

ERIC NELSON - CUST. SVC. DEPT.

Manual No. 17A

**The Harman Kardon
Model hk740**

**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

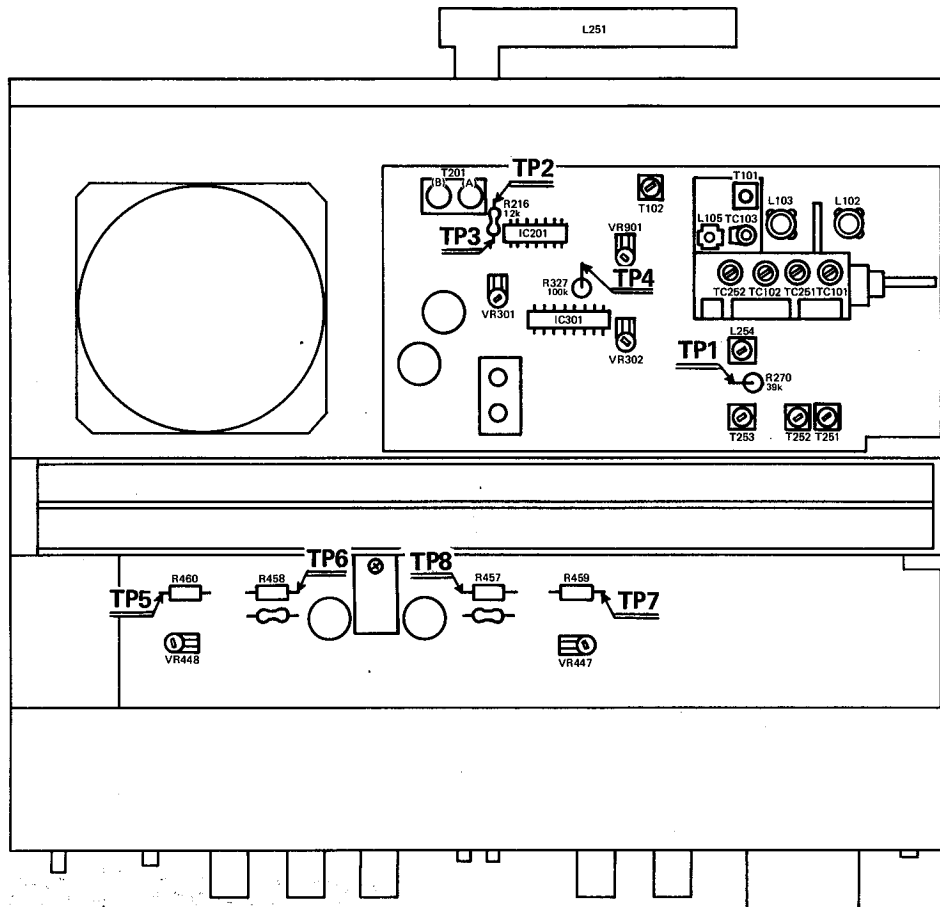


Fig. 1—Alignment Points Location

ALIGNMENT PROCEDURES

AM ALIGNMENT

- Instruments:** 1. AM Signal Generator modulated with 400Hz at 30%.
2. Oscilloscope
3. AC V.T.V.M.

- Notes:** 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	VTVM and oscilloscope to TP1 and ground	Quiet point on band	T251, T252, T253	Maximum output on VTVM and at the same time clean wave form on oscilloscope
2	540kHz	Same as above	540kHz	L254	Same as above
3	1600kHz	Same as above	1600kHz	TC252	Same as above
4	Repeat steps 2 and 3 for optimum sensitivity				
5	600kHz	VTVM and oscilloscope to TP1 and ground	Tune for signal	L251	Maximum output on VTVM and at the same time clean wave form on oscilloscope
6	1400kHz	Same as above	Same as above	TC251	Same as above
7	Repeat steps 5 and 6 for optimum sensitivity				

FM ALIGNMENT

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

- Notes:** 1. Set function selector switch to FM position.
2. Set muting switch to OFF (button out) position.
3. Connect signal source to FM antenna terminals.

Step	Signal Source	Connect Output Meter To	Dial Setting	Adjust	Adjust For
1	_____	VTVM to Tape Out jack	Quiet point on band	T101, T102	Maximum noise on VTVM
2	_____	Center zero meter to TP2 and TP3	Same as above	T201(A)	Indicating "0" on center zero meter
3	_____	VTVM to Tape Out jack	Same as above	T201(B)	Minimum noise on VTVM
4	88MHz 6dBf (1μV)	Same as above	88MHz	L105	Maximum output on VTVM
5	108MHz 6dBf (1μV)	Same as above	108MHz	TC103	Same as above
6	Repeat steps 4 and 5 for optimum sensitivity				
7	90MHz 6dBf (1μV)	VTVM to Tape Out jack	Tune for signal	L102, L103	Maximum output on VTVM
8	106MHz 6dBf (1μV)	Same as above	Same as above	TC101, TC102	Same as above
9	Repeat steps 7 and 8 for optimum sensitivity				
10	98MHz 65dBf (970μV)	Distortion meter to Tape Out jack	Tune for signal	T201(B)	Minimum reading on distortion meter
11	Repeat step 2 (DC balance adjustment) once again.				

ALIGNMENT PROCEDURES

MPX ADJUSTMENT

- Instruments:** 1. FM Signal Generator modulated with 1000Hz at 100% (75kHz).
2. Frequency Counter

- Notes:** 1. Set function selector switch to FM position.
2. Connect signal source to FM antenna terminals.

Signal Source	Connect Output Meter To	Dial Setting	Adjust	Adjust For
98MHz 65dBf (970μV)	Frequency counter to TP4 and ground	98MHz	VR302	19kHz ±50Hz on frequency counter

SEPARATION ADJUSTMENT

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

- Notes:** 1. Set function selector switch to AUTO FM position.
2. Connect signal source to FM antenna terminals.

Step	Signal Source	Connect Output Meter To	Dial Setting	Adjust	Adjust For
1	Set Lch signal ON at FM stereo signal generator				
2	98MHz 65dBf (970μV)	VTVM to Rch Tape Out jack	98MHz	VR301	Minimum output on VTVM
3	Set Rch signal ON at FM stereo signal generator				
4	98MHz 65dBf (970μV)	VTVM to Lch Tape Out jack	98MHz	VR301	Minimum output on VTVM

SIGNAL STRENGTH INDICATOR ADJUSTMENT

- Instrument:** FM Signal Generator modulated with 1000Hz at 100% (75kHz).
Notes: 1. Set function selector switch to FM position.
2. Connect signal source to FM antenna terminals.

Signal Source	Dial Setting	Adjust	Adjust For
98MHz 34dBf (28μV)	98MHz	VR901	Three LEDs of signal level display lights

IDLING CURRENT ADJUSTMENT

- Instrument:** DC Voltmeter
Notes: 1. Set function selector switch to AUX position.
2. Set volume control to minimum position.

Step	Connect Output Meter To	Adjust	Adjust For
1	DC voltmeter to TP5(+) and TP6(-)	VR448	26mV on DC voltmeter
2	DC voltmeter to TP7(+) and TP8(-)	VR447	Same as above

ALIGNMENT PROCEDURES

AM ALIGNMENT

- Instruments:**
1. AM Signal Generator modulated with 400Hz at 30%.
 2. Oscilloscope
 3. AC V.T.V.M.

- Notes:**
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	VTVM and oscilloscope to TP1 and ground	Quiet point on band	T251, T252, T253	Maximum output on VTVM and at the same time clean wave form on oscilloscope
2	540kHz	Same as above	540kHz	L254	Same as above
3	1600kHz	Same as above	1600kHz	TC252	Same as above
4	Repeat steps 2 and 3 for optimum sensitivity				
5	600kHz	VTVM and oscilloscope to TP1 and ground	Tune for signal	L251	Maximum output on VTVM and at the same time clean wave form on oscilloscope
6	1400kHz	Same as above	Same as above	TC251	Same as above
7	Repeat steps 5 and 6 for optimum sensitivity				

FM ALIGNMENT

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

- Notes:**
1. Set function selector switch to FM position.
 2. Set muting switch to OFF (button out) position.
 3. Connect signal source to FM antenna terminals.

Step	Signal Source	Connect Output Meter To	Dial Setting	Adjust	Adjust For
1	_____	VTVM to Tape Out jack	Quiet point on band	T101, T102	Maximum noise on VTVM
2	_____	Center zero meter to TP2 and TP3	Same as above	T201(A)	Indicating "0" on center zero meter
3	_____	VTVM to Tape Out jack	Same as above	T201(B)	Minimum noise on VTVM
4	88MHz 6dBf (1 μ V)	Same as above	88MHz	L105	Maximum output on VTVM
5	108MHz 6dBf (1 μ V)	Same as above	108MHz	TC103	Same as above
6	Repeat steps 4 and 5 for optimum sensitivity				
7	90MHz 6dBf (1 μ V)	VTVM to Tape Out jack	Tune for signal	L102, L103	Maximum output on VTVM
8	106MHz 6dBf (1 μ V)	Same as above	Same as above	TC101, TC102	Same as above
9	Repeat steps 7 and 8 for optimum sensitivity				
10	98MHz 65dBf (970 μ V)	Distortion meter to Tape Out jack	Tune for signal	T201(B)	Minimum reading on distortion meter
11	Repeat step 2 (DC balance adjustment) once again.				

ALIGNMENT PROCEDURES

MPX ADJUSTMENT

- Instruments:** 1. FM Signal Generator modulated with 1000Hz at 100% (75kHz).
2. Frequency Counter

- Notes:** 1. Set function selector switch to FM position.
2. Connect signal source to FM antenna terminals.

Signal Source	Connect Output Meter To	Dial Setting	Adjust	Adjust For
98MHz 65dBf (970 μ V)	Frequency counter to TP4 and ground	98MHz	VR302	19kHz \pm 50Hz on frequency counter

SEPARATION ADJUSTMENT

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

- Notes:** 1. Set function selector switch to AUTO FM position.
2. Connect signal source to FM antenna terminals.

Step	Signal Source	Connect Output Meter To	Dial Setting	Adjust	Adjust For
1	Set Lch signal ON at FM stereo signal generator				
2	98MHz 65dBf (970 μ V)	VTVM to Rch Tape Out jack	98MHz	VR301	Minimum output on VTVM
3	Set Rch signal ON at FM stereo signal generator				
4	98MHz 65dBf (970 μ V)	VTVM to Lch Tape Out jack	98MHz	VR301	Minimum output on VTVM

SIGNAL STRENGTH INDICATOR ADJUSTMENT

- Instrument:** FM Signal Generator modulated with 1000Hz at 100% (75kHz).
Notes: 1. Set function selector switch to FM position.
2. Connect signal source to FM antenna terminals.

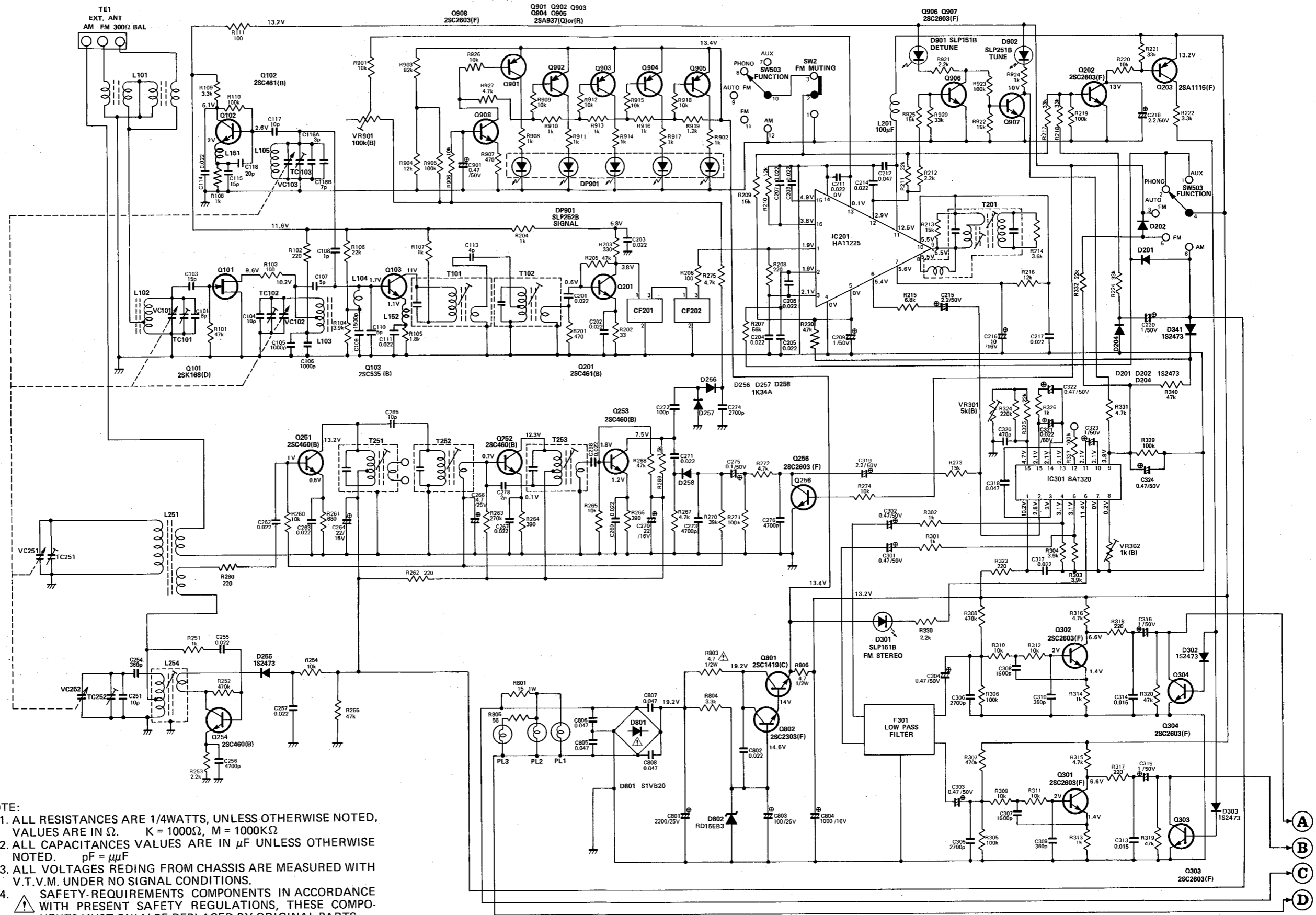
Signal Source	Dial Setting	Adjust	Adjust For
98MHz 34dBf (28 μ V)	98MHz	VR901	Three LEDs of signal level display lights

IDLING CURRENT ADJUSTMENT


- Instrument:** DC Voltmeter
Notes: 1. Set function selector switch to AUX position.
2. Set volume control to minimum position.

