

Stax SRS-4170 Earspeaker System Reviewed

By: Steven Stone, *October 30, 2013*

Stax has been making electrostatic earspeakers (please don't call them headphones) since 1960, when the company introduced the SR-1. Stax still makes a range of earspeaker systems beginning with the \$565 SRS-002 on up to the \$1,775 SRS-4170. Stax also has several more expensive "separates," including the flagship \$4,450 SR-009 (earspeakers and \$2,150 SRM-007tII amplifier. This review will concentrate on the SRS-4170 system, which is situated near the middle of the Stax lineup.



The SRS-4170 system is made up of two components: an earspeaker and an amplifier to power it. Electrostatic headphones, unlike conventional "dynamic" headphones, require a constant bias voltage charge to operate. This charge can be supplied by a specialized amplifier, or a conventional amplifier coupled with a Stax adapter box. Stax ceased making the adapter units years ago (but they are still readily available in the used market.) The SRS-4170 system couples the \$520 SR-407 earspeaker with the \$1,325 SRM-006ts amplifier. If you do the math, the combination price for the two components together is exactly the same as if you purchased the two separately. Obviously, Stax doesn't offer a package discount.

As the earspeaker part of the system, the SR-407 looks very much like some earlier Stax models, including the venerable Lambda Signature Nova and Lambda Nova Classic. The SR-407 even shares the same headband, driver yokes, earpads, and outer casing as the earlier models, but inside, it's very different. Since first introduced in 1979, the Lambda series has had four revisions. The original Lambda signature had a one-micron-thick Mylar panel, but shortly after introduction, the thickness changed to 1.5 microns, due to the addition of adhesive resin. When Stax introduced the SR-404, the panel's thickness was reduced to 1.35 microns. The SR-407 has that same 1.35 panel thickness, but the film material has been improved with what Stax calls "super engineering plastics" that has less sensitivity to temperature and humidity than the older material. Using this new material also allows the SR-407's driver housing to be factory-rebuildable, which will make the SR-407 more readily repairable than earlier models.



One final improvement in the SR-407 over its predecessors is that, instead of protective foam, the SR-407 uses a cloth material in front of the drivers that will not deteriorate with age. Older-model Stax ear speakers' foam dries up and flakes or powders away, often damaging the drivers in the process. This can't happen on the SR-407 ear speakers.

The SRM-006t amplifier uses circuitry originally developed on the Stax SRM-T1 amplifier, which was introduced in 1993. According to Stax, the SRM-006t is an "all class-A" design that is direct-coupled throughout, with no capacitors in the signal chain. It uses a high-voltage dual triode 6FQ7/6CG7 vacuum tube in its output stage, coupled with a simple two-stage FET (field effect transistor) input stage. The SRM-006t has three inputs: one balanced XLR and two unbalanced RCA. One of the two unbalanced inputs also has a fixed-output single-ended pass-through with RCA outputs. The SRM-006t front panel has two "Pro only" ear speaker outputs (earlier Stax ear speakers used a lower bias voltage and are not compatible with the current 580-volt bias voltage). The front panel also has an on/off button, three input buttons, and a large volume knob.

Hooking up the Stax SRS-4170 system is simple, as long as you have a fixed-level line output from your preamp or receiver. Don't even think of connecting the Stax system to a variable-level output, such as the one labeled "preamplifier output," unless you are very careful. If the volume control on your preamp or receiver is too high, a variable-output connection can damage your Stax system. The right choice would be a "tape out" or "recorder out," both of which are almost always fixed-level line outputs. When you turn on the SRM-006t amplifier, it will take almost a minute for the tubes to warm up and stabilize. During that time, the output is muted. Once up and running, the SRM-006t operation is simple: select an input and adjust the volume.



The SR-407 ear speakers have an adjustable leather headband that should fit 99 percent of the population. Even on my small, pointy head, there was still some room to further shorten the headband if necessary. The Stax Lambda design is among the most comfortable headphones ever made, due in large part to its light weight and well-stuffed, carefully-shaped ear cushions. Compared with my own 20-year-old Stax Lambda Nova Signature ear speakers, the SR-407s were slightly less comfortable, principally because the SR-407's ear pads were a bit stiffer and thicker than the Lambda Nova Signature's. I suspect that, with some wearing time, the SR-407s ear pads will break in and be as comfortable as those on the older Stax.

