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DAN D'AGOSTINO'S EXTRAORDINARY MOMENTUM PREAMPLIFIER

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MICHAEL FREMER

Dan D'Agostino Master Audio Systems Momentum

LINE PREAMPLIFIER

A preamplifier is the port of entry through which you gain access to the sources you've so carefully assembled. It's also the gate through which all of your music passes. So while its sonic performance is obviously critical, you'd also better assess how it feels, how it looks, and how it operates—you're going to be in an intimate relationship with it for a long time. Before choosing a preamplifier, therefore, take some time to drive it around the block, or at least shake hands with it. Use your imagination as much as your ears.

Bling that Sings

You may find the looks of the Momentum preamplifier, from Dan D'Agostino Master Audio Systems, breathtaking or way over the top—it's a matter of taste. To me, the Momentum (\$32,000) is among the most beautiful pieces of audio gear I've ever seen or touched. The large, circular, protruding meter indicates volume level (on the Momentum power amp, this meter indicates the power-output level), set with a large, knurled, smoothly rotating ring that surrounds the meter.

The operating system has been carefully and elegantly conceived. To the left of the volume indicator, two rows of three pushbuttons each select among the inputs. When selected, the buttons in each row glow, from left to right, blue, red, or green. Below these are two more buttons: one is an On/Standby toggle; the other engages the tone controls, which are to the right of the volume indicator.

Those functions are repeated on the unilluminated backlit remote control. Circular and palm-sized, the remote also has buttons for Mute, Phase (polarity inversion), and Balance. When you push the Balance button, the Volume + and - buttons become balance controls, the retro-styled green "magic eye" LED is dimmed, and the volume needle now serves as a balance indicator.

Push Mute and the green LED blinks. Pushing the Tone button on the Momentum or its remote illuminates, in neutral white, the front-panel Tone button and the eyebrow windows above the Treble and Bass knobs. Push Phase and the green-illuminated meter window glows pink.

D'Agostino includes a hefty and attractive auxiliary infrared receiver that can be used if a cabinet door blocks the front panel's built-in receiver, or if there's no clear line of sight between the front panel and your listening position. I can't imagine anyone buying such a gorgeous piece of audio jewelry and hiding it behind a door, but if you do, you need to provide adequate ventilation: The Momentum runs warm.

The six inputs represented on the front panel are labeled Server, Radio, DAC, Phono, Dock, and Theater. Just in case you missed it: There's an input labeled Phono, but *not* one labeled CD. Of course, you can use all but the Theater input for whatever kind of line-level source you wish. The Theater input is a unity-gain pass-through. When you select it, the volume meter pegs. Select another input and it automatically reverts to "0." This is a useful feature if you combine your audio system with your home theater. Otherwise, it's a wasted input.

While the Momentum's manual claims that the volume level automatically resets to minimum when you switch inputs, that feature stopped working at some point during the review period. Because of that, switching between inputs produced through the speakers a low-level *tick*.

The Momentum is shipped in a snazzy, wheeled Pelican road case with a presentation befitting a \$32,000 piece of exquisitely finished kit.

Ergonomically Speaking

The input labels on the front panel are not illuminated, and in certain lighting conditions were difficult to read.

SPECIFICATIONS

Description Solid-state line preamplifier with separate power supply/base and tone controls. Inputs: 6 balanced (XLR). Outputs: 2 balanced (XLR). Frequency response: 0.1Hz-1MHz, -1dB (20Hz-20kHz, 40dB). THD, full output: <0.006%, 20Hz-20kHz.

Signal/noise (unweighted): 105dB (no reference level quoted). Channel separation: not specified. Maximum output: not specified. Gain: +6 to +12dB, adjustable. Input and output impedances: not specified.

Dimensions Preamplifier:

18" (450mm) W by 4.3" (108mm) H by 12" (300mm) D. Power supply and base: 11" (275mm) W by 3" (75mm) H by 8" (200mm) D. Combined weight: 75 lbs (34kg).

Serial number of unit reviewed 0579.

Price \$32,000. Approximate number of dealers: 9. Warranty: 5 years.

