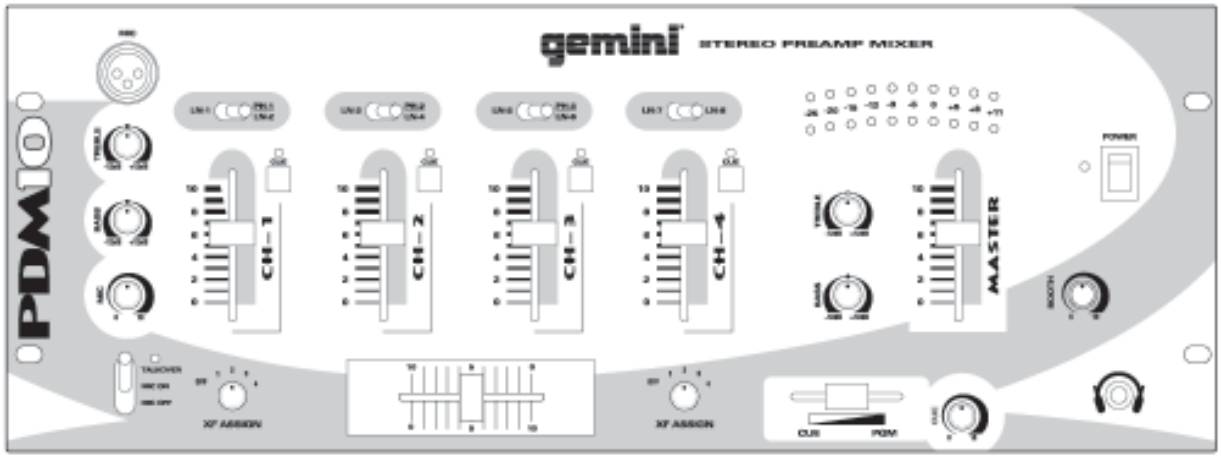
GEMINIDJ.COM

SERVICE MANUAL

PDM-10

Stereo Preamp Mixer



CONTENT'S:

