Accuphase

PRECISION STEREO PREAMPLIFIER

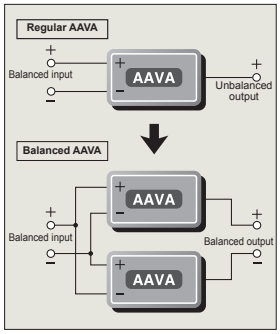
C-3800

● Revolutionary “Balanced AAVA Volume Control” ● Separate high-efficiency toroidal power transformers for left and right channels ● Selectable preamp gain ● Fully modular construction with separate left/right units for each amplifier stage ● Logic-controlled relays for shortest signal paths ● Independent phase selection for each input position ● Printed circuit boards made from glass cloth fluorocarbon resin ● Elegant cabinet with natural persimmons wood finish

Reference preamplifier for the next generation — Balanced AAVA features two AAVA circuits driven in balanced mode, realizing fully balanced operation for all signals from input to output. Total of 20 unit amplifiers for left and right channels, using printed circuit boards made from glass cloth fluorocarbon resin. Dual-mono construction with separate high-efficiency toroidal transformers providing plenty of reserves. Individual phase setting for each input position.

After its founding in 1972, the first product unveiled by Accuphase was the separate amplifier pair C-200/P-300. Ever since then, the company has been unwavering in its dedication to high-end audio, placing utmost emphasis on superior quality and truly faithful sound reproduction. This has resulted in the creation of products sustained by peerless technology and providing outstanding value to their owners. Each product was recognized for genuine creativity and solid reliability, with many models attaining legendary status. Both in Japan and worldwide, audiophiles continue to hold Accuphase in high esteem. The C-3800 now concentrates the extensive know-how and expertise gained over the years in the field of preamplifiers into a product that is destined to become the new reference for the next generation. Both in concept and circuit execution, this preamplifier stands at the very forefront of technology. Each and every part has been carefully selected through extended cycles of listening tests. Eschewing comprises in any respect, Accuphase has created the ultimate in performance and sound quality.

Foremost among the distinguishing features of the C-3800 is the further evolved "Balanced AAVA" concept. Two AAVA circuits are driven in a balanced configuration, resulting in ideal volume control behavior from balanced input to balanced output. The complete path for all signals from the input connectors to the outputs is fully balanced, ensuring utmost purity and further improved electrical characteristics. The result is reflected in notably improved music reproduction that takes fidelity to the next higher plane.



Since making its debut in the C-2800 in 2002, AAVA has revolutionized the concept of the analog preamplifier. Each subsequent preamplifier and integrated amplifier from Accuphase has featured AAVA technology. Both AAVA and Balanced AAVA are fundamentally different from the digital signal processing approach involving A/D and D/A conversion. The volume control operates purely in the analog domain. Using AAVA to change the volume means that the high S/N ratio and low distortion of the amplifier remain totally unaffected. Frequency response and sound quality do not suffer at any listening level. There are no left/right tracking differences or crosstalk, and no other performance related degradations. The conventional concept of volume control is well and truly a thing of the past. Another benefit of AAVA is the fact that it consists entirely of highly reliable semiconductor parts, so that performance and sound quality will remain undiminished for many years to come.

Balanced AAVA (Accuphase Analog Vari-gain Amplifier) Volume Control

AAVA is a radically different volume control principle that eliminates all variable resistors from the signal path. The C-3800 employs two AAVA modules in a fully balanced configuration from input to output. *This makes it possible to realize fully balanced signal paths throughout the preamplifier*, extending from the input connectors to the outputs.

■ Powerful current feedback amplifier in AAVA input stage

The input stage employs four MCS+ current feedback amplifiers in an instrumentation amplifier configuration, featuring outstanding high-speed, low-noise operation.

■ 36 V-I converter amplifiers

Because Balanced AAVA adopts a completely balanced current source configuration, 16 amplifiers each are used for the + input and - input, with the V-I amplifiers for the upper two bits being paralleled, resulting in a total of 36 amplifiers. This ultra-low noise current source contributes to further improved S/N ratio.

■ Volume control resolution

AAVA adjusts the listening volume by means of 16 weighted V-I converter amplifiers which are controlled by current switches. The number of possible volume steps set by the combination of these converter amplifiers is 2 to the power of 16 = 65,536.

■ AAVA ensures high S/N ratio, low distortion, and uniform frequency response and sound quality at any volume

Because AAVA does not introduce a change in impedance, there is no deterioration of S/N ratio at any practical volume setting, and frequency response remains totally uniform. The sound is always perfectly transparent and the tonal quality is not altered in any way.

