

**ADCOM
POWERAMP
GFA-535**

WARNING

The following information is for your own safety and well being.
(required by Underwriters Laboratories, Inc. UL 1270, Sec. 65)

READ INSTRUCTIONS

All safety and operating instructions should be read before this unit is operated.

RETAIN INSTRUCTIONS

Retain this notice and the owners manual for future reference.

HEED WARNINGS

All warnings and cautions on the unit and in the owners manual should be adhered to.

FOLLOW INSTRUCTIONS

All operating and use instructions should be followed.

WATER OR MOISTURE

This unit should not be exposed to water or moisture. For example, near a bathtub, in a wet basement or near a swimming pool.

VENTILATION

This unit should be situated so that its location or position does not interfere with its proper ventilation. Be sure that at least $\frac{1}{2}$ " of space is provided above or below all ventilation holes.

HEAT

This unit should be placed away from other heat producing products and adequate ventilation should be provided.

AC ONLY

This unit should be connected to an AC outlet only. With the precautions described in the owners manual.

GROUNDING

Precautions should be taken for proper grounding as described in the owners manual.

AC CORD PROTECTION

The AC cord should be routed so that it is not likely to be walked on or pinched by items placed upon or against it. Please pay extra attention to cords at the plug, convenience outlet and the point where they exit from the unit.

CLEANING

The unit can be cleaned using a soft cloth dampened with a solution of liquid detergent and water. Under no circumstances should a lye solution or an abrasive cleaner such as scouring powder be used on any part of the unit.

NON USE PERIOD

The power cord should be unplugged from the AC outlet when the unit will not be used for an extended period of time.

OBJECT OR LIQUID ENTRY

Care should be taken so that objects do not fall and liquids are not spilled into the unit through ventilation holes.

DAMAGE REQUIRING SERVICE

The unit should be serviced by a qualified service agency when:

- A) The power supply cord or the plug has been damaged; or
- B) Objects have fallen, or liquid has been spilled into the unit; or
- C) The unit has been exposed to rain; or
- D) The unit does not appear to operate normally or exhibits a marked change in performance; or
- E) The unit has been dropped, or the enclosure damaged.

SERVICING

You should not attempt to service the unit beyond that described in the owners manual. All other servicing should be referred to a qualified service agency.

ADCOM GFA-535 OWNERS MANUAL

WELCOME

It is very important that you thoroughly read this owners manual before turning your ADCOM GFA-535 Power Amplifier ON.

(For those in a hurry, please read Sections 1 — 6)

Your ADCOM GFA-535 represents the most advanced thinking in audio amplifier design. At 60 watts per channel, the GFA-535 offers an exceptional value; superior performance at a reasonable price. Some of the outstanding features of this product are:

- 60 watts per channel, 20Hz—20kHz, into an 8 ohm load with both channels driven with less than 0.09% Total Harmonic Distortion.
- The ability to drive low impedance loads.
- Instantaneous Distortion Alert which indicates when distortion products are above the 1% level.
- Outputs for 2 pairs of speakers.
- Two additional AC outlets for a CD Player, Tuner, or other audio components up to 100 watts, maximum.

This manual has been written to anticipate the kind of questions you may encounter while enjoying the full benefits of your GFA-535 power amplifier. Please read it thoroughly to fully understand all of the features offered and how they can be used to maximize the performance of your audio system.

SECTION 1

WHAT TO DO WHEN YOU OPEN THE BOX

Before each GFA-535 left the factory, it was carefully inspected for physical imperfections as a routine part of ADCOM's systematic quality control. This, along with full electrical testing, should insure a product flawless in both appearance and performance. After you have unpacked the amplifier, inspect it for physical damage. Save the shipping carton and all packing materials as they are essential to reduce to a minimum the possibility of transportation damage should the product ever need to be shipped again. In the unlikely event that damage has occurred, notify your dealer immediately and request the name of the carrier so that a written claim to cover shipping damage can be initiated.

