

CARVER PREMIERE AV-705X

Multichannel Power Amplifier

Steven Stone

Thanks to home theater, power amplifiers now come in many shapes and sizes. There's the single-channel monoblock, the two-channel stereo amp, the three-channel "front speaker" amp, the four-channel "almost does everything" amp, the six-channel "positively will do everything" amp, and the five-channel "does everything but the subwoofer" amp. The Carver Premiere AV-705x is one of this last variety.

This model is the successor to the six-channel AV-806x, which Tom Norton reviewed in the Fall 1995 issue of *SGHT*. Even after two years, TJN continues to feel highly enough of the AV-806x to nominate it as a *SGHT* Class B Recommended Component, including the \$\$\$ designation (which indicates performance above and beyond what is expected for the price). Now I know why.

Techno arcana

Like the HTR-880 A/V receiver reviewed by Robert Harley in the Spring 1997 issue, the THX-certified AV-705x incorporates Carver's Power Steering technology. Instead of five discrete power supplies (one for each channel), the 705x has a single large power supply that is used by whichever channel is doing the most work at any given instant. This "spongy" power supply allows the amplifier to "steer" more than 250 watts into a particular channel at one time—more than enough for most booms and bangs on movie soundtracks.

AV-705x 5-channel power amplifier

- Power output: 180 Wpc into 2 channels at 8Ω, <0.08% THD; 125 Wpc into 5 channels, <0.08% THD
- Power-steering capability: >200W into a single 8Ω channel
- Dynamic headroom: 1.1 dB at 8Ω (all channels driven)
- Frequency response: 20 Hz to 20 kHz (+0, -0.2 dB)
- Separation: >70 dB at 1 kHz
- Damping factor: >300, 20 Hz to 20 kHz
- Input impedance: 50kΩ in parallel with 120 pF
- Phase: 0 degrees (±10 degrees) from 20 Hz to 20 kHz
- Distortion: IM <0.01% CCIF, <0.03% SMPTE; THD <0.08% (at 125W into 8Ω) S/N ratio: >114 dB A-weighted;

>93 dB A-weighted referenced to 1 watt into 8Ω

Power consumption: 100W at idle; 600W with musical program; 1100W at full power into 8Ω

Dimensions: 5.75" x 19s" x 18.7" (HxWxD)

Weight: 42 lbs.

