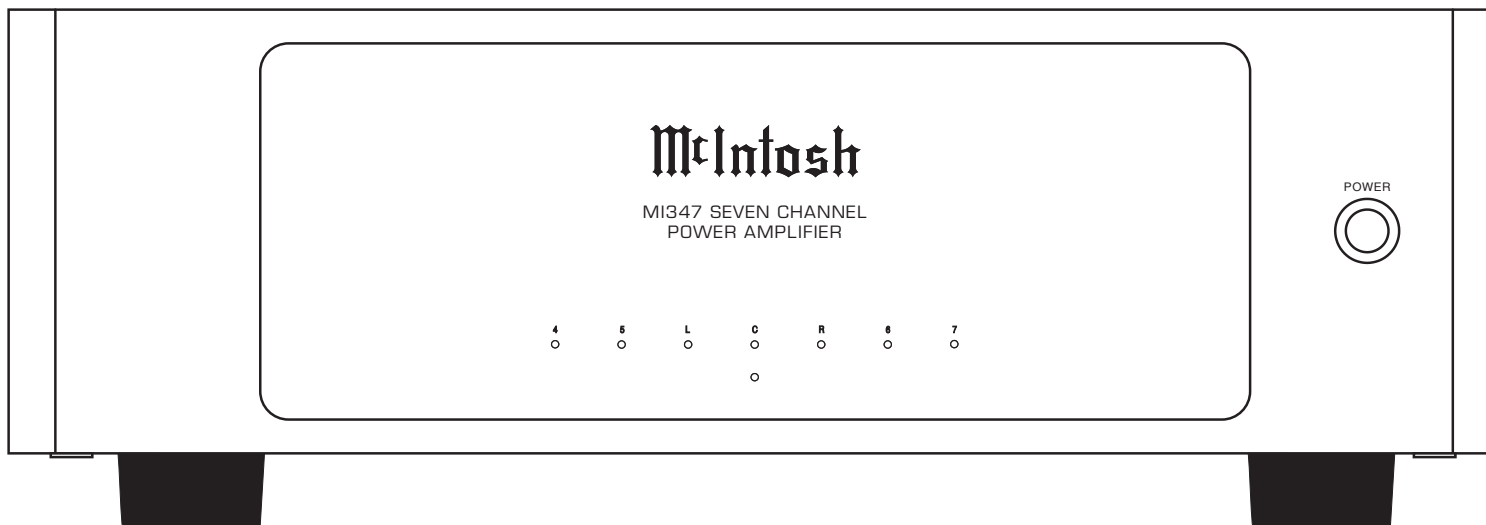




McIntosh Laboratory, Inc. 2 Chambers Street Binghamton, New York 13903-2699 Phone: 607-723-3512 www.mcintoshlabs.com

MI347

Seven Channel
Power Amplifier
Owner's Manual





Important Safety Information is supplied in a separate document “Important Additional Operation Information Guide”

Thank You

With the MI347 Amplifier, 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.

Please Take A Moment

The serial number, purchase date and McIntosh Dealer name are important to you for possible insurance claim or future service. The spaces below have been provided for you to record that information:

Serial Number: _____

Purchase Date: _____

Dealer Name: _____

Technical Assistance

If at any time you have questions about your McIntosh product, contact your McIntosh Dealer who is familiar with your equipment and many other brands that may be part of your system. If you or your Dealer wish additional help concerning a suspected problem, you can receive technical assistance for all McIntosh products at:

McIntosh Laboratory, Inc.
2 Chambers Street
Binghamton, New York 13903
Phone: 607-723-3512
Fax: 607-724-0549

Customer Service

If it is determined that this unit is in need of repair, you can return it to your Dealer. You can also return it to the McIntosh Laboratory Service Department. For assistance on factory repair return procedure, contact the McIntosh Service Department at:

McIntosh Laboratory, Inc.
2 Chambers Street
Binghamton, New York 13903
Phone: 607-723-3515
Fax: 607-723-1917

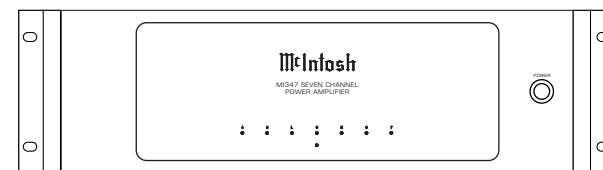
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General Information

1. For additional connection information, refer to the owner's manual(s) for any component(s) connected to the MI347.

2. The MI347 mutes the speaker output for approximately two seconds when first turned on.
3. Included with the MI347 and located in the Owner's Manual Packet are two Side Rack Mounted Brackets and screw fasteners. Refer to page 5 for installing the Side Rack Mount Brackets.



