

the Commander series

MODEL DPR-7

COMBINATION

MIXER / PREAMPLIFIER



harman kardon

COMMERCIAL SOUND DIVISION
Plainview, L. I., New York

TECHNICAL SPECIFICATIONS

Inputs: 4 Mic., 2 Aux, 1 Mag. phono
Frequency Response: 20-15,000 CPS \pm zero db, -0.5 db
Rated Output: Zero DBM, at less than 0.2% T.H. Distortion
7 volts, at 1% T.H. Distortion

Gain:

@ Mic inputs: 60 db

@ Aux inputs: 28 db

Sensitivity:

@ Mic inputs: 4 millivolt

@ Aux inputs: 160 millivolts

Hum & Noise

(@ 7V Output)

Fundamental: -85 db

Output: Low impedance cathode-follower, min. recommended load imp: 50,000 ohms

Controls: Gain controls for Channels 1, 2, 3, 4; Mic-Mag switch for Channel 1, Mic-Aux switches for Channels 2 and 3, Mic-Master switch for Channel 4, power on-off, pilot light, switched aux AC power receptacle

Tubes: 2 12AX7, 1 12AU7, plus silicon rectifier power supply for filaments and high voltage

Dimensions: $5\frac{1}{8}$ " H, $11\frac{1}{2}$ " W, $5\frac{1}{2}$ " D

Shipping Wt: 11 lbs.

Power Source: 105-125V, 50 or 60 cycles A.C.

This self-powered electronic mixer preamplifier is a highly versatile device that may be used as a completely self-contained, multi-channel preamplifier to drive a basic power amplifier, or as a mixer to add additional inputs to an existing sound installation, or as a device to provide remote facilities to a distant amplifying system. All this is made possible by the incorporation of necessary facilities and unique switching arrangements. Performance is of professional calibre, making it suitable for use with other equipment regardless of quality requirements, and will find application in the sound, recording, audio-visual and high fidelity fields.

UNPACKING

After unpacking, inspect carefully for signs of transit damage. This product was subjected to numerous rigid quality control inspections and therefore should be in perfect operating condition. If damage is visible, notify your dealer at once. If it was shipped to you, notify the transportation company. Please note that only you can recover from the carrier for damages incurred during shipment.

CONNECTION TO POWER LINE

Plug the mixer into a 50 or 60 cycle A.C. power source of 105 to 125 volts. If installation is made in an area where D.C. is available, care should be taken to avoid accidental connection to direct current power, as this will burn up the power transformer. In most commercial, industrial and other large buildings a three-wired power line is often used which supplies current at both 115 volts and 230 volts. Make certain that the outlet you use, to plug in the mixer, provides the *correct* voltage, or else damage to the equipment will result. It is good practice, under most circumstances, to leave about three inches of space surrounding the mixer, especially at the rear.

INSTALLATION AND OPERATION

As a mixer, a total of four independently operated channels may be used. Channel 4 can be converted to a master volume control, so that total output from the preamplifier may be adjusted without disturbing the settings and "mix" of the other three channels. A special output receptacle is provided to feed a tape recorder. Multiple inputs are provided, switchable from the front panel, to permit a choice of high and low level inputs without having to rearrange chassis connection. The various channels may be utilized as follows:

Channel 1

This channel offers a *choice* of high impedance microphone or phono player with magnetic cartridge. The selector switch (marked MIC-MAG) is located directly under the Channel 1 gain control. The input for a magnetic cartridge is located at the rear of the chassis and is marked MAG. The microphone input for Channel 1 is marked CHAN 1 MIC.

Channel 2

Either a high impedance microphone, or any auxiliary equipment requiring a high impedance input (such as tuner, tape recorder or phono player with crystal or ceramic cartridge) may be used in Channel 2 and selected with the MIC-AUX A switch located below the Channel 2 gain control. The microphone input is at the rear of the unit and is marked CHAN 2 MIC; the AUX A input is for this channel.

