CLASS-AB STEREO POWER AMPLIFIER

P-7500

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The history of Accuphase could be said to be “the history of the high-power amplifier.”

The P-300, launched back in 1973, was the epoch-making power amp with the excellent output power of 150W/8Ω, 200W/4Ω and surprised audiophiles worldwide with its terrific speaker driving ability.

The new P-7500 of P-300 descent is the flagship of Accuphase Class AB power amplifier, and the P-7500 is the 4th generation model since the P-7000 in 2003. It unites the largest-ever output power and the state-of-art technologies in the historical Accuphase power amp family.

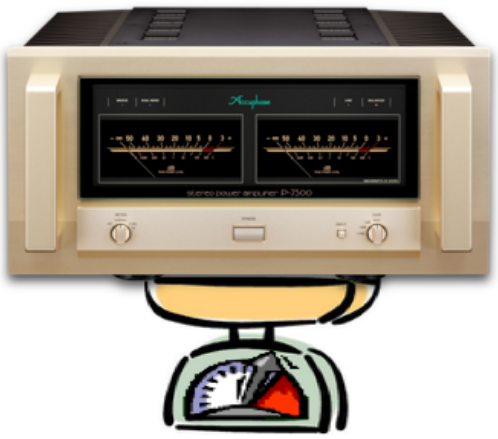
With the overwhelming output power of 300W@8Ω / 600W@4Ω, the ultra-low noise characteristic that shows the 11% improvement from the former model, and the super-high damping factor of 1000, the new P-7500 is born here, investing all engineering efforts that now Accuphase retains.

In addition, the P-7500 ensures product safety with the well-enhanced protection circuitry to prevent a short-circuited accident at speaker terminals.
The P-7500 brings out the best of any speaker, allowing you to enjoy never –before experienced soundscapes.

Dimensions and Weight

- Unit dimensions are the same as P-7300
  Weight is slight heavier

  – Width 465mm
  – Height 238mm
  – Depth 515mm
  – Weight 49.0kg



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The dimension of the P-7500 is same as the P-7300, and the weight is a little heavier, it weighs 49kg.

** P-7300: Width 465mm, Height 238mm, Depth 515mm, Weight 48.6kg

Front and Rear View

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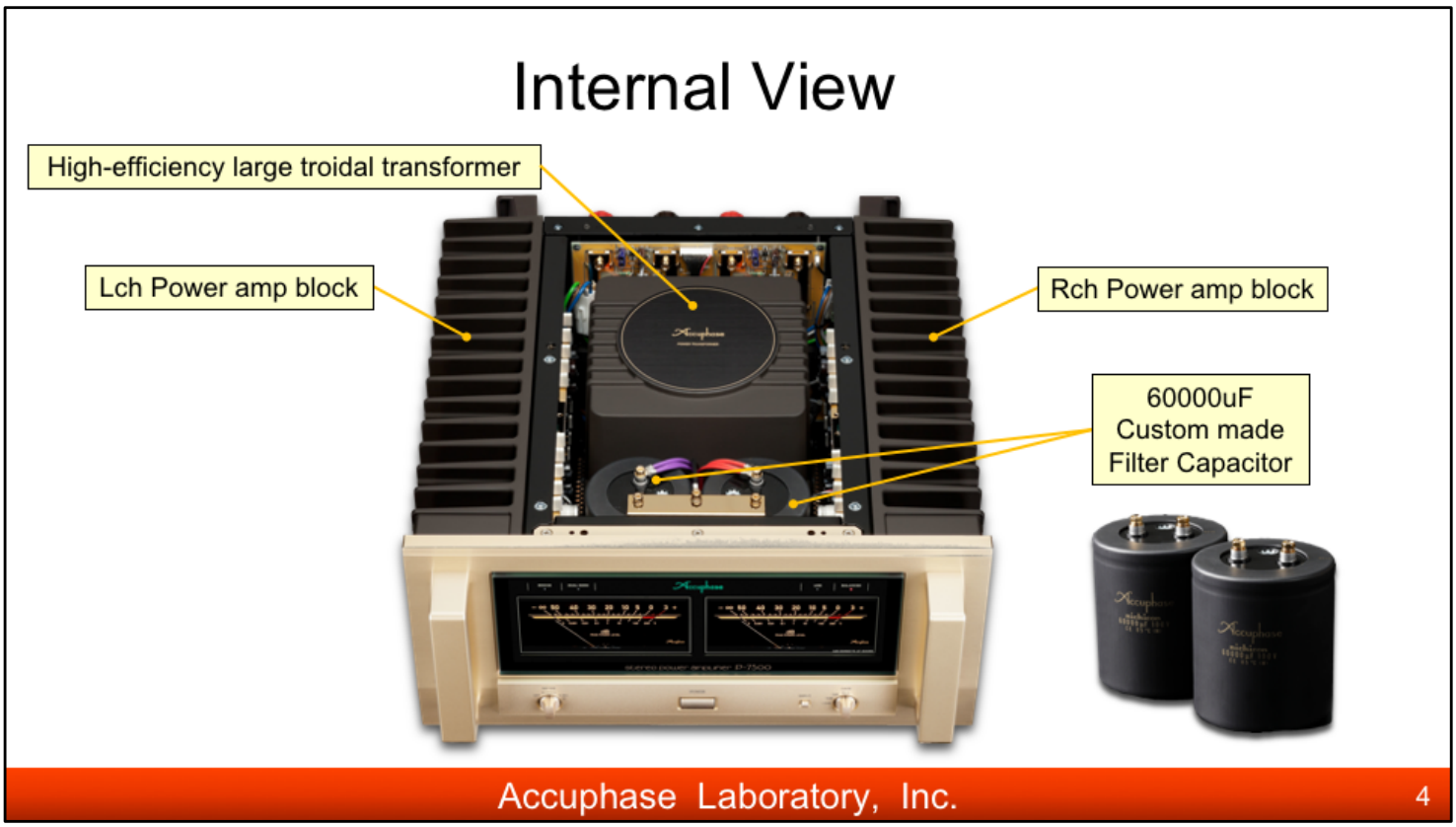
The P-7500 tidies up the very traditional design of the Accuphase power amplifier with massive and elegant impressions.