MI347 with Side Rack Mount Brackets installed

4. For the best performance and safety it is important to attach no more than a single Loudspeaker with an 8 Ohm or 4 Ohm impedance to the Channel 1 - Channel 7 output terminals. Refer to “How to Connect” pages 8 thru 13.

Note: The impedance of a Loudspeaker actually varies as the Loudspeaker reproduces different frequencies. As a result, the nominal impedance rating of the Loudspeaker (usually measured at a midrange frequency) might not always agree with the impedance of the Loudspeaker at low frequencies where the greatest amount of power is required. Contact the Loudspeaker Manufacturer for additional information about the actual impedance of the Loudspeaker before connecting it to this Power Amplifier.

5. In the event that any one or more of the channels overheat, due to improper ventilation or Loudspeaker Impedance, the protection circuits will activate. The Front Panel Channel LED will change color and the audio will be muted. Refer to page 9. When the MI347 has returned to a safe operating temperature, Channel(s) normal operation will resume.

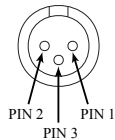
6. For additional information on the MI347 and other McIntosh Products please visit the McIntosh Website at www.mcintoshlabs.com.

Connector and Cable Information

XLR Connectors

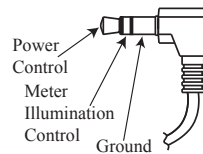
Below is the Pin configuration for the XLR Balanced Input, Input/Output Connectors on the MI347. Refer to the diagram for connection:

- PIN 1: Shield/Ground
- PIN 2: + Input/Output
- PIN 3: - Input/Output



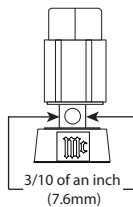
Power Control Connector

The MI347 Power Control Input receives an On/Off signal from +5 to +12 volts. The Power Control Output will in turn provide a +12 volt Output Signal with a total current up to 50mA. An additional connection is for controlling the illumination of the MI347 Meter Power Output Indicators. The 3.5mm stereo mini phone plug connects to a McIntosh Preamplifier or A/V Control Center Power Control Output.



Output Terminal Connector

When cables with spade lugs are used for Loudspeaker Connection, the spade lugs need an opening of at least 3/10 inch (7.6mm)



Introduction

Now you can take advantage of traditional McIntosh standards of excellence in the MI347 Power Amplifier. The Seven Channel Power Amplifier produces high power output per channel and will drive quality Loudspeakers to a high level of performance. The MI347 reproduction is sonically transparent and absolutely accurate. The McIntosh Sound is “The Sound of the Music Itself.”

Performance Features

• Power Output

The MI347 consists of Seven Channel Power Amplifier. Four Channels are rated at 125 watts with 8 ohms Loudspeakers and the three other Channels are rated at 250 watts with 8 ohms Loudspeakers. The MI347 has been engineered for Home Theater applications. This is why three channels, which are intended to power the Left and Right Front Speakers and the Center speaker, have twice the power as the other four. (Pay attention to keeping the channels straight!) The remaining channels are gain matched for seamless multichannel integration.

• Power Guard®

The McIntosh Power Guard® Circuit prevents the amplifier from being over driven into clipping, with its harsh distorted sound that can damage your valuable Loudspeakers.

• Versatile Operation

The MI347 can provide power amplification for seven channels in a single Zone A/V System or multiple in a multiple channels for each of a Zone A/V System.

• Balanced, Unbalanced and Bus Inputs

There are Balanced and Unbalanced Connections for

all seven Power Amplifier Input Channels.

• Sentry Monitor and Thermal Protection

McIntosh Sentry Monitor power output stage protection circuits ensure the MI347 will have a long and trouble free operating life. Built-in Thermal Protection circuits guard against overheating.

• Power Control

The McIntosh Power Control Circuit allows for remote turn-on of the MI347 Power Amplifier from a McIntosh A/V Control Center or Preamplifier for a single or dual Zone System.

• Engineered Power Supply

A regulated Power Supply ensures stable operation despite power line variations.

• LED Solid State Front Panel Illumination

Front Panel Illumination is accomplished by extra long life Light Emitting Diodes (LEDs). The Metal and Glass Front Panel ensures the pristine beauty of the MI347 will be retained for many years.

The following unit dimensions may be helpful in determining the best location for your MI347.

