



## Equipment Report

# SOTM sMS-2000, sDP-1000EX DAC, tX-USBUltra, and sCLK-OCX10 Master Clock

This Upgrade is For You

Rives Bird



**D**igital has been undergoing a transformative evolution in audio. I can remember my first quality CD player made by Mission. I loved it because it did not have that hard edgy grain in the upper frequencies which often led to listening fatigue. To this day, I still hear a few players and DACs that tend to favor high-frequency detail at the expense of some harshness.

Today, CDs have practically vanished, and most listeners are streaming music through a variety of methods. I regularly use Roon, Qobuz, and Tidal, which include the new feature of Qobuz Connect and Tidal Connect. The advantage of these platforms is that the signal goes directly to the streamer/DAC and not to an intermediary server, which is often (but not always) the case when using Roon. The resolution and quality of music we can stream through these services can now surpass what we were afforded with traditional Red Book CDs.

Back in February 2023 I reviewed the Rose 150B streaming DAC. Rose, like SOTM, is a Korean company, and I was impressed with the build quality, sound quality, and ergonomics of its product. I liked the 150B so much I purchased the review sample and continue to use it today.

When Robert Harley asked me to consider reviewing the SOTM sMS-2000, I immediately went to the website to learn more. I had not heard of SOTM before. SOTM stands for Soul Of the Music. This Korean company focuses solely on digital playback, and its roots were originally in PC audiophile digital playback. SOTM was founded in 2008 and has been selling in the U.S. since 2010. The

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sMS-2000 is relatively new to the market. It was first introduced at High End Munich 2024, but distribution did not start until about a year later. What is intriguing about this product is its unique architecture. The unit is a groundbreaking design that is not only a Roon Server (formerly called the Roon Core) but also contains an audiophile USB digital output to a DAC. By placing the server and streamer in the same product, higher-quality, lower-jitter output can be achieved, which is a fundamental principle in

SOTM's design philosophy and mission.

Because of this unique architecture and the fact that I do not have a DAC with a USB input, I also requested that SOTM send me its DAC, the sDP-1000EX. But the array of equipment SOTM continued to send did not stop there. It turns out its systems are very modular, having had their inception in the world of PC audio products. The company sent along two USB filters, the tX-USBUltra, and its master clock, the sCLK-OCX10, along with four separate power supplies. I decided to start off with the DAC only and then add piece by piece. This is not a typical review of a singular product but rather of a family of products and the journey through the upgrades.

### The Beginning—The DAC

The sDP-1000EX is a high-end 32-bit/384kHz PCM DAC that also supports DSD. It has the necessary USB inputs and can also function as a preamp, though I did not test preamp functionality. I initially used the DAC with a Wattson Audio Madison LE streamer via an AES/EBU balanced connection. The DAC retails for \$3630 but does require an SOTM power supply module, the sPS-500, which retails for \$650. Essentially, a \$4300 package.

The sound of the SOTM DAC was better than expected at this price point. Playback was clean with a slight amount of grain. The bass was extremely good, an area where many DACs can be lacking. Soundstage width was also excellent, though the depth was less than optimal. Clarity of individual instruments was

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also good for smaller ensembles. Large ensembles such as big band were more challenging. What was a little surprising though was the orchestral music exhibited exceptional definition. While this was not the most formidable DAC I've experienced, it certainly held its own for this price point.

## My PC Audiophile Experiment

As noted, SOTM began its audio presence in PC audio, so it's no surprise that the architecture of the sMS-2000 is essentially a purpose-built PC utilizing Linux OS tailored to serve as both a Roon Server and digital output. About 15 years ago, I built a dedicated PC (Windows-based) with a low-powered CPU that could run without a noisy fan. It had a dedicated USB card with a separate power supply. This USB was the digital output that then went to a USB filter with a digital output that connected to my DAC via AES/EBU. I used J.River as my music file server. This was okay as an experiment but was lacking sonically in several areas. One of the biggest negatives was that J.River did not support Qobuz or Tidal. The second was the very limited interface. Roon's ability to seamlessly combine your own ripped CDs with Tidal's and Qobuz's libraries is incredible. The Roon interface presents to you a single library composed from disparate sources. You select music and don't care where it is sourced—streaming, ripped files, etc. Also, having all the notes on the artist and connected artists is a real pleasure. I absolutely love it and the three services together are a kind of dream.

## The sMS-2000—Where the Magic Begins

SOTM modifies the standard Linux software to its proprietary OS, named Eunahsu. Eunahsu is optimized for high-end audio. This OS allows the user to set various playback options as well as some tweaks, such as selecting the CPU speed. Custom boards can be found throughout the unit; they are designed solely to improve audio performance, largely focused on reducing noise and jitter artifacts. As with my PC experiment, they have a dedicated USB/network card that is powered by a separate external power supply, the sPS-500. The base price of the sMS-2000 is \$10,350, including the dedicated USB and network cards. The USB cable, the dCBL-UF, was also from SOTM and retails for \$1020.

