

## Convergent Audio Technology JL5 Limited Edition Stereo Amplifier

by Marc Mickelson, October 14, 2021

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Convergent Audio Technology -- CAT to audiophiles -- was founded in the mid-1980s. The company's story is that of one man, Ken Stevens, a university-trained electrical engineer, and his first commercial product, the SL1 preamp. After designing a few audio electronics as both a student and young professional, including a preamp with nearly two dozen tubes, Stevens created the SL1 and CAT was born. CAT continues to manufacture the SL1, currently called the SL1 Renaissance Black Path Edition. Stevens sold his first SL1s direct, and, in those pre-Internet days, consumers spread the message of its sonic splendor by word of mouth. Stevens then made a fateful claim to Harry Pearson, editor of *The Absolute Sound*: he said the SL1 was "the best preamp in the world," and this included highly praised, top-of-the-line models from industry fixtures Audio Research and Conrad-Johnson. Today, such a claim would go largely unnoticed amidst the crush of information we receive electronically, but print reviews in *The Absolute Sound*, which included comments by the irreplaceable HP, and *Stereophile* placed the SL1 firmly in the first rank of available preamps, and put CAT on the audio map. Dealers called, and the rest, as they say, is history. CAT has sold over 6000 SL1s, in its various iterations, over the past

three-plus decades. Pianist Keith Jarrett bought one, and, in the early 1990s, so did I.

Ken Stevens *is* CAT, and his preoccupations are also those of his company. They include audio design rooted in strong engineering and an absolute obsession with sound. Stevens is unique in the high-end-audio industry because he's both a credentialed electrical engineer (of which there are very few) and an uncompromising audiophile, though not necessarily in that order. In fact, Stevens is such an audio perfectionist that he has tested -- actually *listened* to -- hundreds of passive parts, choosing only those that sound best for his products. Want to know which capacitors or resistors sound best and, consequently, which don't, including expensive so-called audiophile types? Ask Ken, and get ready for a long answer filled with absolutes. Ken is not a purveyor of gray area; parts are either good or bad for sound, and most are bad.

I've had many conversations with Stevens about music, sound, and the audio industry. He is one of the most entertaining "audio people" I've met, and while his opinions, especially those of his own equipment, are deeply held, his insights and self-deprecating humor make him