■ No more left/right tracking differences or crosstalk

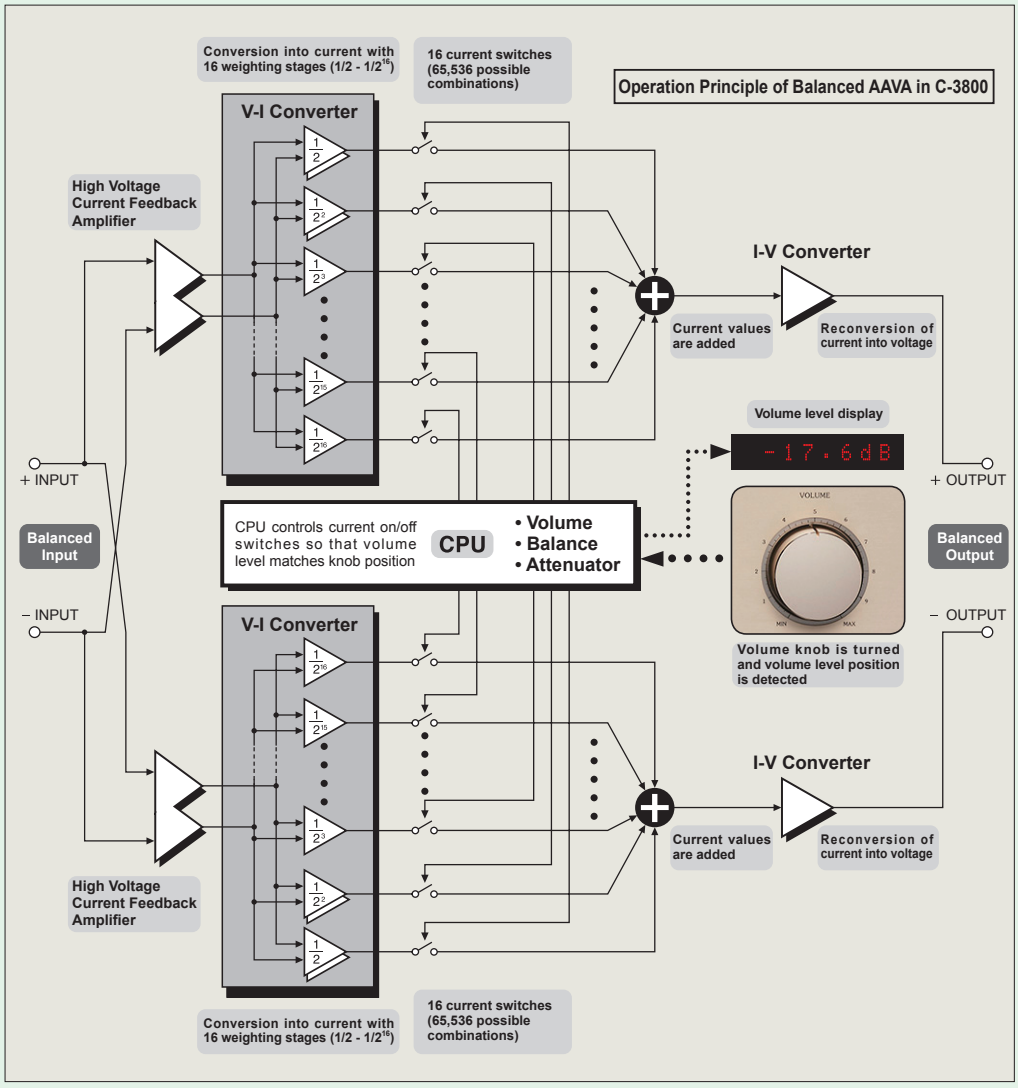
Because the channels can be kept separate, there is virtually no left/right tracking error also at very low volume levels, and crosstalk does not present a problem.

■ AAVA means analog processing

The AAVA circuit converts the music signal from a voltage into a current, alters gain by means of current switches, and then reconverts the current into a voltage. The entire process is carried out in the analog domain.

