



SERVICE MANUAL

PMX-120

PROFESSIONAL STEREO PREAMP MIXER

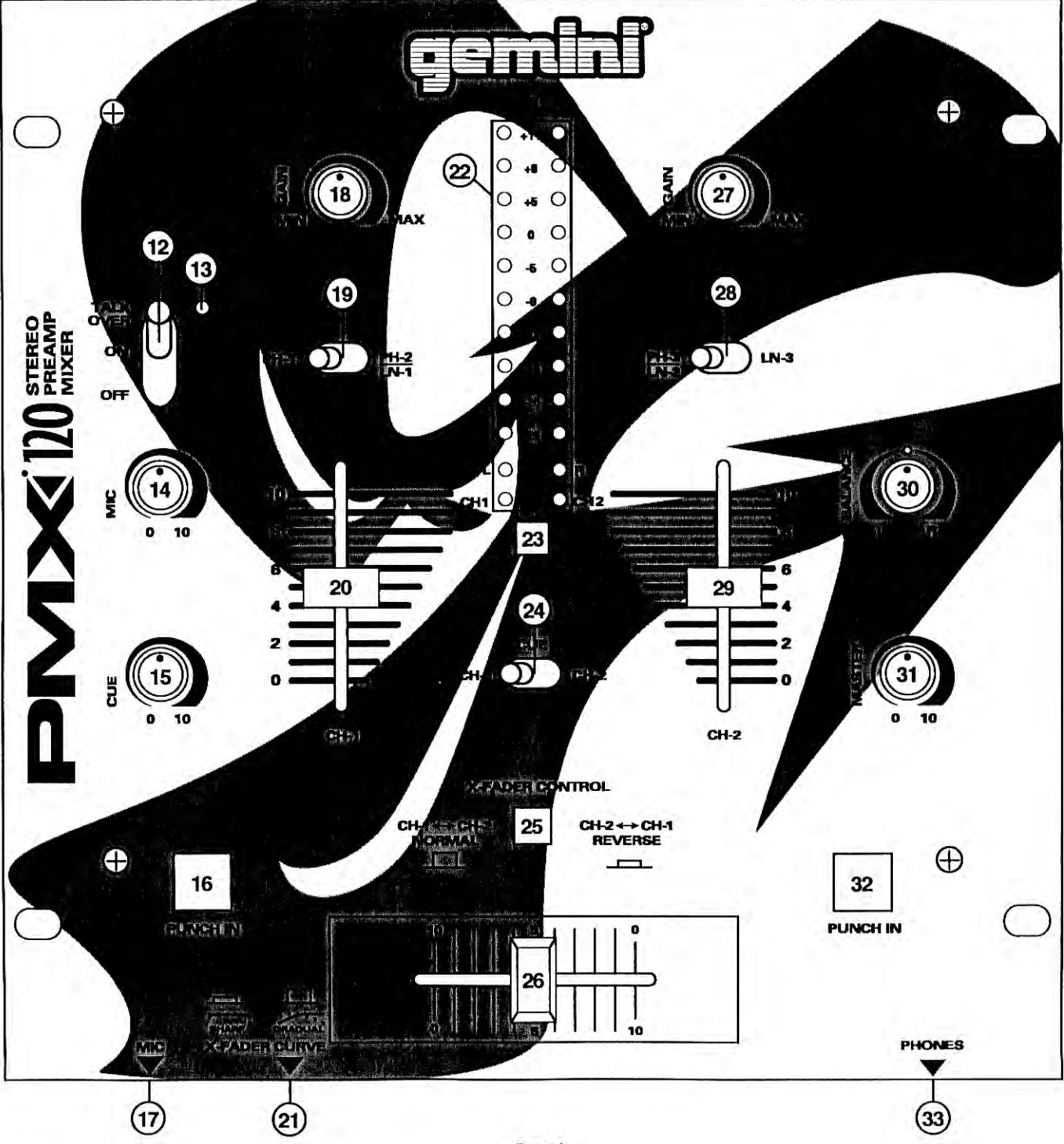
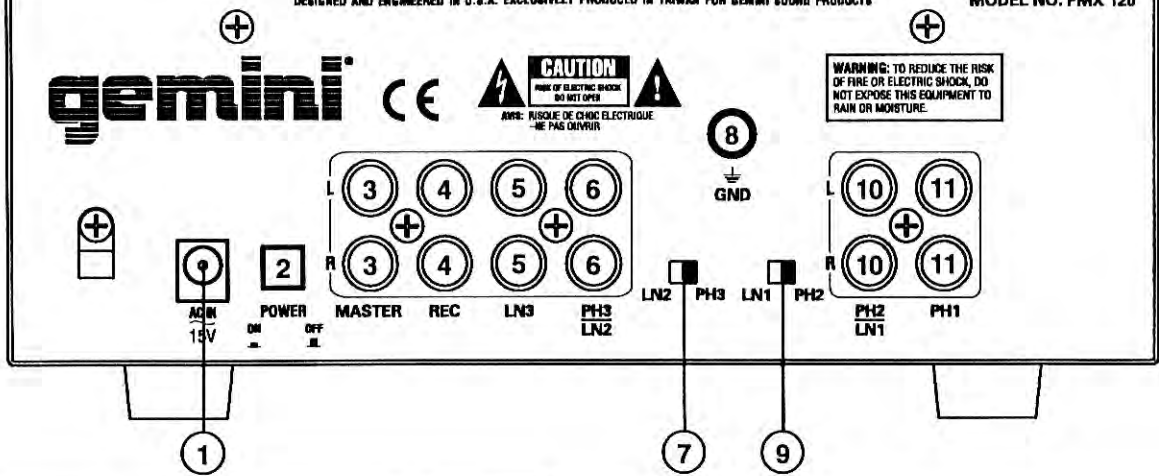
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gemini



