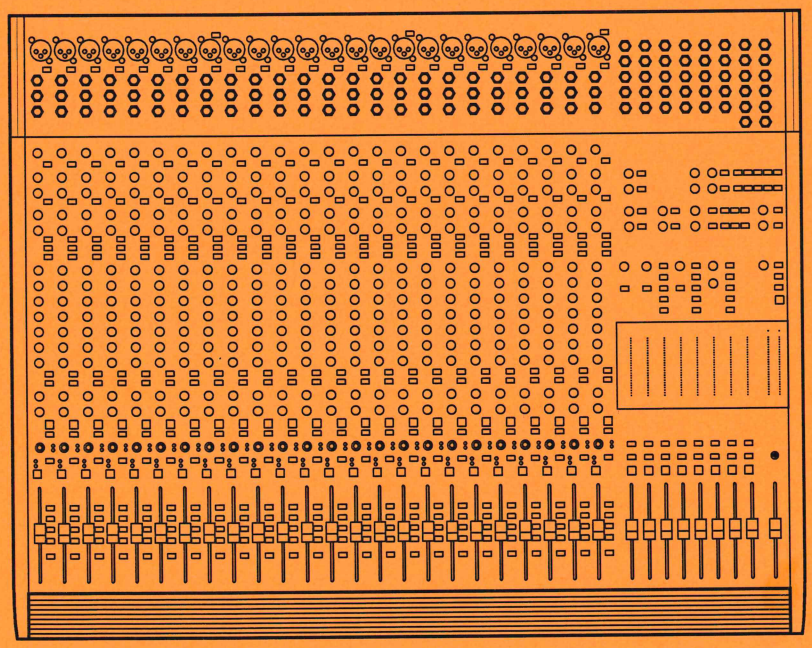
MACKIE®

8•BUS

8•BUS MIXING CONSOLE



SERVICE MANUAL

©1993, ©1999 MACKIE DESIGNS, INC.
820-177-00

SERVICE ON THIS EQUIPMENT IS TO BE PERFORMED BY
EXPERIENCED REPAIR TECHNICIANS ONLY
CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE

CAUTION *AVIS*

RISK OF ELECTRIC SHOCK
DO NOT OPEN
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE THE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR EVITER LES RISQUES DE CHOC ELECTRIQUE, NE PAS ENLEVER LE COUVERCLE. AUCUN ENTRETIEN DE PIECES INTERIEURES PAR L'USAGER. CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE.

AVIS:POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, N'EXPOSEZ PAS CET ARTICLE A LA PLUIE OU A L'HUMIDITE.

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UN PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS LAISSER AUCUNE PARTIE A DECOUVERT.

This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION :Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant las limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le réglement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio energy and, if not installed properly and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Le symbole éclair avec point de flèche à l'intérieur d'un triangle équilatéral est utilisé pour alerter l'utilisateur de la présence à l'intérieur du coffret de "voltage dangereux" non isolé d'ampleur suffisante pour constituer un risque d'éléctrocution.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Le point d'exclamation à l'intérieur d'un triangle équilatéral est employé pour alerter les utilisateurs de la présence d'instructions importantes pour le fonctionnement et l'entretien (service) dans le livret d'instruction accompagnant l'appareil.

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Output board 10-1
Meter board 11-1
Jack Field board 12-1
Tape Output board 13-1
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Expander board 19-1
Power Distribution board 20-1
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INTRODUCTION

SERVICE ON THIS EQUIPMENT IS TO BE PERFORMED BY
EXPERIENCED REPAIR TECHNICIANS ONLY
CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE

This manual contains basic service information. It is essential that you have a copy of the user's manual as this contains the complete operating instructions.



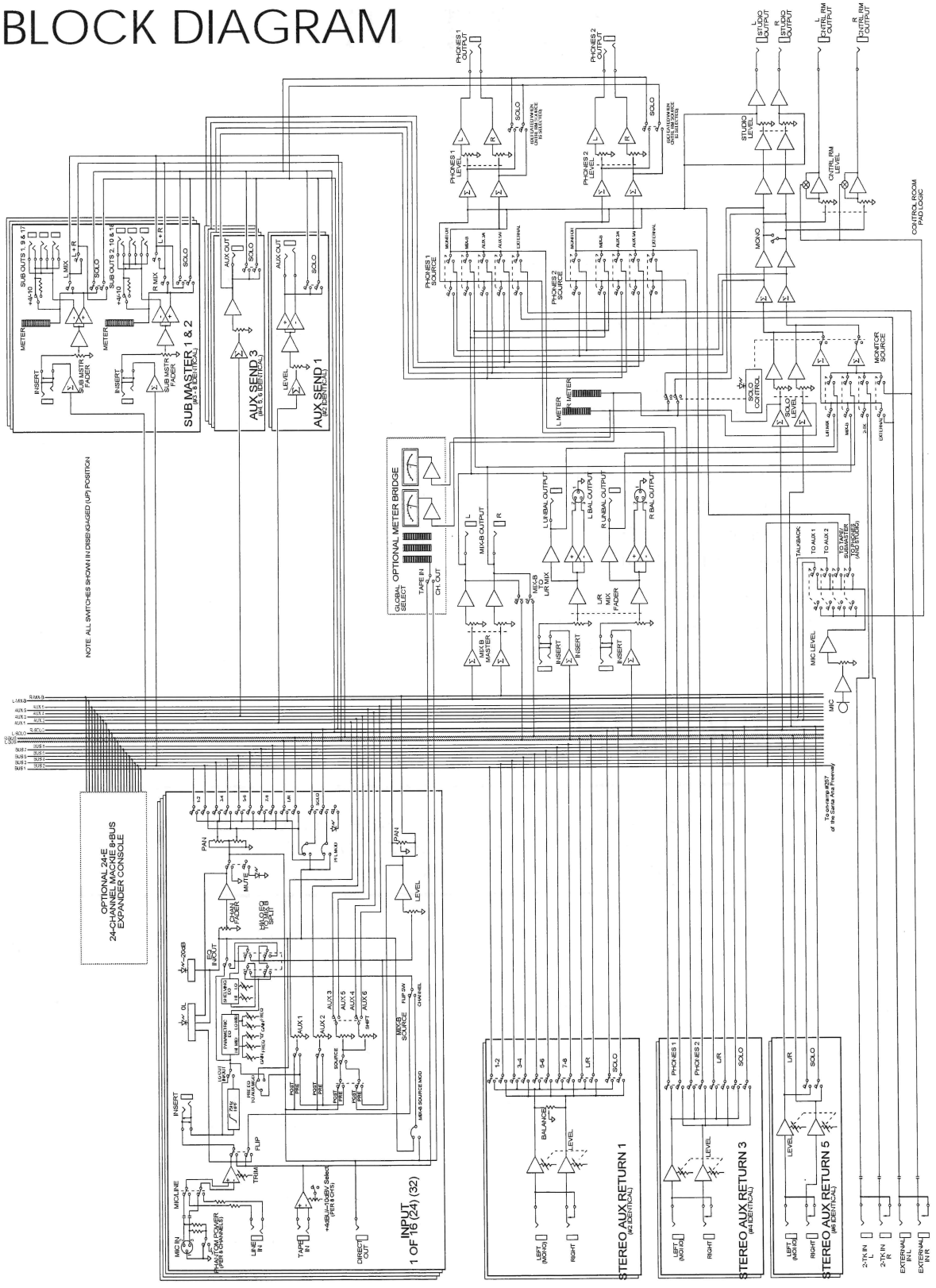
SERVICE TECHNICAL ASSISTANCE

Mackie Designs, Service Technical Assistance, is available 8AM - 5PM PST, Monday through Friday for Authorized Mackie Service Centers, at 1-800-258-6883. Feel free to call with any questions and speak with a carefully-calibrated technician. If one is not available, leave a detailed message and a qualified Mackoid will return your call asap.

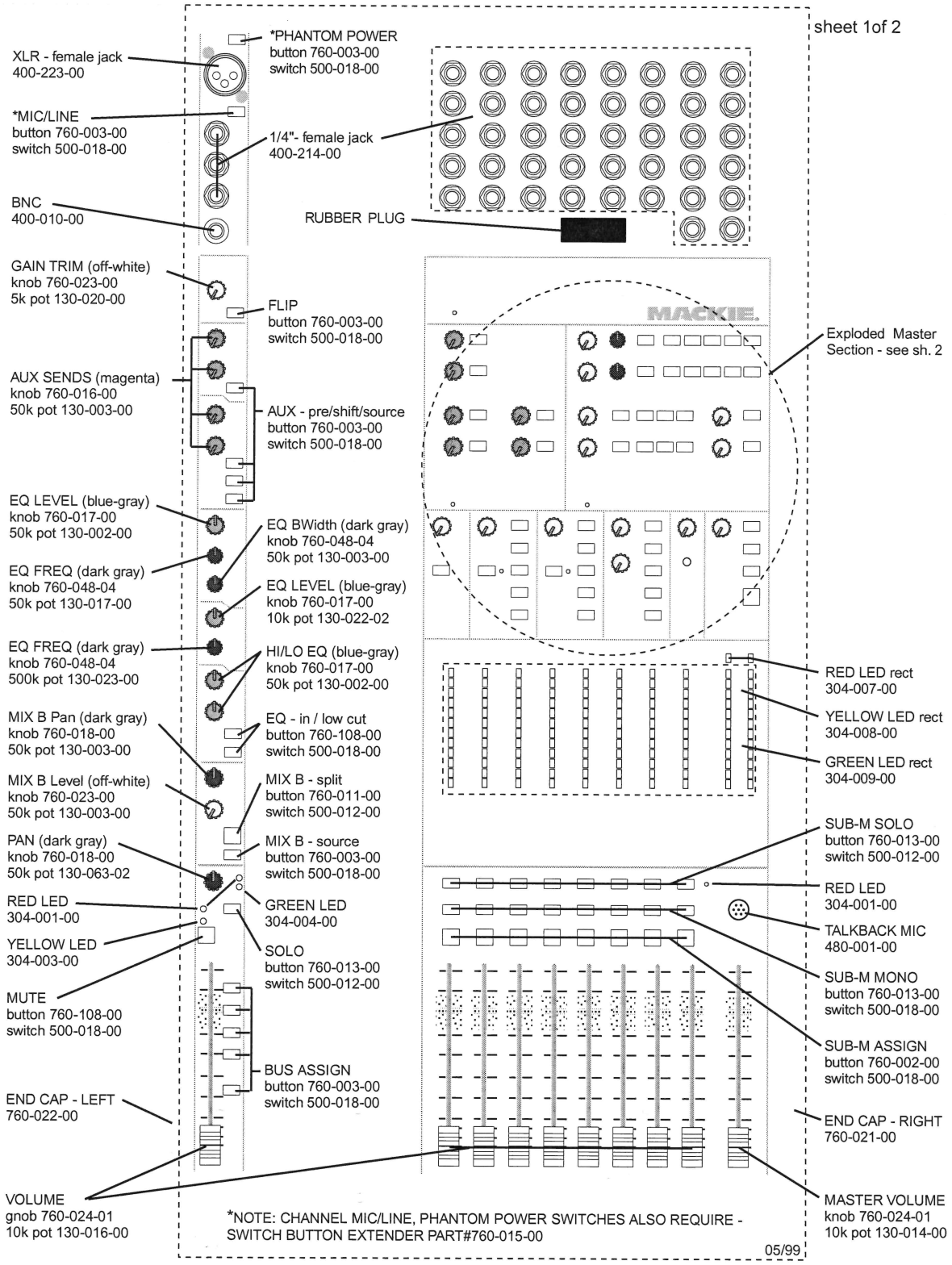
DISCLAIMER

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BLOCK DIAGRAM

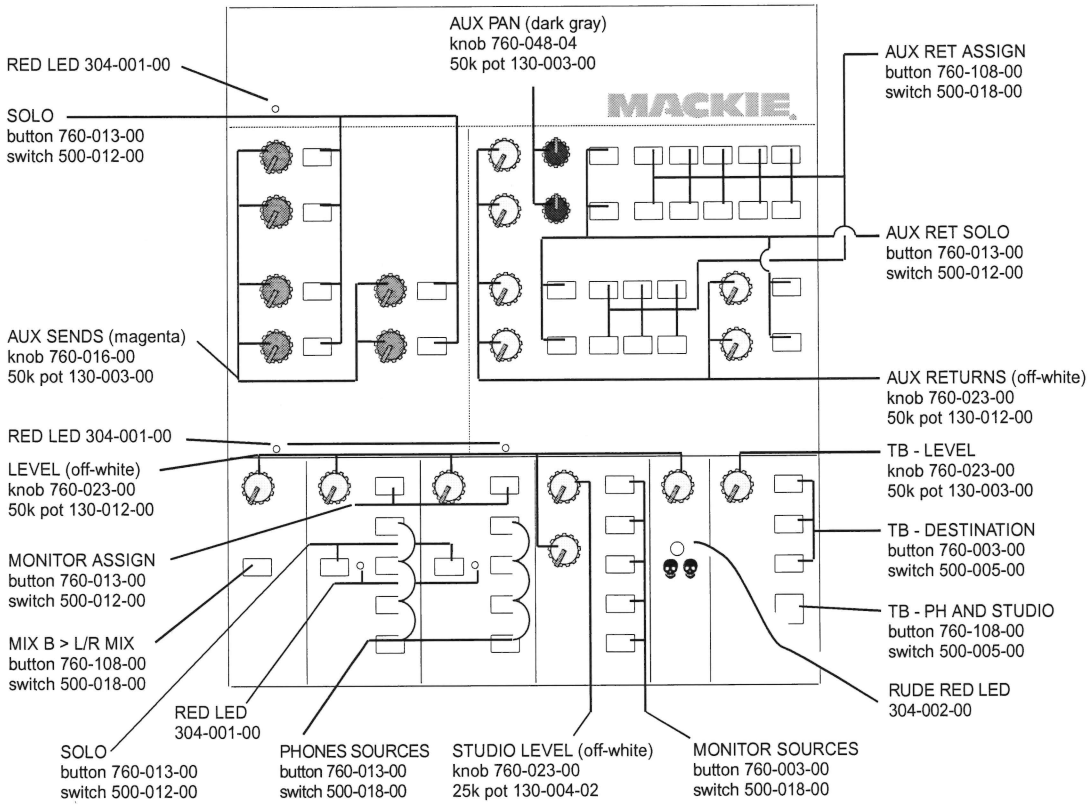


QUICK PARTS

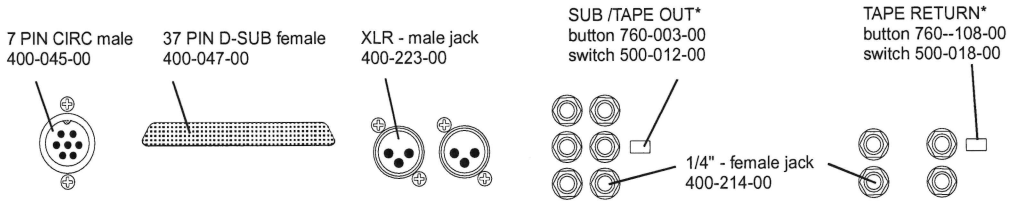

sheet 1of 2
XLR - female jack
400-223-00
*PHANTOM POWER
button 760-003-00
switch 500-018-00
*MIC/LINE
button 760-003-00
switch 500-018-00
1/4"- female jack
400-214-00
BNC
400-010-00
RUBBER PLUG
GAIN TRIM (off-white)
knob 760-023-00
5k pot 130-020-00
FLIP
button 760-003-00
switch 500-018-00
Exploded Master
Section - see sh. 2
AUX SENDS (magenta)
knob 760-016-00
50k pot 130-003-00
AUX - pre/shift/source
button 760-003-00
switch 500-018-00
EQ LEVEL (blue-gray)
knob 760-017-00
50k pot 130-002-00
EQ BWidth (dark gray)
knob 760-048-04
50k pot 130-003-00
EQ FREQ (dark gray)
knob 760-048-04
50k pot 130-017-00
EQ LEVEL (blue-gray)
knob 760-017-00
10k pot 130-022-02
EQ FREQ (dark gray)
knob 760-048-04
500k pot 130-023-00
HI/LO EQ (blue-gray)
knob 760-017-00
50k pot 130-002-00
RED LED rect
304-007-00
YELLOW LED rect
304-008-00
GREEN LED rect
304-009-00
MIX B Pan (dark gray)
knob 760-018-00
50k pot 130-003-00
EQ - in / low cut
button 760-108-00
switch 500-018-00
MIX B Level (off-white)
knob 760-023-00
50k pot 130-003-00
MIX B - split
button 760-011-00
switch 500-012-00
SUB-M SOLO
button 760-013-00
switch 500-012-00
PAN (dark gray)
knob 760-018-00
50k pot 130-063-02
MIX B - source
button 760-003-00
switch 500-018-00
RED LED
304-001-00
RED LED
304-001-00
GREEN LED
304-004-00
TALKBACK MIC
480-001-00
YELLOW LED
304-003-00
SOLO
button 760-013-00
switch 500-012-00
SUB-M MONO
button 760-013-00
switch 500-018-00
MUTE
button 760-108-00
switch 500-018-00
SUB-M ASSIGN
button 760-002-00
switch 500-018-00
BUS ASSIGN
button 760-003-00
switch 500-018-00
END CAP - LEFT
760-022-00
END CAP - RIGHT
760-021-00
VOLUME
gnob 760-024-01
10k pot 130-016-00
MASTER VOLUME
knob 760-024-01
10k pot 130-014-00
*NOTE: CHANNEL MIC/LINE, PHANTOM POWER SWITCHES ALSO REQUIRE -
SWITCH BUTTON EXTENDER PART#760-015-00
05/99

EXPLODED MASTER SECTION

8 Bus Quick Parts



REAR PANEL



* NOTE: SUBMASTER/TAPE OUTPUT & TAPE RETURN LEVEL SWITCHES ALSO REQUIRE - SWITCH BUTTON EXTENDER PART#760-028-00

MISCELLANEOUS:

8 BUS OWNER'S MANUAL
820-007-00

8 BUS Power Supply OWNER'S MANUAL, 820-006-00

Meter Bridge INSTRUCTIONS
820-008-00

Extrusion ARMREST
16–8, 24–E 551-006-00
24–8 551-007-00
32–8 551-008-00

ALLEN HEAD (HEX) SCREWS
(4-40 X 1/4) 700-011-00

24–E EXPANSION CABLE
640-004-00

POWER SUPPLY FAN 770-001-00

METER LENS
780-002-00

POWER SUPPLY POWER SWITCH
16A, 500-006-00

DC POWER CABLE
040-013-00

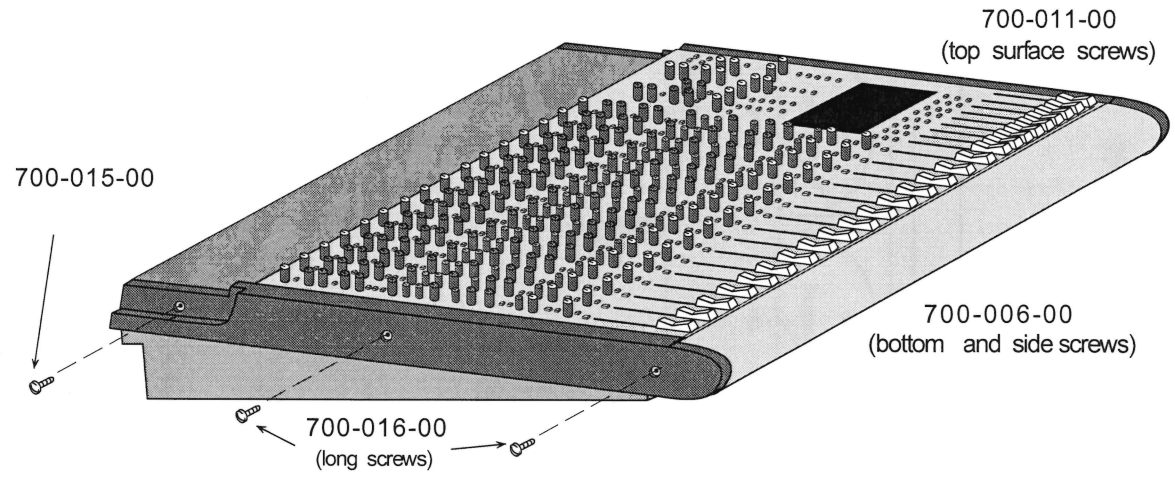
METER BRIDGE MOUNTING KIT
(080-030-00 - includes instructions and mounting hardware)

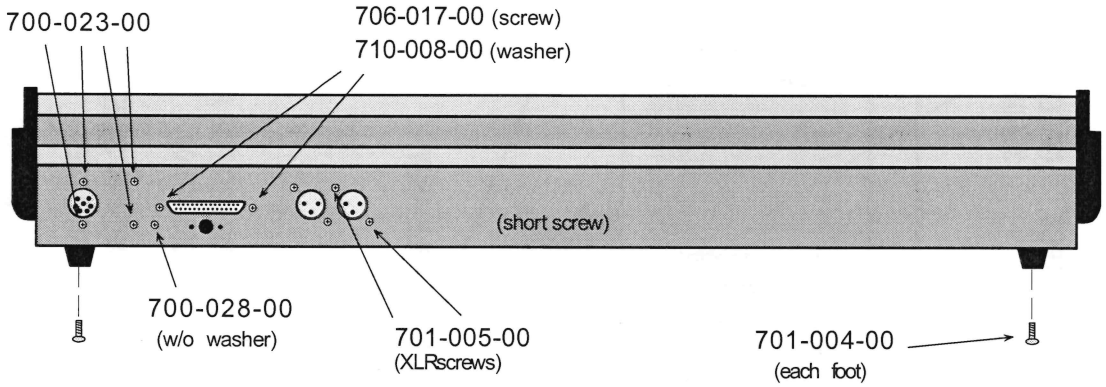
STAND FASTENER KIT
no part # - includes 10 screws
qty 4 8-32X1/4 machine
qty 6 6-32X1/4 sheet

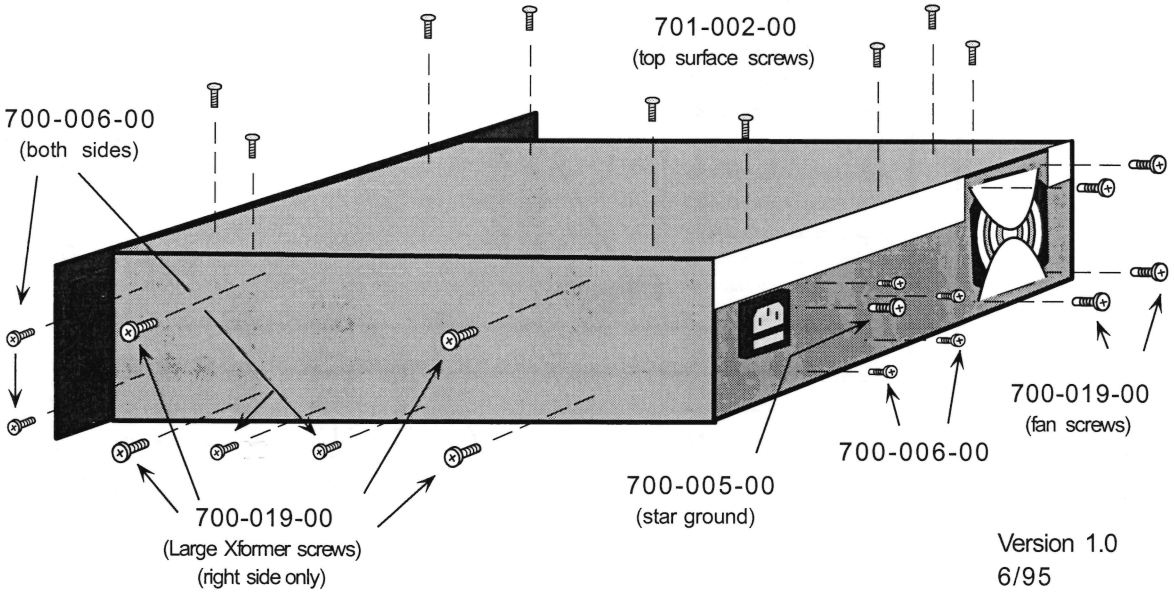
END CAP SCREWS
FRONT (10-32X1 1/4) 700-016-00
BACK (10-32X3/4) 700-015-00

LINE CORD 6' IEC 10A
USA (110V), 640-001-00
EURO (230V), 640-002-00

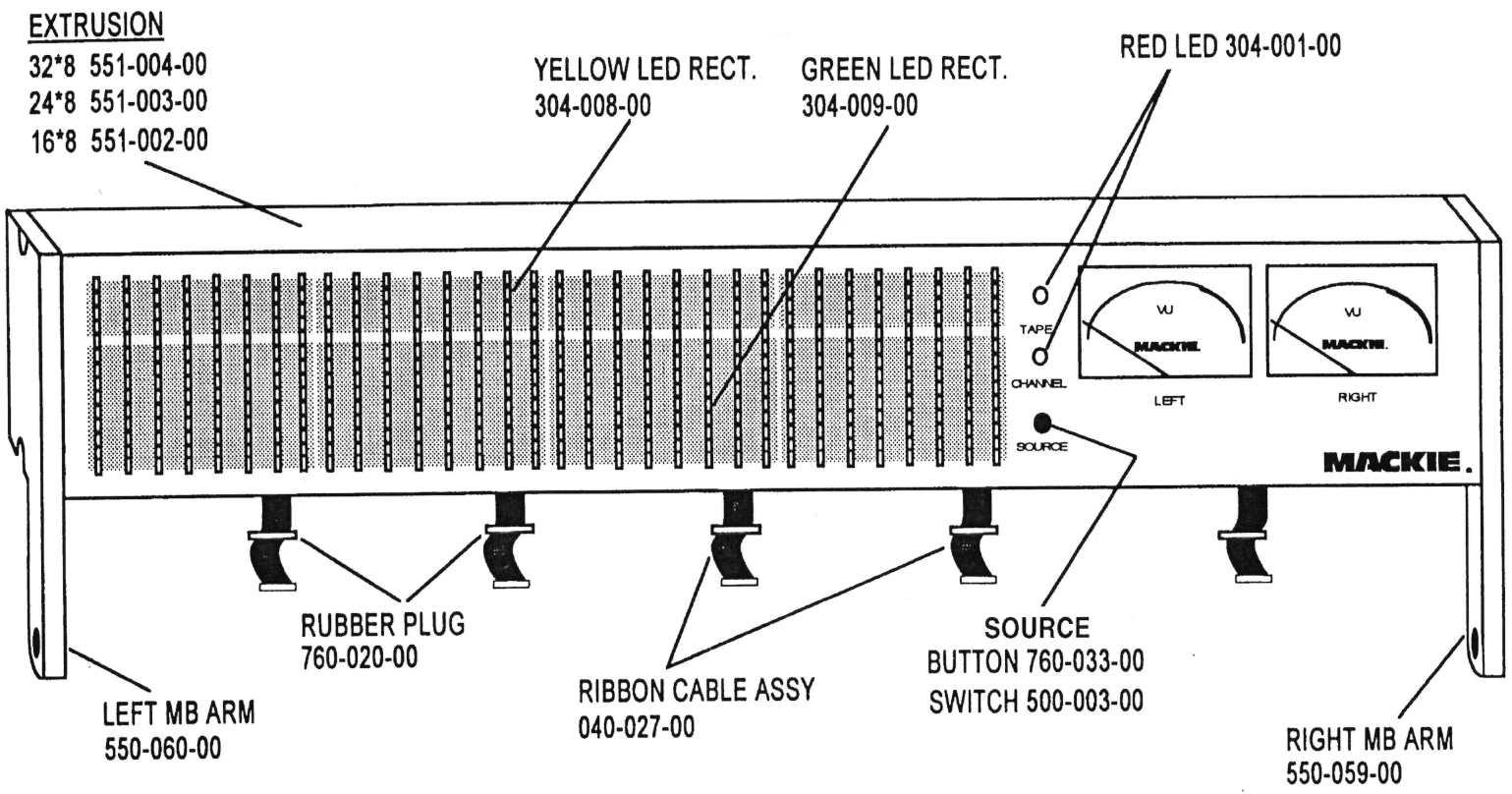
05/99







Version 1.0
6/95



MORE STUFF

METER BRIDGE LENS
32*8 780-005-00
24*8 780-004-00
16*8 780-003-00

MB VU ANALOG PCB ASSY
055-022-00

VU METER LENS
780-006-00

VU METER BEZEL
760-031-00

MB LED PCB ASSY
055-023-00

MB ARM SCREWS
701-001-00

VU METERS
770-002-00

MB INSTRUCTIONS
820-008-00

METER BRIDGE MOUNTING KIT
080-030-00

REPLACEMENT VU LAMPS
304-017-00 (9V NON-FROSTED)
304-023-00(18V FROSTED)

