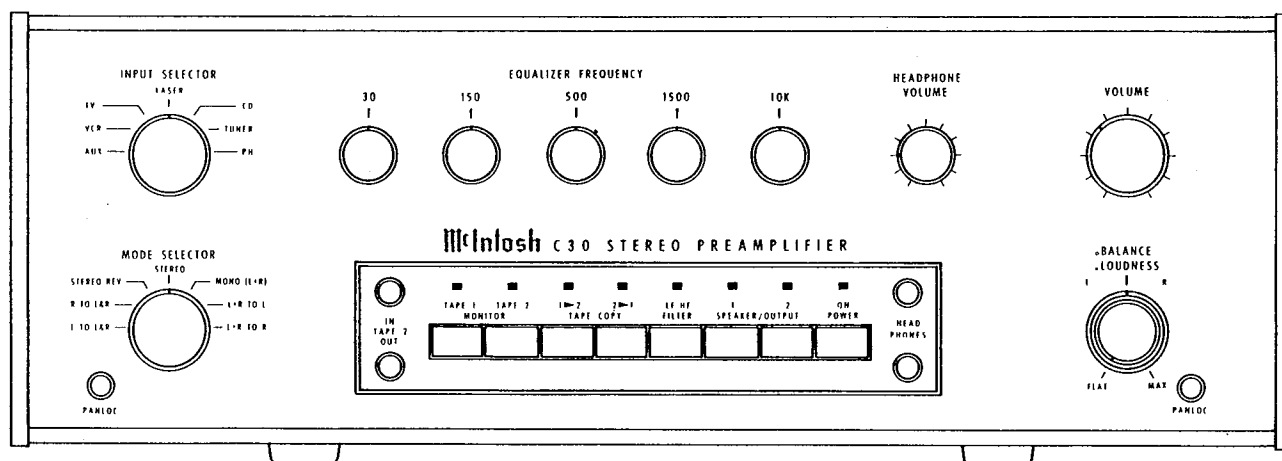


C30

STEREO PREAMPLIFIER



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Phono Amp.			
Mono Switching			
Tape Output Switching			
Tape Copy Switching			

Performance Specifications

FREQUENCY RESPONSE

+0, -0.5dB from 20Hz to 20,000Hz

MAXIMUM VOLTAGE OUTPUT

Main and Tape Output- 10V from 20 to 20,000Hz
Line / Headphone Output- 9V (1.3V with 8 ohm headphones) from 20 to 20,000Hz

TOTAL HARMONIC DISTORTION

.007% maximum from 20 to 20,000Hz at 2.5V rated output

SENSITIVITY

Phono- 2mV for 2.5V rated output (0.4mV IHF)
High Level- 200mV for 2.5V rated output (40mV IHF)

SIGNAL TO NOISE RATIO, A-WEIGHTED

Phono- 90dB below 10mV input (84dB IHF)
High Level- 100dB below rated output (86dB IHF)

MAXIMUM INPUT SIGNAL

Phono- 100mV
High Level- 10V

INPUT IMPEDANCE

Phono- 47k ohms and 65pF capacitance
High Level- 22k ohms

VOLTAGE GAIN

Phono to Tape- 40dB
Phono to Main- 62dB
Phono to Headphone / Line- 68dB
(51dB with 8 ohm headphones)
High Level to Tape- 0dB
High Level to Main- 22dB
High Level to Headphone / Line- 28dB
(11dB with 8 ohm headphones)

EQUALIZATION CONTROL

Variable 12dB boost to 12dB cut at center frequencies of 30, 150, 500, 1500, 10kHz

LF-HF FILTER

Flat or roll-off at 12dB per octave below 50Hz and above 7,000Hz

General Information

SEMICONDUCTOR COMPLEMENT

28 Bipolar Transistors
66 Field Effect Transistors
15 Integrated Circuits
91 Diodes
1 Silicon Controlled Rectifier (SCR)

AC POWER OUTLETS

1 Turntable current-sensing, green, 100 watts
6 Switched, black, and 1 unswitched, red, 1200 watts total

POWER REQUIREMENTS

120 volts, 50/60Hz, 25 watts

Mechanical Information

WEIGHT

18 pounds (8.2kg) net, 30 pounds (13.6kg) in shipping carton

Front and Top Views

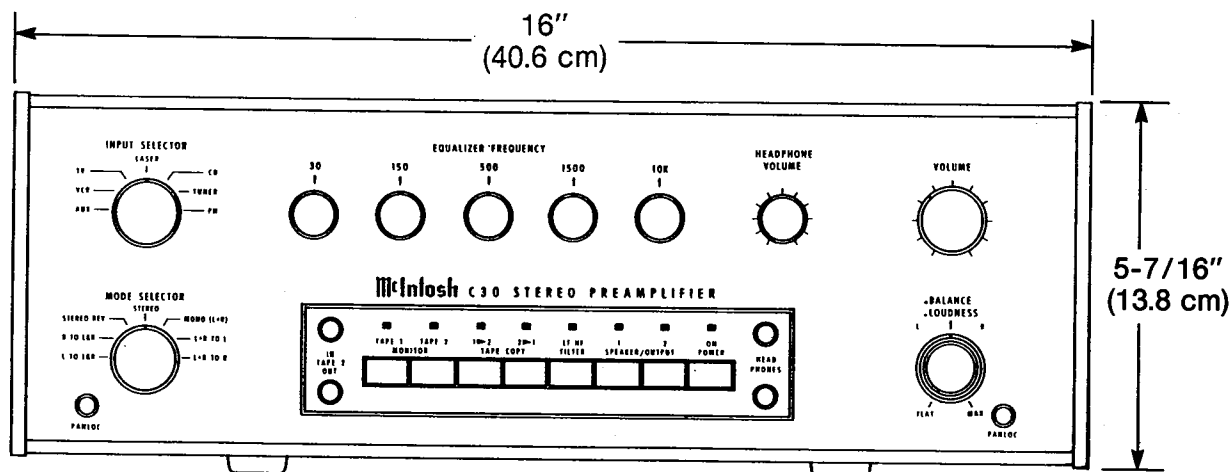


Fig. 1. Front View

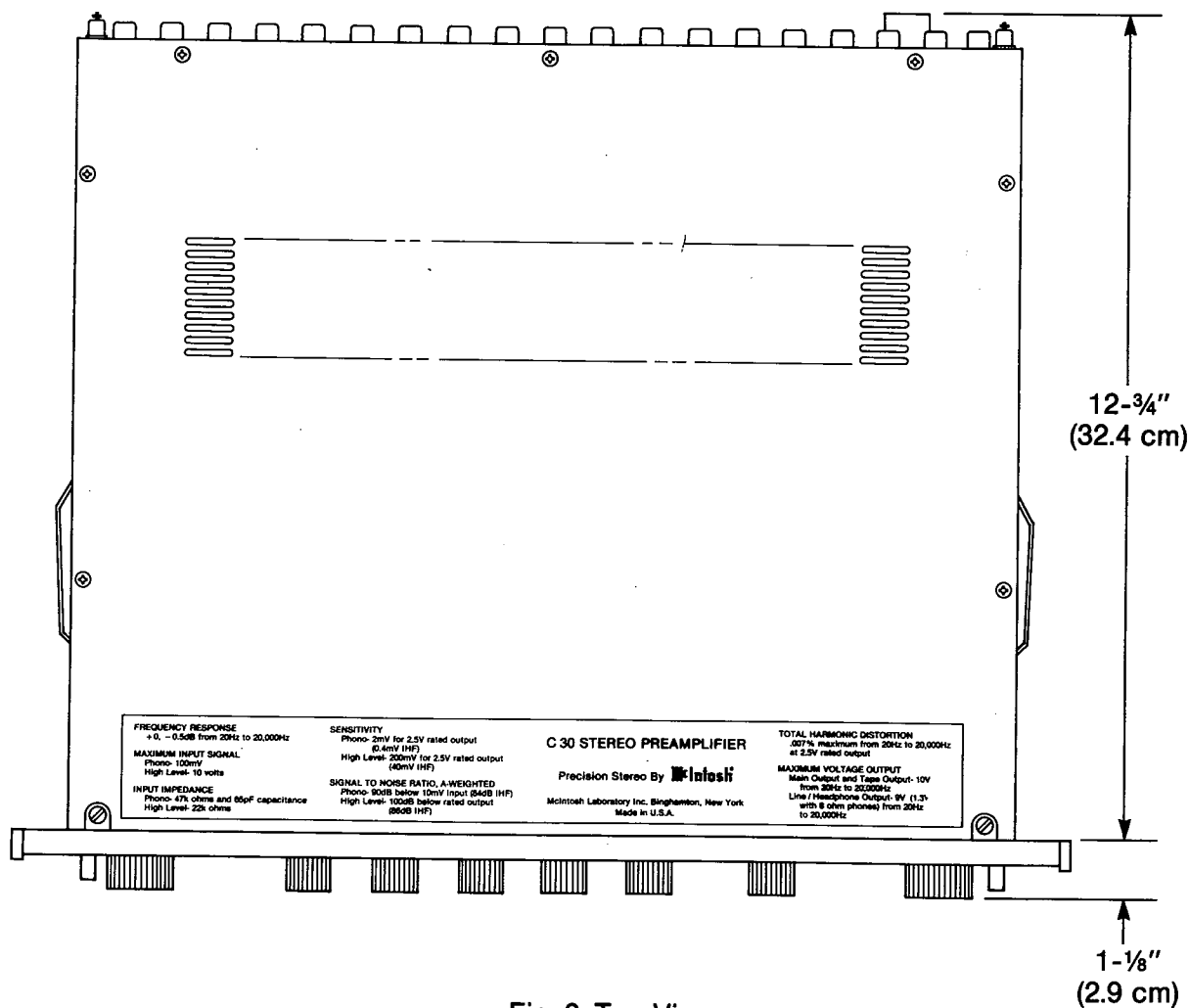


Fig. 2. Top View

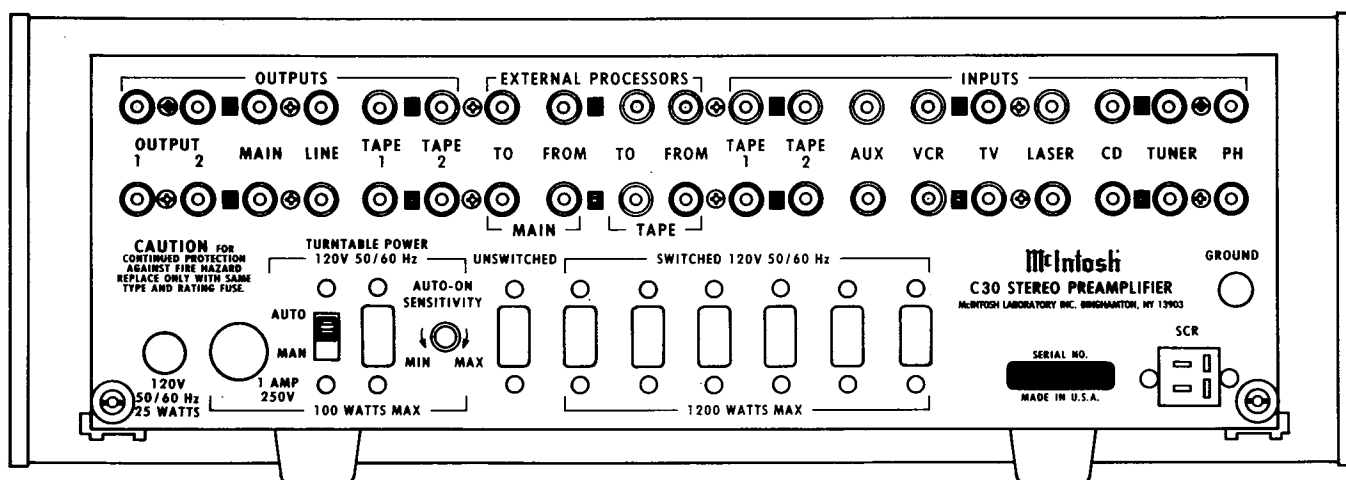


Fig. 3. Rear View

General Notes

1. Unless otherwise noted, all voltages indicated on the schematics are measured under the following conditions:

- a. AC input at 120 volts, 50/60 Hz.
- b. All voltages are $\pm 20\%$ with respect to ground except for the regulated circuits in the power supply. A high impedance voltmeter must be used.
- c. The voltages enclosed in a box (sections 2, 3, 5 and 7) are signal voltages that are measured with a 2mV, 1kHz signal connected to both channels of the PHONO 1 input jacks.
- d. Front panel controls are set at:
 INPUT SELECTOR.....AUX
 MODE.....STEREO
 EQUALIZERS (5).....CENTER DETENT
 HEADPHONE VOLUME.....FULLY CW
 VOLUME.....FULLY CW
 BALANCE.....CENTER DETENT
 LOUDNESS.....FLAT
 PUSHBUTTONS (7).....OUT
 POWER.....ON

2. Unless otherwise specified:

- a. Resistor values are in ohms.
- b. Capacitor values smaller than 1 are in microfarads (μF), and capacitance values greater than 1 are in picofarads (pF).
- c. Inductor values are in micohenries (μH).