The large analog “needle” meters which offer output power monitor and good visibility, are located in the front panel, They are high-sensitivity with the -50dB indicator, which allows you to enjoy the upbeat needle move even under the low volume operation.

We also put the gain selector in the front panel,
You can choose the appropriate gain level from the 4 settings, “Max, -3dB, -6dB, and -12dB.”

This gain switching does not attenuate the signals with an attenuator. But it controls the gain at the input amplifier section, making the power amplifier section stable and reducing the residual noise when using the high-efficiency loudspeakers. We can simultaneously decrease the noise, which occurs when operating the unit under a low gain level.

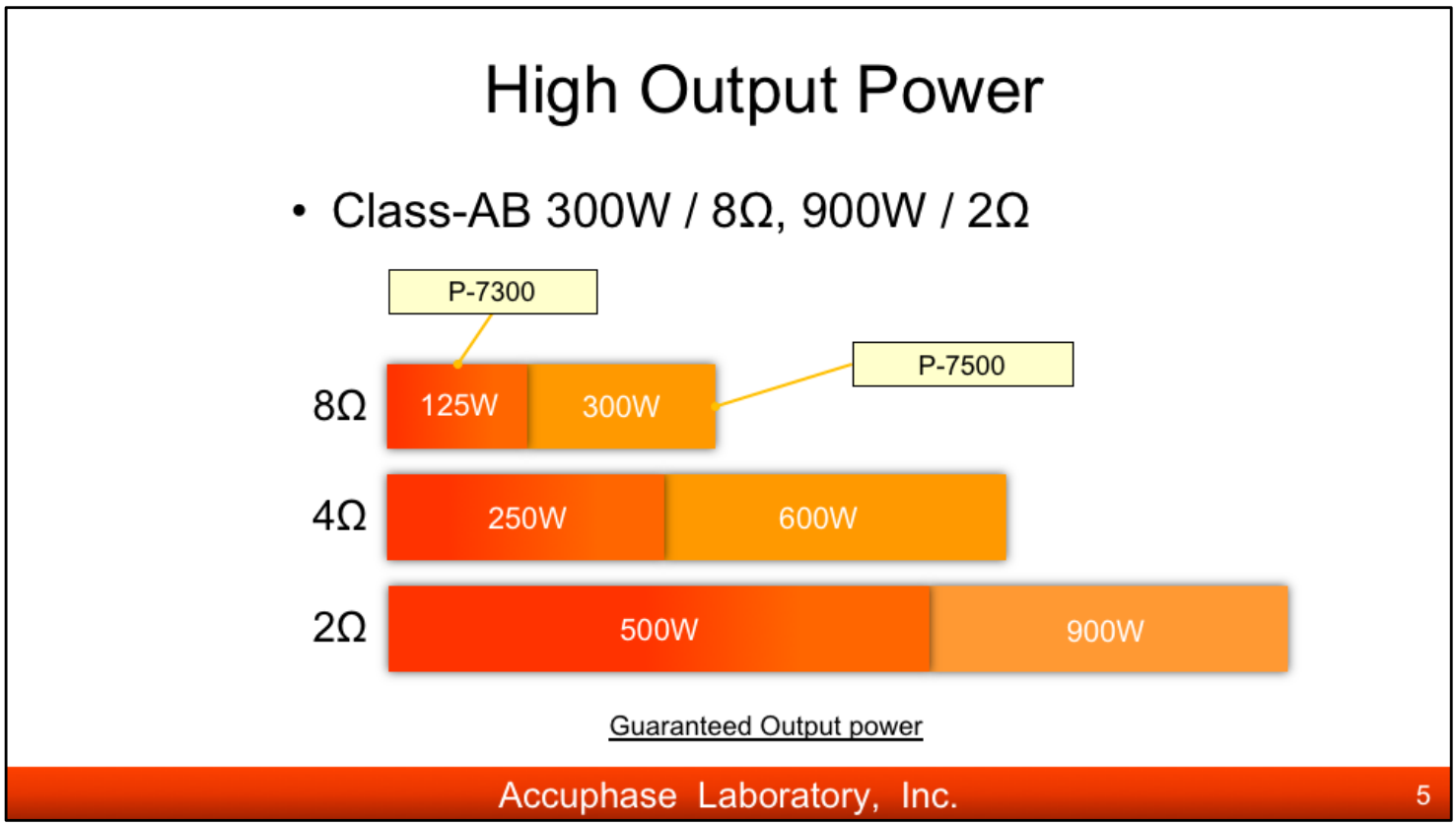
You can easily make a bi-wiring or bi-amping connection with the two large speaker terminals.



