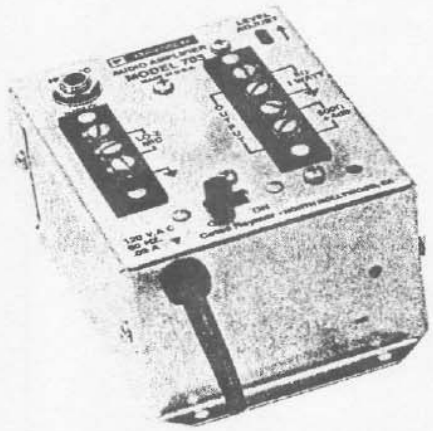
University Sound®

PRODUCT BULLETIN

MODEL 703 AMPLIFIER



DESCRIPTION

The Raymer Model 703 is a one watt solid state audio amplifier with built in power supply housed in a sturdy flanged metal box measuring only 5" x 3½" x 2½". All connections and adjustments are made on the front of the unit. Two controls are provided: a thumbwheel adjustment to set the output level and a power switch to turn the unit on and off. Input provisions are provided for either Low Impedance or High Impedance microphone inputs. The Low Impedance input connections are made by means of screw terminals. This input will match balanced microphones in the 150 to 250 ohm range and has an input sensitivity of 0.5 millivolts to obtain a one watt output. The High Impedance input connection is made by means of a ¼" phone jack. This input will match unbalanced dynamic microphones and has an input sensitivity of 5 millivolts to obtain a one watt output.

Two outputs are provided: the 8 ohm output permits direct connection to a speaker voice coil, and the 500 ohm output may be used to drive a balanced line at a +4dbm (1.23V.) level.

The Model 703 incorporates both a high pass and a low pass filter to contour the frequency response of the unit for maximum speech intelligibility. As supplied, the frequency response is −2db at 350Hz and 7.5KHz. Jumper wires are provided on the circuit board which may be cut to exclude these filters.

TYPICAL APPLICATIONS

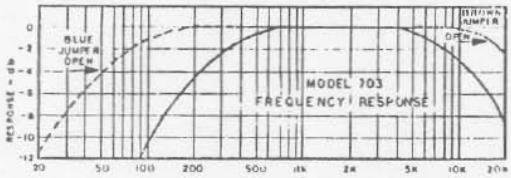
The Raymer Model 703 is suited for applications where the signal from a microphone must be amplified to drive a monitor speaker or balanced line. Typical applications may include:

- **Video/Security**
  - —Add microphone input to surveillance video recorder.
  - —Audible monitor of security areas.

  (both functions may be used simultaneously)
- **Telephony**
  - —Allows direct transmission of microphone over leased lines.
  - —Adds audio to video transmission.
  - —Permits remote paging source.
- **General Purpose**
  - —Allows one microphone to drive multiple amplifiers.
  - —Adds microphone input to amplifiers with only auxiliary input facilities.
- **Sound Reinforcement**
  - —Provides multiple head phone driver for hard of hearing.
  - —Add multiple head phones for speech translation.
- **Installation Aid**
  - —Allows remote microphone wiring without expensive shielded cable.
  - —Allows increased microphone inputs on systems with limited input facilities.

SPECIFICATIONS

Power Output: 1 Watt RMS @ 8 ohms; 3 MW RMS @ 500 ohms. **Outputs:** 8 ohms unbalanced (4 and 16 ohm loads with slight reduction in output); 500 ohms balanced + 4dbm (1.23V). **Distortion:** Less than 0.3% THD. **Frequency Response:**



Input: One microphone low impedance balanced or high impedance unbalanced **Sensitivity:** 0.5 millivolts Lo-Z or 5 millivolts Hi-Z.

Hum and Noise: -65db (below rated output). **Semiconductors:** 2 integrated circuit, 2 silicon diodes, 1 light emitting diode. **Power Consumption:** 5 Watts, 120 Volts AC, 60Hz. **Size:** 5⅛" x 3½" x 2½". **Shipping Weight:** 2 lbs.

Manufactured in the USA

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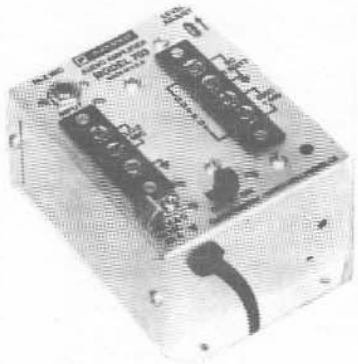
OPERATING INSTRUCTIONS



MODEL 703 AMPLIFIER

DESCRIPTION:

The University Sound Model 703 is a one watt solid state audio amplifier with built in power supply housed in a sturdy flanged metal box measuring only 5" x 31/2" x 21/2". All Connections and adjustments are made on the front of the unit. Two controls are provided: a thumbwheel adjustment to set the output level and a power switch to turn on and off. Input provisions are provided for either Low Impedance or High Impedance microphone inputs. The low Impedance input connections are made by means of screw terminals. This input will match balanced microphones in the 150 to 250 ohm range and has an input sensitivity of 0.5 millivolts to obtain a one watt output. The High Impedance input connection is made by means of a 1/4" phone jack. This input will match unbalanced dynamic microphones and has an input sensitivity of 5 millivolts to obtain a one watt output.