Manufacturer Dan D'Agostino Master Audio Systems, PO Box 89, Cave Creek, AZ 85327. Tel: (480) 575-3069 Web: www.dandagostino.com.



The circular remote's relatively small buttons are arrayed in four horizontal rows. From the top: Server, Balance, Radio; below that are the DAC, Phase, On/Off, Tone, and Phono buttons; then buttons for Theater, Mute, DOC; and, at bottom, Volume +/- . A tiny red LED between the *g* and *o* in the Dan D'Agostino Master Audio Systems logo on the faceplate flashes when you push any button. The remote is easiest to use when it's sitting on a coffee table or other surface. Otherwise, unless you have long fingers, you need two hands: one to hold the remote, the other to punch buttons.

The fully balanced Momentum has only XLR inputs (six pairs) and outputs (two). There's no Tape Out or Tape Loop function—if you want to digitize your record collection, for instance, you have to use the second output, which is also associated with the volume control. That can be useful if your A/D converter lacks a volume control, but it also can require you to shut your amplifiers off to avoid ear-splitting volume possibly needed to achieve sufficient output. With level monitoring available via most computer recording programs, this turned out to be not as big a problem as I at first feared it might be.

The rear panel also has 12V trigger outputs, as well as 3.5mm and RS-232 inputs for remote-control/home-automation systems. But my home is not a "smart" home, and I didn't use these for this review.

Architecture

The Momentum looks like a single-box design but is actually a two-boxer. The control and audio chassis, machined from a solid block of aluminum, sits on four aluminum cones whose points rest in indentations machined into the tops of the corner columns of the thin, curvaceous, satiny-finished power supply. The power supply sits on four soft isolation feet. The Momentum and power supply are

electrically connected via a multi-pin umbilical, and together weigh a hefty 75 lbs. The combination of the power-supply/base and the sculpted, copper-accented main chassis makes for a brilliant and dramatic visual presentation. And I've

The great systems produce a sound that's so coherent from top to bottom that it dissolves almost instantly beneath the music.

never seen a more physically attractive power supply. The assembled stack is relatively tall at 7.5" and requires 3" top clearance. It's best placed atop, not in, a rack. That way, you also get the best view.

Inside the preamp proper, six central, vertically mounted circuit boards—one for each input, and stuffed with "through hole" components rather than surface-mount types—are aligned parallel to the front and rear panels. A seventh board at the rear holds the six sets of balanced XLR inputs and two sets of balanced XLR outputs. Ribbon cables connect the boards, helping to produce an utterly neat and tidy interior reminiscent of the innards of my long-term reference,

the darTZeel NHM-18NS. Neither preamp includes sausage-sized capacitors.

The complementary, balanced, zero-feedback Momentum is DC-coupled, has no capacitors in the signal path, and features fully discrete circuitry with no op-amps. Volume adjustment is via an optical controller and resistor ladder.

Setup and Connections

While RCA-to-XLR adapters can be used for source components, D'Agostino cautions that the Momentum should

MEASUREMENTS

I measured the Dan D'Agostino Master Audio Systems Momentum preamplifier in balanced mode using my top-of-the-line Audio Precision SYS2722 system (see www.ap.com and the January 2008 "As We See It," <http://tinyurl.com/4ffpve4>). The Momentum's maximum gain was a modest 8dB,

which is fine—so many line preamplifiers offer way too much gain—and the preamp preserved absolute polarity (*ie*, was non-inverting), the front-panel meter glowing green. Pressing the Phase button on the remote control inverted polarity, and the meter now glowed pink. The input impedance was a usefully high 95k ohms at low and

middle frequencies, dropping inconsequentially to 86k ohms at the top of the audioband. The output impedance was a low 79 ohms at all frequencies.