Connections & Operations:.....Page 2-5

Specifications:.....Page 5

Parts Lists:.....Page 5-6

PCBs:.....Page 7-8

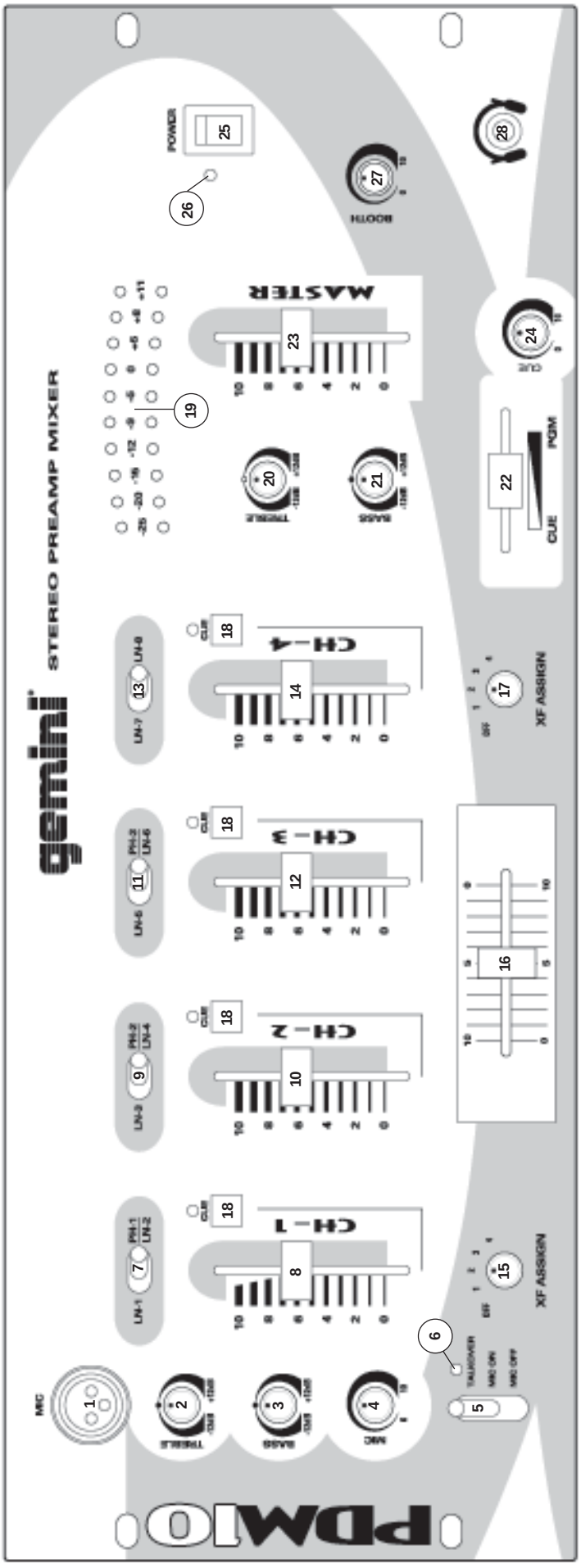
Schematics:.....Page 9-10

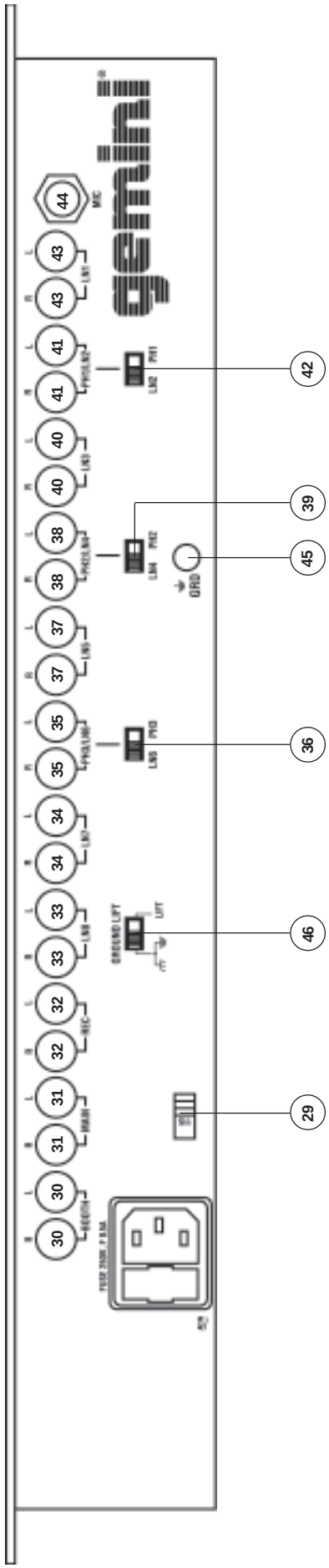
Gemini Sound Products Corp.

120 Clover Place P.O. Box 6928

Edison, NJ 08818-6928

732-738-9003 (Phone) • 732-738-9006 (Fax)


STEREO PREAMP MIXER
gemini
PDM10
MASTER
CH-1
CH-2
CH-3
CH-4
XF ASSIGN
XF ASSIGN
CUE
PGM
CUE
BOOTH
POWER
MIC
MIC
TREBLE
BASS
TREBLE
BASS
TALKOVER
MIC ON
MIC OFF
LIN-1
PH-1
LIN-2
LIN-3
PH-2
LIN-4
LIN-5
PH-3
LIN-6
LIN-7
LIN-8
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28


gemini
MIC
42
39
45
36
46
29

Connections

1. Before plugging in the power cord, make sure that the **VOLTAGE SELECTOR (29)** switch is set to the correct voltage.

NOTE: This product is double insulated and not intended to be grounded.