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



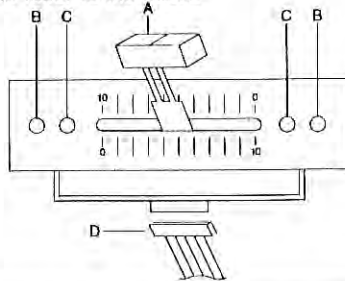
Connections

1. Make sure that the **POWER (2)** switch is in the OFF position. This unit comes supplied with a 15 volt AC adaptor. Plug the male pin of the adaptor into the rear panel **POWER JACK (1)**. Then plug the adaptor into a proper power source.
2. The PMX-120 is supplied with 2 sets of output jacks. The **OUTPUT AMP (3)** jacks are used to connect to your main amplifier. The **OUTPUT REC (4)** jacks can be used to connect the mixer to the record input of your recorder enabling you to record your mix.
3. The **DJ MIC (17)** input (found on the front panel) accepts a 1/4" connector and balanced and unbalanced microphones.
4. On the rear panel are 2 stereo **PHONO/LINE (6, 10)** inputs, 1 stereo **PHONO (11)** input and 1 stereo **LINE (5)** input. The **PHONO/LINE SWITCHES (7, 9)** enable you to set the (6, 10) inputs to Phono or Line. The phono inputs will accept only turntables with a magnetic cartridge. A **GROUND SCREW (8)** 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.
5. Headphones can be plugged into the front panel mounted **HEADPHONE (33)** jack.

Operation

1. **POWER ON:** Once you have made all the equipment connections to your mixer, press the **POWER (2)** switch.
2. **CHANNEL 1:** The **GAIN (18)** control allows you to individually adjust the gain of the channel. Switch # **(19)** allows you to select the **PHONO 1 (11)** or the **PHONO 2/LINE 1 (10)** input. The **CHANNEL SLIDE (20)** controls the input level of this channel.
3. **CHANNEL 2:** The **GAIN (27)** control allows you to individually adjust the gain of the channel. Switch # **(28)** allows you to select the **PHONO 3/LINE 2 (6)** or the **LINE 3 (5)** input. The **CHANNEL SLIDE (29)** controls the input level of this channel.
4. **CROSSFADER SECTION:** The **CROSSFADER (26)** allows the mixing of one source into another. The left side of the **CROSSFADER (26)** is CHANNEL 1 and the right side is CHANNEL 2. The **CROSSFADER (26)** 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.