Step	Connect Output Meter To	Adjust	Adjust For
1	DC voltmeter to TP5(+) and TP6(-)	VR448	26mV on DC voltmeter
2	DC voltmeter to TP7(+) and TP8(-)	VR447	Same as above

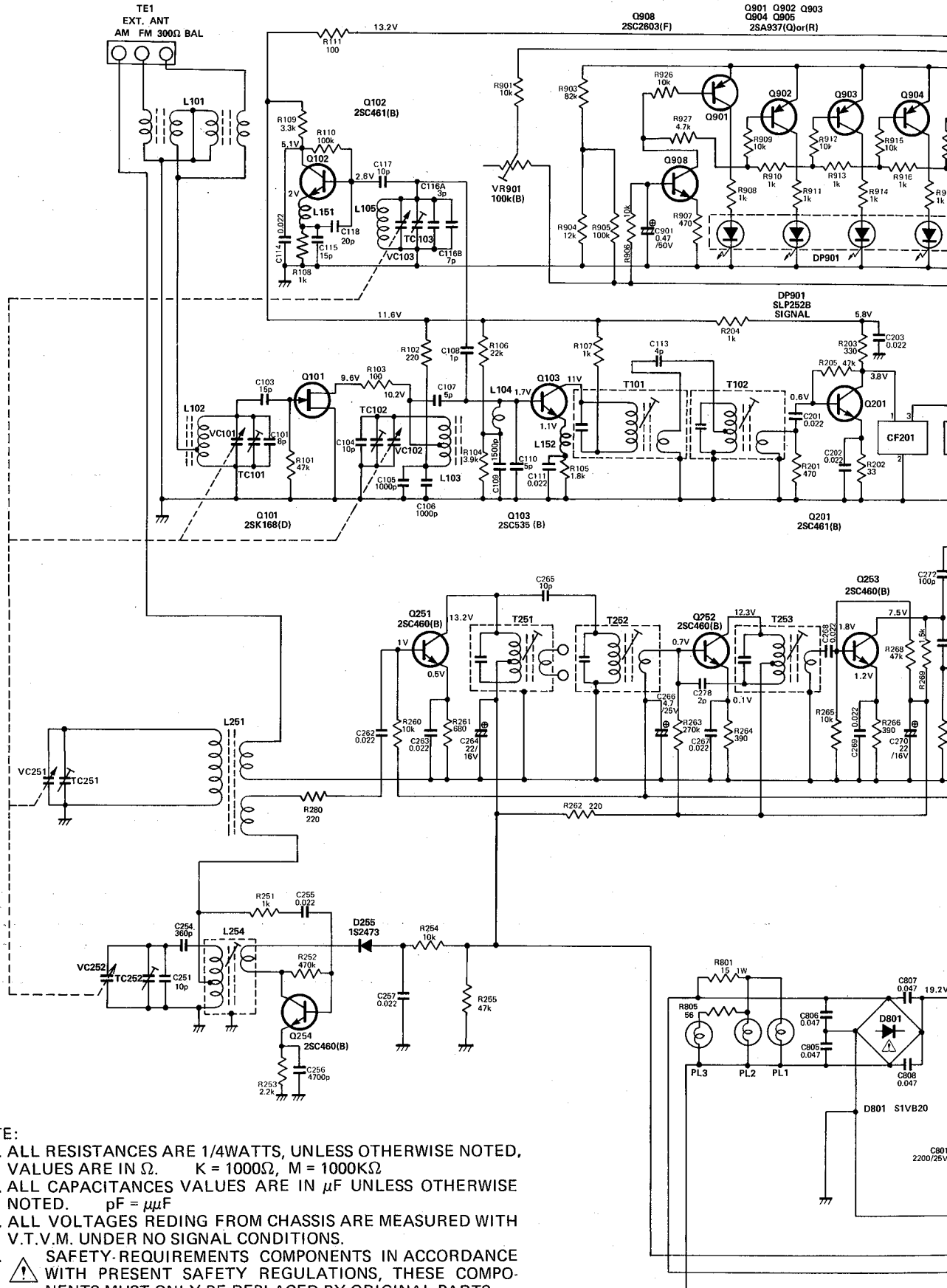
SCHEMATIC DIAGRAM



NOTE:

1. ALL RESISTANCES ARE 1/4WATTS, UNLESS OTHERWISE NOTED, VALUES ARE IN Ω . K = 1000 Ω , M = 1000K Ω
2. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTHERWISE NOTED. $\text{pF} = \mu\mu\text{F}$
3. ALL VOLTAGES REDING FROM CHASSIS ARE MEASURED WITH V.T.V.M. UNDER NO SIGNAL CONDITIONS.
4.  SAFETY-REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

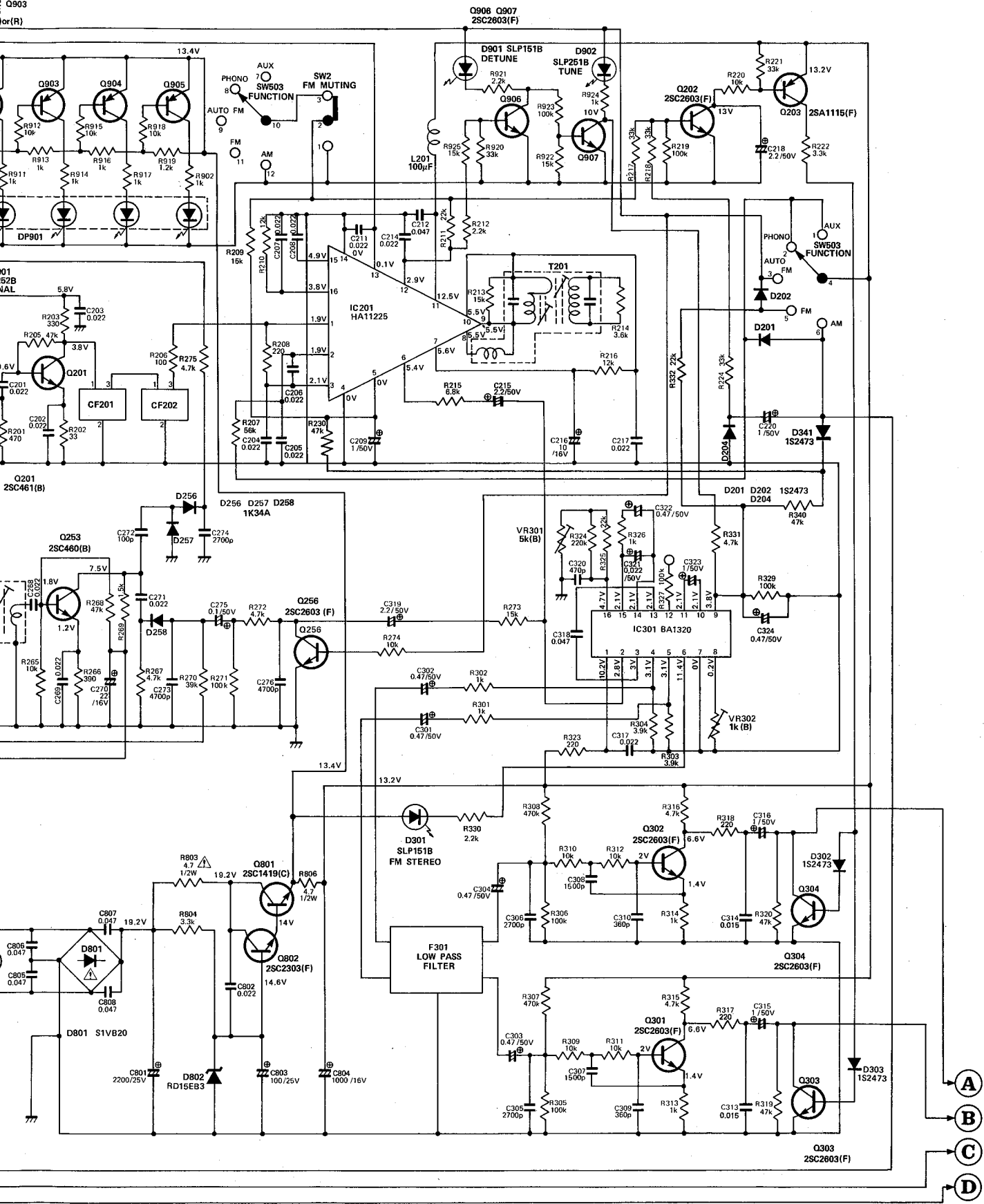
SCHEMATIC DIAGRAM



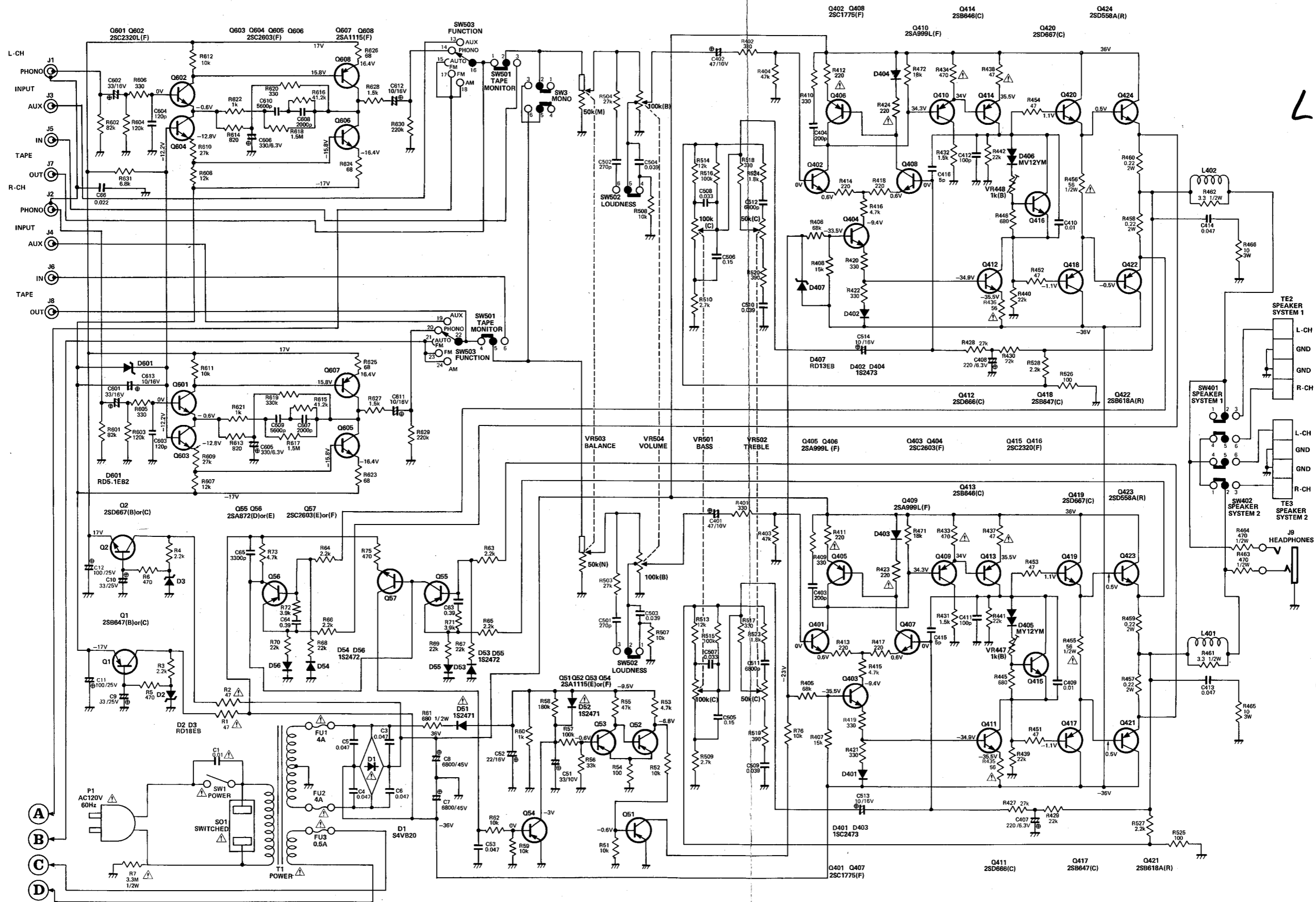
NOTE:

1. ALL RESISTANCES ARE 1/4WATTS, UNLESS OTHERWISE NOTED, VALUES ARE IN Ω . K = 1000 Ω , M = 1000K Ω
2. ALL CAPACITANCE VALUES ARE IN μ F UNLESS OTHERWISE NOTED. pF = μ μ F
3. ALL VOLTAGES REDING FROM CHASSIS ARE MEASURED WITH V.T.V.M. UNDER NO SIGNAL CONDITIONS.
4. SAFETY-REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

Q903
or(R)



