

**The Harman/Kardon
Model 430**

**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.

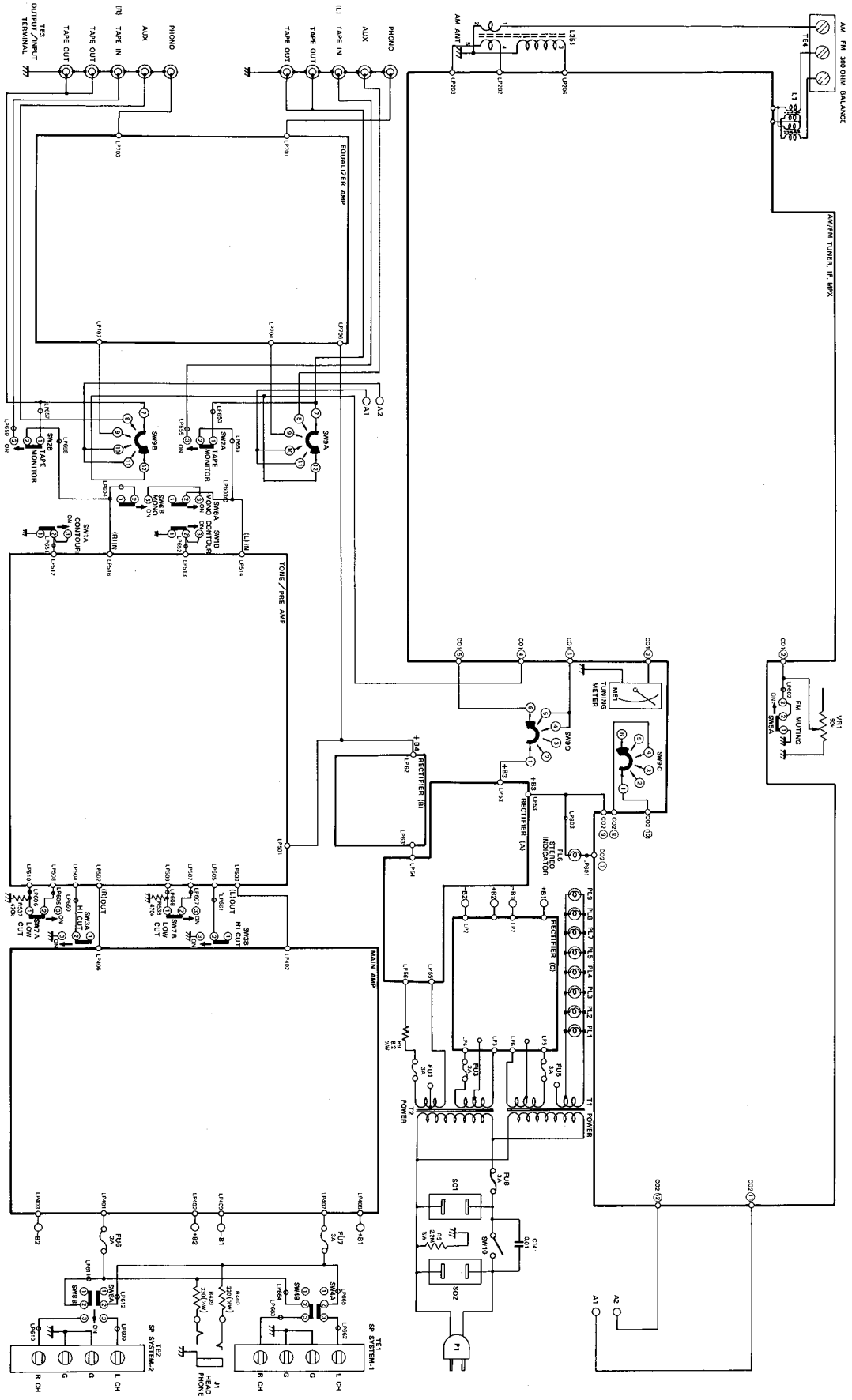
REPLACEMENT PARTS LIST ORDER NOTE:

To speed handling of your order be sure to include both the model and serial numbers which appear at the back of the chassis, 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.

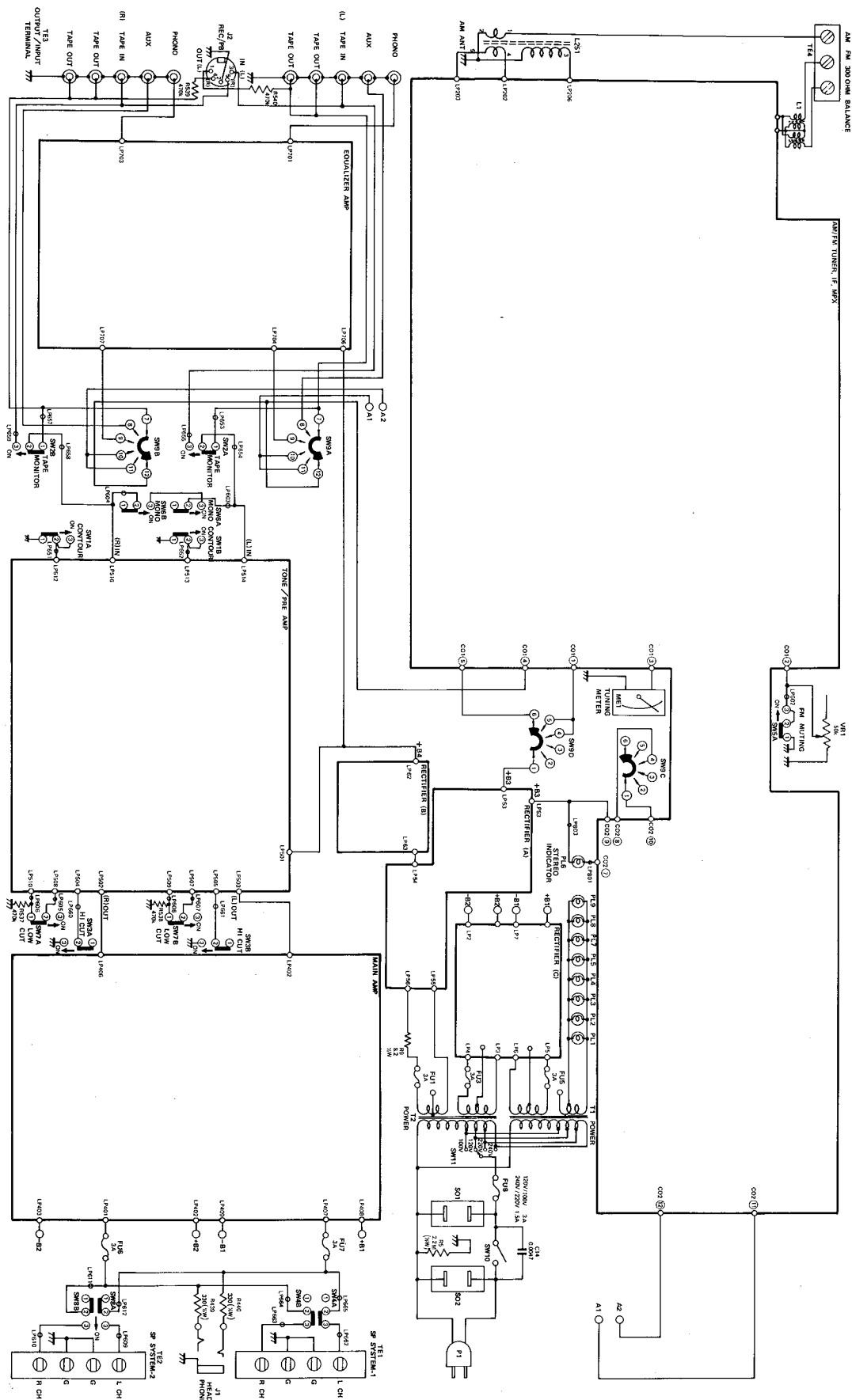
MULTIVOLTAGE SYSTEM INTERCONNECTION DIAGRAM



SYSTEM INTERCONNECTION DIAGRAM



MULTIVOLTAGE SYSTEM INTERCONNECTION DIAGRAM



ALIGNMENT PROCEDURES

AM ALIGNMENT PROCEDURE

INSTRUMENTS: AM Signal Generator modulated with 400Hz at 30%, V.T.V.M. and Oscilloscope.

NOTE: Set FUNCTION selector to AM.
Connect signal source to a loop placed to radiate signals into AM ANT LOOP STICK.

Step	SIGNAL SOURCE OUTPUT	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
1	455kHz of sweep generator AM Sig. Gen.	V.T.V.M. & oscillo- scope to Tape Out	Quiet point near 600kHz	T251	Maximum and undistorted pattern on SCOPE
2				T252	
3				T253	
4	Repeat step 1 through 3 for best sensitivity.				
5	530kHz of AM Sig. Gen.	V.T.V.M. to oscillo- scope to Tape Out	Gang fully closed	L252	Maximum output
6	1600kHz of AM Sig. Gen.		1600kHz	AM oscillator trimmer TC55	
7	Repeat step 5 and 6 for best dial accuracy.				
8	600kHz of AM Sig. Gen.	Same as above	600kHz	AM ANT LOOP STICK L251	Same as above
9	1600kHz of AM Sig. Gen.		1600kHz	AM ANT trimmer TC54	
10	Repeat step 8 and 9 for best sensitivity.				

FM ALIGNMENT PROCEDURE

INSTRUMENTS: FM Signal Generator, AC/DC V.T.V.M., Oscilloscope.

NOTE: Set Function Switch to FM, signal generator for 400 or 1000 cps 100% mod.

Step	FREQUENCY	SIG. STRENGTH	DIAL SETTING	ADJUST	FOR	AT
1	—	0	Quiet point on band	T52 top & bottom (on front end)	Max. noise	R226 ("OUT" term on IF Board
2	—	0	Same as above	T202 top (on FM IF board)	Zero Volts D.C.	R226
3	Near 98 mc.	—1 db of Limiter saturation	Tune for Zero Volts D.C. at R226	T202 bottom T52 top and bottom	Max. sym- metric output (on scope)	Tape Out
4	Repeat steps 2 and 3 until no further improvement is noticed.					
5	90 mc	approx. 10μv	90 mc	L52 (osc) (FM front end)	Zero Volts D.C.	R226
6	106 mc	Same as above	106 mc	TC53 (Osc) (FM front end)	Zero Volts D.C.	R226
7	Repeat steps 5 and 6 until no further improvement is noticed.					
8	90 mc	—3 db of Limiter saturation	Tune for Zero Volts D.C. at R226	L51 (RF) T51 (Ant)	Max. Output	Tape Out
9	106 mc	Same	Same	TC52 (RF) TC51 (Ant)	Max. Output	Tape Output
10	Repeat steps 9 and 10 until no further improvement is noticed.					

MPX ALIGNMENT PROCEDURE

INSTRUMENTS: Frequency counter, Stereo signal generator

NOTE: Set Function Switch to FM Stereo

1	Set MUTING switch to ON.
2	Connect frequency counter to LP301.
3	Adjust VR301 for 19KC ± 50C.
4	Set MUTING switch to OFF.
5	At 25 μv of signal adjust Stereo threshold VR302 for Stereo indicator on.
6	Check Pilot level that Stereo indication lights at 6% of pilot level and that the indicator does not light at 1%.
7	Return Pilot level to 9% and check Stereo separation at 1kHz, 100Hz, and 10kHz.

TUNING INDICATOR ADJUSTMENT

INSTRUMENT: FM Signal Generator.

