

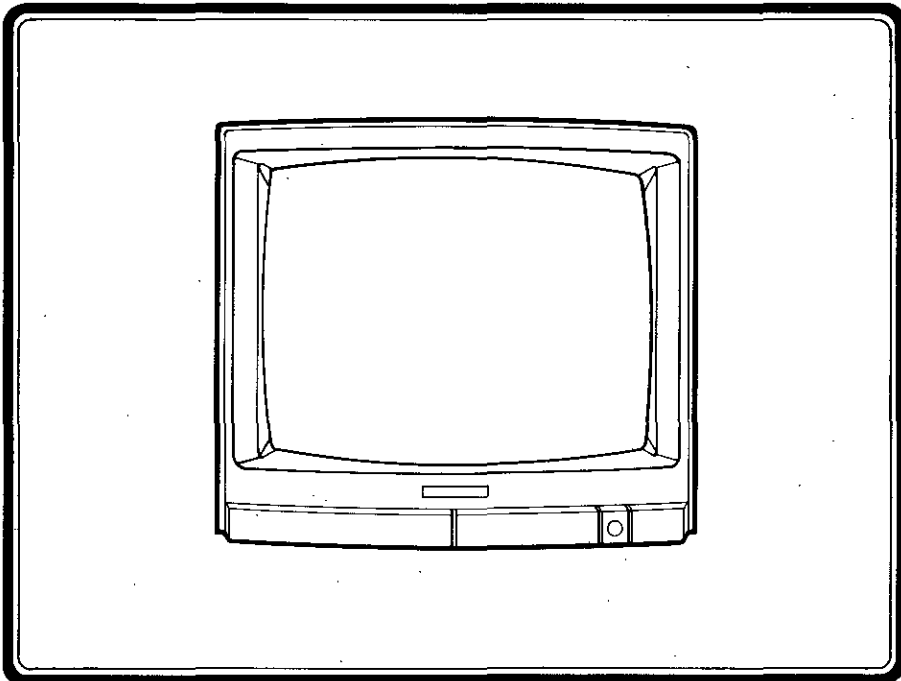
FRONT COUNTER

COLOUR TV SERVICE MANUAL

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DO NOT REMOVE

CAUTION
BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL.

NOTE: Refer to the SVC manual NO. 483-462J that bits of information are deleted in this manual (part NO. 483-462L), because two models have much the same main chassis ass'y and tuning system.



CHASSIS: PC-08X8
MODEL: CBT-9508
CTM 20 RC

CONTROLLED
AUTHORITY *[Signature]* DATE *11-7-88*

MARCH, 1989

P/N 483-462L

5622

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SPECIFICATIONS

Power Source	AC 180 V—270 V, 50 Hz
Power Consumption	80 W
Receiving TV System	CCIR Standard
Colour Receiving System	PAL-B/G
Receiving Channels	VHF Low: 2—4 CH., VHF High: 5—12 CH, UHF:21—69 CH
Intermediate Frequency	
Picture	38.9 MHz
Sound	33.4 MHz
Colour	34.47 MHz
Tuning	Voltage Synthesizer
Audio Output	3W
Antenna Input Impedance	75 ohm IEC Type (300 ohm using balun supplied)
Picture Tube	510MHB22-TC03
Speaker	75 × 40 mm
Dimension	486(W) × 440(H) × 477(D) mm
Weight	23.1 Kg

SAFETY PRECAUTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTIONS", "SAFETY INSTRUCTIONS" AND "PRODUCT SAFETY NOTICE" DESCRIBED BELOW.

X-RAY RADIATION PRECAUTIONS

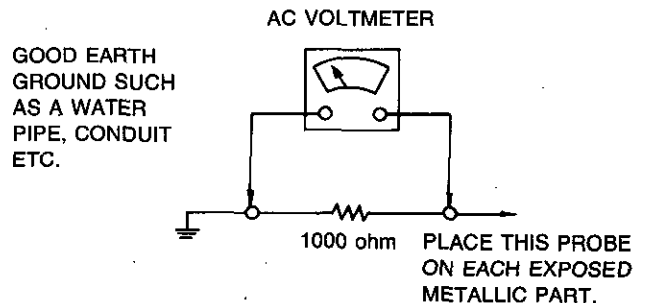
1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 24 ± 1.5 kV at High beam current (maximum brightness) under specified power source. The high voltage must not under any circumstances, exceed 27.5 KV. Each time a receiver requires servicing, the high voltage should be checked. It is recommended the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
3. Some parts in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY INSTRUCTIONS

1. Potentials as high as 25,000—27,000 volts are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back cover removed involves a shock hazard from the receiver.
 - (1) Servicing should not be attempted by anyone who don't know the precautions necessary through and through when working on high-voltage equipment.
 - (2) Always discharge the picture tube anode to the CHASSIS GROUND to reduce the shock hazard before removing the anode cap.
 - (3) Perfectly discharge the high potential of the picture tube before handling.
(WARNING: Risk of implosion. Handle with care.)
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the chassis parts list only.
3. When replacing parts or circuit boards, wind the lead wires around terminals before soldering.
4. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10 mm. away from circuit board.
5. Keep wires away from high voltage or high temperature components.
6. This TV receiver should be connected to AC 220 V.
7. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts

of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts, etc., to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 220 V AC outlet. (Do not use a line isolation transformer during this check). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner.

