

MODEL 3

SERVICE MANUAL

MODEL 3 STUDIO/REMOTE MIXER

The model 3 mixer is a general purpose line level mixer for both studio and remote applications. The model 3 has many features and expansions that are only found on mixers many times this size despite it's compact size. Each channel is designed for stereo inputs on each radial fader for easy cross fading of stereo signals. The first two channels have microphone inputs for field microphones. Each channel can be mono'd for use in studio mix down sessions. A variety of monitoring functions make the mixer flexible in both studio and field use. The flexible connector panel allows the cascading of mixers, additional channels, additional metering, additional monitoring, and outboard microphone preamplifiers.

Model 3 Mixer

Designed and developed by Peter D. Erdman

1983

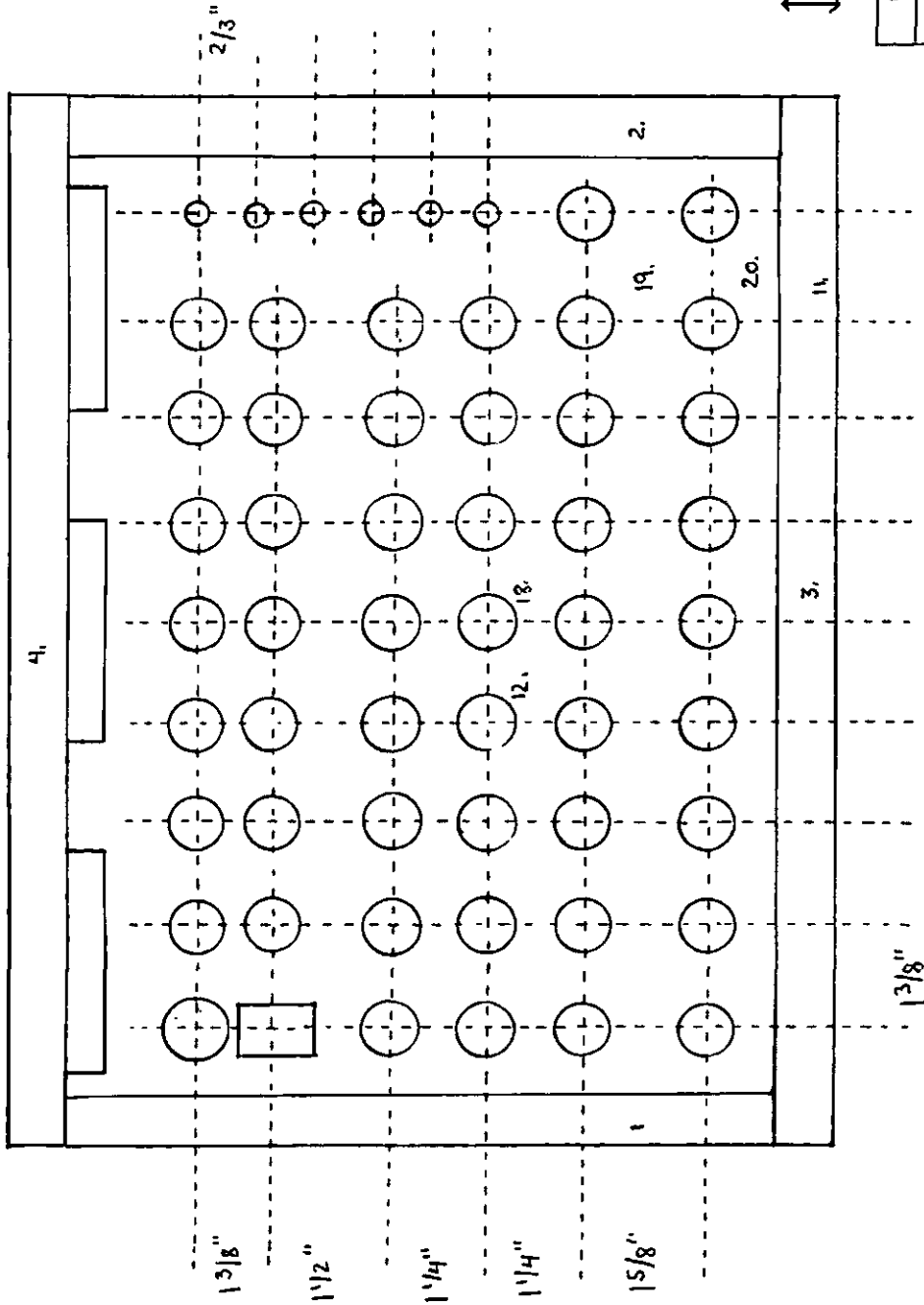
OPERATORY DESCRIPTION

The model 3 professional studio/remote mixer has 8 double (stereo) inputs. Each channel (A & B sides) is controlled by an input radial potentiometer. Channels 3 - 8 have a pan pot that acts as a balance control- independent gain for each channel in complementary directions. Channels 1 & 2 have true pan pots for stereo placement in the two outputs from a single A source. Channel 1 & 2's pan pots have a defeated off position to enable stereo operation and defeat any kind of pan effect. Each channel has a post pan effects send control which routes a portion of the individual channels signal to an external effects buss which eventually is re-entered into the main mix. Also characteristic to each channel is an audition control which allows a stereo mix to be established independent of the main mix. This secondary mix is pre- effects and pre- pan. The overall gain and balance is controlled by the master gain and the master pan for the main mix. The gain of the re- entry point for effects is controlled by the effects receive control, and is hardwired back into the main mix.

