

**The Harman Kardon  
Model hk 560**

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**AM/FM/Stereo FM  
Solid State Receiver**

**Technical Manual**

**harman/kardon**

## PRECAUTIONS

1. Always disconnect the chassis from power line when soldering. Turning the power switch OFF is not enough. Power line leakage passing through the heating element may destroy the transistors.
2. Never attempt to do any work on the transistor amplifiers without first disconnecting the AC line cord and waiting until the power supply filter capacitors have discharged.
3. Replacement for output and driver transistors, if necessary, must be made from the same beta group as the original type.
4. If one output transistor burns out (open or short) always remove all the output transistors in that channel and check the bias adjustment, the control and other parts in the network with an ohmmeter before inserting a new transistor. All transistors in one channel will be destroyed if the base biasing circuit is open on the emitter end.
5. When mounting a replacement power transistor, be sure that the bottom of the flange, the mica insulators and the surface of the heat sink are free of foreign matter, for they may cause transistor failure.
6. Silicon grease must be applied between the transistor and the mica insulator, and between the mica insulator and the heat sink for better heat conduction.
7. Fuses must be replaced with size and type indicated. Use of other types can expose components to destructive current levels.

**NOTE TO WARRANTY STATIONS:** Printed circuit board assembly numbers are shown for reference only. Harman/Kardon does not normally supply assembled printed circuit boards.

**NOTE:** To speed handling of your order be sure to include both the model and serial numbers, in addition to the quantity, part number and part description of the items ordered. Orders from independent dealers, independent servicemen, and retail customers will be shipped on a cash in advance basis. Harman/Kardon reserves the right to substitute equivalent parts for those originally installed in this chassis. All parts should be ordered from Harman/Kardon, 55 Ames Court, Plainview, L. I., N. Y. 11803, Att: Parts Department.

# ALIGNMENT PROCEDURES

## AM ALIGNMENT PROCEDURES

### INSTRUMENTS

**REQUIRED:** \*AM Signal Generator modulated with 400Hz at 30%.  
 \*AM IF Sweep Generator.  
 \*Oscilloscope  
 \*V. T. V. M.

**NOTE:** \*Set function selector switch to AM position.  
 \*Connect signal to Standard Loop so as to radiate signals into AM antenna loop stick (L251).

Step	SIGNAL SOURCE		CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
	GENERATOR	FREQUENCY				
1	AM IF sweep generator	455 kHz	V. T. V. M. and oscilloscope to R267 (4.7 k ohm)	Quiet Point on band	T251	Maximum output and best symmetry on oscilloscope
2					T252	
3	Rotate tuning control to extreme left mechanical stop, and check for dial pointer at center of "0" on log scale.					
4	Repeat steps 1 and 2 for best sensitivity.					
5	AM signal generator	600 kHz	V. T. V. M. and oscilloscope to R267 (4.7 k ohm)	600 kHz	L252	Maximum output
6		1400 kHz		1400 kHz	TC202	
7	Repeat steps 4 and 5 for best dial accuracy.					
8	AM signal generator	600 kHz	V. T. V. M. and oscilloscope to R267 (4.7 k ohm)	600 kHz	L251	Maximum output
9		1400 kHz		1400 kHz	TC201	
10	Repeat steps 7 and 8 for best sensitivity.					

## TUNING METER ADJUSTMENT

### INSTRUMENTS

**REQUIRED:** \*FM Signal Generator modulated with 1000Hz at 100%.  
 \*Oscilloscope.  
 \*V. T. V. M..

**NOTE:** \*Set function selector switch to FM position.  
 \*Connect signal source to FM antenna terminals.

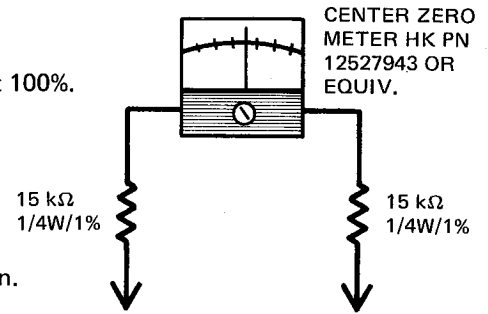
Step	SIGNAL SOURCE		CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
	FREQUENCY	STRENGTH				
1	98 MHz	2 $\mu$ V (6 dB)	V. T. V. M. and oscilloscope to tape out 1 jack	Near 98 MHz	Tuning control	Maximum tuning meter indication
2		1 mV (60 dB)				

## FM ALIGNMENT PROCEDURES

### INSTRUMENTS

**REQUIRED:** \*FM Signal Generator modulated with 1000Hz at 100%.  
 \*Oscilloscope.  
 \*Distortion Meter.  
 \*Center Zero Meter (Described at right).  
 \*V. T. V. M..

**NOTE:** \*Set function selector switch to FM position.  
 \*Set FM muting switch to OFF (button out) position.  
 \*Connect signal source to FM antenna terminals.



Step	SIGNAL SOURCE		CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
	FREQUENCY	STRENGTH				
1			Oscilloscope to R217 (10 k ohm)	Quiet Point on band	T101	Maximum noise
2			Center zero meter to R214 (47 k ohm) and LP108		T201	Indicating zero on center zero meter
3	98 MHz	1 $\mu$ V (60 dB)	Oscilloscope to tape out 1 jack	Near 98 MHz	Tuning control	
4			Distortion meter to tape out 1 jack	Preset point	T202	Minimum reading on distortion meter
5	Repeat steps 2 through 4 until no further improvement is noticed.					
6	90 MHz	2 $\mu$ V (6 dB)	V. T. V. M. and oscilloscope to tape out 1 jack	90 MHz	L105	Maximum output
7	106 MHz			106 MHz	TC103	
8	Repeat steps 6 and 7 until no further improvement is noticed.					
9	90 MHz	1 $\mu$ V (0 dB)	V. T. V. M. and oscilloscope to tape out 1 jack	90 MHz	L102, L103	Maximum output
10	106 MHz			106 MHz	TC101, TC102	
11	Repeat steps 9 and 10 until no further improvement is noticed.					

## IN TUNE INDICATOR BANDWIDTH AND MUTING SENSITIVITY ADJUSTMENTS

### INSTRUMENTS

**REQUIRED:** \*FM Signal Generator modulated with 1000Hz at 100%.  
 \*Oscilloscope.  
 \*V. T. V. M..  
 \*Frequency Counter

**NOTE:** \*Set function selector switch to FM position.  
 \*Set FM muting switch to ON (button in) position.  
 \*Connect signal source to FM antenna terminals.

Step	SIGNAL SOURCE		CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
	FREQUENCY	STRENGTH				
1	98 MHz	50 $\mu$ V (6 dB)	V. T. V. M. and oscilloscope to tape out 1 jack	Near 98 MHz	Tuning control	Maximum tuning meter indication
2		3.16 $\mu$ V (10 dB)				
3		1 mV (60 dB)	V. T. V. M. and oscilloscope to tape out 1 jack		FM signal generator	Increase generator frequency until signal disappears from oscilloscope and note frequency on counter
4						Decrease generator frequency until signal disappears from oscilloscope and note frequency on counter
5					VR202	Repeat steps 3 and 4, and adjust until the difference of frequencies from step 3 and 4 becomes 125 k Hz $\pm$ 15 k Hz

## FM STEREO INDICATOR ADJUSTMENT

### INSTRUMENTS

**REQUIRED:** \*FM Stereo Signal Generator.  
 \*Oscilloscope.  
 \*V. T. V. M..

**NOTE:** \*Set function selector switch to STEREO FM position.  
 \*Connect signal source to FM antenna terminals.  
 \*Set main signal OFF and Pilot signal (10%) ON of FM Stereo signal generator.

Step	SIGNAL SOURCE		CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
	FREQUENCY	STRENGTH				
1	98 MHz	2 $\mu$ V (6 dB)	V. T. V. M. and oscilloscope to tape out 1 jack	Near 98 MHz	Tuning control	Maximum tuning meter indication
2		25 $\mu$ V (28 dB)				

## SEPARATION ADJUSTMENT

### INSTRUMENTS

**REQUIRED:** \*FM Stereo Signal Generator.  
\*Oscilloscope  
\*V. T. V. M..

**NOTE:** \*Set function selector switch to STEREO FM position.  
\*Connect signal source to FM antenna terminals.

Step	SIGNAL SOURCE		CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
	FREQUENCY	STRENGTH				
1	Set main signal OFF and pilot signal (10%) ON of FM stereo signal generator.					
2	98 MHz	2 $\mu$ V (6 dB)	V. T. V. M. and oscilloscope to tape out 1 jack	Near 98 MHz	Tuning control	Maximum tuning meter indication
3		1 mV (60 dB)	V. T. V. M. to Rch tape out 1 jack	Preset point	VR302	Minimum output; Compromise so that left minimum = right minimum $\pm$ 3dB
4			V. T. V. M. to Lch tape out 1 jack		VR302	
5	Set main signal ON and pilot signal (10%) ON of FM stereo signal generator.					
6	98 MHz (Right signal)	1 mV (60 dB)	V. T. V. M. to Lch tape out 1 jack	Preset point	VR303	Minimum output; Compromise so that left minimum = right minimum $\pm$ 3dB
7	98 MHz (Left signal)		V. T. V. M. to Rch tape out 1 jack		VR303	

## MPX OSCILLATION FREQUENCY ADJUSTMENT

### INSTRUMENTS

**REQUIRED:** \*Frequency Counter.  
\*FM Signal Generator.  
\*Oscilloscope.  
\*V. T. V. M..

**NOTE:** \*Set function selector switch to STEREO FM position.  
\*Connect signal source to FM antenna terminals.

Step	SIGNAL SOURCE		CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
	FREQUENCY	STRENGTH				
1	98 MHz	2 $\mu$ V (6 dB)	V. T. V. M. and oscilloscope to tape out 1 jack	Near 98 MHz	Tuning control	Maximum tuning meter indication
2	98 MHz/Mono (No modulation)	1 mV (60 dB)	Frequency Counter to R333 (100 k ohm)	Preset point	VR301	76 kHz $\pm$ 200 Hz

### OUTPUT DC VOLTAGE ZERO ADJUSTMENT

**INSTRUMENT:** \*D. C. V. T. V. M.

**NOTE:** \*Set function selector switch to AUX position.  
\*Set volume control to minimum position.  
\*Set Speaker 1 switch to ON (button in) position.

Step	CONNECT OUTPUT METER TO	ADJUST	ADJUST FOR
1	D. C. V. T. V. M. to Rch terminal of speaker system 1	VR401	0 ± 10mVDC
2	D. C. V. T. V. M. to Lch terminal of speaker system 1	VR402	

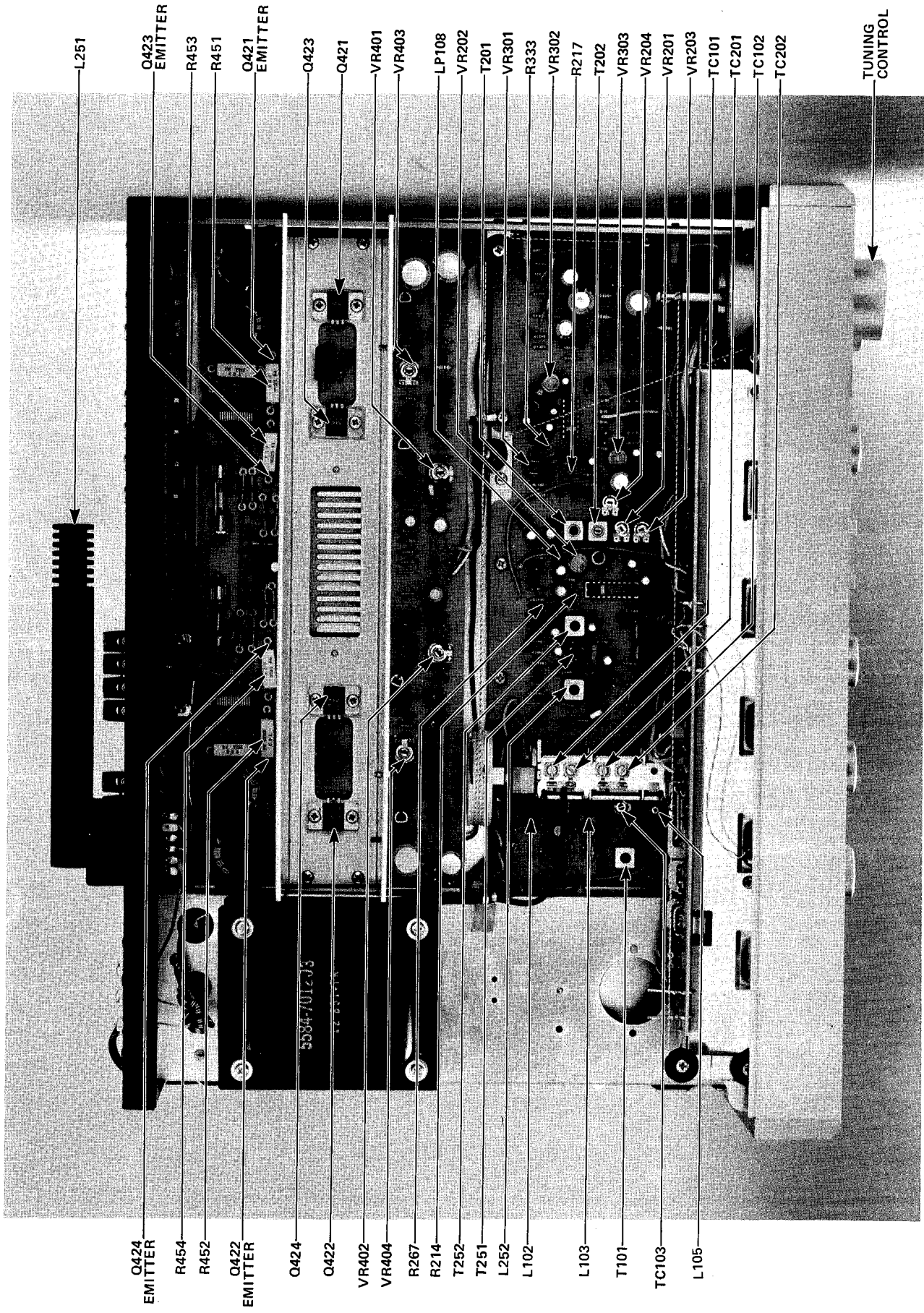
### POWER AMPLIFIER IDLING ADJUSTMENT

**INSTRUMENT:** \*D. C. V. T. V. M.

**NOTE:** \*Set function selector switch ot AUX position.  
\*Set volume control to minimum position.

Step	CONNECT OUTPUT METER TO	ADJUST	ADJUST FOR
1	D. C. V. T. V. M. to Q421 (emitter) and Q423 (emitter)	VR403	33 mV ± 1.6 mV
2	D. C. V. T. V. M. to Q422 (emitter) and Q424 (emitter)	VR404	

