



SERVICE manual

PMX-1400

Stereo Preamp Mixer



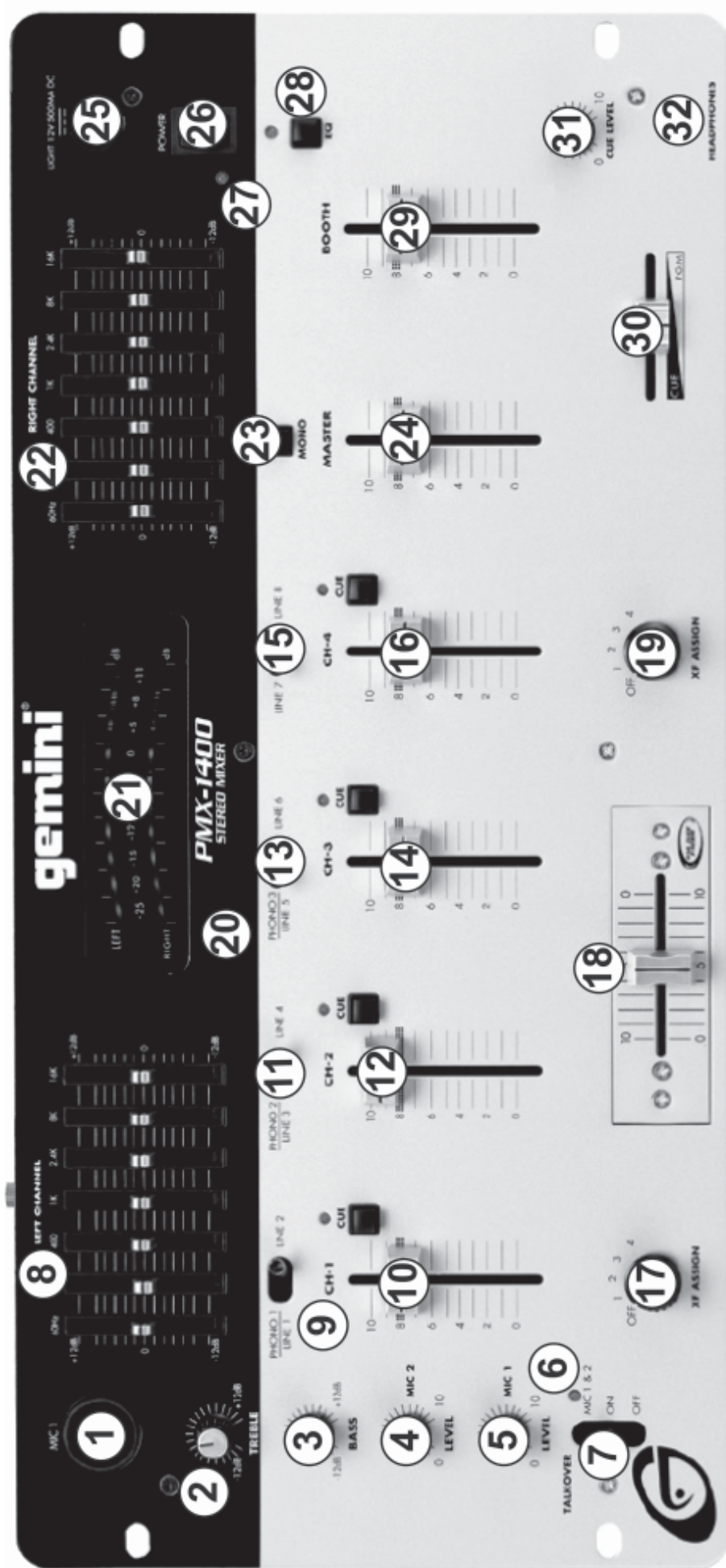
CONTENT'S:

