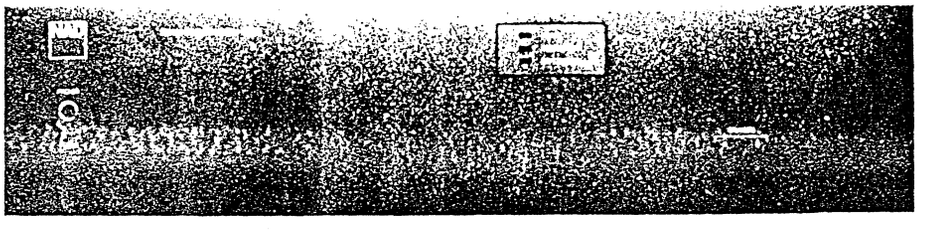
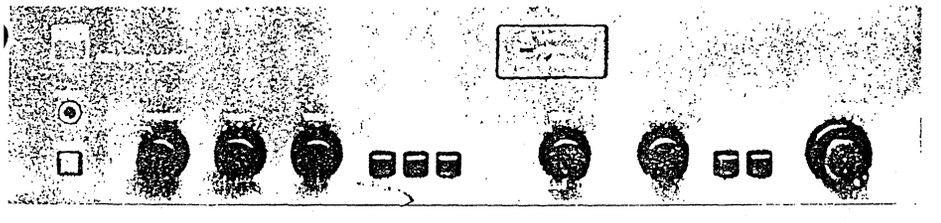
NAD SERVICE MANUAL

