



Sherbourn

PT-7000 Preamplifier and 7/2100 Amplifier



Sherbourn Technologies is a small Boston-area firm best known for modular power amplifiers available in multichannel configurations for both home theaters and multiroom systems. It's quickly won a rep for ample power, fine performance, tanklike construction, and fair value.

The company's power amps are now complemented by the PT-7000 digital surround preamplifier/tuner, a 7.1-channel design equipped with all the necessities of serious audio/video playback and virtually none of the frills — a very refreshing combination. Sherbourn has also introduced its most imposing home theater amplifier yet, the new Model 7/2100, which delivers 200 watts to each of seven channels into 8-ohm speaker loads, or 300 watts into 4-ohm loads. That amount of electrical motivation is so substantial that the amp is equipped with not one but two power cords to feed

wall current to its seven independent output modules.

The PT-7000's front panel is unadorned, with a modest field of large, easily felt pushbuttons, a plain display window, and a single knob — along with really, *really* big, bright-white control labels. Woo hoo! Rear-panel features include six digital inputs (two coaxial), wideband (HDTV-compatible) component-video switching for two sources, and ample analog audio and video ins and outs, including a six-channel set of discrete audio inputs and a 7.1-channel set of outputs (the additional, duplicate back surround channel is for a second speaker in that position).

The five main channels of the multichannel input are equipped with a defeat-able 12-dB-per-octave, 80-Hz high-pass filter. In addition, the bass below 100 Hz in those channels is filtered out, at 24 dB per octave, and combined into the channel fed

to the subwoofer output. This makes the PT-7000 one of those rare pre-amp/processors that provides full bass management for its multichannel analog input.

All of this was starting to seem familiar when it occurred to me that the Sherbourn preamp/tuner is fundamentally the same (other than the name on the faceplate) as the Outlaw Audio Model 950 that I reviewed in the July/August 2002 *Sound & Vision* (available on our Web site in the Equipment Reports Archives). However, Sherbourn points out that there are important distinctions. For instance, the PT-7000 uses more costly capacitors, selected for low leakage and low ESR (effective series resistance), and more expensive, higher-performance op amps in its audio circuits, said to combine for enhanced resolution and low-noise dynamics.

I verified these internal differences, and the PT-7000's lab measurements were indeed slightly better than the Outlaw's in several regards (see "in the lab," page 59, for details). And as with the Outlaw preamp, I was impressed with the PT-7000's performance, ease of use, and no-nonsense layout.

As mentioned above, the PT-7000 provides a full suite of bass-management controls for its multichannel analog input. Why is this important? If you have small, bass-shy satellite speakers, you need good

fast facts

RATED POWER 200 W x 7, each channel driven, into 8 ohms from 20 Hz to 20 kHz with less than 0.05% THD

DIMENSIONS (WxHxD) **PT-7000**

preamplifier/tuner, 17³/₄ x 5¹/₄ x 15⁷/₈ inches;

Model 7/2100 amp, 17³/₄ x 7 x 18¹/₂ inches

WEIGHT PT-7000, 25 pounds; 7/2100, 115 pounds

PRICE PT-7000, \$1,500; 7/2100, \$2,850

MANUFACTURER Sherbourn

Technologies, Dept. S&V, 19-3A Sterling Rd.,

North Billerica, MA 01862;

www.sherbourn.com; 978-663-7385

test report



The Sherbourn duo didn't even break a sweat during the intense, lengthy battle sequence of *Pearl Harbor*.

key features

PT-7000 preamplifier/tuner

- Dolby Digital EX and DTS-ES 6.1-channel decoding
- Dolby Pro Logic II and DTS Neo:6 processing for 5.1/6.1-channel playback from two- or matrixed four-channel sources
- Cirrus Extra Surround postprocessing for 6.1/7.1-channel playback from stereo or 5.1-channel sources
- Compatible with 96-kHz/24-bit PCM stereo recordings
- DSP crossover frequency individually selectable for L/R front, center, and surround channels
- Analog bypass for straight-through stereo playback
- 2 HDTV-compatible component-video inputs, 2 outputs
- 5 A/V inputs, 2 outputs, all with S-video
- S-video, composite-video cross-conversion
- 4 optical, 2 coaxial digital audio inputs; 1 each optical and coaxial outputs
- Multichannel analog audio input (6-channel) with full analog bass management (80-Hz fixed subwoofer crossover)
- 4 stereo audio-only inputs; 1 record output
- 8 preamp outputs
- AM/FM tuner with 32 presets
- 8-component preprogrammed/learning system remote
- Zone 2 audio-only line-level analog-stereo output with independent source selection and volume control
- Dual-zone IR-repeater inputs, 12-volt trigger outputs

Model 7/2100 amplifier

- Seven fully independent modules
- RCA and balanced XLR inputs, multiway binding-post outputs
- Channels 1-2, 3-4, and 5-6 bridgeable for higher power
- Manual, auto signal-sensing, or 12-volt-trigger turn-on

bass management to get the best possible sound from DVD-Audio and multichannel Super Audio CD recordings, and the PT-7000 will provide it.