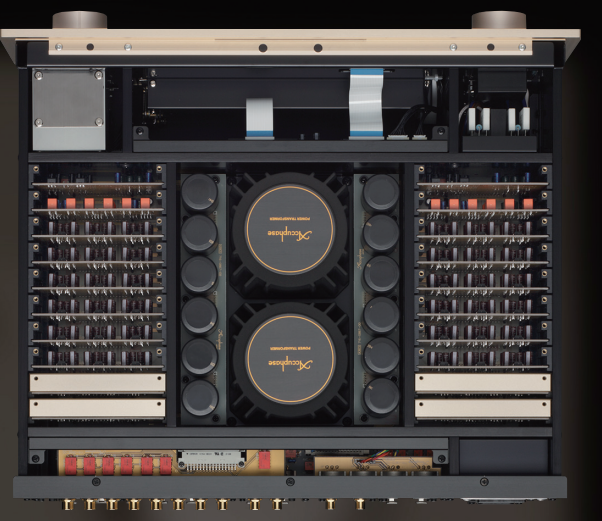
■ Amplifier display shows accurate gain

■ Attenuator and left/right balance control also implemented by AAVA

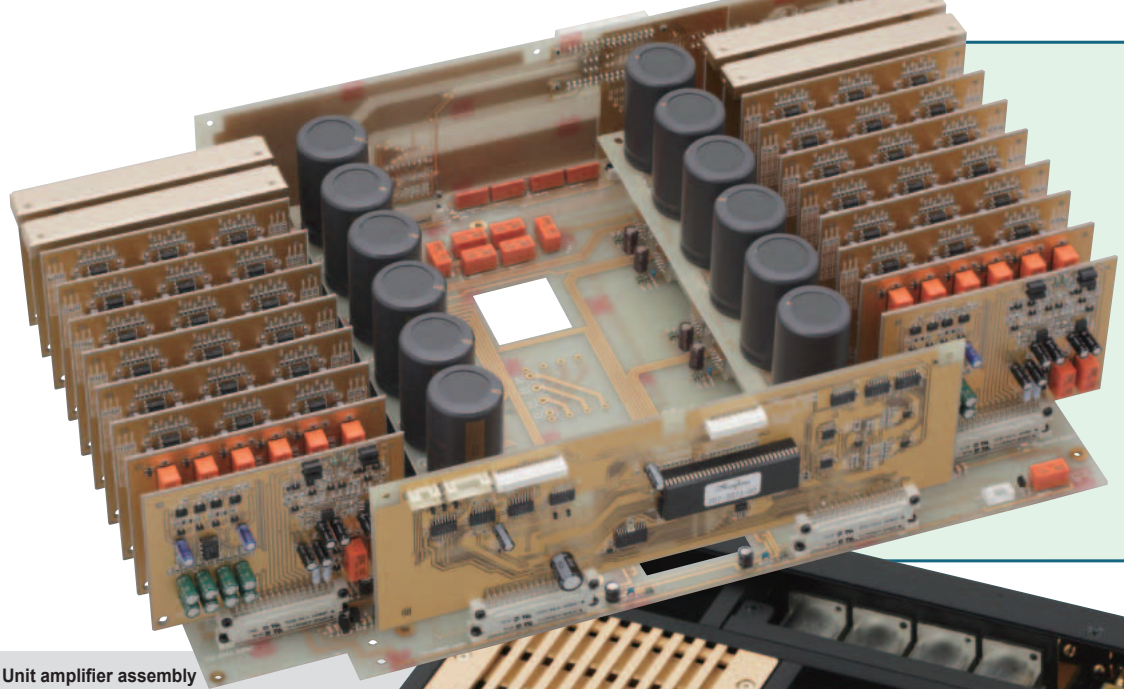


The Ultimate Harmony

# of Craft and Beauty

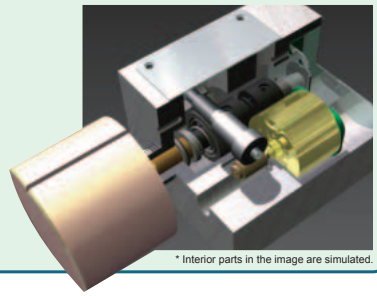


Positioned at the very pinnacle of analog preamplifier technology, the C-3800 implements the latest circuit topology using only the finest parts and materials. The gold-hue front panel and natural persimmons wood cabinet present a simple yet refined visual appearance that exudes warmth and solid presence wrapped in timeless esthetics.



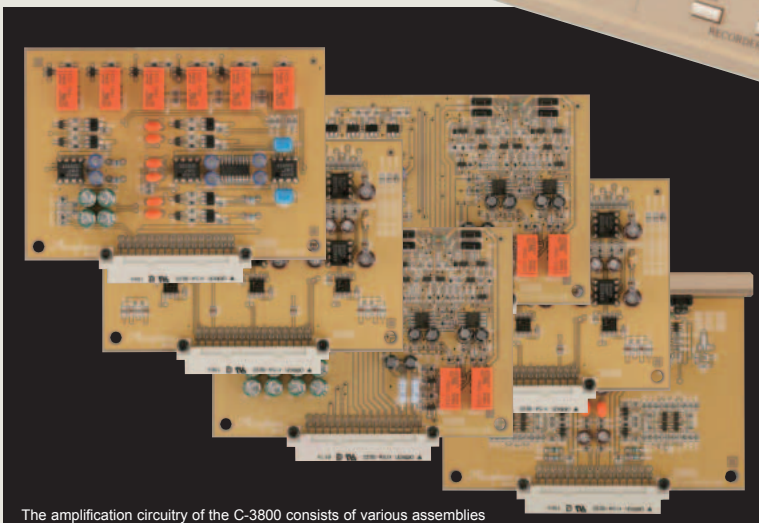
— Extruded from solid aluminum block —
High-rigidity volume sensor construction

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.