2. Make sure that the **POWER (25)** switch is in the off position. The **POWER LED (26)** will be off.
3. The PDM-10 is supplied with 3 sets of amp output jacks. The **MAIN OUTPUT (31)** jacks are unbalanced and used to connect to your main amplifier. The **REC OUTPUT (32)** jacks can be used to connect the mixer to the record input of your recorder enabling you to record your mix. The **BOOTH OUTPUT (30)** jacks allow you to hook up an additional amplifier.
4. For your convenience, there are 2 inputs for the mic. The **MIC (1)** input (found on the front panel) accepts an XLR connector. The **MIC (44)** input (found on the rear panel) accepts 1/4" connectors. All accept balanced and unbalanced microphones.
5. On the rear panel are 3 stereo **PHONO/LINE (35, 38, 41)** inputs and 5 stereo **LINE (33, 34, 37, 40, 43)** inputs. The **PHONO/LINE SWITCH (36)** enables you to set the **(35)** input to Phono or Line. The **PHONO/LINE SWITCH (39)** enables you to set the **(38)** input to Phono or Line. The **PHONO/LINE SWITCH (42)** enables you to set the **(41)** input to Phono or Line. The phono inputs will accept only turntables with a magnetic cartridge. A **GROUND SCREW (45)** for you to ground your turntables is located on the rear panel. The stereo line inputs will accept any line level input such as a CD player, a cassette player, etc.
6. Headphones can be plugged into the front panel mounted **HEADPHONE (28)** jack.

Using the Ground Lift Switch

Depending on your system configuration, sometimes applying the ground will create a quieter signal path. Sometimes lifting the ground can eliminate ground loops and hum to create a quieter signal path.

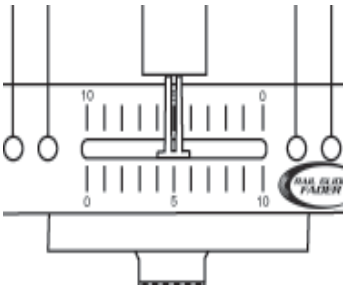
1. With the mixer on, listen to the system in idle mode (no signal present) with the ground applied (the **GROUND LIFT SWITCH (46)** in the left position).
2. **Then turn the power off before moving the GROUND LIFT SWITCH (46)**. Lift the ground by moving the **GROUND LIFT SWITCH** to the right, turn the power back on and listen to determine which position will provide 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 POWER MIXER IN ANY WAY. TERMINATION OF THE AC GROUND CAN BE HAZARDOUS.

Operation

1. POWER ON: Once you have made all the equipment connections to your mixer, press the **POWER SWITCH (25)**. The power will turn on and the **POWER LED (26)** will glow RED.
2. CHANNEL 1: Switch # **(7)** allows you to select the **PHONO 1/LINE 2 (41)** or the **LINE 1 (43)** input. The **CHANNEL SLIDE (8)** controls the input level of this channel.
3. CHANNEL 2: Switch # **(9)** allows you to select the **PHONO 2/LINE 4 (38)** or the **LINE 3 (40)** input. The **CHANNEL SLIDE (10)** controls the input level of this channel.
4. CHANNEL 3: Switch # **(11)** allows you to select the **PHONO 3/LINE 6 (35)** or the **LINE 5 (37)** input. The **CHANNEL SLIDE (12)** controls the input level of this channel.
5. CHANNEL 4: Switch # **(13)** allows you to select the **LINE 7 (34)** or the **LINE 8 (33)** input. The **CHANNEL SLIDE (14)** controls the input level of this channel.
6. CROSSFADER SECTION: The **CROSSFADER (16)** allows the mixing of one source into another. The PDM-10 features an assignable crossfader. The **ASSIGN (15, 17)** switches allow you to select which channel will play through each side of the crossfader. The **ASSIGN (15)** switch has 5 settings (OFF, 1, 2, 3 or 4) and allows you to select channel 1, 2, 3 or 4 to play through the left side of the crossfader. The **ASSIGN (17)** switch has 5 settings (OFF, 1, 2, 3 or 4) and allows you to select channel 1, 2, 3 or 4 to play through the right side of the crossfader. With the **ASSIGN** switch in the off position, that side of the crossfader will be inactive. The **CROSSFADER (16)** in your unit is removable and if the need arises can be easily replaced. Crossfader units are available in three varieties. Part # RF-45 (which is identical to the crossfader supplied with the mixer) has a 45 mm travel from side to side. Part # RF-30 is available with a 30 mm travel distance. Also available is the PSF-45 with a special curve designed for scratch mixing. Just purchase one of these crossfader units from your Gemini dealer and follow these instructions:

    1. Unscrew the outside FADER PLATE SCREWS (B). Do not touch the INSIDE SCREWS (C).
    2. Carefully lift the fader and unplug the CABLE (D).
    3. Plug the new fader into the cable and place it back in the mixer.
    4. Screw the fader to the mixer.

