Accuphase

Class-A
PRECISION INTEGRATED STEREO AMPLIFIER

E-600

● Revolutionary AAVA volume control ● Output stage with triple parallel push-pull power MOS-FETs ● Instrumentation amplifier principle for power amplifier input stage allows fully balanced signal transmission, complemented by MCS+ topology and current feedback amplification circuitry ● Logic-control relays for shortest signal paths ● Strong power supply with massive high-efficiency transformer and large filtering capacitors ● POWER IN button allows separate use of preamplifier and power amplifier sections ● Numeric indication of volume level

The Supreme Pure Class A Integrated Amplifier —— Riding the same crest as the 40th anniversary commemorative models, the E-600 features AAVA volume control and a triple parallel push-pull power MOS-FET arrangement. Power amplifier stage with latest instrumentation amplifier configuration realizes balanced signal transmission. MCS+ topology and current feedback principle assure excellent phase characteristics in high range. Massive power supply and low impedance design of output circuitry result in 150 watts per channel (into 1 ohm, with music signal) and a damping factor of 500.

Integrated amplifiers from Accuphase enjoy an excellent reputation for technical excellence and outstanding musical qualities, as demonstrated in an impressive range of models. In particular, the E-530, E-550, and E-560 integrated amplifiers operating in full class A have been praised widely both in Japan and overseas. Aiming for the even higher performance level set by separate type amplifiers, the E-600 makes full use of the sophisticated design technology accumulated by Accuphase over the years. Featuring a further refined AAVA type volume control, latest circuit topology, and parts and materials of the highest grade, the E-600 is the non-plus-ultra integrated amplifier imbued with the spirit of the 40th anniversary commemorative models.

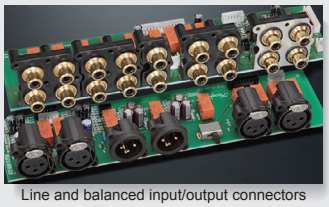
AAVA (Accuphase Analog Vari-gain Amplifier) is a radically different approach that solves a slew of problems that beset conventional volume controls. The AAVA volume control in the E-600 employs the same high-rigidity volume sensor, extruded from a solid aluminum block and featuring an ultra-massive brass shaft, originally developed for the models C-2820/C-2420. Operating the knob provides an utterly smooth operation feel. Paired with a drastic improvement in S/N ratio through low impedance circuit design, the E-600 takes both performance and build quality to a new level.

The power amplifier block is configured with the latest instrumentation amplifier topology, which enables fully balanced signal transmission throughout. Together with MCS+ and the current feedback amplification principle, this makes for even better electrical characteristics. In the output stage, MOS-FET devices are arranged in a triple parallel push-pull configuration per channel. By keeping the impedance of the output circuitry extremely low, constant-voltage speaker drive can be realized, so that the signal remains completely unaffected even by wildly fluctuating speaker impedance. Accuphase's rich expertise and dedication to impeccable sound are manifested in the pure class A operation, resulting in an amplifier capable of bringing out even the most delicate and hidden nuances of the music. With its rich array of highly sophisticated technology geared for the ultimate sound, the E-600 is destined to become the new reference for integrated amplifiers.

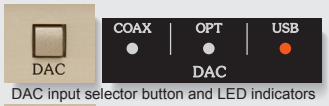
- **Power MOS-FETs in triple parallel configuration operating in pure class A deliver guaranteed linear power: 120 watts/channel into 2 ohms, 60 watts/channel into 4 ohms or 30 watts/channel into 8 ohms.**
- **Strong power supply with massive high-efficiency toroidal transformer and large filtering capacitors.**
- **Loudness compensator for enhanced bass at low listening levels.**
- **Dedicated headphone amplifier optimized for sound quality.**
- **Versatile array of inputs with two balanced inputs to shut out external noise interference.**
- **Power amplifier stage features instrumentation amplifier configuration for balanced signal transmission. MCS+ topology and current feedback principle assure excellent phase characteristics in high range.**
- **Tone controls using summing active filters for optimum sound quality.**
- **Logic-controlled relays for signal switching assure high sound quality and long-term reliability.**
- **Two option board installation slots on rear panel provide further versatility. With AD-30 or AD-20 board, MC/MM switching on front panel is possible.**
- **DAC input selector button allows input selection when using the Digital Input Board DAC-40 With USB Port. Display of the sampling frequency of the locked digital signal is also possible. (Not supported when using DAC-30 / DAC-20 / DAC-10.)**
- **Individual phase setting supported for each input position.**
- **POWER IN button and preamplifier output and power amplifier input connectors allow independent use of both sections. Both line level and balanced connectors are provided.**