NOTE: Set FUNCTION switch to FM

Step	FM STEREO SIGNAL GENERATOR		ADJUST	ADJUST FOR
	CONNECTED TO	SIGNAL STRENGTH		
1	FM Antenna Terminal	1mV	Tuning Knob	Tune for Zero Volts D.C. at R226
2	Same as above	Same as above	VR201	Maximum needle deflec- tion on tuning meter
3	Same as above	Same as above	VR202	To indicate 8 on Tuning Meter

AM/FM TUNER, IF, MPX PC BOARD — PARTS LIST

REF. NO.	H/K PART NO.	DESCRIPTION	REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS			TRANSISTORS (continued)		
VR201	23531305	22k Ohm, Variable	Q251,253,254	43029472	2SC460(C) AM Osc, AM IF Amp
VR202	23530559	10k Ohm, Variable	Q252	43029471	2SC461(B) AM Mixer
VR301	23530554	4.7k Ohm, Variable	Q255	43030569	2SC1335(E) AM IF Amp
VR302	23530558	250k Ohm, Variable	Q301	43030569	2SC1335(E) MPX Amp
CAPACITORS			Q302	43030569	2SC1335(E) Mono-ST. Switching
C210,225, 260,302	31818905	4.7uF +50% —10%, 25V, Electrolytic	Q303,304	43031312	2SA844(E) MPX Output Amp
C220,274 323	32529490	220uF +50% —10%, 16V, Electrolytic	I.C.'s		
C221,228, 275	30731309	0.47uF ±20%, 35V, Tantalum Electrolytic	1C201	43131313	BA401 FM IF Amp
C226,227	31819147	10uF +50% —10%, 16V, Electrolytic	1C202	43131314	BA402 FM IF Amp
C272	30731310	0.1uF ±20%, 35V, Tantalum Electrolytic	1C301	43128071	BA1310 MPX
C276	31818932	100uF +50% —10%, 10V, Electrolytic	DIODES		
C301,313 314	31819157	1uF +50% —10%, 50V, Electrolytic	D201,202,203, 204,205	41029290	1N60P
CF201,202	12030549	Ceramic Filter	D206,207, 208,209	41030552	1S2076
TRANSISTORS			D210	42031315	HZ6C
Q201	43029472	2SC460(C) FM IF Amp	D251,252,253	41029290	1N60P
Q202	43031311	2SK34(C) FET	COILS AND TRANSFORMERS		
Q203,204	43029472	2SC460(C) Differential Amp	L252	12031316	AM Osc
Q205	43030569	2SC1335(E) DC Amp	L301,302, 303,304	12031317	
Q206	43031312	2SA844(E) Muting	T202	11031318	Discriminator
			T251,252	11030556	AM IF
			T253	11030557	AM IF
				00231404	FM Front End

ALIGNMENT PROCEDURES

AM ALIGNMENT PROCEDURE

INSTRUMENTS: AM Signal Generator modulated with 400Hz at 30%, V.T.V.M. and Oscilloscope.

NOTE: Set FUNCTION selector to AM.

Connect signal source to a loop placed to radiate signals into AM ANT LOOP STICK.

Step	SIGNAL SOURCE OUTPUT	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR
1	455kHz of sweep generator AM Sig. Gen.	V.T.V.M. & oscillo- scope to Tape Out	Quiet point near 600kHz	T251	Maximum and undistorted pattern on SCOPE
2				T252	
3				T253	
4	Repeat step 1 through 3 for best sensitivity.				
5	530kHz of AM Sig. Gen.	V.T.V.M. to oscillo- scope to Tape Out	Gang fully closed	L252	Maximum output
6	1600kHz of AM Sig. Gen.		1600kHz	AM oscillator trimmer TC55	
7	Repeat step 5 and 6 for best dial accuracy.				
8	600kHz of AM Sig. Gen.	Same as above	600kHz	AM ANT LOOP STICK L251	Same as above
9	1600kHz of AM Sig. Gen.		1600kHz	AM ANT trimmer TC54	
10	Repeat step 8 and 9 for best sensitivity.				

FM ALIGNMENT PROCEDURE

INSTRUMENTS: FM Signal Generator, AC/DC V.T.V.M., Oscilloscope.

NOTE: Set Function Switch to FM, signal generator for 400 or 1000 cps 100% mod.

Step	FREQUENCY	SIG. STRENGTH	DIAL SETTING	ADJUST	FOR	AT
1	—	0	Quiet point on band	T52 top & bottom (on front end)	Max. noise	R226 ("OUT" term on IF Board)
2	—	0	Same as above	T202 top (on FM IF board)	Zero Volts D.C.	R226
3	Near 98 mc.	-1 db of Limiter saturation	Tune for Zero Volts D.C. at R226	T202 bottom T52 top and bottom	Max. symmetric output (on scope)	Tape Out
4	Repeat steps 2 and 3 until no further improvement is noticed.					
5	90 mc	approx. 10 μ v	90 mc	L52 (osc) (FM front end)	Zero Volts D.C.	R226
6	106 mc	Same as above	106 mc	TC53 (0sc) (FM front end)	Zero Volts D.C.	R226
7	Repeat steps 5 and 6 until no further improvement is noticed.					
8	90 mc	-3 db of Limiter saturation	Tune for Zero Volts D.C. at R226	L51 (RF) T51 (Ant)	Max. Output	Tape Out
9	106 mc	Same	Same	TC52 (RF) TC51 (Ant)	Max. Output	Tape Output
10	Repeat steps 9 and 10 until no further improvement is noticed.					

MPX ALIGNMENT PROCEDURE

INSTRUMENTS: Frequency counter, Stereo signal generator

NOTE: Set Function Switch to FM Stereo

1	Set MUTING switch to ON.
2	Connect frequency counter to LP301.
3	Adjust VR301 for 19KC $\pm$ 50C.
4	Set MUTING switch to OFF.
5	At 25 μ V of signal adjust Stereo threshold VR302 for Stereo indicator on.
6	Check Pilot level that Stereo indication lights at 6% of pilot level and that the indicator does not light at 1%.
7	Return Pilot level to 9% and check Stereo separation at 1kHz, 100Hz, and 10kHz.

TUNING INDICATOR ADJUSTMENT

INSTRUMENT: FM Signal Generator.

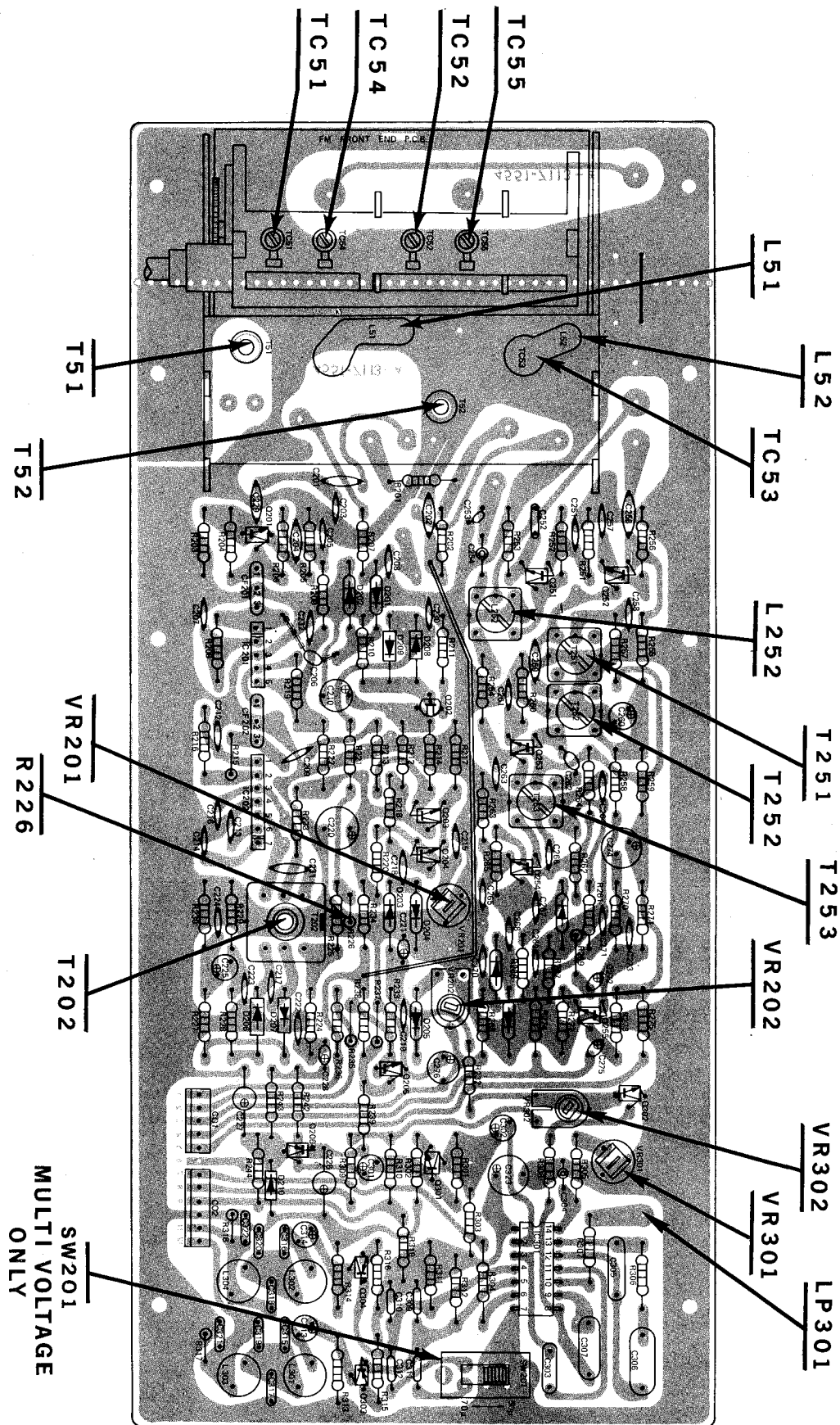
NOTE: Set FUNCTION switch to FM

Step	FM STEREO SIGNAL GENERATOR		ADJUST	ADJUST FOR
	CONNECTED TO	SIGNAL STRENGTH		
1	FM Antenna Terminal	1mV	Tuning Knob	Tune for Zero Volts D.C. at R226
2	Same as above	Same as above	VR201	Maximum needle deflection on tuning meter
3	Same as above	Same as above	VR202	To indicate 8 on Tuning Meter

AM/FM TUNER, IF, MPX PC BOARD – PARTS LIST

REF. NO.	H/K PART NO.	DESCRIPTION	REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS			TRANSISTORS (continued)		
VR201	23531305	22k Ohm, Variable	Q251,253,254	43029472	2SC460(C) AM Osc, AM IF Amp
VR202	23530559	10k Ohm, Variable	Q252	43029471	2SC461(B) AM Mixer
VR301	23530554	4.7k Ohm, Variable	Q255	43030569	2SC1335(E) AM IF Amp
VR302	23530558	250k Ohm, Variable	Q301	43030569	2SC1335(E) MPX Amp
CAPACITORS			Q302	43030569	2SC1335(E) Mono-ST. Switching
C210,225,260,302	31818905	4.7 μ F +50% -10%, 25V, Electrolytic	Q303,304	43031312	2SA844(E) MPX Output Amp
C220,274323	32529490	220 μ F +50% -10%, 16V, Electrolytic	I.C.'s		
C221,228,275	30731309	0.47 μ F $\pm$ 20%, 35V, Tantalum Electrolytic	1C201	43131313	BA401 FM IF Amp
C226,227	31819147	10 μ F +50% -10%, 16V, Electrolytic	1C202	43131314	BA402 FM IF Amp
C272	30731310	0.1 μ F $\pm$ 20%, 35V, Tantalum Electrolytic	1C301	43128071	BA1310 MPX
C276	31818932	100 μ F +50% -10%, 10V, Electrolytic	DIODES		
C301,313314	31819157	1 μ F +50% -10%, 50V, Electrolytic	D201,202,203,204,205	41029290	1N60P
CF201,202	12030549	Ceramic Filter	D206,207,208,209	41030552	1S2076
TRANSISTORS			D210	42031315	HZ6C
Q201	43029472	2SC460(C) FM IF Amp	D251,252,253	41029290	1N60P
Q202	43031311	2SK34(C) FET	COILS AND TRANSFORMERS		
Q203,204	43029472	2SC460(C) Differential Amp	L252	12031316	AM Osc
Q205	43030569	2SC1335(E) DC Amp	L301,302,303,304	12031317	
Q206	43031312	2SA844(E) Muting	T202	11031318	Discriminator
			T251,252	11030556	AM IF
			T253	11030557	AM IF
				00231404	FM Front End

AM/FM TUNER, IF, MPX PC BOARD COMPONENT SIDE



VOLTAGE CHART*

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

+B1, +B2.....	+28.5V
-B1, -B2.....	-28.5V
+B3	+12.5V
+B4	+25.4V

	base	emitter	collector
Q201	+0.83V	+0.12V	+6.72V
Q202	gate 0V	drain +4.89V	source +0.61V
Q203	+4.89V	+4.19V	+11.2V
Q204	+4.89V	+4.19V	+6.25V
Q205	+0.07V	0V	+7.97V
Muting ON	+0.63V	0V	+0.08V
Q206	+7.97V	+6.06V	+6.05V
Muting ON	+5.36V	+6.05V	+6.05V
Q251	+1.98V	+1.48V	+11.5V
Q252	+1.2V	+0.70V	+11.5V
Q253	+1.29V	+0.63V	+11.6V
Q254	+1.87V	+1.19V	+6.76V
Q255	+2.68V	+2.04V	+7.19V
Q301	+1.75V	+1.11V	+4.03V
Q303,304	+8.85V	+9.49V	+4.66V
Q701,702	+0.58V	+0.39V	+1.66V
Q703,704	+1.66V	+1.05V	+11.0V

