

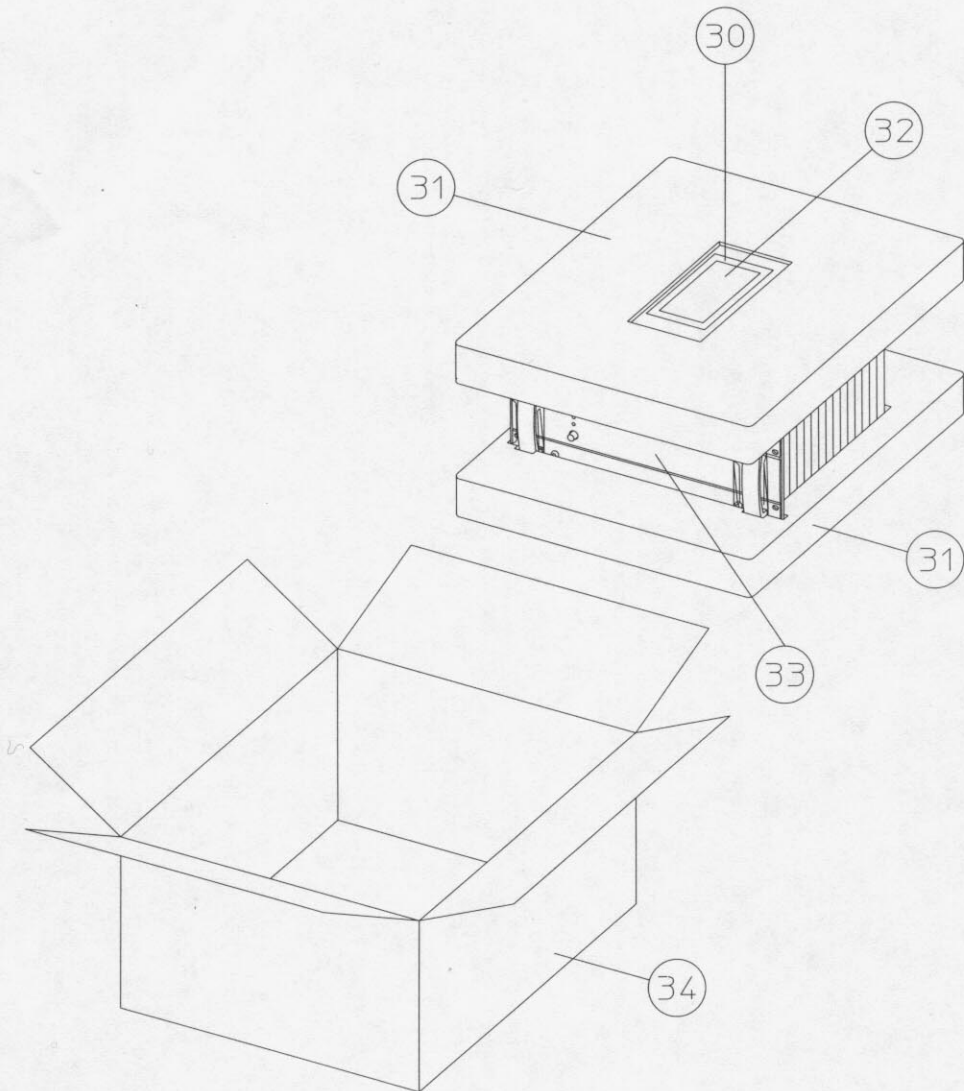
SERVICE MANUAL

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218
STEREO POWER
AMPLIFIER

NAD ELECTRONICS
LONDON

PACKING DIAGRAM



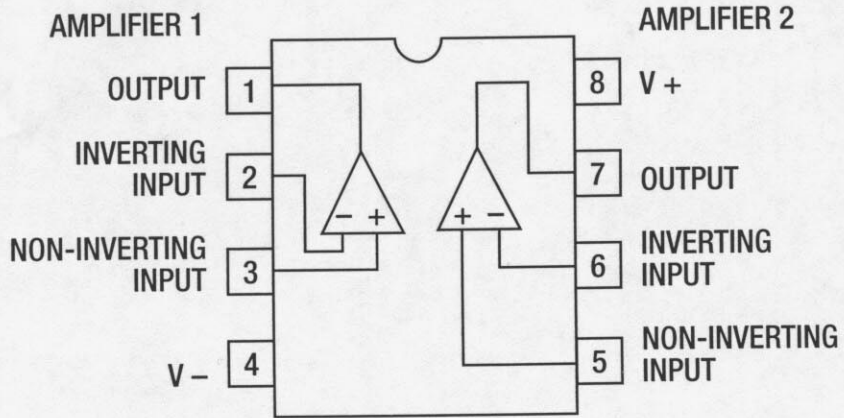
PACKING LIST

<u>Item</u>	<u>Part No</u>	<u>Description</u>	<u>Qty</u>
30	N14971062-0	MANUAL POLYBAG	1
31	1490-1853-0	POLYFORM ENDCAP	2
32	N43013604-1	INSTRUCTION MANUAL	1
33	1497-1482-0	EPE BAG	1
34	1476-3701-0	CARTON BOX	1

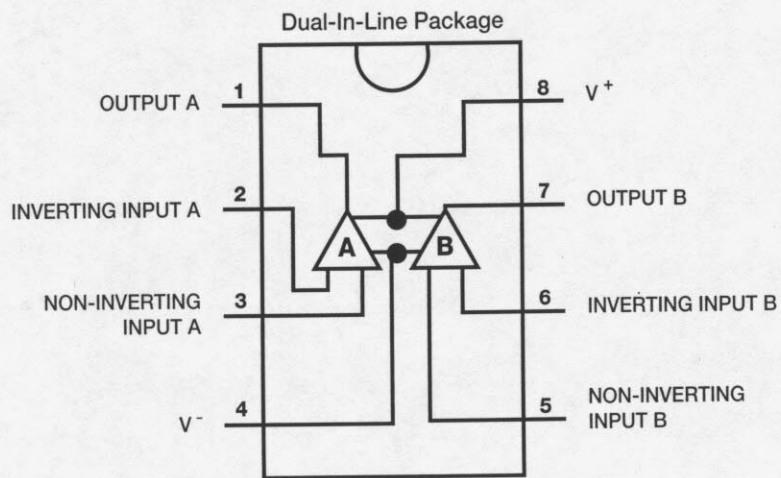
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IC BLOCK DIAGRAM

