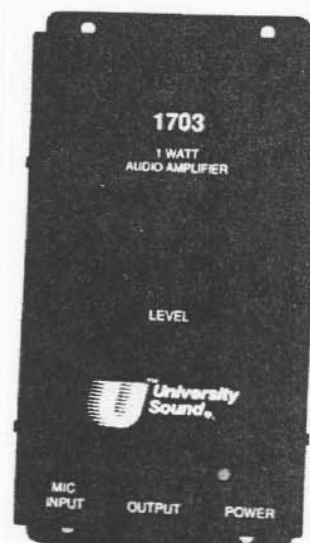
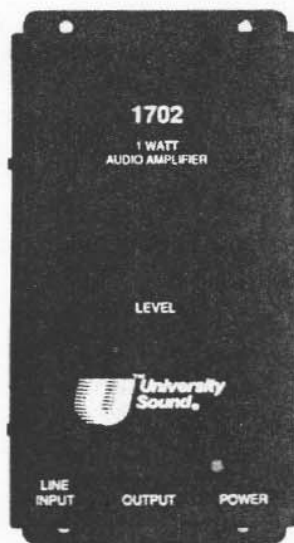
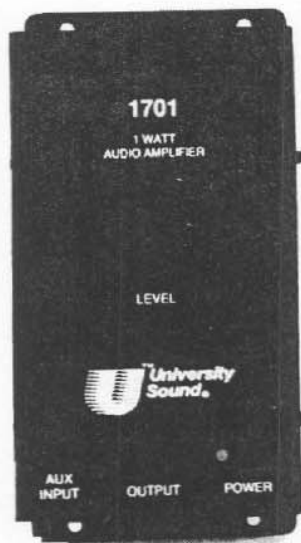




1700 Series

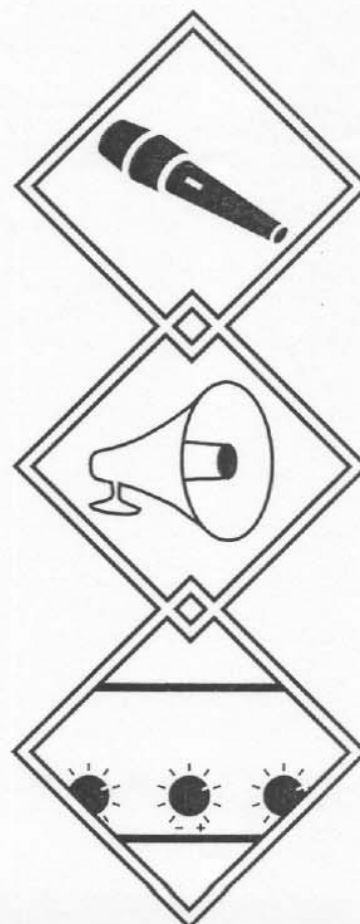
1701, 1702, 1703

1 Watt Utility Amplifiers

Owner's Manual



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DESCRIPTION:

The University Sound 1700 Series are one watt solid state audio amplifiers. The Series consists of three different models: the 1701, 1702, and 1703. The only significant difference between the three models is their input configuration. The Model 1701 has a high impedance (47K Ω) unbalanced input, the 1702 has a transformer balanced input with an impedance of 10K Ω , while the 1703 has inputs for both an unbalanced Hi-Z microphone or a balanced Lo-Z microphone. The Models 1701 and 1702 both use screw terminals and RCA phono jacks for input connections, while the 1703 has screw terminals for the Lo-Z input and a standard 1/4" phone jack for the Hi-Z input. A single control is provided to set the output level of the unit.

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 +4 dBm (1.23V) level.

The Model 1703 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 -2 dB at 350 Hz and 7.5 kHz. Jumpers are provided on the circuit board which may be cut to exclude these filters.

All of the units are enclosed in a sturdy steel box measuring 6 1/8" x 3" x 1 1/4" that can be mounted on most surfaces using #6 screws through the holes in the mounting flanges. The units are powered by a 120 VAC to 24 VDC power adaptor, included with the unit.

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 occurred 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.

INPUT CONNECTIONS

For all of the three models, input connections are made to a screw clamp barrier strip located inside the unit. To

make these connections, the top cover of the enclosure must be removed, which can be accomplished by removing four phillips head screws that attach the top cover to the bottom chassis.

