

powerbass®

A u t o S o u n d



ALC-2

2-Channel LOC / Line Driver

User's Manual

Please read through this manual to familiarize yourself with your new signal processor. Should your PowerBass AutoSound line output converter ever require service, you will need to have the original dated receipt.



Thank you and Congratulations

Thank you for your decision to purchase a PowerBass ALC-2 Line Output Converter. The ALC-2 is a 2-channel LOC (Line Output Converter) that changes the high level (speaker) output from your factory radio to a low level (RCA) signal for use with aftermarket amplifiers.

Your PowerBass ALC-2 has been designed and engineered using the latest in microprocessor technology and will afford you many years of listening enjoyment. Additionally, this LOC also functions as a Line Driver that takes the input voltage of the radio (source unit) and increases it up to 13 volts. The increased signal is delivered to your amplifier for a more lifelike sound with less noise, less distortion and more dynamic range.



LOC / LINE DRIVER

This installation manual contains valuable information on how to get the most from your new PowerBass ALC-2 Line Output Converter. The increased performance from the Line Driver function will benefit virtually any car audio system.

To learn more about PowerBass Autosound, please visit us on the World Wide Web at <http://www.powerbassusa.com>

Δ Warning Δ

Continuous exposure to sound pressure levels in excess of 100 dB can cause permanent hearing loss. PowerBass Autosound Speakers are capable of producing sound pressure levels well over 170 dB. Please observe all local sound ordinances while listening to your PowerBass Autosound system. PowerBass USA, Inc. accepts no liability for hearing loss, bodily injury, or property damage due to the result of use or misuse of this product.

2-CHANNEL LOC / LINE DRIVER FEATURES

2-Channel LOC: Line Output Converter electronically adjusts high level speaker outputs to low level RCA outputs. Necessary when integrating OEM (factory) radios with aftermarket amplifiers and speakers.

Auto Turn On Sensing Circuit: Picks up the voltage from the High or Low level inputs thus eliminating the need to hard wire the remote input.

Selectable High/Low Input: Allows you to use either a high level (speaker) input or low level (RCA) input.

Variable Gain: Matches the output level from the radio to the LOC for maximum signal.

LED Clipping Indicator: An Orange LED gives you visual confirmation when setting the Gain control

RCA Low Level Output: Tiffany style right and left RCA jacks for maximum signal transfer.

13Vrms Output: As a line driver the ALC-2 can boost the output voltage of the radio (head unit) up to 13 volts before delivering it to the amplifier inputs.

Compact Size: Thanks to the extensive use of Surface Mount Devices the ACL-2 can be mounted under dash, behind the dash or virtually anywhere.

Additional Features: Mounting brackets, hardware and plug-in connectors for easy pre-wiring.

