



5-Channel Power Amplifier

User's Manual



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Thank you for purchasing a RetroSound® Technophonic 5-channel power amplifier. Technophonic is designed to power an entire system using a single compact amplifier.

## Features:

- 65 watts RMS x 4 channels full-range @ 4 ohms
- 225 watts RMS x 1 channel subwoofer @ 4 ohms
- 2 ohm and 4 ohm stable
- Bridgeable
- Works with any aftermarket radio with low-level outputs
- Full-range Class D digital circuitry
- Advanced protection circuitry
- Built-in low pass (LPF) and high pass (HPF) electronic crossovers
- Selectable mode switch for 2, 4 and 5 channel operation
- Wired subwoofer remote Gain Control with 16 foot cable (5 meters)

**NOTES:** .....

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The information enclosed in this user's manual is to be used as a guide to assist you in the operation and installation of your amplifier. This guide does not cover every installation possibility, every vehicle, or every aspect of the installation process.

Retro Manufacturing, LLC or its subsidiaries assume no responsibility for any installation. This manual may be updated from time to time.

Visit our website for the latest updates: [www.retromanufacturing.com](http://www.retromanufacturing.com).

# WHAT'S IN THE BOX

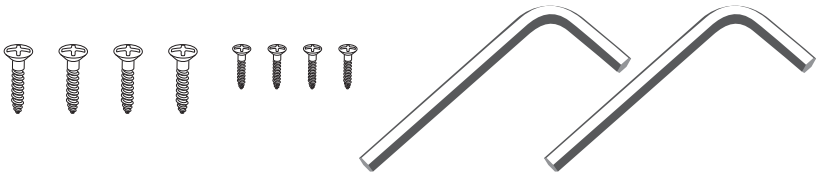
## Technophonic Amplifier



## Wired Remote Gain Control with Cable



## Mounting Hardware and Tools



This owner's manual provides only general installation and operating instructions. It does not cover every possible installation application. If you have any reservations about installing the amplifier, contact an authorized RetroSound® dealer, or contact technical support at [tech@retromanufacturing.com](mailto:tech@retromanufacturing.com).

**IMPORTANT:** This amplifier is designed for operation in vehicles with 12 volt negative ground systems only.

## PREPARING FOR INSTALLATION

The tools listed below may be required for basic installation:

- Electric drill with bits
- Phillips screwdriver
- Standard screwdriver
- Wire strippers
- Wire crimpers
- Utility knife
- Digital multi-meter

# PRECAUTIONS

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- Turn off all stereo devices before you begin.
- Disconnect the negative (-) battery terminal from your vehicle's battery.

**NOTE:** check your vehicle's owner's manual before disconnecting the battery. On some newer vehicles, disconnecting the battery may require entering an anti-theft code upon reconnecting the battery and/or may require resetting the vehicle's on-board computer. Check with your local dealership if you are uncertain.

- Check for fuel lines, brake lines, oil lines and electrical cables when planning the installation.
- When choosing a mounting location, make sure there is adequate clearance around the amplifier's heatsink for proper air flow. If you are mounting the amplifier near the radio, never mount it directly to the radio body, and always maintain at least 2 to 5 inches of clearance between the amplifier and radio body.
- Avoid sharp metal edges when running power cables. If necessary, use rubber grommets to protect cables from being frayed.
- Do not install in a place in which the amplifier could injure the driver or passengers if the vehicle suddenly stops.
- Do not mount the amplifier on its side or upside down. This will compromise heat dissipation through the heatsink and engage its protection circuitry. This can also damage the amplifier. Any damage caused by improperly mounting the amplifier will void your warranty.

# POWER AND GROUND CONNECTIONS

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Technophononic is designed to work within a range of 12 volts to 14.4 volts DC. Before connecting any wiring, use a multi-meter to test the vehicle's electrical system for adequate power supply. First, check the voltage at the positive (+) battery terminal with the ignition in the off position. The multi-meter should read no less than 12 volts. Next, check voltage at the positive (+) battery terminal with the engine running. The multi-meter should show a reading between 12 and 14.4 volts. If your vehicle's electrical system does not fall within these parameters, consult an auto electrician before proceeding with the installation.