The preamp's remaining roster of what might be considered "extras" is blessedly short. There's a multiroom feature that sends line-level stereo audio to a remote room — a bit spartan, given that plenty of preamp/processors (and receivers) in this price range provide both audio and video facilities for a second room. There's no RS-232 or other computer port, but Sherbourn says an accessory box and software are imminent that will enable communication — presumably via the PT-7000's infrared-control minijacks — with serial-control systems.

Next up is Cirrus Extra Surround, a form of postprocessing that you can piggyback atop Dolby Pro Logic II or Dolby Digital to yield 6.1/7.1-channel playback from two-channel stereo, surround-encoded four-channel, or 5.1-channel recordings. Its name derives from Cirrus Logic, the firm that supplies the processor's digital signal processing (DSP) engine, and its effects were clean, defined, and noninvasive in adding a back surround channel. It seemed to increase the spread of surround ambience forward without wreaking havoc with the "real" 5.1-channel signals.

Arguably more valuable over the long haul, the Theatre Compensation mode en-

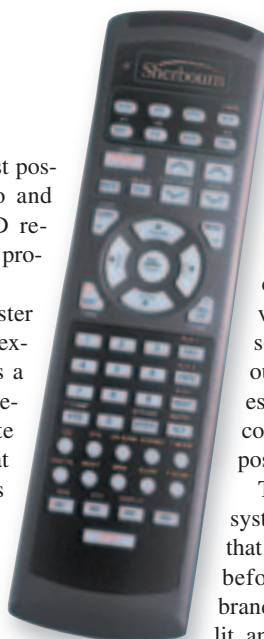
gages a very gentle top-octaves rolloff that can tame soundtracks that are too trebly. Also, the PT-7000 cross-converts composite- and S-video sources so that any source is available on either output, which might be handy, especially with VCRs and other components that have only composite-video jacks.

The supplied eight-component system remote is a familiar one that I've encountered many times before from several different brands. It's clearly labeled, well-lit, and easy to use. Overall, I loved

the PT-7000's straightforward design, unencumbered by silly modes or features and simple to set up and use.

The rest of this Sherbourn story is about power, and the 7/2100 amplifier is a beast. It proved literally more than I could handle alone — I had to enlist help even to uncrate the thing. This is one ultra-solidly built amp, a fact you absorb just by manhandling its 115-pound chassis, noting the very heavy metalwork.

The front panel is a featureless expanse except for the Sherbourn logo, a large power switch, and a blue LED. Around back there are seven input-jack groupings, each with a standard RCA input and a pro-style balanced XLR input (balanced connections use a three-wire cable to reduce noise and hum). Three of the channel pairs can be bridged to a single channel rated for 400 watts into 8 ohms. The ampli-



HIGH POINTS

Excellent surround performance.

Full bass management on multichannel analog input.

Refreshingly simple-to-use design and controls.

Huge seven-channel power output.

LOW POINTS

Expensive.

No headphone jack or front-panel A/V input.

fier outputs are solid multiway binding posts.

Inside I found seven identical, independent channel modules, each with its own toroidal power transformer, storage capacitors, and heat sink. A rear-panel slide switch lets you set the huge amp to turn on manually, automatically when it senses a signal at its inputs, or with a 12-volt trigger.

I encountered no surprises in setting up or balancing the Sherbourn components. The PT-7000's simple and straightforward setup menus covered the basics, and the resulting channel balance remained spot-on at virtually any master-volume setting. You can select subwoofer crossover frequencies of 40, 60, 80, 100, 120, or 150 Hz individually for the front left/right, center, and surround speakers/pairs. This may seem a small thing, but this kind of bass-management precision can make the difference between merely "great bass" and "great sound" overall because it helps you blend the output of the subwoofer and satellites in each one's critical crossover region.

Being familiar with the preamp/processor's basic design and performance, I anticipated top-drawer Dolby Digital and DTS decoding, and that's what I heard. It didn't matter what multichannel stuff I threw at the Sherbourn duo, it sounded uniformly clear, dynamic, and three-dimensional — in a word, terrific.

I did a good portion of my listening in all-full-range mode with no subwoofer, to wring out the amp as thoroughly as I could using my moderately low-sensitivity, nearly full-range seven-speaker suite, and never once heard an effect that could be ascribed to sub-par decoding or wattage limitations. Even the highest of high-voltage movie soundtracks around, like that of *Pearl Harbor*, failed to break a sweat from the 7/2100, and the PT-7000's Dolby Digi-

tal EX (and DTS-ES) processing was clear, stable, and engrossing, right through the impressively produced, 35-minute, non-stop battle sequence — the only conceivable reason to own this otherwise deplorable movie.