The **CROSSFADER CURVE BUTTON (21)** allows you to adjust the kind of curve the crossfader has. Depress the crossfader curve button **■** to make the curve steep and cutting (perfect for scratching). Release the crossfader curve button **■** to make the curve gradual and gentle. The **CROSSFADER REVERSE BUTTON (25)** allows you to

reverse the crossfader so that CHANNEL 2 is controlled by the left side of the crossfader and CHANNEL 1 is controlled by the right side of the crossfader.

NOTE: When the CROSSFADER REVERSE BUTTON (25) is activated (depressed), only the crossfader reverses. The Channel Slides and Gain do not reverse.

5. **PUNCH IN:** The **PUNCH IN BUTTONS (16, 32)** allow you to add a channel's signal to the mix when the crossfader is set to the opposite channel.
6. **OUTPUT CONTROL SECTION:** The level of the **MASTER OUTPUT (3)** is controlled by the **MASTER (31)** control. The **BALANCE (30)** control will allow the MASTER OUTPUT signal to be balanced between the left and right speakers.

NOTE: The RECORD OUT (4) has no level control. The level is set by the channel slides and the gain controls of the selected channel. The tonal qualities are set by the low, mid and high controls of that same channel.

7. **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 (12)** has three settings. When the **MIC/TALKOVER SWITCH (12)** is in the bottom position, the mic and talkover are both off. When the **MIC/TALKOVER SWITCH (12)** is in the center position the mic is on, the **MIC INDICATOR (13)** will glow, but talkover is off. When the **MIC/TALKOVER SWITCH (12)** 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. **MIC LEVEL (14)** controls the level of the MIC.
8. **CUE SECTION:** By connecting a set of headphones to the **HEADPHONE (33)** jack, you can monitor either channel or both together. Move the **CUE SWITCH (24)** to the left to monitor CHANNEL 1. Move the **CUE SWITCH (24)** to the right to monitor CHANNEL 2. Use the **CUE LEVEL (5)** control to adjust the headphone volume without effecting the overall mix.
9. **DISPLAY:** The dual function **DISPLAY (22)** indicates either the **MASTER OUTPUT (3, 4)** left and right levels or the CHANNEL 1 and CHANNEL 2 input levels. You can choose the option you want by pressing the **DISPLAY (23)** button.

NOTE: When the DISPLAY (22) is in the CHANNEL 1/CHANNEL 2 display mode, by adjusting the individual channel gain, you can increase or decrease the signal to match the other channel's signal. The channel slides and crossfader have no effect on the display readings.

Specifications

INPUTS:

DJ Mic.....	1.5mV 600 Ohm
Phono.....	3mV 47Kohm
Line.....	150 mV 27Kohm

OUTPUTS:

Amp.....	0 dB 1V 400ohm
Max.....	20V Peak to Peak

GENERAL:

Gain (Channels 1 - 2).....	0 to -20dB
Frequency Response.....	20Hz - 20KHz +/- 2dB
Distortion.....	0.02%
S/N Ratio.....	better than 80dB
Talkover Attenuation.....	-16dB
Headphone Impedance.....	16ohm
Power Source.....	115V/15V AC 7.5W 230V/15V AC 7.5W
Dimensions.....	10" x 10" x 3" (254 x 260 x 84 mm)
Weight.....	5 lbs (2.3 kg)