PARTS LIST

8•Bus individual circuit boards
(parts list taken from schematics)

990-008-00 REV S..... Mic/Line Preamp Board ..... Pages 2-3
990-009-00 REV U .... Channel Board ..... Pages 4-6
990-010-00 REV U .... Output Board ..... Pages 7-9
990-011-00 REV I ..... Meter Board ..... Page 10
990-012-00 REV S..... Jack Field Board ..... Page 10
990-013-00 REV S..... Tape Output Board ..... Page 11
990-014-00 REV S..... Tape Input Board ..... Page 11
990-015-00 REV S..... Power Supply Board ..... Page 12
990-019-00 REV S..... Expander ..... Page 13
990-020-00 REV C ... Power Distribution ..... Page 13
990-021-00 REV S..... Expander Output ..... Page 14
990-022-00 REV H .... Analog Meter Bridge ..... Page 15
990-023-00 REV F ..... LED Meter ..... Page 16

Parts Numbering guide

040- Cables
055- Finished PCB Assy
100- Pots and resistors
200- Capacitors
300- Semiconductors
400- Jacks/Connectors
500- Switches
510- Fuses
550- Chassis Metalwork
600- Transformers
601- Inductors
610- Wires and Cables
640- AC line cords
700- Hardware
760- Knobs/Plastic
770- Fans
790- Misc./Packing
800- Printed Material
860- EPROM

990-008-00 REV S, Mic/Line Preamp Board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-009-00	RESISTOR CF	22	5%	R113 R213 R313 R413 R513 R613 R713 R813
100-027-00	RESISTOR CF	120	5%	R121 R155 R221 R255 R321 R355 R421 R455 R521 R555 R621 R655 R721 R755 R821 R855
100-042-00	RESISTOR CF	510	5%	R107-108 R207-208 R307-308 R407-408 R507-508 R607-608 R707-708 R807-808
100-050-00	RESISTOR CF	1K1	5%	R2
100-080-00	RESISTOR CF	20K	5%	R1 R118 R218 R318 R418 R518 R618 R718 R818
110-072-00	RESISTOR CF	9K1	5%	R3-4
110-080-00	RESISTOR CF	20K	5%	R150
111-017-00	RESISTOR CF	4.7	5%	R103-104 R203-204 R303-304 R403-404 R503-504 R603-604 R703-704 R803-804
115-281-00	RESISTOR CF	825	1%	R109-110 R209-210 R309-310 R409-410 R509-510 R609-610 R709-710 R809-810
115-331-00	RESISTOR CF	2K49	1%	R111-112 R211-212 R311-312 R411-412 R511-512 R611-612 R711-712 R811-812
115-350-00	RESISTOR CF	3K92	1%	R114-117 R119-120 R214-217 R219-220 R314-317 R319-320 R414-417 R419-420 R514-517 R519-520 R614-617 R619-620 R714-717 R719-720 R814-817 R819-820
115-373-00	RESISTOR CF	6K81	1%	R101-102 R201-202 R301-302 R401-402 R501-502 R601-602 R701-702 R801-802
115-376-00	RESISTOR CF	7K32	1%	R105-106 R205-206 R305-306 R405-406 R505-506 R605-606 R705-706 R805-806
211-001-00	CAPACITOR CERAMIC AXIAL	0.01	10%	C3-11
211-008-00	CAPACITOR CERAMIC AXIAL	220 PF	10%	C105-106 C205-206 C305-306 C405-406 C505-506 C605-606 C705-706 C805-806
220-002-02	CAPACITOR LYTIC RADIAL TAPE	47UF	10%	C108-110 C208-210 C308-310 C408-410 C508-510 C608-610 C708-710 C808-810
220-003-02	CAPACITOR LYTIC RADIAL TAPE	47UF	10%	C1-2 C103-104 C203-204 C303-304 C403-404 C503-504 C603-604 C703-704 C803-804
220-004-00	CAPACITOR LYTIC RADIAL	470UF	10%	C107 C207 C307 C407 C507 C607 C707 C807
220-005-02	CAPACITOR LYTIC RADIAL TAPE	470UF	10%	C12-13
300-001-00	DOIDE SIGNAL	1N4148		D101-104 D201-204 D301-304 D401-404 D501-504 D601-604 D701-704 D801-804
310-003-02	TRANSISTOR PNP, T&R	2SA1084		Q103-104 Q203-204 Q303-304 Q403-404 Q503-504 Q603-604 Q703-704 Q803-804
310-004-00	TRANSISTOR NPN	MPSA06		Q1-2 Q101-102 Q201-202 Q301-302 Q401-402 Q501-502 Q601-602 Q701-702 Q801-802
320-001-00	I.C. LINEAR	NJM 4560		U1-4
400-002-01	CONNECTOR XLR PC MTG VERT FEMALE			J101 J201 J301 J401 J501 J601 J701 J801
400-003-01	CONN. JACK 1/4" VERT PC MT W/LOCKWASHER			J102-104 J202-204 J302-304 J402-404 J502-504 J602-604 J702-704 J802-804
400-013-00	CONNECTOR RTA 20P .100 X 2			J5
400-036-00	CONNECTOR RTA 40P .100 X 2			J4 J6
400-048-00	CONNECTOR RTA 7P .156 X 1			J14
400-056-00	CONNECTOR STR 20P .100 X 2			J12
400-059-00	CONN QUICK DISC 250			E4

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
500-001-00	SWITCH PUSH VERT PC MTG	2P2T	SW1 SW101 SW201 SW301 SW401 SW501 SW601 SW701 SW801
601-001-00	FERRITE BEAD		L101-102 L201-202 L301-302 L401-402 L501-502 L601-602 L701-702 L801-802
610-007-00	WIRE 22GA TR64	VIO 6.5	
760-003-00	BUTTON SW 9X5 MM		
760-015-00	"EXTENDER, SWITCH BUTTON"		

990-009-00 REV U, Channel board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
050-016-00	EQ MODULE			U104 U204 U304 U404 U504 U604 U704 U804
100-008-00	RESISTOR CF	20	5%	R175 R275 R375 R475 R575 R675 R775 R875
100-027-00	RESISTOR CF	120	5%	R165 R265 R365 R465 R565 R665 R765 R865
100-033-00	RESISTOR CF	220	5%	R124 R224 R324 R424 R524 R624 R724 R824
100-042-00	RESISTOR CF	510	5%	R122 R127 R130 R222 R227 R230 R322 R327 R330 R422 R427 R430 R522 R527 R530 R622 R627 R630 R722 R727 R730 R822 R827 R830
100-048-00	RESISTOR CF	910	5%	R146 R246 R346 R446 R546 R646 R746 R846
100-050-00	RESISTOR CF	1K1	5%	R123 R128 R223 R228 R323 R328 R423 R428 R523 R528 R623 R628 R723 R728 R823 R828
100-052-00	RESISTOR CF	1K3	5%	R102 R202 R302 R402 R502 R602 R702 R802
100-056-00	RESISTOR CF	2K	5%	R158 R258 R358 R458 R558 R658 R758 R858
100-059-00	RESISTOR CF	2K7	5%	R159-160 R259-260 R359-360 R459-460 R559-560 R659-660 R759-760 R859-860
100-066-00	RESISTOR CF	5K1	5%	R101 R134-145 R147 R149 R151 R153 R201 R234-245 R247 R249 R251 R253 R301 R334-345 R347 R349 R351 R353 R401 R434-445 R447 R449 R451 R453 R501 R534-545 R547 R549 R551 R553 R601 R634-645 R647 R649 R651 R653 R701 R734-745 R747 R749 R751 R753 R801 R834-845 R847 R849 R851 R853
100-067-00	RESISTOR CF	5K6	5%	R105 R205 R305 R405 R505 R605 R705 R805
100-070-00	RESISTOR CF	7K5	5%	R161 R163 R261 R263 R361 R363 R461 R463 R561 R563 R661 R663 R761 R763 R861 R863
100-071-00	RESISTOR CF	8K2	5%	R109-110 R209-210 R309-310 R409-410 R509-510 R609-610 R709-710 R809-810
100-077-00	RESISTOR CF	15K	5%	R174 R274 R374 R474 R574 R674 R774 R874
100-080-00	RESISTOR CF	20K	5%	R104 R108 R114 R170 R188 R204 R208 R214 R270 R288 R304 R308 R314 R370 R388 R404 R408 R414 R470 R488 R504 R508 R514 R570 R588 R604 R608 R614 R670 R688 R704 R708 R714 R770 R788 R804 R808 R814 R870 R888
100-084-00	RESISTOR CF	30K	5%	R155 R255 R355 R455 R555 R655 R755 R855
100-086-00	RESISTOR CF	36K	5%	R121 R132-133 R157 R221 R232-233 R257 R321 R332-333 R357 R421 R432-433 R457 R521 R532-533 R557 R621 R632-633 R657 R721 R732-733 R757 R821 R832-833 R857
100-092-00	RESISTOR CF	62K	5%	R103 R203 R303 R403 R503 R603 R703 R803

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-097-00	RESISTOR CF	100K	5%	R119 R129 R219 R229 R319 R329 R419 R429 R519 R529 R619 R629 R719 R729 R819 R829
100-104-00	RESISTOR CF	200K	5%	R116-118 R120 R125 R171 R216-218 R220 R225 R271 R316-318 R320 R325 R371 R416-418 R420 R425 R471 R516-518 R520 R525 R571 R616-618 R620 R625 R671 R716-718 R720 R725 R771 R816-818 R820 R825 R871
130-002-02	RESISTOR POT 9MM HORIZ	50KB		R106-107 R113 R206-207 R213 R306-307 R313 R406-407 R413 R506-507 R513 R606-607 R613 R706-707 R713 R806-807 R813
130-003-02	RESISTOR POT 9MM HORIZ	50KG		R115 R148 R150 R152 R154 R156 R162 R215 R248 R250 R252 R254 R256 R262 R315 R348 R350 R352 R354 R356 R362 R415 R448 R450 R452 R454 R456 R462 R515 R548 R550 R552 R554 R556 R562 R615 R648 R650 R652 R654 R656 R662 R715 R748 R750 R752 R754 R756 R762 R815 R848 R850 R852 R854 R856 R862
130-016-00	RESISTOR POT SLIDE 100MM	10KD		R126 R226 R326 R426 R526 R626 R726 R826
130-022-02	RESISTOR POT 9MM HORIZ	10KB		R112 R212 R312 R412 R512 R612 R712 R812
130-030-02	RESISTOR POT 9MM HORIZ	5KZY		R166 R266 R366 R466 R566 R666 R766 R866
130-062-02	RESISTOR POT 12MM HORIZ DUAL	50KC		R164 R264 R364 R464 R564 R664 R764 R864
130-063-02	RESISTOR POT 12MM HORIZ DUAL	50KC/50KA		R131 R231 R331 R431 R531 R631 R731 R831
130-064-02	RESISTOR POT 12MM HORIZ DUAL	500KC		R111 R211 R311 R411 R511 R611 R711 R811
200-002-02	CAPACITOR MYLAR T&R	0.018	10%	C139 C239 C339 C439 C539 C639 C739 C839
200-003-02	CAPACITOR MYLAR T&R	0.033	10%	C107-108 C207-208 C307-308 C407-408 C507-508 C607-608 C707-708 C807-808
200-005-02	CAPACITOR MYLAR T&R	0.0068		C105-106 C118-119 C205-206 C218-219 C305-306 C318-319 C405-406 C418-419 C505-506 C518-519 C605-606 C618-619 C705-706 C718-719 C805-806 C818-819
200-007-02	CAPACITOR MYLAR TAPE	0.01		C110 C210 C310 C410 C510 C610 C710 C810
200-008-02	CAPACITOR MYLAR T&R	0.0039		C111 C211 C311 C411 C511 C611 C711 C811
211-001-00	CAPACITOR CERAMIC AXIAL	0.01	10%	C1-2 C123-124 C223-224 C323-324 C423-424 C523-524 C623-624 C723-724 C823-824
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF	10%	C135-136 C235-236 C335-336 C435-436 C535-536 C635-636 C735-736 C835-836
211-006-00	CAPACITOR CERAMIC AXIAL	20PF	10%	C122 C222 C322 C422 C522 C622 C722 C822
211-008-00	CAPACITOR CERAMIC AXIAL	220 PF	10%	C126 C138 C226 C238 C326 C338 C426 C438 C526 C538 C626 C638 C726 C738 C826 C838

990-009-00 Channel board continued

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
220-002-02	CAPACITOR LYTIC RADIAL TAPE	47UF	10%	C104 C109 C112 C114-117 C120-121 C128 C132 C204 C209 C212 C214-217 C220-221 C228 C232 C304 C309 C312 C314-317 C320-321 C328 C332 C404 C409 C412 C414-417 C420-421 C428 C432 C504 C509 C512 C514-517 C520-521 C528 C532 C604 C609 C612 C614-617 C620-621 C628 C632 C704 C709 C712 C714-717 C720-721 C728 C732 C804 C809 C812 C814-817 C820-821 C828 C832
220-008-02	CAPACITOR LYTIC RADIAL TAPE	1UF	10%	C130-131 C230-231 C330-331 C430-431 C530-531 C630-631 C730-731 C830-831
220-013-02	CAPACITOR LYTIC RADIAL TAPE	.22UF	10%	C101-103 C113 C201-203 C213 C301-303 C313 C401-403 C413 C501-503 C513 C601-603 C613 C701-703 C713 C801-803 C813
300-001-00	DOIDE SIGNAL	1N4148		D101-103 D110 D201-203 D210 D301-303 D310 D401-403 D410 D501-503 D510 D601-603 D610 D701-703 D710 D801-803 D810
304-027-02	LED T1, T&R W/SPACER	RED		D105 D107 D205 D207 D305 D307 D405 D407 D505 D507 D605 D607 D705 D707 D805 D807
304-028-02	LED T1, T&R W/SPACER	YEL		D106 D206 D306 D406 D506 D606 D706 D806
304-029-02	LED T1, T&R W/SPACER	GRN		D104 D204 D304 D404 D504 D604 D704 D804
320-011-00	I.C. LINEAR, 8-PIN SIP	4560		U102-103 U202-203 U302-303 U402-403 U502-503 U602-603 U702-703 U802-803
323-007-00	I.C. LINEAR, 8-PIN SIP	2403		U101 U201 U301 U401 U501 U601 U701 U801
400-005-00	CONNECTOR ST HDR .1 -40	20 X 2		J4 J6
400-031-00	CONNECTOR ST HDR .1	10 X 2		J5
400-077-00	CONNECTOR STR LCK SHRD 20P	.100 X 2		J3
400-078-00	CONNECTOR STR LCK SHRD 10P	.100 X 2		J2
400-079-00	CONNECTOR STR LCK SHRD 14P	.100 X 2		J1
450-009-00	PCB, 8-BUS CHANNEL			
500-036-00	SWITCH PUSH VERT PC MTG	4P2T		SW102 SW110 SW202 SW210 SW302 SW310 SW402 SW410 SW502 SW510 SW602 SW610 SW702 SW710 SW802 SW810
500-037-00	SWITCH PUSH PC MNT	2P2T		SW101 SW103-109 SW111-116 SW201 SW203-209 SW211-216 SW301 SW303-309 SW311-316 SW401 SW403-409 SW411-416 SW501 SW503-509 SW511-516 SW601 SW603-609 SW611-616 SW701 SW703-709 SW711-716 SW801 SW803-809 SW811-816
706-033-01	STANDOFF, SWAGE, 4-40 X .542L			Z101-124
760-011-00	BTN 9X9MM LG CORE			
760-013-00	BTN 9X5MM LG CORE			

990-010-00 REV U, OUTPUT BOARD

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
CONNECTOR STR 2P .156 X 1				E6 E1-4 E7-9
100-008-00	RESISTOR CF	20	5%	R12 R40 R48 R58 R65 R75 R96 R114 R132-133 R607-610
100-027-00	RESISTOR CF	120	5%	R3 R13 R20 R37 R41 R51 R54 R62 R71 R79 R88 R97 R102 R105 R115 R122 R140-141 R151 R169-172 R190-193 R227 R233-235 R237-238 R241-242 R246 R248-249 R404-405 R408-409 R412 R416 R501 R509 R511 R536
100-042-00	RESISTOR CF	510	5%	R5 R22 R39 R56 R73 R90 R107 R124
100-048-00	RESISTOR CF	910	5%	R137 R281 R284 R368 R441
100-050-00	RESISTOR CF	1K1	5%	R136 R220 R224 R228 R262-263 R274 R276 R291 R307-308 R452
100-056-00	RESISTOR CF	2K	5%	R14 R150 R164 R166 R204-205 R252-253 R259 R265 R296 R319 R323 R328 R330 R335 R337 R348 R352 R445 R454 R464 R466 R480 R483
100-058-00	RESISTOR CF	2K4	5%	R219 R223
100-059-00	RESISTOR CF	2K7	5%	R1-2 R17-19 R35-36 R52-53 R69-70 R86-87 R103-104 R120-121 R218 R222 R447
100-066-00	RESISTOR CF	5K1	5%	R6-10 R15-16 R24-29 R32-33 R42-44 R46-47 R49-50 R59-61 R64 R66-67 R76-78 R81 R83-84 R91 R93-95 R99-101 R108-112 R117-118 R126-130 R134-135 R148-149 R153-158 R161-162 R174-185 R188-189 R194-203 R207-212 R214-215 R217 R221 R226 R229-230 R245 R250-251 R264 R279-280 R282-283 R301-304 R309-310 R312-317 R321-322 R341-342 R345-346 R350-351 R360-367 R369 R371 R375-394 R396 R399 R403 R407 R411 R415 R429-430 R433-434 R437-438 R440 R455 R457-461 R465 R467-475 R478-479 R481-482 R502-503 R535 R540-547 R550-551 R553-554 R580
100-073-00	RESISTOR CF	10K	5%	R34 R82 R85 R144-145 R206 R225 R232 R260-261 R270 R275 R293 R397 R444 R446 R462-463 R476-477 R534 R611
100-077-00	RESISTOR CF	15K	5%	R266-267 R269 R272 R556-563 R573 R578
100-080-00	RESISTOR CF	20K	5%	R11 R23 R30 R45 R57 R63 R68 R74 R80 R92 R98 R113 R116 R119 R125 R131 R138-139 R142-143 R152 R231 R236 R239-240 R243-244 R247 R268 R271 R273 R299-300 R305-306 R343-344 R356-359 R370 R372 R400 R431-432 R435-436 R439 R453 R456 R506 R508 R532-533 R537 R548-549 R552 R555 R564-572 R574-577 R579 R605-606
100-083-00	RESISTOR CF	27K	5%	R256-257 R298 R311 R325-326 R339-340 R354-355
100-084-00	RESISTOR CF	30K	5%	R146-147 R168 R173 R254-255 R295 R297 R320 R324 R332-333 R336 R338 R349 R353 R449 R510 R512
100-086-00	RESISTOR CF	36K	5%	R213 R216
100-087-00	RESISTOR CF	39K	5%	R395 R418-428
100-089-00	RESISTOR CF	47K	5%	R165 R167 R329 R331 R538-539
100-092-00	RESISTOR CF	62K	5%	R159-160 R186-187 R451

990-010-00 Output board continued

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-097-00	RESISTOR CF	100K	5%	R277 R292 R294
130-003-02	RESISTOR POT 9MM HORIZ	50KG		R373-374 R402 R406 R410 R414 R442-443 R448
130-004-02	RESISTOR POT 12MM HORIZ DUAL	25KG		R289
130-014-00	RESISTOR POT SLIDE 100MM DUAL		10KD	R278
130-016-00	RESISTOR POT SLIDE 100MM	10KD		R4 R21 R38 R55 R72 R89 R106 R123
130-061-02	RESISTOR POT 12MM HORIZ DUAL	50KG		R163 R258 R285-288 R290 R318 R327 R334 R347
200-004-02	CAPACITOR MYLAR TAPE	0.047	10%	C229 C299 C307
211-001-00	CAPACITOR CERAMIC	0.01	10%	C178-207 C233 C244 C263 C277-278 C283 C285 C287 C290 C296-298 C302-306 C309-340
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF	10%	C6 C12 C18 C24 C34 C40 C46 C55-56 C61-62 C67-70 C76-77 C79 C82 C96-97 C101-102 C106-107 C230-231 C245-247 C250 C252 C256 C261-262 C264 C270 C295
211-006-00	CAPACITOR CERAMIC AXIAL	20PF	10%	C49-50 C53-54 C59-60 C65-66 C80 C83 C89 C100 C113-114 C119-120 C123-124 C127-128 C133-134 C137-148 C161 C164 C167 C170 C172 C175 C209 C212 C222-227
211-007-00	CAPACITOR CERAMIC AXIAL	470PF	10%	C73-74 C300-301
211-008-00	CAPACITOR CERAMIC AXIAL	220PF	10%	C1 C5 C7 C11 C13 C17 C19 C23 C25 C29 C31 C35 C37 C41 C43 C47 C85 C87 C341-342
220-002-02	CAPACITOR LYTIC RADIAL TAPE	47UF	10%	C2 C8 C14 C20 C26 C32 C38 C44 C48 C51-52 C63-64 C75 C78 C86 C88 C91-92 C94-95 C99 C103-105 C108-109 C112 C115-118 C121-122 C125-126 C129-132 C135-136 C149-160 C162-163 C165-166 C168-169 C171 C173-174 C176-177 C210 C218-221 C228 C232 C234-243 C248-249 C251 C253-255 C257-260 C265 C276 C280
220-014-02	CAPACITOR LYTIC RADIAL TAPE	2.2UF	10%	C266-269 C271-275 C293
220-019-02	CAP LYTIC RADIAL KS TAPE	47UF	10%	C3-4 C9-10 C15-16 C21-22 C27-28 C30 C33 C36 C39 C42 C45 C57-58 C71-72 C81 C84 C90 C93 C98 C110-111 C208 C211 C213-217 C279 C281-282 C284 C286 C288-289 C291-292 C294
300-001-00	DIODE SIGNAL	1N4148		D2 D12-21
302-006-00	DIODE ZENER	1N4734		D8-10
304-002-00	DOIDE LED T1-3/4 W/FLASHER	RED		D11
304-027-02	LED T1, T&R W/SPACER	RED		D1 D4-7
304-029-02	LED T1, T&R W/SPACER	GRN		D3
310-004-00	TRANSISTOR NPN	MPSA06		Q1 Q11
310-008-02	TRANSISTOR NPN T&R	2SC3792		Q2-10
320-003-00	I.C. LINEAR, 8-PIN SIP	2068		U1 U5 U9 U13 U30 U33 U57
320-011-00	I.C. LINEAR, 8-PIN SIP	4560		U2-4 U6-8 U10-12 U14-29 U31-32 U34-52 U54-56 U58-61
400-013-00	CONNECTOR RTA 20P .100 X 2			J9
400-048-00	CONNECTOR RTA 7P .156 X 1			J15
400-051-00	CONNECTOR RTA 26P .100 X 2			J7
400-052-00	CONNECTOR RTA 34P .100 X 2			J8 J11
400-058-00	CONNECTOR STR 14P .100 X 1			J10

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
400-063-00	CONNECTOR STR 3P .156 X 1		J32
400-077-00	CONNECTOR STR LCK SHRD 20P	.100 X 2	J3 J31
400-078-00	CONNECTOR STR LCK SHRD 10P	.100 X 2	J2
400-079-00	CONNECTOR STR LCK SHRD 14P	.100 X 2	J1
450-010-00	PCB, 8-BUS OUTPUT		B1
480-001-00	MICROPHONE ELEMENT		M1
500-020-00	SWITCH PUSH MOM VERT PC MTG	2P2T	SW61 SW77-79
500-036-00	SWITCH PUSH VERT PC MTG	4P2T	SW2 SW5 SW8 SW11 SW14 SW17 SW20 SW23 SW29-31 SW36-39 SW55-60 SW62-64
500-037-00	SWITCH PUSH VERT PC MTG	2P2T	SW1 SW3-4 SW6-7 SW9-10 SW12-13 SW15-16 SW18-19 SW21-22 SW24-28 SW35 SW40-48 SW74-76 SW80-87 SW89-93
706-009-00	SPACER, PLASTIC .385 LED		
706-033-01	STANDOFF, SWAGE, 4-40 X .542L		Z101-118
760-011-00	BTN 9X9MM LG CORE		Z1 Z3-10
760-013-00	BTN 9X5MM LG CORE		Z2 Z11-74

990-011-00 REV I, Meter board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
140-037-00	RESISTOR CF	33	5%	R1 R6-10 R16 R21-25 R31 R36-40 R46 R51-55 R61 R66-70
140-066-00	RESISTOR CF	510	5%	R78-79
140-076-00	RESISTOR CF	1K3	5%	R12-15 R27-30 R42-45 R57-60 R72-75
140-090-00	RESISTOR CF	5K1	5%	R76
140-094-00	RESISTOR CF	7K5	5%	R77 R80-89
140-101-00	RESISTOR CF	15K	5%	R4 R11 R19 R26 R34 R41 R49 R56 R64 R71
140-112-00	RESISTOR CF	39K	5%	R5 R20 R35 R50 R65
212-001-00	CAPACITOR CERAMIC	0.01	5%	C2 C4 C7 C9 C12 C14 C17 C19 C22 C24
220-010-00	CAPACITOR LYTIC RADIAL	22UF	10%	C1 C3 C5-6 C8 C10-11 C13 C15-16 C18 C20-21 C23 C25
304-007-00	DOIDE LED RECT	RED		D121-122
304-008-00	DOIDE LED RECT	YEL		D1-4 D13-16 D25-28 D37-40 D49-52 D61-64 D73-76 D85-88 D97-100 D109-112
304-009-00	DOIDE LED RECT	GRN		D5-12 D17-24 D29-36 D41-48 D53-60 D65-72 D77-84 D89-96 D101-108 D113-120
311-002-00	X-SISTOR PNP	2N4403		Q1-20
323-002-00	I.C. QUAD COMPARATOR SO	LM339		U7
324-002-00	I.C. METER DR.	BA6820F		U1-5
400-058-00	CONNECTOR ST HDR .1	14 POS		J10
706-016-00	STAND OFF	4-40 X .325		
706-021-00	SPACER, RUBBER LED 12 SEG			
706-022-00	SPACER, RUBBER LED 13 SEG			
760-029-00	LED BEZEL			
760-032-00	LED BEZEL			

990-012-00 REV S, Jack Field

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-027-00	RESISTOR CF	120	5%	R1-12
400-003-01	CONNECTOR JACK 1/4" VERT PC MOUNT-W/LOCKWASHER			J101-142
400-013-00	CONNECTOR RTA 20P .100 X 2			J9
400-051-00	CONNECTOR RTA 26P .100 X 2			J7
400-052-00	CONNECTOR RTA 34P .100 X 2			J8
400-056-00	CONNECTOR STR 20P .100 X 2			J13
450-012-00	PCB, 8-BUS JACKFIELD			