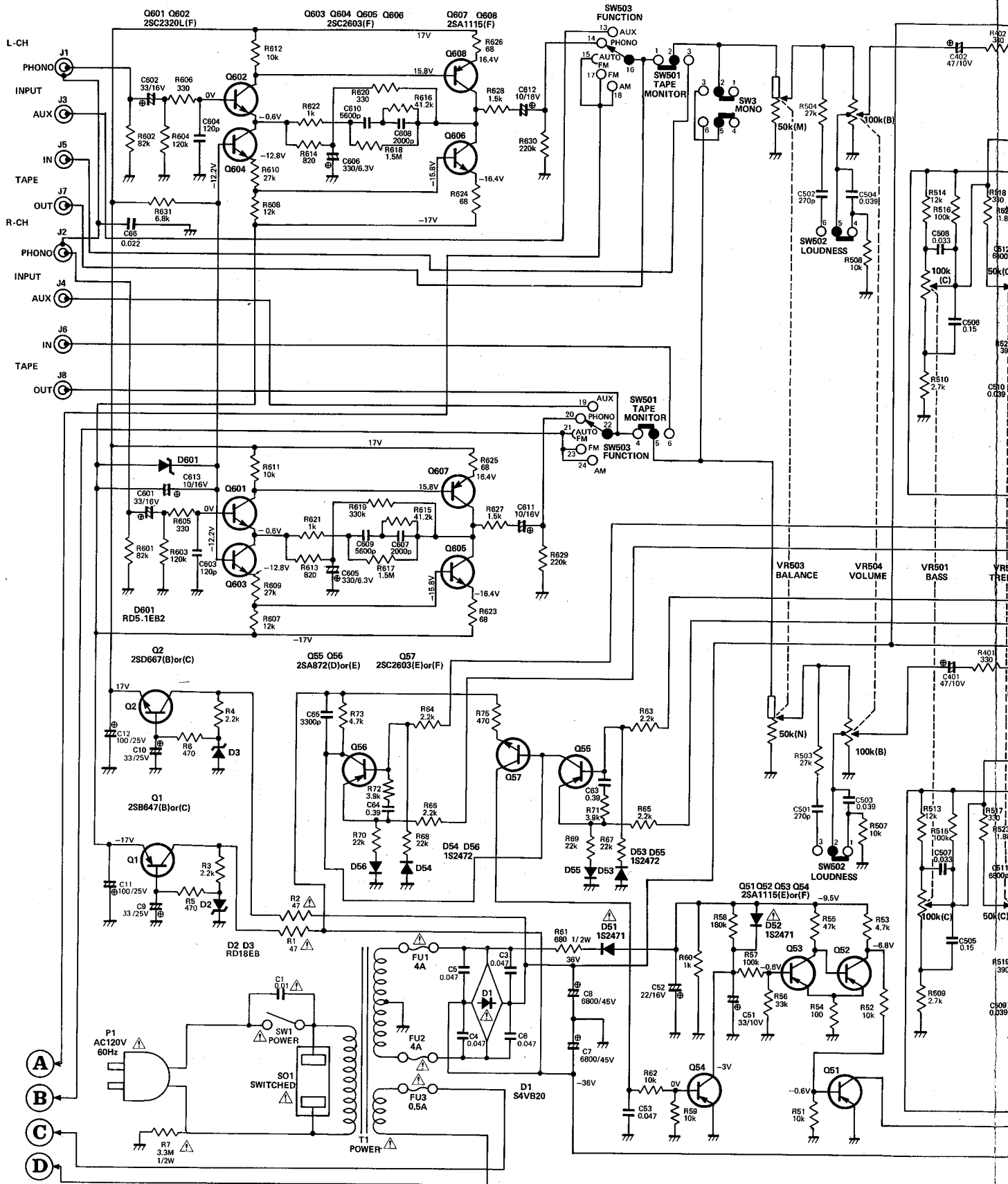
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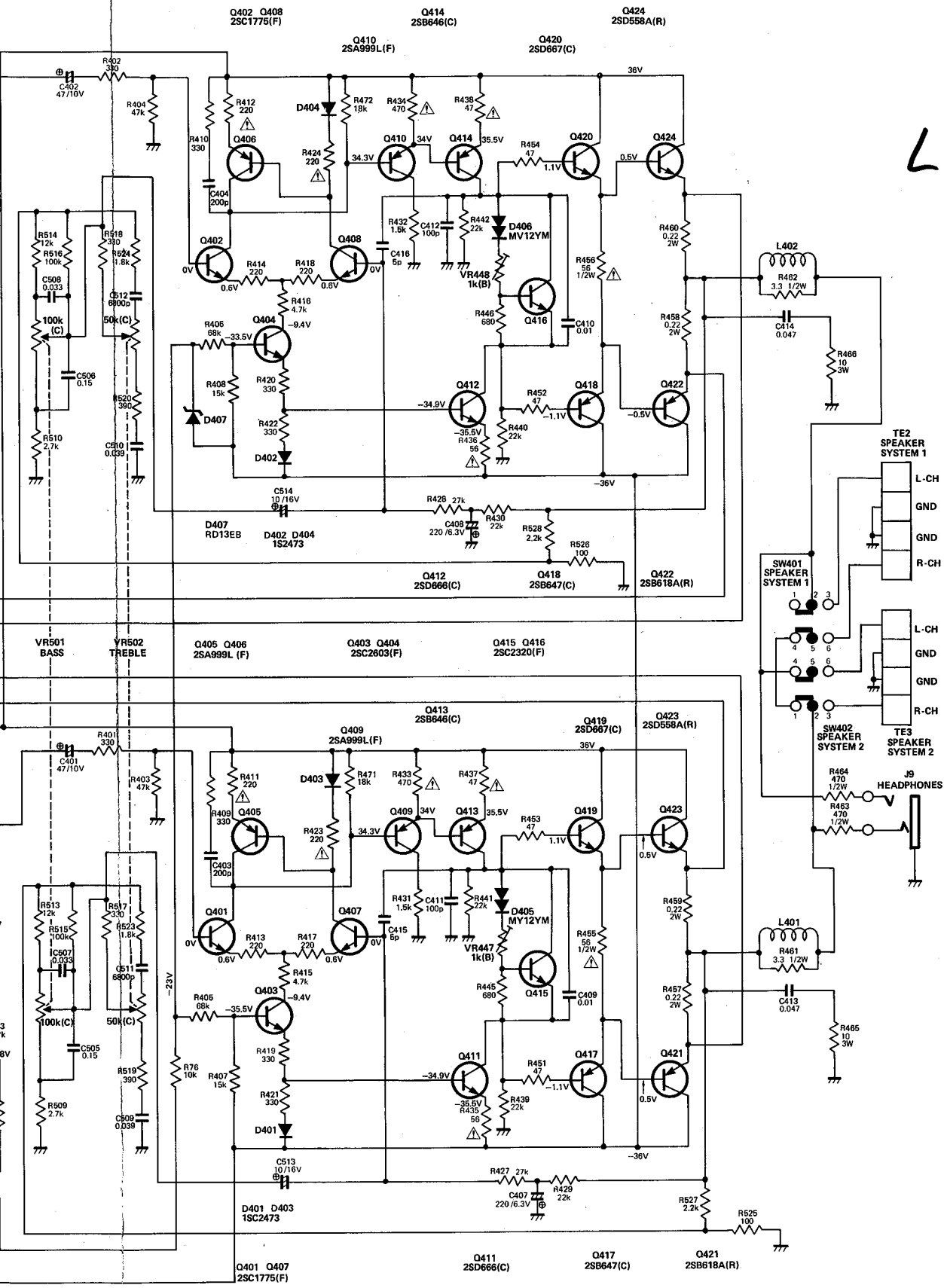