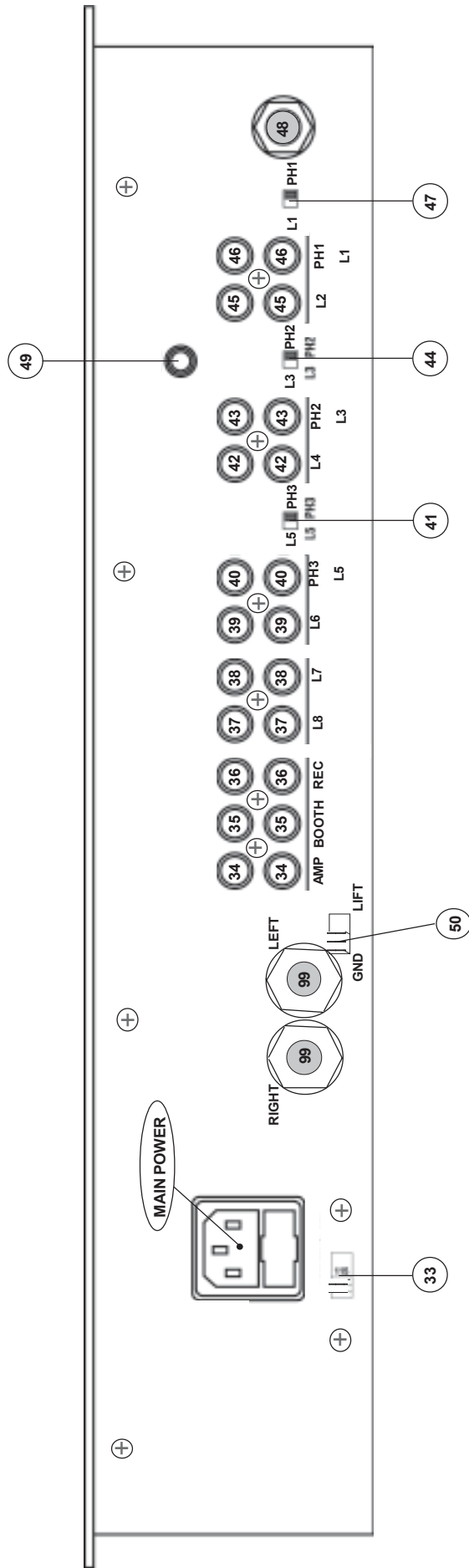
Connections & Operations:	Page 2-5
Specifications:	Page 5
Parts Lists:	Page 5-6
PCBs:	Page 7-9
Schematics	Page 10-11



Gemini Sound Products Corp.
120 Clover Place P.O. Box 6928
Edison, NJ 08818-6928
732-738-9003 (Phone) • 732-738-9006 (Fax)

PMX-1400





INTRODUCTION:

Congratulations on your purchase of the **Gemini PMX®-1400 Mixer**. This state-of-the-art unit is backed by a three year warranty, excluding crossfader and channel slides. Prior to use, we suggest that you carefully read all the instructions.

FEATURES:

- **4 Stereo Channels**
- **Talkover**
- **State-of-the-Art Cue Section**
- **Dual 7 Band Graphic Equalizers**
- **Booth and Record outputs**
- **Balanced and Unbalanced Master Outputs**
- **3 Phono/Line Convertible, 5 Line, and 2 Mic Inputs**

CAUTIONS:

1. All operating instructions should be carefully read before using this equipment.
2. To reduce the risk of electrical shock, do not open the unit.
THERE ARE NO USER REPLACEABLE PARTS INSIDE.
Please refer servicing to a qualified service technician.

In the USA: If you experience problems with this unit, please call 1 (732) 969-9000 for Gemini Customer Service. Do not attempt to return this equipment to your dealer.

3. Do not expose this unit to direct sunlight or to a heat source such as a radiator or stove.
4. This unit should be cleaned only with a damp cloth. Avoid solvents or other cleaning detergents.
5. When moving this equipment, it should be placed in its original carton and packaging. This will reduce the risk of damage during transit.
6. **DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.**
7. **DO NOT USE SPRAY CLEANER OR LUBRICANT ON CONTROLS OR SWITCHES.**

CONNECTIONS:

1. Before plugging the power cord in, make sure that the **VOLTAGE SELECTOR (33)** switch is set to the correct voltage.

NOTE: THIS PRODUCT IS DOUBLE INSULATED AND IS NOT INTENDED TO BE GROUNDED.

2. Make sure that the **POWER (26)** switch is in the OFF position. The **POWER LED (27)** display will be off.
3. The **PMX-1400** is supplied with four sets of output jacks: The **MAIN OUTPUT (34)** jacks connect to the main amplifier. The **BALANCED MASTER OUTPUT (99)** jacks connect the mixer to main amplifier using standard cables with 1/4" connectors. We recommend using balanced cables if the distance to your amp is 10 feet or more. The **REC OUTPUT (36)** jacks can be used to connect the mixer to the record input of your recording unit, thus enabling you to record your mix. The **BOOTH OUTPUT (35)** jacks allow the connection of an additional amplifier.
4. The **MIC 1** input (located on the front panel) accepts an XLR connector. The **MIC 2 (48)** input (on the rear panel) accepts 1/4" connectors. All accept balanced and unbalanced microphones.
5. On the rear panel are three stereo **PHONO/LINE (40, 43, 46)** inputs and five stereo **LINE (37, 38, 39, 42, 45)** inputs: **PHONO/LINE SWITCH (41)** enables you to set the (40) input to Phono or Line.

PHONO/LINE SWITCH (44) enables you to set the (43) input to Phono or Line. **PHONO/LINE SWITCH (47)** enables you to set the (46) input to Phono or Line. Attach phono ground line to the **GROUND THUMB SCREW (49)**.