3. Symbols used in this manual are in conformance with the book "Electrical and Electronics Graphic Symbols and Reference Designations" published by the IEEE. Some important symbols are described below:

- | | |
|--|--|
| $\rightarrow 2 \rangle$ | Plug disconnect (pin 2) |
| $\text{---} \textcircled{2} \text{---}$ | Solder connection (pin 2) |
| $\text{---} \textcircled{4} 18 \text{---}$ | Section number reference.
Wire connects to pin 18 of Section 4. |
| $\downarrow$ | PC board ground |
| $\text{---} \text{---} \text{---}$ | Chassis ground |

Section
Locations

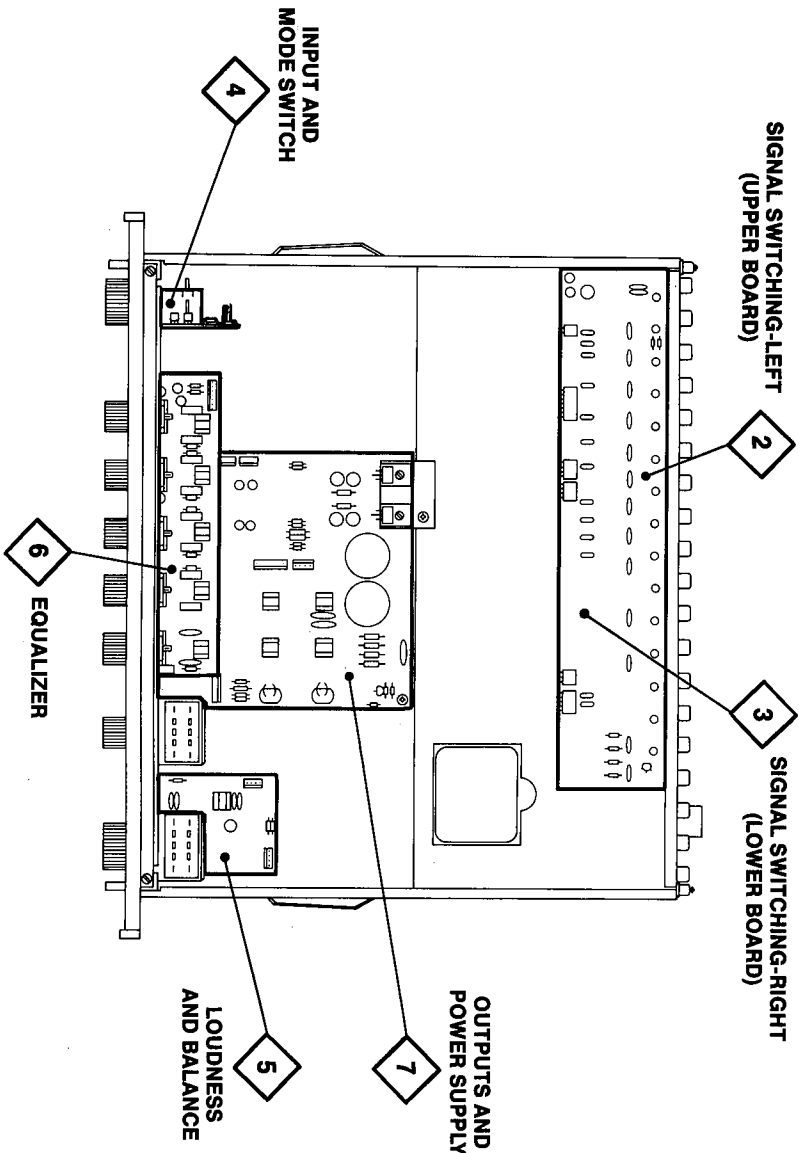


Fig. 4. Top view with cover removed

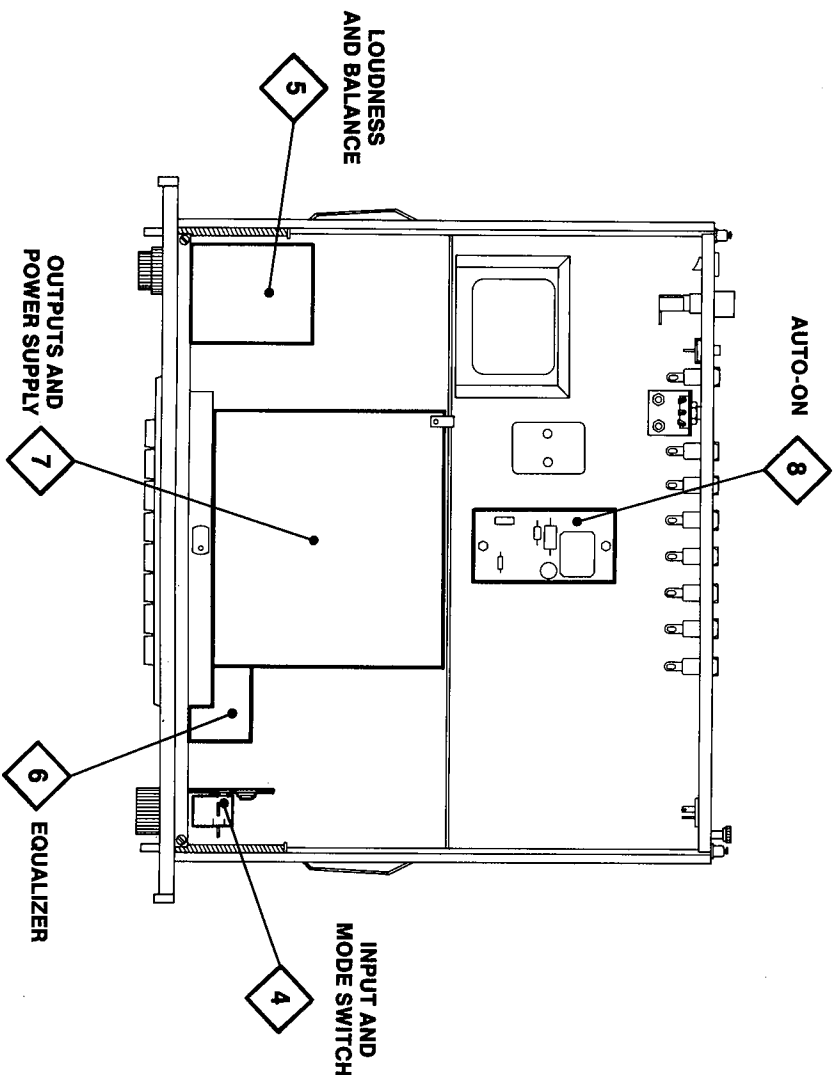


Fig. 5. Bottom view with cover removed

INTERCONNECTION DIAGRAM
PARTS LIST

Symbol No.	Part No.	Description
FUSES		
F1	089007	Fuse, SB, 5A, 125V, MDL-5
F2	089020	Fuse, SB, 0.5A, 250V, MDL-1/2
F3	089002	Fuse, FA, 1A, 250V, AGC-1
RESISTORS (POT = Potentiometer)		
R1	134395	POT, 100K Ω , Volume Control
R2	134365	POT, 50k, Volume Control
R3	134400-134429	POT, Auto-on Adjust
SWITCHES		
S1	148043	Auto-on Switch
TRANSFORMERS		
*T1	159157	Power

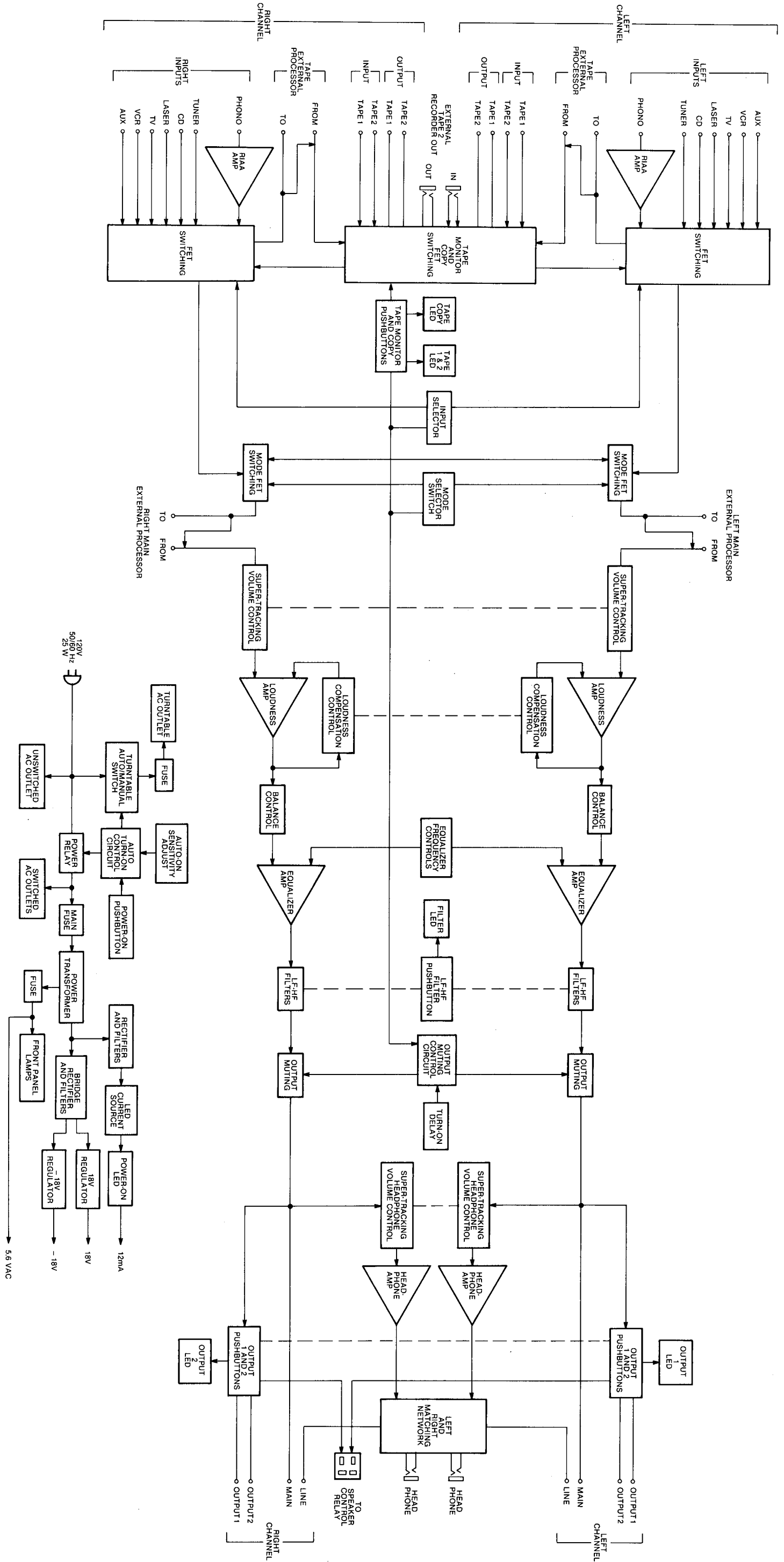
INSTALLATION HARDWARE
PARTS LIST

Part No.	Description
017156	Plastic foot, secure w/101089 screws
038179	Mounting template
043401	Mounting strips
045261	Panloc shelf bracket, right
045262	Panloc shelf bracket, left
045142	Hardware package
101089	Sheet metal screw, #8 x 5/8", Phillips, Black