990-013-00 REV S, Tape Output board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-027-00	RESISTOR CF	120	5%	R1 R4 R7 R10 R13 R17 R19 R22
100-048-00	RESISTOR CF	910	5%	R3 R6 R9 R12 R15 R18 R21 R24
100-059-00	RESISTOR CF	2K7	5%	R2 R5 R8 R11 R14 R16 R20 R23
400-003-01	CONNECTOR JACK 1/4" VERT PC MOUNT-W/LOCKWASHER			J1-3 J5 J7-10 J12-18 J20-28
400-041-00	CONNECTOR XLR PC MTG VERT MALE			J4 J19
400-055-00	CONNECTOR STR 34P .100 X 2			J11
450-013-00	PCB, 8-BUS TAPE OUT			
500-012-00	SWITCH PUSH VERT PC MTG	4P2T		SW1-2
760-003-00	BUTTON SW 9X5 MM			
760-015-00	EXTENDER, SWITCH BUTTON			

990-014-00 REV S, Tape Input board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-052-00	RESISTOR CF	1K3	5%	R110 R112 R310 R312 R510 R512 R710 R712
100-061-00	RESISTOR CF	3K3	5%	R104 R108 R304 R308 R504 R508 R704 R708
100-069-00	RESISTOR CF	6K8	5%	R101-102 R105-106 R301-302 R305-306 R501-502 R505-506 R701-702 R705-706
100-070-00	RESISTOR CF	7K5	5%	R103 R107 R109 R111 R303 R307 R309 R311 R503 R507 R509 R511 R703 R707 R709 R711
211-001-00	CAPACITOR CERAMIC	0.01	10%	C1-2 C110-111 C310-311 C510-511 C710-711
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF	10%	C101-102 C104-105 C107-108 C301-302 C304-305 C307-308 C501-502 C504-505 C507-508 C701-702 C704-705 C707-708
211-007-00	CAPACITOR CERAMIC AXIAL	470PF	10%	C103 C106 C303 C306 C503 C506 C703 C706
310-008-00	TRANSISTOR NPN	2SC3792		Q101-102 Q301-302 Q501-502 Q701-702
320-001-00	I.C. LINEAR	NJM 4560		U101 U301 U501 U701
400-003-01	CONNECTOR JACK 1/4" VERT PC MOUNT-W/LOCKWASHER			J100 J200 J300 J400 J500 J600 J700 J800
400-031-00	CONNECTOR ST HDR .1	10 X 2		J5
450-014-00	PCB, 8*BUS TAPE IN			
500-001-00	SWITCH PUSH VERT PC MTG	2P2T		SW1
760-003-00	BUTTON SW 9X5 MM			
760-015-00	EXTENDER, SWITCH BUTTON			

990-015-00 REV S, Power Supply board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-073-00	RESISTOR CF	10K	5%	R39 R44
110-027-00	RESISTOR CF	120	5%	R4 R18
110-029-00	RESISTOR CF	150	5%	R3 R23 R31 R40-42
110-032-00	RESISTOR CF	200	5%	R6 R19
110-046-00	RESISTOR CF	750	5%	R32
110-049-00	RESISTOR CF	1K	5%	R10 R24
110-056-00	RESISTOR CF	2K	5%	R12 R26
110-065-00	RESISTOR CF	4K7	5%	R1 R15
110-072-00	RESISTOR CF	9K1	5%	R11 R25
110-079-00	RESISTOR CF	18K	5%	R2 R16
110-080-00	RESISTOR CF	20K	5%	R34
110-083-00	RESISTOR CF	27K	5%	R35
115-269-00	RESISTOR CF	619	1%	R14 R28
115-296-00	RESISTOR CF	1K18	1%	R13 R27
115-332-00	RESISTOR CF	2K55	1%	R37
115-350-00	RESISTOR CF	3K92	1%	R17 R43
115-376-00	RESISTOR CF	7K32	1%	R9 R20
115-407-00	RESISTOR CF	15K4	1%	R36
115-427-00	RESISTOR CF	24K9	1%	R38
121-088-00	RESISTOR MF	4K3	5%	R30
121-093-00	RESISTOR MF	6K8	5%	R29
122-043-00	RESISTOR MF	5.6	5%	R33
122-049-00	RESISTOR MF	10	5%	R5
125-018-00	RESISTOR CF	.51	1%	R7-8 R21-22
211-001-00	CAPACITOR CERAMIC	0.01	10%	C8 C13 C17 C21 C27-28
211-007-00	CAPACITOR CERAMIC AXIAL	470PF	10%	C9 C16
220-003-00	CAPACITOR LYTIC RADIAL	47UF	10%	C33-34
220-004-00	CAPACITOR LYTIC RADIAL	470UF	10%	C29-31
220-006-00	CAPACITOR LYTIC RADIAL	2200UF	10%	C1-2
220-007-00	CAPACITOR LYTIC RADIAL	100UF	10%	C24
220-011-02	CAPACITOR LYTIC RADIAL T&R	100UF	10%	C10-12 C18-20 C23 C25-26
220-020-00	CAPACITOR LYTIC RADIAL	10,000UF	10%	C5
220-021-00	CAPACITOR LYTIC RADIAL	2,200UF	10%	C7
220-022-00	CAPACITOR LYTIC RADIAL	22,000UF	10%	C3-4
220-023-00	CAPACITOR LYTIC RADIAL	6,800UF	10%	C6
220-024-00	CAPACITOR LYTIC RADIAL	100UF	10%	C14-15
220-025-00	CAPACITOR LYTIC RADIAL	1,000UF	10%	C22
220-026-00	CAPACITOR LYTIC RADIAL	1,000UF	10%	C32
300-001-00	DIODE SIGNAL	1N4148		D23-25 D30-32 D42-43
301-001-00	DOIDE POWER	1N4002		D1-4 D17-22 D28-29 D33 D36 D38-41
301-003-00	DIODE POWER	1N5401		D13-16 D26 D34
301-005-00	DIODE POWER	FR602		D5-12
302-007-00	DIODE ZENER	1N5234C		D27 D35 D37
310-002-00	TRANSISTOR NPN	2N4403		Q7-8 Q14
310-004-00	TRANSISTOR NPN	MPSA06		Q2 Q6 Q10 Q15-16 Q20
310-014-00	TRANSISTOR POWER PNP	MJE2955		Q12-13
310-015-00	TRANSISTOR POWER NPN	MJE3055		Q3-4
310-016-00	TRANSISTOR NPN	MPSA18		Q17-18
310-017-00	TRANSISTOR PNP	MPSA56		Q1 Q9 Q21
310-018-00	TRANSISTOR PWR DAR NPN	TIP121		Q19
310-019-00	TRANSISTOR POWER NPN	TIP31C		Q5
310-020-00	TRANSISTOR POWER PNP	TIP32C		Q11
321-006-00	I.C. LINEAR POS 3 TERM VOLTAGE REGULATOR	MC78T12CT		3A U1
321-007-00	I.C. LINEAR POS 3 TERM VOLTAGE REGULATOR	MC78T05CT		3A U2

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
400-059-00	CONNECTOR, QUICK DISC. .250		J1-18 J20
400-060-00	FUSE CLIP PC MT	1A3999-10	FC1-12
400-070-00	CONNECTOR STRAIGHT	HDR .1 2 PIN	J19
510-001-00	FUSE 5X20	T1A	F7
510-014-00	FUSE 5X20	T6.3 A	F5-6
510-015-00	FUSE 5X20	T1.6A	F8

990-019-00 REV S, Expander

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-059-00	RESISTOR CF	2K7 5%	R13-22
100-066-00	RESISTOR CF	5K1 5%	R9-12
100-084-00	RESISTOR CF	30K 5%	R1-6
400-047-00	CONNECTOR FEM,PC MT,DP37		J20
400-077-00	CONNECTOR STR LCK SHRD 20P	.100 X 2	J3
400-078-00	CONNECTOR STR LCK SHRD 10P	.100 X 2	J2
400-079-00	CONNECTOR STR LCK SHRD 14P	.100 X 2	J1

990-020-00 REV C, Power Distribution

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
211-001-00	CAPACITOR CERAMIC	0.01 15V 10%	C3-4 C7-8
211-010-00	CAPACITOR CERAMIC	0.01 50V -400	C9
220-006-00	CAPACITOR LYTIC RADIAL	2200UF 25V 10%	C1-2 C5-6
400-015-00	CONNECTOR STRAIGHT POS	.156 7	J4 J7
400-045-00	CONNECTOR MALE RECEPT. AMPHENOL C16-1		J1
400-063-00	CONNECTOR IDC .156 X 3 LOCKING		J8
611-008-00	WIRE 18GA TR64 BLK 6.5 ST2.25		Z1
711-001-00	SOLDER LUG INT STAR #6		Z2
450-020-00	PCB		

990-021-00 REV S, Expander Output board

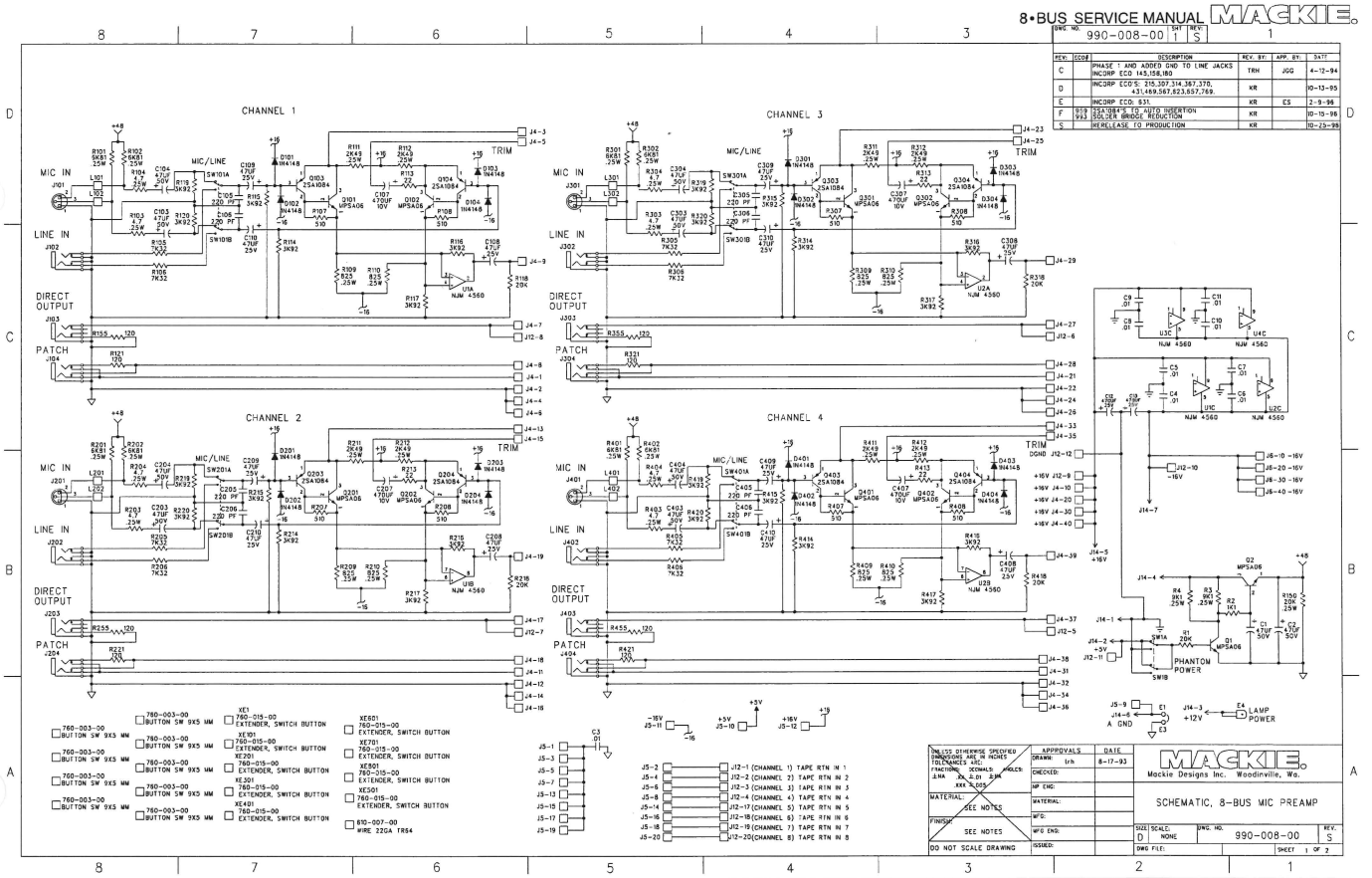
PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-027-00	RESISTOR CF	120	5%	R101 R105 R201 R205 R301 R305 R401 R405 R501 R505 R601 R605 R701 R705 R801 R805 R901 R905 R1001 R1005
100-059-00	RESISTOR CF	2K7	5%	R103 R107 R203 R207 R303 R307 R403 R407 R503 R507
100-066-00	RESISTOR CF	5K1	5%	R100 R104 R108-109 R200 R204 R208-209 R300 R304 R308-309 R400 R404 R408-409 R500 R504 R508-509 R600 R603-604 R607-609 R700 R704 R708-709 R800 R803-804 R807-809 R900 R904 R908-909 R1000 R1004 R1008-1009
100-080-00	RESISTOR CF	20K	5%	R102 R106 R202 R206 R302 R306 R402 R406 R502 R506 R602 R606 R702 R706 R802 R806 R902 R906 R1002 R1006
100-084-00	RESISTOR CF	30K	5%	R703 R707 R903 R907 R1003 R1007
211-001-00	CAPACITOR CERAMIC	0.01	10%	C106-107 C206-207 C306-307 C406-407 C506-507 C606-607 C706-707 C806-807 C906-907 C1006-1007
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF	10%	C600 C603 C800 C803
211-006-00	CAPACITOR CERAMIC AXIAL	20PF	10%	C101 C104 C201 C204 C301 C304 C401 C404 C501 C504 C601 C604 C700-701 C703-704 C801 C804 C900-901 C903-904 C1000-1001 C1003-1004
211-008-00	CAPACITOR CERAMIC AXIAL	220 PF	10%	C100 C103 C200 C203 C300 C303 C400 C403 C500 C503
220-002-02	CAPACITOR LYTIC RADIAL TAPE	47UF	10%	C102 C105 C202 C205 C302 C305 C402 C405 C502 C505 C602 C605 C702 C705 C802 C805 C902 C905 C1002 C1005
320-001-00	I.C. LINEAR	NJM 4560		U101 U201 U301 U401 U501 U601 U700-701 U800-801 U900-901 U1000-1001
320-003-00	I.C. LINEAR	NJM 2068		U100 U200 U300 U400 U500 U600
400-048-00	CONNECTOR RTA 7P .156 X 1			J6
400-069-00	CONNECTOR MALE,PC MT,DP37			J21
400-077-00	CONNECTOR STR LCK SHRD 20P	.100 X 2		J3
400-078-00	CONNECTOR STR LCK SHRD 10P	.100 X 2		J2
400-079-00	CONNECTOR STR LCK SHRD 14P	.100 X 2		J1
450-021-00	PCB, EXPANDER OUT			
700-011-00	SCREW, BTN HD, 4-40 X 1/4			
706-025-00	STANDOFF, 4-40 THRU X .875L			

990-022-00 REV H, Analog Meter board

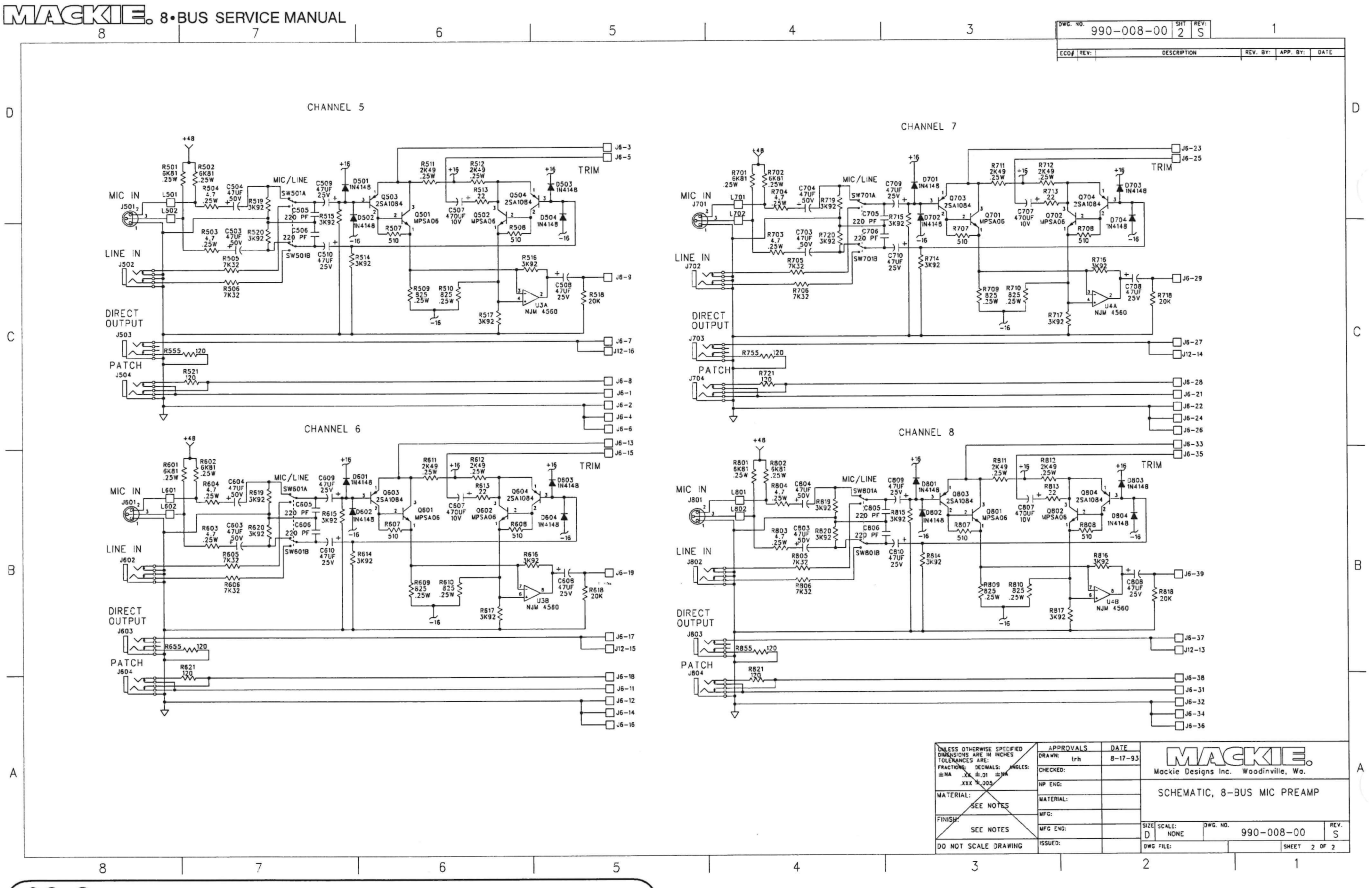
PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
040-027-00	CABLE ASSY, METER BRIDGE			J13
100-057-00	RESISTOR CF	2K2	5%	R1 R5 R13-14
100-073-00	RESISTOR CF	10K	5%	R6-7 R18-19
100-080-00	RESISTOR CF	20K	5%	R17 R20 R22-23
100-089-00	RESISTOR CF	47K	5%	R2 R12 R15-16
100-104-00	RESISTOR CF	200K	5%	R3
100-109-00	RESISTOR CF	1M	5%	R4
110-001-00	RESISTOR CF	10	5%	R8-9
110-064-00	RESISTOR CF	4K3	5%	R10-11
111-017-00	RESISTOR CF	4.7	5%	R25
130-015-00	RESISTOR POT TRIM HORIZ	50KB		R21 R24
211-001-00	CAPACITOR CERAMIC	0.01	10%	C3-4 C8-11
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF	10%	C13 C15
220-001-02	CAP LYTIC RADIAL TAPE	22UF	10%	C14 C16
220-010-02	CAP LYTIC RADIAL KS TAPE	22UF	10%	C6-7
220-014-02	CAPACITOR LYTIC RADIAL TAPE	2.2UF	10%	C1-2 C5 C12
300-002-00	DIODE	1N34A		D3-10
304-001-00	DIODE LED T1	RED		D1-2
320-001-00	I.C. LINEAR	NJM 4560		U2-3
325-002-00	IC, 14093 CMOS NAND GATE X4			U1
400-067-00	PIN RECEPTACLE			E1-3
450-022-00	PCB, ANALOG METER BD			Z1
500-003-00	SWITCH MOM TL1105/SP	SPST		SW1
550-128-00	VU PLATE			Z15
609-001-00	WIRE, 26 AWG RED 3.5 IN			Z5-6
609-002-00	WIRE, 26 AWG BLK 3 IN			Z4 Z10
609-003-00	WIRE, 26 AWG GRN 4 IN ST2	.25		Z7 Z9
609-004-00	WIRE, 26 AWG BLUE 4.5 IN ST2	0.25		Z8 Z11
700-011-00	SCREW, BTN HD 4-40X1/4			Z16-17 Z19-22
706-020-00	SPACER, LED .160 THRU			Z2 Z12
706-030-00	STANDOFF, SWAGE 4-40			Z23-28
720-004-00	TAPE,DS,.125 X .75W, NEO			Z29
770-002-00	METER, YS-475			Z3 Z13
780-010-00	REFLECTOR, VU METER			Z14 Z18

990-023-00 REV F, LED Meter board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
040-027-00	CABLE ASSY, METER BRIDGE			J12
140-051-00	RESISTOR CF	120	5%	R101 R104-108 R201 R204-208 R301 R304-308 R401 R404-408
140-076-00	RESISTOR CF	1K3	5%	R110-113 R210-213 R310-313 R410-413
140-094-00	RESISTOR CF	7K5	5%	R114-115 R214-215 R314-315 R414-415
140-097-00	RESISTOR CF	10K	5%	R117-122 R124-129 R217-222 R224-229 R317-322 R324-329 R417-422 R424-429
140-101-00	RESISTOR CF	15K	5%	R102 R109 R202 R209 R302 R309 R402 R409
140-104-00	RESISTOR CF	20K	5%	R116 R123 R216 R223 R316 R323 R416 R423
140-112-00	RESISTOR CF	39K	5%	R103 R203 R303 R403
212-001-00	CAPACITOR CERAMIC	0.01	5%	C5 C101 C103 C112-113 C201 C203 C212-213 C301 C303 C312-313 C401 C403 C412-413
212-005-00	CAPACITOR CERAMIC	20PF	5%	C114-115 C214-215 C314-315 C414-415
221-001-00	CAPACITOR LYTIC AXIAL	470UF	10%	C1-2
223-001-00	CAPACITOR LYTIC SMT	2.2UF	20%	C106-111 C206-211 C306-311 C406-411
223-003-00	CAPACITOR LYTIC SMT	22UF	20%	C102 C104-105 C202 C204-205 C302 C304-305 C402 C404-405
304-008-00	DIODE LED RECT	YEL		D101-104 D113-116 D201-204 D213-216 D301-304 D313-316 D401-404 D413-416
304-009-00	DIODE LED RECT	GRN		D105-112 D117-124 D205-212 D217-224 D305-312 D317-324 D405-412 D417-424
311-002-00	X-SISTOR PNP	IMBT4403		Q101-104 Q201-204 Q301-304 Q401-404
311-003-00	TRANSISTOR NPN	2SC4695		Q105-108 Q205-208 Q305-308 Q405-408
320-004-00	I.C. LINEAR	NJM 4560		U102 U202 U302 U402
324-002-00	I.C. METER DR.	BA6820F		U101 U201 U301 U401
400-067-00	PIN RECEPTACLE			E1-8
450-023-00	PCB, LED METER BD.			Z1
706-021-00	SPACER, RUBBER LED MTR BR			Z3 Z5 Z7 Z9 Z11 Z13 Z15 Z17
760-032-00	BEZEL, LED			Z2 Z4 Z6 Z8 Z10 Z12 Z14 Z16

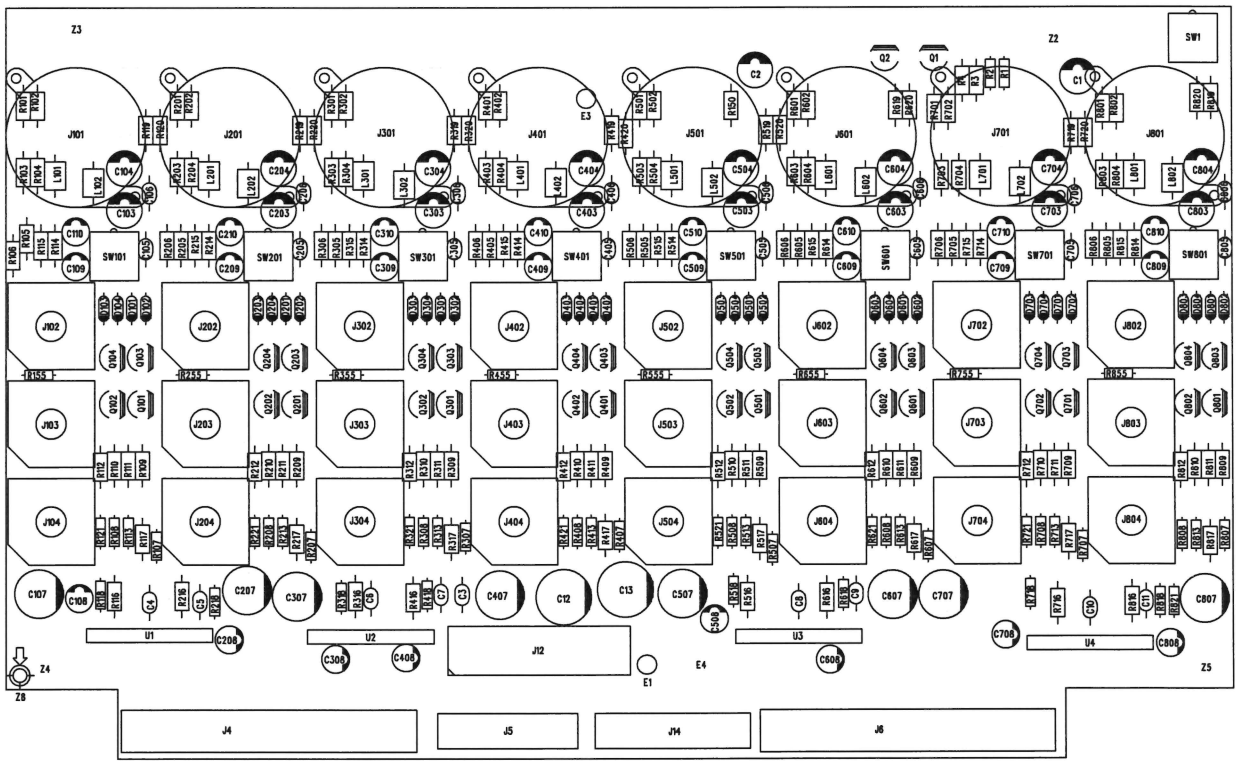


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08-2 MIC/LINE PREAMP BOARD 08 REV S

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J4

CHANNEL 1 INS RTN	1	2	CHANNEL 1 GND
CHANNEL 1 TRIM	3	4	CHANNEL 1 GND
CHANNEL 1 TRIM	5	6	CHANNEL 1 GND
CHANNEL 1 DI OUT	7	8	CHANNEL 1 INS SEND
CHANNEL 1 PRE OUT	9	10	+16V
CHANNEL 2 INS RTN	11	12	CHANNEL 2 GND
CHANNEL 2 TRIM	13	14	CHANNEL 2 GND
CHANNEL 2 TRIM	15	16	CHANNEL 2 GND
CHANNEL 2 DI OUT	17	18	CHANNEL 2 INS SEND
CHANNEL 2 PRE OUT	19	20	+16V
CHANNEL 3 INS RTN	21	22	CHANNEL 3 GND
CHANNEL 3 TRIM	23	24	CHANNEL 3 GND
CHANNEL 3 TRIM	25	26	CHANNEL 3 GND
CHANNEL 3 DI OUT	27	28	CHANNEL 3 INS SEND
CHANNEL 3 PRE OUT	29	30	+16V
CHANNEL 4 INS RTN	31	32	CHANNEL 4 GND
CHANNEL 4 TRIM	33	34	CHANNEL 4 GND
CHANNEL 4 TRIM	35	36	CHANNEL 4 GND
CHANNEL 4 DI OUT	37	38	CHANNEL 4 INS SEND
CHANNEL 4 PRE OUT	39	40	+16V

