

# CLASS-A STEREO POWER AMPLIFIER A-75



Accuphase Laboratory, Inc.

Accuphase class-A stereo power amplifiers have a long and distinguished history, since the P-260 launched in 1979, we have continued to develop them up until today.

The new A-75 is the latest class-A stereo power amplifier. It is the succession model of A-70 which is the mainstay of Accuphase since 2014.

A-75 achieved the further low noise performance and super high damping factor that are in the class of its own, with inheriting the ultimate technology features of the A-250, the flagship class-A monophonic power amplifier of Accuphase.

Please appreciate the alluring sound of A-75 which will be an object of aspiration for the audiophiles.

## Front and rear view



Accuphase Laboratory, Inc.

2

The size of A-75 is as same as the former model A-70.

The digital power meter shows the output power without any effects of speaker impedance.

The LED bar graph shows the output voltage level.

2 pairs per channel of large speaker terminals are equipped.

They are useful for bi-wired connection with loud speakers.

## Front display

- Enlarged the size & numbers of LEDs in the bar graph
  - A-70: 32 pieces → A-75: 38 pieces
- New “Auto-range function” for the digital power meter range selection



Accuphase Laboratory, Inc.

3

To make the LED bar graph for output voltage level easy to see, the size and numbers of LED elements in the bar graph meter are enlarged.

\*\*No. of LEDs: A-70 / 32 pcs -> A-75 / 38 pcs

“Auto-range function” is newly provided with the range selection of digital power meter.

Decimal point of the displayed value is automatically shifted in “Auto-range function” mode.

## Internal view



Accuphase Laboratory, Inc.

4

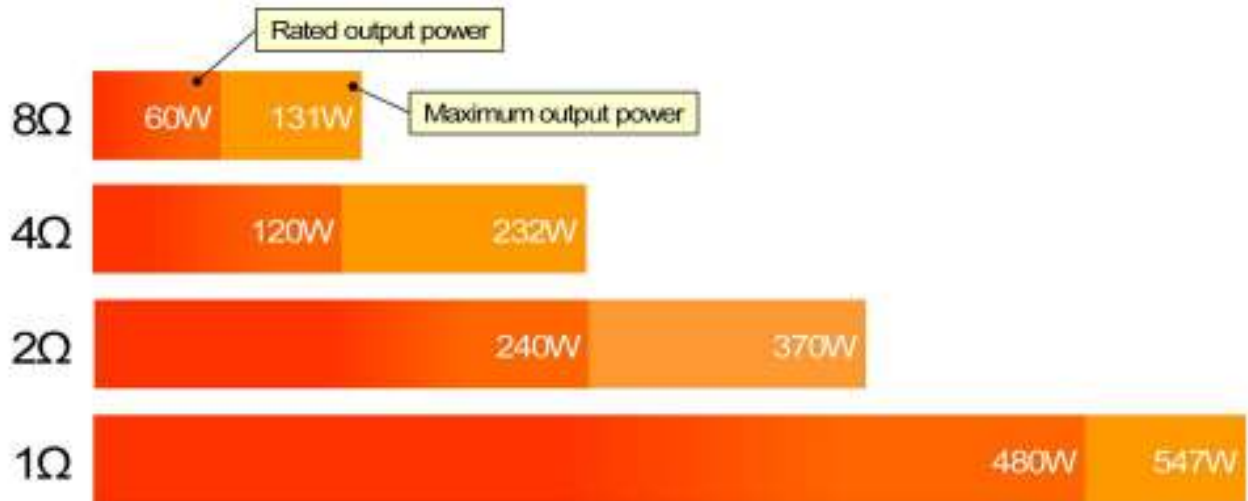
Strong power supply with a massive high-efficiency toroidal transformer and two large  $100000\mu\text{F}$  special made filtering capacitors are installed.

The capacitance of capacitor is reinforced compared to the former model.

\*\*A-70:  $82000\mu\text{F}$

# Output power

- Class-A 60W / 8Ω, 547W / 1Ω



Accuphase Laboratory, Inc.