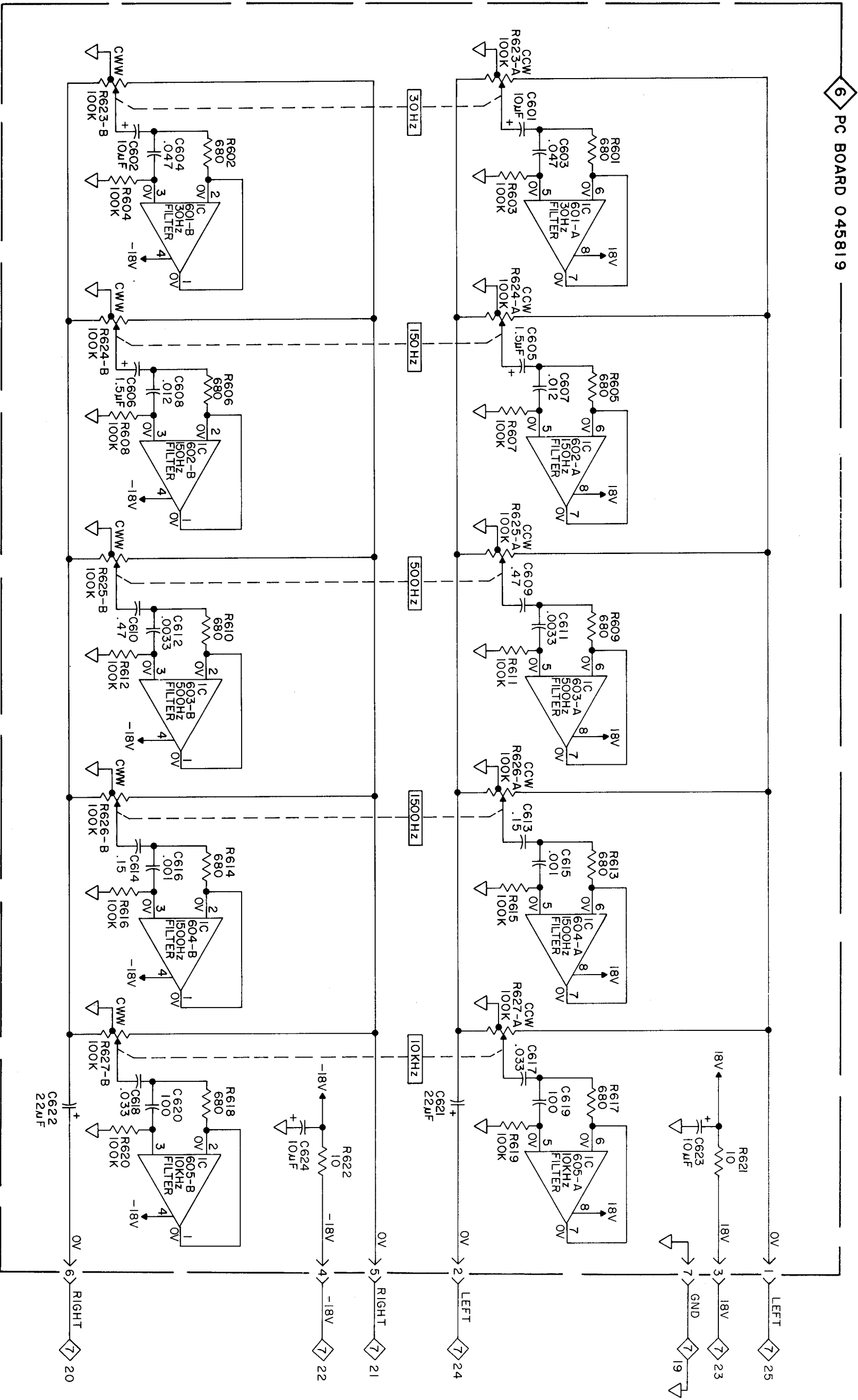
FRONT PANEL & TRIM
PARTS LIST

Part No.	Description
046203	Front panel, glass
046204	Front panel, complete
018155	Top panel rail, secure w/100007 screws
043410	Bottom panel extrusion, secure w/100103 screws
018348	End cap, secure w/101035 screws
100007	Machine screw, #6-32 x 1/4"
100103	Machine screw, #6-32 x 1/8"
101035	Tapping screw, #4-40 x 5/16", fillister head

Block Diagram

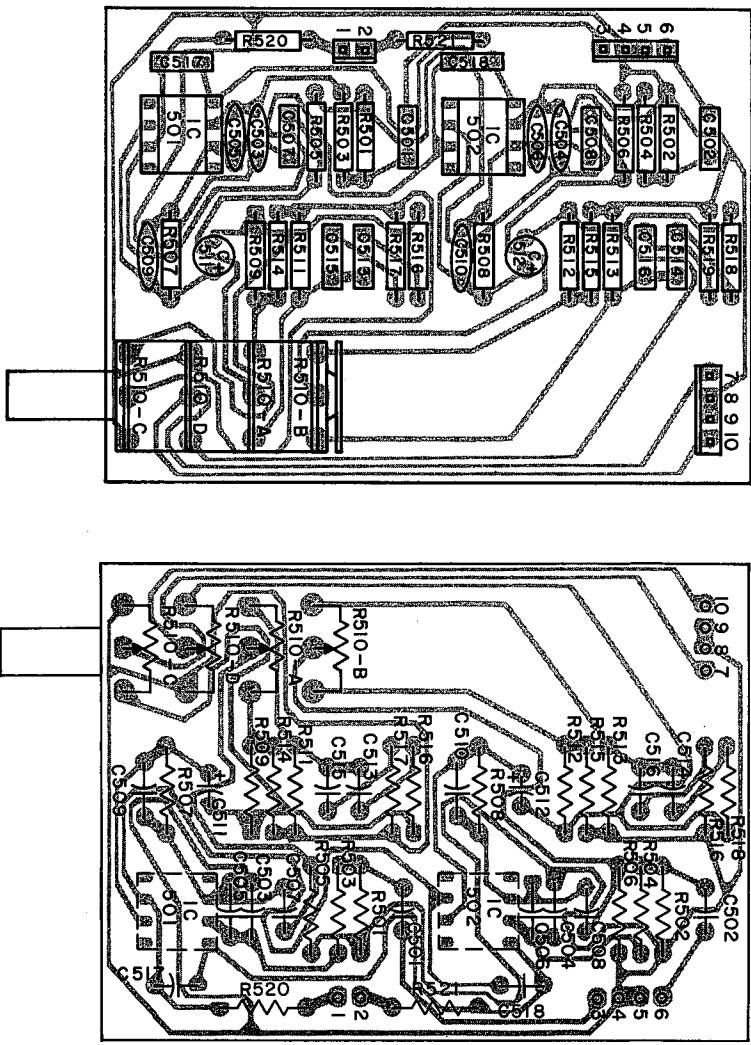
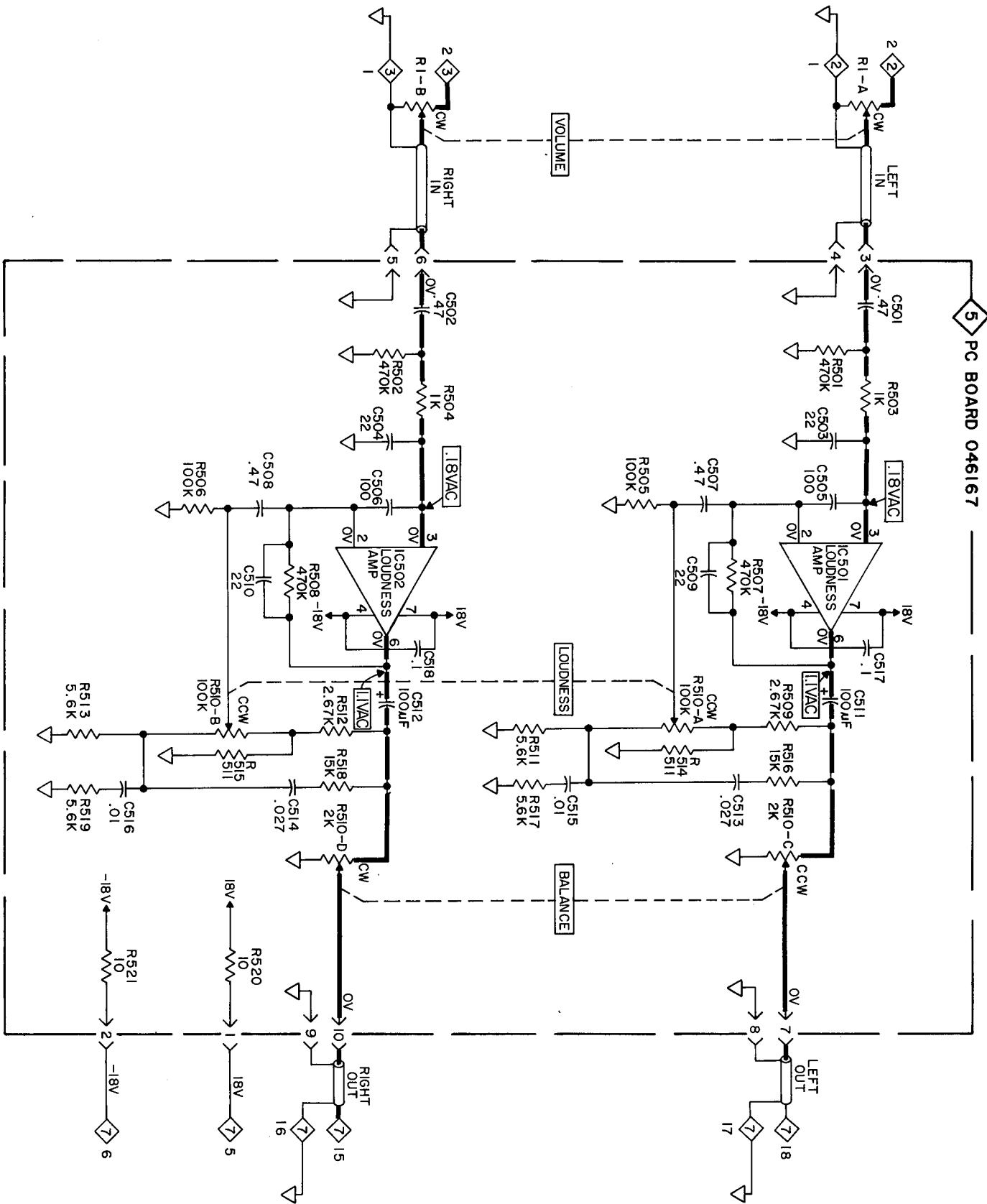


6 Equalizer

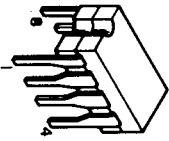


Loudness and Balance

5



LOUDNESS AND BALANCE PCB 046167



IC501-IC502

LOUDNESS AND BALANCE PARTS LIST

Symbol No.	Part No.	Description
INTEGRATED CIRCUITS		
IC501	133066	Operational Amp, NE5534N
IC502	133066	Operational Amp, NE5534N
RESISTORS (POT = Potentiometer)		
R510	134397	POT, Balance/Loudness

