The Harman Kardon Model hk 670

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.

ALIGNMENT PROCEDURES

POWER AMPLIFIER IDLING ADJUSTMENT

INSTRUMENTS 1. D. C. V. T. V. M.

NOTE
1. Set function selector switch to AUX position.
2. Set volume control to minimum position.
3. Connect 8 ohm (50W) resistors to left and ground, right and ground speaker terminals.

STEP	CONNECT OUTPUT METER TO	ADJUST	ADJUST FOR
1	D. C. V. T. V. M. to TP6 (+) and TP7 (–)	VR403	33mV ± 4mV
2	D. C. V. T. V. M. to TP8 (+) and TP9 (–)	VR404	Same as above

OUTPUT DC VOLTAGE ZERO ADJUSTMENT

INSTRUMENTS 1. D. C. V. T. V. M.

NOTE
1. Set function selector switch to AUX position.
2. Set volume control to minimum position.
3. Press in speaker 1 push button to ON (button in) position.

STEP	CONNECT OUTPUT METER TO	ADJUST	ADJUST FOR
1	D. C. V. T. V. M. to R CH terminal of speaker system 1	VR401	0V ± 20mV
2	D. C. V. T. V. M. L CH terminal of speaker system 1	VR402	Same as above
3	Confirm the value of idling current once again.		

ALIGNMENT PROCEDURES

IN-TUNE INDICATOR LAMP AND MUTING SENSITIVITY BAND WIDTH ADJUSTMENT

INSTRUMENTS

1. FM Signal Generator modulated with 1000Hz at 100% (75kHz).
2. Oscilloscope.
3. V. T. V. M.

NOTE

1. Set function selector switch to FM position.
2. Set FM muting switch to ON position.
3. Connect signal source to FM antenna terminals.
4. Turn VR5 (at cabinet back) to full clockwise position.

STEP	SIGNAL SOURCE	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
1	98mHz 47dBf ± 3dB (125μV) of FM signal generator	V. T. V. M. to tape out jack	Tune for signal	VR353	Slowly counter clockwise from its extreme clockwise position until signal appears in full
2	65dBf (1.95 mV) of FM signal generator	In-Tune indicator	Tune for signal	FM Signal generator	Turn frequency dial to clockwise till in-tune indicator lamp goes out and note the frequency of FM signal generator reading
3	Same as above	Same as above	Same as above	Same as above	Turn frequency dial to counter clockwise till in-tune indicator lamp goes out and note the frequency of FM signal generator reading
4				VR202	Repeat steps 2 and 3 and adjust until the difference of frequency from step 2 and 3 becomes 125kHz ± 20kHz

FM STEREO INDICATOR LAMP ADJUSTMENT

INSTRUMENTS

1. FM Stereo Signal Generator modulated with 1000Hz at 100% (75kHz).

NOTE

1. Set function selector switch to FM STEREO position.
2. Connect signal source to FM antenna terminals.
3. Set main signal ON and Pilot signal (10%) ON of FM Stereo signal generator.

SIGNAL SOURCE	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
98mHz 31dBf (20μV) of FM stereo signal generator	FM stereo indicator lamp	Tune for signal	VR352	Light ON

ALIGNMENT PROCEDURES

AM ALIGNMENT PROCEDURES

INSTRUMENTS

1. AM Signal Generator modulated with 400 Hz at 30%.
2. AM IF Generator.
3. Oscilloscope.
4. V. T. V. M.

NOTE

1. Set function selector switch to AM position.
2. Connect signal source to a loop placed to radiate signals into AM antenna loop stick (L251).

STEP	SIGNAL SOURCE	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
1	455kHz of AM IF generator	V. T. V. M. and oscilloscope to TP1 (+) and TP2 (−)	Quiet point on band	T251	Maximum and undistorted pattern on oscilloscope.
2	1400kHz of AM signal generator	V. T. V. M. to tape out jack	1400kHz	TC104	Maximum Output
3	600kHz of AM signal generator	Same as above	600kHz	L252	Same as above
4	Repeat steps 2 and 3 for best dial accuracy.				
5	1400kHz of AM signal generator	V. T. V. M. to tape out jack	Tune for signal	TC105	Maximum Output
6	600kHz of AM signal generator	Same as above	Same as above	L251	Same as above
7	Repeat steps 5 and 6 for best sensitivity.				

MPX ADJUSTMENT

INSTRUMENTS

1. Frequency Counter.
2. FM Signal Generator.

NOTE

1. Set function selector switch to FM STEREO position.
2. Connect signal source to FM antenna terminals.
3. Use coaxial cable to connect frequency counter to test points.

SIGNAL SOURCE	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
98mHz 65dBf (970μV) of FM signal generator (unmodulation)	Frequency Counter to TP5 and TP2	Tune for signal	VR301	75.9kHz ± 100Hz

ALIGNMENT PROCEDURES

FM ALIGNMENT PROCEDURES

INSTRUMENTS

1. FM Signal Generator modulated with 1000Hz at 100% (75kHz).
2. Center Zero Meter.
3. Distortion Meter.
4. V. T. V. M.

NOTE

1. Set function selector switch to FM position.
2. Set FM muting switch to OFF position.
3. Connect signal source to FM antenna terminals.
4. Set signal weak to obtain an exact tuning point when turning.

STEP	SIGNAL SOURCE	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
1		V. T. V. M. to tape out jack	Quiet point on band	T101	Maximum noise
2		Center zero meter to TP3 and TP4	Same as above	T201	Indicating zero on center zero meter
3		V. T. V. M. to tape out jack	Same as above	T202	Minimum noise
4	106mHz 6 dBf (1μV)	Same as above	106mHz	TC101	Maximum Output
5	90mHz 6 dBf (1μV)	Same as above	90mHz	L104	Same as above
6	Repeat steps 4 and 5 until no further improvement is noticed.				
7	106mHz 6 dBf (1μV)	Same as above	Tune for signal	TC102, 103, 104	Same as above
8	90mHz 6 dBf (1μV)	Same as above	Same as above	L101, 102, 103	Same as above
9	Repeat steps 7 and 8 until no further improvement is noticed.				
10	98mHz 65 dBf (970μV)	Distortion meter to tape out jack	Tune for zero indication on center zero meter	T202	Minimum reading on distortion meter
11	Repeat steps 2 and 10 until no further improvement is noticed.				

ALIGNMENT PROCEDURES

SEPARATION ADJUSTMENT

INSTRUMENTS

1. FM Stereo Signal Generator modulated with 1000kHz at 100% (75kHz).
2. (L + R = 45% L - R = 45% 19kHz = 9%.)
3. V. T. V. M.

NOTE

1. Set function selector switch to FM STEREO position.
2. Connect signal source to FM antenna terminals.
3. Set signal weak to obtain an exact tuning point when tuning.

STEP	SIGNAL SOURCE	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
1	Set L CH signal ON at FM stereo signal generator				
2	98mHz 65 dBf (970μV) of FM stereo signal generator	V. T. V. M. to R CH tape out jack	Tune for signal	VR302, 303	Minimum Output
3	Set R CH signal ON at FM stereo signal generator.				
4	98mHz 65 dBf (970μV) of FM stereo signal generator	V. T. V. M. to L CH tape out jack	Tune for signal	VR302, 303	Minimum Output

QUIETING METER ADJUSTMENT

INSTRUMENT

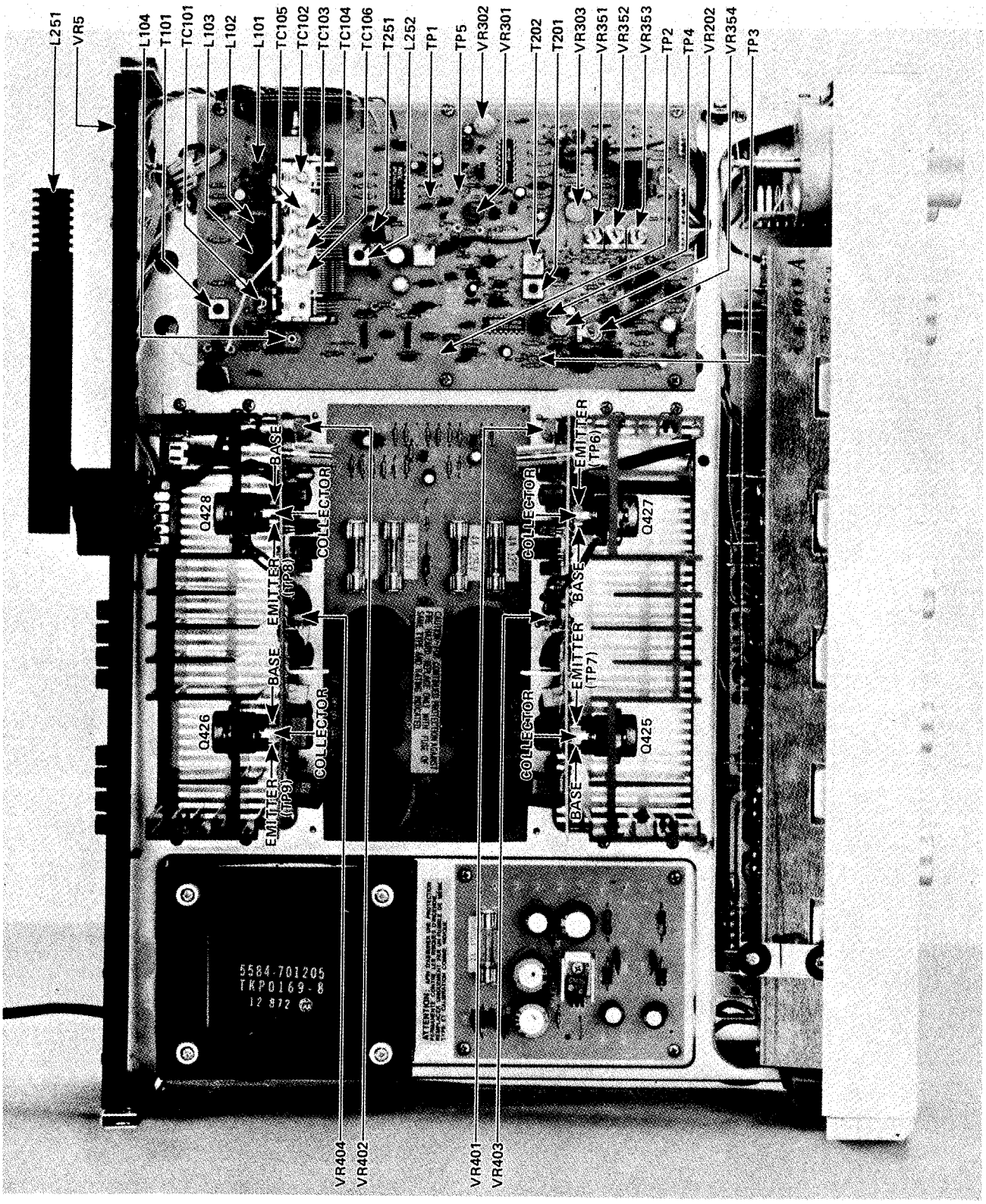
1. FM Signal Generator modulated with 1000Hz at 100% (75kHz).

NOTE

1. Set function selector switch to FM position.
2. Connect signal source to FM antenna terminals.
3. Set signal weak to obtain an exact tuning point when tuning.

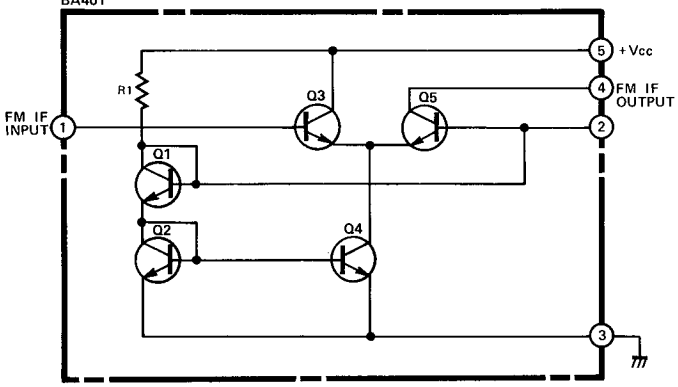
STEP	SIGNAL SOURCE	DIAL SETTING	ADJUST	ADJUST FOR
1	98mHz 51dBf (200μV) of FM signal generator	Tune for signal	VR351	Indicating 9.0 on signal strength meter
2	98mHz 33dBf (25μV)	Same as above	VR354	Indicating 5 on signal strength meter
3	Repeat steps 1 and 2 until above 2 steps are satisfied.			

ALIGNMENT POINTS

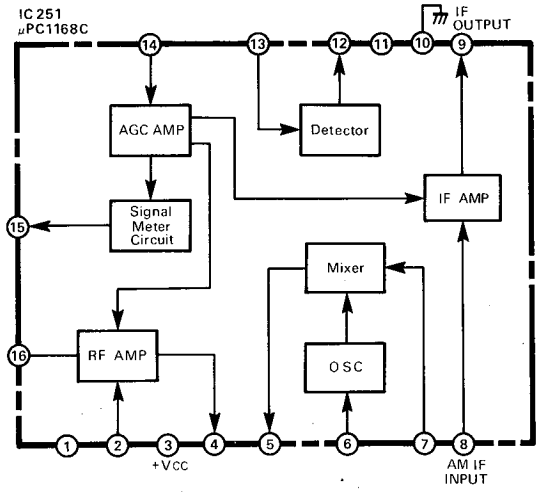


IC BLOCK DIAGRAM

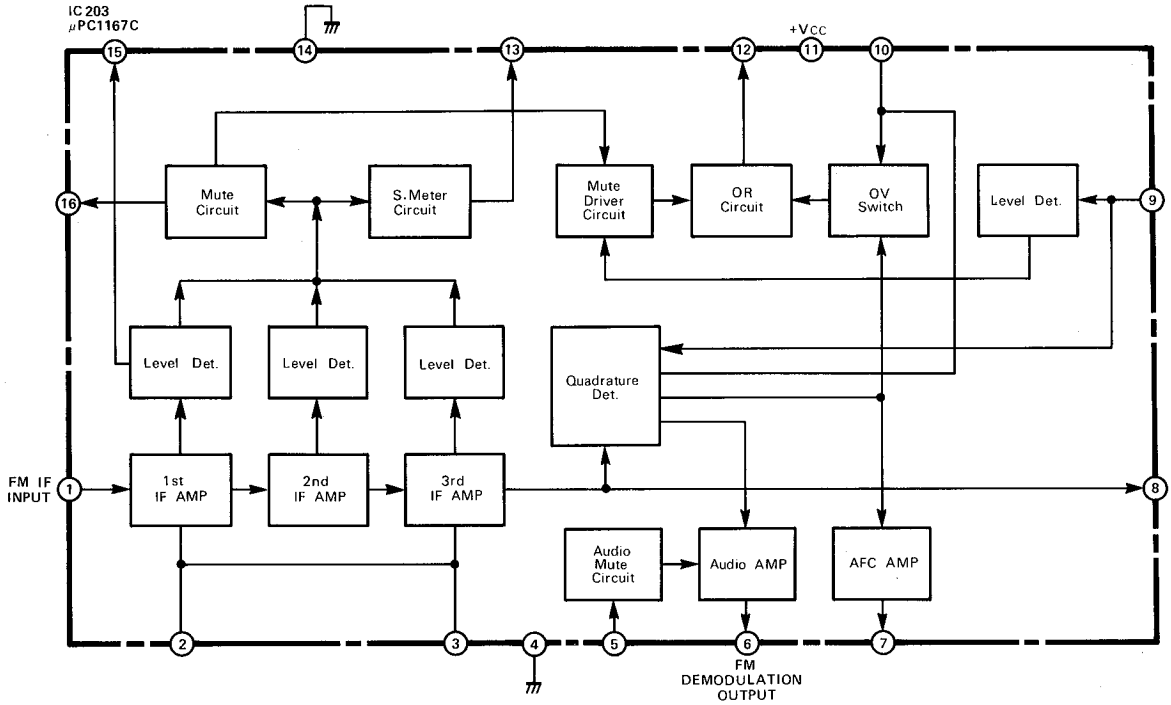
IC201, IC202
BA401



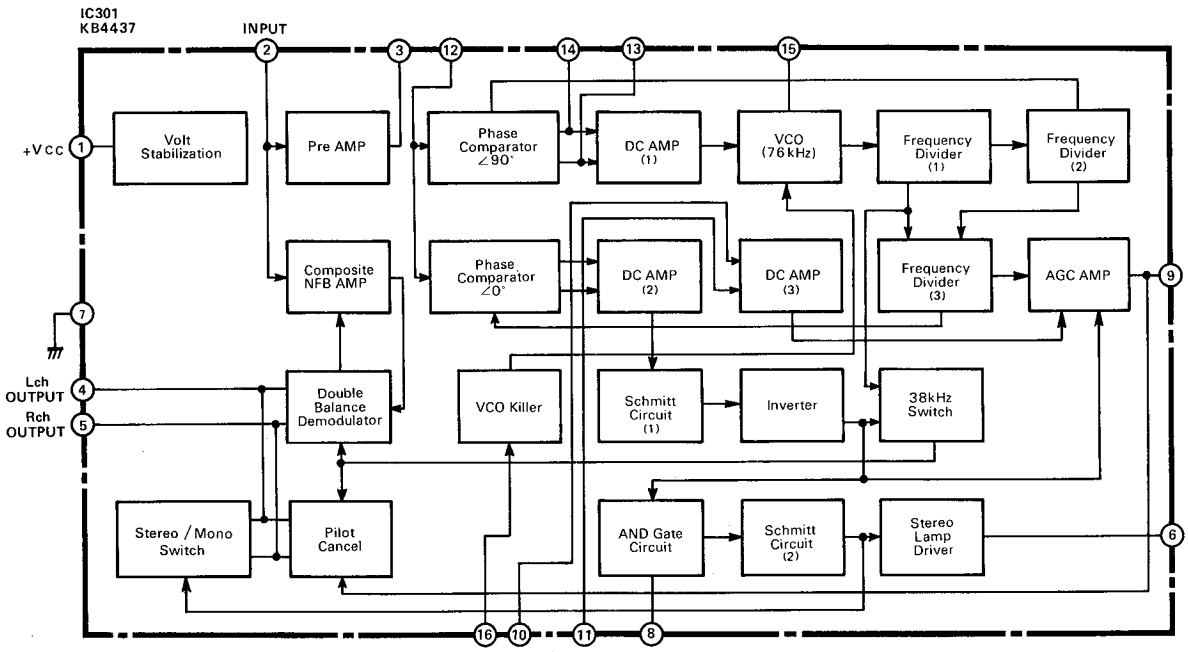
IC 251
μPC1168C



IC 203
μPC1167C



IC301
KB4437



SCHEMATIC NOTES AND DIAGRAMS

1. All resistors are 1/4 watt, ± 5%, unless noted otherwise. Values are in ohms.
   K = 1000 M = 1000K.
2. All capacitances values are in MF unless noted otherwise. RF = MMF.
3. Function selector switch (SW2) is in PHONO position.

VOLTAGE CHART

AC120V
No Signal
Chassis Ground

Volume Control at Minimum
Tone Controls at Mechanical Center

+B1 . . . . . +43V	+B4 . . . . . +14.2V	-B2 . . . . . -43V
+B2 . . . . . +43V	B5 . . . . . +13V	-B3 . . . . . -26.4V
+B3 . . . . . +26.4V	-B1 . . . . . -43V	-B4 . . . . . -14.2V

FM POSITION

	BASE	EMITTER	COLLECTOR
Q1	+13.6V	+13.0V	+19.4V
Q2	+27.0V	+26.4V	+33.5V
Q3	-27.0V	-26.4V	-32.4V
Q31	- 0.7V	- 0.1V	- 0.2V
Q32	- 0.6V	0.0V	- 0.1V
Q33	- 0.6V	0.0V	- 4.3V
Q34	- 0.6V	0.0V	- 0.1V
Q103	+ 3.5V	+ 4.9V	+ 9.5V
Q201	+ 3.6V	+ 3.3V	+12.4V
Q202	+12.4V	+13.0V	+ 4.2V
Q203	0.0V	0.0V	+ 0.03V
Q204	+ 0.03V	0.0V	+10.6V
Q301, 302	+ 8.4V	+ 9.0V	-24.0V
Q303, 304	-24.0V	-24.7V	+ 4.7V
Q305, 306	- 2.4V	0.0V	0.0V
Q351	+ 0.6V	0.0V	+ 1.0V
Q352	+ 1.0V	+ 0.6V	+ 7.3V
Q353	+ 0.6V	0.0V	+ 1.5V
Q354	+ 1.5V	+ 0.9V	+13.0V
Q355	+ 4.7V	+ 4.7V	+13.0V
Q356	+ 1.2V	+ 0.6V	+12.3V
Q357	+11.8V	+12.3V	+ 0.1V
Q358	+ 0.7V	+ 0.03V	+ 0.05V
Q359	0.0V	+ 0.1V	+ 0.03V
	+ 0.6V	0.0V	+ 0.8V (FM Muting ON)
Q360	+ 0.03V	+ 0.1V	+ 0.2V
	+ 0.8V	0.0V	+10.6V (FM Muting ON)
Q361	+ 0.14V	- 0.45V	+13.0V
	+10.6V	+ 9.9V	+13.0V (FM Muting ON)
Q362	+ 0.7V	0.0V	0.0V
Q363	+ 0.05V	+ 0.04V	+10.5V
Q401, 402	-12.1V	-12.7V	- 0.7V
Q403, 404	- 0.02V	- 0.6V	+40.8V
Q405, 406	- 0.02V	- 0.6V	+40.8V
Q407, 408	-40.7V	-41.4V	-40.7V
Q409, 410	+40.8V	+41.4V	- 4.2V
Q411, 412	-40.7V	-41.4V	- 1.2V

SCHEMATIC NOTES AND DIAGRAMS

	BASE	EMITTER	COLLECTOR
Q413, 414	+40.8V	+41.5V	+ 1.2V
Q415, 416	+ 1.3V	- 1.2V	+ 1.2V
Q417, 418	- 1.3V	- 0.7V	-42.0V
Q419, 420	- 0.01V	+ 0.8V	+42.2V
Q421, 422	-42.0V	-42.6V	- 0.6V
Q423, 424	+42.2V	+42.6V	+ 0.7V
Q425, 426	- 0.6V	+ 0.03V	-43.0V
Q427, 428	+ 0.7V	+ 0.09V	+43.0V
Q429, 430	+ 0.03V	+ 0.08V	-42.2V
Q431, 432	-42.2V	-42.8V	- 0.07V
Q501, 502	- 0.05V	- 0.6V	+10.7V
Q503, 504	- 0.05V	- 0.6V	+10.8V
Q505, 506	-12.7V	-13.4V	- 0.03V
Q507, 508	+10.7V	+11.4V	- 0.03V
Q509, 510	- 0.2V	- 0.8V	+13.8V
Q511, 512	- 0.6V	- 1.2V	+13.8V
Q701, 702	- 0.06V	- 0.6V	+25.2V
Q703, 704	+25.2V	+25.7V	+ 3.3V
Q705, 706	+ 3.3V	+ 2.7V	+25.7V
Q707, 708	-25.2V	-25.8V	+ 2.7V

	DRAIN	SOURCE	GATE 1	GATE 2
Q4	+33.5V	+27.0V	+27.0V	
Q5	-27.0V	-32.4V	-32.4V	
Q6	+19.4V	+13.7V	+13.7V	
Q101	+ 8.0V	+ 1.5V	+ 1.0V	+3.6V
Q102	+10.2V	+ 0.4V	0.0V	0.0V

IC201

1. + 1.4V
2. + 1.4V
3. 0.0V
4. +10.5V
5. +11.4V

IC202

1. + 1.4V
2. + 1.4V
3. 0.0V
4. +11.1V
5. +12.2V

IC203

1. + 2.2V
2. + 2.2V
3. + 2.2V
4. 0.0V
5. + 0.1V
6. + 5.3V
7. + 5.3V
8. + 5.1V
9. + 5.1V
10. + 5.1V
11. +13.0V
12. + 1.1V
13. + 0.7V
14. 0.0V
15. + 5.2V
16. + 6.0V

IC301

1. +13.0V
2. + 3.2V
3. + 5.7V
4. + 8.4V
5. + 8.4V
6. + 9.4V
7. 0.0V
8. + 9.9V
9. + 0.8V
10. + 2.5V
11. + 2.5V
12. + 2.6V
13. + 2.6V
14. + 2.6V
15. + 3.6V
16. + 0.05V

