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**PARASOUND ZAMP V.3**

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**2-Channel Power Amplifier (Z Series)**

# Parasound Zamp v.3

Parasound Products, Inc., 950 Battery Street, San Francisco, CA 94111. Voice: (415) 397-7100. Fax: (415) 397- 0144. E-mail: sales@parasound.com. Web: www.parasound.com. Zamp v.3 Zone Amplifier, $299.00. Tested sample on loan from manufacturer.


The three most salient facts about the Parasound Zamp v.3 are: (1) it's small, only half the width of a conventional audio component, about the size and weight of *Merriam-Webster's Collegiate Dictionary*; (2) it's cheap, one dollar under $300 and about 1/30th the price of a pair of similarly powered single-ended triode monoblocks by one of the high-end voodooist manufacturers; (3) it's very good, not a whit inferior to those triode jobs. Welcome to the delirious world of comparative consumer audio.

## The Design

The Zamp v.3 is a 45/45-watt stereo amplifier. That rating is into 8Ω; into 4Ω it's 60/60 watts. Meaning: the power supply is not too hefty, but for many applications the power is entirely adequate. The power supply isn't switch-mode, as you might have inferred from the size of the amplifier; everything in the Zamp v.3 is analog, and the relatively large toroidal power transformer is cleverly shoehorned into the tight-fitting chassis. Even the speaker terminals (spaced for dual banana plugs, thanks goodness) are slanted instead of vertically placed, to keep the chassis height to a minimum. The terminals can be bridged for mono operation; the rated output into 8Ω is then 90 watts. Input impedance is 33 kΩ; output impedance is virtually zero.

In the back (no, not in front) there are two tiny level controls for the two channels; the maximum gain is 22 dB. Theoretically, you could use the Zamp v.3 to play line-level program material without a preamp, but it would be rather inconvenient to reach behind the chassis every time you wanted to adjust the volume. The level controls are more for "gain staging" in an installation to achieve the lowest possible overall background noise. Other features are loop jacks next to the input jacks, for passing on the input signal to another audio component; a ground-lift switch to interrupt ground loops (shades of Bryston!); and an automatic signal-sensitive on/off system, including also a 12V external trigger. Lots of bells and whistles for only $299.

I did not get a circuit schematic, so we'll have to do without one of Dr. David Rich's circuit critiques you may remember from the old print days.

## The Measurements

I usually start with the frequency response at 1 watt into 8Ω; in the case of the Zamp v.3 it is so flat that I'll skip the graph. The response is 0.1 dB down at 20 Hz and 0.25 dB down at 20 kHz; at 50 kHz it is down only 1.4 dB. Flat enough for me.

Much more interesting is the THD+N versus power at various frequencies. Fig. 1 shows the 20 Hz, 1 kHz, and 20 kHz distortion into 8Ω; Fig. 2 shows the same into 4Ω. Most publications show only the 1 kHz curve because it's usually better than the 20 Hz and nearly always much better than the 20 kHz. (The latter condition is known as dynamic distortion.) That's the case here, too, but even the 20 kHz distortion is more than "good enough for government work;"

after all, –76 to –77 dB is only about 0.015% and that's still excellent, especially since the measurement bandwidth was expanded to 80 kHz to include the second, third, and fourth harmonic. The distortion curves are essentially noise-dominated, and clipping at each frequency is at approximately the rated power level into both load impedances. Fig. 3 shows the FFT spectrum of a 1 kHz tone at full rated power into 8Ω. The second and third harmonics are at –92 and –94 dB; the higher harmonics line up from –102 dB down; all totally insignificant. This is a clean amplifier.