Repacking Instructions

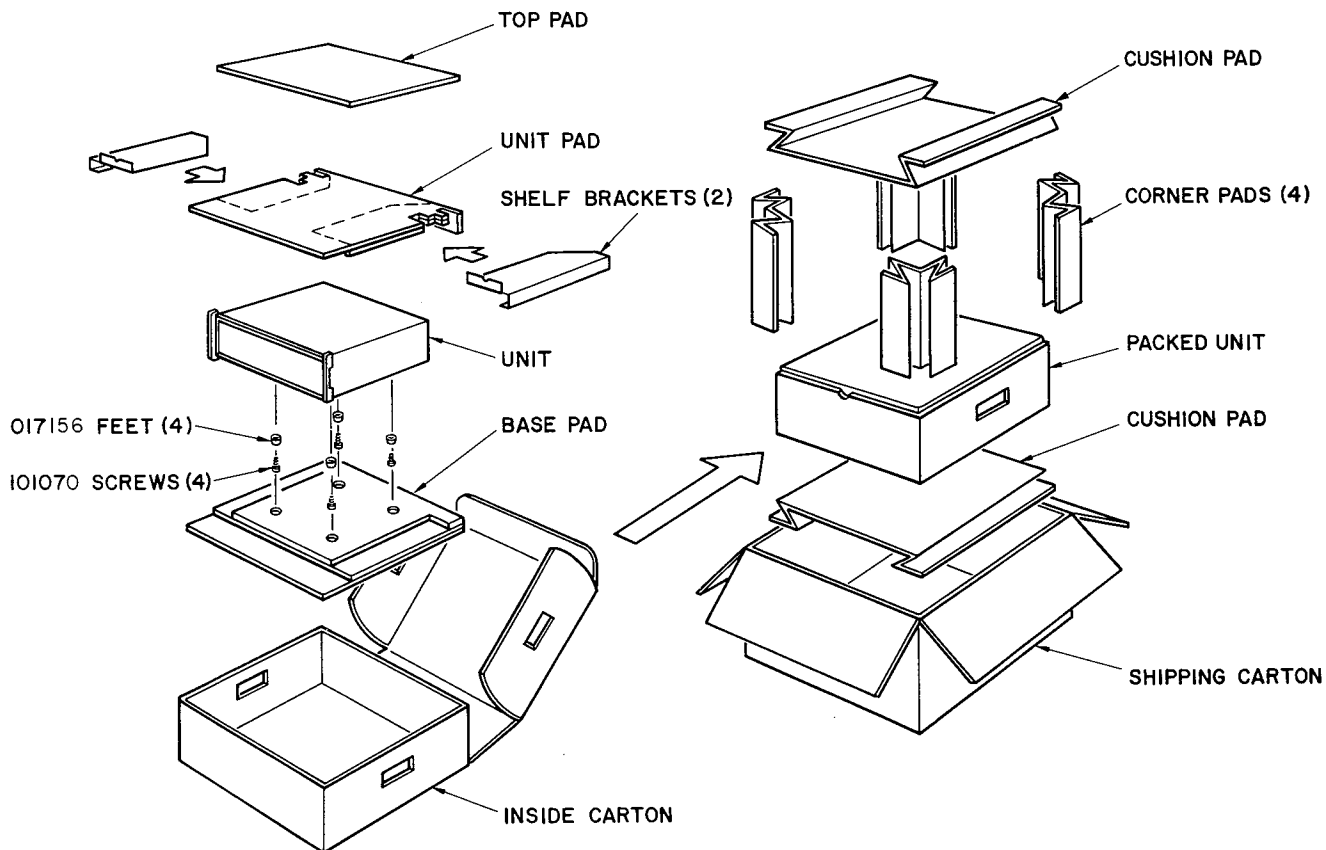
In the event it is necessary to return the C30 to McIntosh Laboratory for service, the unit must be packed exactly as shown below. It is not necessary to return the shelf brackets, although their position in the carton is shown.

The four plastic feet must be attached to the bottom of the C30 so they will locate in the four holes of the base pad.

If a shipping carton is needed, please call or write the Customer Service Department of McIntosh Laboratory. Order using the part numbers on the accompanying list.

Use the original shipping carton only if all pads and cartons are in good serviceable condition.

QTY	PART NO.	DESCRIPTION
1	033466	Shipping carton only
1	033331	Top pad
1	033330	Unit pad
1	033259	Base pad
1	033118	Inside carton
2	033332	Cushion pad
4	033333	Corner pads
4	017156	Plastic feet
1	046463	Shipping carton, complete
4	101070	Screws for feet



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The continuous improvement of its products is the policy of McIntosh Laboratory Incorporated, who reserve the right to improve design without notice. Because of the constant upgrading of McIntosh products' circuitry and components, the Company cannot insure, and does not warrant, the accuracy of the within schematic material, which is intended for information only.

McIntosh Laboratory Inc. 2 Chambers Street Binghamton, NY 13903-2699

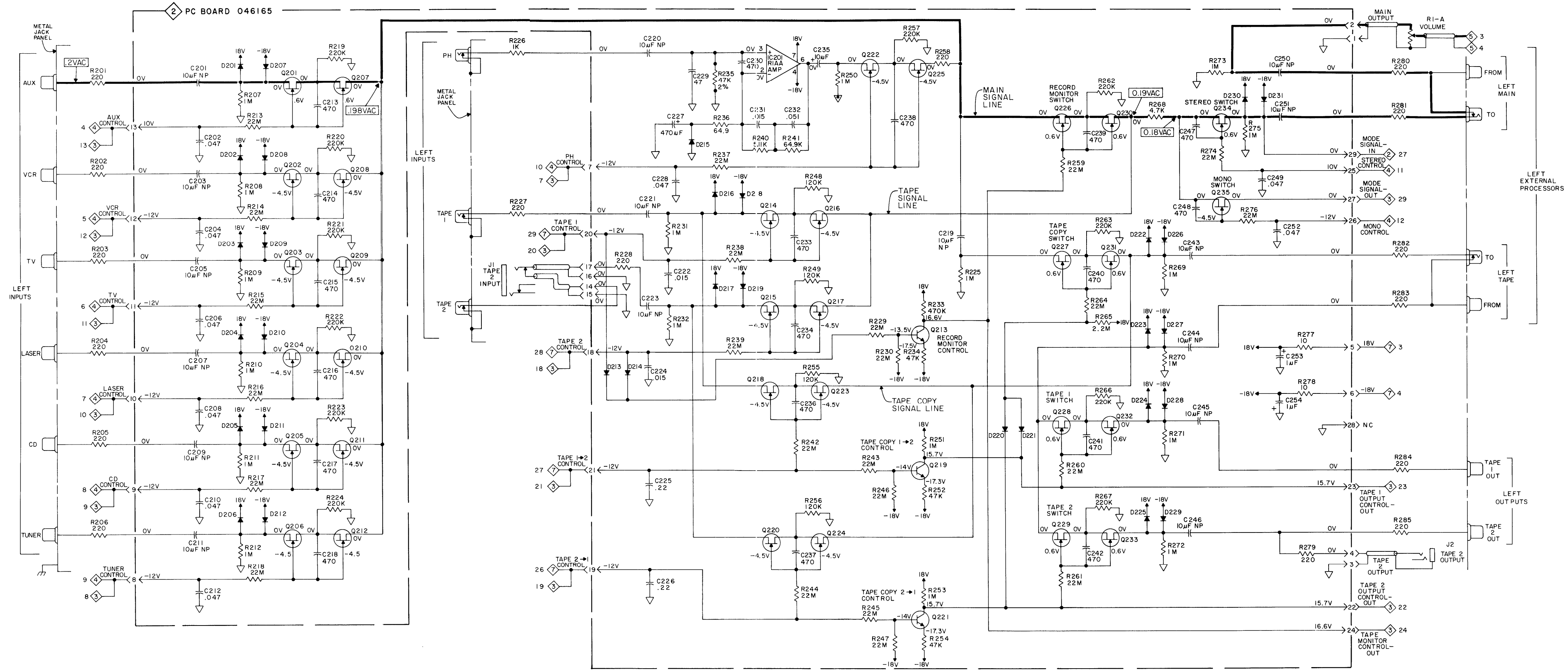
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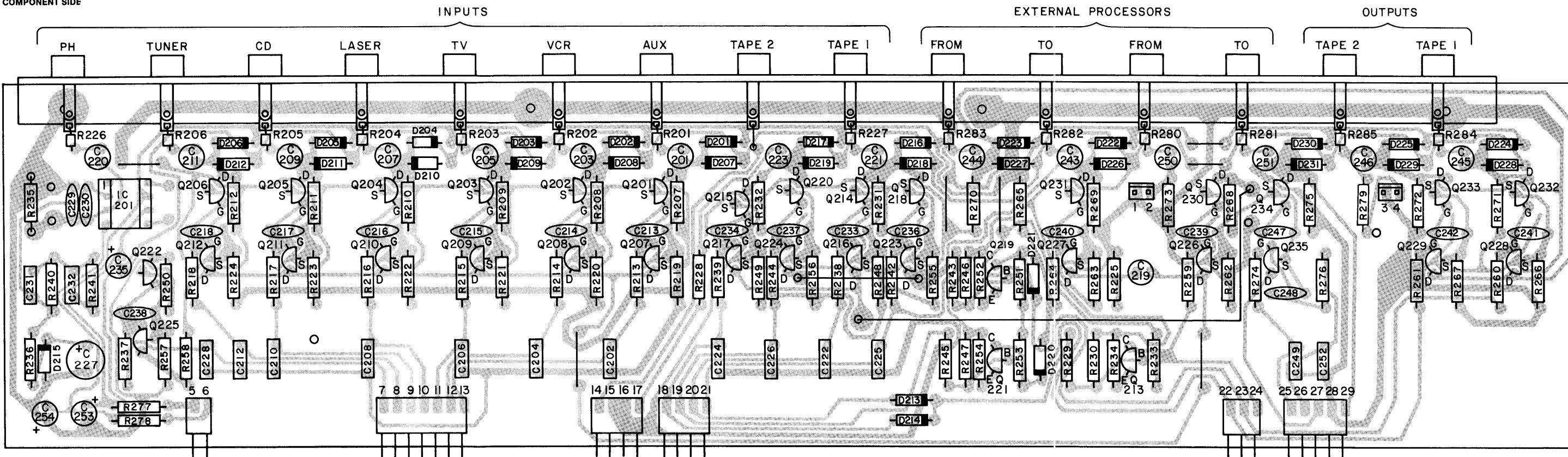
Printed in U.S.A

Telephone (607)723-3512

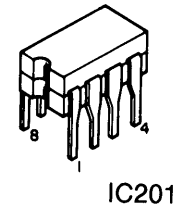
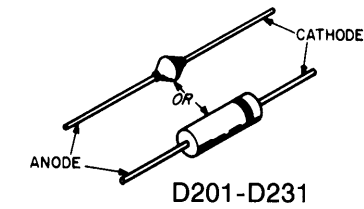
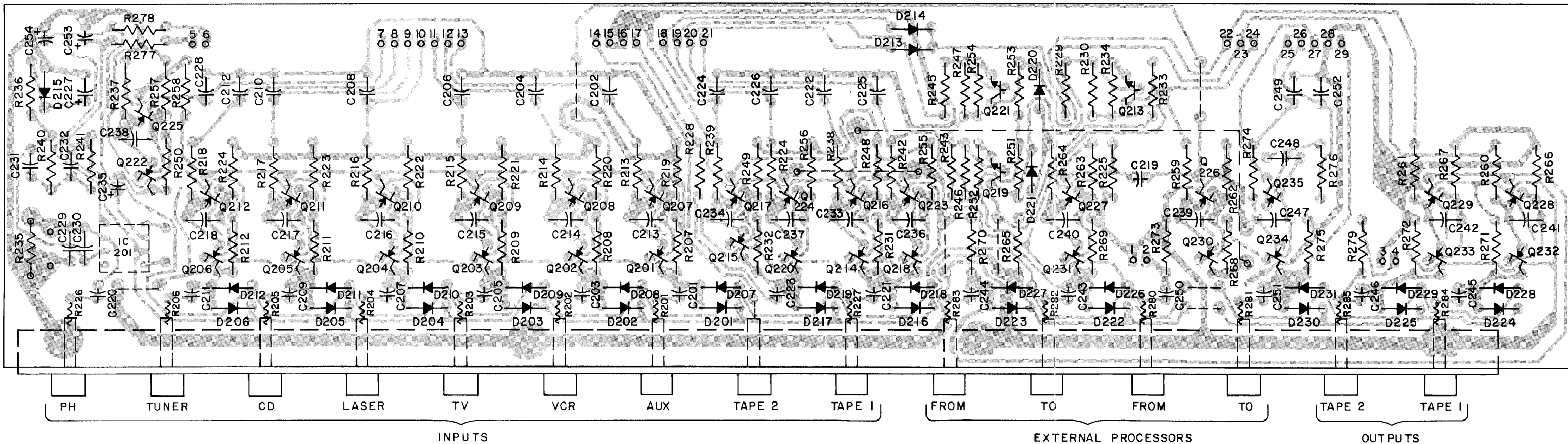