Channel 3

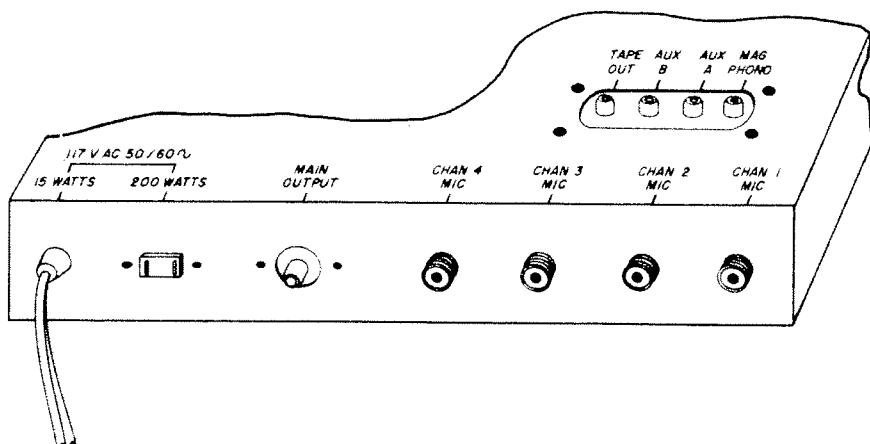
This channel operates the same as Channel 2, the microphone input to this channel being marked CHAN 3 MIC, and the AUX B input is for auxiliary equipment. Its selector switch is located below the Channel 3 gain control and is marked MIC-AUX B.

Channel 4

A high impedance microphone may be used with this channel, in which case the input marked CHAN 4 MIC should be used and the MIC-MASTER switch on the front panel switched to the MIC position. When this channel is not needed for other purposes, it may be instantly converted to master control total output from the mixer, enabling the control settings of the other three channels to remain undisturbed while

adjustment is made to raise or lower total output. This is accomplished by switching to the MASTER position on the MIC-MASTER switch.

When used as a master volume control, the Channel 4 gain control should be initially set at mid-position (about 4 or 5) and the desired "mix" achieved with the other channel controls. Then the MASTER control is used for further adjustment of total output. Of course, the individual channels can still be controlled with their respective gain controls. If greater output driving voltage is needed, set the MASTER control to about 3 and rebalance the other controls for the desired mix. Then use the MASTER control as needed.



More About the Inputs

A total of seven inputs are provided: four for microphones (requiring high gain), an input for magnetic phono (also requiring high gain) and two for auxiliary equipment or telephone line. Since all may be switched in and out of the input circuits from the front panel, all program source equipment may be connected and used as needed, making it unnecessary to rearrange input connections, once installed.

More About Microphones

Any high impedance microphone may be connected to the amplifier, using a standard Amphenol #75-MC1F (or equivalent) plug. Cable is generally furnished with the microphone — usually single conductor and shielded — and is restricted in the case of ceramic and crystal microphones to not more than about seven feet by the manufacturer, to prevent deterioration of microphone performance. *Never* extend the length of connecting cable when using such type microphones. High impedance dynamic and reluctance microphones should also be used in strict accordance with manufacturers' recommendations. If a relatively long run is necessary between the microphone and amplifier, use a "low impedance" microphone (usually between 30 and 250 ohms) and match the microphone to the amplifier MIC input with a "cable" type microphone matching transformer, such as the EV model 502A or the

Shure A86A. **IMPORTANT NOTE:** When a channel is not in use, it is good practice to set the gain control to minimum (1) to keep hum and noise output low.

More About the AUX Inputs

AUX A and AUX B inputs are for use with any auxiliary equipment intended for connection to a high level, high impedance, pre-amplifier input. Virtually all tuners, tape recorders having a preamplifier, or phono player using a crystal or ceramic cartridge will perform properly with this mixer. A telephone line, such as used for wired music, may be used by employing a "cable" type 500 ohm to Hi Z matching transformer.