Diagram showing the front view of the McIntosh MI347 Seven Channel Power Amplifier. The unit is a rectangular black box with a silver faceplate. The faceplate features the McIntosh logo, the model name "MI347 SEVEN CHANNEL POWER AMPLIFIER", and a row of seven indicator lights. A "POWER" button is located on the right side of the faceplate. Dimensions are indicated: the width is 17-1/2" (44.5cm) and the height is 6-1/16" (15.4cm).

19"
48.3cm

McIntosh
MC147 SEVEN CHANNEL
POWER AMPLIFIER

POWER

5-7/32 "
13.3cm

Side view of the M1547

Dimensions:

- Overall width: $18\frac{1}{2}"$ (47.0cm)
- Internal width: $17\frac{1}{16}"$ (43.3cm)
- Height: $5"$ (12.7cm)
- Top flange thickness: $\frac{3}{16}"$ (.5cm)
- Bottom flange thickness: $\frac{1}{4}"$ (.64cm)
- Bottom flange height: $2.0"$ (5.0cm)
- Internal length: $13\frac{21}{32}"$ (34.7cm)
- Right side flange width: $1\frac{5}{16}"$ (3.4cm)

Installation

The MI347 may be placed upright on its four feet or custom installed with the four feet removed. If removed, retain the four feet and fastening screws for any future re-installation. The panel cutout, ventilation cutout and unit dimensions are shown in the drawing on the right side of this page.

It is necessary to provide adequate ventilation for cool operation, ensuring long life for the MI347. Do not install the MI347 above heat generating components. When the MI347 is installed in a cabinet with other components, a ventilation fan may be added to provide cool operating temperature.

A custom cabinet installation needs to provide the following minimum spacing for cool operation:

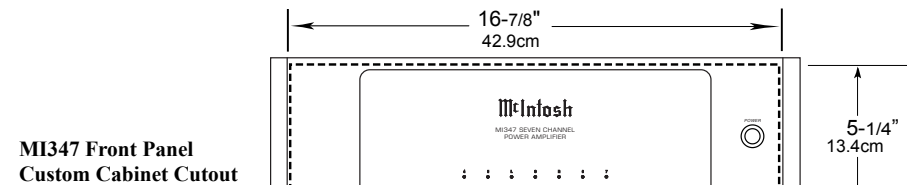
Allow at least 3 inches (7.6cm) above the top, 2 inches (5.08cm) below the bottom, 3 inches (7.62cm) behind the rear panel and 2 inches (5.08cm) on each side of the MI347, providing airflow. Allow 2-1/2 inches (6.4cm) in front of the mounting¹ panel for clearance. Be sure to cut out a ventilation hole in the mounting shelf according to the dimensions in the drawing.

¹ When the MI347 is installed together with other McIntosh Components, check clearances on all components before proceeding.

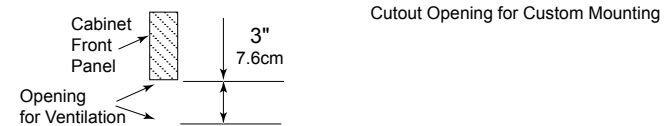
Installation of Side Rack Mount Brackets

When desired, to install MI347 Side Rack Mounting Brackets, follow the steps below for one side at a time:

1. Refer to figure A to remove the two side screws and save them for possible future use.
2. Position the Side Rack Mounting Bracket as illustrated in figure B. Then attach the Bracket to the Front and Side Panel of the MI347, using the screws supplied with the Bracket.
3. Perform steps 1 and 2 to mount the second Bracket to the other side of the MI347.



MI347 Front Panel
Custom Cabinet Cutout



MI347 Side View
in Custom Cabinet

MI347 Bottom View
in Custom Cabinet

Note: Center the cutout horizontally on the unit. For purposes of clarity, the above illustration is not drawn to scale.

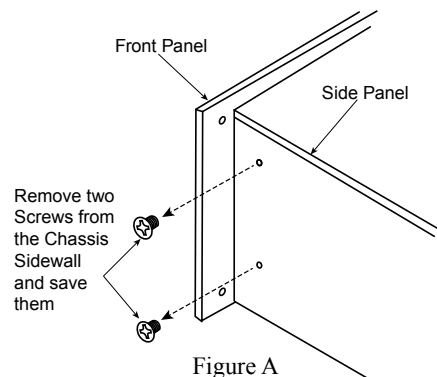
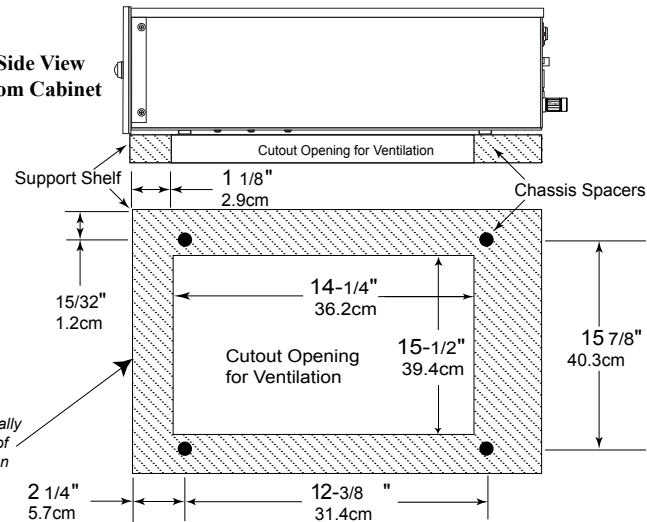