The monitoring system has 3 possible destinations: control room, studio, headphones. Each of these destinations is stereo and must be externally amplified, except for the headphones which is available on the front panel. Each destinations individual channel (A or B) is input selectable via toggle switches and has individual stereo gain controls. Each can monitor either the main mix or the audition mix.

3 1/4"

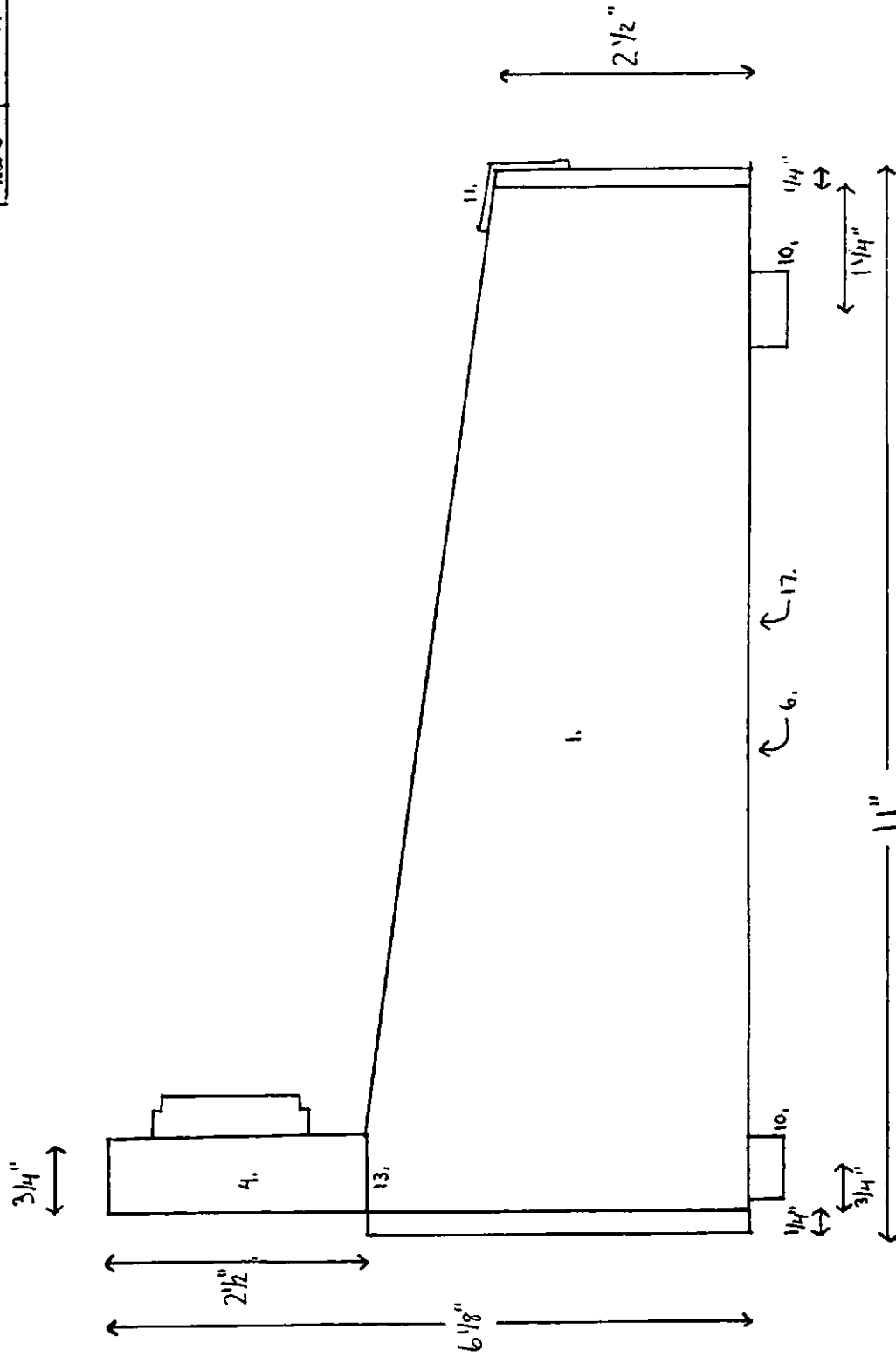
14 1/4"