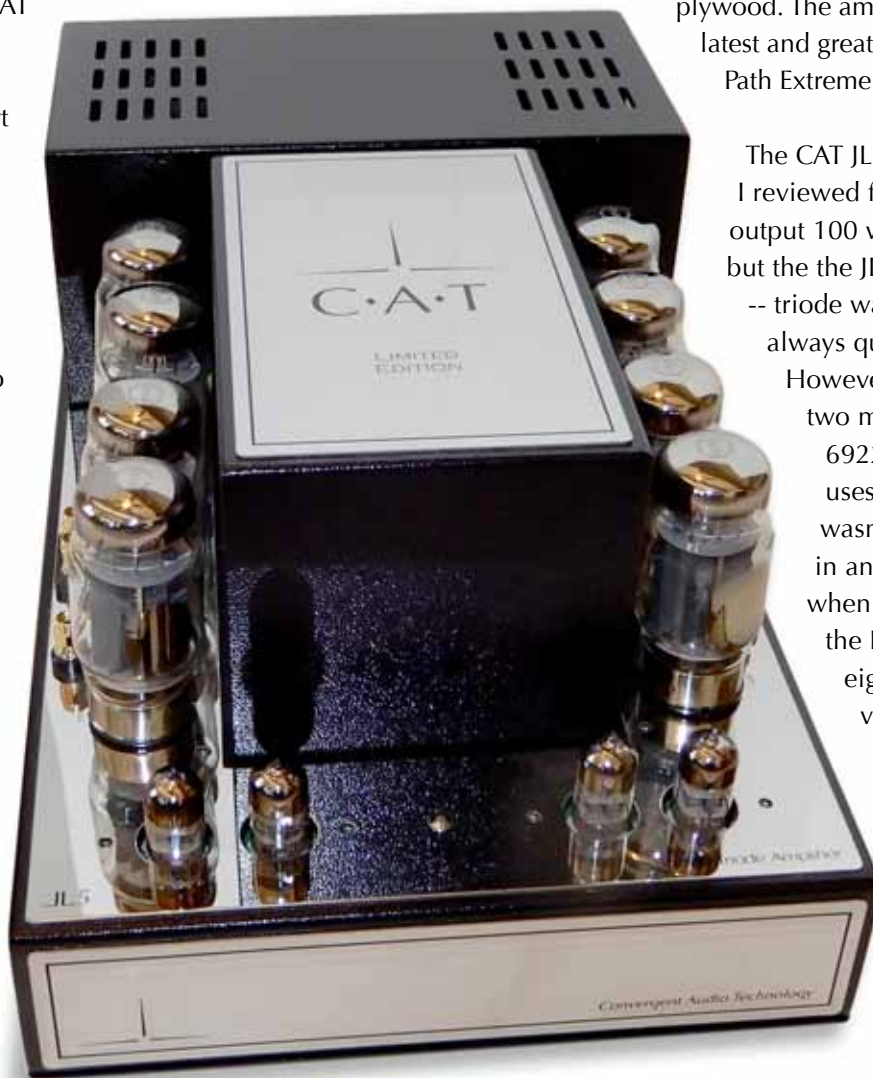


(mostly) enjoyable company. Two quotes from past discussions have been laser-etched on my brain. First, back in the mid-2000s, he told me, "I'm so dumb I'm cool." At that time, CAT was still without its first website, and he was referring to his "strategy" of ignoring the Internet. Second, in summing up the various iterations his products have gone through, he told me that each was "a bunch of little-betters put together," a phrase that has stuck with me for its honesty and artfulness.

To bring you up to date, CAT launched its first website in 2018, but those "little-betters" remain at the heart of CAT's ever-evolving product lineup. I'm sure I'm not the first person to question Ken's use of the terms "limited edition" and "special edition" for his products. They seem to be used interchangeably, when, it stands to reason, one should denote a product that's better than the other. That each subsequent product outperforms its forebear is without debate to my ears; however, the names cloud the issue rather than clarify it.

After more than a decade of offering only the SL1 preamp, in various versions, Stevens broadened his product line in the early 1990s with a pair of monoblocks, the JL1s, followed by a stereo amp, the JL2. Over the years, CAT improved both amps, mostly through parts changes, the most significant of which were the capacitors and transformers. CAT is unique for having designed and manufactured its own caps -- "CAT caps" in various iterations, which gave way in 2016 to the Black Path capacitors that have remained in use since. Stevens has said he wants caps that "sound like water" for his products -- are as neutral as possible -- and that means rolling his own.

CAT debuted the JL5 at the 2014 CES and has improved it since, launching the Limited Edition last year. Running down the center of the amp is a pair of potted C-core output transformers, which Ken Stevens designed. In standard CAT style, they are overbuilt and could be used in amplifiers that output much more power than the JL5, and their cores are made of "exotic, low-loss material." Each 15-pound transformer is encased in a magnetically isolated housing lined with birch plywood. The amp also uses CAT's latest and greatest capacitors, Black Path Extreme.



The CAT JL2 stereo amp, which I reviewed fifteen years ago, output 100 watts per channel, but the the JL5 outputs 120 -- triode watts, as Stevens is always quick to point out.

However, in addition to two matched pairs of 6922s, the newer amp uses an output tube that wasn't even a gleam in an audiophile's eye when I reviewed the JL2: the KT120. The JL5 uses eight of the tubes, versus the sixteen 6550s that the older amp used. For Stevens, the change in output tube was necessary: his source of 6550s dried up when the Svetlana factory closed, so the KT120

it was. But this led to the inevitable question: why not the KT150, which other companies have been touting and using for years? Stevens has written an entire white paper on this question, and his answer boils down, as every one of his answers does, to sound: "The KT150 is very 'hi-fi'-sounding tube, with a thin midrange, tinkly top end and fat, bloated bass."

