

Farad Super3 power supply

by Alan Sircom

The goalposts of 'good audio practice' are forever shifting. I have a *Hi-Fi News* Yearbook from almost half a century ago and while there was a lot of discussion about cartridge compliance and tape bias, the interests and concerns we face now were functionally non-existent. Not just because there wasn't streaming ('wireless' was an alternative term for 'radio' and nothing else), but also because there were no noisy switch-mode power supplies, and the notion that a product could be improved simply by using a better-quality power supply was as alien as having more than three TV channels.

While some seem to think the world should keep its clock set firmly to 1970s time, most recognise that a good power supply can boost significantly the performance of many a good product hampered by a plug-top power supply. And that's where the Farad

Super3 comes in; it's a small supercapacitor power supply that stands barely 5cm high and directly replaces a 3A power supply with anything from a 5V to a 19V voltage output as standard (and other voltage/current options for a €49 upgrade). Note that this is neither an auto-adjusting nor a user-adjustable power supply; you specify the voltage requirements of your product up-front and the Super3 is built to meet those requirements. However, you can further upgrade your power supply through Farad's own cabling options, as well as beefed-up fuses and Furutech IEC power inlet sockets.

There are three ways of improving upon a plug-top power supply; replace it with a conventional linear power supply, replace it with a lot of batteries, or replace it with a supercapacitor (basically an array of capacitors acting as a virtual battery). Each has its good and bad points, but in the main, the speed of charge and discharge of an array of capacitors means a supercapacitor will react to changes in power supply demand from the device it feeds far more accurately than the others. Naturally, this means the capacitor array needs to be tailored to suit the device it feeds and in some equipment that might make for a power supply bigger and larger than the equipment itself, but in the Farad Super3, the whole caboodle fits inside a small, deceptively heavy box that you could fit in your hand.

The Farad design has just one indicator LED, although that still tells the user whether the Super3 is charging its caps, running normally, or needs a reset ▶





▶ (there's a reset button on the rear panel). The Super3 is, in effect, a dual-regulation power supply, the first – which already makes a good power supply in its own right – charges the supercapacitor bank, while the second provides regulated output voltage and current from this supercapacitor bank, which acts as a sort of active battery.

However, by its very nature (capacitors take some time to saturate) this requires run-in. Initial start-up to full charge is only about 10 seconds, and you get almost all of the benefit of the Farad from there. However, a few hundred hours into the listening, the caps seem to settle into their role and the performance takes on an extra layer of refinement and effortlessness. It's possible the caps can go in the opposite direction, and weeks of lying fallow can desaturate the capacitors... meaning if you power down your system for extended periods (for example, you have the system in a second home), you could face the same 'it's great,

even more to follow' effect when you reboot the Super3, but in fairness this is speculation; the review schedule precluded factoring in months of storage. All those caps mean it runs warm – but not hot – to the touch.

While there is a lot of good performance to be extracted from low-cost DACs and headphone amplifiers that typically use plug-top power supplies, that performance does have its limits and what the Farad Super3 does far eclipses the limitations of the DAC. However, partnering the Farad Super3 with something it might actually end up feeding is a more realistic proposition, and in our case, we tried it with the Melco S100 network switch tested by Jason Kennedy in issue 195. The 12V supply provided by Melco itself is, well... it's a power supply. It's not bad, but is ripe for a spot of upgrading, and the Farad does just that.

The S100 one of those more interesting products that really shouldn't have any influence on the sound of a system... but do. And the Farad Super3 improves on the S100's positive influence on sound. The Farad Super3's improvement is clear from the get-go, but the level of improvement increases significantly as those capacitors fully saturate; in other words, when you hear the supercapacitor power supply proper and not the power supply of the supercapacitor. Even from the outset, the Super3 made a clear improvement in streamed sound; one of those 'what did you change?' approving nods from the non-audiophile members of the household changes. Percussion was tighter and tauter, voices were more focused and had a better sense of being in their physical spaces in the soundstage, which seemed to have grown in ▶



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▶ width, depth and height. In general, the sound could be described as more precise yet no less enjoyable sounding for the extra precision it brings. These weren't 'night and day' changes (more 'dawn vs noon') but they were a distinct and identifiable boost in performance. But this was just the start, and as the supercapacitor began to take over from the power supply, the improvements came thick and fast.

Then the supercapacitor achieved full, er, capacity, and things shifted into a higher gear. Now those differences really were 'night and day', taking those benefits heard with just the power supply and running with them. Once again, the big change was the precision and 'snap' to percussion, and in particular percussive, fast and deep synth bass. Playing 'Galvanize' [The Chemical Brothers, *Push The Button*, Virgin], the speed of the bass coupled with the sampled Chaabi track really motors along in a way that is more like a good 12" than often heard even through good network streaming. Here, it retained all the energy and attack needed to make this atmospheric dance tune from 2005 sound as fresh as ever.

However, it was acoustic music that really cemented just how much the sound of a network switch can be improved just through the Farad Super3's power supply. I played some absurdly well-recorded jazz in the shape of 'Satin Doll' on *The Three* [Inner City]. This recording of an acoustic jazz trio is often used as audiophile demonstration material because of the sheer space of the recording and the solidity of the instruments in the mix. However, closer investigation shows it to be some extremely intelligent and surprisingly unconventional arrangements, that play off Joe Sample's outstanding piano work. The trouble is, that arrangement can be easily swamped by the quality of the recording; good systems go for the space and space alone, but here you had a better understanding of the ideas and intentions of the musicians themselves too. That wasn't so easy to parse when using the switch alone but became more distinct when the Super3 was added into the mix. This left some industrial-strength head-scratching as residual 'It's just a power supply... for a network switch!' scepticism boiled off in the heat of the listening session.

From here, musically, everything followed in the same lines, sounding more controlled, more substantial and more 'there', and that applied regardless of genre or quality of recording. When you are swamp-deep in some pre-aircrash Lynyrd Skynyrd ['Sweet Home Alabama', *Second Helping*, MCA] then swap

to the 'Playful Pizzicato' from Britten's Simple Symphony [Britten/ECO, Decca] and find the Farad Super3's benefits both equally well and brings out the best in both and you know you are on to a winner.

The only 'problem' with the Farad Super3 is 'mission creep'. Don't be surprised if you start viewing anything with a plug-top switch-mode supply with suspicion. Any device with an external switch-mode power supply will be scrutinised with a mind to swapping for a Super3. In fact, I'd like an array of them for every different voltage so I can hear what those DACs and streamers and phono stages are capable of. That could get expensive but judging by what it does with a network switch, it would be worth every penny. +

TECHNICAL SPECIFICATIONS

Type: Supercapacitor-based linear power supply

Standard outputs: 5–19V/3A, 24V/2.2A

Size (HxWxD): 4 x 13 x 20cm

Weight: 1.6kg

Price: 5–19V: €587

24V/2.2A €646

Level 2 copper cable: 50cm €167

Manufacturer: Farad Power supplies / Pink Pro B.V.

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