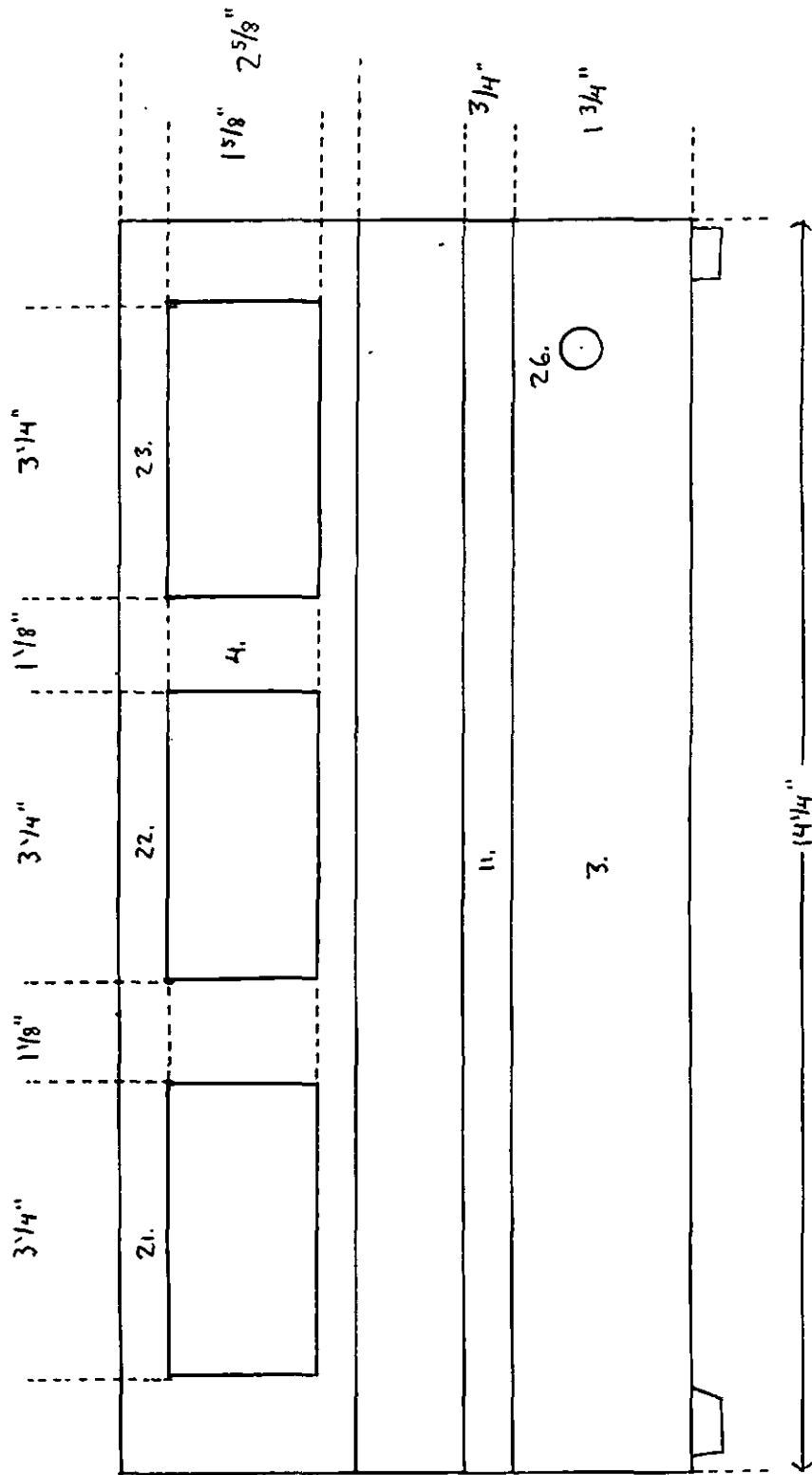


3 1/4"