■ **Unit amplifier assembly**
A total of 20 unit amplifiers handle the signal transmission for the left and right channel. The printed circuit boards are made from glass cloth fluorocarbon resin, and the copper foil surfaces are gold-plated. The unit amplifiers are mounted on a glass epoxy motherboard, and left and right sections are kept completely separate. An 8 mm thick frame made of hard aluminum prevents mutual interference by providing electrical shielding and suppressing physical vibrations.



The amplification circuitry of the C-3800 consists of various assemblies for input buffer, AAVA circuitry, balanced output, headphone amplifier etc. (total of 20 unit amplifiers).

AAVA operation principle

The music signal is converted into 16 types of weighted current by V-I (voltage - current) converting amplifiers [1/2, $1/2^2$, ... $1/2^{15}$, $1/2^{16}$]. The 16 currents are turned on or off by 16 current switches, and the combination of switch settings determines the overall volume. The switching operation is controlled by a CPU to match the position of the volume control knob. The combined current forms a variable gain circuit that adjusts the volume of the music signal. The respective currents are combined and converted back into a voltage by an I-V (current - voltage) converter.

■ **Supplied remote commander RC-210**
Allows volume adjustment, input source switching, and other operations.

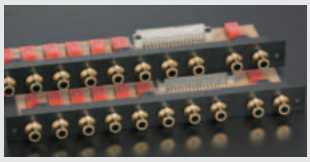
■ **Logic-controlled relays assure high sound quality and long-term reliability.**

■ **Versatile arrangement of balanced and line input and output connectors.**

■ **Printed circuit boards in signal transmission circuitry made from glass fluorocarbon resin with low dielectric constant and low loss.**

■ **Ideal power supply uses high-efficiency toroidal transformers and filtering capacitors selected for sound quality (10,000 µF × 12) in fully monaural configuration.**

Balanced input and output connectors



Line input and output connectors

High-efficiency toroidal transformers

Filtering capacitors with high sound quality

■ **Selectable preamplifier gain with three settings (12 dB, 18 dB, 24 dB)**

■ **EXT PRE function allows use of external preamplifier**

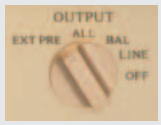
■ **Output phase selectable individually for each input, with visual indication. When INV LED is lit, output phase is inverted. When LED is out, phase is normal.**

■ **Dedicated headphone amplifier with three selectable gain settings**

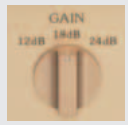
■ **Massive cabinet with persimmons wood finish**

■ **More versatile features:**

- Provisions for recording and playback with a recorder
- Attenuator (-20 dB)
- Loudness compensator with three selectable characteristics
- Alphanumeric indication of input position and volume level