Tape Recorder Output

A tape recorder may be connected to the receptacle marked TAPE OUT. If the connecting cable is single-conductor, shielded, it should be the low capacitance type (30 mmfd. per ft. max.) and should not exceed 50 ft. in length. Two-conductor "twisted-pair" may be run up to 100 feet. This output is designed to feed a high level, high impedance input, such as the AUX, tuner or phono inputs of a recorder.

Main Output

This receptacle is used to connect the mixer to the amplifier supplying audio power to the sound system. Low impedance cathode-follower output permits long runs to an amplifier located up to a hundred feet away. Sufficient output voltage is available from this mixer to operate several amplifiers simultaneously. For best results, the input to the power amplifier should be high impedance. If several power amplifiers are used, the total load impedance reflected to the mixer output should be a minimum of 50,000 ohms. Ordinary "twisted-pair" 2-conductor wire can be used to make connection between the mixer and amplifier(s).

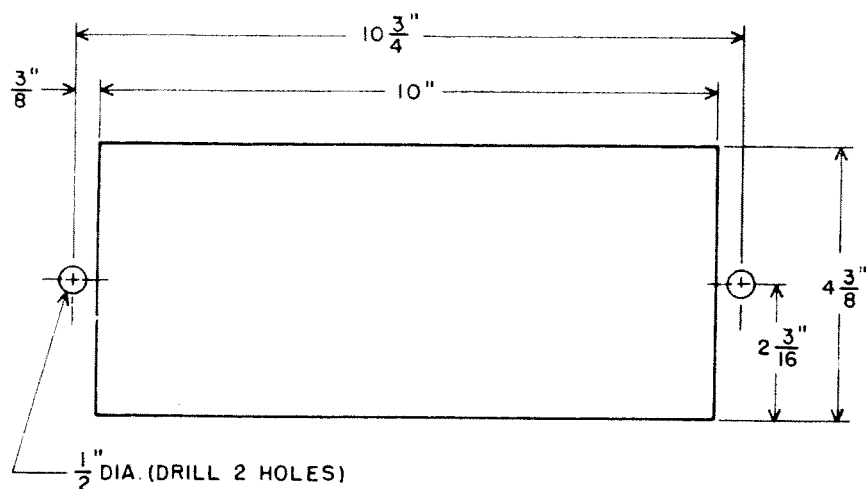
Auxiliary A.C. Outlet

An A.C. receptacle is provided, at the rear of the amplifier, for auxiliary equipment, such as a phono player, tuner, or tape recorder. The power to this outlet is controlled by the amplifier off-on power switch, enabling the entire system to be tuned on and off with the amplifier power switch. Do *not* connect equipment to the auxiliary outlet that requires more than a total of 200 watts of A.C. power.

SPECIAL NOTES ABOUT HUM

Special attention has been given, in the design of this mixer, to keep hum and noise levels down to inaudible levels. If hum or noise is encountered, its origin may be in equipment or cables connected to the amplifier. Try reversing the AC plug of various other equipment, *one at a time*. Inspect connecting cables to make certain of good electrical grounding; look for breaks in the wire and cable shields and for loose-fitting plugs. It is good practice to keep input cables away from output and power cables, and *all* wiring away from tubes and transformers. If the problem persists and is severe, see your distributor for further guidance.

