

# SA Equipment

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## EMM Labs CDSA SE Stereo SACD Player

The gold standard!

Review By Phil Gold

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I'm going to say upfront that this machine is capable of the best digital sound it has been my pleasure to hear, the best by some margin. It will open your eyes to the stunning potential of SACD, so often hidden by mediocre implementations, and can go head to head with exotic vinyl spinners for ultimate fidelity. There is no aural sugar coating, artificial warmth or hyped up dynamics designed to impress in the showroom. This is the real McCoy — a machine dedicated to extracting the maximum accuracy from a two channel SACD signal. But it is not the user-friendliest piece of equipment, it won't do multi-channel or DVD-Audio, and who knows where SACD is heading!



Interested? Read on....

It isn't the most expensive SACD player, although at \$9,995 it may be the most expensive two-channel-only SACD one box player after the dCS P8i (\$13,995). Until now, to put together EMM's complete digital source you would have had to combine their SACD Transport, the CDSD SE (\$8,400), and either the DCC2 SE two channel DAC/Preamp (\$13,500) or the 6-Channel DAC6e SE (also \$13,500), for a total of \$21,900 either way. So the CDSA SE may turn out to be something of a steal if you really want the EMM Labs sound.

Why is this one box player so much less expensive than its brothers?

● It doesn't have all the features of the separates — you are losing either a spectacular preamp or 4 channels.

- There's only one chassis instead of two. This also saves you the cost of cables between the transport and DAC.
- The connection between transport and DAC can be greatly simplified when both are built into one chassis.
- There are far fewer rear panel connectors to support and no digital inputs.
- The transport is a less sophisticated version of the one in the CDSD SE.

If you are only interested in two-channel music, you like the performance of this one-box player and you already have a preamp you are happy with, I don't see the downside.

The box itself is quite big and heavy, 15.7 x 5.5 x 17.1 (DxHxW in inches), weighing a total of 26.5 lbs. This makes it a tight fit in my rack, but I have it nicely balanced on a Sound Fusion CD Platform for optimal mechanical isolation. The unit is quite handsome, although no match for the superb styling and finish of the Esoteric range or the other high priced Japanese components that find their way to these shores. A large LED display makes viewing easy from my listening position, with the exception of some unevenly lit messages showing the repeat status or which layer of a hybrid disc is being played.



What's in the box? The drive unit is a Philips unit, a simplified variant of the one in the stellar CDSD SE Transport. Redbook upsampling to a 5.6448MHz DSD bitstream comes courtesy of a Meitner Digital Audio Translator (MDAT) circuit. MDAT examines the transient nature of the signal and chooses instantaneously from a selection of available conversion algorithms. The dual differential DACs are a proprietary discrete design since Ed is not satisfied with the limitations in integrated circuits of capacitor design and control of power supply fluctuations. His discrete approach may be much more expensive to produce and takes up more real estate but only this way can he avoid the differential non-linearities he claims exist in all D/A chips. Even the circuit boards are special, constructed of aerospace grade composite laminate for low dielectric loss and improved heat conduction for smooth temperature gradients and improved stability over time. Microscopically smooth copper traces are used top and bottom to reduce skin effect issues.

## Ergonomics

I'm not a particularly happy camper here. I'm not fond of the rows of identical looking buttons on the EMM's faceplate. I don't much like the slow loading times, although many SACD players suffer a similar fate, and some do much worse. It takes between 13 and 15 seconds for the music to start playing from the time you press *Play* with a disc in the open drawer. This is due to the low-level behavior of the drive controller, which is beyond EMM's control. More distressing is the complete lack of feedback for the instructions you key into the backlit remote control. Normally, when you punch in a track number you can see the digits show up on the unit's display panel, but not here. Five seconds may pass before anything happens, and then the music starts playing the desired track well before the display updates to tell you what's playing. The remote is a substantial, well laid out plastic wand, and includes useful buttons for phase and layer change.

You can turn off the display but I could hear no difference in sound either way. Dimming the display is not an option. The readout looks more like a scientific instrument (which it is) than usual, with track times shown in an unusual format 0.06.18 meaning 6 minutes and 18 seconds into the track. On most players you can select from a range of different ways to monitor the time elapsed or remaining, by track or by disc, but this machine offers no choice at all. If the disc is playing it shows you the track number and elapsed time on this track, otherwise it shows you the number of tracks and the length of the disc. I found these ergonomic limitations surprising, so I discussed this with the engineers at EMM Labs.