# ALIGNMENT POINTS



L251

Q423  
EMITTER

R453

R451

Q421  
EMITTER

O423

O421

VR401

VR403

LP108

VR202

T201

VR301

R333

VR302

R217

T202

VR303

VR204

VR201

VR203

TC101

TC201

TC102

TC202

TUNING  
CONTROL

Q424  
EMITTER

R454

R452

Q422  
EMITTER

O424

O422

VR402

VR404

R267

R214

T252

T251

L252

L102

L103

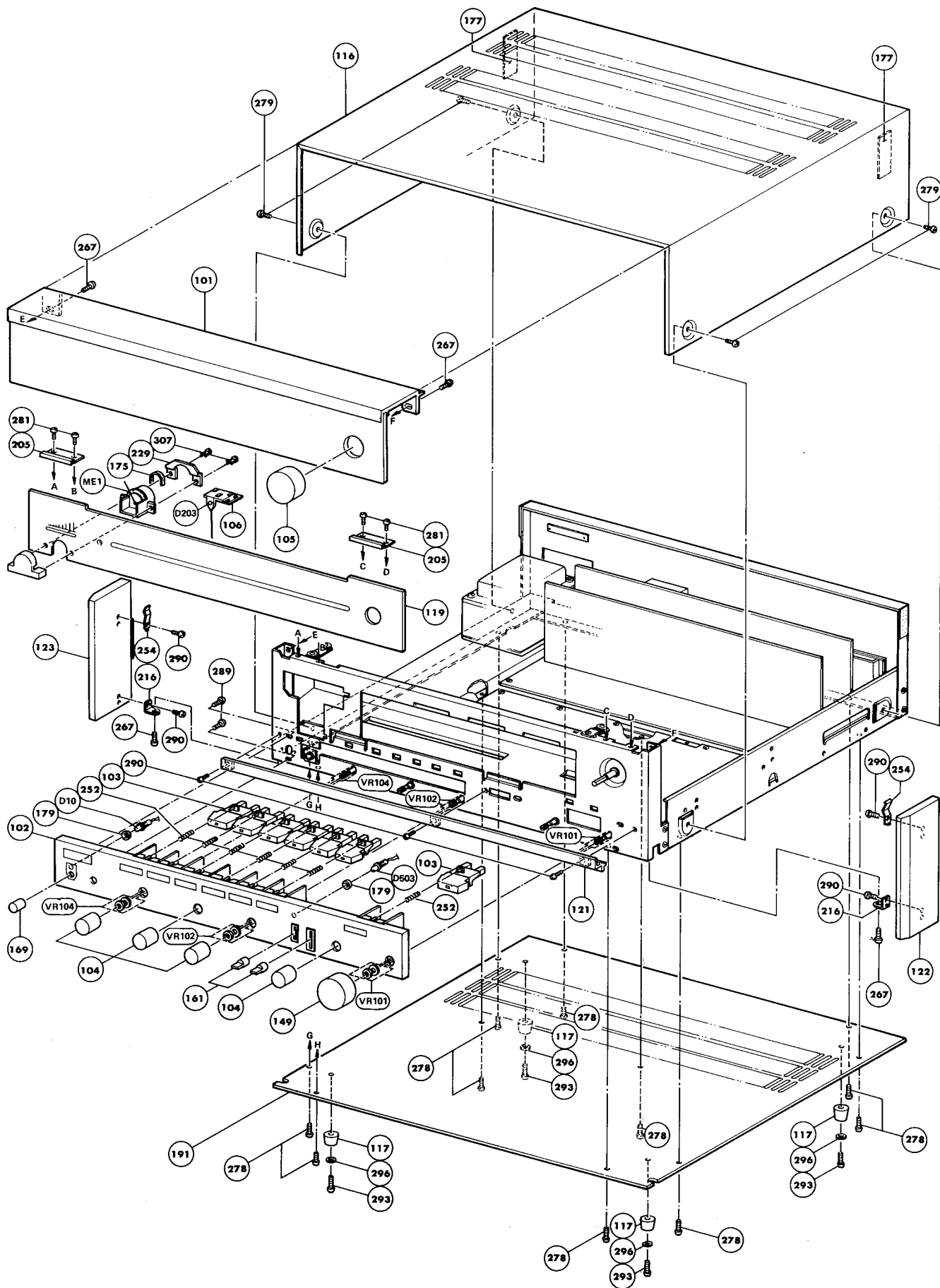