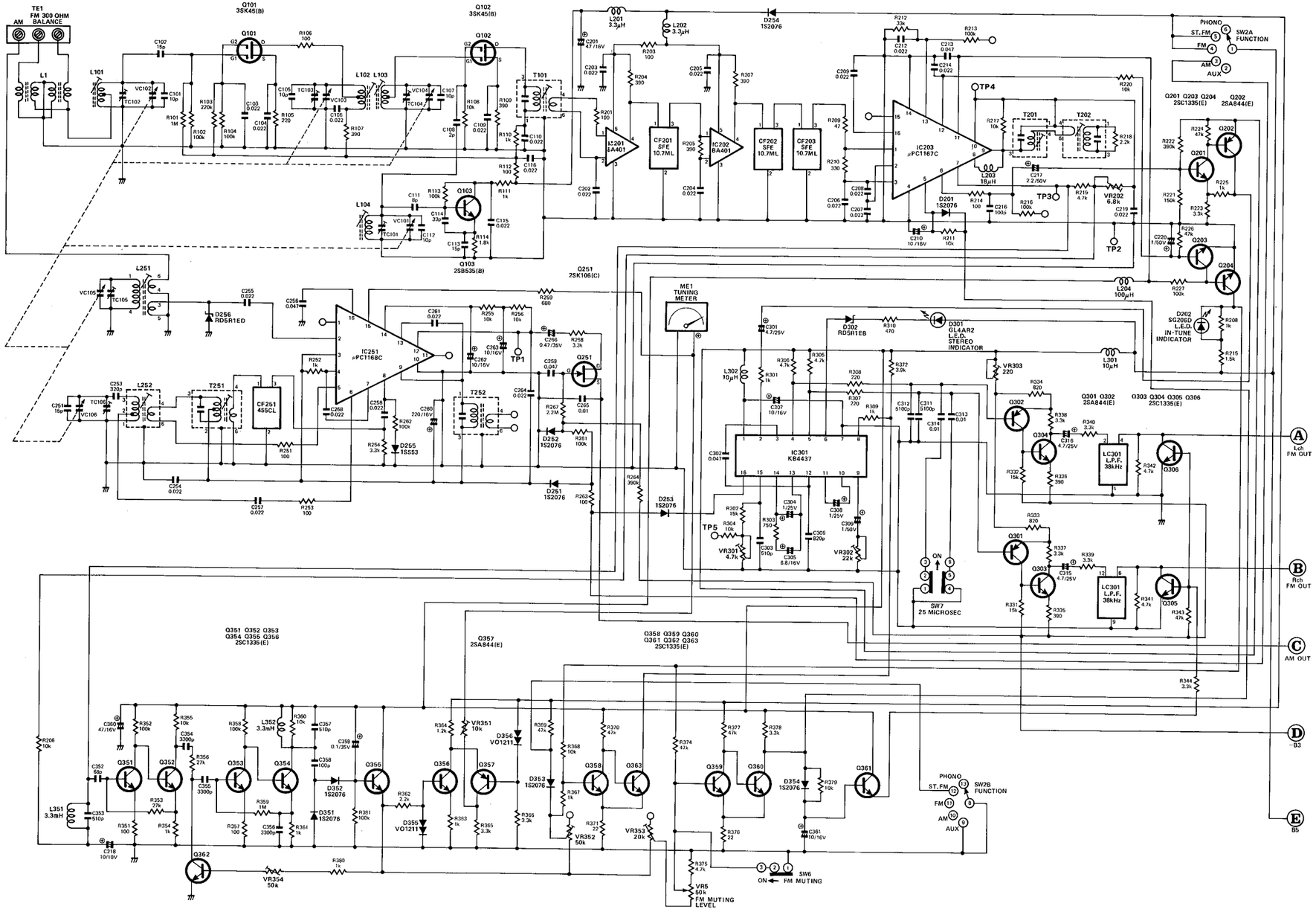
AM POSITION

	DRAIN	SOURCE	GATE
Q251	0V	0V	+0.3V

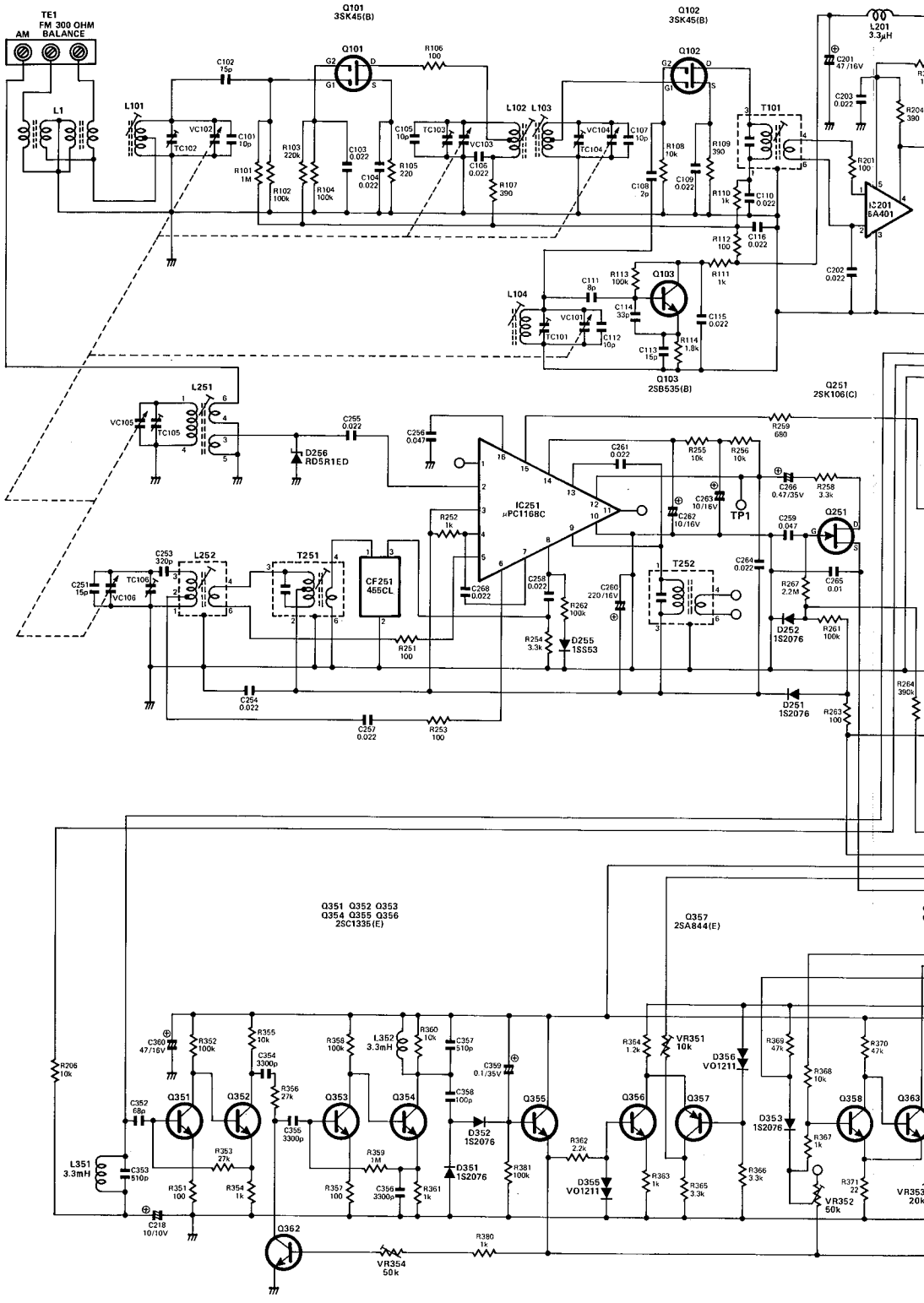
IC251

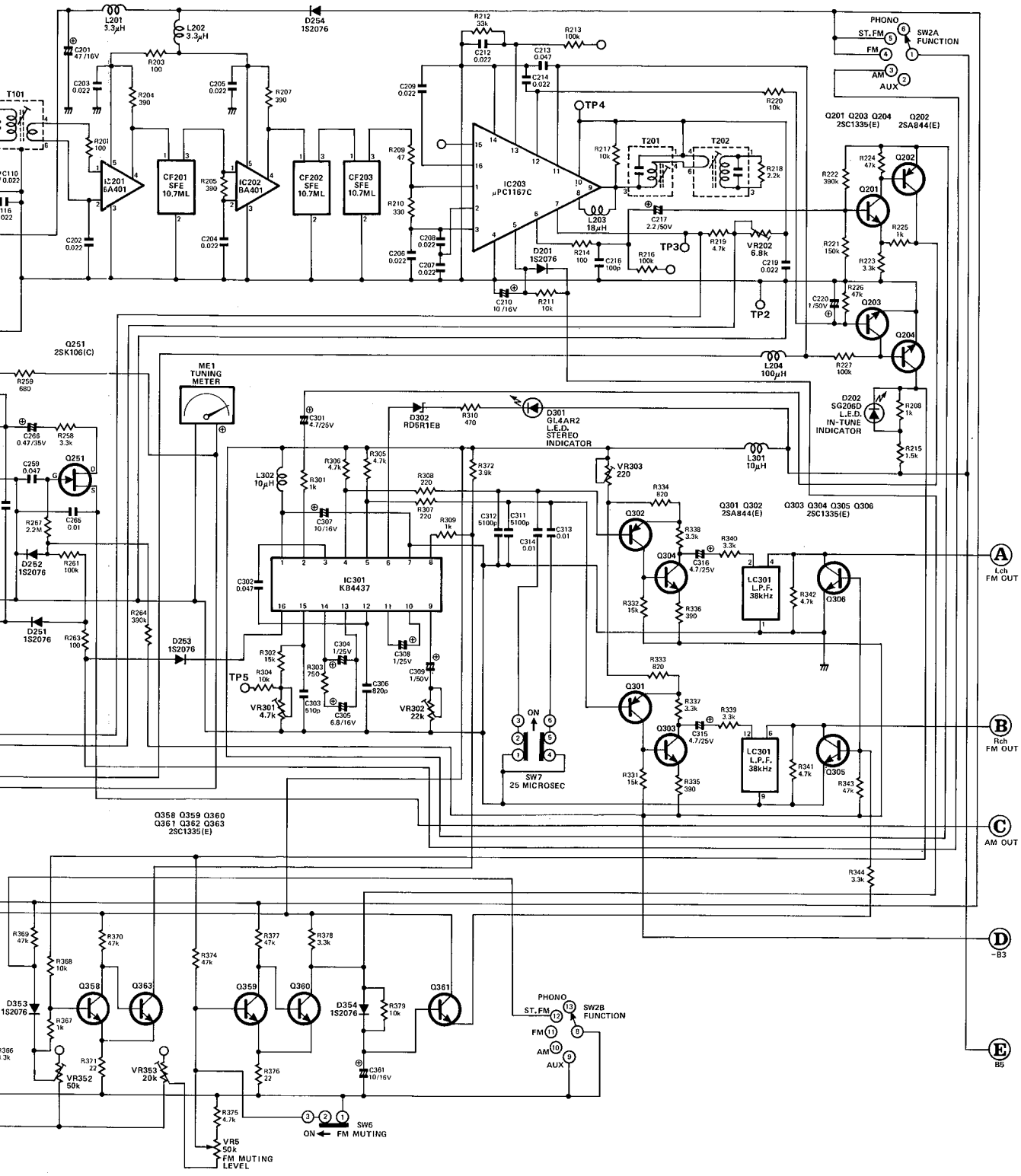
1. 0.0V
2. + 2.7V
3. +10.9V
4. + 8.7V
5. +10.8V
6. + 2.8V
7. + 1.3V
8. + 0.7V
9. +10.9V
10. 0.0V
11. 0.0V
12. + 2.1V
13. + 2.7V
14. + 2.0V
15. 0.0V
16. + 1.3V

SCHEMATIC DIAGRAM

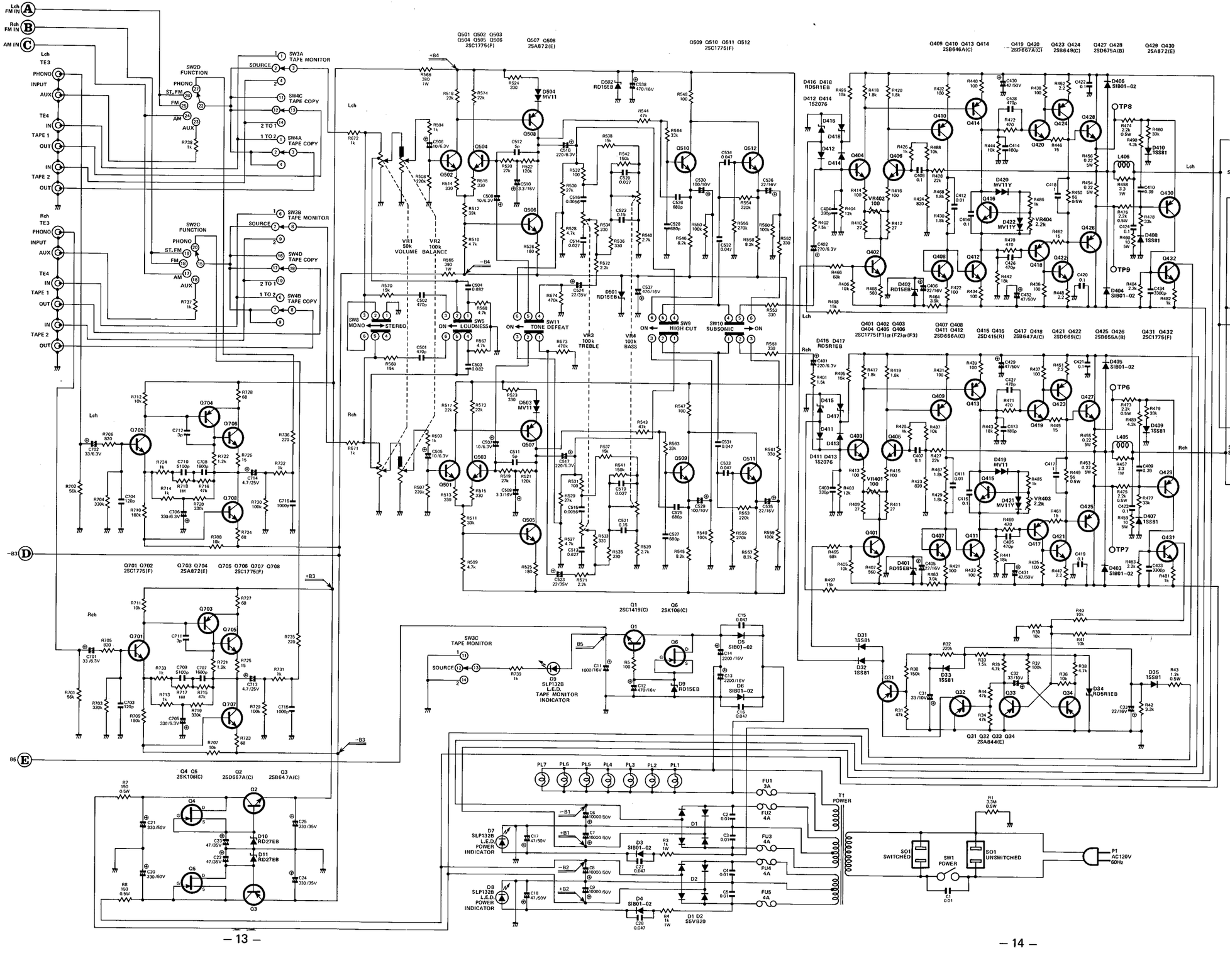


SCHEMATIC DIAGRAM

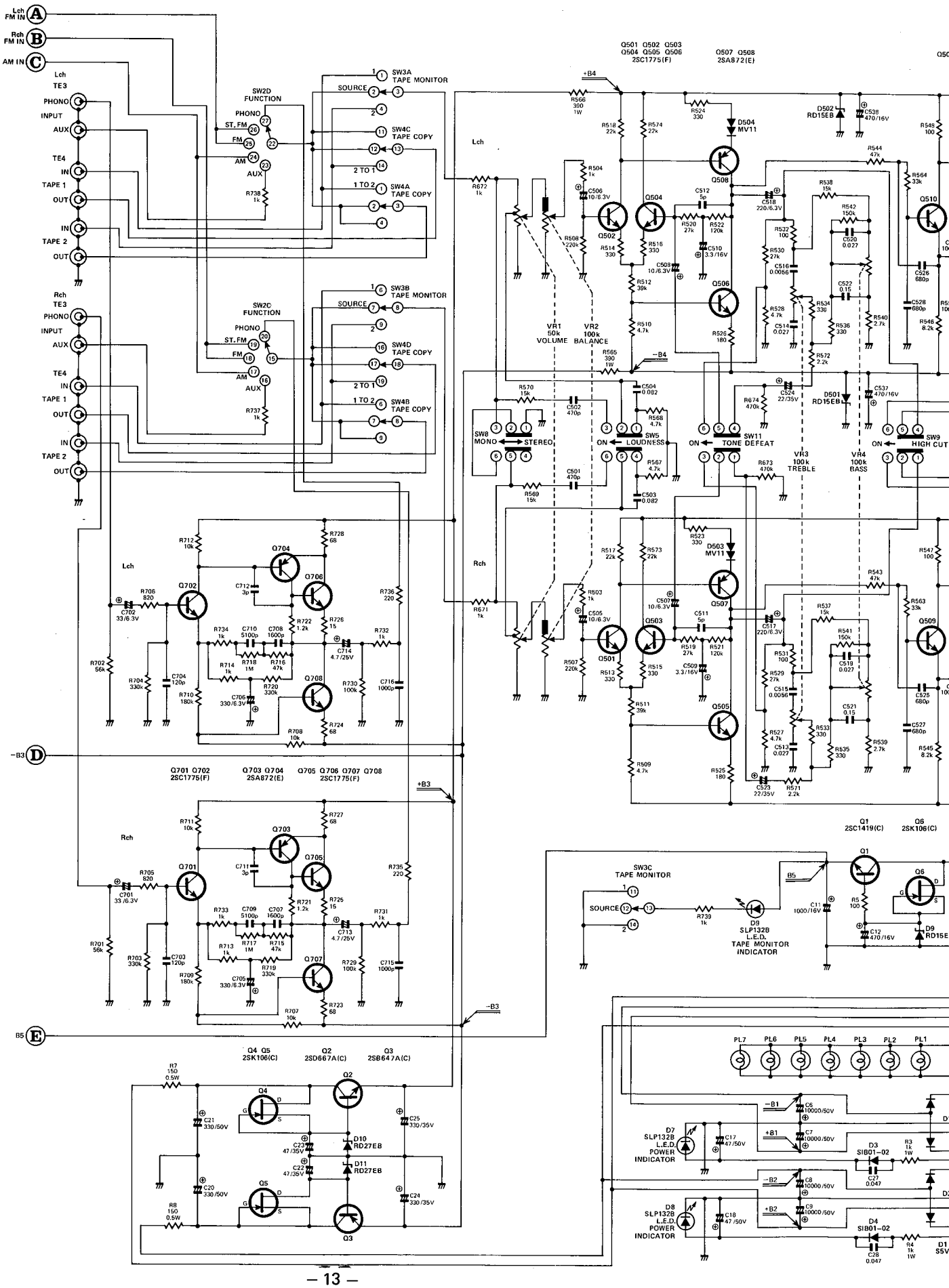


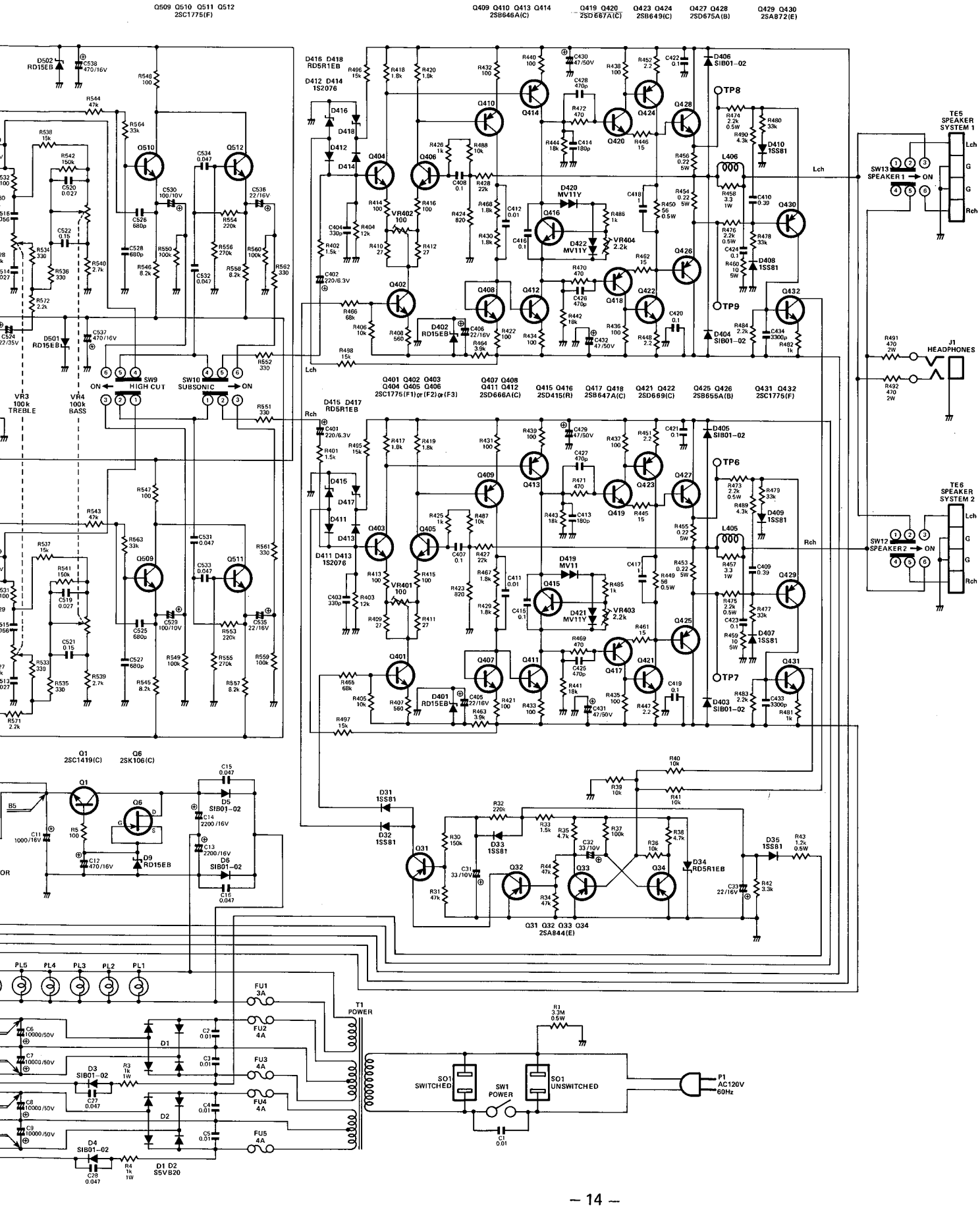

L201 3.3μH
L202 3.3μH
D254 1S2076
C201 47/16V
R203 100
T101
R201 100
C203 0.022
R204 390
C205 0.022
R207 390
IC201 BA401
CF201 SFE 10.7ML
R205 390
IC202 BA401
CF202 SFE 10.7ML
CF203 SFE 10.7ML
C202 0.022
C204 0.022
R209 47
R210 330
C208 0.022
C206 0.022
C207 0.022
R212 33k
C212 0.022
R213 100k
C213 0.047
C214 0.022
C209 0.022
IC203 μPC1167C
TP4
R220 10k
T201
T202
R217 10k
R218 2.2k
L203 18μH
C217 2.2/50V
TP3
R214 100
C216 100p
R216 100k
D201 1S2076
C210 10/16V
R211 10k
R215 4.7k
VR202 6.8k
C219 0.022
TP2
PHONO
ST.FM
FM
AM
AUX
SW2A FUNCTION
Q201 Q203 Q204 2SC1335(E)
Q202 2SA844(E)
R224 47k
Q202
R222 390k
Q201
R225 1k
R221 150k
R223 3.3k
C220 1/50V
R226 47k
Q203
Q204
L204 100μH
R227 100k
D202 SG206D L.E.D. IN-TUNE INDICATOR
R208 1k
R215 1.5k
Q251 2SK106(C)
ME1 TUNING METER
R259 680
C266 0.47/35V
R258 3.3k
C259 0.047
Q251
C265 0.01
R267 2.2M
D252 1S2076
R261 100k
D251 1S2076
R264 390k
R263 100
D253 1S2076
C301 4.7/25V
D302 RD5R1EB
R310 470
D301 GL4AR2 L.E.D. STEREO INDICATOR
L301 10μH
L302 10μH
R301 1k
R306 4.7k
R305 4.7k
R308 220
R307 220
R309 1k
R372 3.9k
VR303 220
C307 10/16V
C312 5100p
C311 5100p
C313 0.01
C314 0.01
IC301 KB4437
C302 0.047
R334 820
Q301 Q302 2SA844(E)
Q303 Q304 Q305 Q306 2SC1335(E)
Q302
R338 3.3k
C316 4.7/25V
R340 3.3k
Q304
R332 15k
R336 390
LC301 L.P.F. 38kHz
R342 4.7k
Q306
R333 820
Q301
R337 3.3k
C315 4.7/25V
R339 3.3k
Q303
R331 15k
R335 390
LC301 L.P.F. 38kHz
R341 4.7k
Q305
R343 47k
R344 3.3k
R302 15k
R303 750
C304 1/25V
C303 510p
C305 6.8/16V
C306 820p
C308 1/25V
C309 1/50V
R304 10k
TP5
VR301 4.7k
VR302 22k
ON
SW7 25 MICROSEC
A Lch FM OUT
B Rch FM OUT
C AM OUT
D -B3
E B5
Q358 Q359 Q360 Q361 Q362 Q363 2SC1335(E)
R369 47k
R370 47k
R368 10k
Q358
Q363
R374 47k
R377 47k
R378 3.3k
Q359
Q360
Q361
D353 1S2076
R367 1k
D354 1S2076
R379 10k
R371 22
VR352 50k
VR353 20k
R376 22
C361 10/16V
PHONO
ST.FM
FM
AM
AUX
SW2B FUNCTION
R375 4.7k
VR5 50k FM MUTING LEVEL
SW6
ON FM MUTING