Figure A

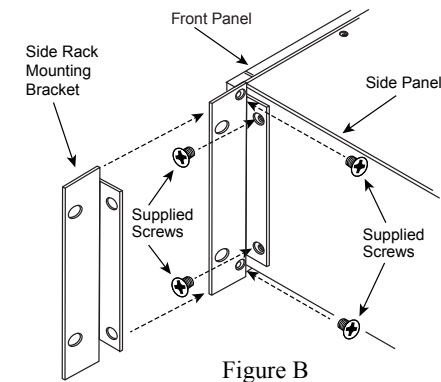
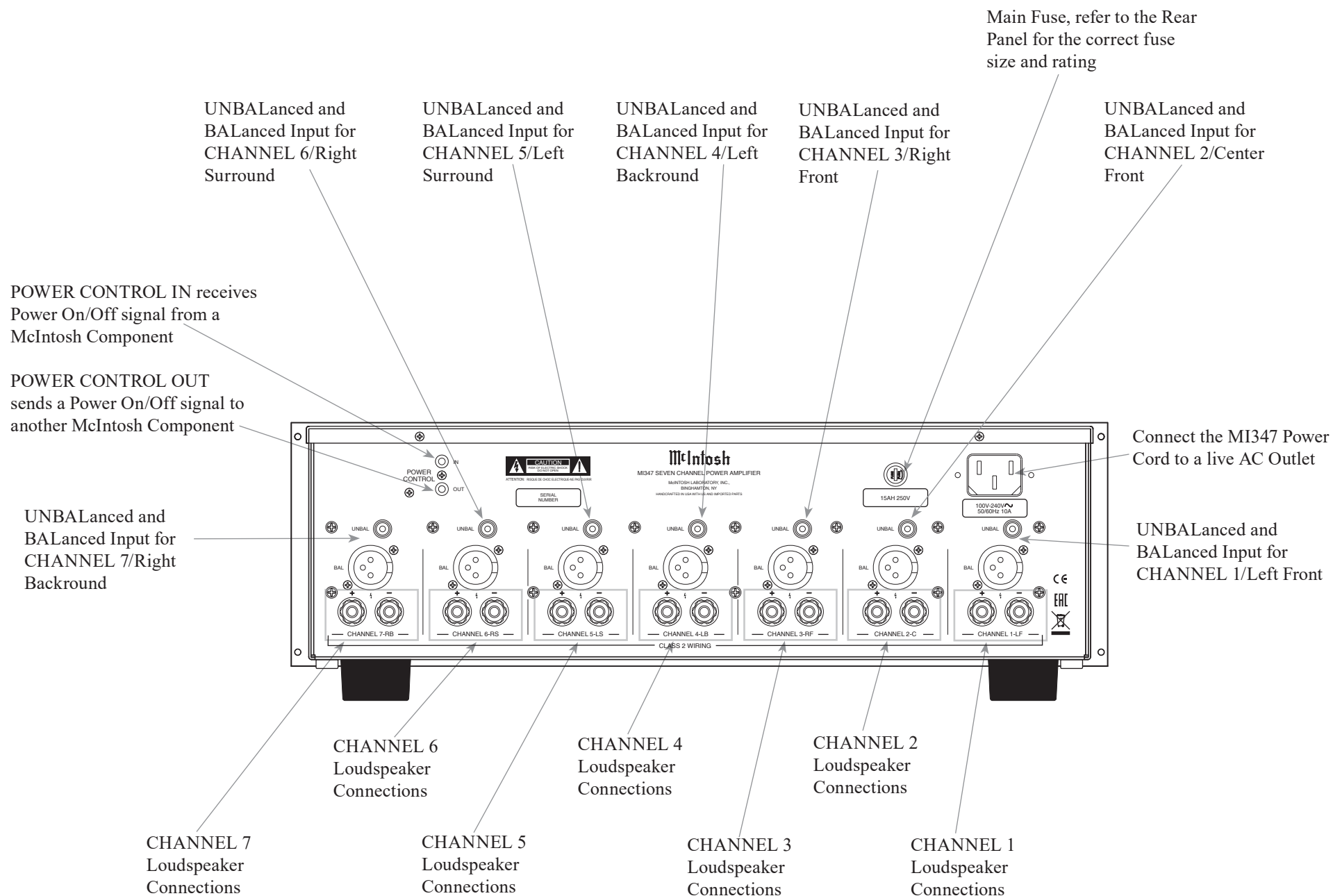