The Momentum's frequency response (fig.1) didn't change with load impedance, and was flat from 100Hz to >200kHz. Note the superb channel matching in this graph with the Balance

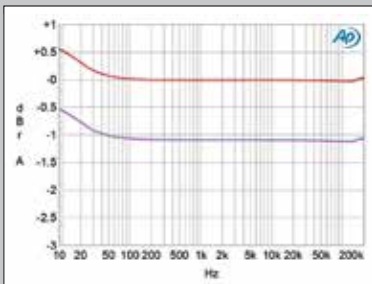


Fig.1 Dan D'Agostino Momentum, frequency response with volume control set to maximum at 1V, into: 100k ohms (left channel blue, right red), 600 ohms (left cyan, right magenta) (0.5dB/vertical div.).

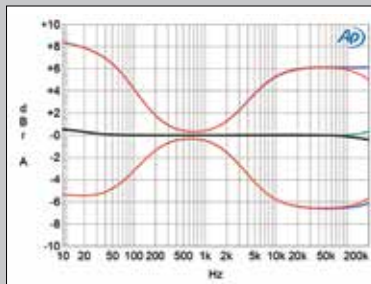


Fig.2 Dan D'Agostino Momentum, frequency response with bass and treble controls set to their maximum and minimum positions into 100k ohms (left channel blue, right red), and set to "0" but still in-circuit (left green, right gray) (2dB/vertical div.).

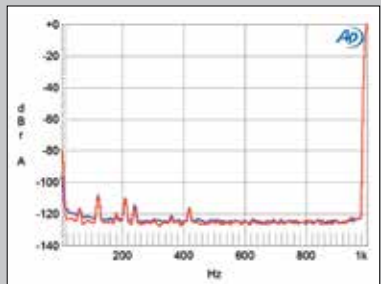
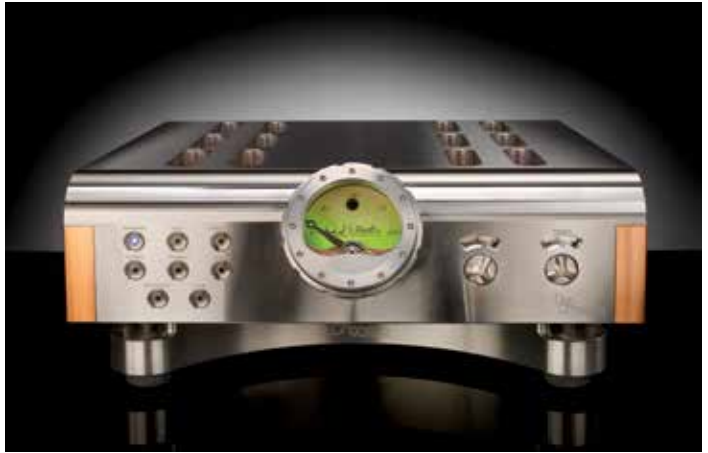


Fig.3 Dan D'Agostino Momentum, spectrum of 1kHz sinewave, DC-1kHz, at 1V into 100k ohms (left channel blue, right red; linear frequency scale).



There are 6 vertically mounted daughter boards, one for each input.



The preamplifier sits on its curvaceous power supply.

be connected only to power amplifiers with XLR balanced cables.

I ran the my Simaudio Moon Evolution 650D player balanced, and my single-ended Ypsilon VPS-100 phono preamplifier from its "convenience" XLR output. During the review period I also auditioned a variety of balanced and single-ended phono preamplifiers, ranging in price from the balanced LKV Research 2-SB (\$2500) to the Phasemation EA-1000, which also has single-ended, "convenience" XLR-outputs.

Power amplifiers were the VTL's dual-differential Siegfried Series II Reference (which I reviewed in the May 2014 issue) and the darTZeel NHB-458, which has an actively balanced input that uses a translator to convert balanced signals to single-ended. DarTZeel suggests

running the amps single-ended, but says that whatever sonic degradation the additional circuitry creates is so minor as to be inaudible. DarTZeel also suggests running preamps other than its own NHB-18S with the NHB-458s set to +26dB gain rather than +32dB, so that's how I configured the amplifiers. While the darTZeel amps began to oscillate when driven by TARA Labs' Zero single-ended interconnect, the balanced version of the Zero produced no such problems and resulted in pure-black backgrounds.