THE RIGHT TO ANY CLAIM AGAINST A PUBLIC CARRIER CAN BE FORFEITED IF THE CARRIER IS NOT NOTIFIED PROMPTLY AND IF THE SHIPPING CARTON AND PACKING MATERIAL ARE NOT AVAILABLE FOR INSPECTION. SAVE ALL PACKING MATERIALS UNTIL THE CLAIM HAS BEEN SETTLED.

SECTION 2

WHERE TO PUT IT (AND WHERE NOT TO!)

The GFA-535 utilizes large heat sinks to dissipate heat from the power transistors. The top and bottom panels of the amplifier have slots to allow air to circulate inside the amplifier. Adequate air circulation must be available to ensure cool operation of the amplifier. Therefore, the GFA-535 should not be completely enclosed with other heat producing components, and adequate space around the amplifier should be maintained. We recommend at least 3 inches on the top and 1 inch on the sides and rear for air circulation. If the GFA-535 is going to be mounted in an enclosed cabinet, it is recommended that the back of the cabinet have vents to allow air to circulate around the amplifier. With these considerations in mind, the GFA-535 should perform quite happily in any reasonable environment. Of course, such normal considerations as protection from excessive dust and moisture should always be observed. The ADCOM GFA-535 power amplifier has been carefully designed with high quality components so that long term undiminished performance may be expected from the amp when it is operated in accordance with the instructions provided.

SECTION 3

FRONT PANEL CONTROLS

The front panel controls on the GFA-535 are the Main AC power switch located on the left side of the front panel and the Speaker Selector switches located on the right side of the front panel. Pushing the power switch will turn the unit ON (Pushing it again will turn the power OFF). To select speaker systems press either system A, system B, or when appropriate, Both A and B. The speaker system will be ON when the switch corresponding to the speaker system selected is in the IN position.

SECTION 4

WHERE (AND HOW) ALL THE WIRES GO

All connections are conveniently located on the rear panel of the GFA-535. Any suitable program source, such as a control preamplifier may be used. ALL CONNECTIONS MUST BE MADE WITH THE AMPLIFIER UNPLUGGED AND THE AC POWER SWITCH OFF.

When making input signal connections, only high quality shielded (co-axial) audio cable should be used. The input jacks accept the standard two-conductor RCA-type phono plugs.

The GFA-535 permits the use of 2 pairs of speaker systems. Output connections from the GFA-535 can be made to any standard or electrostatic loudspeaker system. Follow the procedure below for connecting each set of speaker systems.

When connecting speakers to the GFA-535, you should always use the largest wire size (lowest gauge number) that is available to you. We recommend at least 16 gauge, 2-conductor cord (zip cord) for distances up to 25 feet. For distances up to 50 feet, 14 gauge wire should be used. You may also wish to consider some of the commercially available speaker cables which have been designed to improve the connection between the power amplifier and the loudspeakers.

The Output terminals on the GFA-535 are a twist-type connector. To use this type of connector you must remove about one half inch of the insulation from the end of each speaker wire. Twist the exposed ends of the wire. Now make sure that the knob of the connector is in the upright position. Insert the twisted end of the speaker wire into the hole in the rear of the connector as far as it will go. Now turn the knob of the connector 90 degrees (1/4 turn) clockwise. The wire will be locked firmly in place. If the wire pulls out easily, either too little wire length has been left exposed, or the diameter of the wire used is too thin.

When connecting the speaker wires, **correct phasing** is required to obtain maximum bass response and to preserve a coherent sound when vocalists perform. The simplest way to insure proper phasing is to inspect the wires being used. Some form of coding is always employed, whether a ridge or groove on one edge or side of the wire, or the wires may be of different colors: one copper wire and one silver. For example, to connect a speaker to the left channel of the GFA-535 for speaker system A, connect the copper colored wire to the Left Channel positive (red) output terminal for speaker system A on the amplifier. Next connect the silver colored wire to the Left Channel negative (black) output terminal for speaker system A. Now connect the other end of the copper colored wire to the Positive terminal of the Left speaker of speaker system A. Connect the other end of the silver colored wire to the Negative terminal of the Left speaker in system A. Follow the same procedure when connecting the Right speaker to speaker system A, and if appropriate, to speaker system B. **IT IS IMPERATIVE THAT THE MAIN POWER TO THE AMPLIFIER IS DISCONNECTED DURING THE HOOK UP PROCEDURE.**

After the correct hook up procedure has been followed, the AC line cord should be plugged into an AC outlet providing 120 volts AC, 50-60 Hz.

