

**Ryan Coleman finds definition of digital audio in  
the EMM Labs CDSA CD/SACD player**



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**Specifications:**

**Supported disc formats:** Redbook CD, stereo SACD, MP3

**Digital output:** AES/EBU

**Analog outputs:** XLR (100Ω impedance), RCA (50Ω impedance)

**Selectable outputs:** LOW (XLR=4V, RCA=2V), HIGH (XLR=7.2V, RCA=3.6V)

[Note: XLR outputs are balanced with pin 2 hot (+), pin 3 cold (-) and pin 1 ground]

**Upsampling:** proprietary MDAT to 5.6MHz

**Power consumption:** 60W max.

**Dimensions:** 17W x 16D x 5.5H (inch)

**Weight:** 26.5lb

**INTRO**

Though I have no formal degree in the matter, I fashion myself as an economist. Knowledge of trade, monetary / fiscal policy, productivity and employment all factor into my day job. While current events are of material and immediate concern, sometimes I like to ponder the big picture in the evolution of economies.

My area of greatest interest is the US of A. Merely fifty years ago, the US was a country that, from an economic perspective, was an industrial powerhouse, manufacturing all types of goods and materials. The steel industry, home electronics, textiles, ceramics, and a myriad other categories of items which previously dominated our domestic economy have, at this time, altogether evaporated from our nation's output. The USA is an importer of these goods, having since outsourced production of them to nations that offer lower costs in exchange for the intellectual capital that the USA developed and exports to less advanced economies. A great example of this is Apple; they design the iPod and iPhone in California, and then outsource its production to Southeast Asia. This is the evolution that all open economies will undergo, coming to rely on R&D, engineering acumen, and

design superiority in lieu of low value-added manufacturing. So, for mature capitalist economies, its out with the brawn, and in with the brain.

So what has this to do with audio? Plenty, dear reader, plenty. In audio, for years upon years we aficionados have implicitly equated weight with quality, and brawn as a precursor to performance. And though speakers have a good reason for holding true to this formula (weight = non-resonance = improved staging, detail and dynamics), electronics are slowly slaying this sacred cow of brawn-based performance. Digital amplifiers, weighing in at a fraction of their solid-state contemporaries, are quickly gaining acceptance in the marketplace as performance improves by leaps and bounds. Manufacturers of digital equipment are finding advanced chipsets and decoding algorithms as the determining factors behind performance, exceeding the influence made by ½" thick chassis, monstrous power supplies, and split-function multi-box affairs littering one's equipment rack.

EMM Labs, hardly a newcomer to the digital world, is obviously a company built on the 'brains over brawn' paradigm (ironic to my introductory paragraph, EMM Labs is a Canadian company). Their flagship one-box player, the CDSA, was sent to me after a few months of scheduling difficulties. After such a wait, it likely pains them not that they'll not be seeing this particular unit again.

## **BACKGROUND & TECHNICAL INFO**

If you're about to invest \$10 large into an audio product, it behooves you to research the company behind the product. After all, you wouldn't buy a car if you thought the company might go belly up and leave you stranded for spare parts & service. EMM Labs has a pedigree that rivals Wilson, Krell and other high-end heavyweights, having been in business making state-of-the-art digital processors and players since 1998. The man behind the company, Ed Meitner, has been doing so considerably longer. Turns out Ed Meitner is so well regarded in industry circles, that heavyweights like Sony & Philips turned to him for assistance in getting SACD off the drawing board and into action. EMM Labs equipment is used almost exclusively in the digital mastering of SACD's, and the list of studios and musicians who use EMM Labs products is thoroughly impressive; as they say, you cannot buy publicity like that.

Indeed, it's probably best to consider EMM Labs a company oriented to professional / studio users that just happens to build a few products for the audiophile community.

