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MARCH 1999

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# LIL' WONDER



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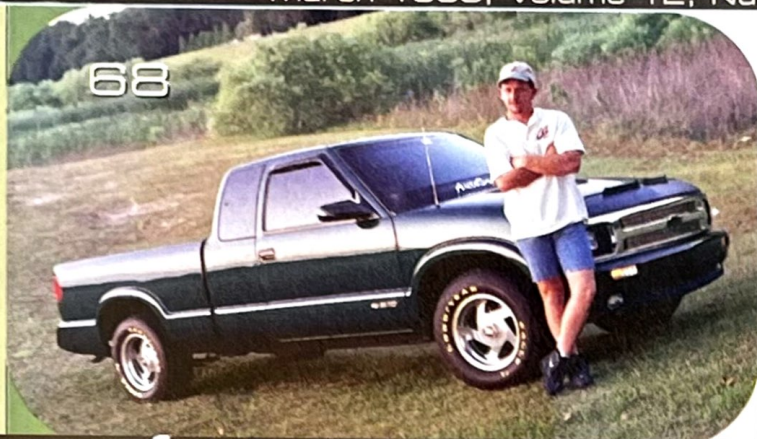


**PRIMEDIA**  
The Authoritative Source

**Competition Coverage:** dB Drags and USAC World Finals

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### ON THE COVER:

Cover model  
Lyric June TerBush  
reaches for Soundstream's  
Lil' Wonder amplifier.  
Photography by Les Bidrawn.

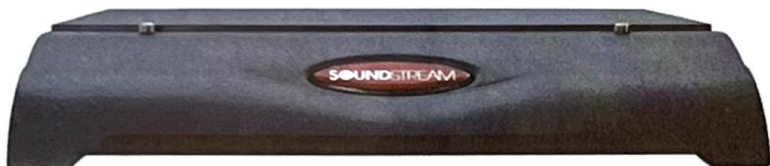


# LIL' WONDER

## Soundstream's Two-Channel Amplifier

It looks like a Soundstream, it's built like a Soundstream, it even has a sense of humor — I'm talking about the Lil' Wonder. This true-blue Soundstream amplifier measures an almost-square 7x9 inches, is 2.5 inches tall, and weighs in at six pounds. It also utilizes the current fin array of 3/4-inch fins spaced about a 1/4-inch apart. The temperature test showed a rise to 140 degrees, which is okay, but ANY air movement across this many fins and the amp will be really cool.

BY CHRIS LEWIS  
PHOTOGRAPHY: LES BIDRAWN



Papa amplifier: The Rubicon 1002 sporting 200 watts x 2 channels



Mama amplifier: The Rubicon 502 pumps out 150 watts x 2 channels



Junior amplifier: The Rubicon 202 sporting a massive 50 watts x 2 channels

The owner's manual and installation guide that arrived with the amp is well written and includes lots of pictures and examples. The last page — where the boring specs would normally be located — is, in this case, a practical joke.

Power output is specified as "Lots!" with a distortion of "You can't hear it." I measured 48 watts into 4-ohm stereo loads with 0.035% distortion, so these claims are true. The all-discrete design reaches clipping gradually; 0.1% distortion occurs at 58 watts. Two-ohm power is claimed to be "More!" Four-ohm mono is "Even More!" Lemme see here, I get 2 by 61 watts into two, 2-ohm loads and 132 watts into a single bridged 4-ohm load and 0.095 distortion. The comedian is right on.

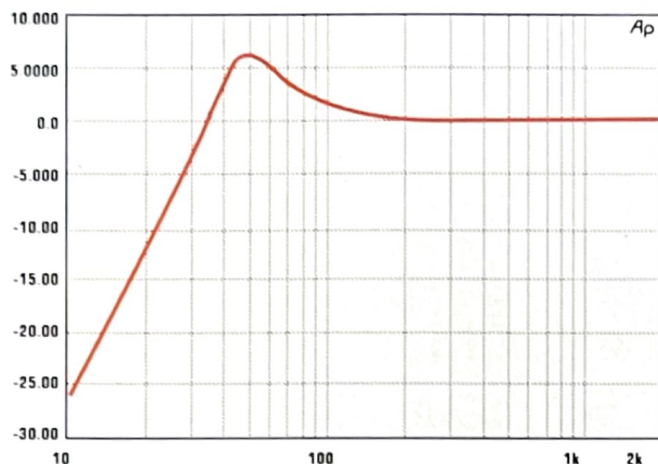
Frequency response is specified as "Flatter than a board," and my Audio Precision printed, on paper, that this is indeed the case (so there). The graph showed a 0.2 dB rise around 25 Hz and was down 1 dB at 120 KHz and 14 Hz, which is very good. Another low power spec is 1 watt distortion where the all-discrete bipolar class AB design

The Lil' Wonder is the latest addition to the Rubicon family of amplifiers. While it may be small, don't let the size fool you. The Lil' Wonder pumps out 132 watts in a single bridged 4-ohm load. Its tiny design lends itself to a ton of specialty applications, especially in stealth installations. You can bet that you'll be seeing this power-packed amplifier in some serious competition situations.