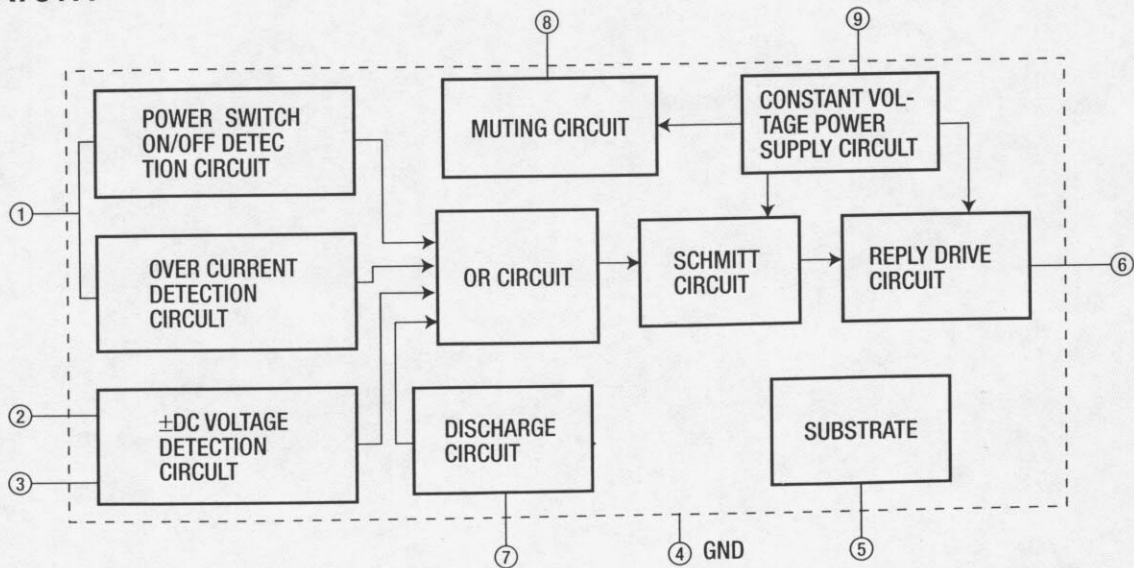
IC101/ IC102: NE5532



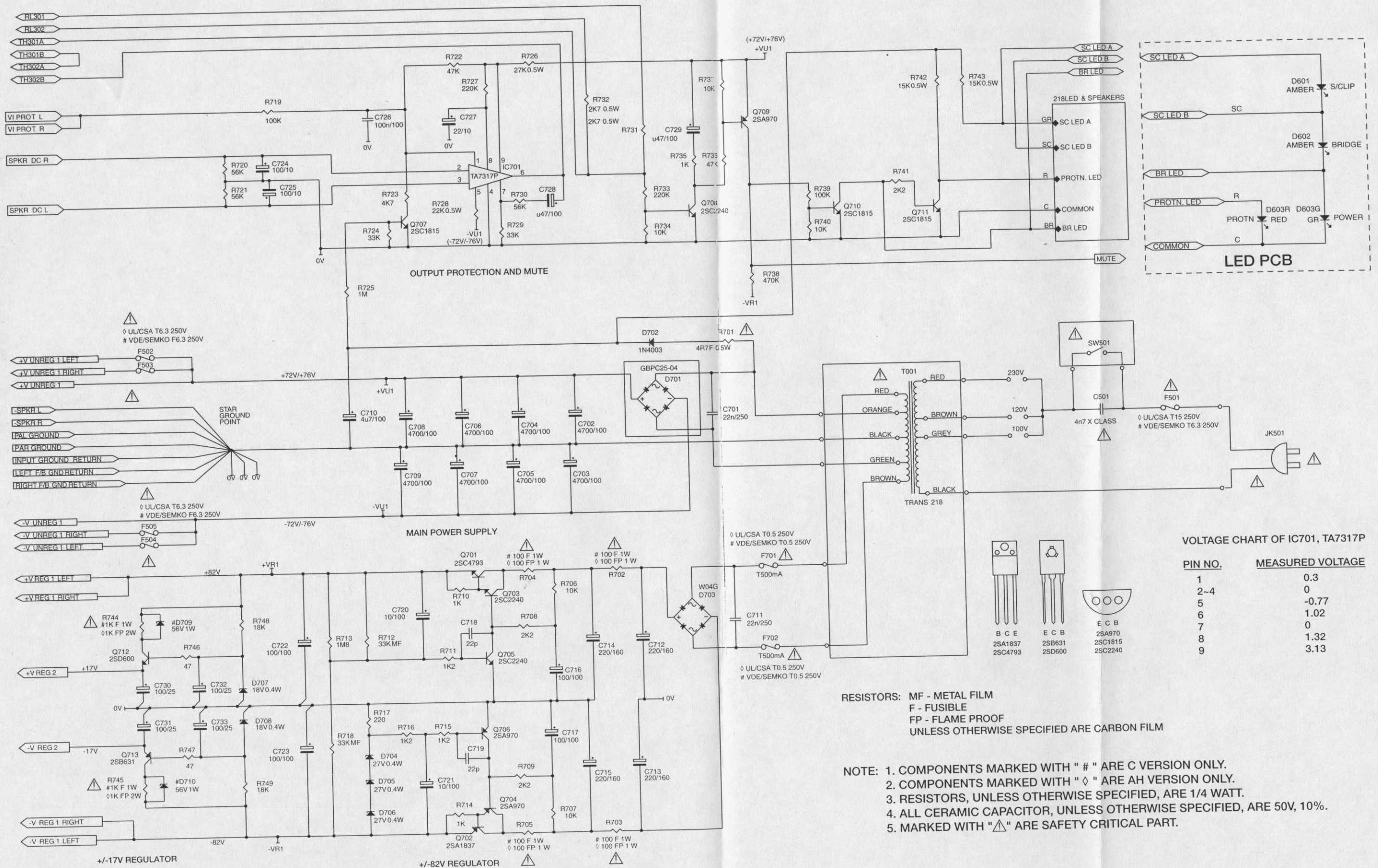
IC201: AD712



IC701: TA7317P



SCHEMATIC DIAGRAM PSU



VOLTAGE CHART OF IC701, TA7317P

PIN NO.	MEASURED VOLTAGE
1	0.3
2-4	0
5	-0.77
6	1.02
7	0
8	1.32
9	3.13

RESISTORS: MF - METAL FILM
F - FUSIBLE
FP - FLAME PROOF
UNLESS OTHERWISE SPECIFIED ARE CARBON FILM

NOTE: 1. COMPONENTS MARKED WITH " # " ARE C VERSION ONLY.
2. COMPONENTS MARKED WITH " ◊ " ARE AH VERSION ONLY.
3. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/4 WATT.
4. ALL CERAMIC CAPACITOR, UNLESS OTHERWISE SPECIFIED, ARE 50V, 10%.
5. MARKED WITH " ⚠ " ARE SAFETY CRITICAL PART.

DIAGRAM 3 – BRIDGE MODE, UNBALANCED MODE (RCA input only)
 Monophonic mode, input at L-CH only. Speaker impedance > 8-ohm.
 Speaker(+) connected to L+, speaker(-) connected to R+ output.

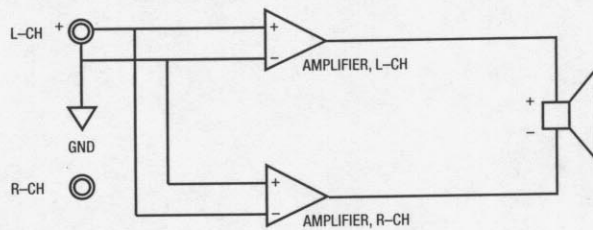


DIAGRAM 3

DIAGRAM 4 – BRIDGE MODE, BALANCED MODE (XLR input only)
 Monophonic mode, input at L-CH only. Speaker impedance > 8-ohm.
 Speaker(+) connected to L +, speaker(-) connected to R + output.