SCHEMATIC DIAGRAM

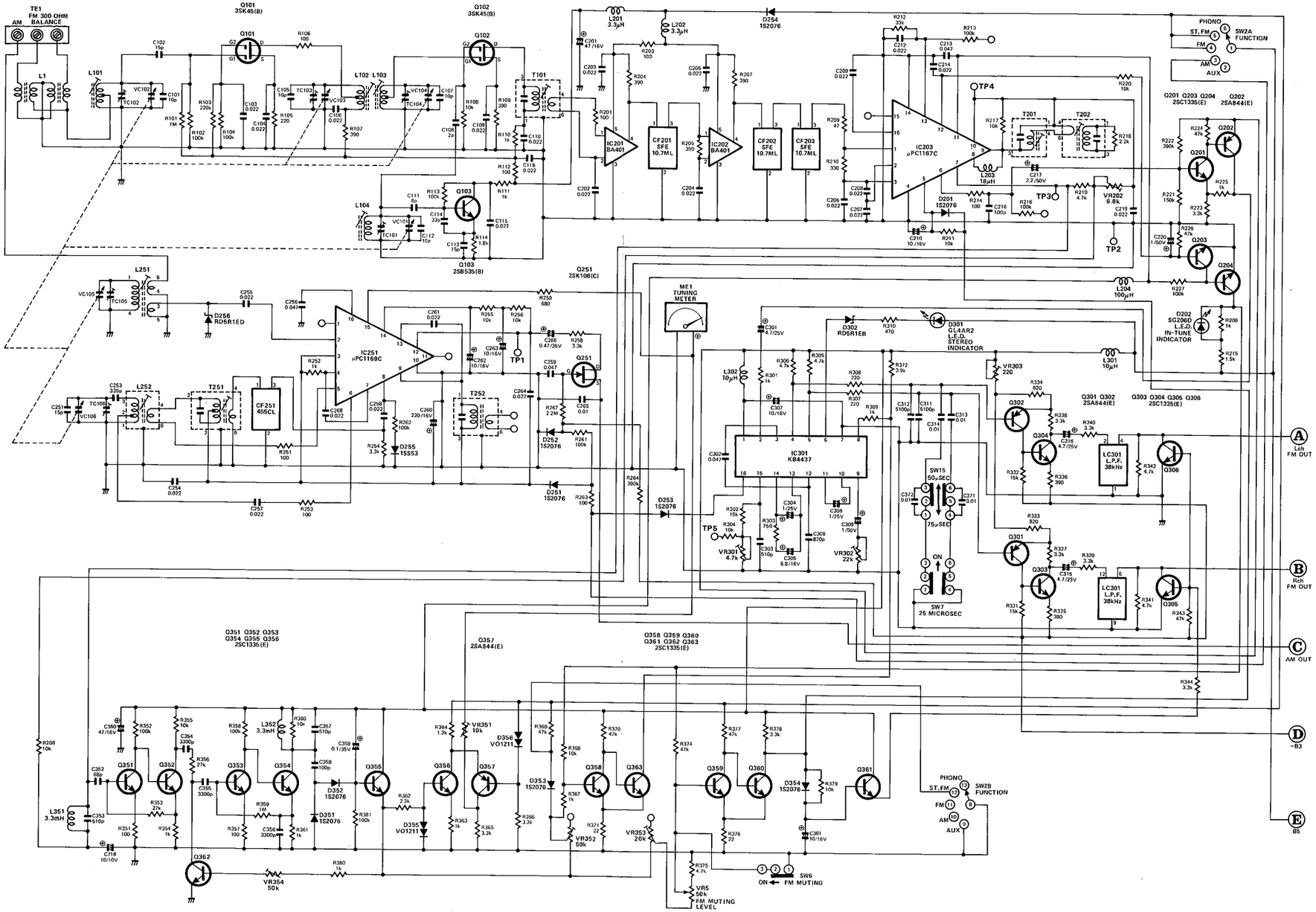


SCHEMATIC DIAGRAM

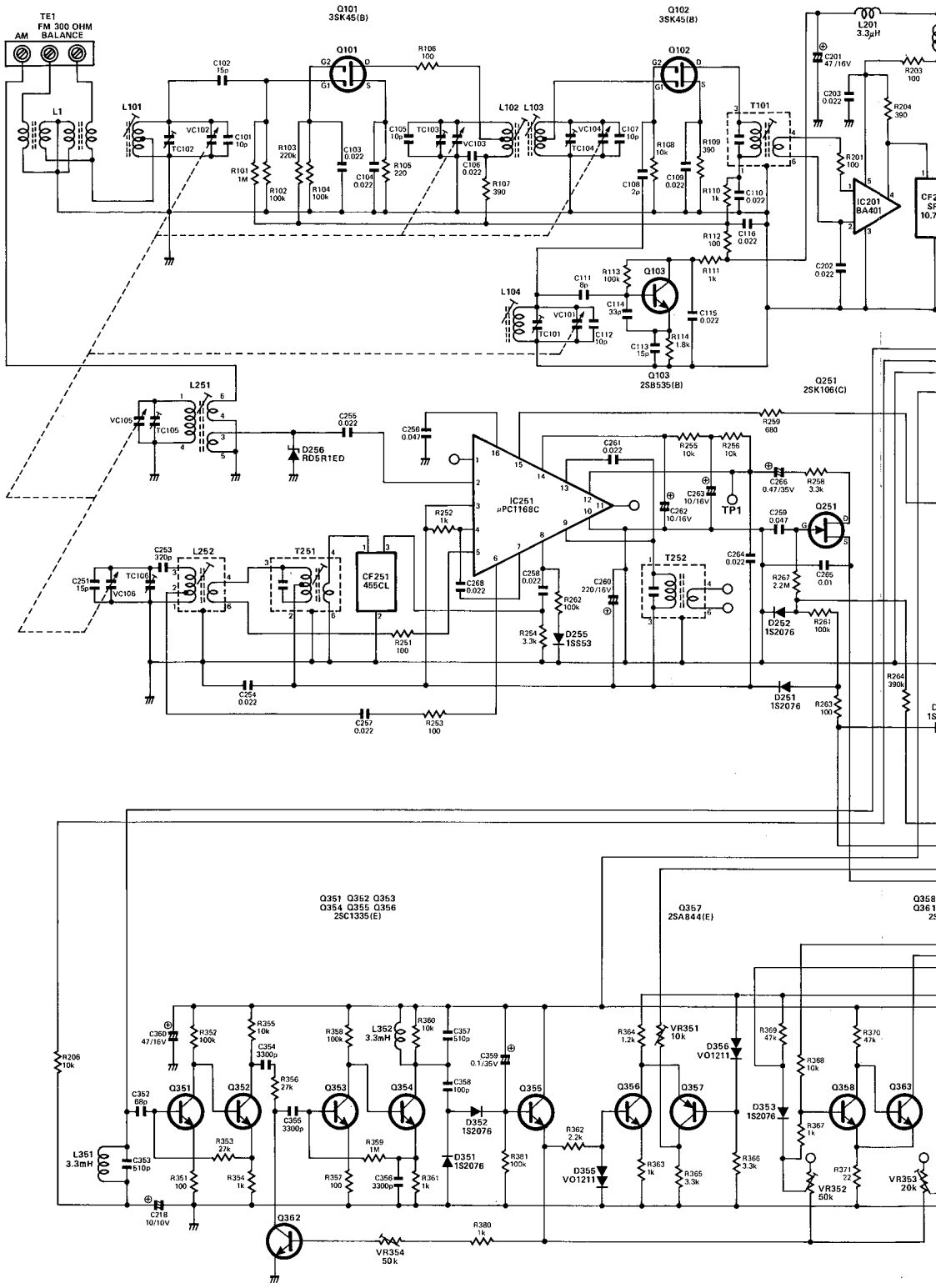


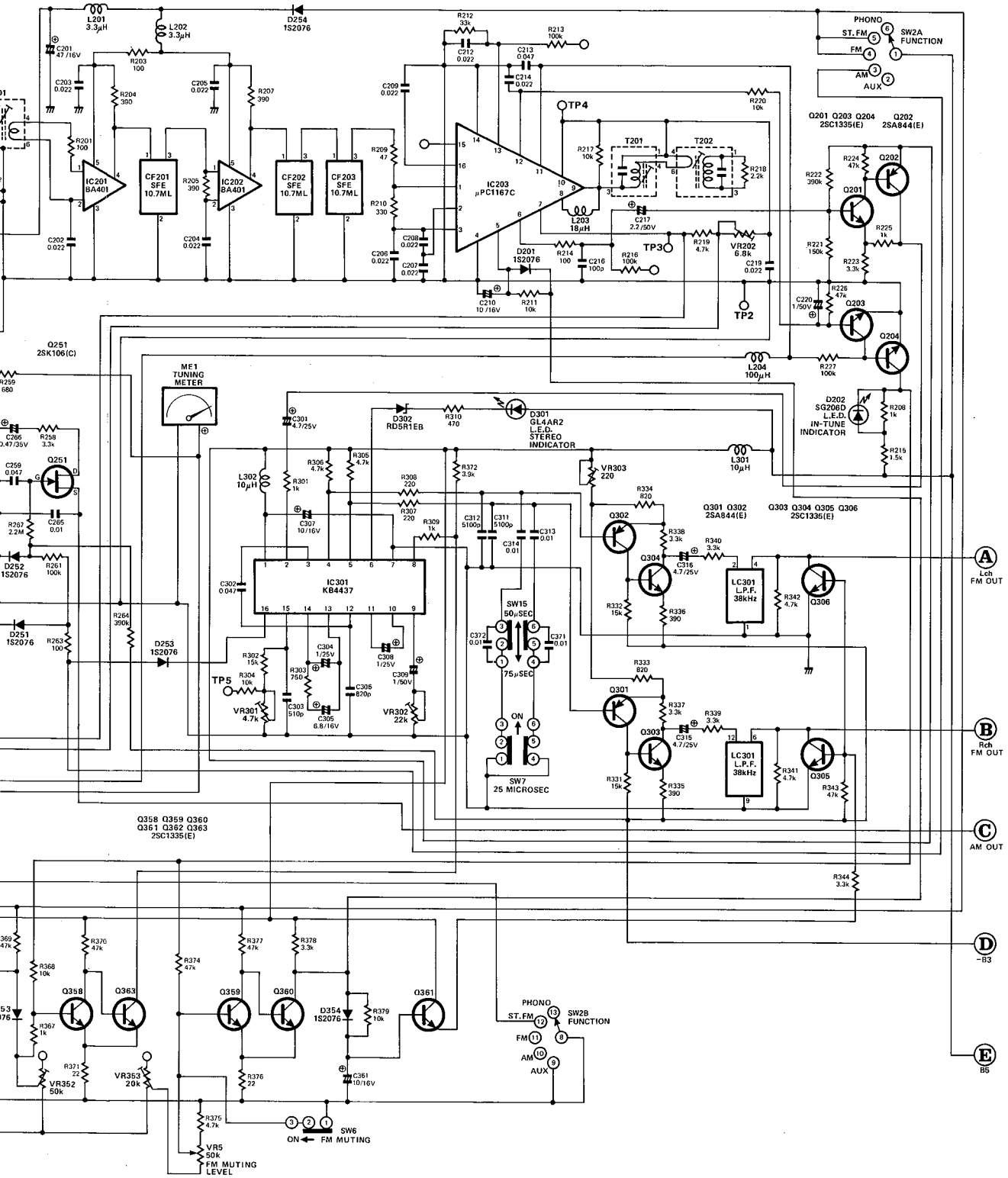

Q509 Q510 Q511 Q512
2SC1775(F)
Q409 Q410 Q413 Q414
2SB646A(C)
Q419 Q420
2SD667A(C)
Q423 Q424
2SB649(C)
Q427 Q428
2SD675A(B)
Q429 Q430
2SA872(E)
D502 RD15EB
C538 470/16V
R548 100
R544 47k
R564 33k
R538 15k
R542 150k
C520 0.027
C534 0.047
C530 100/10V
C536 22/16V
C526 680p
C528 680p
R550 100k
R554 220k
R556 270k
R560 100k
R562 330
R534 330
R536 330
R540 2.7k
R546 8.2k
R558 8.2k
C522 0.15
C532 0.047
R572 2.2k
C524 22/35V
D501 RD15EB
C537 470/16V
R552 330
VR3 100k TREBLE
VR4 100k BASS
SW9 HIGH CUT
SW10 SUBSONIC
ON
R551 330
D416 D418 RD5R1EB
D412 D414 1S2076
R496 15k
R418 1.8k
R420 1.8k
R432 100
R440 100
C430 47/50V
R438 100
R452 2.2
C422 0.1
D406 SIB01-02
TP8
C428 470p
R472 470
R444 18k
C414 180p
R426 1k
R488 10k
C408 0.1
R428 22k
R474 2.2k 0.5W
R480 33k
R490 4.3k
D410 1SS81
L406
R456 0.22 5W
R458 3.3 1W
C410 0.39
R476 2.2k 0.5W
R478 33k
C424 0.1
R460 10 5W
D408 1SS81
C404 330p
R404 12k
R414 100
VR402 100
R416 100
R424 820
R468 1.8k
C412 0.01
R430 1.8k
R402 1.5k
R410 27
R412 27
C402 220/6.3V
D420 MV11Y
C416
C418 1
R454 0.22 5W
R450 56 0.5W
R462 15
R470 470
C426 470p
R442 18k
C432 47/50V
R466 68k
R406 10k
R408 560
D402 RD15EB
C406 22/16V
R464 3.8k
R422 100
R434 100
R498 15k
Lch
Q401 Q402 Q403
Q404 Q405 Q406
2SC1775(F1) or (F2) or (F3)
Q407 Q408
Q411 Q412
2SD666A(C)
Q415 Q416
2SD415(R)
Q417 Q418
2SB647A(C)
Q421 Q422
2SD669(C)
Q425 Q426
2SB655A(B)
Q431 Q432
2SC1775(F)
D415 D417 RD5R1EB
Rch
C401 220/6.3V
R401 1.5k
R495 15k
R417 1.8k
R419 1.8k
R431 100
R439 100
C429 47/50V
R437 100
R451 2.2
C421 0.1
D405 SIB01-02
TP6
C427 470p
R471 470
R443 18k
C413 180p
R425 1k
R487 10k
C407 0.1
R427 22k
R473 2.2k 0.5W
R479 33k
R489 4.3k
D409 1SS81
L405
R455 0.22 5W
R457 3.3 1W
C409 0.39
R475 2.2k 0.5W
R477 33k
C423 0.1
R459 10 5W
D407 1SS81
D411 D413 1S2076
R413 100
VR401 100
R415 100
R423 820
R467 1.8k
C411 0.01
R429 1.8k
C403 330p
R403 12k
R409 27
R411 27
D419 MV11
C415 0.1
C417 1
R453 0.22 5W
R449 56 0.5W
R461 15
R469 470
C425 470p
R441 18k
C431 47/50V
R465 68k
R405 10k
R407 560
D401 RD15EB
C405 22/16V
R463 3.8k
R421 100
R433 100
R497 15k
TP7
C419 0.1
R435 100
R447 2.2
D403 SIB01-02
R483 2.2k
C433 3300p
R481 1k
C434 3300p
R482 1k
R484 2.2k
D404 SIB01-02
C420 0.1
R448 2.2
R547 100
R543 47k
R563 33k
R537 15k
R541 150k
C519 0.027
C531 0.047
C533 0.047
R561 330
C521 0.15
C525 680p
C527 680p
C529 100/10V
C535 22/16V
R553 220k
R555 270k
R557 8.2k
R559 100k
R549 100k
R545 8.2k
R533 330
R535 330
R539 2.7k
R571 2.2k
Q1 2SC1419(C)
Q6 2SK106(C)
C15 0.047
D5 SIB01-02
C14 2200/16V
C13 2200/16V
D6 SIB01-02
C16 0.047
C11 1000/16V
R5 100
C12 470/16V
D9 RD15EB
D31 1SS81
D32 1SS81
R40 10k
R39 10k
R41 10k
R32 220k
R33 1.5k
R35 4.7k
C32 33/10V
R37 100k
R38 4.7k
R30 150k
D33 1SS81
R36 10k
D34 RD5R1EB
D35 1SS81
R43 1.2k 0.5W
Q31
C31 33/10V
Q32
Q33
Q34
R44 47k
R31 47k
R34 47k
C33 22/16V
R42 3.3k
Q31 Q32 Q33 Q34
2SA844(E)
SW12 SPEAKER 2 ON
SW13 SPEAKER 1 ON
TE5 SPEAKER SYSTEM 1
TE6 SPEAKER SYSTEM 2
Lch
G
G
Rch
R491 470 2W
R492 470 2W
J1 HEADPHONES
PL5 PL4 PL3 PL2 PL1
FU1 3A
FU2 4A
FU3 4A
FU4 4A
FU5 4A
T1 POWER
C6 10000/50V
C7 10000/50V
C8 10000/50V
C9 10000/50V
D1
D2
D3 SIB01-02
D4 SIB01-02
C2 0.01
C3 0.01
C4 0.01
C5 0.01
C27 0.047
C28 0.047
R3 1k 1W
R4 1k 1W
D1 D2 S5VB20
R1 3.3M 0.5W
SO1 SWITCHED
SW1 POWER
SO1 UNSWITCHED
C1 0.01
P1 AC120V 60Hz

SCHEMATIC DIAGRAM – MULTI VOLTAGE

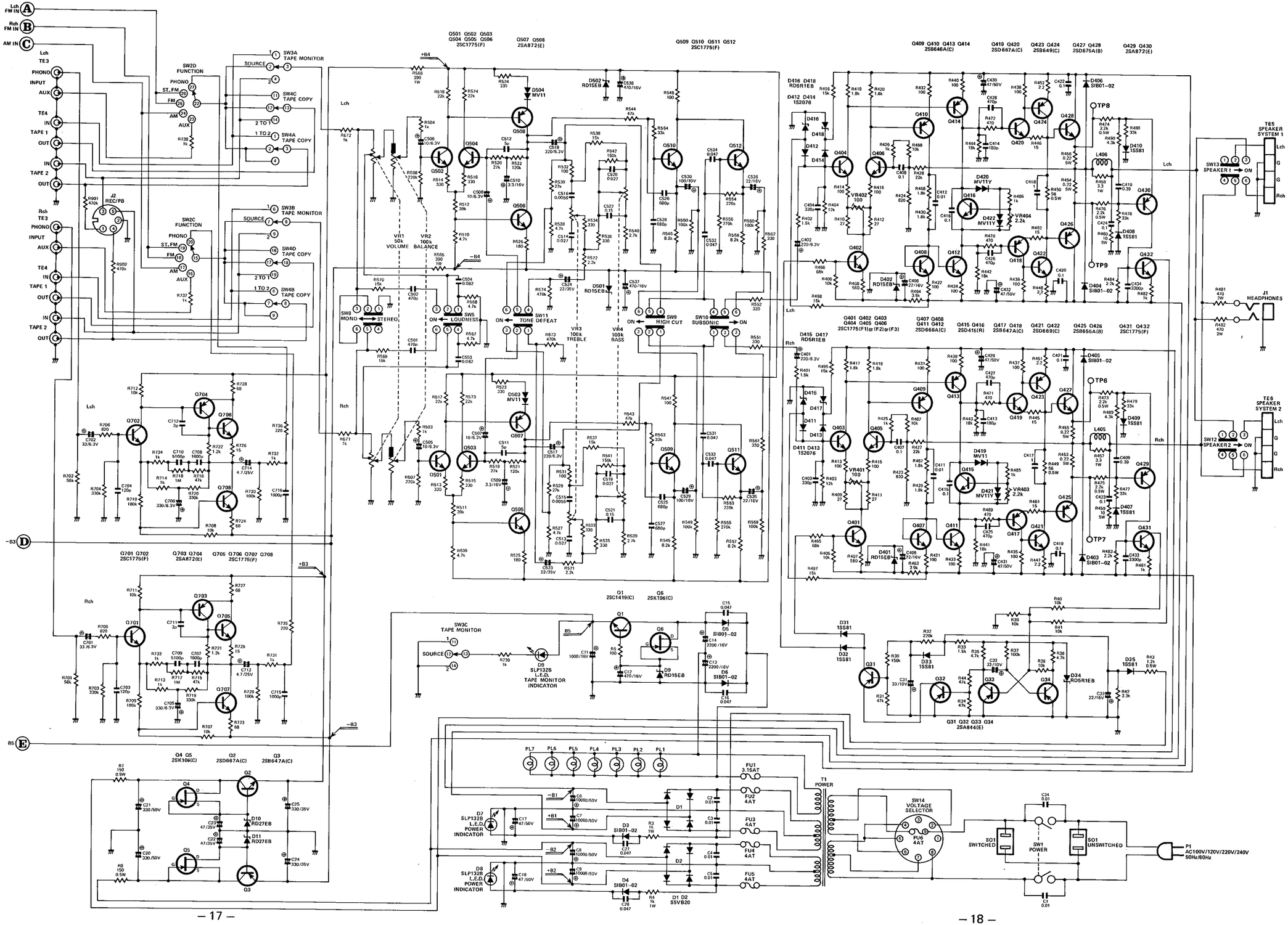


SCHEMATIC DIAGRAM – MULTI VOLTAGE

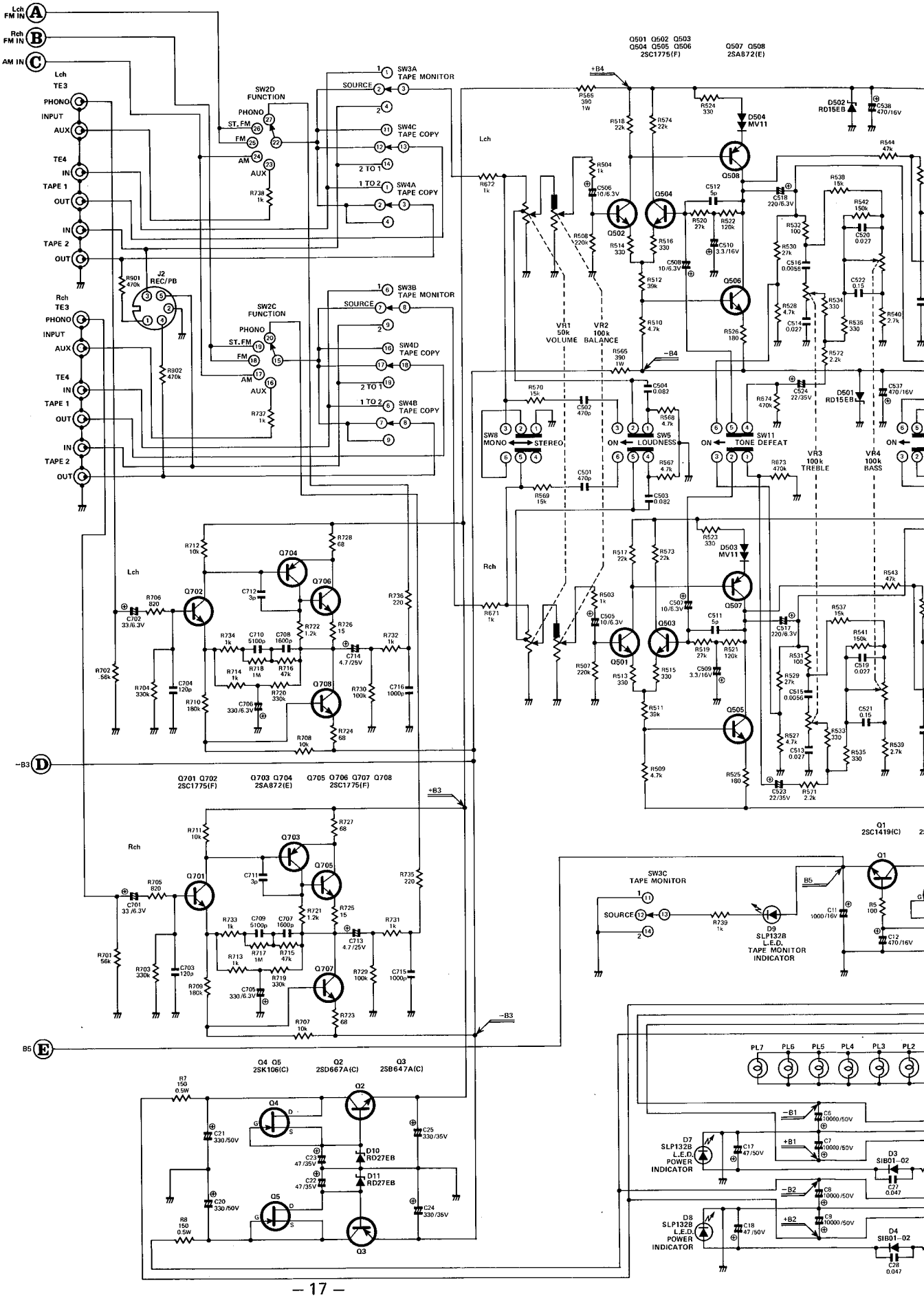


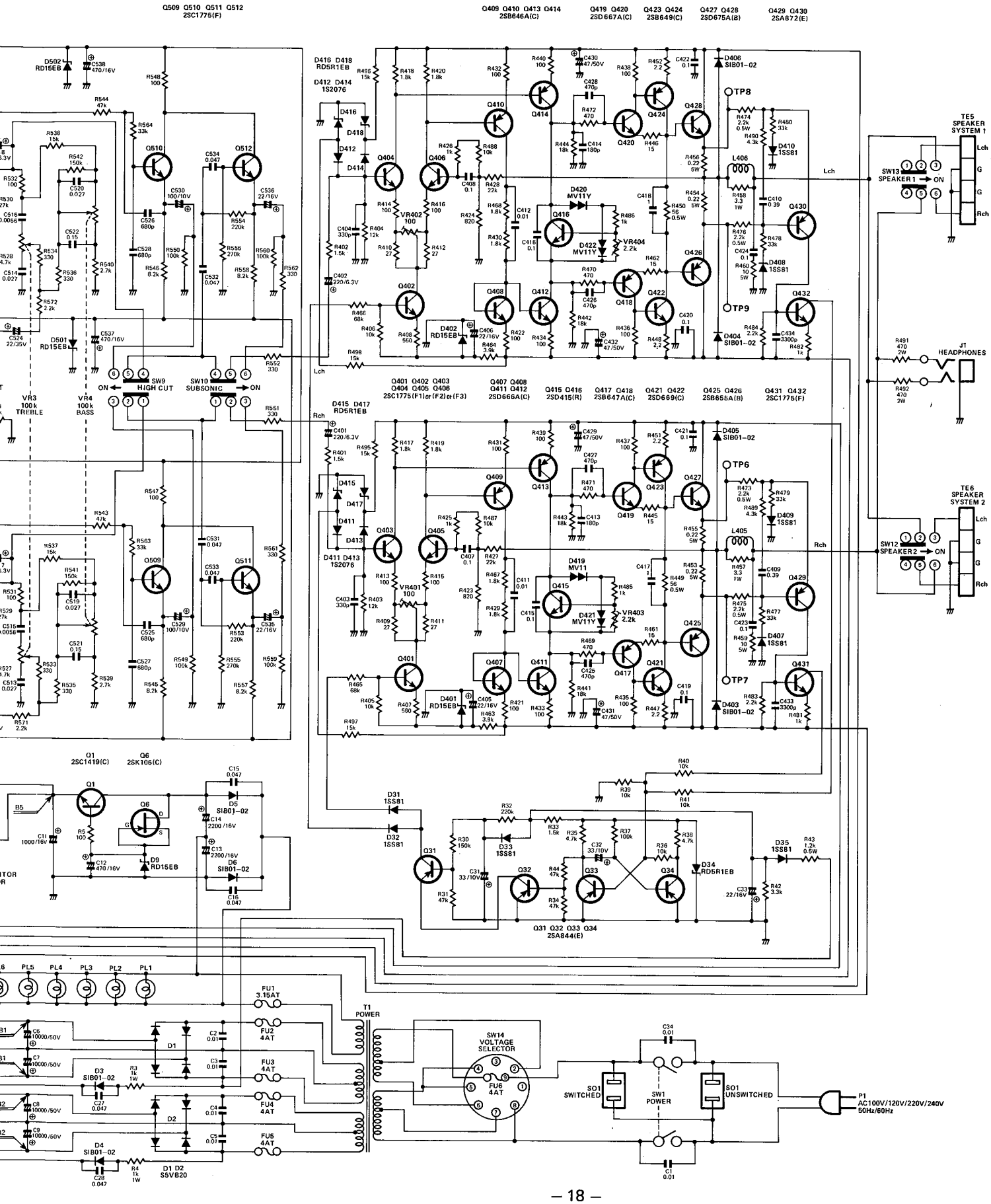

L201 3.3μH
L202 3.3μH
D254 1S2076
IC201 BA401
IC202 BA401
CF201 SFE 10.7ML
CF202 SFE 10.7ML
CF203 SFE 10.7ML
IC203 μPC1167C
L203 18μH
T201
T202
TP4
TP3
TP2
D201 1S2076
PHONO
ST.FM
FM
AM
AUX
SW2A FUNCTION
Q201 Q203 Q204 2SC1335(E)
Q202 2SA844(E)
Q251 2SK106(C)
ME1 TUNING METER
D302 RD5R1EB
D301 GL4AR2 L.E.D. STEREO INDICATOR
D202 SG206D L.E.D. IN-TUNE INDICATOR
L301 10μH
L204 100μH
VR303 220
IC301 KB4437
SW15 50μSEC
75μSEC
SW7 25 MICROSEC
ON
LC301 L.P.F. 38kHz
Q301 Q302 2SA844(E)
Q303 Q304 Q305 Q306 2SC1335(E)
Q358 Q359 Q360 Q361 Q362 Q363 2SC1335(E)
TP5
VR301 4.7k
VR302 22k
VR352 50k
VR353 20k
VR5 50k FM MUTING LEVEL
SW6 ON ← FM MUTING
D354 1S2076
SW2B FUNCTION
A Lch FM OUT
B Rch FM OUT
C AM OUT
D -B3
E B5