J5

N/C	1	2	TAPE RTN 1
N/C	3	4	TAPE RTN 2
N/C	5	6	TAPE RTN 3
N/C	7	8	TAPE RTN 4
DGND	9	10	+5V
-16V	11	12	+16V
N/C	13	14	TAPE RTN 5
N/C	15	16	TAPE RTN 6
N/C	17	18	TAPE RTN 7
N/C	19	20	TAPE RTN 8

J12

TAPE 1	1	2	TAPE 2
TAPE 3	3	4	TAPE 4
CHANNEL 4	5	6	CHANNEL 3
CHANNEL 2	7	8	CHANNEL 1
+16V	9	10	-16V
+5V	11	12	DGND
CHANNEL 8	13	14	CHANNEL 7
CHANNEL 6	15	16	CHANNEL 5
TAPE 6	17	18	TAPE6
TAPE 7	19	20	TAPE 8

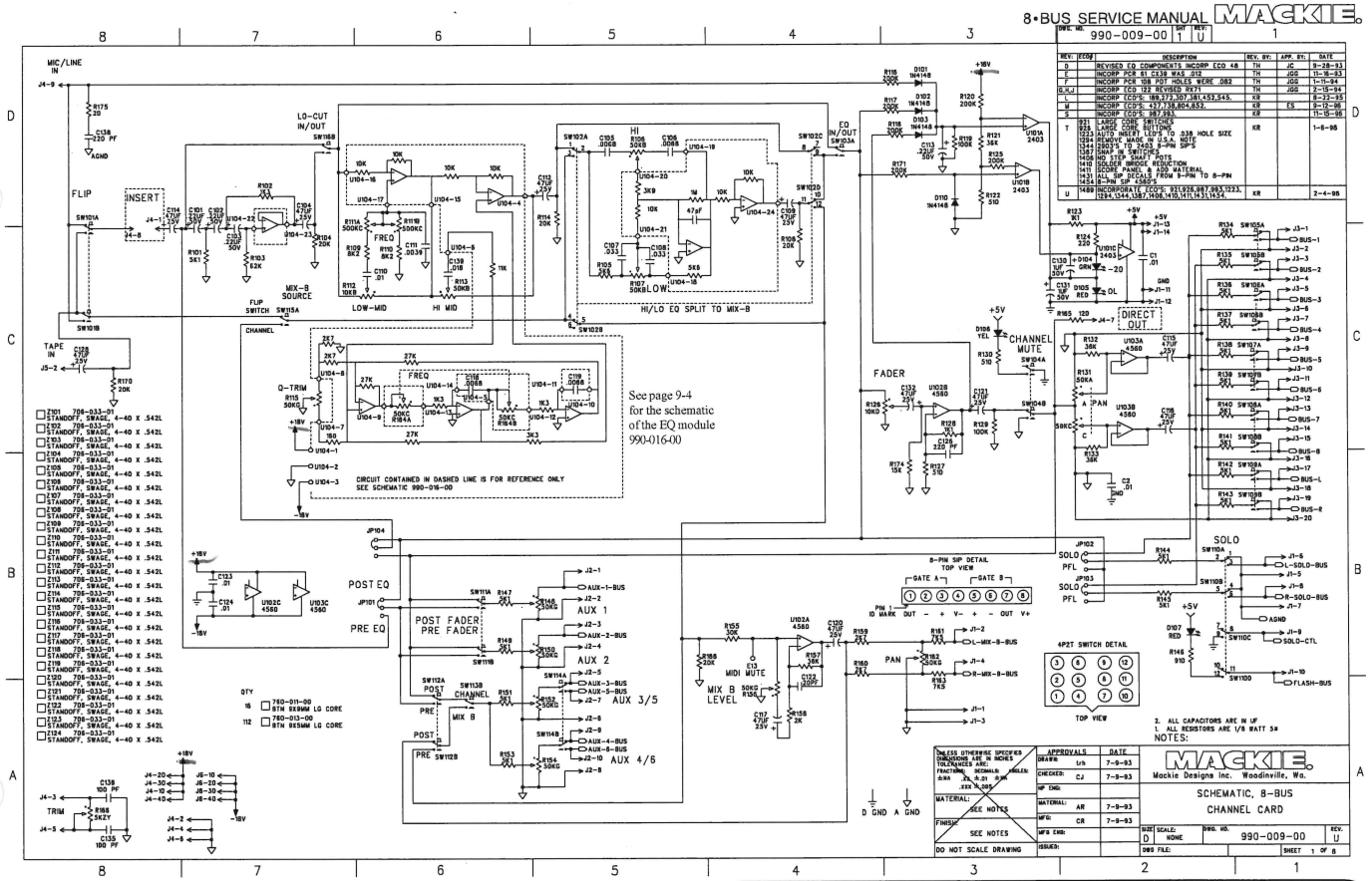
J14

-18V	7
AGND	6
+18V	5
+48V	4
+12V	3
+5V	2
DGND	1

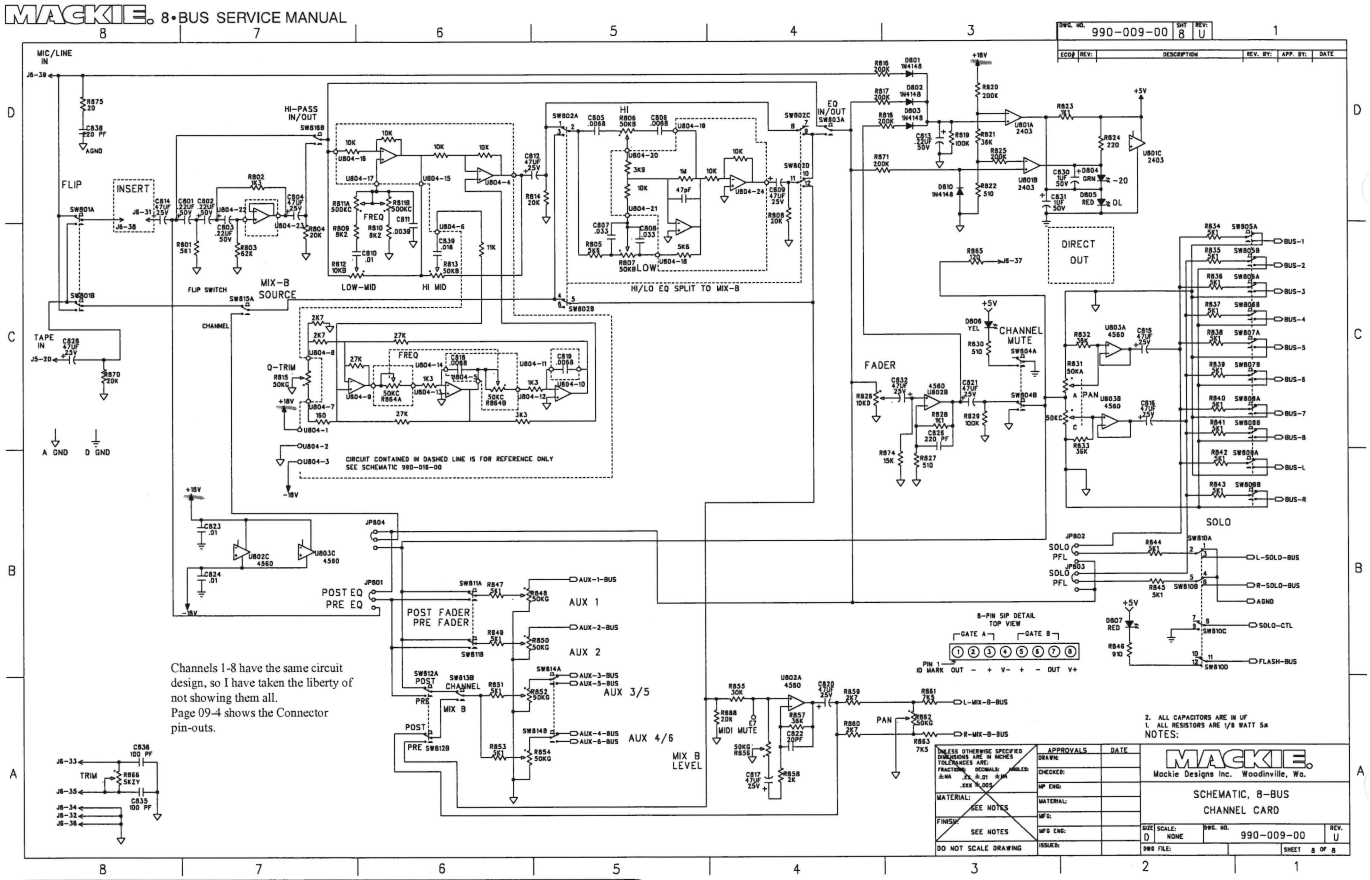
J6

CHANNEL 5 INS RTN	1	2	CHANNEL 5 GND
CHANNEL 5 TRIM	3	4	CHANNEL 5 GND
CHANNEL 5 TRIM	5	6	CHANNEL 5 GND
CHANNEL 5 DI OUT	7	8	CHANNEL 5 INS SEND
CHANNEL 5 PRE OUT	9	10	-16V
CHANNEL 6 INS RTN	11	12	CHANNEL 6 GND
CHANNEL 6 TRIM	13	14	CHANNEL 6 GND
CHANNEL 6 TRIM	15	16	CHANNEL 6 GND
CHANNEL 6 DI OUT	17	18	CHANNEL 6 INS SEND
CHANNEL 6 PRE OUT	19	20	-16V
CHANNEL 7 INS RTN	21	22	CHANNEL 7 GND
CHANNEL 7 TRIM	23	24	CHANNEL 7 GND
CHANNEL 7 TRIM	25	26	CHANNEL 7 GND
CHANNEL 7 DI OUT	27	28	CHANNEL 7 INS SEND
CHANNEL 7 PRE OUT	29	30	-16V
CHANNEL 8 INS RTN	31	32	CHANNEL 8 GND
CHANNEL 8 TRIM	33	34	CHANNEL 8 GND
CHANNEL 8 TRIM	35	36	CHANNEL 8 GND
CHANNEL 8 DI OUT	37	38	CHANNEL 8 INS SEND
CHANNEL 8 PRE OUT	39	40	-16V

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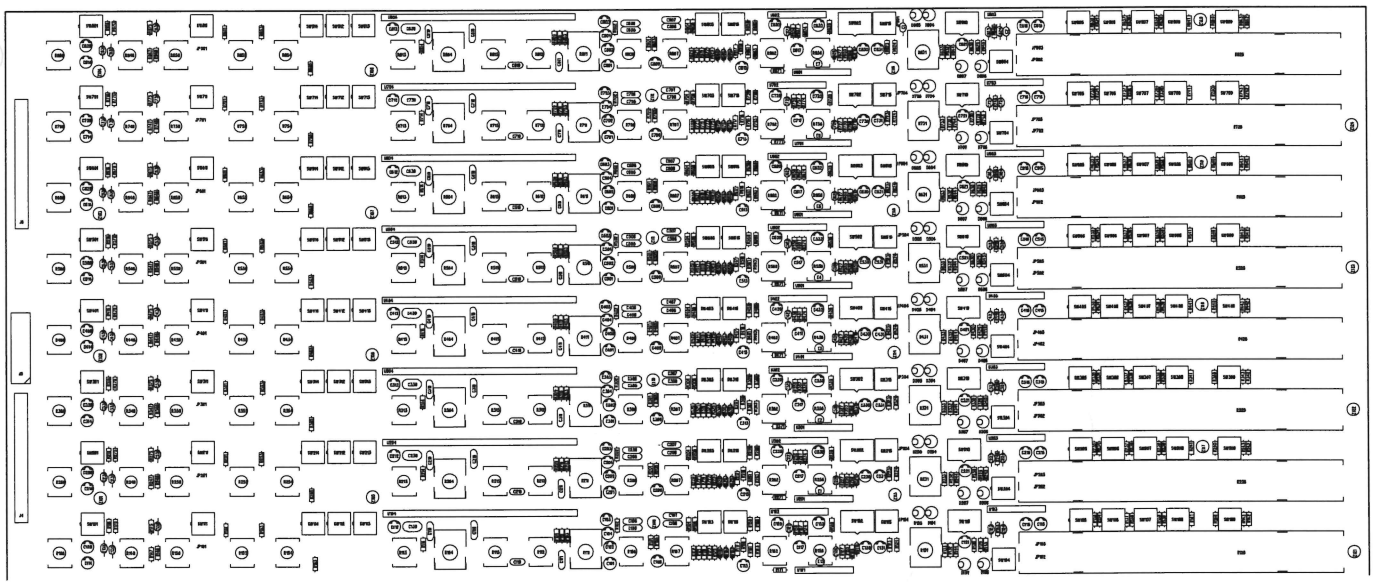
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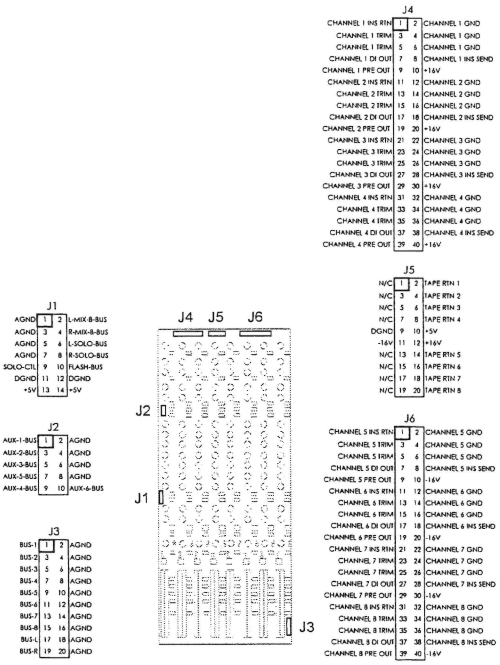
Channels 1-8 have the same circuit design, so I have taken the liberty of not showing them all.
Page 09-4 shows the Connector pin-outs.

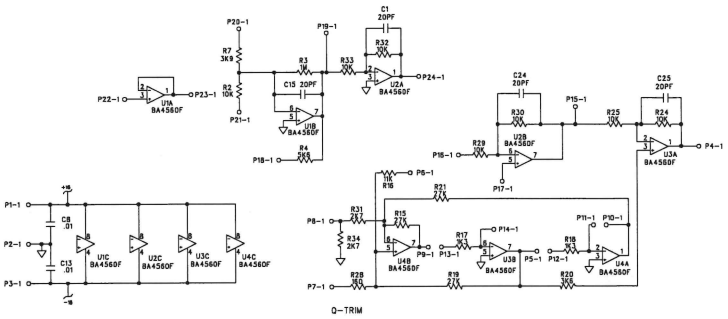
09-2 CONSOLE CHANNEL BOARD 09 REV U

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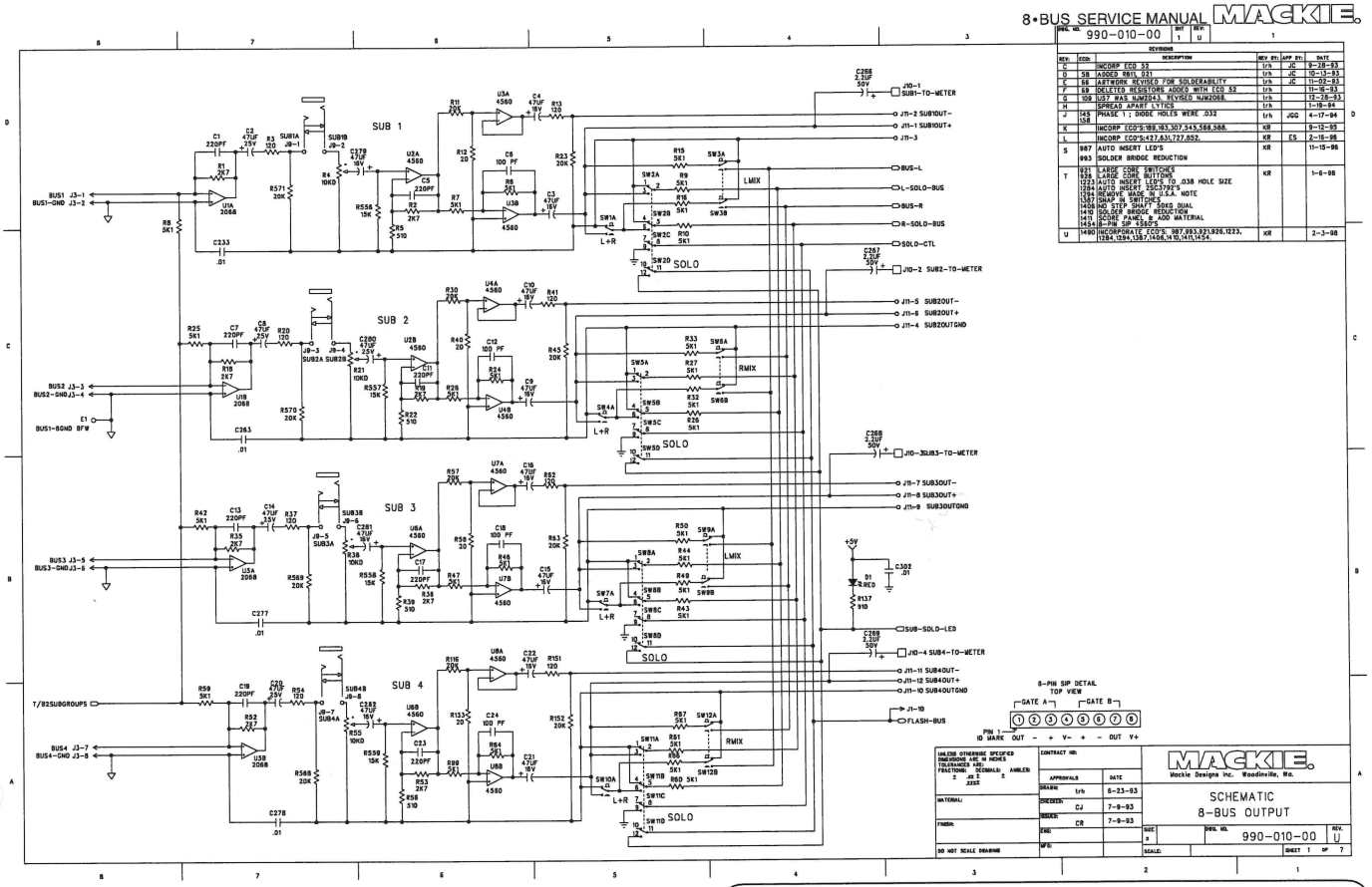
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SCHEMATIC
EQ MODULE
990-016-00

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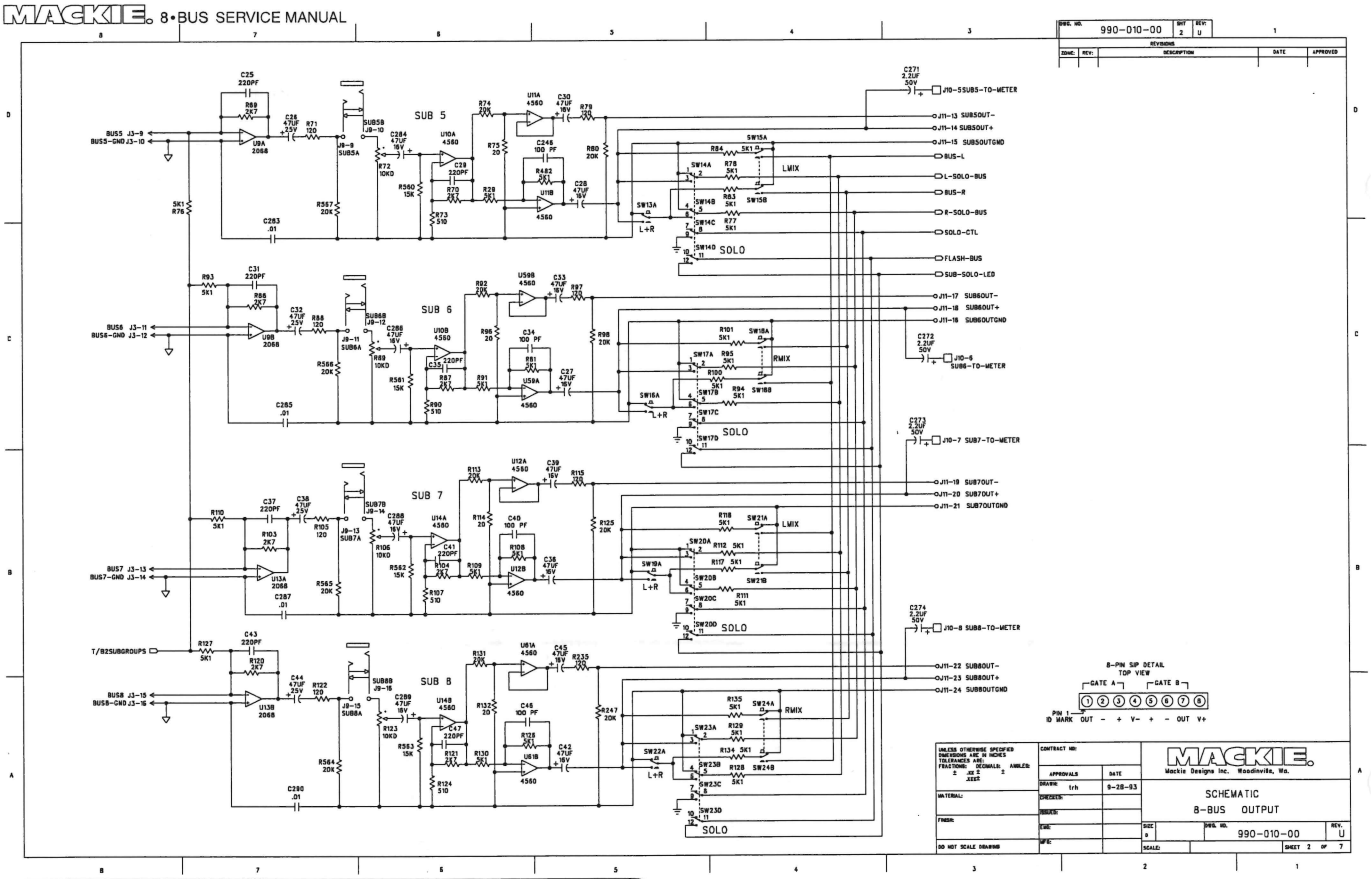
DRWG. NO.	SHT	REV.
990-010-00	1	U

REVISIONS

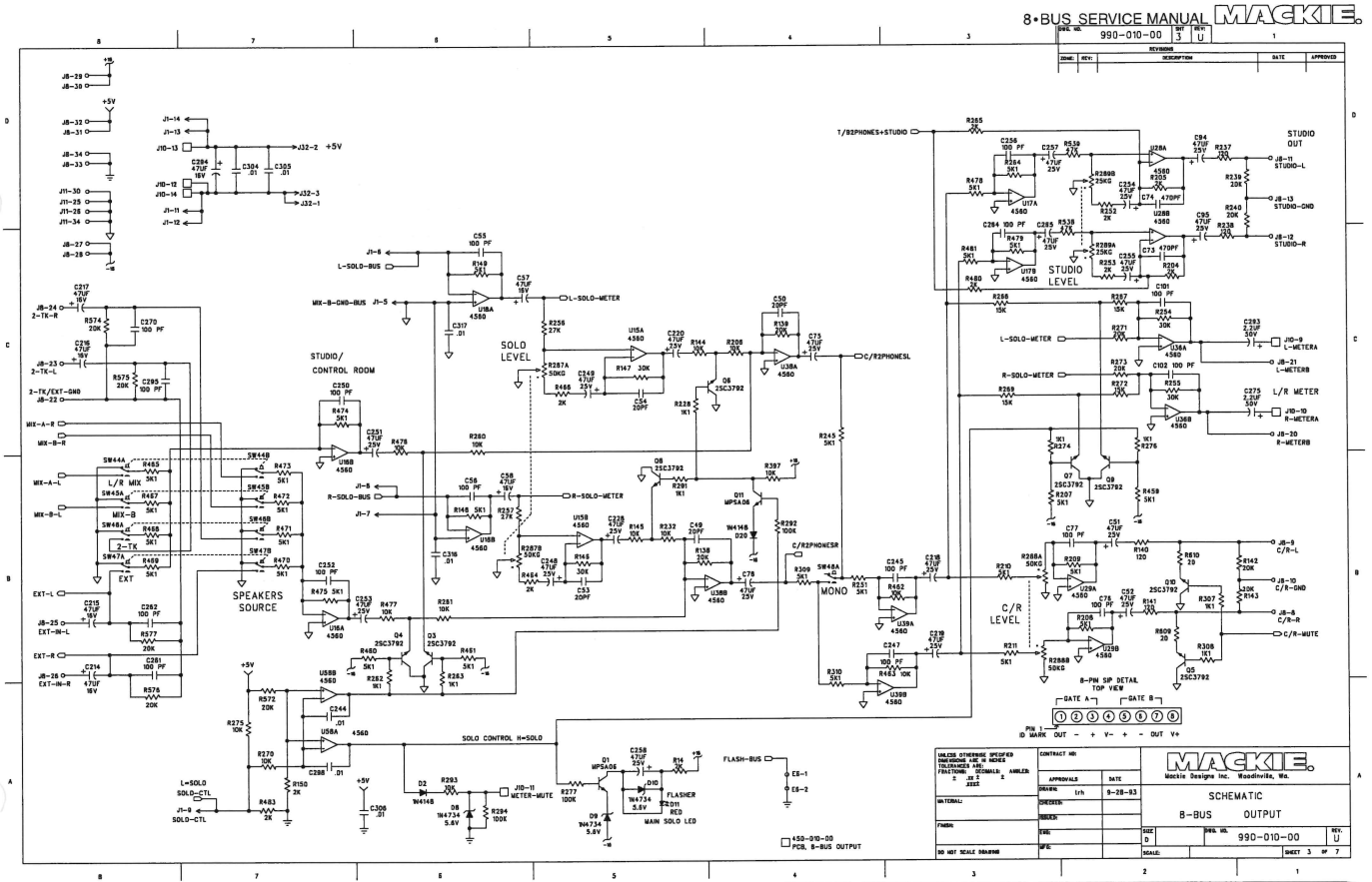
REV:	ECO:	DESCRIPTION	REV BY:	APP BY:	DATE
C		INCORP ECO 52	trh	JC	9-28-93
D	58	ADDED R811, D31	trh	JC	10-13-93
E	66	ARTWORK REVISED FOR SOLDERABILITY	trh	JC	11-02-93
F	69	DELETED RESISTORS ADDED WITH ECO 52	trh		11-16-93
G	109	U37 WAS NJM2043, REVISED NJM2068.	trh		12-28-93
H		SPREAD APART LYTICS	trh		1-19-94
J	145 158	PHASE 1 ; DIODE HOLES WERE .032	trh	JCC	4-17-94
K		INCORP ECO'S:189,193,307,545,568,588.	KR		9-12-95
L		INCORP ECO'S:427,631,727,852.	KR	ES	2-16-96
S	967	AUTO INSERT LED'S	KR		11-15-96
	993	SOLDER BRIDGE REDUCTION			
T	921	LARGE CORE SWITCHES	KR		1-8-98
	926	LARGE CORE BUTTONS			
	1233	AUTO INSERT LED'S TO .038 HOLE SIZE			
	1284	AUTO INSERT 1SS178276			
	1294	REMOVE MADE IN U.S.A. NOTE			
	1367	SNAP IN SWITCHES			
	1408	END STEP SHAFT SOKO DUAL			
	1410	SOLDER BRIDGE REDUCTION			
	1411	SOLDER WAVE - 100 MATERIAL			
	1454	8-PIN SIP 4558D'S			
U	1490	INCORPORATE ECO'S: 987,983,921,926,1223, 1284,1294,1387,1408,1410,1411,1454.	KR		2-3-98