7. Headphones may be plugged into the front panel mounted **HEADPHONE (32)** jack.
8. The **PMX-1400** comes with a front panel **BNC LIGHT (25)** jack for use with a (not provided) gooseneck light.

USING THE GROUND LIFT SWITCH:

Depending on your system configuration, application of the ground will sometimes create a quieter signal path. Lifting the ground occasionally eliminates ground loops and "hum" to create a quieter signal.

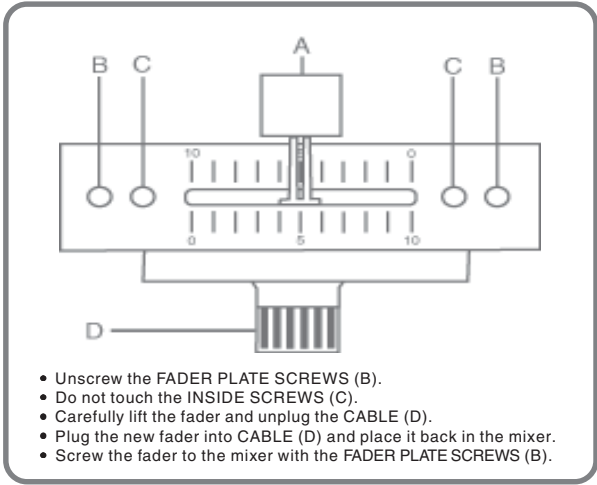
1. With the mixer ON, listen to the system in "idle" mode (no signal present) and with the ground "applied" and the **GROUND LIFT SWITCH (50)** in the LEFT position.
2. **Turn the power OFF before moving the GROUND LIFT SWITCH (50).** "Lift" the ground by moving the **GROUND LIFT SWITCH** to the RIGHT, turn the power back ON and listen to determine which position provides a signal devoid of background noise and hum. Keep the **GROUND LIFT SWITCH** in the "ground" position if the noise level remains the same in either position.

CAUTION: DO NOT TERMINATE THE AC GROUND ON THE MIXER. CABLE. TERMINATION OF THE AC GROUND CAN BE HAZARDOUS!

OPERATION:

1. **POWER:** Once you have made all the equipment connections to your mixer, press the **POWER SWITCH (26)**. The power will turn on and the **POWER LED (27)** will glow RED.
2. **CHANNEL 1:** Switch (9) allows you to select **PHONO 1/LINE 1 (46)** or the **LINE 2 (45)** input. **CHANNEL SLIDE (10)** controls the input level of this channel.
3. **CHANNEL 2:** Switch (11) allows you to select **PHONO 2/LINE 3 (43)** or the **LINE 4 (42)** input. **CHANNEL SLIDE (12)** controls the input level of this channel.
4. **CHANNEL 3:** Switch (13) allows you to select **PHONO 3/LINE 5 (40)** or the **LINE 6 (39)** input. **CHANNEL SLIDE (14)** controls the input level of this channel.
5. **CHANNEL 4:** Switch (15) allows you to select either the **LINE 7 (38)** or **LINE 8 (37)** input. **CHANNEL SLIDE (16)** controls the input level of this channel.
6. **CROSSFADER:** The **CROSSFADER (18)** allows the mixing of one source into another. The **PMX-1400** features an assignable crossfader. The **ASSIGN (17, 19)** switches allow you to select which channel will play through each side of the crossfader.
7. **ASSIGN (17)** switch has five settings (OFF, 1, 2, 3 and 4) and allows you to direct Channel 1, 2, 3 or 4 through the **LEFT** side of the crossfader. **ASSIGN** switch (19) also has five settings (OFF, 1, 2, 3 and 4) and allows you to direct Channel 1, 2, 3 or 4 through the **RIGHT** side of the crossfader. Placing either **ASSIGN** switch in the OFF position inactivates *that* side of the crossfader. The **CROSSFADER** in your unit is removable and, should the need arise, can be easily replaced. Replacement crossfaders are available in three models: the **RG-45 PRO (RAIL GLIDE™) Dual-Rail Crossfader**; as well as **RF-45**, which has a 45mm travel from side-to-side; and the **PSF-45**, which features a special "curve" designed for scratch mixing. Your Gemini mixer is equipped with an **RG-45 PRO (RAIL GLIDE™) 45MM DUAL-RAIL CROSSFADER** featuring internal dual stainless steel rails that allow the slider to ride smoothly and accurately from end-to-end.

The following instructions are provided for those who purchase a crossfader replacement unit from an authorized Gemini dealer:



8. **EQUALIZER:** This unit features dual 7 band **GRAPHIC EQUALIZERS (8, 22)** that allow you to adjust the sound to fit any room. Activate the equalizer by pressing **EQ BUTTON (28)** (EQ LED is illuminated). By adjusting any of the 7 **LEFT** equalizer slide controls (8), you can cut or boost the tonal characteristics of the sound coming from the **LEFT** speaker by ± 12 dB. Adjusting any of the 7 **RIGHT** equalizer slide controls (22) allows you to cut or boost the tonal characteristics of the sound coming from the **RIGHT** speaker by ± 12 dB. Deactivate the equalizer by pressing the **EQ BUTTON (28)** again (EQ LED is OFF).