P-7500 has a mono-block construction.

It contains an intense power supply with a massive special made high-efficiency toroidal transformer and two sizeable 60000µF special made filtering capacitors in the unit's center.

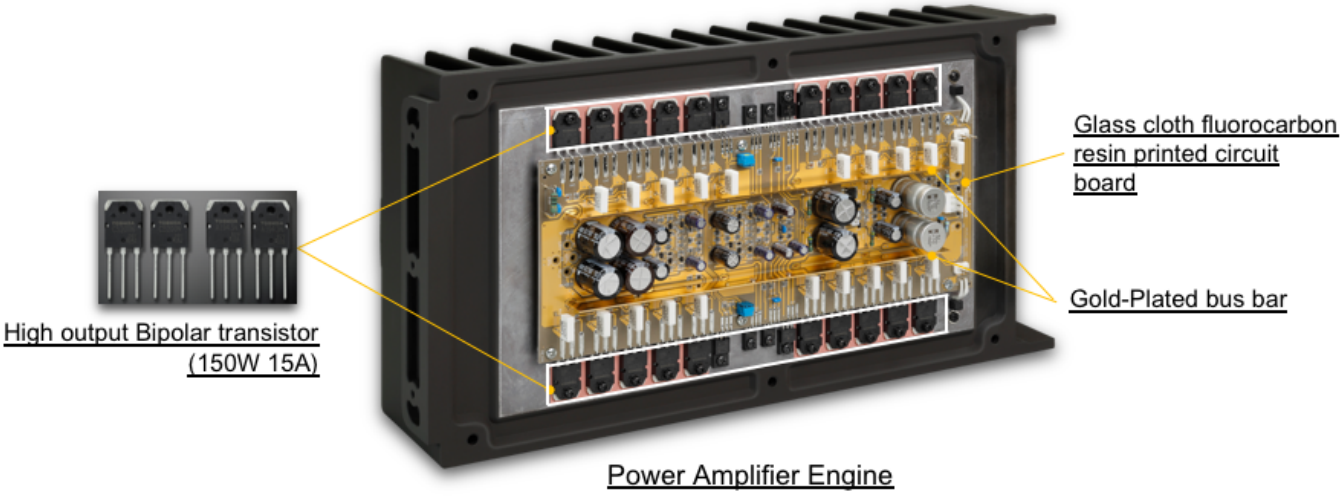
In addition, the two power amplifier units are kept separate for the left and right channels.



High power design provides the rated output power of 300W/8Ω, 600W/4Ω, and 900W/2Ω that vastly exceeds conventional models, securing an overwhelming dynamic range.