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONAL ± DECIMALS .XX ± .XXX ANGLES ±	CONTRACT NO:	MACKIE. Mackie Designs Inc. Woodinville, Wa.
MATERIAL:	APPROVALS / DRAWN: trh 8-23-93 / CHECKED: CJ 7-9-93 / ISSUED: CR 7-9-93	SCHEMATIC 8-BUS OUTPUT
FINISH:	ENG: / MFG:	SIZE B — DRWG NO. 990-010-00 — REV. U
DO NOT SCALE DRAWING		SCALE: — SHEET 1 OF 7

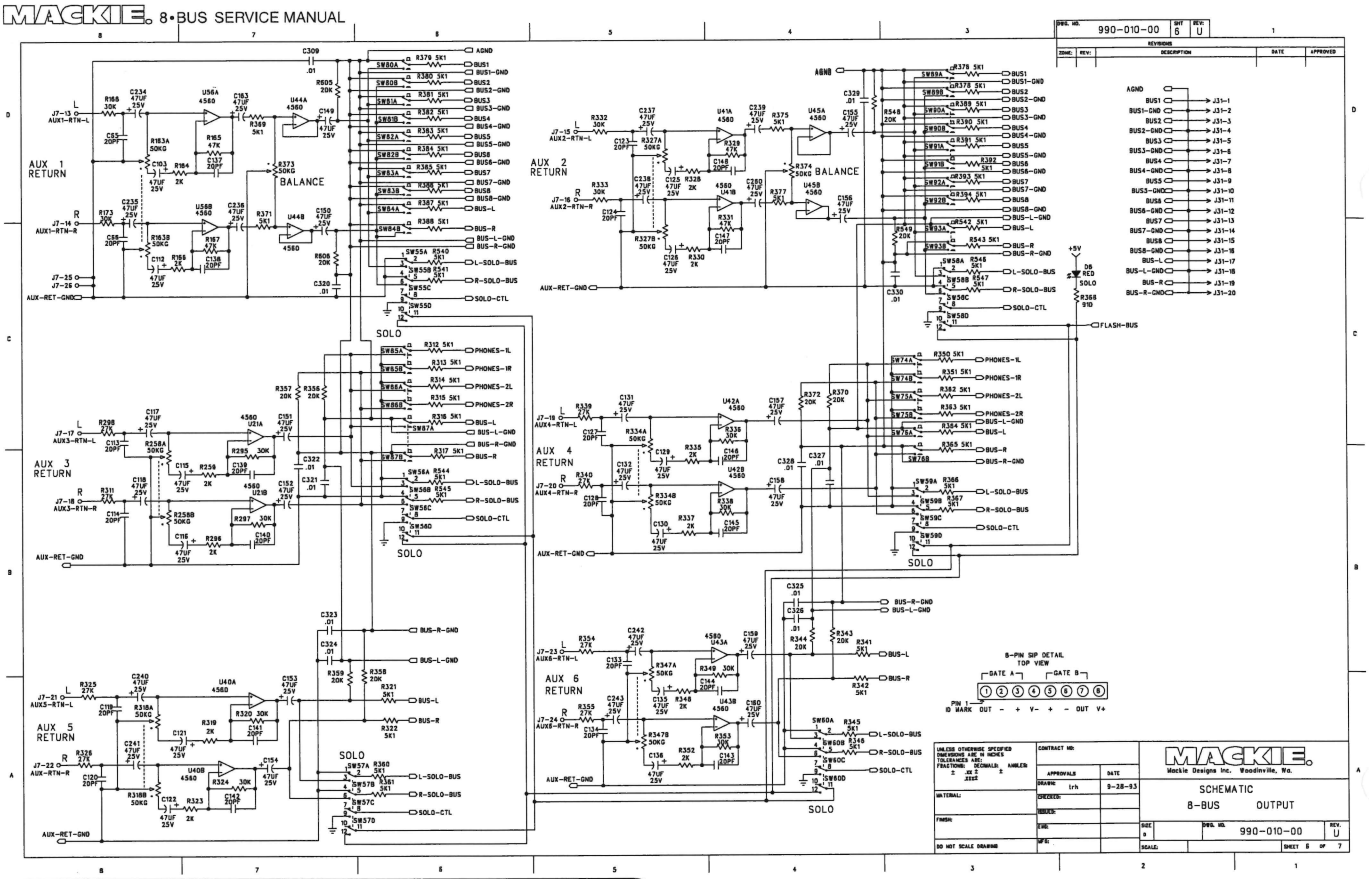
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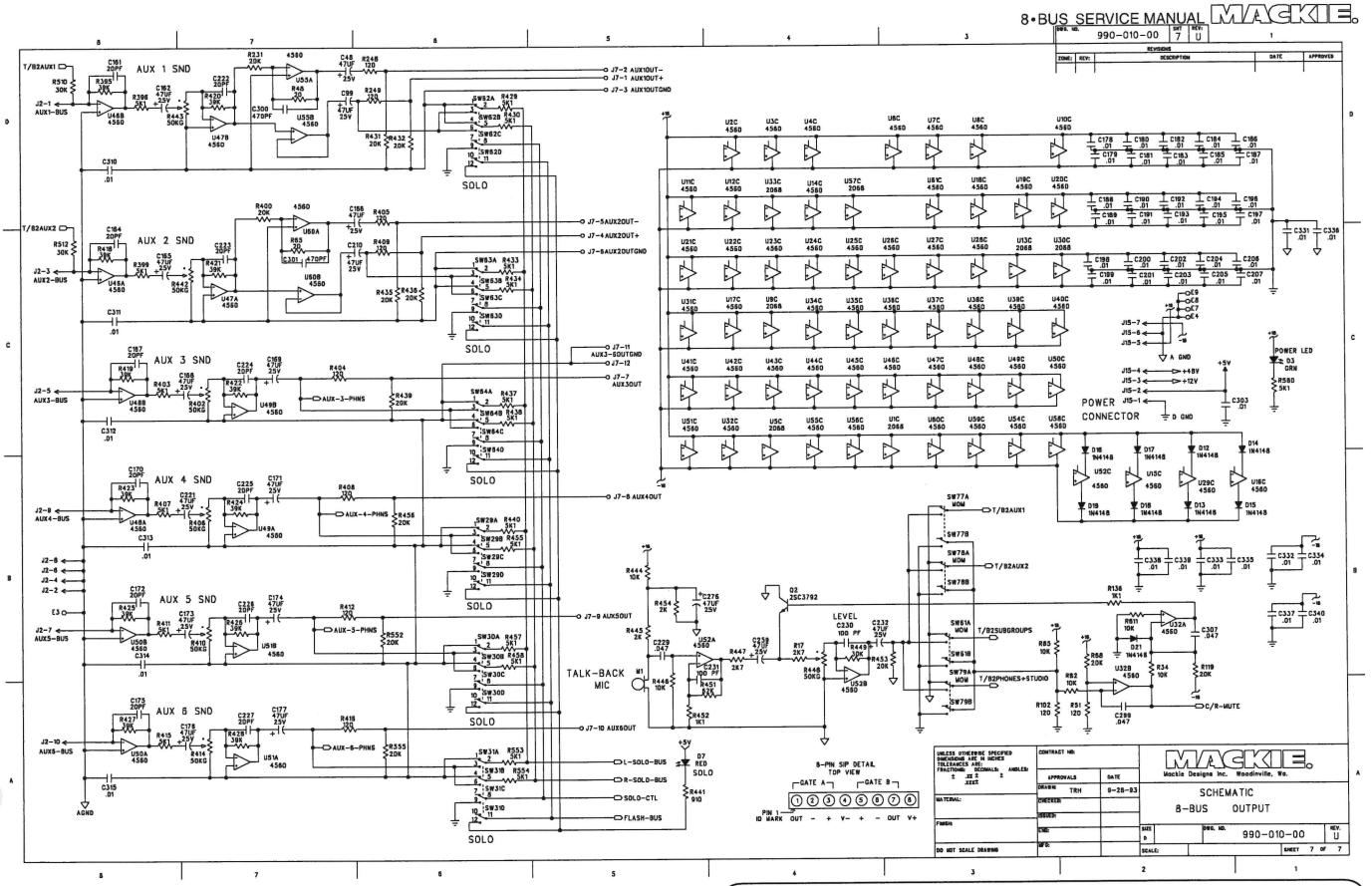


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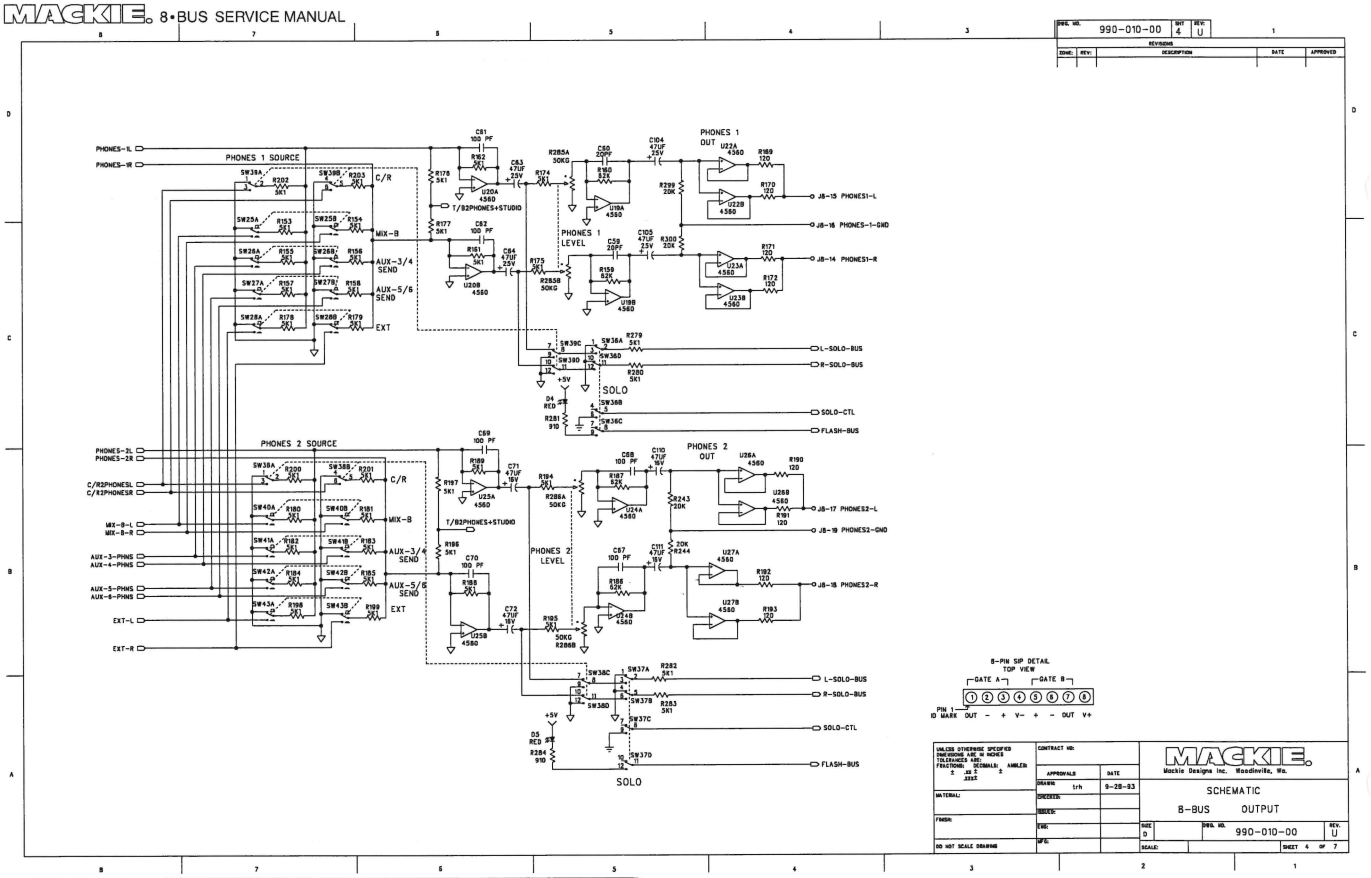


10-4 OUTPUT BOARD 10 REV U

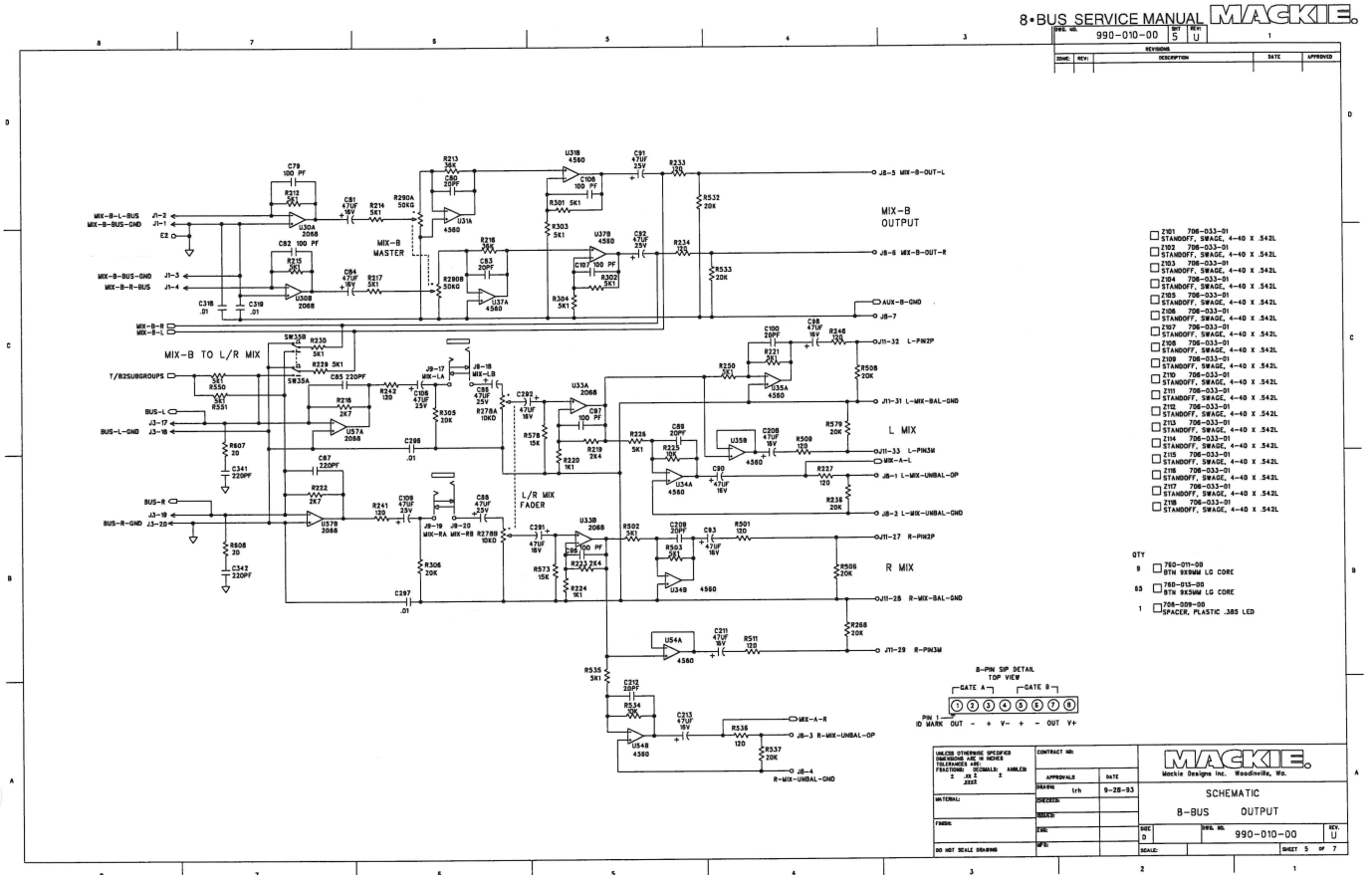
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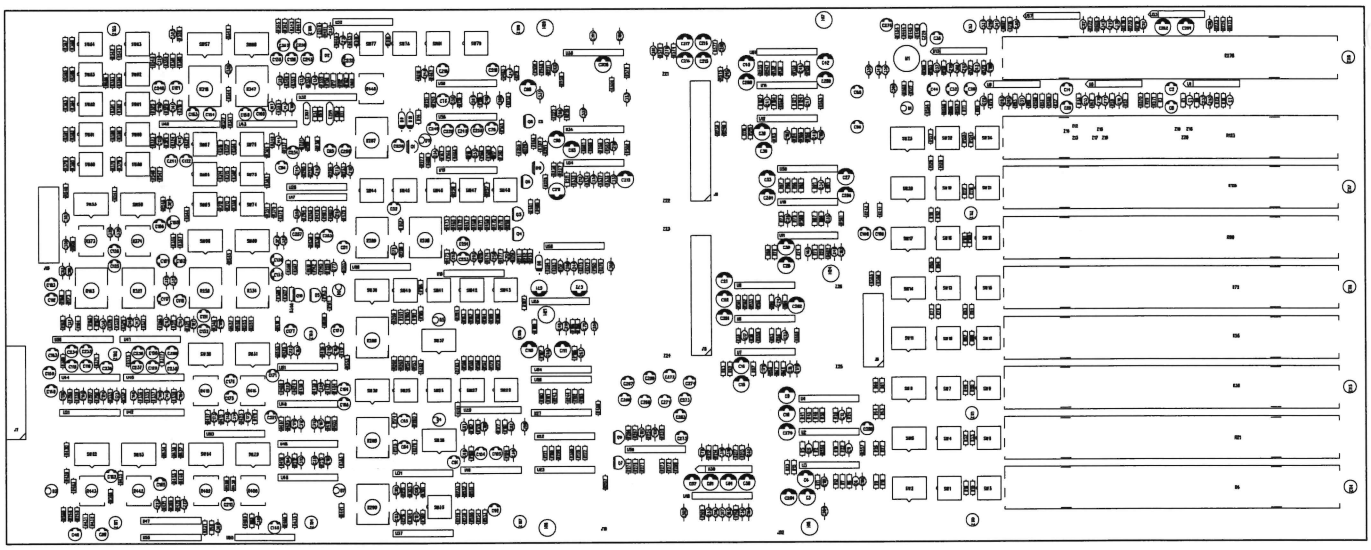
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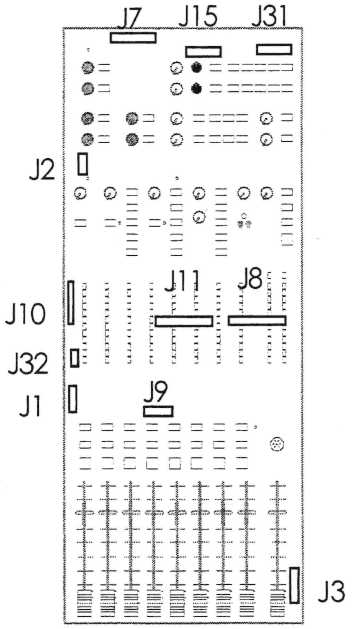
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J7

AUX 1 OUT +	1	2	AUX 1 OUT -
AUX 1 OUT GND	3	4	AUX 2 OUT +
AUX 2 OUT -	5	6	AUX 2 OUT GND
AUX 3 OUT	7	8	AUX 4 OUT
AUX 5 OUT	9	10	AUX 6 OUT
AUX 3-6 GND	11	12	AUX 3-6 GND
AUX 1 RTN L	13	14	AUX 1 RTN R
AUX 2 RTN L	15	16	AUX 2 RTN R
AUX 3 RTN L	17	18	AUX 3 RTN R
AUX 4 RTN L	19	20	AUX 4 RTN R
AUX 5 RNT L	21	22	AUX 5 RTN R
AUX 6 RTN L	23	24	AUX 6 RTN R
AUX RTN GND	25	26	AUX RTN GND

J10

SUB 1 TO METER	1
SUB 2 TO METER	2
SUB 3 TO METER	3
SUB 4 TO METER	4
SUB 5 TO METER	5
SUB 6 TO METER	6
SUB 7 TO METER	7
SUB 8 TO METER	8
L TO METER	9
R TO METER	10
SUB METER MUTE	11
DGND	12
+5V	13
DGND	14

J1

AGND	1	2	L-MIX-B-BUS
AGND	3	4	R-MIX-B-BUS
AGND	5	6	L-SOLO-BUS
AGND	7	8	R-SOLO-BUS
SOLO-CTL	9	10	FLASH-BUS
DGND	11	12	DGND
+5V	13	14	+5V

J8

L MIX UNBAL OUT	1	2	L MIX UNBAL GND
R MIX UNBAL OUT	3	4	R MIX UNGBAL GND
MIX B OUT L	5	6	MIX B OUT R
MIX B GND	7	8	CONTROL ROOM R
CONTROL ROOM L	9	10	CONTROL ROOM GND
STUDIO L	11	12	STUDIO R
STUDIO GND	13	14	PHONES 1 R
PHONES 1 L	15	16	PHONES 1 GND
PHONES 2 L	17	18	PHONES 2 R
PHONES 2 GND	19	20	R METER B
L METER B	21	22	2 TRK/EXT GND
2 TRK L	23	24	2 TRK R
EXT IN L	25	26	EXT IN R
-16V	27	28	-16V
+16V	29	30	+16V
+5V	31	32	+5V
DGND	33	34	DGND

J11

SUB 1 OUT +	1	2	SUB 1 OUT -
SUB 1 OUT GND	3	4	SUB 2 OUT GND
SUB 2 OUT -	5	6	SUB 2 OUT +
SUB 3 OUT -	7	8	SUB 3 OUT +
SUB 3 OUT GND	9	10	SUB 4 OUT GND
SUB 4 OUT -	11	12	SUB 4 OUT +
SUB 5 OUT -	13	14	SUB 5 OUT +
SUB 5 OUT GND	15	16	SUB 6 OUT GND
SUB 6 OUT -	17	18	SUB 6 OUT +
SUB 7 OUT -	19	20	SUB 7 OUT +
SUB 7 OUT GND	21	22	SUB 8 OUT -
SUB 8 OUT GND	23	24	SUB 8 OUT GND
AGND	25	26	AGND
R OUT +	27	28	R OUT GND
R OUT -	29	30	AGND
L OUT GND	31	32	L OUT +
L OUT -	33	34	AGND

J2

AUX-1-BUS	1	2	AGND
AUX-2-BUS	3	4	AGND
AUX-3-BUS	5	6	AGND
AUX-5-BUS	7	8	AGND
AUX-4-BUS	9	10	AUX-6-BUS

J9

SUB 1 INS SEND	1	2	SUB 1 INS RTN
SUB 2 INS SEND	3	4	SUB 2 INS RTN
SUB 3 INS SEND	5	6	SUB 3 INS RTN
SUB 4 INS SEND	7	8	SUB 4 INS RTN
SUB 5 INS SEND	9	10	SUB 5 INS RTN
SUB 6 INS SEND	11	12	SUB 6 INS RTN
SUB 7 INS SEND	13	14	SUB 6 INS RTN
SUB 8 INS SEND	15	16	SUB 8 INS RTN
L MIX INS SEND	17	18	L MIX INS RTN
R MIX INS SEND	19	20	R MIX INS RTN

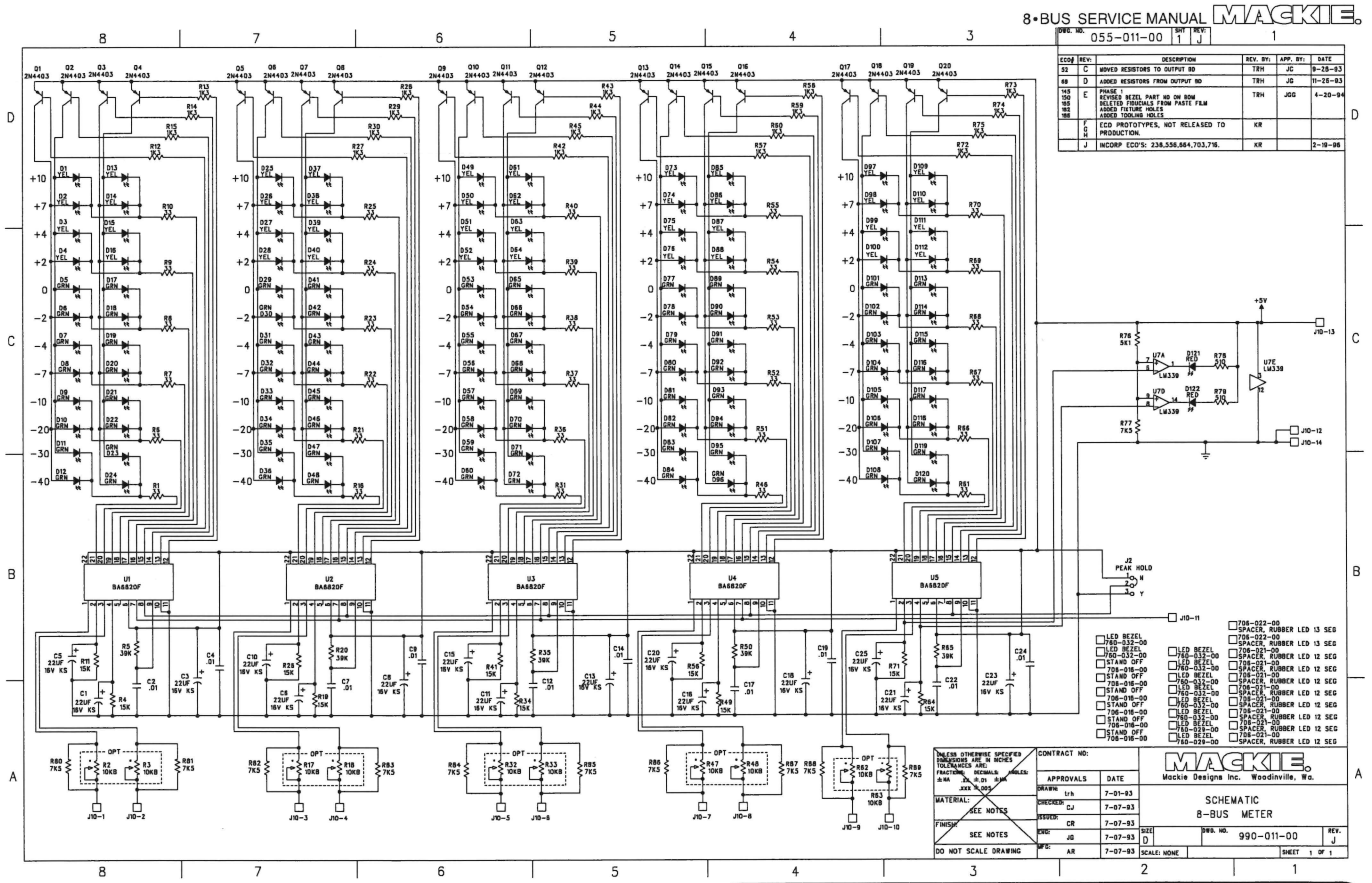
J3

BUS-1	1	2	AGND
BUS-2	3	4	AGND
BUS-3	5	6	AGND
SUS-4	7	8	AGND
BUS-5	9	10	AGND
BUS-6	11	12	AGND
BUS-7	13	14	AGND
BUS-8	15	16	AGND
BUS-L	17	18	AGND
BUS-R	19	20	AGND