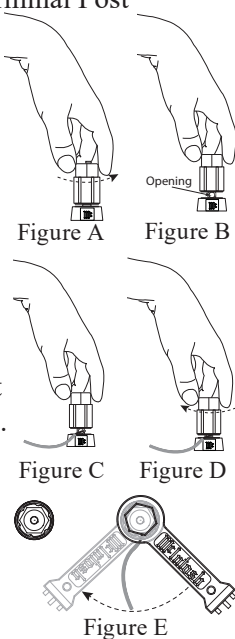
Figure B



Output Terminals

When connecting the Loudspeaker Hookup Cables to the MI347 Amplifier Output Terminals please follow the steps below:

1. Rotate the top of the Output Terminal Post counterclockwise until an opening appears. Refer to figures A and B.
2. Insert the Loudspeaker hookup cable into the Output Terminal Post opening or the cable spade lug around the center post of the Output Terminal. Refer to figure C.
3. Rotate the top of the Output Terminal Post clockwise until it is finger tight. Refer to figure D.
4. Place the supplied McIntosh Wrench over the top of the Output Terminal and rotate it one quarter of a turn (90°) to secure the Loudspeaker Cable Connection. **Do not over tighten.** Refer to figure E.



How to Connect for Multi Channel System

Caution: Do not connect the AC Power Cord to the MI347 Rear Panel until after the Loudspeaker Connections are made. Failure to observe this could result in Electric Shock.

The connection instructions below, together with the MI347 Connection Diagram located on the separate folded sheet “Mc1A”, is an example of a typical Multichannel System. Your system may vary from this, however the actual components would be connected in a similar manner. For additional information refer to “Connector and Cable Information” on page 3.

1. For Remote Power Control, connect a power control cable from the A/V Control Center Power Control Trigger/Output 1 to the Amplifier PWR CNTRL Power Control Input.

Note: When the Power Control Cable is connected between the MI347 and an A/V Control Center, the AUTO OFF Signal Sensing Circuitry is automatically disabled.

2. Connect XLR cables from the Balanced Outputs (LF, C, RF, LB, LS, RS, RB) of an A/V Control Center to the MI347 BALANCED INPUTS (CHANNELs- 1/LF, 2/C, 3/RF, 4/LB, 5/LS, 6/RS, 7/RB) making sure to match up channel designations.

Note: The MI347 UNBALANCED Inputs may be used in place of the Balanced Inputs when the A/V Control Center has Unbalanced Output Connections instead of Balanced Connections.

This McIntosh MI347 Power Amplifier is designed for Loudspeakers with an impedance of 4 ohms or 8 ohms. Connect a single Loudspeaker only to each Channel Output Terminals.

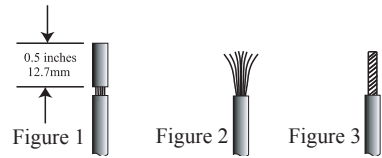
When connecting Loudspeakers to the MI347 it is very important to use cables of adequate size, so there is little to no power loss in the cables. The size is specified in Gauge Numbers or AWG (American Wire Gauge). The smaller the Gauge number, the larger the wire size:

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

4. Prepare the Loudspeaker Hookup Cable for attachment to the MI347 Power Amplifier:

Bare wire cable ends:

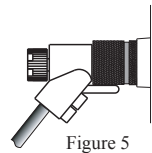
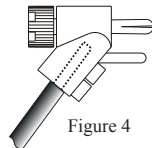
Carefully remove sufficient insulation from the cable ends, refer to figures 1, 2 & 3. If the cable is stranded, carefully twist the strands together as tightly as possible.



- Notes:*
1. If desired, the twisted ends can be tinned with solder to keep the strands together.
 2. The prepared bare wire cable ends may be inserted into spade lug connectors.