Signal Switching
(Left Channel)





SIGNAL SWITCHING (LEFT CHANNEL) PCB 046165

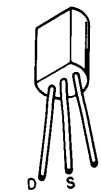
SIGNAL SWITCHING (LEFT CHANNEL)
PARTS LIST

Symbol No.	Part No.	Description
DIODES (SIG = Signal)		
D201	070047	SIG. 75V. 10mA, 1N4148
D202	070047	SIG. 75V. 10mA, 1N4148
D203	070047	SIG. 75V. 10mA, 1N4148
D204	070047	SIG. 75V. 10mA, 1N4148
D205	070047	SIG. 75V. 10mA, 1N4148
D206	070047	SIG. 75V. 10mA, 1N4148
D207	070047	SIG. 75V. 10mA, 1N4148
D208	070047	SIG. 75V. 10mA, 1N4148
D209	070047	SIG. 75V. 10mA, 1N4148
D210	070047	SIG. 75V. 10mA, 1N4148
D211	070047	SIG. 75V. 10mA, 1N4148
D212	070047	SIG. 75V. 10mA, 1N4148
D213	070047	SIG. 75V. 10mA, 1N4148
D214	070047	SIG. 75V. 10mA, 1N4148
D215	070047	SIG. 75V. 10mA, 1N4148
D216	070047	SIG. 75V. 10mA, 1N4148
D217	070047	SIG. 75V. 10mA, 1N4148
D218	070047	SIG. 75V. 10mA, 1N4148
D219	070047	SIG. 75V. 10mA, 1N4148
D220	070047	SIG. 75V. 10mA, 1N4148
D221	070047	SIG. 75V. 10mA, 1N4148
D222	070047	SIG. 75V. 10mA, 1N4148
D223	070047	SIG. 75V. 10mA, 1N4148
D224	070047	SIG. 75V. 10mA, 1N4148
D225	070047	SIG. 75V. 10mA, 1N4148
D226	070047	SIG. 75V. 10mA, 1N4148
D227	070047	SIG. 75V. 10mA, 1N4148
D228	070047	SIG. 75V. 10mA, 1N4148
D229	070047	SIG. 75V. 10mA, 1N4148
D230	070047	SIG. 75V. 10mA, 1N4148
D231	070047	SIG. 75V. 10mA, 1N4148

INTEGRATED CIRCUITS
IC201 133067 Operational Amp Low Noise & THD, NE5534AN

TRANSISTORS
(N = N Channel, J-FET = Junction FET)

Q201	132193	N, J-FET, 2N4392
Q202	132193	N, J-FET, 2N4392
Q203	132193	N, J-FET, 2N4392
Q204	132193	N, J-FET, 2N4392
Q205	132193	N, J-FET, 2N4392
Q206	132193	N, J-FET, 2N4392
Q207	132193	N, J-FET, 2N4392
Q208	132193	N, J-FET, 2N4392
Q209	132193	N, J-FET, 2N4392
Q210	132193	N, J-FET, 2N4392
Q211	132193	N, J-FET, 2N4392
Q212	132193	N, J-FET, 2N4392
Q213	132185	NPN, Selected 2N6429A
Q214	132193	N, J-FET, 2N4392
Q215	132193	N, J-FET, 2N4392
Q216	132193	N, J-FET, 2N4392
Q217	132193	N, J-FET, 2N4392
Q218	132193	N, J-FET, 2N4392
Q219	132185	NPN, Selected 2N6429A
Q220	132193	N, J-FET, 2N4392
Q221	132185	NPN, Selected 2N6429A
Q222	132193	N, J-FET, 2N4392
Q223	132193	N, J-FET, 2N4392
Q224	132193	N, J-FET, 2N4392
Q225	132193	N, J-FET, 2N4392
Q226	132193	N, J-FET, 2N4392
Q227	132193	N, J-FET, 2N4392
Q228	132193	N, J-FET, 2N4392
Q229	132193	N, J-FET, 2N4392
Q230	132193	N, J-FET, 2N4392
Q231	132193	N, J-FET, 2N4392
Q232	132193	N, J-FET, 2N4392
Q233	132193	N, J-FET, 2N4392
Q234	132193	N, J-FET, 2N4392
Q235	132193	N, J-FET, 2N4392

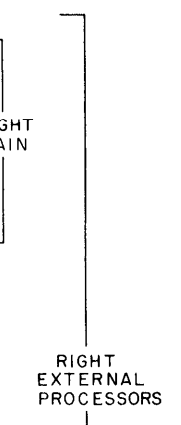


Q201-Q212,
Q214-Q218,
Q220,
Q222-Q235

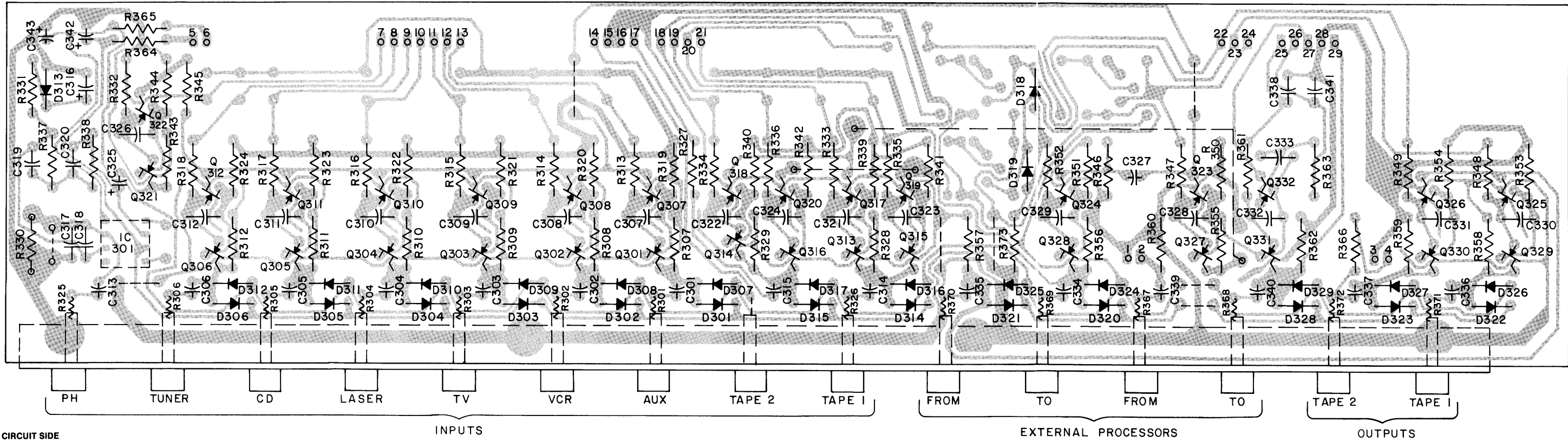
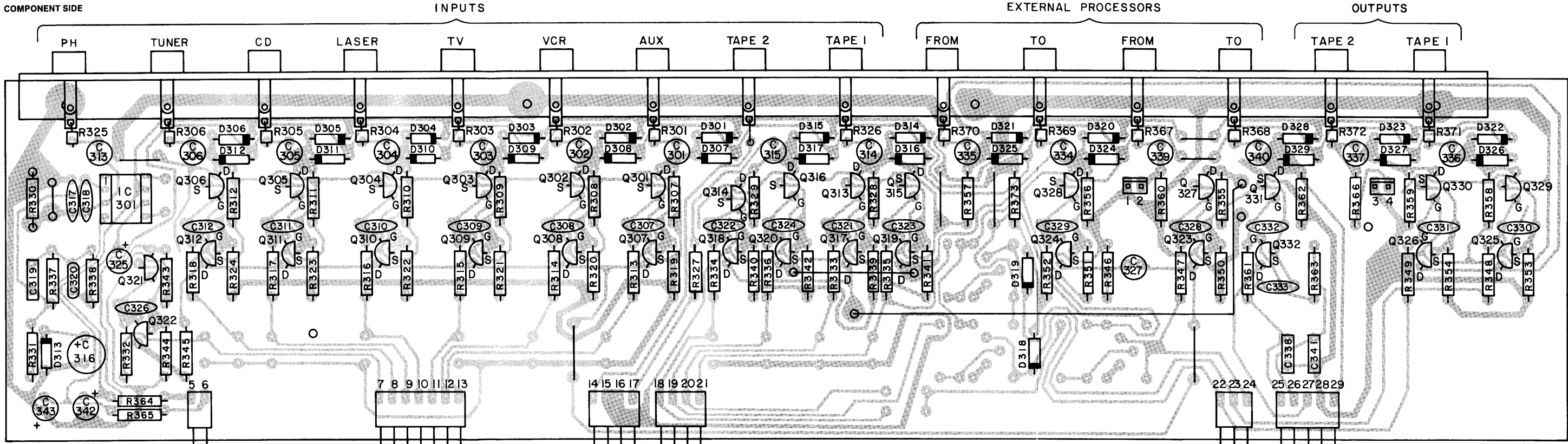


Q213, Q219,
Q221

Signal Switching (Right Channel)