Parts Lists

Cabinet Parts and Packing

Item #	Description	Part #
1	PANEL CONTROL	002-224
2	PANEL REAR	034-021
3	BOTTOM COVER	032-029
4	BRACKET VR (SUB CHASSIS)	021-777
5	HOLDER FADER	022-369
6	KNOB SWING (LONG)	023-674
7	KNOB PUSH (SMALL)	002-531
8	KNOB PUSH (BIG)	002-555
9	KNOB SLIDE (BIG)	002-704
10	KNOB BUSHING (SMALL)	002-532
11	KNOB ROTARY (B TYPE)	003-110
12	INLAY KNOB (BLACK)	148-236
13	INLAY KNOB (RED) - GAIN	148-238
14	TRIMPLATE FRAME-VR	003-970
15	HOLDER LED (3f 17mm)	003-969
16	PAD FOOT	049-206
17	DUST PROOF CLOTE-VR	159-171
18	SWING DUST PROOF CLOTH	159-216
19	PUSH KNOB DUST PROOF CLOTH	159-206
20	GND SCREW	146-710
21	BUSHING WIRE	049-190
22	GIFT BOX	255-057
23	OWNER'S MANUAL	157-915
24	BAND-HEAD TAPPING SCREW/TW-E 3x6(AB)	121-003A
25	FLAT-HEAD TAPPING SCREW 3f x6(AB)	111-043A
26	BAND-HEAD TAPPING SCREW 3x6(AB)	111-046A
27	FLAT-HEAD TAPPING SCREW 3f x12(AB)	111-049A
28	BAND-HEAD TAPPING SCREW 3f x5(AB)	111-051A
29	BAND-HEAD TAPPING SCREW (TWIN) 3f x8(AB)	110-172A
30	BAND-HEAD MACHINE SCREW 3x2x4 (Y)	107-015
31	PAN-HEAD MACHINE SCREW M2.6f x4(B)	102-025

Printed Circuit Boards

Item #	Description	Part #
1	PRINTED CIRCUIT BOARD PMX120-1	262-076
2	PRINTED CIRCUIT BOARD PMX120-2	262-077

Parts Lists - PCB1 Input/Output

ICs

Item #	Designators	Description	Part #
1	IC4	INTEGRATED CIRCUIT NJM7812FA	074-107
2	IC5	INTEGRATED CIRCUIT NJM7912FA	074-114
3	IC1-3	INTEGRATED CIRCUIT NJM2068LD	074-145

Electrical Parts

Item #	Designators	Description	Part #
1	D3-4	RECTIFIER DIODE 1N4002	079-027
2	D1, D2	ZENER DIODE 1/2W 12V	079-012
3	J4	DC JACK 2.5f	092-135
4	J1-3	4P RCA JACK	161-105
5	SW1-2	SLIDE SWITCH 2P2C PH/LINE	081-027
6	SW3	PUSH SW 2P2C POWER SW	083-056