T101

TC103

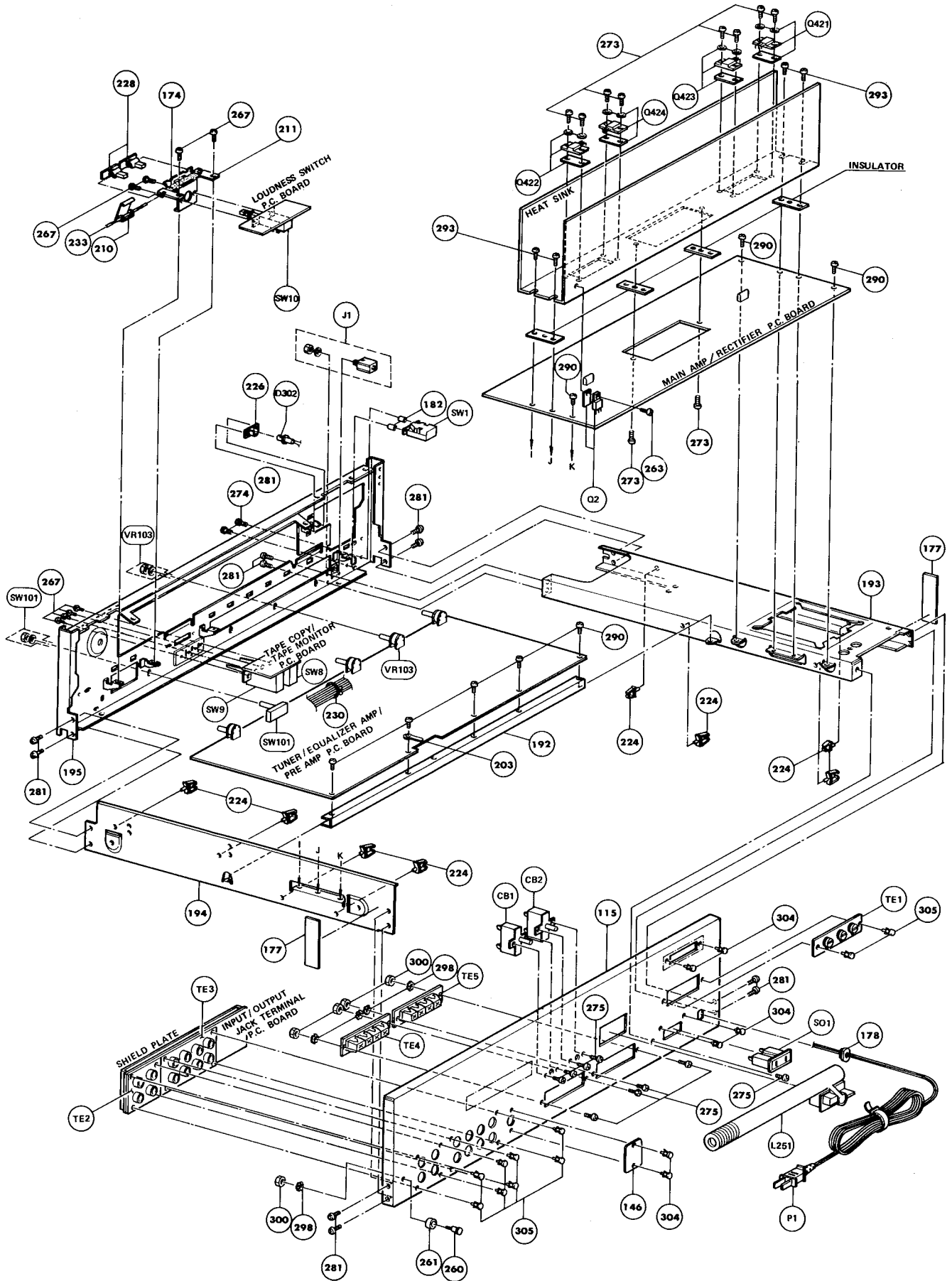
L105



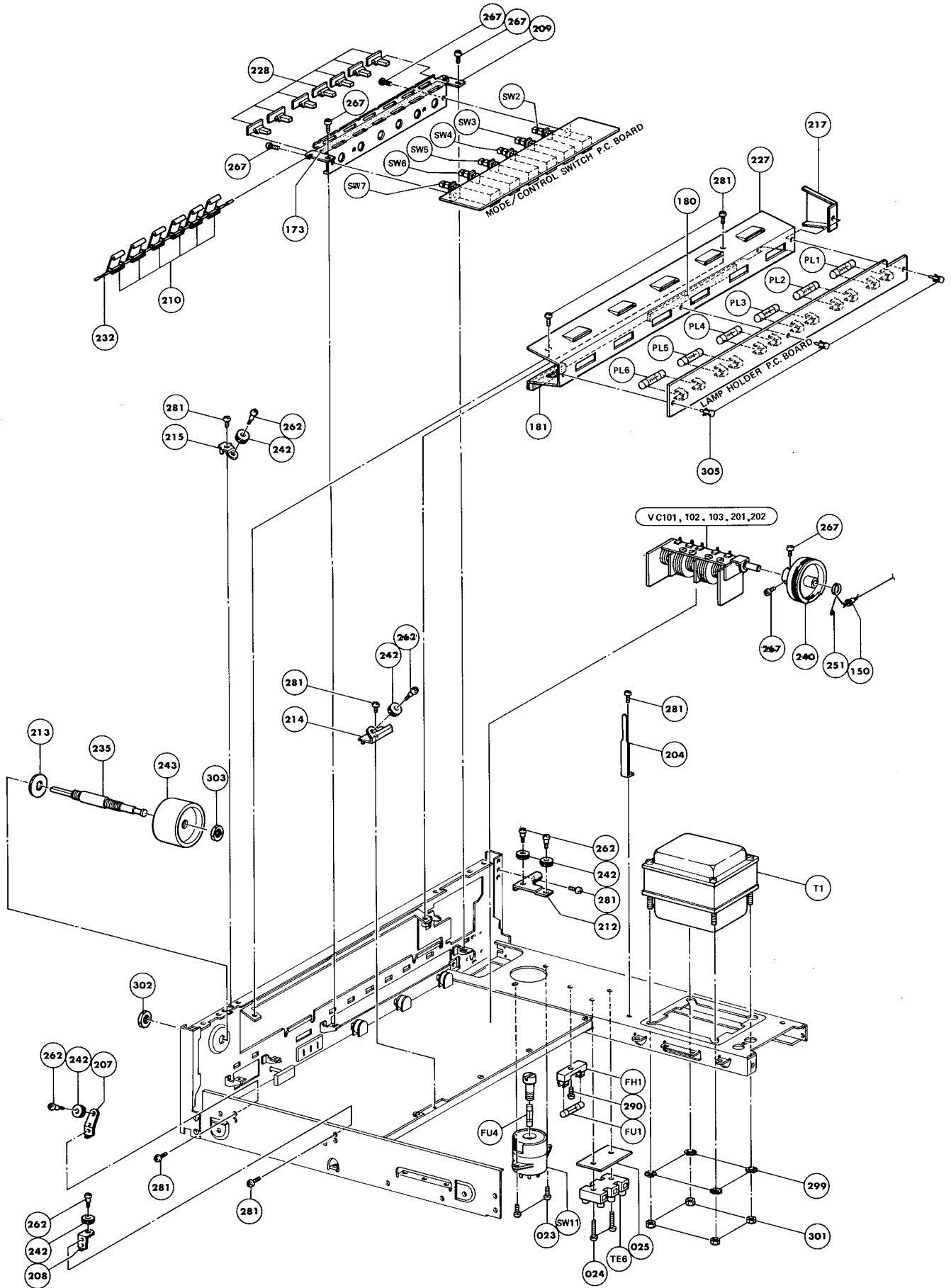
# GENERAL UNIT EXPLODED VIEW





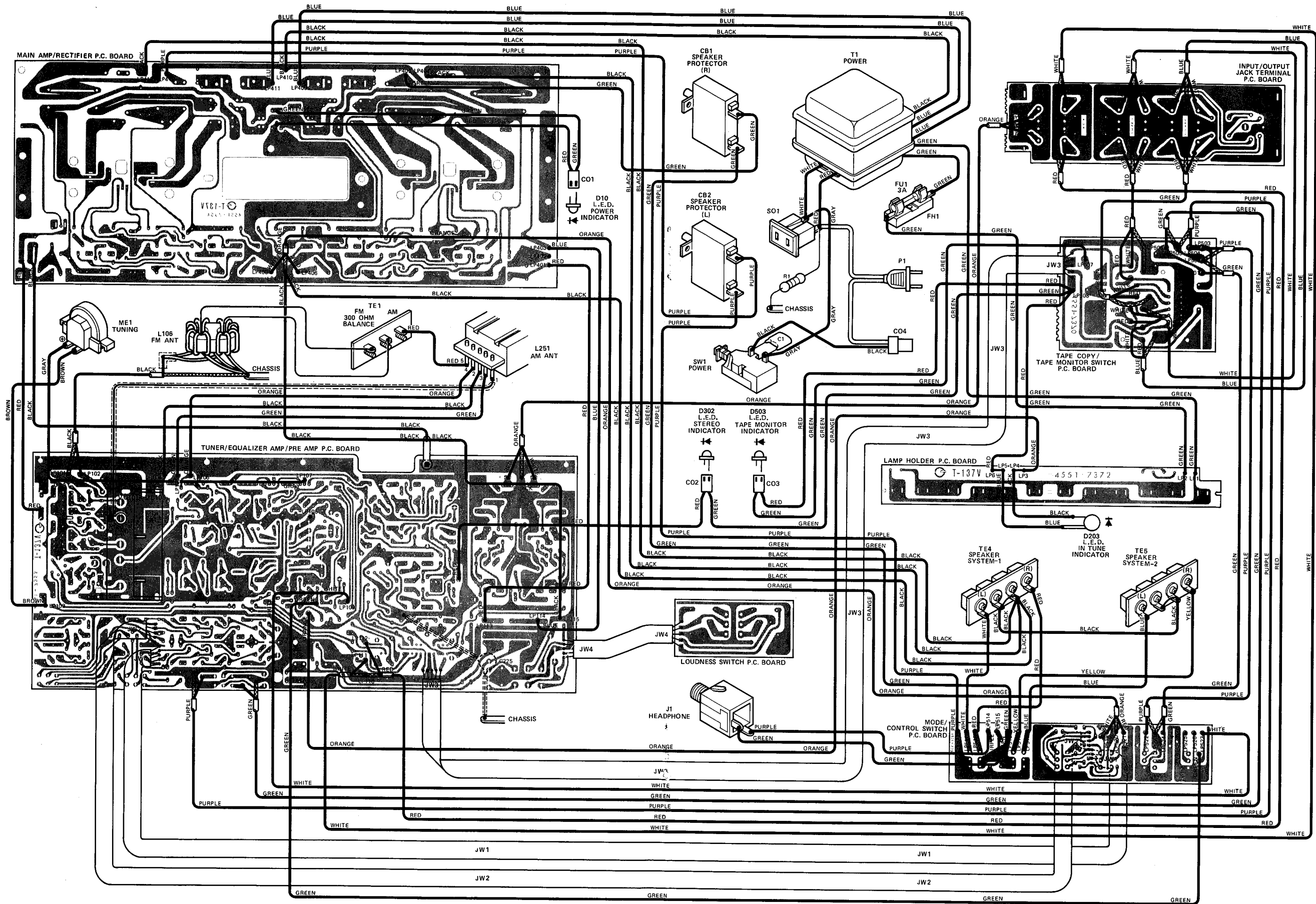


MULTI

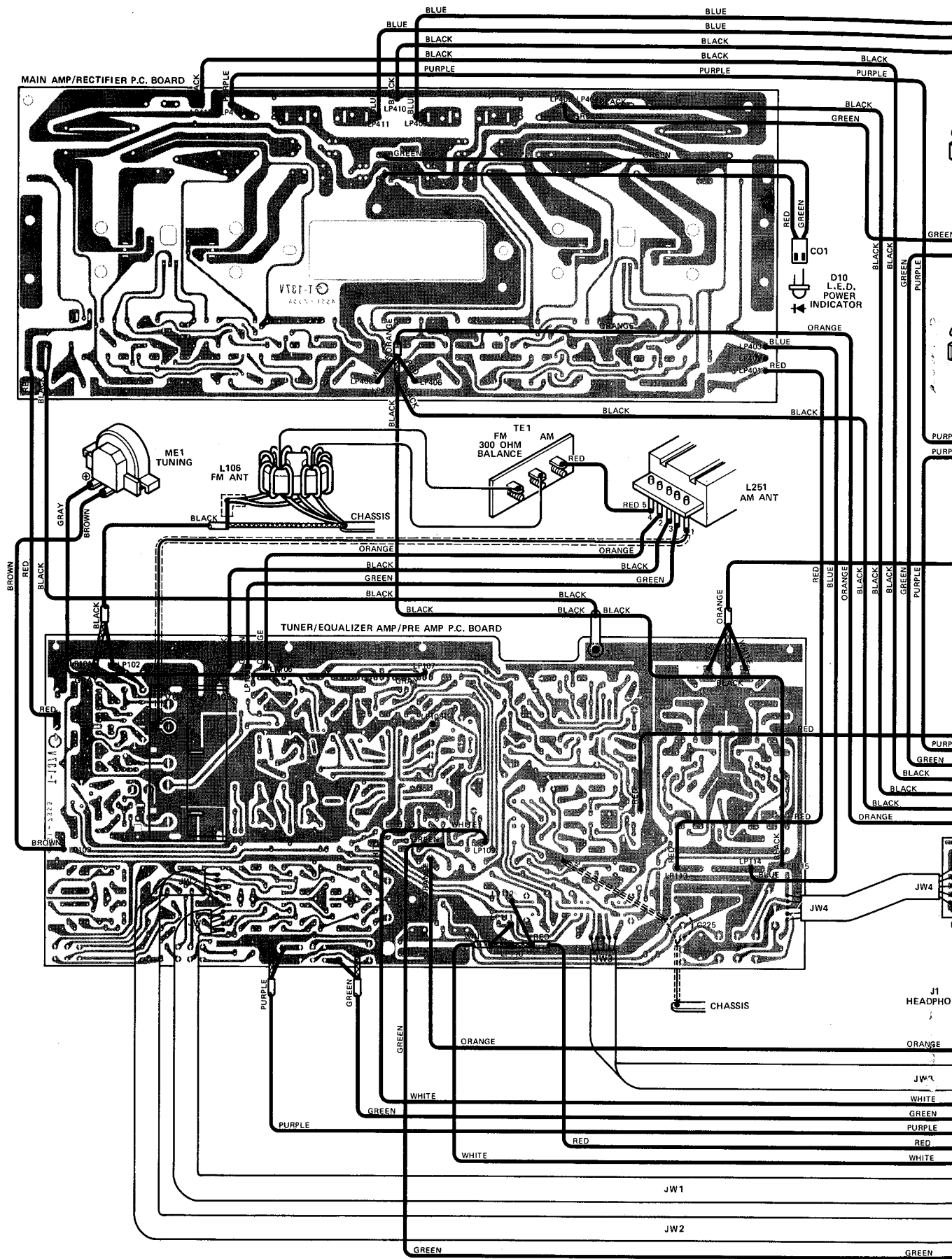




WIRING DIAGRAM



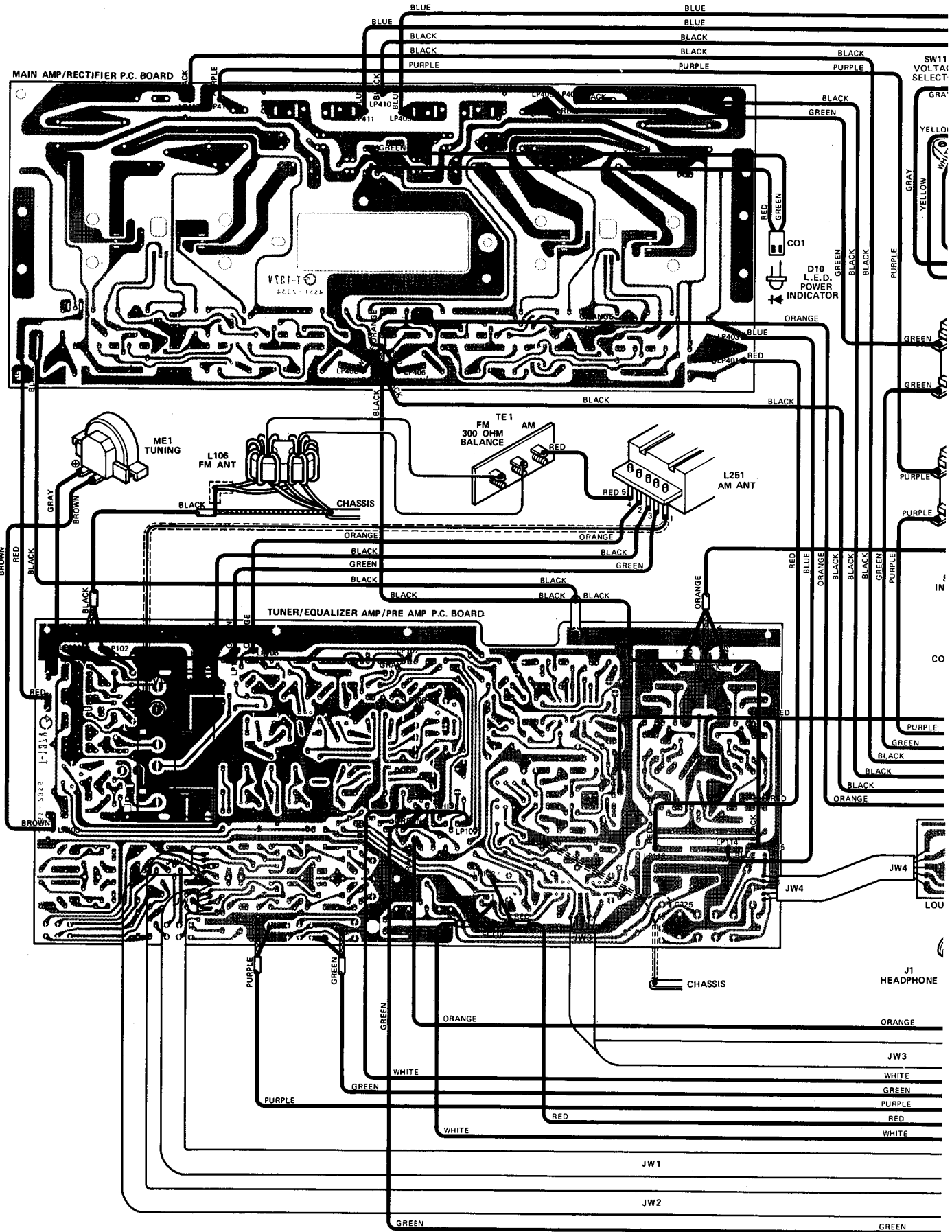
# WIRING DIAGRAM

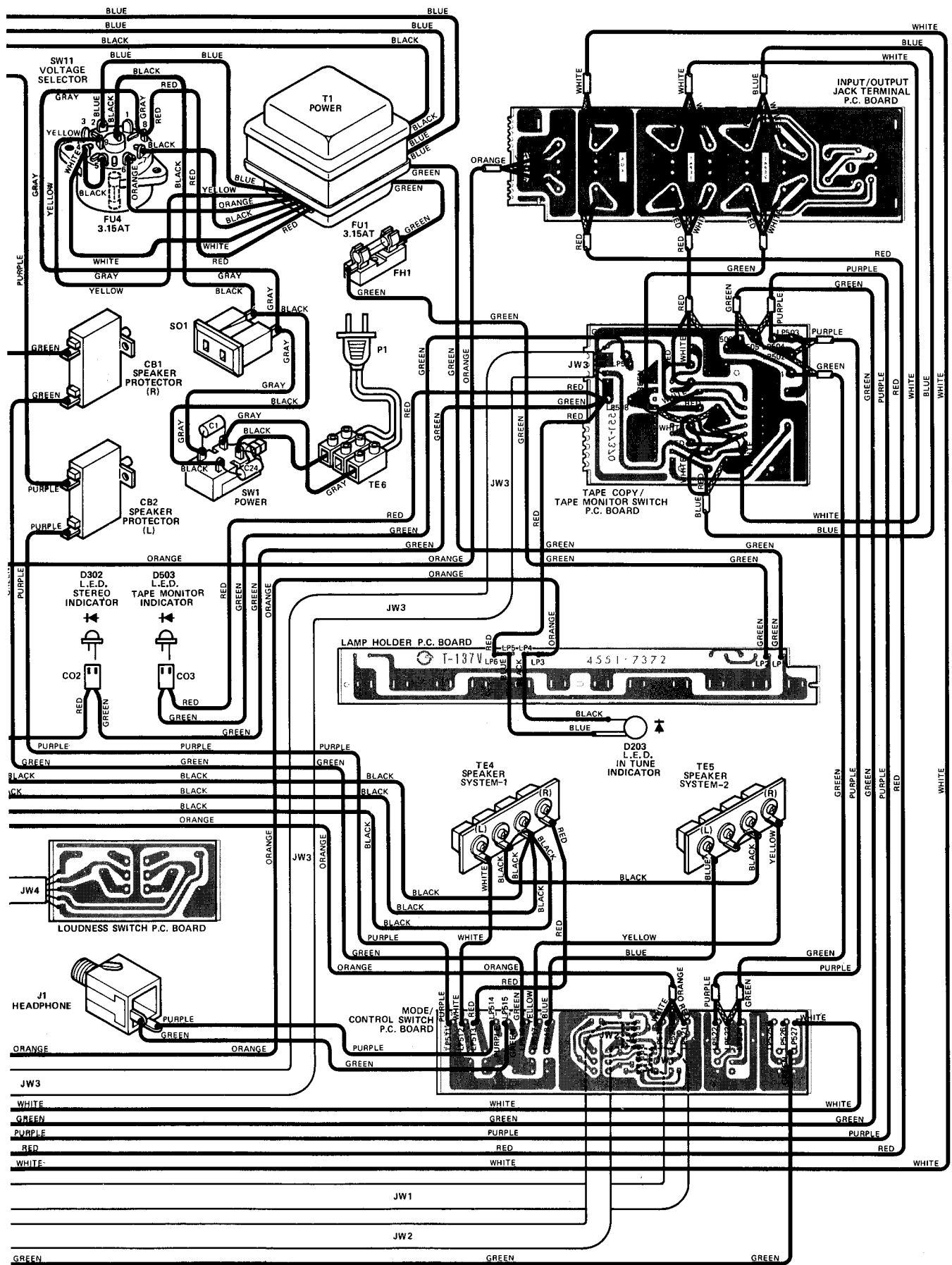




