formed a new company, called NuPrime, to design, build, and market upper-end products that are consistent with the company's original mission.

The IDA-16 integrated amplifier reviewed here is a good example of this shift. At ???? the IDA-16 represents the high value for which NuForce is known, but allows for more ambitious design and implementation than sub-$1000 integrateds. For your ????? you get a 200Wpc unit with a built-in DAC that will play just about everything digital on the market today. The IDA-16's price is still reasonable by high-end-audio standards; in fact, depending on its sonics, NuPrime's integrated could be an outright bargain. My job in this review is to find out if that's the case.

I would describe the IDA-16 as a modern integrated amplifier. By that I mean it integrates the electronics most audiophiles use today: a DAC, preamp or control center, and a power amp. So all you need besides the IDA-16 is a source. (Well, OK, you need speakers and cables, too.) The DAC plays just about any computer-file format of interest to audiophiles, with five digital inputs—one asynchronous USB and four SPDIF (two on RCA coax, two on TosLink). In case a user has an analog source (like a phono system or a tape deck) there's also a line-level analog input.

I see this type of component as the future of integrated amps; except for very high-end DACs, there's no reason why DAC circuitry can't be housed within an integrated amp or preamp chassis. Think of it as functionally similar to one of the Devialet amp/DAC combinations without the ultra-high price.
All the IDA-16 has to offer is packaged in a sleek black chassis with your choice of black or silver front and side panels. If I tell you the amplifier weighs 16 pounds and produces its 200Wpc with 93% efficiency, you'll probably guess the output section is a Class D switching amplifier, and you'll be right.

First a few details about the IDA-16's circuit. It is based on a "self-oscillating circuit" to generate the pulse-width modulation (PWM) signal that turns the output transistors on and off. The switching frequency is a very high 600kHz, about double the speed of most Class D amplifiers. In this regard, the new switching output stage is an advance over those used in the original NuForce amplifiers. The power supply is a switched-mode type. Together with a Cross-Matrix Array (CMA) capacitor bank, the power supply can deliver very high current to the output stage on demand. (The switching power supply in David Berning's ZH-230 tube amplifier showed me how fast such power supplies can furnish real-world current, and how important that is to reproducing the flow and dynamics of music.) Equally interesting is the precision volume control, which uses a switched-resistor arrangement wherein only a single resistor is in the circuit at each of the control's 99 positions (divided into 0.5dB increments). The internal DAC uses the popular ESS9018 Sabre chip, while XMOS input chips are used for the USB input. OPA2134 chips are used in the analog section. Very low noise JFETs are used in the input section.

The built-in DAC is quite special, too. It plays PCM at sampling rates up to 384kHz and DSD256 (11.2MHz sampling rate). Although DSD256 is mostly a curiosity at this point, several companies now offer commercial DSD256 releases, and doubtlessly other companies will soon follow suit. (I just hope DSD doesn't degenerate into a numbers game.)

Although at first glance, it looks like the IDA-16 is devoid of controls, there are actually six small, unobtrusive buttons on its front panel. The three buttons on the left side are used to select the input and turn the amplifier on and off. Under the buttons is a display showing which input is selected. On the right side of the amplifier are buttons which raise and lower the volume level and mute the output. A display under these buttons shows a numeric volume level as well as information about the input. For example, on a DSD256 file the input displays "d11.2," where "d" means a DSD file is being played, and "11.2" means the sampling rate is 11.2MHz. On the black review sample I received, these buttons were almost invisible. Fortunately, all the controls on the front panel are duplicated on the remote, which has much larger buttons that are easier to operate and are clearly labeled. The remote is a black metal tube eight inches long with a hexagonal cross section. The silver buttons tend to rattle a bit, not that that's a drawback.

On the rear panel are five digital inputs and one analog input. Outputs consist of five-way binding posts for speakers, one set of RCA jacks for subwoofers, and a TosLink digital output. A standard IEC jack provides AC power input. There's also a voltage-selector switch for the AC power. With plenty of space between the jacks, cables shouldn't be crowded.

The impedance of the IDA-16's analog input is greater than 1M ohm, while the line-out output impedance is less than 100 ohms. So virtually any source equipment can drive the IDA-16, and the line-out should work with virtually any powered subwoofer or external amplifier. The manual comes on a USB flash drive, along with USB drivers for Windows computers. Of course, if you use a SPDIF input, no driver is needed, but SPDIF has limited maximum sampling rates, if that matters to you. The SPDIF input only accepts PCM files; for DSD playback, you have to use the USB input.

