McIntosh®

THE GREAT AMERICAN POWERHOUSE

FIFTY-YEAR 50 ANNIVERSARY

MHT100 A/V System Controller

McIntosh Home Theater

The awesome sonic potential of DVD movies with Dolby Digital® and DTS® practically begs for McIntosh-quality reproduction. And if you've been waiting for an all-in-one home theater receiver that can hold its own against high-performance separates… the MHT100 is all that, and more. Featuring eight channels of amplification (two for Zone B) plus 24-bit DSP processing for Dolby Digital, DTS, Pro Logic, and 6.1 Expanded Surround, the MHT100 combines the brains of the critically acclaimed MX132 controller/processor with the indomitable brawn of McIntosh power amps. Although we prefer the term "A/V System Controller," consider the MHT100 as "The McIntosh of Home Theater receivers."

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

Featured Technologies

24-BIT DSP PROCESSING. The MHT100 features one of the most powerful DSP engines available to decode Dolby Digital®, Pro Logic, and DTS® soundtracks.

20-BIT ANALOG-TO-DIGITAL CONVERSION. Analog inputs to Zone A feed a 20-bit A-to-D converter featuring AILC (automatic input level control). The AILC acts similar to Power Guard – if overdrive is detected a digitally controlled attenuator turns down the input signal.

20-BIT DIGITAL-TO-ANALOG CONVERSION. The output of the DSP module has four 20-bit stereo D-to-A converters that feed the volume control stage.

SUPER-TRACKING VOLUME CONTROL. Level differences among channels in a stereo or surround system compromise sound imaging. The MHT100 uses an eight-gang precision digitally controlled volume attenuator with tracking accuracy better than 0.5dB for all channels.

BUFFERED FET AUDIO SWITCHING. All eight inputs of the MHT100 are buffered with high-performance op-amps. These provide a uniform high input impedance, protect the FET switches from static discharge damage, and supply the necessary isolation for multiple Zone switching.

MATCHED AND BUFFERED VIDEO SWITCHING. High-resolution video sources such as DVDs demand high-quality video switching. All video switching in the MHT100 is done at 75Ω. FET switches select the input in use. Then the signal is restored to its original value by a broadband video buffer amplifier with 75Ω output impedance. There are buffers for both Zone A and Zone B monitor outputs.

CONTROL LOGIC. All inputs, outputs, and data ports are controlled by logic circuits in the MHT100, ensuring low-resistance, distortion-free switches that never need cleaning. Another benefit is that non-selected inputs are truly "off," eliminating potential sources of interference.

ON-SCREEN DISPLAY. Initial setup is a one-time set-and-forget procedure. In the setup mode, all speaker size selection, room calibration, and custom sound enhancement features can be set from the listening position via remote control. During regular operation, an overlay style on-screen display shows changes in input, volume, trim, and mode selections.

TRIM SELECT. Settings for subwoofer, surround speakers, center speaker, treble, bass, and display can be adjusted using TRIM UP/DOWN or via remote. The settings are shown on the MHT100's fluorescent display and on-screen. For each operating mode only the appropriate trim options can be accessed.

The McIntosh products shown at right are logical companions for the MHT100. Separate literature is available. Check with your McIntosh dealer for any late additions.

MVP841 DVD/CD/Video CD Player. The MVP841 delivers crystal-clear DVD video and outputs 5.1 digital surround sound.

RCT4 Remote Translator. The Translator allows non-McIntosh components to be operated with a McIntosh IR remote or keypad controller. It connects to the data outputs on the MHT100.

RFD2 AC-3 RF Demodulator. The RFD2 is required when connecting a laser disc player with a Dolby Digital RF output to the MHT100.

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 the MHT100.

HC1 Home Controller. The HC1 connects to the MHT100's HOME data port and allows remote operation of other home devices such as lights and movie screens.

WK3 and WK4 Keypad Controllers and R649 IR Sensor. These can be used to operate Zones A and B of the MHT100.

Academy Series Loudspeakers. The Academy speakers satisfy the often contradictory demands of pure music versus movie sound. All McIntosh 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 and CS350** feature arched bridge truss construction that is virtually immune to vibrations that distort sound. A special tweeter plate in the LS320 reduces edge diffraction cancellation. The CS350 center channel speaker is sonically matched to the LS320 and features five tweeters 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.


MVP841 DVD/CD/VIDEO CD PLAYER


RCT4 REMOTE TRANSLATOR

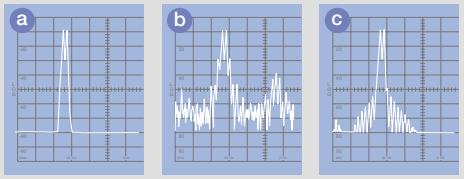

RFD2 AC-3 RF DEMODULATOR


PC4 AC POWER CONTROLLER

Featured Technologies (cont'd.)

EXCLUSIVE MCINTOSH POWER ASSURANCE SYSTEM. Power Assurance is a collection of technologies that enhance performance and reliability and protect the amp and speakers.