SCHEMATIC DIAGRAM – MULTI VOLTAGE

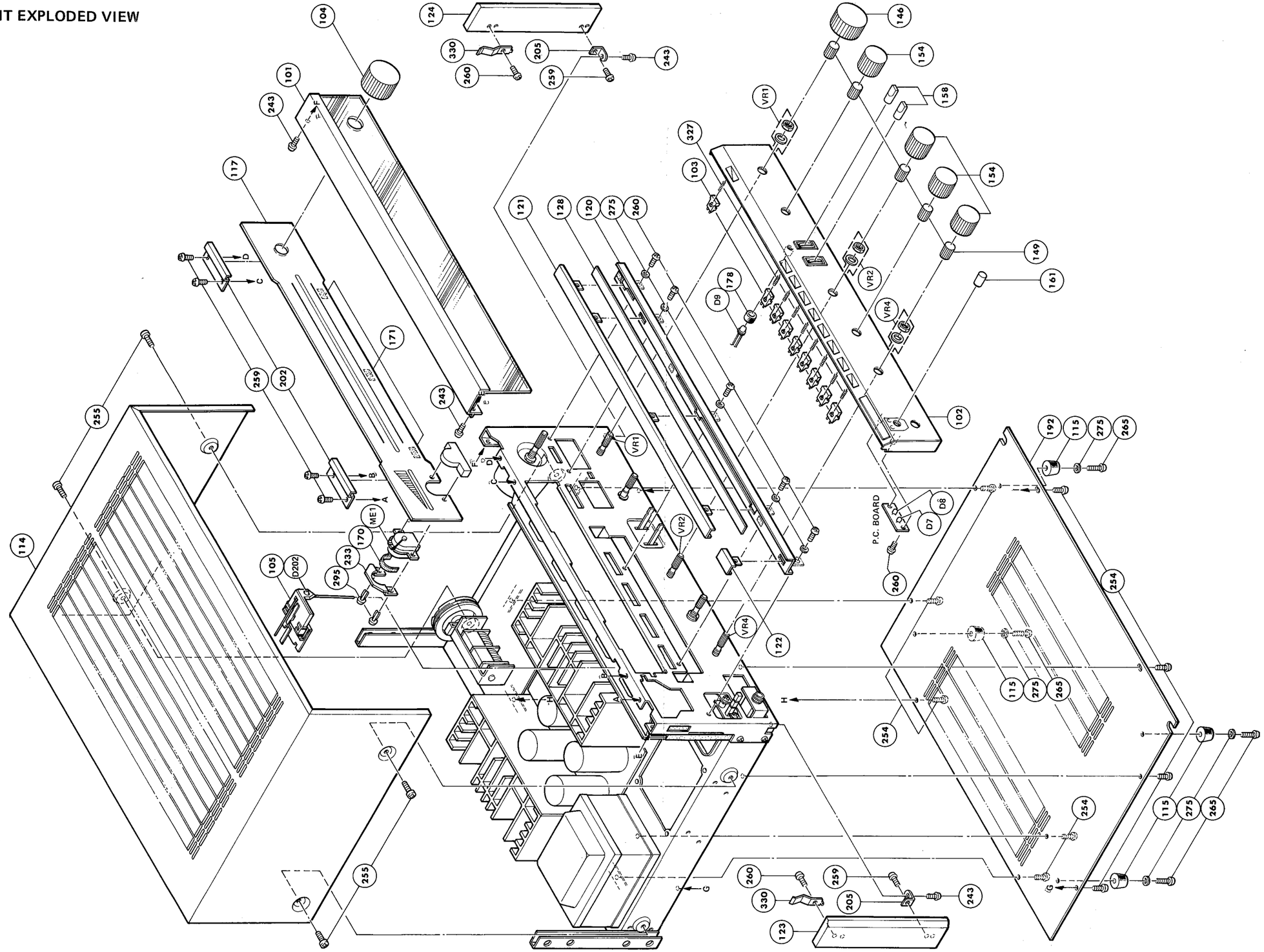


SCHEMATIC DIAGRAM – MULTI VOLTAGE

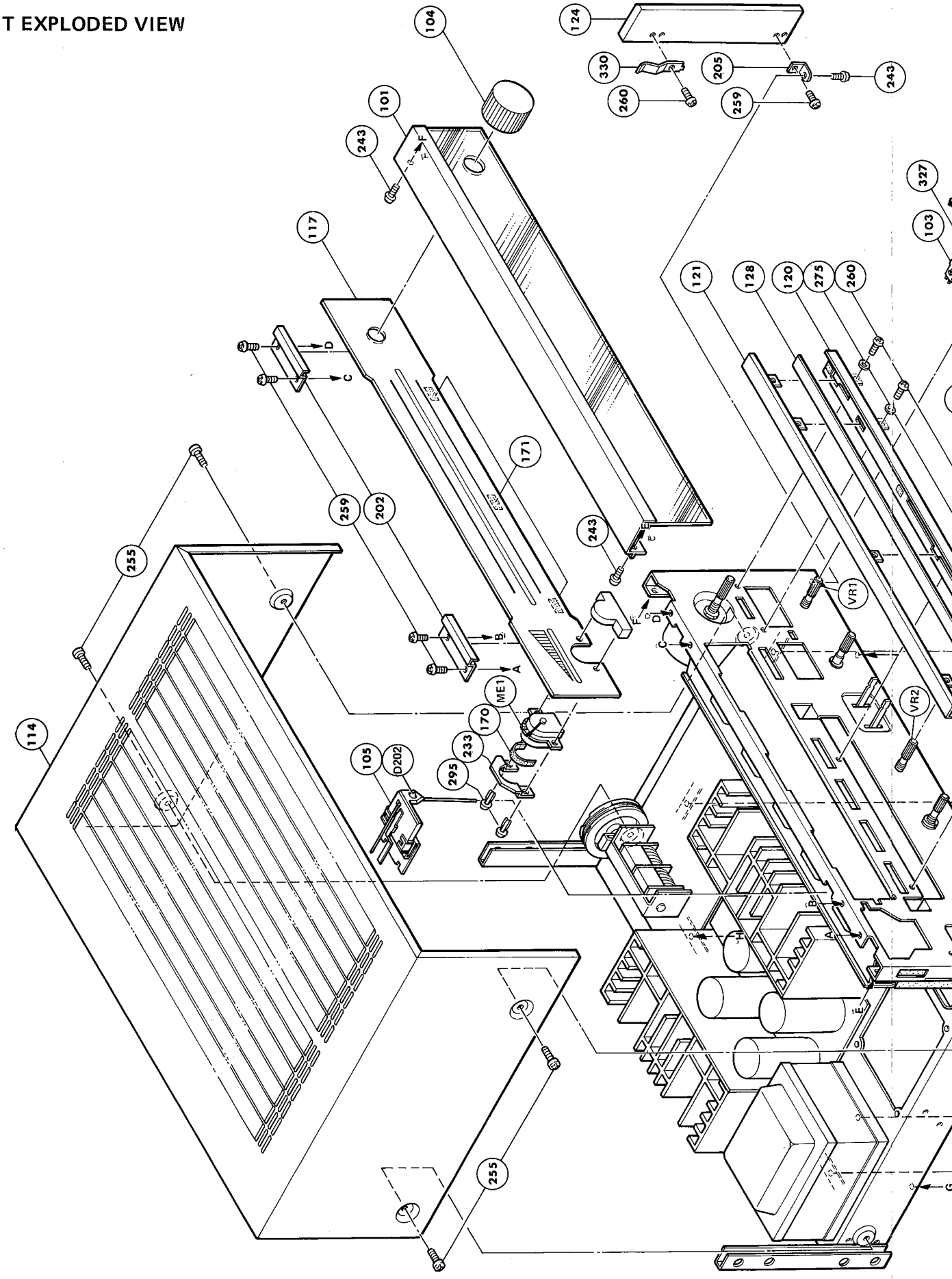


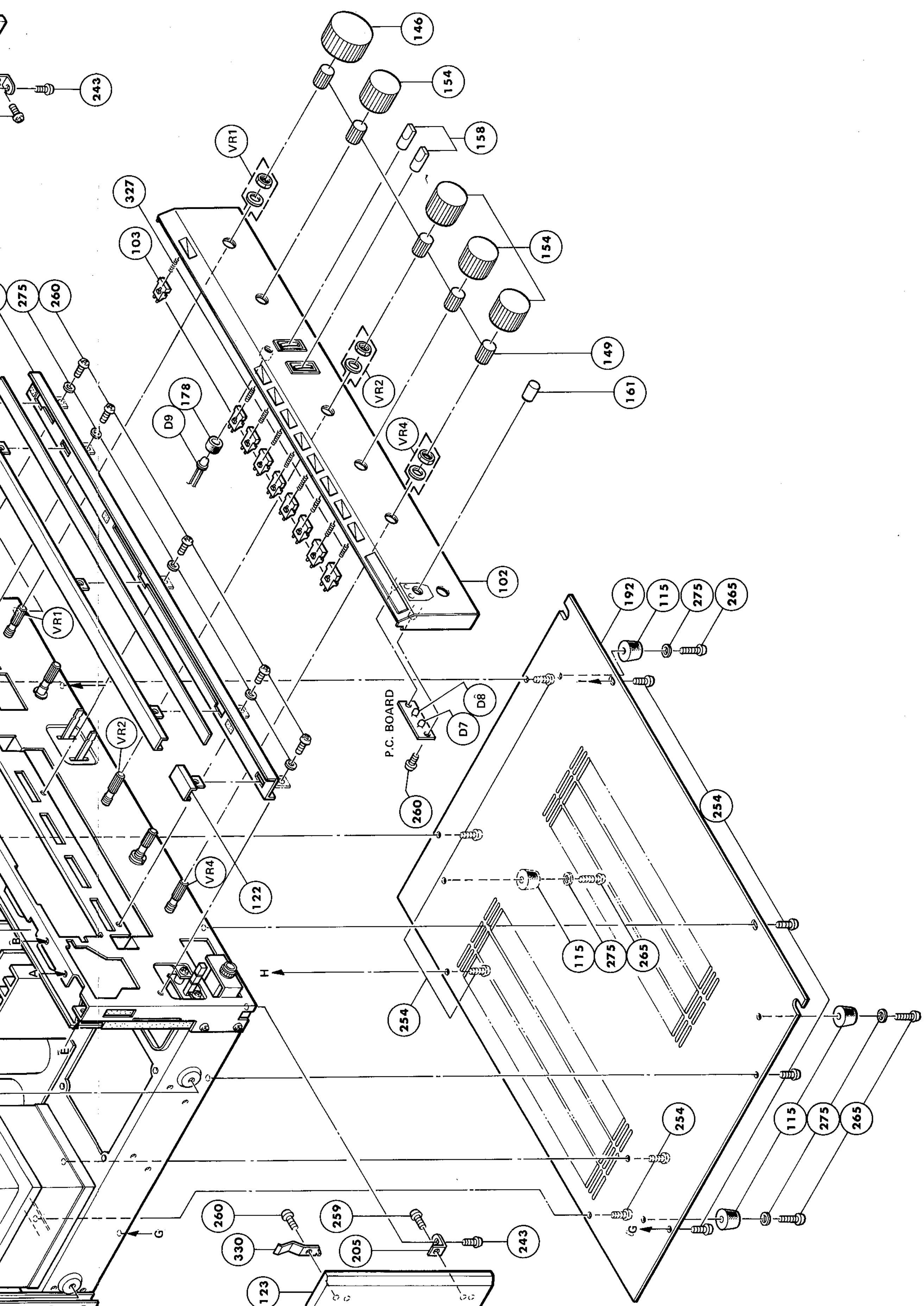

Q509 Q510 Q511 Q512
2SC1775(F)
Q409 Q410 Q413 Q414
2SB646A(C)
Q419 Q420
2SD667A(C)
Q423 Q424
2SB649(C)
Q427 Q428
2SD675A(B)
Q429 Q430
2SA872(E)
D502 RD15EB
C538 470/16V
R548 100
R544 47k
R564 33k
Q510
Q512
C534 0.047
C530 100/10V
C536 22/16V
C526 680p
R554 220k
R550 100k
R556 270k
R560 100k
R562 330
C532 0.047
R546 8.2k
R558 8.2k
R538 15k
R542 150k
C520 0.027
R532 100
C516 0.0056
C522 0.15
R534 330
R536 330
R540 2.7k
R572 2.2k
C514 0.027
C524 22/35V
D501 RD15EB
C537 470/16V
R552 330
SW9 HIGH CUT
SW10 SUBSONIC
ON
VR3 100k TREBLE
VR4 100k BASS
R561 330
D416 D418 RD5R1EB
D412 D414 1S2076
R498 15k
R418 1.8k
R420 1.8k
R432 100
R440 100
C430 47/50V
C428 470p
R472 470
R444 18k
C414 180p
Q410
Q414
Q420
Q424
Q428
R438 100
R452 2.2
C422 0.1
D406 SIB01-02
TP8
R474 2.2k 0.5W
R490 4.3k
R480 33k
D410 1SS81
L406
R456 0.22 5W
R458 3.3 1W
C410 0.39
R476 2.2k 0.5W
R478 33k
C424 0.1
R460 10 5W
D408 1SS81
Q430
Q432
TP9
R484 2.2k
C434 3300p
R482 1k
D404 SIB01-02
C420 0.1
R448 2.2
R436 100
C432 47/50V
R426 1k
R488 10k
R428 22k
C408 0.1
Q404
Q406
Q402
Q408
Q412
R414 100
R416 100
VR402 100
R404 12k
R402 1.5k
R410 27
R412 27
C404 330p
C402 220/6.3V
R466 68k
R406 10k
R408 560
D402 RD15EB
C406 22/16V
R464 3.8k
R422 100
R434 100
R468 1.8k
R424 820
R430 1.8k
C412 0.01
C416 0.1
D420 MV11Y
D422 MV11Y
Q416
R486 1k
VR404 2.2k
C418 1
R450 56 0.5W
R454 0.22 5W
R462 15
R470 470
C426 470p
R442 18k
Q426
Q418
Q422
R498 15k
Lch
Rch
TE5 SPEAKER SYSTEM 1
SW13 SPEAKER 1 ON
J1 HEADPHONES
R491 470 2W
R492 470 2W
TE6 SPEAKER SYSTEM 2
SW12 SPEAKER 2 ON
Q401 Q402 Q403
Q404 Q405 Q406
2SC1775(F1) or (F2) or (F3)
Q407 Q408
Q411 Q412
2SD666A(C)
Q415 Q416
2SD415(R)
Q417 Q418
2SB647A(C)
Q421 Q422
2SD669(C)
Q425 Q426
2SB655A(B)
Q431 Q432
2SC1775(F)
D415 D417 RD5R1EB
D411 D413 1S2076
C401 220/6.3V
R401 1.5k
R495 15k
R417 1.8k
R419 1.8k
R431 100
R439 100
C429 47/50V
C427 470p
R471 470
R443 18k
C413 180p
Q409
Q413
Q419
Q423
Q427
R451 2.2
C421 0.1
D405 SIB01-02
TP6
R473 2.2k 0.5W
R489 4.3k
R479 33k
D409 1SS81
L405
R455 0.22 5W
R457 3.3 1W
C409 0.39
R475 2.2k 0.5W
R477 33k
C423 0.1
R459 10 5W
D407 1SS81
Q429
Q431
TP7
R483 2.2k
C433 3300p
R481 1k
D403 SIB01-02
C419 0.1
R447 2.2
R435 100
C431 47/50V
R425 1k
R487 10k
R427 22k
C407 0.1
Q403
Q405
Q401
Q407
Q411
R413 100
R415 100
VR401 100
R403 12k
R409 27
R411 27
C403 330p
R467 1.8k
R423 820
R429 1.8k
C411 0.01
C415 0.1
D419 MV11
D421 MV11Y
Q415
R485 1k
VR403 2.2k
C417 1
R449 56 0.5W
R453 0.22 5W
R461 15
R469 470
C425 470p
R441 18k
Q425
Q417
Q421
R465 68k
R405 10k
R407 560
D401 RD15EB
C405 22/16V
R463 3.8k
R421 100
R433 100
R497 15k
R547 100
R543 47k
R563 33k
R541 150k
C519 0.027
C521 0.15
R533 330
R535 330
R539 2.7k
R571 2.2k
R537 15k
R531 100
C515 0.0056
C513 0.027
C531 0.047
C533 0.047
Q509
Q511
C525 680p
C529 100/10V
C535 22/16V
C527 680p
R549 100k
R553 220k
R555 270k
R559 100k
R545 8.2k
R557 8.2k
Q1 2SC1419(C)
Q6 2SK106(C)
C15 0.047
D5 SIB01-02
C14 2200/16V
C13 2200/16V
D6 SIB01-02
C16 0.047
B5
C11 1000/16V
R5 100
C12 470/16V
D9 RD15EB
R40 10k
R39 10k
R41 10k
D31 1SS81
D32 1SS81
R32 220k
D33 1SS81
R30 150k
R33 1.5k
R35 4.7k
C37 33/10V
R37 100k
R38 4.7k
R36 10k
D34 RD5R1EB
D35 1SS81
R43 1.2k 0.5W
Q31
Q32
Q33
Q34
C31 33/10V
R44 47k
R31 47k
R34 47k
C33 22/16V
R42 3.3k
Q31 Q32 Q33 Q34
2SA844(E)
PL6 PL5 PL4 PL3 PL2 PL1
FU1 3.15AT
T1 POWER
FU2 4AT
FU3 4AT
FU4 4AT
FU5 4AT
FU6 4AT
SW14 VOLTAGE SELECTOR
C6 10000/50V
C7 10000/50V
C8 10000/50V
C9 10000/50V
D1
D2
D3 SIB01-02
D4 SIB01-02
C2 0.01
C3 0.01
C4 0.01
C5 0.01
C27 0.047
C28 0.047
R3 1k 1W
R4 1k 1W
D1 D2 S5VB20
C34 0.01
SO1 SWITCHED
SW1 POWER
SO1 UNSWITCHED
C1 0.01
P1 AC100V/120V/220V/240V 50Hz/60Hz

GENERAL UNIT EXPLODED VIEW

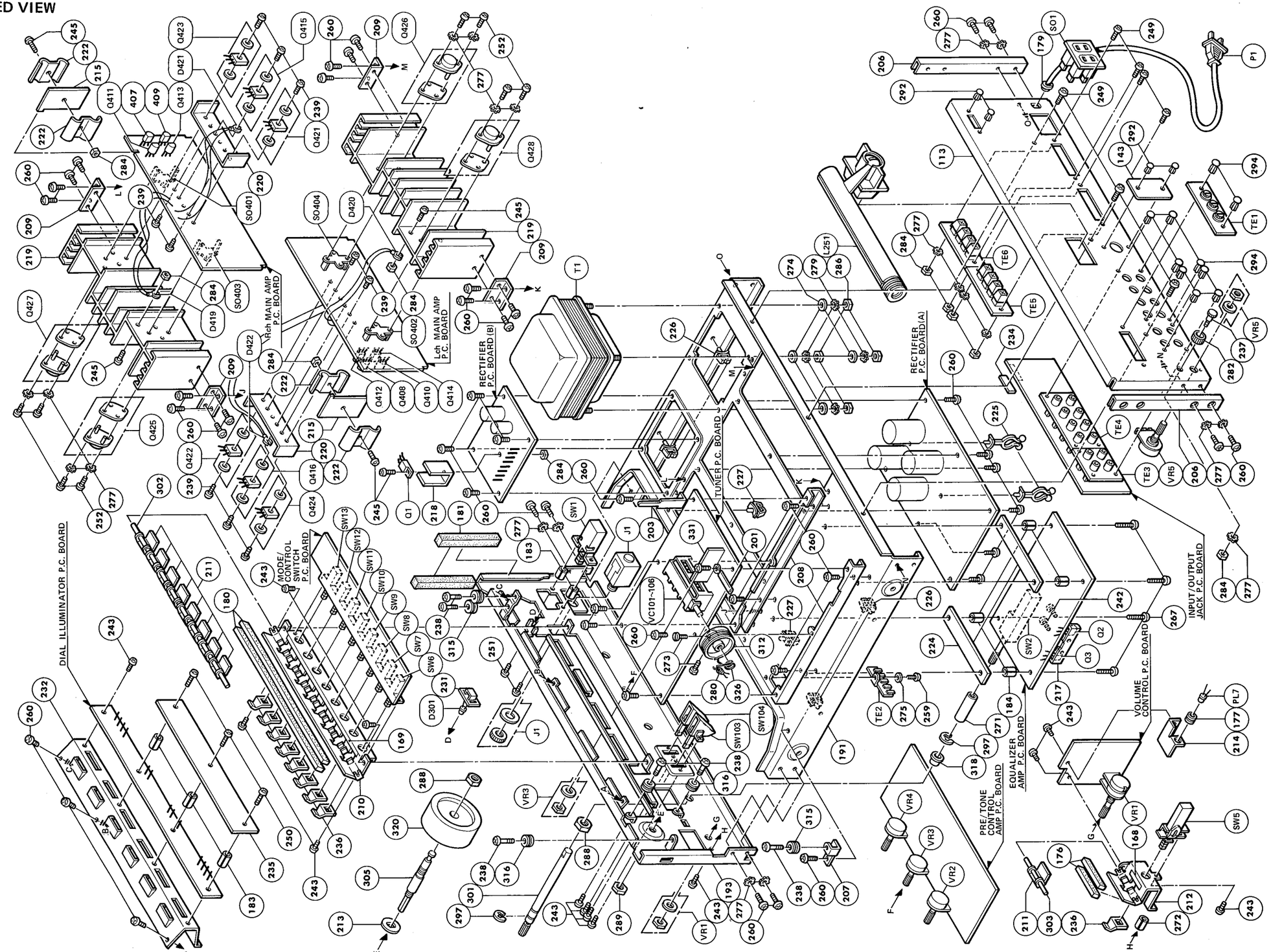


GENERAL UNIT EXPLODED VIEW

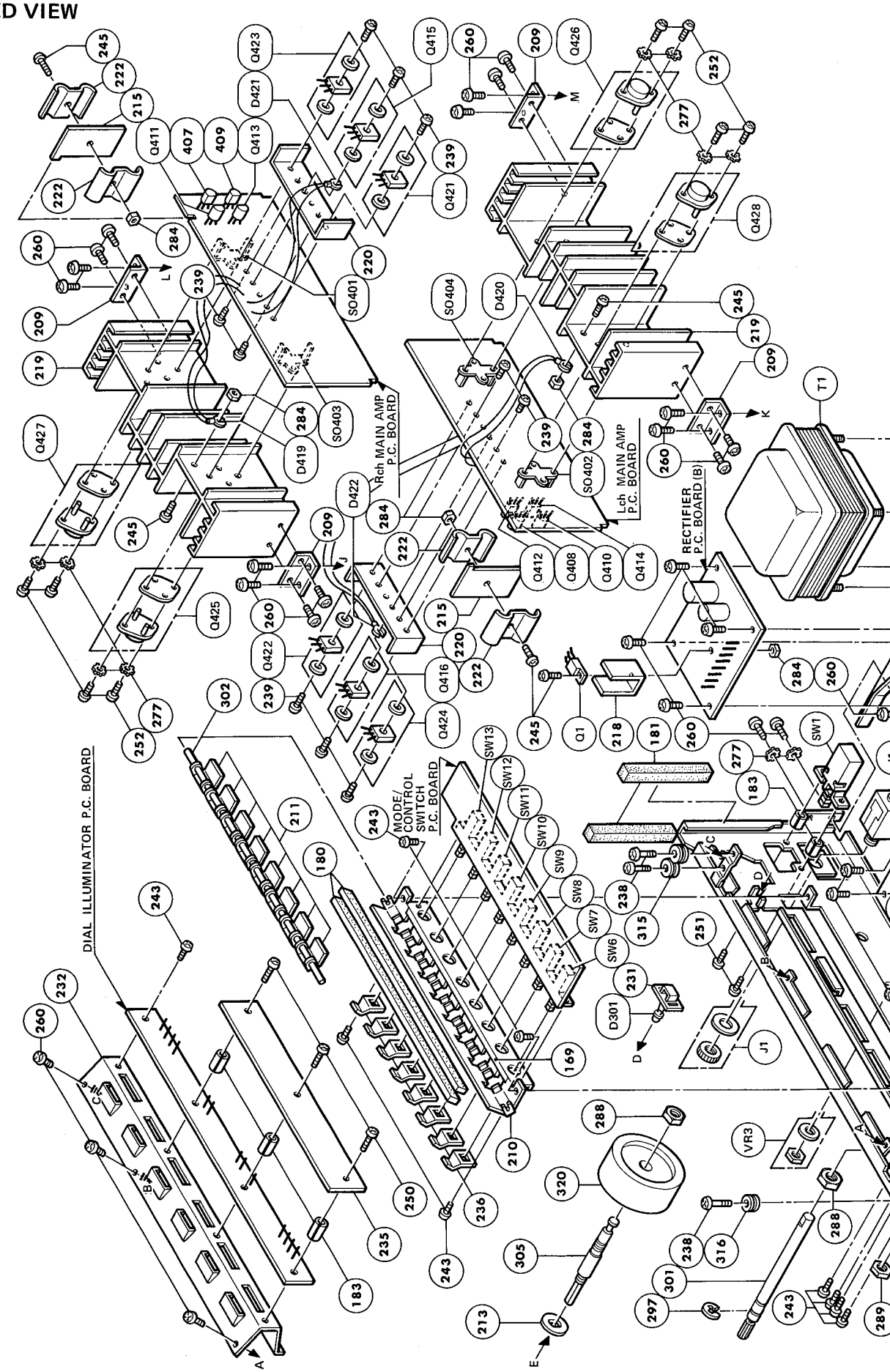


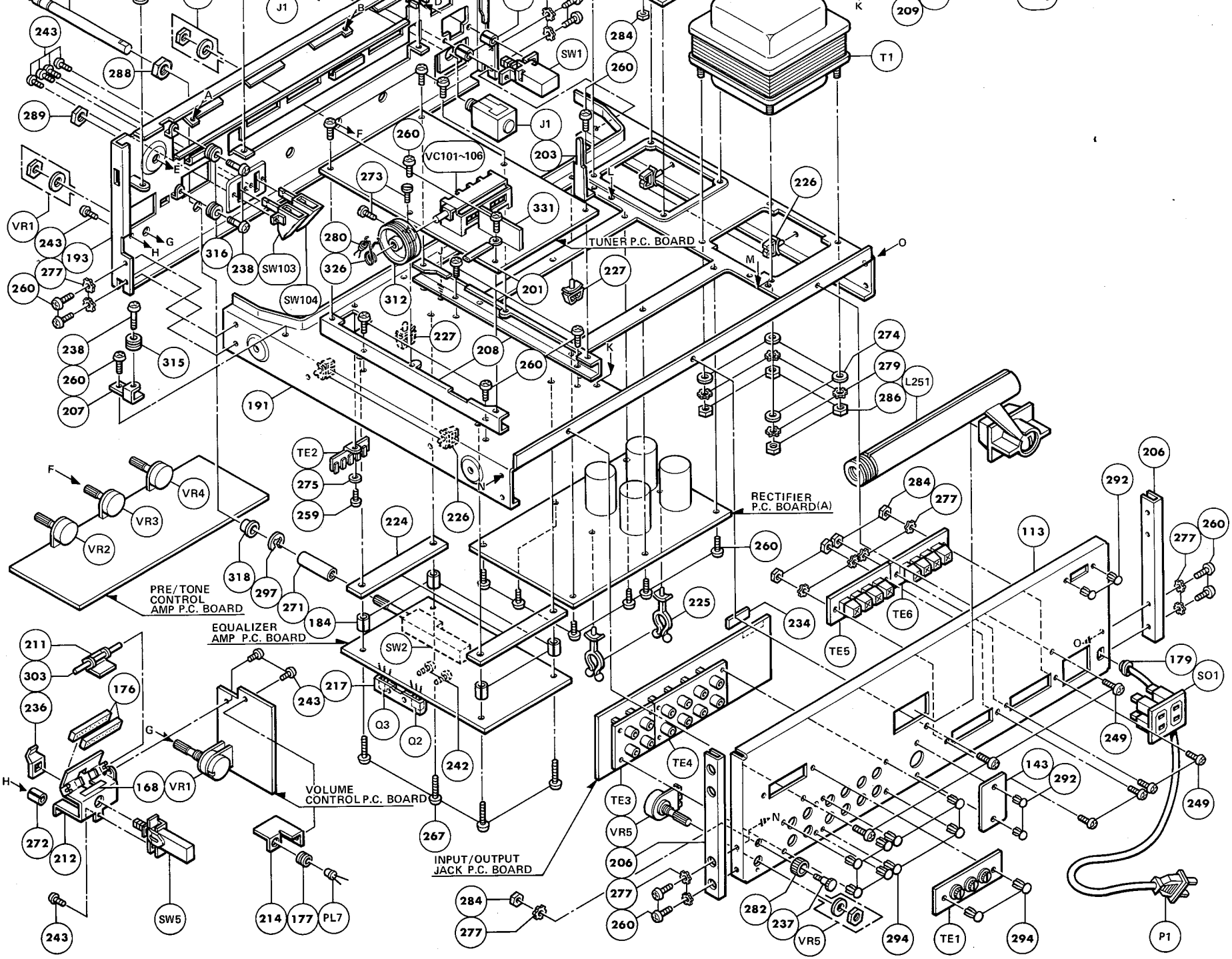

146
243
154
VR1
158
327
103
275
260
154
149
178
D9
VR2
161
VR4
102
192
115
275
265
VR1
P.C. BOARD
D8
D7
VR2
260
254
122
VR4
115
275
265
H
254
E
B
A
115
275
265
254
G
260
259
243
330
205
123

GENERAL UNIT EXPLODED VIEW

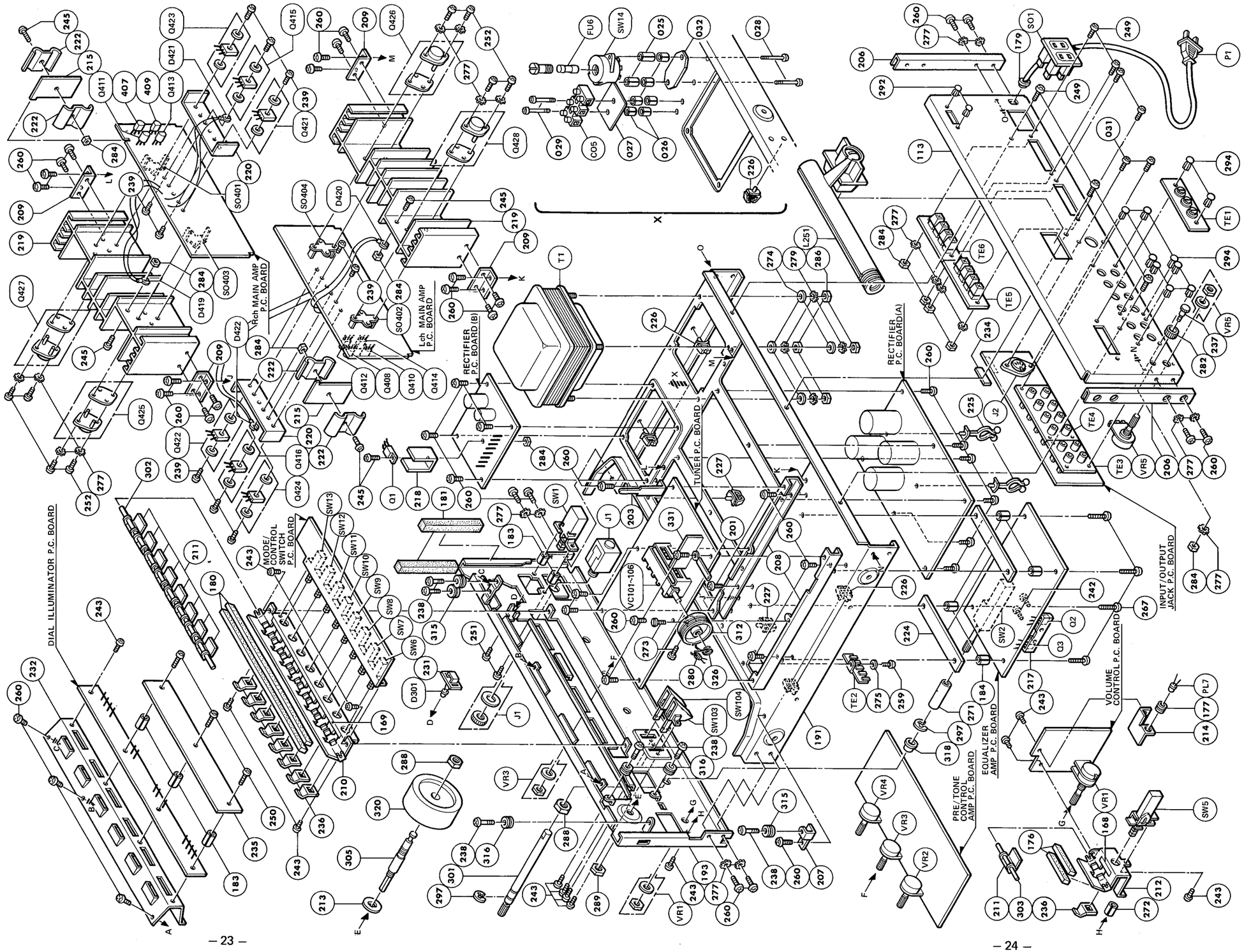


GENERAL UNIT EXPLODED VIEW

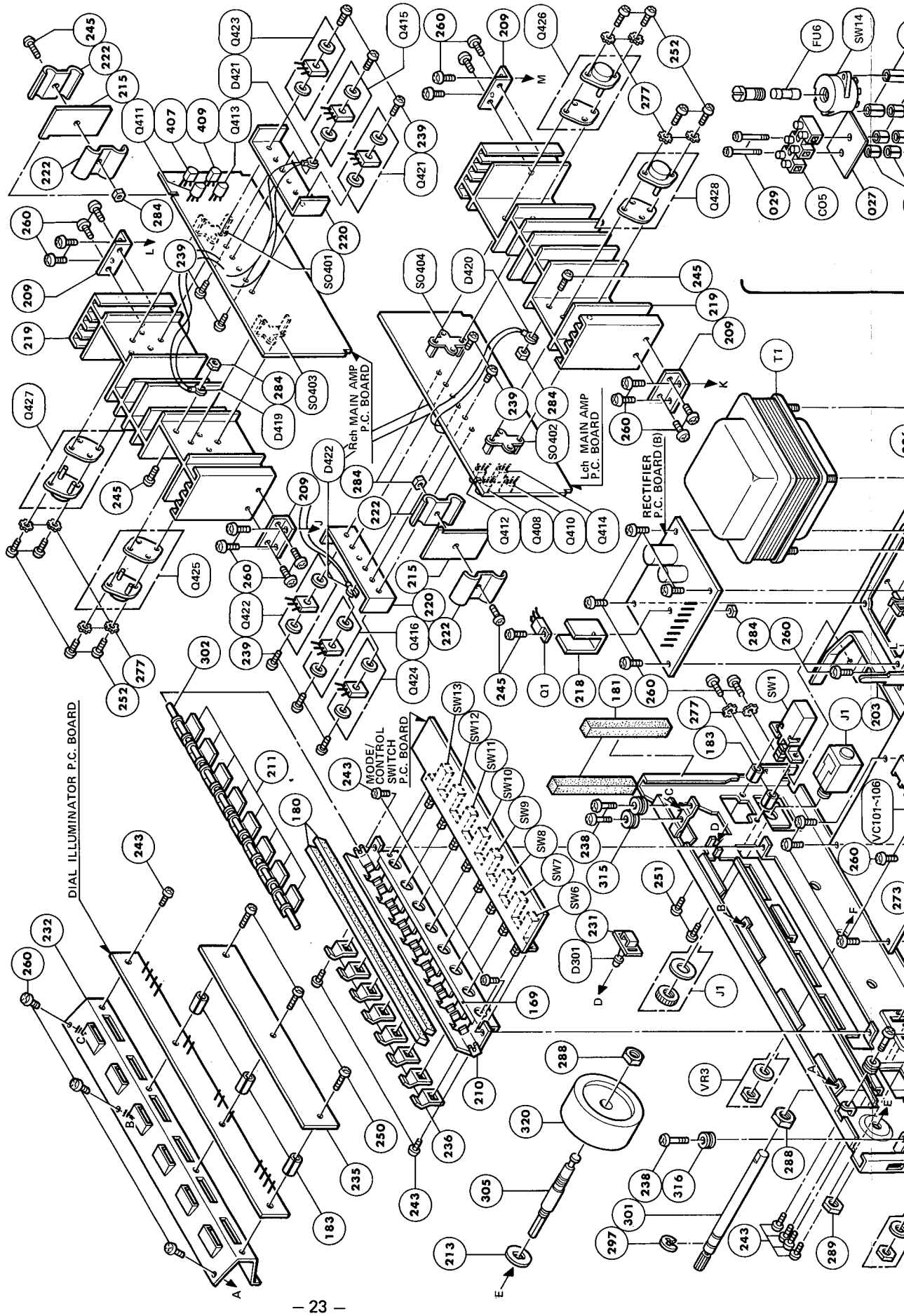


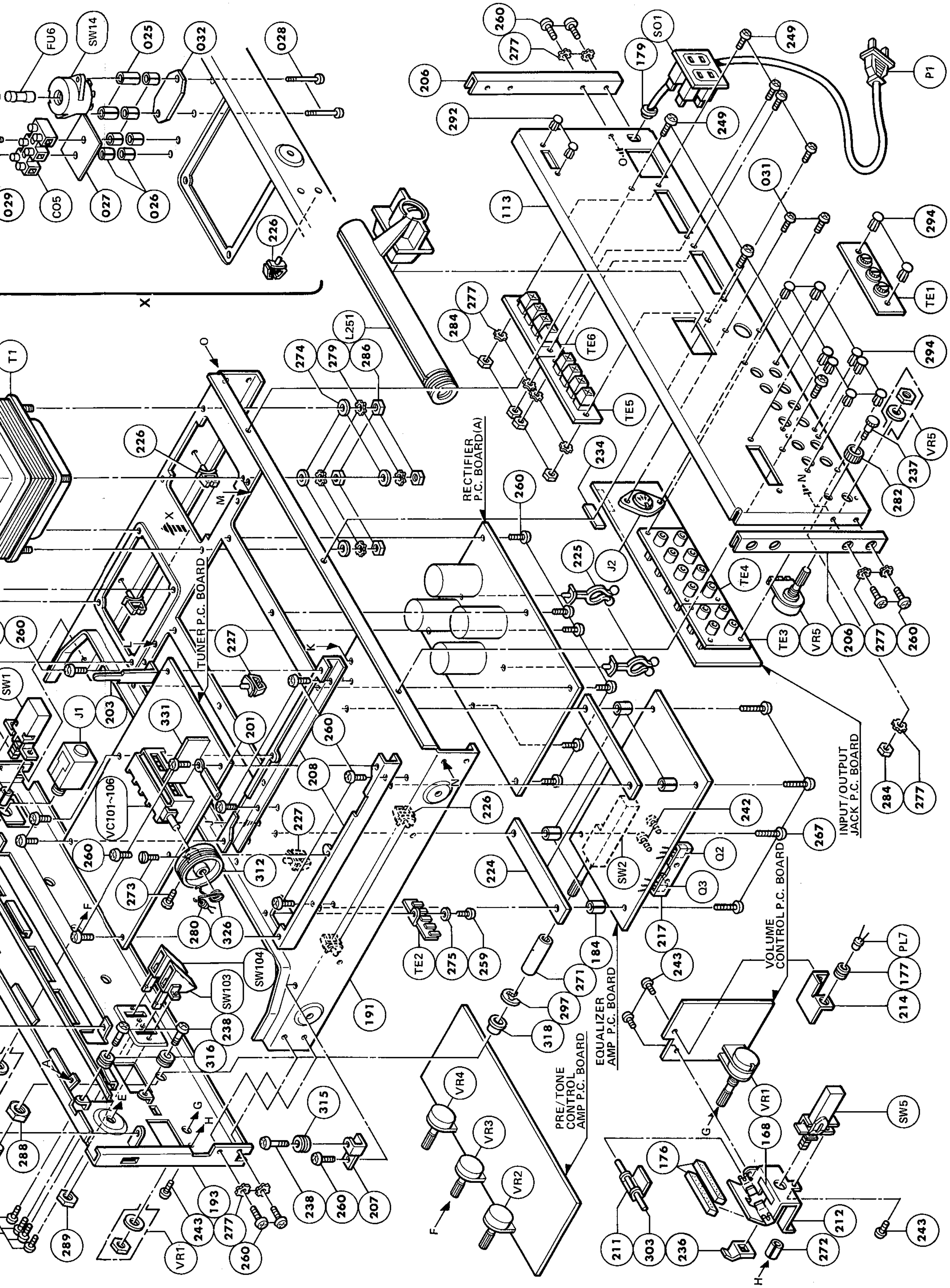

TUNER P.C. BOARD
RECTIFIER P.C. BOARD(A)
PRE/TONE CONTROL AMP P.C. BOARD
EQUALIZER AMP P.C. BOARD
VOLUME CONTROL P.C. BOARD
INPUT/OUTPUT JACK P.C. BOARD
VC101~106
SW1
SW2
SW5
SW103
SW104
J1
T1
L251
TE1
TE2
TE3
TE4
TE5
TE6
P1
SO1
Q2
Q3
PL7
VR1
VR2
VR3
VR4
VR5