Technology for High Output Power

- 10 Pararrel Output stage per channel



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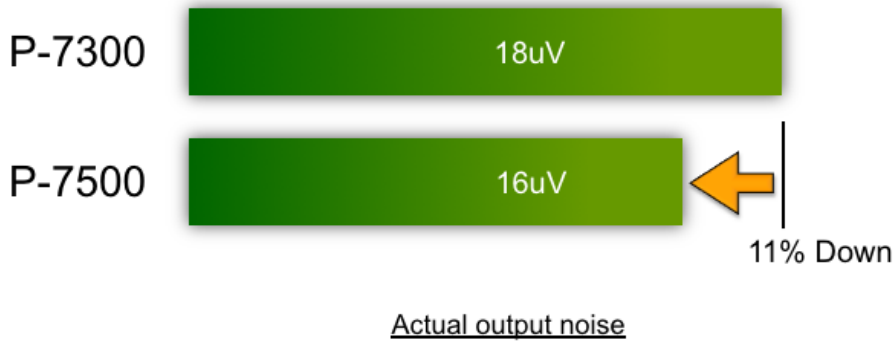
The P-7500 power amplification stage uses a 10-parallel push-pull power transistor architecture, providing a large current without the influence of impedance fluctuation of loudspeakers.

The Gold-plated glass cloth fluororesin PCB helps to improve a lower impedance and reliability.

The gold-plated big bus bars are on the paths where large current flows. They contribute to the further lower impedance for the circuits and allow ample output power to be transmitted to the loudspeakers.

Ultra Low Noise

- Highest S/N out of power amplifiers
  - S/N ratio: 130dB guarantee (P-7300: 125dB)



Actual output noise

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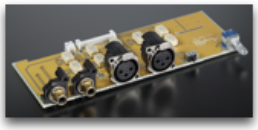
The noise performance of the P-7500 is remarkable compared with the former P-7300.

With the state-of-art circuitry, the P-7500 improves noise level suppression by 11% over the previous model.

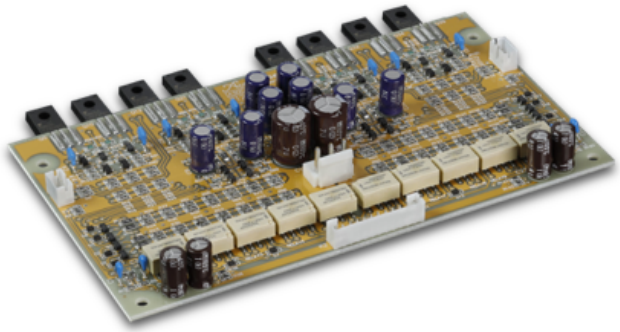
The guaranteed S/N ratio achieves 130dB, the best value in the Accuphase Power Amp history.

Technology for ultra low noise

- Instrumentation Amplifier architecture
- Balanced signal transfer with the optimization of gain distribution



Balanced Input Module



Signal Input Section

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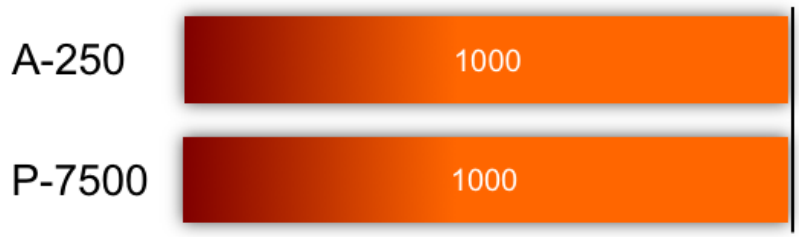
With balanced circuits in the signal input section, the amplification stage is comprised entirely of and instrumentation amplifier principle that equalizes input impedance on the + and – sides, for excellent external noise suppression, and providing optimal circuitry for this high-end audio amplifier.

Noise Level suppression has been dramatically improved by assigning a high gain (12.6x) in the signal input section with excellent noise figure results.

Super high Damping-Factor

- Same Damping-Factor as Top models
  - Damping Factor: 1000 guaranteed



Guaranteed Damping-Factor

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The P-7500 achieves 1000 of guaranteed Damping-Factor, equal to the flagship Class-A monophonic power amp A-250.