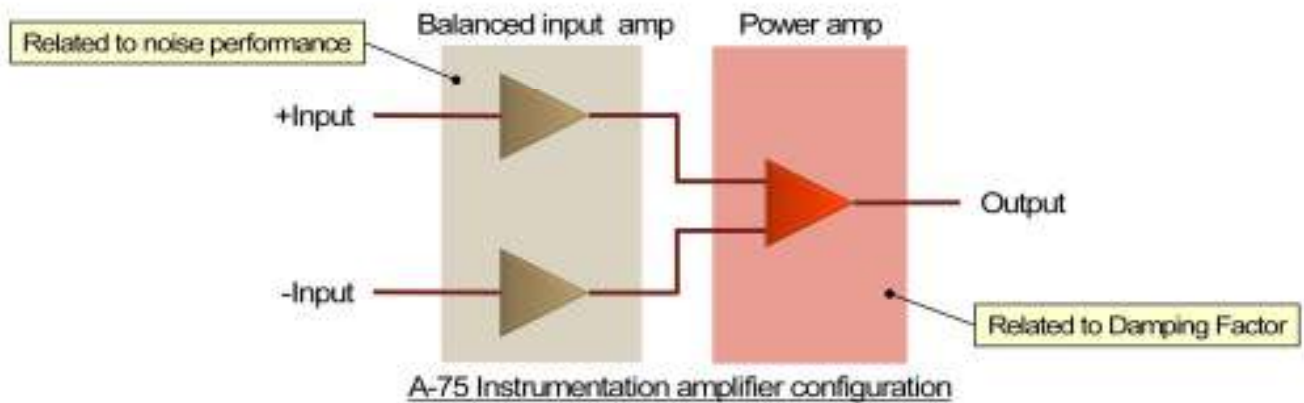
5

The continuous average output power (rated output power) is 60W into 8Ω load. However, its actual maximum output power is bigger, saying 131W into 8Ω and 547W into 1Ω load.

\*\*Output power is as same as A-70.

# Highlights of electrical performance

- Ultra low noise
- Super high \*Damping Factor



\*Damping Factor: A index of speaker driving ability

Accuphase Laboratory, Inc.

6

The performance highlights of A-75 are “Ultra low noise” and “Super high Damping Factor”.

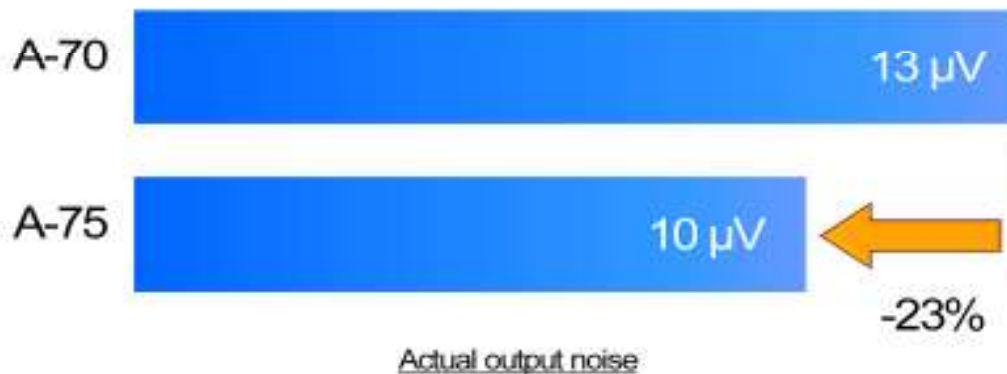
The A-75 features the latest instrumentation amplifier topology. It consists of a complete balanced input amplifier block and a power amplifier block.

The balance input amplifier block is related to the noise performance and the power amplifier block is related to the Damping Factor.



## Ultra low noise

- 23% lower than the former model
  - S/N ratio: 122dB guarantee @Maximum-gain



Accuphase Laboratory, Inc.

