## McIntosh

McIntosh Laboratory, Inc. 2 Chambers Street Binghamton, New York 13903-2699 Phone: 607-723-3512 www.mcintoshlabs.com

### MC2.1KW

POWER AMPLIFIER OWNER'S MANUAL



#### Thank You from all of us at McIntosh

You have invested in a precision instrument that will provide you with many years of enjoyment. Please take a few moments to familiarize yourself with the features and instructions to get the maximum performance from your equipment. If you need further technical assistance, please contact your dealer who may be more familiar with your particular setup including other brands. You can also contact McIntosh with additional questions or in the unlikely event of needing service.

#### McIntosh Laboratory, Inc.

2 Chambers Street Binghamton, New York 13903				
Technica	<b>Assistance</b>	(607) 723-3512		
	Fax	(607) 724-0549		
<b>Customer Service</b>		(607) 723-3515		
	Fax	(607) 723-1917		
Email Website	support@mcintoshlabs.com www.mcintoshlabs.com			

#### **Please Take A Moment**

For future reference, you can write down your serial number and purchase information here. We can identify your purchase from this information if the occasion should arise:

Serial Number:	
----------------	--

Purchase Date:\_\_\_\_\_

Dealer Name:

#### **Table of Contents**

#### Introduction

The McIntosh MC2.1KW Monoblock Power Amplifier is the ultimate power in home audio amplification. The pinnacle of audio amplification, the MC2.1KW stands as a testament to our unwavering commitment to sonic perfection. This tri-chassis marvel possesses the remarkable ability to deliver an astonishing 2,000 Watts of pristine McIntosh power, forever transforming your home stereo or theater experience. At McIntosh, we don't just appreciate sound – we are Made of Sound<sup>TM</sup>.

#### Safety First

Please read the safety instructions included in a separate document called **Important Additional Operation Information Guide**.

- 1. The MC2.1KW Power Module weight is 145 pounds (65.8 kilograms) and the MC2.1KW Output Module weight is 125 pounds (56.7 kilograms). It requires two or more persons to safely handle when moving the Power or Output Module.
- 2. Each of the MC2.1KW Power Modules needs to be connected to a dedicated AC circuit. The MC2.1KW Output Module should be connected to a third separate AC circuit. The third AC circuit may have other components connected, including additional MC2.1KW Output Modules. Contact your McIntosh dealer and a certified electrician for additional information and assistance.
- 3. The AC power cables going to the MC2.1KW Power Modules, MC2.1KW Output Module and all other components should not be connected to AC power until all system components are connected together.
- 4. Always provide adequate ventilation for the MC2.1KW Output and Power Modules. Each module should be installed upright and on its feet. Do not install any of the modules directly above any type of heat generating component. For the MC2.1KW Output Module allow at least 2 inches (5.1cm) of space above the top and 2 inches (5.1cm) of space on each side. For the MC2.1KW Power Modules allow at least 6 inches (15.2cm) of space above the top and 2 inches (5.1cm) of space on each side.

- 5. In the event that either or both MC2.1KW Power Modules overheat, the thermal protection circuits will activate, should this happen, the sound will be muted, and the MC2.1KW Output Module Power Guard LED will illuminate. When the MC2.1KW Power Modules have returned to a safe operating temperature, normal operation will resume.
- 6. The MC2.1KW loudspeaker negative connections are above chassis ground. Do not combine any connections together, ground them or connect with another MC2.1KW Power Amplifier.
- 7. Each MC2.1KW Power Module connects to the MC2.1KW Output Module with two different interconnect cables. Do not use any other cable when connecting the MC2.1KW Output Module to the MC2.1KW Power Modules. These cables are for use only with the MC2.1KW Power Amplifier. If all cables are not connected correctly, the MC2.1KW Power Amplifier will not power up. Refer to pages 12 and 13 for additional information on connecting the MC2.1KW Power Modules to the MC2.1KW Output Module.
- 8. It is important to keep your McIntosh unit out of direct sunlight and only use appropriate gentle cleaners because the Organic Anodize can become discolored over time. While most products will maintain their classic dark features for their lifetime, some situations can accelerate discoloration. The most pervasive culprit is UV light, especially light directly from the sun, or high intensity spotlights. Even high intensity short-term exposure can result in discoloration. Chemicals can also alter the finish of the Anodize. Aggressive cleaners will take their toll over time and actually etch away the Anodize finish.
- 9. The MC2.1KW has been tested and certified for indoor use only.