Technophononic utilizes a very efficient digital Class D design. For most installations 8 to 10 gauge power and ground primary wire (not included) are suitable. For longer runs, use thicker wire (Example: For installation beneath the front seat, use 10 gauge wire. For installation in the trunk, use 8 gauge wire).

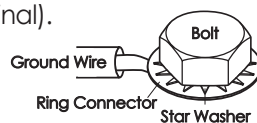
## Battery (+) Wire (Constant 12 volt)

A constant 12 volt Battery (+) Wire (not included) should be wired directly to the vehicle's positive (+) battery terminal using 8 to 10 gauge primary wire. Start at the vehicle's positive (+) battery terminal, and run the wire back to the Battery (+) terminal on the side panel of the amplifier. Avoid running the wire over engine components and heater cores. The use of an in-line fuse (not included) is required at the positive (+) battery terminal. Connect the fuse holder as close to the battery as possible (within 6-8 inches of the positive (+) battery terminal). This fuse should be 60 amps. Leave the fuse out until final connections have been made.

## Ground (-) Wire

Locate a metal area as close to the amplifier as possible (preferably the floor pan or vehicle chassis). Use a wire brush or sandpaper to eliminate any paint for a better ground connection. Secure the Ground Wire (not included) to the vehicle using a bolt, star washer and nut (not included). See diagram below for close-up of correct ground connection (connect the other end to the amplifier's Ground terminal).

**NOTE: Remove any paint below the Ring Connector**



# MOUNTING THE AMPLIFIER

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It is best to mount the amplifier in a location that allows air to freely circulate around it and allows access to the end panel controls for adjustments. Although both thermal and overload protection are built in, if the amplifier overheats it will reduce its power output to maintain operation.

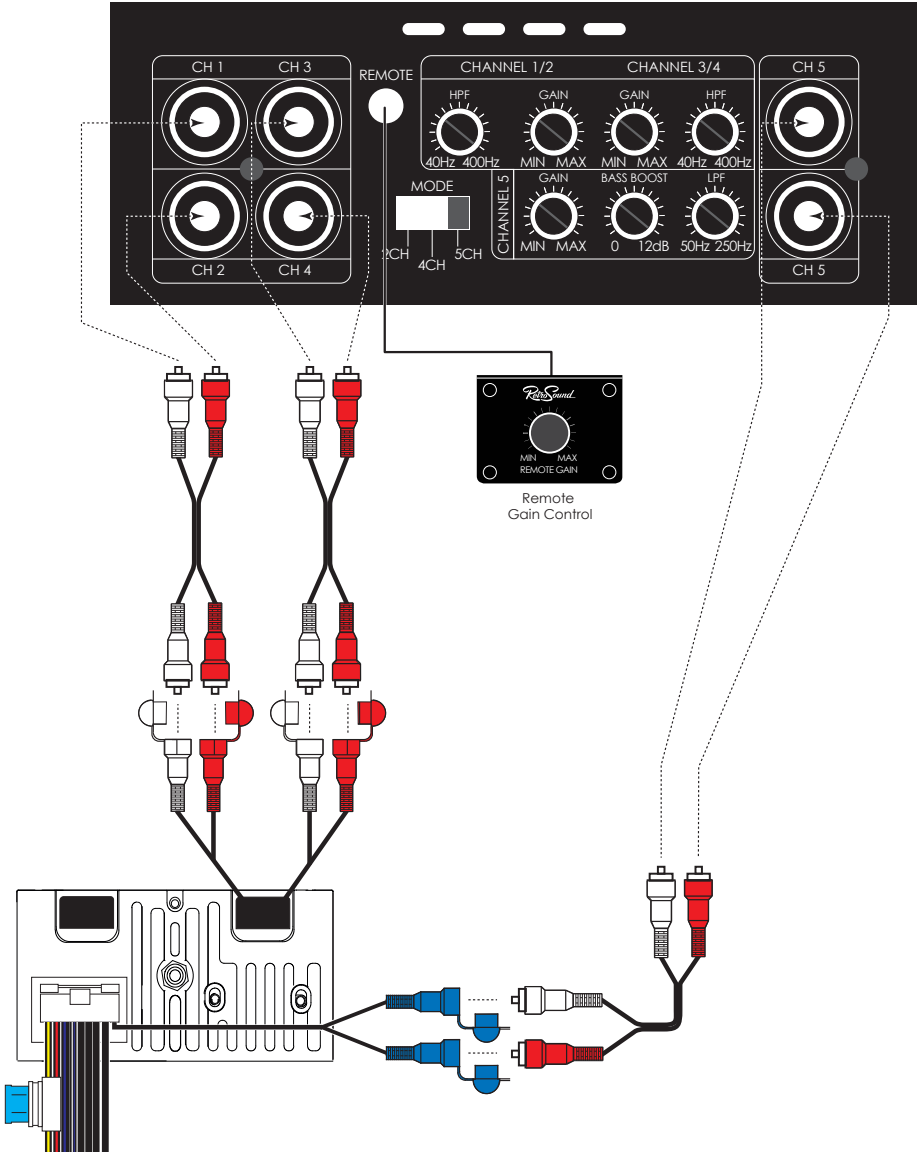
Find a dry, clear and well-ventilated area in which to mount the amplifier. The area should be free of any obstructions that might block air flow to the amplifier. It should be protected from exposure to direct sunlight.

