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■ EQUIPMENT REVIEW

March 2010

Esoteric AI-10 Integrated Amplifier-DAC



The Oxford English Dictionary defines *esoteric* as that which is "intended for or understood by only a small number of people with a specialized knowledge." *Hmmm, I thought: Could there be a more appropriate title for a high-end audio company?* The very name suggests exclusivity -- something out of reach or beyond the means of most.



Esoteric is to Japan-based TEAC as Lexus is to Toyota - *i.e.*, an upscale brand of a parent company -- and they have a broad range of products, including CD players, transports, DACs, preamps, power amps, even speakers. Often, Esoteric products are expensive, and most, if not all, of them are unique in one way or another. The subject of this review, the AI-10, is not simply an integrated amplifier. With an onboard analog-to-digital and digital-to-analog converters, as well as a master-clock sync generator for use with Esoteric's other digital products, the AI-10 occupies a product class all its own.

But unlike many Esoteric products, the AI-10 costs only \$5000 USD -- by high-end as well as Esoteric standards, a moderate price that puts its squarely in the company of other topflight integrated amplifiers, such as the [Stello Ai500](#) and the [Bryston B100 SST](#), both of which I've reviewed. When I received my review sample of the AI-10, I quickly hooked it up to hear what it could do.

Description

Weighing just under 32 pounds and measuring 17 3/8"W x 5 7/8"H x 15 1/16"D, the Esoteric AI-10 sits on three sturdy isolation feet and comes clad in a beautiful brushed-aluminum case. The top panel is an impressive 5mm thick, while the sides are only slightly thinner at 4mm. The small display, with blue text, looks very sharp, especially in a dark room, where the user can adjust the brightness or turn it off altogether. The front panel exudes simplicity and consists of just four buttons (Power, Setup, Word, Muting) and two rotary dials (Input, Volume).

The AI-10's amplifier section, an efficient switching design with a 205VA toroidal transformer in combination with MOSFET transistors, is said to produce 110Wpc into 8 ohms or 150Wpc into 4 ohms -- which, if true, is enough power for most speakers.

What distinguishes the AI-10 from other integrated amps is that it also serves as a master-clock sync generator. Master-clock sync allows the retiming of the DAC to the transport device of a compatible CD player (such as Esoteric's own SA-10 or UZ-1) capable of inputting a sync signal (word clock). The frequency of the word-sync signal comes factory-set at 100kHz, but can be changed by pressing the Word button on the front panel (or on the remote control) to 44.1, 48, 88.2, 96, 176.4, or 192kHz. Once the CD player's clock is synchronized with the AI-10's master clock, Esoteric claims, improvements can be heard in soundstaging, transparency, and imaging. Unfortunately, I didn't have a compatible CD player that could input a word clock, and therefore wasn't able to take advantage of this feature.

On the AI-10's rear panel are one optical and one coaxial digital input for a DAC section that accepts resolutions of up to 24-bit/192kHz. This takes the incoming PCM digital bitstream and generates pulse-width modulation (PWM) signals using a Texas Instruments TAS5076 chip. These signals are used to directly drive the power-amplifier stage. Therefore, the AI-10 can drive speakers from a CD transport without the use of an external DAC. In addition, the AI-10 converts *all*

incoming analog signals to digital before they reach the amplification stage. This is done by an AKM 5385B, a 24-bit/192kHz, two-channel A/D converter chip. Once signal conversion is complete, it undergoes the same PWM processing described above.

These unique features had me concerned about the net effect on the sound of all this processing. I'd never encountered these features before, so I contacted the folks at Esoteric to find out why they'd used this approach. It turns out there were several reasons. One is that, during the process of generating the PWM signal, fluctuations in the power supply will not influence the power-amplification stage. Furthermore, this circuitry doesn't introduce noisy feedback, while allowing Esoteric to make use of its clock technology. Finally, the engineers had already learned a great deal about PWM while developing their AZ-1 integrated. They found they could achieve excellent sonic results using PWM processors and amplifiers, which prompted them to use it in the AI-10. They employed hand-selected components and left the final tuning of the sound to Esoteric's president, Motoaki Ohmachi.