GENERAL UNIT EXPLODED VIEW – MULTI VOLTAGE

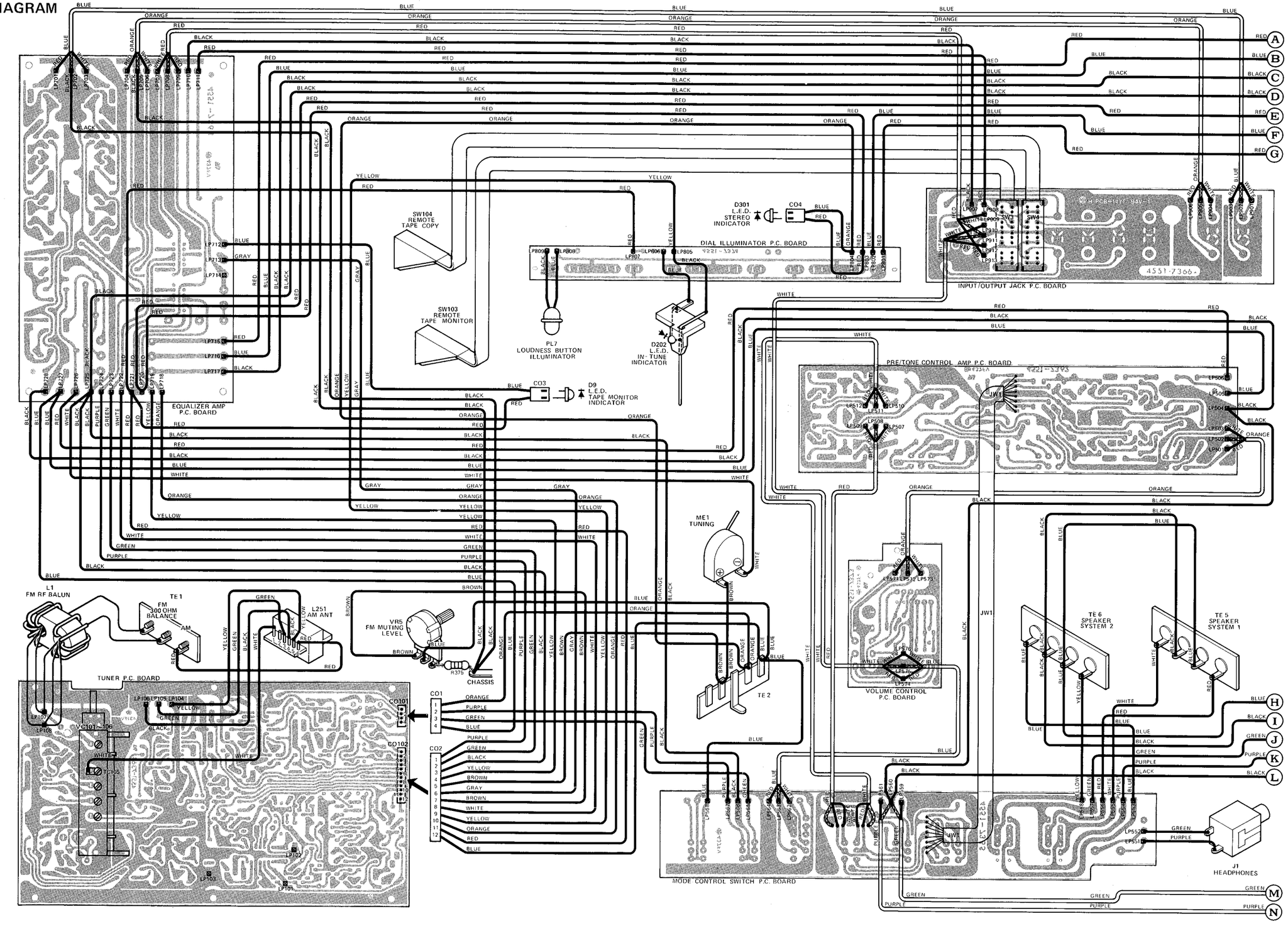


GENERAL UNIT EXPLODED VIEW – MULTI VOLTAGE

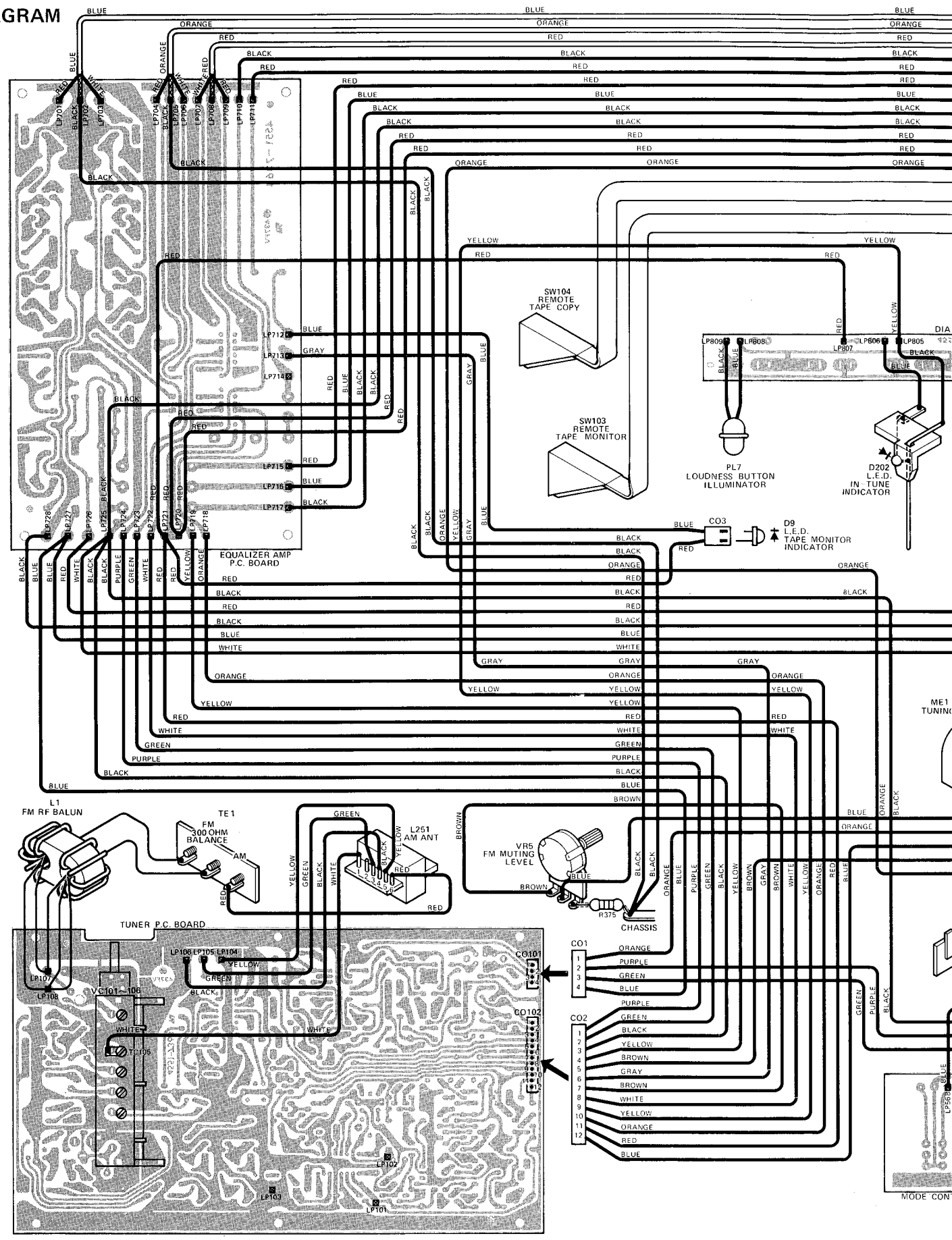


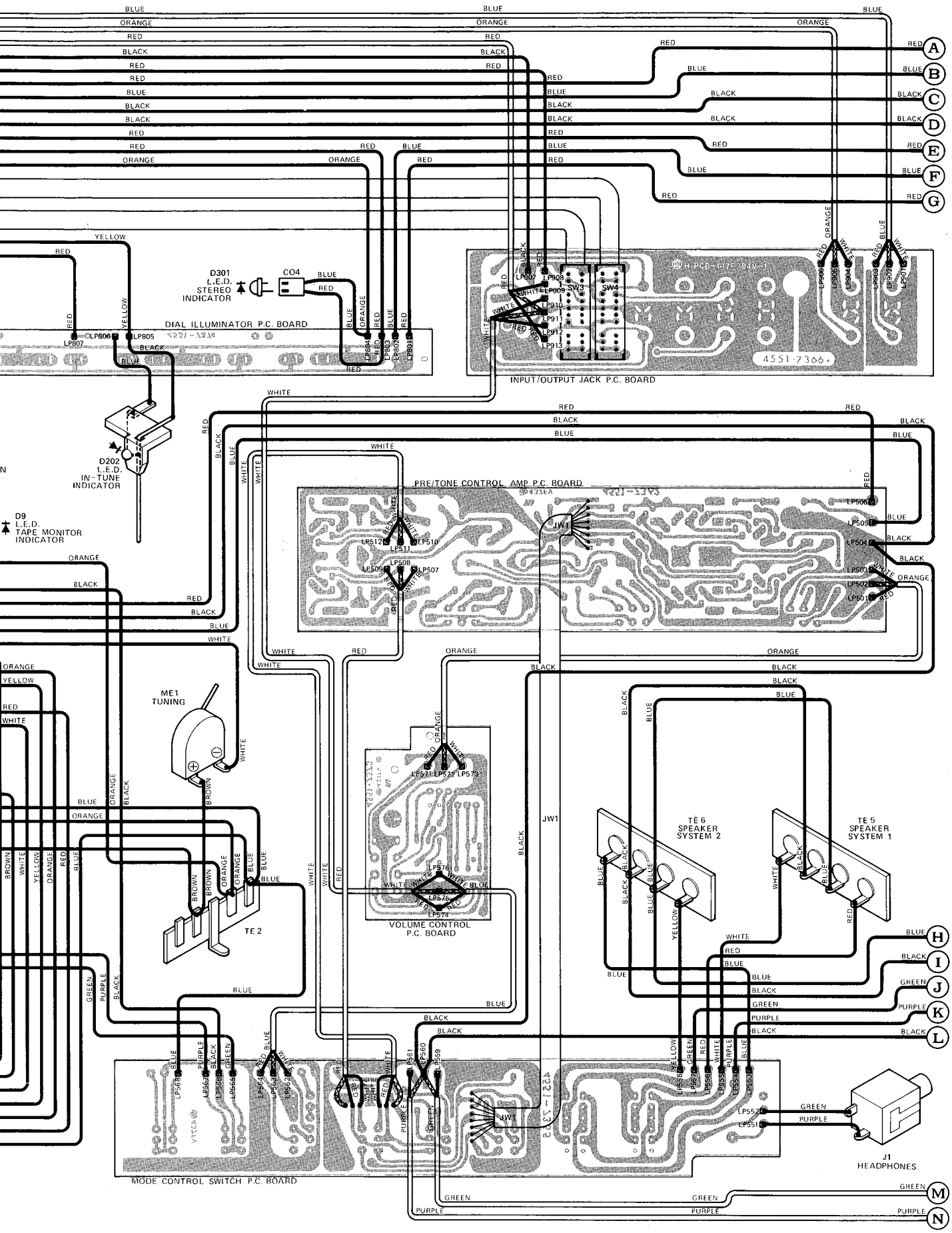

TUNER P.C. BOARD
RECTIFIER P.C. BOARD(A)
INPUT/OUTPUT JACK P.C. BOARD
VOLUME CONTROL P.C. BOARD
EQUALIZER AMP P.C. BOARD
PRE/TONE CONTROL AMP P.C. BOARD

WIRING DIAGRAM

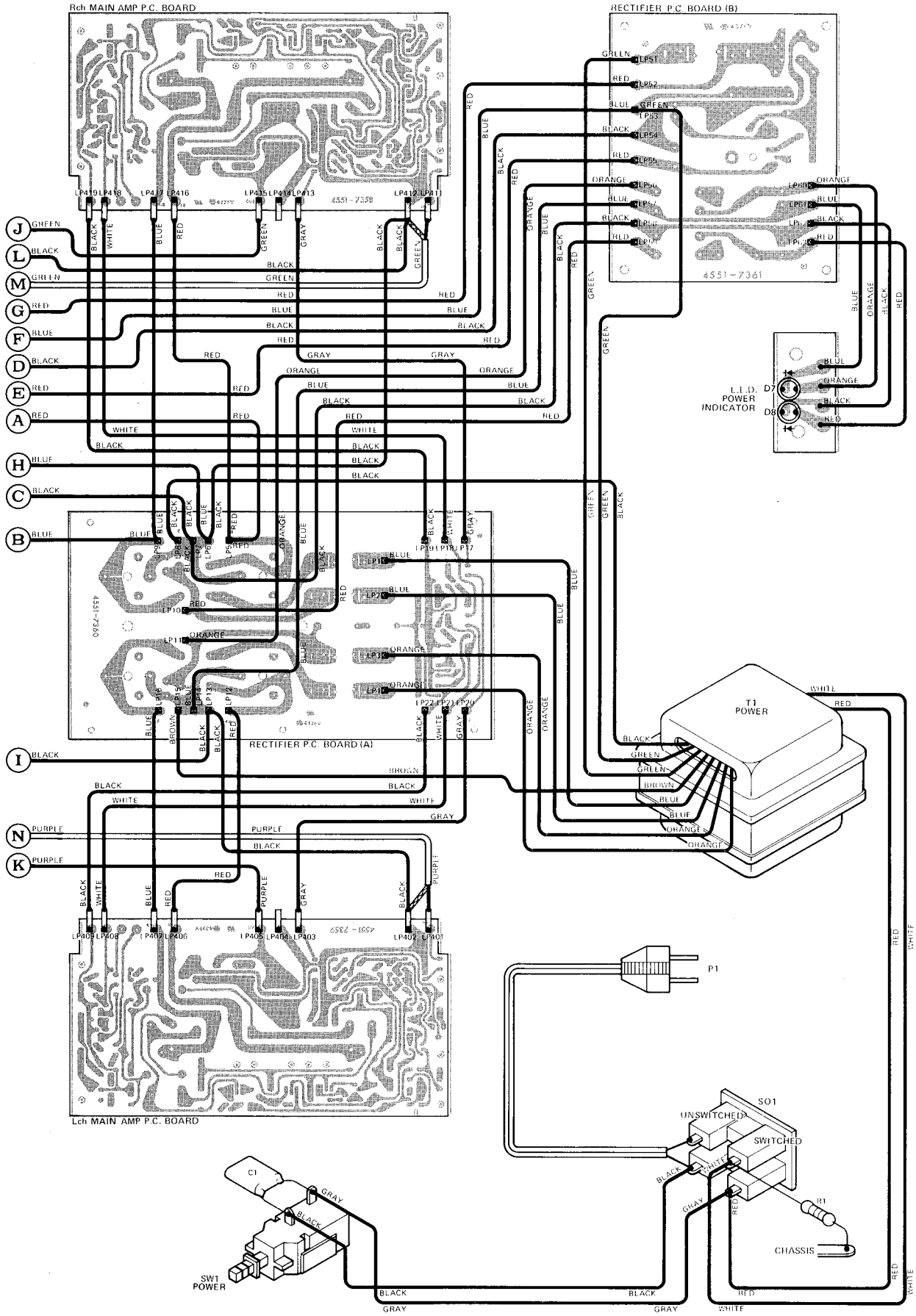


WIRING DIAGRAM

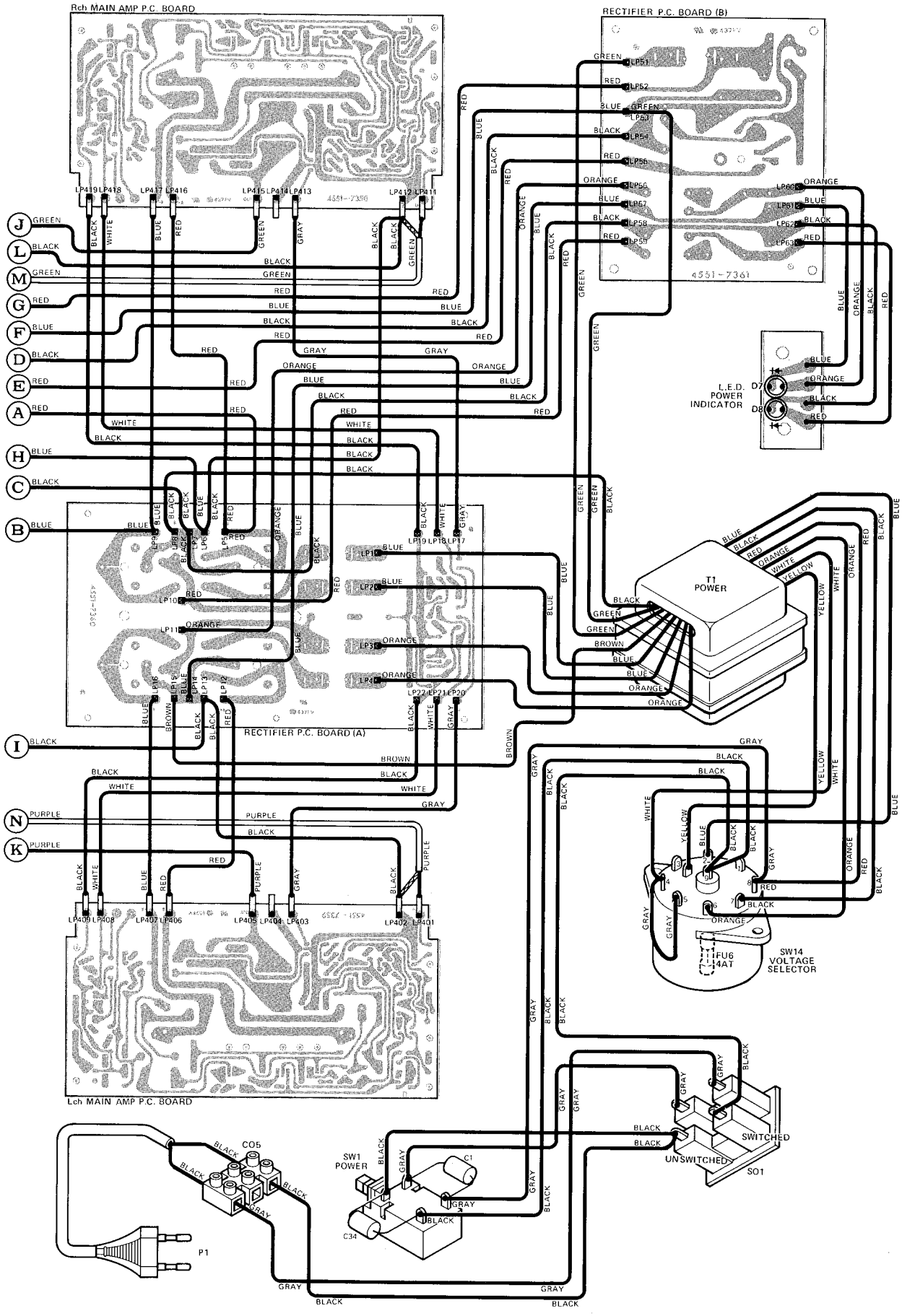



D301
L.E.D.
STEREO
INDICATOR
CO4
DIAL ILLUMINATOR P.C. BOARD
INPUT/OUTPUT JACK P.C. BOARD
D202
L.E.D.
IN-TUNE
INDICATOR
D9
L.E.D.
TAPE MONITOR
INDICATOR
PRE/TONE CONTROL AMP P.C. BOARD
ME1
TUNING
TE 2
VOLUME CONTROL
P.C. BOARD
TE 6
SPEAKER
SYSTEM 2
TE 5
SPEAKER
SYSTEM 1
J1
HEADPHONES
MODE CONTROL SWITCH P.C. BOARD
A
B
C
D
E
F
G
H
I
J
K
L
M
N

WIRING DIAGRAM



WIRING DIAGRAM – MULTI VOLTAGE

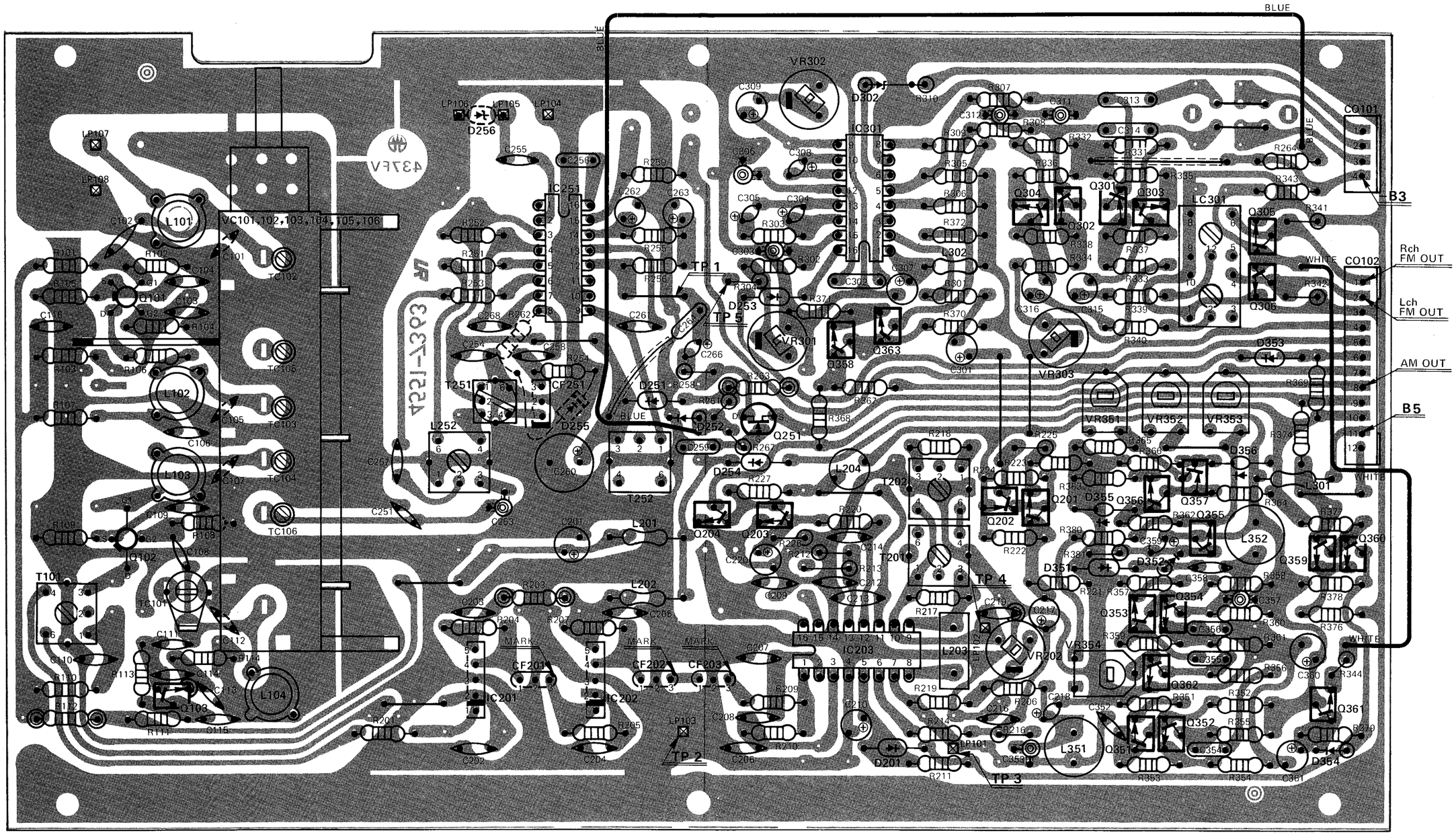


TUNER PC BOARD

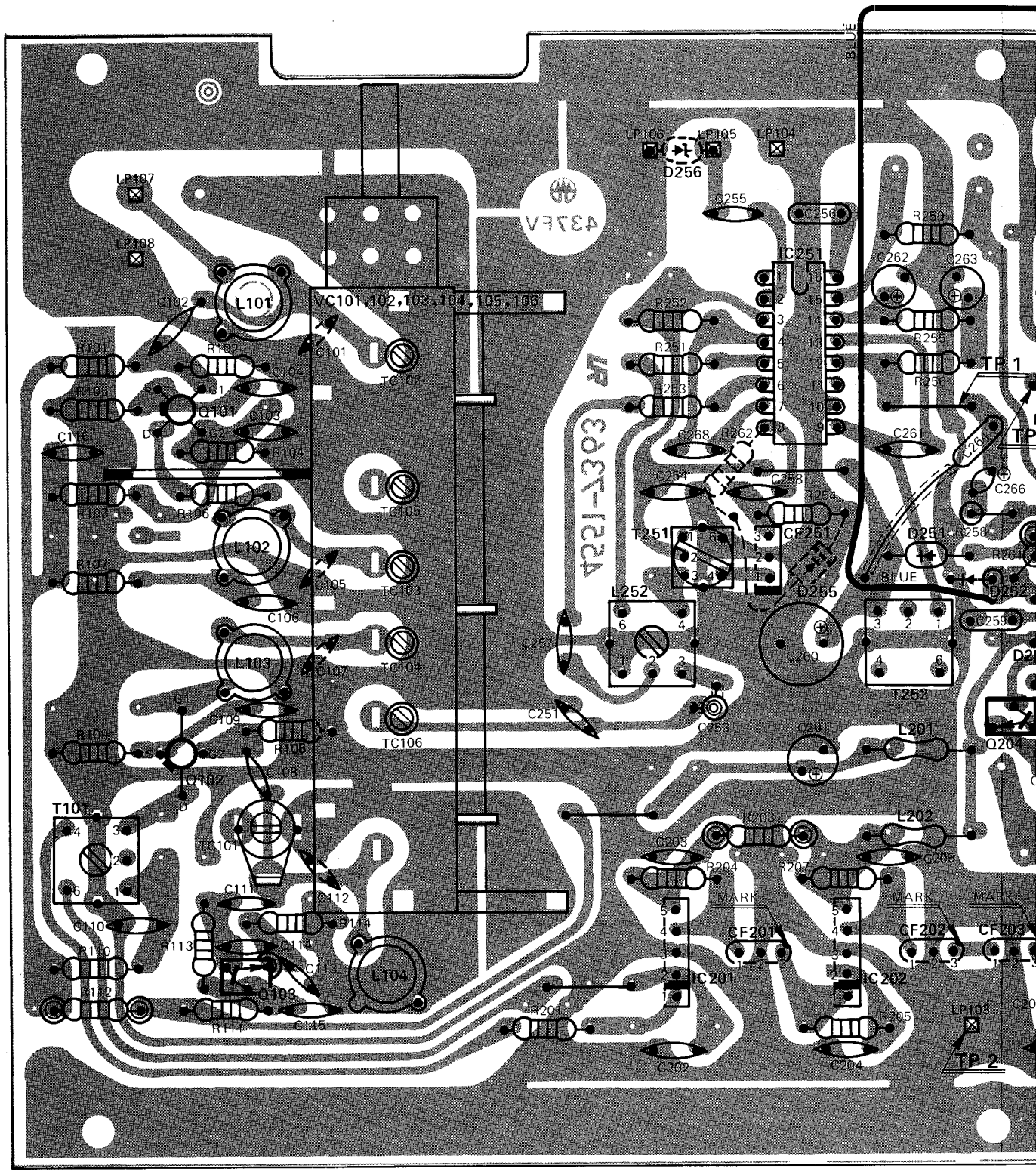
REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS		
VR202	23536016	Variable Resistor, 6.8 k ohm
VR301	23530554	Variable Resistor, 4.7 k ohm
VR302	23531305	Variable Resistor, 22 k ohm
VR303	23532130	Variable Resistor, 220 ohm
VR351	23536017	Variable Resistor, 10 k ohm
VR352, 354	23536018	Variable Resistor, 50 k ohm
VR353	23536019	Variable Resistor, 20 k ohm
CAPACITORS, ELECTROLYTIC		
C201	31835582	47MF +50% −10% 16V
C210	31835573	10MF +50% −10% 16V
C217	31835657	2.2MF ± 20% 50V
C218	30736020	10MF ± 20% 10V Tantalum
C220	31835574	1MF +75% −10% 50V
C260	31835577	220MF +50% −10% 16V
C262, 263	31835573	10MF +50% −10% 16V
C266	30731309	0.47MF ± 20% 35V Tantalum
C301, 315, 316	31835588	47MF ± 20% 25V
C304, 308	30736021	1MF ± 20% 25V Tantalum
C305	30736022	6.8MF ± 20% 16V Tantalum
C306	31836023	820PF ± 5% 50V
C307	31835573	10MF +50% −10% 16V
C309	31832149	1MF ± 20% 50V
C359	30731310	0.1MF ± 20% 35V
C360	31835582	47MF +50% −10% 16V
C361	31835573	10MF +50% −10% 16V
VC101, 102, 103 104, 105, 106	30336024	Variable Capacitor (w/Trimmers TC102, 103, 104, 105, 106)
TRANSISTORS		
Q101, 102	43035590	F. E. T., 3SK45(B) FM RF Amp., FM Mixer
Q103	43034834A	2SC535(B) FM Osc.
Q201	43028536	2SC1335(E) FM Demodulation Signal Amp.
Q202	43031312	2SA844(E) FM Demodulation Signal Amp.
Q203, 204	43028536	2SC1335(E) In-Tune Indicator Drive
Q251	43035874	F. E. T., 2SK106(C) Delay Switch
Q301, 302	43031312	2SA844(E) MPX Output Amp.
Q303, 304, 305, 306	43028536	2SC1335(E) MPX Output Amp., FM Muting Switching
Q351, 352, 353, 354	43028536	2SC1335(E) 100 kHz Amp.
Q355	43028536	2SC1335(E) Buffer Amp.
Q356	43028536	2SC1335(E) Meter Driver
Q357	43031312	2SA844(E) Meter Driver
Q358, 363	43028536	2SC1335(E) Schmitt Circuit (Stereo Muting)
Q359, 360	43028536	2SC1335(E) Schmitt Circuit (FM Muting)
Q361	43028536	2SC1335(E) FM Muting Switching Driver
Q362	43028536	2SC1335(E) AGC
IC201, 202	43131313	Integrated Circuit, BA401 FM IF Amp.
IC203	43136025	Integrated Circuit, UPC1167C FM IF Amp./ FM Det.
IC251	43136026	Integrated Circuit, UPC1168C AM IF Amp./ AM Det.
IC301	43135778	Integrated Circuit, KB4437 FM Multiplex

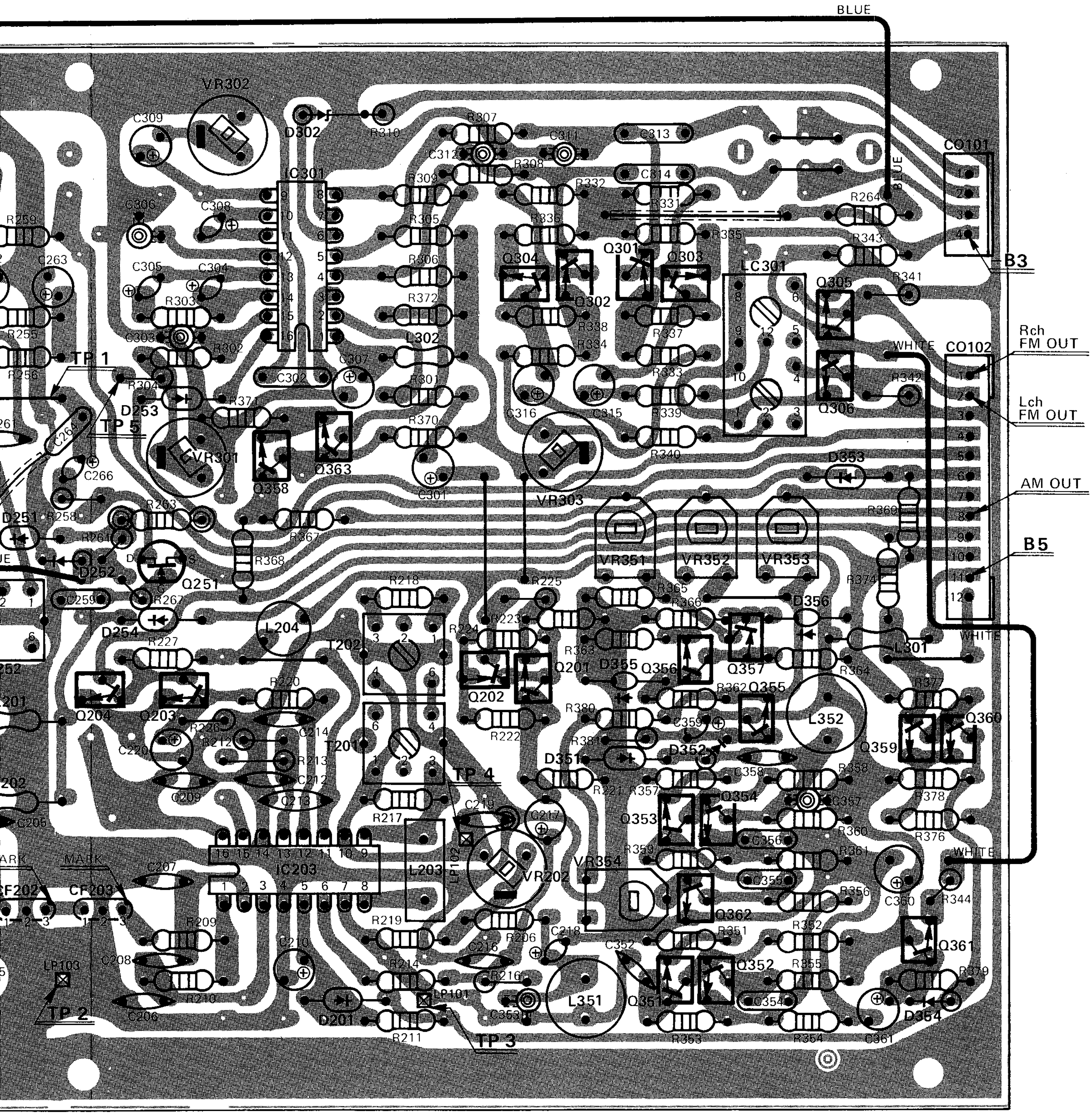
REF. NO.	H/K PART NO.	DESCRIPTION
TRANSISTOR (Continued)		
D201, 254	41028593	Diode, 1S2076
D251, 252	41028593	Diode, 1S2076
D253	41028593	Diode, 1S2076
D255	41036027	Diode, 1SS53
D256	42035972	Zener Diode, 5.1V ± 0.3V
D302	42035972	Zener Diode, 5.1V ± 0.3V
D351, 352, 353 354	41028593	Diode, 1S2076
COILS		
L101	12035597	FM RF
L102, 103	12036029	FM RF
L104	12036030	FM Osc.
L201, 202	12036031	RF Choke
L203	12036032	Phase Sifter
L204	12032108	RF Choke
L252	12036033	AM Osc.
L301, 302	12035603	RF Choke
L351, 352	12032144	100 kHz Band Pass Filter
TRANSFORMERS		
T101	11035604	FM IF
T201	11035605	Quadrature Det.
T202	11035606	Quadrature Det.
T251	11035607	AM IF
T252	11034843A	AM IF
MISCELLANEOUS		
CF201, 202, 203	12036034	Ceramic Filter, FM IF
CF251	12035610	Ceramic Filter, AM IF
LC301	12035611	L. C. Component, Low Pass Filter