You may use the amplifier as a template to mark the four screw locations with a felt-tip marker. Set the amplifier aside before drilling the mounting pilot holes. Use caution to make certain there are no objects behind the installation area that may become damaged by drilling. Make sure the amplifier has at least two inches of clearance above the heatsink to allow for heat dissipation.



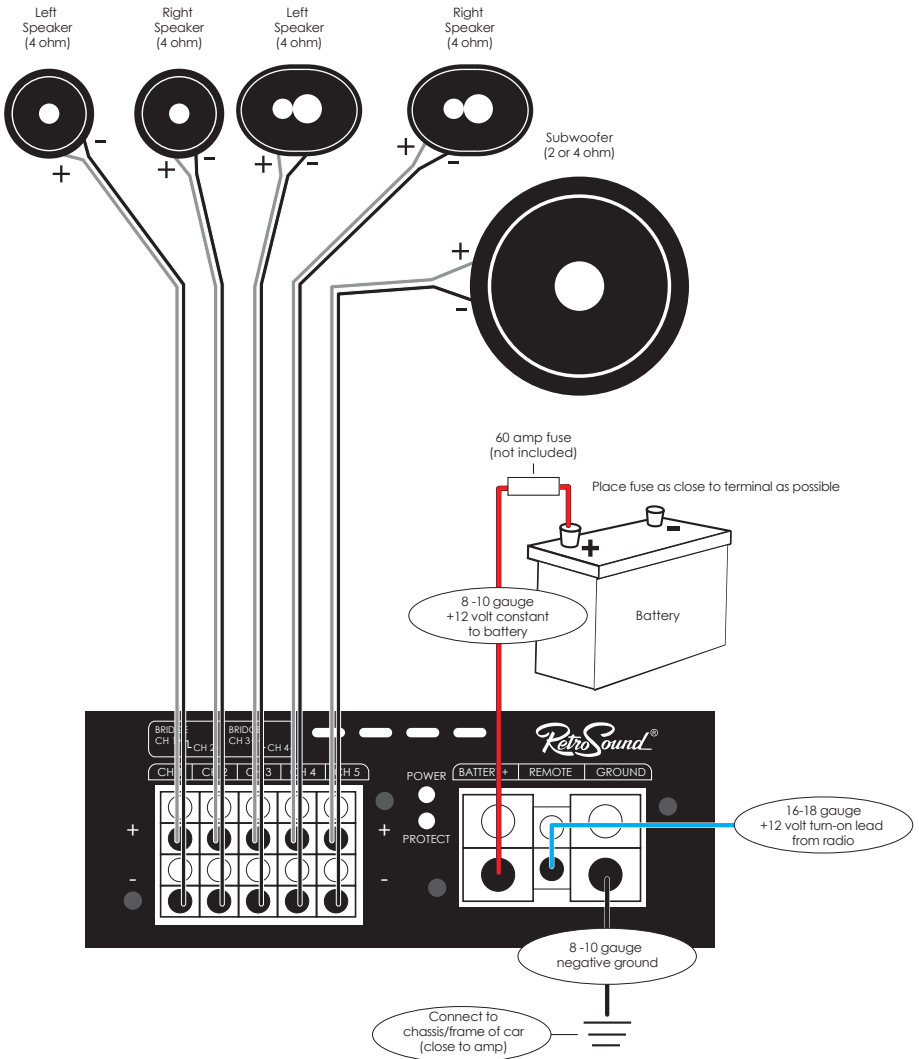