Also on the rear panel are one pair of balanced XLR inputs and three pairs of line-level RCA inputs. The last RCA input can be switched between two settings: Line makes it a standard line-level input, while Line/Phono turns on the phono stage, which supports moving-magnet or high-output moving-coil cartridges. After passing through an analog phono equalizer, the signal undergoes the same A/D conversion as all other analog inputs before sending the PCM signal on to the PWM architecture. It seems that more and more companies are including phono stages in their integrated amplifiers; as a vinyl enthusiast, I welcome this trend.

The Setup button on the front panel allows the user to perform several functions. One is to match the gains of all line-level inputs so that the outputs of all connected components are at about the same volume. This is particularly useful when trying to evaluate different components. Setup also allows the user to change the name of the inputs shown on the display, as well as to skip those inputs not in use. For example, if a CD player is connected to Line 2, the input can be programmed to read "CD" rather than "Line 2." Not only does this customize the AI-10 based on the listener's system, the ability to remove unused inputs makes it faster to scroll through the list of connected components.

Another nice feature of the AI-10 is something called S-VOL, for "Starting Volume." This allows the user to preset a volume to which the unit will automatically return every time it's powered up. Most of us have at one time or another received a good scare when we turn on our stereo, after having forgotten to turn down the volume at the end of the last listening session. Of course, if jumping out of your skin isn't a concern, S-VOL can be turned off; in that case, the AI-10 automatically returns to the last volume set.

On the rear is a small panel labeled "Reserve." This can be removed when an optional hardware upgrade, i.Link, is installed. The i.Link terminal is an interface that sends digital audio from CDs, DVDs, and SACDs between the AI-10 and the connected external device, allowing multiple external devices to be connected in a daisy chain. For example, three AI-10s can be connected to a single i.Link-equipped SACD player to produce surround sound from six channels.

The AI-10's full-function remote control can also be used to operate an Esoteric CD or DVD player. Not only is the remote backlit for use in poor light, its backside is wrapped in leather -- it won't scratch any surface on which it's set. The AI-10's speaker terminals, manufactured by WBT, accept spades, banana plugs, or bare wire.

Clearly, the people at Esoteric haven't sacrificed convenience in designing the AI-10. This product is well thought out, and unique in its category. All that remained was to listen to it.



System and sound

An NAD C542 CD player was connected to the AI-10 using Kimber Kable Tonik interconnects. A Thorens TD-160HD turntable with modified Rega RB250 tonearm, on which was mounted a Dynavector DV10x5 high-output moving-coil cartridge, performed analog duties. This communicated with the Esoteric via AMX Optimum RCA interconnects. PSB

Platinum M2 speakers comprised the last link of this audio chain. All electronics were plugged into an ExactPower EP15A power conditioner/regenerator.

As a writer for the SoundStage! Network, I've reviewed a fair number of integrated amplifiers. While some have performed extremely well, only a few have been able to raise the bar a little higher. What set those components apart was their level of refinement, mostly owing to the fact that they had little sound of their own. Combined with their ability to sound effortless and bring a genuine sense of ease to the music, these integrated amps epitomize "high-end" sound. It was in this category that the AI-10 found itself.

First, like the Stello Ai500 I recently reviewed, Esoteric's AI-10 was pretty much dead quiet in use. Basically, this means that it had an uncanny ability to retrieve low-level details from good recordings. Not only did this let me hear deep into recordings, it also tended to capture performances in a way that made them seem more pure, and closer to the original.

This was particularly true when I listened to "Be Your Husband," sung a cappella by the late Jeff Buckley on his marvelous *Live at Sin-é* (CD, Columbia/Legacy C2K 89202). Through the AI-10, the small acoustic space of this New York City coffeehouse was captured with near-startling realism -- I could hear the quiet chatter of the audience and the clinking of glasses with astonishing clarity. I never heard Buckley perform during his lifetime, but *Live at Sin-é* gives an amazing glimpse of what it must have been like to have been present when these performances were recorded. With an ultraclean integrated such as the Esoteric, it wasn't difficult to imagine myself sitting in that audience.

