

# Accuphase

STEREO PHONO AMPLIFIER

## C-27

- Separate MM/MC amplifier circuitry ensures ultra low noise
- Highly precise equalization with only  $\pm 0.3$  dB RIAA deviation
- Versatile impedance switching with three settings for MM and six settings for MC
- Gain switching enables high gain of up to 70 dB
- Three analog player inputs with separate settings memory
- Balanced and unbalanced analog outputs
- Polarity selector for balanced outputs





**The Ultimate Phono Equalizer Amp — Separate circuitry for MM and MC ensures ultra low noise performance and outstanding RIAA precision. Versatile load impedance selector with three settings for MM and six settings for MC brings out the best in every cartridge. Subsonic filter, and high gain capability of up to 70 dB with gain switching. Three analog player inputs with separate settings memory for each input.**

The analog phono record is experiencing a quiet boom among discerning music lovers. It goes without saying that a phono equalizer of high quality is essential to extract the enormous richness of sonic information engraved on vinyl records. Furthermore, the selection of tonearm, cartridge and other parts of the playback system requires a thorough understanding of audio fundamentals. This is a field where some investment of time and effort can yield immensely satisfying results.

Accuphase has gained considerable expertise in designing and building phono equalizers, either integrated in preamplifiers or available as option (AD-2810 and AD-20). In response to the wishes of audiophiles worldwide, we have now developed the C-27 as a high-end standalone phono equalizer amplifier, capable of exploring the possibilities of the analog disc to the fullest.

Because the output signal level of a record player is extremely low, high-gain amplification is required before supplying the signal to subsequent stages. Distortion and noise should be kept to an absolute minimum, and excellent linearity from low to high frequencies is also a must. In the C-27, these goals are achieved by employing completely separate amplifier sections for MM and MC, each with optimized circuit topology and strictly selected parts for no-compromise performance. S/N ratio, THD, high-frequency characteristics, linearity and all other parameters approach the ideal in performance. What's more, the C-27 is perfectly equipped to accommodate a wide range of cartridge output voltage ratings and load impedance requirements. To ensure optimum matching, three different settings for MM and six different settings for MC can be selected.

Designed to raise the bar for phono equalizer amplifiers, the C-27 will bring out the characteristics and musical qualities of any phono cartridge to optimum effect, providing pure music enjoyment from those legendary analog discs.

### C-27 Functions and Features

- Separate MM/MC amplifier configuration ensures ultra low noise
- Highly precise equalization: RIAA deviation only  $\pm 0.3$  dB
- Monaural construction with separate toroidal power transformers and separate equalizer boards for left and right channel
- Versatile impedance switching options

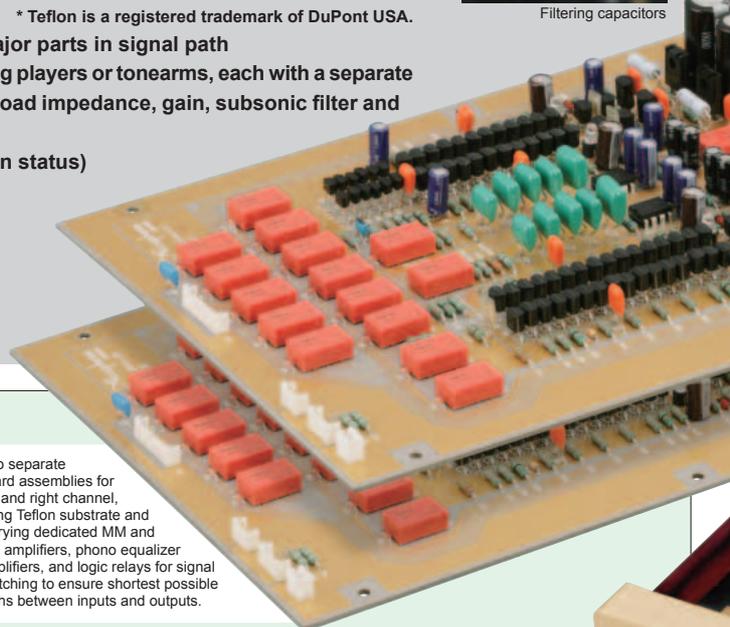
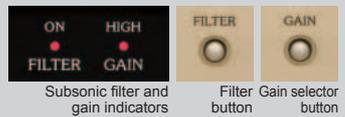
MM 1k $\Omega$ , 47k $\Omega$ , 100k $\Omega$   
 MC 3 $\Omega$ , 10 $\Omega$ , 30 $\Omega$ , 100 $\Omega$ , 300 $\Omega$ , 1k $\Omega$