9. **OUTPUT CONTROL:** The level of the **MAIN OUTPUT (34)** is controlled by the **MASTER (24)** slide. Activating the **MONO (23)** button (MONO LED is illuminated) converts the overall output to mono. The **BOOTH (29)** control adjusts the level of the **BOOTH OUTPUT (35)**.

HINT: BOOTH OUTPUT IS USED BY SOME DJS TO RUN MONITOR SPEAKERS IN THE DJ BOOTH. IT IS ALSO USED AS A SECOND ZONE OR AMP OUTPUT.

NOTE: REC OUTPUT HAS NO LEVEL CONTROL. LEVEL IS CONTROLLED WITH THE CHANNEL SLIDES OF THE SELECTED CHANNEL(S). TONE IS CONTROLLED VIA THE EQUALIZERS.

10. **TALKOVER:** The purpose of the talkover is to allow the program playing to be muted so that the mic may be heard above the music. The **MIC/TALKOVER SWITCH (7)** controls MIC 1 and MIC 2 and has three settings.

- When **MIC/TALKOVER (7)** is in the **BOTTOM** position, MIC 1, MIC 2 and TALKOVER are all OFF.
- When **MIC/TALKOVER (7)** is in the **CENTER** position, MIC 1 and MIC 2 are ON. **MIC INDICATOR (6)** glows/TALKOVER is OFF.
- When **MIC/TALKOVER SWITCH (7)** is in the **TOP** position, MIC 1, MIC 2 and TALKOVER are ON and the volume of all sources *except* MIC inputs is lowered by 16 dB.

11. **TREBLE (2)** and **BASS (3)** controls allow you to adjust the tone of MIC 1 and MIC 2. **MIC 1 LEVEL (5)** controls the level of MIC 1 while **MIC 2 LEVEL (4)** controls the level of MIC 2.

12. **CUE:** By connecting a set of headphones to the **HEADPHONE (32)** jack, you can monitor any or all channels. Press **CUE ASSIGN (20)** buttons for Channels 1 through 4 and select the Channel(s) to be monitored. The respective LED indicators will glow. Use the **CUE LEVEL (31)** control to adjust the cue volume without changing the overall mix. By moving the **CUE PGM PAN (30)** control to the **LEFT** you will be able to monitor the assigned cue signal. Moving the control to the **RIGHT** allows you to monitor PGM (program) output.

13. **DISPLAY:** The **DISPLAY (21)** indicates the **MASTER** output of the left and right levels.

SPECIFICATIONS:

INPUTS:

Phono.....3 mV, 47 KOhm
 Line.....150 mV, 27 KOhm
 MIC 1 & MIC 2.....1.5 mV, 2 K Ohm
 Balanced
 Bass..... ± 12 dB
 High..... ± 12 dB

OUTPUTS:

Amp/Booth.....0 dB 1V, 400 Ohm
 Max.....20V Peak-to-Peak
 Rec.....225 mV, 5 KOhm

GENERAL:

Frequency Response.....20Hz - 20KHz +/- 2 dB
 Distortion.....0.02%
 S/N Ratio.....Better than 80 dB
 Talkover Attenuation.....-16 dB
 Headphone Impedance.....16 Ohm
 Echo.....600m sec
 Power Source.....115/230V, 50/60Hz, 10W
 Dimensions.....19" w x 4" d x 9" h (483 x 94 x 221 mm)
 Weight.....10.17 lbs. (4.6 Kg)

Parts Lists:

Cabinet Parts and Packing

Item #	Description	Part #
1	PANEL CONTROL	FACEPPMX1400
2	PANEL REAR	021-999
4	COVER BOTTOM	032-007
5	BRACKET VR	021-767
6	HOLDER X-FADER	022-322
7	PROTECTOR PLATE FOR 115/230V SWITCH	022-305
8	SWING LEVEL	023-674
9	KNOB PUSH (SMALL)	002-531
10	BUSHING FOR KNOB (SMALL)	002-532
11	KNOB SLIDE (SMALL)	002-703
12	KNOB SLIDE SILVER (BIG)	002-724
13	KNOB SLIDE SILVER (SMALL)	002-726
14	KNOB ROTARY (ASSIGN)	003-102
15	KNOB ROTARY (B)	003-110
16	KNOB INLAY (SILVER); LEVEL, BALANCE, CUE, ASSIGN	148-312
17	EQ VR INLAY	003-994
18	TRIM VR	003-970
19	INLAY PLATE	003-373
20	HOLDER LED 3f LED(17mm)	003-969
21	HOLDER LED	003-986
22	HOLDER LED	003-975
23	WASHER XLR	003-564
24	PCB SPACER SUPPORT	047-474
25	PAD FOOT	049-206
26	BNC DUST PROOF CLOTH	159-201
27	DUST PROOF CLOTH (VR)	159-167
28	DUST PROOF CLOTH (KNOB-SWING)	159-216
29	DUST PROOF CLOTH (VR)	159-171
30	FADER DUST PROOF CLOTH	159-196
31	GND SCREW	146-710
32	FLAT-HEAD MACHINE SCREW; FMS 2X4 (Y)	101-008