TUNER PC BOARD

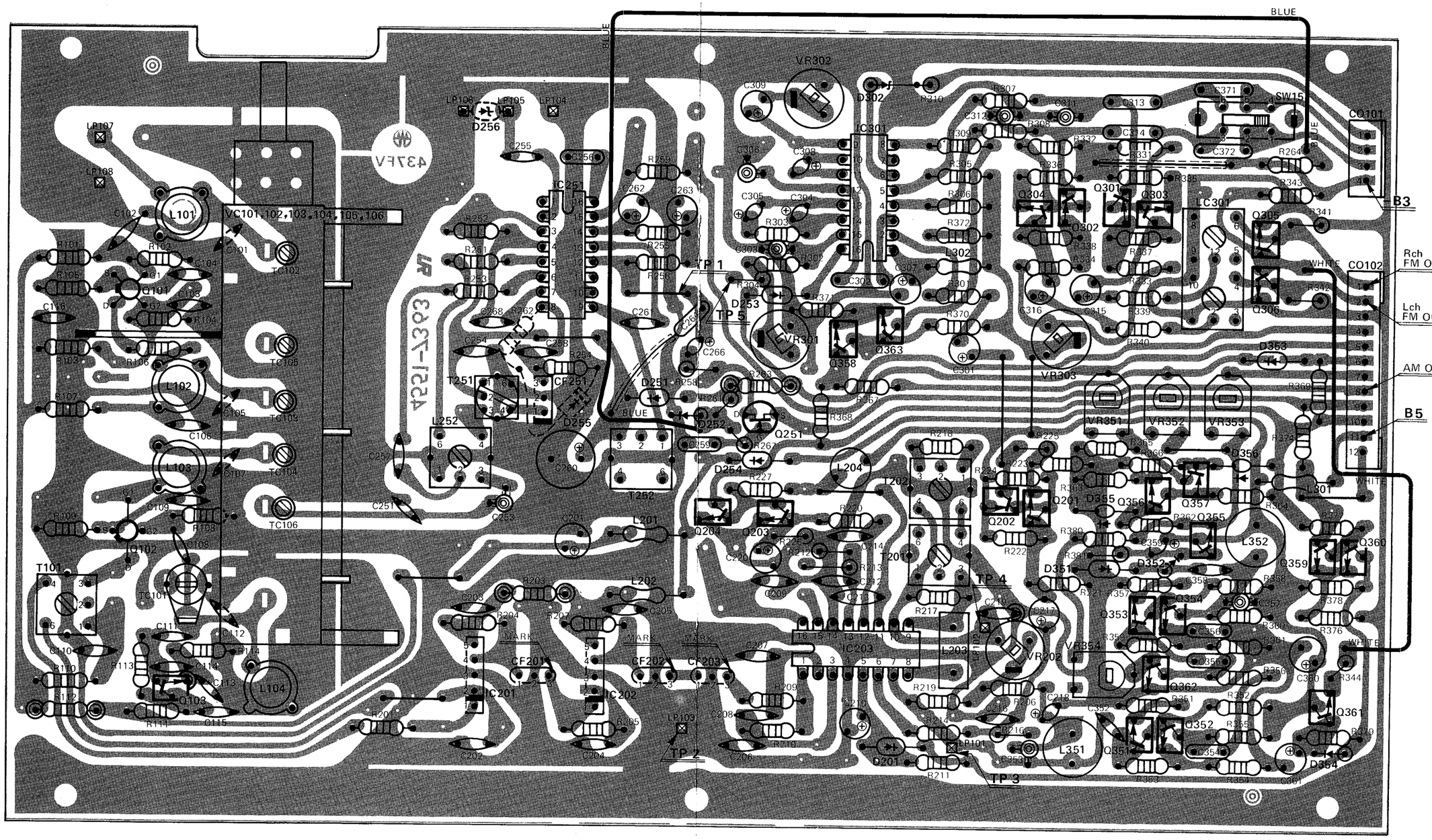


TUNER PC BOARD

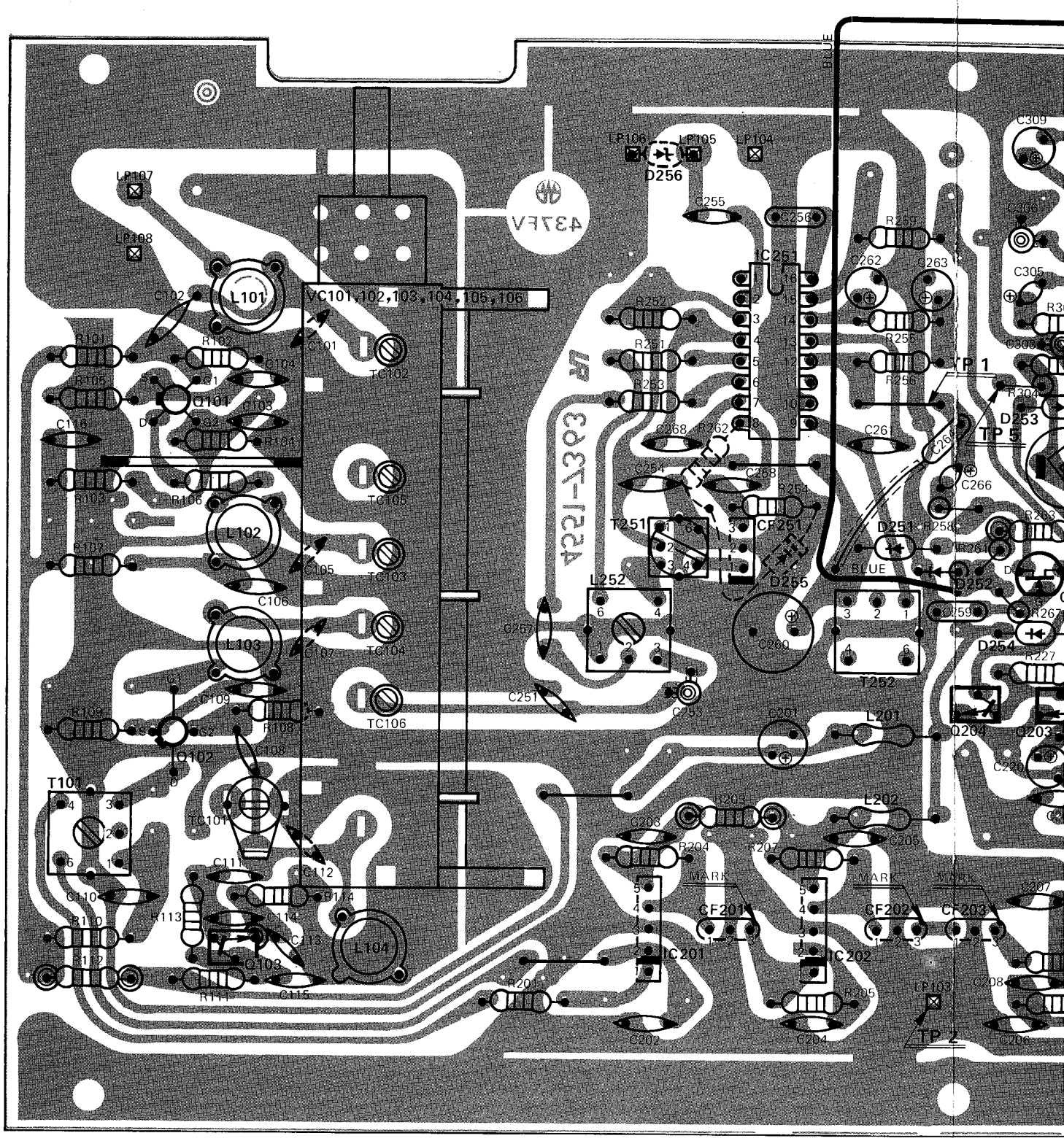


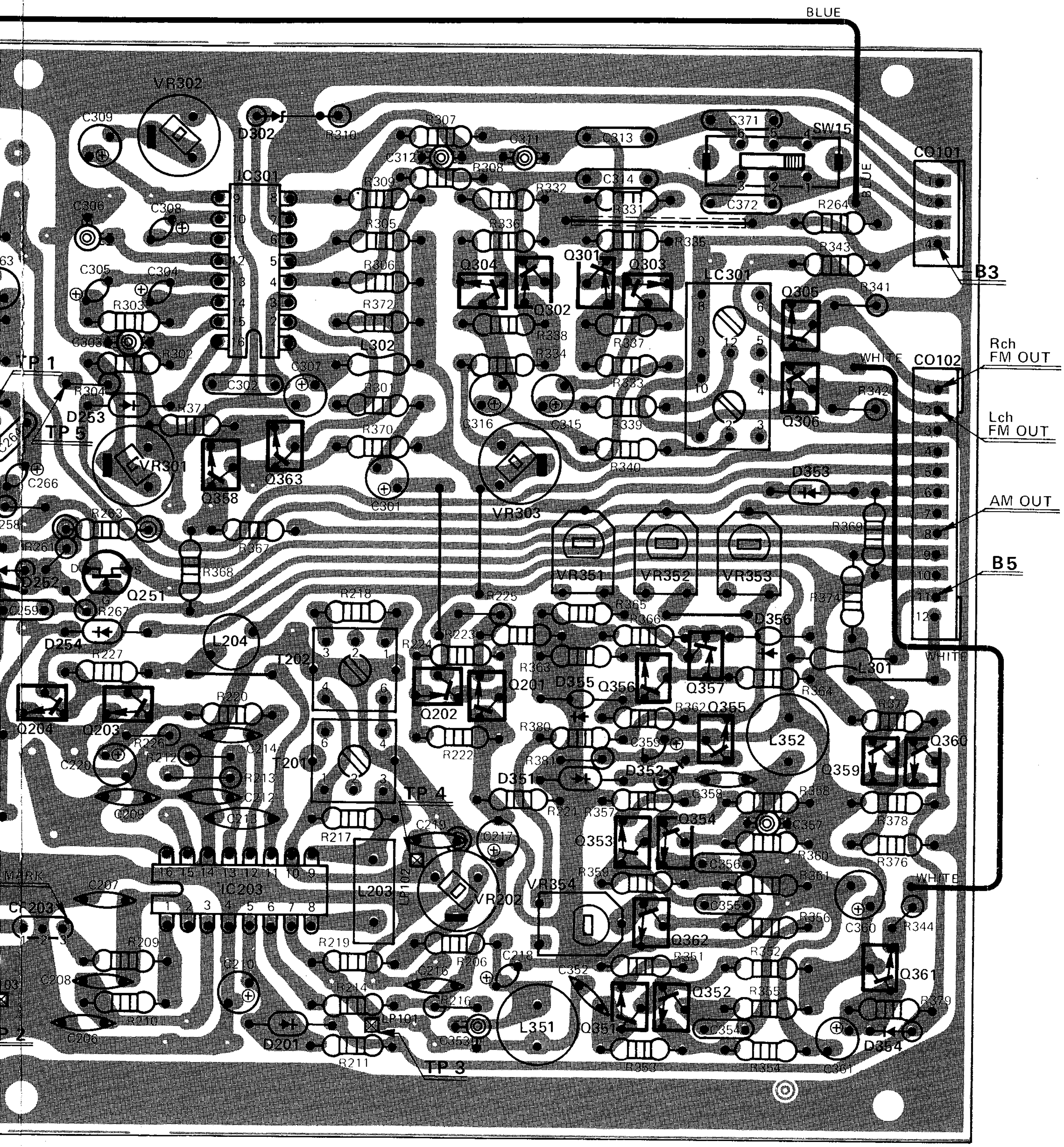

BLUE
VR302
D302
IC301
CO101
B3
LC301
Rch FM OUT
Lch FM OUT
CO102
AM OUT
B5
WHITE
TP 1
TP 5
VR301
VR303
VR351
VR352
VR353
L204
T202
T201
TP 4
L352
L301
IC203
L203
VR202
VR354
L351
TP 2
TP 3
CF202
CF203
MARK

TUNER PC BOARD – MULTI VOLTAGE

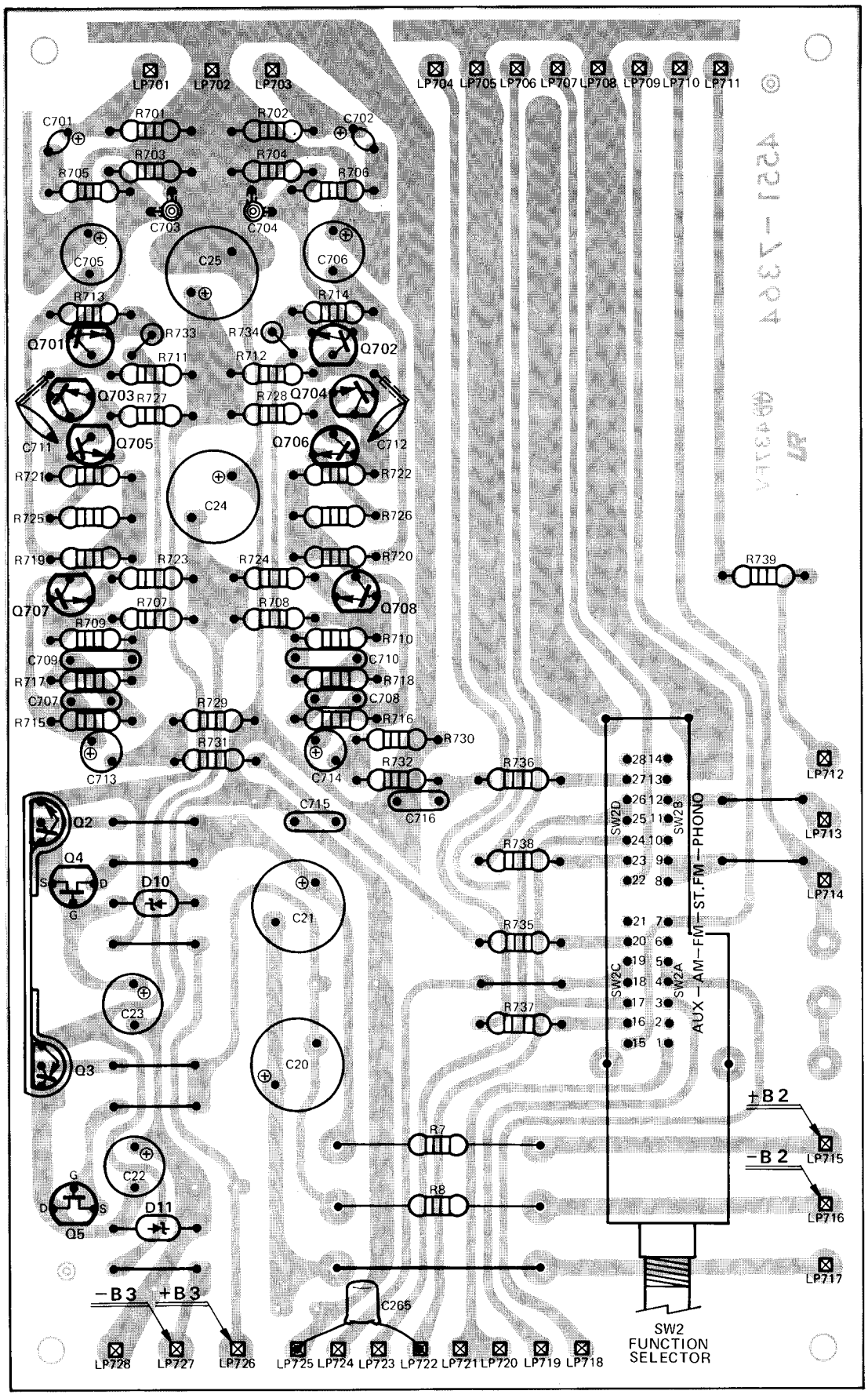


TUNER PC BOARD – MULTI VOLTAGE




BLUE
WHITE
Rch
FM OUT
Lch
FM OUT
AM OUT
B3
B5
CO101
CO102
SW15
IC301
IC203
LC301
VR302
VR301
VR303
VR351
VR352
VR353
VR354
VR202
TP 1
TP 3
TP 4
TP 5
Q201
Q202
Q203
Q204
Q251
Q301
Q302
Q303
Q304
Q305
Q306
Q351
Q352
Q353
Q354
Q355
Q356
Q357
Q358
Q359
Q360
Q361
Q362
Q363
D201
D253
D254
D302
D351
D352
D353
D354
D355
D356
L204
L301
L302
L351
L352
L203
T201
T202
MARK

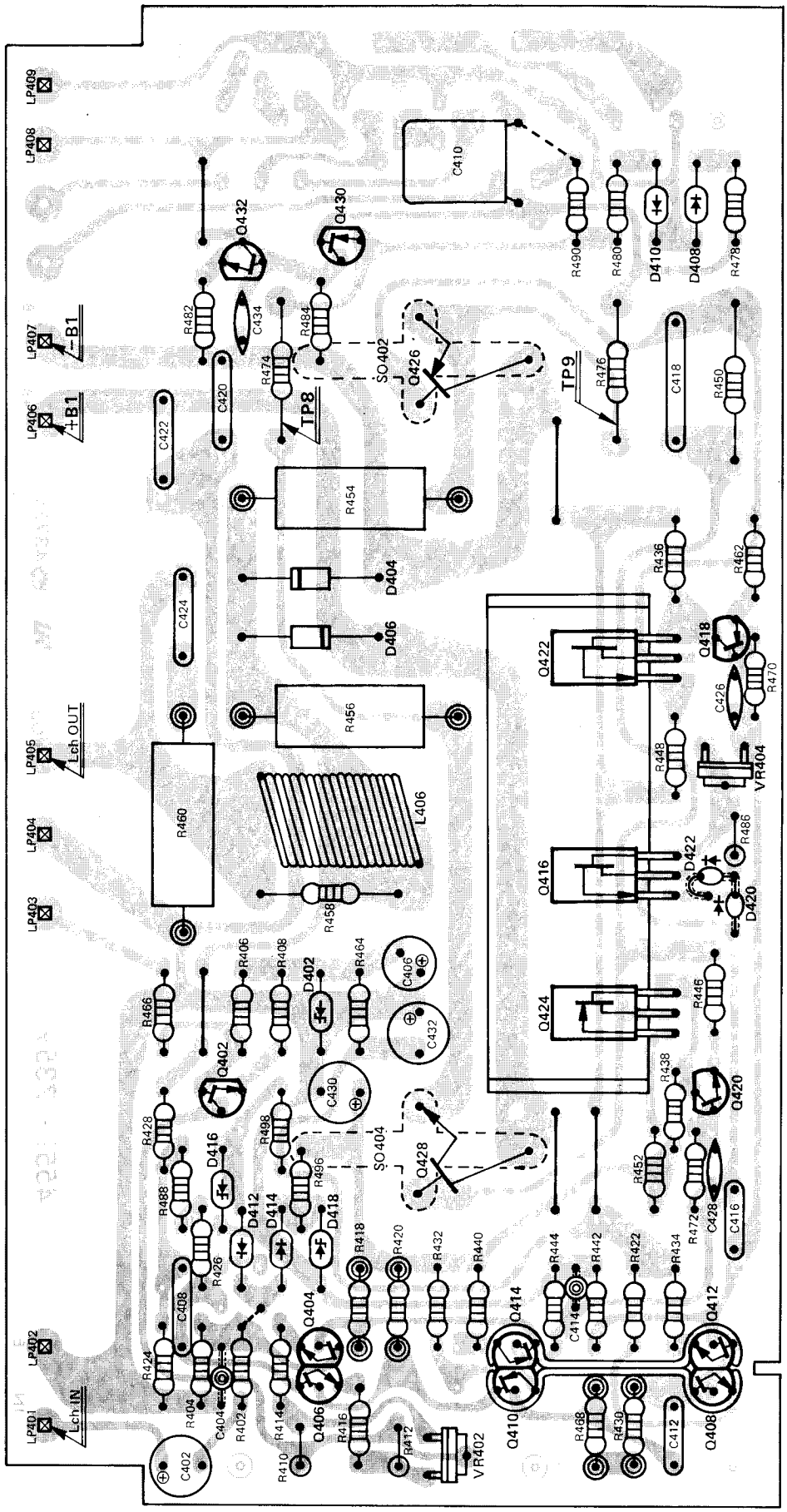
EQUALIZER AMP PC BOARD



EQUALIZER AMP PC BOARD

REF. NO.	H/K PART NO.	DESCRIPTION
CAPACITORS, ELECTROLYTIC		
C20, 21	31835888	330MF +50% −10% 50V
C22, 23	31835973	47MF +50% −10% 35V
C24, 25	31835974	330MF +50% −10% 35V
C701, 702	31835586	33MF ± 20% 6.3V Tantalum
C705, 706	31835587	330MF +50% −10% 6.3V
C713, 714	31835588	1000PF ± 5% 50V Mylar
TRANSISTORS		
Q2	43035624	2SD667A(C) Voltage Regulator
Q3	43035625	2SB647A(C) Voltage Regulator
Q4, 5	43035874	F. E. T., 2SK106(C) Current Regulator
Q701, 702, 705 706, 707, 708	43035592	2SC1775(F) Equalizer Amp.
Q703, 704	43032151	2SA872(E) Equalizer Amp
D10, 11	42035977	Zener Diode, RD27EB 27V ± 1.9V
MISCELLANEOUS		
SW2	24036035	Rotary Slide Switch, Function Selector

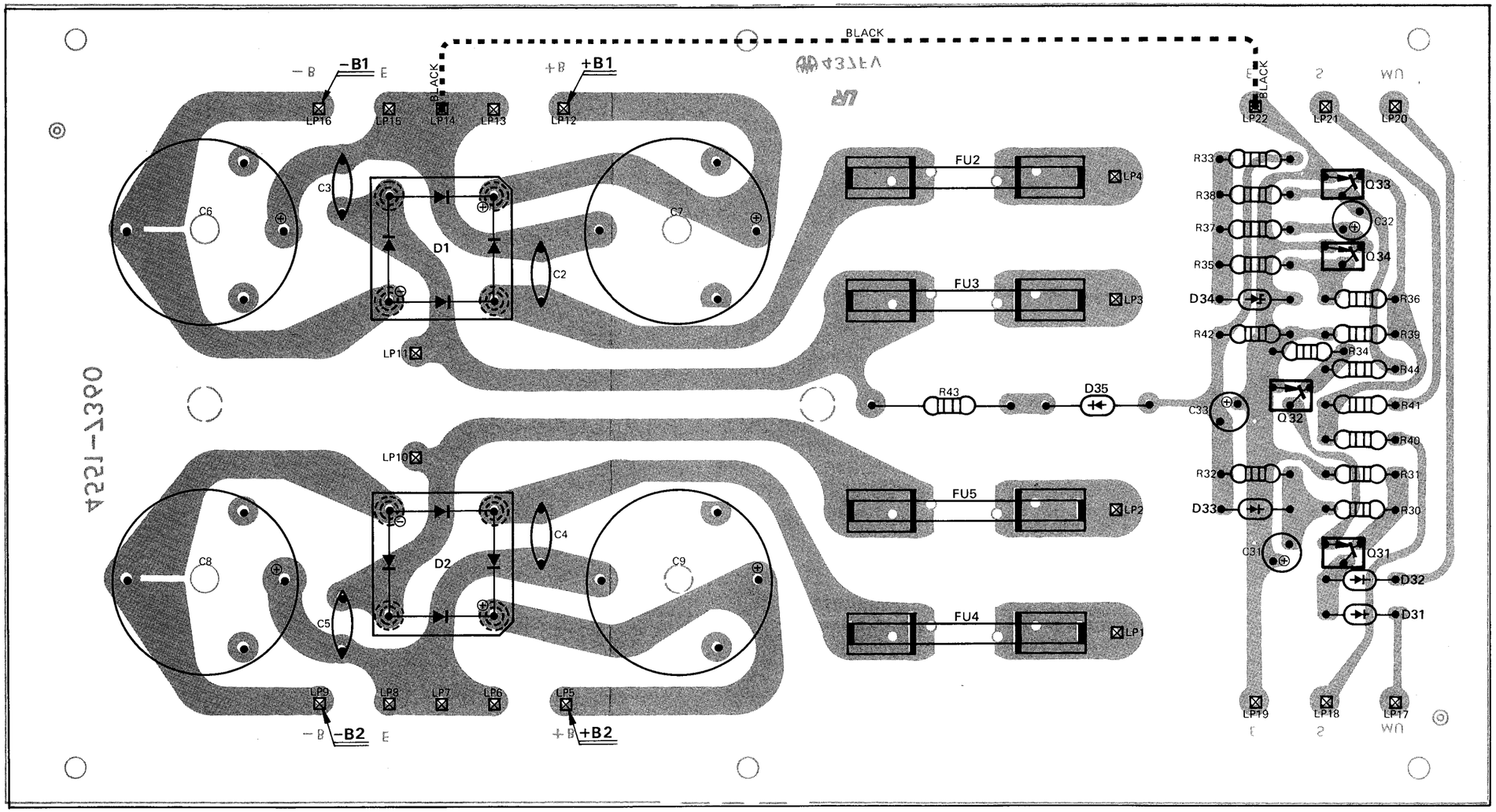
L CH MAIN AMP PC BOARD



L CH MAIN AMP PC BOARD

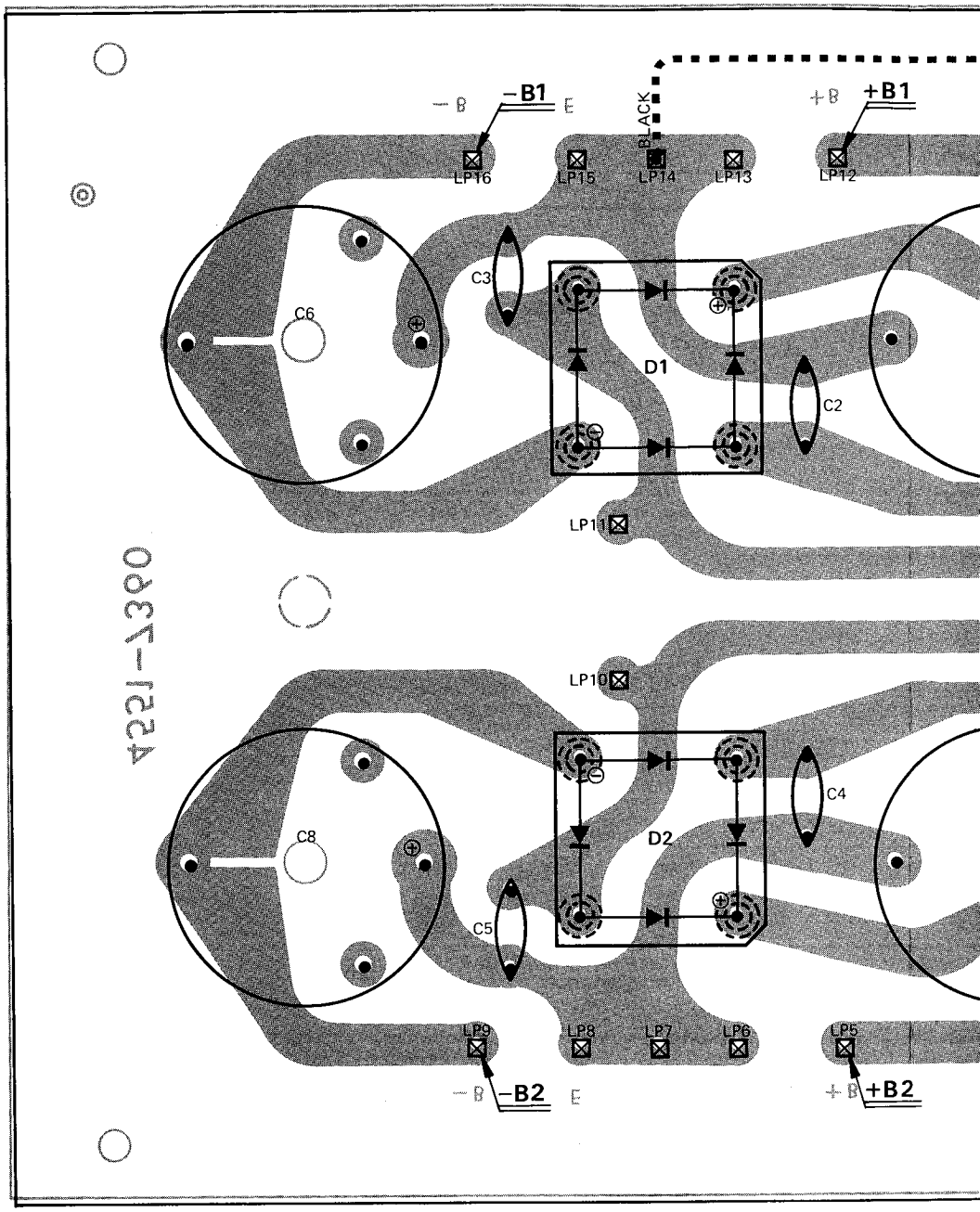
REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS		
VR402	23535987	Variable Resistor, 100 ohm
VR404	23535988	Variable Resistor, 2.2 k ohm
CAPACITORS, ELECTROLYTIC		
C402	31835982	220MF +50% −10% 6.3V
C406	31835572	22MF +50% −10% 16V
C430, 432	31835985	47MF +50% −10% 50V
TRANSISTORS		
Q402, 404, 406	43035592	2SC1775(F) Current Regulator, Differential Amp.
Q408, 412	43035989	2SD666A(C) } Pre-Driver
Q410, 414	43035990	2SB646A(C) }
Q416	43035991	2SD415(Q) Bias Stabilization
Q418	43035625	2SB647A(C) } Driver
Q422	43035992	2SD669(C) }
Q420	43035624	2SD667A(C) } Driver
Q424	43035993	2SB649(C) }
Q426	43035994	2SB655A(B) Power Output
Q428	43035995	2SD675A(B) Power Output
Q430	43032151	2SA872(E) Overload Protection Circuit
Q432	43035592	2SC1775(F) Overload Protection Circuit
D402	42032757	Zener Diode, RD15EB 14.7 ± 0.9V
D404, 406	41631295	Diode, SIB01-02
D408, 410	41035628	Diode, 1SS81
D412, 414	41028593	Diode, 1S2076
D416, 418	42035972	Zener Diode, RD5R1EB 5.1V ± 0.3V
D420, 422	41631466	Variable, MV11Y
COIL		
L406	12035996	RF Choke