TONE/CONTROL, MAIN AMP Function Selector to AUX

	base	emitter	collector
Q501,502	+4.43V	+3.83V	+25.4V
Q503,504	+0.6V	+0.035V	+5.63V
Q505,506	+5.63V	+5.06V	+25.4V
Q401,402	-0.046V	-0.64V	+27.6V
Q403,404	-0.04V	-0.64V	+28.0V
Q405,406	-26.8V	-27.5V	-0.64V
Q407,408	-27.5V	-28.0V	-0.75V
Q409,410	+27.6V	+28.4V	+1.18V
Q413,414	-0.75V	-0.16V	-28.3V
Q415,416	+1.18V	+0.60V	+28.4V
Q417,418	+0.60V	+0.027V	+28.5V
Q419,420	-28.3V	-28.5V	-0.02V
Q421,422	-0.048V	-0.75V	+1.18V

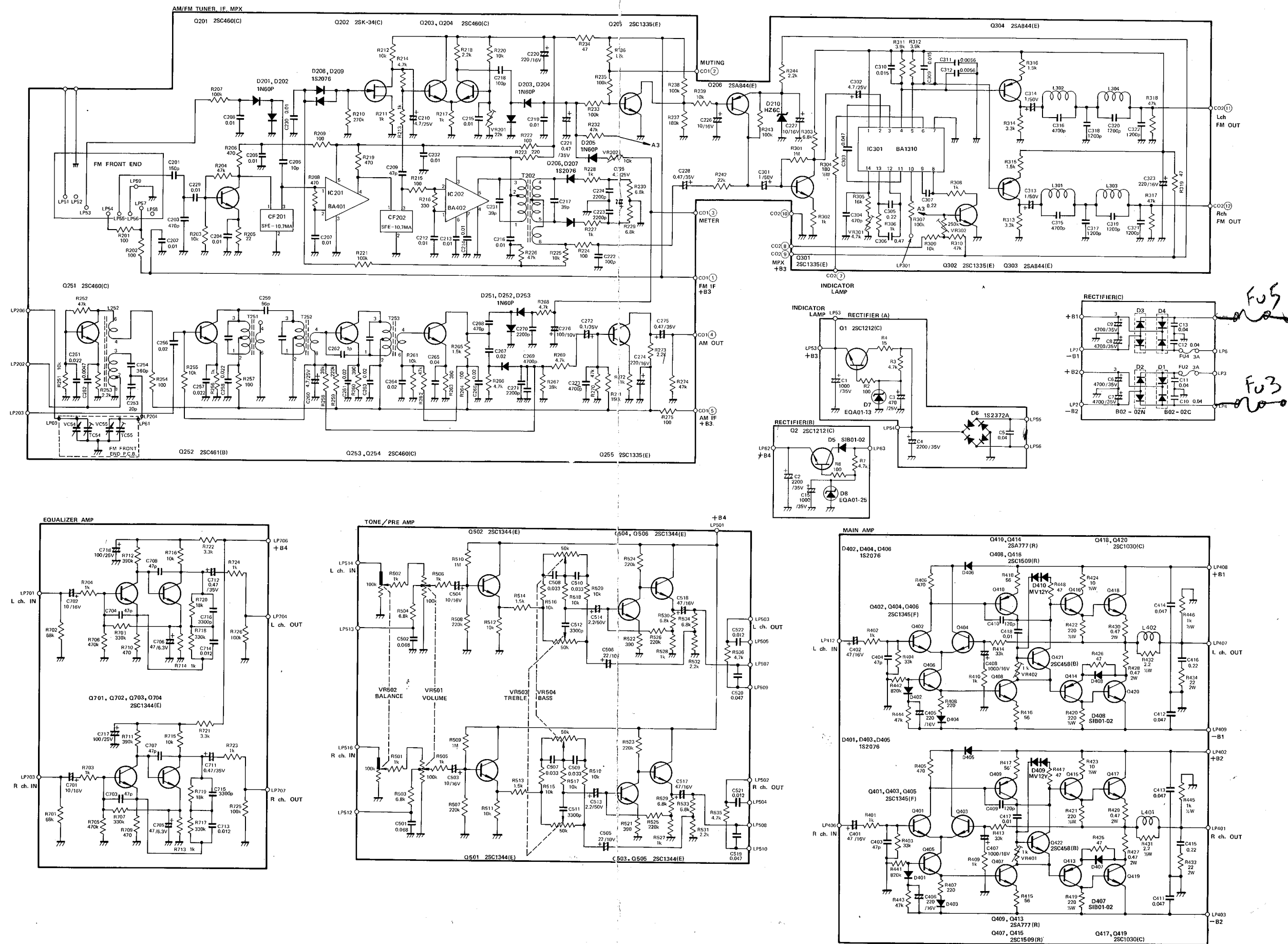
IC201	1	+1.42V
	2	+1.42V
	3	+1.07V
	4	+9.39V
	5	+10.08V
IC202	1	+2.05V
	2	+2.04V
	3	+9.16V
	4	0V
	5	+8.96V
	6	+2.06V
	7	+2.05V
IC301	1	+11.6V
	2	+3.97V
	3	+5.90V
	4	+8.85V
	5	+8.91V
	6	+12.44V
	7	0V
	8	+0.12V
	9	+2.57V
	10	+1.68V
	11	+2.43V
	12	+2.59V
	13	+2.61V
	14	+3.10V

*All values $\pm 15\%$ Typ

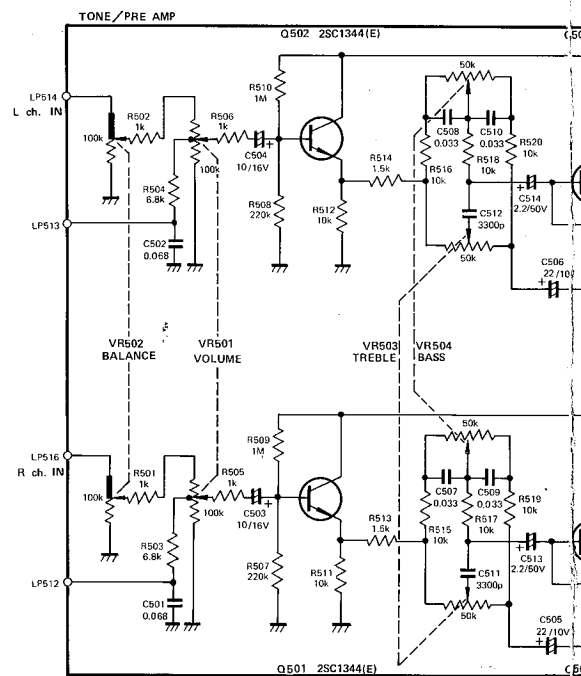
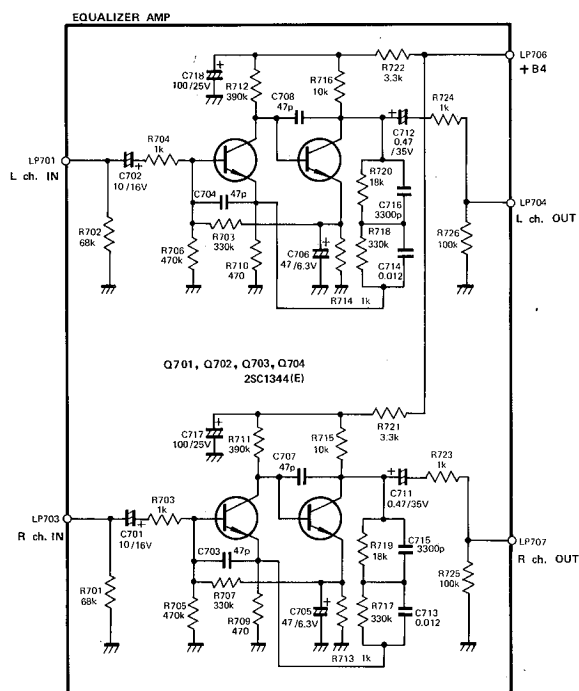
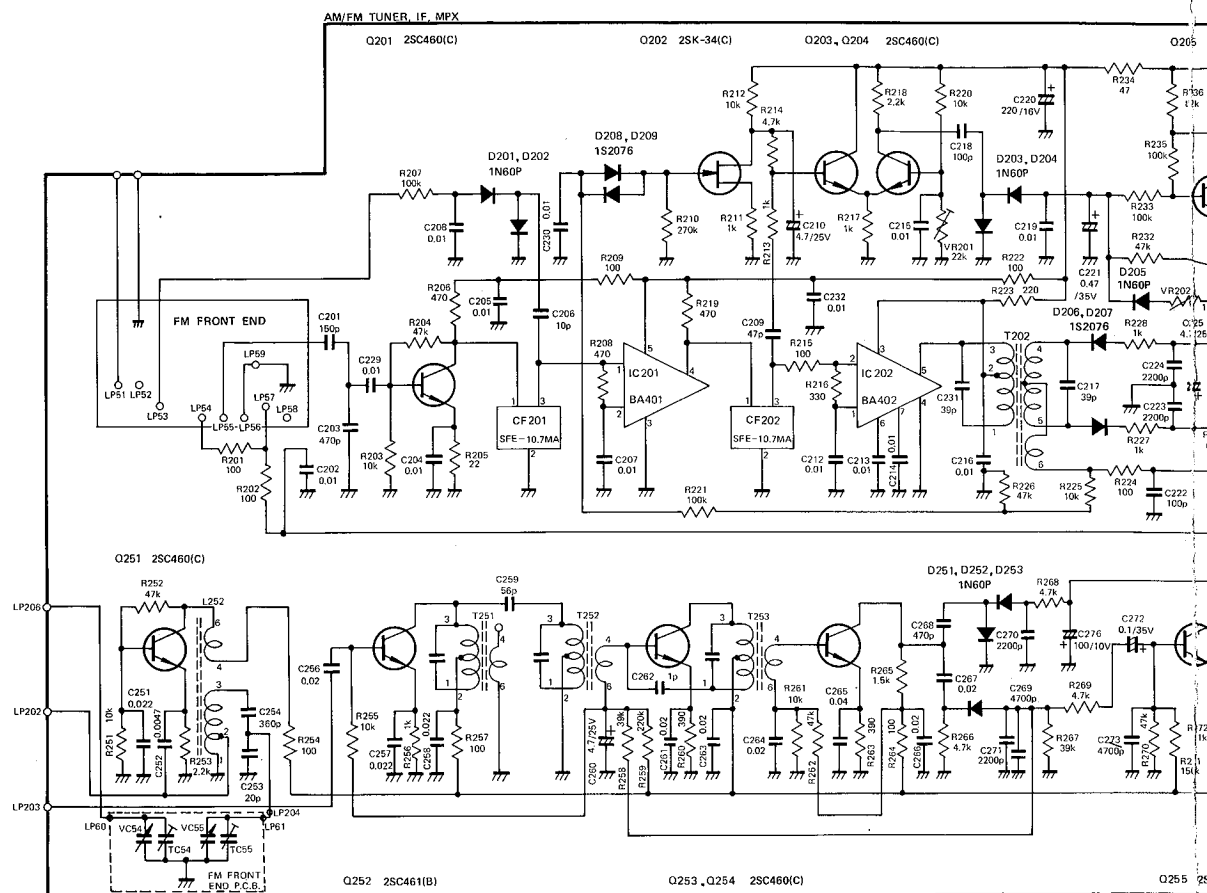
SCHEMATIC DIAGRAM NOTES