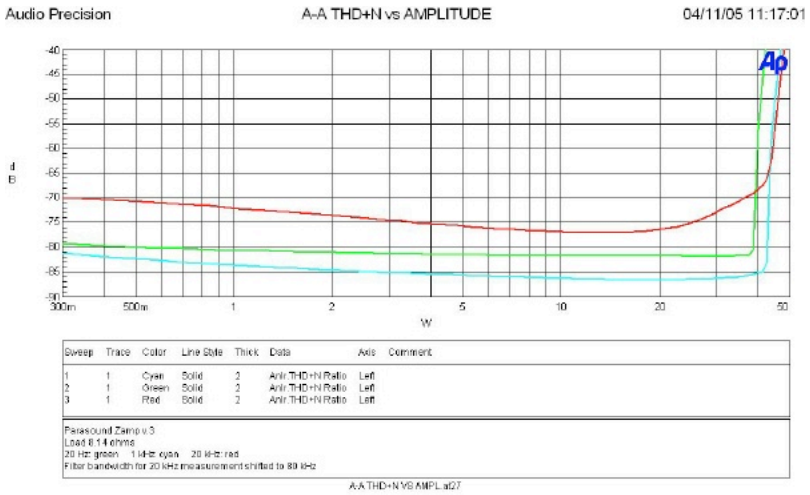


**Fig. 1: THD+N vs. power of one channel into 8Ω at 20 Hz (green), 1 kHz (cyan), and 20 kHz (red).**


**Fig. 2: THD+N vs. power of one channel into 4Ω at 20 Hz (green), 1 kHz (cyan), and 20 kHz (red).**

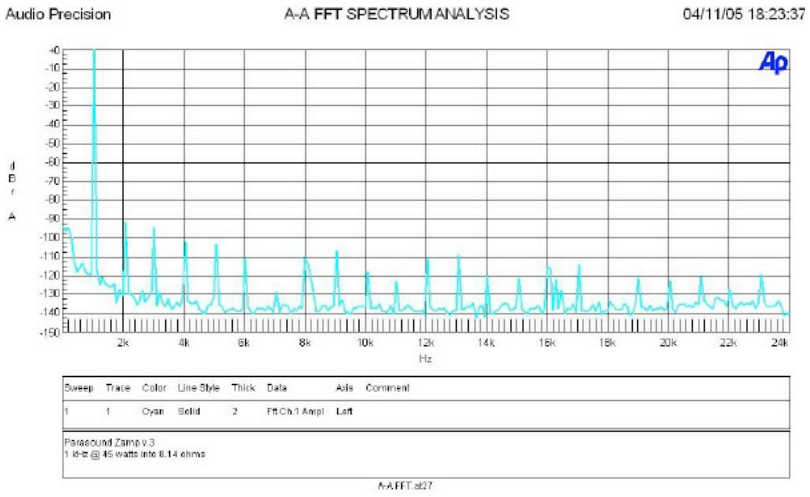


**Fig. 3: Spectrum of a 1 kHz tone in one channel at 45 watts into 8Ω.**

I also ran a test that I usually don't bother with, namely THD+N versus frequency at 1 watt into 8Ω. Noise becomes more of a factor at such a low level, especially since I opened up the measurement bandwidth to <10 Hz–80 kHz. The result is shown in Fig. 4; as you can see, all distortion components are below –82 dB from 20 Hz to 3 kHz, rising to a maximum of –69 dB at 20 kHz. There is absolutely nothing to worry about here; this is all an order of magnitude or more below the threshold of audibility, although some megabuck amplifiers yield better numbers (so what?). The most remarkable thing is that exactly the same test at 40 watts results in virtually identical curves, as shown in Fig. 5.

