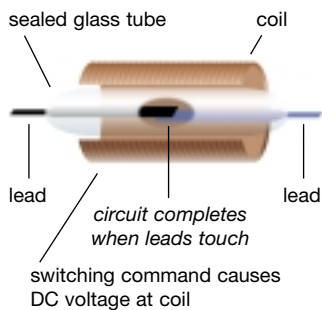


See "SYSTEMS ENGINEERING" in main brochure for more on McIntosh system architectures.



The input selectors on McIntosh Control Centers actually control state-of-the-art silent electromagnetic switches.



A new digitally controlled attenuator system and menu-based input selection are the featured refinements in the C200 Preamplifier/Controller, successor to the C100. Representing McIntosh engineering at its finest, the C200 is a fully balanced design with separate chassis for total isolation of the audio signal. It uses the finest one-percent resistors and capacitors and internal gold-plated contacts with solid-soldered joints. No details are overlooked in the design of a preamplifier virtually devoid of any measurable noise.

Featured Technologies

FULLY BALANCED DUAL-CHASSIS DESIGN. The extraordinary C200 is fully balanced from input to output – a configuration that essentially *cancels all distortion*. The precision volume control has four matched sections and the main gain stage uses four matched amplifiers operating in push-pull. Even unbalanced signals are converted to and processed as balanced signals. The Preamplifier chassis, which contains only audio circuits and inputs/outputs, is completely isolated from the power supply and the microprocessors, ensuring total noise rejection. The Controller chassis contains the selector switches, digital display, all control microprocessors, and the power supply. After any switching operation, the control circuits are automatically turned off to eliminate any possibility of microprocessor noise reaching the audio circuits. The only connection between the Preamplifier and Controller is a 25-pin shielded cable.

SILENT ELECTROMAGNETIC SWITCHING. In a conventional preamp, an input signal travels to a switch, and then travels to the input circuitry. Unfortunately, the farther a signal must travel, the more distorted it becomes. And this says nothing of what detritus a dirty switch can add to the signal. McIntosh Silent Electromagnetic Switching literally brings the switch to the input. The distortion-free switch consists of a glass tube containing oxygen-free gas and two signal leads separated by mere thousandths of an inch. The tube sits in a multilayer copper coil and the entire assembly is encased in shock-absorbent plastic. When DC voltage is applied to the coil in response to a switching command, current flow creates a magnetic field that causes the leads to bend and contact one another, completing the circuit. The inert gas eliminates corrosion of the contacts, ensuring a low-resistance, distortion-free switch that never needs cleaning. Another benefit is that non-selected inputs are truly "off," eliminating potential sources of interference.

More About the C200's Volume Stage

A fully balanced design requires stringent attenuator specifications. Mistracking not only effects left and right channel balance, it also influences common mode noise and distortion rejection. The four sections required must track better than a stereo attenuator by a factor of at least 10 to 1. Therefore, McIntosh has chosen a digitally controlled attenuator that provides 213 steps of

0.5dB each. The step match between the sections is typically less than +0.05dB. Mechanical potentiometers cannot provide such tracking accuracy.

A post attenuator stage is interlaced with the main attenuator. It rapidly reduces the output amplifier gain to unity. The result is an immediate drop in the noise floor to better than -110dB. This is much lower than possible with a mechanical

potentiometer. Noise and distortion are virtually eliminated.

Attenuation changes occur at the zero crossings of the audio signal so that there are no audible artifacts during volume adjustment. One of three different volume rotation curves (Vs) can be selected from the C200's setup menu:

SLOW - two turns of the knob traverses the entire dynamic range

C200 Companion Products

The McIntosh products shown at right are logical companions for the C200. Separate literature is available. Check with your McIntosh dealer for any late additions.

MC1201 Power Amplifier, MDA700 D/A Converter, and MCD751 CD Transport. The MC1201 double-balanced power amp and the C200 both hail from the no-compromise school of design. Add the MDA700 converter with balanced output plus the MCD751 transport for a totally balanced audio system without peer.

MR85 AM/FM Tuner with Dual Tuners. Ideal for multiroom systems, the MR85 is available with a second tuner (the TM1 module) that operates independently. A thoroughly engineered broadcast monitor, the MR85 reveals the upper limits of AM and FM performance. The supplied RAA1 AM antenna can be positioned away from sources of interference (e.g., TV sets, fluorescent lights) for greatly improved AM quality.

RCT4 Remote Translator. The Translator allows non-McIntosh components to be operated with a McIntosh handheld remote or keypad controller. It connects to the data outputs on the C200.

PC4 AC Power Controller. The PC4 provides five AC outlets (four switched) for turning non-McIntosh components on and off automatically

when it is connected to the power control output of a Control Center or Integrated Amplifier.

R649 IR Sensor. With switching for three additional stereo power amplifiers and a connector for an external IR sensor, the C200 can supply music to other areas, with remote operation via the R649 wall-mount IR sensor.

Academy Series Loudspeakers. The Academy speakers satisfy the often contradictory demands of pure music versus movie sound. All Academy loudspeakers use the acclaimed LD/HP® driver – which significantly reduces bass distortion while increasing power handling. The compact **HT5** has a footprint less than 10 inches square. The **LS320, LS340, and LS360** feature arched bridge truss construction that is virtually immune to vibrations that distort sound. A special tweeter plate in the LS320 and LS340 reduces edge diffraction cancellation, while the five tweeters in the LS360 are wired in a Bessell Function array that acts as a point source. The **WS320** is the wall-mount sibling of the LS320 and comes in a paintable white finish. At 400 watts, the **PS112** is McIntosh's most powerful amplified subwoofer. It features arched bridge truss construction and a black glass control panel.