It seems Ed Meitner believes the presence of the normal microprocessor that implements the control logic in almost every other player has a detrimental effect on the sound, so he has discarded it in favor of a much simpler Field Programmable Gate Array (FPGA). The advantage here is the removal of the continuous clock, which may have an adverse effect on the other circuits. The clock need only be activated when necessary so that functional blocks can remain in a quiescent state when not required. This FPGA is capable of reacting to only a few simple commands and does not have sufficient capacity to show the numbers being pressed on the keypad. Instead, it can just show the track that is now playing. This explains the relatively primitive display and control options, and Ed believes the sonic benefits are worth the sacrifice in utility. Now it all makes sense, and provided the player is still simple enough to control and the sound does indeed surpass the competition, this decision can be supported.

A Perreaux Radiance R200i and a Valve Audio Predator were used in my tests with my reference Nordost Valhalla cabling throughout, occasionally switching over to top of the line Crystal Cable Ultra power cords and EMM Isopath Interconnects. The very revealing Wilson Benesch Act 1s with updated drivers and Bybee Quantum Purifiers completed the system. The Predator (a hybrid integrated amp with a tube preamp section and a 200wpc MOSFET power amp) is not sufficiently resolving and dynamic to release the full dynamic potential of the CDSA but the solid state Perreaux makes a great partner.

Now for the acid test.

## The Sound

## Part 1: Redbook on the EMM versus Redbook on the Meridian G08.

The Meridian G08 makes it very hard for other CD Players that come my way for review. It's so eminently musical, dynamic, involving and spacious. If I hadn't heard its big brother, the 808 Signature Reference, I'd have a hard time naming its better.

The EMM Labs comfortably exceeds the performance of the G08 by providing higher resolution, increased dynamics and a bigger, deeper and more precisely located image.

Joan Baez's *Diamonds and Rust* [Vanguard VCD3-127] can overwhelm with its high energy and many layers of detail. The G08 is full of color, weight and detail and the famous voice is present and far from thin as through lesser players. Low-level detail can be heard easily in the mix and the music swells and thrills. The EMM throws a larger image where each instrument is more precisely located, and the level of detail is even higher. Perhaps it is just easier to make out fine details because the acoustic space is so large that the sounds do not run into each other. Most notably, the bass line is stronger and the voice is even more rich and intimate. A sensational performance from both machines, with a clear edge going to the EMM.

The same verdict applies to the magnificent Haitink recording of Shostakovich's *Fifth Symphony* [DECCA 425066 2]. Each machine brings its own special qualities. The Meridian majors in dynamics, color and speed, while the EMM trumps the Meridian on detail, openness, depth and beauty of string tone. There is a wonderful sense of purity to the EMM's sound, and this is very effective in making sense of the blinding crescendos that can so easily turn to mush in lesser hands. I particularly enjoy the delicate layering which the EMM reveals in the textures of the orchestral playing and the startling bite of the brass. Each machine is capable of terrifying you in this music (most CD players cannot), but the EMM makes more sense of the brilliant orchestration due to its altogether remarkable imaging.

Beethoven Piano Sonata Opus 32 No. 1, played by Alfred Brendel [Philips 438 134-2] has humor, passion and virtuosity by turns. All of this is well demonstrated by the Meridian, with its excellent timing, black backgrounds and strong dynamics. The long reverberation of the grand piano is captured perfectly, as is the voicing Brendel gives to each part. This is an extremely musical performance and it sounds like Brendel is improvising, so fresh is his music making. Bass notes sound clear and from middle C on up the piano sings. The EMM takes this one step further. It allows you to hear the separate strands more clearly, and it ruthlessly reveals Brendel's hard piano tone, a far cry from the beautiful sound a Rubinstein brings to Beethoven. The Meridian may sound more elegant, but I've heard Brendel in the flesh many times, so I know the EMM is more accurate.

I spent a lot of time comparing Redbook on these two machines, because the EMM is a candidate to be my new reference digital source. Since I have so many excellent CDs any new reference will have to be clearly superior to the G08 on Redbook. So I pulled out dozens of CD, never once failing to prefer the EMM. I noticed a stronger deep bass, a more open and refined top end, outstanding low level detail and the blackest of backgrounds.

In short, a clear win for the EMM.

## **Part 2: Redbook on the EMM versus Redbook on the Meridian 808**

Can the EMM top the Meridian 808 Signature Reference CD Player on Redbook? The 808 improves on every one of the G08's fine audio qualities and is certainly the best CD player I have ever heard. It has presence, authority, explosive dynamics, extremely high resolution, lightning responses — it simply brings music to life. It certainly should at \$12,995.