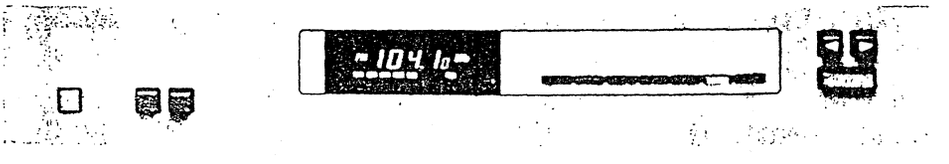


MODELS

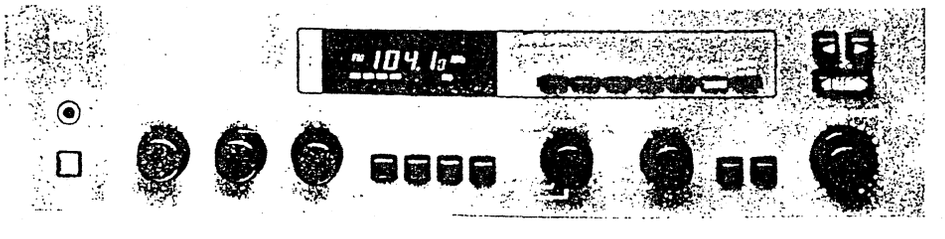
2150



3150

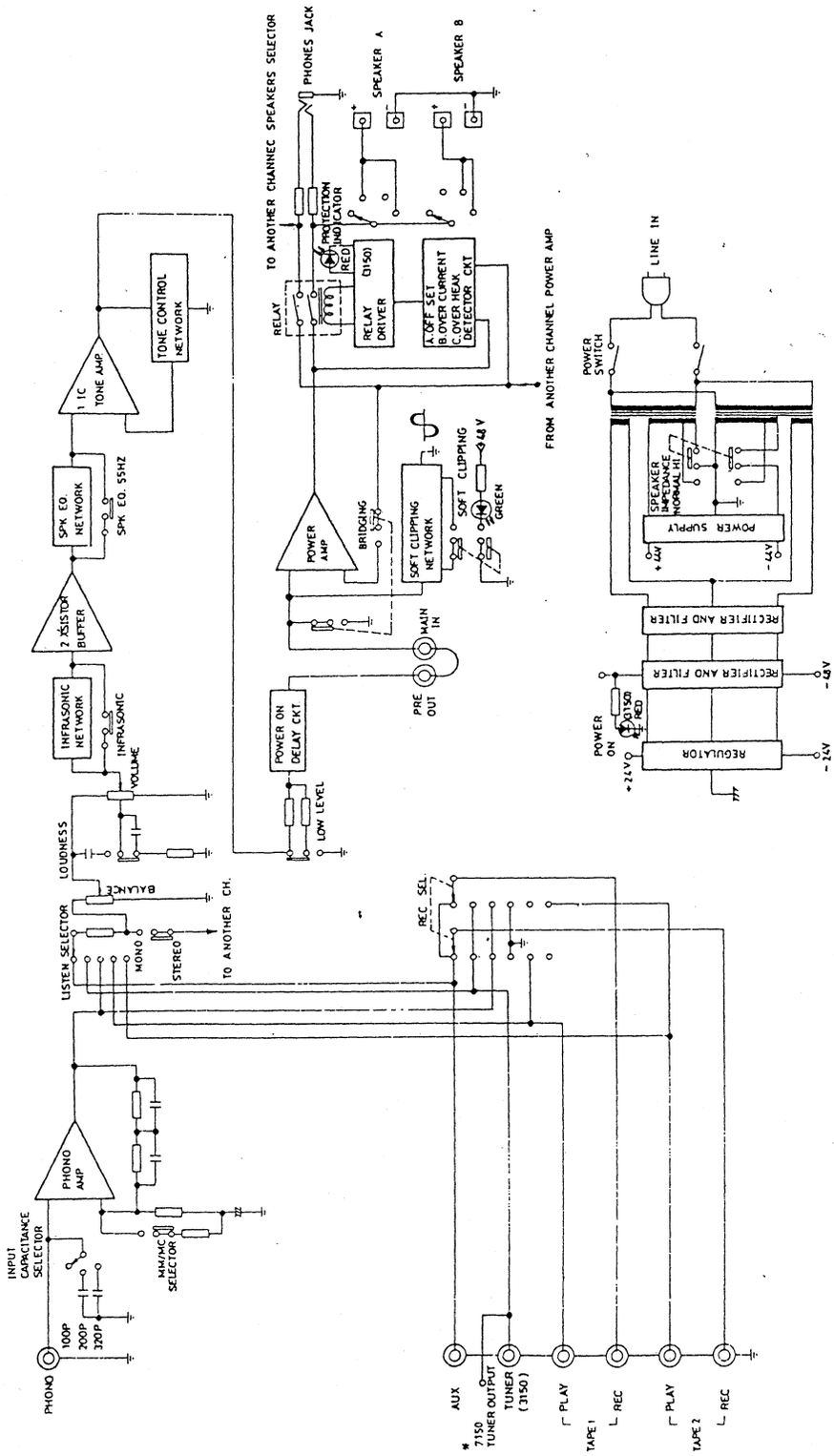


4150



7150

7150 AUDIO / 3150 BLOCK DIAGRAM



2150/3150/4150/7150 ALIGNMENT PROCEDURE

2150 ADJUSTMENT

DC OFF-SET ALIGNMENT
1. Set on the power for 5 minutes pre- heating.
2. For L (R) channel alignment: Connect probe of DC millivolt-meter to L (R) channel speaker terminals, then adjust VR-601 (VR-602) till the reading are closed to 0mV.

IDLE CURRENT ALIGNMENT
1. Turn VR-603 to fully clockwise position and VR-604 to fully counter-clockwise position.
2. Set on the power for 5 minutes pre-heating.
3. Remove the load in speaker terminals.
4. Connect one probe of DC millivolt-meter to L (R) channel speaker terminal "+", the other to point TP1 (TP2) on main PCB foiling side, adjust VR-603 (VR-604) till the reading is between point TP1 (TP2) on main PCB foiling side, adjust VR-603 (VR-604) till the reading is between 4.4mv and 11mv.

3150/7150 (AUDIO) ALIGNMENT

DC OFF-SET ALIGNMENT
1. Set on the power for 5 minutes pre-heating.
2. Set volume control to minumum position and speaker selector switch to "A+B" position.
3. For L (R) channel alignment: Connect probe of DC millivolt-meter to L (R) channel speaker terminals, then adjust VR-601(VR-602)till the reading are colsed to 0mV.