#### **Performance Features**

#### Quad Balanced Design

The MC2.1KW consists of one Output Module and two Power Modules each containing its own 1,000 Watt amplifier. The incoming audio signal enters the Output Module from the preamplifier. An in-phase signal is sent to one of the Power Modules and amplified while an out-of-phase signal is sent to the other Power Module and amplified. Both amplified signals exit the Power Modules and reenter the Output Module where they drive opposite ends of the bi-filar wound McIntosh Autoformer. This combines the amplified signals back into one at twice the power. Through this artful engineering, a low distortion audio signal leaves the Output Module to deliver pristine sound through your loudspeaker.

#### • Power Output

The MC2.1KW Power Amplifier is capable of 2,000 Watts into a 2, 4, or 8 ohm loudspeaker with less than 0.005% distortion. It can provide peak current of 200 amperes and over 8,000 Watts of power output on music bursts.

#### • ThermalTrak<sup>™</sup> Power Transistors

The MC2.1KW uses a total of 96 ThermalTrak Power Transistors in the Power Modules for fast thermal bias tracking. This is accomplished using a thermally matched bias diode that is part of the transistor die itself thereby eliminating any delay in establishing thermal equilibrium. ThermalTrak<sup>TM</sup> is a trademark of Semiconductor Components Industries, LLC.

#### • Power Guard®

The patented McIntosh Power Guard circuit prevents the amplifier from being overdriven into clipping. Clipping produces a harsh distorted sound and can also damage loudspeakers.

#### • Sentry Monitor<sup>TM</sup>

The McIntosh Sentry Monitor circuit monitors amplifier output current to keep it within a safe range should a short or improper load be present on the amplifier output.

#### • Monogrammed Heatsinks<sup>TM</sup>

The McIntosh designed Monogrammed Heatsinks ensure thorough and even heat dissipation in the Power Module output stage. Thermal protection is provided for each heatsink should there be inadequate ventilation.

#### • Proprietary Autoformer<sup>TM</sup>

The McIntosh designed and manufactured output Autoformer provides an ideal match between the Power Module output stage and loudspeaker loads of 2, 4, and 8 ohms. The Autoformer also provides perfect DC protection for your loudspeakers.

#### • Solid Cinch<sup>TM</sup> Binding Posts

Our patented Solid Cinch binding posts easily but securely attach the loudspeaker cables for a solid connection. The posts are gold-plated to prevent corrosion and ensure a quality signal is sent over your loudspeaker cables. There are three sets of binding posts for each of the three output impedances. This allows for easy bi or tri-wiring of a loudspeaker.

#### • Illuminated Glass Front Panel

The famous McIntosh illuminated front panel is made from ½ inch thick glass and uses Light Emitting Diodes (LEDs) for even illumination and long life.

#### • Illuminated Power Meter

The Illuminated Power Output Meter is peak responding and indicates the true power output of the amplifier. A choice of displaying either the dynamic power output or displaying peak hold is available. Meter lighting can also be controlled from the front panel or remotely.

#### Remote Power Control

McIntosh power control circuits allow for remote turn on/off of the MC2.1KW Power Amplifier from a McIntosh preamplifier or A/V control center. Meter illumination can also be controlled remotely using the preamplifier or A/V control center's trim menu.

#### • Independent Power Supplies

The MC2.1KW Output Module uses a low noise R-Core power transformer with fully regulated power supplies for powering the low-level audio, control and illumination circuits. Each MC2.1KW Power Module uses a large toroidal power transformer and large filter capacitors with a total of 860 Joules of energy.

#### • Dual Inputs for Advanced System Configurations

The MC2.1KW has dual sets of balanced and unbalanced inputs, conveniently allowing you to connect more than one preamplifier. This gives you the ability to easily switch between preamps of different types such as vacuum tube and solid-state.



### MtIntosh

**Dimensions (continued)** 





#### **MtIntosh** Front Panels



#### 1. METER Control Knob

LIGHTS OFF - The meter operates as if in the WATTS position, but meter illumination is turned off.

WATTS - The meter dynamically responds to power output.

HOLD - The meter will hold the highest power output peak then gradually decay until a higher peak is reached.