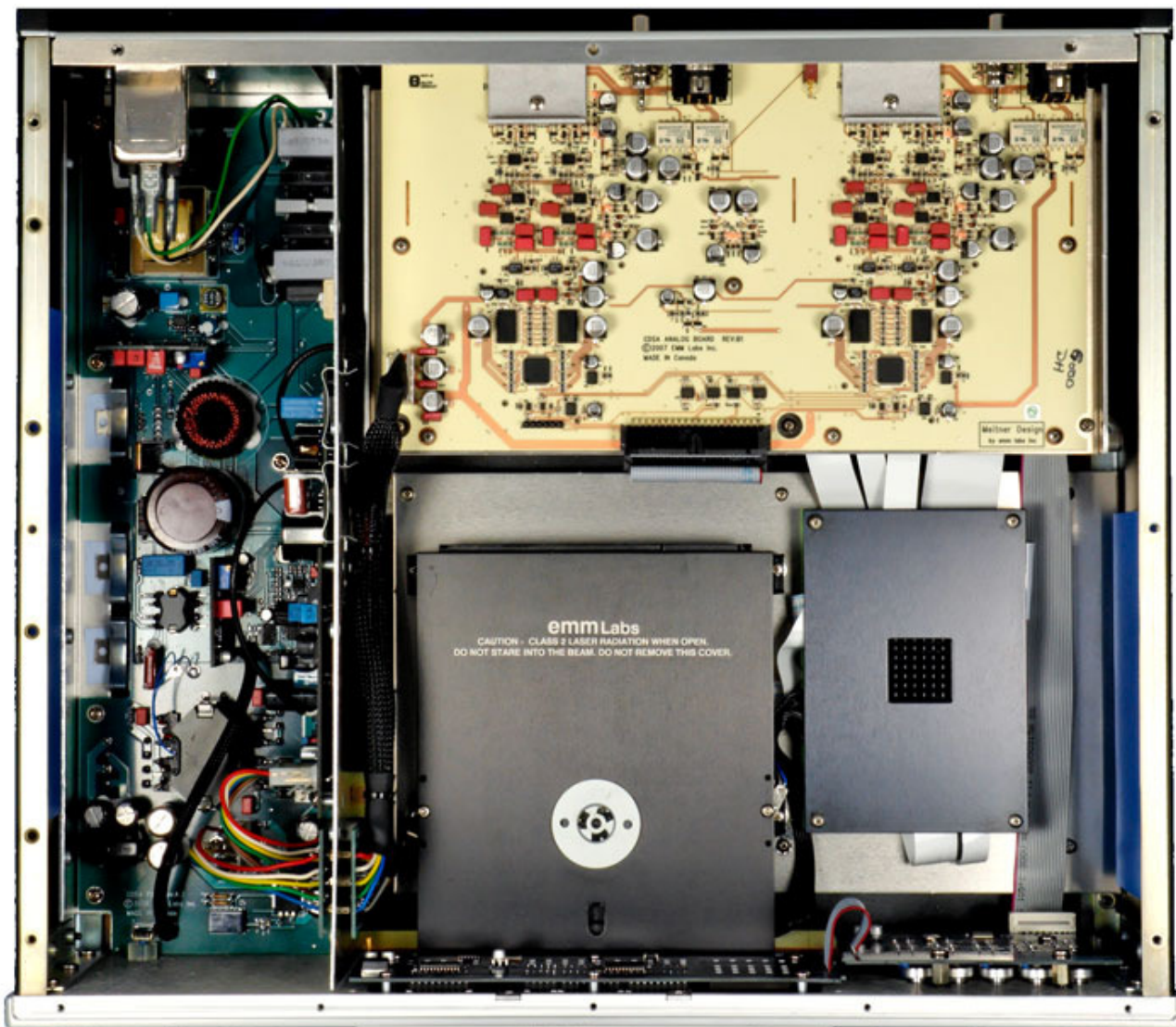
So what is it that makes EMM Labs stuff so special and well regarded? It's the intellectual capital: the decoding algorithms, named aptly the Meitner Digital Audio Translator (MDAT). The CDSA decodes Redbook CD's at twice the rate of SACD's, upsampling 44.1kHz to 5.6448MHz. But evidently it's more than that. To quote from the EMM Labs website:

*Rather than address the digital signal as a series of sine waves—as is standard convention—the MDAT-equipped CDSA SE processes (and upsamples CD audio to DSD for conversion to analog) by dynamically adapting to the transient nature of the musical signal. In this way, the CDSA SE is utterly unique and singularly able to preserve the phase, frequency and dynamic integrity of the original signal.*

Now, I'm a bright guy and I stay at a Holiday Inn Express some nights, but I'll be damned if I know what that upsampling or MDAT is going to do by looking over the specs, as opposed to a power amplifier, where if one examines the power supply, one can quickly ascertain how its going to behave. Listening will have to suffice (as if measurements could ever?!?).

