

# Ayre Acoustics KX-5 Twenty Preamplifier and VX-5 Twenty Stereo Amplifier - The Audio Beat

 [theaudiobeat.com/equipment/ayre\\_kx5\\_twenty\\_vx5\\_twenty.htm](http://theaudiobeat.com/equipment/ayre_kx5_twenty_vx5_twenty.htm)



## Ayre Acoustics • KX-5 Twenty Preamplifier and VX-5 Twenty Stereo Amplifier

| *"... both call to mind and transcend the solid-state/tube debate."*

| by [Marc Mickelson](#) | October 28, 2016

**A** couple of years ago, I responded to a Craigslist ad for some records for sale. I was delighted to discover that the fellow selling the records was a member of the audiophile tribe with a carefully chosen late-1990s system. He had a pair of ProAc floorstanding speakers placed close to the wall behind them, flanking a Target equipment rack on top of which was a VPI turntable. An Ayre Acoustics preamp and power amp sat below. I didn't note the models of the Ayre electronics, but in hindsight I am sure they were a V-3 and K-3, both in silver. I mentioned to the owner how much I liked Ayre's MX-R monoblocks (I had [previously reviewed them](#)) and he said that he didn't know them -- or any other Ayre products -- but he "loved" his preamp and amp.



Prices: KX-5 Twenty, \$8950;  
VX-5 Twenty, \$8950.  
Warranty: Five years parts and  
labor.

Ayre Acoustics  
2300-B Central Ave.  
Boulder, Colorado 80301  
(303) 442-7300  
[www.ayre.com](http://www.ayre.com)



---

It quickly occurred to me that this guy's system -- and his feelings about it -- aligned perfectly with Ayre's own philosophy: ignore current fashion and introducing new products on a regular, marketing-driven schedule; instead, focus on creating products with lasting sonic value -- ready-made classics, if you will -- like this guy's amp and preamp, which, even after nearly two decades of ownership, he had no desire to replace.

Charles Hansen, Ayre's founder and chief designer, has set this particular agenda without apology or compromise. One of the true experiences of being a member of the audio press is talking to Charles, whose mind works in lateral fashion, spinning one interconnected metaphysical tale after another. Before calling him, I e-mailed him a list of questions, and after 90 minutes of stimulating conversation, we hadn't made it through even one answer. Not to worry, however, because Charles followed up with a seven-page e-mail that covered all of my queries.

But I digress -- talking to Charles will do that to you. The supposed subject of our conversation was the two Ayre products I had been listening to, the KX-5 Twenty preamp and VX-5 Twenty amp, which were the

offspring of the electronics the LP seller had -- and surely *still* has -- in his system. While neither the KX-5 Twenty nor VX-5 Twenty occupies Ayre's top of the range, both share so much of their DNA with the MX-R Twenty amps and KX-R Twenty preamp that the resemblance is more than casual. If you can't afford the R-series products or simply don't have the inclination to spend \$50,000 on your electronics, Ayre's 5-series amp and preamp are the answer: slightly less extreme but in no ways compromised, the products of a strict design philosophy whose outcome guarantees a similar sonic personality at a far reduced price.

Central to both the KX-5 Twenty preamp and VX-5 Twenty amp -- as well as Ayre's entire lineup of electronics -- are a few guiding principles that direct Charles Hansen with each of his designs. Every manufacturer has such North Stars, but Ayre may be more strict in achieving them. Charles admits that he's "black and white" in terms of his thinking on the proper design of audio gear, and this is clear when you look closely at Ayre's product line. There is nothing sketchy or halfway in the design of any of the products. What Charles professes about his goals -- quite convincingly, I might add -- is exactly what you get in his products.

Foremost perhaps is fully complementary balanced circuitry. This ensures not just the common-mode noise rejection of a fully balanced circuit but also a direct signal path with a minimum of gain stages. Why does directness matter? As Charles explained, "The more stages, the more copies [of the signal] and the more chances for degradation -- like taking a photograph of a photograph of a photograph of a photograph." Here, however, "there are no extra steps required as the signal makes its way from the input to output."

Ayre products also eschew the use of feedback, which is one of the more controversial aspects of electronics design. Feedback can, for instance, aid an amplifier in coping with a particularly tough speaker load, but Charles believes that it creates timing errors "that make music sound reproduced instead of real."