LEFT

RIGHT

SCHEMATIC DIAGRAM

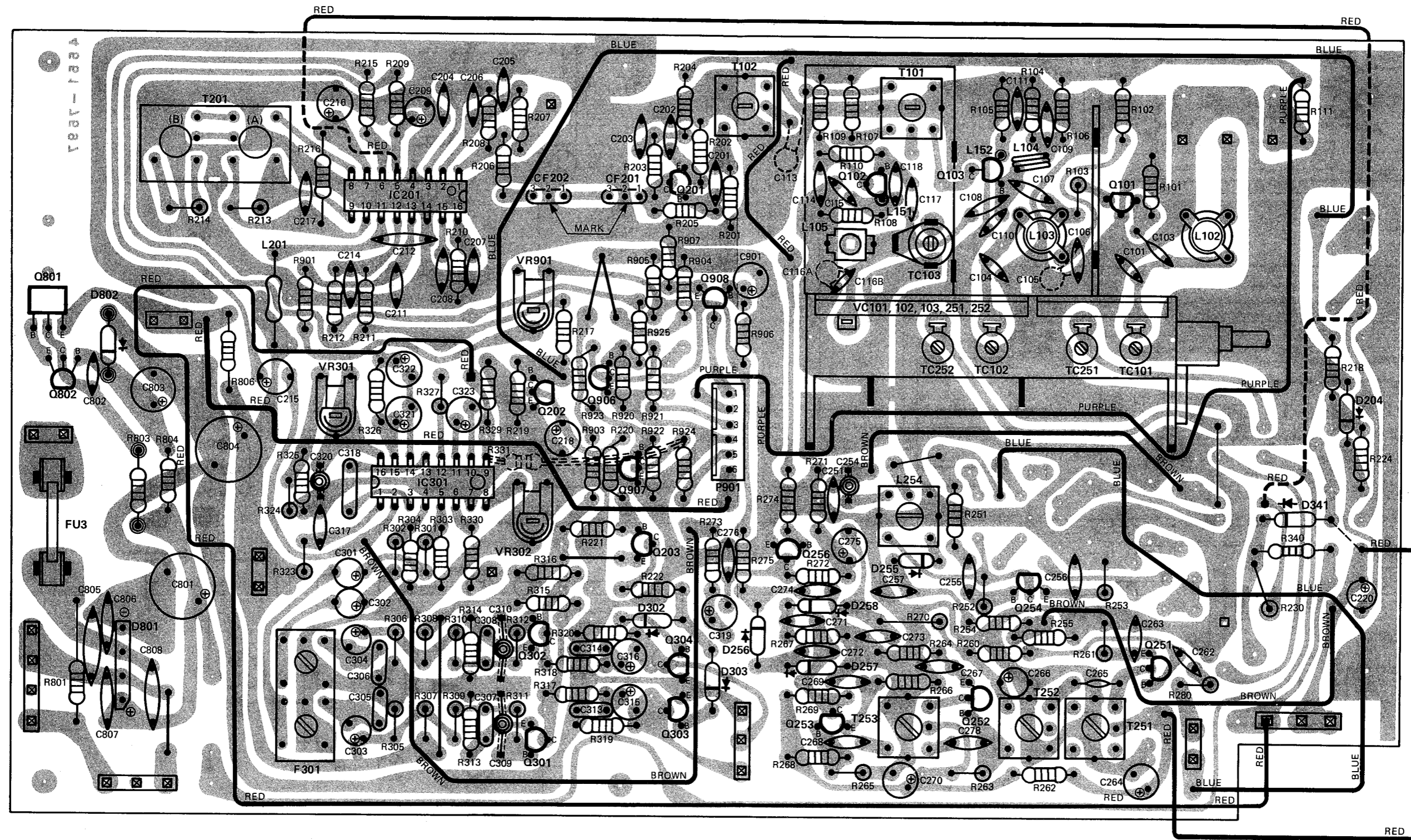


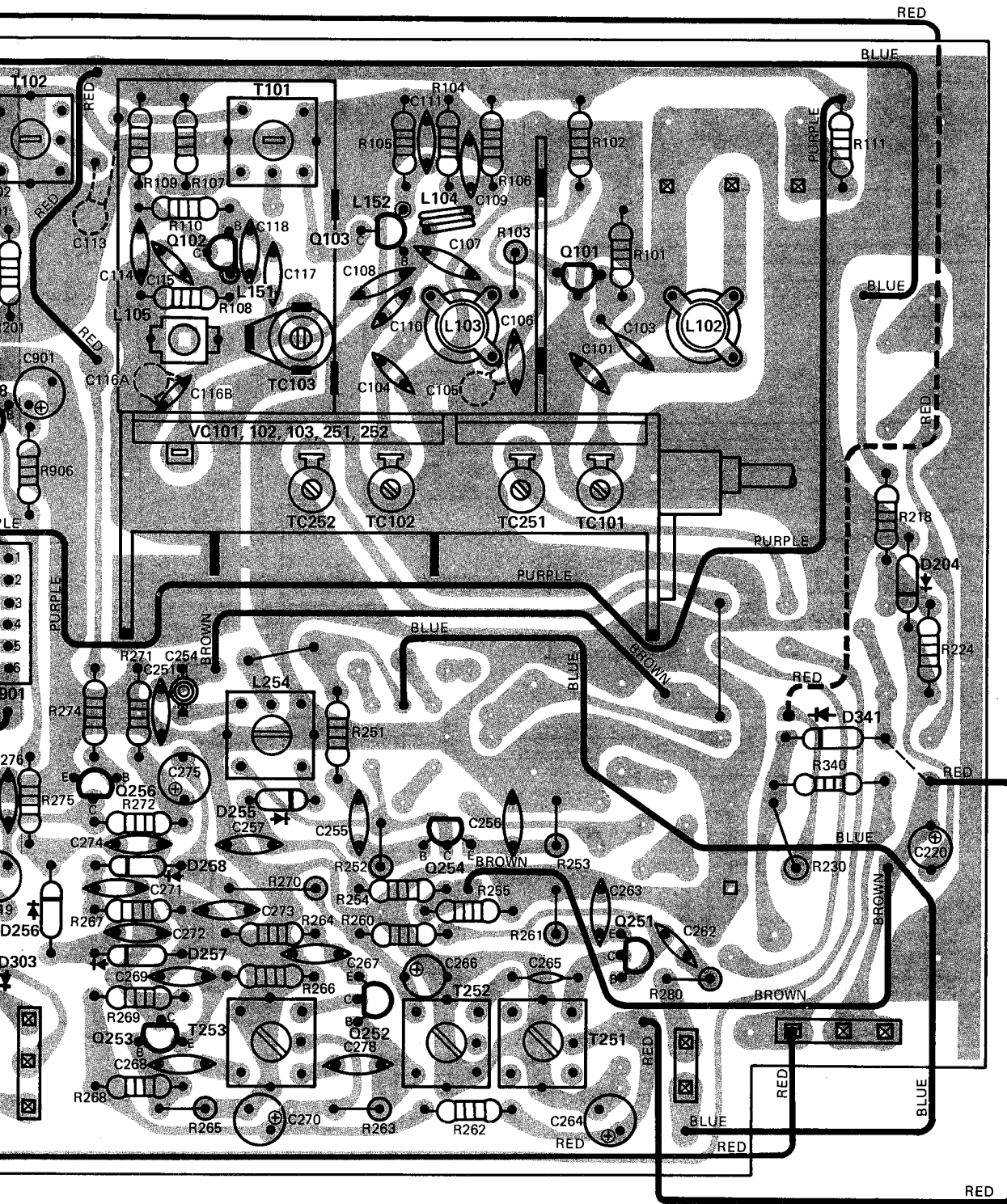


LEFT

RIGHT

TUNER P.C. BOARD

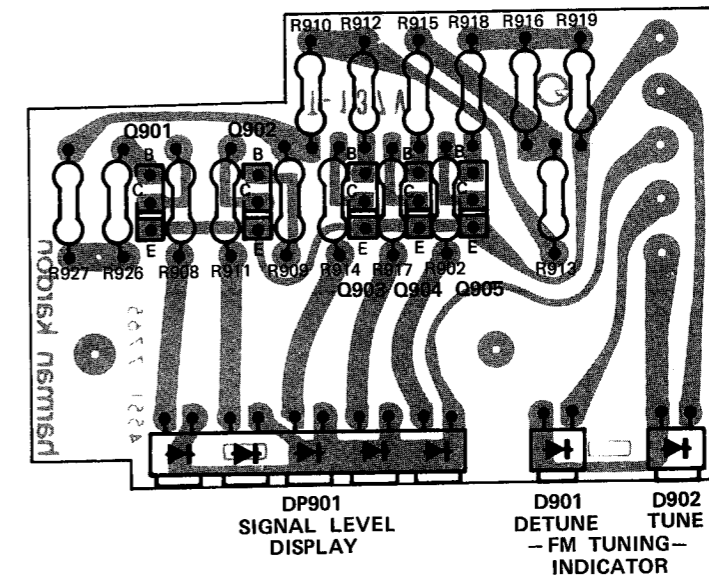




TUNER P.C. BOARD

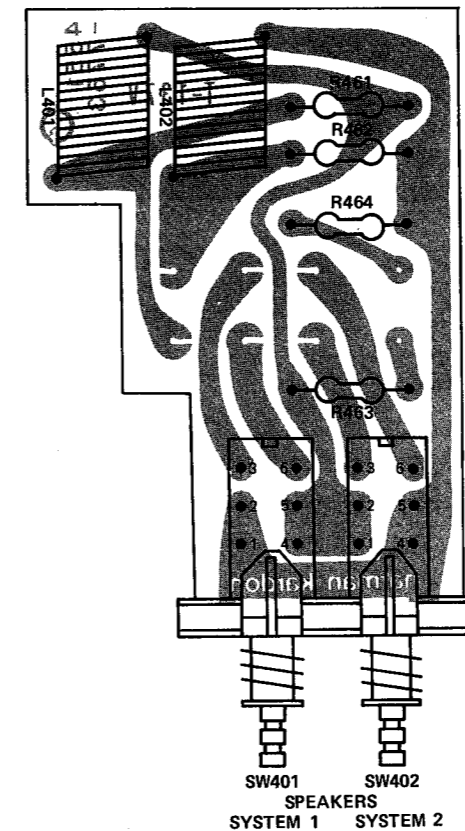
Ref. No.	Part No.	Description
RESISTORS		
R803	5102-4R75710	4.7 ohm ±5% 1/2W Fuse
VR301	5101-50271913	Variable Resistor, 5 k ohm
VR302	5101-10271913	Variable Resistor, 1 k ohm
VR901	5101-10471913	Variable Resistor, 100 k ohm
CAPACITORS		
C801	5345-228-25	2200µF +50%–10% 25V Electrolytic
C804	5345-108-16	1000µF +50%–10% 16V Electrolytic
VC101,102,103, 251,252	5315-718	Variable Capacitor (w/Trimmers TC101,102,251,252)
TC103	5371-55	Trimmer Capacitor
INTEGRATED CIRCUITS		
IC201	5652-HA11225	HA11225 FM IF Amp./FM Det.
IC301	5652-BA1320	BA1320 FM Multiplex
TRANSISTORS		
Q101	5616-2SK168(D)	F.E.T., 2SK168(D) FM RF Amp.
Q102,201	5613-461(B)	2SC461(B) FM Osc., FM IF Amp.
Q103	5613-535(B)	2SC535(B) FM Mixer
Q202	5613-2603(F)	2SC2603(F) } FM Muting
Q203	5611-1115(F)	
Q251,252,253, 254	5613-460(B)	2SC460(B) AM Mixer, AM IF Amp., AM Osc.
Q256,301,302, 303,304,906, 907,908	5613-2603(F)	2SC2603(F) AM Signal Switching, MPX Output Amp., FM Muting, FM Tuning Indicator Driver, Signal Level Display Pre-Driver
Q801	5613-1419(C)	2SC1419(C) } Voltage Regulator
Q802	5613-2303(F)	
DIODES		
D204,255,302, 303	5631-1S2473	1S2473
D256,257,258	5631-1K34A	1K34A
D801	5685-S1VB20	Bridge Silicon, S1VB20
D802	5635-RD15EB3	Zener, RD15EB3
COILS		
L102	5943-70125	FM RF
L103	5943-70225	FM RF
L104	5991-7065	FM IF Trap
L105	5942-70215	FM Osc.
L201	5995-101225	RF Choke
L254	5923-70227	AM Osc.
TRANSFORMERS		
T101,102	5563-0027	FM IF
T201	5574-7023	Quadrature Det.
T251,252	5553-70115	AM IF
T253	5553-70215	AM IF
MISCELLANEOUS		
F301	5214-14	LC Components, Low Pass Filter (Notch)
CF201,202	5671-7117Y	Ceramic Filter, FM IF
FU3	5732-501031	Fuse, 0.5A 125V
L151,152	5597-4	Ferrite Bead

SIGNAL LEVEL DISPLAY P.C. BOARD



Ref. No.	Part No.	Description
Q901,902,903, 904,905	5611-937(Q)	Transistor, 2SA937(Q)or(R) Signal Level Display Driver
DP901	5637-SLP252B	LED Display Assembly, SLP252B Signal Level Display
D901	5637-SLP151B	Light Emitting Diode, SLP151B Detune Indicator
D902	5637-SLP251B	Light Emitting Diode, SLP251B Tune Indicator

SPEAKERS SWITCH P.C. BOARD

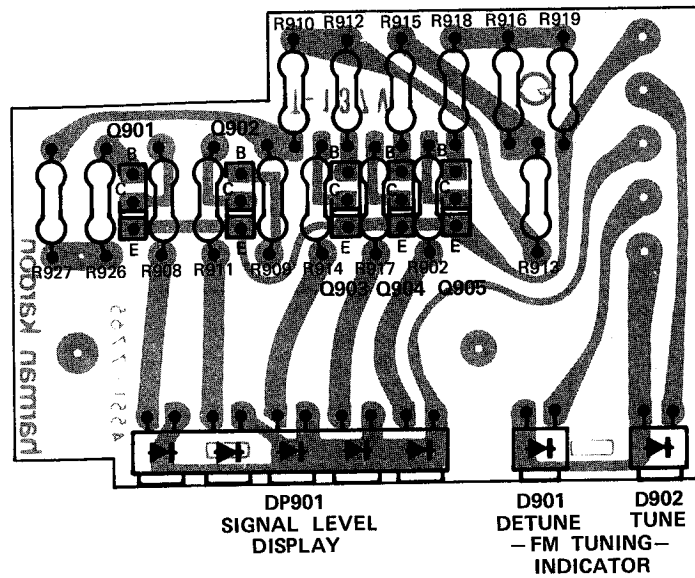


Ref. No.	Part No.	Description
L401,402	5991-7125	Coil, RF Choke
SW401,402	4431-02047355	Push Switch, Speakers System 1, System 2

TUNER P.C. BOARD

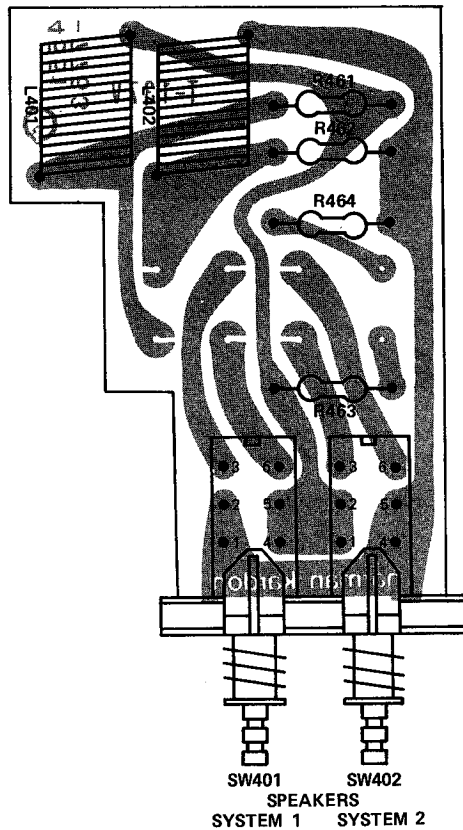
Ref. No.	Part No.	Description
RESISTORS		
R803	5102-4R75710	4.7 ohm $\pm 5\%$ 1/2W Fuse
VR301	5101-50271913	Variable Resistor, 5 k ohm
VR302	5101-10271913	Variable Resistor, 1 k ohm
VR901	5101-10471913	Variable Resistor, 100 k ohm
CAPACITORS		
C801	5345-228-25	2200 μ F +50%–10% 25V Electrolytic
C804	5345-108-16	1000 μ F +50%–10% 16V Electrolytic
VC101,102,103, 251,252	5315-718	Variable Capacitor (w/Trimmers TC101,102,251,252)
TC103	5371-55	Trimmer Capacitor
INTEGRATED CIRCUITS		
IC201	5652-HA11225	HA11225 FM IF Amp./FM Det.
IC301	5652-BA1320	BA1320 FM Multiplex
TRANSISTORS		
Q101	5616-2SK168(D)	F.E.T., 2SK168(D) FM RF Amp.
Q102,201	5613-461(B)	2SC461(B) FM Osc., FM IF Amp.
Q103	5613-535(B)	2SC535(B) FM Mixer
Q202	5613-2603(F)	2SC2603(F) } FM Muting
Q203	5611-1115(F)	2SA1115(F) }
Q251,252,253, 254	5613-460(B)	2SC460(B) AM Mixer, AM IF Amp., AM Osc.
Q256,301,302, 303,304,906, 907,908	5613-2603(F)	2SC2603(F) AM Signal Switching, MPX Output Amp., FM Muting, FM Tuning Indicator Driver, Signal Level Display Pre-Driver
Q801	5613-1419(C)	2SC1419(C) } Voltage Regulator
Q802	5613-2303(F)	2SC2303(F) }
DIODES		
D204,255,302, 303	5631-1S2473	1S2473
D256,257,258	5631-1K34A	1K34A
D801	5685-S1VB20	Bridge Silicon, S1VB20
D802	5635-RD15EB3	Zener, RD15EB3
COILS		
L102	5943-70125	FM RF
L103	5943-70225	FM RF
L104	5991-7065	FM IF Trap
L105	5942-70215	FM Osc.
L201	5995-101225	RF Choke
L254	5923-70227	AM Osc.
TRANSFORMERS		
T101,102	5563-0027	FM IF
T201	5574-7023	Quadrature Det.
T251,252	5553-70115	AM IF
T253	5553-70215	AM IF
MISCELLANEOUS		
F301	5214-14	LC Components, Low Pass Filter (Notch)
CF201,202	5671-7117Y	Ceramic Filter, FM IF
FU3	5732-501031	Fuse, 0.5A 125V
L151,152	5597-4	Ferrite Bead

SIGNAL LEVEL DISPLAY P.C. BOARD



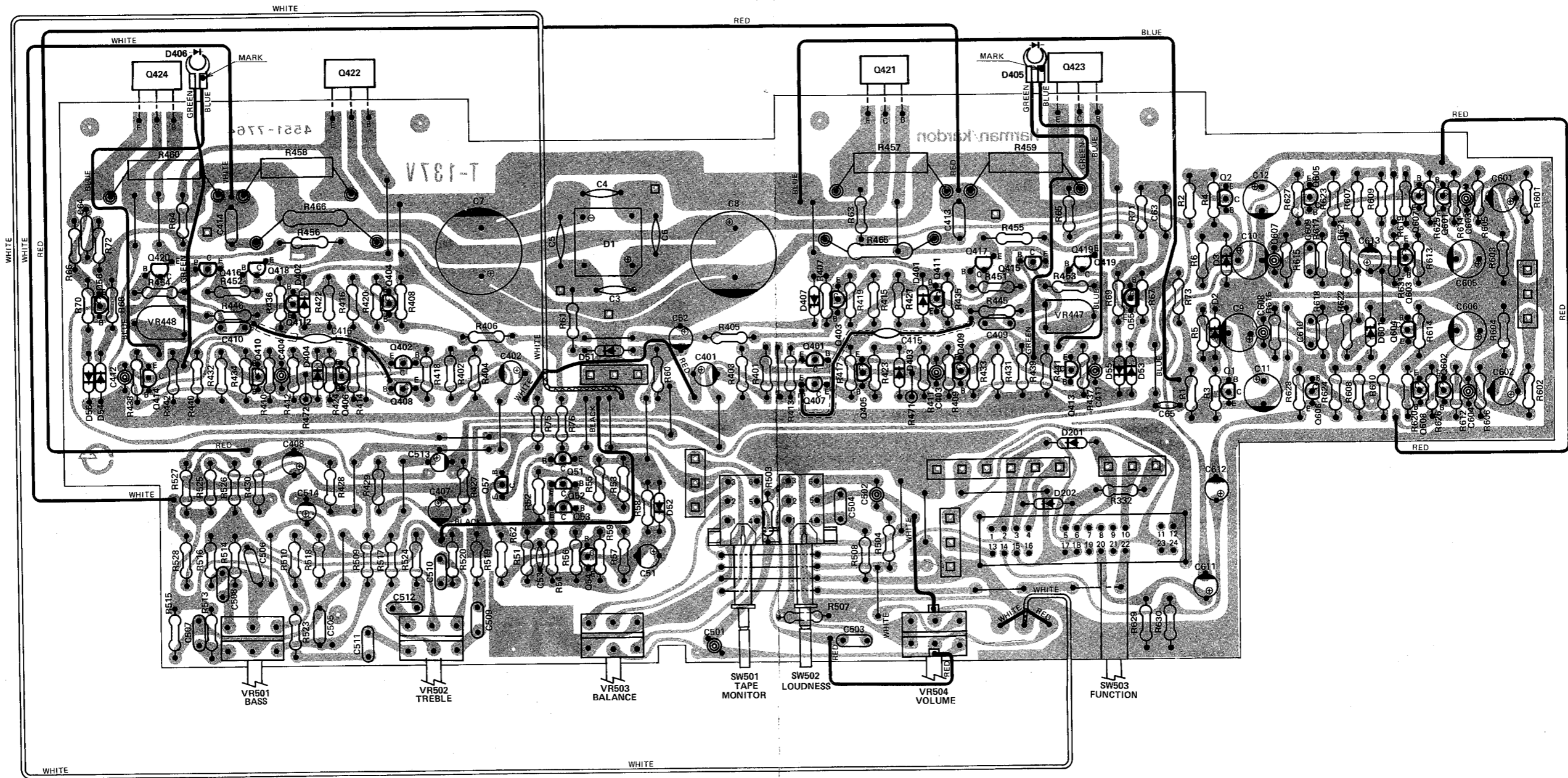
Ref. No.	Part No.	Description
Q901,902,903, 904,905	5611-937(Q)	Transistor, 2SA937(Q)or(R) Signal Level Display Driver
DP901	5637-SLP252B	LED Display Assembly, SLP252B Signal Level Display
D901	5637-SLP151B	Light Emitting Diode, SLP151B Detune Indicator
D902	5637-SLP251B	Light Emitting Diode, SLP251B Tune Indicator