Driving the same DAC as before with the sMS-2000 was nothing short of miraculous. I could hardly believe I was listening to the same digital-to-analog converter. This was a refined, super-high-end digital playback. Three areas of improvement were immediately noticeable. First, the grain on the upper frequencies was nearly gone. All the detail was there, but that upper-frequency harshness had all but vanished. The second significant change was the depth in the soundstage. This is one area that I had never gotten digital to perform well on. That changed when the sMS-2000 was installed. The depth of the soundstage approached that of my analog system. I had never gotten close to this before. Last and most significant was the improvement in the dimensionality and texture of each instrument. Each instrument was taking on a 3D character that produced more lifelike sonic images. It wasn't just a few instruments either. Drums, horns (particularly saxophones), strings (particularly cello), and of course vocals all had

## Specs & Pricing

### sMS-2000 Server

Linux based high-end audio Eunahsu OS, Roon Server, DLNA, UPnP Server, network streamer, storage up to 48TB, USB audio out  
**Price:** \$10,250

### tX-USBx10G USB Card

USB card included in the sMS-2000, but can be purchased separately  
**Price:** \$550

### sNI-1G Network Card

Network card also included in the sMS-2000 but can be purchased separately  
**Price:** \$550

### sDP-1000EX DAC

32-bit/384kHz PCM, DSDx64, DSDx128, inputs, USB, BNC, AES/EBU, balanced and unbalanced outputs  
**Price:** \$3630

### tX-USBUltra USB Filter

USB input and 2 output ports, requires separate power supply  
**Price:** \$1400

### sCLK-OCX10 Master Clock

10MHz master clock generator  
**Price:** \$3900

### sPS-500 Power Supply

7, 89, 12, 19VDC  
**Price:** \$650

### sNH-10G Network Switch

8x RJ-45 ports, 2x SFP ports, support 10, 100, 1G Ethernet  
**Price:** \$1900

### dCBL-UF USB Cable

**Price:** \$920/\$1020

### dCBL-BNC BNC Cable

**Price:** \$820

**Total system price as configured with all upgrades:** \$35,940

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## Associated System

**Loudspeakers:** Talon Phoenix

**Subwoofers:** 2x Talon Thunderbird (with Rives sub-PARCs)

**Amplifier:** VAC 30/30 (300B-based)

**Preamplifier:** Mark Levinson 380S

**Turntable:** VPI TNT MkII (modified)

**Tonearm:** Graham Phantom B

**Cartridge:** Air Tight PC-1 Coda

**Phonostage:** Aesthetix Rhea Signature (Telefunken tubes)

**Digital:** Wattson Audio Madison LE Streamer

**Cables:** Kubala-Sosna Emotion Series

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greater presence and naturalness. The micro-harmonics that you get from live instruments were now present in this configuration. This is often the biggest shortcoming of digital playback that gives you the feeling that something is missing, but it's hard to put a finger on exactly what. The sMS-2000 was providing something truly magical with this refined detail.

## Can It Get Any Better Than This?

At this point, we have installed four of the nine products that were sent to me, not including the cables. What remained were two tX-USUltra filters, one sCLK-OCX10 10 MHz clock capable of reclocking four devices, and two more power supplies, one for the clock and the other to power both filters. I felt this was a bit overkill as the sound was already outstanding, but according to Sean Lee at SOTM, it could and would get better.

I started by adding one filter. This did, in fact, improve everything. Though it was not the dramatic difference that adding the sMS-2000 made, it was also a relatively inexpensive upgrade at \$1400. What I heard was a smoother overall presentation without loss of detail. Micro-harmonics and instrumental textures were slightly better defined. I also felt that bass was just a little richer, and perhaps soundstage depth was slightly better. This was definitely a welcome upgrade.

The clock made a stronger impression. It was connected to the sMS-2000, the DAC, and the USB filter. The clock is not inexpensive at \$3900. With the power supply and the SOTM BNC cables at \$820 per connection, it's a costly upgrade. But once installed everything locked into place. Now I was getting all the improvements I had, but individual instruments took on a very solid anchor in place. They did not waiver at all. Bass was definitely improved with the clock. While these were the only two things I noticed significant changes on, they were pronounced. This took the product up a level, and once the clock was installed, this was something I would miss if it were taken out of the system.

So, the last step was to add a second cascading USB filter. I really didn't expect this to add much if anything. We already had one filter, and the clock had made a significant difference; how much more of a difference would a second filter make, if any? I really expected it to be very minute and probably not worth it, but having been sent the equipment, it was only responsible to test it. I'm glad I did; to my surprise the second filter had about the same effect as the first. I heard the same type of improvement, but to a greater degree. Unlike the clock, I could live without a second USB filter, but there's no question that it did make a demonstrable improvement of the same magnitude that the first USB filter made.

