

SECRETS

of Home Theater and High Fidelity review

Parasound 2100 Stereo Preamplifier and 2250 Stereo Power Amplifier - June 2008

"... the Model 2100 and 2250 are excellent products (...) clearly superior ..."

BY CHRIS GROPPI

"... you can't go wrong with the Model 2100 and 2250, and you'll have to spend quite a lot more to do significantly better."

INTRODUCTION

Now is a very good time to be an audiophile. The market is awash in high quality, high value audio components from many, many manufacturers. While even just a few years ago, you could easily spend lots of money for marginal performance, today there's a great selection of moderately priced equipment that really deliver the sonic goods. I recently replaced my stalwart Plinius 8150 integrated amp with a preamp and amplifier combination from Emotiva, the RSP-1 and RPA-1. These US designed and Asian manufactured components were clearly superior to the \$3000 Plinius, but at roughly half the price.

Parasound is a well-respected manufacturer of high quality electronics dating back almost

30 years, and they have always had a foot in the "value high end" arena of affordable but high quality electronics. Their "New Classic" line of amplifiers, preamplifiers, processors, and source components are in many cases based on previously successful Parasound designs, and offer high quality at reasonable prices.

The components reviewed here, the Model 2100 preamplifier and 2250 power amplifier, are virtually identical in specification and features to my new Emotiva components, and are also comparatively priced. I was excited to be able to try some value separates that many audiophiles would be able to find in local brick and mortar stores. While the Emotiva pair is fantastic, I know many people are just not interested in buying components over the Internet without being able to listen





to them first. The Parasound 2100 and 2250 are much more widely available.

THE DESIGN

As one would hope with high quality electronics, a cursing UPS driver delivered the Parasound pair. I guarantee I will not be on the UPS Christmas list with all the incredibly heavy boxes delivered to my house. While not ridiculously heavy, the Parasound amp and preamp need to be shipped in sleeved heavy duty boxes with built-in plastic lifting handles.

After unpacking, one can see why they are heavy, as both units are housed in heavy gauge pressed steel chassis with a crackle black paintjob. Unlike Emotiva, each component gets its own custom designed enclosure. Both the amp and preamp sport a machined aluminum face, with very clean and unobtrusive cosmetics.

“... sound quality across the board so good ... the Parasounds are a steal.”

The Model 2100 preamp has a relatively slim enclosure, with simple front panel controls. A rotary encoder is used to switch between sources with relay based switching. A potentiometer does volume control duty, in addition to pots for sub level control, tone controls (defeatable), and balance. A mini-jack input labeled “MP3” is available on the front panel for iPod connectivity, in addition to a mini headphone jack. A vacuum fluorescent display shows the selected source and tone settings. For those like me who want to integrate a high quality two-channel preamp in their home theater setup, a bypass input is available that simply routes a set of inputs through the preamp, allowing use of an SSP for home theater duty.

The rear panel offers a slew of RCA single ended inputs, but no balanced inputs or

outputs. A phono stage, based on the well-received Zphono preamp, is included, as well as a defeatable subwoofer crossover. While only a single pair of RCA outputs is provided, the Parasound amps all offer daisy chained RCA outputs for additional connectivity. For custom installation, RS-232 control, as well as 12V trigger inputs and outputs are provided.

The simple remote for the model 2100 gives you all the controls you need, and none that you don't.

Inside the 2100 preamp chassis, all the circuitry is contained on three PCBs. A small but well built power supply board supplies the DC power to the other two boards. Behind the front panel lives the control board, with all the front panel related electronics. This talks to the main audio board located at the rear of the unit via several discretely wired umbilical cords. The amplification is based on TI NE5532 dual op-amps, with relay-based source switching. Compared to the Emotiva RSP-1, the Model 2100 gives up a little in internal features (the Emotiva RSP-1 offers a larger power supply, higher quality op-amps, and balanced inputs and outputs), but it is still clear that the Model 2100 is a very well built component that belies its \$600 price tag.

The model 2250 power amplifier is a beefy 250WPC stereo amp capable of delivering 45A peak into each channel. The amp is housed in a matching crackle black painted

chassis with a machined aluminum front panel. Given the considerable heft of the amp, the lifting handles mounted on the rear panel were a welcome addition. Dual binding posts are provided, but not for bi-wiring. Two sets of speakers can be connected to the amp, and selected via an A/B selector on the front panel. An extra set of loop RCA jacks on the rear panel allows daisy chaining amplifiers or connecting to an active subwoofer. The amp can be bridged to mono to deliver 600W of power. A ground lift switch is provided to get around ground loop noise problems. Auto turn-on is present, as well as an adjustable level control. This can be set to a reference detent when not needed.