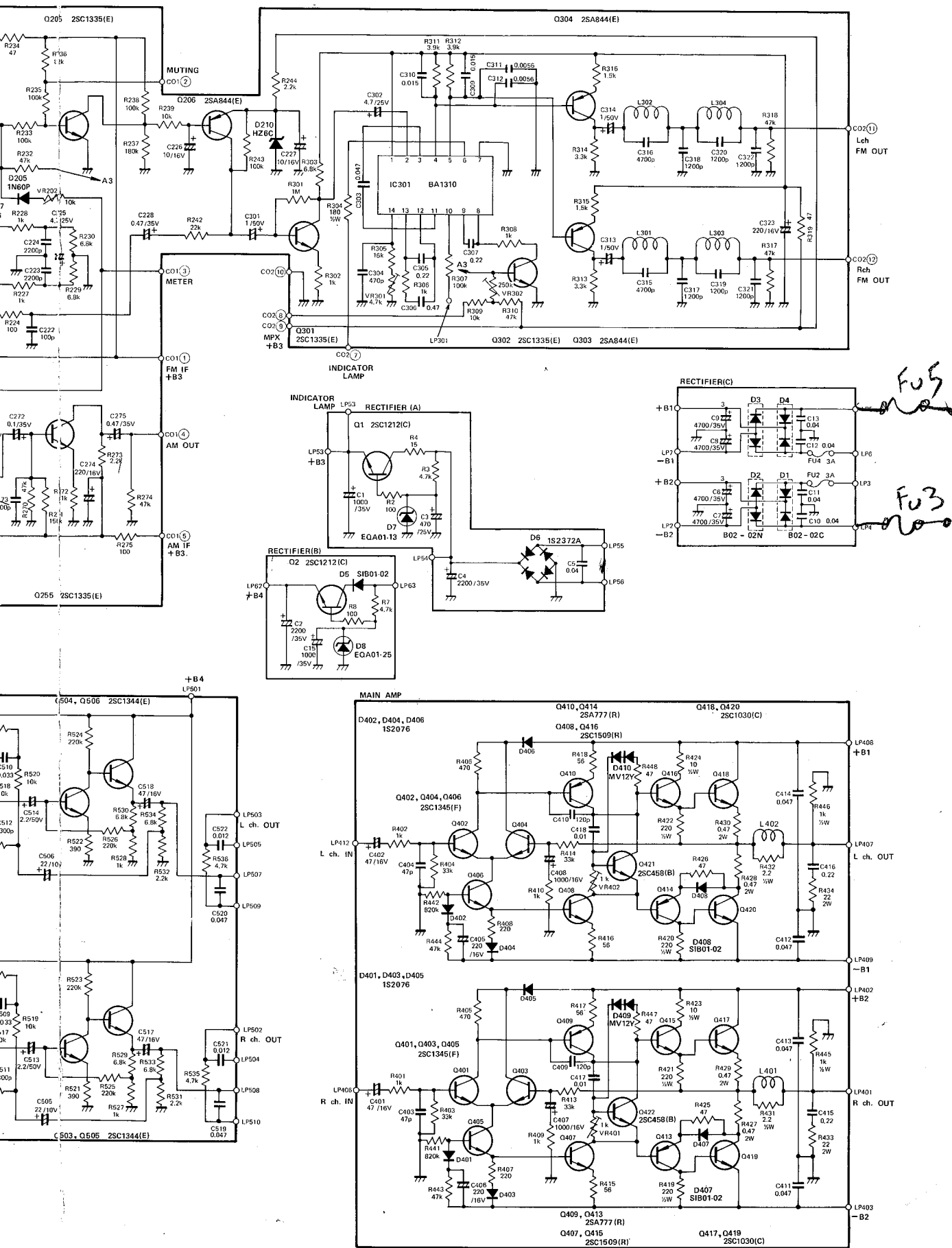
1. All resistors are 1/4 watt, $\pm 5\%$, unless noted otherwise.
Values are in ohms. K = 1000 M = 1000K
2. All capacitance values are in MF unless noted otherwise. PF = MMF
3. Function selector switch (SW9) is in AM position.

