

UNIVERSAL AUDIO

MODEL 1108 SOLID-STATE AMPLIFIER

INSTALLATION NOTES and OPERATING SUGGESTIONS

In order to insure the most satisfactory operation of the 1108 amplifier and make maximum use of its unique features and excellent performance, it is important that attention be given to the following details:

- 1- The amplifier should be powered from a 24 vdc supply with low ripple (one mv. RMS maximum) and no regulator noise. In some instances the low-frequency noise produced by poor power supply regulator circuitry will exceed the residual noise of the amplifier.
- 2- It is extremely important that good grounding practice be followed in connecting the amplifier in a system, to prevent ground "loops". Separate connections for chassis ground and B- are provided at the receptacle. Note that opposing terminals on the receptacle are provided in each case for B+, B- and ground so that these circuits may be bussed through a bank of amplifier receptacles. It is suggested, however, that flexible wire be used, leaving a small arc between amplifiers to permit some receptacle movement for self-alignment of the amplifier plugs.
- 3- In cases where the LDR "Inputrim" device is not used, it is imperative that the LDR D, C. control terminals be strapped together and connected to B- (strap F and 6 to D and 4). Leave the jumper wire in the "Inputrim" socket (Pin # 1)
- 4- In cases where the "Inputrim is used:
 - A- Remove the jumper wire from " Inputrim" socket (Pin # 1) and insert the accessory "Inputrim" device into the 4-pin socket, aligning the tab with the index dot on the PC board between 1 and 4.
 - B- Refer to drawing # A-10733 for recommended external d. c. control circuitry for proper operation of the "Inputrim" device. Calibrate the "Inputrim" circuitry as follows:
 - a- Feed a 1 kHz signal into the amplifier, at a sufficient level to produce some convenient amplifier output reference level (for instance, "0" db on VU meter).
 - b- Turn the Inputrim control (300 ohm pot) to minimum attenuation position. (This may be clockwise or counter-clockwise, depending on how the control is wired. Some operators may prefer the control to provide full amplifier gain in the maximum clockwise position, and some may prefer maximum gain attenuation in this position).

- c- Adjust CALIBRATE control (1K pot which may be screwdriver slotted and mounted inconspicuously) to the threshold point at which the slightest amount of signal attenuation is observed on the output VU meter, (fraction of a db).
- d- Next rotate the INPUTRIM control (300 ohm pot) to its 12 o'clock (1/2 rotation) position and note amount of attenuation indicated by VU meter. This should be between -7 and -10 db from the reference level.
- e- Rotate the INPUTRIM control (300 ohm pot) to its maximum attenuation position (opposite full rotation from (b) above). The output meter should now indicate an attenuation of -18 to -24 db from the reference level.
- f- Now rotate the INPUTRIM control fully in the opposite direction. Note that the output level will return slowly to within 0.25 db of the original reference output level.
- g- By slightly readjusting the 1 K CALIBRATE pot and checking the 12 o'clock and full attenuation positions of the 300 ohm INPUTRIM controls you will be able to achieve the following "tracking" of the INPUTRIM control:

Minimum attenuation:	0.25 to 0 db
12 o'clock position:	-7 to -10 db
Maximum attenuation:	-18 to -24 db

Since the INPUTRIM device is used to prevent overloading the amplifier from high level microphones (such as capacitor types) it eliminates the need for any external microphone attenuator pads, and further permits convenient fader control settings over a wide range of levels from any microphones in use today.

5-The 1108 amplifier may be used with or without the 508 H or 508 V equalizer, with no change in performance in the "flat" position.

A- When used as a booster, line amplifier or non-equalized preamplifier, an 8200 -ohm 1/4 or 1/2 watt 5 % resistor (supplied with the unit) should be connected between terminals 5 and E on the tray receptacle.

B- For use with the 508 Envelopmental Equalizer, a two-conductor foil-shielded pair with drain wire (Belden 8761 or equivalent) should be used to connect the equalizer to the amplifier tray receptacle, and may be up to 25 feet in length.

5- B- Cont'd.

High-capacity miniature audio cable will degrade the performance of the amplifier slightly and should not be used.

- a- One wire of the pair connects between terminal E of the amplifier receptacle and terminal 3 of the 508 equalizer.
- b- The other wire connects between terminal 5 of the amplifier receptacle and terminal 1 of the equalizer.
- c- The drain wire (shield) connects between terminal 4 (B-) of the amplifier and terminal 2 of the equalizer.

The case of the 508 equalizer should be well grounded (chassis ground), since it is not internally connected to B-. (This prevents a possible ground loop and hum).