MC1201 MONOBLOCK POWER AMP



MDA700 D/A CONVERTER



MCD751 CD TRANSPORT



MR85 AM/FM TUNER



RCT4 REMOTE TRANSLATOR



PC4 AC POWER CONTROLLER



R649 IR SENSOR

academy
LOUDSPEAKERS



PS112



LS320



LS340

Featured Technologies (cont'd.)

VARIABLE RATE VOLUME (VRV) DIGITALLY CONTROLLED ATTENUATOR. If McIntosh electromagnetic switching brings the switch to the input, then the C200's volume control brings the attenuator to the input. The volume knob actually operates an optical rotary encoder with 213 steps; it sends instructions at the speed of light to the digitally controlled attenuator located near the inputs. Together they provide 0.5dB resolution with 0.05dB accuracy. (*More details in sidebar below.*)

PROGRAMMABLE SOURCE TRIM. A traditional McIntosh feature that allows matching the output levels of different source components, source trim in the C200 establishes new standards for audio purity and operating convenience. Instead of adjusting individual potentiometers, the trim for each input is stored electronically as a volume offset.

ADVANCED PHONO SECTION. Phono inputs are provided for both moving magnet and moving coil phono cartridges. The MC inputs have a dedicated RIAA preamplifier and double mu-metal-shielded step-up transformers wound with silver wire.

CONTROL DATA OUTPUTS. To facilitate system integration, the C200 outputs control data for source components. This allows remote operation of non-McIntosh components either by direct connection to compatible data inputs or via a McIntosh Remote Translator.

BALANCED CONNECTIONS. Balanced connections guard against induced noise. A balanced connection between the C200 and the MC1201 amp provides 40dB more noise protection than would an unbalanced ("single-ended") connection.

REMOTE POWER CONTROL. The C200 has four individual remote power jacks (one main, one accessory, switched 1, switched 2) that enable it to turn connected power amps on/off.

FAST - one turn of the knob traverses the entire dynamic range

VRV - the level rate changes as the control is turned. VRV results in a volume curve that equals that of a normal volume potentiometer.

One of two different balance modes can be selected from the C200's setup menu:

SLOW - each knob click equals 1dB of offset

VRB - the rate of offset change is determined by

the speed of knob rotation. Turn the knob slowly for 1dB steps or rapidly for larger steps.

The C200 also includes a pass-through mode that disables the volume and balance circuits. When PASSTHRU is on, the selected input is passed directly to the MAIN and 1&2 OUTPUTS at unity gain. This is done so that the FRONT LEFT and FRONT RIGHT audio signals from a home theater processor can be fed directly to the amps and speakers connected to

the C200. They would then become part of the home theater system. PASSTHRU mode is triggered by a signal received through a rear panel jack. This signal can be the "POWER ON" command from the McIntosh MAC-3, MSD-4, or MX132 processors.

C200 Preamplifier/Controller



- Fully balanced from input to output
- Dual chassis isolates audio signals from power and switching
- Extra-wide dynamic range
- Ultra-low distortion
- Silent electromagnetic switching
- VRV (Variable Rate Volume) with new multistage precision digitally controlled attenuator system
- Programmable source trim for input level matching
- 12-character blue vacuum fluorescent display for input selection, volume level in dB or %, and menu selection
- 11 source selections including separate MM and MC phono
- 3 balanced inputs, 1 bal. tape loop
- 8 unbal. inputs, 1 unbal. tape loop
- 3 bal. stereo outputs (1 main, 2 sw.)
- Independent listen & record selection
- Dual processor loops
- Control data output for source components
- Remote power control (2 main, 2 switched)
- Double shielded power transformer
- Separate electronic regulators for each preamplifier section
- Low-noise 1% metal film resistors
- Ultra-precision (.5%) metal film resistors and 1% polypropylene capacitors for phono equalization
- Moving coil input transformers
- Polyester coupling capacitors
- Discrete output stage
- Gold-plated input and output jacks
- Modular construction w/ steel chassis
- Glass front panel with illuminated nomenclature
- Infrared remote control (all circuitry in Controller chassis)
- Connector for external IR sensor
- Headphone jack

Frequency Response
10Hz to 40kHz, +0 / -0.5dB

Rated Voltage Output
2.5Vrms, all outputs

Maximum Voltage Output
Balanced: 25Vrms
Unbalanced: 12Vrms

Output Impedance
100 ohms balanced
50 ohms unbalanced

Total Harmonic Distortion
0.002% maximum from
20Hz to 20kHz

Input Sensitivity
Phono: 4.4mV for 2.5V
High level: 450mV for 2.5V

Maximum Input Signal
MM phono: 50mV
High level: 5V

A-Weighted S/N
Phono: 86dB
High level: 98dB

Input Impedance
MC phono: 5 ohms
MM phono: 47k ohms, 65pf
High level:
44k ohms balanced
22k ohms unbalanced

Voltage Gain
MC phono to tape: 70dB
MM phono to tape: 40dB
High level to tape: 0dB
High level to main: 15dB

Dimensions (h x w x d)
inch: 5.375 x 17.5 x 20 each unit
cm: 13.7 x 44.5 x 50.8 each unit
Knob clearance: 0.75" (1.9 cm)

Weight
C200C: 40.4 lbs. (18.4kg) boxed
C200P: 34.9 lbs. (15.9kg) boxed