SCHEMATIC DIAGRAM — MODEL 430

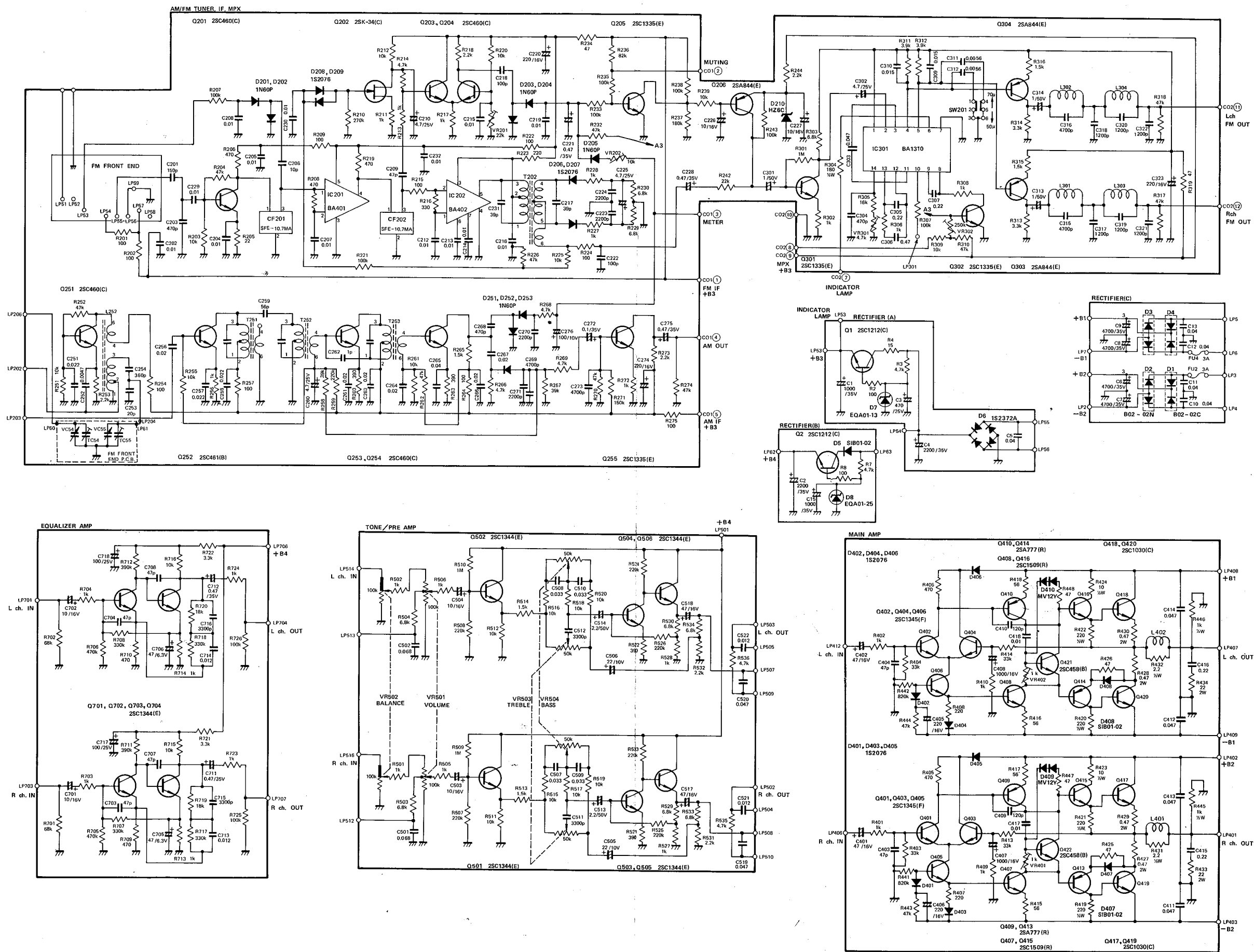


SCHEMATIC DIAGRAM — MODEL 430

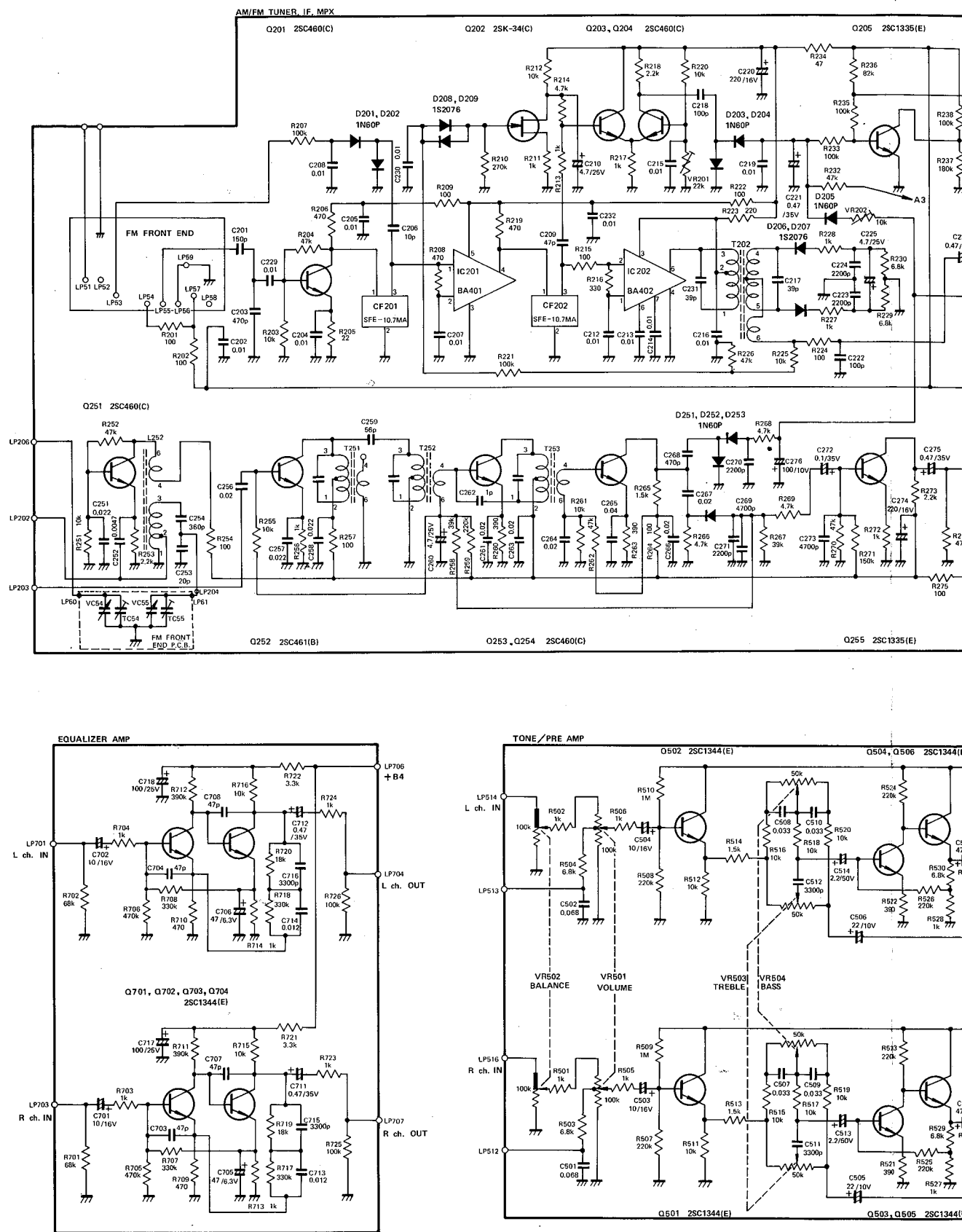


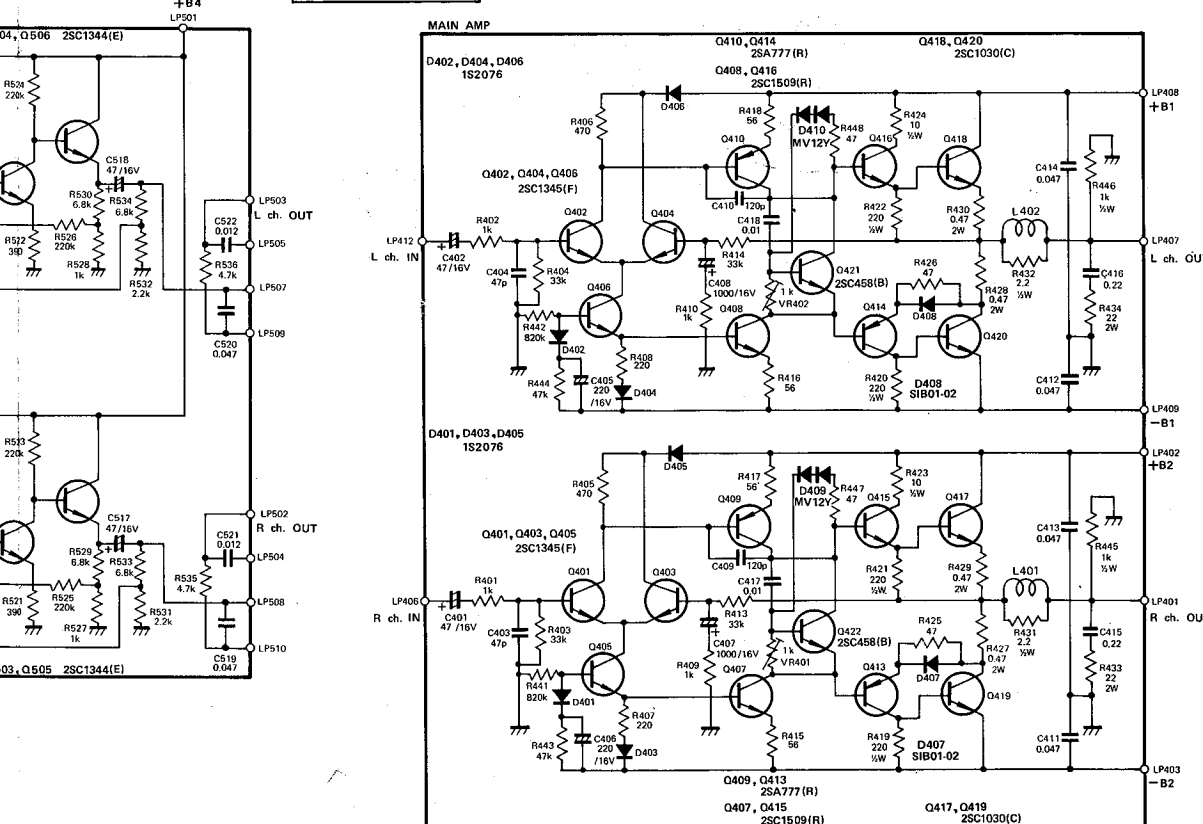


MULTIVOLTAGE SCHEMATIC DIAGRAM — MODEL 430

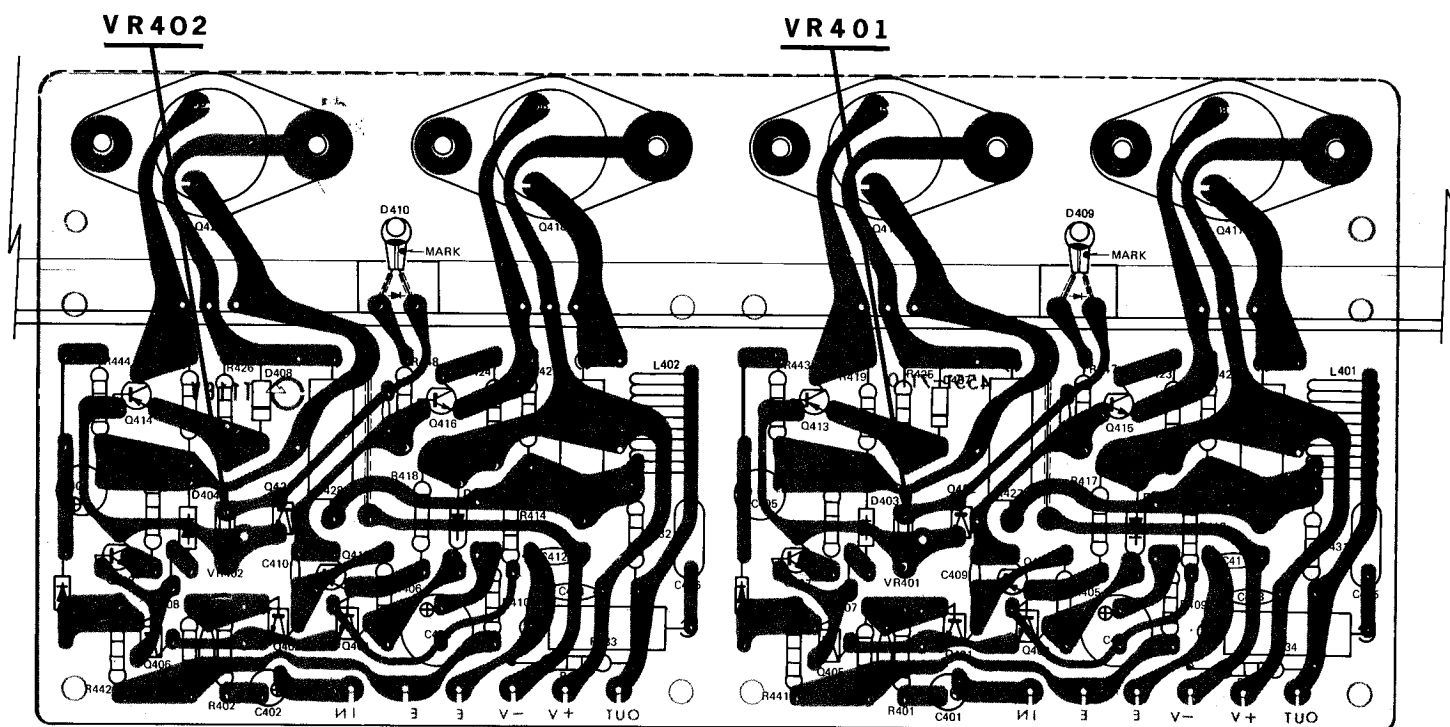


MULTIVOLTAGE SCHEMATIC DIAGRAM — MODEL 430





MAIN AMP PC BOARD COMPONENT SIDE



MAIN AMP. ALIGNMENT

- NOTES: 1. Set up HK430 as follows:
- FUNCTION — — — — AUX
 - tone & BALANCE — — — — MID
 - STEREO/MONO SWITCH — — — — STEREO
 - SPEAKER SWITCH — — — — ON
2. Connect 8 Ohm (50W) Resistor across Left and Right Speaker Terminals

IDLING ADJUSTMENT

INSTRUMENT: DC Voltmeter

NOTE: Set VOLUME Control to Minimum Output

Step	DC VOLTMETER CONNECTION	ADJUST	ADJUST FOR
1	Across R428 Resistor	VR402	25 mV DC
2	Across R427 Resistor	VR401	25 mV DC

MAIN AMP PC BOARD — PARTS LIST

REF. NO. H/K PART NO. DESCRIPTION

RESISTORS

VR401,402 23531300 1K Ohm, Variable
R427,430 33514781 0.47 Ohm 2W Resistor
R433,34 33512201 22 Ohm 2W Resistor

CAPACITORS

C401,402 31831301 47uF +50% -10%, 16V, Electrolytic
C405,406 32529490 220uF +50% -10%, 16V, Electrolytic
C407,408 31828611 470uF +50% -10%, 16V, Electrolytic

TRANSISTORS

Q401,402, 403,404 43029483 2SC1345(F) Differential Amp

REF. NO. H/K PART NO. DESCRIPTION

TRANSISTORS (continued)

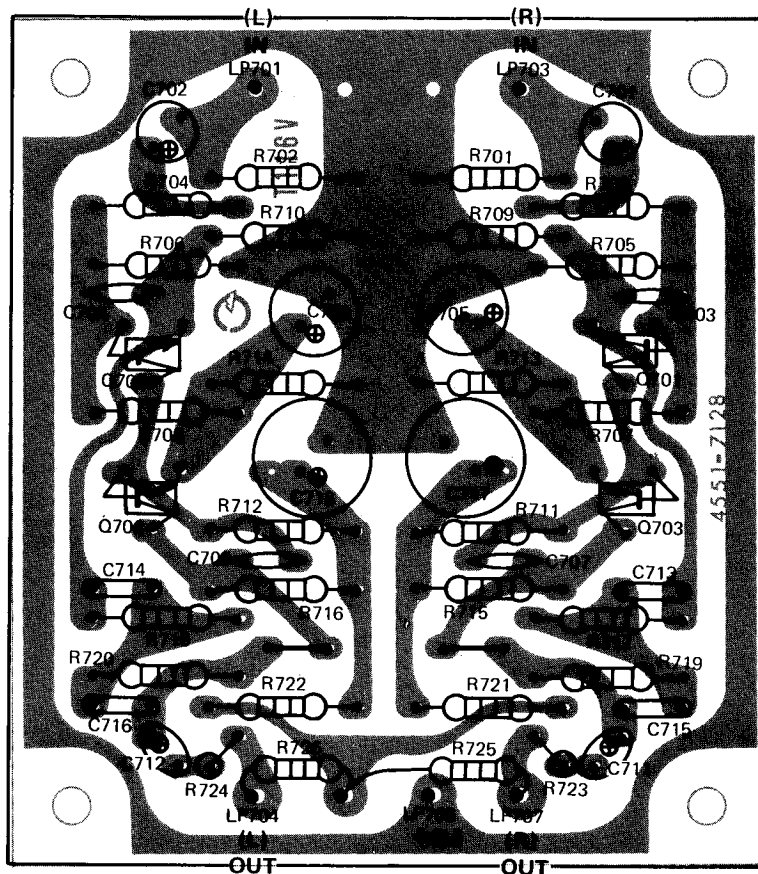
Q405,406 43029483 2SC1345(F) Current Regulator
Q407,408 43029484 2SC1509(R) Current Regulator
Q409,410 43029485 2SA777(R) Driver
Q413,414 43029485 2SA777(R) Complement
Q415,416 43029484 2SC1509(R) Complement
Q417,418, 419,420 43031303 2SC1030(C) Power Amp
Q421,422 43027379 2SC458(B) Bias Stabilization

DIODES

D401,402, 403,404, 405,406 41030552 IS2076
D407,408 41631295 SIB 01-02
D409,410 41631340 MV 12Y, Varistor