3 $\Omega$  10 $\Omega$  30 $\Omega$  100 $\Omega$  300 $\Omega$  1k $\Omega$  47k $\Omega$  100k $\Omega$

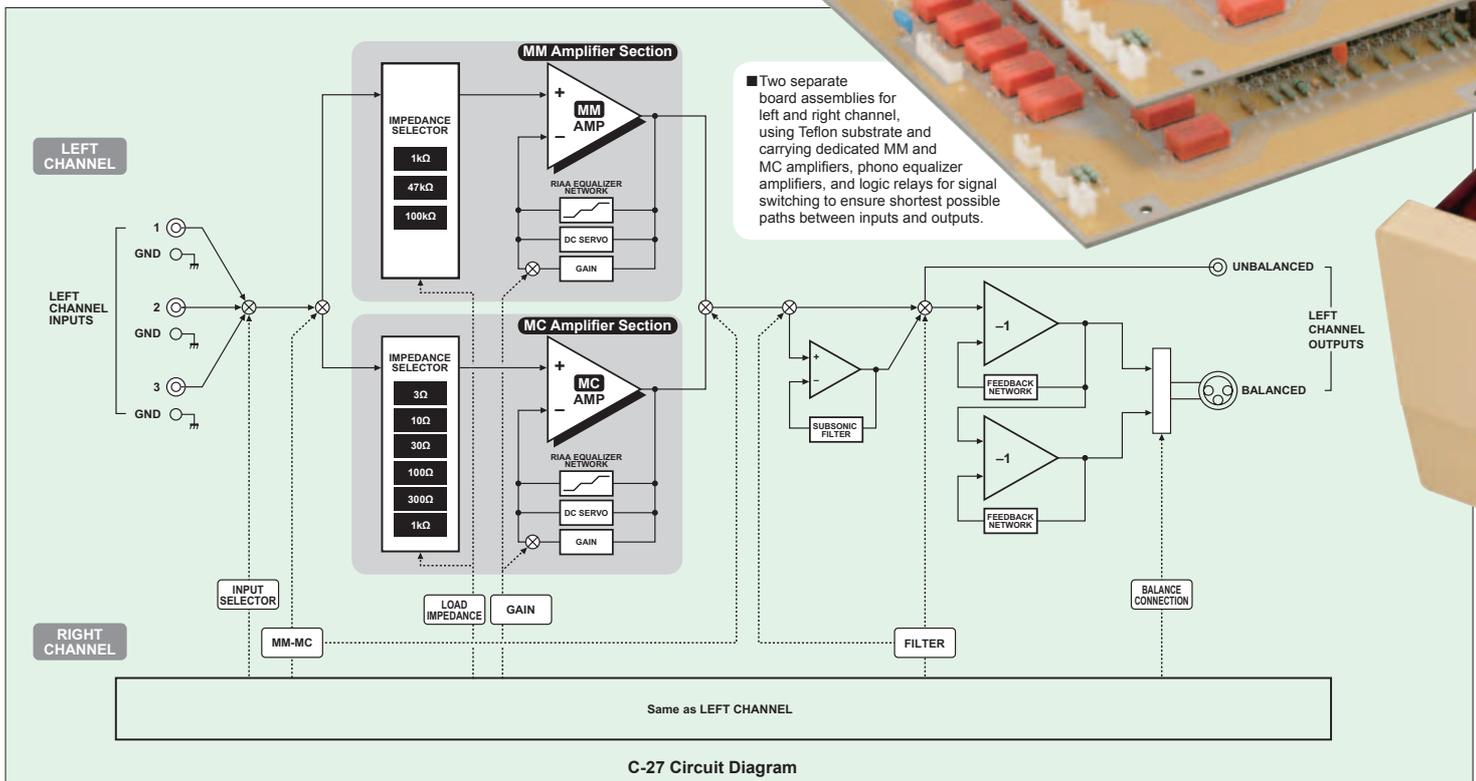
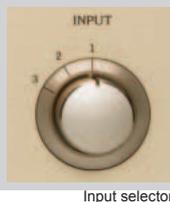
Load impedance indicators Load impedance selector