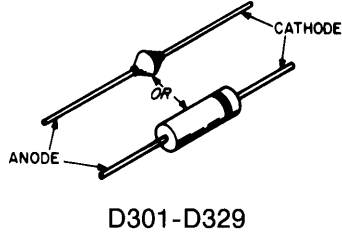
COMPONENT SIDE



CIRCUIT SIDE

SIGNAL SWITCHING (RIGHT CHANNEL)
PARTS LIST

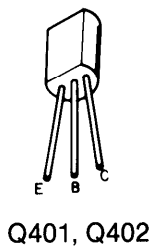
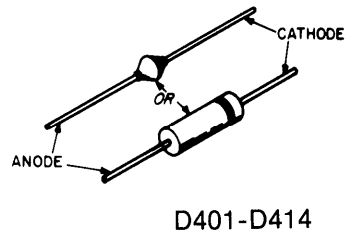
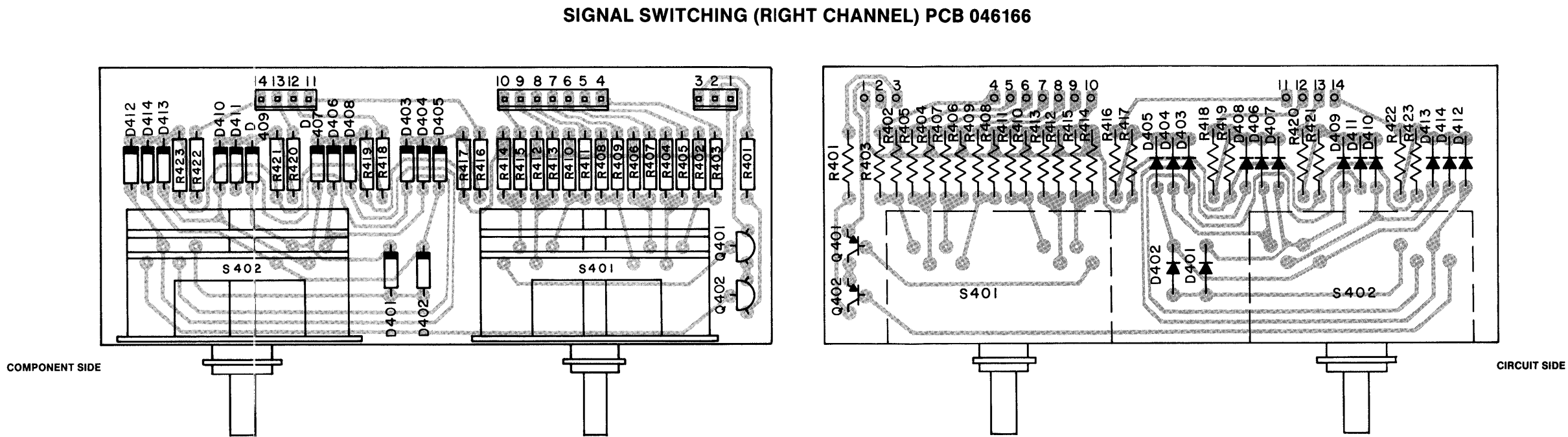
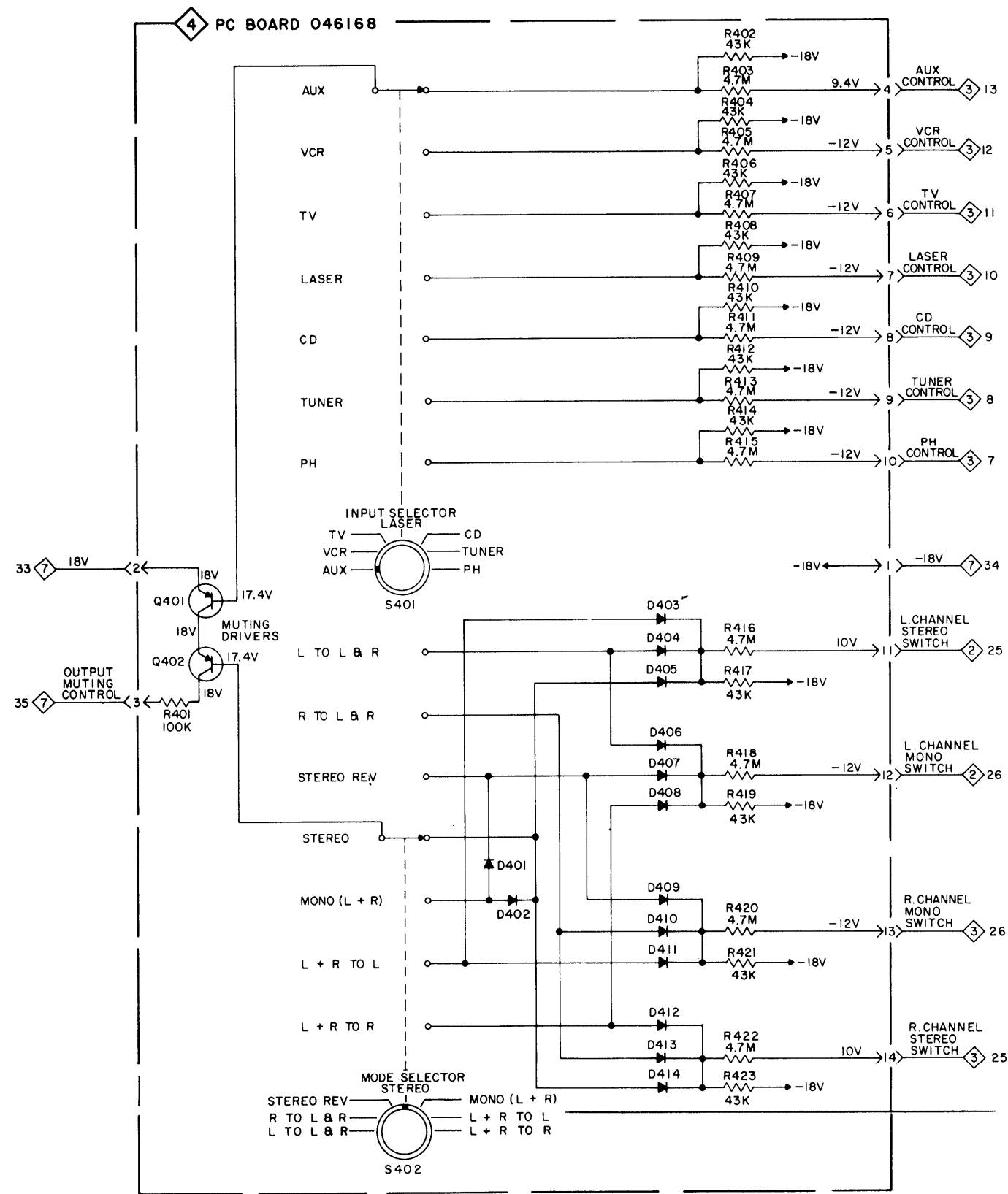
Symbol No.	Part No.	Description
DIODES		
D310	070047	SIG, 75V, 10mA, 1N4148
D302	070047	SIG, 75V, 10mA, 1N4148
D303	070047	SIG, 75V, 10mA, 1N4148
D304	070047	SIG, 75V, 10mA, 1N4148
D305	070047	SIG, 75V, 10mA, 1N4148
D306	070047	SIG, 75V, 10mA, 1N4148
D307	070047	SIG, 75V, 10mA, 1N4148
D308	070047	SIG, 75V, 10mA, 1N4148
D309	070047	SIG, 75V, 10mA, 1N4148
D310	070047	SIG, 75V, 10mA, 1N4148
D311	070047	SIG, 75V, 10mA, 1N4148
D312	070047	SIG, 75V, 10mA, 1N4148
D313	070047	SIG, 75V, 10mA, 1N4148
D314	070047	SIG, 75V, 10mA, 1N4148
D315	070047	SIG, 75V, 10mA, 1N4148
D316	070047	SIG, 75V, 10mA, 1N4148
D317	070047	SIG, 75V, 10mA, 1N4148
D318	070047	SIG, 75V, 10mA, 1N4148
D319	070047	SIG, 75V, 10mA, 1N4148
D320	070047	SIG, 75V, 10mA, 1N4148
D321	070047	SIG, 75V, 10mA, 1N4148
D322	070047	SIG, 75V, 10mA, 1N4148
D323	070047	SIG, 75V, 10mA, 1N4148
D324	070047	SIG, 75V, 10mA, 1N4148
D325	070047	SIG, 75V, 10mA, 1N4148
D326	070047	SIG, 75V, 10mA, 1N4148
D327	070047	SIG, 75V, 10mA, 1N4148
D328	070047	SIG, 75V, 10mA, 1N4148
D329	070047	SIG, 75V, 10mA, 1N4148
TRANSISTORS (N = N Channel, J-FET = Junction FET)		
Q301	132193	N, J-FET, 2N4392
Q302	132193	N, J-FET, 2N4392
Q303	132193	N, J-FET, 2N4392
Q304	132193	N, J-FET, 2N4392
Q305	132193	N, J-FET, 2N4392
Q306	132193	N, J-FET, 2N4392
Q307	132193	N, J-FET, 2N4392
Q308	132193	N, J-FET, 2N4392
Q309	132193	N, J-FET, 2N4392
Q310	132193	N, J-FET, 2N4392
Q311	132193	N, J-FET, 2N4392
Q312	132193	N, J-FET, 2N4392
Q313	132193	N, J-FET, 2N4392
Q314	132193	N, J-FET, 2N4392
Q315	132193	N, J-FET, 2N4392
Q316	132193	N, J-FET, 2N4392
Q317	132193	N, J-FET, 2N4392
Q318	132193	N, J-FET, 2N4392
Q319	132193	N, J-FET, 2N4392
Q320	132193	N, J-FET, 2N4392
Q321	132193	N, J-FET, 2N4392
Q322	132193	N, J-FET, 2N4392
Q323	132193	N, J-FET, 2N4392
Q324	132193	N, J-FET, 2N4392
Q325	132193	N, J-FET, 2N4392
Q326	132193	N, J-FET, 2N4392
Q327	132193	N, J-FET, 2N4392
Q328	132193	N, J-FET, 2N4392
Q329	132193	N, J-FET, 2N4392
Q330	132193	N, J-FET, 2N4392
Q331	132193	N, J-FET, 2N4392
Q332	132193	N, J-FET, 2N4392