PANEL MOUNTING THIS MIXER

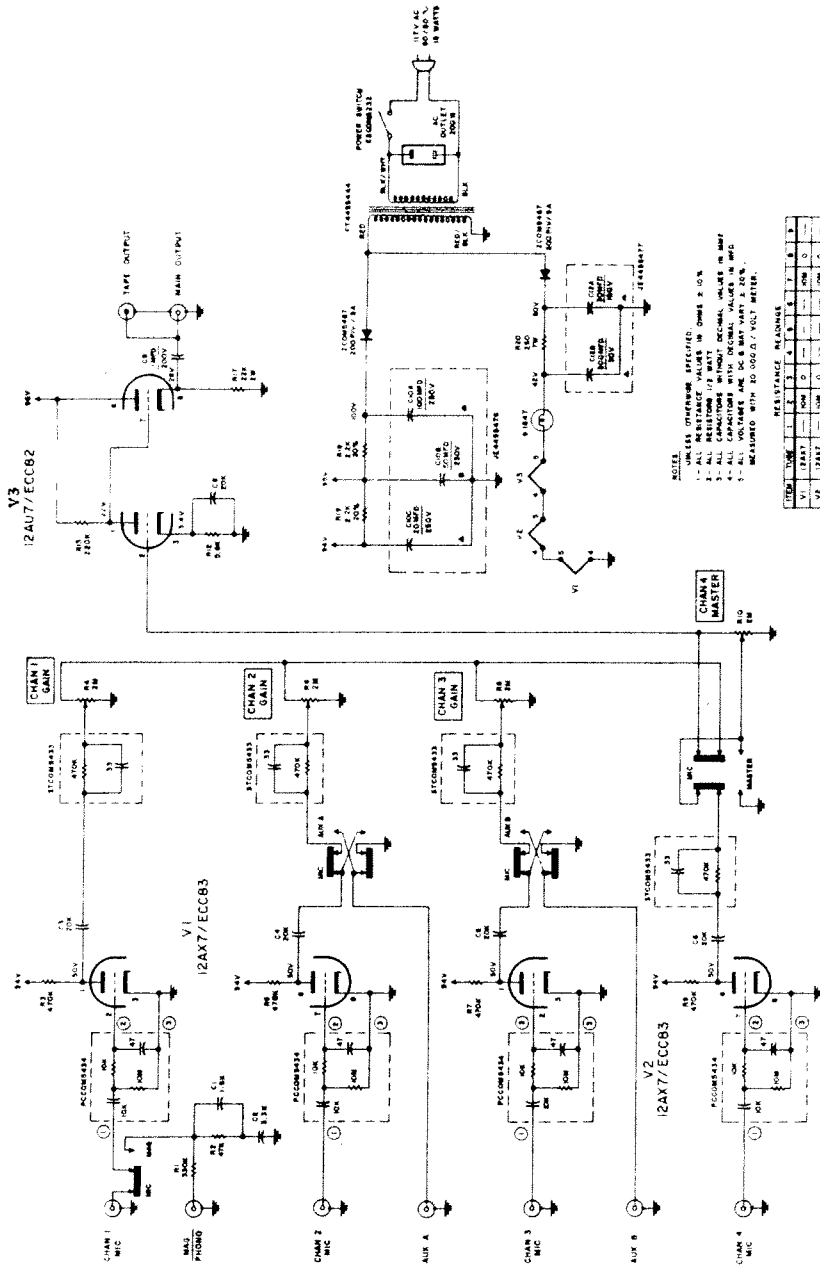


TO INSTALL UNIT INTO A PANEL:

1. CUT OUT FRONT PANEL ACCORDING TO DIMENSIONS IN ABOVE SKETCH.
2. REMOVE CAGE AND FOUR PLASTIC FEET FROM UNIT. (CAGE AND FEET ARE NO LONGER REQUIRED FOR PANEL INSTALLATION).
3. REMOVE (1) HEX NUT AND (1) LARGE WASHER FROM EACH ESCUTCHEON MOUNTING SCREW. INSTALL UNIT IN PLACE AND SECURE UNIT WITH HEX NUTS AND WASHERS JUST REMOVED.