In his upper registers, Buckley sounded open and clear, the AI-10 readily exposing his slightest shifts in tone. The midrange was delivered with power and lucidity, as Buckley projected the amazing confidence and certainty of an artist honing his craft. The AI-10 sailed through each song with ease, stepping out of the way without adding to the music its own sonic imprint. There was no coloration at all in its sound, not even a subtle shading. So long as the source material was well recorded to begin with, the AI-10 allowed that quality to be heard.

Then I cued up Neil Young's *Live at Massey Hall 1971* (CD, Reprise CDW 43327). The Esoteric's incredible transparency continued to clearly reveal cues about the recording venue, much as it had with *Live at Sin-é*. However, unlike the intimate coffeehouse in which Jeff Buckley had performed, Young had given his concert in Toronto's Massey Hall, a much larger space. This was evident from the sounds of coughing, laughter, and applause that came from an audience clearly sitting farther away from Young than Buckley's audience had been from him. Still, it was possible to imagine sitting on stage with Young and looking out into the crowd. His acoustic guitar and piano sounded as natural as I've ever heard them, the strings resonating with crispness and purity against a black background. I could almost hear a pin drop on the stage.

My listening sessions with the AI-10 took place during the Christmas season, and I found myself putting on some festive favorites. Among these was Loreena McKennitt's *To Drive the Cold Winter Away* (CD, Quinlan Road QRCD102). The desolation evoked by "Snow" is due in part to the fact that McKennitt sings the piece in the large, empty space of Glenstal Abbey, in Ireland -- a perfect aural metaphor for the mood evoked by the lyrics, a 19th-century poem by Archibald Lampman. The Esoteric's exceptional ability to capture Glenstal Abbey's ambience was second to none, and a major reason I prefer this version of "Snow" to the one on McKennitt's more recent *A Midwinter Night's Dream* (CD, Quinlan Road QRCD112). That 2008 release was recorded in a studio; despite the reverb added to this version of "Snow," it doesn't come close to equaling the expansiveness of the earlier one.

However, *A Midwinter Night's Dream* is still very well recorded, a fact that was immediately evident through the Esoteric. The AI-10 was able to create a tangible, uncluttered, three-dimensional soundstage across which the musicians were placed with sharp outlines and a good sense of space around them. Percussion was taut and quick, while the sounds of the assorted stringed instruments were equally fast and precise, conveying wonderful transient snap and speed.

Though I would never describe the AI-10 as analytical, it definitely wasn't warm or euphonic. Highs were extended and quick, while the midrange was detailed, open, and clear. Although its sound was full and pleasing, it also had complete control at the frequency extremes, where its poise and precision were extremely evident.

The AI-10 could easily fill my room with controlled and articulate low frequencies, but never added warmth or weight. This made it sound a touch drier than integrated amplifiers that don't exercise its degree of control down low, and first became apparent when I listened to "Suntoucher," from Groove Armada's *Goodbye Country (Hello Nightclub)* (CD, Zomba 9230492). The bass on this track is incredibly deep; while the AI-10 was more than up to the task of playing deep (at least within the limits of my bookshelf speakers), it didn't sound too weighty or fat. Much like its performance higher in the audioband, the AI-10 was clean as a whistle down low. If you want your room filled with rich, warm bass, this Esoteric probably won't be to your liking. However, if you value controlled bass that isn't exaggerated, and displays the discipline of a Zen monk, you need to hear the AI-10. It consistently impressed me with its speed and tightness, and it had no trouble getting my foot tapping as I was swept up in the

The AI-10's Phono Stage

The Esoteric AI-10 comes equipped with a built-in phono stage compatible with moving-magnet or high-output moving-coil cartridges. As my turntable is equipped with a Dynavector 10X5 high-output MC, I spent considerable time enjoying this feature.

Perhaps unsurprisingly, the AI-10's phono stage had much in common with the sonic character of the rest of the component. By this I mean that it was very quiet (at least within

rhythm of the music.