Power Guard® clipping protection. Power Guard ensures that the amplifier will always deliver full power without causing clipping distortion. If an amplifier channel is overdriven, Power Guard automatically reduces the input volume just enough to keep distortion below 2% and prevent any clipping distortion. Thanks to an optical resistor, Power Guard acts literally at the speed of light, producing absolutely no audible side effects. An amplifier with Power Guard will actually deliver clipping-free output well above its rated power.



The patented McIntosh Power Guard in the MHT100 provides real-time clipping protection without affecting power output or sound quality. **a.** test signal **b.** overdriven amp without Power Guard produces SEVERE clipping **c.** overdriven amp with Power Guard produces NO clipping

Sentry Monitor® current protection. Sentry Monitor continually senses the voltage and current of the output stage and confines it to a safe limit. Sentry Monitor does not limit power output.

Thermal Cutout. If the cooling air is blocked and the power transistors become too hot, thermal cutouts protect against overheating until the amp cools.

Turn-On Delay. This circuit delays operation for about two seconds after turn-on in order to avoid any pops or thumps generated as other equipment turns on.

Soft Start inrush protection. Thermistors in the power transformer act as a cushion against inrush current, eliminating component stress during turn-on.

CONTROL DATA OUTPUTS. To facilitate system integration, the MHT100 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.

REMOTE POWER CONTROL. Four independent jacks are provided for power control of connected audio and video components and accessories.


HC1 HOME CONTROLLER


WK3, WK4 KEYPAD CONTROLLERS

academy
LOUDSPEAKERS


HT5


LS320


CS350


WS320


PS112

MHT100 A/V System Controller

Home Theater Control Center/Processor/Amplifier

Zone A (theater):
6 x 100 watts (4Ω) or 6 x 80 watts (8Ω)

Zone B (multiroom):
2 x 100 watts (4Ω) or 2 x 80 watts (8Ω)

Zone A: 6 pairs of gold-plated speaker outputs

Zone B: 2 pairs of gold-plated speaker outputs

Wide power bandwidth, ultra-low distortion amps with exclusive McIntosh Power Assurance System:
- Power Guard® clipping protection
- Sentry Monitor® current protection
- Thermal Cutout
- Turn-On Delay
- Soft Start inrush protection

24-bit DSP processing for Dolby Digital®, Pro Logic, and DTS® with automatic mode switching

6.1 processing for Expansion Modes

Four stereo 20-bit D/A converters

20-bit A/D conversion of analog source signals (Zone A)

Switchable compressor for Late Night Dolby Digital

Optional built-in AM/FM tuner module with high-performance RAA1 remote AM antenna

8 audio/video source selections (including optional tuner) with re-assignable naming (for 7)

6 assignable digital audio inputs (3 optical, 3 coaxial)

2 digital outputs (1 optical, 1 coaxial)

Component, S-Video, and composite video switching

2 assignable component video inputs

7 power amp input connections

8 preamp outputs

8-channel input for use with an external processor

Matched and buffered video switching

Super Tracking volume control (±0.5dB)

Control data output for all source components

Auto-memory for each input's preferred mode

LED indicators for mode and Power Guard

Internal noise source for system calibration

On-screen assistance for setup and operation

Adjustable speaker time delay

Front-panel control of Zone A & B input and volume

Remote control of all mode and trim settings for easy setup and calibration

Permanent memory of system calibration settings

Independent listen and record selection

Independent remote control of Zones A and B

Zone A & B connections for WK-3, WK-4 keypads and IR sensors (compatible with Xantech sensors)

RS232 port for control with Crestron® and Elan® touch-screen system remotes

Remote operation of lights, screens, and drapes with McIntosh HC1 Home Controller

4 remote power control outputs (Zones A and B; Video; Accessory)

Auto muting

Gold-plated input and output jacks

Modular construction with steel chassis

Fanless convection cooling

Glass front panel with illuminated nomenclature

Infrared remote control with backlit buttons

Optional Tuner

Seek or manual FM or AM tuning

Electronic memory for 9 FM and 9 AM stations

Exact digital display of tuned frequency

Automatic muting when changing stations

Memory search

DMOS-FET RF amplifier for better sensitivity and better cross modulation rejection

Double-balanced mixer for better spurious response rejection and local oscillator isolation

Linear phase, piezoelectric IF filters never require adjustment and provide lower distortion

PLL MPX for better separation, lower noise, and lower distortion

Automatic stereo blend reduces background noise for weak FM Stereo stations with little loss of image

19kHz pilot and 38kHz carrier suppression circuits for noise-free tape recording

Adjacent-channel multiplex interference rejection circuit reduces background chatter

AM antenna circuit with Faraday shielded low-impedance ferrite rod antenna rejects locally generated interference

RAA1 remote AM antenna can be located away from sources of interference.

Why Choose McIntosh?

Consumer electronics products usually are viewed as short-term investments because they don't last or they quickly become obsolete in some way. But behind every McIntosh is a fifty-year heritage of excellence, proudly carried forward by every employee. No production lines, no "price-point" engineering, no planned obsolescence. McIntosh equipment is made to sound better and last longer.