Parts Lists - PCB2 Main

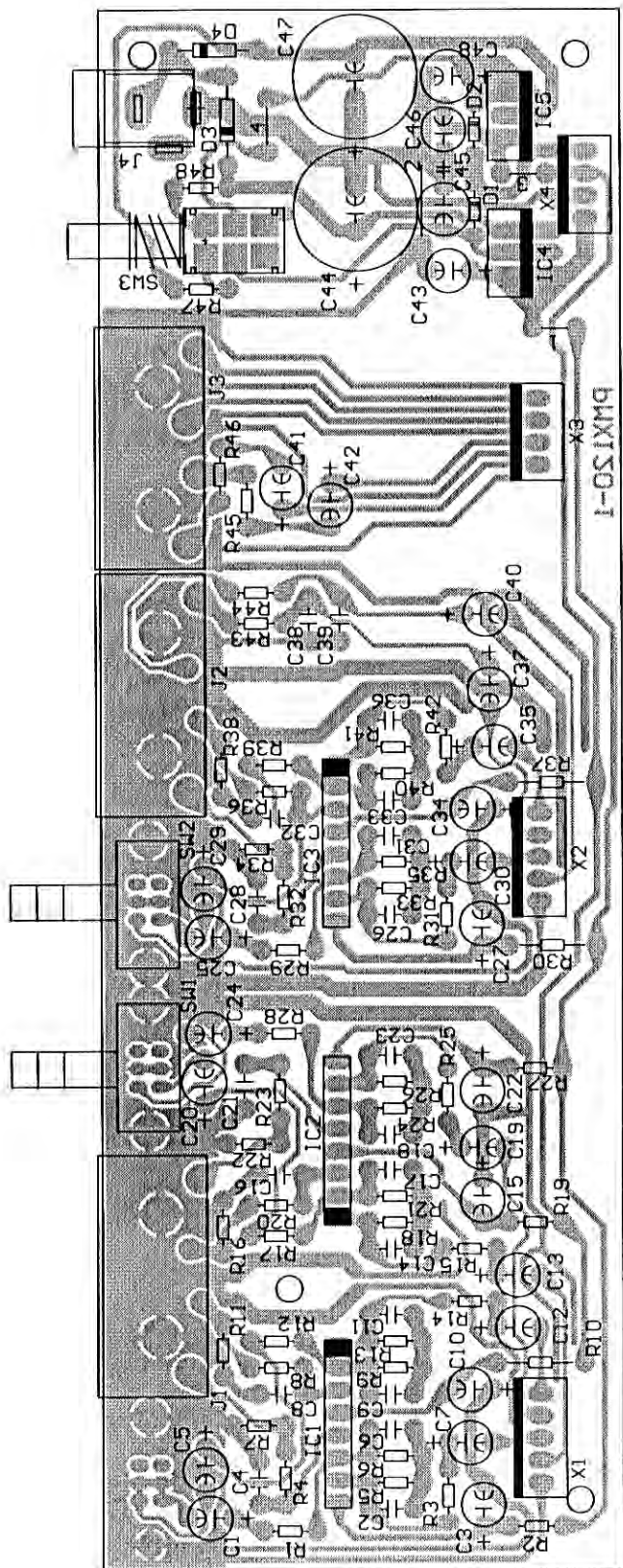
ICs

Item #	Designators	Description	Part #
1	IC5-8	INTEGRATED CIRCUIT LB1403N	074-022
2	IC4	INTEGRATED CIRCUIT NJM4741D	074-039
3	IC9	INTEGRATED CIRCUIT NJM4558LD	074-104
4	IC1	INTEGRATED CIRCUIT NJM4556L	074-113
5	IC2, IC3	INTEGRATED CIRCUIT NJM2068LD	074-145