IDLE CURRENT ALIGNMENT
1. Turn VR-603 to fully colckwise position and VR-604 to fully counter-clockwise position.
2. Set on the power for 5 minutes pre-heating.
3. Set volume control to minimum position and speaker selector switch to "A+B" position..
4. Remove the load on speaker terminals.
5. Connect one probe of DC millivolt-meter to L (R) channel speaker terminal "+", the other to point TP1 (TP2) on main PCB. Foiling side, adjust VR-603 (VR-604) till the reading is between 4.4mV and 11mV.

4150/7150 (TUNER) ALIGNMENT

1. FM MPX ALIGNMENT
   a. Selector Switch in FM position
   b. AC Line Voltage at Rated Voltage
   c. Monitor OUTPUT at record OUTPUT
   d. FM SG is external modulated by stereo SG and connected to FM 300 OHM antenna terminal on the rear panel through FM dummy antenna.

SECTION	Step	FM SG	Stereo Sg	Dial Setting	Indicator	Adjustment	Adjust For
MPX Pilot	1	98 MHz 0% Modulation	——	98 MHz	Connect frequeney Counter To Pin TP1	VR201	76 kHz±50 Hz
	2	98 MHz	10% 19 kHz 90% L+R	98 MHz	——	VR201	Stereo LED Light
	3		Repeat Step 1 and Step 2				
	4		IF there is an excessive difference between leak-free effect of both channels, slightely adjust VR202 So that the levels of signal leakage of both channels are equal.				
Stereo 50 dB quieting		98 MHz SG OUTPUT Level 30uV	10% 19 kHz pilot.0% L+R, L-R.	98 MHz	V.T.V.M or Oscilloscope	VR102	Just minimum OUTPUT

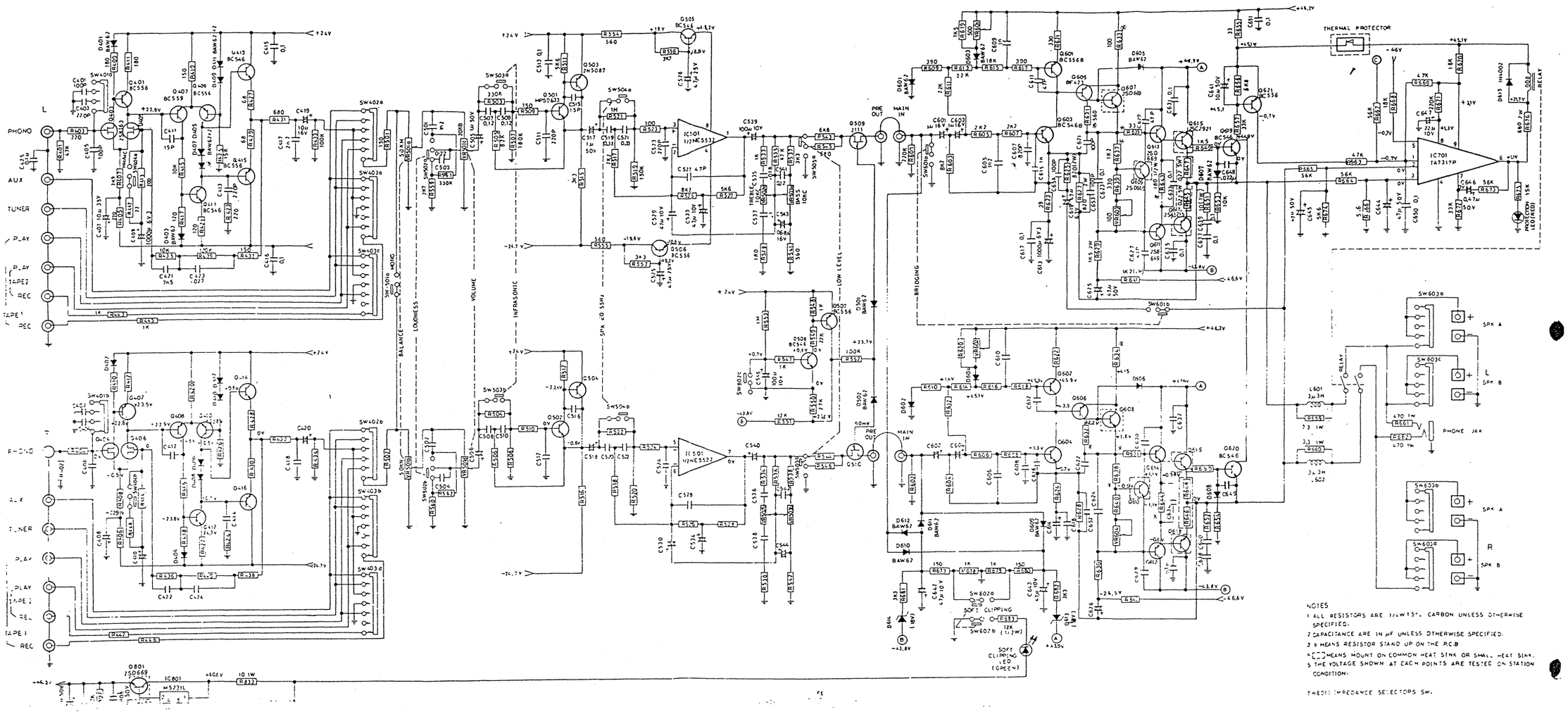
2. FM ALIGNMENT
   a. Selector Switch in FM position
   b. AC Line Voltage at Rated Voltage
   c. Monitor OUTPUT at record OUTPUT