When customers are presented with McIntosh products, criteria they have been conditioned to overlook – reliability, longevity, craftsmanship, ease-of-use, adaptability, pride of ownership – suddenly leap to the top of their list. The choice then becomes clear: ***There is nothing like a McIntosh.***

Specifications

PREAMP SECTION

Frequency Response
Stereo
L & R channels
20Hz to 20kHz, +0 / -.5dB

Music Surround
L,C,R,LS,RS channels
20Hz to 20kHz, +0 / -.5dB

Dolby Pro Logic
L,C,R channels
20Hz to 20kHz, ±.5dB
LS, RS channels
20Hz to 6.3kHz, +1 / -3dB
If SMALL speakers are selected for use, the above channels employ high-pass filters with a corner frequency of 80Hz and a 12dB/octave rolloff.

Dolby Digital, DTS, 8ch EXT. INPUT
L,C,R,LS,RS, BSL, BSR channels
20Hz to 20kHz, +0 / -.5dB
Subwoofer: This channel has an electronic low-pass filter with an 80Hz corner frequency and a 24dB/octave rolloff in all modes except EXTERNAL.

Rated Voltage Output
2V (L,C,R,LS,RS,BSL,BSRSUB)

Max. Voltage Output
8Vrms, all outputs

Video Output
1V p-p, 75 ohms

Output Impedance
Less than 560 ohms, all outputs

Total Harmonic Distortion
0.05% max. all channels from 20Hz to 20kHz

Input Sensitivity
Line level: 100mV IHF
Dolby level: 200mV input
Ext. Proc. ref. level: 200mV input

S/N Ratio (A-Weighted)
>90dB below ref. level, all outputs

Maximum Input Signal
High level: 6V

Input Impedance
High level: 20k ohms

Voltage Gain
High level to Tape: 0dB
High level to Preamp Out: 14dB

Tone Controls
Bass and treble: variable ±10dB

POWER AMP SECTION

RMS Power Output
Zone A (L,C,R,LS,BS,RS):
100W (4Ω) or 80W (8Ω) min. sine wave continuous average power output per channel with all 6 channels operating
Zone B:
100W (4Ω) or 80W (8Ω)

Output Load Impedance
8 or 4 ohms

Rated Power Band
20Hz to 20kHz

Total Harmonic Distortion
0.05% max. at any level from 250 milliwatts to rated output per channel from 20Hz to 20kHz with all channels operating

Dynamic Headroom
1.8dB

Frequency Response
20Hz to 20kHz, +0 / -.25dB
10Hz to 100kHz, +0 / -3.0dB

Input Sensitivity
1V input for 100 watts output

Input Impedance
20k ohms

S/N Ratio (A-Weighted)
92dB (112dB below rated output)

Intermodulation Distortion
0.05% max. if instantaneous peak output does not exceed twice the output rating per channel with all channels operating

Power Guard®
Clipping is prevented and THD does not exceed 2% with up to 14dB overdrive at 1kHz

OPTIONAL TUNER

FM SECTION
Useable Sensitivity
14dB (1.4uV across 75Ω)

50dB Quieting Sensitivity
Mono: 19dBF (2.4uV across 75Ω)
Stereo: 35dBF (15uV across 75Ω)

Signal-to-Noise Ratio
Mono: 75dB • Stereo: 70dB

Frequency Response
Mono: 20Hz to 15kHz, +0 / -1dB
Stereo: 20Hz to 15kHz, +0 / -1dB

Harmonic Distortion

Mono:	Stereo:
0.3% @ 100Hz	0.45% @ 100Hz
0.3% @ 1kHz	0.45% @ 1kHz
0.3% @ 10kHz	0.65% @ 10kHz

Intermodulation Distortion
Mono: 0.25%
Stereo: 0.45%

Capture Ratio
1.2dB

Alternate Channel Selectivity
75dB

Spurious Response Rejection
100dB

Image Rejection
75dB

RF Intermodulation
65dB

Stereo Separation
45dB at 100Hz
50dB at 1kHz
35dB at 10kHz

SCA Rejection
65dB

OPTIONAL TUNER (CONT'D)

AM SECTION
Sensitivity
20uV (ext. ant., 50Ω signal source)

Signal-to-Noise Ratio
48dB at 30% modulation
58dB at 100% modulation

Harmonic Distortion
0.5% max. at 50% modulation

Frequency Response
50Hz to 6kHz NRSC

Adjacent Channel Selectivity
55dB minimum IHF

Image Rejection
65dB minimum from 540kHz to 1600kHz

IF Rejection
80dB minimum

GENERAL

Dimensions (h x w x d)
inch: 9.5 x 17.5 x 20
cm: 24.1 x 44.5 x 50.8
Knob clearance: 0.75" (1.9 cm)

Weight
92 lbs. (41.8kg) boxed

McIntosh Laboratory, Inc., 2 Chambers Street, Binghamton, New York 13903
tel (607) 723–3512 • U.S. toll-free (888) 979–3737 • fax (607) 772–3308 • www.mcintoshlabs.com

1200.MHT100.30k.essecomm