AI-10 vs. B100 SST

I compared the Esoteric AI-10 with my reference integrated amplifier, Bryston's B100 SST (\$2995). Although the B100 is less expensive in its base configuration than the AI-10, the addition of optional onboard D/A conversion, MM phono stage, and remote control brings the Bryston's total cost to \$4795, making it an almost direct competitor for the AI-10 (\$5000).

Both integrateds are full-featured, with numerous input options, onboard digital conversion, phono stages, and remote control. However, the Esoteric pulls ahead with its inclusion of a master-clock sync generator, i.Link hardware, S-VOL, and its ability to let the user individually set and cancel each input's gain. In terms of rated power, it was almost a toss up (Bryston rates the B100 at 100Wpc into 8 ohms or 180Wpc into 4 ohms), and was never an issue at the volumes at which I listen to music. One isn't likely to be chosen over the other on the sole basis of their power outputs.

As I listened to various discs and switched between these two components, I became more certain of something I mentioned above: that about \$5000 is a point of diminishing returns for an integrated amplifier. Spending more mostly buys a sound that's different, not one that's inherently superior.

That's what I heard while comparing the AI-10 and B100. Both performed at such a high level that I found it impossible to say that one was clearly better. Rather, as is so often the case in subjective evaluations, the better of these two integrateds will be that which more closely satisfies the listener's sonic preferences. Playing "Going Nowhere," from Elliott Smith's *New Moon* (CD, Kill Rock Stars KRS455), both the Esoteric and Bryston sounded exceptionally clean and transparent, both placing Smith's voice front and center, as if he were sitting in my room. In terms of his voice, I could hear very little difference between the amps. Listening more closely to the sound of Smith's *guitar*, however, I'd give the slight edge to the Esoteric, which was able to reproduce the subtlest details as Smith fingerpicked the tune, sliding his hand up and down the frets. Again, it was like being in the room with him as he played. It wasn't that the B100 wasn't detailed, but that the AI-10's ultra-tidy sound helped me be more aware of such details.

"Going Nowhere" also helped me discern differences in the two integrateds' bass reproduction. Through the AI-10, the acoustic bass had ample weight and extension; with the B100, the instrument sounded fuller and weightier in my room. I also noticed this with Groove Armada's "Suntoucher": the Bryston was simply more powerful down low, making the Esoteric sound leaner by comparison.

Conclusion

Until the Stello Ai500 arrived for review, it had been some time since I'd heard an integrated amplifier that I enjoyed as much as my own reference, the Bryston B100 SST. With the arrival of the Esoteric AI-10, I've found another. The AI-10 came up in the reviewing queue almost immediately after I'd sent back the Ai500, so it seems the old adage is true: when it rains, it pours. Luckily for me, getting rained on means being saturated with wonderful sound. That's a shower I don't mind taking.

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the limits of analog playback) and sounded incredibly clear. Music emerged from as black a background as I've heard from my turntable, allowing low-level information and subtle musical details to surface. With particularly quiet-sounding LPs such as the Beastie Boys' *Ill Communication* (LP, Capitol 94232 1), the casual listener could be forgiven for thinking that he or she was listening to a CD. The bass on this record was fast and tight, with characteristic analog warmth but without the bloat or fuzziness of less poised integrateds. It still amazes me how intoxicating vinyl can be; after listening to some LPs through the AI-10, I was feeling pretty good.

I moved on to Portishead's *Third* (LP, Island/Universal LC 00407). The AI-10's phono stage did a superb job of conveying the immense, sometimes haunting feeling of space in which Beth Gibbons finds herself singing these trip-pop tunes. The music expanded from wall to wall of my room, extending well beyond the boundaries of the speakers and shrouding me in the dark murk that characterizes Portishead's sound. Through the AI-10 the music flowed effortlessly, immersing me even more as I enthusiastically turned up the volume.

If you own a turntable and want to get the most from your LPs, the Esoteric makes a good argument for itself with a very-high-quality phono stage that's part of the basic package. If you've got a compatible cartridge, this could be the factor that tips the scales in favor of your owning an AI-10.

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Esoteric AI-10 Integrated Amplifier-DAC
Price: \$5000 USD.
Warranty: Three years parts and labor with warranty-card return (two years without).

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