

JASON VICTOR SERINUS

Stromtank S-4000 ProPower MK-II XT

COMPUTER-CONTROLLED BATTERY POWER SOURCE

n my enthusiastic 2022 review of the Stromtank S-1000 (\$16,900),¹ I described the Stromtank as a computer-controlled lithium iron phosphate (LiFePO₄) battery array that, coupled with its AC inverters and all the trimmings, supplies clean, constant, stable off-grid AC power to hi-fi components. By softly depressing a single button on the front panel, Stromtank owners can easily switch from wall-connected mode (when the Stromtank's dimmable front-panel meter is blue) to a disconnected, battery-only state (when the meter is green). At the end of a listening session, users can return to blue mode to recharge the battery array.

When a Stromtank is fully charged, the needle on the meter rests at zero, ² and a horizontal array of small green LEDs below the meter is fully illuminated. As battery charge dissipates, the number of illuminated LEDs decreases; the power meter's needle continues to rest at zero until the voltage starts to sag. If the Stromtank discharges fully during playback, the Stromtank automatically shifts from green to blue and begins to recharge. As it recharges, you can still play music, but the AC is no longer completely isolated from the vagaries of wall power.

After I spent many months with the Stromtank S-1000, Stromtank company founder/CEO/chief technical engineer Wolfgang Meletzky³ sent me an S-2500 Quantum MK-II (\$29,000), which has enough capacity to enable longer green mode sessions. The S-2500 MK-II remained in my system through the spring of 2024, when it began to buzz while in green mode. Simultaneously, the power supply of my reference D'Agostino Momentum HD preamplifier also started to buzz, but at a maddeningly different frequency. Not even Arnold Schönberg would have been happy.

Like an increasing number of today's companies, Stromtank can diagnose and repair many problems remotely, without leaving its office in Berlin. First, though, they had to supply a remote diagnostics and repair box. I connected it as directed, phoned the Stromtank mothership in Berlin, and awaited the results. Alas, for



1 See stereophile.com/content/stromtank-s-1000-computer-controlled-battery-power-source.
2 It is tempting to think of a meter on a hi-fi component as either a power meter or a level meter; this is, in fact, a current meter. It stays at zero when the unit is fully charged. While it's charging, the needle points to the right, indicating the charging current. When it is in use, the needle points to the left, indicating the discharge rate in amperes.

3 Meletzky founded MBL in 1979, then sold the company in 2009 because it had grown to such an extent that he had no time left to design new products. After starting a new company whose products would store solar and wind power in batteries, he returned to his love of music and envisioned what battery power could do for audio systems.

SPECIFICATIONS

Description Computer-controlled lithium iron phosphate (LiFePO4) A grade battery array with dual power inverter technology. Capacity: (XT version) 5300Wh. Nominal battery voltage: 53V DC/48V system. Input voltage: 200–245V AC or 90–130V AC. Input frequency: 50Hz or 60Hz (set at factory). Transfer time (on grid to off grid): <15ms. Output voltage (US): 100–130V. Output frequency: 50Hz or 60Hz ±0.05% (set at

factory and crystal controlled). Output power: 1100VA at 25°C, continuous; 30 minutes max, 1500VA at 25°C. Pulse load (3s): 3700VA at 25°C. Maximum efficiency: 96% (DC/AC conversion mode). Consumption: 1.8W (off), 2.1W standby; 12W on. AC output receptacles: 4× duplex HPOC Grade, pure copper, rhodium plated, or optional 4× Furutech NCF performance Schuko sockets. Three duplex outlets are for analog products,

one is intended for digital.

Dimensions 19" (480mm) ×
21" (540mm) × 23" (590mm).

Weight: 176lb (80kg).

Finish Silver or black, with custom finishes available upon request.

reviewed 825024.

Manufactured in Germany.

Price \$51,000, XT version; basic version costs \$44,000. North American dealers: 20. Warranty: 3 years.

Manufacturer

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this S-2500, remote repair proved impossible. Rather than replace the unit, Meletzky suggested I upgrade to the just-released Stromtank S-4000 ProPower MK-II.

What it is

The Stromtank S-4000 MK-II contains 16 LiFePO4 batteries and two high-performance inverters that, working in parallel, output 120V AC at 60Hz. Stromtank claims the S-4000 MK-II can supply an entire large system, including powerful power amplifiers, with battery power. The upgrade to MK-II status came about two years after the release of the original S-4000. In improving the S-4000, Stromtank paid special attention to its internal copper cabling, determining what length and diameter works best.

The S-4000 MK-II comes in two versions: basic (\$44,000) and XT (\$51,000). Stromtank believes that the basic MK-II's stored energy capacity of 2650Wh should enable users to power a 600VA load with off-grid battery power—green mode—for about four hours. The XT version's stored energy capacity of up to 5300Wh should provide the same load battery power for approximately eight hours. At the urging of Stromtank US's Alex Wilde, Meletzky supplied the S-4000 MK-II XT for review.