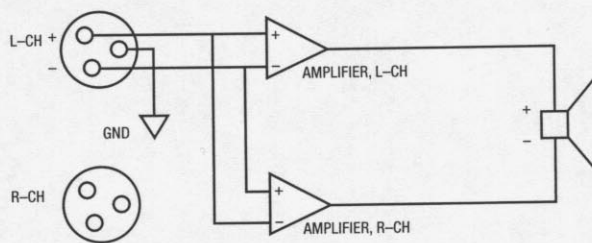


DIAGRAM 4

MODES OF CONNECTION

INPUT CONNECTION

Model 218 has both RCA and XLR input connections for each channel. The circuit can operate in unbalanced mode and balanced mode. When the input mode is selected to BAL mode, differential input signal of 180 degrees phase difference can be fed into the input amplifier through the XLR socket. This could have a high common mode rejection ratio as the interference from the ground shield can be cancelled out at this input point. When using RCA inputs or the input mode switch is selected to UNBAL, the amplifier is operated in unbalanced mode and the anti-phase input is grounded to the ground shield. It becomes a normal power amplifier which only needs one shielded cable connection for each channel.

OUTPUT CONNECTION

The output configuration can be selected to normal mode or bridge mode. At normal mode, each speaker output channel corresponds to the input signal at that channel. At bridge mode, the output becomes mono output in which the output of the left channel is in opposite phase to the right channel. One speaker is needed in such case. The speaker is connected across the red terminals, the positive phase(+) of the speaker is connected to L-channel and the negative phase(-) is connected to the R-channel. Left input connection is used. Please refer to the diagrams below for the connections.

RCA AND XLR INPUT CONNECTION DIAGRAMS

DIAGRAM 1 – NORMAL, UNBALANCED MODE (RCA or XLR input)

Pin 2 of XLR I/P = RCA I/P, Pin 3 of XLR I/P = GROUND.

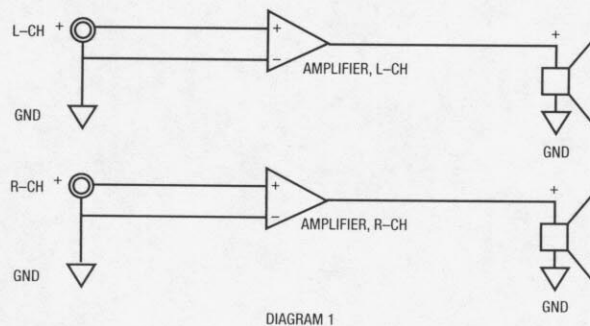
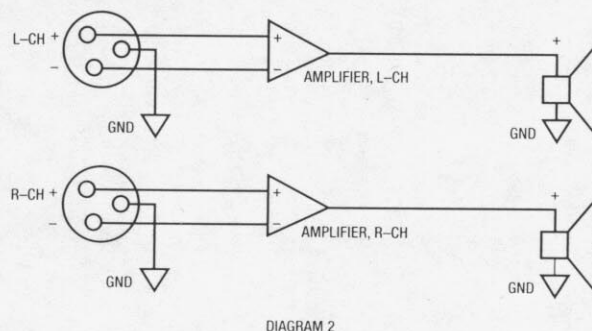


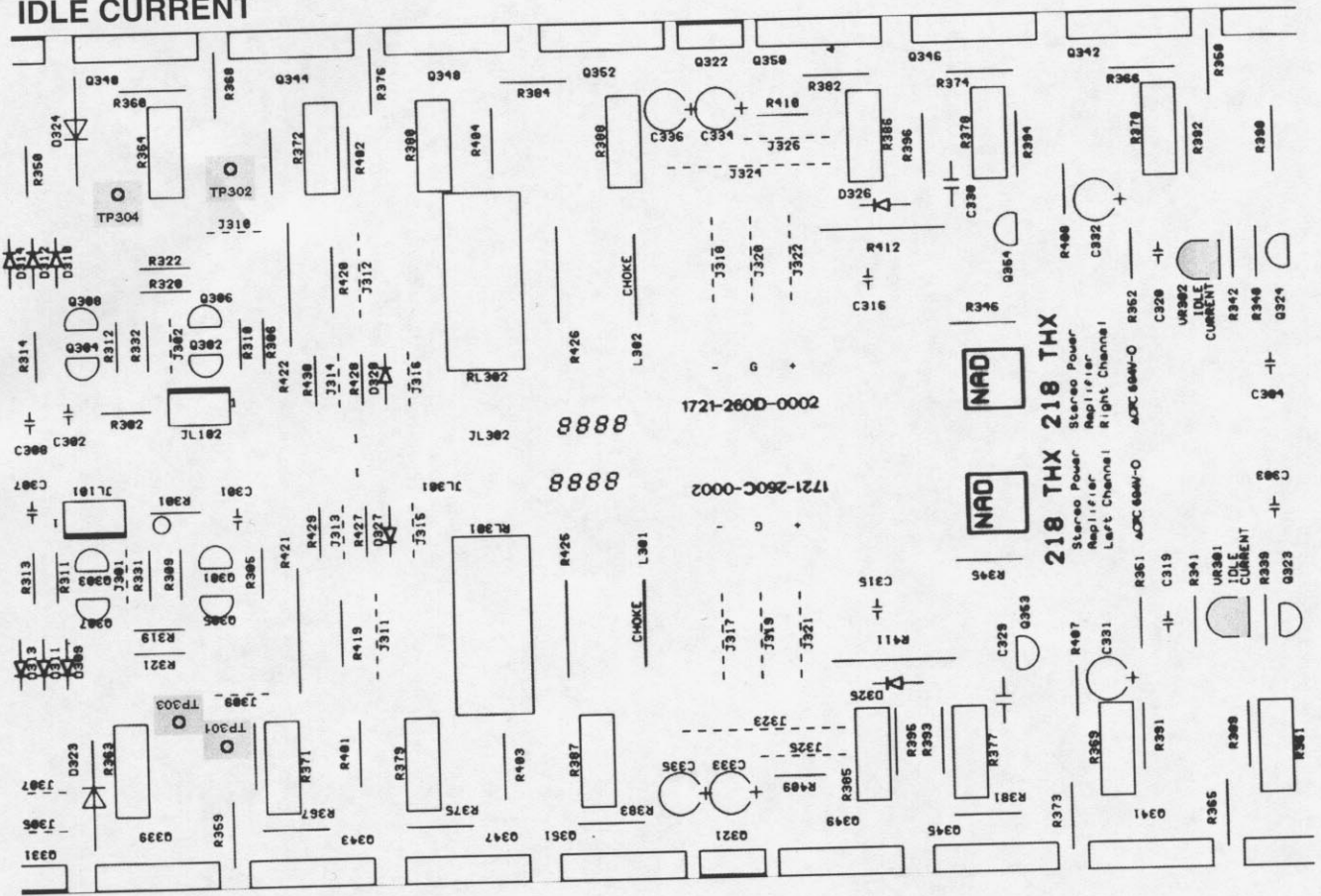
DIAGRAM 2 – NORMAL, BALANCED MODE (XLR input only)

Pin 2 & Pin 3 of XLR input are antiphase differential inputs.