- Subsonic filter (10 Hz, -12 dB/octave)
- Gain switching enables high gain of up to 70 dB
- Equalizer PCBs made from Teflon\* (glass fluorocarbon resin) with low dielectric constant and low loss



- \* Teflon is a registered trademark of DuPont USA.
- Gold-plating of all major parts in signal path
- Three inputs for analog players or tonearms, each with a separate memory for MM/MC, load impedance, gain, subsonic filter and other settings (LEDs show selection status)



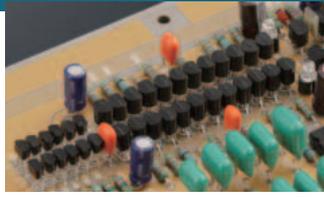
■ Two separate board assemblies for left and right channel, using Teflon substrate and carrying dedicated MM and MC amplifiers, phono equalizer amplifiers, and logic relays for signal switching to ensure shortest possible paths between inputs and outputs.

## Completely separate MM and MC sections

One of the biggest challenges for a phono equalizer amp is the problem of noise. How to achieve high S/N ratio is a crucial point. In order to precisely match the circuit configuration to the different requirements of MM and MC cartridges, the C-27 features separate sections employing purpose-selected components and optimized operating points. This uncompromising approach results in outstanding S/N ratio, minimum distortion, and excellent frequency response characteristics. Amplifier performance finally approaches ideal levels.

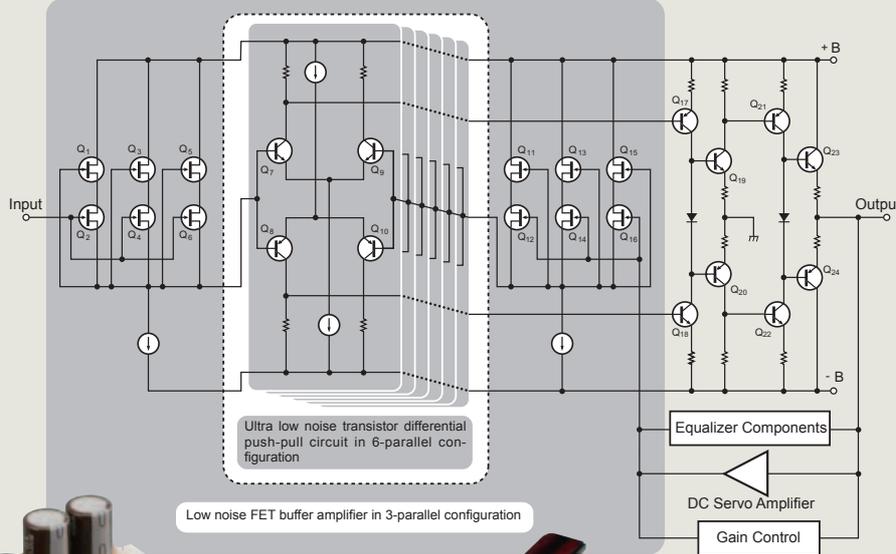
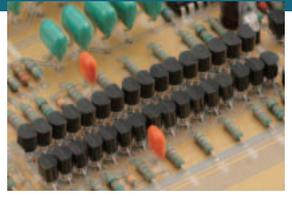
### MM amplifier section

The MM section must provide a high impedance input while also reducing residual noise. To achieve this, FET devices were selected for the initial stage. The circuit configuration is defined as "3-parallel low noise FET buffer amplifier" + "6-parallel ultra low noise transistor differential push-pull circuit".