Banana Plugs are for use in the United States and Canada only:

1. Attach the previously prepared bare wire cable ends into the banana plugs and secure the connections. Refer to figure 4.
2. Referring to figure 5, connect the Loudspeaker hookup cables with banana plugs into the hole at the end of the MI347 Negative and Positive Output Terminals, making sure to match up channel designation with Loudspeaker location.



WARNING: Loudspeaker terminals are hazardous live and present a risk of electric shock. For additional instruction on making Loudspeaker Connections contact your McIntosh Dealer or McIntosh Technical Support.

3. Connect the MI347 power cord to an active AC outlet.

Spade Lug or Wire Connections:

4. Connect the Loudspeaker hookup cables to the MI347 Output Terminal being careful to observe the correct polarities, making sure to match up channel designation with Loudspeaker location. Insert the spade lug connector or prepared section of the cable end into the terminal side access hole. Then tighten the terminal cap until the cable is firmly clamped into the terminals so the lugs or

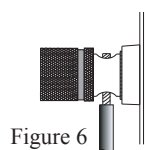


Figure 6

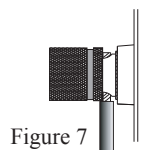


Figure 7

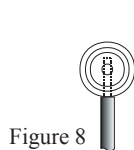


Figure 8

wire cannot slip out. Refer to figures 6, 7 and 8.

WARNING: Loudspeaker terminals are hazardous live and present a risk of electric shock. For additional instruction on making Loudspeaker Connections contact your McIntosh Dealer or McIntosh Technical Support.

5. Connect the MI347 power cord to an active AC outlet.

How to Operate

Power On

The LED Power ON Indicator illuminates to indicate the MI347 is connected to AC Power. To switch ON the MI347, press the POWER Push-button on the Front Panel or switch On the Audio Source Component providing there is a Power Control Cable Connection to the MI347. Refer to figure 20.



Figure 20

- Notes:*
1. It will take about 6 seconds for initialization of the internal circuitry to take place on the MI347 when switched On.
 2. There must be a power control connection between the MI347 and the Audio Source Component in order for the Remote Control Operation Power ON/OFF to function.
 3. When the MI347 is receiving a Power Control ON Signal, the Front Panel POWER Push-Button becomes inactive.

Auto Off Function

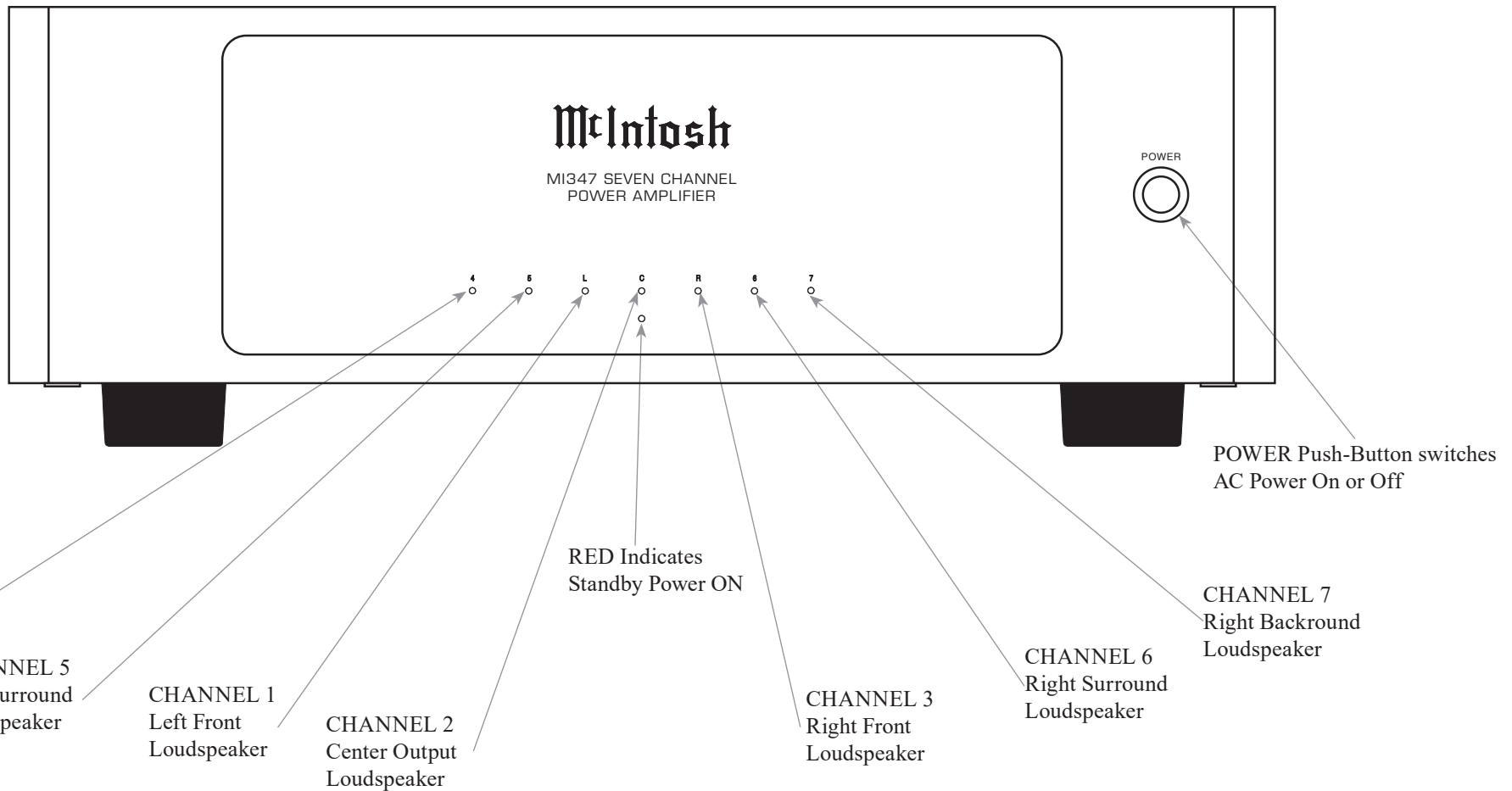
The MI347 incorporates Power Save Circuitry to automatically place the MI347 into the power saving Standby Mode approximately 30 minutes after there has been an absence of an audio input signal on all seven channels.

