

MULTICHANNEL POWER AMPLIFIER

Outlaw Model 750

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Is your home-theater budget stretched thinner than Ally McBeal? Did you just buy that dream speaker system only to find that you can't afford an amp? Do those big-buck power amplifiers have you convinced that all amps sound the same just so you can get off the upgrade merry-go-round? If you answered yes to any of these questions, Outlaw Audio might have a solution.

Outlaw *who?* Well, I hadn't heard of them either. This new company of designers, engineers, and marketing professionals plans to sell its home-theater products *only* through the Internet, though I somehow suspect

they'll sell you an amp via telephone or snail-mail if you make nice with them. Buying a sophisticated product via the Internet can be intimidating, but Outlaw gives you a 30-day, no-questions-asked, money-back guarantee (minus shipping). Like it or not, Internet commerce is growing rapidly.

I'd call Outlaw "factory-direct," but they don't have a factory. Their products are built under contract in factories here in the US. (The Model 750 is the first product, and a surround preamp/processor is in the works.) And at \$1099, the new Outlaw Model 750 will steal more than a few sales from conventional vendors.

The Inside Scoop

New ideas for amplifier designs are never in short supply, but most are simply variations on old themes. Truly radical departures seldom make it to market—and cost a mint when they do. The best amplifiers usually start from established principles and follow through with solid circuit design, good parts, and quality construction. The Outlaw Audio Model 750 follows this path. Outlaw's marketing might be unconventional, but their first product is anything but.

The 750 consists of five interchangeable, self-contained amplifier modules, one for each channel. Isolated power supplies (except the power transformer) reside in each module, along with 20,000 microfarads of filter capacitance, the amplification stages, and 400 square inches of heatsink. A single 1.5kVA toroidal power transformer supplies all the modules and is located just behind the front panel. It steps down the AC voltage from the wall outlet to 10 secondary output windings, two of which are dedicated to each channel. Quality parts are used throughout, including glass-epoxy, military-grade circuit boards. The chassis is made from 13-gauge, powder-coated steel.

In the event of serious overload or shorted outputs, a protection circuit does not merely rein in the amplifier, a common practice that can result in compromised sound; instead, it shuts the amp down completely. The 750 resumes operation only when the

SPECIFICATIONS

Model 750 5-channel power amplifier

Power output: 165Wpc into 8 Ω , 250Wpc into 4 Ω , all channels driven @ 0.05% THD

Frequency response: 20Hz–20kHz, ± 0.1 dB at rated output

Intermodulation distortion: <0.05% at rated output, 20Hz–20kHz; <0.005% at 1kHz

Power bandwidth: 5Hz to >100kHz, +0/–3dB

Damping factor: >1000, 10–400Hz

Crosstalk: >90dB, 20Hz–20kHz

Gain: 28dB

Slew rate: 50V/ μ s

Input impedance: 28k Ω , nominal

Input sensitivity: 1.2V for full rated output

Dimensions: 17" \times 7.75" \times 14" (W \times H \times D)

Weight: 73 lbs.

Price: \$1099

Manufacturer

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problem is corrected and the amplifier has cooled down to a safe temperature. If the 750 is playing at all, you know it's operating optimally. I never experienced a shutdown during my listening tests.

On the outside, the Model 750 is about as simple as it gets. On the front is a combination power switch/indicator light. There are no other active features (such as clipping LEDs, etc.). On the rear are the unbalanced input and 5-way binding-post output for each channel. The permanently attached power cord is the two-conductor type with a polarized plug rather than the increasingly common three-prong variety. The amp seems lighter than its listed 73 pounds, but it feels solid nonetheless.

Listening

The best measure of any home-theater product is how hard it is to get it out of your system (double meaning intended). The best components fully satisfy your home-theater itch and make themselves right at home in your equipment rack.

As a reviewer, if I feel no urgent need to finish a review and return to my reference—which claims higher performance and a price tag to match—the product under review deserves a solid-gold star for that alone.

The Outlaw Model 750 is such a product. Admittedly, when I first installed it in my system, it sounded a bit softer and less dynamic than the Proceed AMP 5, with less top-end air and less "punch." Still, it was refined and completely at ease driving the Snell speakers (reviewed in the July/August 1999 issue) that were in my system at the time. Substituting the Proceed AVP pre-amp/processor for the Meridian 861 livened things up a bit. (The AVP sounds crisper than the warmer Meridian.) I kept the AVP in the system for the remainder of the evaluation period, but later switched to Revel Ultima Gems/Voice in front and Thiel SCS3s for the surrounds.