Inside, the amp has a single large power transformer, and two large extruded heat sinks dissipating the waste heat of all the output transistors. The amplifier's circuitry is contained on a single large PCB, independent from the power supply. This is a traditional stereo amplifier topology, as opposed to the dual-mono construction of the Emotiva RPA-1 that has two separate power transformers and two separate circuit boards for the right and left channels.

The Parasounds stuck mainly to my preferred ideals of offering only necessary features without lots of extra bells and whistles. I could have done without the adjustable gain on the Model 2250 (just another pot for the signal to go through), and the inclusion of tone controls and a subwoofer crossover on the Model 2100, but overall the execution of these two products was excellent.

THE SOUND

As usual, I installed the Parasound duo in my system and ran them on home theater duty for a few weeks before doing any critical listening. The bypass mode of the preamp made this job very easy. As with previous amplifier/preamplifier combos, I listened to these as a single unit, and made no attempt



to separate the performance of the amplifier and preamplifier.

After this break-in period, I had a system that sounded very close to what I had before (with my Emotiva separates). If you've read the review of those components, then you will understand the sound quality was excellent across the board. It took some careful listening, and going back to the Emotiva pair, to find all the small differences between these components. The short answer is that I would be an extremely happy audiophile with either of these preamp/amp pairs.

As with the components they replaced, the Parasound duo offered excellent tonal and spatial separation of instruments. The Emotivas were champions in the tonal separation of instruments, but offered slightly flat, two-dimensional representations. The Parasounds gave much rounder, three-dimensional images but at the expense of overall clarity and tonal sharpness. This might be due to the balanced design of the RPA-1 and RSP-1. When used with single ended interconnects, the Emotivas lose some of their clarity. Overall soundstage depth and width was also superior with the Parasounds. This surprised me, as the Emotiva RPA-1 has true dual mono construction inside, while the Parasound Model 2250 is a traditional stereo amplifier. This is just another example of why a list of specifications can't tell you what a component sounds like!

With an additional 50WPC, the Model 2250 did an excellent job controlling the bass of my Gallo Reference 3.1s. The extra low-end grunt had me readjusting the gain on my Gallo Reference SA subwoofer amplifier that drives the second voice coils of the Reference 3.1s. The Emotivas might have offered just a tiny bit more bass agility and clarity, but the big model 2250 really delivered in the impact department. If you have power hungry speakers, this \$1200 amp could be just what you need. If you have REALLY power hungry speakers, you can even get two and bridge them to mono.

I found that the phono stage in the Model 2100 was very similar in performance to the excellent phono stage in the Emotiva RSP-1. When listening to LPs, I heard the character of the components as with any other input. Both phono stages were excellent at getting out of the way of the music, and were obviously superior to the Lehmann Black Cube phono stage I used to own. For those

out there who still love listening to LPs, the Model 2100 should be on your short list of reasonably priced preamps with good built in phono stages. In fact, the \$600 MSRP of the Model 2100 is about what I paid just for my Black Cube.

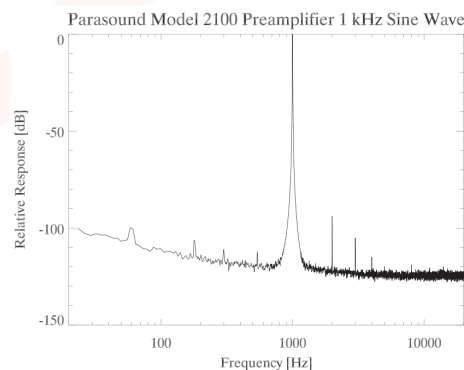
".. excellent tonal and spatial separation..."

Overall, the Model 2100 and 2250 are excellent products, and perform way beyond the \$1800 asking price for the pair. They are clearly superior to many products I have heard costing twice as much, including the Plinius 8150 integrated amp that the Emotivas displaced. Compared to that amp, which garnered many awards from reviewers, the Parasound pair is superior in almost every way. The bass impact and control of the 2250 is absolutely spectacular. The wide, deep and three-dimensional soundstage offered by the Parasound pair is also superior to the Plinius, although the Plinius did have the ability to reproduce a very tall soundstage that could reach from the floor to the ceiling. The Parasounds also bested the Plinius in terms of overall clarity and image separation. While I do believe that the Emotivas have the edge here, the Parasounds still outperformed the \$3000 Plinius. While I did not have the Plinius for direct comparison, it was still obvious to me that the Parasounds sounded better.