SECTION	STEP	FM SG Connection	Carrier	Mod.	Dial Setting	Idicator	Adjustmer:	Adjust for
FM IF		——	——	——	point of non-interference	Digital Voltage Meter	IFT 101	to pin TP3 Voltage 0V
FM RF	1	Connect to FM 300 OHM antenna on the rear panel through FM Dummy Antenna.	90 MHz	100% Mod 400 Hz	90 MHz	Digital Voltage Meter	LT 606	Tuning Voltage 4.3v ±0.1v
	2		106MHz		106MHz		VC006	Tuning Voltage 18.7v±0.2v
	3		Repeat Step 1 and Step 2					
FM Sens	1		90 MHz	100% Mod 400 Hz	90 MHz	V.T.V.M Oscilloscope	LT001 to LT005	Maxmimum OUTPUT
	2		106MHz		106 MHz		VC001 to VT005	
	3		98 MHz		98 MHz		LT007	
	4		Repeat Step 1.2 and Step 3					
FM Mute	1		Muting Push Switch "ON" Adjust attenuator of FM SG for Antenna Input 14dB					
	2 3		98 MHz	100%Mod 400 Hz	98 MHz	V.T.V.M Oscilloscope	VR 101	OUTPUT just disappear
	4		Increase FM SG OUTPUT 4dB more to get fully audio OUTPUT IF fully audio OUTPUT cannot get, repeat Step 1.2.3					

3. AM ALIGMENT

SECTION		AM SG Connection	Carrier	Mod.	Dial Setting	Indicator	Adjustmer:	Adjust for
AM		Hot side of SG OUTPUT through	[illegible]	[illegible]	[illegible]	V.T.V.M.	IFT 703	Maximun
	2	distance.	[illegible]	400hz	1400kHz		VC 701	Tuning Voltage 20.5V±0.2V
	3		Repeat Step 1 and Step 2					
AM Sens	1	Hot side of SG OUTPUT through a loop ANT radiate to AM ANT BAR vertically and keep 60cm distance.	600kHz	30% Mod 400Hz	600kHz	V.T.V.M or Oscilloscope	ANT BAR	Maximum OUTPUT
	2		1400kHz	30% Mod 400Hz	1400kHz		VC 702	
	3		Repeat Step 1 and Step 2					

3150 CIRCUIT DIAGRAM



NOTES

1 ALL RESISTORS ARE 1/4W±5%, CARBON UNLESS OTHERWISE SPECIFIED.

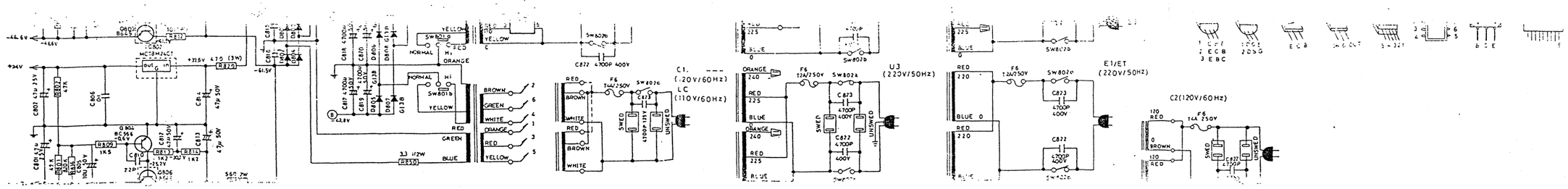
2 CAPACITANCE ARE IN μF UNLESS OTHERWISE SPECIFIED.