When in the WATTS or HOLD position, meter illumination can be controlled from a preamplifier with meter light control capabilities if there is a power control connection. Refer to pages 14 and 15 for making a power control connection.

#### 2. POWER OUTPUT Meter

Displays the power output in WATTS (top scale) and DECIBELS (bottom scale).

#### **3. POWER GUARD Indicator**

The POWER GUARD indicator will illuminate under the following conditions:

- When the Power Guard circuit activates to control excessive distortion in the audio output.
- When the audio is muted due to high temperatures in any of the Power Module heatsinks.
- When the audio is muted during the MC2.1KW power on sequence (approximately 4 seconds).

#### 4. OFF/REMOTE Indicator

Indicates that the MC2.1KW is in the OFF/

REMOTE operating mode. When the MC2.1KW is off, this indicates that the Output Module is connected to AC power and all interconnect cables are properly connected to the Power Modules. When the MC2.1KW is on, this indicates that it is being controlled remotely by an audio preamplifier with a power control connection.

#### 5. POWER Control Knob

OFF/REMOTE - With no power control connection being used, the MC2.1KW will be off in this position.

With power control being used, the MC2.1KW will be on in this position provided the preamp that is connected to either power control input is on.

INPUT 1 - The MC2.1KW will turn on and INPUT 1 will be active.

INPUT 2 - The MC2.1KW will turn on and INPUT 2 will be active.

When the POWER Knob is in either the INPUT 1 or INPUT 2 position, power control input is overridden.

#### 6. INPUT 2 Indicator

Indicates that INPUT 2 is the active audio input.

#### 7. INPUT 1 Indicator

Indicates that INPUT 1 is the active audio input.

#### 8. Capacitor Bank

Illumination of the Capacitor Bank will follow illumination of the meter by either the front panel METER Control Knob or by using a power control connection. Refer to METER Control Knob above. Illumination of the Capacitor Bank can be permanently turned off by using the LIGHT CONTROL switch on the rear panel of the Power Module. Refer to Rear Panel information on pages 10 and 11. MeIntosh

**Rear Panels** 



#### 1. Output Module AC Input

Connect the MC2.1KW Output Module to an AC circuit that is separate from any MC2.1KW Power Module. The Output Module can be connected to an AC circuit with another Output Module or other lower power system components.

#### 2. Fuse

Under normal operation, the fuse should not need to be replaced. If required, refer to the rear panel for the proper fuse type and rating.

#### **3. INPUT 1**

UNBAL – This input accepts an unbalanced (RCA) signal from a preamplifier.

BAL – This input accepts a balanced (XLR) signal from a preamplifier.

MODE – Set the MODE switch to the appropriate position depending on the type of input being used. Only one type of input (UNBAL or BAL) should be connected to INPUT 1.

Refer to pages 14 and 15 for additional information on connecting inputs.

#### 4. **INPUT 2**

UNBAL – This input accepts an unbalanced (RCA) signal from a preamplifier.

BAL – This input accepts a balanced (XLR) signal from a preamplifier.

MODE – Set the MODE switch to the appropriate position depending on the type of input being used. Only one type of input (UNBAL or BAL) should be connected to INPUT 2. Refer to pages 14 and 15 for additional information on connecting inputs.

#### 5. POWER/INPUT CONTROL

AUTO OFF – When enabled, after approximately 30 mins without an audio signal, the MC2.1KW will turn off to conserve power. The AUTO OFF switch can be set to DISABLE to prevent this. If the front panel POWER Control Knob is set to OFF/REMOTE and the MC2.1KW is being controlled by a preamplifier, the AUTO OFF function is automatically disabled.

MAIN/IN 1 - When connected to a preamplifier with power control capabilities, a control signal at the IN connection will turn the MC2.1KW on and select INPUT 1. The OUT connection provides a power control signal that can be used to control other components. The OUT connection is always active whenever the MC2.1KW is powered on, regardless of a signal at the IN connection. IN 2 -When connected to a preamplifier with power control capabilities, a control signal at the IN connection will turn the MC2.1KW on and select INPUT 2. The OUT connection provides a power control signal that can be used to control other components. The OUT connection is active

whenever INPUT 2 is selected. To use POWER/INPUT CONTROL the front panel POWER Control Knob must be in the OFF/ REMOTE position. If the POWER Control Knob is set to INPUT 1 or INPUT 2, all power control signals are overridden.

