

# Lejonklou HiFi Källa streamer



Lejonklou Källa (pronounced Shell-ah) our first source product, a streamer with internal DAC. Like all Lejonklou HiFi units, Källa is designed to enthrall you with the music – music streamed from your favorite service using an Apple device like an iPhone or iPad. Källa looks like a Tundra amp without pilot lights and sells for \$8495.

Fredrik Lejonklou's says: "Källa is simpler to use than anything I've encountered and it's more thrilling to listen to than any digital source I have heard. Källa should be regarded as a source component for streaming services."

There are three people who created it: Fredrik designed and tuned the hardware. A programmer wrote and tuned the software (a process that will continue). An engineer did the low level programming. Everything is built from the ground up. Over the last four years, we've made a lot of discoveries, repeatedly corrected the course, replaced each and every part multiple times, ditched the entire design and restarted it. Each time we've gotten a little closer to our target. A source of endless thrills. Now it is complete and ready for your enjoyment.

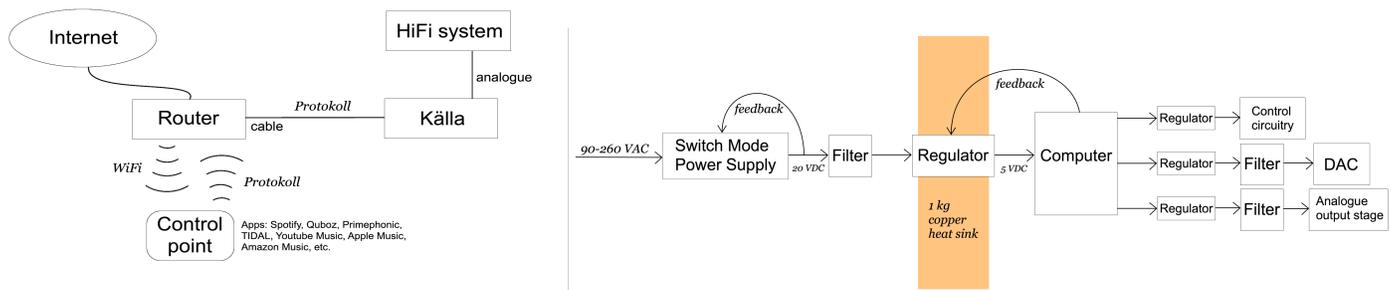
You have probably already gotten the idea that this is not your typical streamer/DAC. It is a true Lejonklou HiFi product where everything is optimized for the most musically engaging performance. Regardless of whatever specifications seem like they should be best, everything here is based on what actually works after countless hours of researching every possibility and discarding whatever doesn't improve the music. We all know that specs don't tell us anything about how musical a turntable, cartridge, amp or speakers are but somehow the whole specs thing has taken hold of audiophiles when it comes to digital media. DSD, MQA, 24/192 or /384, upsampling to the stars, etc. This is not what the Källa is about. It is not made to appeal to the hard-core audiophile looking for specs, it is for the music lover who wants to stream music and get enjoyment similar to what analog provides. In doing this the Lejonklou HiFi team found that they achieved the most musical performance at 16bit, 44.1kHz! So while the hardware could handle 24bit, 192kHz it will not be doing that and will down-sample high data rate files to 16bit, 44.1kHz, because that is what gives the most musical engagement. So you can see that Källa is a very different streamer, unusually simple to use and excitingly musical to hear.

## Technical info on the Källa

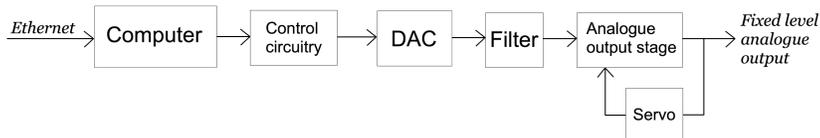
In terms of construction the computer in Källa is a Tinkerboard S, mounted on top of the main board, which houses filters, regulators, control circuitry, DAC and analogue output stage. Every Tinkerboard S is individually tuned in its core parameters. Only those boards that can be tuned to the musically optimal values are used. Some Tinkerboards fall outside of the optimal values and although they are fully functioning, they don't sound as good when performing the time-critical Källa tasks. Therefore only the Tinkerboards that meet Lejonklou HiFi standards are used.

95% of the DAC section in Källa is made up of regulators and control systems. The DAC chip they feed and control is an AKM AK4358VQ chip, an 8-channel DAC on which the two best channels are used, the others inactive. This chip was chosen for its fantastic sound when treated right and its PS input of 5 Volts only, which makes it work more harmoniously with the Tinkerboard. There is no upsampling or oversampling used in the DAC section. The main printed circuit board of Källa is made in Germany and of the same specification as in SINGularity, with some parameters changed to optimize the conditions for the digital circuitry. These boards are expensive, but as soon as Fredrik listened to the first prototype made with it, he knew they just had to use it.

Here are diagrams of how the Källa connects into and interacts with the network and system, and how the power supply is configured.



A diagram Källa signal path.



## Notes:

1) It is not difficult to add UPnP so that Källa can access files from a standard NAS. But Lejonklou has chosen not to do so because:

- 1) Streaming services sound better without the UPnP protocol added.
- 2) Streaming services sound better without a NAS connected (typically to a switch and the streamer).
- 3) Streaming services are, with 1 and 2 applied, in general more musical than listening to the same music stored on a NAS, even when the files on the NAS are higher resolution than from the streaming services.

If Lejonklou HiFi ever adds the ability for Källa to play locally stored music, it will be a solution that is made entirely in-house and specifically tuned for musicality in each and every parameter. Standard NASes and protocols are convenient but, in our view, simply not good enough.

2) The hardware in the Lejonklou Källa is fully capable of decoding 24/192 and other formats. But in extensive testing the working group has found that 16/44.1 sounds much better than all the alternatives. So this is the resolution used by the Lejonklou Protokoll.

3) The Källa is software upgradeable. Upgrades will come out from time to time to add functionality or improve sound. Lejonklou HiFi will not release any software updates that do not sound at least as good as current versions, if not better.