Other than the software glitch that caused the level not to return to zero when sources were switched, the Momentum performed flawlessly during the review period.

The Momentum Amplifier's Sound Duplicated

In terms of sound, this is a ridiculously easy review to write,

measurements, continued

centered. In the low bass, however, there was a slight rise in response, which reached +0.55dB at 10Hz. This graph was taken with the volume set to its maximum: "100" on the meter. The unity-gain position was just under "75" and, commendably, the frequency response was the same as at maximum volume. With the tone controls active but set to "0" (fig.2, green and gray traces), the audioband response

was the same as it had been in fig.1, though now the right channel (gray trace) started to roll off above 150kHz. Set to their maximum and minimum positions, the bass and treble controls offered sensible amounts of boost and cut (blue and red traces).

Channel separation was superb, at approximately 120dB at and below 500Hz and, at 20kHz, still 89dB R-L and 92dB L-R. As usual, I measure the

signal/noise ratio in the worst-case condition: input shorted but volume control set to its maximum. The unweighted, wideband ratio, ref. 1V output, was 75.3dB in both channels, which improved to 92dB when the measurement bandwidth was restricted to the audioband. Switching an A-weighting filter into circuit improved this ratio by another 3dB. Fig.3 reveals the presence of extremely

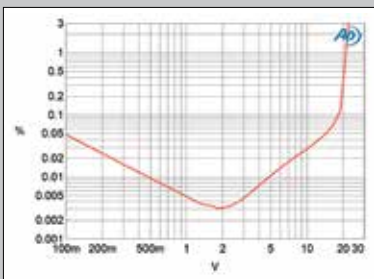


Fig.4 Dan D'Agostino Momentum, distortion (%) vs 1kHz output voltage into 100k ohms.

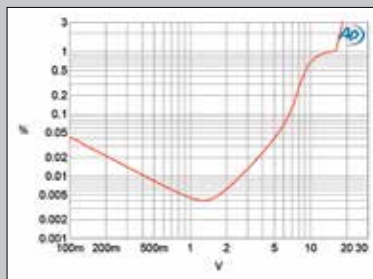


Fig.5 Dan D'Agostino Momentum, distortion (%) vs 1kHz output voltage into 600 ohms.

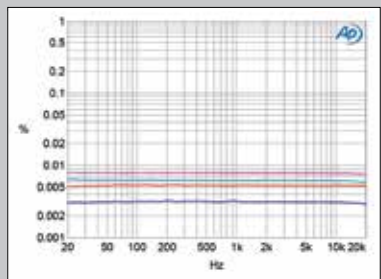


Fig.6 Dan D'Agostino Momentum, THD+N (%) vs frequency at 2V into: 100k ohms (left channel blue, right red), 600 ohms (left cyan, right magenta).

especially for someone who's already reviewed D'Agostino's Momentum monoblock (see *Stereophile*, February 2013). The Momentum preamp's sound duplicates the amp's—an observation that I confirmed in one of Paragon Audio's rooms at last spring's AXPONA show, where the two Momentum models drove a pair of Wilson Audio Specialties Alexia speakers to extremes of billowy transparency and delicacy. What I heard at home is what I heard under more difficult show conditions.

I wrote in my review about hearing the Momentum amps a few years before, at a Consumer Electronics Show, driving a pair of original Wilson Sashas. I wrote of their "overall seamlessness, their tube-like midband delicacy, their bottom-end authority," and "just the right blend of speed, texture, weight, and tonality." About the midrange, I said, "They produced an airy midband effervescence, and a top end that, while not exactly white light, perfectly complemented everything below.

"The overall result," I continued, "was the production of an all-enveloping 'sonic aether' in which all of the notes swam with equal ease and at just the right time. In short, I heard at home precisely what I'd heard through the Wilson Sashas at CES: pretty much nothing. Or everything."

And that's what I heard at AXPONA, as well as at home with the Momentum preamplifier driving the darTZeel amplifiers—but less so driving the big VTL Siegfried IIs, which, because they're tubed, have a more pronounced and less transparent sonic signature, though still one that many listeners might prefer.