Two outputs are provided: the 8 ohm output permits direct connection to a speaker voice coil, and the 500 ohm output may be used to drive a balanced line at + 4dbm (1.23V.) level.

The Model 703 incorporates both a high pass and a low pass filter to contour the frequency response of the unit for maximum speech intelligibility. As supplied, the frequency response is -2db at 350Hz and 7.5KHz. Jumper wires are provided on the circuit board which may be cut to exclude these filters.

UNPACKING

The unit is to be removed carefully from the carton and inspected for any possible damage in transit. If there is any evidence of any damage which might have occured in shipment, immediately notify your supplier, or the transportation company which delivered it. Claims for damage sustained in transit must be made upon the carrier. Save all packing material for inspection by the claim agent who will furnish you with the proper forms and will also give you the necessary instructions for filing a claim.

INSTALLATION

The unit may be secured to a flat mounting surface by the use of #6 screws through the holes provided in the mounting flanges. Do not store or operate the unit in areas where the ambient temperature exceeds 140°F.

The power cord should be connected to a 120 volt 60 Hz power source. Because of the low 5 watt power consumption, the unit may be left running without heat built-up. However if it is desirable to turn the unit on and off with its associated equipment, the power cord should be plugged into the convenience outlet of the amplifier or receiver with which it is used.

WARRANTY

THIS UNIT HAS BEEN VERY CAREFULLY INSPECTED AND IS WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND SERVICE FOR A PERIOD OF ONE YEAR FROM DATE OF SALE TO THE ORIGINAL PURCHASER. THIS WARRANTY DOES NOT EXTEND TO ANY UNIT WHICH BEEN SUBJECT TO ABUSE, MISUSE, NEGLECT, ACCIDENT, IMPROPER INSTALLATION, OR ALTERATIONS. THE OBLIGATION OF ***University Sound*** UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OF ANY DEFECT IN MATERIAL OR WORKMANSHIP AND/OR THE REPLACEMENT OF ANY DEFECTIVE PART, PROVIDED THE UNIT IS RETURNED TO ***University Sound*** TRANSPORTATION PREPAID.

IT IS RECOMMENDED THAT ANY UNIT ON WHICH SERVICE IS REQUIRED BE PROCESSED THROUGH YOU DISTRIBUTOR OR INSTALLATION COMPANY WHEREVER POSSIBLE.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON OUR PART. WE NEITHER ASSUME NOR AUTHORIZE ANY OTHER PERSON TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE PRODUCTS MANUFACTURED BY ***University Sound.***

MANUFACTURED IN THE USA BY

University Sound® Inc.

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Phone (818) 362-9516

MODEL 703 OPERATING INSTRUCTIONS

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

CONNECTION

The audio input to the amplifier is made one of two methods: when a high impedance microphone is used, the input connection is made by means of a ¼ inch phone jack or when a low impedance balanced microphone is used, the input connection is made by means of three screw terminals. The microphone cable should be connected to these screw terminals as shown in Figure 1.

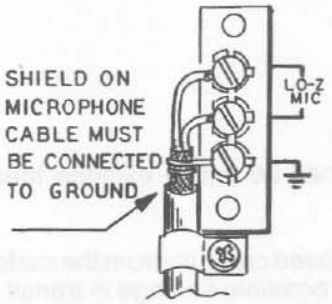

FIGURE I.
LOW IMPEDANCE MICROPHONE INPUT WIRING.

Speaker connections should be made to the two screw terminals marked 8Ω. This output will properly match speaker impedances of 4, 8 or 16 ohms. DO NOT CONNECT 8 ohm headphones directly across these terminals as sound pressure levels will be obtained which could cause hearing damage. Headphone jacks should be wired as shown in Figure 2. One Model 703 amplifier can drive up to 20 pair of headphones when connected in this arrangement.

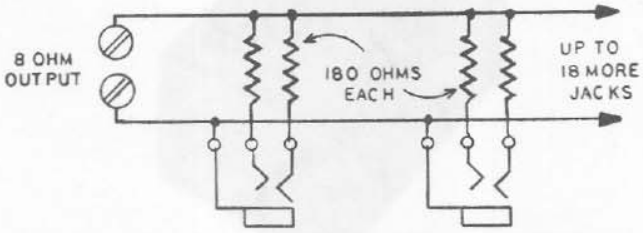

FIGURE 2 : HEADPHONE JACKS REQUIRE DROPING RESISTORS.

The 500Ω output is provided to drive 500/600 ohm audio line such as a leased telephone line or it may be used to provide line level input for other audio equipment such as amplifiers or recorders. It is not intended to drive a speaker, since this output represents only a few milliwatts. The 500 ohm output and the 8 ohm output may be loaded simultaneously with no mismatch of the amplifier output.

When the 500 ohm input is used to drive an audio line, the Raymer Model TM-2 should be used at the receiving end to properly match the signal to the audio amplifier input.