If there is a control signal present at both MAIN/ IN1 and IN2 at the same time, INPUT 2 will be selected. To switch back to INPUT 1, the control signal on IN2 must be turned off.

#### 6. POWER MODULE Connections

These connections are used to connect the MC2.1KW Output Module to each of the 2 MC2.1KW Power Modules using the supplied interconnect cables.

Refer to pages 12 and 13 for additional information on connecting the modules.

#### 7. $8\Omega$ OUTPUTS

This set of outputs is for connecting an  $8\Omega$  loudspeaker to the MC2.1KW. Multiple pairs of outputs (A, B and C) are provided for bi-wiring or tri-wiring.

Refer to pages 16 and 17 for additional information on connecting loudspeakers.

#### 8. $4\Omega$ OUTPUTS

This set of outputs is for connecting a  $4\Omega$  loudspeaker to the MC2.1KW. Multiple pairs of outputs (A, B and C) are provided for bi-wiring or tri-wiring.

Refer to pages 16 and 17 for additional information on connecting loudspeakers.

#### 9. $2\Omega \text{ OUTPUTS}$

This set of outputs is for connecting a  $2\Omega$  loudspeaker to the MC2.1KW. Multiple pairs of outputs (A, B and C) are provided for bi-wiring or tri-wiring.

Refer to pages 16 and 17 for additional information on connecting loudspeakers.

#### **10. Power Module AC Input**

Connect the MC2.1KW Power Module to an AC circuit that is separate from any other MC2.1KW Power Module or any other system component.

#### **11. CIRCUIT BREAKER**

Under normal operation, the CIRCUIT BREAKER should never activate. If the breaker does activate, the tip of the breaker will pop out. Reset the breaker by pushing in on the tip.

#### **12. OUTPUT MODULE Connections**

These connections are used to connect each of the 2 MC2.1KW Power Modules to the MC2.1KW Output Module using the supplied interconnect cables. Refer to pages 12 and 13 for additional information on connecting the modules.

#### 13. LIGHT CONTROL Switch

This switch is used to control the illumination of the front panel capacitor bank. When set to ON/ METER, the capacitor bank illumination will follow the illumination of the power output meter. When set to OFF, the illumination will always be off. Refer to pages 8 and 9 for controlling illumination of the meter and capacitor bank.

#### **Connecting the Modules**

Each MC2.1KW Power Module must be properly connected to the MC2.1KW Output Module for the system to operate. Two 30 Pin Interconnect Cables with green ID rings and two 8 Pin Interconnect Cables with blue ID rings are provided for these connections. If any of the four cables are not connected, or if any are not connected to the correct module, the OFF/REMOTE indicator on the front panel of the MC2.1KW Output Module will not illuminate and the system will not power on. Follow the steps below on how to insert and lock the connectors and follow the steps on page 13 to connect the modules together.

#### **Inserting and Locking the Cables**

1. Align the indicator on the cable connector with the indicator on the receptacle.



2. Rotate the locking ring on the cable connector so that one of the three locking keys engages the key slot.

KEY SLOT







4. Rotate the locking ring clockwise until the connector is fully locked into the receptacle. The supplied McIntosh wrench can be used to assist in locking the connectors.



#### **Connecting the Cables**

- 1. Choose one of the two MC2.1KW Power Modules to be the (A) Module. For convenience, use the Power Module with an A in the serial number.
- 2. Connect one 30 Pin Interconnect Cable (Green Ring) ring to the 30 Pin Receptacle (Green Ring) on the back of the A Power Module rear panel.
- 3. Connect this same cable to the 30 Pin Receptacle (Green Ring) on the back of the MC2.1KW Output Module that is labeled (A).
- 4. Connect one 8 Pin Interconnect Cable (Blue Ring) to the 8 Pin Receptacle (Blue Ring) on the back of the A Power Module rear panel.
- 5. Connect this same cable to the 8 Pin Receptacle (Blue Ring) on the back of the MC2.1KW Output Module that is labeled (A).
- 6. The other Power Module will be the (B) Module. For convenience, this is the Power Module with a B in the serial number.
- 7. Connect one 30 Pin Interconnect Cable (Green Ring) ring to the 30 Pin Receptacle (Green Ring) on the back of the B Power Module rear panel.
- 8. Connect this same cable to the 30 Pin Receptacle (Green Ring) on the back of the MC2.1KW Output Module that is labeled (B).
- 9. Connect one 8 Pin Interconnect Cable (Blue Ring) to the 8 Pin Receptacle (Blue Ring) on the back of the B Power Module rear panel.
- 10. Connect this same cable to the 8 Pin Receptacle (Blue Ring) on the back of the MC2.1KW Output Module that is labeled (B).