Stromtank's website proposes a best-of-all-possible-worlds scenario to address power problems, in which an S-4000 Pro-Power "supplies all analog devices of your stereo system, while an S1000-SourcePower in combination with the SEQ-5 power strip or an S2500-Quantum exclusively takes care of the needs of digital sources." The company notes that the two Stromtank units can be stacked—one placed on top of the other—and operated simultaneously.

Not every scenario is ideal. Beyond the total price of these units, I trembled at the thought of a double Stromtank tower in front of my equipment rack, blocking components as heavy power cables snaked around and through my rack. As "A Mighty Fortress is our God" played on repeat at top volume in my head, I banished all consideration of two stacked Stromtanks in my music room.

To set me at ease, Meletzky assured me that a single S-4000 MK-II XT, in combination with a Stromtank SEQ-5 power strip (in which each duplex operates independently from the other), could power my whole system. The big Stromtank, he said, would supply both my front-end components and amplifiers with clean, regulated battery power that would enable me to enjoy my system to its full potential.

I informed Meletzky that previous experimentation had convinced me that the Stromtank's dedicated outlets for digital equipment, which are designed to filter out digital noise, were not an asset with my low-noise dCS and other digital gear. In response, he supplied an S-4000 MK-II XT with no filtered "digital" outlets.

During a Zoom chat, Meletzky explained the advantage of the S-4000 MK-II's double-converter system: Two converters "work together in parallel and split the energy. They give you much more power than the S-2500 Quantum MK-II and can handle the big pull of amplifiers because the second internal converter can help the first one supply output current faster.

"If you have too big an engine, for example, it is always difficult to handle lower power in combination with high power pulses.



But if you split the output power between two DC/AC converters, you can handle the low energy as well as the high peak energy. The MK-II's 48V system means we divide the internal battery current by half so that less current runs in a single wire. We now have higher voltage and lower current flow in the whole unit. Our new battery-management system keeps all 16 batteries at the same, absolutely flat level. The energy does not spike because no single cell outputs more or less current than the other."

Round one

The Stromtank S-4000 ProPower MK-II XT arrived in a large, sturdily designed custom case attached to a wooden pallet. When power expert and Stromtank dealer Edward DeVito of Audio-Ultra paid a visit

to help install it, we easily removed the screws that held the case's front and top panels in place, slid the unit onto a dolly, and wheeled it into the music room. Using inflatable sliders, we—mostly Ed—removed the S-2500 Quantum MK-II and replaced it with the S-4000 MK-II XT.

But first we listened to my system with the S-2500 Quantum MK-II in place. Given how many power cables my system requires, the number of available outlets, and the capacity of backs to break, sliding two 176lb Stromtanks back and forth and changing all those cables for repeated A/B comparisons was out of the question. A single A/B was all any sane person could hope to accomplish.

With the S-2500 supplying battery power to all my front-end components, we picked some revealing tracks. Given Ed's tight schedule, we stuck to one track each. Ed chose "In the Wee Hours" from *Hoodoo Man Blues* by Junior Wells's Chicago Blues Band with Buddy Guy (16/44.1 FLAC, Delmark/Tidal). I went for the maximal impact, multi-octave span, wide dynamic contrasts, and deep bass of the first movement of Mahler Symphony No.5 performed by Orchestre Symphonique du Montréal, conducted by Rafael Payare (24/96 download, Pentatone). With those two tracks, we had most items on the audiophile checklist covered.

After listening with the S-2500 Quantum MK-II, taking notes, and discussing, we did the big switch and powered all my front-end components with the Stromtank S-4000 MK-II XT.

Guess which cookie Alice ate

I'm referring to the Alice of Lewis Carroll, not the Alice of Gertrude Stein. Gertrude's Alice preferred brownies.⁴

As Mahler's tragic march began to unfold, Ed and I immediately bolted upright, gazed at each other in amazement, and proclaimed, almost simultaneously, "Did you hear that?" Images increased significantly in size, and each percussive pound packed more wallop. The sound was smoother, the midrange more substantial. As we continued to listen, I found myself lowering the volume to accommodate dynamic contrasts, which seemed wider than before.

The effect reminded me of what I experienced when I first switched to aftermarket power cables, upgraded from the dCS Rossini Apex to the dCS Vivaldi Apex, and more recently replaced the discontinued D'Agostino Momentum HD preamplifier with the top-of-the-line D'Agostino Relentless preamp. With each upgrade, I heard much more *there* there (with thanks to Gertrude Stein, with

or without Alice and her brownies). Which begs the ultimate question: How many more "theres" can there be before we're finally there? Not even my local Zen Priest, friend Scott Campbell, could answer that one. Which left me in the there that many audiophiles know well. Just when I thought I had gone about as far as I could go with my system, upgrading the Stromtank power source propelled me forward once again.

After Ed and I got over being astounded, we remained flummoxed. What was it about the new Stromtank that was responsible for all these changes?