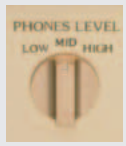
"EXT PRE" selector



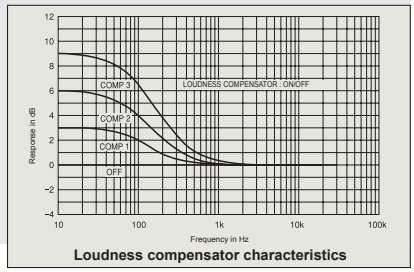
Gain selector

LED indicators

Phase selector button

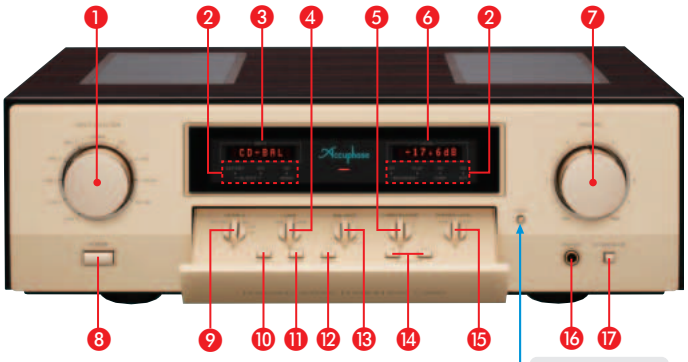


Headphone level selector



Loudness compensator characteristics

■ Front Panel



■ Rear Panel

1. Input selector (with LED indication)
   LINE 3, LINE 2, LINE 1, BAL 2, BAL 1, CD-BAL, CD, TUNER, LINE (AD), BAL (AD)
2. Function LED indicator
3. Alphanumeric input indicator
4. Gain selector
   12dB, 18dB, 24dB
5. Loudness compensator selector
   OFF, 1, 2, 3
6. Volume level indicator
7. Volume control knob
8. Power switch
9. Output selector
   EXT PRE, ALL, BAL, LINE, OFF
10. Display ON/OFF switch
11. Phase selector button
12. Stereo/mono selector button
13. Balance control
14. Recorder output ON/OFF and PLAY buttons
15. Headphone level selector
    LOW, MID, HIGH
16. Headphone jack
17. Attenuator button
18. Line (unbalanced) input connectors
    LINE(AD), TUNER, CD, LINE 1,2,3
19. Recorder playback/recording connectors
20. Line (unbalanced) output connectors (2 sets)
21. Balanced output connectors (2 sets)
    With line input signal: pin ② negative (-), pin ③ positive (+)
    With balanced input signal: same phase as source equipment
    (Can be switched with phase selector button 11).
22. Balanced input connectors (4 sets)
    BAL (AD), CD-BAL, BAL 1, 2
23. EXT PRE input connectors (2 sets) LINE/BAL
24. AC power supply connector★

Remarks

★ *This product is available in versions for 120/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.*

★ *The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.*

C-3800 Guaranteed Specifications

* Guaranteed specifications are measured according to EIA standard RS-490.
* Gain selector set to 18 dB position

● **Frequency Response** BALANCED LINE INPUT
3 – 200,000 Hz +0, –3.0 dB
20 – 20,000 Hz +0, –0.2 dB

● **Total Harmonic Distortion** (for all inputs)
0.005%

● **Input Sensitivity, Input Impedance**

Input	Sensitivity		Input impedance
	For rated output	For 0.5 V output	
BALANCED	252 mV	63 mV	40 kΩ (20 kΩ/20 kΩ)
LINE	252 mV	63 mV	20 kΩ

● **Rated Output Voltage, Output Impedance**
BALANCED/LINE OUTPUT 2 V 50 ohms

● **S/N Ratio**

Input	Input shorted, IHF-A weighting S/N ratio at rated output	S/N ratio (EIA)
BALANCED	113 dB	110 dB
LINE	113 dB	110 dB

● **Maximum Output Level** (0.005% THD, 20 – 20,000 Hz)
BALANCED/LINE OUTPUT 7.0 V
RECORDER REC (with BALANCED input): 6.0 V

● **Maximum Input Level** BALANCED INPUT: 8.0 V
LINE INPUT: 6.0 V

● **Minimum Load Impedance** BALANCED/LINE OUTPUT: 600 ohms
RECORDER REC: 10 kilohms

● **Crosstalk** –90 dB or above (10 kHz) (EIA)

● **Gain** (gain selector: 18 dB)
* Gain selector allows increase or decrease by 6 dB, except for REC output.

BALANCED INPUT	→	BALANCED OUTPUT:	18 dB
BALANCED INPUT	→	LINE OUTPUT:	18 dB
LINE INPUT	→	BALANCED OUTPUT:	18 dB
LINE INPUT	→	LINE OUTPUT:	18 dB
BALANCED/LINE INPUT	→	RECORDER REC:	0 dB

● **Loudness Compensation** 1: +2 dB (100 Hz), 2: +4 dB (100 Hz), 3: +6.5 dB (100 Hz)

● **Headphone Jack** Suitable impedance: 8 ohms or above
Output Level: 2 V (40 ohms)
Gain (LOW, MID, HIGH): ±10 dB from standard MID level

● **Attenuator** –20 dB

● **Power Requirements** AC120 V/230 V, 50/60 Hz
(Voltage as indicated on rear panel)

● **Power Consumption** 55 watts

● **Maximum Dimensions** Width 477 mm (18-3/4")
Height 156 mm (6-1/8")
Depth 412 mm (16-1/48")

● **Mass** 24.8 kg (54.7 lbs) net
32.0 kg (70.5 lbs) in shipping carton

■ **Supplied accessories:**
- **AC power cord**
- **Audio cables with plugs (1 m)**
- **Remote commander RC-210**
- **Cleaning cloth**

• Specifications and design subject to change without notice for improvements.

Accuphase
ACCUPHASE LABORATORY, INC.

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