An alternate (but less reliable) method for checking proper phase response is to connect two speakers and then place them side by side. Play some mono program material with heavy bass content through the system. Now turn off the system, and reverse one pair of wires to one of the two speakers. Turn on the system and play the same passage again. If the bass response has increased, leave the system as it now is. If the bass response has diminished, turn off the system and rewire it as it was originally set up. When making loudspeaker connections, care must be taken to avoid short circuits which will cause improper operation of the amplifier.

AMPLIFIER PROTECTION CIRCUIT

Your GFA-535 power amplifier is equipped with external and internal fuses which are designed to protect your loudspeakers from possible damage and also to protect the amp itself under all but the severest abuse of operating conditions. A thermal cutoff is also employed to protect the amplifier under high temperature conditions.

Because of the great amount of electrical energy stored in the capacitors, the design of the GFA-535 will allow music to remain audible for several seconds after the amplifier has been shut off. We suggest that you wait until the red power LED has stopped glowing before turning off your preamplifier and other components. This procedure will prevent turn-off transients from reaching your speakers. During the shut down procedure, you may hear small noises through your speakers which result from capacitor discharge. This is normal, and is no cause for concern.

SECTION 5

SAFETY WARNING

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE THE AMPLIFIER COVER. THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL ONLY!

CAUTION: BURN-OUT OF THE OUTPUT STAGE BECAUSE OF FAILURE TO OBSERVE THE FOLLOWING PRECAUTIONS WILL VOID THE WARRANTY!

There is no such thing as absolute reliability or protection when amplifiers are abused. While the GFA-535 amplifier has been designed to operate reliably under normal conditions, it may not be impervious to gross abuse. There is one condition which must always be avoided: This condition is called RF Detection and because ADCOM amplifiers have such an extremely wide bandwidth, RF Detection will almost certainly cause failure of the output devices if it occurs. Damage to, or failure of this equipment due to RF Detection is considered abuse, and is specifically excluded from the ADCOM warranty.

The following acts cause RF Detection and **MUST BE AVOIDED:**

- 1) Connecting the inputs or outputs while the amplifier is ON.
- 2) Using the "Thumb Test". It is a dangerous habit to connect cables to the inputs, touching the other end of the cable while the amplifier is ON. This may not only cause amplifier failure but may destroy your loudspeakers due to the high power surge emitted from the amplifier.

It is essential to follow the procedure of completely hooking up your system before turning anything on! A few simple precautions will contribute to trouble free performance. Because of the high power capability of the GFA-535, ADCOM will not be responsible for any damage to speakers or other components due to their inability to handle the amplifier's power output or any other misuse.

SECTION 6

WHY WE BUILT IT THE WAY WE DID

The ADCOM GFA-535 represents a departure from many of the other amplifier designs currently available. This departure is the result of a careful study of all known amplifier technology, circuits and parts. The main feature of the GFA-535 is its outstanding ability to drive the vast majority of speakers to reasonably high sound levels while maintaining the sonic integrity of the music.

The Instantaneous Distortion Alert is a unique distortion detection circuit which reads all forms of distortion — THD, IM, Slew Induced, and DC-Offset. Peak LEDs, one per channel, will glow when distortion is above 1% regardless of the load impedance or reactance. In use, the LEDs may occasionally flicker under high volume listening. If they glow brightly or are on most of the time that you are listening, you are overdriving your equipment and should turn down your volume control.

We consider the GFA-535 to be a truly significant contribution to the advancement of sound technology. To ensure that the quality of construction is on par with the quality of the sonics, (a much neglected area in many other amplifiers) the GFA-535 has been carefully developed with computer controlled metal fabrication techniques that maintain 0.005 of an inch tolerances throughout. Full electrical inspection of each and every circuit board, sub-assembly, as well as the finished amplifier, provide a mechanically and sonically superior product for your enjoyment. At the time of its design, we knew of no other product on the market which offered the design and construction quality of the GFA-535 at anything close to its selling price. We sincerely hope that you'll agree.