J15

DGND	1
+5V	2
+12V	3
+48V	4
+18V	5
AGND	6
-18V	7

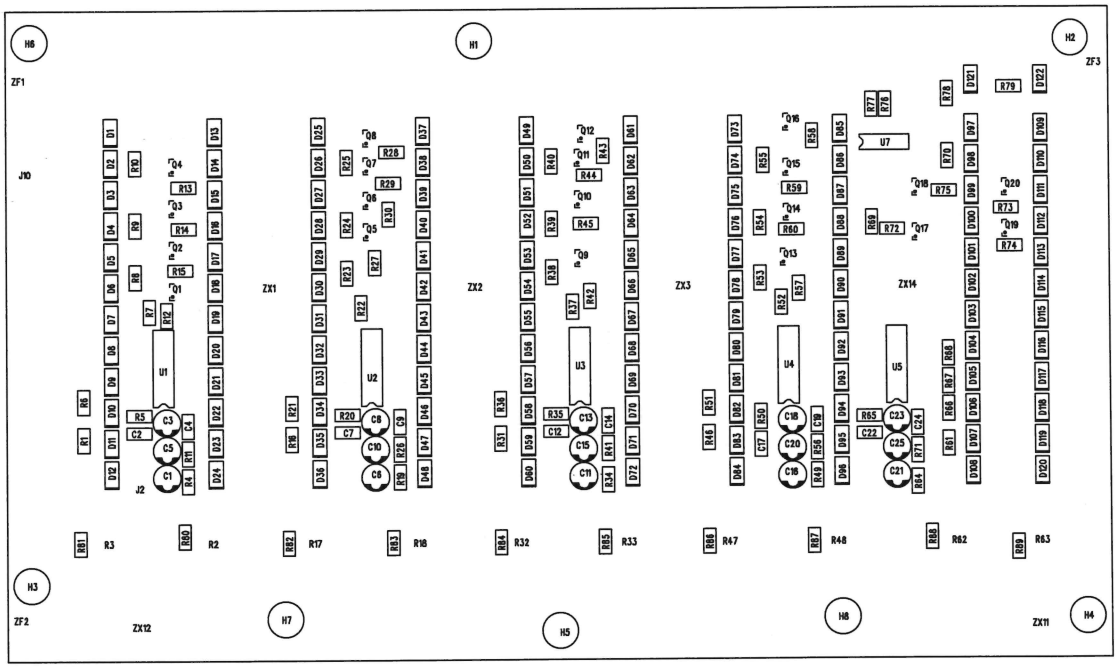
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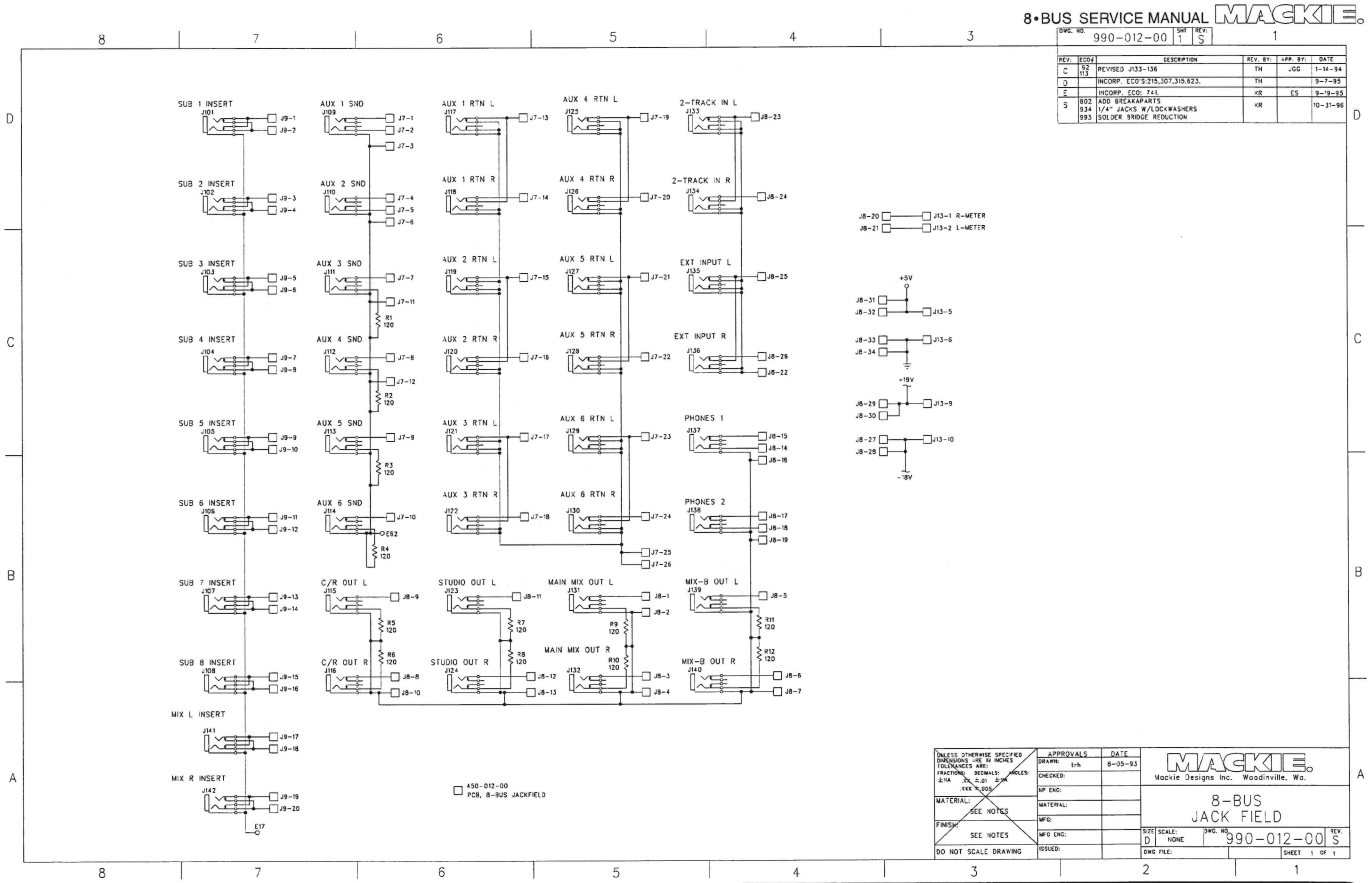
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J10

SUB 1 TO METER	1
SUB 2 TO METER	2
SUB 3 TO METER	3
SUB 4 TO METER	4
SUB 5 TO METER	5
SUB 6 TO METER	6
SUB 7 TO METER	7
SUB 8 TO METER	8
L TO METER	9
R TO METER	10
SUB METER MUTE	11
DGND	12
+5V	13
DGND	14



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J7

AUX 1 OUT -	1	2	AUX 1 OUT -
AUX 1 OUT GND	3	4	AUX 2 OUT -
AUX 2 OUT -	5	6	AUX 2 OUT GND
AUX 3 OUT	7	8	AUX 4 OUT
AUX 5 OUT	9	10	AUX 6 OUT
AUX 3-6 GND	11	12	AUX 3-6 GND
AUX 1 RTN L	13	14	AUX 1 RTN R
AUX 2 RTN L	15	16	AUX 2 RTN R
AUX 3 RTN L	17	18	AUX 3 RTN R
AUX 4 RTN L	19	20	AUX 4 RTN R
AUX 5 RNT L	21	22	AUX 5 RTN R
AUX 6 RTN L	23	24	AUX 6 RTN R
AUX RTN GND	25	26	AUX RTN GND

J9

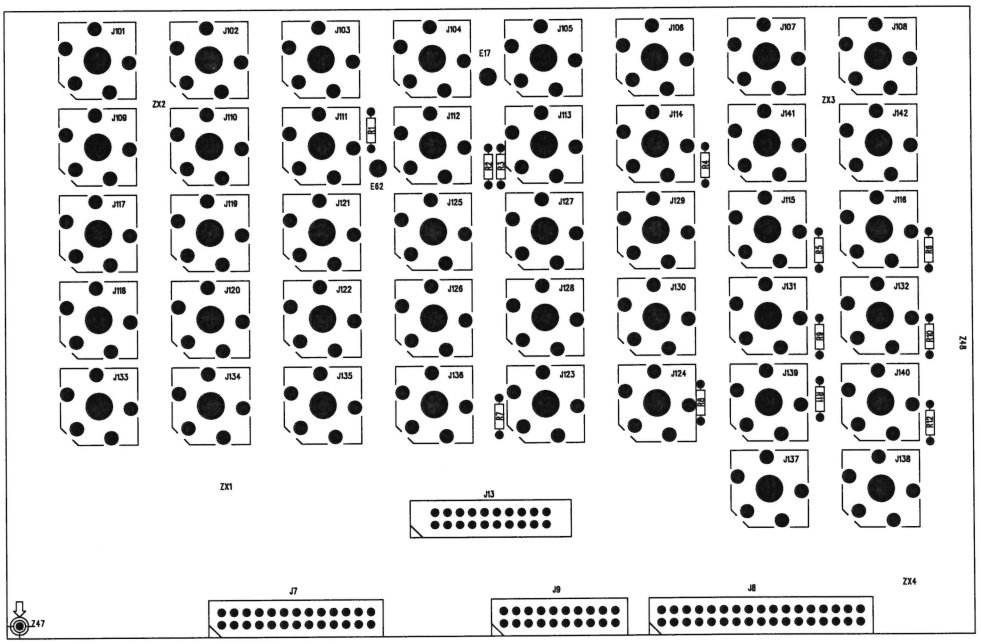
SUB 1 INS SEND	1	2	SUB 1 INS RTN
SUB 2 INS SEND	3	4	SUB 2 INS RTN
SUB 3 INS SEND	5	6	SUB 3 INS RTN
SUB 4 INS SEND	7	8	SUB 4 INS RTN
SUB 5 INS SEND	9	10	SUB 5 INS RTN
SUB 6 INS SEND	11	12	SUB 6 INS RTN
SUB 7 INS SEND	13	14	SUB 6 INS RTN
SUB 8 INS SEND	15	16	SUB 8 INS RTN
L MIX INS SEND	17	18	L MIX INS RTN
R MIX INS SEND	19	20	R MIX INS RTN

J8

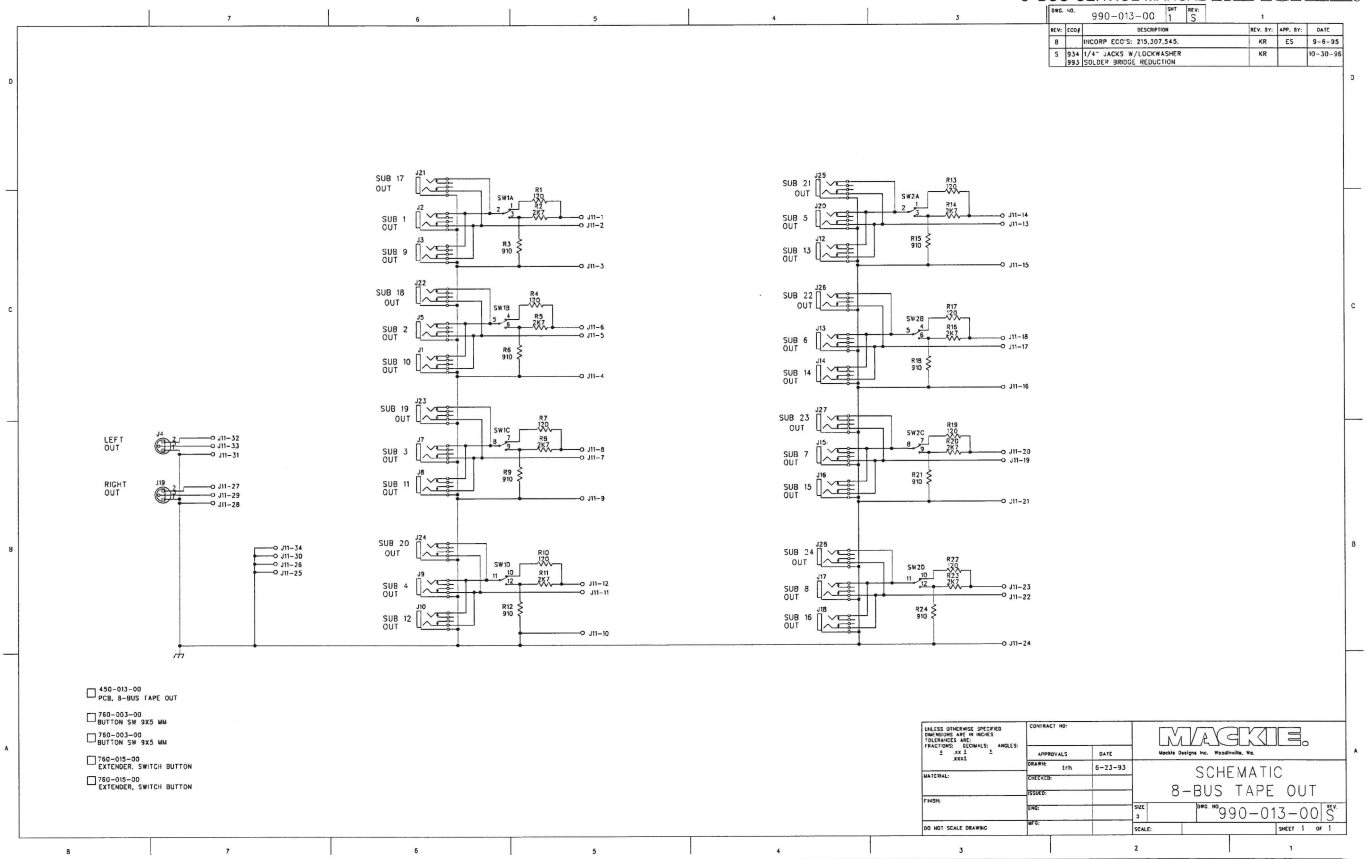
L MIX UNBAL OUT	1	2	L MIX UNBAL GND
R MIX UNBAL OUT	3	4	R MIX UNGBAL GND
MIX B OUT L	5	6	MIX B OUT R
MIX B GND	7	8	CONTROL ROOM R
CONTROL ROOM L	9	10	CONTROL ROOM GND
STUDIO L	11	12	STUDIO R
STUDIO GND	13	14	PHONES 1 R
PHONES 1 L	15	16	PHONES 1 GND
PHONES 2 L	17	18	PHONES 2 R
PHONES 2 GND	19	20	R METER B
L METER B	21	22	2 TRK/EXT GND
2 TRK L	23	24	2 TRK R
EXT IN L	25	26	EXT IN R
-16V	27	28	-16V
-16V	29	30	+16V
+5V	31	32	+5V
DGND	33	34	DGND

J13

R METER	1	2	L METER
N/C	3	4	N/C
+5V	5	6	N/C
N/C	7	8	N/C
+18V	9	10	+18V
N/C	11	12	N/C
N/C	13	14	N/C
N/C	15	16	N/C
N/C	17	18	N/C
N/C	19	20	N/C



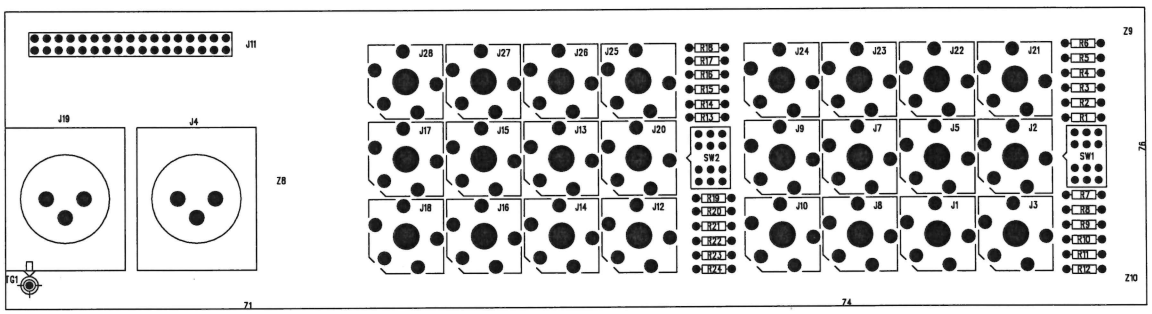
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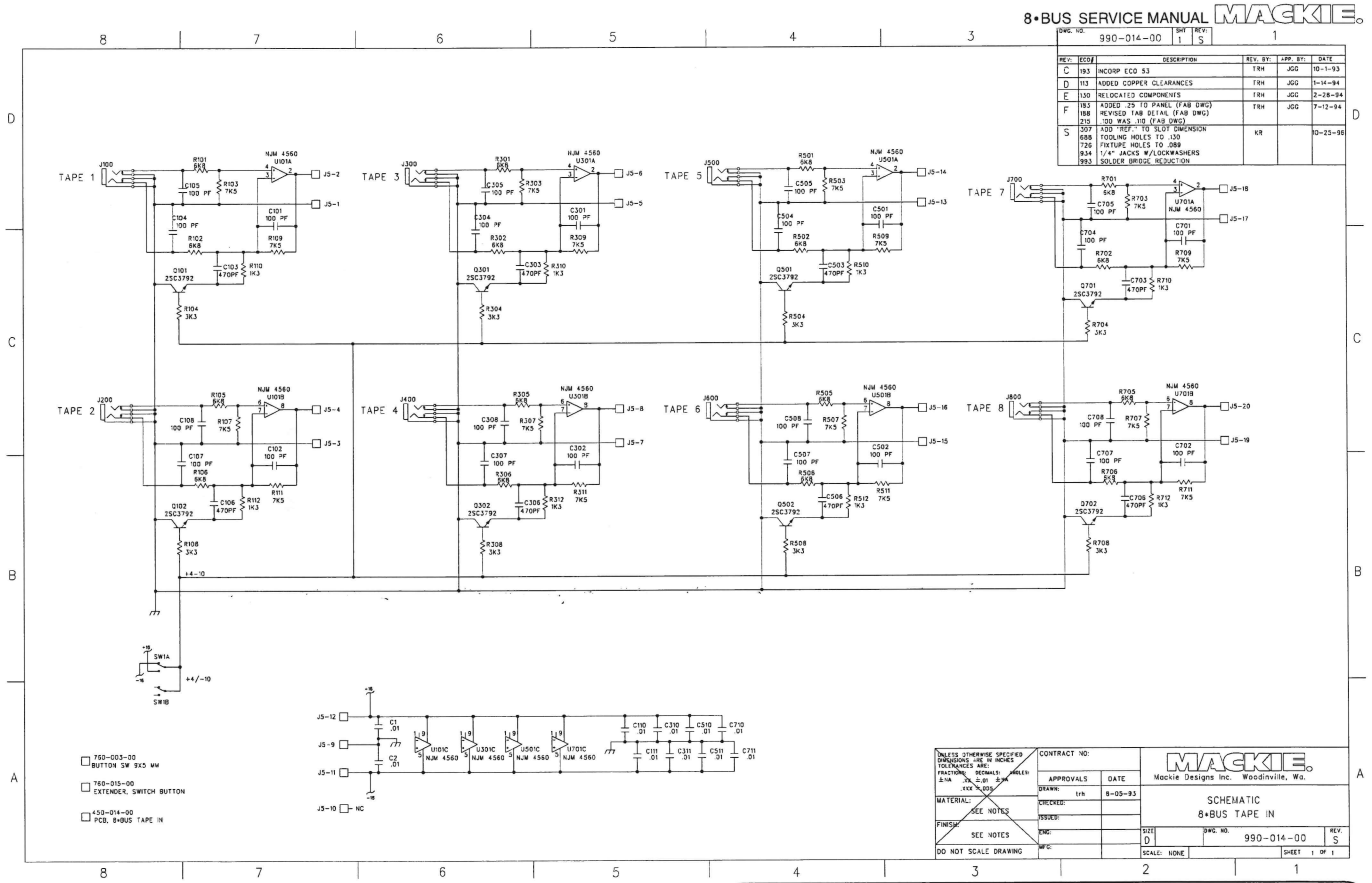
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J11

SUB 1 OUT +	1	2	SUB 1 OUT -
SUB 1 OUT GND	3	4	SUB 2 OUT GND
SUB 2 OUT -	5	6	SUB 2 OUT +
SUB 3 OUT -	7	8	SUB 3 OUT +
SUB 3 OUT GND	9	10	SUB 4 OUT GND
SUB 4 OUT -	11	12	SUB 4 OUT +
SUB 5 OUT -	13	14	SUB 5 OUT +
SUB 5 OUT GND	15	16	SUB 6 OUT GND
SUB 6 OUT -	17	18	SUB 6 OUT +
SUB 7 OUT -	19	20	SUB 7 OUT +
SUB 7 OUT GND	21	22	SUB 8 OUT -
SUB 8 OUT GND	23	24	SUB 8 OUT GND
AGND	25	26	AGND
R OUT +	27	28	R OUT GND
R OUT -	29	30	AGND
L OUT GND	31	32	L OUT +
L OUT -	33	34	AGND



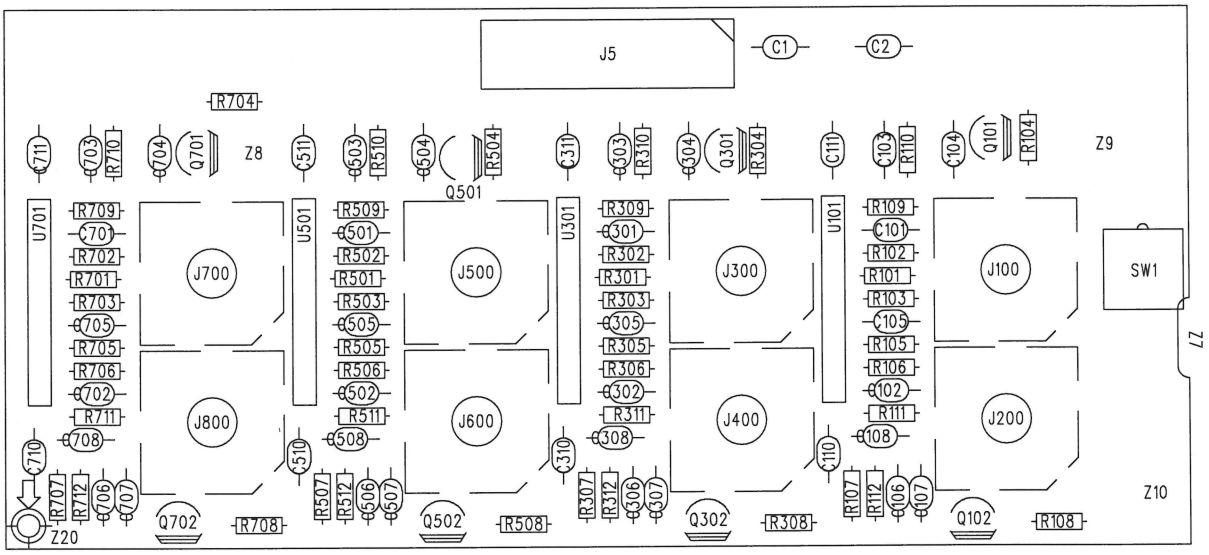
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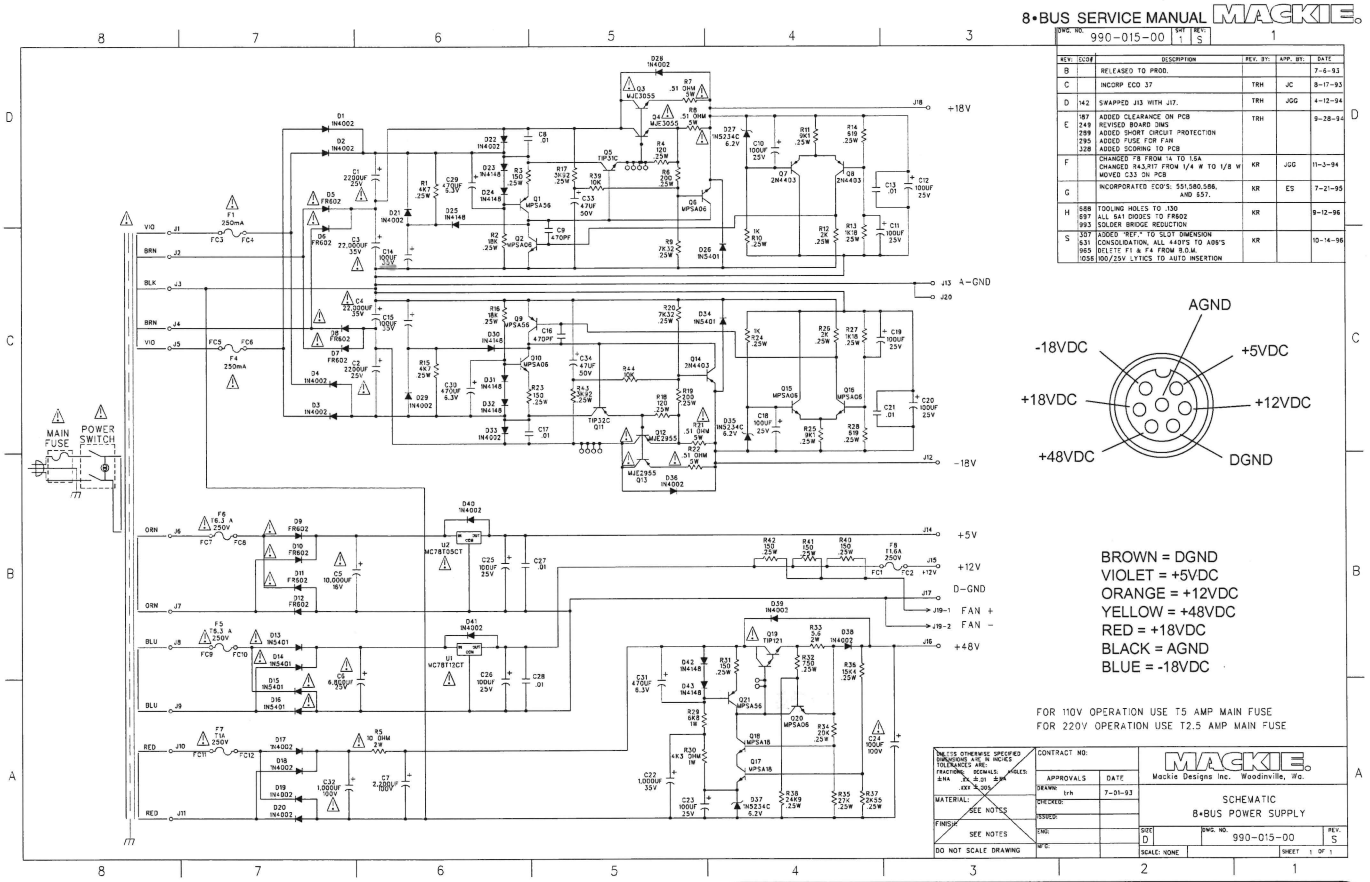
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J5