Q301-Q332

4

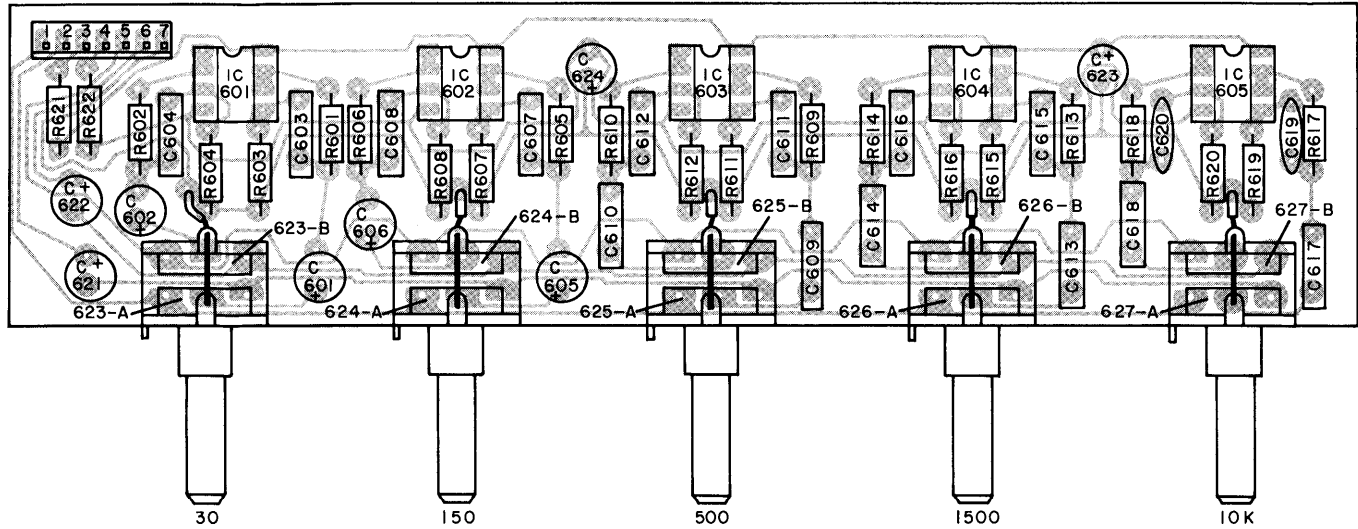
Input and Mode Switch



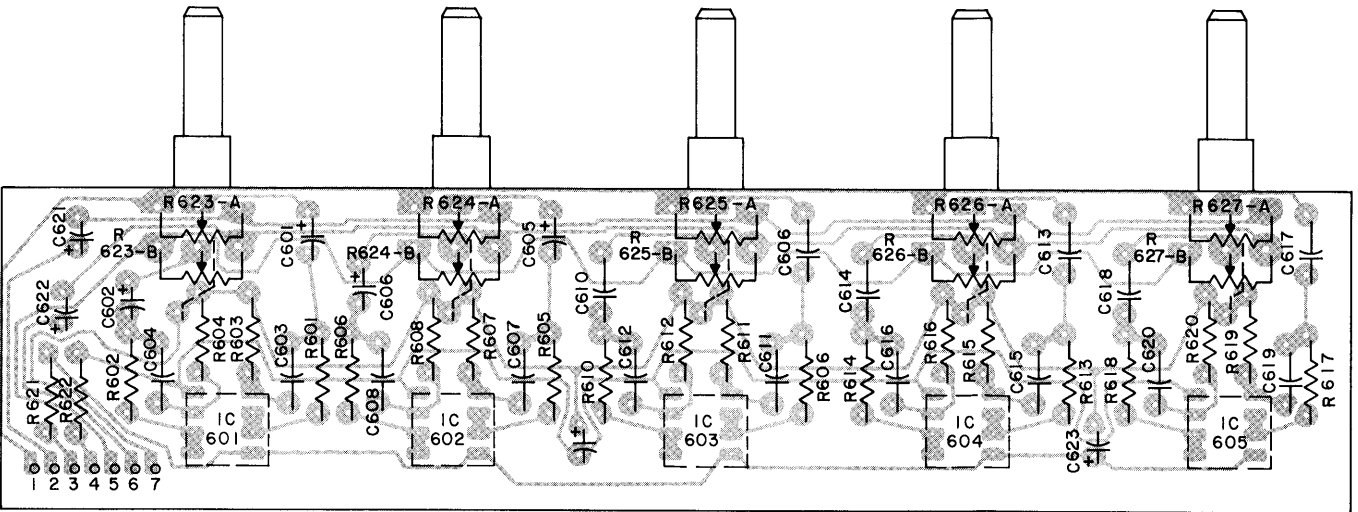
INPUT AND MODE SWITCH
PARTS LIST

Symbol No.	Part No.	Description
DIODES (SIG = Signal, CF = Carbon Film)		
D401	070047	SIG, 75V, 10mA, 1N4148
D402	070047	SIG, 75V, 10mA, 1N4148
D403	070047	SIG, 75V, 10mA, 1N4148
D404	070047	SIG, 75V, 10mA, 1N4148
D406	070047	SIG, 75V, 10mA, 1N4148
D407	070047	SIG, 75V, 10mA, 1N4148
D408	070047	SIG, 75V, 10mA, 1N4148
D409	070047	SIG, 75V, 10mA, 1N4148
D410	070047	SIG, 75V, 10mA, 1N4148
D411	070047	SIG, 75V, 10mA, 1N4148
D412	070047	SIG, 75V, 10mA, 1N4148
D413	070047	SIG, 75V, 10mA, 1N4148
D414	070047	SIG, 75V, 10mA, 1N4148
TRANSISTORS		
Q401	132224	PNP, MPS4126
Q402	132224	PNP, MPS4126
SWITCHES		
S401	146215	Input Selector switch
S402	145215	Input Selector Switch

COMPONENT SIDE



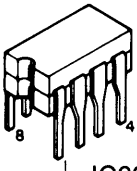
EQUALIZER PCB 045819



CIRCUIT SIDE

EQUALIZER
PARTS LIST

Symbol No.	Part No.	Description
INTEGRATED CIRCUITS		
IC601	133028	Dual Hi-speed Operational Amp, MC4558CP1
IC602	133028	Dual Hi-speed Operational Amp, MC4558CP1
IC603	133028	Dual Hi-speed Operational Amp, MC4558CP1
IC604	133028	Dual Hi-speed Operational Amp, MC4558CP1
IC605	133028	Dual Hi-speed Operational Amp, MC4558CP1
RESISTORS (CF = Carbon Film, POT = Potentiometer)		
R623	134316	POT. 100k Ω /100k Ω , Equalizer
R624	134316	POT. 100k Ω /100k Ω , Equalizer
R625	134316	POT. 100k Ω /100k Ω , Equalizer
R626	134316	POT. 100k Ω /100k Ω , Equalizer
R627	134316	POT. 100k Ω /100k Ω , Equalizer

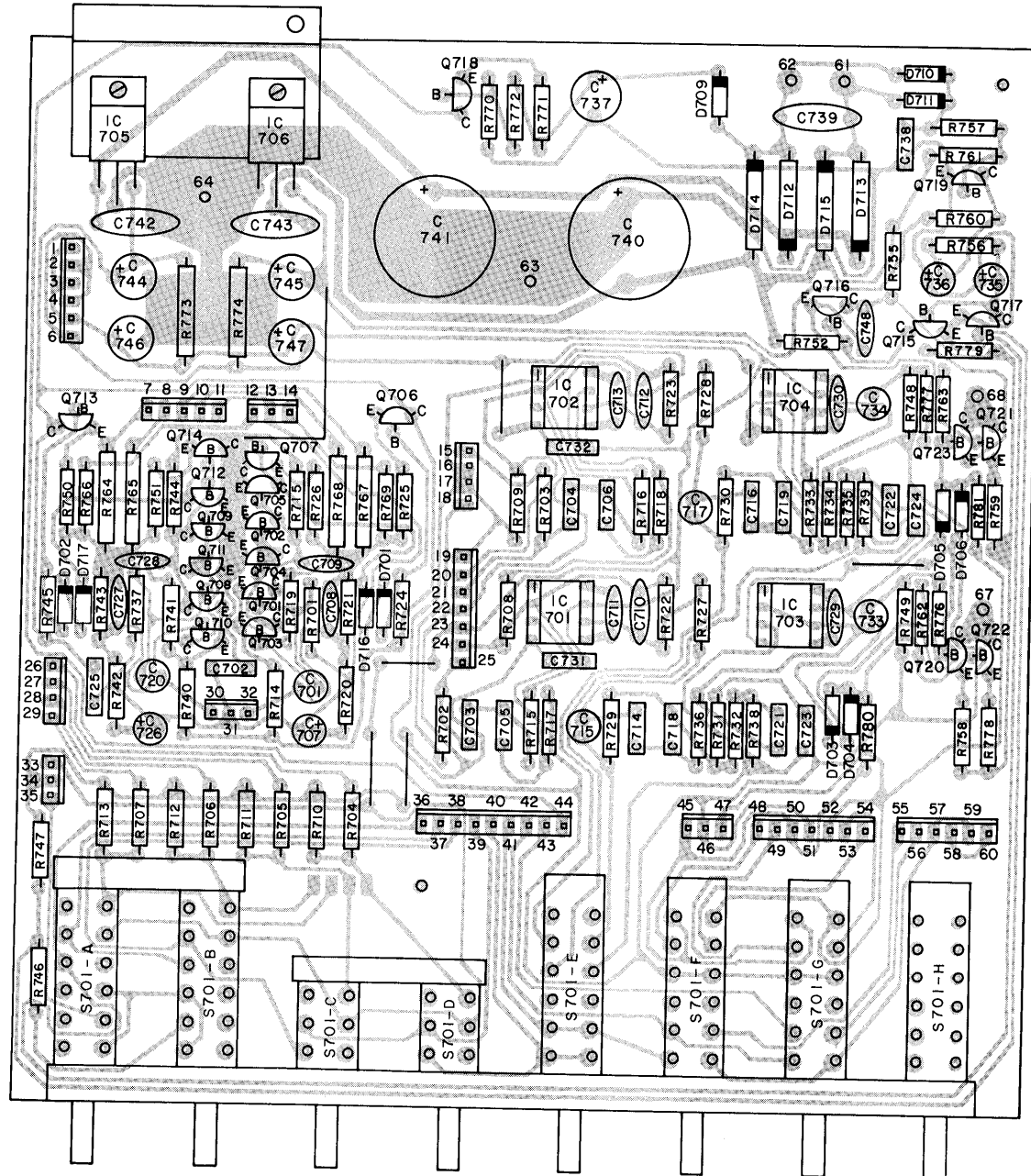


IC601-IC605

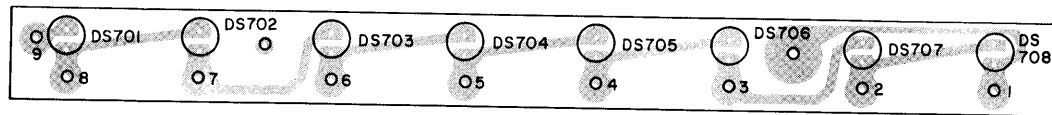
► Outputs and Power Supply



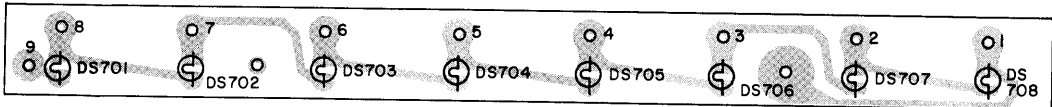
COMPONENT SIDE



OUTPUTS AND POWER SUPPLY PCB 046455

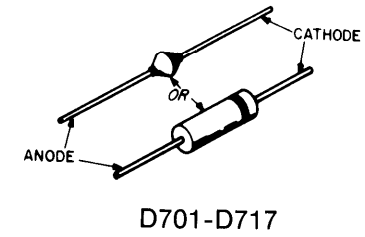
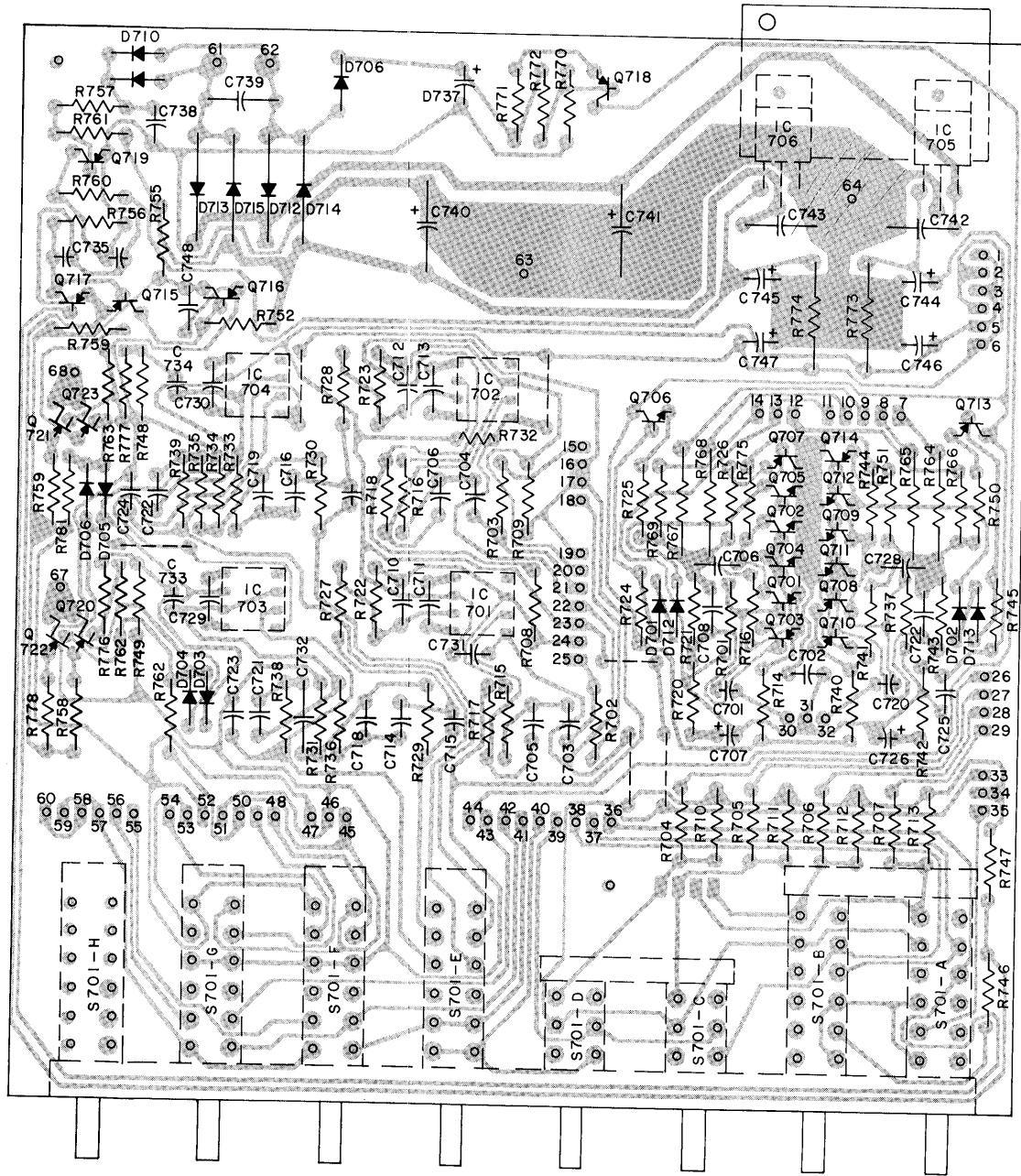