SPEAKERS SWITCH P.C. BOARD

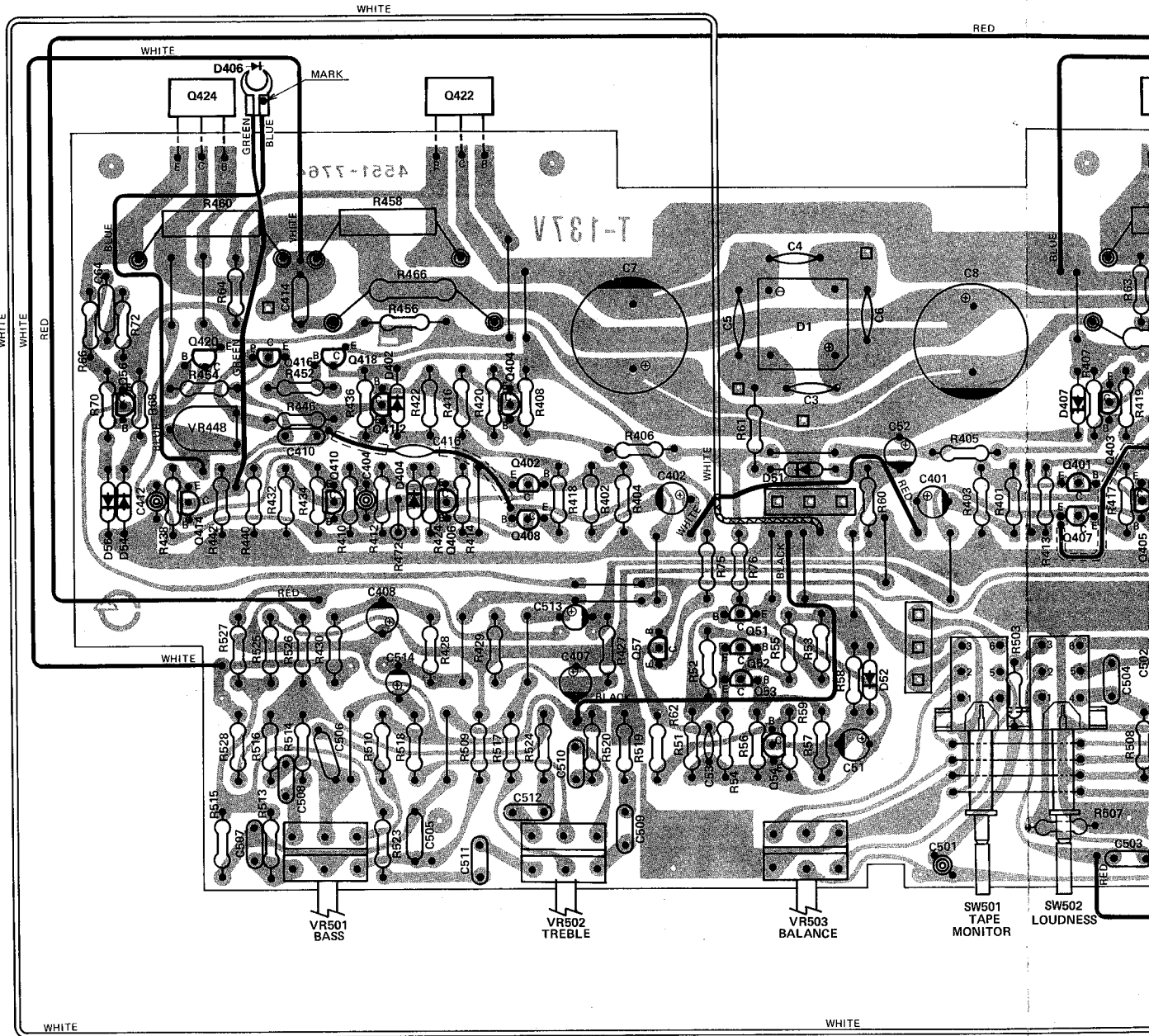


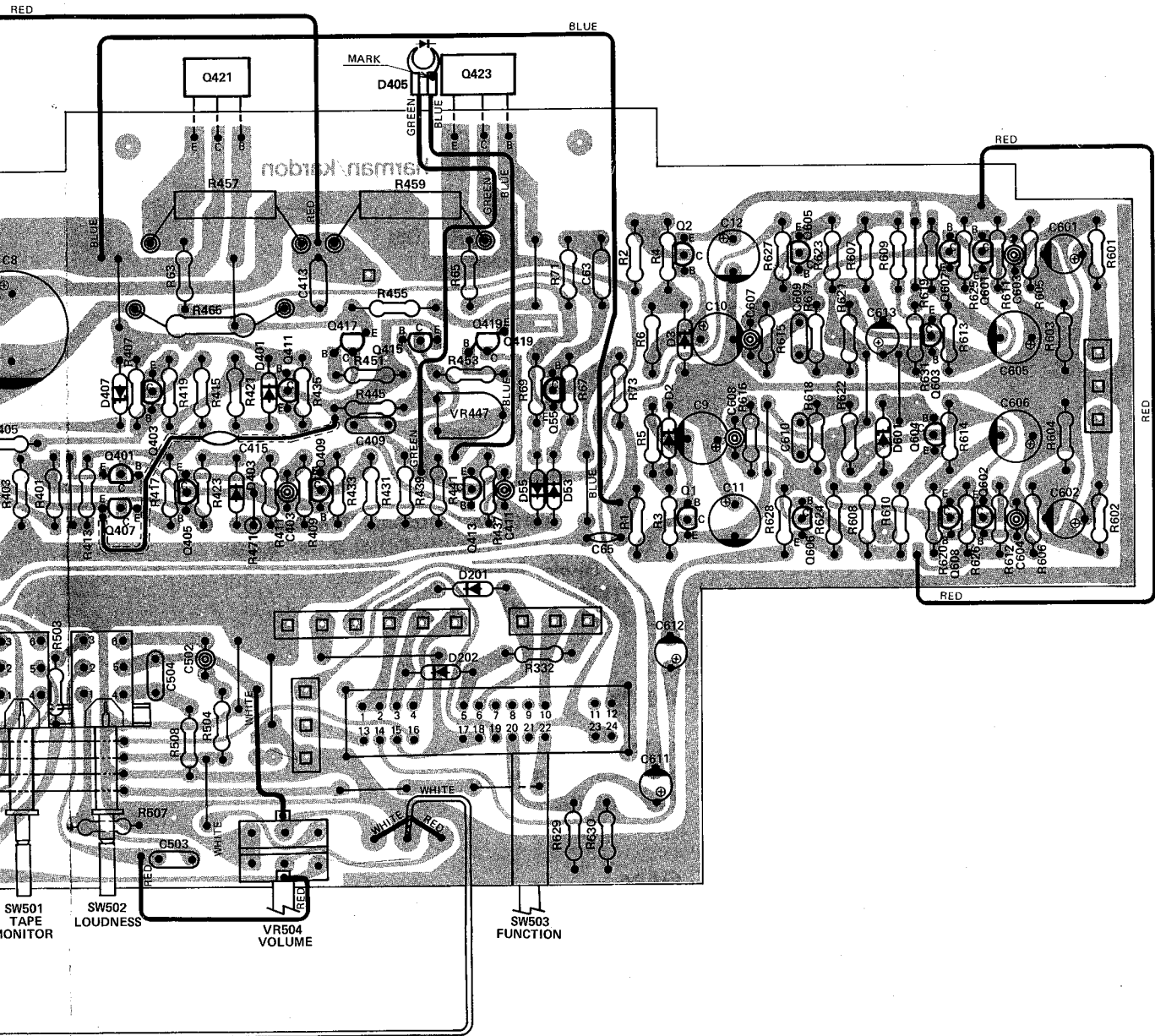
Ref. No.	Part No.	Description
L401,402	5991-7125	Coil, RF Choke
SW401,402	4431-02047355	Push Switch, Speakers System 1, System 2

MAIN P.C. BOARD



MAIN P.C. BOARD





MAIN P.C. BOARD

Ref. No.	Part No.	Description
RESISTORS		
R1,2,437,438	5102-4704713	47 ohm ±2% 1/4W Fuse
R411,412,423,424	5102-2214713	220 ohm ±2% 1/4W Fuse
R421,422	5102-3314713	330 ohm ±2% 1/4W Fuse
R433,434	5102-4714713	470 ohm ±2% 1/4W Fuse
R435,436	5102-5604713	56 ohm ±2% 1/4W Fuse
R455,456	5102-5605710	56 ohm ±5% 1/2W Fuse
R457,458,459,460	5272-R22581	0.22 ohm ±5% 2W Cement
R465,466	5175-100571	10 ohm ±5% 3W Metal
VR447,448	5101-1027187	Variable Resistor, 1 k ohm
VR501	5113-1047577	Variable Resistor, 100 k ohm Bass Control
VR502	5113-5037677	Variable Resistor, 50 k ohm Treble Control
VR503	5113-5037477	Variable Resistor, 50 k ohm Balance Control
VR504	5113-1047J40	Variable Resistor, 100 k ohm Volume Control
CAPACITORS, ELECTROLYTIC		
C7,8	5341-688Z0956	6800µF ±20% 45V
TRANSISTORS		
Q1	5612-647(B)	2SB647(B) or (C) Voltage Regulator
Q2	5614-667(B)	2SD667(B) or (C) Voltage Regulator
Q51,52,53,54	5611-1115(E)	2SA1115(E) or (F) Audio Muting/Overload Protector
Q55,56	5611-872(D)	2SA872(D) or (E) } Overload Detector
Q57	5613-2603(E)	
Q401,402,407,408	5613-1775(F)	2SC1775(F) }
Q403,404	5613-2603(F)	2SC2603(F) }
Q405,406,409,410	5611-999L(F)	2SA999L(F) }
Q411,412	5614-666(C)	2SD666(C) } Power Amp.
Q413,414	5612-646(C)	
Q415,416	5613-2320(F)	
Q417,418	5612-647(C)	
Q419,420	5614-667(C)	
Q421,422	5612-618A(R)	
Q423,424	5614-588A(R)	
Q601,602	5613-2320L(F)	
Q603,604,605,606	5613-2603(F)	2SC2320L(F) } Equalizer Amp.
Q607,608	5611-1115(F)	
DIODES		
D1	5685-S4VB20	Bridge Silicon, S4VB20
D2,3	5635-RD18EB	Zener, RD18EB
D51,52	5636-1S2471	1S2471
D53,54,55,56	5636-1S2472	1S2472
D201,202,401,402,403,404	5636-1S2473	1S2473
D405,406	5641-MV12YM	Varistor, MV12YM
D407	5635-RD13EB	Zener, RD13EB
D601	5635-RD5R1EB2	Zener, RD5.1EB2
MISCELLANEOUS		
SW501,502	4431-02047555	Push Switch, Tape Monitor, Loudness
SW503	4412-045713	Rotary Slide Switch, Function

CHASSIS PARTS LIST

Ref. No.	Part No.	Description
GENERAL UNIT		
101	A424-HK740	Cabinet Bottom Assembly
102	A443-HK740	Front Panel Assembly
103	A634-HK740-A	Knob Assembly, Tuning
104	A634-HK740-B	Knob Assembly, Bass, Treble, Balance, Volume, Function
105	A662-HK740	Push Button Assembly, Speakers System 1, System 2, FM Muting, Mono
106	A673-HK740	Dial Pointer Assembly
116	1319-7230	Foot
117	1414-00702	Cabinet Top
119	1423-00301	Lid
120	1424-04403	Cabinet Back
240	2310-7015	Special Screw
241	2410-7005	Special Washer
242	2440-7011	Special Nut
249	2440-7009	Special Nut
258	2611-7154	Dial Drum
260	2612-7001	Pulley
262	2602-007116	Tuning Shaft
ELECTRICAL		
P1	4161-0487	AC Line Cord
SO1	4474-152	External AC Socket, Switched
SW1	4431-01017358	Push Switch, Power
SW2,3	4431-02047255	Push Switch, FM Muting, Mono
T1	5584-701346	Power Transformer
FU1,2	5732-402031	Fuse, 4A 125V
TE1	4214-104	FM/AM External Antenna Terminal
TE2,3	4214-7027	Speaker Terminal, Speaker System 1,2
PL1,2	5731-1507345	Lamp, 15V 100mA Dial Illuminator
PL3	5731-1207152	Lamp, 12V 60mA Dial Pointer
C1	5352-1030959	Capacitor, 0.01µF ±20% AC125V Metalized Polyester
D301	5637-SLP151B	Light Emitting Diode, SLP151B FM Stereo Indicator
L101	5995-703027	Coil, FM RF Balun
L251	5911-211	AM Ferrite Loopstick Antenna
J1,2,3,4,5,6,7,8	4484-27	4-Pin Jack, Phono, AUX, Tape
J9	4451-4164	Jack, Headphones
	1397-6	Dipole Antenna