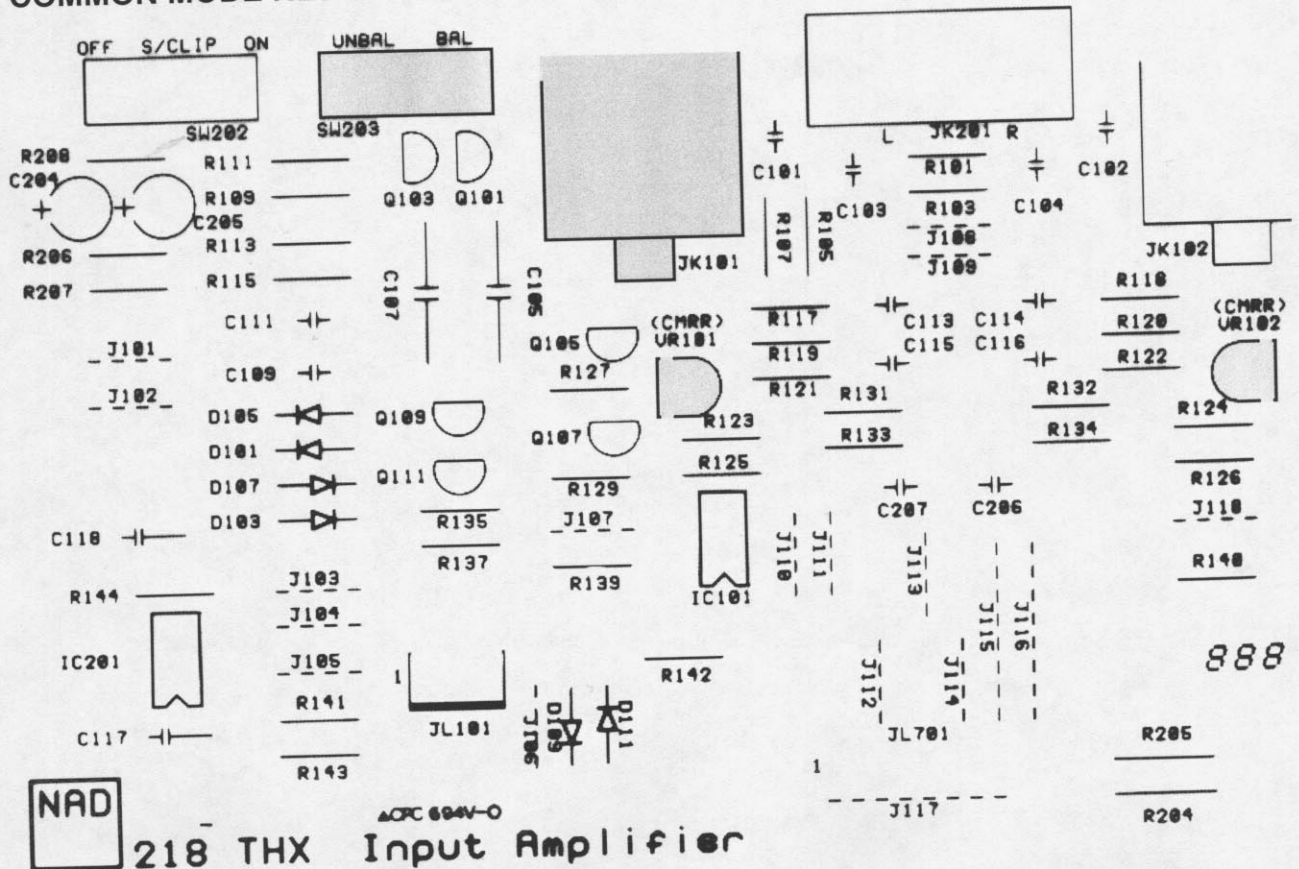


ALIGNMENT POINTS DIAGRAM

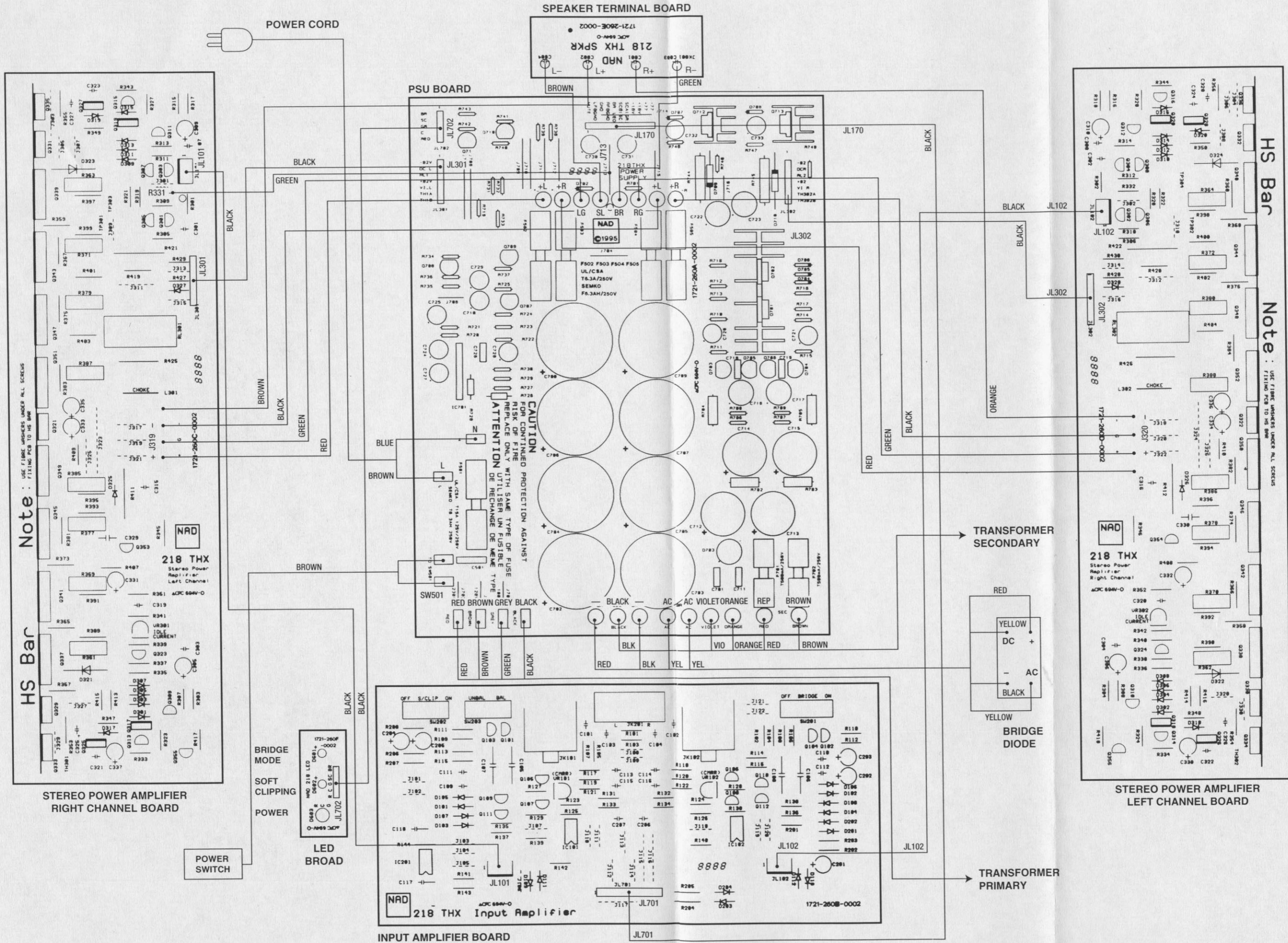
1. IDLE CURRENT



2. COMMON MODE REJECTION



WIRING DIAGRAM



Note: USE FIBRE WASHERS UNDER ALL SCREWS. FIXING PCB TO HS BAR

HS Bar

STEREO POWER AMPLIFIER RIGHT CHANNEL BOARD

POWER SWITCH

BRIDGE MODE
SOFT CLIPPING
POWER

LED BROAD

218 THX Input Amplifier

CAUTION
FOR CONTINUED PROTECTION AGAINST RISK OF FIRE WITH SAME TYPE OF FUSE REPLACE ONLY UTILISER UN FUSIBLE ATTENTION DE RECHANGE DE MEME TYPE