3 X MEANS RESISTOR STAND UP ON THE P.C.B

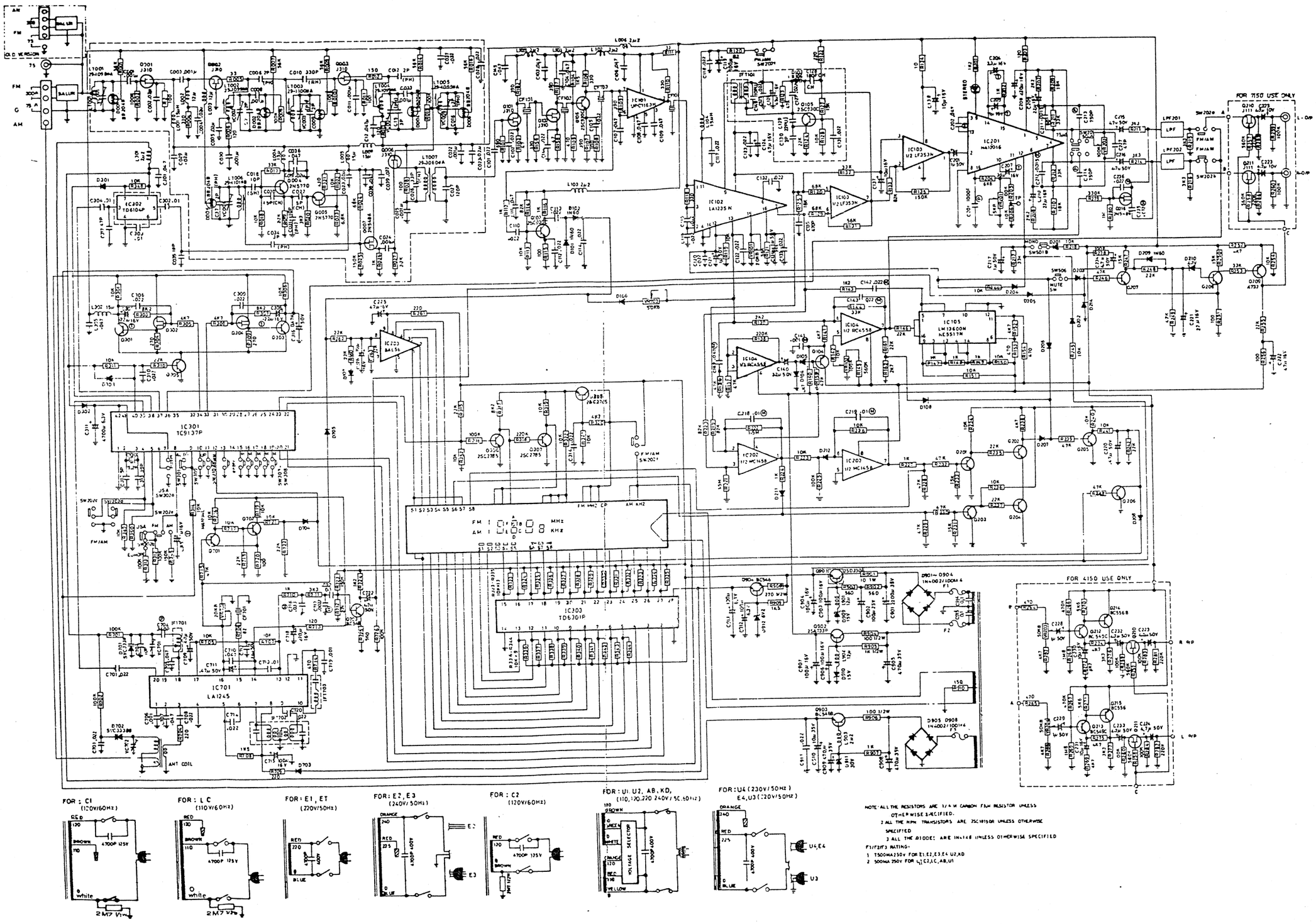
4 [ ] MEANS MOUNT ON COMMON HEAT SINK OR SMALL HEAT SINK.