Toroidal power transformer

Filtering capacitors



Line and balanced input/output connectors



DAC input selector button and LED indicators

MC/MM selector button

Sampling frequency display example

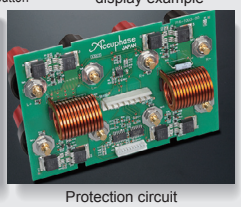
POWER IN selector button

PHASE selector button

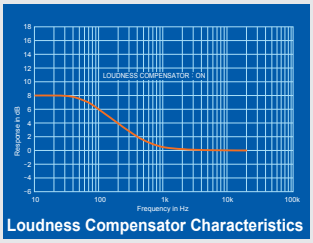
- **Newly developed bar graph meters allow monitoring of output power levels.**
- **Semiconductor (MOS-FET) switches used for protection circuitry prevent contact problems and ensure long-term reliability. Eliminating mechanical contacts from signal path also further enhances sound quality.**
- **Two sets of large-size speaker terminals accept also Y lugs.**

Ultra-heavy-gauge edgewise coil

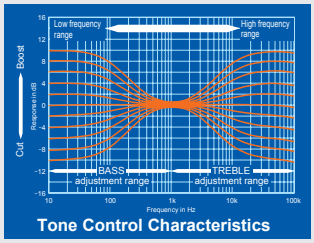
MOS-FET switches



Protection circuit

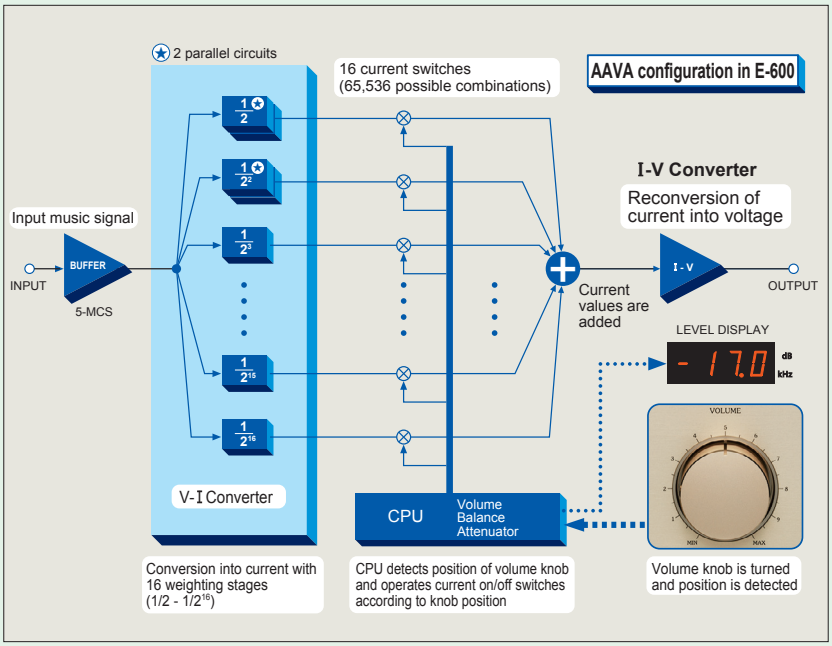


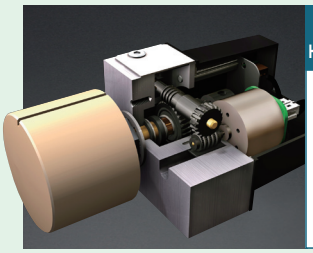
Loudness Compensator Characteristics



Tone Control Characteristics

AAVA (Accuphase Analog Vari-gain Amplifier) Volume Control





Extruded from solid aluminum block

High-rigidity volume sensor construction

Turning the volume knob on the front panel causes the actual volume level position to be detected. The corresponding signal is sent to a CPU which in turn controls the action of the AAVA circuitry.
The massive knob provides a smooth operation feel and further enhances position detection accuracy.