Model 1701: This input is a high impedance unbalanced input with a maximum sensitivity of 50 mV, suitable for matching the output of a tuner, tape deck, pre-amplifier, mixer, or other equipment

with a line level output. Shielded audio cable should be used for this connection to prevent RFI/EMI noise pickup. When using the screw terminal input connection, the cable shield should be connected to the terminal marked "LOW" and the center conductor connected to the terminal marked "HIGH." When the RCA phono jack is used, these connections are automatically made in the correct manner. **Do not connect this input directly to a phone circuit.** Telephone circuits are balanced and require

transformer isolation. For this type of application, use the Model TM-2/TM-2P telephone adaptor to isolate the input of the unit, or use the Model 1702.

Model 1702: Twisted pair wiring may be used on either the screw terminal or the RCA phono jack inputs. To prevent possible oscillation, do not bundle the input line

with the output line. This transformer isolated input has an impedance of 10K Ω balanced, with a maximum sensitivity of 50 mV. Up to twenty Model 1702 amplifiers can be connected across a 500 Ohm line for music or paging distribution.

Model 1703: The 1703 has two microphone-level inputs; one is a low-impedance balanced input and the other is a high-impedance unbalanced input. The Lo-Z input connection is made on internal screw terminals, while the Hi-

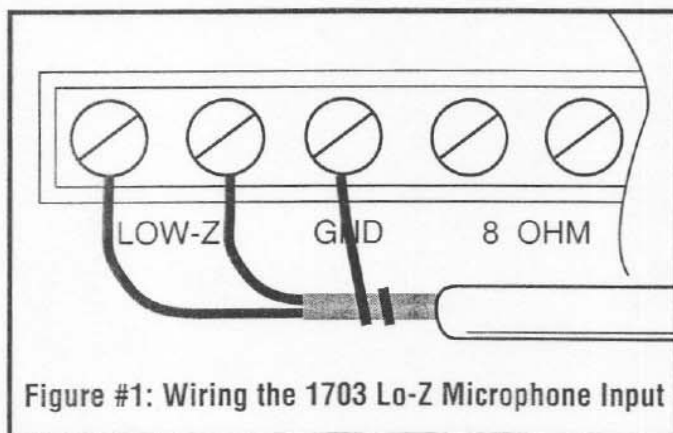


Figure #1: Wiring the 1703 Lo-Z Microphone Input

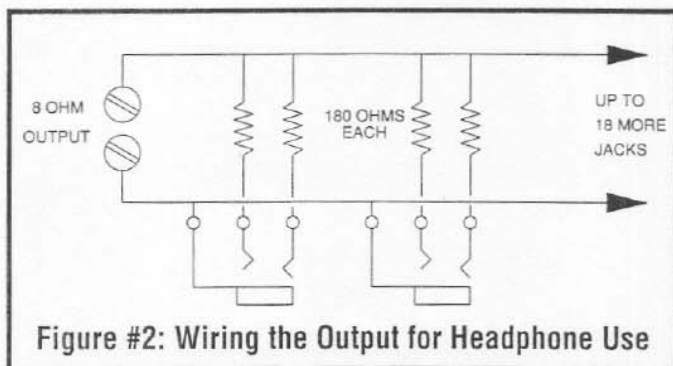


Figure #2: Wiring the Output for Headphone Use

Z input uses an externally accessible 1/4 - inch phone jack. When connecting to the Lo-Z input, shielded microphone cable should be used, and should be connected as illustrated in Figure 1. This will insure a minimum of noise pickup in the cable. The Model 1703 also has high-pass and low-pass filters that roll-off the extreme high and low ends of the signal, mainly to maximize speech intelligibility and lessen the load on other system components. If flat response is desired on either the high or low end, there are two jumpers located on the circuit board that can be cut to achieve this. The two jumpers are marked as "High-cut" and "Low-cut" on the circuit board; the High-cut jumper affects the low-pass filter, and the Low-cut jumper affects the high-pass filter.