To push the envelope even further, the CDSA employs discrete dual differential DAC's, using EMM Labs proprietary conversion circuitry. The circuit boards are a composite laminate with uber-smooth copper traces, and purer signal paths leads to purer sound, as I've always found with interconnects. The chassis (which I'll touch on below) is very stiff and resistant to flexing or vibration, and the inside

of the player looks more at home in the semiconductor labs of Intel than anything I've encountered in a high-end component.



## FIRST IMPRESSIONS

Though well packed in double boxes, I was initially struck by how light the shipping container felt. Those impressions were only furthered as box after box was stripped away, and I was left staring at the CDSA. The unit cannot go much more than 15 pounds (*26.5lb per EMM Labs. –Ed*), and its exterior is uneventful, consisting of a simple brushed aluminum face with a black body. While the buttons on the faceplate that operate the unit are small and non-descript, they contrast starkly with the size 50 font, ostentatious 1960s-Star-Trek-era digital display of track and time information (the display can be turned off, thankfully). On the back, in addition to the typical RCA and XLR outputs, the unit offered digital outputs (alas, no digital inputs), as well as a voltage output controller, so that one doesn't overdrive their preamp. Preamps sound best attenuating the signal as little as possible, so reducing the voltage output usually allows one to crank the volume knob a bit more. Good thinking EMM!

The transport itself is as thin as I've ever encountered. Coming off using the Esoteric XO-1 D2 and having the Wadia 861SE on hand, I must say I found it out of place in a mega-player. The draw seemed more befitting of a \$1k Sony than a \$10k uber-player. To give you an idea of usability, my dear darling wife is a clumsy sort who spills when pouring out of the milk carton; whereas I'd have no reservation of her dropping a disc into the XO-1 D2, I would never ask her to put one into the EMM, for fear it could easily go in cockeyed. The drawer is not sculpted metal or aluminum, but looks to be a simply plastic, and hardly awe-inspiring. Now, the flip side to this is that the transport mechanism is an off-the-shelf version from Philips, meaning that if service is required, it's not some proprietary

mechanism that cannot be serviced. Case in point: Accuphase doesn't have enough replacement parts for its DP-75V.

That said, I'm terribly spoiled by the Herculean build quality of the Teac VRDS transport used in the XO-1 and 861SE, and would've loved to see it in the EMM, if only for my piece of mind. Any differences I cite in the following "Comparison" section of this review could very well be a function of the transport used, but it's truly impossible to know for sure given so many other variables. I brought this matter to the attention of EMM Labs, and while they acknowledged the resultant loss of ergonomics and aesthetics when compared to a metal tray / VRDS-version, they maintained that the sonic benefits of the metal transports do not justify the cost. The final performance is all in the software / algorithms; their position, as alluded to in my introduction, is that it's the brains and not the brawns that matter with digital audio reproduction.

The remote control is quite intuitive and plain Jane; it takes a few seconds for the unit to execute the command, a minor annoyance one easily gets accustomed to (note: the remote has a phase switch--hip hip hooray!). What was curious was that when a button on the remote is pressed, the entire remote light up glowing stark blue, reminding me as if I were holding a light-saber about to do battle with Darth Vader. For such a simple command as pressing a button, the remote acts like you're doing something special.

Which, when you get right down to it, it is.

## LISTENING IMPRESSIONS

I don't normally publish impressions of a component that has no burn-in, as I find burn-in to be a valid and, in some cases, significant influence on the performance. But I was immediately struck by the incredible resolving capabilities of the CDSA. Quite simply, I was (get your cliché's ready) hearing a familiar piece of music for the first time, and immediately knew I had just hooked up a very special player in the EMM Labs.

One of my favorite CDs, Flotation Toy Warning's *Bluffers Guide from the Flight Deck*, is so horribly mastered that I will never use it in my duties as a reviewer, but I love the music, so it gets frequent playtime in my rig. So, thinking that 1<sup>st</sup> day wasn't for serious evaluations, I threw in Flotation Toy Warning's disc and, for the first time, heard a soundstage on the playback. Granted, it still wasn't a well-defined stage ala Jack Johnson's releases, but it was far better than I ever heard before, thinking that the stage on this CD was never to improve beyond a jumbled puzzle. Further, I was picking up low-level details that were deeply buried in the mix (as this CD has myriad overdubs), giving an indication of the remarkable resolving capabilities of the CDSA.