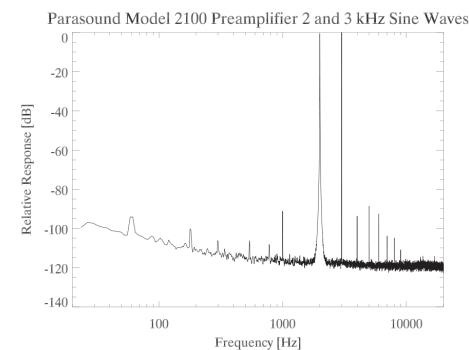
ON THE BENCH

Measurements were made with PHS SpectraPlus FFT analysis software and a Roland Edirol UA-101 24 bit 196 kHz USB sound card. 8 ohm 300W power resistors were used as the load for the amplifier, with a divide by 100 voltage divider to reduce the amplitude of the measured signal at the input of the sound card.

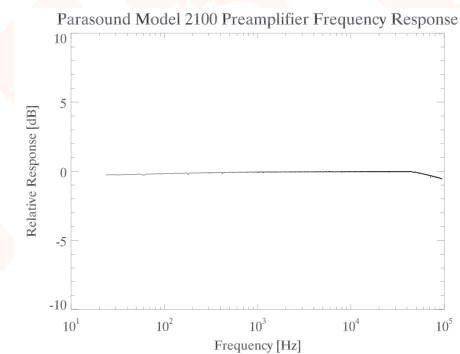
2100 Preamplifier



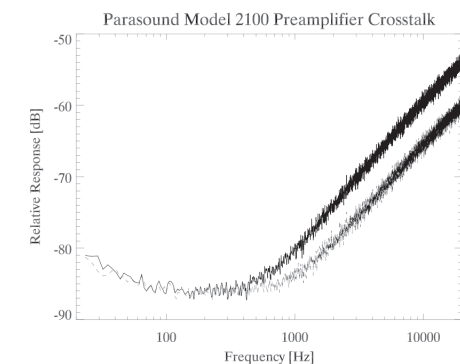
Here we see the output of the preamp with a 1 kHz sine wave at the input. Harmonics are at least 90 dB down from the signal, with the second harmonic the highest in amplitude. The more objectionable third harmonic is more than 10 dB lower in amplitude.



The intermodulation spectrum shows the output of the preamp with 2 and 3 kHz sine waves at the input. The 1 kHz intermodulation product is also about 90 dB down from the signal tones.

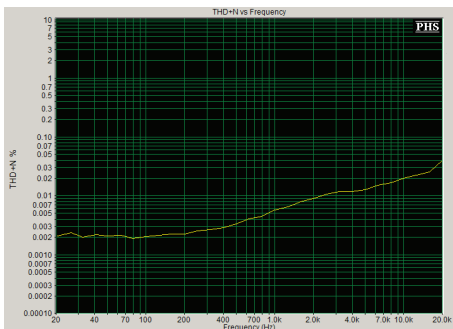


Frequency response is flat as a pancake from 20 Hz to 50 kHz, and rolls off by less than a dB to the Nyquist frequency of the sound card ADC at 96 kHz. These data have been normalized to the frequency response of the sound card.



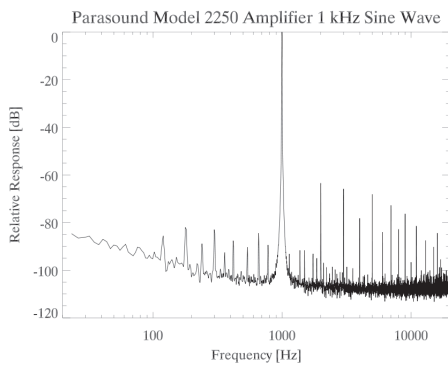
Crosstalk is below the noise floor of the sound card at -85 dB below 1 kHz, and rises to around -60 dB at 20 kHz. The crosstalk

from the left input to the right output (solid line) is a bit higher than the crosstalk from the right input to the left output (dashed line). These data have been corrected for the frequency response of both the preamp and the sound card.