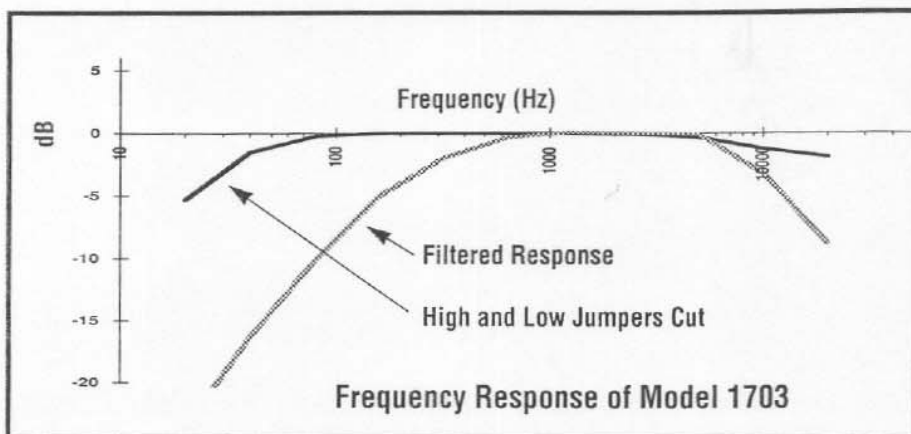
OUTPUT CONNECTIONS

These amplifiers are provided with two outputs: an 8 Ohm 1 Watt output and a 500 Ohm +4 dBm transformer isolated output. Both outputs may be loaded simultaneously with no mismatch of the amplifier output.

The 8 Ohm output may be used to drive speakers or multiple headphones. This output can match a speaker load of 4Ω, 8Ω, or 16Ω. **Do not connect 8Ω headphones directly across these terminals as the sound pressure levels obtained can cause damage to the headphones**

as well as to the user's hearing. Headphone jacks should be wired with dropping resistors as shown in Figure 2. Up to twenty pair of headphones may be used with this arrangement.

The 500 Ohm output may be used to drive a 500Ω/600Ω line at a level of up to +4 dBm (1.23V). This transformer isolated output is ideal for driving a balanced phone line to a remote amplifier. Music-on-Hold telephone arrange-

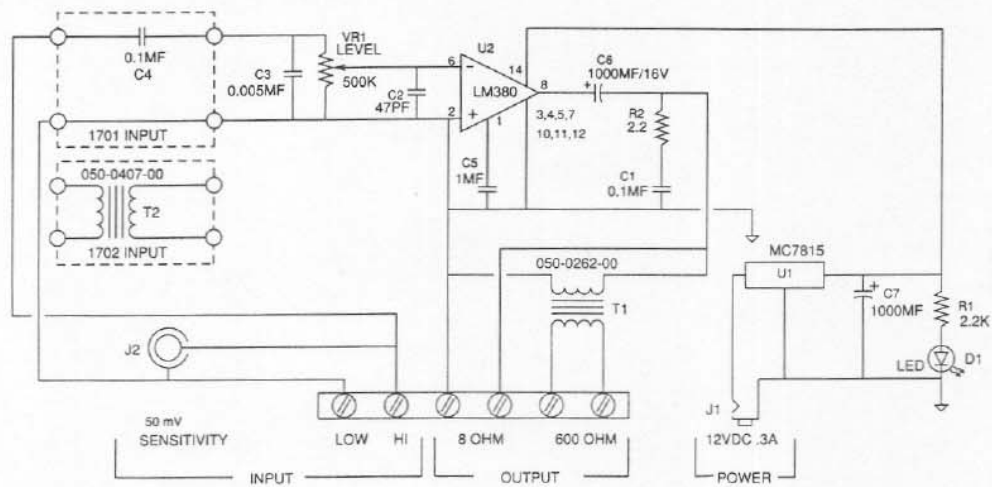


ments usually require a 500Ω line as a driving source, but some older 1A2-type key systems use an 8 Ohm 1 Watt source. If the type of MOH input is unknown, try the 500Ω output first; if this is not loud enough, then use the 8Ω power output.