7. OUTPUT CONTROL SECTION: The level of the **MAIN AMP OUT (31)** is controlled by the **MASTER (23)** slide. The Master **TREBLE (20)** and **BASS (21)** controls allow you to adjust the output of channels 1 - 4. The **BOOTH (27)** control adjusts the level of the **BOOTH OUTPUT (30).** HINT: The booth output is used by some DJs to run monitor speakers in their DJ booth. You can also use it as a second ZONE or AMP output.

NOTE: The **RECORD OUT (32)** has no level control. The level is set by the channel slides of the selected channel.

8. TALKOVER SECTION: The purpose of the talkover section is to allow the program playing to be muted so that the mic can be heard above the music. The **MIC/TALKOVER SWITCH (5)** has three settings. When the **MIC/TALKOVER SWITCH (5)** is in the bottom position, the mic and talkover are both off. When the **MIC/TALKOVER SWITCH (5)** is in the center position the mic is on, the **MIC INDICATOR (6)** will glow, but talkover is off. When the **MIC/TALKOVER SWITCH (5)** is in the top position, the mic and talkover will be on and the volume of all sources except the Mic input are lowered by 16 dB. The **TREBLE (2)** and **BASS (3)** controls allow you to fully adjust the tone of the MIC. **LEVEL (4)** controls the level of the MIC.

9. CUE SECTION: By connecting a set of headphones to the **HEADPHONE (28)** jack, you can monitor any or all of the channels. Press the **CUE ASSIGN (18)** buttons for channels 1 - 4 to select the channel or channels to be monitored and their respective LED indicators will glow. Use the **CUE LEVEL (24)** control to adjust the cue volume without effecting the overall mix. By moving the **CUE PGM PAN (22)** control to the left you will be able to monitor the assigned cue signal. Moving the control to the right will monitor the PGM (program) output. Rotating to the right will monitor the PGM (program) output.

10. DISPLAY: The **DISPLAY (19)** indicates the **MASTER** output left and right levels.

Specifications

INPUTS:

DJ Mic.....1.5mV 2Kohm balanced

Phono.....3mV 47Kohm

Line.....150 mV 27Kohm

OUTPUTS:

Amp/Booth.....0 dB 1V 400ohm

Max.....20V Peak to Peak

Rec.....225mV 5Kohm

MIC:

DJ Mic.....1.5mV 2Kohm balanced

Bass.....± 12dB

High.....± 12dB

GENERAL:

Frequency Response.....20Hz - 20KHz +/- 2dB

Distortion.....0.02%

S/N Ratio.....better than 80dB

Talkover Attenuation.....-16dB

Headphone Impedance.....16ohm

Power Source.....115/230V 50/60Hz 10W

Dimensions.....19”w x 4”h x 9”d

Weight.....10.17 lbs

Parts Lists

Cabinet Parts and Packing

Item #	Description	Part #
1	PANEL CONTROL	002-204
2	PANEL REAR	021-993
4	COVER BOTTOM	032-017
5	BRACKET VR	021-762
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 (BIG)	002-704
13	KNOB ROTARY (ASSIGN)	003-102
14	KNOB ROTARY (B)	003-110
15	KNOB INLAY (BLACK); LEVEL,BALANCE,CUE	148-236
16	KNOB INLAY (GRAY); TREBLE,BASS	148-239
17	TRIM VR	003-970
18	HOLDER LED 3f LED(17mm)	003-969
19	WASHER XLR	003-564
20	PAD FOOT	049-206
21	DUST PROOF CLOTH (VR)	159-167
22	DUST PROOF CLOTH (KNOB-SWING)	159-216
23	DUST PROOF CLOTH (VR)	159-171
24	GND SCREW	146-710
25	PAN-HEAD MACHINE SCREW; PMS 2X4(B)	102-007
26	PAN-HEAD MACHINE SCREW; PMS 2.6X4(B)	102-025
27	BAND-HEAD TAPPING SCREW/TWIN SCREW; BTS-2 3X8(AB) TWIN	110-172A
28	FLAT-HEAD TAPPING SCREW; FTS-3 3X6(AB)	111-043A
29	BAND-HEAD TAPPING SCREW; BTS-3 3X10(AB)	111-044A
30	BAND-HEAD TAPPING SCREW; BTS-3 3X6(AB)	111-046A
31	FLAT-HEAD TAPPING SCREW; FTS-3 3X12(AB)	111-049A
32	FLAT-HEAD TAPPING SCREW; FTS-3 3X12(Y)	111-050
33	BAND-HEAD TAPPING SCREW; BTS-3 3X5(AB)	111-051A
34	BAND-HEAD TAPPING SCREW/TW-E; BTS-3/ TW-E 3X6(AB)	111-053A
35	NUT/WASHER 3mm	131-081