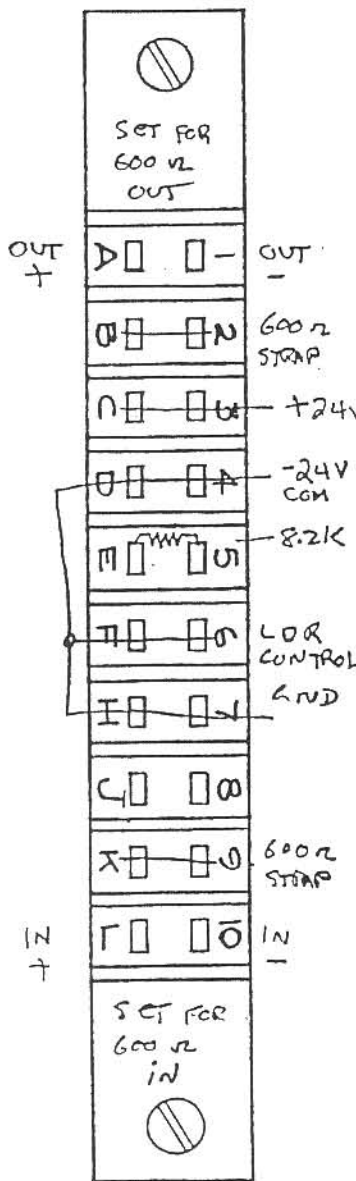
6- The gain of the 1108 may be changed from 45 db (unterminated input) to 50 db by removing the internal strap from terminal L and reconnecting it to terminal H. (These terminals are located on the opposite side of the printed circuit board from the transistors, in the lower front corner near the plug end.) The amplifier will function properly with or without the 508 equalizer in either gain configuration. The equivalent input signal noise level remains: -124 dbm or better.

7- As stated in the specifications (Bulletin SE-08) the nominal input impedance of the 1108 is at least five times its source impedance for a given strapping from 30 Hz to 15 kHz. This is a great advantage in microphone preamplifier applications. However, in instances where the 1108 is used as a booster or program/line amplifier, or in cases where the input source fed to the amplifier requires a solid-matching termination (i.e, faders, pads, filters, equalizers, etc.) it is then necessary to externally terminate the source.

Recommended values for input termination resistors are:

From 600 ohm source:	680 ohms	5%
From 150 ohm source:	160 ohms	5%
From 37 1/2 ohm source:	47 ohms	5%

8- The internal output impedance of the 1108 is approximately 10% of the rated load, even to 20 kHz. This has the great advantage of minimizing the loading effect of high capacity audio cable, and makes the 1108 relatively insensitive to reactive loads.



TERMINAL
VIEW

INPUT 600 ohms : Connect to L (+) and 10 (com.)
Strap K to 9 (ct)

INPUT 150 ohms : Connect to K (+) and 9 (com.)
Strap K to L; strap 9 to 10

INPUT 37.5 ohms : Connect to J (+) and 8 (com.)
Strap J to K ; strap 8 to 9

OUTPUT 600 ohms : Connect to A (+) and 1 (com.)
Strap 2 to B

OUTPUT 150 ohms : Connect to A (+) and 1 (com.)
Strap A to B; strap 1 to 2

508 EQUALIZER : Connect EQ term # 1 to 5
Connect EQ term # 2 to 4 (B-)
Connect EQ term # 3 to E

Note When 508 Equalizer is not used,
connect 8200 ohm resistor
between 5 and E

24 vdc. B+ : Connect to 3 and C

24 vdc. B- (Gnd) : Connect to 4 and D

CHASSIS GROUND : Connect to 7 and H

INPUTRIM CONTROL : Connect control voltage minus
to 6. Connect control pot arm
to F.

Note IF INPUTRIM IS NOT USED, strap
both 6 and F to 4 (B-)