ALC-2 SPECIFICATIONS

Maximum Input Power (High Level): 100 watts

Maximum Input Voltage (Low Level): 9.5 volts

Maximum Output Voltage: 13 volts

Frequency Response: 10Hz-100KHz +/-3dB

Total Harmonic Distortion: <0.4%

Signal to Noise Ratio: 94dB

Low Level Input Impedance: >20,000 ohms

High Level Input Impedance: >180 ohms

Output Impedance: <100 ohms

Power Supply: PWM DC/DC

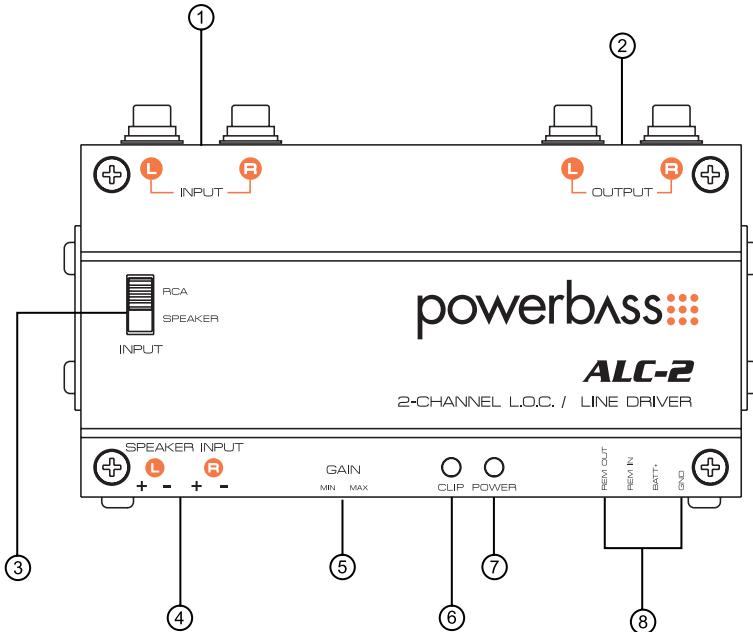
Current Draw: 150mA

Recommended Fuse: 1-amp

Chassis Measurements (W x L x H): 4.4" x 2.3" x 1.1" (111mm x 58mm x 28mm)

Due to continuing improvements these specifications are subject to change without any notice.

CONTROL PANEL LAYOUT



1. INPUT (Low Level)

These RCA input jacks allow a low level left and right channel signal input from the source unit.

2. OUTPUT (Low Level)

These RCA output jacks provide signal to your amplifier.

3. INPUT Switch

This switch is used to select the input of the ALC-2. There are two possible inputs. The RCA position selects the low level RCA input (0-6V) and the Speaker position selects the high level input.

4. SPEAKER INPUT (High Level)

This terminal block allows for a high level left and right channel signal input from the source unit. Use this if your source unit does not have low level RCA outputs.

5. GAIN Control

This control matches the input level of your ALC-2 with the output level of your system.

6. CLIP Indicator

This LED indicates when the signal is at its maximum level before distortion occurs. When the input GAIN adjustment is set correctly and the source unit is at its maximum volume this LED should flicker orange intermittently.

7. POWER Indicator

This LED glows blue when the ALC-2 is powered on.

8. REM OUT/REM IN/BATT+/GND Power Terminal

These connections are for remote turn-on, input power and chassis ground. Use a minimum of 18-gauge wire for the power (BATT+) and ground (GND) connections. The power (BATT+) should be fused with a 1-amp fuse.

INSTALLATION EXPERIENCE

Installation of PowerBass mobile sound equipment requires detailed knowledge of electronics wiring and proper speaker impedance. We strongly recommend installation by an authorized PowerBass dealer. This Owner's Manual only provides general installation and operation instructions. If you have any reservations about your installation skills, please contact your local PowerBass dealer for assistance.

PREPARING FOR INSTALLATION

NOTE: The tools listed below may be required for basic installation

- An electric drill with bits
- Phillips head and standard screwdrivers
- Wire strippers
- Crimping tool
- VOM (electronic volt ohm meter)
- Heat shrink tubing and heat gun
- Soldering iron

MOUNTING THE LINE OUTPUT CONVERTER

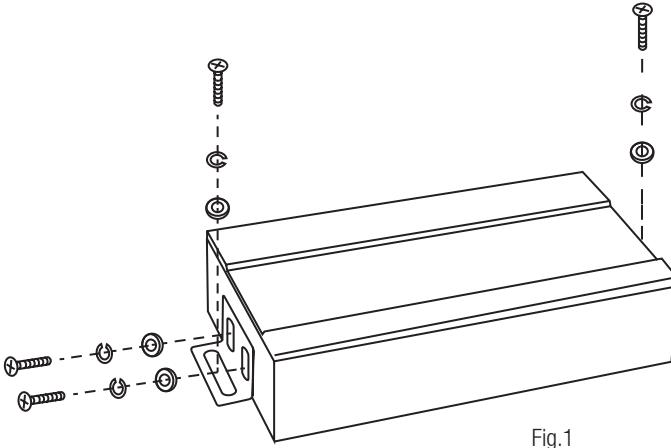


Fig.1

There are two basic mounting options for your PowerBass Line Output Converter. One is to mount the unit using the supplied brackets as shown in Fig 1. Once attached, you may use the brackets as a template and mark the two screw locations with a felt tip pen. Use caution to make sure there are no objects behind the installation surface that may become damaged during drilling.