PARTS REPLACEMENT LIST

Part No.	Description	List Price
FT4455444	POWER TRANSFORMER	5.00/ea
P4455431	ESCUTCHEON	8.50/ea
ESCOM5486	SLIDE SWITCH (SS50) w/4-40 TAPPED HOLE	.45/ea
ESCOM5232	SLIDE SWITCH (SS36-1) w/4-40 TAPPED HOLE	.40/ea
RVCOM5228	LEVEL CONTROL	.85/ea
JE4455477	ELECTROLYTIC CAPACITOR 30/100V 500/50V	2.50/ea
JE4455476	ELECTROLYTIC CAPACITOR 100-50-20/250V	3.00/ea
PCCOM5434	P.E.C. PLATE INPUT	.45/ea
ZCOM5488	SILICON DIODE 400 PIV-CER70A	2.10/ea
P4455438	CAGE	8.50/ea
PCOM5238	KNOB ASSY./CONSISTS OF PCOM5305 AND PCOM5306	.55/ea
ZCOM5487	SILICON DIODE	1.60/ea



NOTES:
 1- ALL RESISTANCE VALUES IN OHMS UNLESS OTHERWISE SPECIFIED
 2- ALL CAPACITORS UNLESS OTHERWISE SPECIFIED IN MICROFARADS
 3- ALL CAPACITORS WITH DECIMAL VALUES IN MIC. FARADS ARE TO BE USED IN THIS POSITION.
 4- ALL CAPACITORS WITH DECIMAL VALUES IN MIC. FARADS ARE TO BE USED IN THIS POSITION.

RESISTOR	RESISTANCE VALUES									
	1	2	3	4	5	6	7	8	9	0
V1	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K
V2	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K
V3	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K