SECTION 7

THE CARE AND FEEDING OF YOUR GFA-535

Great care has been taken by ADCOM to assure that your amplifier is as flawless in appearance as it is electronically. The front panel is heavy gauge, high-grade anodized aluminum, bead-blasted for durability and beauty. If the front panel should become fingerprinted or smeared, it can be cleaned with a damp, soft cloth.

UNDER NO CIRCUMSTANCES SHOULD A STRONG OR ABRASIVE CLEANER SUCH AS SCOURING POWDER OR OVEN CLEANER BE USED ON ANY PART OF THE AMPLIFIER.

The amplifier is protected by a line fuse on the rear panel. If the power is switched ON and the small red LED on the front panel does not illuminate after a few seconds, shut off the amplifier, unplug the AC line cord from the power outlet, and check the AC line fuse. If the fuse has opened, replace it **ONLY** with a fuse of equal value.

REPLACEMENT WITH AN INCORRECT FUSE OR ONE OF A HIGHER RATING WILL NOT PROTECT THE AMPLIFIER AND WILL VOID THE WARRANTY.

If after replacing the fuse, it blows immediately, an electronic component failure or shorted output connection must be suspected. No further attempts to replace the fuse or operate the amplifier should be made before rechecking all connections.

SECTION 8

IF YOU HAVE A PROBLEM OR QUESTION

ADCOM has a technical service department to answer all questions pertinent to the installation and operation of your unit. Please feel free to write or call us in the event of difficulty, and we shall endeavor to offer prompt advice. If your problem can not be resolved through our combined efforts, we may wish to refer you to an authorized repair agency, or we may prefer to authorize return of the unit to the factory. To aid us in directing you to a convenient service station, it would be helpful if you indicate which major city is accessible to your home.

Please address inquires to:

**ADCOM TECHNICAL SERVICE DEPT.
11 ELKINS ROAD
EAST BRUNSWICK, NJ 08816
(201) 390-1130**

Be sure to include the model and serial number of your unit, as well as the date of purchase and the dealer from whom the unit was purchased, when calling or writing about your amplifier. In the event that the unit must be returned to us for service, you will be instructed as to the proper procedure when you call or write for return authorization.

UNDER NO CIRCUMSTANCES SHOULD YOUR UNIT BE SHIPPED TO THE FACTORY WITHOUT PRIOR AUTHORIZATION, OR WITHOUT ORIGINAL CARTON AND FILLERS.

If the original shipping carton has been lost or discarded, or if the carton is not in good condition, a duplicate carton may be obtained from our service department for a nominal charge.

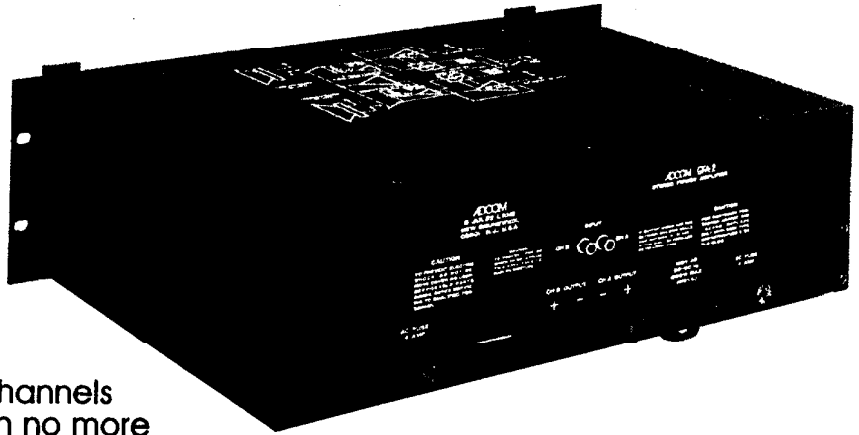
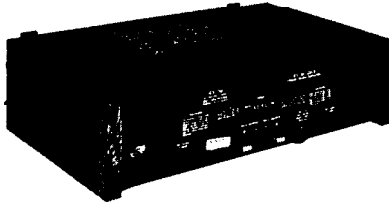
Always ship **PREPAID** via UPS or other recognized surface carrier. **DO NOT SHIP VIA PARCEL POST**, since the packing will not withstand rough mail handling. We are forced to refuse most Parcel Post shipments since they arrive in such poor condition. **FREIGHT COLLECT SHIPMENTS CANNOT BE ACCEPTED.**