1000uf 16v

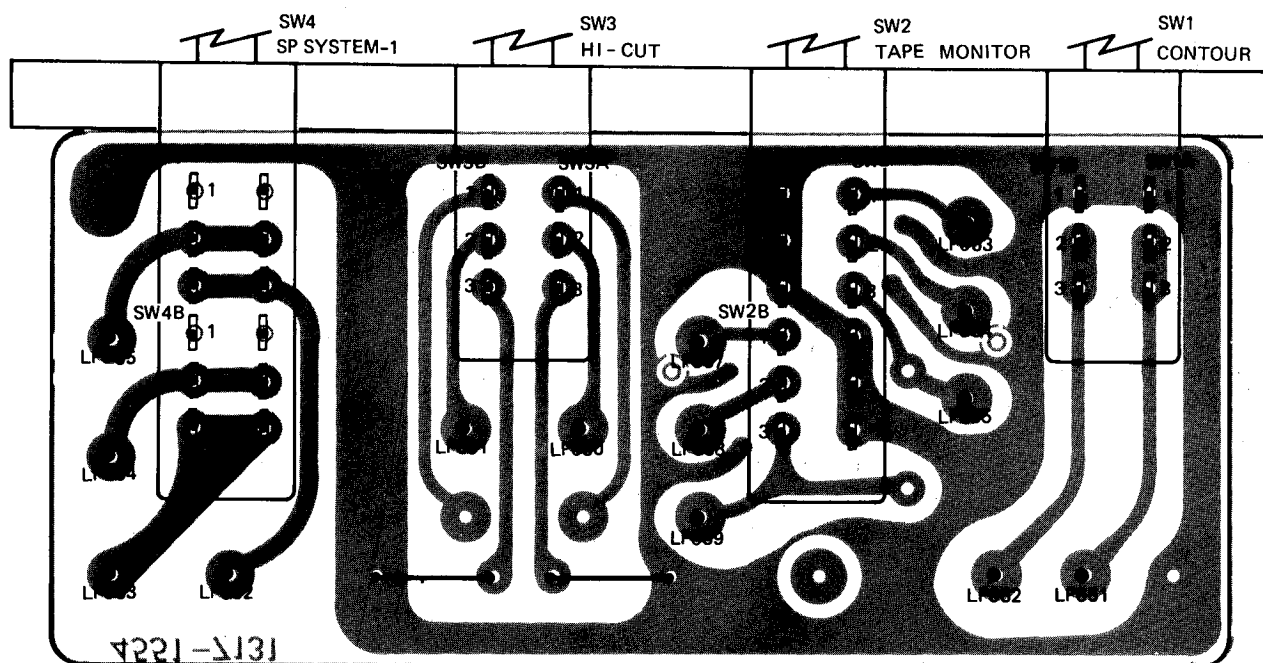
EQUALIZER AMP PC BOARD



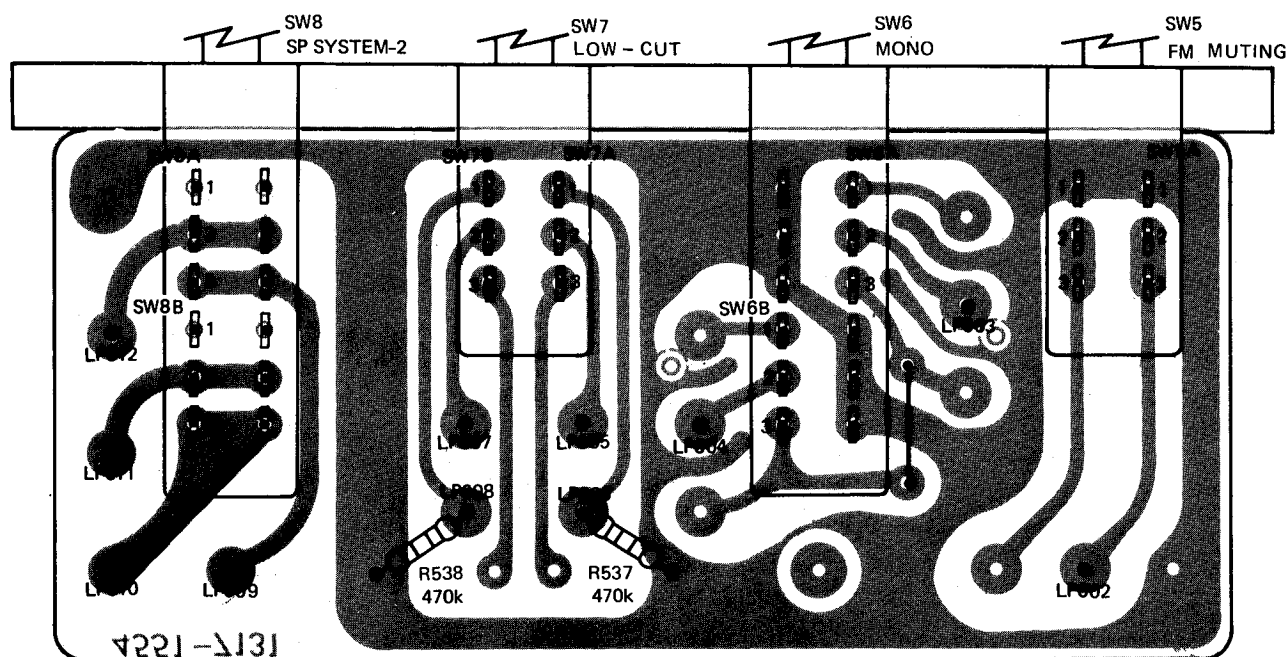
EQUALIZER AMP PC BOARD – PARTS LIST

REF. NO.	H/K PART NO.	DESCRIPTION
CAPACITORS		
C701,702	31819147	10uF +50% -10%, 16V Electrolytic
C705,706	31819155	47uF +50% -10%, 10V Electrolytic
C711,712	30731309	0.47uF ±20%, 35V, Tantalum Electrolytic
C717,718	31831324	100uF +50% -10%, 25V Electrolytic
TRANSISTORS		
Q701,702,703,704	43028535	2SC1344(E) Equalizer Amp

MODE/CONTROL SWITCH PC BOARD (A)



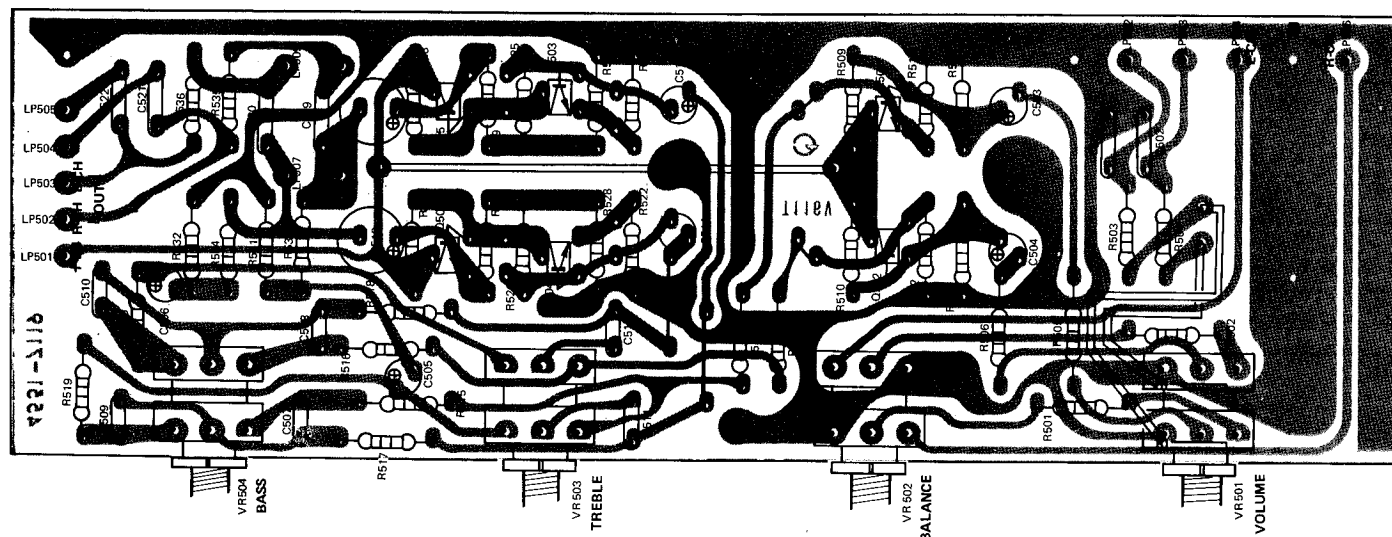
MODE/CONTROL SWITCH PC BOARD (B)



MODE/CONTROL SWITCH PC BOARD – PARTS LIST

REF. NO.	H/K PART NO.	DESCRIPTION
SWITCHES		
SW1,2,3,4	25031325	Contour, Tape Monitor, Hi-Cut, Speakers 1
SW5,6,7,8	25031325	FM Muting, Mono, Lo-Cut, Speakers 2

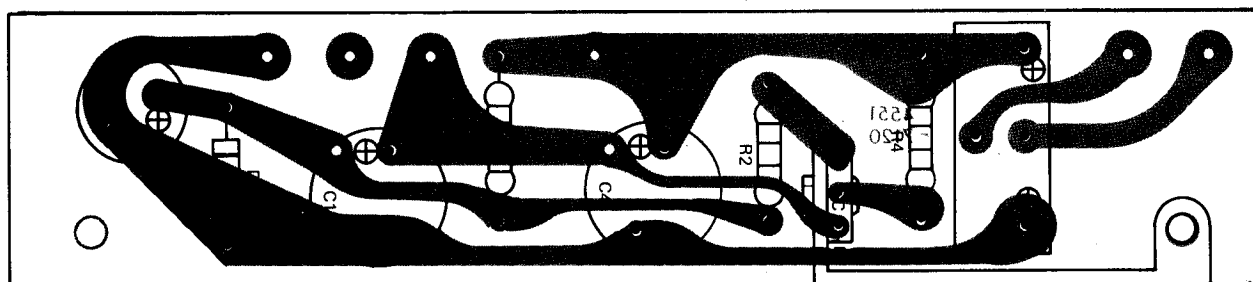
TONE/PREAMP PC BOARD



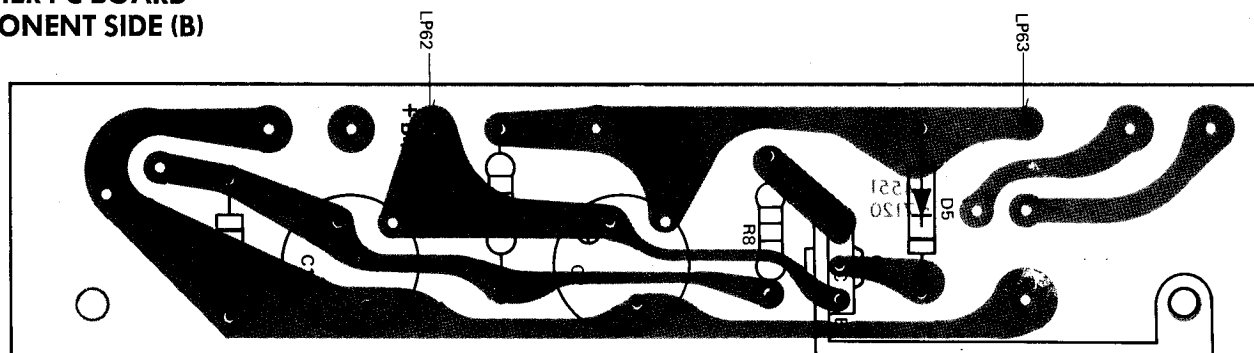
TONE PREAMP PC BOARD – PARTS LIST

REF. NO.	H/K PART NO.	DESCRIPTION
RESISTORS		
VR501	22031319	Variable, 100k Ohms, Volume Control
VR502	22031320	Variable, 100k Ohms, Balance Control
VR503	22031321	Variable, 50k Ohms, Treble Control
VR504	22031321	Variable, 50k Ohms, Bass Control
CAPACITORS		
C503,504	31819147	10uF +50% -10%, 16V Electrolytic
C505,506	31831322	22uF +50% -10%, 10V Electrolytic
C513,514	31831323	2.2uF +50% -10%, 50V Electrolytic
C517,518	31831301	47uF +50% -10%, 16V Electrolytic
TRANSISTORS		
Q501,502,503,504, 505,506	43028535	2SC1344(E) Preamp

**RECTIFIER PC BOARD
COMPONENT SIDE (A)**



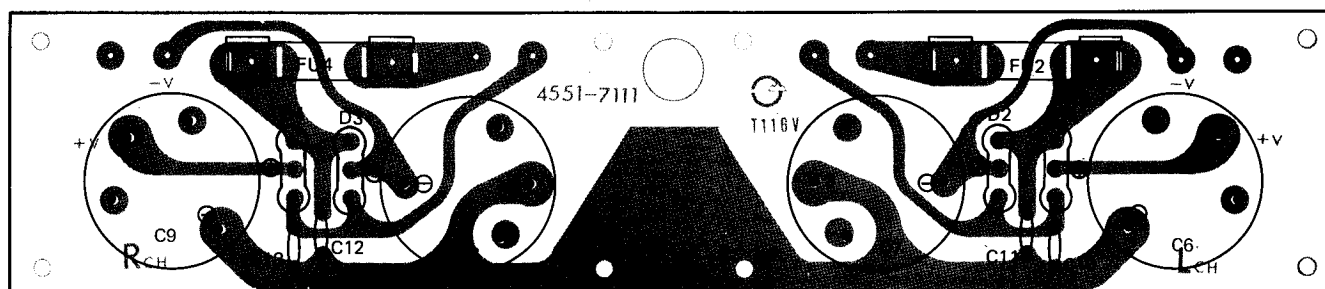
**RECTIFIER PC BOARD
COMPONENT SIDE (B)**



RECTIFIER PC BOARD (A) AND (B) – PARTS LIST

REF. NO.	H/K PART NO.	DESCRIPTION
CAPACITORS		
C1,15	32529491	1000uF +100% -10%, 35V, Electrolytic
C2,4	31819227	2200uF +100% -10%, 35V, Electrolytic
C3	31819152	470uF +100% -10%, 25V, Electrolytic
TRANSISTORS		
Q1,2	43025972	2SC1212, Rectifier, Voltage
DIODES		
D5	41631295	SIB 01-02, Rectifier
D6	42131296	IS 2372A, Bridge Rectifier
D7	42029566	EQA 01-13, Zener
D8	42031297	EQA 01-25, Zener

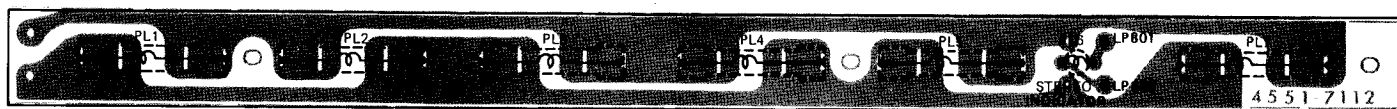
RECTIFIER PC BOARD COMPONENT SIDE (C)



RECTIFIER PC BOARD (C) – PARTS LIST

CAPACITORS		
C6,7,8,9	31831302	4700uF +50% -10%, 35V, Electrolytic
DIODES		
D1,4	41631298	B02-02C, Rectifier
D2,3	41631299	B02-02N, Rectifier