In the ensuing weeks, my impressions of the Outlaw amplifier progressed from

"Solid performance for the buck" to "What am I missing here? Nothing!" It does the obvious things right, with an easy, unstrained, yet involving sound, neither dull nor bright. A subwoofer was part of the system, so I couldn't judge much about the 750's bass performance; that would have to wait for the music-room evaluation (discussed shortly). But with a sub in the mix, the Outlaw never sounds anemic and never clips, at least not in an audibly obvious way. (Most amps clip on very brief peaks from time to time.) With good program material, it never sounds edgy or ragged. And its

soundstage is solid, with tight imaging and a good sense of depth when the recording or soundtrack calls for it.

The Outlaw's fine performance is consistent across a wide range of program material. *Pleasantville* has all the air and detail I expect from this subtle yet outstanding soundtrack, with particularly superb reproduction of Randy Newman's outstanding score. *Armageddon* sounds less obviously bright than with the Proceed AMP 5. This soundtrack can turn a little rough-edged and scrappy, but the slightly forgiving nature of the Model 750 is a perfect match, taming the edge a bit without



REVIEW SYSTEM

Home Theater

Video Sources

Pioneer DV-09 and DV-05 DVD players

Preamp/Processor

Proceed AVP

Power Amp

Proceed AMP 5

Speakers

Revel Ultima Gem (L/R)

Revel Ultima Voice (center)

Thiel SCS3 (surrounds)

ATC SCM0.1/15 subwoofer

Infinity HPS-1000 subwoofer

Cables

Madrigal CZ-Gel and XLO VDO audio interconnects

XLO VDO speaker cables

Kimber Kable AGDL digital cables

Misc.

Sound Anchors adjustable center-channel stand

Music Room

Sources

Mark Levinson No.37 CD transport

Mark Levinson No.36s D/A converter

Preamp

Rowland Consummate

Power Amp

Kinergetics KBA-280

Speakers

NHT 2.9 (2)

Cables

TARA Labs, Cardas, Monster interconnects

Monster speaker cables

Kimber Kable AGDL digital cables

losing the dynamic punch that is vital to this film's impact.

The Truman Show sounds as open and clean with the 750 as I know it to be. Nothing is slighted, including: the sharp transient overtones defining the drums that punctuate two key scenes; the well-recorded music score; the rain, wind, and pounding surf; and the clean, crisp, yet natural-sounding dialog. The Model 750 does it all and does it right.

A prime example of the Outlaw's capabilities was how it helped me rediscover the soundtrack from *Amistad*. Having already seen this film in the theater, I hadn't yet watched the DVD all the way through when I popped it in the player and sat down to sample a few key scenes, knowing it would have great sound. (What Spielberg film doesn't?)

It was a revelation. I ended up watching the film all the way through—a compelling experience. This is very definitely a reference-quality soundtrack. It's not often spectacular, but that's not the point. The incessant metallic clanking of the captives' chains, the ambience of the courtrooms and other interior spaces, the cannon fire, and the spacious reproduction of John Williams' score all combine with the stunning visuals to form an experience far more involving than my first viewing of the movie in a first-rate theater. The film might lack the spectacle of the key scenes near the beginning and end of *Saving Private Ryan*, but after viewing *Amistad* for a second time, I find it to have a richer, more layered narrative than Spielberg's latest WWII epic.

What does all this have to do with the Outlaw 750? Everything. The entire point of a great home theater is to re-create great cinematic experiences, and the Outlaw does its part to ensure this result. There is real depth in the *Amistad* soundtrack, and I hear it with the Outlaw. There is detail without exaggeration, and the Outlaw gets it all.



distracts from the movie itself, which is exactly as it should be.

I admit that combining roughly \$14,000 worth of speakers (not including sub) and an \$1100 amplifier seems a bit silly, but it most assuredly wasn't in this case. It was synergistic, the slightly sweet sound of the Outlaw nicely balancing the slight brightness of the Revels and the AVE. And if the Outlaw can work so well with state-of-the-art speakers, it should do just fine with any well-designed speakers you connect to it.

Music and Such

In the music room I focused on comparing the Outlaw with the Kinergetics KBA-280, an excellent \$3000 stereo amplifier. Initially, the Outlaw sounded a little brighter and brasher than the liquid, class-A Kinergetics design—as the British hi-fi mags might say, "untidy." This was not surprising, considering the difference in price. But this characteristic had been nowhere within earshot in the home-theater system.

Only on a very few peaks does it sound just a bit strained, and this is most certainly in the recording. As I mentioned earlier, the sound is neither bright nor dull. With the Outlaw in the system, nothing in the sound

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Eventually, the Outlaw settled in, or perhaps I became accustomed to its balance, which is slightly different from the Kinergetics through the inherently crisp-sounding NHT 2.9 speakers I used. At this point, its strengths began to reappear. Its performance ranged from solid to exceptional, depending on the program material. The Kinergetics displayed more warmth and richness in addition to a slightly more forward, immediate sound. The Outlaw is a little more laid-back and a bit leaner through the midbass, with more sparkle at the top end (which explains my initial impression of added brightness). With hard transients—particularly percussion—the Outlaw sounds a little more alive than the Kinergetics, but never fizzy.