Printed Circuit Boards

Item #	Description	Part #
1	PRINTED CIRCUIT BOARD PDM10-1: SWITCH (V0 12×146)	262-039
2	PRINTED CIRCUIT BOARD PDM10-2: MAIN	262-040
3	PRINTED CIRCUIT BOARD PDM10-3: MASTER VR	262-041
4	PRINTED CIRCUIT BOARD PDM10-4: FADER (V0 73.5×13)	262-042
5	PRINTED CIRCUIT BOARD PDM10-5: PHONES (V0 14.5×27)	262-043

Parts Lists - PCB 1, 2, 4

ICs

Item #	Designators	Description	Part #
1	IC1	INTEGRATED CIRCUIT NJM4558LD	074-104
2	IC2-6	INTEGRATED CIRCUIT NJM2068LD	074-145

Diodes

Item #	Designators	Description	Part #
1	D1-5	LIGHT EMITTING DIODE (RED) 3.15f	080-091

Electrical Parts

Item #	Designators	Description	Part #
1	J1	PHONE JACK 6.3f	092-078
2	J2-9	2P RCA JACK P=14mm	161-117
3	SW2, 5, 8	SLIDE SWITCH 2P2C	081-004
4	SW3, 7, 10, 12	LEVER SW 4P2C	082-019
5	SW1	LEVER SW 4P3C	082-022
6	SW4, 13	ROTARY SWITCH 1-2-5 L=17 FAD ASSIGN	082-028
7	SW6, 9, 11, 14	PUSH SWITCH 2P2C L=12.5	083-069
8	VR4-7	SLIDE VR 45mm L=20 CH VOL MASTER 50KA×2	072-035
9	X-FADER	SLIDE VR 45mm L=20 FADER 100KB×2	072-081
10	VR1-2	ROTARY VR 16f L=20 MIC-TONE 20KA C.C	071-135
11	VR3	ROTARY VR 16f L=20 MIC VOL 250KA	071-102

Parts Lists - PCB 3, 5

ICs

Item #	Designators	Description	Part #
1	IC7, IC10, IC15	INTEGRATED CIRCUIT NJM4558LD	074-104
2	IC14	INTEGRATED CIRCUIT NJM4556L	074-113
3	IC11	INTEGRATED CIRCUIT NJM2068LD	074-145
4	IC8, 9, 12, 13	INTEGRATED CIRCUIT LB1403N	074-022
5	IC17	INTEGRATED CIRCUIT NJM7812FA	074-107
6	IC16	INTEGRATED CIRCUIT NJM7912FA	074-114

Transistors

Item #	Designators	Description	Part #
1	Q1-4	TRANSISTOR 2SC2878	076-095
2	Q5	TRANSISTOR 2SA1048 (2SA1317)	076-104