Ser.#: 96101380162

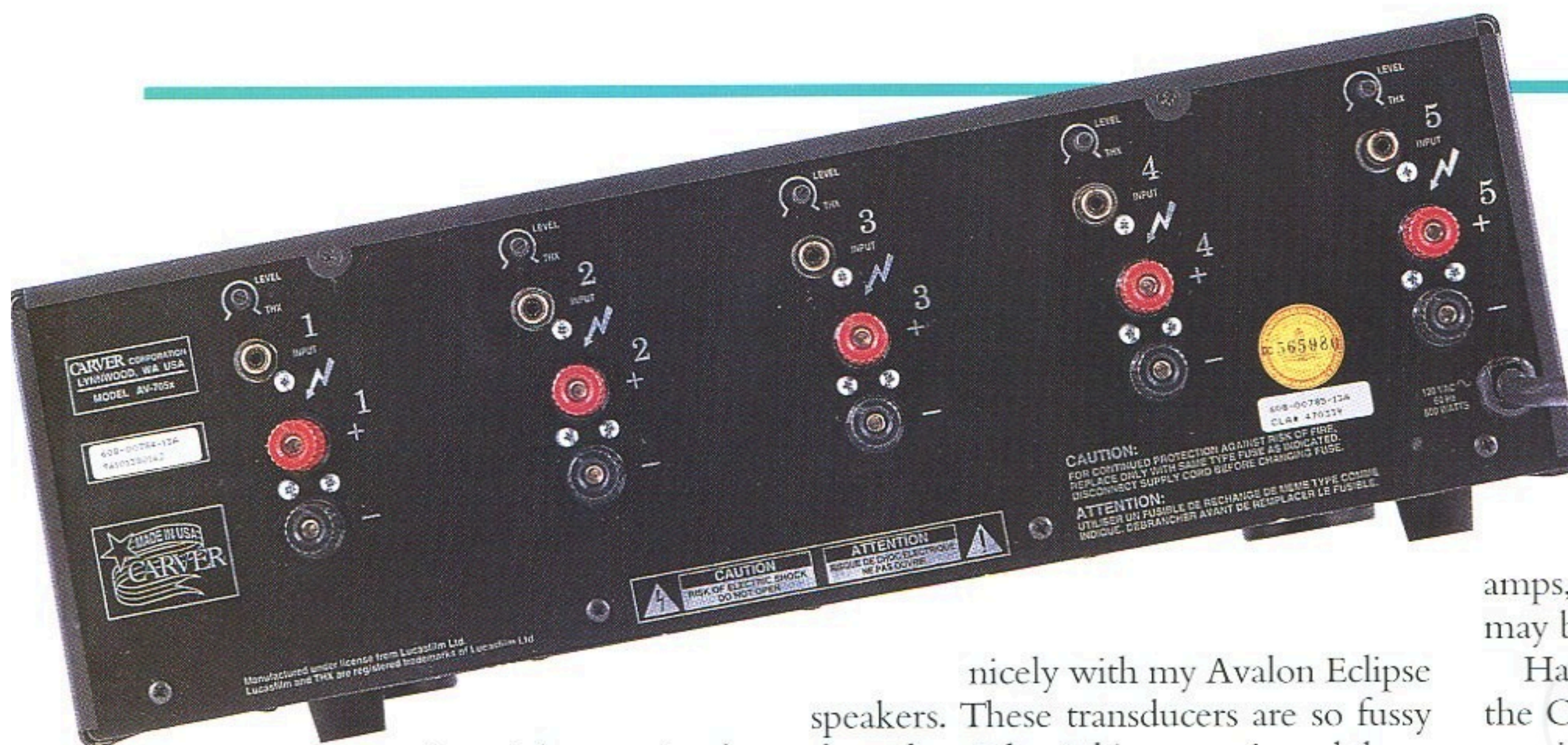
Price: \$1199

Manufacturer:

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In addition to Power Steering, the AV-705x features more efficient high-voltage energy storage than the earlier-generation AV-806x. It also offers a bunch of techno arcana of interest primarily to amplifier geeks, including fully discrete circuit topology with short signal paths, only two gain stages, fully complementary dual differential input stages, pure class-A operation throughout the voltage stages, output protection relays inside the feedback loop, advanced DC servo multistage bias regulators, clipping LEDs, double-sided glass epoxy boards, more





heatsink area in the output stage than the AV-806x, and a swell all-black chassis with Carver's trademark pseudo rack-mount handles.

Setting up and binding down

Although setting up a power amp is generally pretty easy, the AV-705x instruction book makes it seem even simpler. With admonitions like "don't panic," the book walks you step by step through the procedure.

My only quibble with the ergonomics of the amp itself are the binding posts: They're no fun to use. They have these tiny little slots that are designed for bare wire, and are really difficult to configure with spade-plug-terminated wire. Most audiophiles don't do bare wire. Thank God the posts permit banana plugs, since my Avalon Eclipse front-right and -left speakers demand bi-wiring, and fitting a double set of spade lugs in the Carver's binding posts is about as easy as playing a guitar while wearing mittens.

The sound

If I were prone to hyperbole, I could easily go overboard describing the Carver AV-705x's attributes. This is one fine amplifier. One of the most telling examples of its sonic goodness is that it mates

nice with my Avalon Eclipse speakers. These transducers are so fussy that when John Atkinson reviewed them in *Stereophile* back in 1989 he couldn't find any solid-state amps that sounded totally "right" with them. Welcome to 1997. The Carver is by far the least expensive high-power solid-state amp I've heard that sounds acceptable with the Eclipses.