The JL2 was a big, heavy and lovely hunk of audiophile amplifier, and so is the JL5, though it's only about two-



thirds the size and weight of its forebear, at 20"D x 12 3/8"W x 7 3/4"H and 88 pounds. To keep the signal path as short as possible, the inputs are near the front of the amp and the speaker terminals, for 4- and 8-ohm loads, are on each side. In the amp's ventilated rear section are power-supply capacitors and an isolation transformer. Ken Stevens doesn't recommend using power conditioners, regenerators or filters with his equipment, but not for the reason some have claimed for him: that he's opposed to these types of products. The truth is exactly the opposite: he thinks so much of getting clean power to his products that each has an isolation transformer of his design built in. This makes such extra components superfluous, so you plug CAT equipment right into the wall. Stevens is also picky about the power cords used with his products, less, in terms of filtering, being more. Essential Sound Products power cords are his default choice.

Whereas the output tubes of earlier CAT amps I've used needed to be biased by hand, with the help of those amps' onboard adjustment pots and meter, the JL5 uses a new auto-bias system that takes care of this chore. However, the output tubes are still protected with resistors instead of fuses, because it just sounds better. Speaking of which, Ken Stevens has always championed the idea that electronics, like speakers, benefit from the strategic use of materials to improve their sound. Therefore, the chassis of the JL5 is made from heavy-gauge steel, not aluminum, and the inside surfaces are covered with Ken Stevens' special "resistive damping compound" to control resonance.

Stevens even goes the extra mile for his circuit boards. He used to use a G200 substrate, which blends Bismaleimide/Triazine (BT) and epoxy resin for their superior electrical properties. Several years ago he moved to Polyimide for his standard JL5 amp and SL1 preamp. Flexibility and resistance to heat are often given as its advantages, but Steven's uses it for its superior sonic properties. He goes one step further for his upper-end preamps and amps, using Teflon circuit boards, which are the most costly. He cites superior transparency and low-level resolution as his reasons for using Teflon. "Why Circuit Boards Matter" is his white paper on the subject.

When Ken Stevens and I began discussing the possibility of this review (and another of his latest SL1 Legend preamp, which is in the works), I was just about to receive

the Wilson Audio XVX speakers and Subsonic subwoofers, which require four channels of amplification. I told him that he could still send a stereo amp and I could run the subs with either solid-state or hybrid amps, ensuring matched levels with Wilson's active crossover. On top of this, I explained that whatever amp he sent would need to go to Wilson Audio first, so they could measure it to determine its time-alignment properties and I could adjust the XVXes to compensate.

Ken saw all of this as an opportunity, supplying the amp to Wilson Audio, which now has measurements of it available to its customers. As with just about everything having to do with his products, Ken is unerring in his praise of the JL5, including its appropriateness for driving a pair of massive subs like the Wilson Subsonics. So, a few months after the first JL5 arrived, another one showed up, followed by Ken himself, who wanted to hear the entire system (and, truth be told, hang out in the active tourist area of my smallish Arizona town for a few days -- a working vacation, so to speak). It's worth keeping this in mind because while most of my comments about the JL5 are actually about a pair of the amps, one for the main speakers and a second for the subs, anything I offer applies just as easily to a single amp used in the usual way: driving a pair of stereo speakers.

One more interesting system note: Ken hauled along his reference digital source from the now-defunct company Audio Aero, convinced that the dCS Rossini system I use (transport, DAC and clock) as my reference would not equal it -- or come close. (He also brought along interconnects of his own design that were pretty great.) But after a few cuts, he was so pleased with what he heard from the dCS equipment that he proclaimed his bringing a large CD/SACD player on the plane with him a waste of time and effort. One afternoon during his visit, with Ken in the listening seat, I cycled through every combination of the Rossini's many user-definable features, spending the most time listening back and forth between different mappers and digital filters. It was clear from the very beginning that the CAT electronics were up to the task, because even severely off-axis I could discern the differences, even between close alternatives, rather clearly. Ken listened to each for a few seconds, then declared either that what he just heard was "better" or asked for me to "go back" so he could compare all over again. He was in his element -- listening for slight



differences and being able to describe them without a second's hesitation, just as he surely had done with so many passive parts. This was audiophile obsessiveness at its most extreme, or an enjoyable afternoon for Ken Stevens.