PCB FOR PL-2

4551-7747 left side RIGHT
4551-7746 right side LEFT
2347-200521 screw

MAIN P.C. BOARD

Ref. No.	Part No.	Description
RESISTORS		
R1,2,437,438	5102-4704713	47 ohm $\pm 2\%$ 1/4W Fuse
R411,412,423, 424	5102-2214713	220 ohm $\pm 2\%$ 1/4W Fuse
R421,422	5102-3314713	330 ohm $\pm 2\%$ 1/4W Fuse
R433,434	5102-4714713	470 ohm $\pm 2\%$ 1/4W Fuse
R435,436	5102-5604713	56 ohm $\pm 2\%$ 1/4W Fuse
R455,456	5102-5605710	56 ohm $\pm 5\%$ 1/2W Fuse
R457,458,459, 460	5272-R22581	0.22 ohm $\pm 5\%$ 2W Cement
R465,466	5175-100571	10 ohm $\pm 5\%$ 3W Metal
VR447,448	5101-1027187	Variable Resistor, 1 k ohm
VR501	5113-1047577	Variable Resistor, 100 k ohm Bass Control
VR502	5113-5037677	Variable Resistor, 50 k ohm Treble Control
VR503	5113-5037477	Variable Resistor, 50 k ohm Balance Control
VR504	5113-1047J40	Variable Resistor, 100 k ohm Volume Control

CAPACITORS, ELECTROLYTIC

C7,8	5341-688Z0956	6800 μ F $\pm 20\%$ 45V
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TRANSISTORS

Q1	5612-647(B)	2SB647(B)or(C) Voltage Regulator
Q2	5614-667(B)	2SD667(B)or(C) Voltage Regulator
Q51,52,53,54	5611-1115(E)	2SA1115(E)or(F) Audio Muting/Overload Protector
Q55,56	5611-872(D)	2SA872(D)or(E) } Overload Detector
Q57	5613-2603(E)	
Q401,402,407, 408	5613-1775(F)	2SC1775(F) }
Q403,404	5613-2603(F)	2SC2603(F) }
Q405,406,409, 410	5611-999L(F)	2SA999L(F) }
Q411,412	5614-666(C)	2SD666(C) }
Q413,414	5612-646(C)	2SB646(C) }
Q415,416	5613-2320(F)	2SC2320(F) }
Q417,418	5612-647(C)	2SB647(C) }
Q419,420	5614-667(C)	2SD667(C) }
Q421,422	5612-618A(R)	2SB618A(R) }
Q423,424	5614-588A(R)	2SD588A(R) }
Q601,602	5613-2320L(F)	2SC2320L(F) }
Q603,604,605, 606	5613-2603(F)	2SC2603(F) }
Q607,608	5611-1115(F)	2SA1115(F) }

DIODES

D1	5685-S4VB20	Bridge Silicon, S4VB20
D2,3	5635-RD18EB	Zener, RD18EB
D51,52	5636-1S2471	1S2471
D53,54,55,56	5636-1S2472	1S2472
D201,202,401, 402,403,404	5636-1S2473	1S2473
D405,406	5641-MV12YM	Varistor, MV12YM
D407	5635-RD13EB	Zener, RD13EB
D601	5635-RD5R1EB2	Zener, RD5.1EB2

MISCELLANEOUS

SW501,502	4431-02047555	Push Switch, Tape Monitor, Loudness
SW503	4412-045713	Rotary Slide Switch, Function

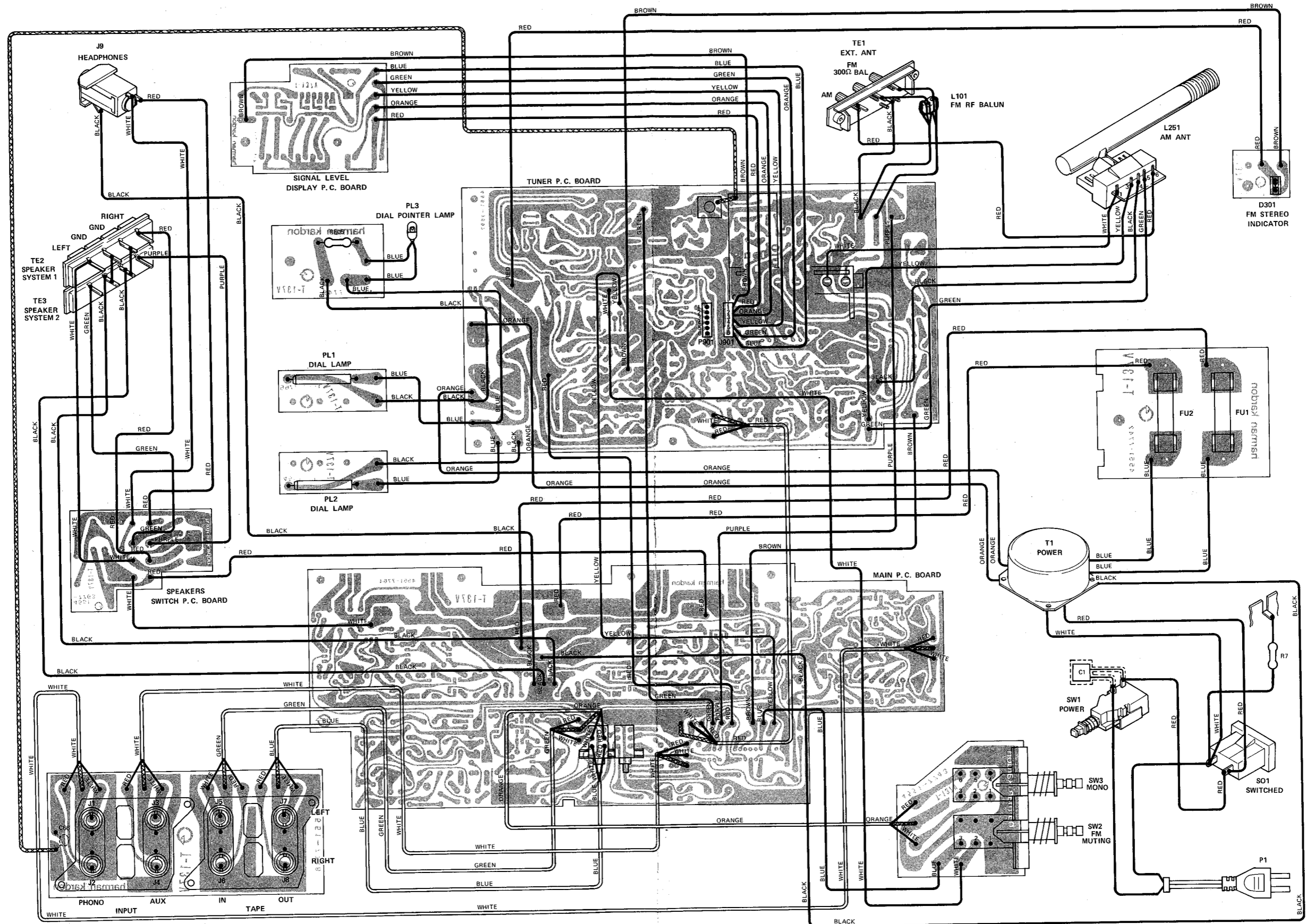
CHASSIS PARTS LIST

Ref. No.	Part No.	Description
GENERAL UNIT		
101	A424-HK740	Cabinet Bottom Assembly
102	A443-HK740	Front Panel Assembly
103	A634-HK740-A	Knob Assembly, Tuning
104	A634-HK740-B	Knob Assembly, Bass, Treble, Balance, Volume, Function
105	A662-HK740	Push Button Assembly, Speakers System 1, System 2, FM Muting, Mono
106	A673-HK740	Dial Pointer Assembly
116	1319-7230	Foot
117	1414-00702	Cabinet Top
119	1423-00301	Lid
120	1424-04403	Cabinet Back
240	2310-7015	Special Screw
241	2410-7005	Special Washer
242	2440-7011	Special Nut
249	2440-7009	Special Nut
258	2611-7154	Dial Drum
260	2612-7001	Pulley
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SO1	4474-152	External AC Socket, Switched
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L251	5911-211	AM Ferrite Loopstick Antenna
J1,2,3,4,5,6,7,8	4484-27	4-Pin Jack, Phono, AUX, Tape
J9	4451-4164	Jack, Headphones
	1397-6	Dipole Antenna

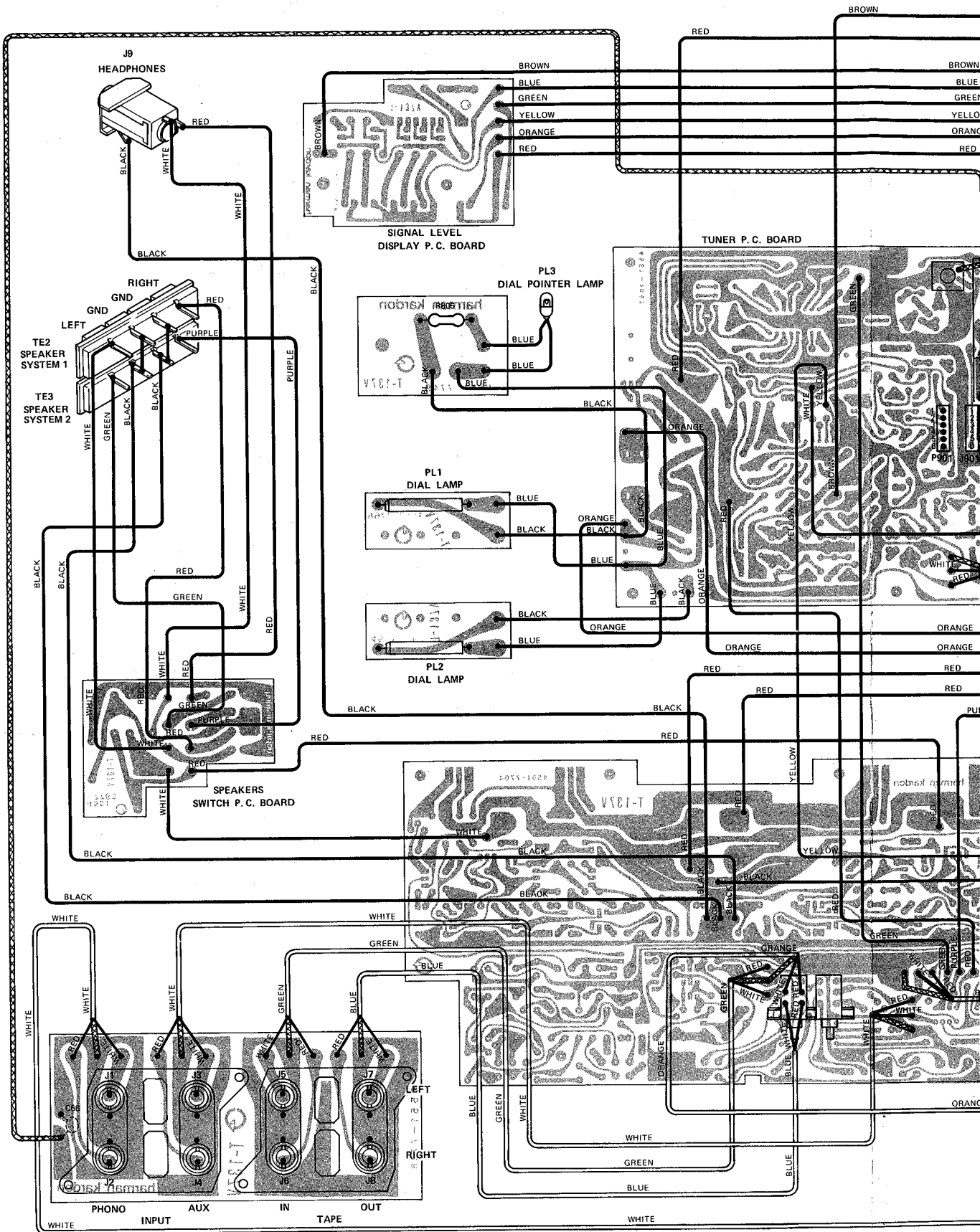
PCB For PU-2

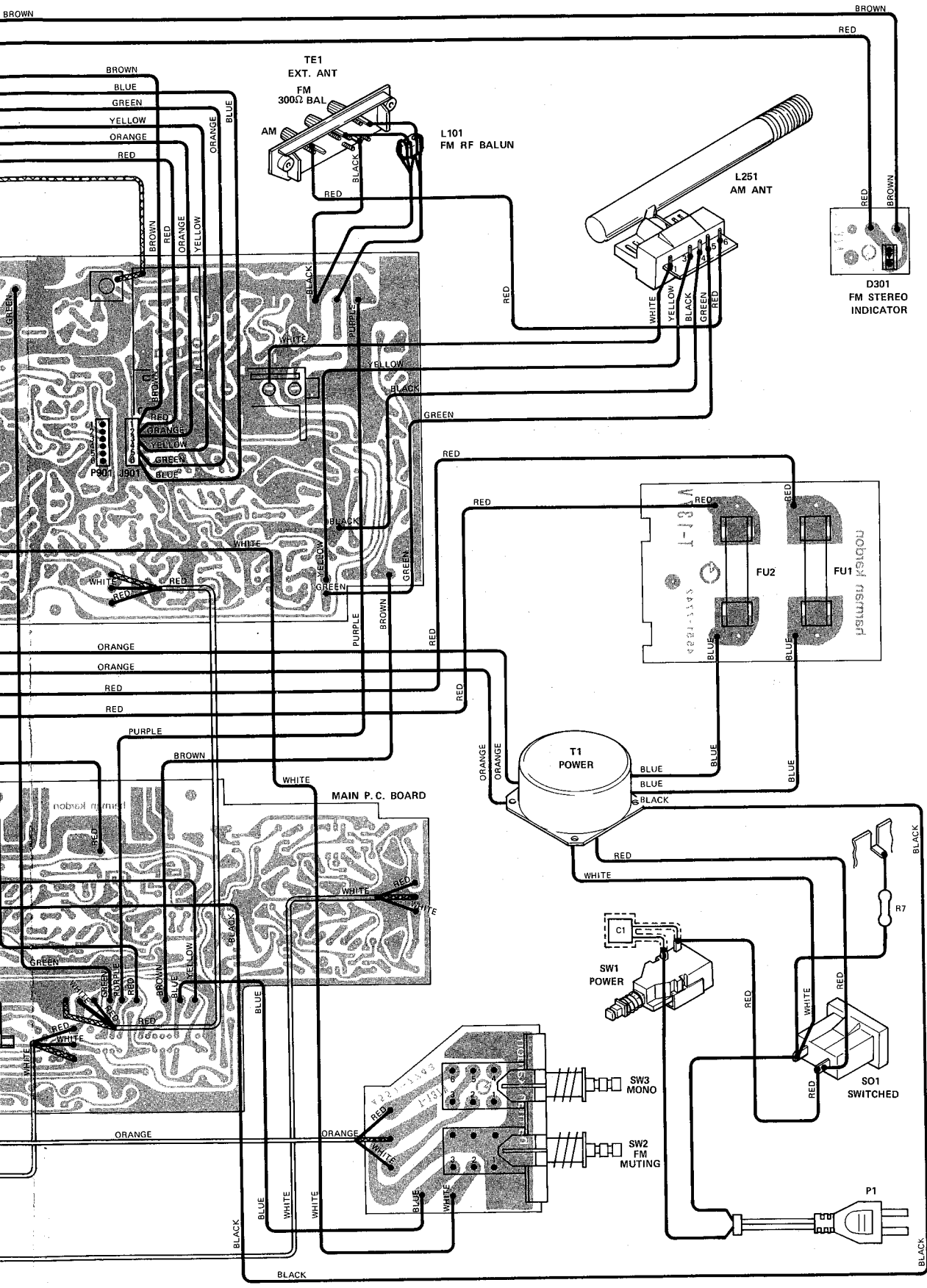
4551-7747 ~~left side~~ RIGHT
4551-7746 ~~right side~~ LEFT
2347-200521 screw