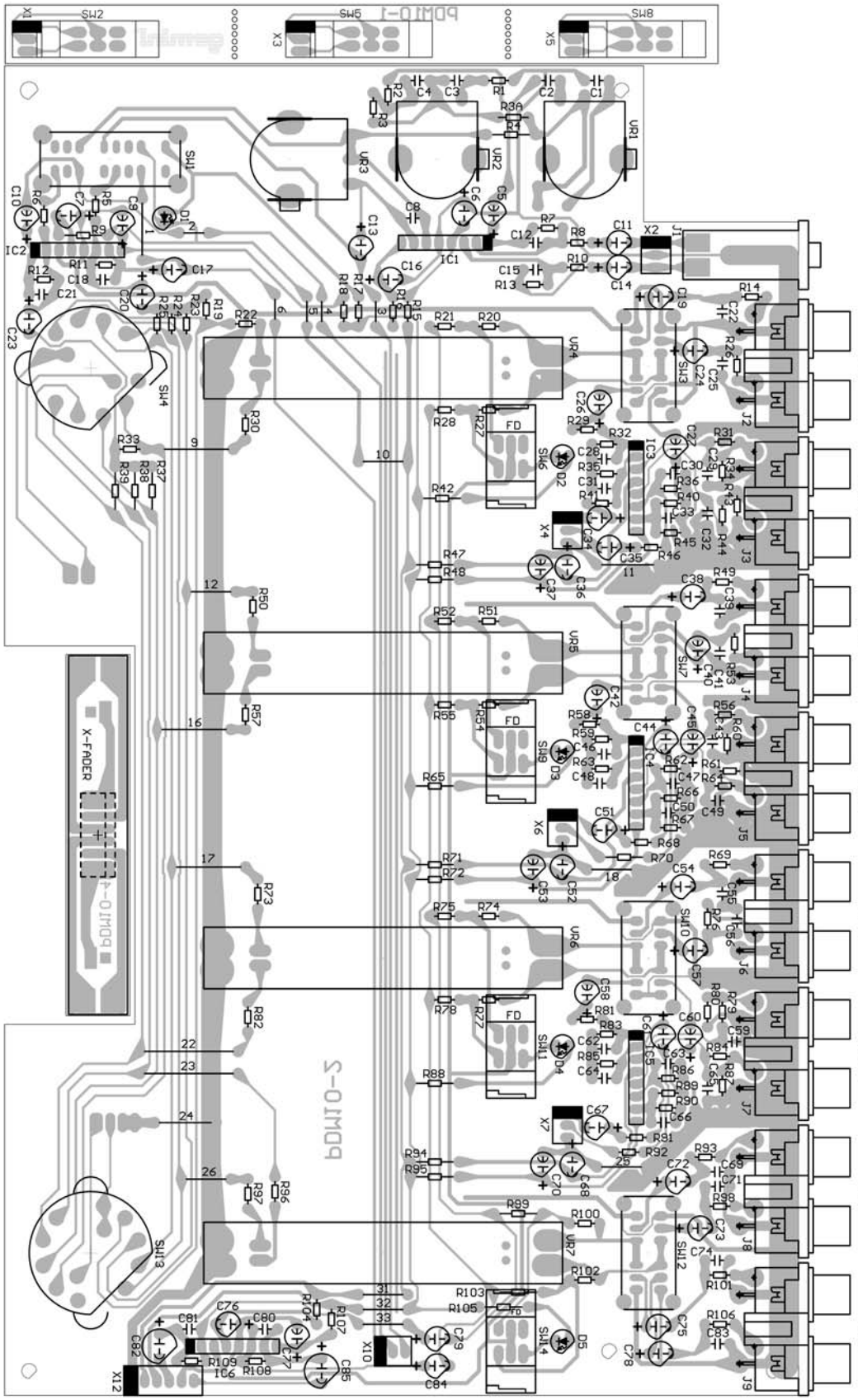
Diodes

Item #	Designators	Description	Part #
1	D26-30	RECTIFIER DIODE 1N4002 (1N4003,1N4004)	079-027
2	D32-33	SILICON DIODE 1N4148	079-003
3	D6-17,	LIGHT EMITTING DIODE (GREEN) 3.15f	080-104
4	D18-D21	LIGHT EMITTING DIODE (YELLOW) 3.15f	080-103
5	D22-25, D31	LIGHT EMITTING DIODE (RED) 3.15f	080-091