The second CD, the Beatles' *Love*, was also interesting, but for anecdotal reasons. My wife, dear as she is, seldom demonstrates any interest in my audiophile pursuits, forced to listen to my stereo from another room. But while *Love* was spinning, she came into the room in a half-dance, saying, "Be sure to bring this CD on holiday with us." When I asked her why she was now demonstrating interest in this music, she replied simply, "Something sounds much better." She didn't know it, but she was talking about the CDSA.

Another watershed moment came once I got back from vacation; I had thrown in the poorly-recorded disc *I Am Not Afraid of You and I Will Beat Your Ass* by Yo La Tengo, and was two rooms away, taking a leak. And I noticed that two rooms away, it sounded *good*. I was hearing two separate horn lines on the track "Mr. Tough" for the first time. And this was from two rooms away! Ever hear the old adage that one should listen to their system from another room to tell if it's realistic? It's absolutely true, and the EMM CDSA made my system far truer to the music, two rooms away, than I had ever heard it.



And I think that this is the first conclusion I drew from the CDSA: I've never encountered a player that did more with less. As in, the EMM CDSA delivered more musical satisfaction from less-than-ideal recordings, which most Redbook CD's are. The EMM CDSA is without question the most resolving player I've heard, but it doesn't do so with any tonal anomalies or tricks (more on this later in my comparison to a discontinued Wadia 861SE). It simply oozes out music in an organic, natural and completely seductive manner, unforced yet startlingly clear in all its glory. Some players might sound musical because of tube warmth or via a deliberate voicing to de-emphasize the treble, which is where digital playback fails miserably compared to analog. The EMM CDSA doesn't need to do this. This combination of resolution with the sweetest, most natural treble I've come across makes the CDSA the most musical and non-digital of CD players I've encountered; it's more analog-like than any digital player I've heard---strong words indeed. Vinylphiles will gravitate to the EMM for this reason, and likely never break away from it.

Additionally, the CDSA delivers a stage when one normally cannot be found, but when one is properly recorded on the disc (Low "Time is the Diamond" off of "Trust"), it delivers the most holographic and well-carved out soundstage that I've ever heard off of digital playback. Depth and body that I thought my room couldn't deliver still were foreshortened, but to my surprise, I was *finally* getting depth! Jack Johnson's releases are invariably well recorded, and the CDSA would deliver his three-man band with properly sized images, each having its own sense of space and body around the performer, giving me the ability to hear in front, around, and behind the performer. Only the best recordings provide this effect, but it takes world class electronics to bring it home, and the CDSA did it better than anything that's come before it.

Digital playback typically has little or no trouble with maintaining the pace, rhythm and timing (PRAT) of music. In fact, it is very seldom that one comes across a component that does muck it up; if a component does, it's usually a tube piece with an undersized power supply. The CDSA has no problem keeping pace, and as it is eminently musical, it is very easy to get lost in the performance. However, dynamics, close cousin to PRAT, are a tougher nut to crack with the CDSA.

At first, I thought that the CDSA didn't have the attack and leading edge that music has (as heard on horn lines when listening to James Brown's "Soul Power" or acoustic guitar on The Ditty Bops "Moon over the Freeway"). But listening carefully and making the appropriate comparisons, I found that it's the CDSA that best recreates the sound of the recorded instrument. The reason I had trouble deciphering this effect is because of the false etch, the 'digititis,' that most every other CD player imparts to the leading edge of transients. The CDSA does away with this etch, leaving the edge but without the distortion, which some mistaken listeners will opine is a subdued transient---but careful listening proves otherwise. To offer an analogy, the effect of the CDSA vs. other players reminds me of the effect of a good power conditioner; initially, one would think the leading edge and top-end are subdued, but then one realizes that the conditioner simply removed noise from the signal.