The other option is to use a large cable or wire tie and secure it behind the dash by wrapping it around the chassis of the unit. Make sure the Line Output Converter is secure and do not let the unit hang by the wiring. Doing so may cause the wiring plugs to become loose and even disconnected over time due to road vibrations which will cause the Line Output Converter to stop working.

It is highly recommended to complete the wiring of the Line Output Converter and set the GAIN adjustment prior to mounting the unit.

SETUP ADJUSTMENT



Fig.2

GAIN Control

Set the GAIN to increase the amount of signal coming from the Line Output Converter to your amplifier(s). Start with the control at the MIN position (completely counter clock wise). Adjust the GAIN control clockwise until the orange CLIP indicator begins to flicker, then back off slightly to cut distortion and operate at optimum gain.

POWER WIRING AND SIGNAL CONNECTIONS

Use the supplied 4-pin wiring plugs to wire up the Power and Speaker connections on the side panels of the Line Output Converter. Carefully follow the markings on the top of the ACL-2 for proper wire location. The silver set screws on the top of the 4-pole wiring plug should face up. Fig. 3

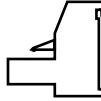


Fig. 3 Wiring Plug (Silver screws on top)

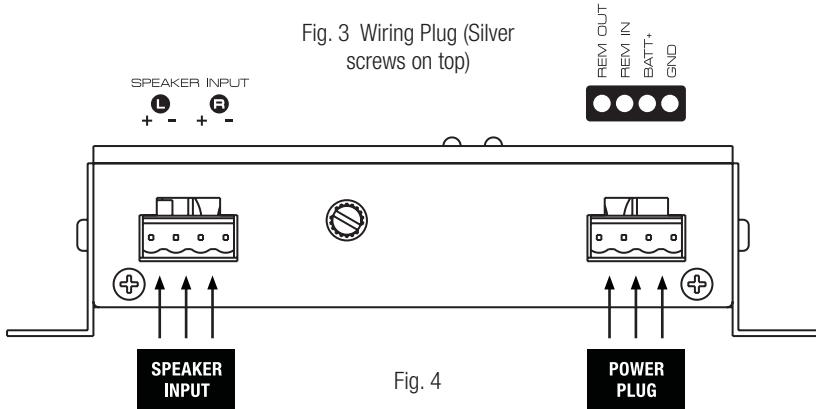


Fig. 4

REM OUT (Remote Out)

The ALC-2 is equipped with a signal sensing circuit that can detect a signal on its input to provide a +12 volt output signal to turn on an aftermarket amplifier. Prepare the remote-out turn on wire for attachment to the power plug the same way you did for the power and ground. We recommend using a 18-gauge wire (preferably with a blue jacket). Insert one end into the REM OUT location on the power plug and the other end to the remote terminal on the amplifier.

REM IN (Remote In)

The Remote-In on the ALC-2 can be activated one of two ways, by traditional hard wiring or using the built in auto sensing circuitry. The auto sensing circuitry is triggered by the voltage from the High or Low inputs. A 6mV offset (RCA input) and 3V offset (Speaker input) will be detected when your source unit has been turned on and eliminates the need to run a dedicated wire to the source unit. For hardwiring, prepare a Remote In turn on wire for attachment to the power plug in the same way you did for the power and ground.

We recommend using an 18-gauge wire (preferably with a blue jacket). Insert one end into the REM IN location on the power plug and connect the other end to the remote lead from the car radio (source unit). This remote lead from the source unit will trigger a +12 volt output only when the car radio is turned on. If the source unit does not provide a remote turn on, this method will turn on and off the ALC-2 with the key when the source unit is on or off.

BATT+ (Power)

The ALC-2 should be wired directly to a constant +12 volt source. We recommend using minimum 18-gauge wire (preferably with a red jacket) and an In-line fuse holder containing a 1-amp fuse. The use of an in-line fuse is a must to protect the unit in case of electrical short. Insert the other end of the fused power wire into the power plug BATT+ position after stripping off 3/8" of insulation from the end of the wire.