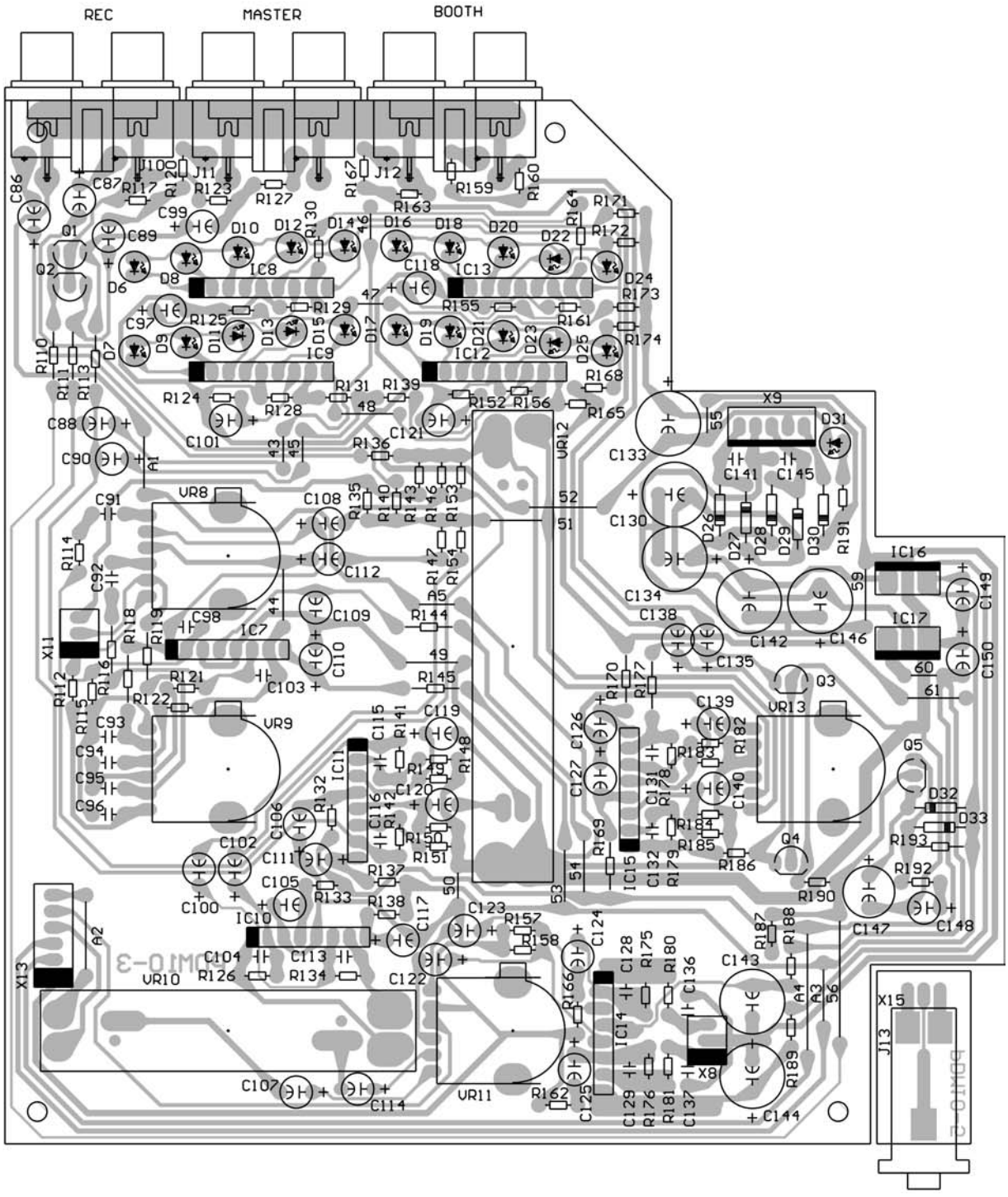
Electrical Parts

Item #	Designators	Description	Part #
1	J13	PHONE JACK 6.3f	092-078
2	J10-12	2P RCA JACK P=14mm	161-117
3	VR12	SLIDE VR 45mm L=20 CH VOL MASTER 50KA×2	072-035
4	VR10	SLIDE VR 30mm L=15 CUE FADER 20KB×2	072-092
5	VR8-9	ROTARY VR 16f L=20 CH-TONE 20KW×2 CC	071-104
6	VR11, 13	ROTARY VR 16f L=20 BOOTH CUE VOL 50KA×2	071-084