∗ Interior parts in the image are simulated.

- **Configuration with a total of 18 V-I converter amplifiers, paralleled for upper two units, reduces overall AAVA impedance to one half and results in lower noise. Input stage with five buffer amplifiers ensures powerful drive capability.**
- **No more left/right tracking differences or crosstalk.**
- **Amplifier display shows accurate gain as numeric indication.**
- **AAVA maintains high S/N ratio, low distortion, uniform frequency response and optimal sound quality at any volume setting.**
- **Attenuator and balance control also implemented by AAVA, eliminating additional circuitry.**
- **Volume control resolution: Combination of V-I converter amplifiers gives 65,536 possible volume steps.**

Logic-controlled relays and line input and output connectors

Option board slots

Protection circuit assembly

Massive power transformer

Large heat sink and power amplifier assembly

High-rigidity volume sensor mechanism

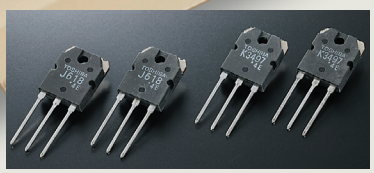
Large heat sink and power amplifier assembly

Large filtering capacitors

AAVA volume control assembly

■ **Supplied Remote Commande RC-220**

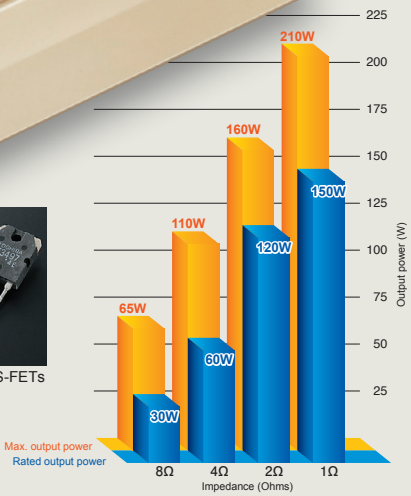
Allows volume adjustment and input source switching.



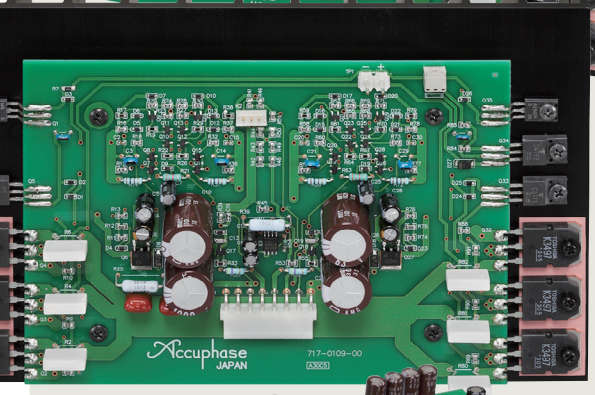
Power MOS-FETs

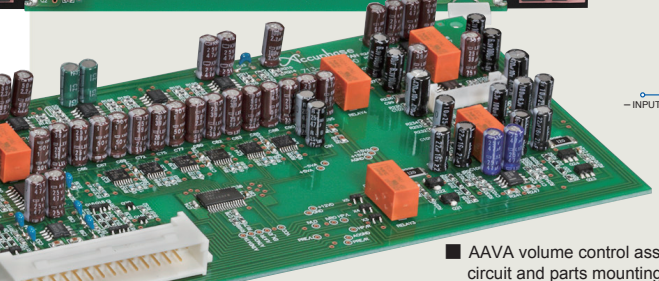
Power amplifier assembly

Power amplifier assembly and output stage with triple parallel push-pull power MOS-FETs directly mounted to large heat sink.