8 Conductor Cable (Blue Ring)

### McIntosh

#### **Connecting a Single Preamplifier**

When connecting a preamplifier to the MC2.1KW use connectors with the pin PREAMPLIFIER configurations shown below. **XLR Connectors RCA Connectors** CAUTION MIX OF BLACTOR BIO DO NOT OPEN O  $( \circ )$ Signal Ground (+) Signal Ground 0.0 ..... **⊁**O 3 O◀ (...) 00 0 EAC -000 . © © 4 4 -0**0 Power Control Connectors** 0.00 (-) Signal C€ Kä 0.0 0 X Power Control Meter Illumination Control Ground 0.00 **A** • 00 60 **RIGHT OUTPUT MODULE** LEFT OUTPUT MODULE

SERIAL NUMBER

0

©•©=≊ <sup>|</sup>

٩

**Connecting Two Preamplifiers** 



#### **Connecting a Loudspeaker**

#### Loudspeaker Impedance

The MC2.1KW has three sets of output terminals,  $\pm 2$  ohm,  $\pm 4$  ohm, and  $\pm 8$  ohm. Based on the specifications of your loudspeaker, determine the best set of terminals to use. For a speaker whose impedance falls between two choices, use the lower impedance terminal. Each impedance set has three pairs of terminals for bi-wiring or tri-wiring a loudspeaker.

#### Loudspeaker Cables

When connecting loudspeakers to the MC2.1KW it is very important to use cables of adequate size. The size is specified in AWG (American Wire Gauge). The smaller the gauge number, the larger the wire size.

Loudspeaker Cable Wire Gauge Guide				
Loudspeaker Impedance	Cable Distance			
	25 feet (7.62 meters) or less	50 feet (15.24 meters) or less	100 feet (30.48 meters) or less	
2 ohms	12AWG	10AWG	8AWG	
4 ohms	14AWG	12AWG	10AWG	
8 ohms	16AWG	14AWG	12AWG	

#### **Output Terminals**

Loudspeaker cables should be terminated on the ends to securely fit into the terminals according to the dimensions below.



#### **Output Terminal Covers**

To gain access to the output terminals, use the supplied  $\frac{1}{8}$  in Hex T-Handle to remove the four screws that hold the clear polycarbonate cover to the rear of the output module. If needed, the top cover with glass window may also be removed by using the supplied  $\frac{5}{32}$  in Hex T-Handle to remove the four screws that hold the cover to the top. After all loudspeaker connections have been made, all terminal covers must be reinstalled with their appropriate screws.



### Connecting a Loudspeaker (continued)

#### Loudspeaker Cable Connections

When connecting loudspeaker cables to the MC2.1KW output terminals follow the steps below:

#### 1. Make sure AC power is disconnected.

2. Rotate the top of the output terminal counterclockwise until an opening appears.



- 3. Insert the loudspeaker cable into the output terminal. **Proper polarity must be maintained for all connections.** (+/-)
- 4. Rotate the top of the output terminal clockwise until it is finger tight.
- 5. Place the McIntosh wrench over the top of the output terminal and rotate the output terminal clockwise one quarter of a turn (90°). **Do not over tighten.**





#### **System Specifications**

#### **Power Output**

2000 watts into 2 ohm load 2000 watts into 4 ohm load 2000 watts into 8 ohm load

**Rated Power Band** 20Hz to 20,000Hz

**Dynamic Headroom** 2.1dB

**Wide Band Damping Factor** Greater than 40

**Frequency Response** +0, -0.25dB from 20Hz to 20,000Hz +0, -3dB from 10Hz to 100,000Hz

#### **Total Harmonic Distortion**

0.005% maximum harmonic distortion at any power level from 250 milliwatts to rated power, 20Hz to 20,000Hz

#### **Intermodulation Distortion**

0.005% maximum, if the instantaneous peak power output does not exceed twice the rated power output for any combination of frequencies from 20Hz to 20,000Hz