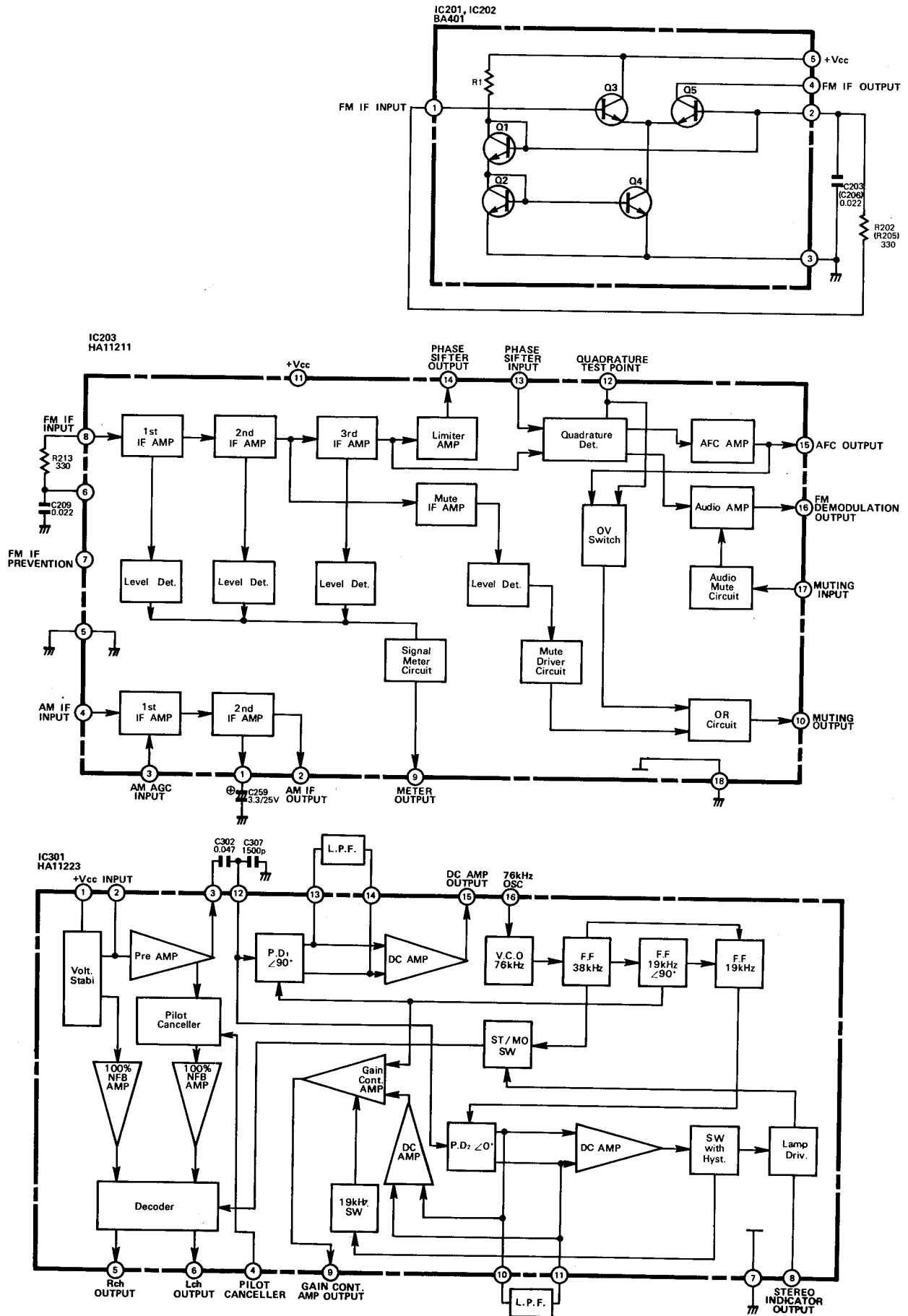


# WIRING DIAGRAM MULTI

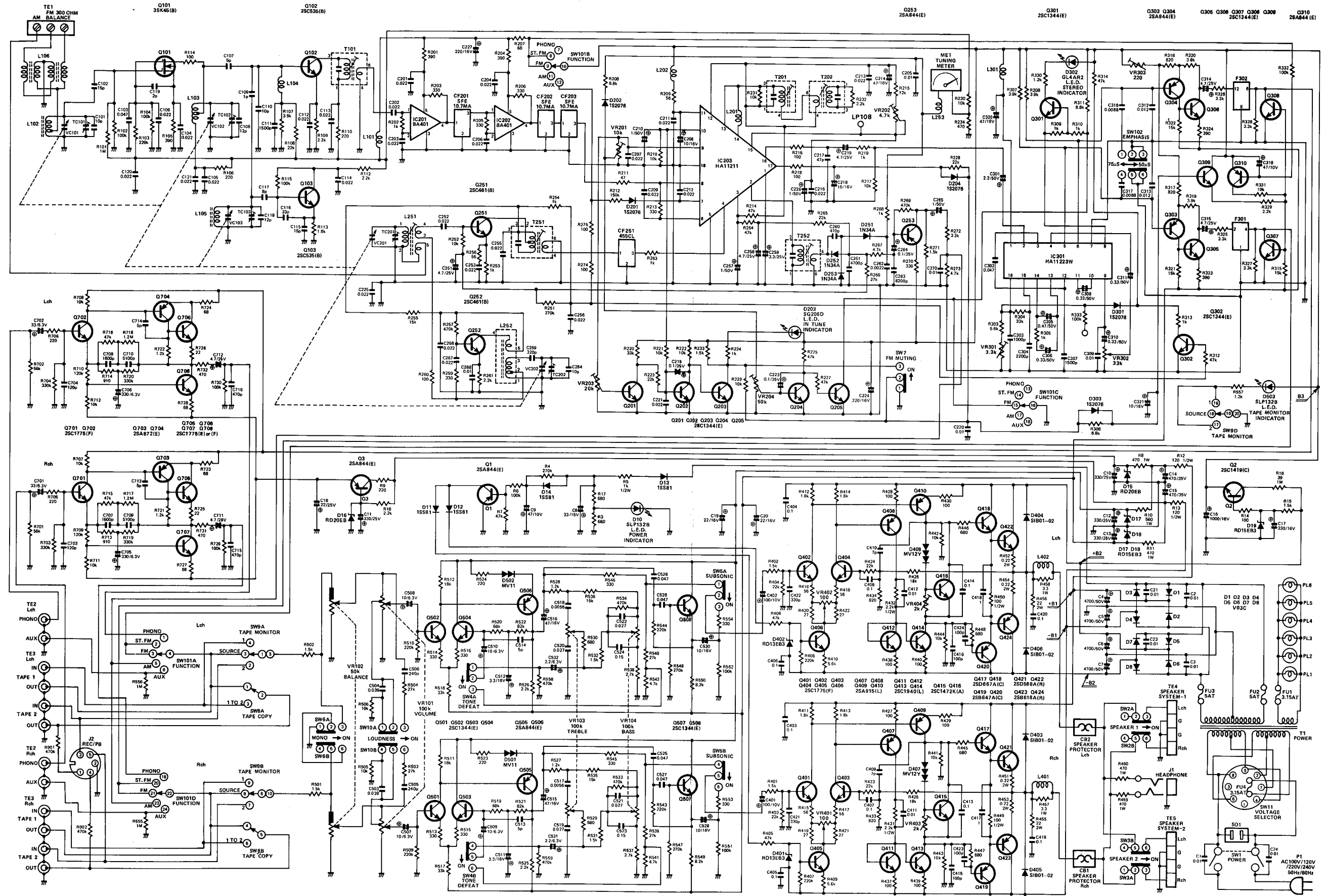




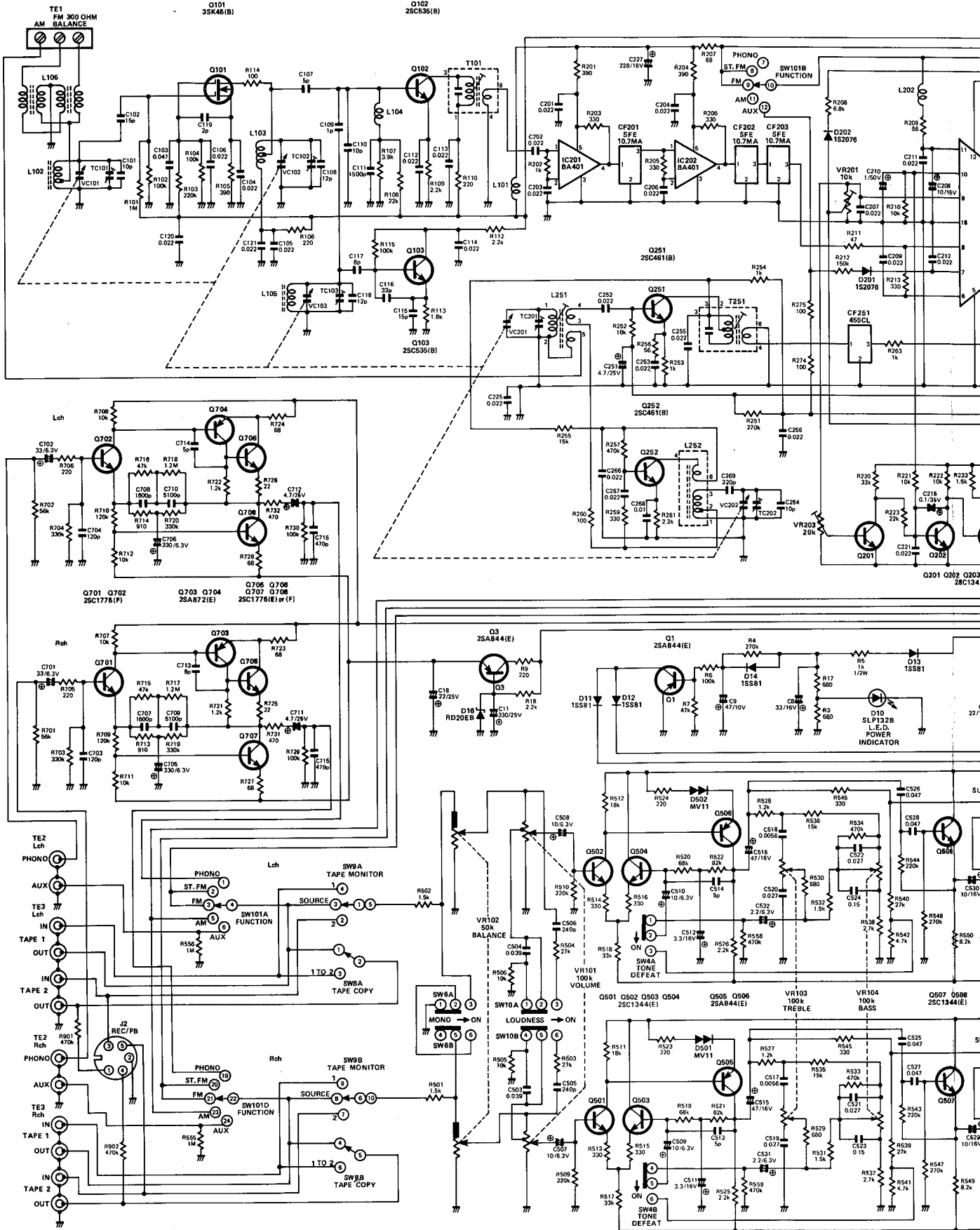
# IC BLOCK DIAGRAM



# SCHEMATIC DIAGRAM MULTI



# SCHEMATIC DIAGRAM MULTI



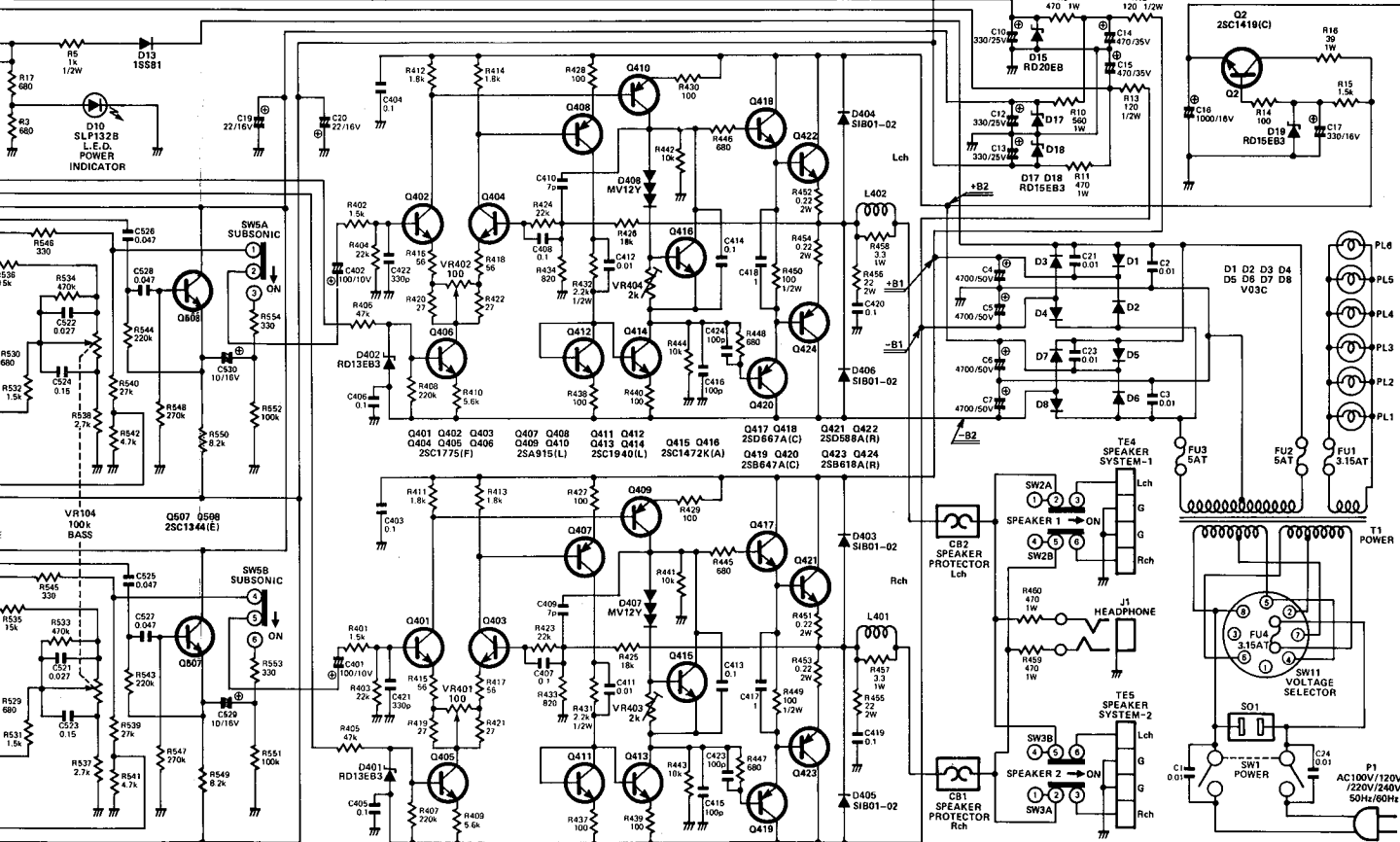
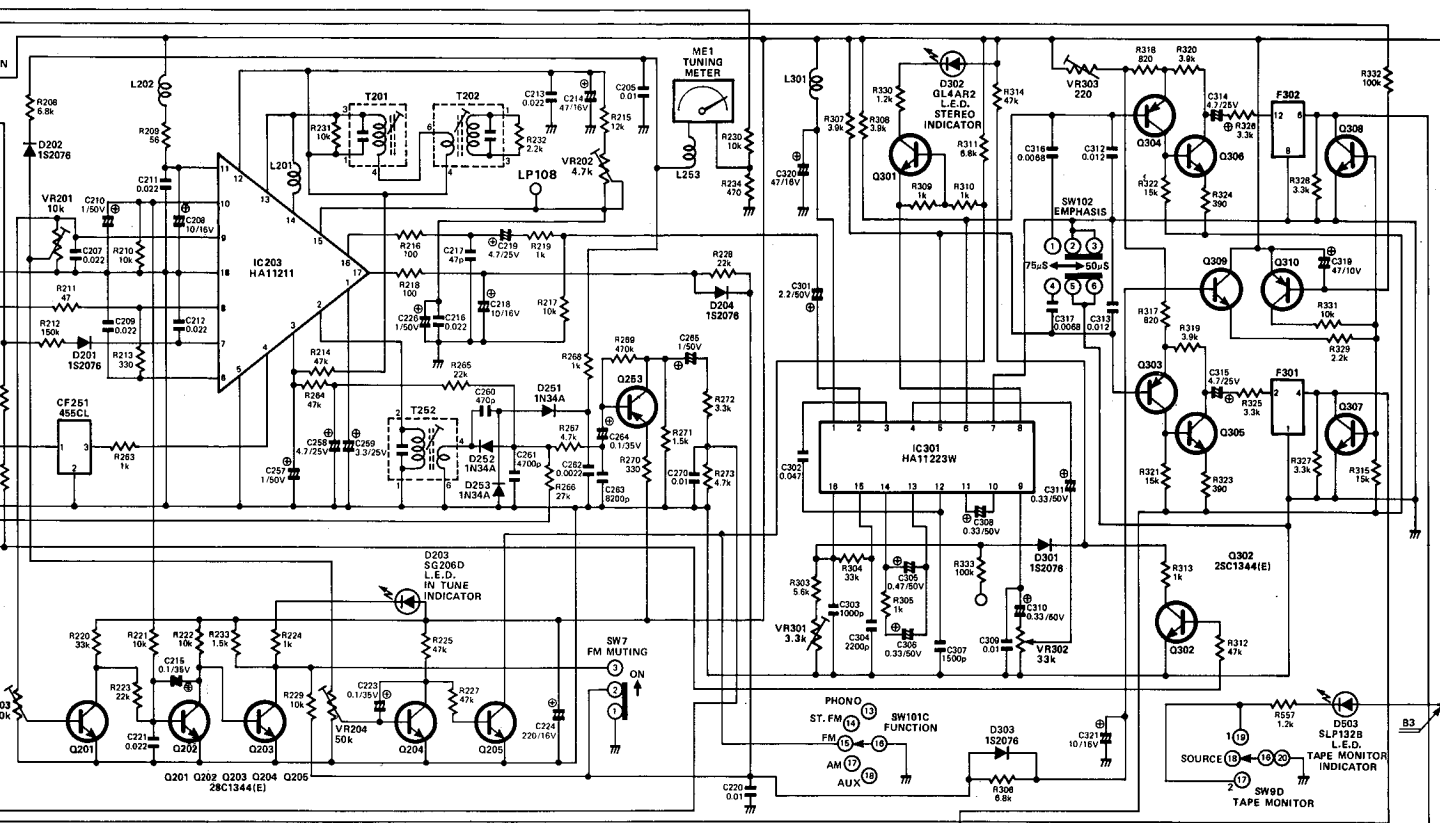
Q253  
2SA844(E)

Q301  
2SC1344(E)