Output power characteristics

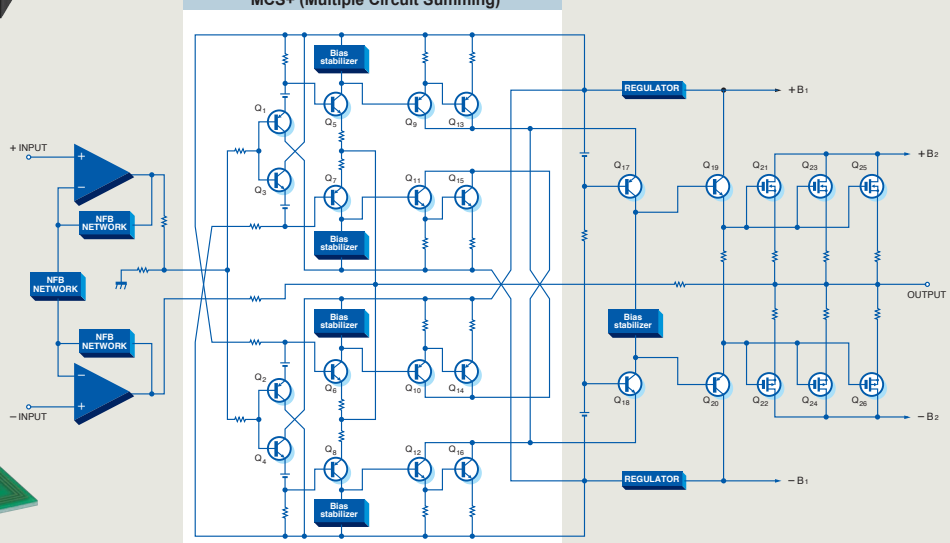




■ AAVA volume control assembly with increased circuit and parts mounting density

Signal input stage | **Power amplifier stage**

MCS+ (Multiple Circuit Summing)

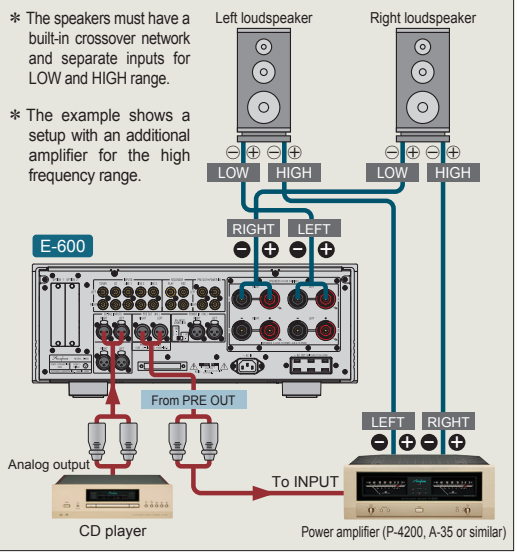


Circuit diagram of E-600 amplifier section (one channel)

Connection Example For Bi-amping Setup

In a bi-amped setup, the speaker units for the LOW frequency range and HIGH frequency range are driven by separate amplifiers of equal gain, for even better sound quality.

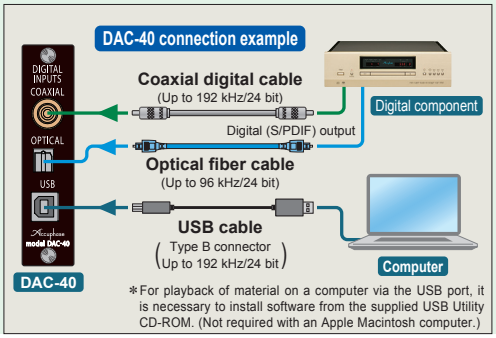
* The speakers must have a built-in crossover network and separate inputs for LOW and HIGH range.
* The example shows a setup with an additional amplifier for the high frequency range.