Otherwise, the dominant impression was one of quiet power: the kind of dynamic ease and effortless impact that only a really big, really powerful amp delivers. And I think this counts as much (or more) on material you wouldn't expect as on the obviously dynamic, headroom-stretching crescendos. For example, the DVD-Audio disc of Neil Young's classic *Harvest* is an excellent production, and the Sherbourn gear transported me effectively to the inti-

mate acoustic of the "barn" studio (one of four different ones on this album), believably conveying the tweedy thumping of Tim Drummond's hollow-body bass and the tight, almost claustrophobic smacks of Kenny Buttrey's drumming.

Bottom line: No one who chooses the Sherbourn PT-7000 preamp and 7/2100 amp combo is likely to be disappointed on the basis of fundamental performance. This duo does a super job of providing serious home theater audio, without fuss or fanfare. The components aren't exactly bargain priced, but they aren't priced extravagantly either. And for that money you get a kind of artillery-piece solidity that's quietly reassuring. **S&V**

in the lab

DOLBY DIGITAL PERFORMANCE

All data were obtained from the Dolby Labs test DVD and other discs using dithered test signals, which set limits on measured distortion and noise performance. Reference input level is -20 dBFS, and reference output is 1 watt into 8 ohms, obtained with the volume control set to read -14 dB. Except for subwoofer-related tests, all speakers were set to "large," subwoofer on. All are worst-case figures where applicable.

Output at clipping (1 kHz into 8/4 ohms)
1 channel driven.....253/381 W (24.0/25.8 dBW)
5 channels driven (8 ohms)...206 W (23.1 dBW)

Distortion at 1 watt (THD+N, 1 kHz)
8/4 ohms.....0.03/0.04%

Noise level (A-wtd)-72.4 dB

Excess noise (with sine tone)
16-bit (EN16).....+2.6 dB

Frequency response
20 Hz to 20 kHz +0.2, -1.2 dB

Subwoofer-output frequency response
24 dB/octave above -6-dB rolloff point of 80 Hz

High-pass-filter frequency response
12 dB/octave below -3-dB rolloff point of 78 Hz

Maximum unclipped subwoofer output (at reference volume setting).....6.3 volts

Subwoofer distortion (from 6-channel, 30-Hz, 0-dBFS signal; master volume at reference level; subwoofer trim set to 0).....2%

The Sherbourn duo delivered very good test-bench numbers. Noise was generally within a couple of decibels of the theoretical ideals in our real-world, dithered-silence tests. The preamp was 96-kHz/24-bit-capable, and noise improved satisfactorily with 96/24 signals, though response was down a bit more at 40 kHz than with some other 96/24 components I've tested.

Maximum unclipped subwoofer output and

MULTICHANNEL PERFORMANCE, ANALOG INPUT

Reference output level is 1 watt (into 8 ohms) from 200-mV input; volume setting for reference output level was -14 dB.

Distortion
(THD+N, 1 kHz, 8/4 ohms).....0.08/0.09%

Noise level (A-wtd)-69.6 dB

Frequency response
<10 Hz to 77 kHz +0.2, -3 dB (-6 dB at 125 kHz)

STEREO PERFORMANCE, DIGITAL INPUT

Reference levels and volume setting were the same as for Dolby Digital measurements. Speakers were set to "large," subwoofer off.

Output at clipping (1 kHz, 8/4 ohms, both channels driven).....241/355 W (23.8/25.5 dBW)

Distortion at 1 watt
(THD+N, 1 kHz, 8/4 ohms).....0.02/0.02%

Linearity error (at -90 dBFS).....0.3 dB

Noise level (A-wtd)-73.4 dB
(-75.6 dB with 96-kHz/24-bit signals)

Excess noise (with/without sine tone)
16-bit (EN16).....+2.8/+2.6 dB
quasi-20-bit (EN20).....+18.7/+18.5 dB

Noise modulation0.3 dB

Frequency response (tone controls off)
10 Hz to 20 kHz +0.2, -1.2 dB
(<10 Hz to 27 kHz +0.2, -3 dB; -6 dB at 38 kHz with 96-kHz/24-bit signals)

reference-level distortion were both impeded because the PT-7000 "soft-clipped" its line outputs (all channels) when asked to produce more than about 1 volt into 100 kilohms, reaching about 2% THD at any frequency at outputs of 2 volts or more. In practice, this should not be a significant factor unless the sensitivity of the amplifier or speakers employed is unusually low, requiring a master-volume setting above "0 dB." — D.K.