WIRING DIAGRAM

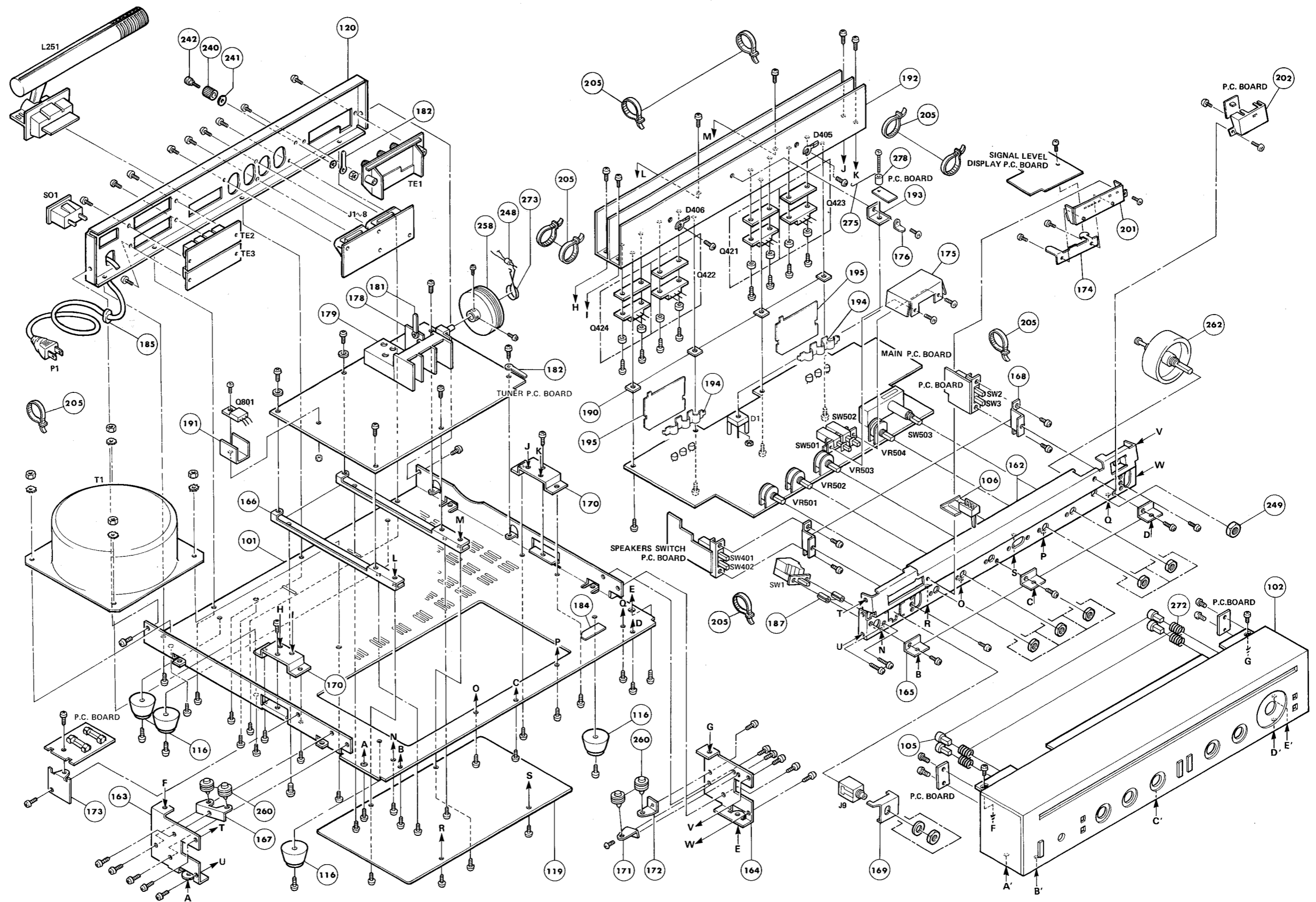


WIRING DIAGRAM

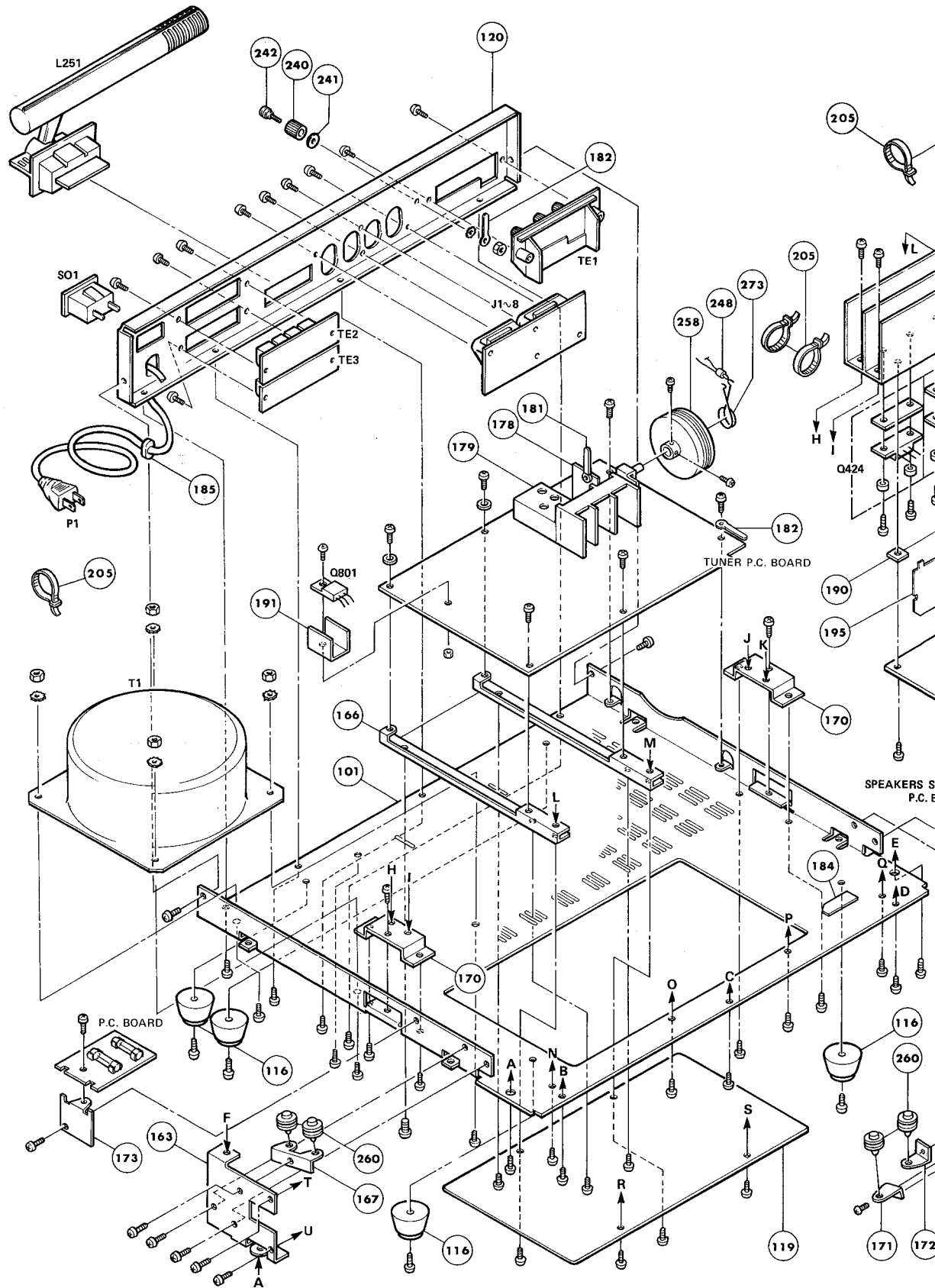


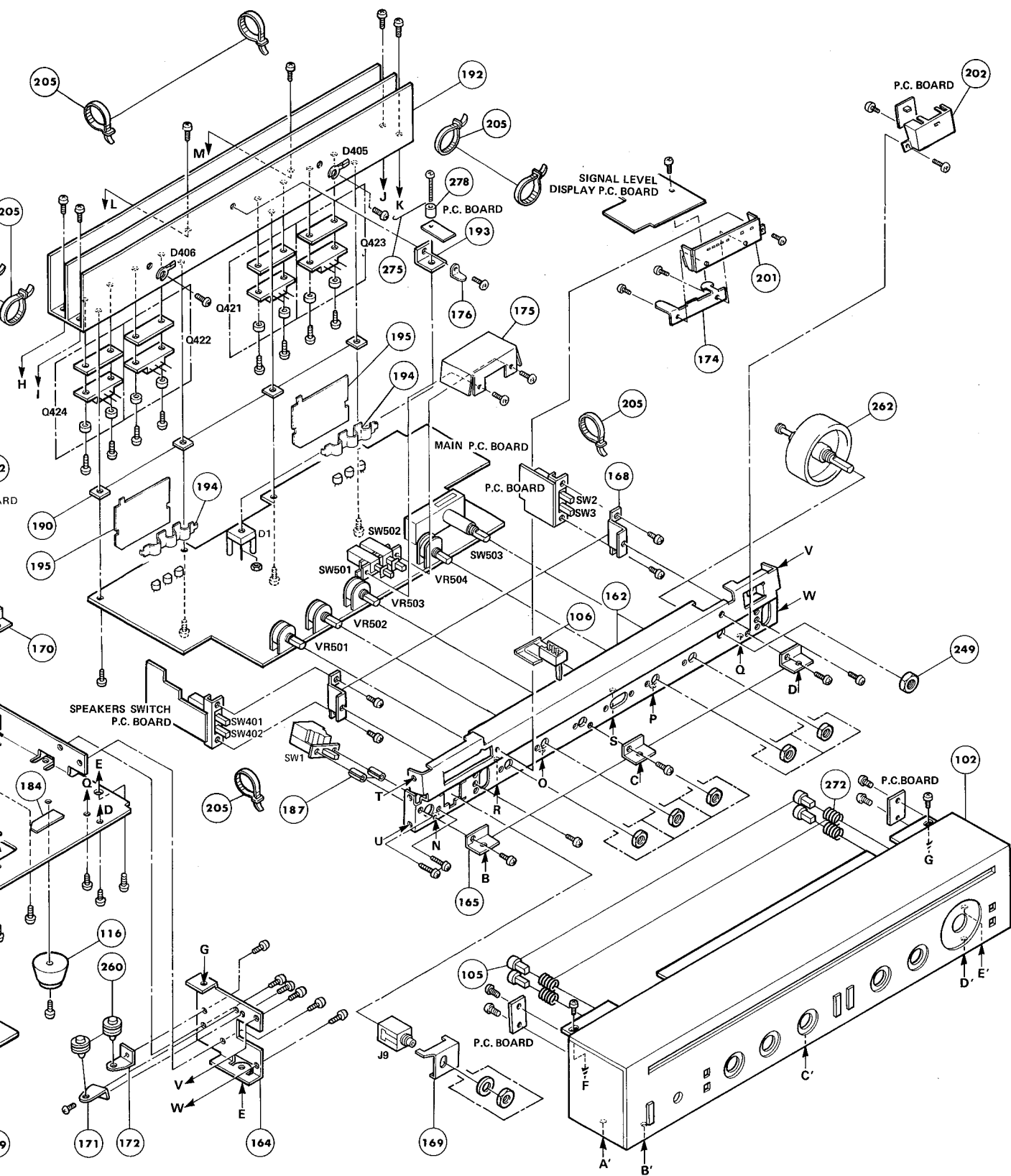


GENERAL UNIT EXPLODED VIEW

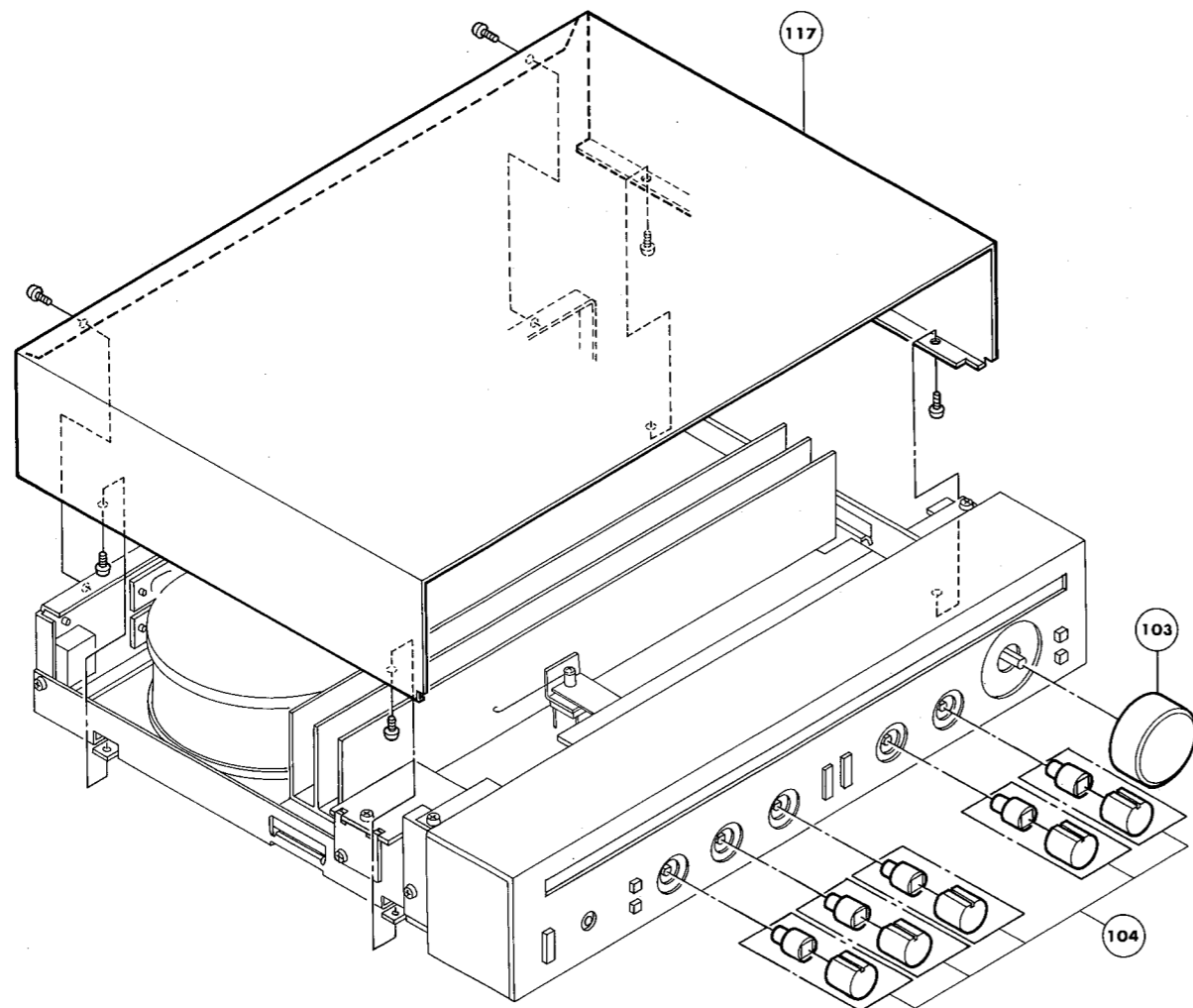


GENERAL UNIT EXPLODED VIEW

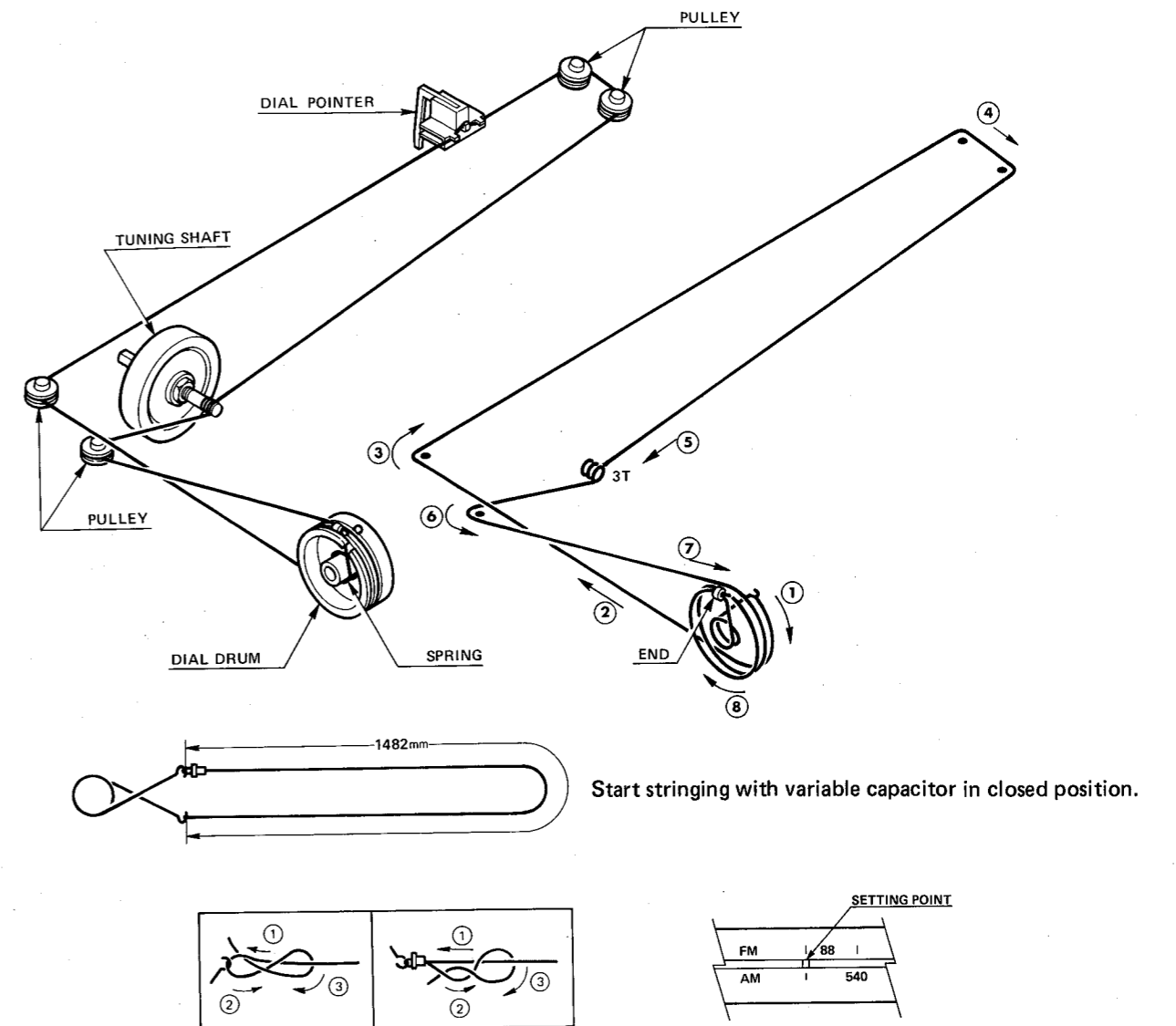




GENERAL UNIT EXPLODED VIEW