Option Boards

- **Two slots allowing easy insertion of option boards are provided on the rear panel.**
- **Option boards can be used to implement high-quality reproduction of a digital music signal supplied directly to the amplifier, or high-quality reproduction of analog records.**
- **It is also possible to install two identical boards.**

Photo shows option board installation example.



* For playback of material on a computer via the USB port, it is necessary to install software from the supplied USB Utility CD-ROM. (Not required with an Apple Macintosh computer.)

Digital Input Board DAC-40

Features a high sound quality, high-performance MDS++ D/A converter. The USB port allows connection to a computer via USB cable, for reproduction of high-resolution music library data with superior sound quality.

- **COAXIAL:** For 75-ohm coaxial cable
  Supported sampling frequency range: 32 kHz to 192 kHz, 24 bit
- **OPTICAL:** For optical fiber cable
  Supported sampling frequency range: 32 kHz to 96 kHz, 24 bit
- **USB:** For USB cable (Type B connector)
  Supported sampling frequency range: 32 kHz to 192 kHz, 24 bit

Analog Disc Input Board AD-30

Features a high-performance, high-gain phono equalizer for playback of analog records with outstanding sound quality.

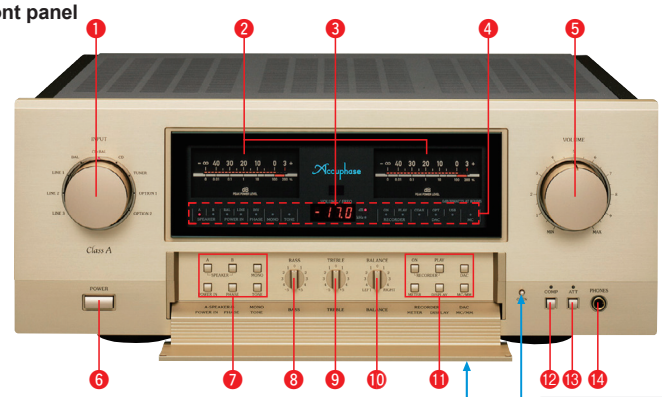
- **MC/MM switching is possible on the front panel of the E-600.**
- **Internal DIP switches control MC input impedance and subsonic filter on/off.**

MC	Gain:	66 dB
	Input impedance:	30/100/300 ohms (selectable)
MM	Gain:	40 dB
	Input impedance:	47 kilohms

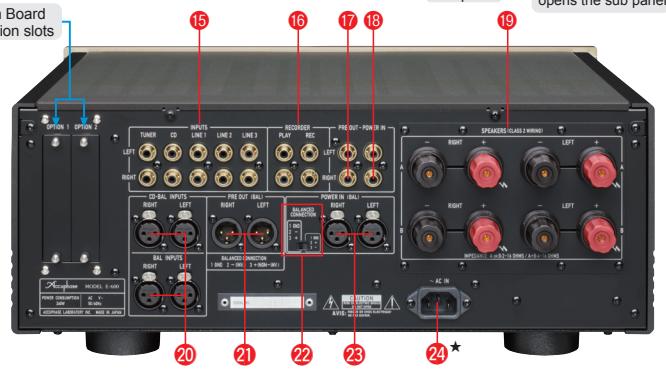
Line Input Board LINE-10

Provides a set of general line level inputs.