I don't have the 808 on hand so I'll have to go by memory, with the help of my detailed listening notes. The CDSE SA comes very close to toppling the 808 from its position as the CD player of choice. It edges past the 808 on purity of sound and deep bass extension, but cannot quite match its relaxed easy nature or its power and immediacy. It may be more accurate than the Meridian, but accuracy to a 44.1kHz/16-bit signal is not the same as accuracy to the original performance. On Redbook the little bit of extra warmth the Meridian offers is welcome and tips the scale in its favor.

I could happily live with either but I'll give the edge to the Meridian 808.

## **Part 3: SACD on the EMM versus Redbook CD on the Meridian G08.**

This will be a very short section.

On every well-recorded SACD disc in my collection, the SACD layer proved clearly superior to the Meridian G08's Redbook. It's not even close. The EMM is at once more precise, more responsive and rich, so that you very quickly lose the appetite for A/B testing. I am surprised to be writing these words, since SACD has never fully convinced me before now. Sure, the bass is exceptional, and I like the detail, but I've often found the treble unconvincing and the music to have lost some of its excitement. I've blamed the medium and remained happy with my vast collection of CDs.

Today I've changed my mind. The problem was never the medium itself, just the rather the particular implementations I've heard from the Esoteric DV-50, the Sony SCD-XA9000ES, the modified Denon 5900, and the McCormack UDP that have spent significant amounts of time in my system and the various other players I've auditioned more briefly.

No contest.

## Part 4: SACD on the EMM versus Redbook CD on the EMM.

SACD on the EMM sounds quite different from CD on the EMM. After auditioning a string of machines whose SACD performance was only modestly better than that from CD, this comes as quite a shock. Although certain sonic characteristics are common to both layers here, specifically the high level of definition and the exemplary imaging, CD sounds nowhere near as good as SACD on this beast. And why should it? SACD boasts a bit-rate of 2,822,400 bps while Redbook checks in at 705,600 bps, quite a difference. For comparison purposes 24-bit/96kHz clocks in at 2,304,000 bps — nearly as high as the DSD stream.

The SACD layer is much more palpable and present than the CD layer. Intimacy is increased, the bass line is firmer and more defined, the top more open, the detail greater, the image more realistic. Every aspect of performance is improved, and improved markedly. Now it is easy to understand why people fuss over their inconvenient analog turntables rather than switch to the ubiquitous CD. CD is an approximation to the analog signal and so of course is SACD. But SACD is a much better approximation and therefore more faithful to the original sound. Good enough to challenge vinyl head on and miles ahead in convenience. I'm not saying the CDSA puts vinyl to shame or competes with analog master tape. Let's just say it is much harder to dismiss digital on principle when it sounds like this.

Game, set and match to the EMM.

## Part 5 – SACD on the EMM

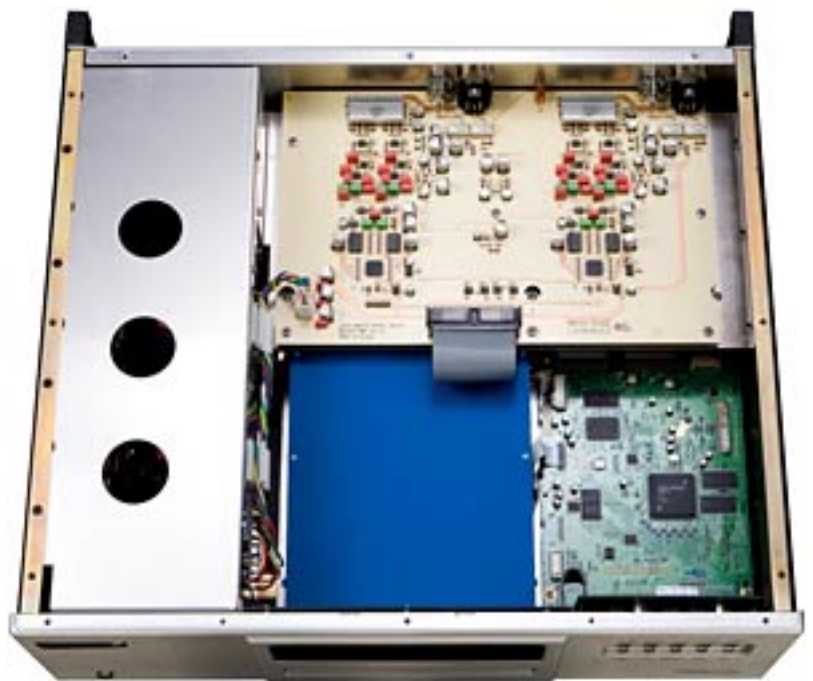
Forget about A/B testing. Let's concentrate on SACD exclusively. There's no better place to start than MA on SA, a disc put together using Crystal Cables by the Dutch specialty label MA using very simple high quality microphones to record small groups or soloists onto PCM at 24/96. So this is not a native DSD recording, but the conversion to DSD has been done superbly. The piano on track 2 is the most realistic I have ever heard. There is no temptation to compare with the Redbook layer on this hybrid CD since MA has encoded completely different selections onto the CD layer. Very few SACDs are so well recorded and mastered, the live recording Red Rose Music Volume One being another and rather better known example. The trouble with extremely well recorded discs is that they sound good on many setups. *Good yes, though staggering and unbelievably lifelike, you've just got hear this*, I doubt it. Voices sound so real, instruments so clear and rich in detail, harmonics so wondrous. Sounds like this are what this hobby aims for every day and falls short of so often.