Printed Circuit Boards

Item #	Description	Part #
1	PRINTED CIRCUIT BOARD PDM24S-1:IN/OUT	262-044
2	PRINTED CIRCUIT BOARD PDM24S-2:MAIN	262-045
3	PRINTED CIRCUIT BOARD PDM24S-4: FADER (73.5x13)	262-046
4	PRINTED CIRCUIT BOARD PDM14-3:PHONE	262-052
5	PRINTED CIRCUIT BOARD PDM14-5: PHONE JACK (21x13)	262-053

Parts Lists - PCB1 Input/Output

ICs

Item #	Designators	Description	Part #
1	IC1-4	INTEGRATED CIRCUIT NJM2068LD	074-145
2	IC6	INTEGRATED CIRCUIT NJM7812FA	074-107
3	IC7	INTEGRATED CIRCUIT NJM7912FA	074-114

Transistors

Item #	Designators	Description	Part #
1	Q2-5	TRANSISTOR 2SC2878	076-095
2	Q1	TRANSISTOR 2SA1048 (2SA1317)	076-104

Electrical Parts

Item #	Designators	Description	Part #
1	D3-8, D507, D508	RECTIFIER DIODE 1N4002 (1N4003,1N4004)	079-027
2	D1, D2	SILICON DIODE 1N4148	079-003
3	SW1-3	SLIDE SWITCH 2P2C PH/LINE	081-027
4	J1	PHONE JACK 6.3	092-078
5	J2-5	4P RCA JACK P=14mm	161-105
6	J6	6P RCA JACK P=14mm	161-106

Parts Lists - PCB2 Main

ICs

Item #	Designators	Description	Part #
1	IC11	INTEGRATED CIRCUIT NJM4558LD(M5218AL,BA4558N)	074-104
2	IC8-10	INTEGRATED CIRCUIT NJM2068LD	074-145
3	IC12	INTEGRATED CIRCUIT M5229P	074-115
4	IC13-16	INTEGRATED CIRCUIT LB1403N	074-022

Electrical Parts

Item #	Designators	Description	Part #
1	SW4-7	LEVER SW 4P2C P=18 PH/LN, LN/LN	082-019
2	SW9-10	ROTARY SWITCH 1-2-5 L=17 FAD ASSIGN	082-028
3	SW11-15	PUSH SWITCH 2P2C L=12.5 CUE, MONO	083-069
4	SW8	PUSH SWITCH 4P2C L=12.5	083-097
5	VR1-4	SLIDE VR 45mm L=20 CH VOL MASTER 50KAx2	072-035
6	VR7-13	SLIDE VR 30mm L=15 EQ 20KW C.C	072-107
7	X-FADER	RAILGLIDE VR 45mm X-FADER 100KBx2	072-113
8	VR14-15	ROTARY VR 16f L=20 TREBLE, BASS 10KB C.C	071-101
9	VR5-6	ROTARY VR 16f L=20 MIC LEVEL 10KA	071-159
10	Red 3.15	LIGHT EMITTING DIODE (RED)	080-091
11	Green 2.5x6.5	LIGHT EMITTING DIODE (GREEN)	080-079
12	Yellow 2.5x6.5	LIGHT EMITTING DIODE (YELLOW)	080-080
13	Red 2.5x6.5	LIGHT EMITTING DIODE (RED)	080-078

Parts Lists - PCB3 Phono

ICs

Item #	Designators	Description	Part #
1	IC19, IC20	INTEGRATED CIRCUIT NJM4558LD(M5218AL,BA4558N)	074-104
2	IC21	INTEGRATED CIRCUIT NJM4556L	074-113
3	IC17	INTEGRATED CIRCUIT NJM2068LD	074-145
4	IC18	INTEGRATED CIRCUIT M5229P	074-115