5 THE VOLTAGE SHOWN AT EACH POINTS ARE TESTED ON STATION CONDITION.

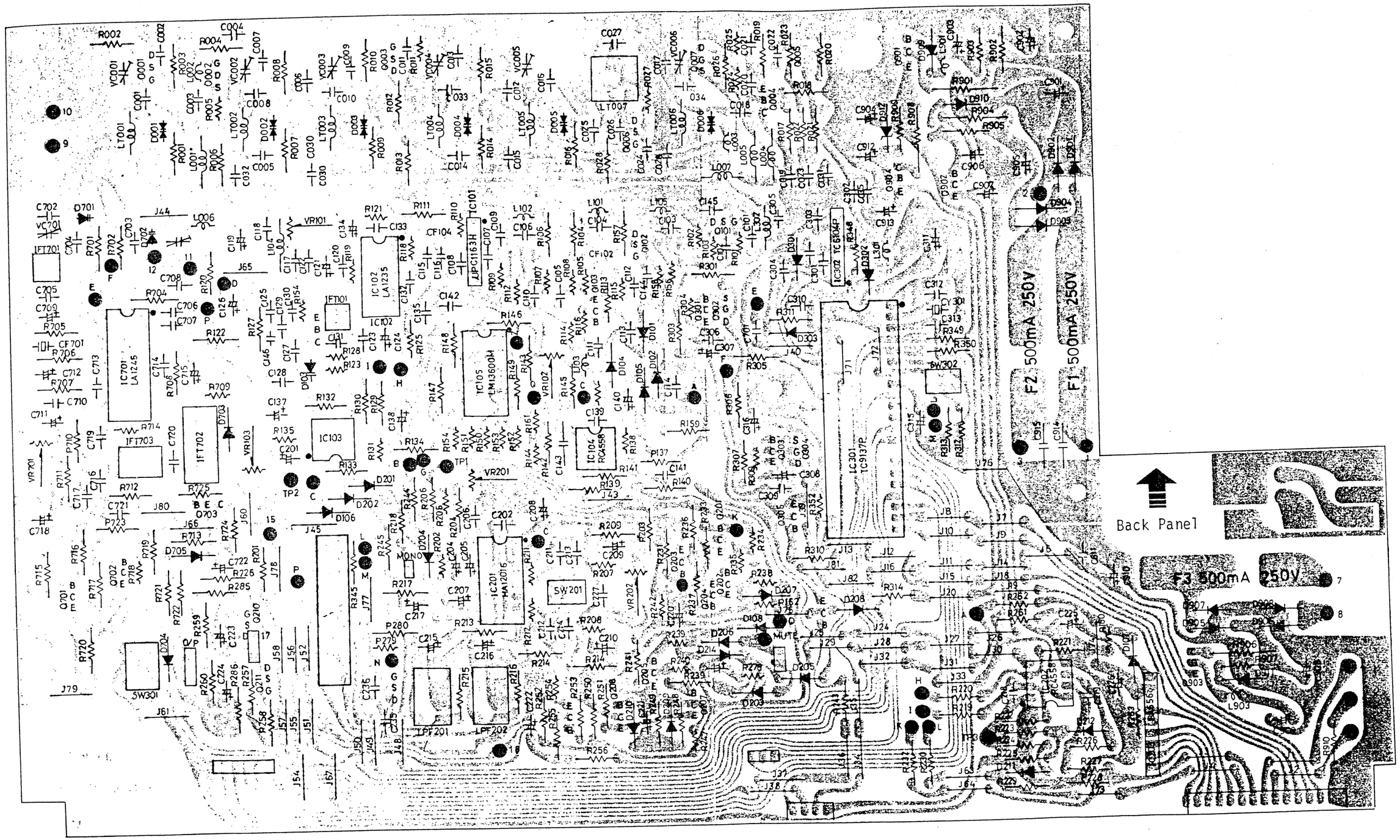
SW8011 IMPEDANCE SELECTORS SW.