I've already touched on the treble as being sweet, organic, and musical, but if I had to fault the sonics of the CDSA, it'd be at the other frequency extreme. The deep bass is a bit shortened and the

musical foundation (which rests upon visceral bass), while not absent, is a bit subdued. I've been spoiled with a number of players that deliver this foundation (Wadia, Modwright, Esoteric), and the EMM CDSA doesn't have the depth of these players, but I will say that it is still highly satisfying in this area, as what it delivers does have plenty of impact, depth and articulation. Is this shortcoming the sonic effect of a lesser transport compared to the Wadia and Esoteric? Or is it the build quality? Or, the power supply?

Really, it could be any of these things, but I'd bet dollars to donuts that it's the power supply, and here's why: As it used a Sony platform, the Modwright player was limited to Sony build quality and a flimsy Sony transport, but it delivered this 'foundation' more so than the EMM, and I'd reason that it's because of the substantial outboard power supply that Modwright employed. Also, while I'm not inclined to take a manufacturer's statements unquestioningly, the statements of EMM Labs on the sonic impact of the transport earlier in this review are entirely consistent with what I found when comparing the CDSA vs. the Modwright, the Wadia, and the Esoteric; the EMM was easily the most resolving, despite the fact that it employed a lesser transport mechanism when compared to the Wadia or Esoteric, again lending credibility to the argument that it's the software that matters, and that the build quality of the transport is just for ergonomics. All this is brought to light for your education, dear reader, but not because the EMM was unsatisfying in this region. It certainly could rattle the walls and provide plenty of slam, but it's not a 'headbanger' type player the way the Wadia and Esoteric are.

Indeed, over long-term listening, I found the EMM CDSA to be, without question, the most musically satisfying CD player I've ever come across. If you have a system that doesn't invite long listening sessions, or if you're completely off-put by digital playback, the EMM CDSA is the panacea for what afflicts you.

## COMPARISONS

### EMM CDSA vs. Wadia 861SE



I had recently purchased Wadia's previous-generation 861SE CD player for experimentation and as a reference for my reviewing purposes. The Wadia possessed incredible, tank-like build quality and was a total joy to use from an ergonomic and functional standpoint; while digital inputs proved ahead of its time (but thoroughly welcome), their much touted digital volume control is decidedly improved upon with my Einstein "The Tube" preamp. Once I gave it proper accessories (footers, cables), I was able to remove most of the digital glare and clinical coldness that the player possesses when relying on its stock feet and power cord. However, in comparison to the EMM, the Wadia still exhibited a prominent whitish etch, a coldness of tone that is Exhibit "A" for all those vinylphiles who hate digital.

The EMM had a purity of tone, an organic quality that invited long term listening. Listening to various reference tracks of mine (Tom Waits "Cold Water," Ween "Mollusk"), I found the Wadia presented the

performers in a relatively less three-dimensional manner compared to the EMM, which had far greater image depth, body and space around the performers, displaying each musician as a living event in the context of the performance. Now, the Wadia did have a few advantages over the EMM.

The Wadia had better bass depth and articulation, giving the music a firmer foundation (the same foundation I found so beguiling with the XO-1 D2). Dynamics initially *seemed* better with the Wadia, with a leading edge that was more pronounced and startling. However, careful listening led me to the conclusion that what the Wadia was presenting was a digital artifact, an etch that one could easily mistake for leading edge (the same way that some people think power conditioners remove the leading edge when in fact the conditioner is simply removing noise from the AC). The EMM never displayed the slightest hint of etch or 'digitits', but still conveyed so much of the dynamic envelope that is required to bring music to life in the home environment. Finally, the EMM CDSA distinguished itself as the clear winner in resolving details and extracting every last bit off the disc (which makes me wonder just how necessary the VRDS transport really is?).

The discontinued Wadia 861SE was and still is an excellent player, but even with every possible advantage I could afford it (AC, footers, interconnects), it was outclassed by the stock EMM CDSA.

## EMM CDSA vs. Esoteric XO-1 D2



This is the shootout that needed to happen. One could easily argue (as I would) that these two players stand out at the top of the heap in digital playback today, and anyone considering one of the players should definitely audition both. And I don't mean to sound like I'm hedging on preferences or "which is better," which is just a nonsensical question in a subjective evaluation of two highly competent audio components. It'd be like asking "which color is better." It depends on your opinion, and on what you value; do you like the cool, soothing peacefulness of 'blue', or do you gravitate to the vibrancy, action and heat of 'red?' So let me elaborate a bit using an analogy that audiophiles should be able to relate to: the EMM player is probably the single-ended triode of CD playback, whereas the XO-1 D2 could be the solid-state amp. Which is better depends on how you like your music.