045295 PUSHBUTTON INDICATORS

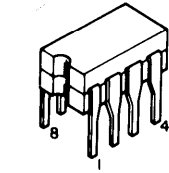


CIRCUIT SIDE

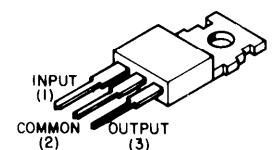
CIRCUIT SIDE



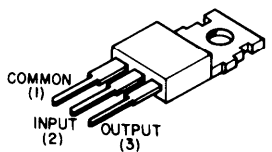
D701-D717



IC701-IC704



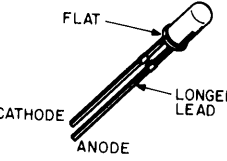
IC705



IC706

OUTPUTS AND POWER SUPPLY PARTS LIST

Symbol No.	Part No.	Description
DIODES (SIG = Signal, RECT = Rectifier)		
D701	070047	SIG, 75V, 10mA, 1N4148
D702	070047	SIG, 75V, 10mA, 1N4148
D703	070047	SIG, 75V, 10mA, 1N4148
D704	070047	SIG, 75V, 10mA, 1N4148
D705	070047	SIG, 75V, 10mA, 1N4148
D706	070047	SIG, 75V, 10mA, 1N4148
D707	070047	SIG, 75V, 10mA, 1N4148
D708	070047	SIG, 75V, 10mA, 1N4148
D709	070047	SIG, 75V, 10mA, 1N4148
D710	070047	SIG, 75V, 10mA, 1N4148
D711	070047	SIG, 75V, 10mA, 1N4148
D712	070131	RECT, 400V, 1A, 1N4004
D713	070131	RECT, 400V, 1A, 1N4004
D714	070131	RECT, 400V, 1A, 1N4004
D715	070131	RECT, 400V, 1A, 1N4004
D716	070047	SIG, 75V, 10mA, 1N4148
D717	070047	SIG, 75V, 10mA, 1N4148
INTEGRATED CIRCUITS		
IC701	133066	Operational Amp, NE5534N
IC702	133066	Operational Amp, NE5534N
IC703	133066	Operational Amp, NE5534N
IC704	133066	Operational Amp, NE5534N
IC705	133045	+18V Regulator, LM340T-18
IC706	133044	-18V Regulator, LM340T-18
LIGHTING DEVICES (LED = Light Emitting Diodes)		
DS701	070093	LED, Red, HP5082-4658
DS702	070093	LED, Red, HP5082-4658
DS703	070093	LED, Red, HP5082-4658
DS704	070093	LED, Red, HP5082-4658
DS705	070093	LED, Red, HP5082-4658
DS706	070093	LED, Red, HP5082-4658
DS707	070093	LED, Red, HP5082-4658
DS708	070093	LED, Red, HP5082-4658
LIGHT DEPENDENT RESISTORS		
LDR701	144179	LDR, VTL5C9
LDR702	144179	LDR, VTL5C9
TRANSISTORS (N = N Channel, P = P Channel)		
Q701	132056	PNP, 2N5087
Q702	132223	NPN, MPS4124
Q703	132056	PNP, 2N5087
Q704	132223	NPN, MPS4124
Q705	132171	NPN, MPSA05
Q706	132171	NPN, MPSA05
Q707	132172	PNP, MPSA55
Q708	132056	PNP, 2N5087
Q709	132223	NPN, MPS4124
Q710	132056	PNP, 2N5087
Q711	132223	NPN, MPS4124
Q712	132171	NPN, MPSA05
Q713	132171	NPN, MPSA05
Q714	132172	PNP, MPSA55
Q715	132224	PNP, MPSA126
Q716	132172	PNP, MPSA55
Q717	132224	PNP, MPSA126
Q718	132172	PNP, MPSA55
Q719	132056	PNP, 2N5087
Q720	132193	N, J-FET, 2N4392
Q721	132193	N, J-FET, 2N4392
SWITCHES		
S701	150047	Pushbutton Switch (5)



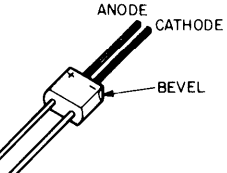
DS701-DS708



Q701-Q719



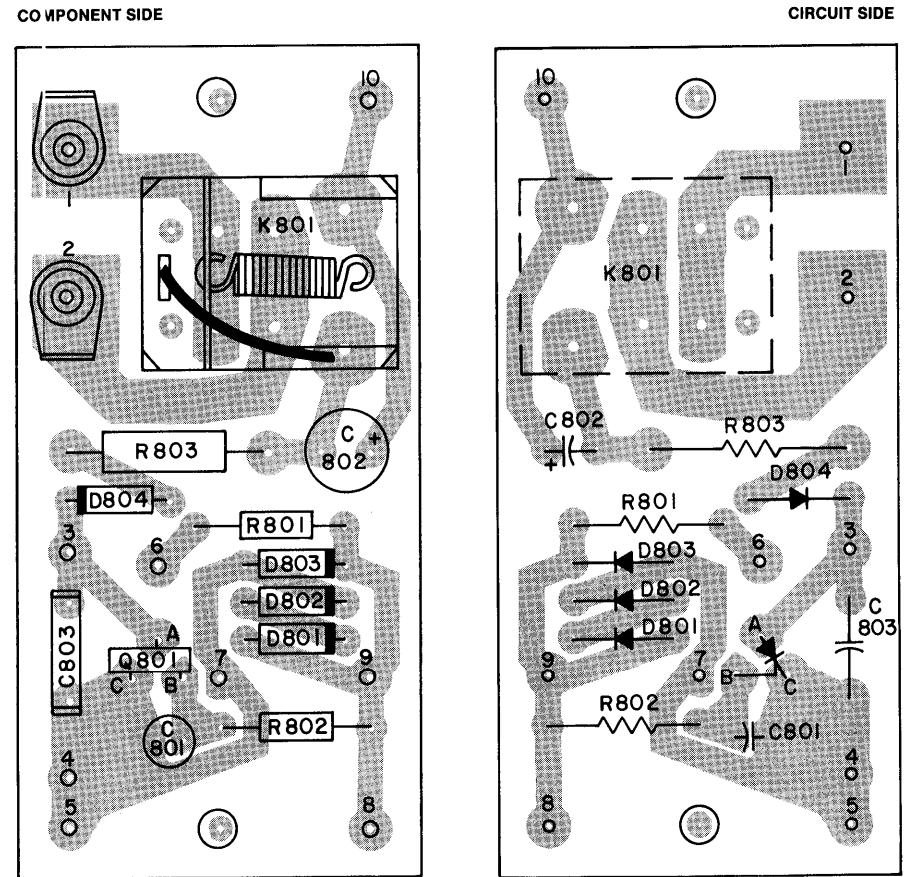
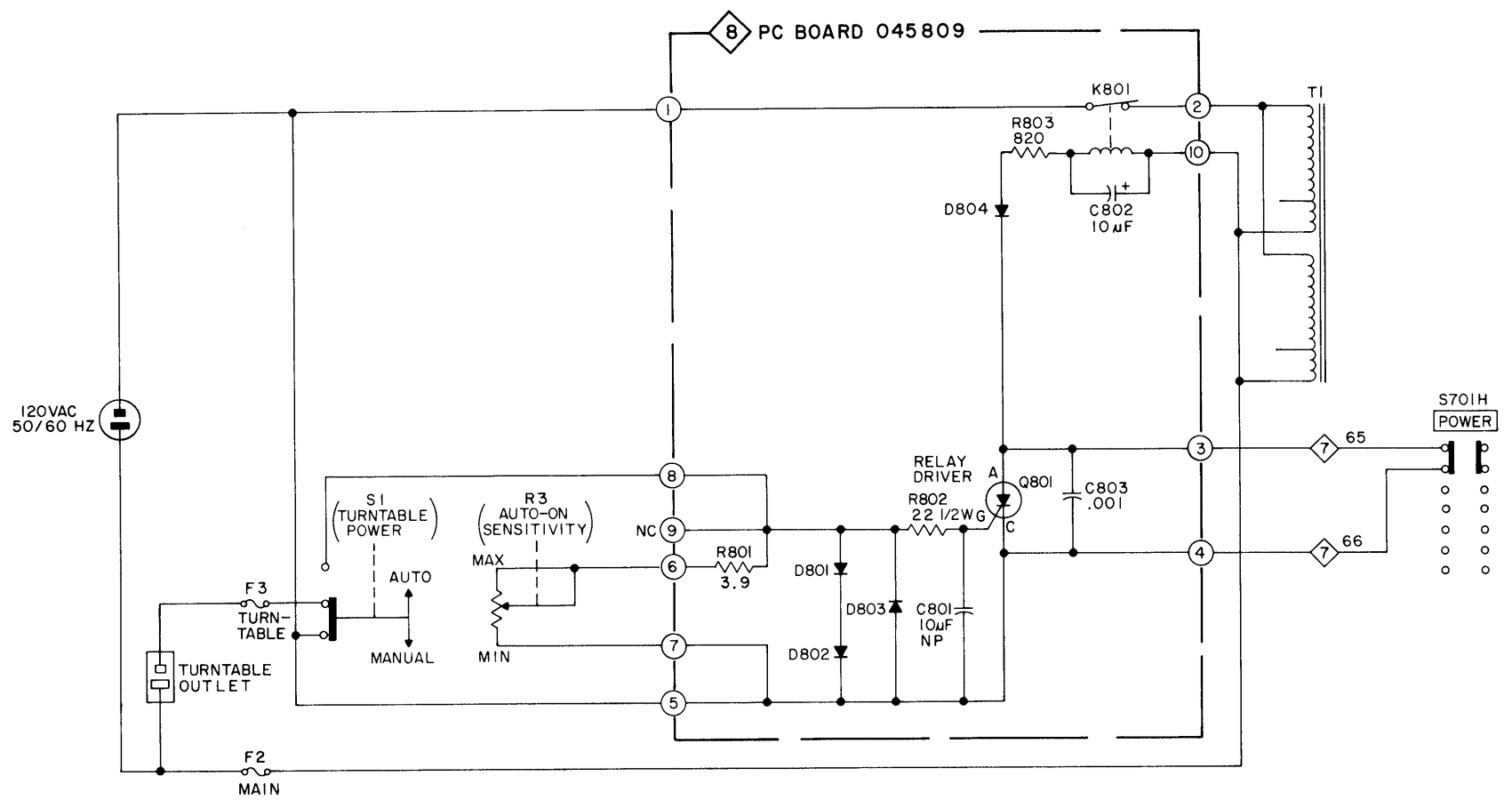
Q720, Q721



LDR701, LDR702

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Auto-On



AUTO-ON PCB 045809

AUTO-ON
PARTS LIST

Symbol No.	Part No.	Description
DIODES (RECT = Rectifier)		
D801	070031	RECT, 400V, 1.5A
D802	070031	RECT, 400V, 1.5A
D803	070031	RECT, 400V, 1.5A
D804	070031	RECT, 400V, 1.5A
RELAYS		
K801	087033	SPDT, 100VDC
TRANSISTORS		
Q801	131012	SCR, C106M