VOLUME AND RESISTANCE VALUES
 ALL CONTROLS IN DEP POSITION

5445
 54450502A

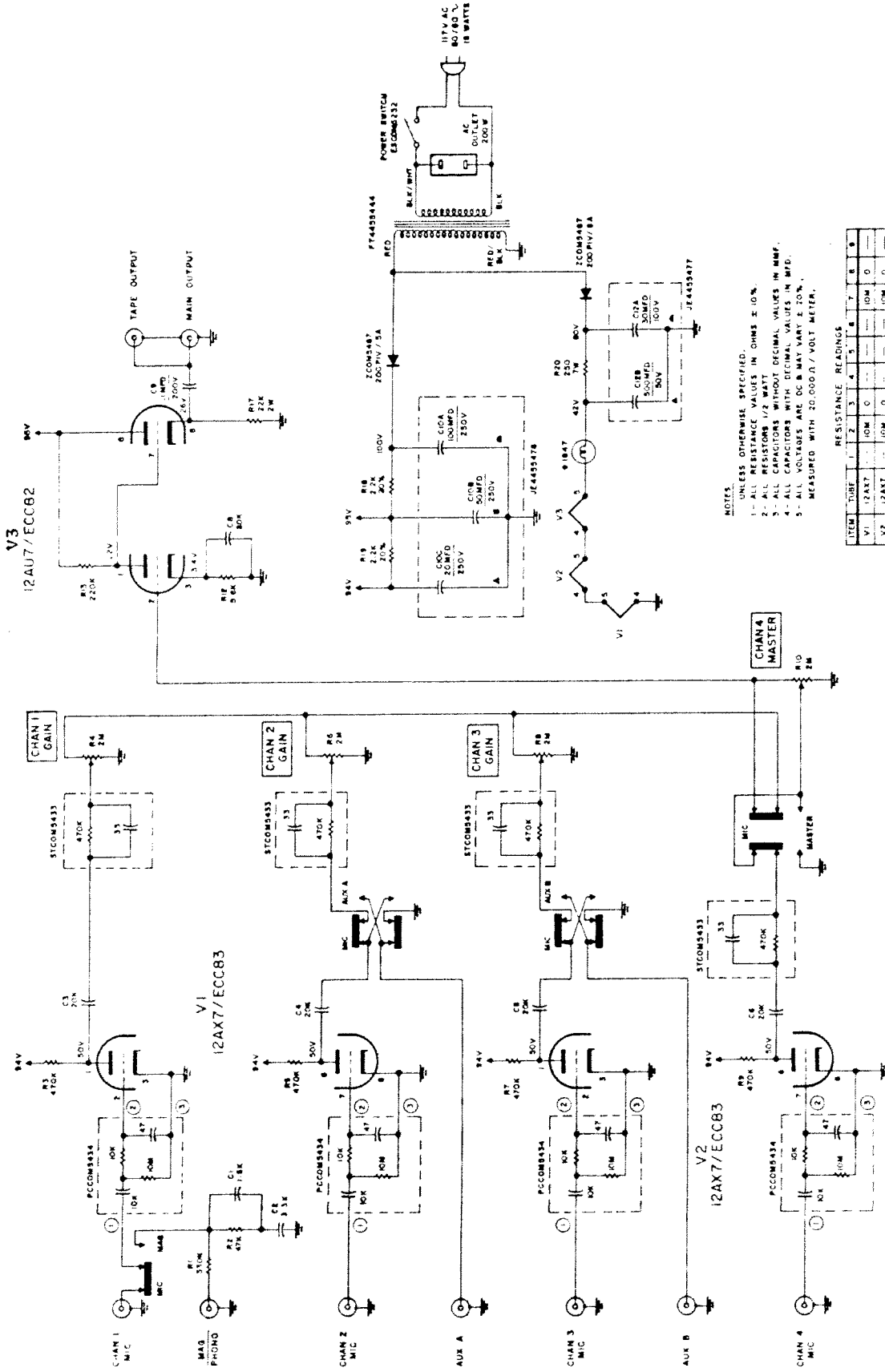
WARRANTY

We urge you to fill in your warranty card and mail it without delay to protect your rights under warranty. The warranty is not valid unless we have your card on file.

We warrant our products to be free from defects in material and workmanship under normal use and service, and in accordance with the conditions herein below set forth, for a period of 1 year from date of delivery to the original purchaser, and agree to replace or repair any part or parts, with the exception of tubes which are under a 90 days warranty, returned to us within said 1 year, with transportation prepaid and which our examination shall disclose to our satisfaction to have been thus defective. This warranty is not applicable to any instrument which shall have been repaired or altered in any way so as in our judgment to affect its stability or reliability nor which has been subject to neglect, misuse, abuse, negligence or accident nor which has had the serial number altered, effaced or removed. Neither shall this warranty apply to any instrument which has been connected otherwise than in accordance with instructions furnished by us.

This warranty is expressly in lieu of all other warranties, express or implied, and of all other obligations or liability on our part, and we neither assume nor authorize any representative or other person to assume for use any other liability in connection with the sale of this instrument.

We have established a special consumer division to answer all questions pertinent to the installation and operation of your unit. Please feel free to write us at any time and we will endeavor to offer prompt and complete advice. If your problem cannot be resolved through our combined efforts, then we may wish to refer you to one of our authorized warranty stations. The unit must be then shipped via Railway Express, Prepaid to the station designated, accompanied by a brief note describing the exact nature of the difficulty. *Under no circumstances should the set be shipped directly to the factory without prior authorization.* of the difficulty.



- NOTES:
- 1- ALL RESISTANCE VALUES IN OHMS ± 10%.
 - 2- ALL RESISTORS 1/2 WATT, DECIMAL VALUES IN MMF.
 - 3- ALL CAPACITORS WITH DECIMAL VALUES IN MMF.
 - 4- ALL VOLTAGES ARE DC & MAY VARY ± 20%.
 - 5- MEASURED WITH 20,000 Ω / VOLT METER.

RESISTANCE READINGS

ITEM	TUBE	1	2	3	4	5	6	7	8	9
V1	12AX7	10M	0	0	0	0	10M	0	0	0
V2	12AX7	10M	0	0	0	0	10M	0	0	0
V3	12AU7	500K	5.5K	0	0	0	0	0	0	22K

VOLTAGE AND RESISTANCE READINGS
 ALL SWITCHES IN MIC POSITION
 ALL CONTROLS IN CCW POSITION

5445
 54455542A