■ Front panel



■ Rear panel



1. Input selector
2. Bar graph meters
3. Level/frequency display
4. Function LED indicators
5. Volume control
6. Power switch
7. Function selector buttons (A)
   Speakers A/B switching, MONO/STEREO
   Preamplifier/power amplifier separation,
   Phase switching
   Tone controls ON/OFF
8. Bass control
9. Treble control
10. Left/right balance control
11. Function selector buttons (B)
    Recorder ON/PLAY selection
    DAC input switching, Meter ON/OFF
    Display mode switching, MC/MM switching
12. Loudness compensator
13. Attenuator
14. Headphone jack
15. Line inputs
    TUNER / CD / LINE 1, 2, 3
16. Recorder input/output connectors
17. Preamplifier output connectors (Line)
18. Power amplifier input connectors (Line)
19. Left/right speaker output terminals (A/B, 2 sets)
20. CD/LINE balanced input connectors
    When using line input: Pin ② -, Pin ③ +
    When using balanced inputs: Same as input source component
    (Can be changed with phase selector button 7)
21. Preamplifier output connectors (Balanced)
22. Phase selector switch for balanced power amplifier inputs
23. Power amplifier input connectors (Balanced)
24. AC power connector ★

E-600 Guaranteed Specifications

[Based on the EIA RS-490 test standard]

- **Rated Continuous Average Output Power** (both channels operating simultaneously, 20 - 20,000 Hz)
  150 W/ch 1-ohm load (＊)
  120 W/ch 2-ohm load
  60 W/ch 4-ohm load
  30 W/ch 8-ohm load
  Note: ＊ 1-ohm operation possible with music signals only.
- **Total Harmonic Distortion** (both channels operating simultaneously, 20 - 20,000 Hz)
  0.05% 2-ohm load
  0.03% 4 to 16 ohm load
- **Intermodulation Distortion** 0.01%
- **Frequency Characteristics** HIGH LEVEL INPUT
  At rated continuous average output:
  20 - 20,000 Hz 0, -0.5 dB
  POWER IN
  At rated continuous average output:
  20 - 20,000 Hz +0, -0.2 dB
  At 1 watt output: 3 - 150,000 Hz +0, -3.0 dB
- **Damping Factor** 500 (with 8-ohm load, 50 Hz)
- **Input Sensitivity, Input Impedance**

Input	Sensitivity		Input impedance
	For rated output	For 1 W output (EIA)	
HIGH LEVEL INPUT	77.7 mV	14.2 mV	20 kΩ
BALANCED INPUT	77.7 mV	14.2 mV	40 kΩ
POWER IN	0.617 V	113 mV	20 kΩ

- **Output Voltage, Output Impedance**
  PRE OUTPUT 0.617 V 50-ohm (at rated continuous average output)
- **Gain** HIGH LEVEL INPUT → PRE OUTPUT: 18 dB
  POWER IN → OUTPUT : 28 dB
- **Tone Controls** Turnover frequency and adjustment range
  BASS: 300 Hz ±10 dB (50 Hz)
  TREBLE: 3 kHz ±10 dB (20 kHz)
- **Loudness Compensation** +6 dB (100 Hz)
- **Attenuator** −20 dB
- **S/N Ratio, Input-converted Noise**

Input	Input shorted (A weighting) S/N ratio at rated output	S/N ratio (EIA)
HIGH LEVEL INPUT	101 dB	97 dB
BALANCED INPUT	94 dB	97 dB
POWER IN	117 dB	101 dB

- **Power Level Meters** Output voltage (dB) shown on 24-point scale
  With meter ON/OFF switching function
- **Load Impedance** 2 - 16 ohms
- **Stereo Headphones** Suitable impedance: 8 ohms or higher
- **Power Requirements** 120 V/220 V/230 V AC, 50/60 Hz
  (Voltage as indicated on rear panel)
- **Power Consumption** 160 watts idle
  260 watts in accordance with IEC 60065
  200 watts for rated output into 8 ohms
- **Maximum Dimensions** Width 465 mm (18.31")
  Height 191 mm (7.52")
  Depth 428 mm (16.85")
- **Mass** 24.7 kg (54.5 lbs) net
  32.0 kg (70.6 lbs) in shipping carton

Remarks

★ *This product is available in versions for 120/220/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.*
★ *230 V version has an Eco Mode that switches power off after 120 minutes of inactivity.*
★ *The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.*

■ **Supplied accessories:**
- **AC power cord**
- **Remote Commander RC-220**

• The specifications and appearance of this product are subject to change without notice.

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ACCUPHASE LABORATORY, INC.

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