However, now that I have more listening time under my belt, I won't call the Momentum preamp's sound "pretty

ASSOCIATED EQUIPMENT

Analog Sources Continuum Audio Labs Caliburn turntable, Cobra tonearm, Castellan stand; VPI Classic Direct Drive turntable & 3D 12" tonearm; Kuzma 4Point tonearm; Lyra Atlas & Etna, Ortofon Anna, Transfiguration Proteus, Miyajima Labs Zero (mono) cartridges.

Digital Sources Simaudio Moon Evolution 650D CD player, BPT-modified Alesis Masterlink hard-disk recorder; Meridian Digital Media System; Pure Music, Vinyl Studio softwares.

Preamplification Ypsilon MC-10L & MC-16L step-up transformers; PBN Audio Olympia CPS/Pi, Phasemation EA-1000, Ypsilon VPS-100 phono preamplifiers; darTZeel NHB-18NS preamplifier.

Power Amplifiers darTZeel NHB 458, VTL Siegfried Series II Reference (both monoblocks).

Loudspeakers Wilson Audio Specialties Alexandria XLF.

Cables Interconnect: TARA Labs Balanced Zero Gold & Balanced Evolution, Wireworld Platinum Eclipse 7. Speaker: TARA Labs Omega Gold, Wireworld Platinum Eclipse 7, Terasonic Clarison Gold, Stealth Sakra & Indra. AC: Shunyata Research ZTron Anaconda & ZTron Alpha HC Analog.

Accessories Shunyata Research Hydra Triton & Typhon power conditioners (2 sets); Oyaide AC wall box & receptacles; ASC Tube Traps; RPG BAD, Skyline & Abffusor panels; Symposium Rollerblocks & Ultra platform; HRS Signature SXR, Finite Elemente Pagode stands; Audiodynia Cable Cooker; Furutech, Stein Audio demagnetizers; Furutech deStat; Loricraft PRC4 Deluxe, Audio Desk Systeme record-cleaning machines.—**Michael Fremer**

1 See www.stereophile.com/content/dan-dagostino-momentum-monoblock-power-amplifier.

measurements, continued

small amounts of 60, 120, 240, and 420Hz supply-related spurs, with the highest in level, at 120Hz, lying just above -110dB below 1V, or 0.0003%. However, there is also a spurious tone at 210Hz, also at -110dB, that is not related to the power-supply frequency.

With our usual definition of clipping as 1% THD+noise, the D'Agostino preamplifier clipped at a whopping 21V

into 100k ohms (fig.4). More significant, the distortion remained below the noise floor at levels below 2V, and was still just 0.007% at 4V, which will be about the highest level required to drive a typical power amplifier into clipping. With the Momentum driving the punishing 600 ohm load (fig.5), the clipping point dropped slightly, to 16V, but the distortion was still below the

noise floor below 1.5V.

I measured how the percentage of THD+N varied with frequency at 2V, where figs. 4 and 5 indicated that I would be measuring distortion rather than noise. Even so, the percentage was commendably constant with frequency (fig.6). However, the right channel (red and magenta traces) was not quite as linear as the left (blue, cyan); fig.7 reveals that while the highest-level harmonic in the left channel was the third, with almost no second harmonic visible (blue), the right channel (red) had more second harmonic present than third. Intermodulation distortion was very low, even into 600 ohms (fig.8), with the second-order difference product resulting from an equal mix of 19 and 20kHz tones lying below -90dB (0.003%).

Its measured performance confirms that the Momentum preamplifier lives up to Dan D'Agostino's reputation for heroic audio engineering.—**John Atkinson**

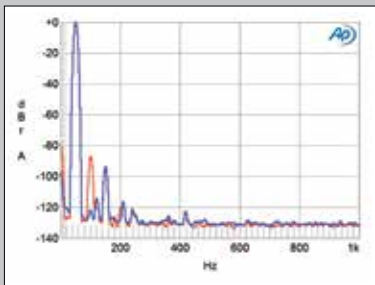


Fig.7 Dan D'Agostino Momentum, spectrum of 50Hz sine wave, DC-1kHz, at 2V into 100k ohms (left channel blue, right red; linear frequency scale).