Although I certainly do my share of movie-watching using my video system, the true measure of any sound-reproduction system is how well it does with music. My criteria are especially stringent since my reference sources include not only commercial releases, but my own live-concert classical recordings as well.

J. Gordon Holt and I recently recorded Anne Akiko Meyers performing the Sibelius Violin Concerto, accompanied by the Boulder Philharmonic directed by Theodore Kuchar. It was a wonderful performance, and we got a fantastic recording.

This DAT is perfect for judging a solid-state amp's traditional weak spots: three-dimensional depth and soundstaging. The AV-705x does a credible job on both. No, it isn't as three-dimensional as my reference Pass Aleph 0s (\$7000/pair), but the Carver's soundstage width is almost their equal. While the AV-705x does not have the three-dimensional

verisimilitude (God, I love that word) of the Aleph 0s, it does give a reasonable impression of depth, and clearly layers the orchestra. For listeners used to the limited depth characteristics of most solid-state multichannel amps, the Carver's abilities in this regard may be something of a sonic revelation.

Harmonic balance is one area where the Carver cheats a bit. The overall harmonic impression of the AV-705x is one of sweetness and midrange warmth. This sonic sleight of hand is accomplished by rolling off the highs ever so slightly. Compared to the Aleph 0s, there is a noticeable lack of air and extreme upper harmonics. Looking at this from a pragmatic point of view, it is not such a bad thing, since much video software and hardware suffers from top-end glare. The top-end "softening" on the Carver is subtle—I only picked up on it in direct A/B comparisons.

On the plus side, the Carver is excellent in terms of midrange grain. It not only gets midrange textures right, but does so with a level of finesse that rivals premium-quality stereo amps.

Transient speed and dynamics are two areas where the AV-705x takes on all comers. No matter what sort of SF ("sound and fury") extravaganza I threw at it, the Carver always delivered crisp, sharp transients, and never displayed any signs of distress. Be it bombs, bullets, thunder, or lightning, the Carver did a terrific job of delivering the goods. In *The Last Supper*, for example, there are numerous thunderstorms with innumerable thunderclaps. The Carver not only got the beginning transients right, but also did a superb job on the trailing edges

Had It With Thick Wire

I've got to get something off my chest: I've totally lost my patience with thick, inflexible wire. The latest generation of super-duper "audiophile" AC power cords makes me want to scream, rant, and jump up and down on them! The only premium AC cable I've got that isn't wicked-stupid thick and inflexible as hell is TARA Labs RSC. With most AC cables, I feel like Johnny Weissmuller up to his neck in jungle muck fighting pythons. Enough with the thick wires already!

This rant is courtesy of two hours spent fighting with cables

doing the "hum patrol" thing with the Carver when I first put it in my video system. For some unfathomable reason, the right-front channel hummed. I tried all the usual tricks—put everything on the same AC line, disconnected every source—I was at my wit's end. In desperation, I rerouted the right front-channel cable: I ran it across the center of the room instead of around the outside with all the other cables. *Voilà!* Hum-be-gone. I felt really stupid (some readers would suggest I should trust my feelings), but at least I solved the problem. —SS

of the meteorological mayhem.

The Carver's basic operating noise level is very good, although not quite as electronically quiet as the Pass Aleph 0s'. With a total absence of physical hum and noise, the only indication of the AV-705x's "on" status is the front-panel light and the faintest of hisses from the Avalon's tweeters. When I first put the Carver in my system, I had a hum problem in the right-front channel. (See the sidebar, "Had It With Thick Wire.") Is the Carver more sensitive to hum fields than other amps? I think not, but its low internal noise level may make you more aware of externally generated hum fields.