If you're ever talking to Ken, on the phone or at a show, and want to wind him up, just ask this question: "Is your amplifier [or preamplifier] a synergistic match for my preamplifier [or amplifier]?" Ken will expound, loudly, on the misguidedness of "synergizing," the mixing and matching of sonic signatures, for as long as you can stand it. Using tubes with solid state is probably the most prevalent synergism in audiophilia, but there are others, each with the goal of rebalancing the final sound to produce a sonic result that is more complete than a single product achieves by itself. Ken's view, paraphrased for brevity and lack of offensiveness, is that this practice has no place in high-end audio. To him, the resolution and neutrality he works to achieve are absolutes, and all of the very best audio equipment should achieve them too. While we humans can justify a sin with a corresponding good work, audiophiles, according to Stevens, should never, ever fix a problem with another problem. Two sonic wrongs mixed together don't make a right; they make three wrongs.

While I understand Ken Stevens's thinking here, for years I used an earlier iteration of the CAT SL1 Legend preamp with a wide variety of amps, and in each case I could clearly hear and appreciate the preamp's strengths. While none of the partnering amps was identical to the Legend in sonic terms, they also did not change the sound in obvious ways. Strengths met strengths, producing a pleasing sonic end. I wouldn't say that any of these amps were grossly colored, but they definitely had their own personalities, and these mated, for better or worse, with the CAT preamp. I wasn't synergizing per se; I was simply

using good products together, producing a valid and pleasing result.

I have taken the full-on synergizing/rebalancing route with audio systems I've put together, and I bet you have too. But I have to say that after spending time with the JL5 Limited Edition amp driving a speaker system like the Wilson XVXes and Subsonics, I would not want to dilute in any way what this system achieves. This was an amp (or a pair of them), modest by some measures, that not only confidently drove the huge Wilson speakers and subs to very high levels, but did so without qualification or apology. There was no obvious synergizing at work,



no tipping of the musical scales in any direction to effect an alternative sonic reality. Instead, amps and speaker system formed a cohesive whole, a surprising new sound that delighted me from the first note and deepened my appreciation over time. Speakers, subs and amps were a new audio thing, and the best audio thing that has been in my listening room. What does all of this mean regarding the JL5's own sound? First and foremost, it means the banishment of many of tube amplification's nearly inherent weaknesses while keeping all of the strengths intact. The JL5 displays absolute control and grip from top to bottom, never sounding demure, overtly soft or "musical," but also offering abundant midrange presence and tonal color -- the sorts of things we all expect to hear from tube amplifiers and that bring recorded music to



life. While it would be easiest to explain this by inserting my listening impressions of a female-vocal recording here, some well-recorded rock was far better at revealing the entirety of the JL5's performance, and Jakob Dylan's *Seeing Things* [Columbia 88697023282] fills the bill. I've used tracks from this CD as demo material, and for good reason: the sound is warm, the bass is full, and the overall resolution of musical detail is high. Dylan's voice on "Evil is Alive and Well" sometimes teeters between low talking and actual singing, and the JL5 brought its ample nuance to life while lending real punch -- not just a tubey near-equivalent -- to this growling music.