RECTIFIER PC BOARD (A)

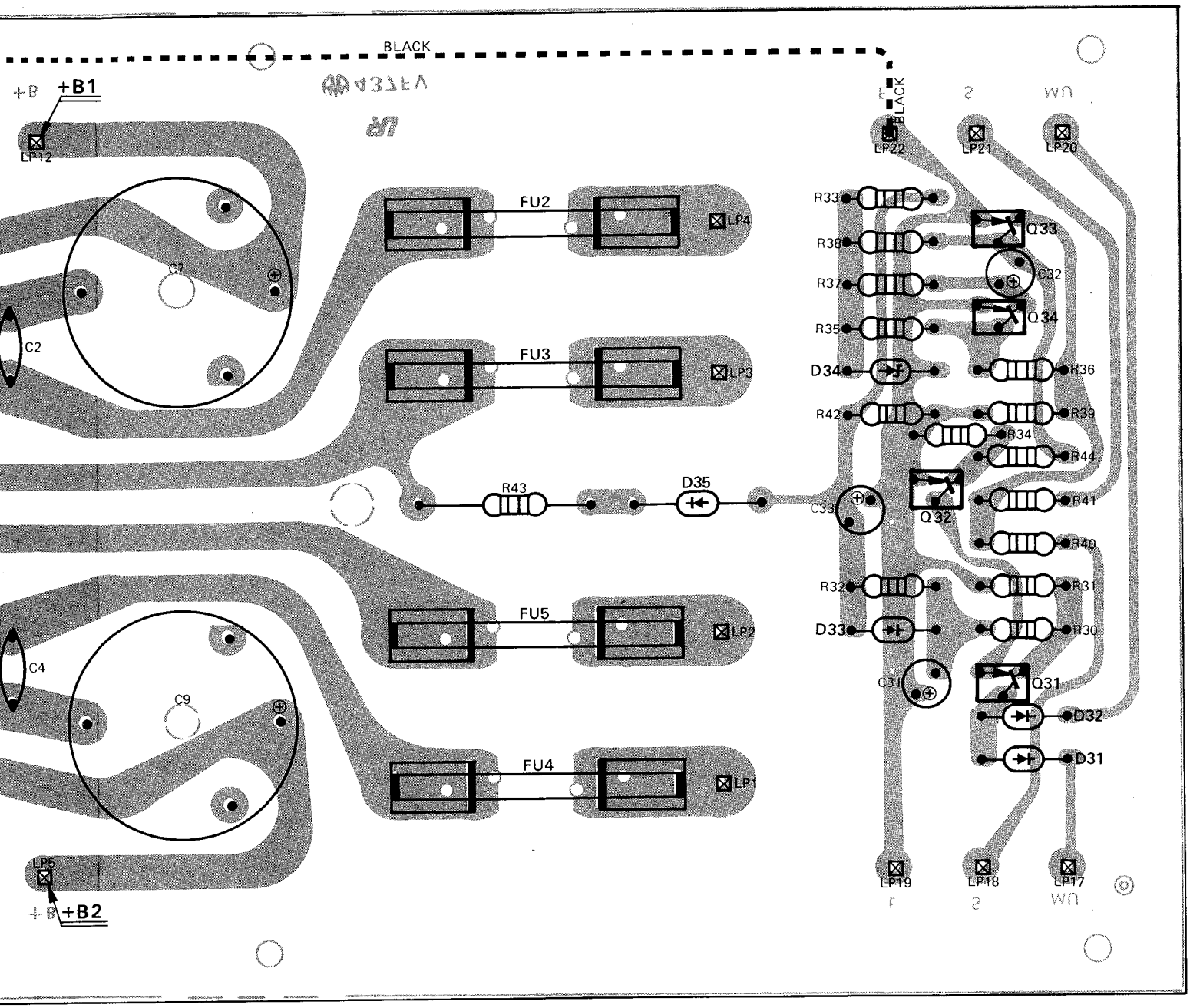


REF. NO.	H/K PART NO.	DESCRIPTION
CAPACITORS, ELECTROLYTIC		
C6, 7, 8, 9	31835970	10000MF ± 20% 50V
C31, 32	31835941	33MF +50% −10% 10V
C33	31835572	22MF +50% −10% 16V
TRANSISTORS		
Q31	43031312	2SA844(E) Audio Muting
Q32, 33, 34	43031312	2SA844(E) Overload Protection Circuit
D1, 2	41035971	Bridge Silicon Diode, S5VB20
D31, 32, 33, 35	41035628	Diode, 1SS81
D34	42035972	Zener Diode, RD5R1EB 5.1V ± 0.3V
FUSE		
FU2, 3, 4, 5	45035559	4A 125V

RECTIFIER PC BOARD (A)

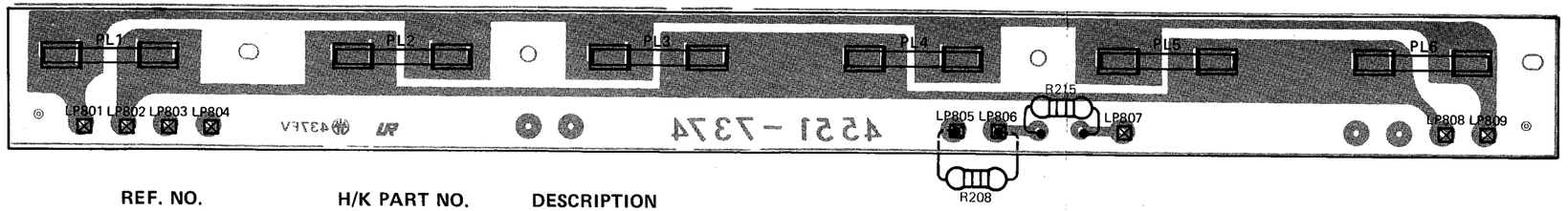


REF. NO.	H/K PART NO.
CAPACITORS, ELECTROLYTIC	
C6, 7, 8, 9	31835970
C31, 32	31835941
C33	31835572
TRANSISTORS	
Q31	43031312
Q32, 33, 34	43031312
D1, 2	41035971
D31, 32, 33, 35	41035628
D34	42035972
FUSE	
FU2, 3, 4, 5	45035559



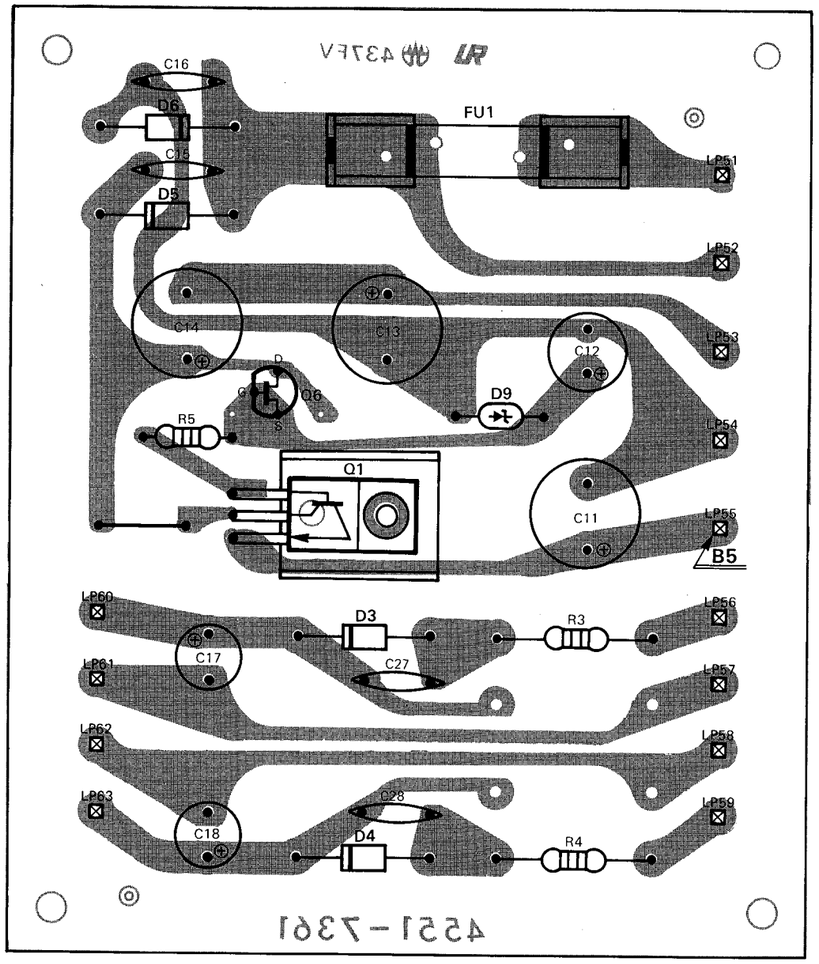
K PART NO.	DESCRIPTION
YTIC	
835970	10000MF ± 20% 50V
835941	33MF +50% −10% 10V
835572	22MF +50% −10% 16V
031312	2SA844(E) Audio Muting
031312	2SA844(E) Overload Protection Circuit
035971	Bridge Silicon Diode, S5VB20
035628	Diode, 1SS81
2035972	Zener Diode, RD5R1EB 5.1V ± 0.3V
5035559	4A 125V

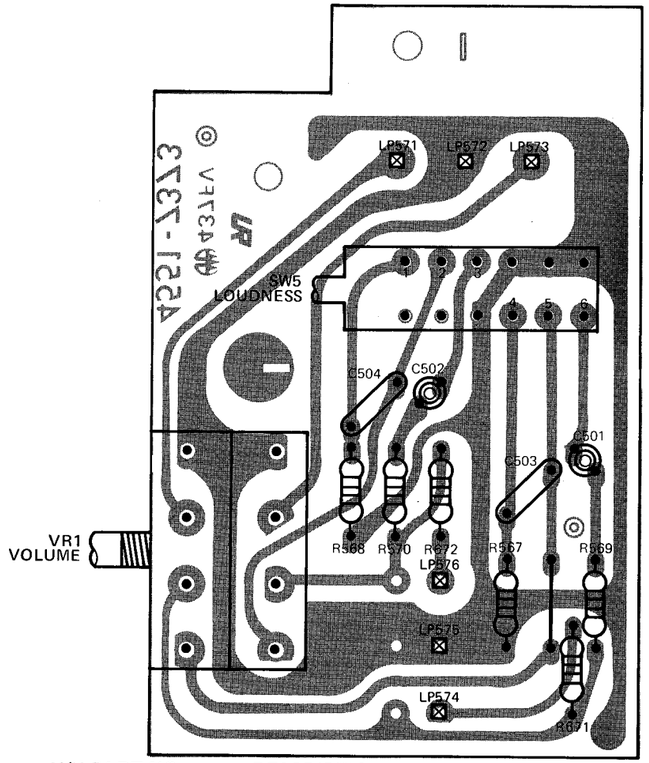
DIAL ILLUMINATOR PC BOARD



REF. NO.	H/K PART NO.	DESCRIPTION
PL1, 2, 3, 4 5, 6	46529502	Dial Illuminator Lamp, 8V 300mA

RECTIFIER PC BOARD (B)

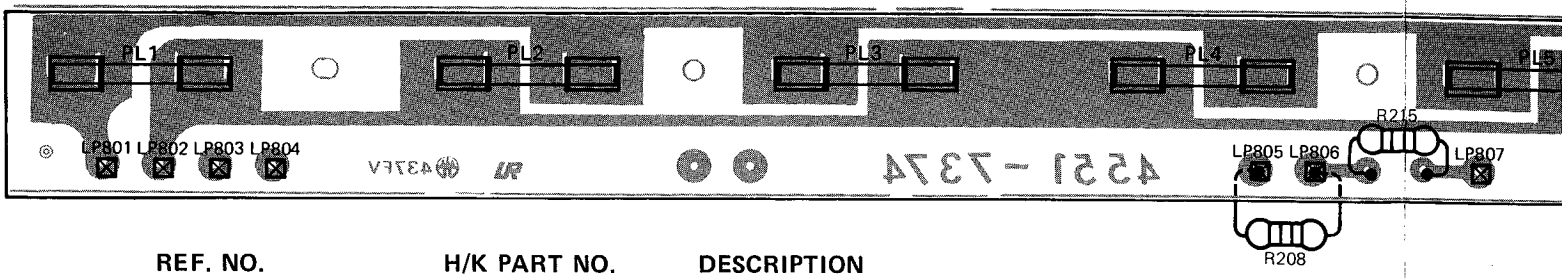




REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS		
VR1	23536036	Variable Resistor, 50 k ohm, Volume Control
MISCELLANEOUS		
SW5	25036037	Push Switch, Loudness

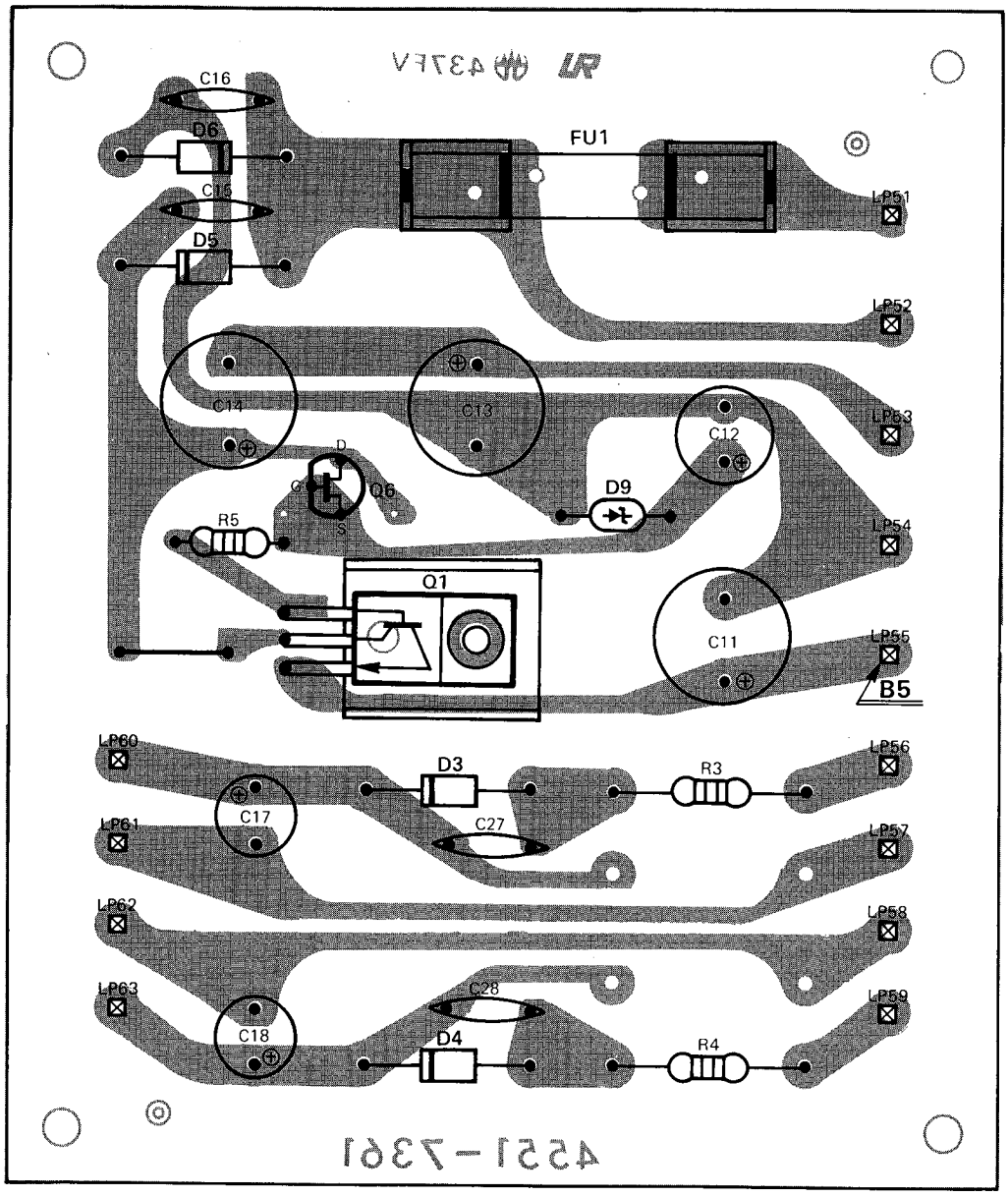
REF. NO.	H/K PART NO.	DESCRIPTION
CAPACITORS, ELECTROLYTIC		
C11	31835618	1000MF +50% –10% 16V
C12	31835720	470MF +50% –10% 16V
C13, 14	31836015	2200MF +50% –10% 16V
C17, 18	31835985	47MF +50% –10% 50V
TRANSISTOR		
Q1	43035961	2SC1419(C) Voltage Regulator
Q6	43035874	F. E. T., 2SK106(C) Current Regulator
D3, 4, 5, 6	41631295	Diode, SIB01-02
D9	42032757	Zener Diode, RD15EB 14.7V ± 0.9V
FUSE		
FU1	45035558	3A 125V

DIAL ILLUMINATOR PC BOARD



REF. NO.	H/K PART NO.	DESCRIPTION
PL1, 2, 3, 4 5, 6	46529502	Dial Illuminator Lamp, 8V 300mA

RECTIFIER PC BOARD (B)

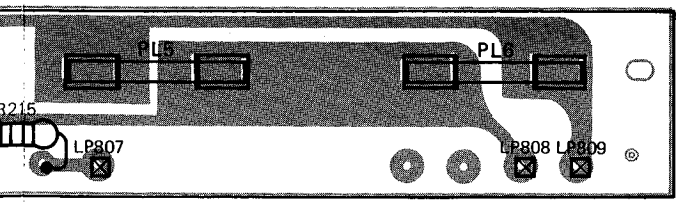


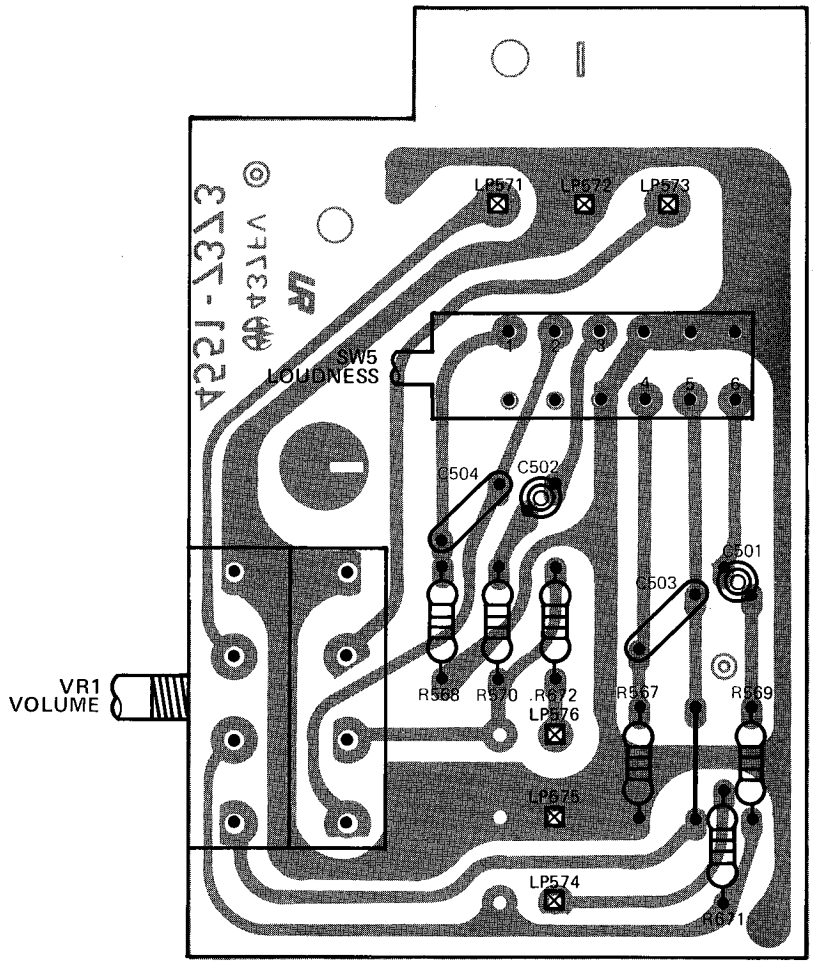
REF.

CAPA
C11
C12
C13, 1
C17, 1

TRAN
Q1
Q6
D3, 4,
D9

FUSE
FU1

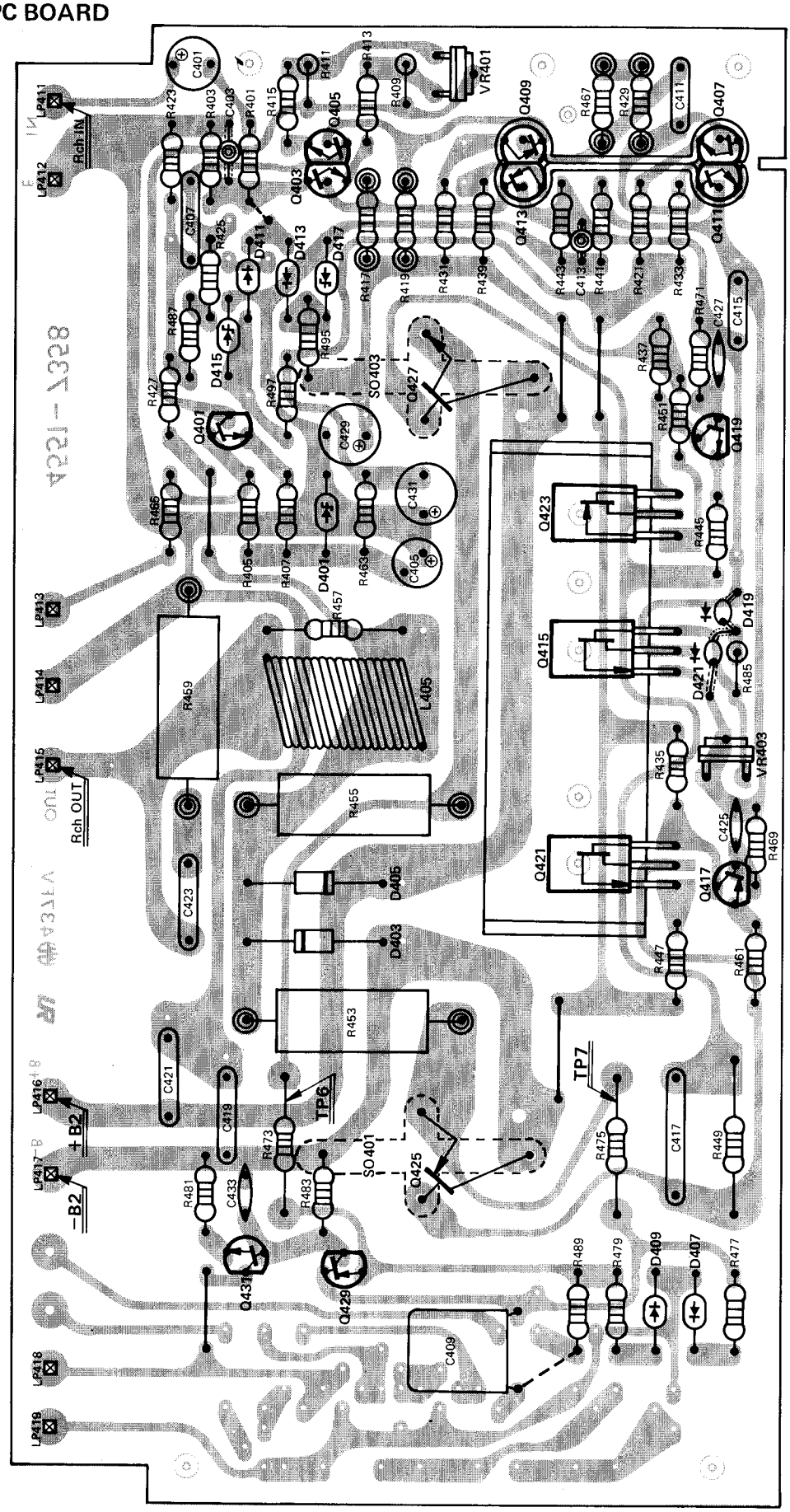




REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS		
VR1	23536036	Variable Resistor, 50 k ohm, Volume Control
MISCELLANEOUS		
SW5	25036037	Push Switch, Loudness

REF. NO.	H/K PART NO.	DESCRIPTION
CAPACITORS, ELECTROLYTIC		
C11	31835618	1000MF +50% −10% 16V
C12	31835720	470MF +50% −10% 16V
C13, 14	31836015	2200MF +50% −10% 16V
C17, 18	31835985	47MF +50% −10% 50V
TRANSISTOR		
Q1	43035961	2SC1419(C) Voltage Regulator
Q6	43035874	F. E. T., 2SK106(C) Current Regulator
D3, 4, 5, 6	41631295	Diode, SIB01-02
D9	42032757	Zener Diode, RD15EB 14.7V ± 0.9V
FUSE		
FU1	45035558	3A 125V

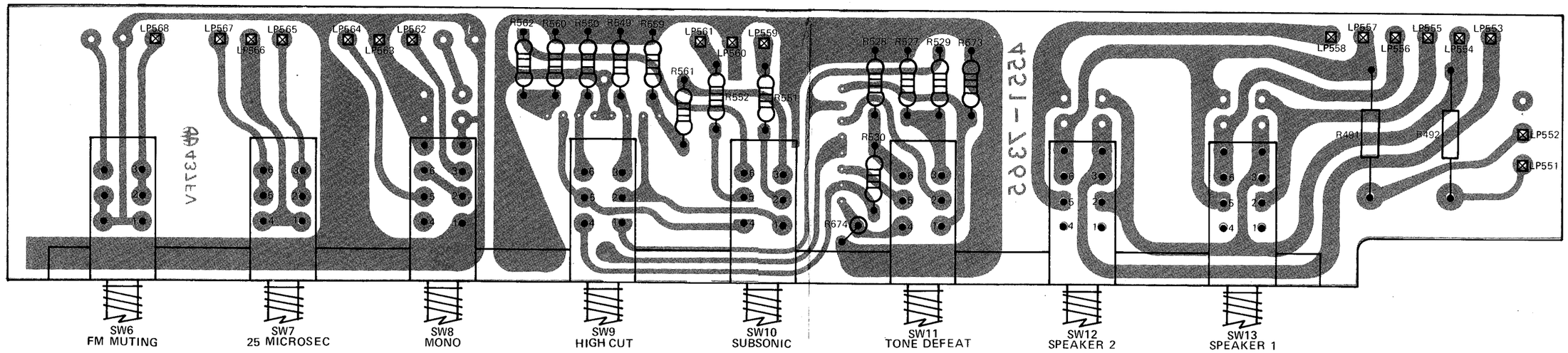
R CH MAIN AMP PC BOARD



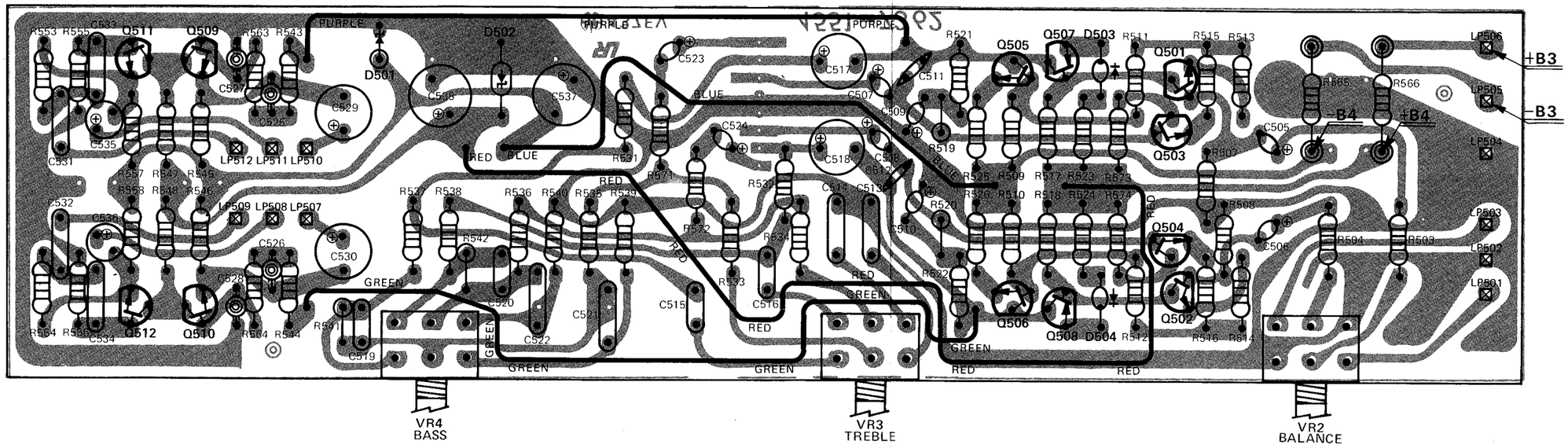
R CH MAIN AMP PC BOARD

REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS		
VR401	23535987	Variable Resistor, 100 ohm
VR403	23535988	Variable Resistor, 2.2 k ohm
CAPACITORS, ELECTROLYTIC		
C401	31835982	220MF +50% −10% 6.3V
C405	31835572	22MF +50% −10% 16V
C429, 431	31835985	47MF +50% −10% 50V
TRANSISTOR		
Q401, 403, 405	43035592	2SC1775(F) Current Regulator, Differential Amp.
Q407, 411	43035989	2SD666A(C)
Q409, 413	43035990	2SB646A(C)
Q415	43035991	2SD415(Q) Bias Stabilization
Q417	43035625	2SB647A(C)
Q421	43035992	2SD669(C)
Q419	43035624	2SD667A(C)
Q423	43035993	2SB649(C)
Q425	43035994	2SB655A(B) Power Output
Q427	43035995	2SD675A(B) Power Output
Q429	43032151	2SA872(E) Overload Protection Circuit
Q431	43035592	2SC1775(F) Overload Protection Circuit
D401	42032757	Zener Diode, RD15EB 14.7V ± 0.9V
D403, 405	41631295	Diode, SIB01-02
D407, 409	41035628	Diode, 1SS81
D411, 413	41028593	Diode, 1S2076
D415, 417	42035972	Zener Diode, RD5R1EB 5.1V ± 0.3V
D419, 421	41631466	Variable MV11Y
COIL		
L405	12035996	RF Choke

