

Simply Elegant Performance

Hot House Model Six Hundred Power Amp PRM 165 Passive Reference Monitors

by Frank Wells

The Model Six Hundred is part of the third generation of control room reference amplifiers from Hot House, joining Models Four Hundred and One Thousand (all stereo) and the Model Two Thousand (dual monoblock, from the preceding series). The stereo amps, while using modern output stages, also rely on a straightforward, uncluttered design. The massive dual-split toroidal power transformer in the chassis center and the substantial heat sinks on each side are the design features that seem to dictate the 3RU chassis height, and that take most of the responsibility for the 36-pound weight.

Input signals are maintained differentially throughout the signal path, with just a pair of op-amps as active components per channel, prior to the output devices. The Six Hundred uses eight output devices per channel and is rated

at 175 watts per channel into 8-ohm loads, 275 and 325 watts into 4 and 2 ohms, respectively. I was fairly brutal to the amp, heating up my load resistors and the amp by demanding full output for an extended (far beyond what would be encountered in practical use) time. If the internal thermal protection of the output devices ever came into play, it was not readily apparent in the performance.

The amp runs clean, with THD + Noise ratios nominally in the .00x percent range (that's good, especially for a power amp—we are used to lowering our performance standards for amps, but the Model Six Hundred is proof that such compromises aren't necessary). Intermodulation distortion numbers are equally good, as is frequency response. I measured the 3 dB down point as close to 100 kHz, more than acceptable even for high-resolution, wide-bandwidth audio. Linearity measured within .05 dB

across a 55 dB range of input signal. The noise floor is clean, with no sign of oscillation or other spurious signals.

The Model Six Hundred is simple in implementation—no volume control (which I find typically adds unnecessary circuitry in practice), the power switch is the only feature on the chassis front (a thick aluminum plate with an elegant gloss black finish). On the rear is an IEC power input jack, Neutrik combo 1/4-inch TRS/XLR jacks for audio input, and high-quality 5-way binding posts for output. I measured the throughput gain at just over 28 dB, with left and right channels matching within .01 dB. The 175-/275-/325-watt power ratings are conservative, as I said. Measured just at the tiniest indications of the onset of clipping, I measured 184/285/325 watts, and at around .1 percent THD + N (a commonly used measuring point), I measured 190/305/350 watts.

As for audible performance, the highest praise you can give an amplifier is that it has no distinctive sonic signature. The Model Six Hundred performs as advertised, simply taking the input, making it louder, and driving speaker loads without audible artifacts. I used the amp on the Hot House PRM 165 nearfields also provided for this review, with Tannoy System 600s, also with some cheapo consumer speakers that have proven a difficult load in the past, and even with a modest PA stack. In all cases, the Model Six Hundred performed its assigned task with transparent ease.

The PRM 165s deserve a mention of their own. The rear-ported passive cabinets house a 6.5-inch woofer and 1-inch recessed dome tweeter. The shielded cabinets weigh in at 25 pounds each. The 165s have as nice an attack as I've ever heard from a dome tweeter. Transients are crisp, and there is no tendency towards sibilance or edginess. The low-frequency performance is outstanding for a cabinet of this size; I'd swear the 165s performed well beyond their 58 Hz rating. While bass is tight with plenty of punch, I did find the end of the woofer's volume capabilities before my ears gave up.

I know a few engineers with a penchant for demanding excessive volume from a nearfield monitor, and they may not find the PRM 165s loud enough for their tastes. That said, the performance was plenty satisfactory for my tastes, with their best feature being their ability to sound excellent at modest volume, and to do so without any listener fatigue over long listening sessions. Their performance is, like the Model Six Hundred amp, transparent and musical. Instruments that I know were recorded to sound like the originals do just that—they sound real.

Singly, or as a package, the Hot House Model Six Hundred amplifier and PRM 165 speakers are capable performers. The components are premium-priced, but the price is backed up with solid performance. This review was my first direct experience with Hot House products, an enormously positive experience. I hate to see them go.

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The Drawing Board

With their Models Four Hundred, Six Hundred and One Thousand stereo amplifiers, Richard Rose, the president of Hot House, reveals that their design approach is markedly different than that taken with previous Hot House amplifiers. For this third generation of amps, Hot House has developed a way to cascade a commercially available amplifier device to achieve professionally useful performance and power output. "It's not a cost-effective way to build an amplifier by today's standards," says Rose. "There are cheaper ways to get an amplifier out the door, obviously."


But while cost is always a factor in product development, Rose says the main reason the approach is employed is "in the interest of getting the best sound possible." This approach allowed the design team to avoid "all of the things that get in the way of the audio," such as negative feedback and protection circuitry. The voltage limitations of the device used dictate the size of the amp that could be built. "The One Thousand is as big as we can get," says Rose. "The Two Thousand is still using the MOSFET technology from the last generation." The Model Two Thousand dual monoblock amp uses 40 output devices in a more traditional approach, though totally avoiding the use of feedback—totally feedback-free.

The model Six Hundred and its kin have "no global feedback," beyond that inherent in the output devices. "I hear feedback in amplifiers," says Rose. "It doesn't do it for me, usually." One factor, says Rose, is that the amps transition into an overload condition more gracefully without the use of a feedback topology.

With test loads well below 1 ohm, Rose reports that the amp still performs. "The only way I could get the devices to go into audible protection mode is by putting a dead short, a screwdriver, across the terminals in parallel with that, say, 1/2-ohm load," he elaborates. "When you take [the short] away, the amazing thing is, it doesn't even blow a mains fuse, it just goes back to normal."

As for the Hot House PRM 165 nearfield monitors also used in the review, Rose says the approach was "to do the most accurate, smoothest, flattest, non-fatiguing speaker we could, but not one that was flattering. One that may sound beautiful, but you hear what you're doing. Usually, those are mutually exclusive—if it really sounds great, it means that something's being hidden from you, usually. In our case, I think, if it sounds great, it's because you have great music on the tape."


Rose says that they get consistent comments from veteran engineers that the PRM 165s provide a non-fatiguing performance that does not require the engineer to "check the mix" on other speakers. Rose reports a typical end-user comment as: "The 165s always seem to translate, and I can mix for 25 hours in a row."



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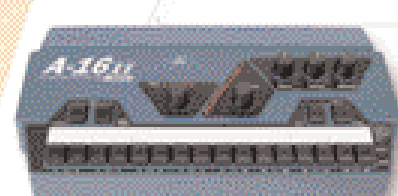
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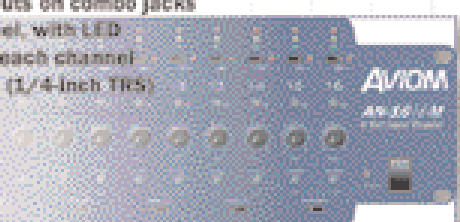
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Product information

Model Six Hundred stereo power amplifier:
\$2,499 (optional polished front panel: \$199)
PRM 165 nearfield reference monitors:
\$1,299 (pair)
Hot House
www.hothousepro.com