## More Tweaks

If all those boxes weren't enough to satisfy any audiophile, there were still some options to further optimize the system. The most significant being the CPU speed. According to Sean Lee, founder of SOTM, the lower the CPU speed the better the sound, but at the expense of possible latency in terms of function. He recommended 1.2GHz which is about as low as the CPU will go, with a maximum speed of 3.6GHz. Early in the listening, I spent a little

time with this but did not critically evaluate it. Now, I was digging into what this could do. I started with 3.6GHz, which is the default value. Most of my listening prior was also at 3.6GHz so we'll use that as our baseline.

I immediately went to the other side of the spectrum at 1.2GHz to hear what changed. Two things were clearly different. First was the width of the soundstage. At 3.6GHz the soundstage was roughly the width of the speakers. At 1.2GHz, the soundstage was beyond the width of the speakers by at least 25%. Large orchestral works sounded fantastic at this setting. Their scale was surrealistic. The other change was a magnified sense of the micro-harmonics previously discussed. The small jazz ensembles had such instrument textures it was like you were right next them with a magnifying glass. Honestly, it was too much for me. There's taking the veil off, and there's using x-ray vision. I don't think I want x-ray vision. I'll leave that to Superman.

For my tastes, I liked the lower CPU frequencies for large-scale classical works but did not like it so much for small-scale jazz ensembles. I continued to play with this, and while you can change it easily enough through the web portal, it's not something I would want to do regularly. I ultimately settled on 2.2GHz being a nice middle ground for both types of music. The setting is easy to change, experiment with, and tailor to your personal preference. Sean Lee prefers the 1.2GHz setting (perhaps he listens to more classical music than I do). I listen to probably 70%

jazz, so it's my priority for any tailoring I will do to the system, and the 2.2GHz selection was excellent with it.

The other optimization is a tuning setting. My unit was originally set on latency performance. Throughout the sessions I left it on that setting until the end to evaluate it. In doing so, there were very subtle differences. One provided slightly accentuated high frequencies, which I did not care for. No tune is an option and was clearly not as good as the latency performance. The other settings were very close and offered subtle changes. After some experimentation, I wound up staying with the latency performance option.

## The final upgrade

The network in the house can be a significant issue in achieving best results for a streaming system. In my home I upgraded a few components to get better performance, including a Luxul network router and a Luxul POE network switch. For the audio system, I bypass this switch and go directly to the audio system from the router. At the audio system, there is a need for a switch, and I previously used a simple Trendnet unmanaged eight-port switch with the EtherREGEN network filtering system to go to the SOTM sMS-2000.

SOTM felt things could be improved with its network switch and another 10MHz clock for the switch. I expected a significant change. I first installed the network switch, the sNH-10G at \$1900, without the clock. There was a noticeable difference. Things took on a bit more romantic feel. Everything was smoother; bass was deeper and fat-



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ter. But there were some tradeoffs. The attack, particularly with drums, was not as aggressive and high frequencies were a bit too polite for my taste. While the switch made some improvement, it was not as dramatic as I had anticipated.

Next, I installed the 10MHz clock, figuring I'd probably get some benefit but did not have great expectations. Well, that proved to be completely wrong. The clock turned out to be the magic to the network switch. This was a profound improvement to the point that I would say if you plan to get this network switch you absolutely need the clock. Every aspect of the music improved. The bass extension was better, the highs were all there (no politeness about them—but no harshness either), soundstage depth improved, the subtle textures of each instrument were there in a very natural way. I honestly couldn't believe how transformative this was. Outside of installing the SMS-2000, this was the single biggest impact on overall fidelity.

### Conclusion

The SOTM products, starting with the SMS-2000, server and Roon core, have an unusual and extremely effective architecture and upgrade path(s). If you like pursuing exceptional music fidelity through a series of add-ons, this system would particularly appeal to you. It's also nice to be able to start on a path at rea-

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sonable price points. I will say I had a lot of fun with each component install and listening to improvements from each product.

The array of the SOTM products in this review make up a formidable state-of-the-art streaming digital-playback system. I was not prepared for performance that not only challenged but, in many cases, outperformed my analog front end. I think the most astounding aspect of the system was the way it captured the natural sonic textures of indi-

vidual instruments. I had not heard this before in a digital system, and it's probably been the reason I tend to gravitate toward analog playback. This composition of products represents some of the finest in digital and may change my behavior in serious listening sessions quite a bit.

To say SOTM products would be highly recommended would be understating how I feel about what the company has achieved. The SOTM system is a *tour de force* in digital playback. If you are interested in streaming digital without having to spend in the stratosphere and having an upgrade path for future improvements, this is the company and upgrade for you. **tas**