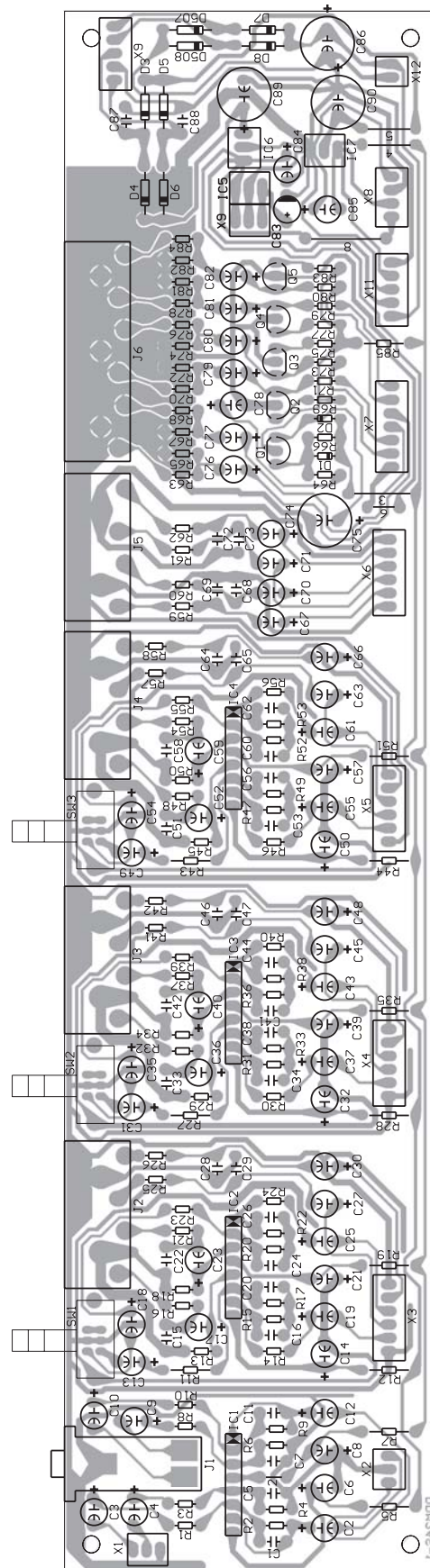
Diodes

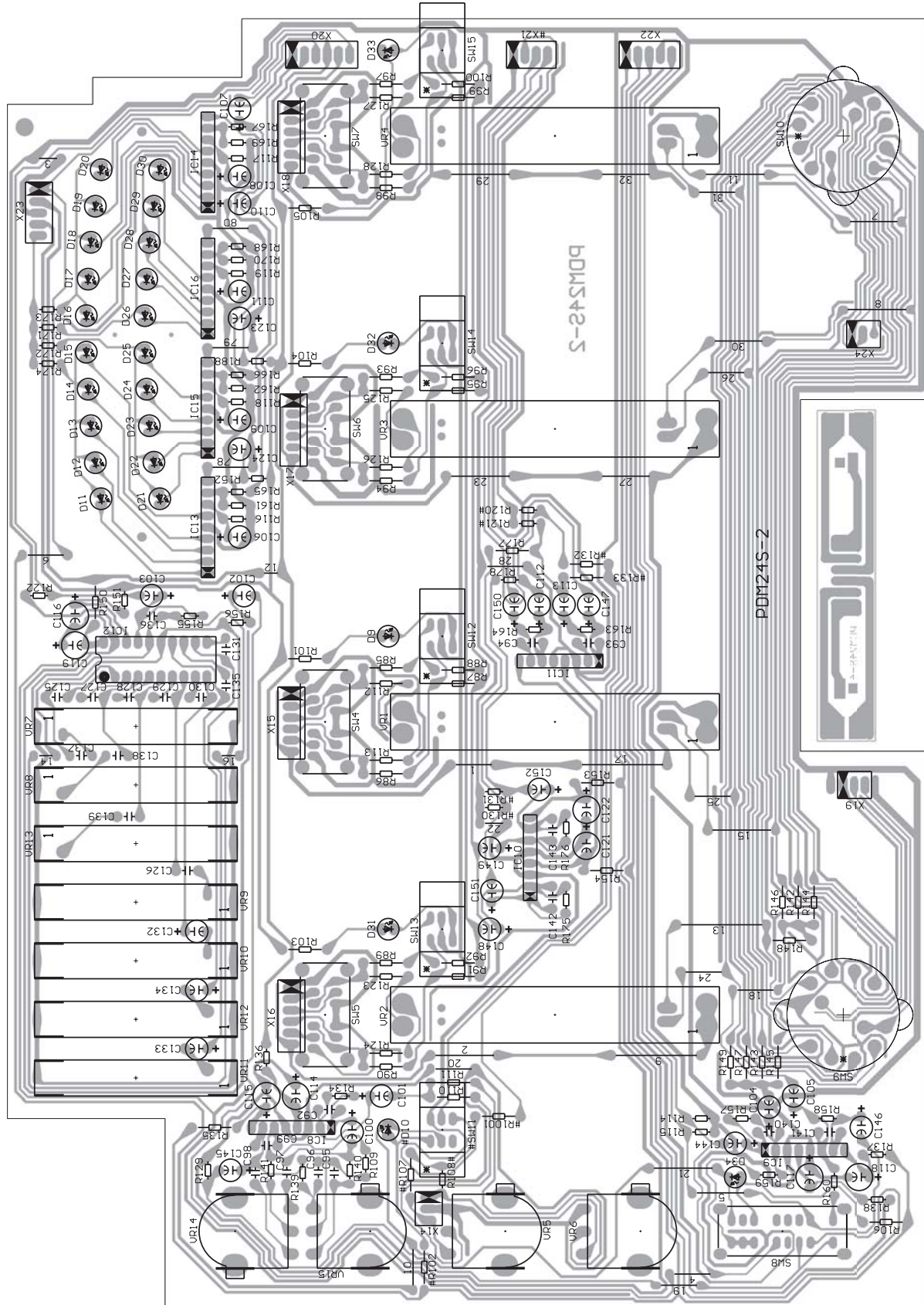
Item #	Designators	Description	Part #
1	D35-37	LIGHT EMITTING DIODE (RED) 3.15f	080-091