GND (Ground)

The main ground connection should be made between the GND position on the power plug and a metal part close to the ALC-2 mounting location. The ground wire needs to be as short as possible to minimize the possibility of induced noise. The metal point on the vehicle where the ground connection is to be made needs to have all paint sanded away to bare metal and removed for better contact of the ground. Use the same gauge of wire as you did for the positive connection (instead this time preferably using wire with a black jacket). Strip the jacket and prepare the other end of the ground wire the same way you did the power wire for insertion into the GND position on the power plug.

Once you have completed wiring the Power Plug, gently push it into the power socket on the side panel of the PowerBass ACL-2.

RCA INTERCONNECTS

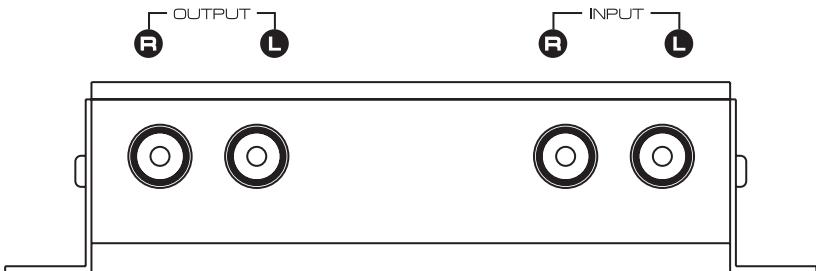


Fig.5

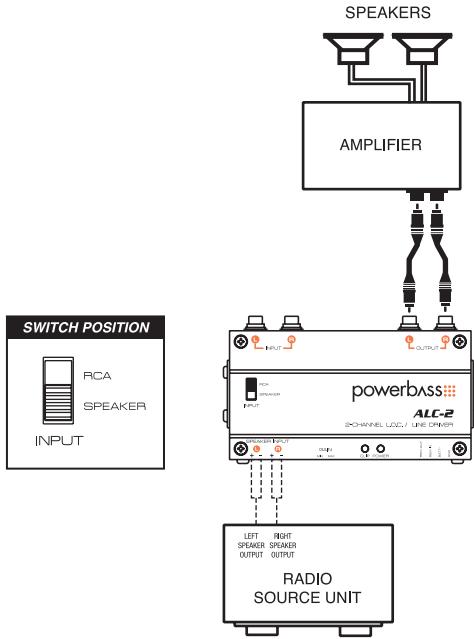
Choose the correct length and style of RCA interconnects for your needs (not included). Run the RCA cables from the amplifier to the location of the PowerBass ALC-2. Make sure all the RCA cables are run on the opposite side of the vehicle from where you ran the power cables to the amplifier(s). Hiss, engine noise, and fan noise can easily be picked up through the RCA cables if run incorrectly.

Attach the RCA cable from the amplifier to the OUTPUT jacks on the side panel of the processor. Next attach the RCA cable from the output on the source unit to the processor's INPUT jacks (Unless you are using the high speaker level input).