**Signal To Noise Ratio (A Weighted)** 123dB below rated output

Input Sensitivity (for rated output)

5.0 Volts Balanced2.5 Volts Unbalanced

#### **Input Impedance**

22,000 ohms Balanced 22,000 ohms Unbalanced

#### **Voltage Output**

126.5V across 8 ohms 89.5V across 4 ohms 63.3V across 2 ohms

Voltage Gain 34dB, 8 ohms 31dB, 4 ohms 28dB, 2 ohms

**Power Control Input** 5-12VDC

**Power Control Output** 12VDC, 25mA

#### **Power Module Specifications**

Power Requirements

100 Volts, 50/60Hz at 1440 watts 110 Volts, 50/60Hz at 13.0 amps 120 Volts, 50/60Hz at 12.0 amps 220 Volts, 50/60Hz at 7.5 amps 230 Volts, 50/60Hz at 6.5 amps 240 Volts, 50/60Hz at 6.5 amps **Refer to the rear panel of the MC2.1KW Power Module for the correct voltage.** 

#### **Overall Dimensions**

Width is 17<sup>15</sup>/<sub>16</sub> inches (45.6cm) Height is 11<sup>7</sup>/<sub>8</sub> inches (30.2cm) Depth is 30<sup>3</sup>/<sub>16</sub> inches (76.7cm)

#### Weight

145 pounds (65.8 kg) net 165 pounds (74.8 kg) in shipping carton

#### **Output Module Specifications**

Power Requirements 100 Volts, 50/60Hz at 35 watts 110 Volts, 50/60Hz at 35 watts 120 Volts, 50/60Hz at 35 watts 220 Volts, 50/60Hz at 35 watts 230 Volts, 50/60Hz at 35 watts 240 Volts, 50/60Hz at 35 watts Refer to the rear panel of the MC2.1KW Output Module for the correct voltage.

#### **Overall Dimensions**

Width is 17  ${}^{15}\!/_{16}$  inches (45.6cm) Height is 12  ${}^{5}\!/_{32}$  inches (30.9cm) Depth is 30  ${}^{3}\!/_{16}$  inches (76.7cm)

#### Weight

125 pounds (56.7 kg) net 150 pounds (68 kg) in shipping carton

#### **Packing Instructions**

In the event it is necessary to repack the equipment for shipment, the equipment must be packed exactly as shown below. It is very important that the four aluminum feet are attached to the bottom of the equipment. This will ensure the proper equipment location on the bottom pad. Failure to do this will result in shipping damage. Use the original shipping carton and interior parts only if they are all in good serviceable condition. If a shipping carton or any of the interior part(s) are needed, please call or write Customer Service Department of McIntosh Laboratory. Refer to page 2. Please see the Part List for the correct part numbers.

#### **Parts List**

Quantity 1	Part Number 03410500	<u>Description</u> Shipping Carton Top
2	03473400	Foam Pads Top/Bottom
3	03467800	Foam Rings
1	03373900	Poly Bag
1	03410400	Shipping Carton Bottom



#### Trademarks of McIntosh Laboratory, Inc.:

The following are Registered Trademarks of McIntosh Laboratory, Inc. in multiple jurisdictions around the world: the written McIntosh logo; the McIntosh Globe logo; the Mc logo; Power Guard; Power Guard Screen Grid Sensor; Power Guard SGS; LD/HP; Dynamic Power Manager; the 4DPM8 logo; HXD; the HXD logo; Behind The Sound; Legendary Performance.

The following are Trademarks of McIntosh Laboratory, Inc. in multiple jurisdictions around the world: Autoformer; Sentry Monitor; Solid Cinch; McIntosh Monogrammed Heatsinks; Hybrid Drive; DualView; TripleView; Made of Sound.

The foregoing trademarks, registered and otherwise, are not to be used, reproduced, or registered in any way without the express written permission of McIntosh Laboratory, Inc.

# MtIntosh®

#### MADE OF SOUND™

McIntosh Laboratory, Inc. 2 Chambers Street Binghamton, NY 13903

www.mcintoshlabs.com

The continuous improvement of its products is the policy of McIntosh Laboratory, Inc. who reserve the right to improve design without notice.

Printed in the U.S.A.

© 2024 McIntosh Laboratory, Inc.

McIntosh Part No. 24123700