SPEAKER TERMINAL BOARD

PSU BOARD

TRANSFORMER SECONDARY

BRIDGE DIODE

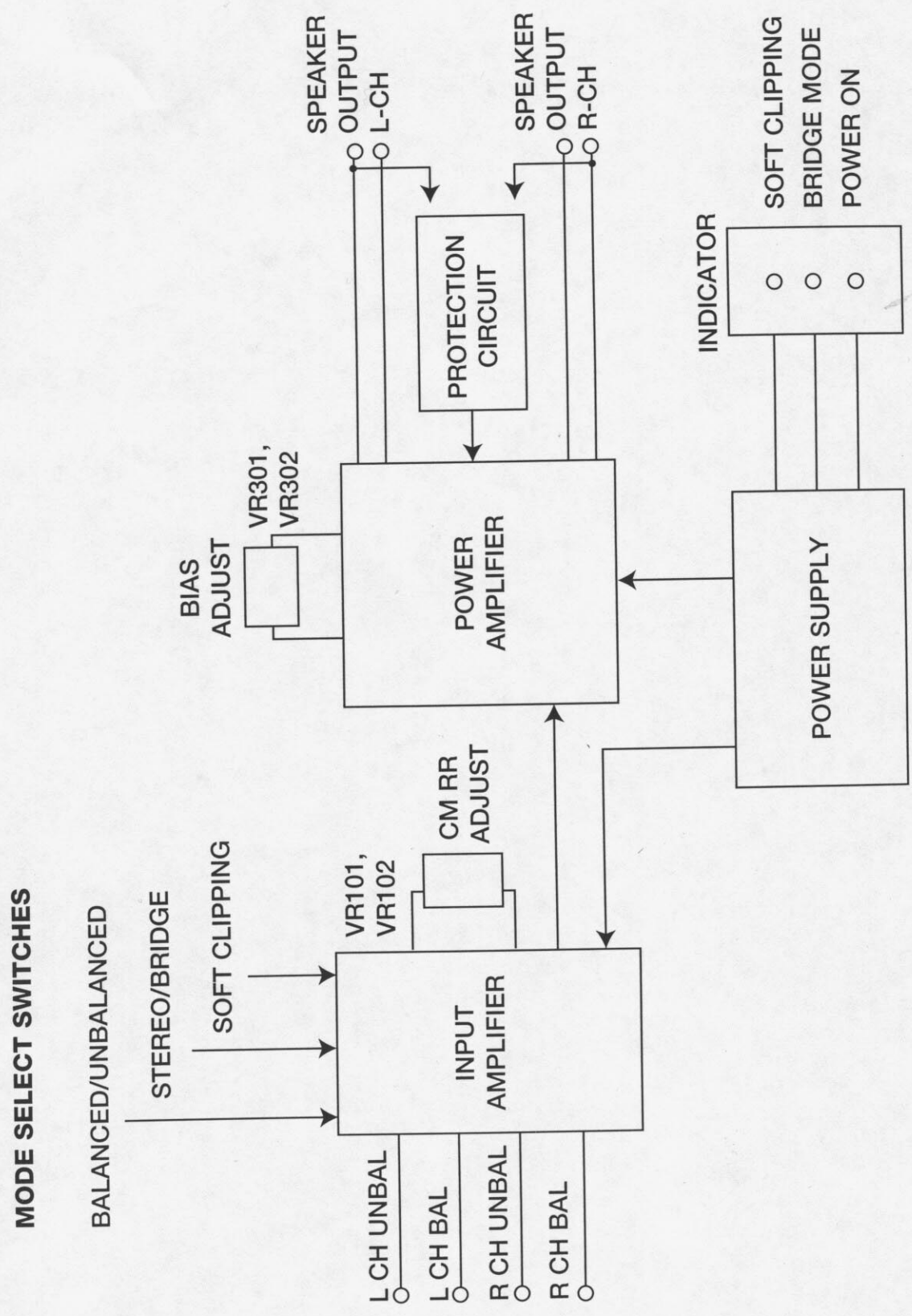
TRANSFORMER PRIMARY

HS Bar

Note: USE FIBRE WASHERS UNDER ALL SCREWS. FIXING PCB TO HS BAR

STEREO POWER AMPLIFIER LEFT CHANNEL BOARD

BLOCK DIAGRAM



SERVICE MANUAL

NAD

SERVICE SAFETY PRECAUTIONS (UL)

1. Use exact replacement parts for critical locations marked "⚠"
2. Return lead dress to original position and re-install protective covers.
3. Before returning to customer, test for shock hazard; use either method A or B:

A. Leakage test "cold":

1. Unplug the AC cord; turn power switch ON.
2. Connect one lead of High Voltage Insulation Tester to both prongs of the AC plug.
3. Touch other lead to all exposed metal parts.
4. Impedance measurement must be 0.3-5.0 Megohms.

B. Leakage test, "live":

1. Plug unit directly into the AC outlet: do not use isolation transformer.
2. Connect one lead of the Leakage Current Tester to earth ground.
3. Touch other lead to all exposed metal parts.
4. Leakage measurement must be less than 0.5 milliamps.

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Alignment procedure

1. Idle current (VR301, VR302).

Ensure VR301 and VR302 are set to minimum (fully counter-clockwise) before first switching on. No load should be connected and no input signal.