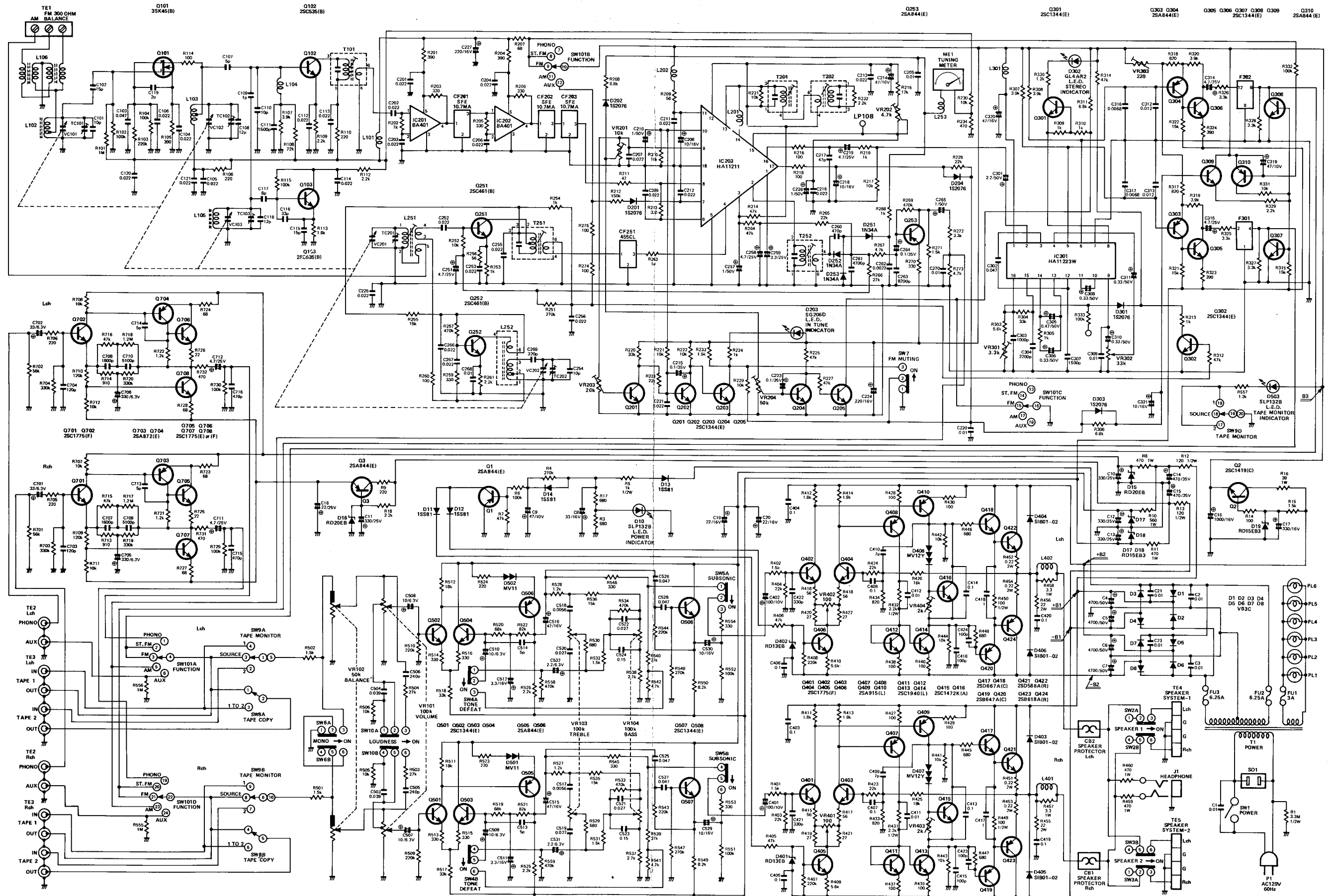
Q303 Q304  
2SA844(E)

Q305 Q308 Q307 Q308 Q309  
2SC1344(E)

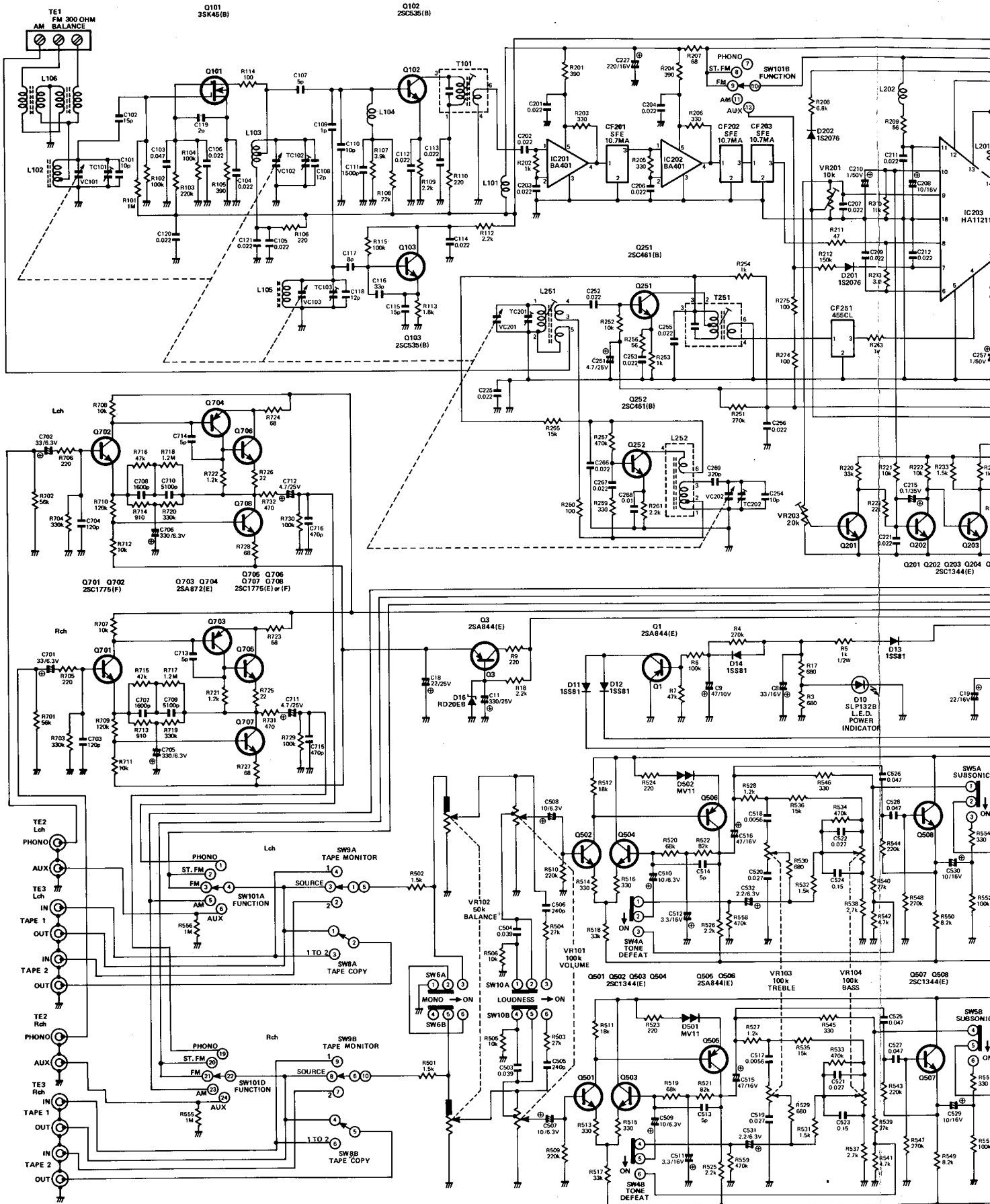
Q310  
2SA844(E)



**SCHEMATIC DIAGRAM REGULAR**



# SCHEMATIC DIAGRAM REGULAR





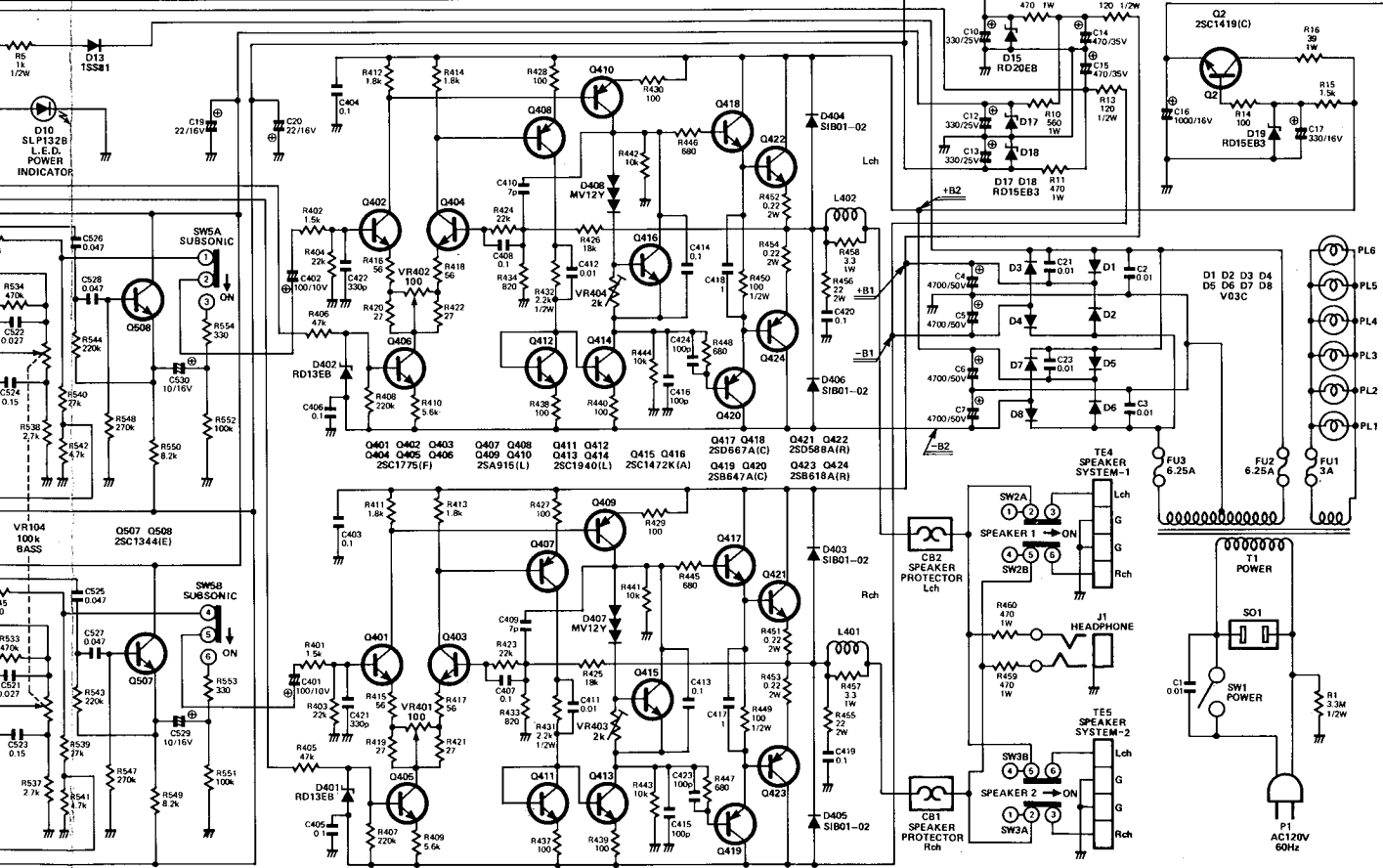
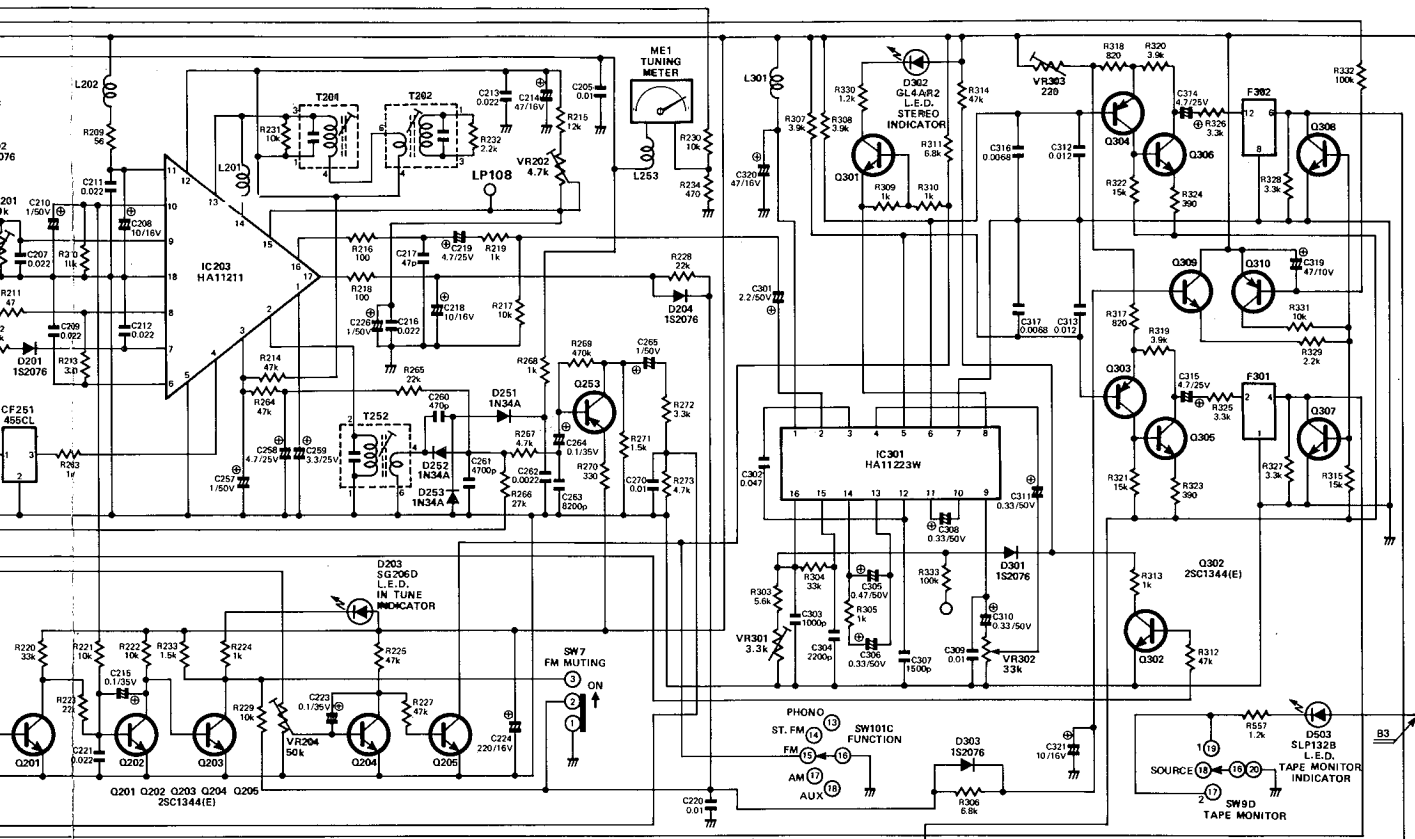
Q253  
2SA844(E)

Q301  
2SC1344(E)

Q303 Q304  
2SA844(E)

Q305 Q306 Q307 Q308 Q309  
2SC1344(E)

Q310  
2SA844(E)



# SCHEMATIC NOTES AND VOLTAGES

- NOTES:** Unless otherwise specified.
1. All resistors are 1/4 watt, ±5%. Values are in ohms. K=1000 M=1000k.
  2. All capacitances values are in MF. PF=MMF.
  3. Function selector switch (SW101) is in FM position.