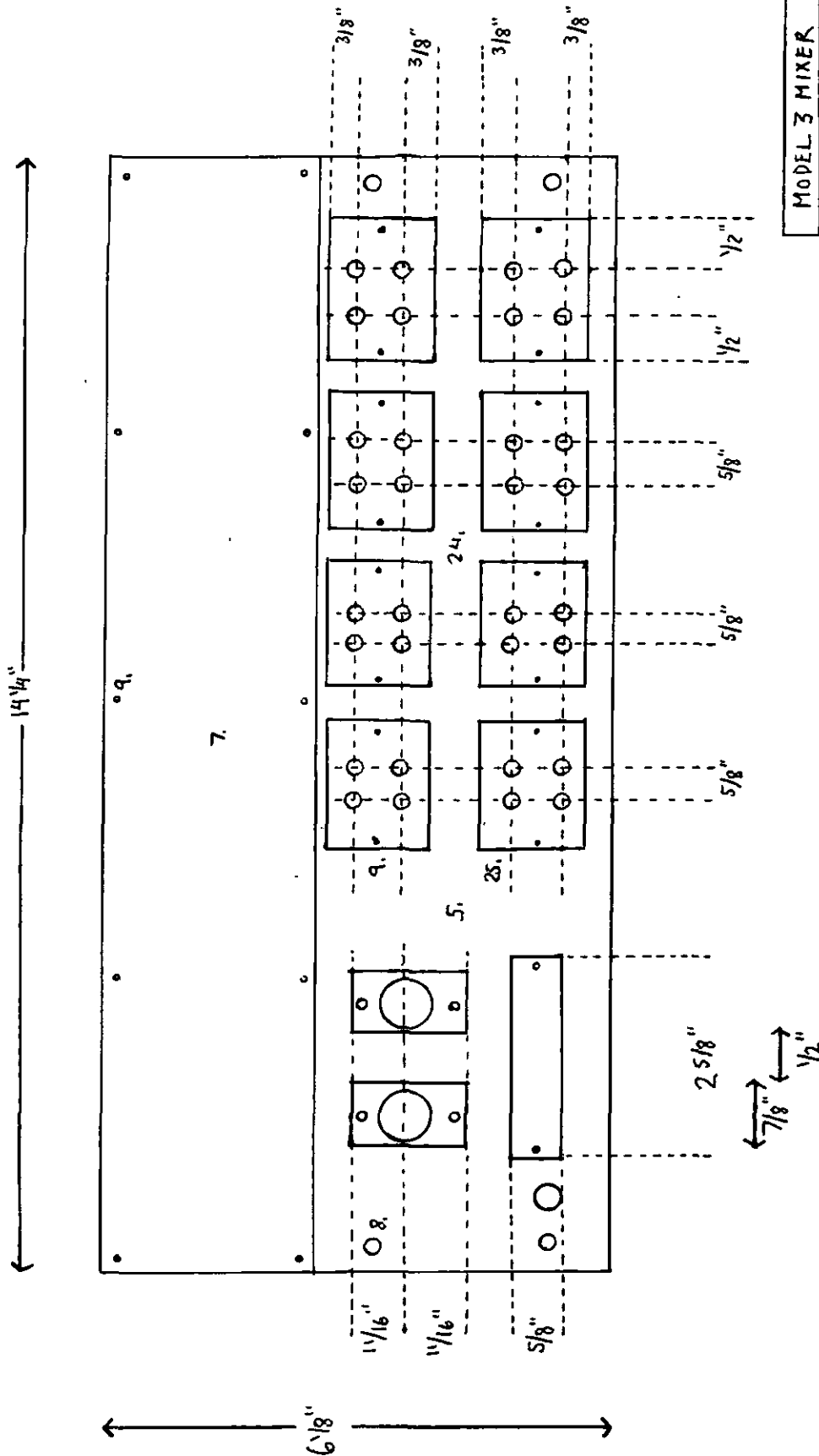
MODEL 3 MIXER		
TOP VIEW		
12/12	12-9-83	rev. 1.4
B.B.L.	EROMAN	