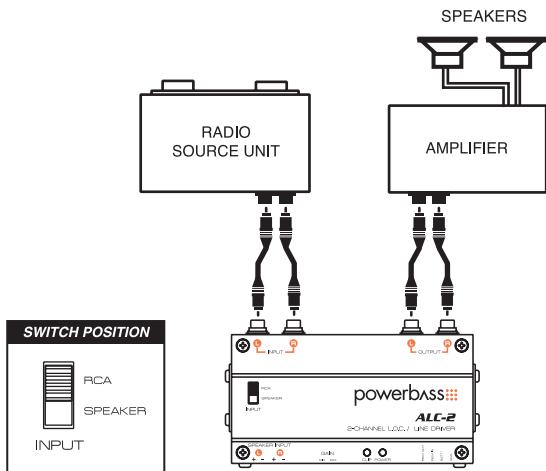
SPEAKER OUTPUT CONFIGURATIONS

1. High Level (Speaker) Input from Factory Radio

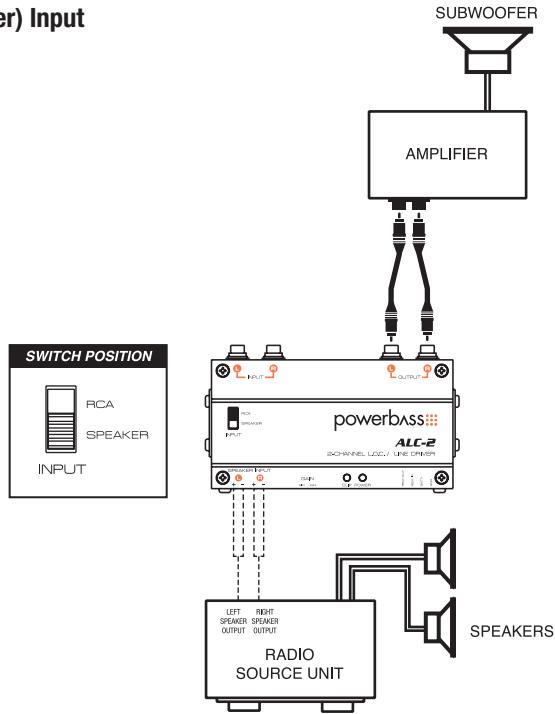
Tech Support
8:30am-5:30pm Pacific Time
(909) 923-3868
www.powerbassusa.com



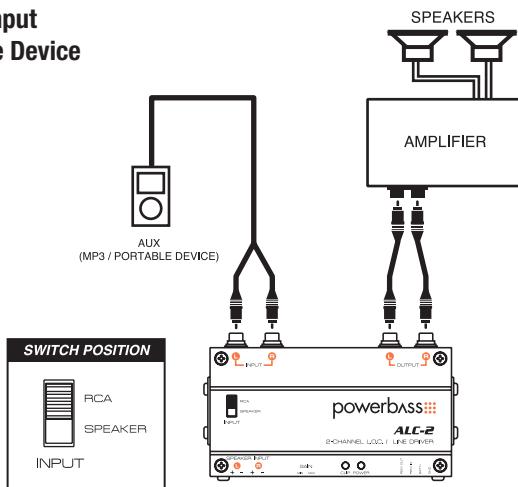
2. Low Level (RCA) Input from Aftermarket Radio



3. High Level (Speaker) Input from Factory Radio



4. Low Level (RCA) Input from Portable Source Device



POWERBASS AUTOSOUND LIMITED WARRANTY POLICY

PowerBass USA, Inc. offers limited warranty on PowerBass products under normal use on the following terms:

PowerBass Autosound Electronics are to be free of defects in material and workmanship for a period of one (1) year.

This warranty applies only to PowerBass products sold to consumers by Authorized PowerBass Dealers in the United States of America. Products purchased by consumers from a PowerBass dealer in another country are covered only by that country's Distributor and not by PowerBass USA.

This warranty covers only the original purchaser of PowerBass product. In order to receive service, the purchaser must provide PowerBass with the receipt stating the consumer name, dealer, product and date of purchase.

Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at PowerBass's discretion and will not be liable for incidental or consequential damages. PowerBass will not warranty this product under the following situations:

- **Electronics received with apparent rust or corrosion**
- **Any evidence of liquid damage or exposure to excessive heat**
- **Attempted repairs or alterations of any nature**
- **Product that has not been installed according to this owners manual**

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for PowerBass any other liability in connection with the sale of this product.

Please call (909) 923-3868 for PowerBass Customer Service. You must obtain an RA# (Return Authorization Number) to return any product to PowerBass. **The RA number must be prominently marked on the outside of the shipping carton or the delivery will be refused.** Please pack your return carefully; we are not responsible for items damaged in shipping. Return the defective product along with a copy of the original dated retail sales receipt, plus \$12.00 for handling and diagnostic evaluation to:

**PowerBass USA, Inc.,
Attn: Returns (RA# _____)
2133 S. Green Privado, Ontario, CA 91761**

Residents of HI, AK and US territories will be charged for return shipping. All inquires regarding service and warranty should be sent to the above address.

Removed or altered serial numbers will void this warranty

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