Finally, Charles also pays particular attention to the power supplies for all of his products. His maxim: "The better the power supply, the better the circuit will operate." More than a couple electronics designers have told me that power-supply design is not just vitally important but painfully difficult. When you see some power supplies -- I'm thinking here of those for the big Naim and VTL mono amps, not to mention those housed in separate chassis -- you know how true this is.

But these are the generalities, the climate in which Ayre products are designed. The subjects of this review build on them while adding nuance. The "Twenty" in both products' names refers to a set of design specifics that commemorate Ayre's 20 years in business, all of which debuted with the MX-R Twenty monoblocks and KX-R Twenty preamp.

First is the proprietary EquiLock circuit, a method for stabilizing the operating conditions of the active amplification devices in the analog section of both products. Charles again: "It is a specific type of cascode (of which there are many), and implemented in a non-conventional way with all parameters fine-tuned via critical listening evaluations for the best possible sound quality."

Next up is Variable-Gain Transconductance (VGT), which applies only to Ayre's preamps and integrated amp. Here, the standard attenuator volume control is replaced with a proprietary variable-gain amplifier stage (which sounds to my non-technical mind similar to B.M.C.'s Current Injection circuit). "This is not a conventional off-the-shelf chip as has been used by others, using an old technology called VCA (Voltage-Controlled Amplifier)," Charles is quick to point out. The VCA approach adds distortion and ensures a slightly different sound at different volume settings, something that can be easily heard with so many preamps, some of which require to you lean on the volume control to hear the preamp at its best. "This is unacceptable to Ayre," says Charles, and the KX-5 Twenty bears this out, as it sounds utterly uniform no matter the volume setting, even at very low level.

Ayre's Diamond Output and Double-Diamond Output circuits were, as Charles let me know, "conceptualized by Richard Baker (most famous for 'the Baker clamp') of MIT in the 1950s, before the required complementary devices were even available." A diamond buffer is a way of connecting two pairs of complementary emitter followers so that the first pair of devices provides the bias current for the second pair. Doing so eliminates the need for a separate bias circuit. "In our evaluations," Charles said, "we have found it to sound better than the commonly used alternatives. This is likely due to the fact that the two complementary halves are coupled together more tightly, creating a more faithful replica of the input." But there is a disadvantage: a diamond buffer is complex, requiring additional circuitry, space, and expense.

Finally, we come to AyreLock -- a regulator that locks the output voltage "in a radical new way," according to Charles. "The AyreLock regulator has a push-pull output stage that can both 'pull' the output up (higher) when the audio circuit draws more current, and also 'push' down (lower) when the audio circuit draws less current." Charles calls AyreLock "a radical breakthrough in power supplies and moves the performance mark forward greatly."

Beyond all of the circuitry, the VX-5 Twenty amplifier has a special feature: the LED ring around the on/off button indicates operating status, including low-voltage conditions and if DC is present at the output terminals, which could save your speakers. While the KX-5 Twenty preamp is fully balanced, it has both single-ended and balanced inputs and outputs, and its rich microprocessor-controlled feature set makes it customizable to your system.

Once connected and powered on, the amp and preamp make almost no noise of their own. The ear-to-speaker test revealed only the very slightest hiss. Because of the way the volume control is implemented, changing the setting causes a faint mechanical sound from the preamp. At first I thought this meant that something was wrong, but then I remembered the belts and gears from previous Ayre preamps, used for changing volume via remote control, and realized that the same was the case here. Both products give no indication of fussiness and the feel of heirloom quality -- as though they will be working just as they did when new for decades, through whatever upgrades come their way. That's certainly the belief we have with every new product, but it's not always the result. However, Charles Hansen has staked the reputation of his company on it.

**M**y approach to writing audio reviews is straightforward to the point of being simplistic: let the product speak for itself, tell me what to write about it. While I'm certainly interested in technology, even for its own sake, it is ultimately the sound of the product -- how it speaks for itself -- that matters most. Discerning and understanding this requires detachment -- putting aside notions of *what should be* and dealing with *what is* -- in order to be an astute observer. You might think this is easier with solid-state electronics, because of their inherent linearity and even-handed tonality, than with tubes, but that's not really the case. It may be true that solid state has generally less variance from a theoretical ideal of no character when compared to tubes, with their sometimes obvious deviations from neutrality, but solid-state electronics are often lacking in less forthright ways, conveying tonal color and capturing space among them -- the breath of life that tubes impart as a matter of course.