MODEL 3 MIXER		
SIDE VIEW		
12/12	12-7-83	rev 1.1
ROE	EROMAN	



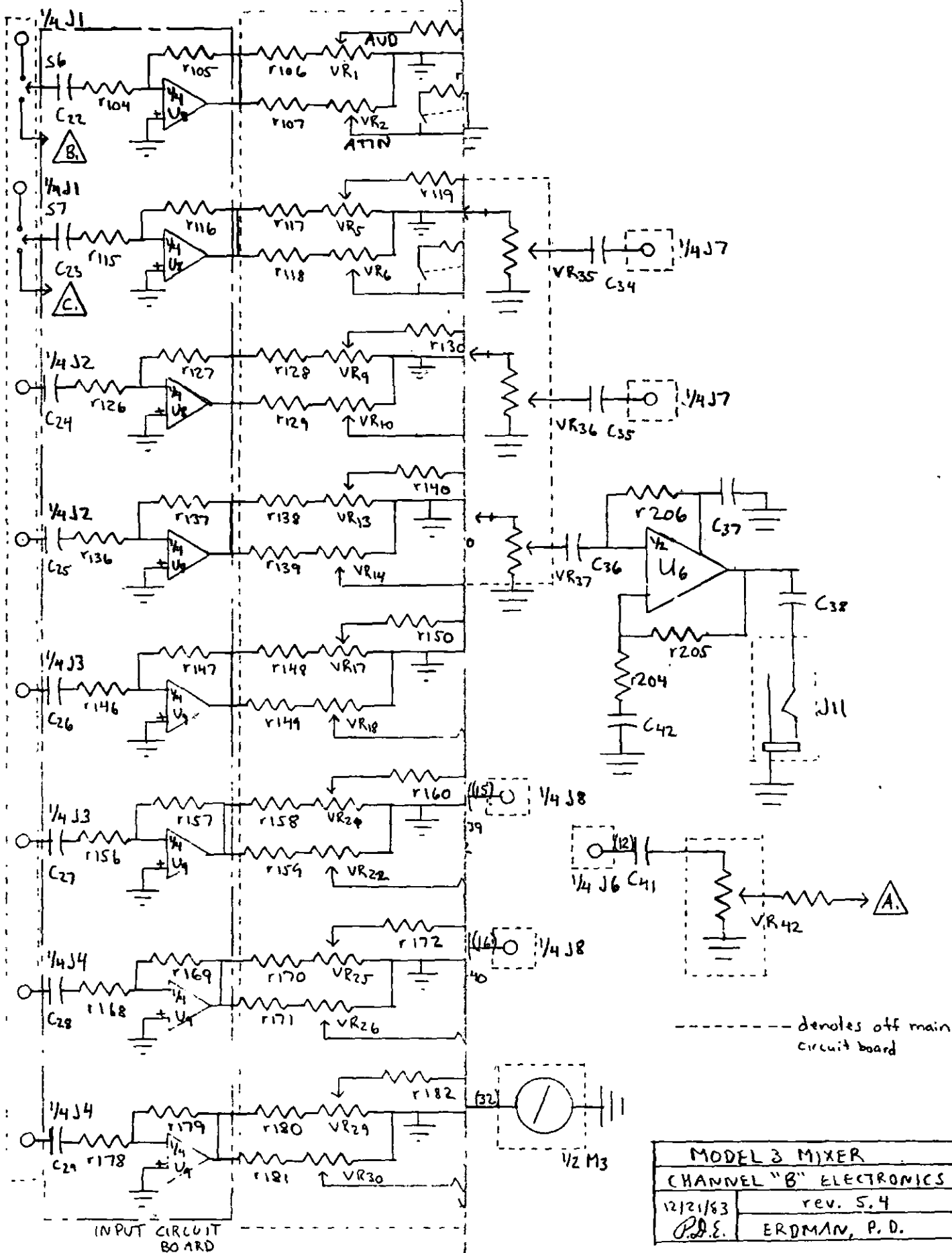


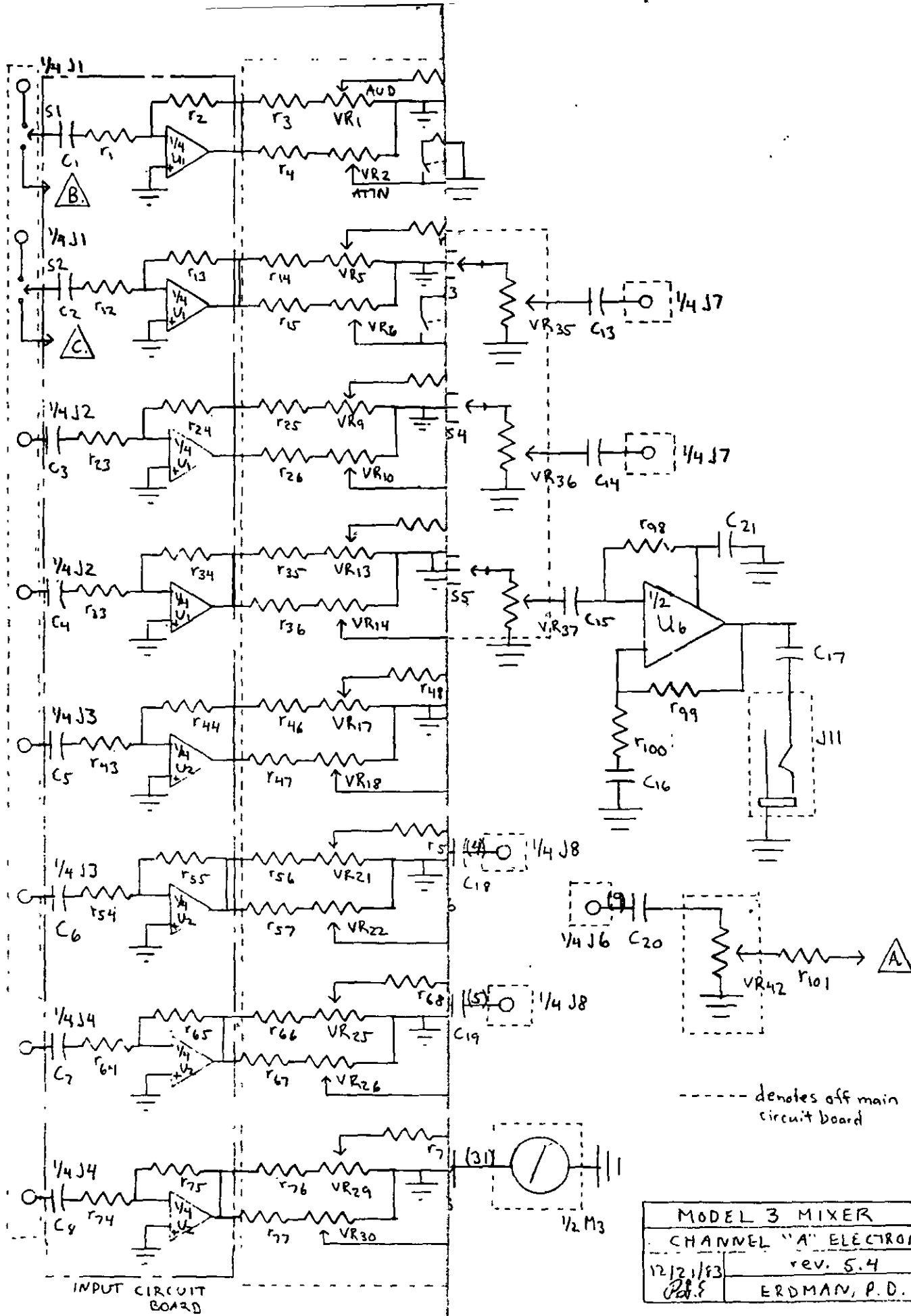
MODEL 3 MIXER		
FRONT VIEW		
12/12	12-11-83	rev. 1.3
PDE.	ERDMAN	