Setting Up And Using The IDA-16

The amplifier fit easily on my equipment rack, taking up an entire shelf. I used it to drive KEF LS50 speakers. The LS50s' sensitivity is specified at 85dB, so they need a powerful amplifier to perform at their best. I normally use a subwoofer in a 2.1-configuration to extend the bottom end of the KEFs, but since I needed to assess the amplifier's lower octaves, I disabled the subwoofer for the review. (Otherwise, I'd be listening to the subwoofer's internal amplifier in the low end.) For actual use, I'd connect the analog output jacks to the subwoofer.

As a source I used my HP laptop computer running the J. River Media Center Version 20 server program. Since my laptop runs Windows 7, I had to install the Windows driver so it would work with the IDA-16's DAC. I used a Paul Pang TZ YUN Red II USB cable to connect the laptop to the IDA-16's USB input, and Audience Au-24 e speaker cables between the IDA-16 and the KEFs. Since the power cable NuPrime supplied with this integrated looked as if a lot of thought had gone into its design, I stuck with it for the AC power connection.

The 13-page owner's manual, a PDF file on an included USB flash drive, was very well-written, with lots of illustrations. You'll appreciate the brevity of the manual if you decide to print it out. I wish more manuals were like this.

The Windows driver installed easily, and set up in J. River with no hassle. Unlike some Windows drivers I've used, the IDA-16 driver never crashed during use. NuPrime recommended 100–150 hour break-in time, so I gave the IDA-16 at least 200 hours of break-in before listening critically. Right out of the box, the IDA-16 sounded OK, but somewhat lifeless; however, after break-in it sounded a bit more dynamic, and the treble, which had been disappointing in some switching amplifiers I'd tried, became delicate and detailed.

The IDA-16 lived up to its claim of near-silence. The old ear-to-the-speaker-driver test produced—nothing. Nada. Zip. Total silence. And the control buttons produced no pops or clicks when operated, either on the front panel or on the remote. I could blather on about music "emerging from the blackest background ever," but I won't, although it did. Even the on/off button produced no clicks or pops. When I changed the volume, the display changed to show a relative (0–100) volume level, then switched back to the sampling rate. The display was big enough to read from my listening seat about

ten feet from the amplifier. When I muted the IDA-16, the volume display blinked. When I turned muting off, the volume started at a low level and gradually increased to the original level, so I wasn't blasted out of my chair. That's a cool touch.

Sound

Switching amplifiers have come a long way. NuPrime brags about the IDA-16's bass performance, and although the LS50s don't have extended bass response, what I heard was a punchy, powerful low end. A couple of times, I felt compelled to check to be sure the subwoofer was off, so deep and powerful was the bass. Some switching amplifiers I've heard have had high frequencies that were a bit discontinuous—i. e., they sounded different than the midrange—but the IDA-16's highs were smooth, continuous, and detailed. They were also very extended. I wouldn't call them bright, because they weren't peaky; but they were a defining characteristic of the IDA-16's sound.
Since the IDA-16 plays DSD256 files, I had to try the unit with one of them. So I cued up the only DSD256 I had available, Howard Hanson/An American Romantic, from High Definition Tape Transfers (highdeftapetransfers.com). On the first selection, "Nymphs And Satyr Ballet Suite," performed by the Rochester Chamber Orchestra with David Fetler conducting, the recording of this attractive tonal music showed very well developed instrumental harmonics and punchy dynamics. If the notion of 20th century American music sounds scary, fear not; this music is well-crafted and (to my ears) actually pretty.

Turning to more familiar material, I cued up Jordi Savall and his band's La Folia 1490–1701 (44.1/16 AIF, ripped from Alia Vox AFA 9805), specifically the first cut "Folia Rodrigo Martinez." The first thing that stood out was the bass power and impact the IDA-16 coaxed out of the small KEF speakers. Although the KEFs can't reproduce the mid-20Hz frequencies on this cut, they still went surprisingly deep, and I felt the impact as the bass drum was struck. On the other end of the frequency spectrum, the IDA-16 reproduced the high frequencies with plenty of transient detail so that the very active percussion instruments were very clearly reproduced. In the midrange, Savall's viola da gamba lacked a smidgen of the detail present in the recording. The soundstage was quite wide, with instruments realistically distributed between the speakers.

On to The Tallis Scholars' Allegri's Miserere & Palestrina's Missa Papae Marcelli (96/24 FLAC, Gimell), where the first cut "Miserere" sounded unusually pure and free from distortion. While the soundstage was slightly narrower than usual, the depth was realistic. On this choral recording, a main group is at the front of the stage, while a smaller solo group is some distance behind it. Through the IDA-16, the solo group sounded appropriately distant. Sometimes room echoes from the solo group are smeared and incoherent, but the IDA-16 pretty well nailed the reverberation that surrounds the solo group's sound. The tenor soloist's voice in the main group was also free from the glassiness I sometimes hear.