When there is a Power Control Connection between the MI347 and a Preamplifier or Source Component, the AUTO OFF Function is bypassed.

Channel Operational Indication

The MI347 Front Panel has seven Tri-Color LEDs. The LEDs indicate the current functioning status for each of the seven channels.

MI347 Channel Operation Functions	
LED COLOR	Functional Status
LED not Illuminated	Indicates when the Channel is OFF
Green	Indicates when the Channel is ON with an Audio Signal Present and Normal Operation for the Channel exists
Amber	Indicates when maximum Power Output for the Channel has occurred with prevention of Audio Clipping
Red	Indicates current limit or short circuit for the Channel Loudspeaker Output Connection



Front Panel LED Indicators 4, 5, L, C, R, 6, 7

CHANNEL 1-7 Front Panel TRI-COLOR LED Indicator Legend

GREEN - CHANNEL OUTPUT POWER WITHIN SPECIFICATIONS

AMBER - CHANNEL MAXIMUM OUTPUT POWER LIMIT EXCEEDED,
CHANNEL SELF PROTECTION ACTVATED.

RED - CHANNEL OUTPUT POWER OVER-LIMIT, CHANNEL SHUT-DOWN



Specifications

Power Output

Minimum sine wave continuous average power output:
4 Channels at 125 Watts into 8 ohm load
4 Channels at 200 Watts into 4 ohm load
3 Channels at 250 Watts into 8 ohm load
3 Channels at 300 Watts into 4 ohm load

Output Load Impedance

8 and 4 ohms

Rated Power Band

20Hz to 20,000Hz

Total Harmonic Distortion

0.025% maximum harmonic distortion at any power level from 250 milliwatts to rated power, 20Hz to 20,000Hz

Dynamic Headroom

2.5dB, 8 ohm load
3.5dB, 4 ohm load

Frequency Response

+0, -0.9dB from 20Hz to 20,000Hz

Input Sensitivity for rated output for Channels 1-3 (8 ohm load)

5.0 Volt Balanced
2.5 Volt Unbalanced
Channels 4-7 are gain matched for seamless multi-channel intergration

Input Sensitivity for rated output for Channels 1-3 (4 ohm load)

3.8 Volt Balanced
1.9 Volt Unbalanced
Channels 4-7 are gain matched for seamless multi-channel intergration

Signal To Noise Ratio (A-Weighted)

83dB (100dB below rated output)

Intermodulation Distortion

0.1% maximum, if the instantaneous peak power output does not exceed the rated power output for any combination of frequencies from 20Hz to 20,000Hz.