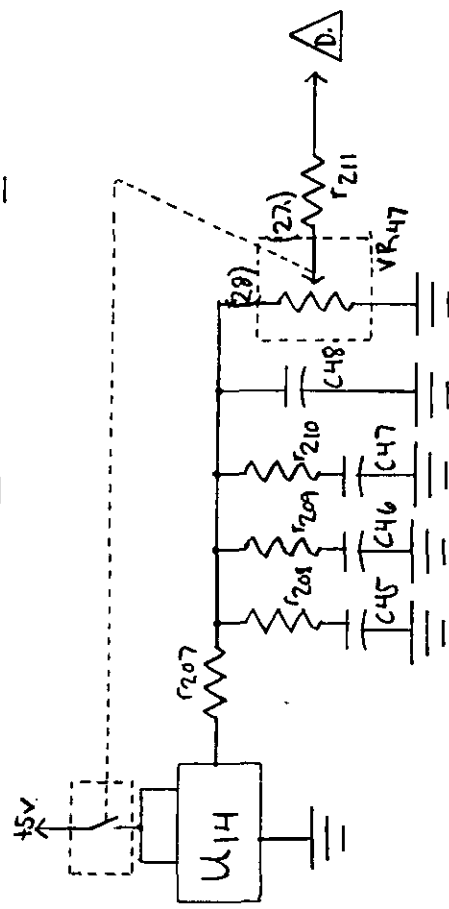
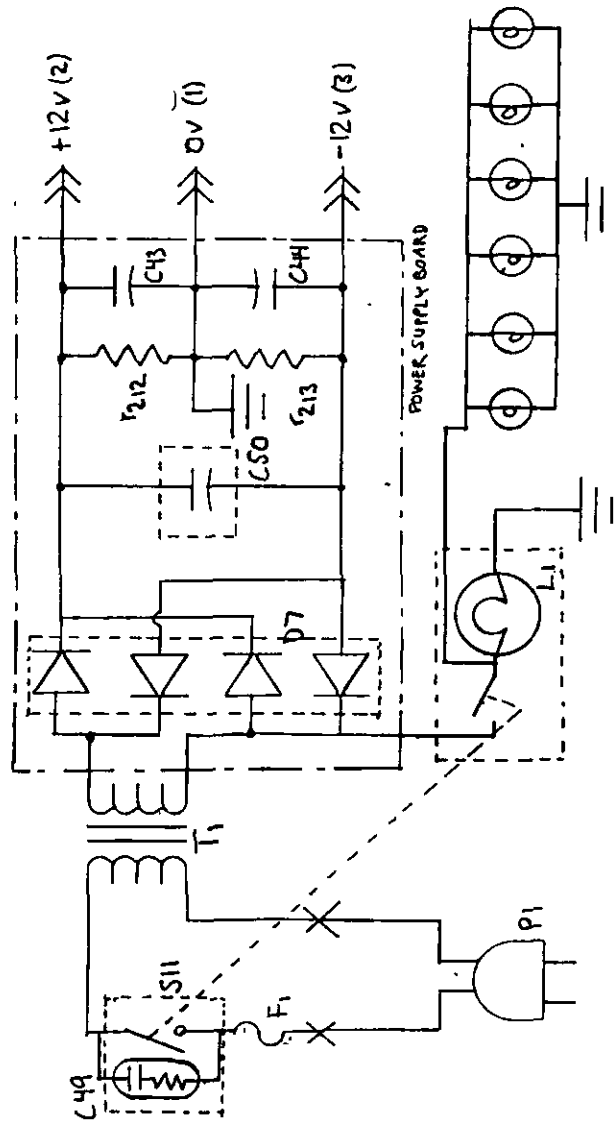
MODEL 3 MIXER		
BACK VIEW		
1243	12-12-83	REV 1.3
DE.	ERDMAN	

		<u>CHASSIS</u>		
600	1	Side walnut panel- left		1
601	2	Side walnut panel- right		1
602	3	Front panel- walnut		1
603	4	Meter bridge panel		1
604	5	Rear walnut panel		1
605	6	Bottom panel		1
606	7	Meter bridge masking metal		1
607	8	Screw, #10, 1"		4
608	9	Screw, #4, 3/8"		22
609	10	Rubber feet with screws		4
610	11	Vinyl edge material		1
611	12	Potentiometer knobs		48
612	13	Screw, #12, 1"		2
613	14	Spacer, 1"		4
614	15	Screw, #8, 1"		2
615	16	Spacer Foam		1
616	17	Copper shield plate		1
617	18	Potentiometer nuts		96
618	19	Face plate metal		1
619	20	Face plate metal image sheet		1
620	21	"Audition" meter label sheet		1
621	22	"Mix" meter label sheet		1
622	23	"Auxiliary" meter label sheet		1
623	24	Rear panel connector labels		1
624	25	Rear panel connector labels		1
625	26	"Headphones" connector label sheet		1





MODEL 3 MIXER	
CHANNEL "A" ELECTRONICS	
12/21/83	rev. 5.4
Pd. 5	ERDMAN, P. D.