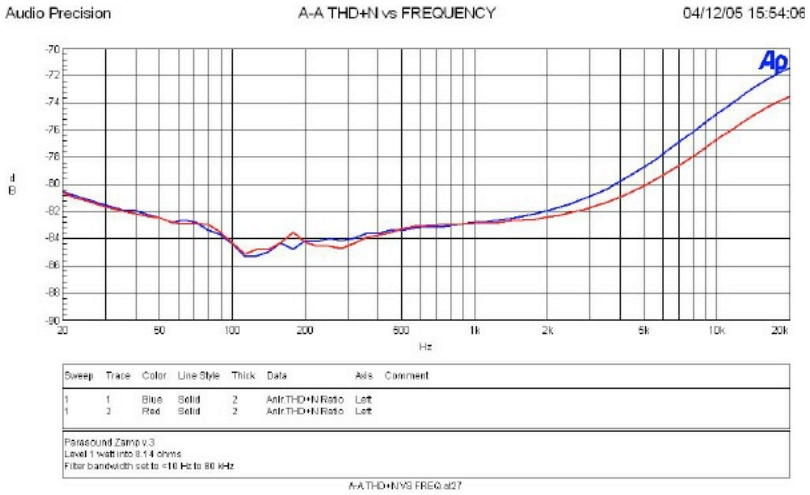


**Fig. 4: THD+N vs. frequency of both channels at 1 watt into 8Ω.**

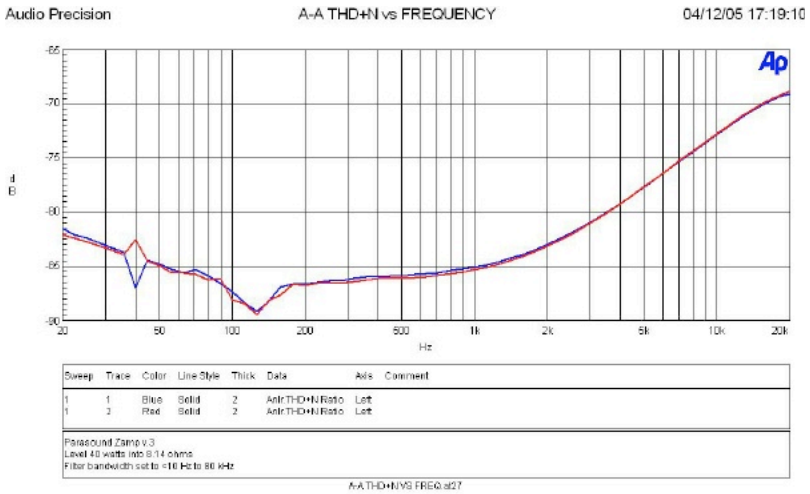


**Fig. 5: THD+N vs. frequency of both channels at 40 watts into 8Ω.**

The single-point noise measurement, unweighted, with reference to rated maximum output, is –106.5 dB. That, folks, is low noise.

Channel separation is shown in Fig. 6. At higher frequencies the numbers are typical of the best amplifiers; at lower frequencies the maximum separation of 66 dB is a little bit on the scant side but still guaranteed inaudible.

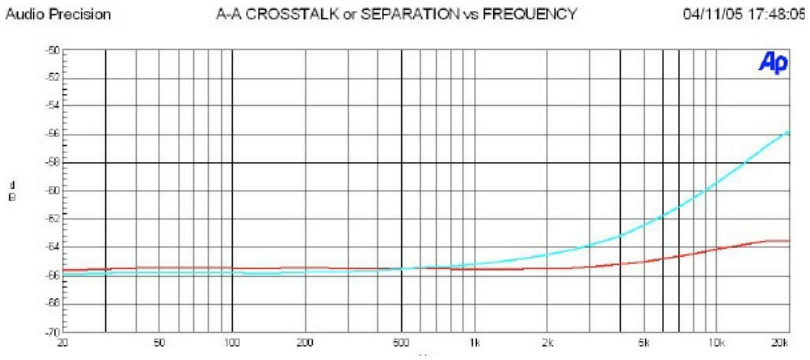


**Fig. 6: Channel separation at 1 watt into 8Ω.**

The ability of an amplifier to drive widely fluctuating load impedances, such as presented by certain loudspeakers, is measured by the PowerCube test. As far as I know, ***The Audio Critic*** is the only American audio journal to publish PowerCube measurements. The instrument for the test is made in Sweden; it produces repeated 1 kHz tone bursts of 20 ms duration into 20 different complex load impedances across the amplifier (magnitudes of 8Ω, 4Ω, 2Ω, and 1Ω, phase angles of –60°, –30°, 0°, +30°, and +60°). The graphic output of the instrument shows the 20 data point connected to form a more or less cubelike polyhedron. The test really separates the men from the boys when it comes to real-world loads rather than just resistances. Unfortunately the computer controlling the instrument is currently on the fritz; as soon as it is repaired I shall append the Zamp v.3 test results here. (That's one advantage of a Web publication—nothing is carved in stone, everything can be changed.)

## The Sound

As I used to state over and over again in the print version of ***The Audio Critic***, all amplifiers having high input impedance, low output impedance, flat frequency response, low distortion, and low noise floor sound exactly the same when operated at matched levels and not clipped. This has been proven so many times in double-blind listening tests that opinions to the contrary by the tweako/weirdo element of the audiophile community and by the subjectivist audio press can be totally disregarded. They just don't get it.

The Parasound Zamp v.3 is no exception to the rule. Just because it's small and cute and cuddly, just because it costs only $299, it sounds no different from $9000 amplifiers that have comparable power outputs. The possible exception to that statement would be the handling of difficult loads; the PowerCube test will reveal problems, if any, in that area. I have no difficult-to-drive loudspeakers on the premises at the moment.

So, pending the PowerCube test, let me conclude with the considered opinion that the Parasound Zamp v.3 is one helluva 45-watt amplifier, regardless of price tag and chassis size. That the price and the size are remarkably small is an aspect of comparison shopping, not of audio performance.

Comments