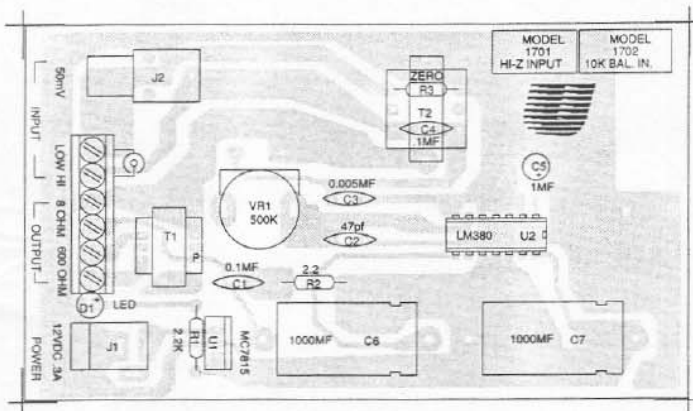
	1701	1702	1703
Output Power:	1 Watt @ 8Ω 3 mW @ 500Ω	1 Watt @ 8Ω 3 mW @ 500Ω	1 Watt @ 8Ω 3 mW @ 500Ω
Inputs:			
Type	Aux	Balanced Line	Microphone (Hi-Z & Bal Lo-Z)
Impedance	47KΩ	10KΩ	2kΩ (Lo-Z) & 25KΩ (Hi-Z)
Sensitivity	50mV	50mV	0.5 mV (Lo-Z) & 10 mV (Hi-Z)
Frequency Response:	30 Hz - 20 kHz, ±2 dB	30 Hz - 20 kHz, ±2 dB	30 Hz - 20 kHz, ±2 dB*
Signal-to-Noise Ratio:	69 dB	69 dB	69 dB
Dimensions:			
Height	6 1/8" (156 mm)	6 1/8" (156 mm)	6 1/8" (156 mm)
Width	3" (76 mm)	3" (76 mm)	3" (76 mm)
Depth	1 1/4" (32 mm)	1 1/4" (32 mm)	1 1/4" (32 mm)
Shipping Weight	2 lbs. (0.9 kg)	2 lbs. (0.9 kg)	2 lbs. (0.9 kg)
Power Requirements:	12 VDC @ 300 mA	12 VDC @ 300 mA	12 VDC @ 300 mA

* Response with both filter jumpers cut.

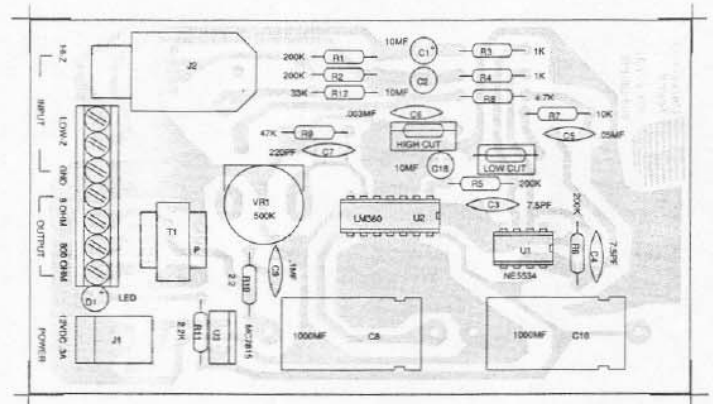
Warranty: These units have been very carefully inspected and are warranted to be free from defects in material and workmanship under normal use and service for a period of one year from sale to original purchaser. This warranty does not extend to any unit that has been subject to abuse, misuse, neglect, 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 transportation paid within one year. It is recommended that any unit on which service is required be processed through your local 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 for us any other liability in connection with the products manufactured by University Sound.



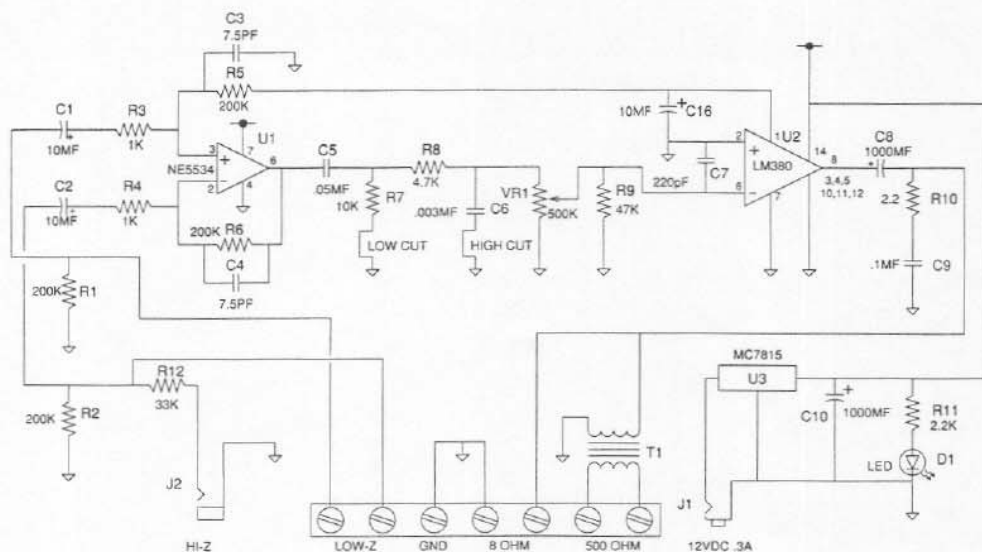
Model 1701 and 1702 Schematic



1701 and 1702 PCB Layout



1703 PCB Layout



Model 1703 Schematic