Mention this to Charles Hansen and you will get a multi-faceted but unequivocal response. He will express some admiration for the sonic character of tubes, even as he points out some obvious limitations, including their variability and the fact that they wear out. And he'll then go one step further: "In my not so humble opinion, the X-5 Twenty series is better than any competitor's reference equipment -- regardless of price or technology." Such confidence is understandable. When you design audio equipment in a particular well-defined way, when you hit all of your marks, it's only natural to believe that your work is better than that of other makers, especially ones who do things completely differently. And what's more different from solid state than tubes?

While confidence can easily become hubris, that's not the case with the KX-5 Twenty and VX-5 Twenty. What was immediately apparent about this Ayre preamp and amp were the ways in which they adhered to the generalities of solid state while never abandoning the musical qualities of tubes. I'm not saying that they are solid-state electronics that sound like tubes; that's both too simple and not wholly accurate. Rather, the matter-of-fact truth of solid state and subjective beauty of tubes are both present and accounted for, the KX-5 Twenty and VX-5 Twenty giving a strong sense of sonic completeness from the very first note.

**What was immediately apparent about this Ayre preamp and amp were the ways in which they adhered to the generalities of solid state while never abandoning the musical qualities of tubes.**

This combination gave immediate insight into a recording's genesis while never ignoring its more musical qualities. An LP that was particularly revealing was *Golden Greats by the Ventures* [Liberty LST-8053], a one-dollar thrift-store find. This music was the electronica of its day, the 1960s, a bunch of cooler-than-cool instrumentals dominated by guitar twang. Interestingly, the recording quality is consistent from track to track, leading me to believe that instead of being a greatest-hits compilation, *Golden Greats* is a collection of re-recorded favorites that includes probably the group's best-known works, "Wipe-Out" and "Walk, Don't Run." The airiness of the recording is something that solid-state gear can accentuate, making the music sound less substantial, but not with the Ayre electronics. The air is there, but it's in the background, *is* the background, a quality of the recording. The guitars and various sonic effects float throughout the concocted soundscapes, giving insight into the recording's creation. This was music meant to be heard on AM radio, and a well-balanced audio system preserves its odd energy while also revealing the qualities of the recording -- just

what the Ayre electronics accomplish by their very nature.

After only a couple of hours of listening with the KX-5 Twenty and VX-5 Twenty, it was obvious that they were not products that required careful choice of recordings, either in terms of music or format. Their fundamental accuracy and great retrieval of musical detail didn't lead to a ruthless spectral balance or antiseptic tonality. And their ease, sweetness and grace never turned into obscuring darkness or slowness. Instead, their balance opened up my music collection; sometimes I chose a recording because I was curious about how it would sound with the Ayre electronics, and other times I wanted to see if I could trip them up.

I've been making my way through a collection of jazz LPs I received more than a year ago, and it has been a true musical revelation -- an exploration of free, soul and spiritual jazz, along with reacquaintance with classics from Davis, Coltrane, Rollins, and others. While all of the music is undeniably jazz, it is still very diverse, made by small, large and very large ensembles and representing a wide range of playing styles and recording qualities. The Ayre separates not only respected the music in the grooves, but did right by it, due to their evenhanded tonality, high-frequency extension and overall timbral realism. Their personality was not so much the lack of personality, but rather the sense that they were passing the signal without overt editorial addition. Hearing music with them never required mental equalization, the making of even small excuses for them, as opposed to the recordings, some of which sounded glorious and others not so good. But even in the latter case, I was hearing the recording as it existed -- in its full essence -- and there was great value in that.

The notion of *component matching* has a couple of meanings in the context of assembling an audio system. The first is *complementary* -- using a tube preamp with a solid-state power amp, for instance. The goal here is to offset the sonic disposition of one component with that of another. The two presumably don't sound alike, or close to it, but the product of using them together is closer to the desired sonic outcome than either of them achieves alone. The second meaning is *cohesive* -- using products that sound similar, or identical, together so the sonic signature of one is carried over to the other, creating a consistent sound through the signal chain. This is a much higher goal -- one that doesn't require obscuring transgressions with reciprocal embellishments. It's also the theory behind using a consistent cable "loom" from the wall socket to the speakers: extending identical performance from the signal's very electrical beginning to the point at which it becomes acoustic sound.

In the first case, there is something about the products that needs correcting. In the second, the goal is simply to create a uniform whole. In the context of any review, you ideally want to explore both approaches, in order to discover if you can attain -- and report on -- a whole that's greater than the parts.