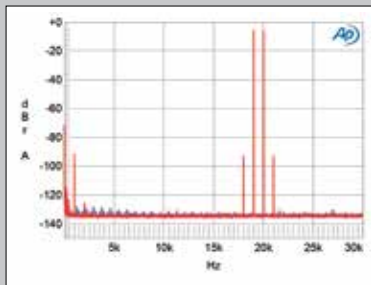


Fig.8 Dan D'Agostino Momentum, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 2V peak into 600 ohms (left channel blue, right red; linear frequency scale).

much nothing.” Because what I heard when I walked into that AXPONA room was a familiar sound. When we think we’re hearing “nothing” or “neutrality,” we’re kidding ourselves. Every audio system produces a distinctive “sound” of one sort or another. The great ones produce a sound that’s so coherent from top to bottom that it dissolves almost instantly beneath the music, and so *does* disappear. The more “distinctive” systems have a sonic signature that never submerges and remains an obvious coloration, though one some ears might appreciate.

Low-level signal processing presents greater challenges than do the higher levels found in amplifiers, but in the Momentum, Dan D’Agostino has produced a preamplifier that duplicates the Momentum amp’s delicacy, transparency, three-dimensionality, and especially its liquidity and freedom from grain without softening transients—all floating above the blackest backdrops. I’m becoming a believer in balanced operation.

Nor did it take a grizzled reviewer to hear this. My wife, who doesn’t spend much time in my listening room (“too crowded, makes me claustrophobic”), wandered in one evening and, without missing a beat, exclaimed, “Wow! That sound has just the right balance of liquidity and delicacy without sounding too soft.”

She nailed it. That’s precisely what the Momentum preamp managed. Yet despite being remarkably revealing of sonic differences among associated gear, especially cables, the Momentum preamp was not at *all* “analytical” or “hyper-detailed.” It seemed to neither miss anything in the sound nor add anything to it.

The front-end gear was connected with both Wireworld Platinum Eclipse 7 and TARA Labs Zero Evolution. The Platinum Eclipse is, as I previously wrote, the company’s best cable, but the new, finally flexible Zero Evolution takes the sound to another level of liquidity, transparency, and limitless high-frequency extension. If you’re going to buy a \$32,000 preamplifier, don’t skimp on cables! Or at least don’t skimp on the time required to try a few different brands.

Right now I’m listen to Joe Pass’s *Virtuoso #2*, a solo album on which the guitarist plays a hollow-body electric (LP, Pablo 231-788). It lays bare all of the Momentum preamp’s strong



The Momentum’s inputs and outputs are all balanced.

suits: an exquisitely three-dimensional image, all of the inviting warmth of Pass’s Gibson ES 175, yet with delicate string transients preserved, not sounding too soft or unnaturally edgy, but oh, so *liquid*.

And when I switched to something more grating, like Mobile Fidelity Sound Lab’s 1982 Beatles box, *The Beatles: The Collection*, where both highs and lows were foolishly boosted to produce a midrange trough, thus robbing whatever warmth was originally found on some of the recordings—and in, say, the White Album (*The Beatles*), there wasn’t much to begin with—the Momentum didn’t cover up or homogenize the problem.

Tone Controls?

Just in case you missed it, the Momentum has *tone controls*: Bass and Treble. You remember those from the old days, don’t you? Their range of adjustability is $\pm 6\text{dB}$, but the instruction manual doesn’t provide a plot of their active bandwidths. Nonetheless, I attempted to repair the damage MoFi had done to *The Beatles*. When I reduced the bass by -3dB and the treble by -4dB , up (relatively) came the midrange, restoring much of the better tonal balance found on the original release. The midrange was still a bit thin, but overall, it made the boxed set far more listenable and truer to the original.

Mostly, though, I listened without using the tone controls, so rich, lush, and perfectly aggressive and edgy—

when so required by the recording—was the sound of the D’Agostino Momentum. Analogue Productions’ vinyl reissues of RCA Living Stereo recordings, mastered directly from the three-track tapes by Ryan K. Smith, revealed just how remarkable was the Momentum’s sound—or the lack thereof.