# WIRING DIAGRAM

## RCA CONNECTIONS (5-CHANNEL CONFIGURATION)



# WIRING DIAGRAM

## POWER AND SPEAKER CONNECTIONS - STANDARD

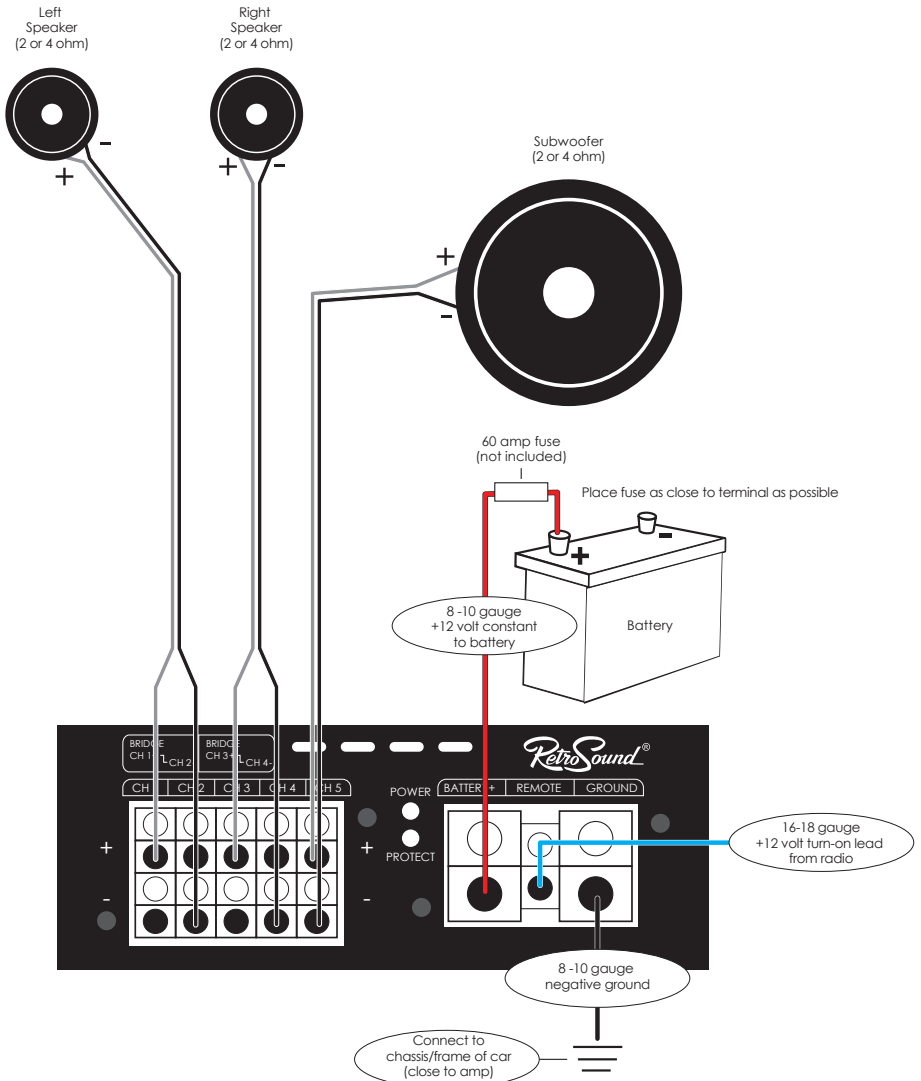


**NOTE:** The fuses included with the amplifier only protect the amplifier itself. Installing a fuse near the battery is required to protect your vehicle and wiring in case of a short-circuit. Check the fuses on the bottom of the amplifier for troubleshooting (30 amp ATC style).

**CAUTION:** It is very important that you use the same gauge wire for both the Battery (+) (12 volt constant) and the ground.

