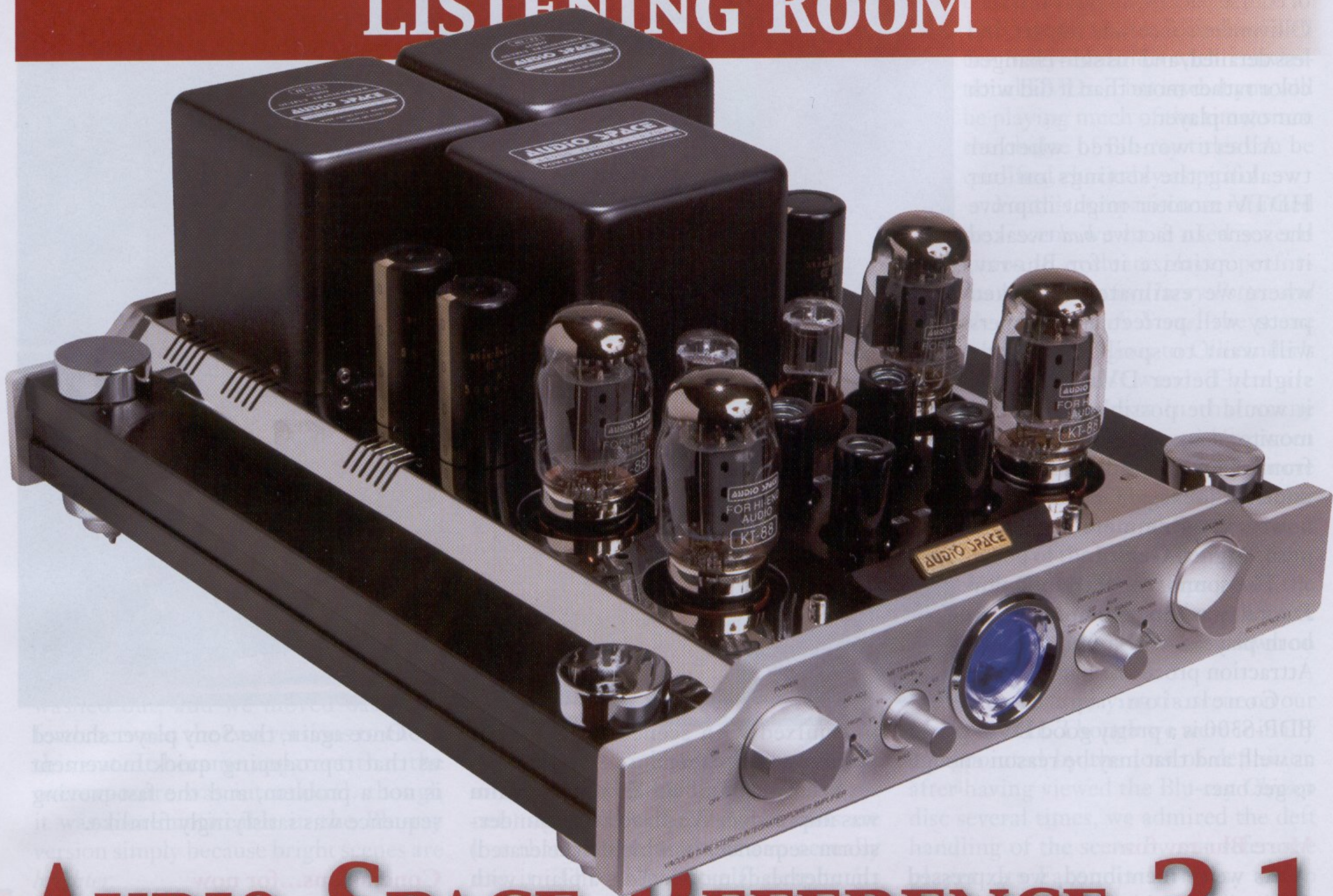


# LISTENING ROOM



## AUDIO SPACE REFERENCE 3.1

**Y**es, it's made in China, as so many contemporary tube amplifiers seem to be, but China is a big country, and Audio Space comes from a corner that is different from the rest of China, namely Hong Kong.

This isn't the first time we've reviewed an Audio Space amplifier. The much smaller (and lighter!) AS-3i was featured in *UHF* No. 78, and it was a hit with us. Not only did it sound way better than its modest price tag might have suggested, but it was the sort of product we are tempted not to send back (we fought off the temptation). Audio Space makes even smaller tube amps, including one with a USB input that can run from a computer, but it also builds far more expensive products, including luxury monoblocks with five-digit price tags, and we don't mean in Yuan. What can the company

do if you give it more money?

Quite a lot, it turns out.

If the amplifier looks big in the picture, be assured it doesn't get any smaller when you are in its presence. Or any lighter. The back end is especially weighty because of the massive transformers, which are the key to any tube amplifier that hopes to deliver significant power below the midrange. By the way, some output transformers ring hollow if you tap them. Not these.