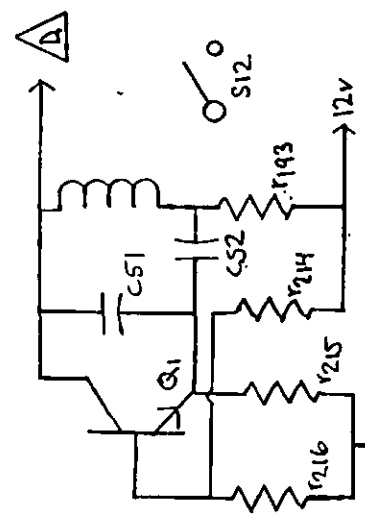
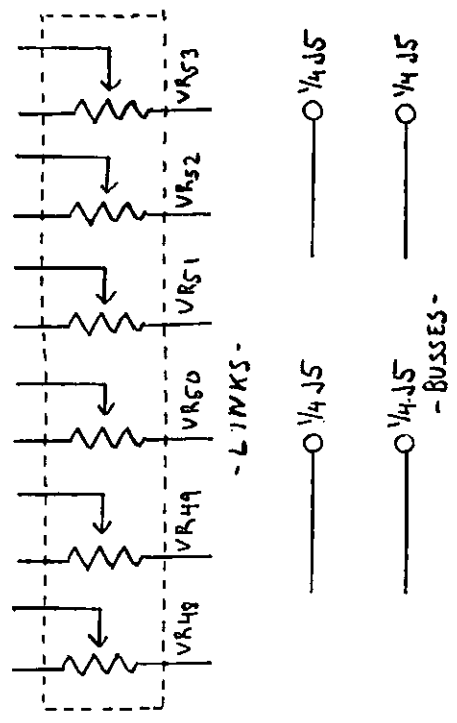


-PINK NOISE GENERATOR-

20 IN.C.

CARD EDGE CONNECTOR

P2



--- denotes off main circuit board

MODEL 3 MIXER	
COM. CHANNEL ELECTRONICS	
12-21-83	REV. 5.4
ERD E.	ERDMAN, P.D.

40 Pin Connector Assignment

1. Ground	21. TT freq out
2. Plus 12 volts	22. TT freq in
3. Minus 12 volts	23. TT gain out
4. Output 1A	24. TT gain in
5. Output 2A	25. TT switch in
6. Inputs A	26. TT switch out
7. Eff and A	27. PN gain in
8. Eff inputs A	28. PN gain out
9. Eff rec A	29. VU #1 out
10. Aud inputs A	30. VU #2 out
11. Aud inputs B	31. VU #3 out
12. Eff rec B	32. VU #4 out
13. Eff inputs B	33. VU #5 out
14. Inputs B	34. VU #6 out
15. Output 2B	35. Aud switch A
16. Output 1B	36. Aud switch B
17. Eff and B	37. Pga output switch A
18. Master/pan B out	38. Pga output switch B
19. Master/pan B in	39. Master/pan A out
20. NC	40. Master/pan A in

<u>ELECTRONICS</u>				
500	C1 - 8 C12 - 15 C17 - 20 C22 - 29 C33 - 36 C38 - 41 C53	Capacitor, .01 MFD, 50v, disc		33
501	C9 - 11 C30 - 32	Capacitor, 4.7 PFD, 20v, disc		6
502	C16, C42	Capacitor, 4.7 MFD, 20v, disc		2
503	C21, C37	Capacitor, 220 MFD, 20v, elect.		2
504	C43 - 44	Capacitor, 100 MFD, elect.		2
505	C45	Capacitor, 1 MFD, 10v, disc		1
506	C46	Capacitor, .3 PFD, 10c, disc		1
507	C47 C51 - 52	Capacitor, .1 MFD, 10v, disc		3
508	C48	Capacitor, .05MFD, 10v, disc		1
509	C49	Capacitor, .1 MFD, 1000v		1
510	C50	Capacitor, 1000 MFD, elect.		1
511	C54	Capacitor, .005 MFD, disc		1
512	C55	Capacitor, 1000 PFD, disc		1
513	D1 - 6	Diode, 1N4004, 50 PIV		6
514	D7	Diode, full wave bridge, 100 PIV		1
515	F1	Fuse block		1
516	J1 - 8	Jack, Quad RCA plate, female		8
517	J9 - 10	Jack, XLR, female, chassis		2
518	J11	Jack, $\frac{1}{4}$ ", female, chassis		1
519	L1	Lamp assembly, amber		1
520	M1 - 3	Meter, dual VU		3
521	P1	Plug, edison with cord		1
522	P2	Plug, 40-pin edge connector		1
523	Q1	Transistor, SK3003		1