## VOLTAGE CHART

AC120V      Volume Control at Minimum  
 No Signal      Tone Controls at Mechanical Center  
 Chassis Ground

+B1 ..... +38V  
 -B1 ..... -38V

+B2 ..... +38V  
 -B2 ..... -38V  
 B3 ..... +13.6V

## FM POSITION

	base	emitter	collector
Q1	-0.63V	0V	0V
Q2	+14.2V	+13.6V	35V
Q3	-20.0V	-19.4V	-26.3V
Q102	+1.8V	+1.3V	+12.3V
Q103	+4.5V	+4.0V	+7.4V
Q201	+0.16V	0V	+0.9V
Q202	+0.69V	0V	0V
Q203	0V	0V	+11.9V
Q204	0V	0V	+7.1V
Q205	+0.66V	0V	+0.05V
Q301	+0.05V	0V	+12.4V
Q302	+0.13V	0V	+13.5V
Q303, 304	+10.0V	+11.6V	-12.4V
Q305, 306	-12.4V	-13.0V	-2.5V
Q307, 308	+2.4V	0V	0V
Q309	0V	-0.6V	+13.6V
Q310	+13.5V	+13.6V	+0.13V
Q401, 402	-0.04V	-0.62V	+36.0V
Q403, 404	-0.03V	-0.62V	+36.0V
Q405, 406	-25.3V	-25.9V	-0.7V
Q407, 408	+36.0V	+36.6V	-8.0V
Q409, 410	+36.0V	+36.6V	+1.2V
Q411, 412	-36.4V	-36.8V	-36.4V
Q413, 414	-36.4V	-36.8V	-1.15V
Q415, 416	-0.5V	-1.15V	+1.2V
Q417, 418	+1.15V	+0.6V	+38.0V
Q419, 420	-1.12V	-0.6V	-38.0V
Q421, 422	+0.6V	+0.02V	+38.0V
Q423, 424	-0.6V	-0.01V	-38.0V
Q501, 502	0V	-0.6V	+11.0V
Q503, 504	0V	-0.6V	+15.0V
Q505, 506	+11.0V	+11.6V	0V
Q507, 508	-0.5V	-1.1V	+15.0V
Q701, 702	0V	-0.6V	+18.9V
Q703, 704	+18.9V	+19.5V	+3.5V
Q705, 706	+3.5V	+2.8V	+19.5V
Q707, 708	-18.0V	-18.6V	+2.6V

## IC201

1.....+1.4V  
 2.....+1.4V  
 3..... 0V  
 4.....+9.5V  
 5.....+10V

## IC301

1.....+13.8V  
 2..... +3.5V  
 3..... +4.8V  
 4..... +0.7V  
 5.....+10.0V  
 6.....+10.0V  
 7..... 0V  
 8..... 0V

## IC202

1.....+1.3V  
 2.....+1.3V  
 3..... 0V  
 4.....+9.5V  
 5.....+10V

9..... +5.5V  
 10..... +2.7V  
 11..... +2.7V  
 12..... +2.7V  
 13..... +2.7V  
 14..... +2.7V  
 15..... +4.3V  
 16..... +3.0V

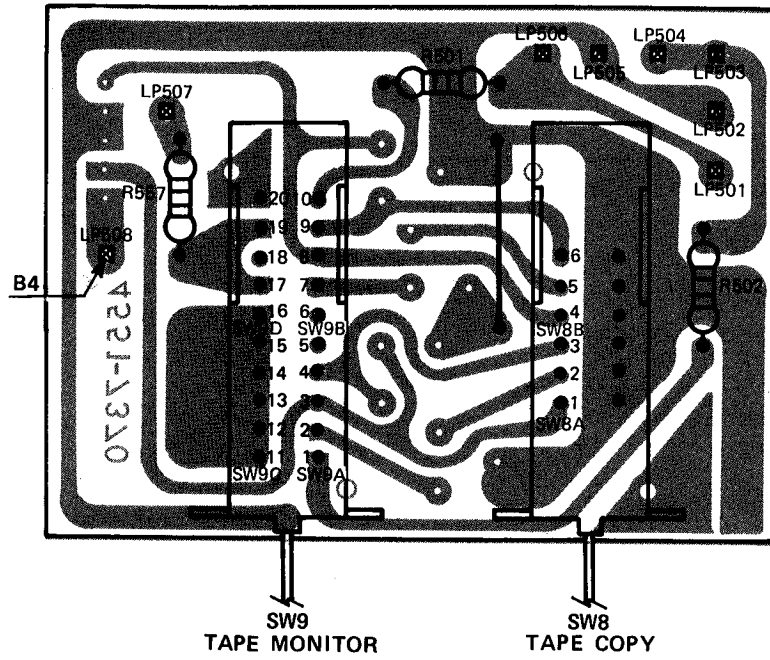
## IC203

	FM	AM
1.	+2.6V	+2.6V
2.	0V	0V
3.	+3.4V	+3.4V
4.	+0.7V	+0.7V
5.	0V	0V
6.	+2.0V	+2.7V
7.	+2.0V	+2.7V
8.	+2.0V	+2.7V
9.	0V	.0V
10.	+5.0V	+5.2V
11.	+11.8V	+11.7V
12.	+5.6V	+5.6V
13.	+5.6V	+5.6V
14.	+5.6V	+5.6V
15.	+7.4V	+6.5V
16.	+7.4V	+6.5V
17.	0V	0V
18.	0V	0V

## AM POSITION

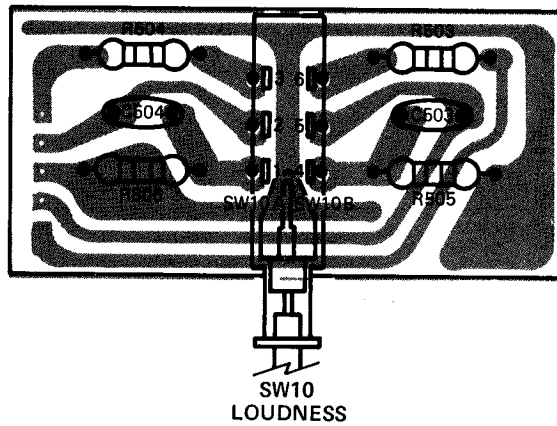
	base	emitter	collector
Q251	+0.93V	+0.33V	+12.7V
Q252	+1.8V	+1.2V	+4.6V
Q253	+11.0V	+11.6V	+6.5V

**TAPE COPY/TAPE MONITOR SWITCH PC BOARD**



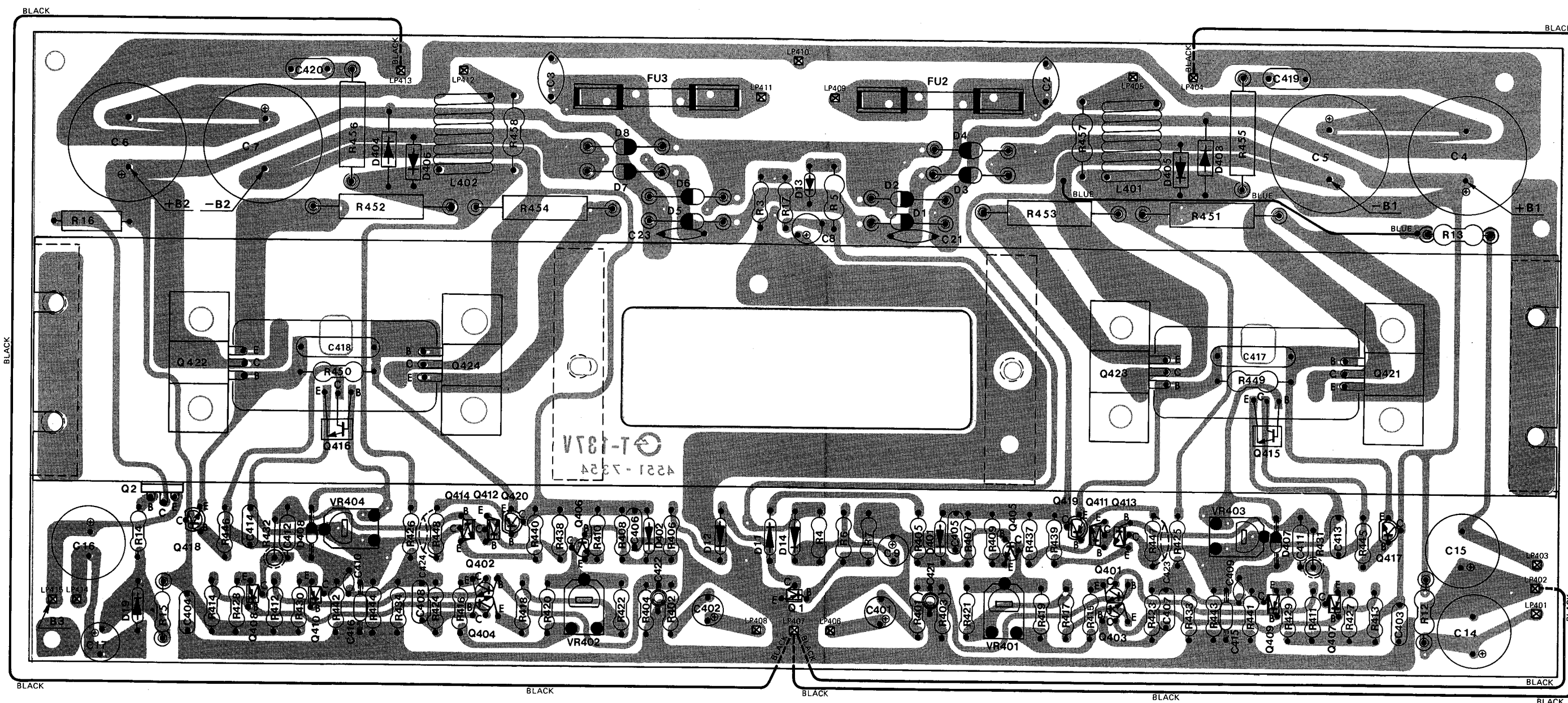
CIRCUIT REF.	H/K PART NO.	DESCRIPTION
SW6	26535632	Lever Switch, Tape Monitor

**LOUDNESS SWITCH PC BOARD**



CIRCUIT REF.	H/K PART NO.	DESCRIPTION
SW7	25035633	Push Switch, Loudness

MAIN AMP/RECTIFIER PC BOARD

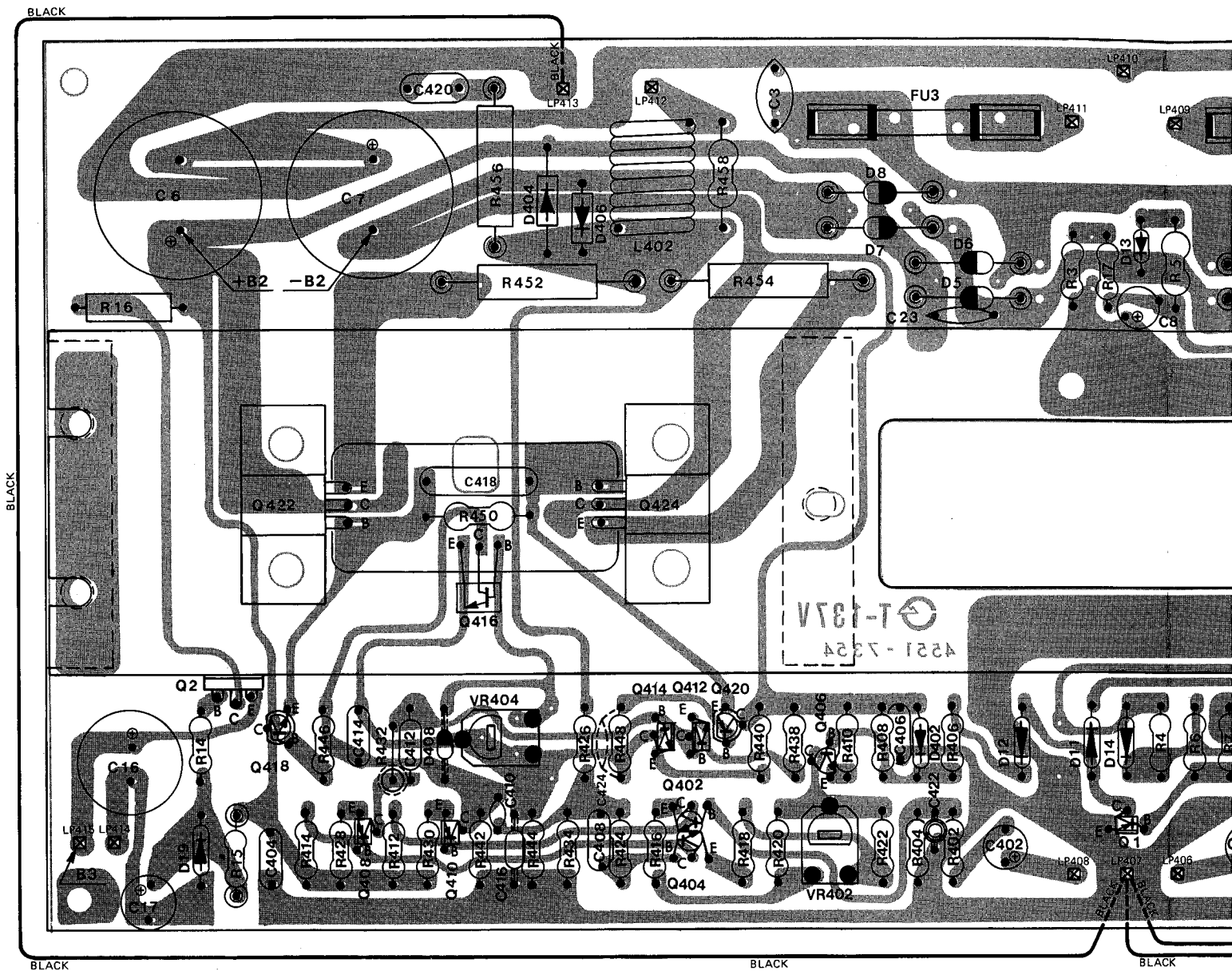


CIRCUIT REF.	H/K PART NO.	DESCRIPTION
<b>RESISTORS</b>		
VR401, 402	23535613	Variable Resistor, 100 ohm
VR403, 404	23535614	Variable Resistor, 2 k ohm
<b>CAPACITORS, ELECTROLYTIC</b>		
C4, 5, 6, 7	31535660	4700 MF +30% -10% 50V
C8	31835661	33 MF ±20% 16V
C9	31835662	47 MF ±20% 10V
C14, 15	31835617	470 MF +50% -10% 35V
C16	31835618	1000 MF +50% -10% 16V
C17	31835571	330 MF +50% -10% 16V
C401, 402	31835619	100 MF +50% -10% 10V

CIRCUIT REF.	H/K PART NO.	DESCRIPTION
<b>TRANSISTOR</b>		
Q1	43031312	2SA844(E) Audio Muting
Q2	43035620	2SC1419(C) Voltage Regulator
Q401, 402, 403, 404, 405, 406	43035592	2SC1775(F) Differential Amp., Current Regulator
Q407, 408, 409, 410	43035621	2SA915(L) Differential Amp.
Q411, 412, 413, 414	43035622	2SC1940(L) Current Regulator
Q415, 416	43035623	2SC1472K(A) Bias Stabilization
Q417, 418	43035624	2SD667A(C) Driver
Q419, 420	43035625	2SB647A(C) Driver
Q421, 422	43035623	2SD588A(R) Power Amp.
Q423, 424	43035664	2SB618A(R) Power Amp.