1.1 Connect a DVM switched to its 200mV range between TP301 and TP303.

1.2 Switch the amplifier on and, after one minute, adjust VR301 to obtain a reading of between 2 and 2.5 mV.

1.3 Transfer the DVM to TP302 and TP304 and adjust VR302 to obtain a reading of between 2 and 2.5 mV.

1.4 Leave power on for between 5 and 10 minutes to allow the idle currents to stabilize.

1.5 Re-adjust VR301 and VR302 as necessary to obtain a reading of 8 mV \pm 2 mV on each channel.

2. Common Mode rejection (VR101, VR102).

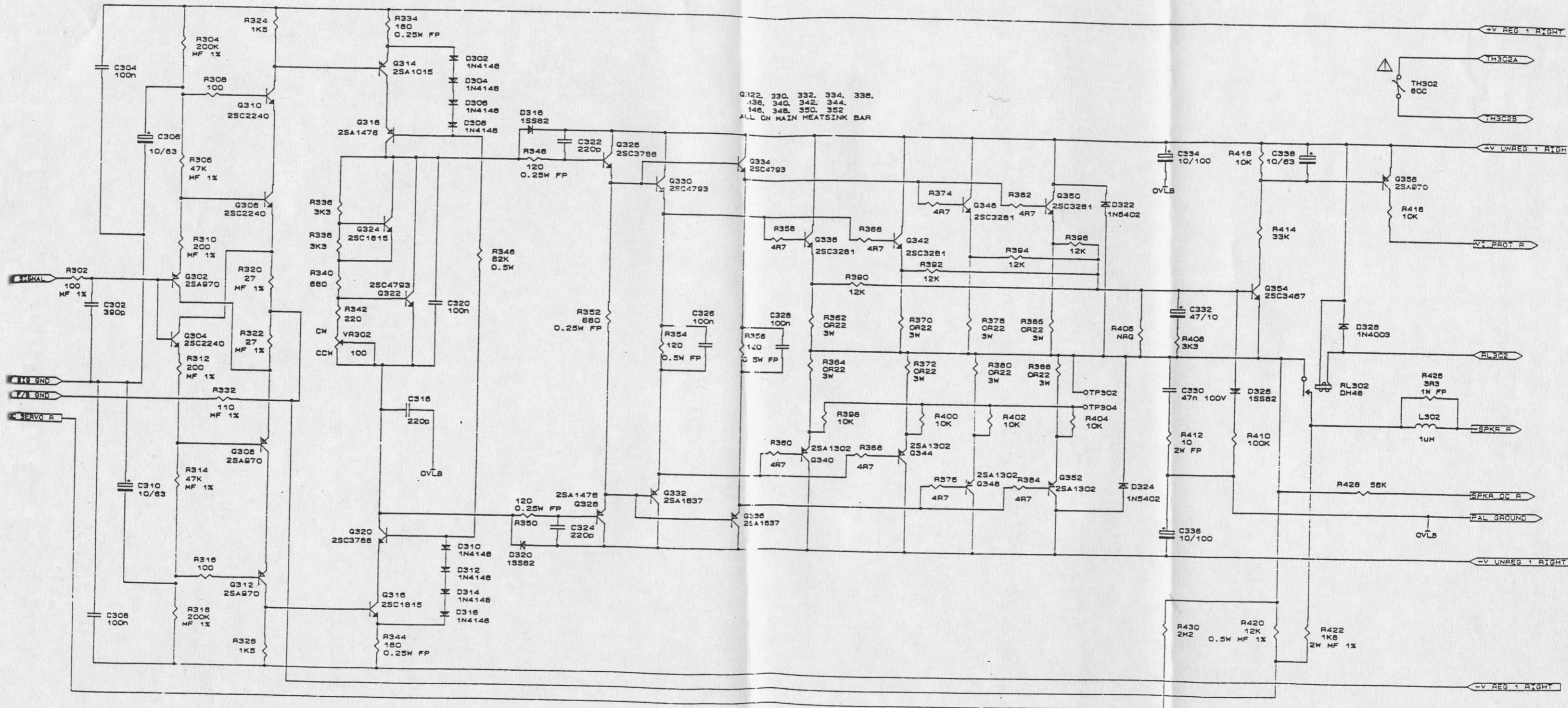
2.1 Set SW203 to BALANCED mode.

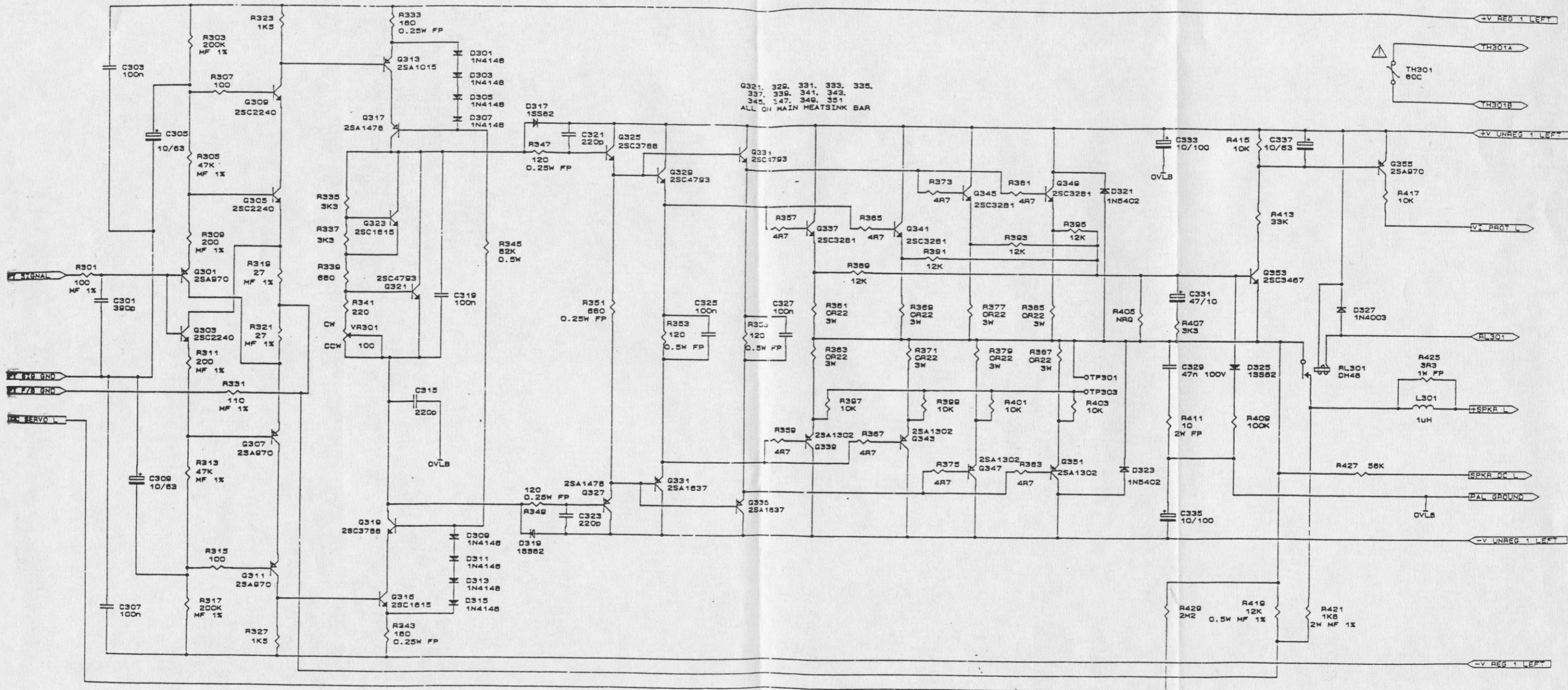
2.2 Apply a signal of 1V rms, 1kHz simultaneously to pins 2 and 3 of the Left channel balanced input jack (JK101). Pins 2 and 3 must be shorted together at the plug and the signal referenced to the ground pin (1) for this test.