		<u>ELECTRONICS</u>		
524	R3 - 5 R7 - 11 R14 - 16 R18 - 22 R25 - 32 R35 - 42 R46 - 53 R56 - 63 R66 - 73 R76 - 83 R85 - R87 R90 R101 R106 - 109 R111 - 114 R117 - 119 R121 - 125 R128 - 135 R138 - 145 R148 - 155 R158 - 165 R170 - 177 R180 - 187 R189 R191 R194 - 197 R211	Resistor, fixed, 10K, $\frac{1}{4}$ watt, 10%		146
525	R1 R12 R23 R33 R43 R54 R64 R74 R94 - 95 R104 R115 R126 R136 R146 R156 R168 R178 R200 - 201	Resistor, fixed, 200, $\frac{1}{4}$ watt, 10%		

<u>ELECTRONICS</u>					
526	R6 R17 R110 R120	Resistor, fixed, 5K, $\frac{1}{4}$ watt, 10%			4
527	R2 R13 R24 R34 R44 R55 R65 R75 R102 - 103 R105 R116 R127 R137 R147 R157 R169 R179 R198 - 199	Resistor, fixed, 500, $\frac{1}{4}$ watt, 10%			20
528	R84 R86 R89 R188 R190 R193	Resistor, fixed, 50K, $\frac{1}{4}$ watt, 10%			6
529	R88 R96 - 97 R192 R202 - 203	Resistor, fixed, 30K, $\frac{1}{4}$ watt, 10%			6
529	R98 - 99 R205 - 206	Resistor, fixed, 100K, $\frac{1}{4}$ watt, 10%			4
530	R100 R204	Resistor, fixed, 1.8K, $\frac{1}{4}$ watt, 10%			2
531	R207	Resistor, fixed, 7K, $\frac{1}{4}$ watt, 10%			1

<u>ELECTRONICS</u>				
532	R208 R214	Resistor, fixed, 3K, $\frac{1}{4}$ watt, 10%		2
533	R209	Resistor, fixed, 1K, $\frac{1}{4}$ watt, 10%		1
534	R210	Resistor, fixed, 300, $\frac{1}{4}$ watt, 10%		1
535	R212 - 213	Resistor, fixed, 500, $\frac{1}{2}$ watt, 20%		2
536	R215	Resistor, fixed, 27K, $\frac{1}{4}$ watt, 10%		1
537	R216	Resistor, fixed, 2.2K, $\frac{1}{4}$ watt, 10%		1
538	S1 - 2 S6 - 7	Switch, toggle, SPST, miniature		4
539	S3 - 5 S8 - 10	Switch, 3-position, miniature		6
540	S11	Switch, paddle, DPDT		1
541	S12	Switch, wafer, 4-pole		1
542	T1	Transformer, 12.6v, 2 amp		1
543	U1 - 2 U8 - 9	IC, TL084C		4
544	U3 U10	IC, LM301Na		2
545	U4 U7 U11 U13	IC, LM324N		4
545	U5 U12	IC, 739N		2
546	U6	IC, LM1877		1
547	U14	IC, S2688		1
548	VR1 - 2 VR4 VR5 - 6 VR8 VR9 - 32 VR35 - 37 VR39 - 40 VR42	Resistor, variable, 50K, $\frac{1}{2}$ watt, stereo		36

<u>ELECTRONICS</u>					
549	VR3 - VR7 VR48 - 53	Resistor, variable, 50K, $\frac{1}{2}$ watt, with switch			8
550	VR34 VR44 VR38 VR41 VR45 VR46	Resistor, variable, 100K, $\frac{1}{2}$ watt, trim			6
551	VR33 VR43	Resistor, variable, 1K, $\frac{1}{2}$ watt			2
552	X1	Circuit board, generic			1

LAMP/FUSE SCHEDULE

Lamps

L1 (power indicator)	lamp # 1816
VU meter lamps	lamp # 48 FSB

Fuses

Internal line fuse	3/10 amp @ 100 volts AGC .3
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SPECIFICATIONS

MIC INPUT

Source impedance: 200 ohm or greater, balanced

Input impedance: 600 ohm

Nominal input level: -60 dBm

LINE INPUT

Source impedance: 30K ohm or greater

Input impedance: 200 ohm

Nominal input level: -8 dBm

EFFECTS RECEIVE

Input impedance: 10K ohm

Nominal input level: -8 dBm

CONTROL ROOM SEND

Output impedance: 10K ohm

Nominal output level: -8 dBm

STUDIO SEND

Output impedance: 30K ohm

Nominal output level: -8 dBm

HEADPHONE OUTPUT

Load input: 8 ohms or greater stereo headphones

Maximum output power: 100mW per channel

MAIN OUTPUT

Output impedance: 10K ohm

Nominal output level: -8 dBm

POWER

117 VAC, 60 Hz, 10 Watts