# WIRING DIAGRAM

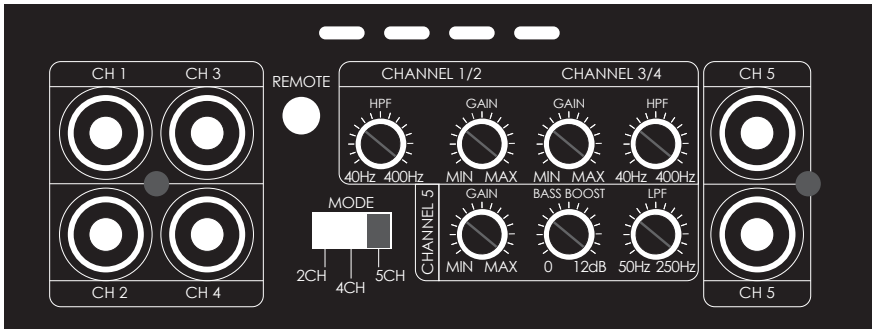
## POWER AND SPEAKER CONNECTIONS - BRIDGED



**NOTE:** The fuses included with the amplifier only protect the amplifier itself. Installing a fuse near the battery is required to protect your vehicle and wiring in case of a short-circuit. Check the fuses on the bottom of the amplifier for troubleshooting (30 amp ATC style).

**CAUTION:** It is very important that you use the same gauge wire for both the Battery (+) (12 volt constant) and the ground.

# CONTROL PANEL LAYOUT



## HPF (High Pass Filter)

The HPF (adjustable between 40Hz and 400Hz) filters out frequencies below the designated setting on the amplifier while attenuating frequencies above that setting.

## Gain

This control is used to match the input sensitivity of the amplifier to the radio. The Gain Control is not a volume control. Use the source unit (radio) to control system volume. Use these steps to properly set all three Gains:

- Set the Gain Control to minimum by turning the control knobs completely counter clockwise.
- On the radio, set the bass and treble to zero, and adjust the volume to approximately 2/3 of maximum.
- Slowly increase the amplifier's Gain by turning the knob clockwise until the sound has just begun to distort. Then turn the knob counterclockwise until the distortion goes away. This will allow the amplifier to operate at maximum efficiency.

Failure to follow these steps could result in damaged speakers and/or amplifier.

## Bass Boost

The Bass Boost increases the decibel level of the bass at 50Hz. The Bass Boost control adjusts between 0dB (no boost) and 12dB (maximum).

# CONTROL PANEL LAYOUT

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## LPF (Low Pass Filter)

The LPF (adjustable between 50Hz and 250Hz) filters out frequencies above the designated setting on the amplifier while attenuating frequencies below that setting.

## Mode

The Mode control switch toggles the input mode of the amplifier between 2 channel, 4 channel and 5 channel operation.

- When set to 2CH, only input channels 1 and 2 will be active.
- When set to 4CH, only input channels 1,2,3 and 4 will be active.
- When set to 5CH, all input channels will be active.

## Remote

This is where the Remote Gain Control plugs into the amplifier. The Remote Gain Control allows the user to reduce the Gain on channel 5 according to their preferences without having to change the settings on the amplifier. This is particularly useful when listening to poorly recorded music or live recordings where the bass frequencies may be louder than normal.

Adjusting this control will adjust between Min and wherever the Gain is set on the amplifier. When set to Max, the Gain will be equal to the setting on the amplifier.