I just happened to have five Marantz MA-500 monoblock amps (\$300/ea.) in my clutches while doing this review, so I figured it was time to put the Carver up against something with a similar price tag. The Marantz monoblocks are fine amplifiers, and deserve their *SGHT* Class B \$\$\$ rating, but in my system the AV-705x sounded slightly better. The Carver had a more natural midrange, with increased body and harmonic complexity, especially with female vocalists.

However, the Marantzes were the Carver's equal in soundstage size, bass extension, dynamic ease, and image focus. The Carver had slightly better depth rendition, more transient life, and a lower electrical-noise level. The MA-500s had a bit more top-end extension than the AV-705x, making them more revealing of steely sources like overly close-miked strings. Differences were not drastic, but they were apparent with demanding and reference-quality software. Which will you prefer? It really depends on your speakers, room, and tastes. Both amps are certainly great values.

Listening in stereo

Jim Croft, Carver's vice president of research and development, mentioned in a cover letter that he found the AV-705x to be an excellent two-channel stereo amp and "encouraged" me to listen to it in stereo mode. Since when does an audio reviewer need encouragement to listen to stereo?

I placed the AV-705x in my large-room system and hooked it up to my reference Dunlavy Signature Vs. Other components in the system include an EAD DSP-9000 III D/A converter, PS Audio Lambda CD transport, VPI TNT 3 turntable with outboard motor assembly, Clearaudio Triquartz tonearm with Clearaudio Veritas Cartridge, Fanfare FM-1 tuner, Reference Lines Preeminence Two passive preamp, and Vendetta SCP-C phono preamp. Interconnects are from Discovery cable, and speaker wire is from Aural Symphonics.

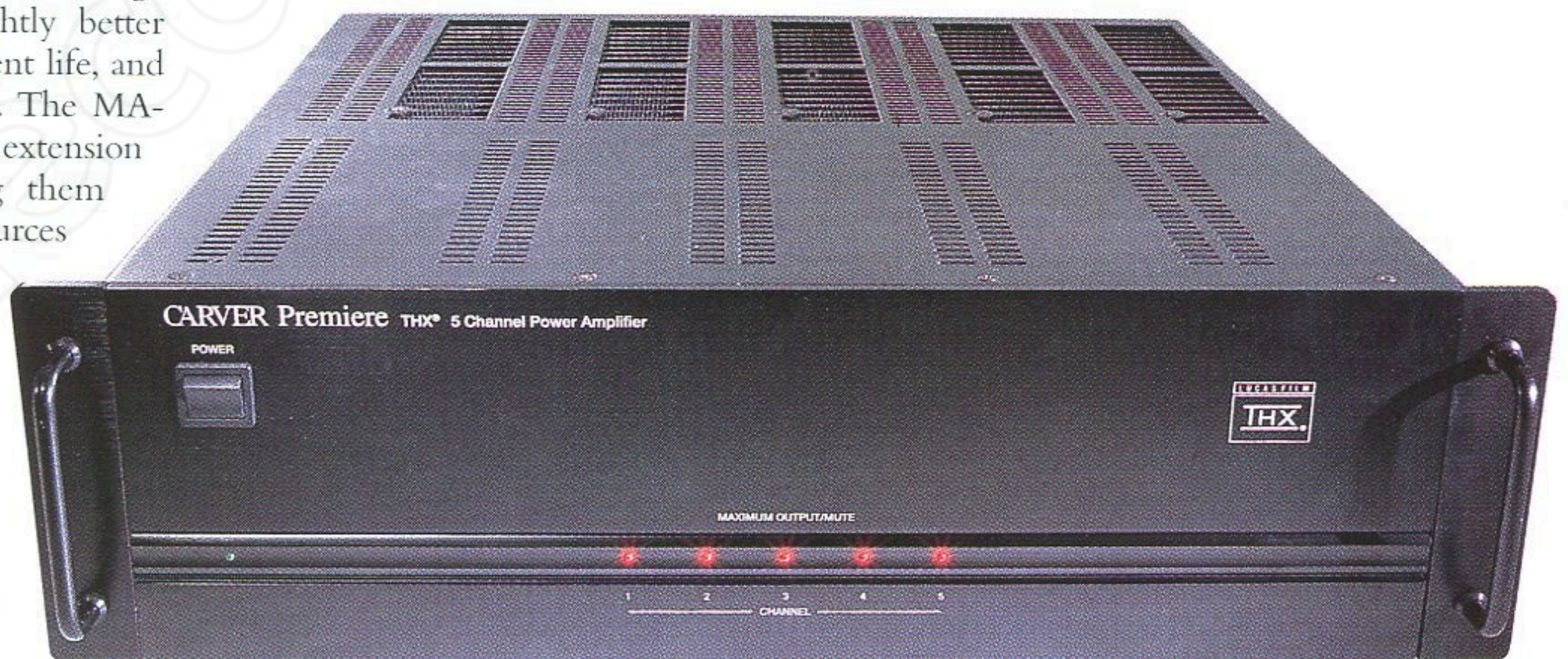
The current resident amplifier in this system is the Reference Line Model One Silver Signature. This \$7895 amp is under review for *Stereophile*. Perhaps pitting an \$1199 amp against one seven times its cost is unfair, but when was fairness a prerequisite of comprehensive