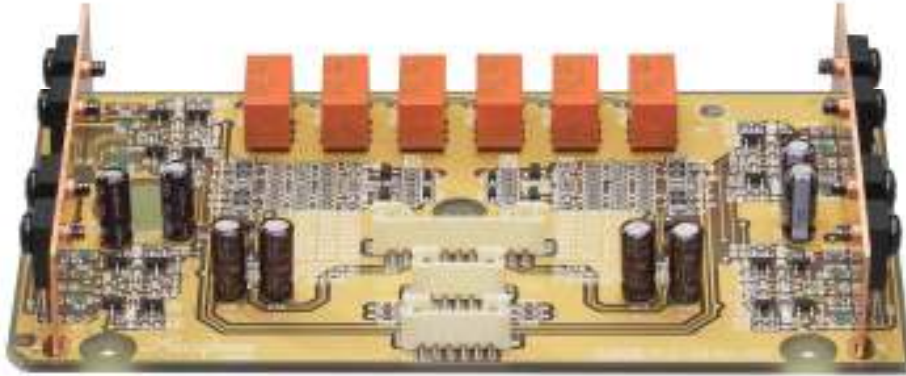
7

The former model A-70 has the excellent noise performance.  
However A-75 achieves even 23% lower output noise voltage than A-70.

A-75 guarantees,  
SN ratio: 122dB @Maximum-gain

# Technology for ultra low noise

- Fully discrete configuration “Balanced input amplifier”
  - Using low noise transistor in input stage



Balanced input amplifier

Accuphase Laboratory, Inc.

8

The output noise is also reduced by the fully discrete configuration amplifier which any ICs are not installed on the signal paths.



## Super high Damping Factor(D.F.)

- 25% higher than the former model



Accuphase Laboratory, Inc.

9

A-75 has the guaranteed 1000 of Damping Factor.  
It is 25% higher than the former model A-70.  
The actual value is in excess of 2000.

**\*\*Damping Factor:**

A index of speaker driving ability.

Higher Damping Factor amplifier has higher speaker driving ability.

D.F. =  $8\Omega$  / Output-impedance

# Technology for super high D.F.

- Very low output impedance power amplifier engine
  - MOS-FET 10 parallel push-pull output stage



Accuphase Laboratory, Inc.

10

The output impedance is decreased by 10 parallel push-pull final stage arrangement of MOS-FETs.

A-75 features the new power MOS-FET device which is heavy-duty and has the large rated current characteristic.

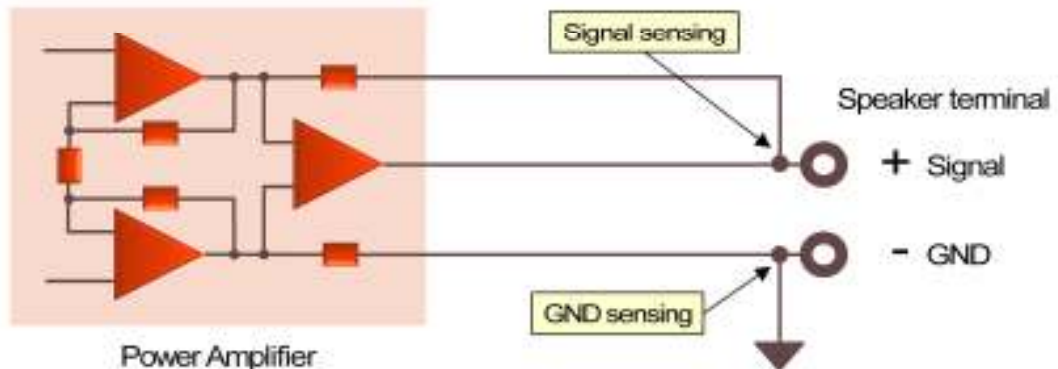
- \*\*Current capacity of power MOS-FET
  - A-70's MOS-FET: 10A
  - A-75's MOS-FET: 33A



A-75's MOS-FET

# Technology for super high D.F.

- **Balanced Remote Sensing**
  - Feedback from nearby speaker terminals
  - Signal-line and GND-line sensing



Accuphase Laboratory, Inc.

11

Remote Sensing is the technique to lower the output impedance of amplifier 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 GND level.

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

## Technology for super high D.F.

- Speaker protection equipped with MOS-FET switch
- Using very low resistance components
- Short signal path configuration



Accuphase Laboratory, Inc.

12

Mechanical relays are the common components for speaker protection but the super high Damping Factor is achieved by the lower impedance component.

As the contact resistance of mechanical relay is higher than people think, 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 all improved.

A-75 employs carefully-selected very low impedance components such as the large speaker terminals, the heavy-gauge edgewise coil and so on.

Making signal paths thick and short also helps attaining the low impedance.