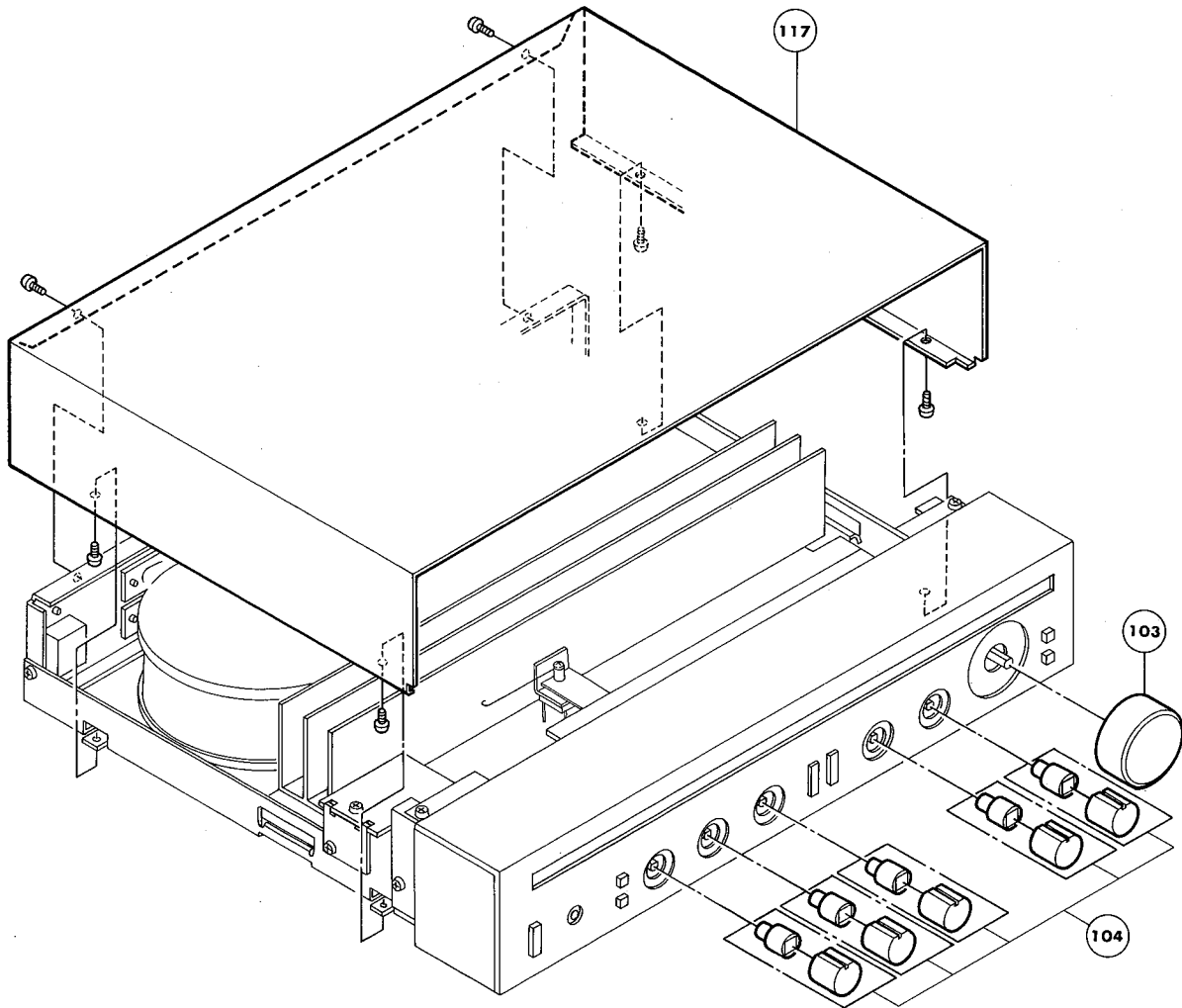


DIAL CORD STRINGING



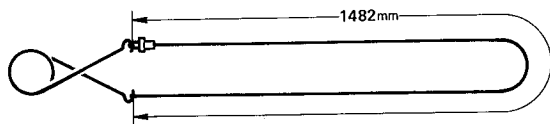
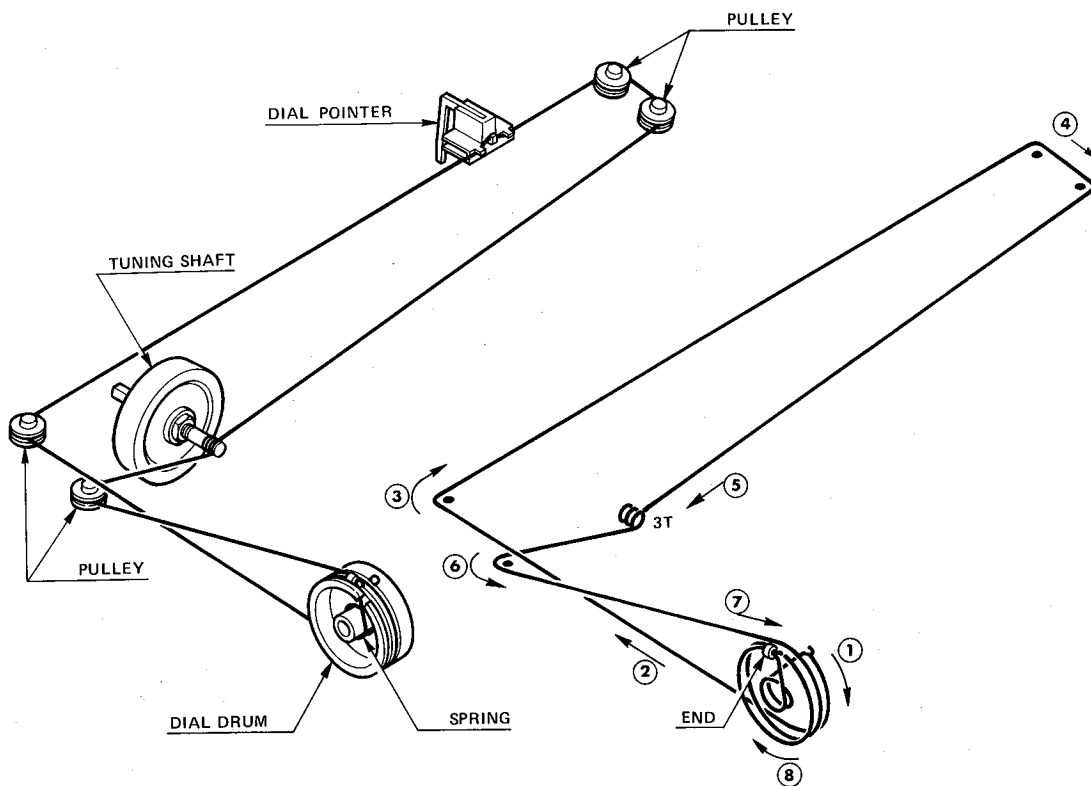
GENERAL UNIT EXPLODED VIEW

DIAL



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DIAL CORD STRINGING



Start stringing with variable capacitor in closed position.