Remote Gain Control

# TROUBLESHOOTING

PROBLEM	SOLUTION
Green Power LED does not turn on	<ul style="list-style-type: none"><li>• Check to ensure that the Battery (+) (12 volt constant) wire has 12 to 14.4 volts.</li><li>• Check to ensure that the amplifier turn-on lead has 12 volts.</li><li>• Check the fuses at bottom of the amplifier. (30 amp ATC style)</li></ul>
Red Protect LED illuminates	<ul style="list-style-type: none"><li>• Advanced protection circuitry is engaged due to high internal temperature of the amplifier. The amplifier needs more clearance around the chassis. If this continues, choose a better ventilated mounting location.</li><li>• High operating temperature can also be caused by an incorrect input sensitivity level. Reset the Gain Control.</li></ul>
The amplifier becomes very hot and shuts down or plays at a very low volume	<ul style="list-style-type: none"><li>• Thermal protection is engaged. Check for proper impedance at speaker terminals and air flow around the amplifier.</li><li>• Voltage protection is engaged. Voltage to the amplifier is not within the 12 to 14.4 volt operating range. Inspect the charging system.</li><li>• Short-circuit protection is engaged.</li><li>• Check for speaker wires shorted to each other or the vehicle chassis.</li></ul>
Alternator noise that varies with RPM	<ul style="list-style-type: none"><li>• Check for damaged RCA cables.</li><li>• Check the radio and amplifier ground.</li><li>• Turn down the amplifier Gain setting.</li></ul>
Poor bass response	<ul style="list-style-type: none"><li>• Speakers are out of phase. Ensure that positive and negative speaker terminals are wired correctly.</li></ul>

# SPECIFICATIONS

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Due to continuing improvements, specifications are subject to change without notice.

TECHNOPHONIC	SPECIFICATIONS
Full-Range Power Output @ 4 ohms	65 watts RMS x 4 channels @ 4 ohms
Subwoofer Power Output @ 4 ohms	225 watts RMS x 1 channel @ 4 ohms
Full-Range Power Output @ 2 ohms	95 watts RMS x 4 channels @ 2 ohms
Subwoofer Power Output @ 2 ohms	330 watts RMS x 1 channel @ 2 ohms
Full-Range Frequency Response	40Hz - 65KHz
Subwoofer Frequency Response	24Hz - 250Hz
Total Harmonic Distortion	<0.2%
Bass Boost	0-12dB @ 50Hz
Signal to Noise Ratio (EIA rated)	>95dB
Input Sensitivity	200mV - 6.0 volts
Crossover Slope	24dB
High Pass Filter (HPF) Frequency Range	40Hz - 400Hz
Low Pass Filter (LPF) Frequency Range	50Hz - 250Hz
Fuses* (fuse door on bottom of amplifier)	30 amp ATC Style (x2)
Dimensions (inches)	12.9" W x 5.3" D x 1.87" H
Dimensions (mm)	330mm W x 134mm D x 47.5mm H

\*An additional 60 amp fuse (not included) must be used on the Battery (+) wire at the battery. The fuse must be placed as close as possible to the positive (+) battery terminal (within 6-8 inches away).

If your unit does not work properly because of a defect in materials or workmanship, Retro Manufacturing, LCC (collectively referred to as "the warranter") at its option will either (a) repair your unit with new or refurbished parts, or (b) replace it with new or refurbished unit. The warranty period starts from the date of original purchase.

TECHNOPHONIC WARRANTY PERIOD: (1) YEAR.

During the warranty period, there will be no charge for replacement. You must mail in your unit prepaid during the warranty period. This warranty only applies to products purchased and serviced in the United States. This warranty is extended only to the original purchaser of a new product which was not sold "as is." A purchase receipt or other proof of the original purchase date is required for warranty service.

To handle a warranty issue, contact us at [tech@retromanufacturing.com](mailto:tech@retromanufacturing.com) or 888.325.1555 for a Return Authorization number. All returns and warranty issues must be accompanied by a Return Authorization (RA) number. Any product received without an RA number will be refused.

## LIMITED WARRANTY-LIMITS AND EXCLUSIONS

This warranty ONLY COVERS failures due to defects in materials and workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred during shipment, failures which are caused by products not supplied by the warranter, failures which result from accident, misuse, abuse, neglect, bug infestation, mishandling, misapplication, alteration, faulty installation, set-up adjustment, improper maintenance, power surge, improper voltage supply, lightning, modification, commercial use (such as use in hotels, offices, restaurants, or other business uses) or rental use of the product, or service by anyone other than Retro Manufacturing, LLC, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY". THE WARRANTER IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS UNIT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the servicer, and loss of media, data or other memory contents. The items listed are not exclusive, but are for illustration only). ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this unit develops during or after the warranty period, you may contact your dealer or Retro Manufacturing, LLC.



# INSTALLATION NOTES

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*Retro*<sup>®</sup>  
**MANUFACTURING**

MODERN SOUND FOR YOUR CLASSIC