

## INTRODUCTION

This service manual is intended to assist trained and qualified technical personnel in verifying the performance of, adjusting, and repairing the ADCOM GFA-5800 amplifier. The procedures described here are not intended for persons unfamiliar with the appropriate safety and test procedures.



### WARNING



THERE ARE POTENTIALLY LETHAL VOLTAGES WITHIN THE GFA-5800 AMPLIFIER WHICH WILL BE ACCESSIBLE ONCE ITS TOP COVER IS REMOVED. **DO NOT ATTEMPT FAMILIARIZATION, INSPECTION, OR ANY PROCEDURE WHATSOEVER UNLESS YOU HAVE DISCONNECTED THE GFA-5800 FROM THE WALL AC OUTLET OR OTHER SOURCE OF AC POWER AND THE POWER-SUPPLY CAPACITORS ARE COMPLETELY DISCHARGED.** PLEASE TAKE NOTE THAT THE POWER SUPPLY CAPACITORS CAN TAKE AS LONG AS 15 MINUTES TO DISCHARGE. THESE INSTRUCTIONS ARE PROVIDED FOR USE ONLY BY COMPETENT TECHNICAL PERSONNEL. **DO NOT UNDERTAKE ANY SERVICE PROCEDURES IN THE GFA-5800 UNLESS YOU ARE TECHNICALLY QUALIFIED TO DO SO.**

## TEST PROCEDURES

- All tests are performed with a 115V, low-distortion (less than 2% THD), AC-power source, 8-ohm resistive load (except slew rate), and a signal source of not more than 600 ohms.
- Tests are performed after warming up the amplifier at idle with no load, for at least 60 minutes.
- All grounds during testing are referred to the ground of the black output terminal of the channel under test.
- An 80kHz low-pass filter is employed during THD distortion measurements.
- Signal-to-noise measurements are "A" weighted.
- Damping factor is measured by comparing the 1 watt output voltage with and without an 8 ohm load.
- Slew rate is measured with an inductive load, and is derived with a dual-time-based oscilloscope reading the slope of a full power (125volts peak to peak) 5kHz square wave. To avoid damaging output network R-3 and C-4, **DO NOT OPERATE THE AMPLIFIER AT FULL-POWER SINE WAVE ABOVE 22kHz OR FULL-POWER (125V PEAK TO PEAK) SQUARE WAVE ABOVE 5kHz.**

**IMPORTANT: Before proceeding with adjustments, be certain that the amplifier's temperature has settled to a constant idle temperature near room temperature.**

## BIAS ALIGNMENT

1. With amplifier connected to an 8 $\Omega$  resistive load, apply a 1kHz sine wave at the input to achieve 83.3W at the output.
2. Operate at 83.3W for 5 to 6 minutes.
3. Turn the unit off and disconnect the input signal and the load resistors.
4. Disconnect the B+ wire from the amplifier PCB and connect an ammeter between the B+ wire and the B+ terminal on the amplifier PCB.
5. Turn amplifier on and allow a 10 to 15 minute settling period.
6. Adjust BIAS control (P 2) to obtain 800mA  $\pm$  50mA.
7. Allow unit to idle for 10 more minutes, and recheck adjustment for drift.

## DC OFFSET

1. Connect a DC millivoltmeter across the output binding posts. Adjust DC offset control (P1) until DC offset = 0mV ( $\pm$  0.1mV).

**CORRECT BIAS ADJUSTMENT IS CRITICAL TO THE PERFORMANCE OF THIS AMPLIFIER. MAXIMUM OUTPUT POWER, MINIMUM THD, AND HEAT DISSIPATION ARE AFFECTED BY THE BIAS SETTING, AND MUST BE CORRECT TO MAINTAIN THE SONIC QUALITY AND LONGEVITY OF THE AMPLIFIER.**