On guitarist Alex de Grassi's album Special Event 19 (DSD64/DFF, Blue Coast Records), the cut "Shenandoah" sounded unstrained and pure. Perhaps I've heard the leading-edge transients of de Grassi's guitar defined a little better on much more expensive systems, but it was a close call.
Shelby Lynne's album Just a Little Lovin' (DSD64/DSF, Acoustic Sounds) starts off with the eponymous track recorded with plenty of deep bass. (Once again, the IDA-16 extracted surprising low end from the KEFs on this track; I hardly missed the contribution usually made by the subwoofer. OK, maybe I missed it a little.) Lynne's voice was rich and resonant, as usual.
I love Claude Debussy's orchestral music, but one of my favorite Debussy orchestral pieces, Petite Suite, was actually orchestrated from Debussy's piano work by someone else, a gentleman named Henri Busser. To see how the IDA-16 performed with orchestral music, I used a recent download of Debussy's complete orchestral music played by the Orchestre National de L'O.R.T.F. under the direction of Jean Martinon (96/24 AIF, HDTracks). In the second movement of Petite Suite, the bubbly "Menuet," the IDA-16 captured the woodwinds with fine detail and harmonic accuracy, and the music sprang forth with infectious spirit. It's no wonder this piece has been in heavy rotation here recently.

Comparison

I used a $2995 Belles Soloist 1 integrated amplifier to drive the KEF speakers for comparison. Although rated at "only" 125 watts/channel, in power the Class AB Belles amplifier has more than adequate power. It doesn't have a built-in DAC, so I had to use an external DAC. It didn't seem fair to use my normal $5995 DAC for the comparison, so I used the amazing iFi nano iDSD DAC/headphone

amplifier, which is designed to plug into a computer's USB output. You might think it's equally unfair to use a $189 DAC for comparison, but it's the only DAC in my collection that plays DSD256 files—my other, more expensive DACs are limited to DSD128 playback, if they play DSD at all.

Through the Belles amplifier/iFi DAC combination, the Howard Hanson/An American Romantic album sounded forceful, with well-defined macro- and micro-dynamics. The Belles/iFis' high frequencies were slightly less pronounced than the IDA-16, which made the mids and midbass frequencies slightly more prominent. I never thought the Belles/iFi combination lacked highs, but the IDA-16's highs were slightly more elevated.

"Folia Rodrigo Martinez" exhibited the same frequency balance as the Hanson album, with the Belles/iFi providing more detail and texture in the reproduction of the viola da gamba. The differences were slight, but observing them is what reviewers do for a living. The IDA-16 produced deeper bass than the Belles/iFi combination; with the IDA-16, I could feel more impact when percussionist Pedro Estevan whacked the bass drum.

On the "Miserere" track, the IDA-16 sounded slightly purer, with less distortion than the Belles/iFi combination. As a result, the IDA-16 produced a more believable sense of depth between the main choral group and the distant solo group.

On Just a Little Lovin' the Belles/iFi combination's midbass was a tiny bit more prominent than the IDA-16's. If that seems to contradict the findings from "Folia Rodrigo Martinez," where I found the IDA-16's bass deeper, keep in mind that the low frequencies in "Folia Rodrigo Martinez" are deeper than those in Just a Little Lovin'. Lynne's voice was just as buttery smooth with the Belles/iFi combo as with the IDA-16.

Bottom Line

I wouldn't go so far as to call $2350 cheap, but for a 200Wpc integrated amplifier, it's on the reasonable end of the high-end price spectrum. And when you consider the NuPrime IDA-16 has an advanced DAC built in, which will play virtually any digital recording available today, it's an even better value. Of course, if it didn't sound good, it wouldn't be a good value, no matter how low the price was, but it sounds excellent. I've picked a few nits about its performance, but in context these were quite minor. Plus the unit looks good, too; I wouldn't be ashamed to put it on a shelf next to the fanciest component. Remote controls don't always get the attention they deserve, but the IDA-16's remote is very easy to use, with enough flexibility to operate the amplifier without offering a plethora of confusing options.

The NuPrime IDA-16 DAC/amplifier along with the KEF LS50 speakers made a system that, if you'll pardon a tired reviewer cliché, punched far above its weight. So to return to the question left open in the first paragraph: Yes, the NuPrime IDA-16 DAC/amplifier can indeed be called a bargain. Highly recommended.

SPECS

Amplifier Section
Power output: 200Wpc into 8 ohms
THD+N: 0.004%
Peak output power: 400W
Frequency response: 10Hz–80kHz
Dimensions: 17" x 1.97" x 15"
Weight: 16 lbs.

DAC Section
USB sampling rates: 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz, 352.8kHz, 384kHz, and DSD 2.8MHz, 5.6MHz, 11.2MHz
SPDIF sampling rates: 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz
Bit resolution: 16–24 bits