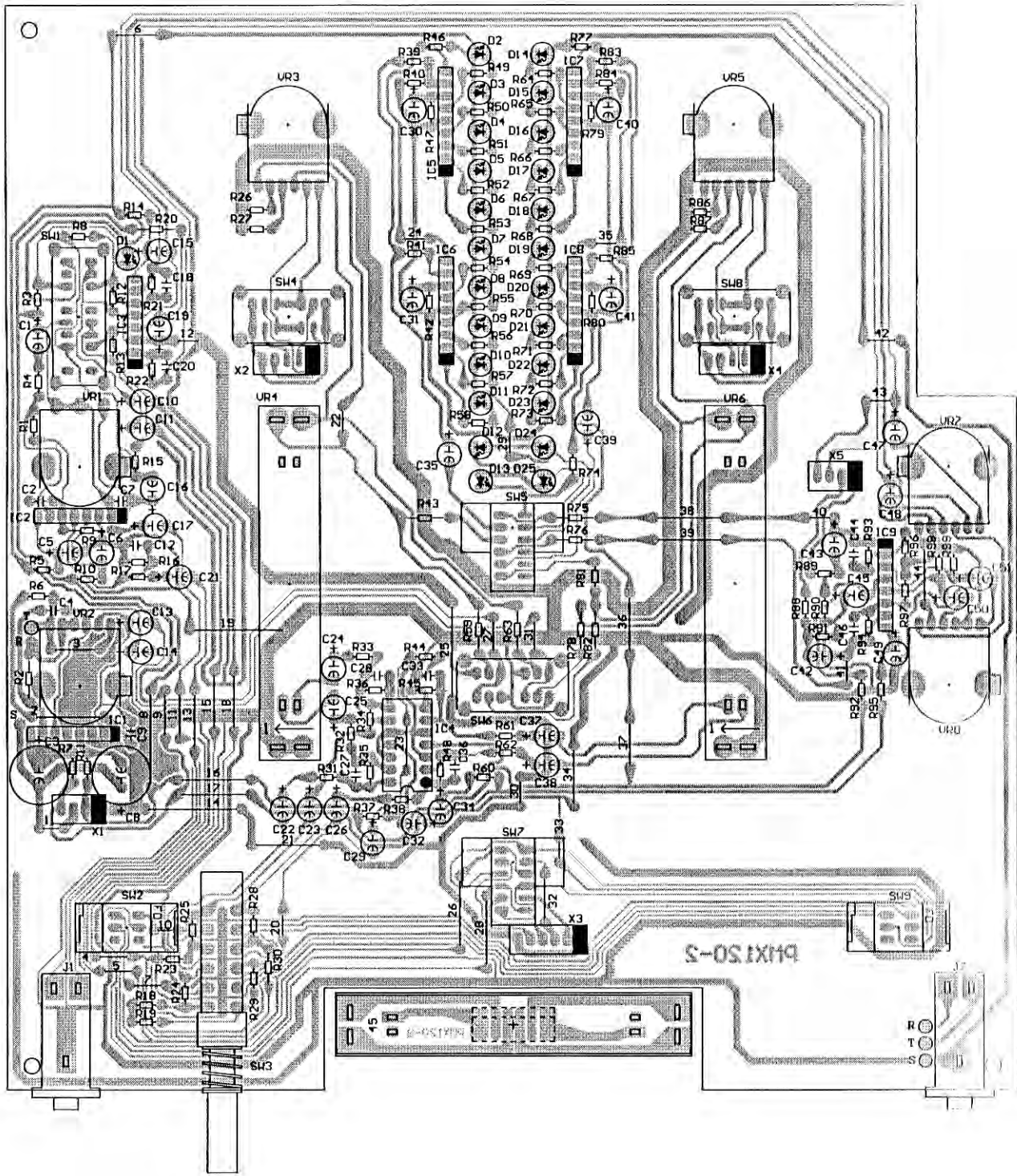
Electrical Parts

Item #	Designators	Description	Part #
1	D1-3, D14-15	LED (RED) 3.15f	080-091
2	D4-5, D16-17	LED (YELLOW) 3.15f	080-103
3	D6-13, D18-25	LED (GREEN) 3.15f	080-104
4	J1, J2	PHONE JACK 6.3f MIC PHONES	092-078
5	SW4, SW6, SW8	LEVER SW 4P2C PHONO/LINE XF SW	082-019
6	SW1	LEVER SW 4P3C TALK	082-022
7	SW2, SW9	PUSH SW 2P2C PUNCH SW	083-096
8	SW5, SW7	PUSH SW 4P2C LED SW	083-097
9	SW3	PUSH SW 4P2C XF CURVE	083-110
10	VR4, VR6	SLIDE VR 45mm L=20mm 50KAx2 CH VOL	072-035
11	VR1	ROTARY VR 16f L=20mm 50KA MIC LEVEL	071-066
12	VR8	ROTARY VR 16f L=20mm 50KAx2 CUE MASTER	071-084
13	VR3, VR5	ROTARY VR 16f L=20mm 10KBx2 CH GAIN	071-137
14	VR2	ROTARY VR 16f L=20mm 500KAx2 CUE	071-158
15	VR7	ROTARY VR 16f L=20mm 20KMNx2.CC BALANCE	071-136