CIRCUIT REF.	H/K PART NO.	DESCRIPTION
<b>DIODE</b>		
D1, 2, 3, 4, 5, 6, 7, 8	41035665	VO3C
D11, 12, 13, 14	41035628	1SS81
D19	42035595	Zener, RD15EB3 14.72V ±0.37V
D401, 402	42032760	Zener, RD13EB 13.2V ±0.8V
D403, 404, 405, 406	41631295	SIB01-02
D407, 408	41035666	Variator, MV12Y
<b>COIL</b>		
L401, 402	12035630	RF Choke

# MAIN AMP/RECTIFIER PC BOARD



CIRCUIT REF.

H/K PART NO.

DESCRIPTION

CIRCUIT REF.

H/K PART NO.

DE

**RESISTORS**

VR401, 402	23535613	Variable Resistor, 100 ohm
VR403, 404	23535614	Variable Resistor, 2 k ohm

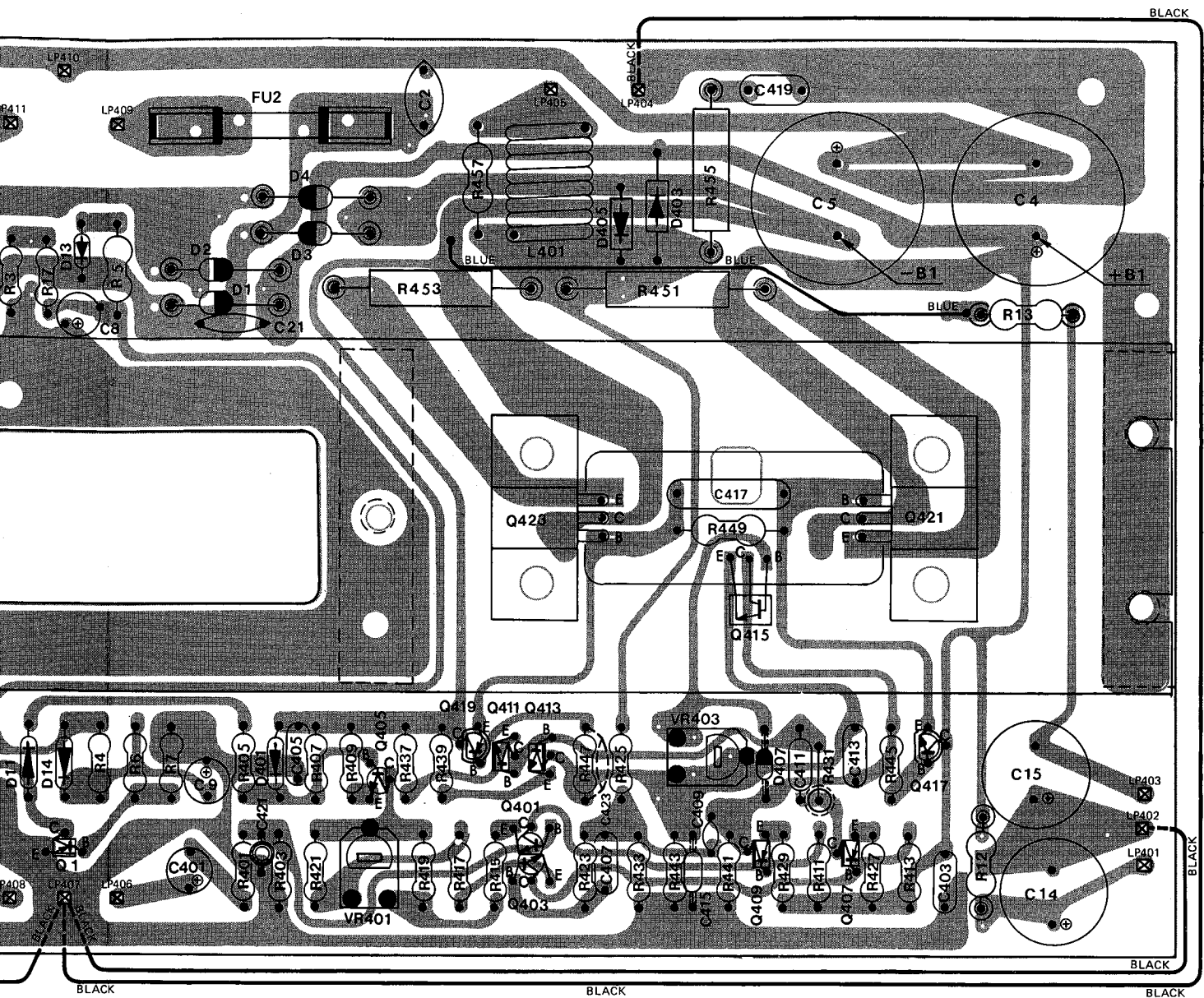
**CAPACITORS, ELECTROLYTIC**

C4, 5, 6, 7	31535660	4700 MF +30% -10% 50V
C8	31835661	33 MF ±20% 16V
C9	31835662	47 MF ±20% 10V
C14, 15	31835617	470 MF +50% -10% 35V
C16	31835618	1000 MF +50% -10% 16V
C17	31835571	330 MF +50% -10% 16V
C401, 402	31835619	100 MF +50% -10% 10V

**TRANSISTOR**

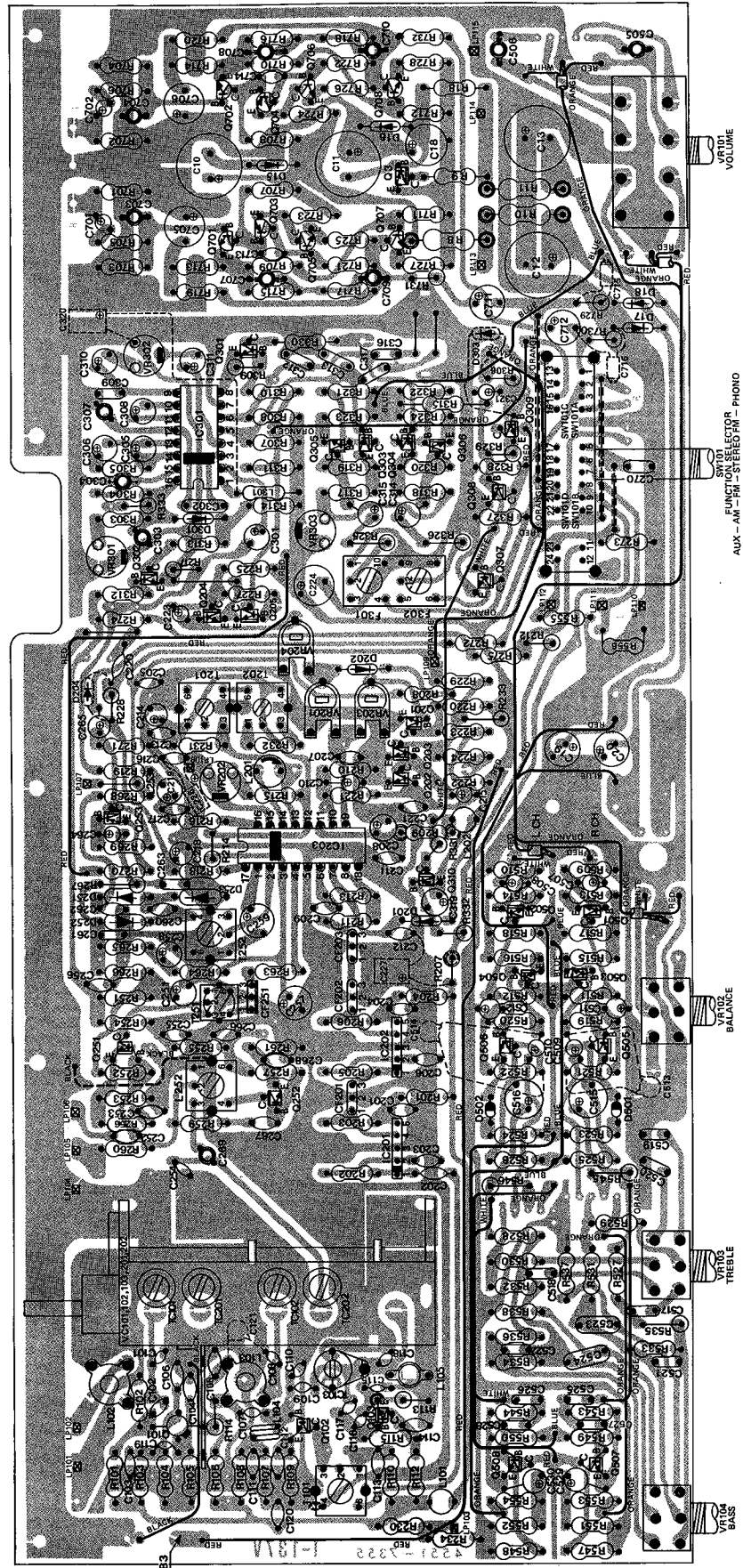
Q1	43031312	2SA
Q2	43035620	2SC
Q401, 402, 403, 404, 405, 406	43035592	2SC
Q407, 408, 409, 410	43035621	2SA
Q411, 412, 413, 414	43035622	2SC
Q415, 416	43035623	2SC
Q417, 418	43035624	2SD
Q419, 420	43035625	2SE
Q421, 422	43035623	2SD
Q423, 424	43035664	2SE





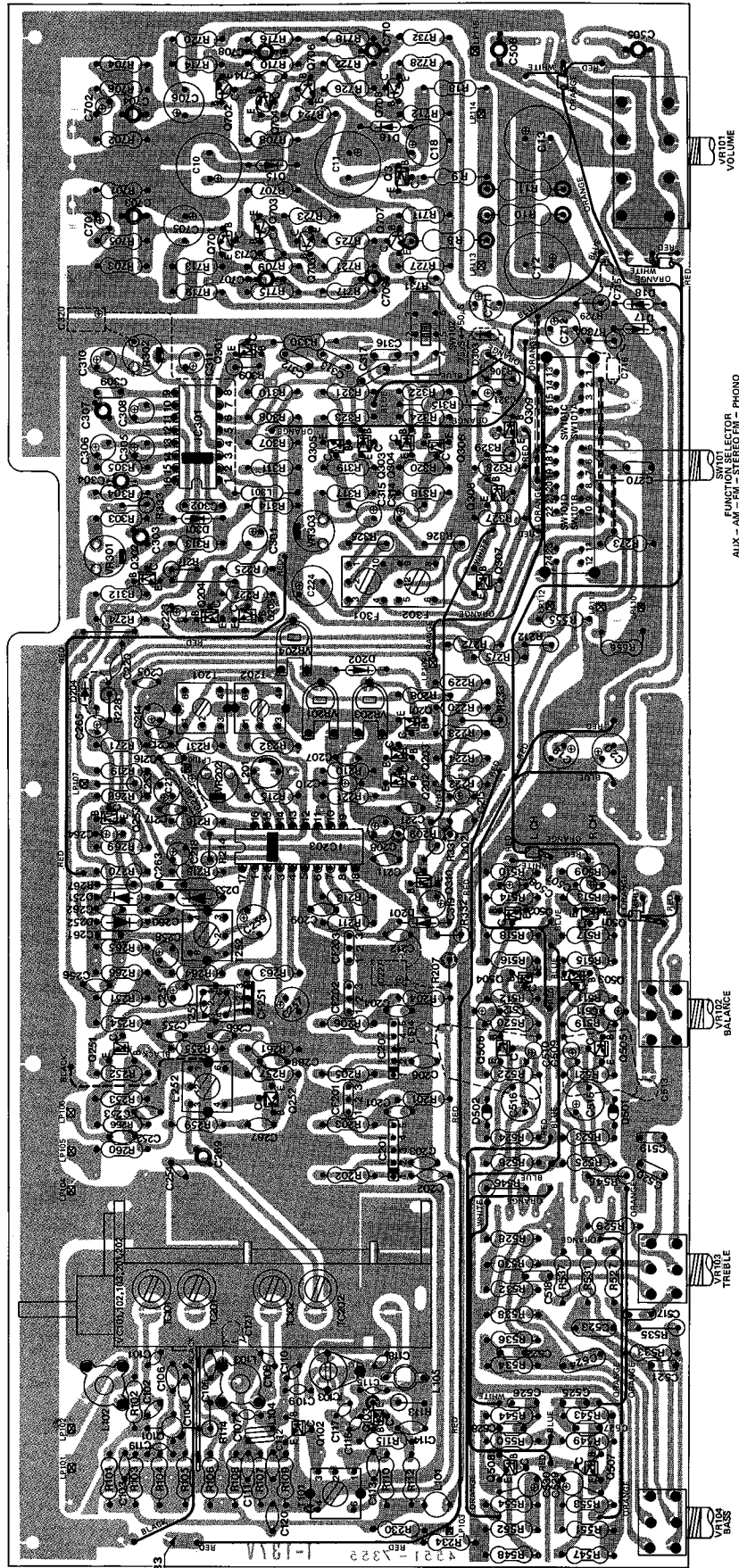
PART NO.	DESCRIPTION	CIRCUIT REF.	H/K PART NO.	DESCRIPTION
112	2SA844(E) Audio Muting			
120	2SC1419(C) Voltage Regulator			
192	2SC1775(F) Differential Amp., Current Regulator			
21	2SA915(L) Differential Amp.			
22	2SC1940(L) Current Regulator			
23	2SC1472K(A) Bias Stabilization			
24	2SD667A(C) Driver			
25	2SB647A(C) Driver			
23	2SD588A(R) Power Amp.			
64	2SB618A(R) Power Amp.			
		<b>DIODE</b>		
		D1, 2, 3, 4, 5, 6, 7, 8	41035665	VO3C
		D11, 12, 13, 14	41035628	1SS81
		D19	42035595	Zener, RD15EB3 14.72V ±0.37V
		D401, 402	42032760	Zener, RD13EB 13.2V ±0.8V
		D403, 404, 405, 406	41631295	SIB01-02
		D407, 408	41035666	Variator, MV12Y
		<b>COIL</b>		
		L401, 402	12035630	RF Choke