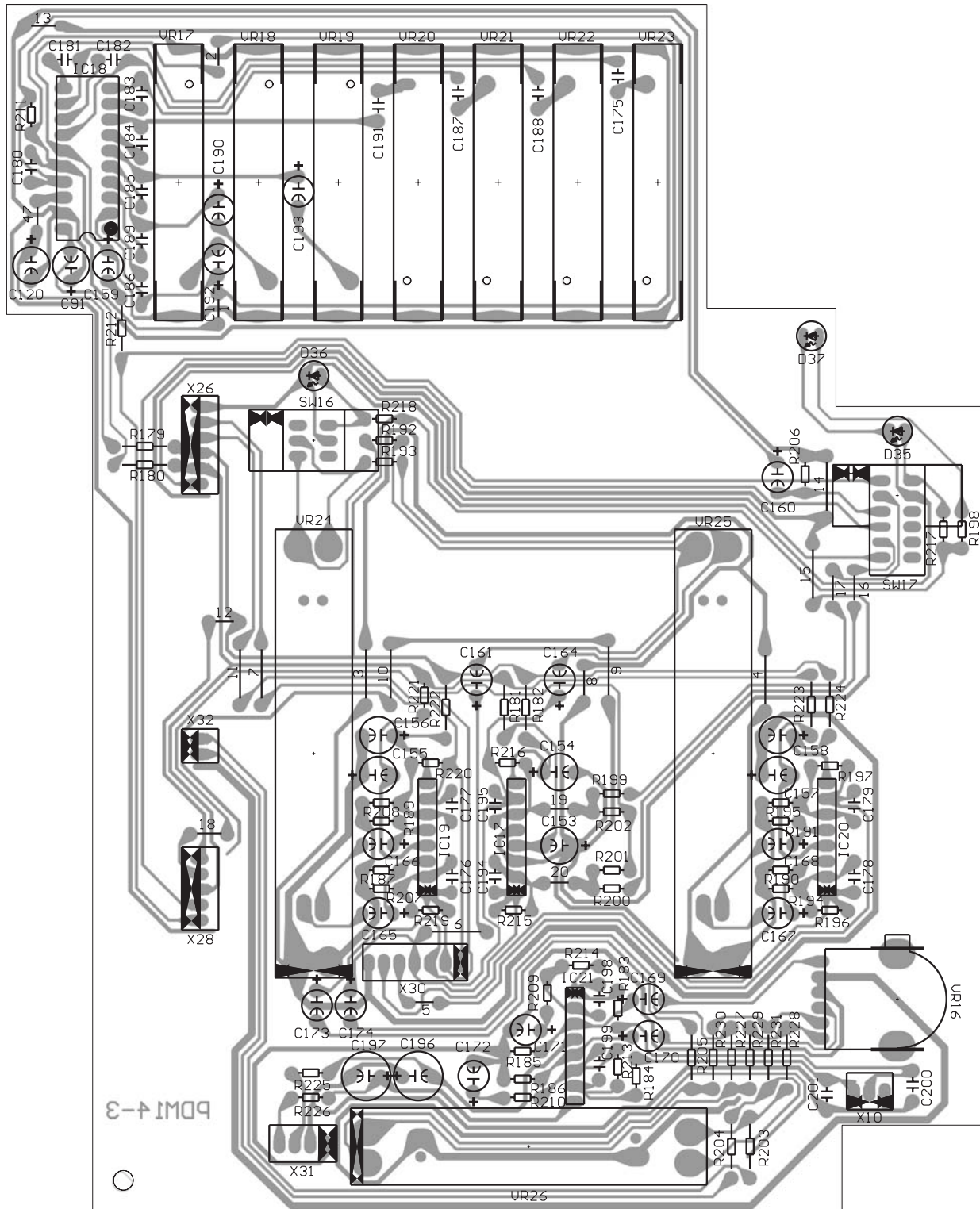
Electrical Parts

Item #	Designators	Description	Part #
1	SW16	PUSH SWITCH 2P2C L=12.5 CUE, MONO	083-069
2	SW17	PUSH SWITCH 4P2C L=12.5 EQ	083-097
3	VR24-25	SLIDE VR 45mm L=20 CH VOL MASTER 50KAx2	072-035