*Damping-Factor, DF: The damping factor is an index of speaker driving ability. A Higher Damping-Factor amplifier has a higher speaker driving ability. DF = 8 ohm / Output-impedance

Technology for super high Damping Factor

- Speaker protection equipped with MOSFET switch circuit
- Short signal path configuration

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Mechanical relays are the typical components for speaker protection. Still, the contact resistance of mechanical relay is higher than people think.

Therefore, Accuphase has chosen the MOS-FET switch instead of conventional mechanical relays for speaker protection.

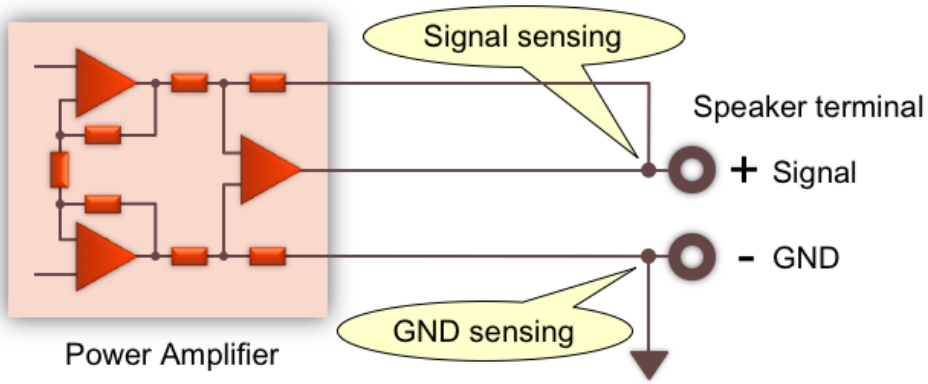
Thanks to this MOS-FET switch, the damping factor, reliability, and sound quality are improved.

The P-7500 employs carefully-selected very low-impedance components such as the large speaker terminals. Making signal paths thick and short also helps attain low impedance.

** MOS-FET switch On-resistance
P-7500's MOS-FET: 1.6mΩ
P-7300's MOS-FET: 2.0mΩ

Technology for super high Damping Factor

- Balanced Remote-sensing
  - Feedback from speaker terminal proximity
  - Signal-line and GND-line sensing



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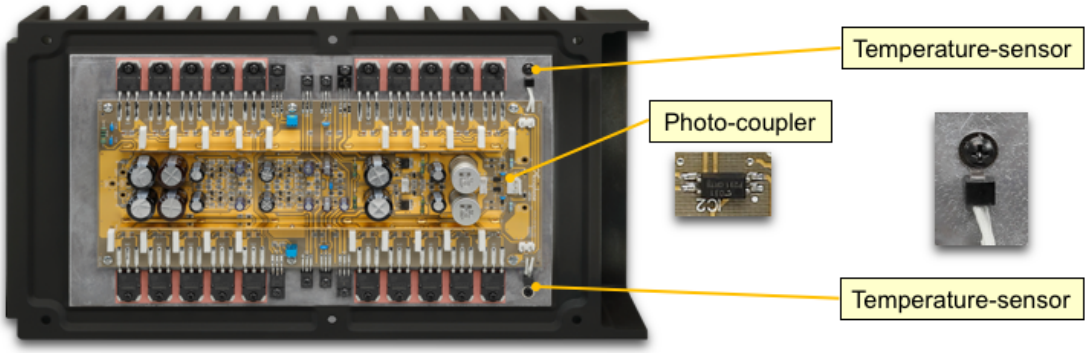
Remote Sensing is the technique to lower the amplifier's output impedance by the negative feedback with signal sensing from nearby the speaker terminals.

Balanced Remote Sensing is the technique to make the output impedance even lower by both the signal sensing and the GND sensing, that is, the negative feedback of the GND level.

Not only the Damping Factor but also the Total Harmonic Distortion and Intermodulation Distortion are all improved by the Balanced Remote Sensing.

Pursuing further product safety and reliability

- Power amplifier
  - Newly-developed protection circuit using Photo-couplers
  - Temperature-sensors are installed on the heatsink



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The newly designed output protection circuit can detect any short-circuiting of the speaker terminals with due consideration for product safety.

Temperature sensors that detect the heatsink temperature are installed (2 sensors on a heatsink). Thanks to this, the unit accurately ascertains the high-temperature alarm in the power amplifier section.

Thanks to the photo-coupler, the detected signal is completely isolated from the output signal to minimize the adverse effects on the sound quality.

**When these protection circuits are activated, the unit completely interrupts speaker output. It makes the power meters flash to indicate the abnormal condition.