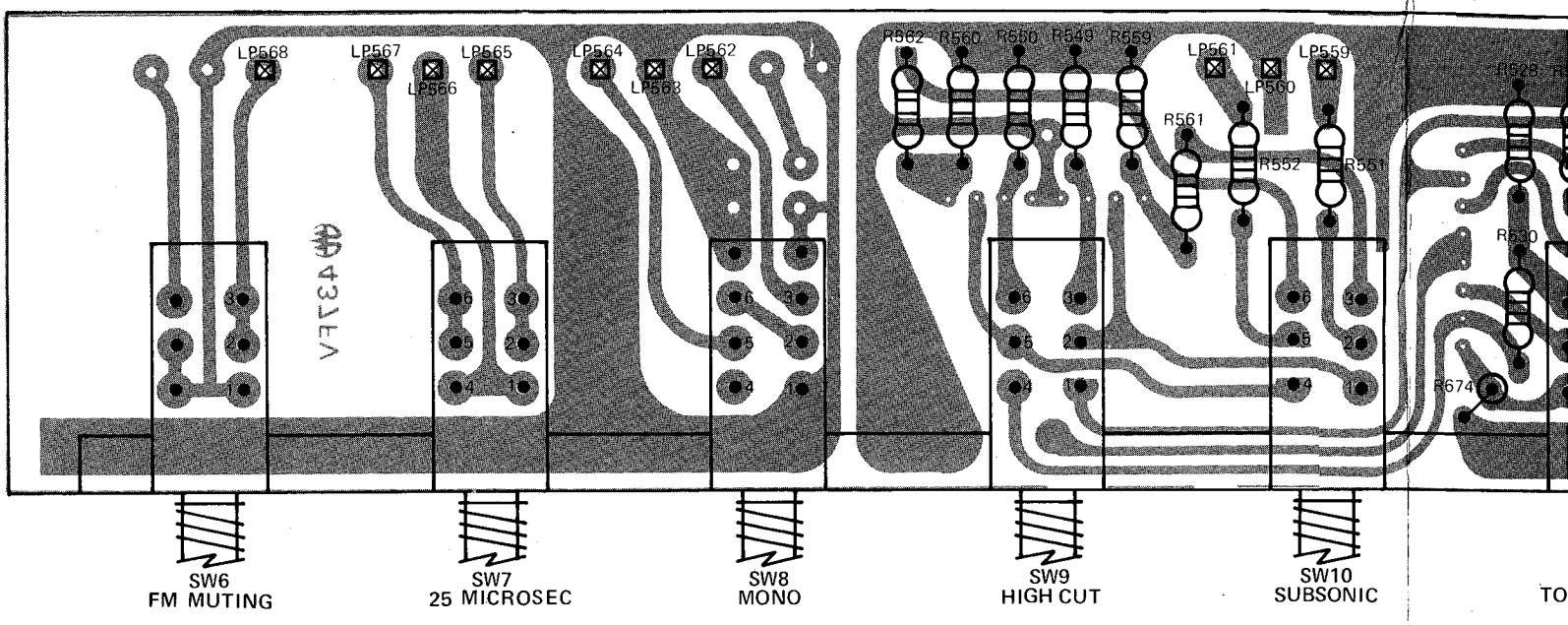
MODE/CONTROL SWITCH PC BOARD



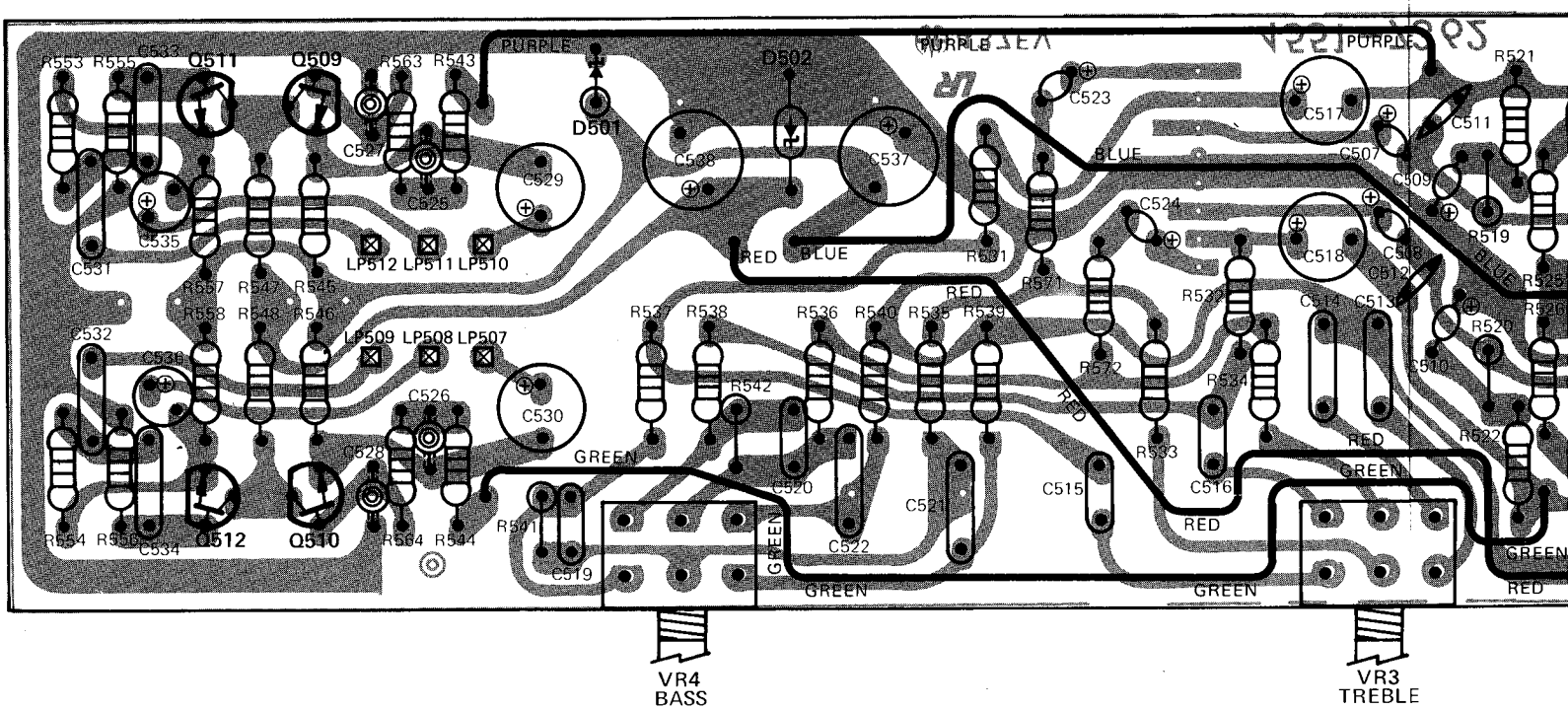
PRE/TONE CONTROL AMP PC BOARD

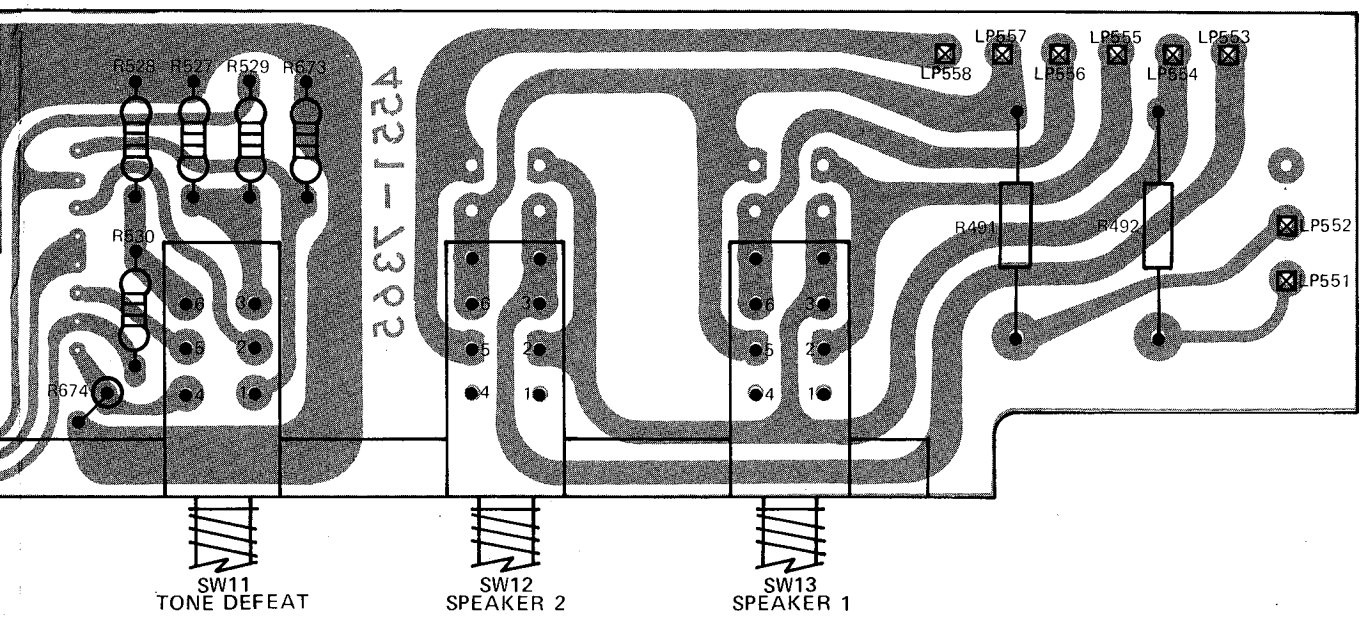


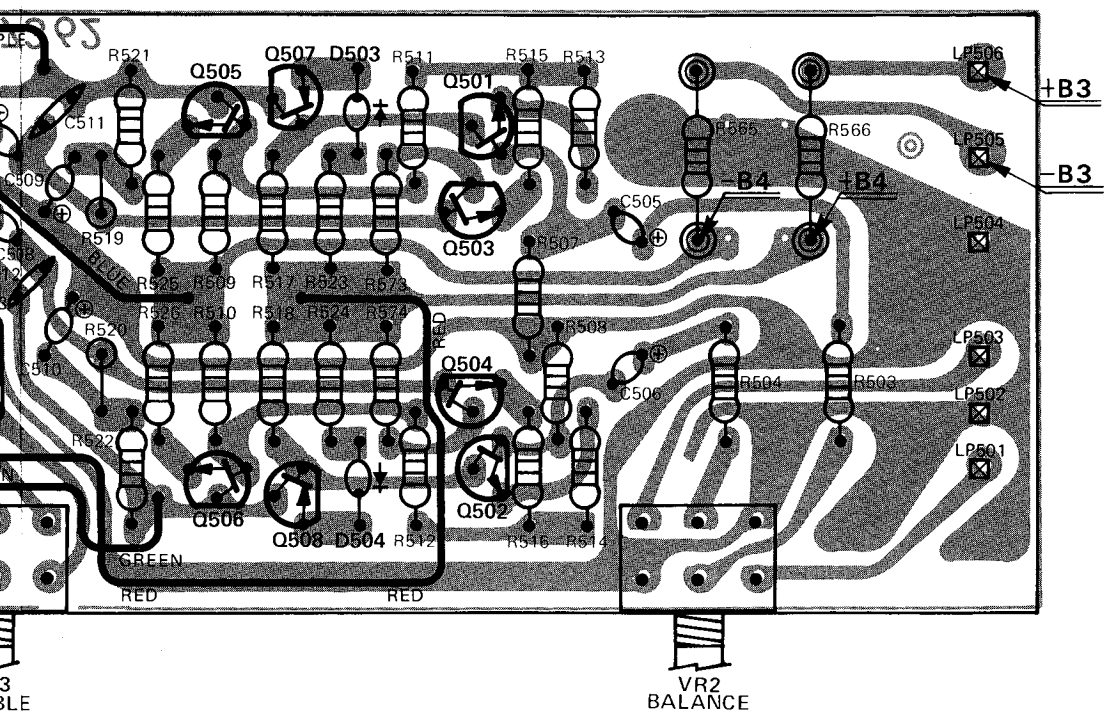
MODE/CONTROL SWITCH PC BOARD



PRE/TONE CONTROL AMP PC BOARD




R528 R527 R529 R673
R530
R674
LP557
LP555
LP553
LP558
LP556
LP554
R491
R492
LP552
LP551
SW11
TONE DEFEAT
SW12
SPEAKER 2
SW13
SPEAKER 1


R521
Q507 D503
R511
R515 R513
Q505
Q501
LP506
+B3
C511
R565
R566
LP505
-B3
C509
-B4
+B4
C505
LP504
R519
Q503
R507
R525 R509 R517 R523 R573
R526 R510 R518 R524 R574
R508
LP503
R520
Q504
C510
C506
R504
R503
LP502
R522
LP501
Q506
Q508 D504
R512
R516 R514
GREEN
RED
RED
VR2
BALANCE

MODE/CONTROL SWITCH PC BOARD

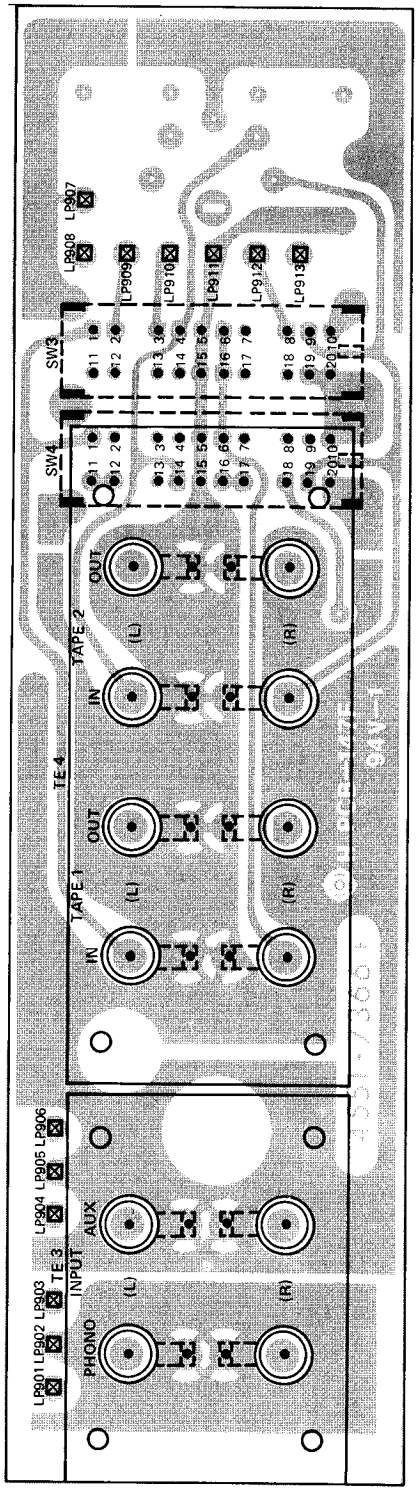
REF. NO.	H/K PART NO.	DESCRIPTION
MISCELLANEOUS		
SW6, 7, 8, 9, 10 11, 12, 13	25036038	Push Switch, FM Muting/25 Microsec/ Mono-Stereo/High Cut/Subsonic/Tone Defeat/ Speaker 2/Speaker 1

PRE/TONE CONTROL AMP PC BOARD

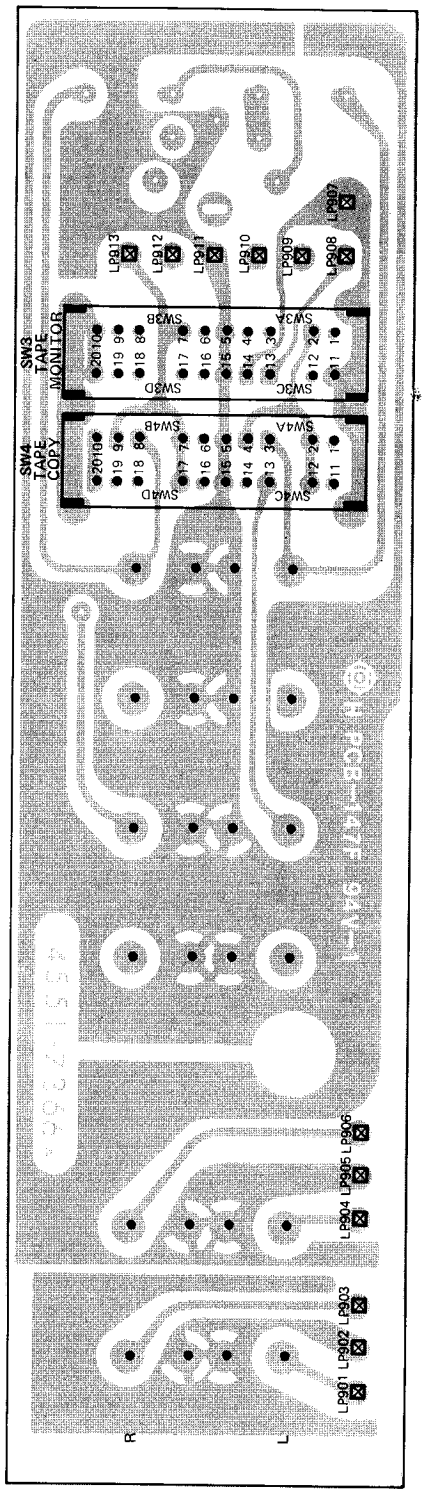
REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS		
VR2	23535979	Variable Resistor, 100 k ohm, Balance Control
VR3, 4	22035653	Variable Resistor, 100 k ohm, Treble and Bass Control
CAPACITORS, ELECTROLYTIC		
C505, 506, 507 508	31835583	10MF ± 20% 6.3V Tantalum
C509, 510	30736039	3.3MF ± 20% 16V Tantalum
C517, 518	31835982	220MF +50% −10% 6.3V
C523, 524	31835667	2.2MF ± 20% 16V Tantalum
C529, 530	31835619	100MF +50% −10% 10V
C535, 536	31835572	22MF +50% −10% 16V
C537, 538	31835720	470MF +50% −10% 16V
TRANSISTORS		
Q501, 503, 505	43035592	2SC1775(F) } Pre/Tone Control Amp.
Q507	43032151	2SA872(E) }
Q502, 504, 506	43035592	2SC1775(F) } Pre/Tone Control Amp.
Q508	43032151	2SA872(E) }
Q509, 510, 511 512	43035592	2SC1775(F) High-Cut Filter, Subsonic Filter
D501, 502	43032757	Zener Diode, RD15EB 14.7V ± 0.9V
D503, 504	38128541	Varistor, MV11

INPUT/OUTPUT JACK PC BOARD

SIDE B



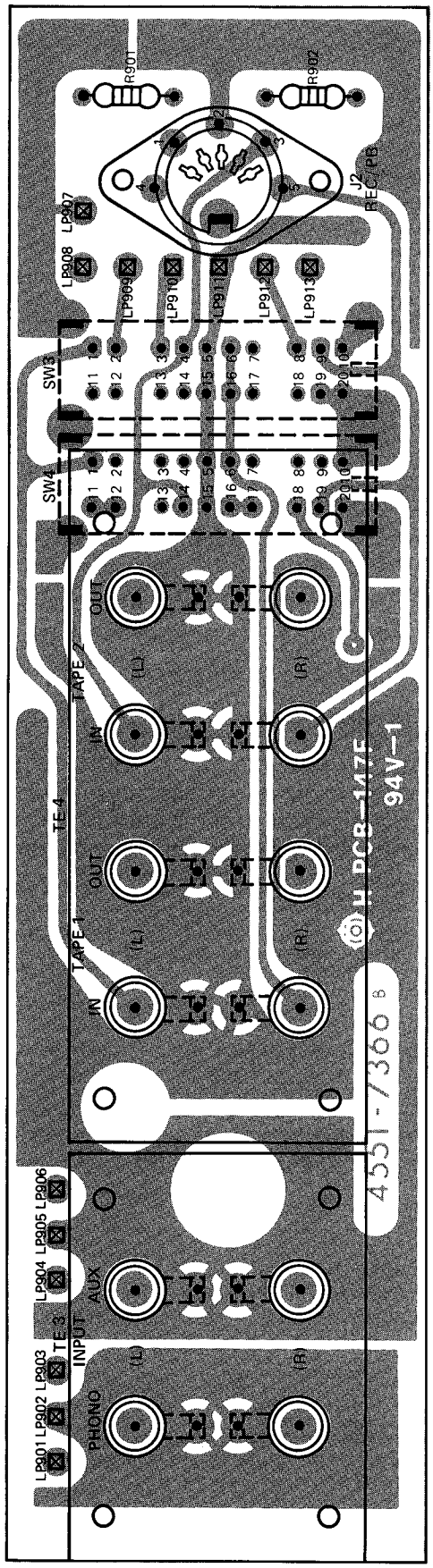
SIDE A



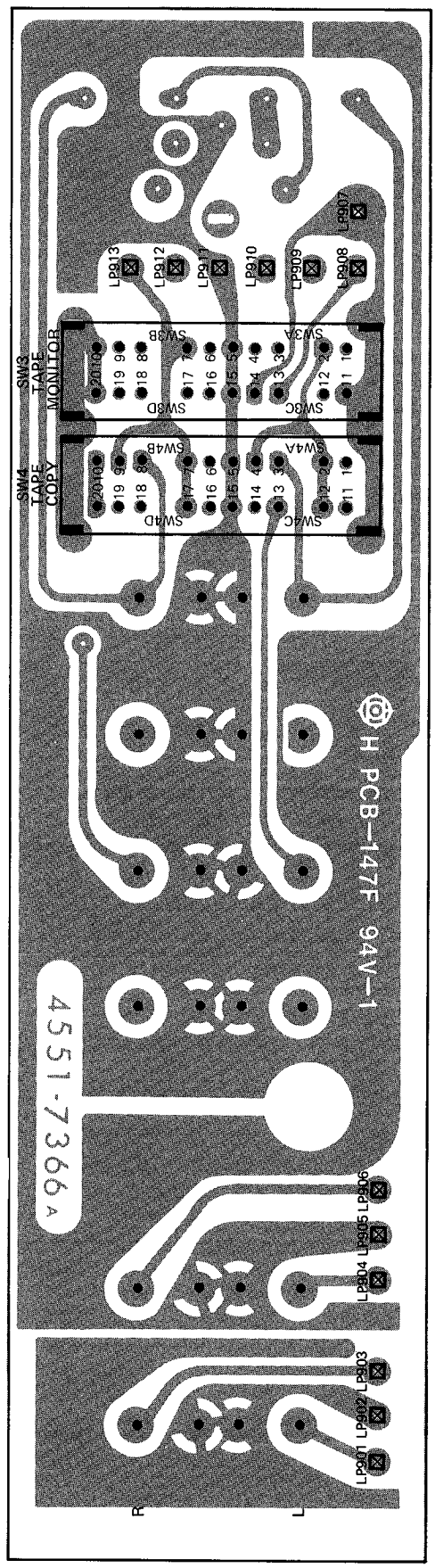
REF. NO.	H/K PART NO.	DESCRIPTION
TE3	65435670	4-Pin Jack, Phono./Aux. Input
TE4	65433652	8-Pin Jack, Tape 1 and Tape 2 Input/ Output
SW3, 4	26536040	Remote Slide Switch, Tape Monitor/Tape Copy

INPUT/OUTPUT JACK PC BOARD – MULTI VOLTAGE

SIDE B



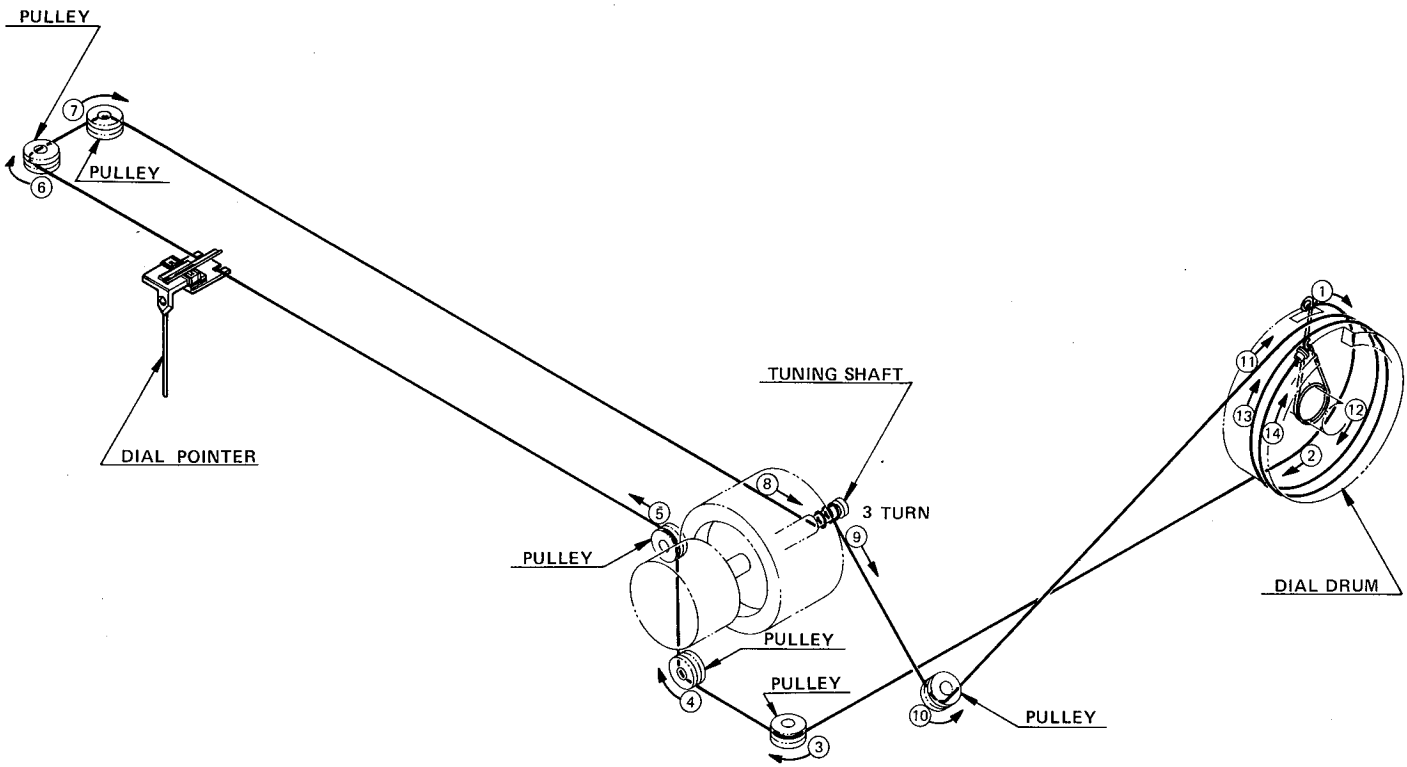
SIDE A

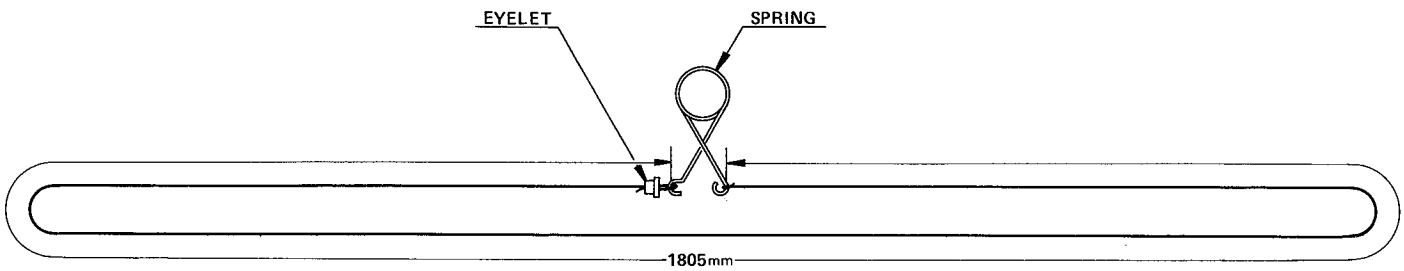


CHASSIS PARTS LIST

REF. NO.	H/K PART NO.	DESCRIPTION
GENERAL UNIT		
101	00235998	Clear Panel Assembly
102	00235999	Front Panel Assembly
104	00236000	Knob Assembly, Tuning
105	00236001	Dial Pointer Assembly (includes: In-Tune Indicator (D202))
113	60136002	Cabinet Back
114	60136003	Cabinet Top
115	62035544	Feet, Cabinet Bottom (X4)
117	61036004	Dial Panel
120	64236005	Bracket, Front Center Rail
121	64336006	Bracket, Slit Cover for Center Rail
122	64336007	Bracket, Slit Cover for Center Rail
123	64336008	Bracket, Front Left Side
124	64336009	Bracket, Front Right Side
146	63235758	Knob, Volume
154	63235760	Knob, Balance/Treble/Bass/Function (X4)
158	63235552	Knob, Tape Monitor/Tape Copy (X2)
161	63233663	Push Button, Power
305	60435762	Tuning Shaft
312	60936010	Dial Drum
ELECTRICAL		
T1	10136011	Power Transformer
SW1	25035554	Push Switch, Power
SW103, 104	26536012	Remote Switch, Tape Monitor/Tape Copy
J1	65432119	Headphones Jack
ME1	12535555	Tuning Meter
SO1	65436013	External AC Socket, Unswitched/Switched
TE1	65129518	FM/AM External Antenna Terminal
TE2	65436014	Lug Terminal
TE5, 6	65434823A	Speaker Output Terminal
PL7	46532121	Lamp, Loudness Button Illuminator 8V 60mA
VR5	21531367	Variable Resistor, 50 k ohm, FM Muting Level Control
D7, 8	46735560	Light Emitting Diode, SLP132B Power Indicator
D9	46735560	Light Emitting Diode, SLP132B Tape Monitor Indicator
D202	46735650	Light Emitting Diode, SG206D In-Tune Indicator
D301	46735561	Light Emitting Diode, GL4AR2 Stereo Indicator
L1	12032107	Coil, FM RF Balun
L251	20535562	AM Ferrite Bar Antenna
MULTI VOLTAGE RECEIVER		
T1	10136041	Power Transformer
SW1	25035635	Push Switch, Power
FU1	45036042	Fuse, 3.15AT 250V
FU2, 3, 4, 5	45036043	Fuse, 4AT 250V
SW14	24035639	Power Source Voltage Selector
SW15	24531335	Slide Switch, Emphasis
FU6	45036043	Fuse, 4AT 250V
J2	65432127	5-Pin DIN Jack, REC/PB

DIAL CORD STRINGING





START STRINGING WITH VARIABLE CAPACITOR IN CLOSED POSITION.

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.

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