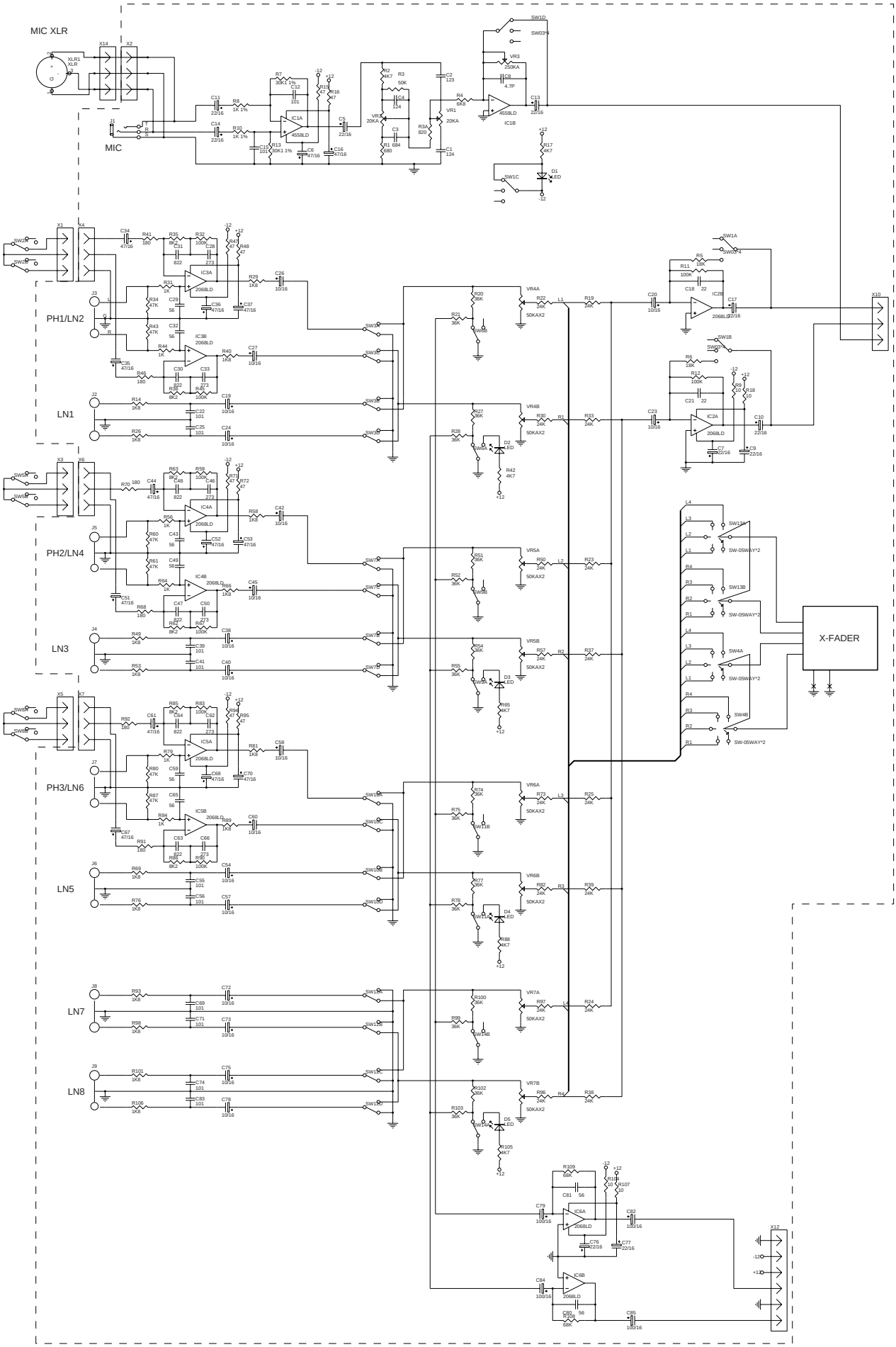
PCB 1, 2, 4



PCB 3, 5



PCB 1, 2, 4 - Schematic



PCB 3, 5 - Schematic