journalism? (Just kidding.) Anyway, the Carver acquitted itself rather well in this uneven match-up.

Although certainly not the equal of the Reference Line in any sonic parameter, the Carver is not nearly as inferior as its price tag might indicate. While the Carver's soundstage is not as large or as spatially well defined as the Reference Line, it is still involving and clearly delineated. On John Gorka's "Blue Chalk," from his *Between Five and Seven* CD, background vocals are much better defined through the Reference Line amp. The Carver is never muddy, but it lacks some separation and individuation of parts; there is a bit of homogenization of detail going on.

The biggest sonic difference between the two amps is in upper-frequency harmonic extension and "air." Here the more expensive Reference Line amplifier displays a level of information retrieval that totally eludes the Carver. In bass response, however, the amps are far closer in performance level. The Carver's midbass is admittedly less well defined, but it is far from woolly, and has excellent punch and dynamic speed.

Perhaps the AV-705x is not the ultimate giant killer, but it is still a fine-per-

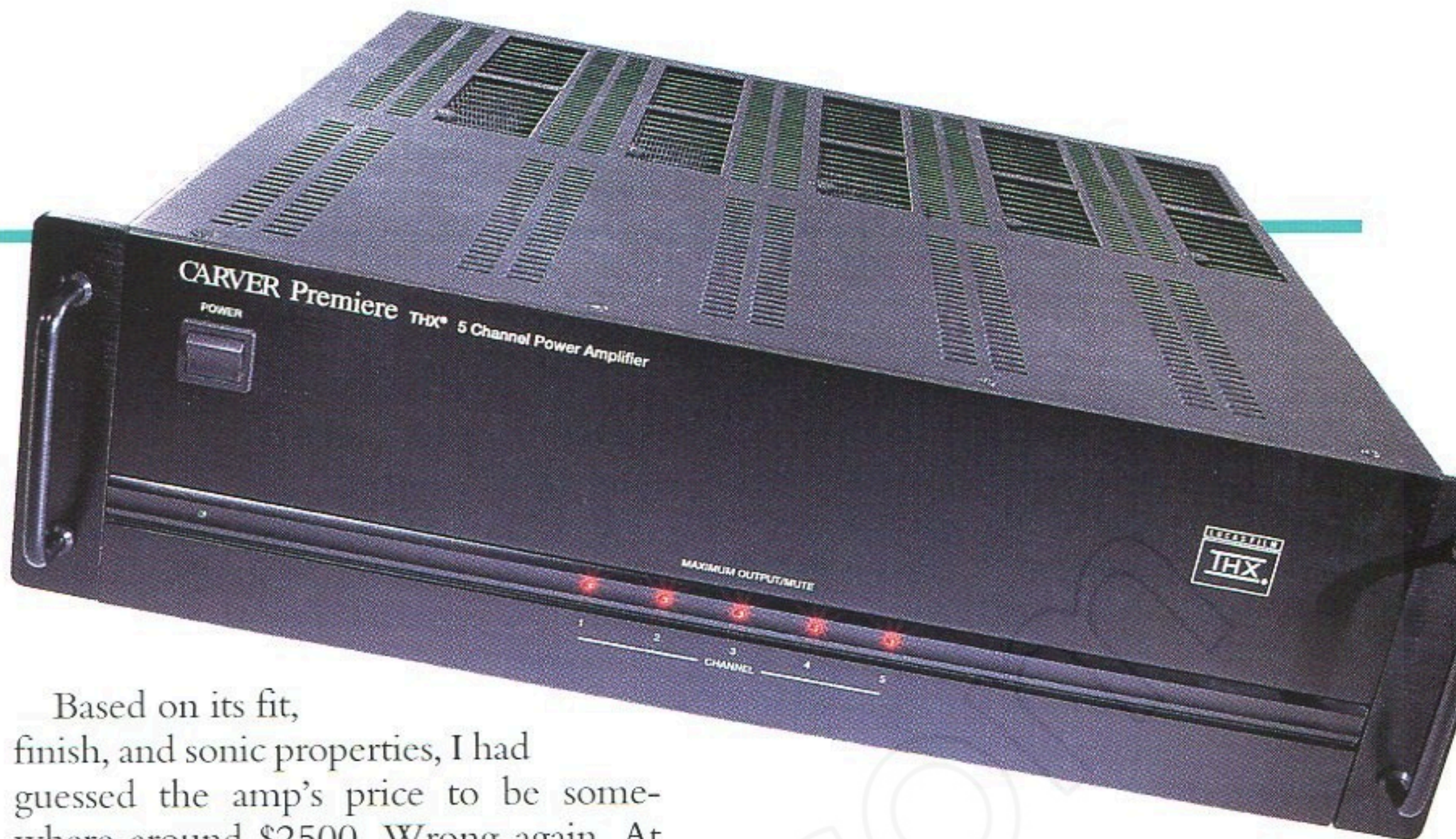


Measurements by Thomas J. Norton

The Carver's frequency-response, signal/noise ratio, and distortion measurements were all excellent. Its crosstalk was good. The input impedance was 55k Ω ; output impedance was negligible.

Measurements: Clipping (1% THD+noise at 1 kHz): 164 Wpc into 8 Ω , three channels driven; 283 Wpc into 4 Ω , two channels driven; and 116 Wpc into 2 Ω , one channel driven. The operation of Carver's "Power Steering" circuit was verified by the output with just one channel driven (1% THD+noise at 1 kHz): 206W into 8 Ω , 344W into 4 Ω .

Carver AV-705x



forming amplifier. The bottom line is that the Carver can drive a \$25,000 loudspeaker system far better than any other similarly priced amp I've listened to. Not only can it drive the Dunlavy speakers, but the sonic results were good enough to live with. Now *that* is remarkable.

Conclusions

Lately I've been making a point of listening to audio components before I know how much they cost. Since most review gear comes from Santa Fe *sans* manuals and written information, this isn't too hard to do. Only when I was well into writing this review did I discover the AV-705x's actual cost. I was very surprised.

Based on its fit, finish, and sonic properties, I had guessed the amp's price to be somewhere around \$2500. Wrong again. At \$1199 the Carver AV-705x is a stone-cold bargain. To my ears it is the equal of the very excellent Marantz MA-500 monoblocks (five of which would set you back \$1500). Both rate as best buys in the Class B "Recommended Components" amplifier category.