Comparatively speaking, the XO-1 D2 just plain trounces the EMM when it comes to build-quality and ergonomics. Nothing, absolutely nothing, is built like an Esoteric player, and one never questions whether you're getting value for your money. Beyond that, it becomes far more tit-for-tat. The EMM has better resolving power for getting every last bit of information off the disc, throws a more holographic soundstage, and has a more natural tone and harmonic envelope on complex instruments like pianos and female vocals. The XO-1, however, does better than the EMM when it comes to leading edge, but unlike the Wadia, the XO-1 doesn't possess the etch that might manifest itself as the leading edge. With the XO-1 D2, it's the correct leading edge, and even more correct than the CDSA; why this is the case I can only assume is because of the power supply advantages of the XO-1. Also the XO-1 has deeper, more articulate bass, creating that musical foundation that gives music the visceral quality that it has in a live setting.

On the whole, the XO-1 beats the EMM at the frequency extremes, and its slightly sharper leading edge and PRAT make it a player more suited for rock & roll than the EMM.

The differences between the two players are not that great. And like I said, the EMM is probably like a SET amp to the XO-1's solid-state brute amp. So, what kind of amp do you like? The irony is that for system building, if you own one type of amp, you'd probably be better off buying the digital player that is the opposite of your amp typology. If you own a SET, you'd probably get a more realistic and balanced system if you used the XO-1 (with its better frequency extremes making up for some SET's shortcomings); if you own a solid-state amplifier, you'd likely be better off with the EMM (as its incredible staging, resolution and organic tone would help address the shortcomings associated with a solid-state amp). Now, I can easily envision people going with the same CD-amp combos (EMM with SET), as it would provide an immensely musical system, displaying all the traits that you chose the amp for in the first place, but those traits would be even more pronounced than before. That's not to say it's more right, it's just more right *for you*. (For what its worth, the shortcomings of each player can be significantly reduced with proper accessories: e.g. using warm-sounding feet with the XO-1, or networked interconnects with the EMM).

There is no "better" between these two players (unless we're talking about build quality, which favors the XO1, or affordability, which makes the EMM \$6,000 more affordable). Auditioning is highly recommended. But by the same token, you simply cannot go wrong with either. You simply might be a bit happier with the other, but you'll never miss what you never heard.

## CONCLUSION

I don't want to gush, so let me start by what I *don't* like. The ergonomics of the EMM Labs CDSA are not befitting a \$10k player, and the transport is not at all inviting for audiophiles who are 'all-thumbs.' Indeed, I could well imagine some readers not buying the EMM CDSA because they're worried they might damage it while loading discs. Also, the user interface is hardly ideal: press a button on the remote and wait a few seconds. That digital display? Egads, Scotty, beam me up! Thankfully it can be turned off. Furthermore, I would love to chain my SlimDevices Squeezebox to the CDSA, but the lack of digital inputs on the CDSA make that impossible, a fact I find most objectionable in this day & age. As for sonic playback, the bass depth and impact leave a bit to be desired to take the unit to 'state-of-the-art' levels (as defined by the Esoteric XO-1 D2).

And it's appropriate that we consider what 'state-of-the-art' is. Here and now, the EMM Labs CDSA, with emphasis on its sonic performance, is the state-of-the-art in digital playback (as is the Esoteric XO-1 D2). I don't know if it's the DAC circuitry, or the MDAT, or the upsampling, but I've not encountered a player that does more with the flawed medium of Redbook CD's. It makes poorly recorded discs musical, and it makes well recorded discs sound more musical than you've ever heard them. For those audiophiles who will never go back to the inconvenience or demands of vinyl but respect and love what that medium delivers, the EMM is as close as you can get via digital software.

The EMM Labs CDSA, light on brawn but heavy on brains, will be making its residence on my listening rack for the foreseeable future, as I bought the review sample. I know of no higher recommendation than parting with my hard-earned money. And if you have the resources at your disposal, you owe it to yourself to audition this unit.

Digital never had it so good.