SECTION 9

ADCOM PROTECTION PLAN (U.S.A. ONLY)

ADCOM offers the enclosed **LIMITED WARRANTY**. Please read the details carefully to fully understand the extent of the protection offered by the warranty, its limits, and what responsibilities are required of you in order to obtain its benefits.

GFA-2, shown with optional oiled side oak panels



100 watts per channel, both channels driven, 20Hz to 20,000 Hz with no more than 0.05% Total Harmonic Distortion.

The ADCOM GFA-2 represents an improvement in design over many of the other currently available amplifier configurations. The GFA-2 front end, is a double differential FET input amplifier which provides for very low distortion, (typically 0.005% at midband), low noise and stability. The output section of the GFA-2 uses the finest state-of-the-art high-speed output transistors. Because of their speed, they are extremely linear and have a higher quality of sonic dimensionality.

The GFA-2 employs individual power supplies, one for each channel instead of the more usual single power supply found in other amplifiers. The use of two power supplies ensures high image resolution by eliminating interaction between the two channels. Individual power supplies also permit complete power consistency in each channel because there is no interference between channels especially when it comes to maximum power output.

The GFA-2 is totally DC coupled from input to output. DC coupling allows the amplifier to pass low frequency signals with no phase shift, resulting in superior bass performance. The GFA-2 also has a very wide frequency damping factor; unlike most amplifiers where the damping factor is high at only 10Hz or 20Hz, the GFA-2 has a damping factor of over 100 at 3kHz. This very wide, smooth damping allows the amplifier to properly control midrange frequencies, as well as low frequencies for a cleaner, truer sound.

The GFA-2 employs a multi-stage protection system. The first stage is for speaker protection and eliminates transients when the amplifier is turned on or off. The next stage is designed to disconnect the speakers in the event of DC leakage, power overload, or excessive clipping. The final stage employs an acoustically transparent peak current limiting circuit. This circuit is totally inactive until it actually experiences a peak current clip. A thermal sensing cutoff stage guards the amplifier from overheating.

Two peak reading LEDs (for each channel), are provided to monitor power output. Occasional LED flickers mean that the amp is close to operating at or near maximum output, while a steady red glow means that the amp is being overdriven and is "clipping" or "distorting" the output signal, a visual warning to "turn it down."

The GFA-2 front panel is finished in a handsome black anodized aluminum and is rack mountable in standard 19-inch equipment racks.

GFA-2

Stereo Power Amplifier

SPECIFICATIONS

Power Output: 100 watts per channel, 8 ohms, 20-20,000 Hz.
THD: Less than 0.05% THD
IM Distortion: Less than 0.01% (SMPTE Standard)
Slew Rate: 35 volts per microsecond
Frequency Response: ± 0.2 db from 20-20,000Hz at full power.
Signal-to-noise Ratio: 95db at 1 watt A weighted
Crosstalk: Greater than 60db at 10,000Hz
Input Impedance: 50,000 ohms
Damping Factor:
180 minimum at 20Hz
100 minimum at 3,000Hz
50 minimum at 20,000Hz
Input Sensitivity: 97 millivolts for 1 watt output
Weight: 29 lbs. net, 34 lbs. shipping
Dimensions: 5 1/4" (H) x 19" (W) x 14" (D)
110-120 volts;
60Hz.*

*230V, 50Hz version available on special order

ADCOM
the stereo components

9 Jules Lane, New Brunswick, New Jersey 08901 U.S.A. (201) 828-8590 TELEX: 844430

©1982, Adcom Printed in the USA