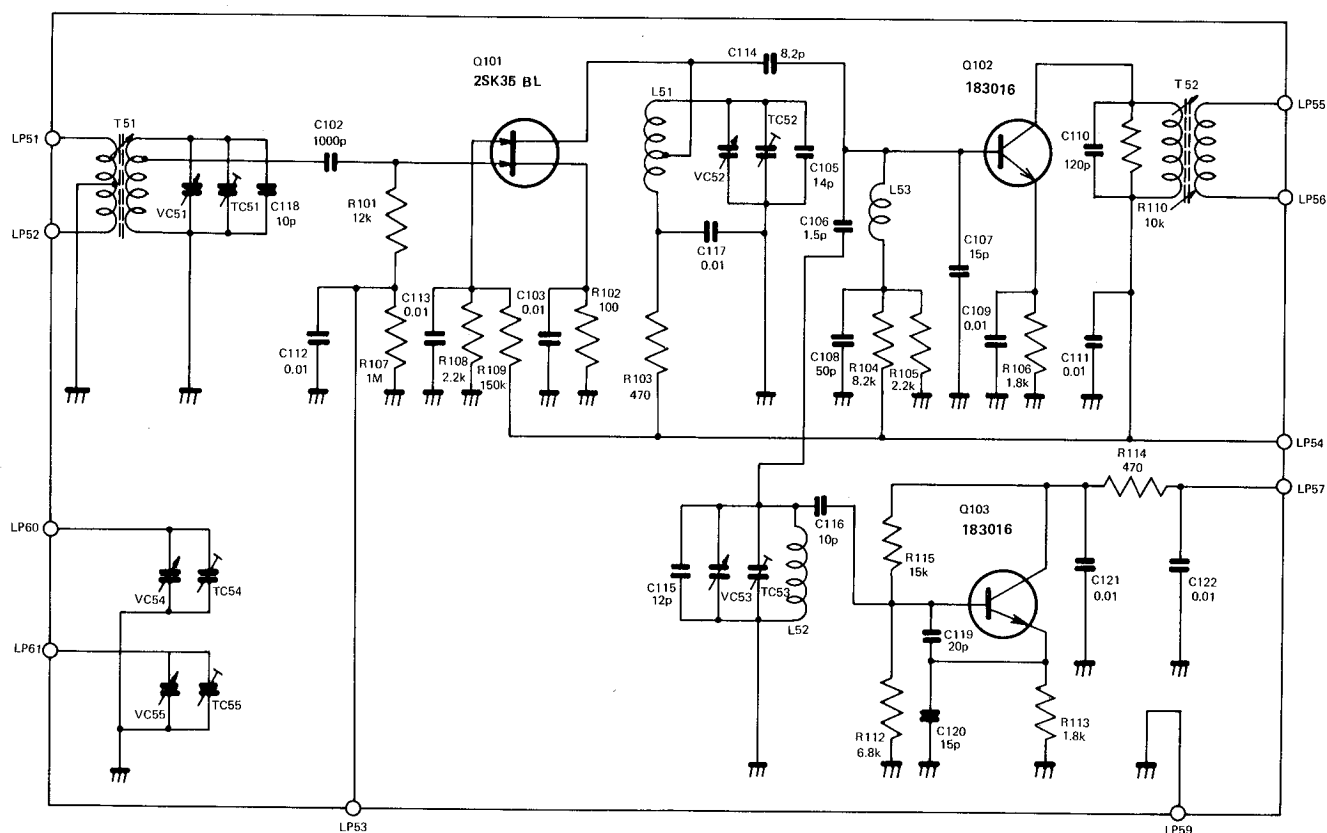
INDICATOR LAMP HOLDER PC BOARD WIRING SIDE



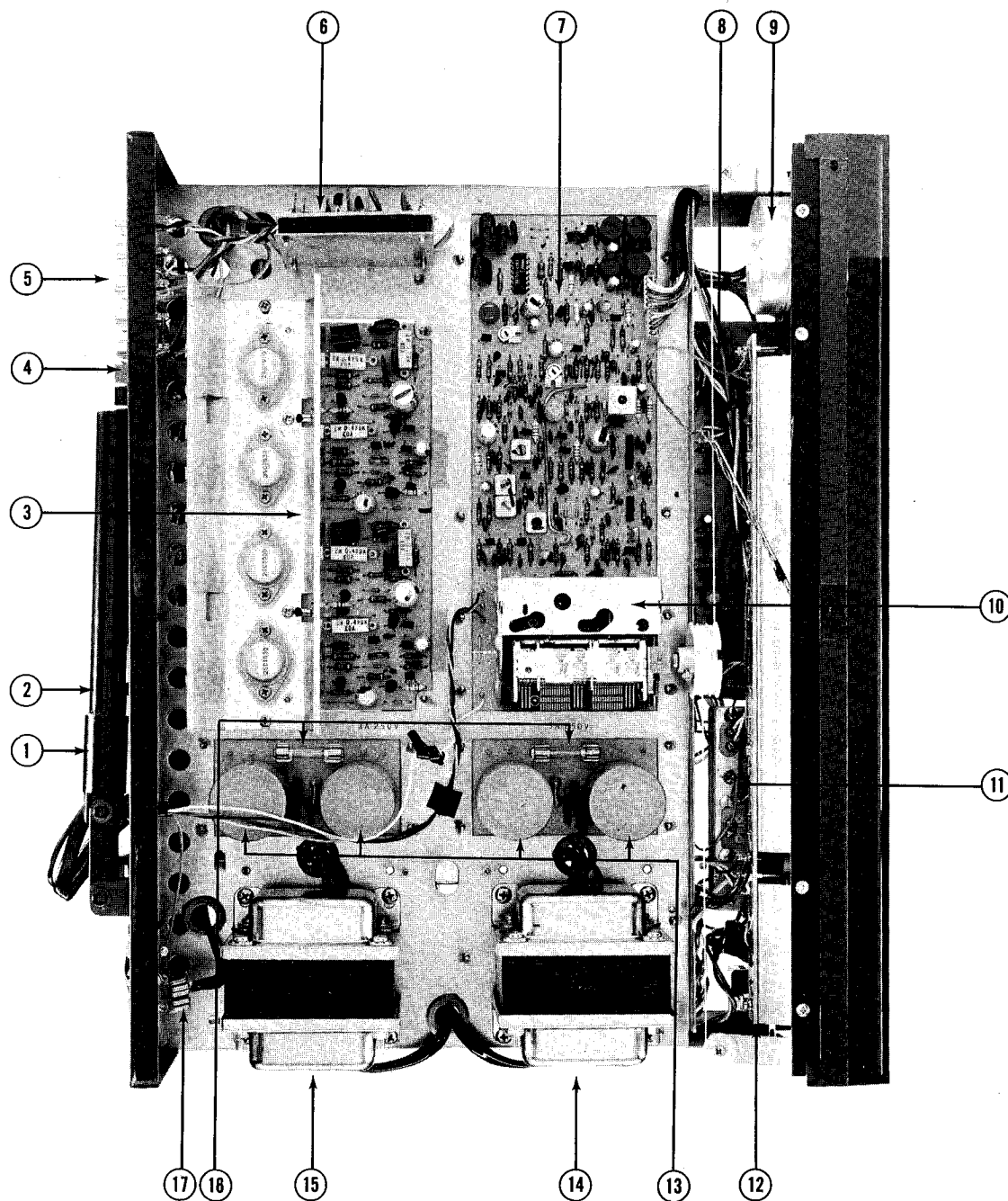
INDICATOR LAMP HOLDER PC BOARD – PARTS LIST

REF. NO.	H/K PART NO.	DESCRIPTION
LAMPS		
PL1,2,3,4,5,7	46524956	6.3V 0.25A Dial Illuminator
PL6	46531326	6.3V 40mA Stereo Indicator

FM FRONT END

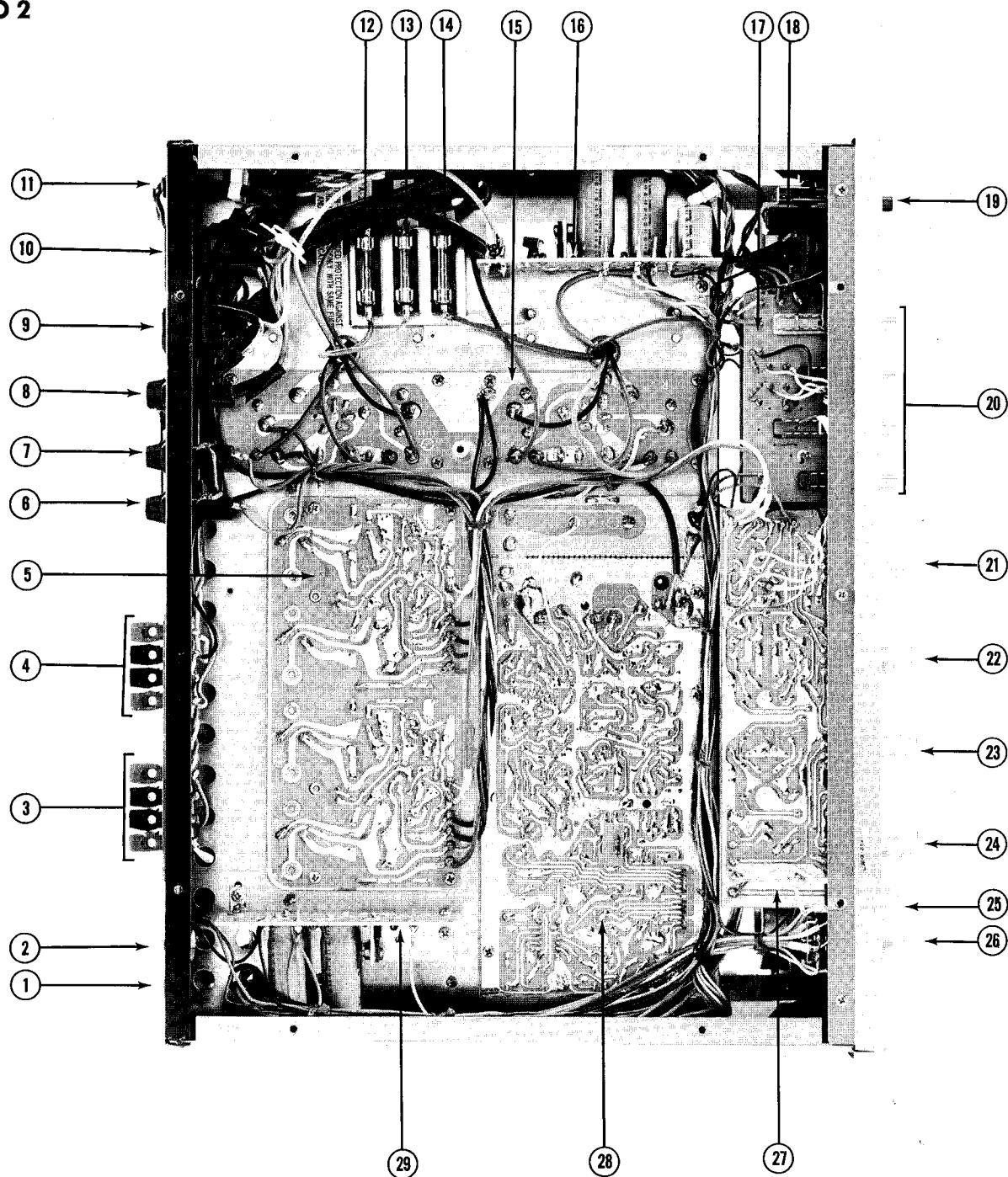


**BOTTOM VIEW
PHOTO 1**



REF.	DESCRIPTION	PART NO.	REF.	DESCRIPTION	PART NO.
1	AM Antenna Holder	00228712	10	FM Front End	00231404
2	AM Antenna	20531334	11A	Top Mode Control PC Bd.	00131361
3	Main Amp. P.C. Bd.	00131357	11B	Bottom Mode Control PC Bd.	00131394
4	Speaker Terminal	65431366	12	Indicator Lamp Holder	00131360
5	Input Output Terminal	65429520	13	Electrolytic Cap. C-6,7,8,9	31831302
6	Equalizer Amp. PC Bd.	00131355	14	Transformer T1	10131328
7	AM/FM Tuner IF MPX PC Bd.	00131354	15	Transformer T2	10131328
8	Tone/Preamp. PC Bd.	00131356	16	Fuse 3A 250V FU2,4	45013291
9	Tuning Shaft Wheel	60431386	17	FM Antenna Coil L-1	12031333