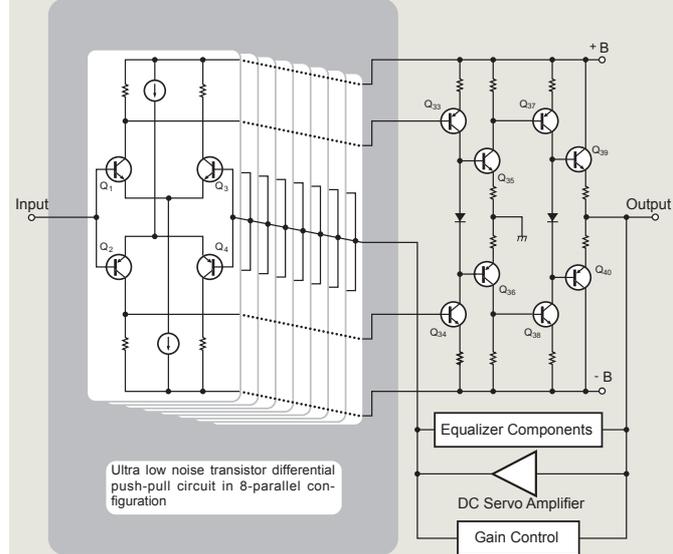


### MC amplifier section

The MC section must provide low internal impedance over a wide range to properly handle the output voltage of MC cartridges, which is a level of magnitude lower than that of MM cartridges. Residual noise of the amplifier therefore needs to be kept to an absolute minimum. This is achieved by using an "8-parallel ultra low noise transistor differential push-pull circuit" to guarantee high S/N ratio.



MM Amplifier Section  
Circuit Diagram



MC Amplifier Section  
Circuit Diagram



## Other Functions and Features

- Balanced and unbalanced analog outputs
- Side panels with elegant persimmons wood finish



Input jacks and ground connector



Balanced output connectors



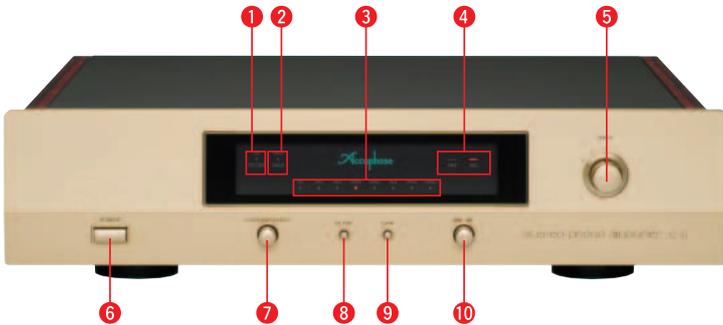
High-reliability parts selected for sound quality

### Polarity selector for balanced outputs

- In the factory default condition, the switch is set to the left position (pin ③ +) as shown in the photo.
- Only change the switch position if the connected preamplifier or integrated amplifier requires the (pin ② +) setting.



## Front panel



## Rear panel



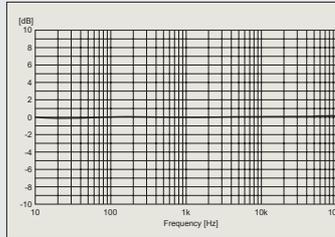
- |  |   |
|--|---|
| ① Subsonic filter indicator              | ⑩ MM-MC selector                        |
| ② Gain indicator                         | ⑪ Player input jacks 1, 2, 3            |
| ③ Load impedance indicator               | ⑫ Player ground connectors              |
| └─ For MM: 1kΩ, 47kΩ, 100kΩ              | ⑬ Unbalanced output jacks               |
| └─ For MC: 3Ω, 10Ω, 30Ω, 100Ω, 300Ω, 1kΩ | ⑭ Balanced output connectors            |
| ④ MM-MC indicator                        | ⑮ Balanced connection polarity selector |
| ⑤ Input selector 1, 2, 3                 | ⑯ AC power connector★                   |
| ⑥ Power switch                           |   |
| ⑦ Load impedance selector                |   |
| ⑧ Subsonic filter button                 |   |
| ⑨ Gain selector                          |   |

- Supplied accessories:
- AC power cord
  - Audio cables with plugs (1 m)
  - Cleaning cloth

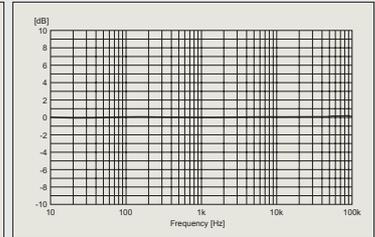
### Remarks

- ★ 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.