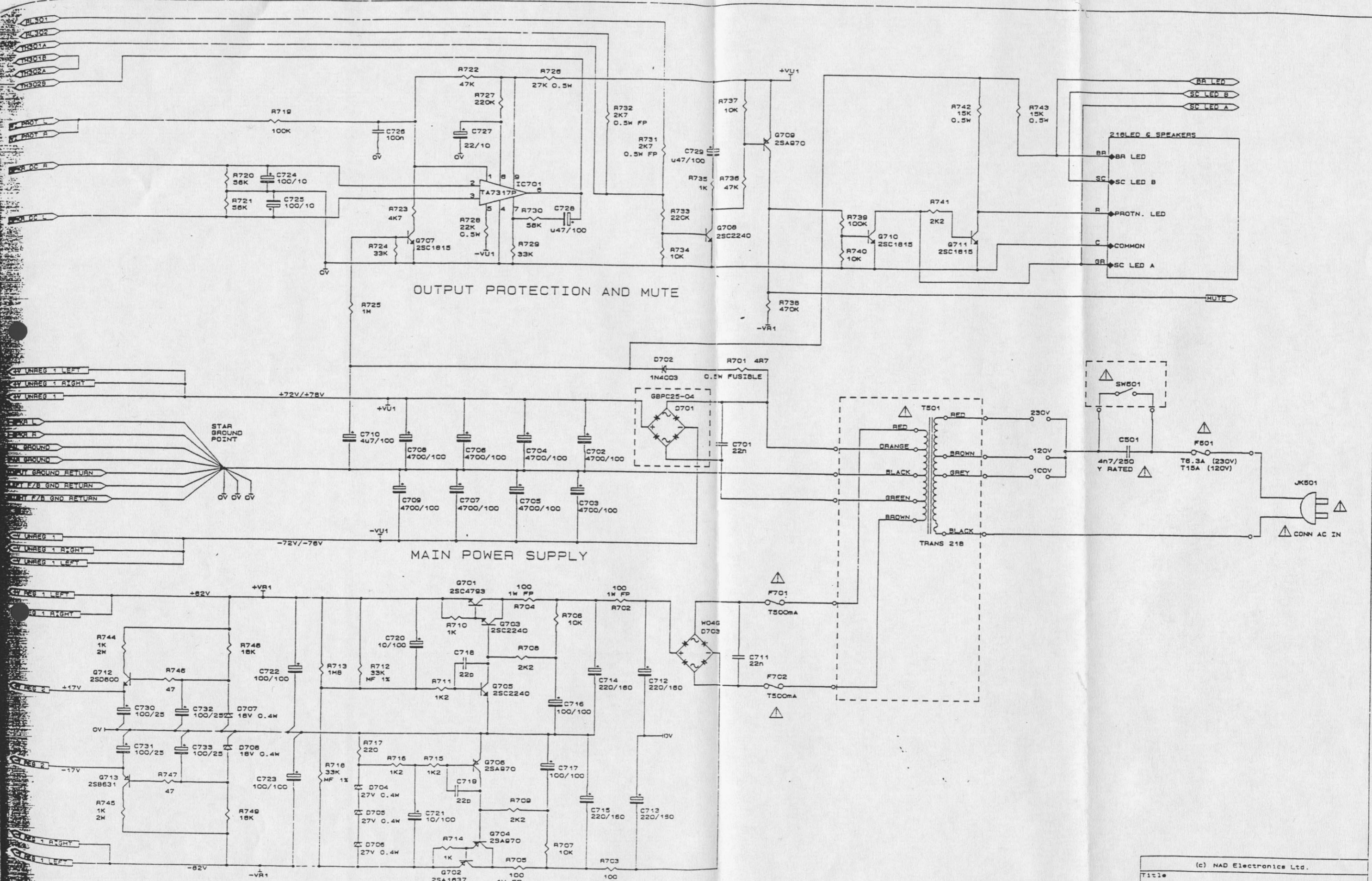
2.3 Monitor the output level at the Left channel speaker terminals with an AC voltmeter (no load connected).