The output tubes are KT88's, but they are not operated for maximum output. Some tube amps allow you to choose between tetrode mode (in which the screen grid is charged in order to accelerate the electrons and yield more power), and a hybrid operation called Ultralinear. Audio Space, on the other hand, gives you the choice of Ultralinear or *full triode mode!* The 50 watt per

channel rating drops to 26 watts when you select triode operation. There is also a switch for selecting how much inverse feedback you want. Feedback lowers harmonic distortion, as you possibly know, but it is often blamed for various audible flaws up to and including the misery and heartbreak of psoriasis.

There is, we should add, a slightly more expensive version of the Reference 3.1 that uses the legendary 300B tube, still as a push-pull pair, instead of the KT88. The two tubes are not pin-for-pin equivalents, nor do they have the same characteristics, and so you can't just buy an amp meant for one tube and try the other tube model to see whether you like it better.

The front-panel meter can be switched to show the bias setting for each output tube, and it can be adjusted easily with a screwdriver. Note that no

protective cage is provided, which means you'll want to place the amplifier out of reach of children. Also missing is a remote control, a surprising omission in a modern amplifier.

The rear panel sports quality connectors, with an unusual feature: outputs not only for 4 ohms and 8 ohms, but also for 16 ohms. You'd need to shop for some really old British speakers to find a 16 ohm model, but that output may have another purpose. The higher the impedance tap, the less wire there is in the output transformer's secondary winding. If you can afford to give up a little power, you can possibly get somewhat better performance. It's worth experimenting with, especially if you have highly efficient speakers.

This amplifier is too large and unwieldy to go up the stairs to our Alpha room, which meant it would need to drive the Reference 3a Suprema speakers in our Omega system. They're efficient enough (91 dB), but because of their push-pull passive subwoofers we knew we would need all of the Reference 3.1's power. We ran it in Ultralinear mode, connecting to the 4 ohm setting. We thought this large amplifier was up to the challenge, but we weren't about to handicap it.

We decided to spoil ourselves and make this an all-LP test. The Reference 3.1 does actually have a phono input, which we'll get to shortly, but we began by plugging our own phono stage directly into one of the amplifier's high-level inputs.

We began with one of the world's most famous symphonies, Beethoven's *Ninth*, with Solti and the Chicago Symphony on a Mobile Fidelity re-release. This is a virtuoso version, marked by lush strings and faultless winds. Solti commands discipline even through rapid passages in the 4th movement... and he *does* go fast at times. The recording sounded gorgeous with our own electronics. With the Audio Space...

You probably know that the three of us usually agree on whether a system sounds right or not, but there's no pressure to conform, and in this case we diverged sharply.

Reine and Albert were disappointed. Reine found the brass opening too

thin, and she thought something in the middle tones seemed to be missing. She enjoyed the counterpoints and the duet between tenor and baritone, but she found the soaring lyrical passages less involving. Albert praised the smoothness, but he found less contrast among the layers of orchestral sound.

Gerard heard it differently. He did find the sound darker, but he admired the spaciousness of this excellent recording, and also the transparency of the sound. "When the cellos and double basses first take up the *Ode to Joy*," he said, you can still follow the counterpoint of the woodwinds in the background." He thought the baritone seemed less real, but he was impressed by the powerful choral passages.

Was there something unique about that recording? From here on, our opinions converged.

The second selection was the medley from *A Chorus Line* (*Beachcomber*, Reference Recordings RR-62). You want dynamics? You got it!

With the Audio Space the introduction didn't have *quite* the effortlessness it has with our much powerful Moon W-8 solid state amp, but it threw us back into our seats and no mistake. When the piece calmed down (very temporarily) we noted the rich layers of texture in Frederick Fennell's complex wind band orchestration, and the broad stereo image. "I'm not sure about the depth, though," said Albert.

Would the amplifier handle the impressive tympani solo that occurs halfway through the suite? Indeed it did, with impact that spoke volumes about the sheer amount of current backing up the amplifier's tube circuits.

We then slipped on the LP version of the Ray Brown Trio's *Soular*



*Energy*, selecting the one-time hit parade topper *Teach Me Tonight*. We could find little to criticize. This is a laid back piece, but even so we were impressed by the impact and solidity of the first measures by Gene Harris's piano and Ray Brown's bass. Transients were sharp, but not *too* sharp. Brown's extended solo (how many bassists ever get to carry the melody?) was lyrical and delightful. Did the instrument have as much body as it did with out own amplifier? We could see little reason to care. Full marks!

We also gave the amplifier full marks for *The Master's Plan* from bluesman Doug McLeod's *Come to Find* album. We glanced at each other during the opening guitar riff, admiring the fine tone. We could hear McLeod's fingers sliding on the strings. His voice was gorgeous, and we followed the lyrics easily, even when — as often happens — McLeod stresses an opening syllable and then lets his voice dip to a whisper. Reine used the word "charming," and we agreed on it.

We ended the series with a recording we wish they'd bring back, Irish singer Mary Black's *No Frontiers*. Her powerful voice was attractive, and its barely reduced energy was compensated by its smoothness. There was no blurring, no mushiness, and we followed the lyrics easily. The accompanying instruments — accordion, guitar, synthesizer — were excellent.

We were done, or were we? Remember the phono input we told you about?