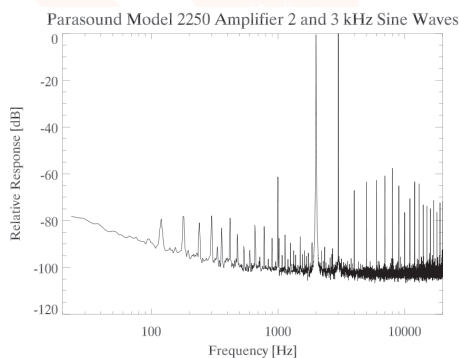


The THD+N vs. Frequency is 0.002% at 20 Hz and rises to 0.02% at 20 kHz. These are vanishingly small. In my opinion, the first plot showing the harmonic spectrum is a more important measurement, but the THD+N results shown here are still very good.

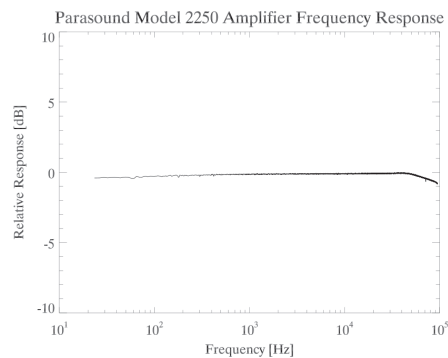
2250 Power Amplifier



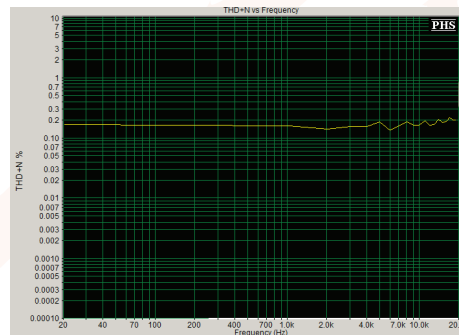
The output of the model 2250 with a 1 kHz sine wave at the input into a 8 ohm power resistor is shown here. Harmonics are at least 60 dB down, with odd harmonics at higher amplitude than the even harmonics. Harmonics are clearly visible to relatively high order (10th harmonic).



The intermodulation spectrum resulting from 2 kHz and 3 kHz sine waves at the input shows a 1 kHz intermodulation product 60 dB down.



The frequency response of the amp is also flat to about 50 kHz and then very gently rolls off. The rolloff is very small (less than 1 dB) and may be a measurement artifact, as with the preamp measurement. Amplifier crosstalk was not measurable with my measurement setup. The dynamic range of the setup with the voltage divider was insufficient to measure the crosstalk above the noise floor of the measurement setup.



The THD+N vs. Frequency of the 2250 is a low 0.2% from 20 Hz to 20 kHz, and is essentially flat. I also measured THD+N into 4 ohms and 2 ohms and got essentially identical results.

For both the model 2100 and model 2250, the measured results show solid engineering that is fully consistent with the high quality performance I experienced with my ears.

CONCLUSIONS

As I said at the beginning of this article, now is a good time to be an audiophile. The Parasound 2100 and 2250 offer sound quality across the board so good I would have thought you'd have to pay at least \$3,000 to get it. At a mere \$1,800, the Parasounds are a steal. The \$600 Model 2100 preamp offers a killer phono stage in addition to its already

great performance. When combined with the big 250WPC Model 2250, the combo can drive almost any speaker and deliver first class performance. And unlike my reference Emotiva RSP-1 and RPA-1, it can be found in many brick and mortar audio retailers, so you can listen before you buy. If you have \$2K to spend on a preamp and amp, you can't go wrong with the Model 2100 and 2250, and you'll have to spend quite a lot more to do significantly better.

"... overall the execution of these two products was excellent."

Specifications:

2100 Preamplifier

- Design: Stereo, Solid State
- MFR: 10 Hz - 100 kHz, ± 3 dB
- THD+N: 0.008%
- S/N: 105 dB, A-Weighted
- Input Impedance: 30 kOhms
- Output Impedance: 60 Ohms
- Dimensions: 4.25"H x 17.25"W x 14.5"D
- Weight: 13 Pounds
- MSRP: \$600 USA

2250 Power Amplifier

- Design: Stereo, Solid State
- Power Output: 250 Watts/Ch RMS into 8 Ohms, 385 Watts/Ch RMS into 4 Ohms
- MFR: 20 Hz - 50 kHz, -3 dB @ 1 Watt
- THD+N: 0.02% at Full Output
- S/N: 114 dB, A-Weighted
- Input Impedance: 33 kOhms
- Dimensions: 2.5"H x 17.25"W x 16"D
- Weight: 25 Pounds
- MSRP: \$1,200 USA