That punch is the product of not just the JL5's no-apologies-needed bass and midbass impact but also its large-scale dynamics and power reserves. "All Day and All Night," also from *Seeing Things*, has a chugging bass line punctuated with some tandem kick-drum/bass-guitar bursts of visceral power, and the JL5 handled them without issue, even at very high levels -- as loud as I've ever played this track, here or at a show. There are very few tube amps (and solid-state too) that don't compress as the listening level increases to deafening levels, but the JL5 is one of them -- and the only one that's a stereo amp, from my experience. The music just gets louder and louder, even as I approached no-listener's land on the volume control. Why does this matter if we are not going to listen at such levels? Because, as with speaker sensitivity, amplifier dynamic ability has its payoffs at much lower listening levels, when the music surprises with bursts of electric guitar or some percussive piano notes. The JL5 had the entire dynamic spectrum covered.



But the JL5 is far from a mere tubey brute. It displays all of the treble sophistication for which tubes are known, along with openness and transient speed, suppleness and delicacy.

The ECM label has a house sound that's even more recognizable than Rudy Van Gelder's, at least to me, and it's not one that all amps handle well. It leans to delicacy over bombast, ambience over body, micro-over macrodynamics. Each ECM recording I've heard, even ones made at live performances, has an inky-black background from which the mostly acoustic instruments emerge, like ships from a fogbank. Normally I would default to discussing one of Keith Jarrett's trio recordings here, but *Stoa*, from Nik Bärtsch's Ronin [ECM 1939 B0005977-2], was a joy to hear with the CAT amp. It features an unusual grouping of instruments that includes, Fender Rhodes electric piano, contrabass and bass clarinet, drums and other percussion. The liner notes quote Stravinsky, but this is not even close to orchestral music. It's hard to characterize -- *avant-garde hypno-funk* is my term, meant to convey how schizophrenic it is. Imagine Phish playing Phillip Glass compositions and you get an idea. Each cut is called a "Modul," with numerals differentiating one from another. The JL5 captured the slightly dry atmosphere of the recording along with quick transients, midrange nuance, and fine treble detail, bringing this musical stew into magnificent focus, the individual instruments creating a collective sound that's both unique and vaguely familiar.

*Stoa* also helped me understand an easy-to-overlook aspect of the JL5's sound: its true neutrality -- not the arid thinness that some audiophiles and audio critics mistake for neutrality. While the sound of JL5 doesn't fit easily into a standard list of a tube amp's strengths, it is forever



a tube amplifier, possessing all of the tonal sophistication, bodily presence and midrange beauty that any listener expects from tubes -- and triode tubes at that. On the one hand, it reminded me of a low-power SET amp in many ways; on the other, it was not an amp with which I was limited to using only high-sensitivity speakers, nor one for whose bass I would need to make excuses. In fact, one of the notable things about this tube amp is its bass -- from the midbass down to the lowest reaches of your speakers. And just when I thought the bass might actually be the JL5's one big thing, it reproduced voice or piano jazz with such unforced resolution and tonal beauty that I almost couldn't believe it was the same amp. The JL5 may cede to other amps a few percentage points here or there, but it is never less than very good at any one thing, and spectacular at so many.

But so what? That's the reaction I sometimes have after giving a piece of audio equipment a full physical, breaking it down to its constituent sonic parts. Does recognizing and comprehending a collection of specific traits -- some of which qualify as *sonic minutiae* -- improve the experience of listening to recorded music? Well, yes and no. Yes, it does to people who want to know what a piece of equipment sounds like. That's what an audio review should do -- describe what the equipment does, not how much the writer likes or dislikes it. But, in another sense, no; the small points don't matter, because no one sane listens to recorded music for isolated traits that an amp or speaker displays. It's the totality of the experience that matters, how that piece of equipment resolves the recording and helps the music dance around in its bones. And it's in this particular way that the JL5 excels most of all. More than anything I've written above, I will rest my case for this amp on the fact that I always wanted to listen to it -- with any kind of music or any combination of ancillary equipment. A few minutes here, an hour there, it didn't matter. When this amp, or the pair of amps, was in my system, I wanted to listen and turn off the part of my brain that compels me to pick apart and analyze. This is surely a result of all that the JL5 does so well, all of those traits, but it's also a trait itself, and the most important one. Turn on the system, put on music, listen, repeat the previous two steps: that's the process this CAT stereo amp promotes.