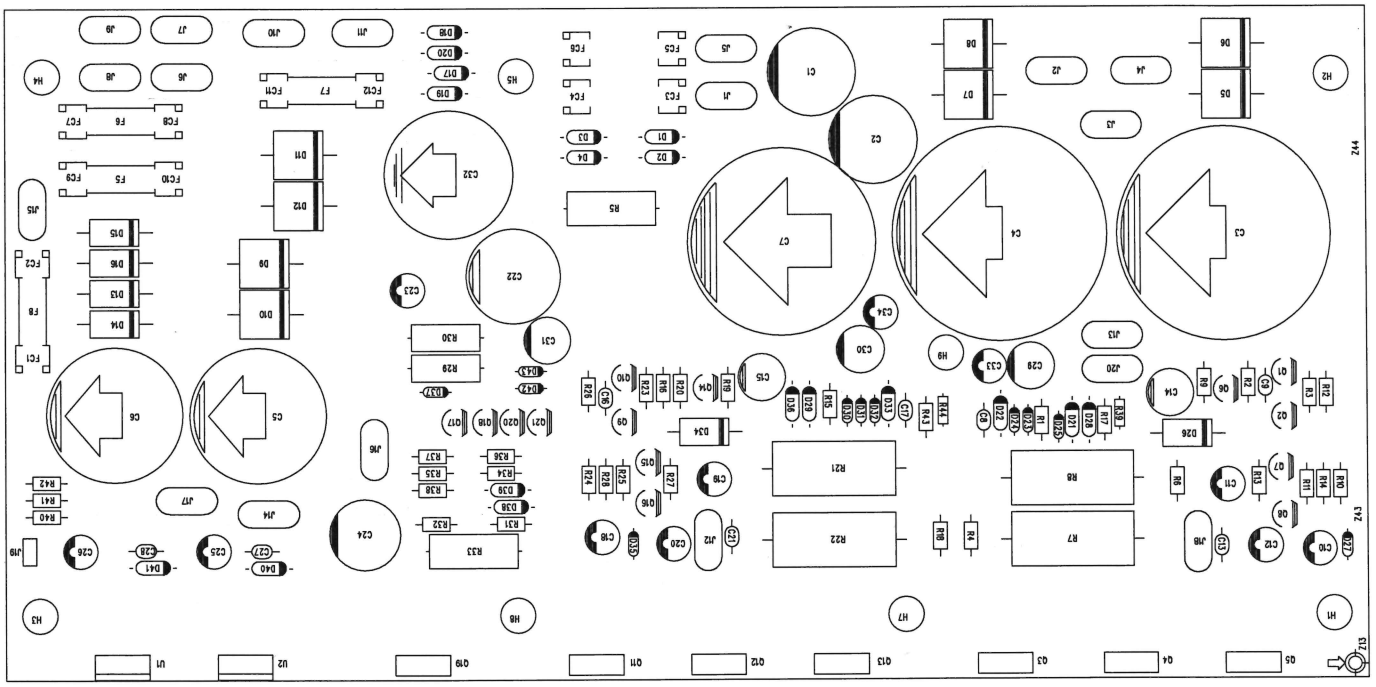
N/C	1	2	TAPE RTN 1
N/C	3	4	TAPE RTN 2
N/C	5	6	TAPE RTN 3
N/C	7	8	TAPE RTN 4
DGND	9	10	+5V
-16V	11	12	+16V
N/C	13	14	TAPE RTN 5
N/C	15	16	TAPE RTN 6
N/C	17	18	TAPE RTN 7
N/C	19	20	TAPE RTN 8



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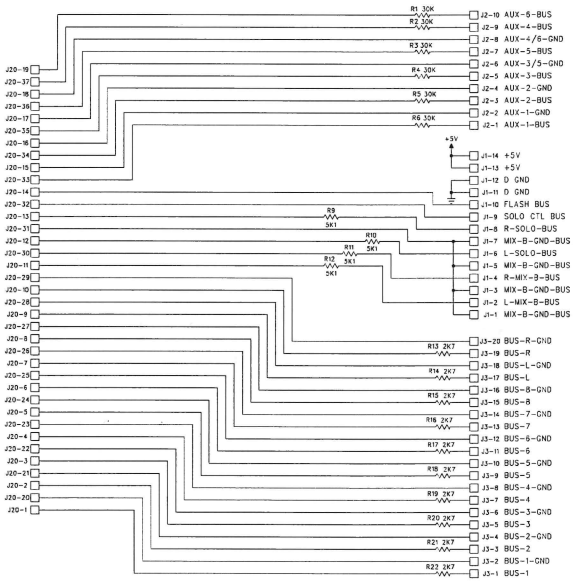


15-2 POWER SUPPLY BOARD 15 REV S

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DWG. NO.	UNIT	REV.
990-019-00	1	S

REV:	ECO#	REVISIONS DESCRIPTION	REV. BY:	APP. BY:	DATE
C	67	CORRECTED CONNECTOR PINOUTS	TH	JC	11-12-93
D	189	CHANGED TO LOCKING CONNECTORS	TH	JGG	5-20-94
S	307 888 983	ADD 'REF.' TO SLOT DIMENSION TOOLING HOLES TO .130 SOLDER BRIDGE REDUCTION	KR		10-31-96



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONAL ± DECIMALS: .X ± .05 .XXX ± ANGLES: ±

CONTRACT NO:

APPROVALS	DATE
DRAWN: TH	6-23-93
CHECKED: CHUCK	7-7-93
ISSUED: CR	7-7-93
ENG: JG	7-7-93
MFG: AR	7-7-93

MATERIAL:

FINISH:

DO NOT SCALE DRAWING

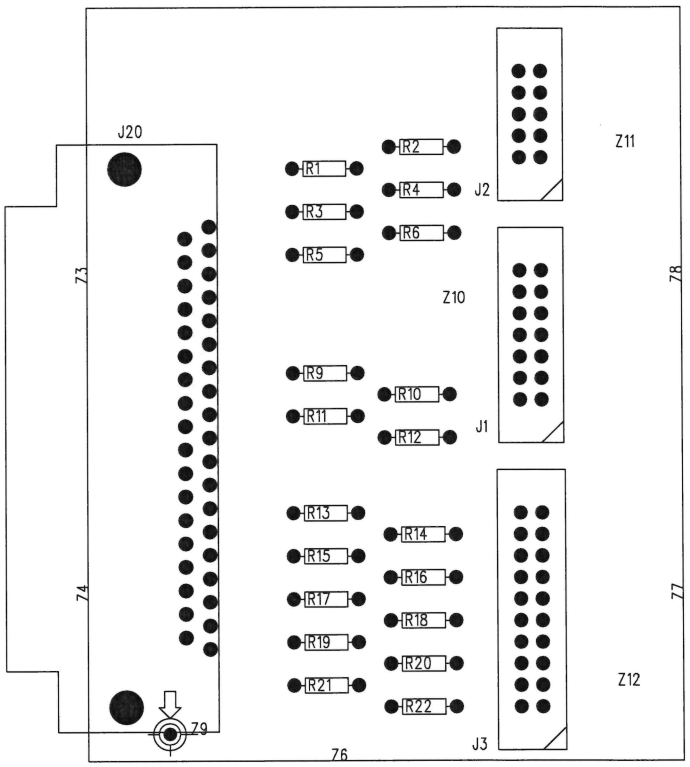
MACKIE. Mackie Designs Inc. Woodinville, Wa.

SCHEMATIC
8-BUS EXPANDER

SIZE B | DWG. NO. 990-019-00 | REV S

SCALE: | SHEET 1 OF 1

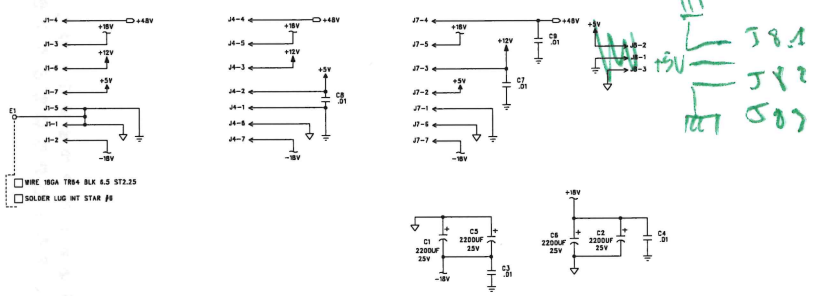
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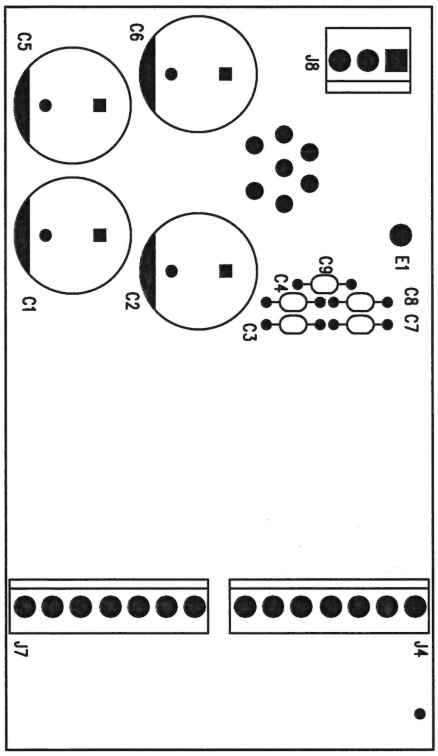
DWG. NO. 990-020-00 | SHT 1 | REV. D

ECO	REV	DESCRIPTION	DATE	APPROVED
507		ADD REF TO SLOT ONE		
508		SOME CORRECTIONS		
509	B	CHG C8 FROM 33V TO 50V		
510		CHG TOOLING HOLE FROM .125 TO .130		
566		DELETED J2,J3,J4,J5 HEADERS		

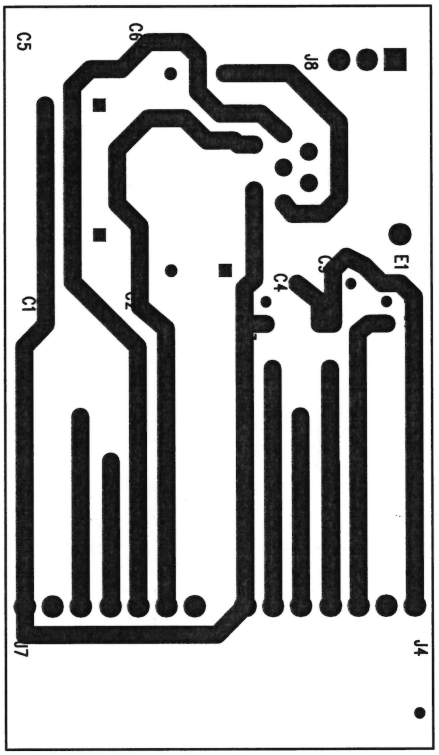


UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: DECIMALS: ANGLES: ± .XX ± .XXX ±	CONTRACT NO:	MACKIE. Mackie Designs Inc. Woodinville, Wa.	
	APPROVALS / DATE		
MATERIAL:	DRAWN: trh 8-05-93	8-BUS POWER DISTRIBUTION	
FINISH:	CHECKED:		
DO NOT SCALE DRAWING	ENG:	SIZE B DWG. NO. 990-020-00 REV. C	
	MFG:	SCALE: NONE SHEET 1 OF 1	

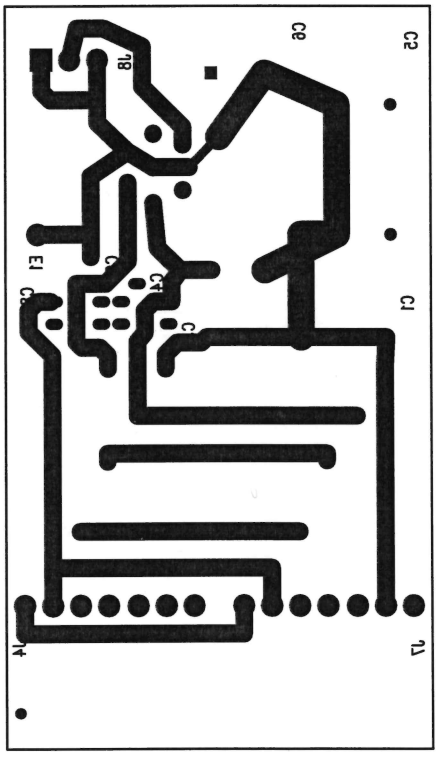
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TOP

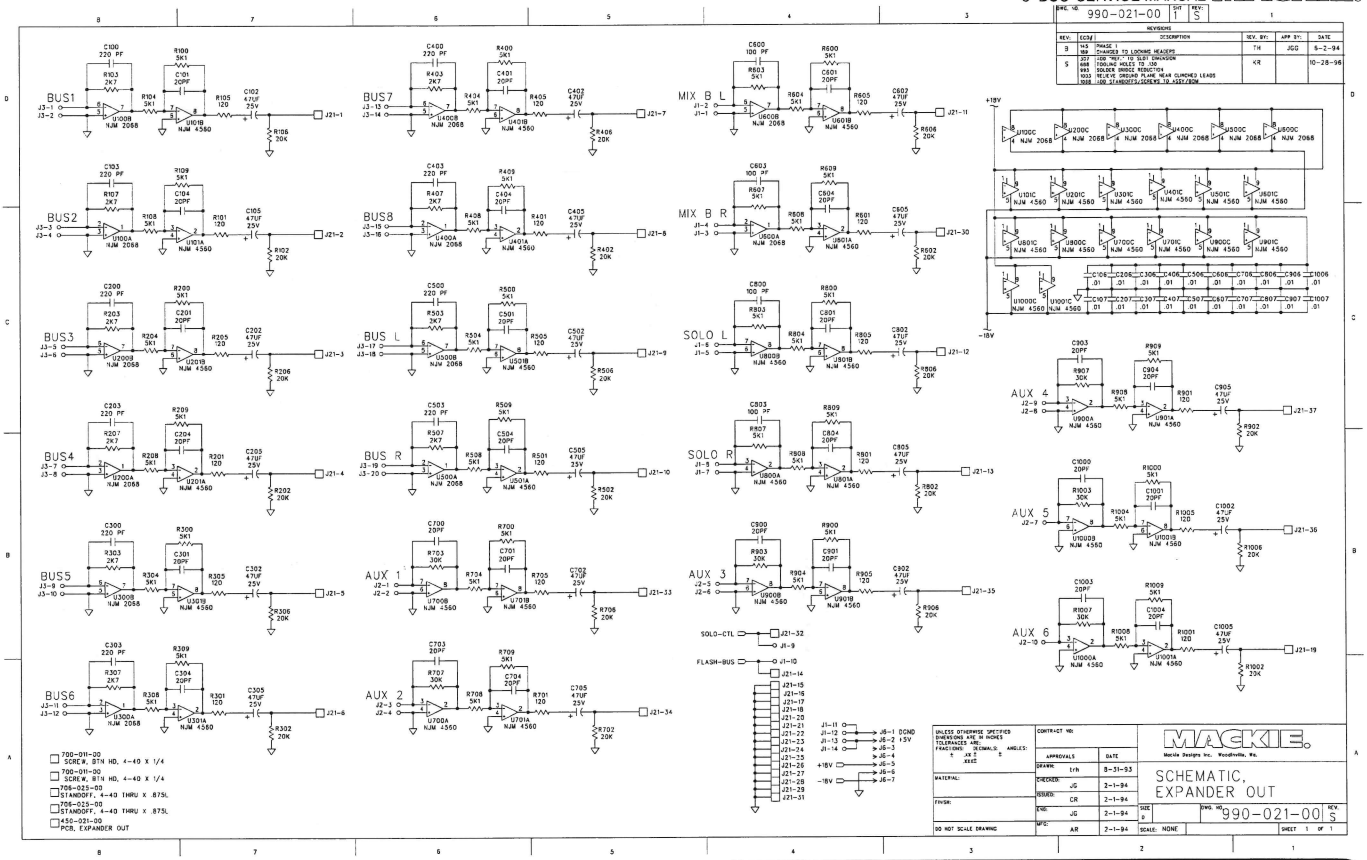


TOP TRACES

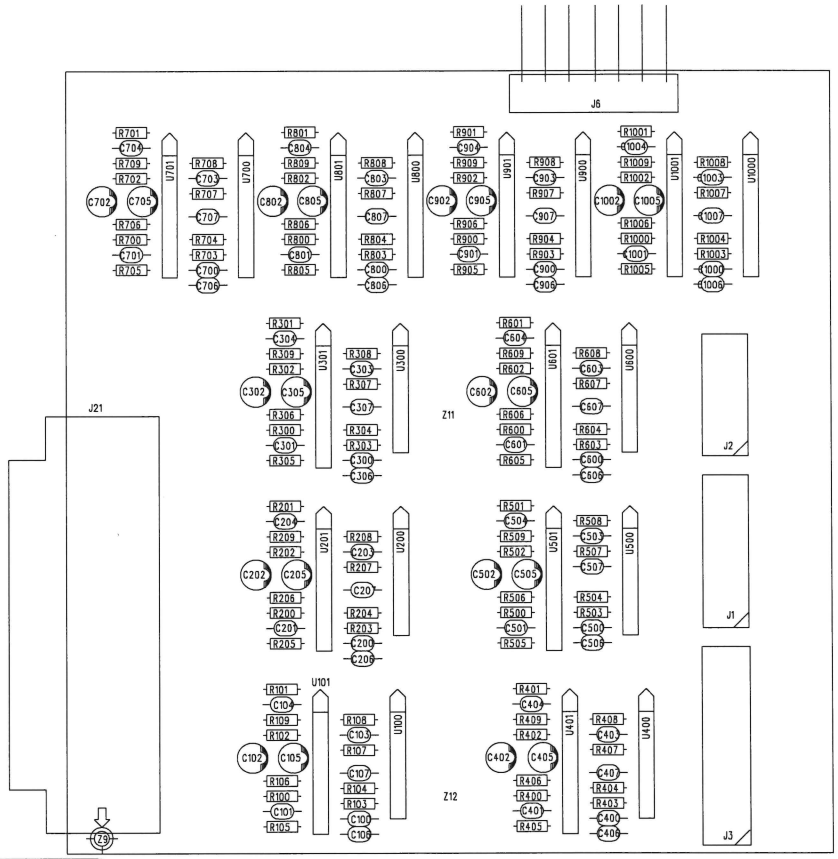


BOTTOM TRACES

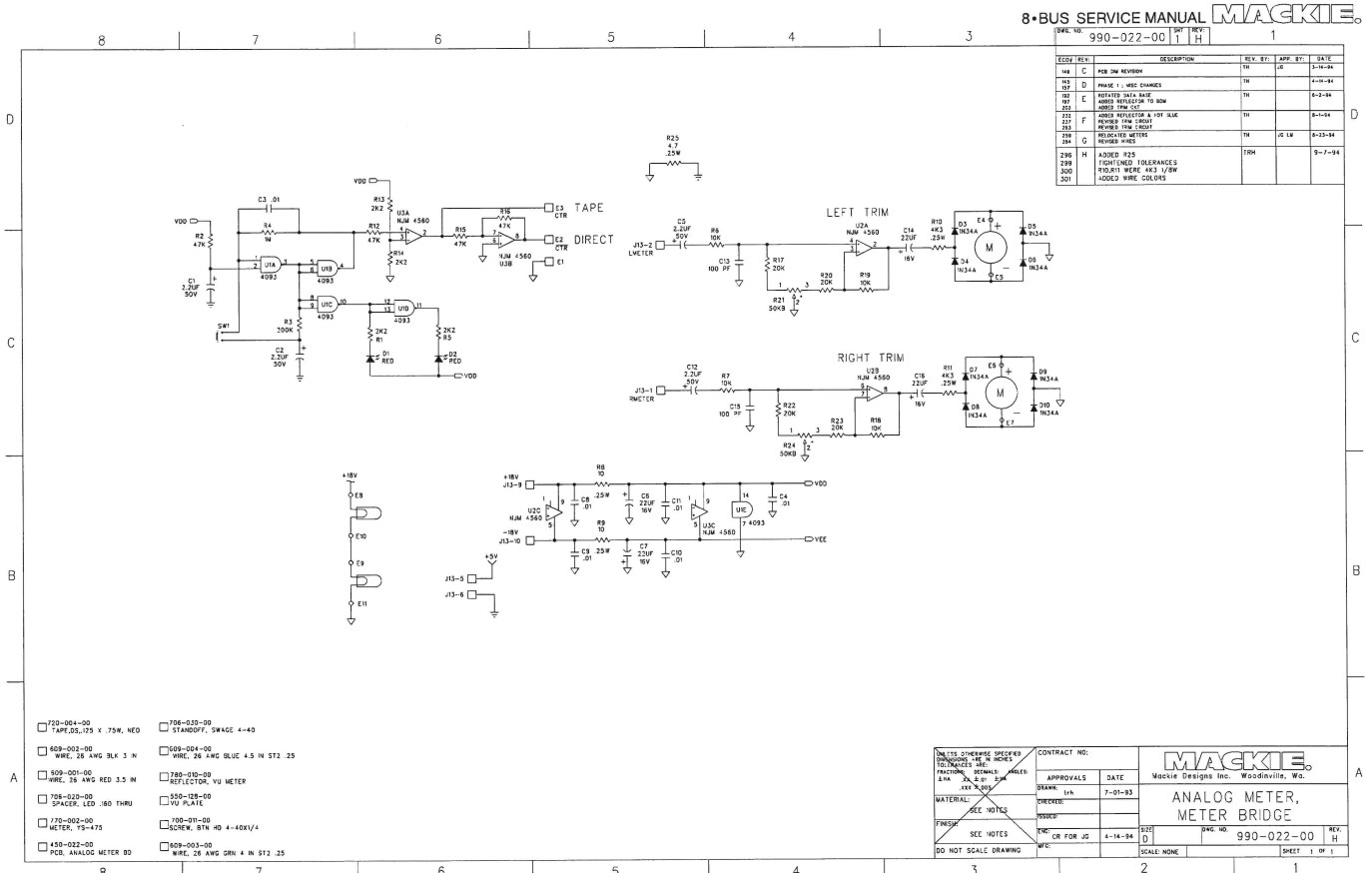
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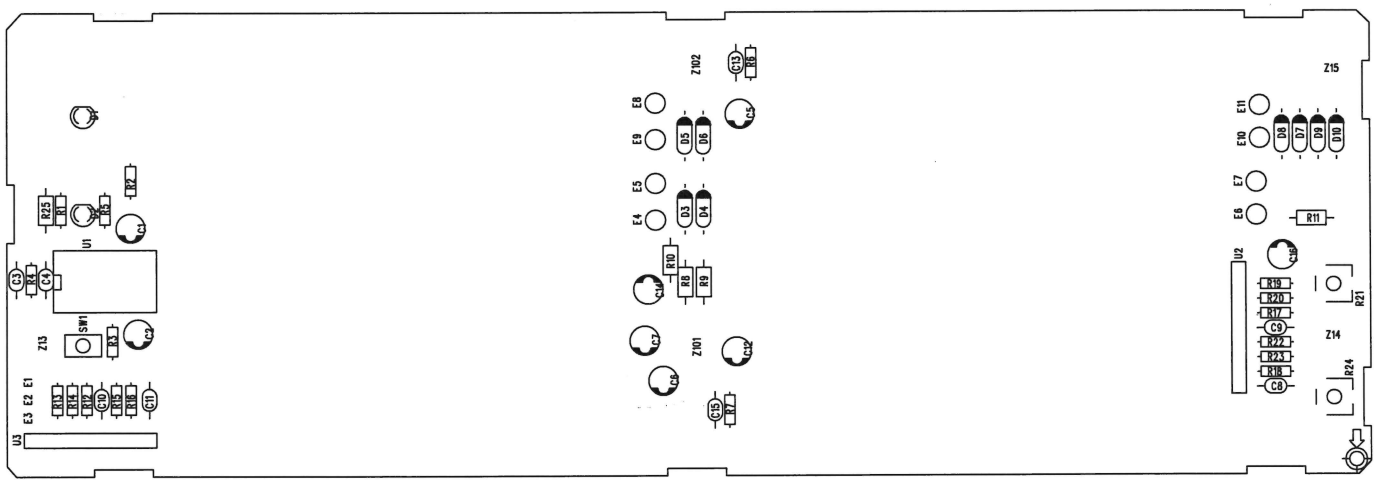
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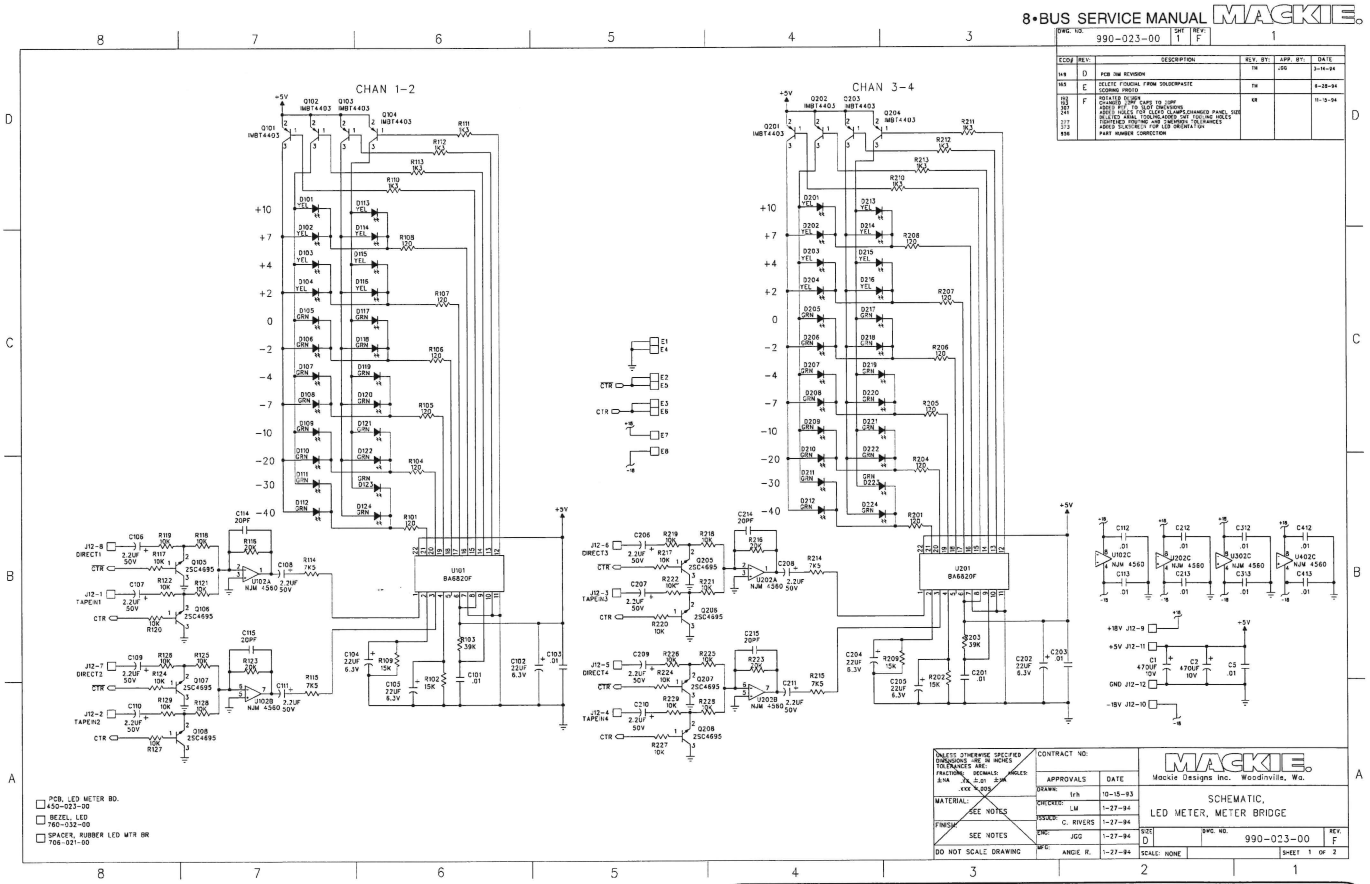
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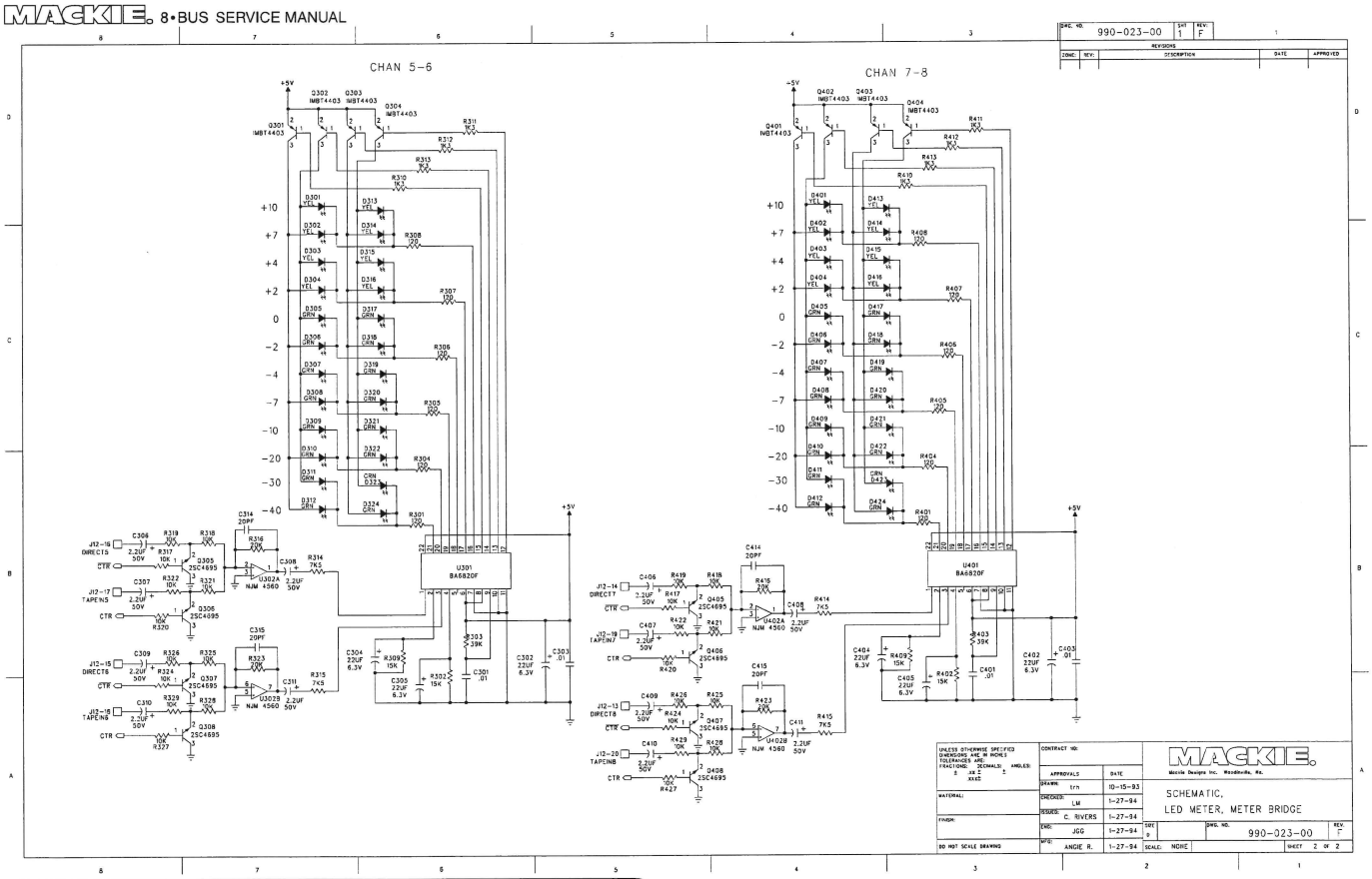
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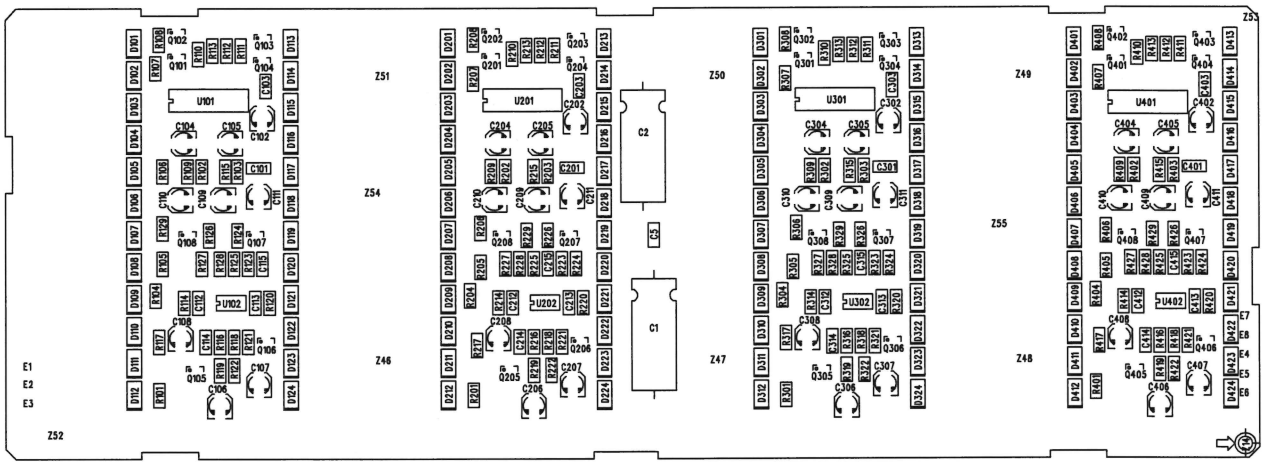