Many SACDs fall well short and are downright disappointing. Bob Dylan's 60s recordings are thin and lacking in detail and texture and the same goes for The Rolling Stones. Nora Jones' first album [Blue Note 5414728] is a joke — the DSD Stereo layer being derived from a Redbook source. Blood Sweat and Tears SACD only album [Columbia 63986] leaves me cold. I've had great recordings from Channel Classics, Mobile Fidelity, IsoMike, Analog Productions, ASV, Telarc and Artegra, while Columbia, Abkco and Blue Note have sometimes disappointed. Ideally you should look for an original DSD recording, but there are many fine recordings dating back to the days of analog recording.

## And So...

Clearly Mr. Meitner is on to something. What is his secret sauce? Is it the absence of a microprocessor, the discrete DACs, the power supply, the transport, the output stage? Is it the fine-tuning or fundamental design principles? I can't tell for sure, but I can give you some clues. His colleagues tell me that Ed Meitner likes to think like an electron, and designs his circuitry from the electron's point of view. *If I were an audio signal, what would make my passage through this analog circuit as happy as possible?* Listening tests are the final stage, and Ed has a very good sense of how those tests will turn out before they begin, because he has calculated and measured the performance of the circuit in advance.

Of primary concern in his designs is preservation of the phase characteristics of the signal. If you get this right, the imaging will be spot on and the output has a chance to sound like music should sound. Add high resolution, low distortion, tonal accuracy, black backgrounds and broad bandwidth and you're nearly home. But a number of high end components still fall down in the areas of dynamic range and transient response. You need a broad dynamic range with headroom for the most massive crescendos and you need lightning reflexes to capture the excitement and tactile feel of live music. To achieve this requires the most careful attention to the power supply and the independent regulation and isolation of the various digital and control circuits. The CDSA SE has all these qualities in spades, giving true meaning to the much misused expression *high fidelity*.



Some will prefer a smoother or warmer SACD sound; others may prefer the dynamics reduced a little for more comfortable listening. They may be happier with an Accuphase or Audio Aero. EMM Labs makes no concessions in this area, aiming only for the purest possible reproduction of the original recording. This component does not romanticize the music in the least, and is also very revealing of inferior recordings and flawed components. You need to partner it with high resolution, wide bandwidth, low distortion equipment to do it justice.

The CDSA SE has to be in very front rank of CD Players regardless of cost. It will do wonders for detail retrieval, imaging and accuracy complete with a fully realized bottom end and open top on the best Redbook recordings. Its failings are those of the medium itself. As to SACD, this is as good as digital gets, and far better than any Redbook CD you will ever hear.

Not a mass market product, but clearly an exceptional achievement and a challenge to vinyl lovers everywhere. Meet my new reference digital source.

## Specifications

Type: Digital disc player and transport

Disc Formats: Redbook CD, Stereo SACD, MP3

Digital Outputs: AES / EBU - PCM

DACs: Proprietary Dual Differential DAC Circuit

Analog Output: Unbalanced (RCA), Balanced (XLR) - Pin 2 hot

Output Impedance: 50 ohms (RCA), 100 ohms (XLR)

Output Level (low): 4V (XLR), 2V (RCA)

Output Level (high): 7.2V (XLR), 3.6V (RCA)

CD upsampling: MDAT technology converts to 5.6MHz DSD

System Connections: Infrared remote and RS232

Software Upgrades: Via rear USB port

Power Cable: Kimber Kable PK14 (6ft) included

Dimensions: 17.1 x 15.7 x 5.5 (WxDxH in inches)

Weight: 26.5 lbs

Warranty: 5 yrs (except drive - 1 yr), original owner

Price: \$9,995



## Company Information

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