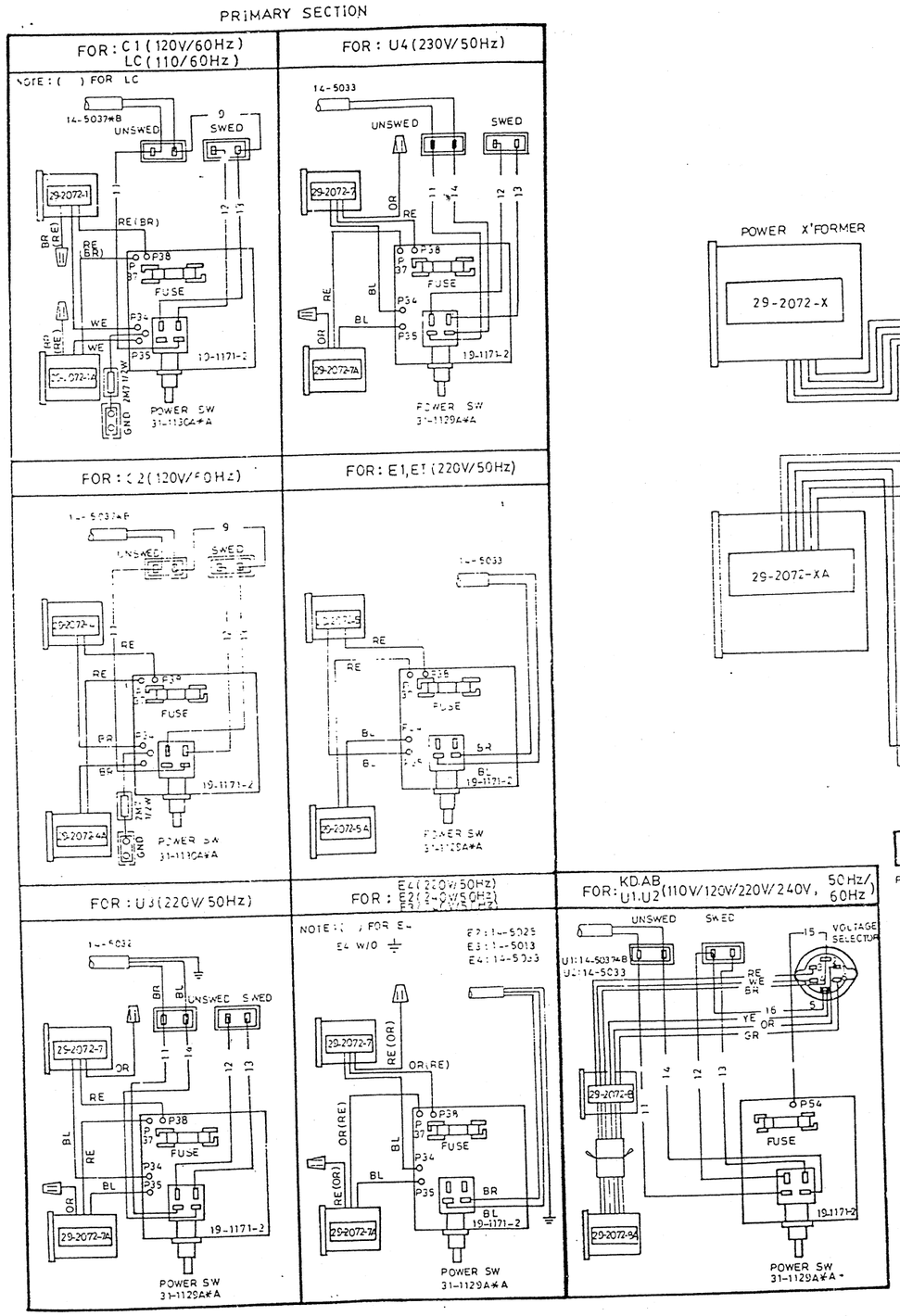
7150 TUNER / 4150 CIRCUIT DIAGRAM

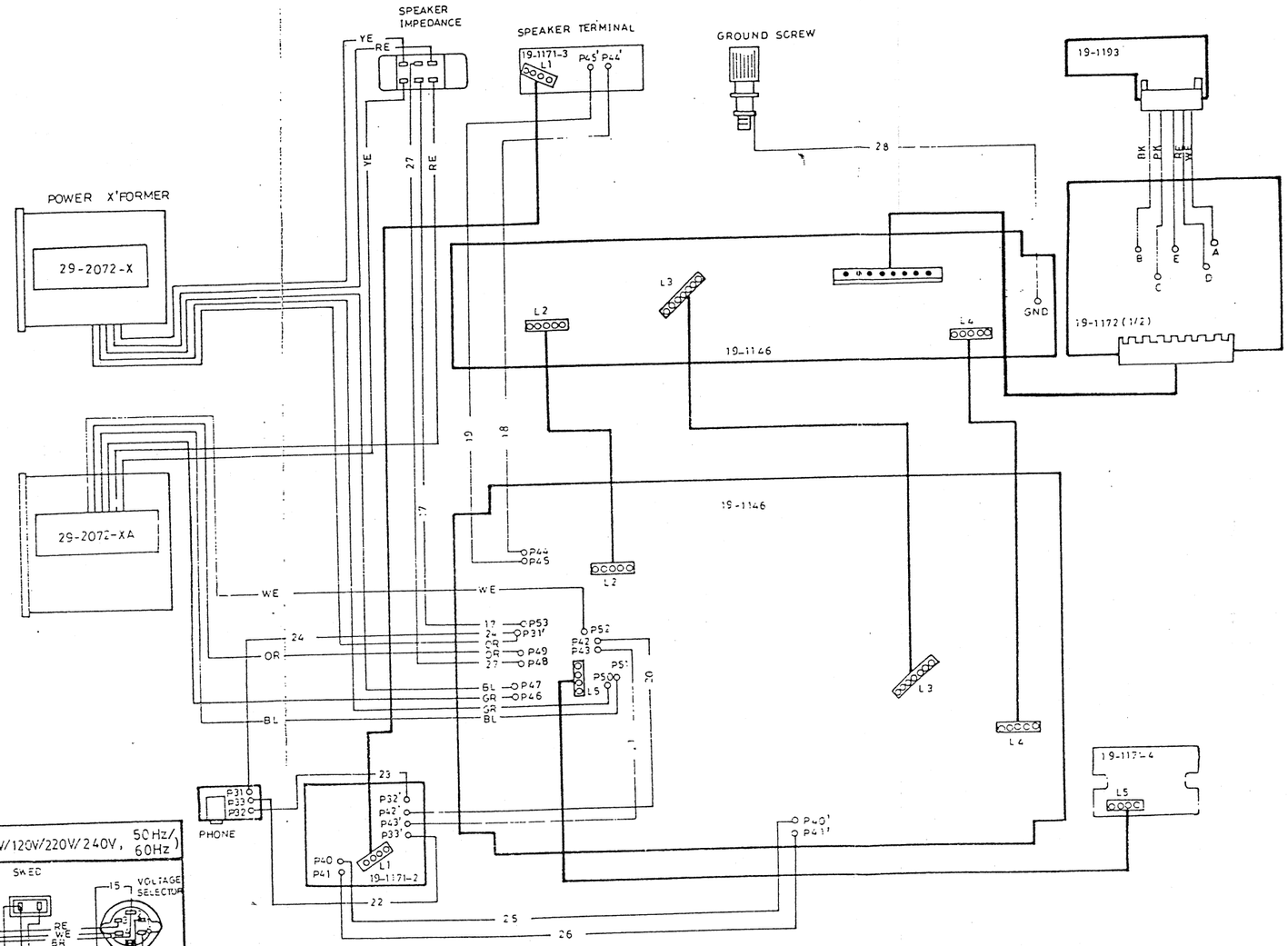


7150 TUNER/4150 PCB PARTS LOCATION (BOTTOM VIEW)



3150 WIRING DIAGRAM





WIRE COLOR ABBREVIATIONS :

BK - BLACK
BR - BROWN
RE - RED
OR - ORANGE
YE - YELLOW
GR - GREEN
BL - BLUE
WE - WHITE
PK - PINK