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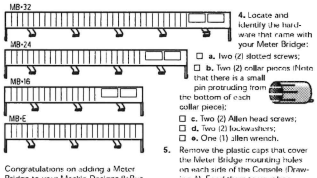
23-2 LED METER BOARD 23 REV F

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MB•32/MB•24/MB•16/MB•E 8•BUS METER BRIDGES



Congratulations on adding a Meter Bridge to your Mackie Designs 8•Bus Console. Installation is very straightforward and should take just a few minutes. The only reason we've included so many step-by-step drawings is because our art department wanted something to do on a rainy day.

INSTALLATION INSTRUCTIONS

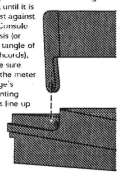
1. Locate the warranty card and fill it out. If you bought your Meter Bridge at the same time you purchased an 8•Bus series console, you don't need to answer all the questions on the card that came with the Meter Bridge. Just fill in the model number of the Meter Bridge, serial number, purchase date and dealer, and your name and address.
2. Make sure that your 8•Bus Console power supply is turned off.
3. Remove the Meter Bridge from its plastic bag. Save the bag. It's handy for wrapping bra constrictors or moray eels before popping them in your freezer. Also, save the box.

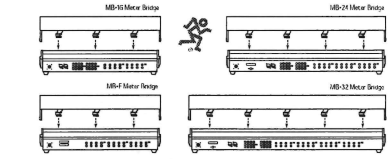
Real cute, wise guy, sorta. Four by four - actual size, design-wise - the Purchasers Blueprint drawings time to 'Rotate 3 more'.

4. Locate and identify the hardware that came with your Meter Bridge:
   - ☐ **a.** Two (2) slotted screws;
   - ☐ **b.** Two (2) collar pieces (Note that there is a small pin protruding from the bottom of each collar piece);
   - ☐ **c.** Two (2) Allen head screws;
   - ☐ **d.** Two (2) lockwashers;
   - ☐ **e.** One (1) allen wrench.
5. Remove the plastic caps that cover the Meter Bridge mounting holes on each side of the Console (Drawing A). Feed them to your boa.



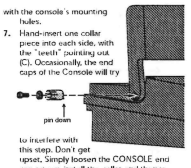
6. Align the Meter Bridge with the Console (B) and lower it into place. Tilt the Meter Bridge back until it is at rest against the Console chassis (or your tangle of patchcords). Make sure that the meter bridge's mounting holes line up





with the console's mounting holes.

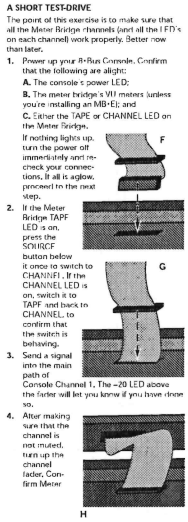
7. Hand-insert one collar piece into each side, with the "teeth" pointing out (C). Occasionally, the end caps of the Console will try



to interfere with this step. Don't get upset. Simply loosen the CONSOLE end cap screws, install the collar and then re-tighten the screws.

8. Turn the collars by hand until you feel the pin seat itself (it will stop turning).
9. Slide one lockwasher onto each allen-head screw.
10. Secure the collars by inserting an Allen-head screw on each side (C). Take care not to cross-thread the screws or strip the screwheads. Tighten the Allen screws securely.
11. Using a hefty screw driver, install a flush screw almost all the way into each side (Drawing D at right).
12. Raise the Meter Bridge as far forward as it will go.
13. On the Console, locate the rubber plugs that cover the Meter Bridge ribbon cable sockets. The 32•8 has five; the 24•8 has four; the 16•8 and MB•E each have three (see epic MondoDrawing E at the top).
14. Remove the rubber plugs and feed them to the afore-mentioned boa constrictor.
13. Making sure that the plug and socket are aligned, firmly insert each ribbon cable into its corresponding socket in the Console (F). Take care to make sure that the cable is not twisted 180° (sounds insulting to caution you against something like this, but we've seen it done.) Unless your fingers are microminiature, you'll probably need to use the eraser end of a pencil to press down on the plug and make sure that it is fully seated (G).
16. Slide the new improved, slotted rubber plugs (that are pre-attached to the ribbon cables) down until they fit snugly into the rectangular Console holes (Drawing H).
17. Adjust the Meter Bridge to the desired angle and tighten the screws.
18. Make yourself a sandwich. Wash hands before returning to work.





A SHORT TEST-DRIVE

The point of this exercise is to make sure that all the Meter Bridge channels (and all the LED's on each channel) work properly. Better now than later.

1. Power up your 8•Bus Console. Confirm that the following are alight:
   - **A.** The console's power LED;
   - **B.** The meter bridge's VU meters (unless you're installing an MB•E); and
   - **C.** Either the TAPE or CHANNEL LED on the Meter Bridge.

   If nothing lights up, turn the power off immediately and re-check your connections. If all is aglow, proceed to the next step.
2. If the Meter Bridge TAPE LED is on, press the SOURCE button below it once to switch to CHANNEL. If the CHANNEL LED is on, switch it to TAPE and back to CHANNEL, to confirm that the switch is behaving.
3. Send a signal into the main path of Console Channel 1. The –20 LED above the fader will let you know if you have done so.
4. After making sure that the channel is not muted, turn up the channel fader. Confirm Meter Bridge activity on Channel 1. Whoop with unbridled joy.
5. Repeat steps 3 and 4 for each channel of the Console. You'll probably want to stop whooping after about the sixth or seventh channel.
6. Assign the last channel you tested to the L/R MIX. Turn up the L/R MIX fader. Engage the L/R switch in the MONITOR section of the Console.
7. Confirm meter activity on both the Meter Bridge VU meters and the console's L/R MAIN LED meters. Pan the channel left and right to confirm that all meters understand this sort of thing.



TROUBLESHOOTING

If a group of LED ladders doesn't respond, there's a good chance that the corresponding ribbon cable isn't pushed in all the way. Make sure that it is firmly plugged in.

If nothing responds, contact your dealer or Mackie Designs Tech Support immediately.

METER BRIDGE OPERATION

Your meter bridge's ballistics and general behavior is the same as the submaster LED ladders on the Master section of the Console. For the excruciating details, read the section on METERING on page 11 of your 8•Bus manual.

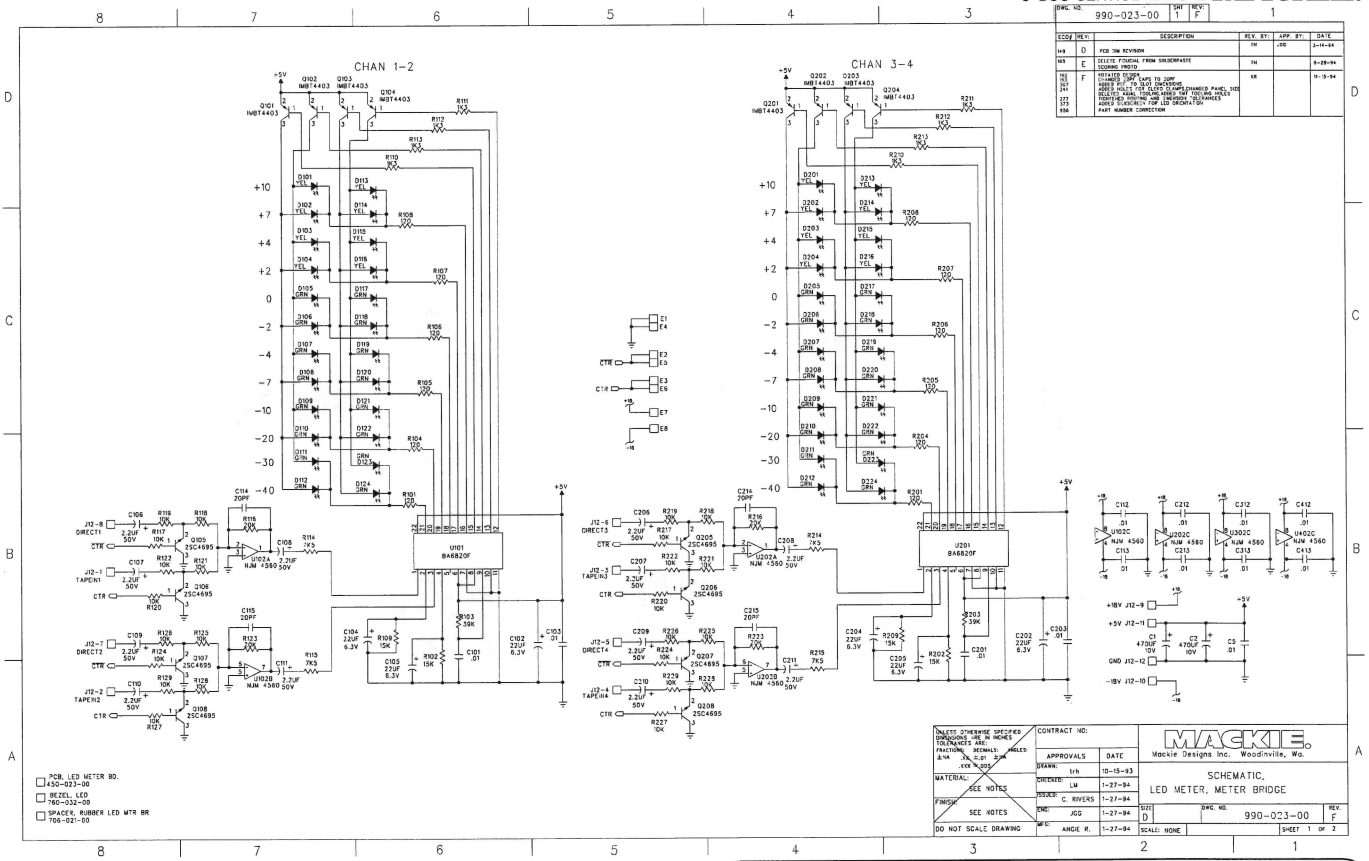
When TAPE is selected on the Meter Bridge, the channel meters will show you what is coming out of your multitrack into your tape returns — before any signal manipulation in the channel (but after the +4/–10 switching circuit). The channel meters should behave just like your multitrack's meters.

When CHANNEL is selected, the meters "see" the channel's direct output post-EQ, post-fader and post-mute. This is particularly handy for live mixing.

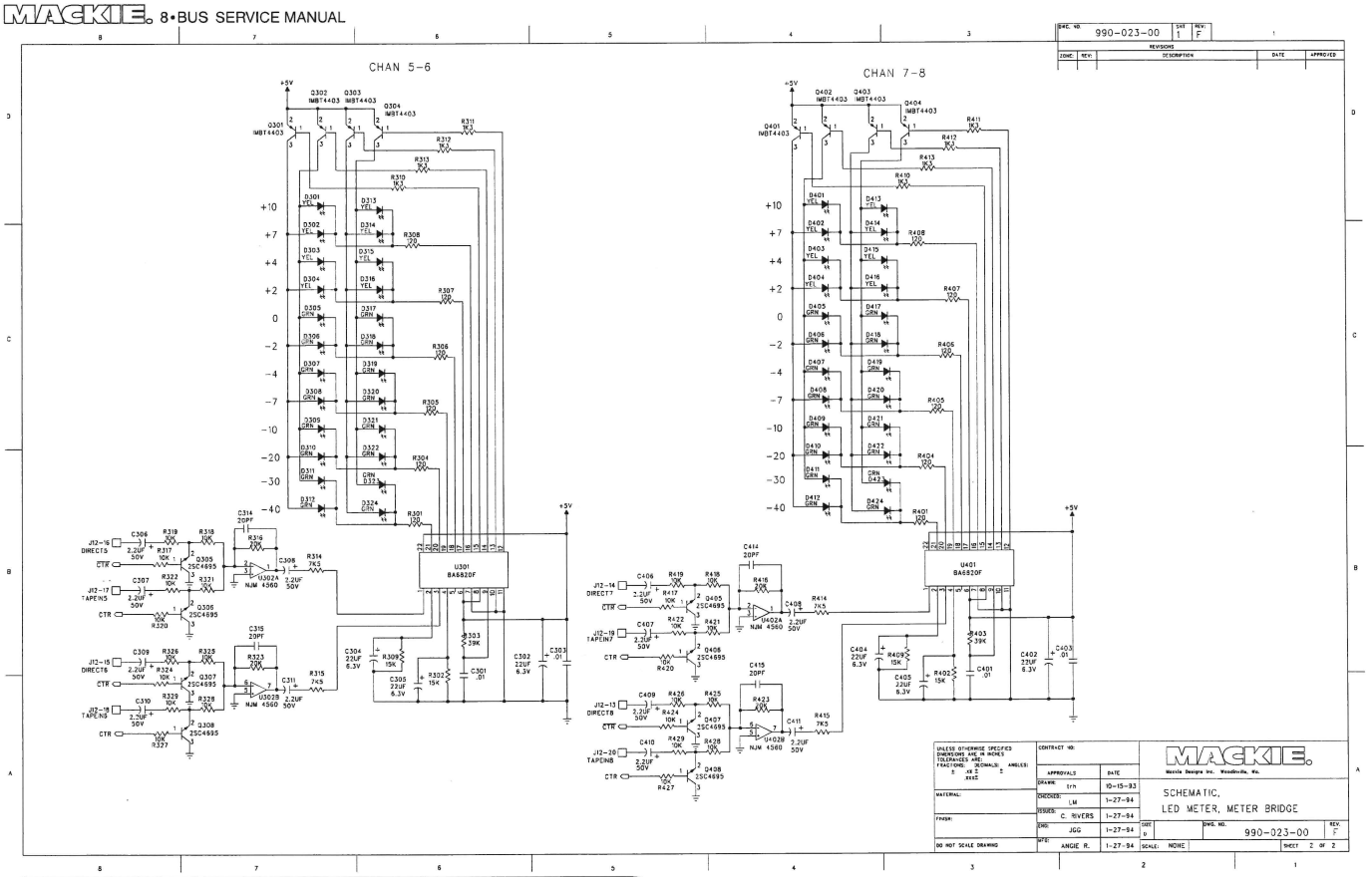
The VU meters on the MB•32, MB•24 and MB•16 "look" at the same signals as the console's L/R LED meters. You will notice that the VU meters and LED meters will not always agree with each other. THIS IS NORMAL. The LED meters react peak activity and will show every dynamic nuance. The VU meters, designed in the Early Bronze Age, are slower to respond and therefore show an RMS or average signal level. This will usually be several dB less than the peaks shown on the LED meter.

Final suggestion: Turn your overhead lights way down so that your Mackie system will look like the Death Star from Revenge of the Jedi.

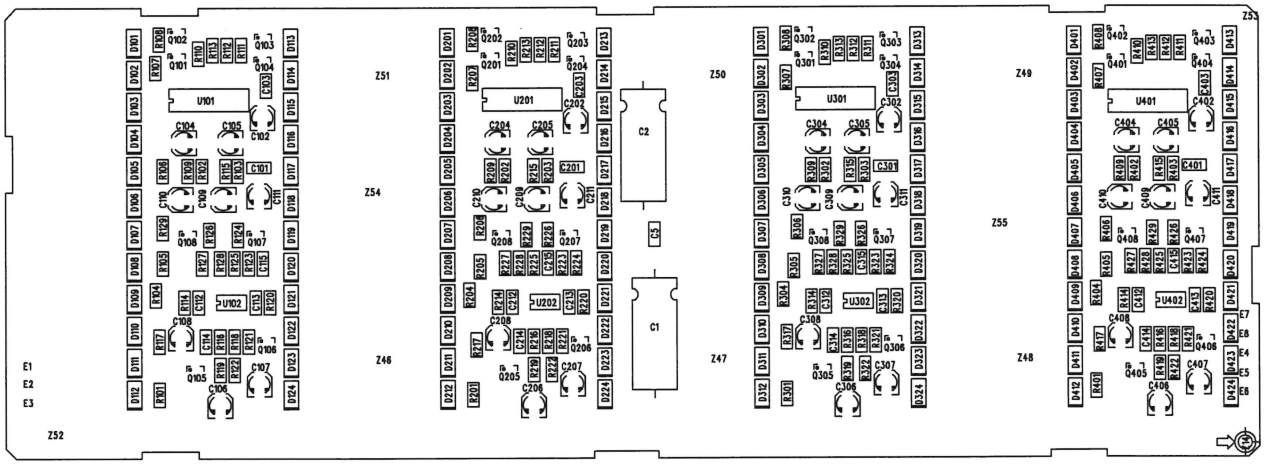
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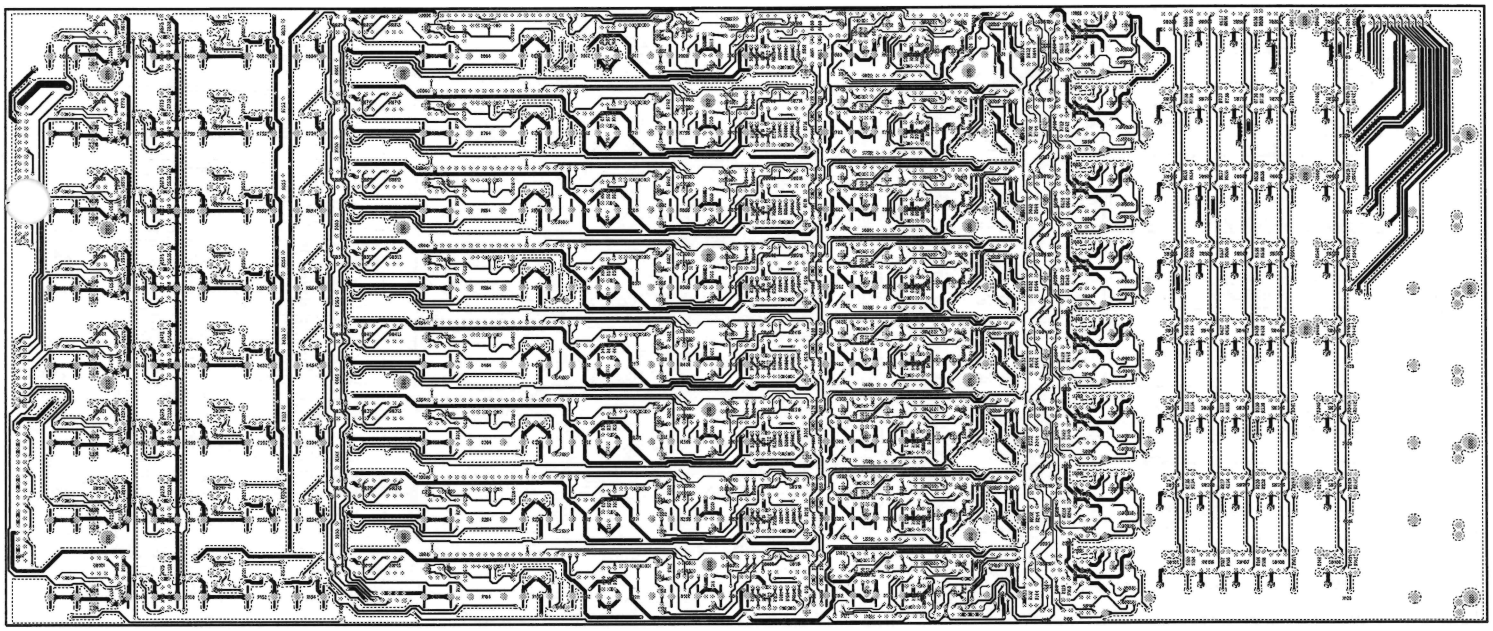
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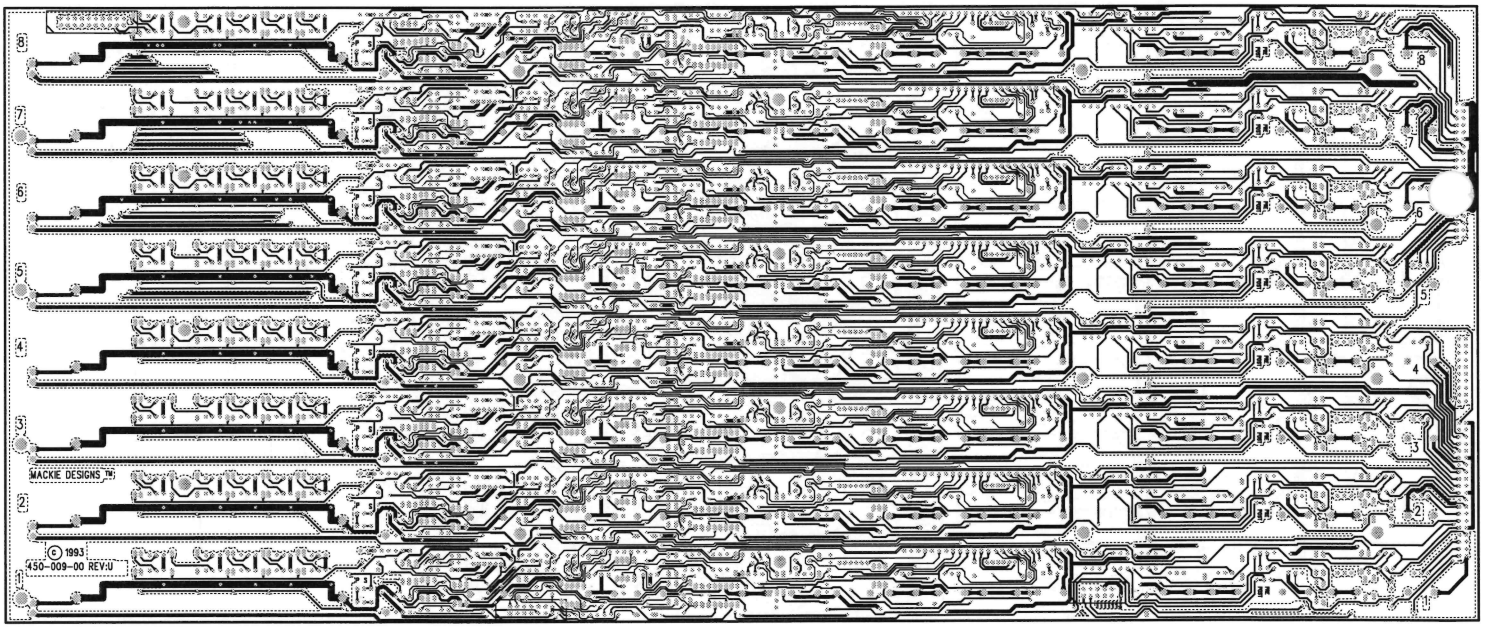
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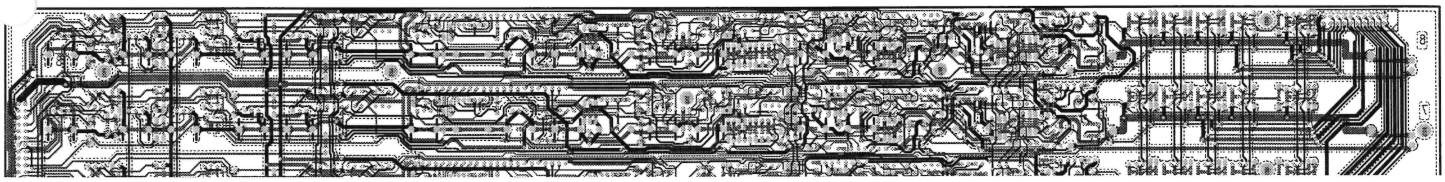
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Top (component side) of board
Dotted lines are the copper pour layer



Bottom (solder side) of board
Dotted lines are the copper pour layer



Top (component side) of Board
With bottom side shown in green
Dotted lines are the copper pour layer