After my talk with Charles Hansen, I am sure he's not a proponent of rebalancing the sound of a system with disparate products and design approaches. (Ken Stevens of Convergent Audio Technology, who squarely prefers tube circuits to solid state, adamantly believes the same thing.) And while I used the KX-5 Twenty and VX-5 Twenty with preamps and amps from other makers, it was clear from the beginning that they were made for each other. Much like using the same cables from outlet to speaker, the Ayre separates not only maintained a particular (and very appealing) sonic signature when used together, that signature could only be altered, not improved upon, with equipment from other makers. As much as I admire the Audio Research Reference 6 or VTL TL-7.5 III preamps, I couldn't make the case that they were an improvement over the KX-5 Twenty when used with the VX-5 Twenty amp; the same was true of the Lamm M1.2 Reference monoblocks and the VX-5 Twenty. While the tonal balance of the system shifted, the overall sound wasn't more natural or realistic than with the all-Ayre system. It was different for sure, but not better.

In fact, one of the most interesting things about the KX-5 Twenty and VX-5 Twenty was the way in which they expanded the possibilities for the systems in which they were used. For instance, in [my review of the Wilson Audio Sabrina](#), I discussed using those sub-\$16,000 speakers with the over-\$100,000 dCS Vivaldi 2.0 digital system and the VX-5 Twenty to produce "In many ways . . . the best sound I've heard ever in my room." That includes all of the pairings of amps and speakers so expensive that some of them approached the value of my house. This was an odd combination of equipment, given the individual prices, and one that would not likely be used together outside a reviewer's system, and yet there it was producing absolutely state-of-the-art sound *and* sublime music, "no sonic excuses required."

More recently -- right before finishing this review, in fact -- another Wilson speaker was set up in my room: the \$109,000-per-pair Alexx. While I've reviewed and lived with various of David Wilson's big speakers, the Alexx is not only his latest creation but in many ways his best -- the speaker that maximizes the dynamic range, bass power and harmonic sophistication for which Wilson speakers are known. I wrote a great deal about the coherence of the Sabrina in my review, and the Alexx, even with two extra drivers, is the equal of the smaller speaker in this regard and so many others. But in terms of scale with classical music, the Sabrina simply can't keep up with the Alexx, which conveys a sense of mass, such as that of a full orchestra, like no

other speaker I've heard. This was plain with the KX-5 Twenty and VX-5 Twenty, as was the Alexx's nimbleness with jazz trio and especially solo guitar, and its low-end power with the crushing bass and drums of "Words of Wonder" from Keith Richards' *Main Offender* [Virgin V2-86499]. Early listening to the Alexx with the Ayre amp and preamp has been enlightening, both in terms of appreciating the capabilities of the Wilson speakers as well as much of the music I've played, some of which *I thought* I already knew well.

So there you have it -- the KX-5 Twenty and VX-5 Twenty with speakers that were their price peers and definitely not, along with one of the audio world's most renowned digital systems, with a price to match. Not only did the Ayre preamp and amp hold their own, they were essentially inconspicuous -- conduits to the high-grade music-making. The price disparity between the Ayre products and the others was wide, but everything fit sonically, as though it was designed to be used together. With hi-fi equipment, you can always spend more and get more (sometimes in the guise of *different*) in return, but these Ayre separates turn this notion on its head, making me question the level of improvement that even Ayre's MX-R Twenty and KX-R Twenty would bring.

A natural curiosity, when you're covering a preamp and amp together, is if they sound uniform and whether one of them is a better overall product than the other. The first part of this question is answered somewhat by all of the information I presented on Charles Hansen's design philosophy, which doesn't alter from product to product. Both the KX-5 Twenty and VX-5 Twenty are fully balanced, no-feedback designs, and these govern their performance to a great degree. So, yes, this preamp and amp sound alike -- utterly so, in fact. Anything I've written about the two of them used together also applies to either product alone. As for one being better than the other, throughout most of my listening I would have said that the VX-5 Twenty was more widely applicable -- better able to fit in a wide variety of systems, because of its 175Wpc output into 8 ohms (doubling into 4 ohms) -- than the KX-5 Twenty, but as time went on, and I used the preamp with Audio Research and Lamm amplifiers, I honestly couldn't put one ahead of the other.