Wide Band Damping Factor

Greater than 85, 8 ohm Load
Greater than 45, 4 ohm Load

Input Impedance

32,000 ohms Balanced
18,000 ohms Unbalanced

Voltage Gain

25dB

Power Control Input

5-15VDC, less than 1mA

Power Control Output

12VDC, 50mA maximum total

Power Requirements

100 - 240Volts, 50/60Hz at 10 Amps
Standby: less than 0.5 watt

Overall Dimensions

Width is 17-1/2 inches (44.5cm)
Width is 19 inches (48.3cm) with Side Mount Brackets attached
Height is 6-1/16 inches (15.4cm) including feet
Depth is 21 inches (53.3cm) including the Front Panel and Cables

Weight

32.5 pounds (14.8 kg) net, 47 pounds (24.4 kg) in shipping carton

Shipping Carton Dimensions

Width is 26-1/2 inches (67.3cm)
Height is 11-3/4 inches (29.9cm)
Depth is 24-1/4 inches (61.6cm)

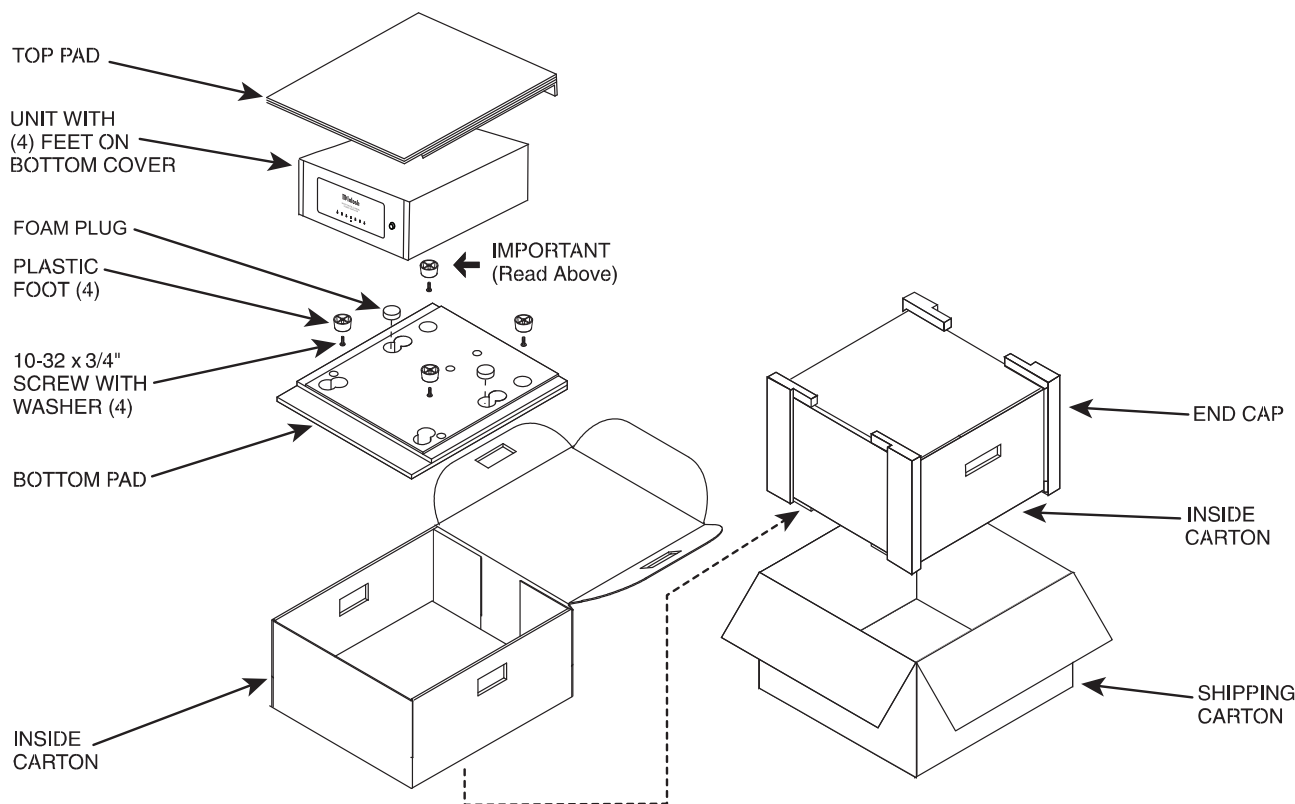
Packing Instructions

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 plastic 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.

Quantity	Part Number	Description
1	033838	Shipping carton only
2	033837	Pad Foam End cap
1	033836	Inside carton only
1	033725	Top pad
1	034576	Bottom pad
2	034446	Foam plug
4	017937	Plastic foot
4	400159	#10-32 x 3/4" screw
4	404080	#10 Flat washer





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