One area that Stax didn't change from the older headphones, and perhaps should have, is the headband and yokes. If you drop them, sit on them accidentally, or drop them onto a hard surface from a high-enough spot, you can easily break the headband or yokes. Fortunately, Stax does offer replacement parts, but given the choice, most users would prefer a heavier-duty, more damage-resistant design.



The Stax SR-407 cable is 2.5 meters long and permanently attached. If you need a longer cable, Stax has 2.5- and five-meter extension cables. Sometimes, I did wish the cable were a different length, since for desktop use I had a lot of cable dangling to the floor. But the cable wasn't quite long enough to allow complete freedom of movement in my small office.

Stax earspeaker systems have long had a reputation for clarity, speed, and their "whole cloth" harmonic presentation. The SRS-4170 system further advances Stax's superiority in these areas, while improving dynamic contrast and bass extension compared with earlier models. While the Stax Lambda Nova Signature and SR-407 sound very similar, the SR-407 has greater frequency range, especially in the bass, as well as more slam and dynamic power.

Stax headphones have only one driver, which covers the entire frequency spectrum. This means they have no crossover or crossover parts. The lack of a crossover translates into a seamless quality to the sound; there are no capacitors or crossover slopes to muck up phase coherence or add group delays. Once you've spent time listening to the full-range driver in the Stax, it's harder to accept the sonic compromises caused by a crossover, any crossover. They spoil you.

The Stax SRM-006t amplifier seems to be an excellent match for the SR-407 (which is probably why Stax chose to put them together as a system). It has more than enough gain, even with my own live concert recordings, which are at least 10 dB lower in level than most commercial releases. It is possible, with an injudicious twist of the volume knob, to overdrive the SR-407s with the SRM-006t to the point where you could damage the driver panels. I suggest always turning the Stax volume knob back to zero after each use.

The overall sonic characteristics of the SRM-006t amplifier were very similar to those of my venerable Stax SRM-007t headphone amplifier, except that the SRM-006t had more gain and delivered slightly tighter bass. Both shared that magic Stax midrange and airy treble, but the SRM-006t had slightly greater vibrancy and micro-dynamic life. The only advantage the SRM-007t has over the SRM-006t is that it supports the older standard bias Stax earspeakers via a third Stax headphone output connection.

High Points

- The SRS-4170 delivers superlative sound quality.
- The earspeakers are extremely comfortable compared to other earspeakers in their class.
- The SRM-006t amplifier thoughtfully has three separate inputs.
- The overall fit and finish of these ear speakers and electronics are simply impeccable.

Low Points

- The SRM-407 headband and attachment arms are somewhat fragile.
- The cable length may be too long for some situations, yet too short for across-the-room amplifier placement.
- The SRM-006t amplifier has only two "pro only" headphone outputs and cannot drive older Stax normal bias earspeakers.

Competition and Comparison

The Stax electrostatic SRS-4170 earspeakers have little in the way of direct competition. The only other company that currently offers electrostatic headphones is Jecklin from Germany, which has been making The Float for over 40 years. Anyone who has ever tried on the Jecklin headphone and leaned forward (at which point it will slide off your head) knows that, in terms of comfort, the Stax are light years ahead.

Although very different in design, the conventionally-driven Audeze LCD-3 headphones offer a similar planer full-range experience, but they have their own unique sonic character. Some users prefer the fit of the Audeze over the Stax, but I find them to be equally comfortable.

The only truly direct competition for a new Stax system is a used Stax system. For audiophiles on a tight budget, used Stax earspeaker systems can be an excellent value. However, buyer beware: used Stax amps often need some repair or parts replacement to sound their best. Extreme care must be taken when buying a used Stax amplifier to make sure it's compatible with your country's voltage. Many Stax amplifiers were gelded at the factory, so they don't have universal voltage, unlike the current models. If you hook up a 100-volt AC Stax amplifier made for the Japanese market to a 120-volt system, it will burn up unless you use a step-down voltage converter.



Conclusion

For a long time prior to the recent headphone revival, Stax was the headphone at the top of the heap. While dynamic full-range headphones have made dramatic leaps in sound quality (and price), if you are limited to headphone systems priced under \$2,000, the Stax SRS-4170 should be at the top of your must-audition list. Nestled right in the middle of Stax's product line, the SRS-4170 earspeaker system delivers superb sound and comfort, and as my 20-year-old Stax Lambda Nova has proven, if treated well, it will provide years of musical enjoyment.