Which amplifier is the more "accurate"? The definitive answer awaits the arrival of a direct line from the recording studio, perfect speakers, and a flawless room. (My script for this scenario awaits the next incarnation of *The Twilight Zone*.) But the Outlaw scores big points with its detailed top end, its airy, open quality, and its tight,

well-defined bass. The Kinergetics counters with a larger soundstage and a more palpable midrange, but it sounds less open. Its bass is more powerful, but the Outlaw's bass leaves no doubt that in a home-theater system using full-range speakers instead of a sub, it will not let you down.

Back in the Home Theater

Returning to the home-theater system, I finished up by comparing the Outlaw Model 750 directly with the Proceed AMP 5. On *Savior*, an excellent DVD transfer of a good but wrenching film, the AMP 5 sounds a little more muscular (even though the closest level match I could achieve actually meant it played 0.2dB lower in level than the Outlaw). This is clearly due to a brighter low and mid-treble, which translates into more impact and "snap." But it can also result in a slightly more aggressive quality.

At the very top end, however, the Outlaw sounds a little more airy and open than the Proceed. For example, the strings in *Savior's* music score (particularly at the start of chapter 21) sound smoother on the Outlaw. In contrast, however, the drums at the start of chapter 16—which I guarantee will make you jump out of your Lazz-Boy—are more crisp and punchy on the Proceed. (The subwoofer handles the deep bass here, but the higher harmonics, which give bass its definition and "speed," are dependent on the main-channel amps and speakers.)

The AMP 5 is also less forgiving of the slight fuzz that creeps into this and other soundtracks now and then, which might be due to digital audio compression artifacts or overload in the original recording. Overall, the AMP 5 might simply be more revealing of flaws in the program material—though that's a tough call to make. But if the Outlaw errs, it errs in the right direction—over-bright soundtracks are all too common.

These impressions were consistent with a number of different films. The AMP 5 sounds a little more immediate and alive, while the 750 is a little more laid-back, with more sparkle and air on top. But don't think for a minute that the Outlaw is somehow dynamically challenged. Not at all. I'm talking *relative* performance levels here. When they need to, both amps put out.

Conclusions

Most budget solid-state power amps fall down by being either dark and boring or etched and bright, with bass that comes in somewhere between thin and underdamped. The Outlaw has none of these failings. Whatever the caliber of your home-theater system—modest to all-out—the 750 is not likely to disappoint. It can compete with some of the best amps I know of without apologies. This isn't to say that the 750 is the best choice for all listeners and all systems, but I can say this much for certain: The Outlaw Model 750 isn't just an excellent inexpensive amp; it's an excellent amp, period. The fact that you don't need to hold up a bank to buy it is simply a bonus.



MEASUREMENTS

The Outlaw Model 750's frequency response is first-class: flat within less than 0.3dB or less from 20Hz to 20kHz into 8 or 4 ohm loads. The crosstalk is similarly excellent: -106dB at 1kHz and -84dB at 20kHz for two adjacent channels (left and center). The A-weighted signal/noise ratio measured 94.6dB, ref. 1W into 8 ohms, left channel.

The THD+noise at low power is at or under 0.15% (worst case, into a 2 ohm load) across the audible range. The squarewaves are nearly ideal, with very little rounding even at 10kHz, and a fast risetime. IM distortion measured with a 19+20kHz input is very low—less than 0.01% at 18kHz with an output of 167W into 4 ohms. The Outlaw's gain is 29dB, its input impedance 53.4k ohms, and its output impedance 0.045 ohms.

The 750's output power at clipping (1% THD+noise, 1kHz) measures 186Wpc with all five channels driven into 8 ohms, 347Wpc with two channels driven into 4 ohms, and 550W with one channel driven into 2 ohms. At 20Hz, with all five channels driven, the ampli-

fier clipped at 180Wpc. The line voltage for these measurements ranged from 116V to 120V.

Outlaw recommended that I try shorting one of the 750's outputs to check the functioning of its protection circuit. When I did this, with a 1kHz input signal driving an 8 ohm load to 20W prior to the short, the affected channel shut down. It recovered a few seconds after the short was removed, with no measurable degradation in the amplifier's post-short performance.

While some very large, very expensive amplifiers (generally stereo or monoblock designs) double their output power with each halving of load impedance, the Outlaw Model 750 will not do this. But it appears to have no problem putting significant power into low-impedance loads. And within its substantial power limits—which I was never able to audibly exceed during my listening tests—you will be unlikely to find better test-bench performance from any amplifier at any price, whether monoblock, 5-channel, or anything in between.—TJN