I’ve been playing Fritz Reiner and the Chicago Symphony’s recordings of Prokofiev’s *Lieutenant Kijé* and Stravinsky’s *Song of the Nightingale* (LP, RCA Living Stereo/Analogue Productions LSC-2150) ever since I found a mint copy (11S/6S stampers) at a small Chicago record store during the 1987 summer CES. In the Prokofiev, the clarity of the distant opening trumpet, the delicacy of the triangle and celeste, the appropriate piercing quality of the finely rendered and perfectly focused piccolo, the brassy yet burnished horns, the reediness of the saxophone, and the snap of the snare, all announcing Kijé’s birth, had never been so well delineated, tonally, texturally, or spatially. Never had the rich Chicago strings ever sounded so gorgeously lush and liquid.

On my original pressing, the triangle sounds fuzzy, the tambourine covered in gauze. On the reissue, the top end is further extended than on the somewhat warm yet pleasing originals, but the reissue’s transients are utterly precise, delineating a level of inner detail that naturally makes

distinguishable instruments previously homogenized together. Dynamics are ridiculously greater on the reissue. In comparison, the timpani are mush on the original, yet the definition of the reissue's skin textures is far superior.

In short, the reissue sounded astonishing through the Momentum, though I have no doubt that, through lesser gear, complaints might be lodged about its "brightness" and "stridency." The point is, this reissue gets it all—if your system is up to it, you'll hear it. If your system has any etch, glare, grain, or edge, that, too, will be tacked on to the greatness—but don't blame the reissue.

Since 1987 I've picked up numerous mint copies of various desirable stampers of the original RCA, but as far as I'm concerned, the Analogue Productions reissue betters every original I've heard, in every way.

The soundtrack of the original *Tron* (1982), composed by Wendy Carlos and performed by her on synthesizer over a rich bed of orchestral and choral music, was scheduled to be issued in June by Audio Fidelity. I've played the test pressings, and this music has never sounded so spacious, particularly in terms of depth, or so texturally and

harmonically complete—not since I heard the original tapes in 1982 at Lion's Gate Studios, where the film was mixed. It was recorded in the Royal Albert Hall, and finally sounds it! Yes, as with the RCA reissues, it's the new mastering's doing, but the Momentum preamp didn't cover, limit, tack on, or diminish the huge sonic differences between the original LP, the 2001 CD reissue, and the new two-LP set—not in any way I could hear.

Despite consistently producing great sonic beauty, the Momentum also brutally revealed deficiencies in and additive colorations of source components.

Conclusions

The D'Agostino Momentum preamplifier ruthlessly revealed differences among gear, cables, and recordings, and consistently produced ear-pleasing liquidity and tonal and harmonic beauty. Ugly-sounding recordings sounded ugly. The great ones? Oh, my!

How has Dan D'Agostino done it? I can't answer the question in technical terms, and as I write this I haven't yet seen John Atkinson's measurements, but here's the recipe for what I heard: Take an ultraquiet backdrop. Then,

without making the sound too soft or too etchy, add just the right balance of liquidity and delicacy, to produce natural transient attacks, a generous, almost tube-like sustain, and take-your-breath-away decays that produce the sensation of floating on a cloud. Combine that with precise, three-dimensional imaging—particularly in terms of front-to-back-of-hall image delineation—expansive soundstaging, explosive dynamics, and exceptional transparency, and you have the Momentum's "sound."

Which begs the question: Does the Momentum let this sound through, or does it *create* this sound? I don't know—and after living with it for many months, I could not care less. But if you ignore cables, you do so at your sonic peril. Driving the sonically similar darTZeel NHB-458 monoblocks connected with TARA Labs Zero Gold speaker cables, and with TARA Zero Evolutions interconnects from the source components, my results have been everything and more than one should expect and demand from an audio system that costs more than what one paid 15 years ago for one's very nice home in a very nice 'burbs. ■