TOP VIEW
PHOTO 2

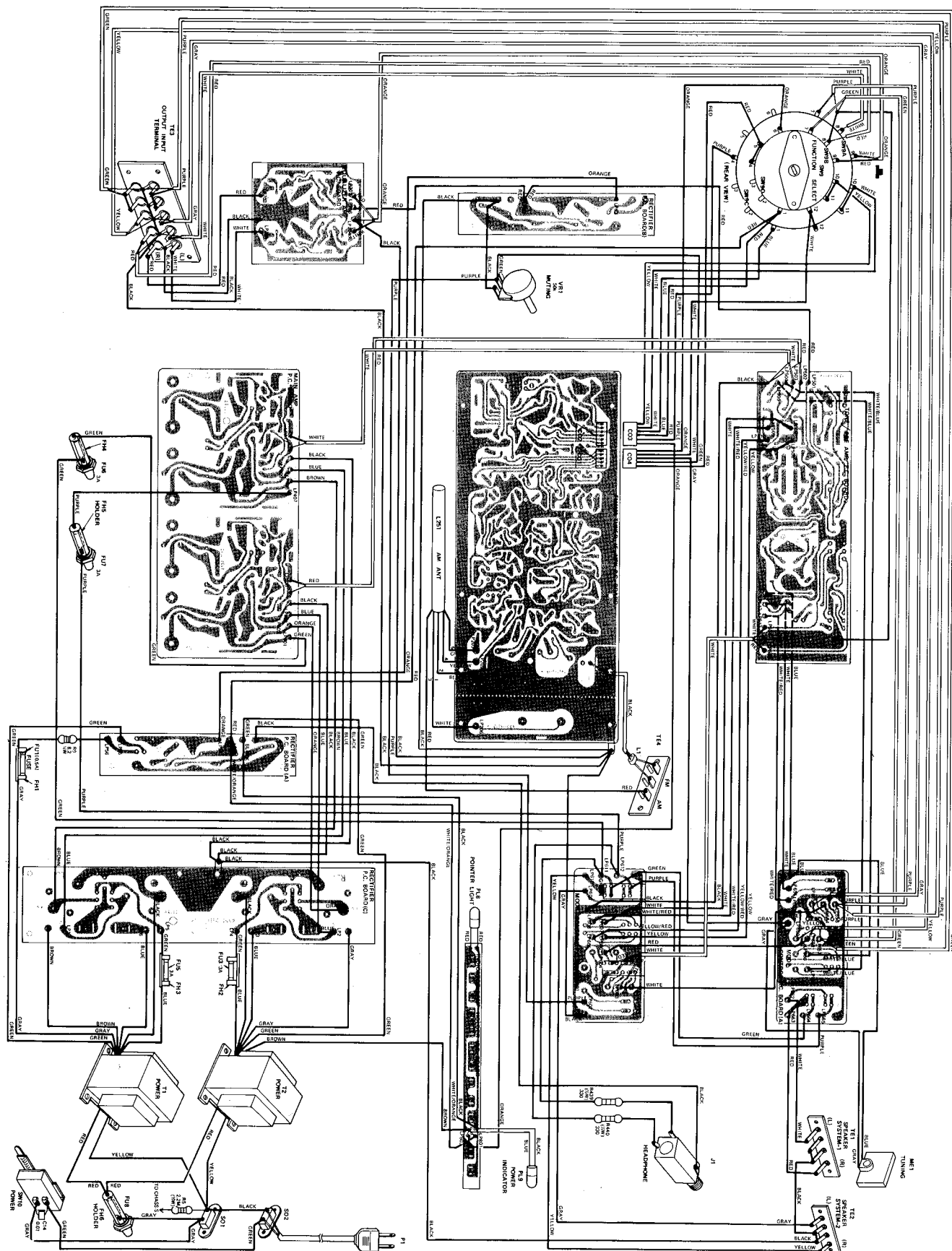


REF.	DESCRIPTION	PART NO.	REF.	DESCRIPTION	PART NO.
1	Ground Terminal Screw	79031382	16	Rectifier A P.C.B.	00131359
2	FM Muting Adjust VR-1 50K	21531367	17	Mode Control SW PCB Top	00131361
3	Speaker System 1 Terminals	65431366	17	Mode Control SW PCB Bottom	00131394
4	Speaker System 2 Terminals	65431366	18	Headphone Jack	65424917
5	Main Amp. P.C.B.	00131357	19	Push Button, Power	63231378
6	Left Spkr. Fuse FU7 3A 3AG	45013291	20	Push Button, Control/Mode	63231377
7	Right Spkr. Fuse FU6 3A 3AG	45013291	21	Bass Control Knob	63231376
8	Main Power Fuse FU8 3A 3AG	45013291	22	Treble Control Knob	63231376
9	Switched AC Outlet SO1	65424896	23	Balance Control Knob	63231376
10	Unswitched AC Outlet SO2	65424896	24	Volume Control Knob	63231376
11	AC Line Cord & Plug P1		25	Tuning Knob	63231375
12	Fuse FU-5 3A 3AG	45013291	26	Fuction Knob	63231376
13	Fuse FU-1 3A 3AG	45013291	27	Tone/Preamp P.C.B.	00131356
14	Fuse FU-3 3A 3AG	45013291	28	AM/FM Tuner/IF/MPX PCB	00131354
15	Rectifier C P.C.B.	00131358	29	Rectifier B PCB	00131362

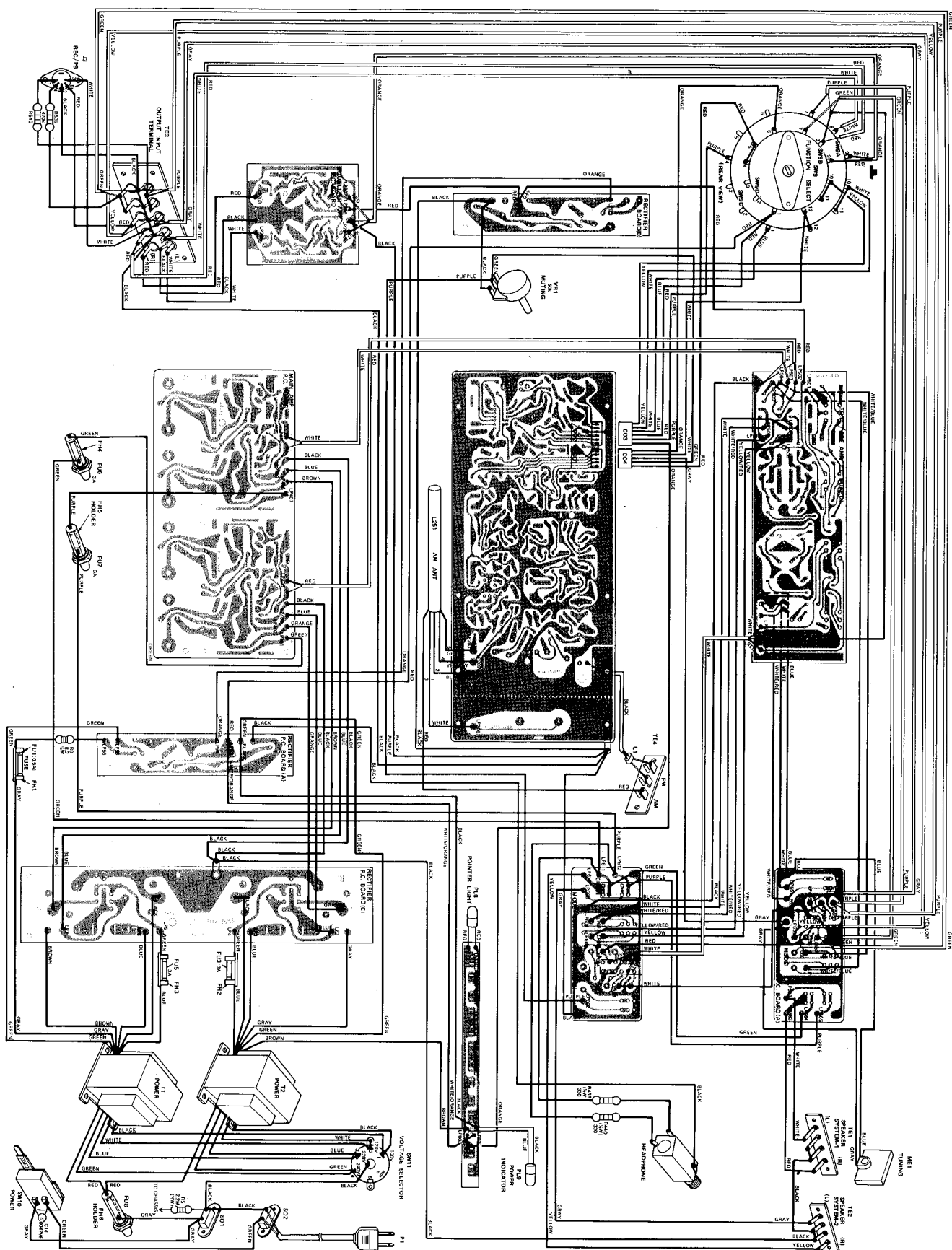
MISCELLANEOUS PARTS LIST

PHOTO REF.	CIRCUIT REF.	PART NO.	DESCRIPTION
MULTI-VOLTAGE RECEIVER			
	SW201	24531335	Slide Switch on AM/FM Tuner, IF, MPX, PC Board
	SW11	24031338	Rotary Switch, Power Source Voltage Selection
	FU8	(45031336)	3A Fuse 100/120V
		(45031337)	1.5A Fuse 220/240V
	T1,2	10131339	Power Transformer
MISCELLANEOUS			
2-19	SW10	25029514	Power Switch
2-6,7,8	FH4,5,6	65429516	Fuseholder for FU6,7,8
2-13	FU1	45031327	0.5A AGC-3 Fuse
	FU3,5,6,7,8	45013291	3A AGC-3 Fuse
1-14,15	T1,2	10131328	Power Transformer
1-5	TE3	65429520	Output/Input Terminal
	ME1	12531329	Tuning Meter
	TE4	65129518	FM/AM External Antenna Terminal
	PL8	46531330	6.3V 30mA Pointer Light
	PL9	46531331	6.3V 50mA Power Indicator Light
1-17	L1	12031333	FM Antenna Coil
1-2	L251	20531334	AM Ferrite Bar Antenna
1-7		00131354	FM/AM Tuner, IF and MPX P.C.B. Complete
1-6		00131355	Equalizer Amp. P.C.B. Complete
1-8		00131356	Tone/Pre. Amp. P.C.B. Complete
1-3		00131357	Main Amp. P.C.B. Complete
2-15		00131358	Rectifier P.C.B. (C) Complete
2-16		00131359	Rectifier P.C.B. (A) Complete
1-12		00131360	Indicator Lamp Holder P.C.B. Complete
1-11A		00131361	Mode/Control Switch P.C.B. (A) Complete
1-11B		00131394	Mode/Control Switch P.C.B. (B) Complete
2-29		00131362	Rectifier P.C.B. (B) Complete
2-26		24031363	Function Selector Switch
2-9,10		65431364	AC Socket
2-12,13,14		65431365	Fuse Holder for Fuse FU1,3,5
2-3,4		65431366	Speaker Output Terminal
2-2	VR-1	21531367	Variable Resistor, 50k Ohm, Muting Adjust
		60131368	Cabinet Top
		60131369	Cabinet Back
		60131370	Cabinet Bottom Cover
		00231371	Front Panel Assembly
		60131372	Front Side Panel
		62031373	Leg for Unit
		61031374	Dial Panel
2-25		63231375	Tuning Knob
2-21-24,26		63231376	Knob, Tone Control, Function Selector
2-20		63231377	Push Button, Control/Mode
2-19		63231378	Push Button, Power
		65431379	Bushing, AC Line Cord
1-1		61631380	AM Ferrite Bar Antenna Holder
		80131381	Nut for Unit Ground Terminal
		79031382	Special Screw for Unit Ground Terminal
		53031383	External AM Antenna Lead Wire
		00231384	Dial Pointer Assembly
		00231385	Tuning Shaft Assembly
		60431386	Wheel for Tuning Shaft
		60431387	Dial Drum for Variable Capacitor
		60431388	Pulley for Dial Cord
		60631389	Spring for Dial Cord
		60631390	Spring for Pointer Lamp Holder
		86531391	Spacer for Equalizer Amp. P.C. Board
		60131392	Reflector Pan for Dial Lamp
2-18		65424917	Headphone Jack

WIRING DIAGRAM



MULTIVOLTAGE WIRING DIAGRAM



STRINGING DIAGRAM