4	VR17-23	SLIDE VR 30mm L=15 EQ 20KW C.C	072-107
5	VR26	SLIDE VR 45mm L=20 CUE PGM 20KBx2	072-092
6	VR16	ROTARY VR 16f L=20 CUE LEVEL 50KAx2	071-084
7	J10	JUMP WIRE TYPE 0.5f P=5mm T/52mm	060-702

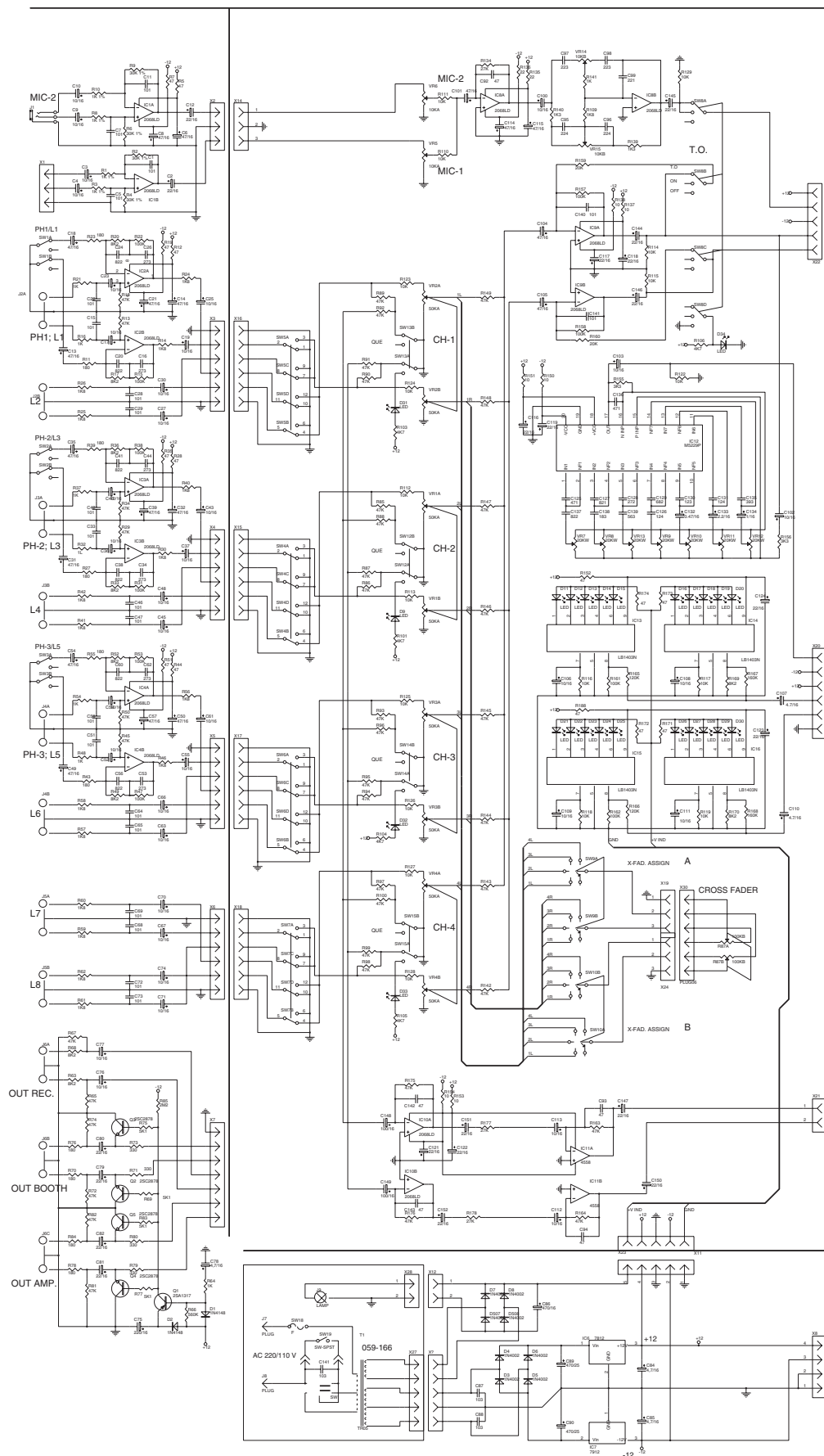
PCB1 - Input/Output







Schematic A



Schematic B