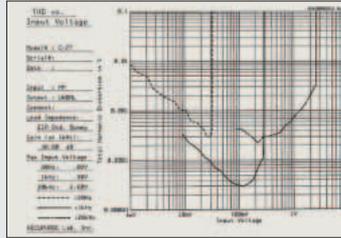
## Performance Graphs



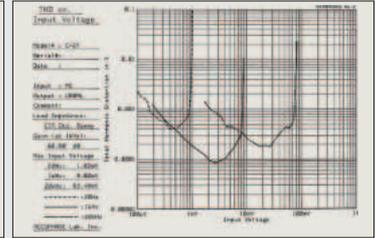
RIAA deviation (MM amplifier)



RIAA deviation (MC amplifier)



Input voltage vs. THD characteristics (MM)



Input voltage vs. THD characteristics (MC)

## C-27 Guaranteed Specifications

[Guaranteed specifications are measured according to EIA standard RS-490.]

- **RIAA Deviation**

MM	10 - 100,000 Hz	±0.5 dB
	20 - 20,000 Hz	±0.3 dB
MC	10 - 100,000 Hz	±0.3 dB
- **Total Harmonic Distortion** 0.005%
- **Gain** \*INPUT → BALANCED/UNBALANCED OUTPUT
 

GAIN button OFF (Normal)	MM: 30 dB
	MC: 60 dB
GAIN button HIGH	MM: 40 dB
	MC: 70 dB
- **Input Sensitivity** (at rated output: 1 kHz, 2 V)
 

MM	30 dB: 63.2 mV
	40 dB: 20.0 mV
MC	60 dB: 2.0 mV
	70 dB: 0.63 mV
- **Maximum Input Voltage** (1 kHz, THD 0.005%)
 

MM	30 dB: 300 mV
	40 dB: 95 mV
MC	60 dB: 9 mV
	70 dB: 2.9 mV
- **Maximum Output Level** (THD 0.002% 20 - 20,000 Hz)
 

BALANCED/UNBALANCED OUTPUT:	8.0 V
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- **Input Impedance**

MM settings:	1 kilohm, 47 kilohms, 100 kilohms
MC settings:	3 ohms, 10 ohms, 30 ohms, 100 ohms, 300 ohms, 1 kilohm
- **Rated Output and Output Impedance**

BALANCED OUTPUT	2 V	50 ohms
UNBALANCED OUTPUT	2 V	50 ohms
- **S/N Ratio**

Input terminal	Input shorted (A weighting)
	S/N ratio at rated output
MM, 30 dB	110 dB
MM, 40 dB	102 dB
MC, 60 dB	98 dB
MC, 70 dB	90 dB
- **Minimum Load Impedance** BALANCED/UNBALANCED OUTPUT: 10 kilohms
- **Crosstalk** -90 dB or less (10 kHz)
- **Residual Noise (A-weighted)**

GAIN button OFF (Normal)	MM: 6 μV or less
	MC: 25 μV or less
GAIN button HIGH	MM: 16 μV or less
	MC: 63 μV or less
- **Subsonic Filter** -12 dB/octave, 10 Hz
- **Power Requirements** AC120 V/230 V (Voltage as indicated on rear panel) 50/60 Hz
- **Power Consumption** 35 W
- **Maximum Dimensions**

Width	465 mm (18-5/16")
Height	121 mm (4-3/4")
Depth	405 mm (15-15/16")
- **Mass**

	14.5 kg (32.0 lbs) net
	20.0 kg (44.1 lbs) in shipping carton

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ACCUPHASE LABORATORY, INC.