Given that the Stromtank was only powering front-end components that, together, consumed far less power than my amplifiers, a bigger soundstage with weightier, most substantial images was the last thing we expected. As much as I wanted to ask Meletzky for an explanation, I remembered that *Stereophile* reviewers are prohibited by longstanding policy from discussing what we hear with manufacturers, at least while the review is ongoing. Perhaps after reading this, Meletzky can offer an explanation in his Manufacturer's Comment.

Amplifiers: Round one

Over the next few days, I discovered that the Stromtank S-4000 MK-II XT would not recharge. After many email and WhatsApp exchanges, DeVito returned with his toolkit and the Stromtank diagnostics box. With Meletzky, Managing Director Annett Dehmel, and Stromtank's research and engineering mastermind Sven Böttcher on a WhatsApp video call from Berlin, we opened the Stromtank and connected the box.

Once the folks in Germany could see what was going on, Dehmel sent a photo with a cable connection circled. When we looked inside, we confirmed that the cable was disconnected. A second photo led us to another disconnected cable. Once they were reconnected, and I executed, on request, two complete discharge/recharge cycles, the Stromtank seemed to reset itself and function as intended.

It was time to see if the Stromtank S-4000 MK-II XT could power power amplifiers without limitation. Which power amplifiers? In house, I had the D'Agostino Momentum M400 MxVs, which can output up to 400W into 8 ohms and 800W into 4 ohms; the

Accuphase A-300s, which are rated at 125W into 8 ohms and 250W into 4 ohms, much of that power in class-A; and Burmester 218 amplifiers in mono configuration, one for each channel; the Burmesters are capable of putting out 565Wpc into 8 ohms and 785W into 4 ohms. There was a lot to test.

I conducted three listening sessions, solo and with friends, going back and forth between pure Stromtank power and pure wall power. By the end of the longest listening session, I'd lost a pound moving six amplifiers back and forth.

Shortly after completing those tests, another issue arose. Nothing the folks in Germany tried could address a soft buzz that slowly grew from silence to an audible peak before buzzing down to silence, then repeating. Also, the unit would not

recharge until it had discharged completely, and the row of LED charging indicators did not function properly. No amount of long-distance or on-site finagling could solve those problems.

I needed a properly functioning Stromtank S-4000 MK-II XT before I could trust the results of my listening tests.

Amplifiers: Round two

After a second Stromtank S-4000 MK-II XT arrived and was installed with DeVito's help—bless you, Ed DeVito—I confirmed that it worked properly. The Burmester amps had moved on, but the D'Agostino and Accuphase monoblocks remained in house.

Since day one, Dan D'Agostino has insisted that no Stromtank—indeed, nothing but wall power—can adequately power his amplifiers. That declaration may have preceded the development of the S-4000 MK-II XT, but what I heard with the Momentum 400 MxV monoblocks validated his claim. In sessions conducted both on my own and in the presence of EMM Labs' Shahin Al Rashid, who visited Port Townsend to help with the installation of the new EMM Labs DA2i DAC, the S-4000 MK-II XT seemed to stifle some of the gloriousness I've come to expect to hear from the D'Agostino monoblocks. Colors seemed blanched, bass lost some focus, and the amplifiers' glorious transparency and radiance was dimmed. Rashid and I agreed that they sounded better plugged into the wall.

The Accuphase A-300s fared far better. Air and depth increased, colors and image size remained as impressive as before, but bass lost some of its tightness. Scott, who joined me for that listening session and helped move amps back and forth, said if he had to choose between the lesser of two evils, he'd sacrifice ultimate bass tautness for the extra air and depth that the Stromtank brought to the presentation. I wasn't so moved.

Conclusion

My front-end components, as well as every piece of music I play, benefit from the Stromtank S-4000 MK-II XT's battery power. The increased size, weight, and credibility it contributes to images greatly enhance music's communicative power. Since it arrived, I've experienced one "wow" moment after the other. With each listening session, my appreciation for the Stromtank S-4000 MK-II

XT's gifts deepens.

It's difficult to know how satisfactorily a Stromtank S-4000 MK-II XT will power a particular amplifier. I expect that it depends at least in large part on the demands the amp places on the power source, but it may well be more complicated than that. It's also likely to depend on the ultimate resolution of the rest of your system, your room, your ears, and your expectations. Given so many variables and unknowns, I intend to try it with every new stereo, mono, or integrated amplifier that comes my way.



 $\label{thm:com/here-it-is-alice-b-toklass-recipe-for-hash-brownies.} 4 \, See \ lithub.com/here-it-is-alice-b-toklass-recipe-for-hash-brownies.$

5 Skeptical that two cables could become dislodged during shipping, I consulted a neutral third party, Nuno Vitorino of Innuos. Vitorino, who ships product worldwide, assured me that if a product is dropped from a significant height at just the "right" angle, all the insulation in the world cannot prevent cables from disconnecting.