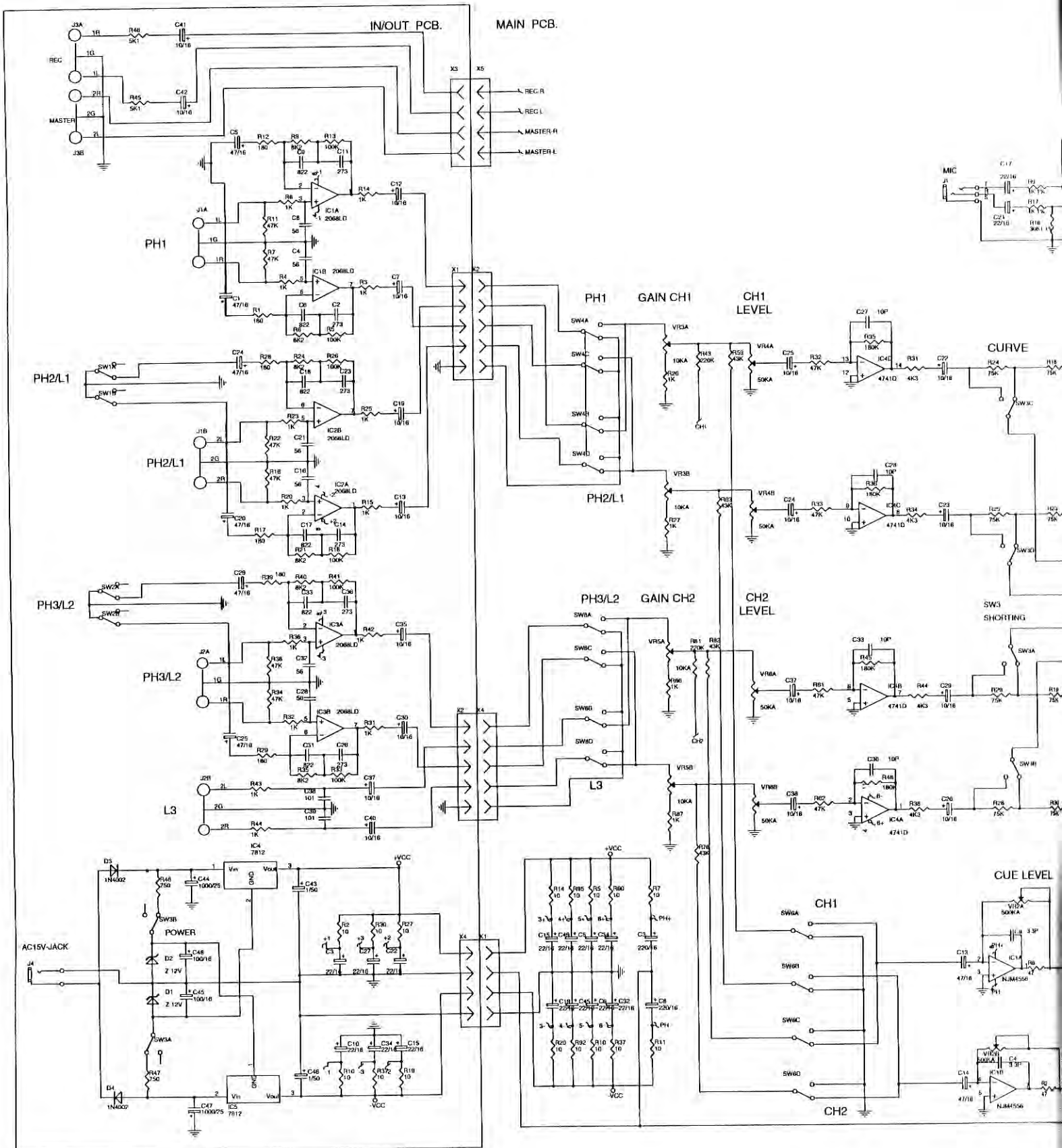
PCB1 - Input Output

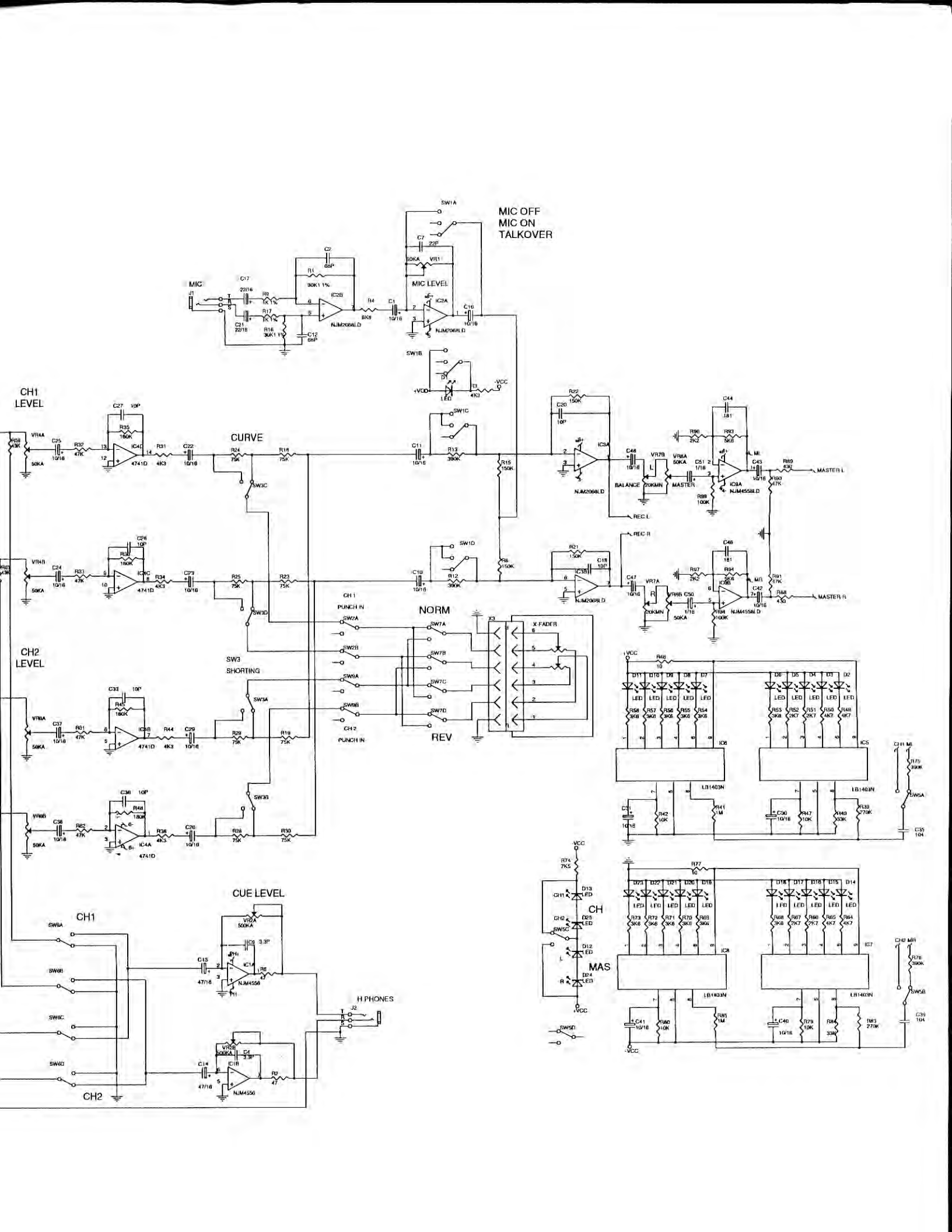


PCB2 - Main



Schematic





MIC OFF
MIC ON
TALKOVER

CH1
LEVEL

CH2
LEVEL

CUE LEVEL

CURVE

NORM

REV

CH

MAS

H PHONES

CH1

CH2

SHORTING

PUNCH IN

PUNCH IN

PUNCH IN

MIC

BALANCE

MASTER

REC L

REC R

MASTER L

MASTER R

CH1 M1

CH2 M1

SW5A

SW5B

SW5C

SW5D

SW5E