# TUNER/EQUALIZER AMP/PRE AMP PC BOARD



93.1 - 105

TUNER/EQUALIZER AMP/PRE AMP PC BOARD MULTI

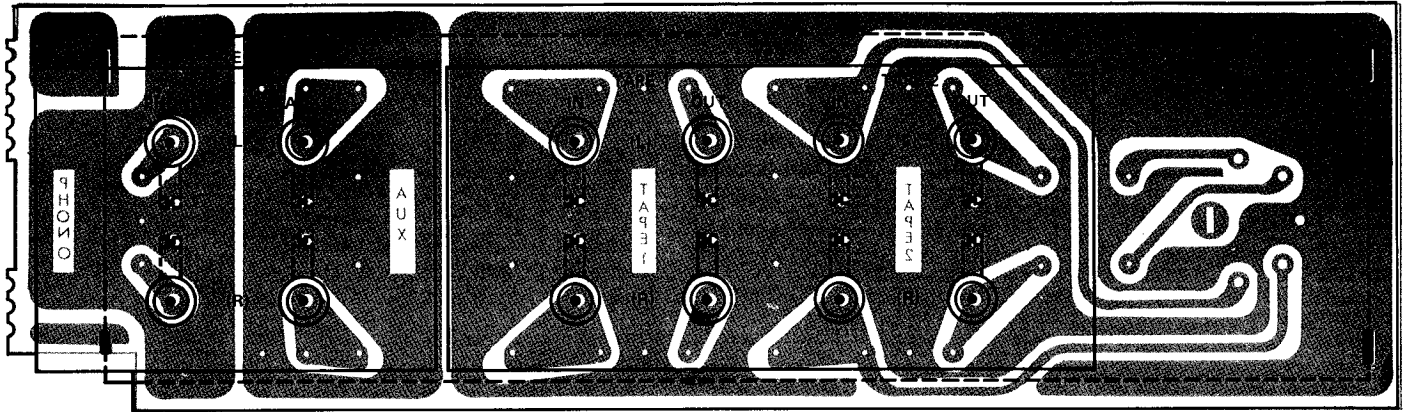




CIRCUIT REF.	H/K PART NO.	DESCRIPTION
<b>RESISTORS</b>		
VR101	22035651	Variable Resistor, 100k ohm, Volume Control
VR102	22035652	Variable Resistor, 50 k ohm, Balance Control
VR103, 104	22035653	Variable Resistor, 100 k ohm, Treble and Bass Control
VR201	23535566	Variable Resistor, 10 k ohm
VR202	23535567	Variable Resistor, 4.7 k ohm
VR203	23535654	Variable Resistor, 20 k ohm
VR204	23535568	Variable Resistor, 50 k ohm
VR301	23535569	Variable Resistor, 3.3 k ohm
VR302	23535570	Variable Resistor, 33 k ohm
VR303	23532130	Variable Resistor, 220 ohm
<b>CAPACITORS, ELECTROLYTIC</b>		
C10, 11, 12, 13	31835655	330 MF +50% -10% 25V
C18	31835656	22 MF +50% -10% 25V
C19, 20	31835572	22 MF +50% -10% 16V
C208, 218	31835573	10 MF +50% -10% 16V
C210, 226	31835574	1 MF +75% -10% 50V
C214	31835582	47 MF +50% -10% 16V
C215, 223	30731310	0.1 MF ±20% 35V Tantalum
C219	31835576	4.7 MF +50% -10% 25V
C224, 227	31835577	220 MF +50% -10% 16V
C251, 258	31835576	4.7 MF +50% -10% 25V
C257, 265	31835574	1 MF +75% -10% 50V
C259	31835578	3.3 MF +75% -10% 25V
C264	30731310	0.1 MF ±20% 35V Tantalum
C301	31835657	2.2 MF ±20% 50V
C305	31835580	0.47 MF ±20% 50V
C306, 308, 310, 311	31835581	0.33 MF ±20% 50V
C314, 315	31835576	4.7 MF +50% -10% 25V
C319	31835575	47 MF +50% -10% 10V
C320	31835582	47 MF +50% -10% 16V
C321	31835573	10 MF +50% -10% 16V
C507, 508, 509, 510	31835583	10 MF ±20% 6.3V Tantalum
C511, 512	31835658	3.3 MF ±20% 16V
C515, 516	31835582	47 MF +50% -10% 16V
C529, 530	31835584	10 MF ±20% 16V
C701, 702	31835586	33 MF ±20% 6.3V Tantalum
C705, 706	31835587	330 MF +50% -10% 6.3V
C711, 712	31835588	4.7 MF ±20% 25V
VC101, 102, 103, 201, 202	30834831A	Variable Capacitor (w/Trimmers TC101, 102, 201, 202)
<b>TRANSISTOR</b>		
Q3	43031312	Transistor, 2SA844(E) Voltage Rectifier
Q101	43035590	F. E. T., 3SK45(B) FM RF Amp.
Q102, 103	43034834A	Transistor, 2SC535(B) FM Mixer, FM Osc.
Q201, 202, 203, 204, 205	43028535	Transistor, 2SC1344(E) In Tune Indicator Driver, Stereo Indicator Driver
Q251, 252	43035591	Transistor, 2SC461(B) AM Mixer, AM Osc.

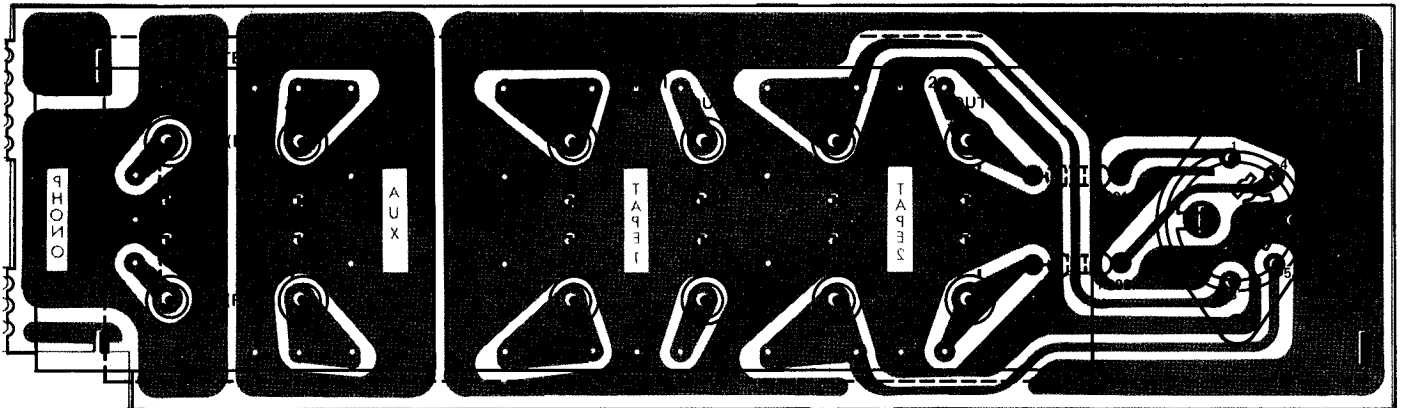
CIRCUIT REF.	H/K PART NO.	DESCRIPTION
<b>TRANSISTORS (continued)</b>		
Q253	43031312	Transistor, 2SA844(E) AM Output Amp.
Q301, 302, 305, 306, 307, 308, 309	43028535	Transistor, 2SC1344(E) Stereo/Mono Switching, MPX Osc Stop Switching, MPX Output Amp., FM Muting Switching, Tuning Muting Driver
Q303, 304, 310	43031312	Transistor, 2SA844(E) MPX Output Amp., Switch Muting Driver
Q501, 502, 503, 504	43028535	Transistor, 2SC1344(E) Pre. Amp.
Q505, 506	43031312	Transistor, 2SA844(E) Pre. Amp.
Q507, 508	43028535	Transistor, 2SC1344(E) Tone Control Amp.
Q701, 702	43035592	Transistor, 2SC1775(F) Equalizer Amp.
Q703, 704	43032151	Transistor, 2SA872(E) Equalizer Amp.
Q705, 706, 707, 708	43035592	Transistor, 2SC1775(E) or (F) Equalizer Amp.
IC201, 202	43131313	Integrated Circuit, BA401 FM IF Amp.
IC203	43135593	Integrated Circuit, HA11211 FM IF Amp./ FM Det./AM IF Amp.
IC301	43135594	Integrated Circuit, HA11223W FM Multiplex
D15, 16	42035659	Zener Diode, RD20EB 20V $\pm$ 1.2V
D17, 18	42035595	Zener Diode, RD15EB3 14.72V $\pm$ 0.37V
D201, 202, 204	41028593	Diode, 1S2076
D251, 252, 253	41528591	Diode, IN34A
D301, 303	41028593	Diode, IS2076
D501, 502	38128520	Variator, MV11
<b>COILS</b>		
L101	12035596	Coil, Choke
L102	12035597	Coil, FM RF
L103	12035598	Coil, FM RF
L104	12034838	Coil, FM IF Trap
L105	12033599	Coil, FM Osc.
L201	12035600	Coil, Phase Shifter
L202	12035596	Coil, Bypass Filter
L252	12035602	Coil, AM Osc.
L253	12035603	Coil, Choke
L301	12035603	Coil, Choke
<b>TRANSFORMERS</b>		
T101	11035604	Transformer, FM IF
T201	11035605	Transformer, Quadrature Det.
T202	11034606	Transformer, Quadrature Det.
T251	11035607	Transformer, AM IF
T252	11035608	Transformer, AM IF
<b>MISCELLANEOUS</b>		
CF201, 202, 203	12035609	Ceramic Filter, FM IF
CF251	12035610	Ceramic Filter, AM IF
F301, 302	12035611	L. C. Component, Low Pass Filter
SW101	24035612	Rotary Slide Switch, Function Selector

INPUT/OUTPUT JACK TERMINAL PC BOARD

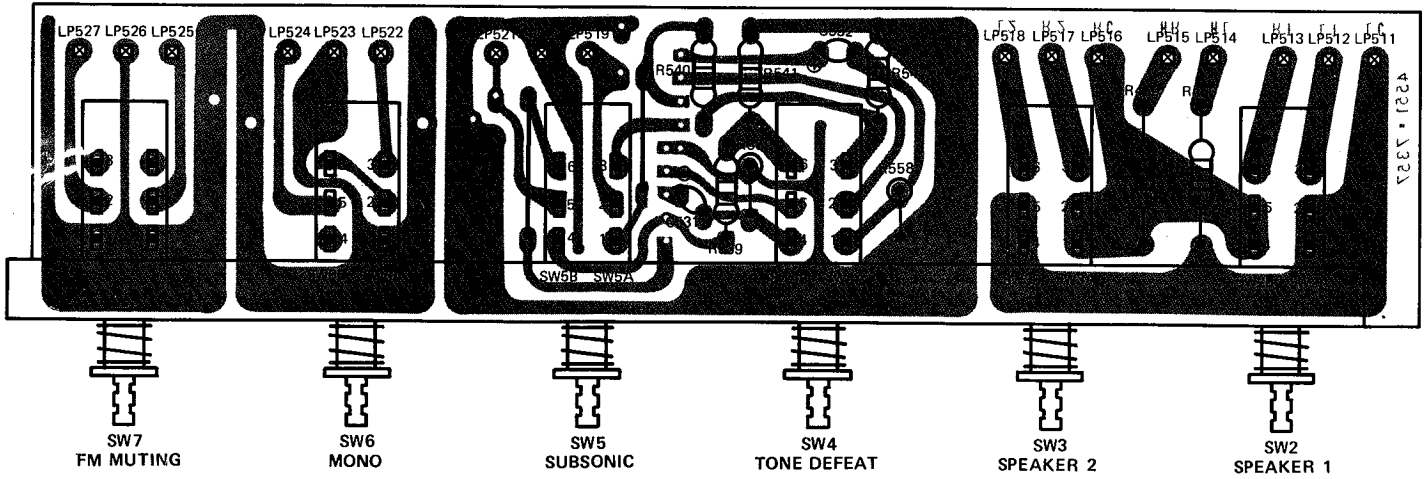


CIRCUIT REF.	H/K PART NO.	DESCRIPTION
SWITCH PUSHBUTTON	31835667	Capacitor, 2.2 MF ±20% 16V Tantalum Electrolytic
SW2, 3, 4, 5 6, 7	25035668	Speaker 1/Speaker 1/Speaker 2/Tone Defeat/Subsonic/Mono/FM Muting

INPUT/OUTPUT JACK TERMINAL PC BOARD  
MULTI

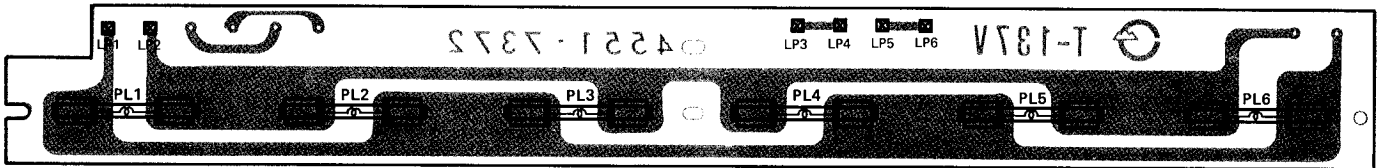


# MODE/CONTROL SWITCH PC BOARD



CIRCUIT REF.	H/K PART NO.	DESCRIPTION
CONNECTOR		
TE2	65435670	4-Pin Jack, Phono/Aux.
TE3	65433652	C-Pin Jack Tape 1 and 2 Input/Output

# LAMP HOLDER PC BOARD



## CHASSIS PARTS LIST

CIRCUIT REF.	H/K PART NO.	DESCRIPTION
<b>GENERAL UNIT</b>		
101	00235640	Clear Panel Assembly
102	00235641	Front Panel Assembly
103	00135642	Push Button Assembly, Speaker 1/Speaker 2/Tone Defeat/ Subsonic/Mono/FM Muting/Loudness (x 7)
104	00235643	Knob Assembly, Bass/Treble/Balance Function Selector (x 4)
105	00235644	Knob Assembly, Tuning
106	00235645	Dial Pointer Assembly (Includes: In Tune Indicator (D203))
115	60135646	Cabinet Back
116	60135543	Cabinet Top
117	62035544	Foot, Cabinet Bottom (x 4)
119	60135545	Dial Panel
121	64235546	Bracket, Clear Panel
122	64235547	Bracket, Front Panel Right
123	64235548	Bracket, Front Panel Left
146	60135549	Dressing Plate, Cabinet Back
149	63235550	Knob Assembly, Volume
161	63235552	Knob Assembly, Tape Copy/Tape Monitor (x 2)
169	63233663	Push Button Assembly, Power
<b>ELECTRICAL</b>		
T1	10135647	Power Transformer
SW1	25035554	Push Switch, Power
ME1	12535555	Tuning Meter
J1	65432119	Headphones Jack
SO1	67435556	External AC Socket, Switched
CB1, 2	45535648	Speaker Protector
TE1	65129518	FM/AM External Antenna Terminal
TE4, 5	65434823A	Speaker Output Terminal
FU1	45035558	Fuse, 3A 125V
FU2, 3	45045649	Fuse, 6.25A 125V
D10, 503	46735556	Light Emitting Diode, SLP132B Power Indicator, Tape Monitor Indicator
D203	46735650	Light Emitting Diode, SG206D In Tune Indicator
D302	46735561	Light Emitting Diode, GL4AR2 Stereo Indicator
L106	12031333	FM Antenna Coil
L251	20535562	AM Ferrite Bar Antenna
PL1, 2, 3, 4, 5, 6	46529502	Dial Illuminator Lamp, 8V 300mA
<b>MULTI VOLTAGE RECEIVER</b>		
T1	10135671	Power, Transformer, MV
SW1	25035635	Push Switch, Power
FU1, 4	45035636	Fuse, 3.15AT 250V
FU2, 3	45035751	Fuse, 5AT 250V
SW11	24035639	Rotary Switch, Power Source Voltage Selector
SW102	24531335	Slide Switch, Emphasis
J2	65432127	5-Pin DIN Jack, REC/PB

DIAL CORD STRINGING