If a contemporary amplifier includes a phono stage, it is almost certainly as an extra-cost option. The Audio Space, on the other hand, includes it free. It is of course for moving magnet and other high-output cartridges, but that's usual for an all-tube amplifier. Our London

Reference cartridge has a high (5 millivolt) output, so we plugged it into the phono input and played *No Frontiers* again.

We all noticed how quiet this phono stage is, but once the music began we diverged again. Albert liked what the Audio Space did to Black's voice. Reine disagreed, finding the tone too hard, and Gerard found the overall sound somewhat thin.

We then played the Beethoven selection again. Sure enough, there was a considerable loss in the amplitude of the cellos and double basses, which play a key role in the long introduction of the fourth movement. But there was none of the shrillness we associate with inadequate phono preamps. "It's perfect for audiophiles who are analog-curious," suggested Gerard. "Pick up a turntable, plug it in, and see what you may have been missing. You can always add an outboard phono preamp if you like what you hear."

We took the Audio Space into the lab (it took two of us), and ran several tests on it.

We have pretty much stopped expecting that measured power will coincide with claims on the spec sheet, and sure enough the useful output is below the claim. Understand, though, that the

amplifier *can* reach the output claimed, just not at acceptable distortion. Tube amplifiers, unlike solid state amps, don't *suddenly* begin clipping, and that was the case of the Audio Space. We therefore did our measurements while keeping a close eye on our oscilloscope.

At 1 kHz in Ultralinear mode, we considered the essentially undistorted output to be 35.3 watts, well below 50 watts. At 20 Hz the undistorted power was a very low 14.6 watts, reflecting the inevitable limitations of the output transformer. At 30 Hz it was 31.2 watts. At 20 kHz we got 26.7 watts.

What if we switched it into triode mode? We ran the readings again, being careful to keep the waveform looking

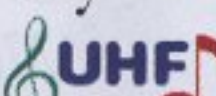
right. Undistorted power at 1 kHz was just below 20 watts. Power at 20 Hz was 4.8 watts, rising to 11.3 watts at 30 Hz, and an even 16 watts at 20 kHz.

We emphasize once more that more power is available, but with gradually declining quality.

We measured crosstalk between adjacent inputs and got very good figures: it was 74 dB down at 1 kHz, only 10 dB worse at 10 kHz. At 30 Hz it was below noise. That's enough to avoid audible leakage even in a system with a tuner.

This amplifier won't be for everyone, if only because of its size and its heat output. It also doesn't have a cage to protect the tubes from toddlers and pets, not does it come with a remote. On the other hand, it drove even our potentially problematic Suprema loudspeakers without complaining. It did so at loud levels, too.

But loud is not the whole story, because an amplifier does only a fraction of its work at maximum level. Most of the time it functions below 1 watt, and that's where some expensive amplifiers are surprisingly mediocre. The Audio Space has finesse and elegance, two of the qualities that are a part of what audiophiles call *musicality*.

We liked this amplifier a lot. If you have room for it, give it a listen. 

## SUMMING IT UP...

**Brand/model:** Audio Space Reference 3.1

**Price:** C\$3495

**Size (WDH):** 41 x 48 x 20.5 cm

**Rated power:** 50 wpc Ultralinear, 26 wpc triode

**Most liked:** Refined sound, surprising impact

**Least liked:** No remote control

**Verdict:** A level of refinement that goes way beyond its price point

## CROSSTALK

Remember that smaller Audio Space amp we reviewed a couple of issues back? It made such an impression on me that I was tempted to send Charisma Audio a cheque and hang on to it. This *much* larger amplifier doesn't have the same cuteness factor, but I am anything but disappointed. It has clearly been designed for finesse rather than muscle, and most of the engineering decisions seem to have been wise. It can resolve detail, yes, but what's more important is that it can resolve *music*.

A bargain, any way you look at it.

—Gerard Rejskind

It was an interesting test session, and in more ways than one.

From recording to recording, I was able to find common characteristics with

this amplifier: firm attacks, communicative rhythm, good dynamics, a multitude of gorgeous detail, clarity of sung lyrics beyond reproach, fine inflections, remarkable textures...in short, something not far from perfection.

I say "not far," because I *do* have minor reservations, which showed up on the Beethoven. What I heard was by no means poor, but it was below the performance of our reference electronics. That aside, this amplifier is a tremendous bargain...and you can even save on the (unneeded) interconnect cable. Add it up, and the price is frankly tempting. Give in for once!

—Reine Lessard

What a pleasure to discover that this amplifier sounds as good as it looks. Music

poured out naturally, effortlessly, creating transparent layers of sound in the space between the speakers.

I have a feeling this model will help convert a lot of audiophiles to a tube-based system. We're not talking about one of those rare amplifiers, the power of which you can count on the fingers of one hand, unable to handle more than a limited range of music styles — preferably through horn speakers. This is a very competent unit, easily adaptable to your choice of music and your existing system. It will shine proudly in your listening room and sing as loud as your ears (or neighbors) can bear.

And I'm particularly glad the designers acknowledged the increasing number of vinyl fans by including a good phono stage.

—Albert Simon