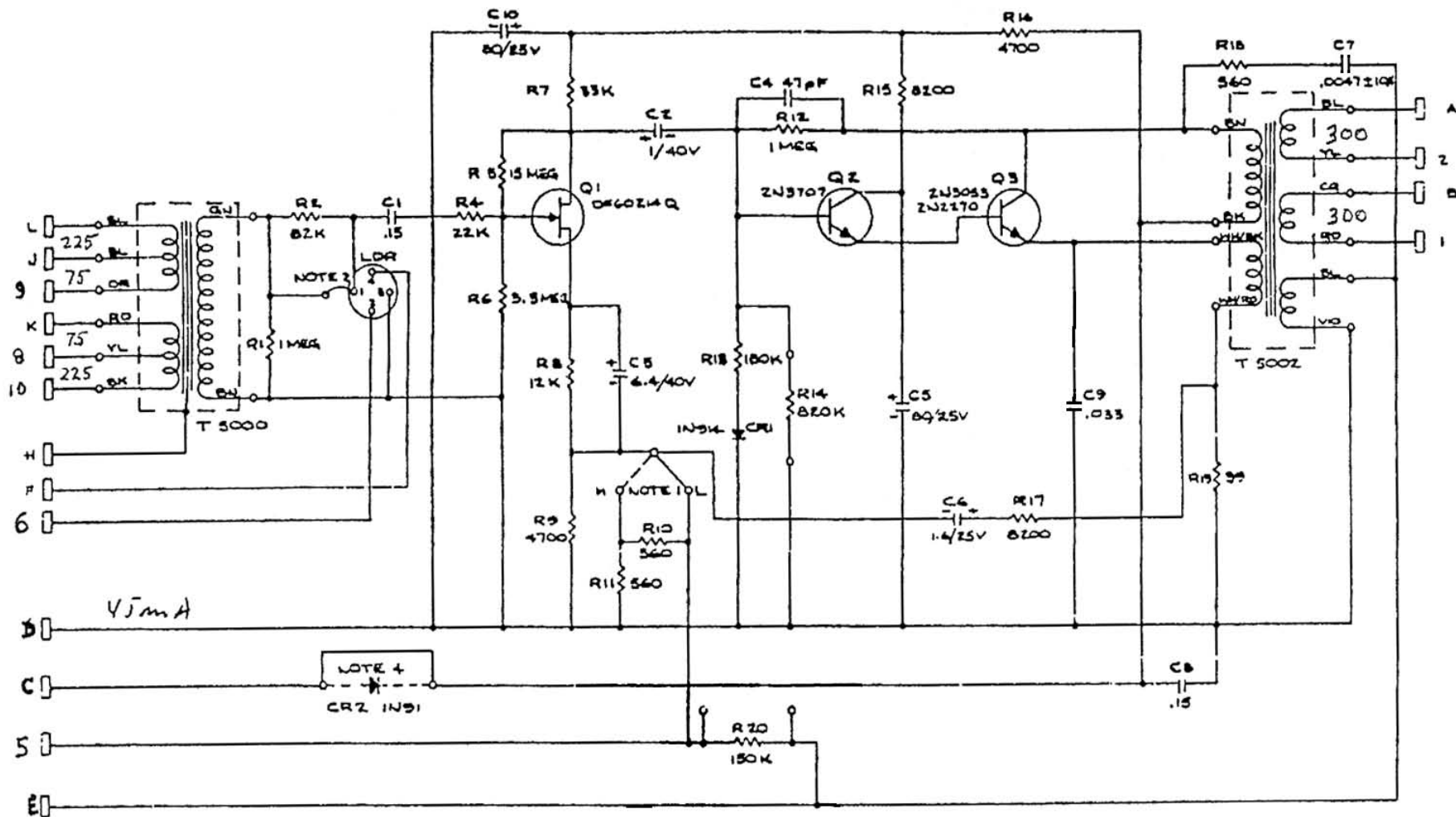
Total current drain per amplifier
is 41 ma without INPUTRIM.

UNIVERSAL AUDIO DIV.
STUDIO ELECTRONICS CORP.
11922 VALERIO ST.
NO. HOLLYWOOD, CALIF. 91605

1108 TP TERMINAL
CONNECTIONS & STRAPPING

DRAWN	RRA/12-B-66
DESIGN	
APPVD	

A-10735



NOTES:

- HIGH-LOW GAIN STRAPPING, SEE INSTALLATION NOTES (6-)
- FOR DETAIL ON LOR SEE DWG A-10733
- ALL RESISTOR VALUES IN OHMS, 1/2W, 5%
- ALL CAPACITORS IN μ F UNLESS OTHERWISE SPECIFIED.
- CR2 NOT FURNISHED, MAY BE ADDED FOR POLARITY PROTECTION
- FOR TERMINAL CONNECTIONS AND STRAPPING SEE DWG A-10733

UNIVERSAL AUDIO DIV. STUDIO ELECTRONICS CORP. 11922 VALERIO ST. NO. HOLLYWOOD, CALIF. 91605		MICROPHONE PREAMPLIFIER MODEL 1100	
DRAWN	REVISION	C-10635	
DESIGN	DATE		
APPROV			