I've been reviewing audio equipment for over 25 years, the last half of that period at *The Audio Beat*, which launched exactly twelve years ago this month. That's a slice of time that has gone by far too fast. I've heard, in my system, many of the best amps available -- tubed, solid state, hybrid, switching, OTL, SET, you name it. I've enjoyed listening to most of these amps and coveted a few of them. I've heard vivid and transparent amps, present and weighty amps, sweet and colorful amps, midrange-centric and dynamic amps. Each has been distinct and had its own sonic strengths, the kind of things that make them memorable in some way. I didn't enjoy them all to the same degree -- that's just the nature of being an audiophile -- but I have appreciated their contributions to my mental sonic database and even daydreamed about finding one that would bring together the best of them all.

After 25 years, I've still not discovered a single amp that's everything to everybody, if such a beast even exists. But I've now heard one that comes closer than any other. The CAT JL5 Limited Edition brings together tremendous drive with transparency and, for lack of a better term, humanness. It has the body and presence that bring performers to life, the power reserves to keep up with seemingly any music played at any level, and the clarity to reveal the qualities of each recording. And the JL5 has its own set of super powers, which include exceptional control, wide dynamic range and high resolution, all while driving any speakers (or a pair of huge passive subwoofers). It also displays the tonal beauty of great tubes, in a package that costs less -- even far less -- than other stalwarts.

Ken Stevens is a unique audio character and as confident as a shaman in his message: that *everything* that goes into creating audio electronics matters to the sound, that tubes don't have to give to and take away from the music, that an all-triode amp doesn't have to peter out when the music gets really loud or really dynamic, and that a stereo amp that achieves all of this doesn't have to cost six figures. How the JL5 is a Limited Edition is a mystery, because I'm sure CAT will make as many as the company can sell, but it is an audio rarity, and a musical revelation too.



**Prices:** \$25,000.

**Warranty:** Three years parts and labor.

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### Associated Equipment

**Analog:** TW-Acoustic Raven AC and Grand Prix Audio Parabolica turntables; Graham B-44 Phantom Series II Supreme and Tri-Planar U2-SE tonearms; Denon DL-103R, Denon DL-305 and Dynavector XV-1s Mono cartridges; Lamm Industries LP2.1 phono stage; Meridian 562 analog-to-digital converter with Meridian 515 MC phono stage.

**Digital:** Ayre Acoustics DX-5 DSD "A/V Engine"; dCS Rossini 2.0 digital playback system; CEC TL1 CD transport; Conrad-Johnson Premier 9 and Timbre Technology TT-1 digital-to-analog converters; Genesis Digital Lens data buffer; Audio Alchemy DTI Pro 32 jitter attenuator; Wadia 17 analog-to-digital converter.

**Preamplifiers:** Convergent Audio Technology SL1 Legend Extreme.

**Amplifiers:** Krell Showcase 7 multichannel amplifier, Lamm M1.2 Reference monoblocks.

**Loudspeakers:** Wilson Audio XVX with Subsonic subwoofers and ActivXO crossover.

**Interconnects:** Convergent Audio Technology Black Path interconnects, Shunyata Research Sigma v2.

**Speaker cables:** Shunyata Research Alpha v2 and Sigma v2.

**Digital cables:** DH Labs D-750 S/PDIF and D-110 AES/EBU cables; Shunyata Research Sigma v2 S/PDIF and AES/EBU cables.

**Power conditioners:** Essential Sound Products The Essence Reference, Shunyata Research Everest 8000 and Denali D6000/S v2.

**Power cords:** Essential Sound Products The Essence Reference and MusicCord-Pro ES, Shunyata Research Alpha NR v2 and Sigma NR v2.

**Equipment rack and platforms:** Silent Running Audio Craz<sup>2</sup> 8 equipment rack and Ohio Class XL Plus<sup>2</sup> platforms (under Lamm M1.2 amps).