What I can say, once again, is that both of them sounded their very best when used together. While other electronics helped produce pleasing sound, the totality of the Ayre sound was superior in so many ways, including a canny balance of sheer resolution to the more musical qualities of naturalness and ease. Again, the KX-5 Twenty and VX-5 Twenty are all about balance, never leaning so far in one sonic direction or another to ruin the equilibrium of the result. This is not a showy quality, that one thing that many listeners will easily identify and praise, but it leads to something much more valuable: the suspension of disbelief. This phrase is used to describe so many products of all types, but it applies for real to this Ayre preamp and amp, and that's all the more surprising to me, because there's nary a tube in either of them.

**S**olid-state electronics have come a long way in the past couple of decades. Once considered the engineer's choice because of technical advantages, even at the expense of a flat, matter-of-fact sterility, solid-state circuits have moved toward a more tube-like character that's more consonant with the point of assembling a fine audio system to begin with: enjoying great music at home.

Even with this in mind, the Ayre KX-5 Twenty and VX-5 Twenty are rare pieces of audio equipment, precisely because they both call to mind and transcend the solid-state/tube debate. They are among the very best-sounding solid-state electronics I've heard, in league with the Conrad-Johnson Premier 350 SA amp, [Robert Koda Takumi K-10 preamp](#), and Ayre's own MX-R monoblocks and KX-R preamp, but not because they somehow mimic the sound of tubes. Instead, they are musically natural without sounding cloying or murky, as so much solid state that attempts to sound like tubes does. The KX-5 Twenty and VX-5 Twenty come by their character honestly, not through clumsy tailoring of the frequency range, obscuring as much music as they seemingly save. Instead, they are products of a strict design process that produces refined circuits and requires careful selection of parts, the aim of which is *purifying* the musical signal, making for listening that's both insightful and enjoyable. They are the kind of products that resist analysis, that you relax into, that remind listeners of the time travel that hearing recorded music reproduced exceedingly well can bring. None of this is accidental. As I talked to Charles Hansen during my audition of his products, I became aware of how much of him goes into his designs -- his high-mindedness and rigor, his generosity of spirit.

**They are the kind of products that resist analysis, that you relax into, that remind listeners of the time travel that hearing recorded music reproduced exceedingly well can bring.**

But what to make of his claim that the KX-5 Twenty and VX-5 Twenty are better than competitors' best

products? It's unprovable given the huge amount of competition and the variability of individual taste. But I can say this: like the guy selling records on Craigslist, I could happily live with this Ayre preamp and amp, even as part of a system that costs many times their combined price, and never give replacing them a second thought. ☺

## Associated Equipment

*Analog: Grand Prix Audio Monaco 1.5 and TW-Acoustic Raven AC turntables; Graham B-44 Phantom Series II Supreme and Tri-Planar Ultimate U12 tonearms; Denon DL-103R and Dynavector XV-1s (stereo and mono) cartridges; Nordost Valhalla 2 phono cable; Audio Research Reference Phono 2 SE and Lamm Industries LP2.1 phono stages.*

*Digital: Ayre Acoustics DX-5 "A/V Engine"; CEC TL1 CD transport; dCS Vivaldi 2.0 transport, digital-to-analog converter, master clock and upsampler; Timbre Technology TT-1 digital-to-analog converter; Genesis Digital Lens; Toshiba Satellite laptop.*

*Preamplifiers: Audio Research Reference 6, VTL TL-7.5 Series III Reference.*

*Amplifiers: Audio Research Reference 75 SE stereo amp; Kenwood L-07M and Lamm M1.2 Reference monoblocks.*

*Loudspeakers: MartinLogan Aeon, Paradigm Signature S2 v2, Wilson Audio Alexia, Alexx and Sabrina.*

*Interconnects: AudioQuest William E. Low Signature, Nordost Valhalla 2, Shunyata Research Zi-Tron Cobra and Anaconda.*

*Speaker cables: AudioQuest William E. Low Signature, Nordost Valhalla 2, Shunyata Research Zi-Tron Cobra and Anaconda.*

*Digital cables: Nordost Valhalla 2 S/PDIF and AES/EBU cables.*

*Power conditioners: Essential Sound Products The Essence Reference, Quantum QB4 and QB8, Quantum Qx4, Shunyata Research Hydra Triton.*

*Power cords: Essential Sound Products The Essence Reference and MusicCord-Pro ES, Nordost Valhalla 2, Shunyata Research Zi-Tron Cobra.*

*Equipment rack and platforms: Paradigm J-29 speaker stands, Silent Running Audio Crazy 8 equipment rack and Ohio Class XL Plus<sup>2</sup> platforms (under Lamm M1.2 amps), Harmonic Resolution Systems M3 isolation bases.*