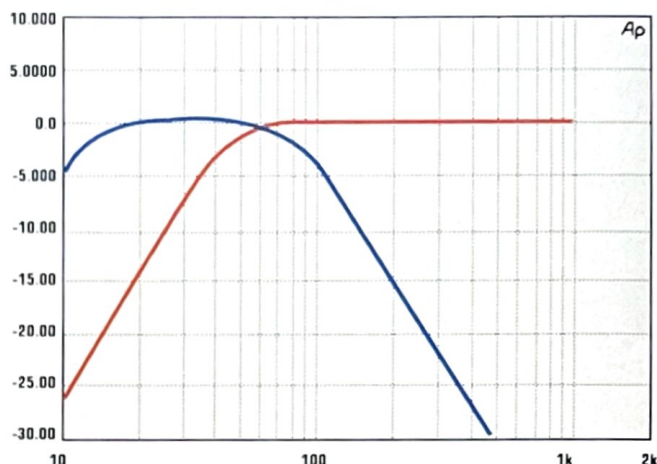


SOUNDSTREAM

**SOUNDSTREAM LIL' WONDER HAWKINS EQ LEVEL (dB) VS FREQ (Hz)**



**SOUNDSTREAM LIL' WONDER CROSSOVER LEVEL (dB) VS FREQ (Hz)**



## Soundstream's Two-Channel Amplifier

has 0.0307% distortion. The distortion consists of slight crossover non-linearity.

As expected, higher frequencies fare a bit worse with a low open loop gain. At 5 KHz and 1 watt, the distortion increased to 0.051%. Lower power specs are influenced by the noise floor of -82 dBW and the aforementioned crossover non-linearity. One-tenth watt distortion is 0.0921% at 1 KHz and 0.142% for 5 KHz.

The good news is that the -82 dBW noise floor is constant for all gain settings. Minimum gain needs 5.7 volts to make full power, and wide open just 250 mV. More good news is the lack of any turnoff noises and only a faint "on" thump, as well as a damping factor of 290, which is specified as "wet, very wet." I don't get it, but I'm an engineer with a dry sense of humor.

All connections are on one end and the size lends itself nicely to under-the-seat mounting. The case is isolated from signal by a small capacitance, so screw it down. Power and speaker connections are, in the Soundstream tradition, fully insulated. It looks like the usual terminal strip, with large screws for power and normal-sized screws for the speakers. The white plastic molding prevents the screws from being lost. I like it.

The Lil' Wonder includes a 12 dB/octave lowpass and high-pass crossover. Plug in modules inserted through the bottom change the frequency. These are independent crossovers, so if you turn on both at the same time you get very little sound.

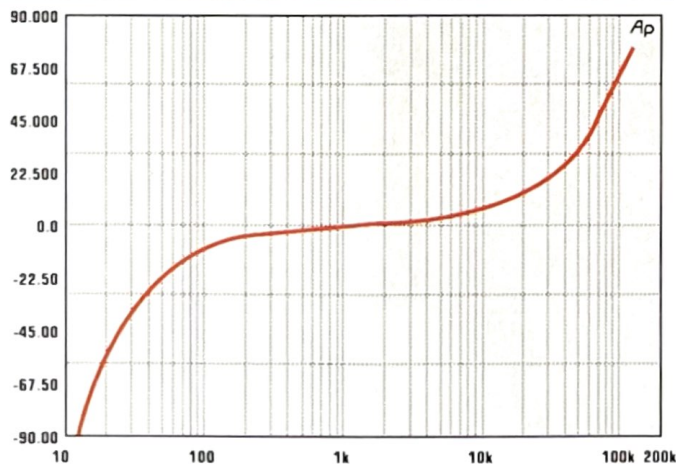
Build quality inside is classic Soundstream, lots of TO-220 case transistors clamped by the circuit board to the sink. The mosfets in the power supply are National Semi NDP6060, which,

**"This true-blue Soundstream amplifier measures an almost-square 7x9 inches, is 2.5 inches tall, and weighs in at six pounds"**

with 1 per phase, is still overkill. But it's nice to know the smallest amp wasn't made with cheaper parts. The rectifiers are also TO-220, and the audio outputs are two-pair per channel, TIP-102/107 TO-220 case, bipolar darlington: overkill again. The SG3525 is configured for unregulated operation.

If you break one of these, I just might do a "lil' wondering" about your unregulated behavior. [cae]

**SOUNDSTREAM LIL' WONDER PHASE RESPONSE PHASE (deg) VS FREQ (Hz)**



**SOUNDSTREAM LIL' WONDER LEVEL (dB) VS FREQ (Hz)**