Congratulations, Carver. Not only have you made it that much easier for videophiles to get superior sound without taking out a second mortgage, you've also upped the ante for what should be expected from a \$1200 multi-channel amplifier. **SGHT**

Review System

My video system hasn't changed radically since my last *SGHT* review, but there have been enough minor changes to warrant a full accounting.

I had one surround processor in-house while the Carver was in my system: a Citation 7.0. Digital source components include the Denon LA-3500 laserdisc player (a very well-built player that has delivered yeoman service over the past six months), with the TosLink digital out routed through an Audio Alchemy datastream transmitter; Sony D-8 DATMAN; and a C.E.C. TL 2 CD transport connected via AT&T optical and S/PDIF coaxial outputs to an EAD DSP-7000 III D/A converter.

The analog front-end consisted of a VPI HW-19 Series IV turntable with Clearaudio/Souther TQ-1 arm and Denon/van den Hul 103C cartridge mounted on a Bright Star J-7 base sitting on a RoomTunes Just-a-Rack. I used two outboard phono preamplifiers: a Gold Aero dB-45 and Michael Yee's PFE-1. Other source components include a Fanfare FT-1 FM tuner; Sony SL-HF900 Beta VCR (yes, Beta still lives at *Casa Stone*); and Fisher FVH 8901 Hi-Fi VHS VCR.

Just before the Carver arrived, I was using three Marantz MA-500 THX-certified monoblock amps driving the center channel and two surround channels, and a pair of Pass Aleph 0 monoblocks driving the front-right and -left channels. Although it may be unconventional to use a different brand of amp for the front L/R and center channels, this combination works very well—honest.

My speaker system setup is also somewhat unconventional. I use a pair of Avalon Eclipse speakers for the front right and left, and the smaller Avalon Reference Monitor speaker for the center channel. The Reference Monitor is not shielded (neither are the Eclipses), yet I have no problems with interference. I did try turning the Monitor upside down once (to get the tweeter closer to the plane of the right and left speakers); boy, did I get a nasty

band of magenta along the top of my Proton 331 video monitor!

For surround speakers, I use the excellent yet inexpensive Paradigm Atoms. I have them mounted on Target speaker hangers angled so they point into the center of the room from the corners at a 45-degree angle. Monopolar speakers like the Atoms can work nicely as surround speakers if your room is well-damped and lacks a lot of space behind the listening position. I have one subwoofer in the system, the *SGHT* Class B-rated B&W ASW800. It is flexible, reasonably compact, and sounds great. In my room, one good sub is all I really need to get enough low bass to make any explosion a blast.

Cables include XLO and Monster THX-certified interconnects and speaker cables (see my review in the Fall 1996 issue), coaxial digital cables from Illuminati and AudioMagic, and interconnects from Esoteric Audio, Synergistic Research, AudioMagic, Discovery, and AudioQuest.

Room-treatment devices include Tube Traps and Shadow Casters from ASC, and CornerTunes, EchoTunes, RoomTunes, and custom-made Ceiling Clouds from Michael Green Designs. Components are supported on Sound Design SS-7 speaker stands; Arcici Superstructure II, Soundstyle X503, and RoomTunes Just-a-Rack equipment racks, and Billy Bags amp stands. All major components use Bright Star Big Rock isolation bases and Little Rock top plates.

Other accessories include: Shakti Stones, Fluxbuster, PAD break-in disc, Music and Sound ferrite beads, AudioQuest ferrite clamps, Chang Lightspeed power-line conditioner, Panamax MAX-1000 power-line filter, TARA Labs RSC power cords, Synergistic Research power cords, AudioQuest record brush, Gryphon "Exorcist" conditioning tool, Nitty Gritty record-cleaning machine, RadioShack sound-pressure meter, Kleenmaster Brillianize CD cleaner, and a 1965 Gibson Barney Kessel standard guitar. —SS