2.4 Adjust VR101 to produce the minimum reading on the AC voltmeter. This should be below 10mV rms.

2.5 Repeat the above procedure with the Right channel to set VR102.



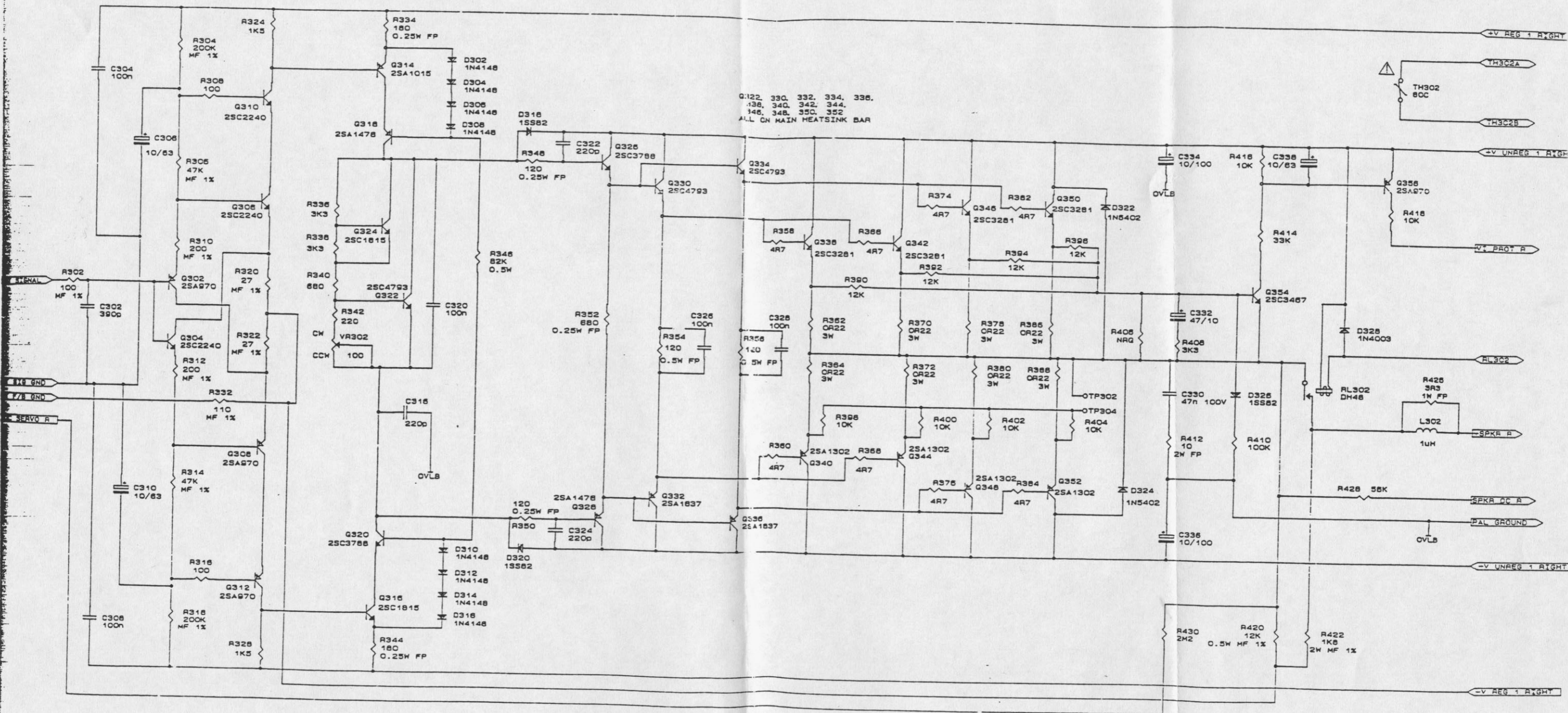




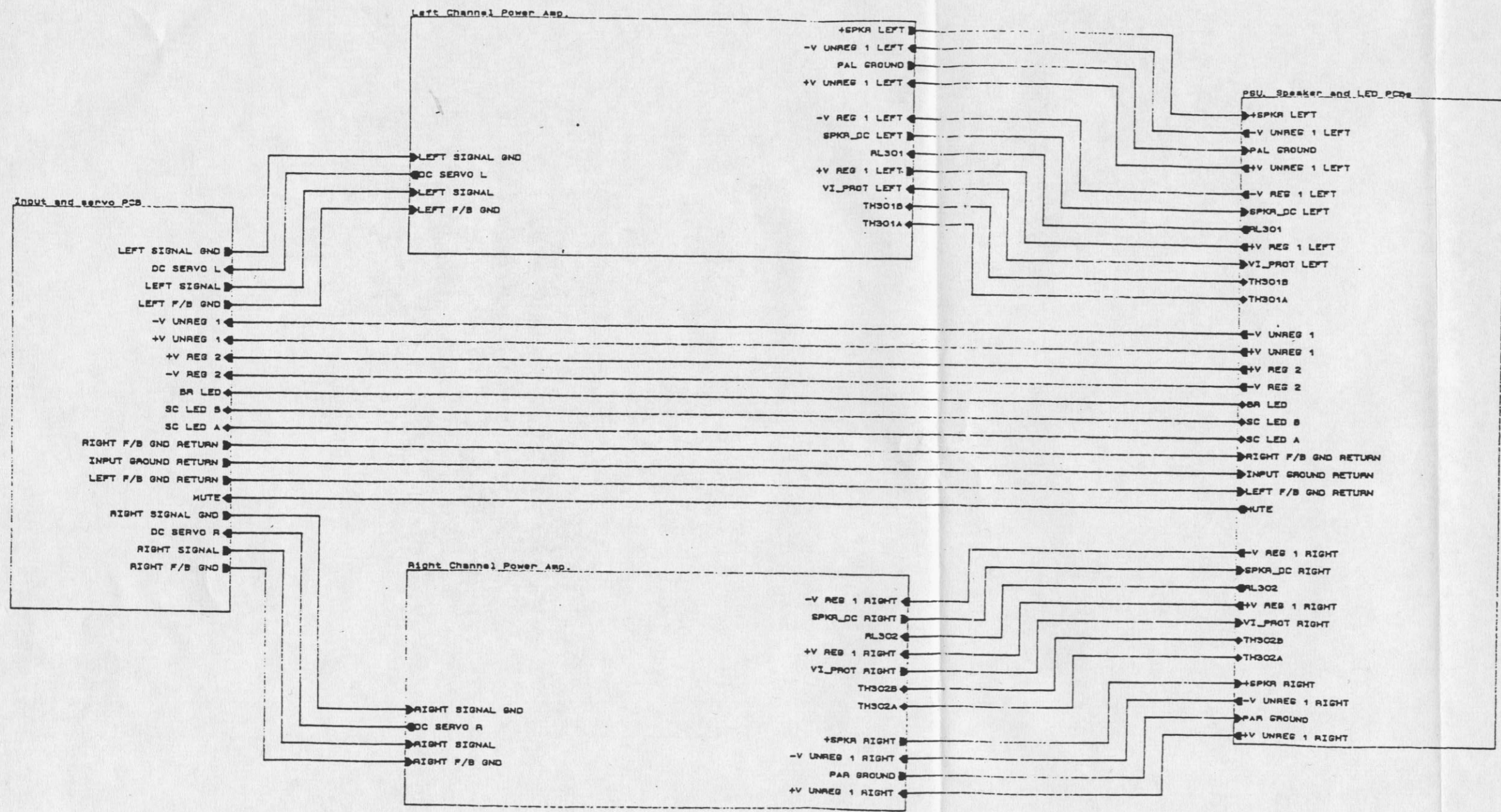
+/-17V REGULATOR

+/-82V REGULATOR

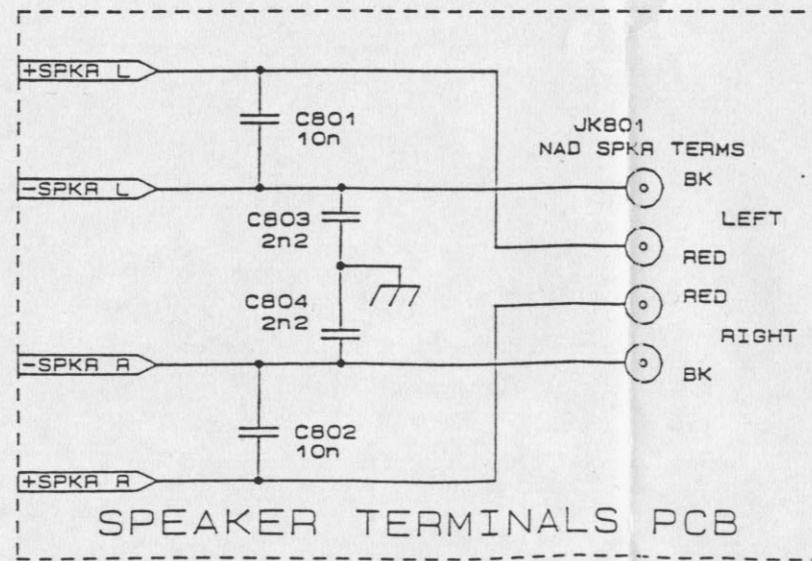
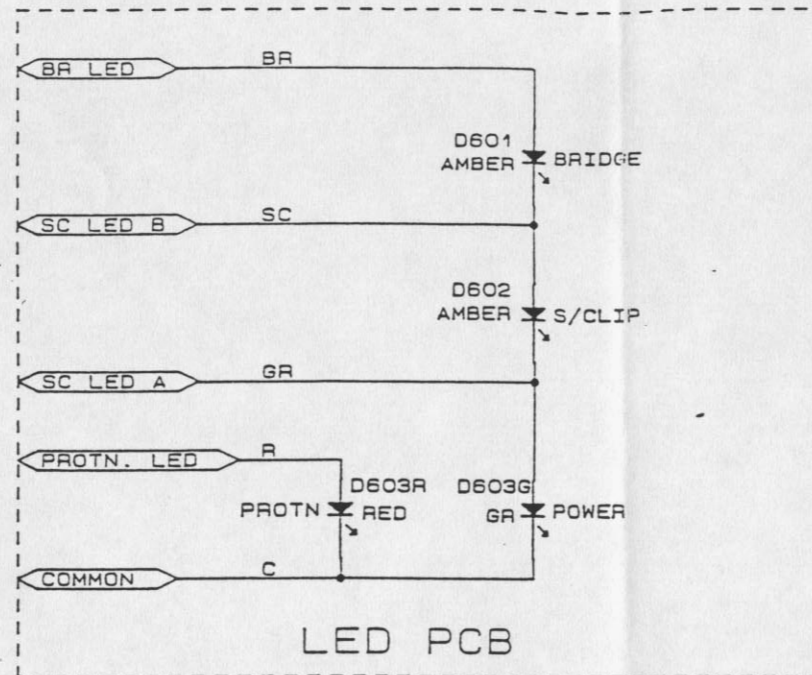
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Title	218 PSU PCB	
Size	Document Number	REV
C	218PS	A
Date:	April 24, 1995	Sheet 1 of 1



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Title 218 Power Amplifier System		
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C	February 15, 1988	Sheet 1 of 1



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218 LED & Speakers PCBs		
Size	Document Number	REV
B	218LED	A
Date:	February 14, 1995	Sheet 1 of 1