Connect a 1000 ohm resistor between a known good earth ground, (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1000 ohm resistor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 1 volt RMS. This corresponds to 1 mA. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY RADIATION.

SERVICING PRECAUTIONS

CAUTION: Before servicing receiver covered by this service manual and its supplements and addenda, read and follow the **SAFETY PRECAUTIONS** on page 3 of this publication. **NOTE:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. **Remember: Safety First.**

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before:
 - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
 - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
 - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.
CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
 - d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc.) equipped with a suitable high voltage probe. *Do not test high voltage by "drawing an arc".*
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do *not* spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator: 10 % (by volume) Acetone and 90 % (by volume) isopropyl alcohol (90 %-99 % strength).
CAUTION: *This is a flammable mixture.* Unless specified otherwise in this service manual, lubrication of contacts is not required.
6. Do not defeat any plug/socket B+ voltage interlocks equipped in receivers covered by this service manual.
7. Do *not* apply AC power to this receiver and/or any of its electrical assemblies unless *all* solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground *before* connecting the test receiver positive lead.
Always remove the test receiver ground lead *last*.
9. Use with this receiver only the test fixtures specified in this service manual.
CAUTION: Do *not* connect the test fixture ground strap to any heatsink in this receiver.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices*. Examples of typical

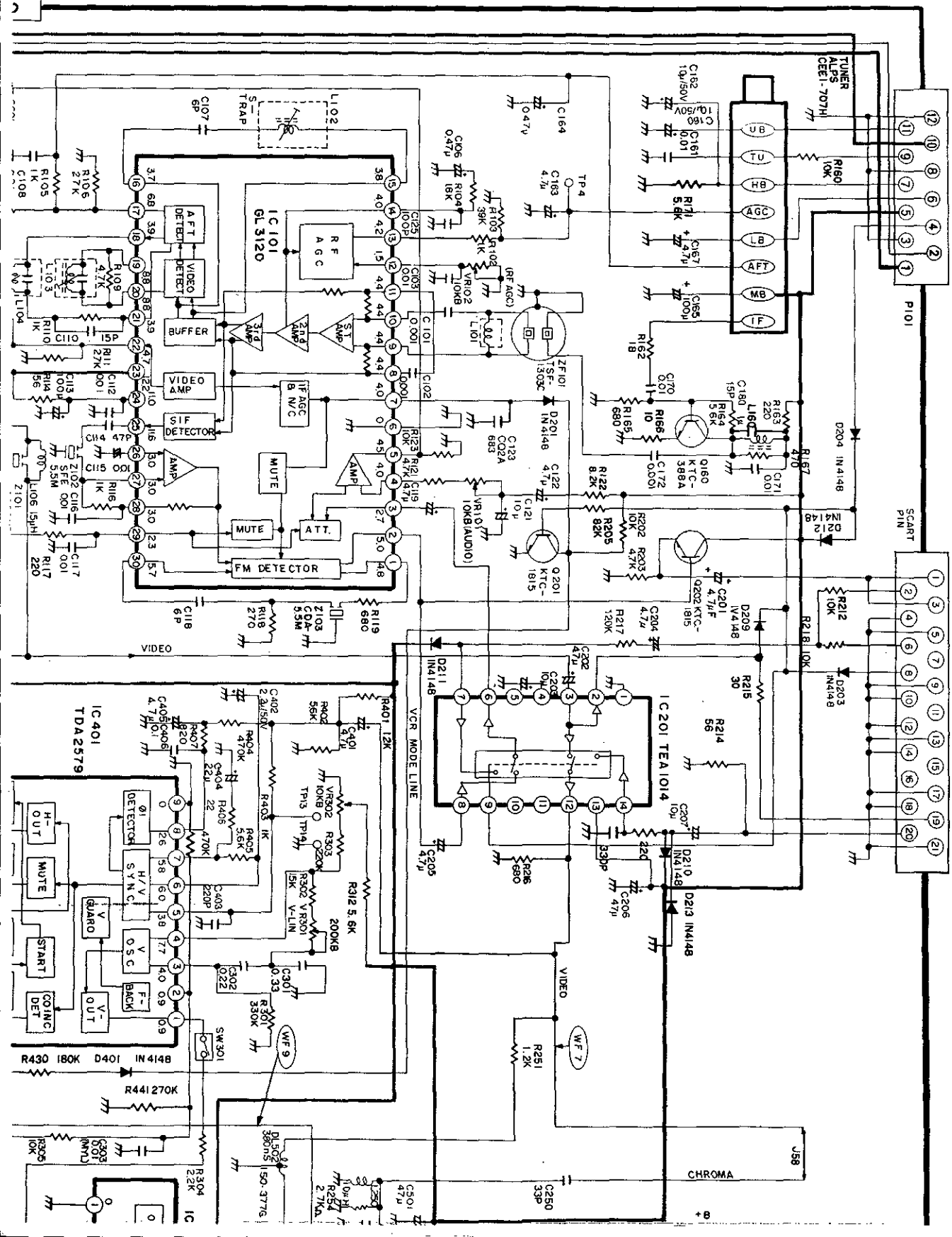
ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity:

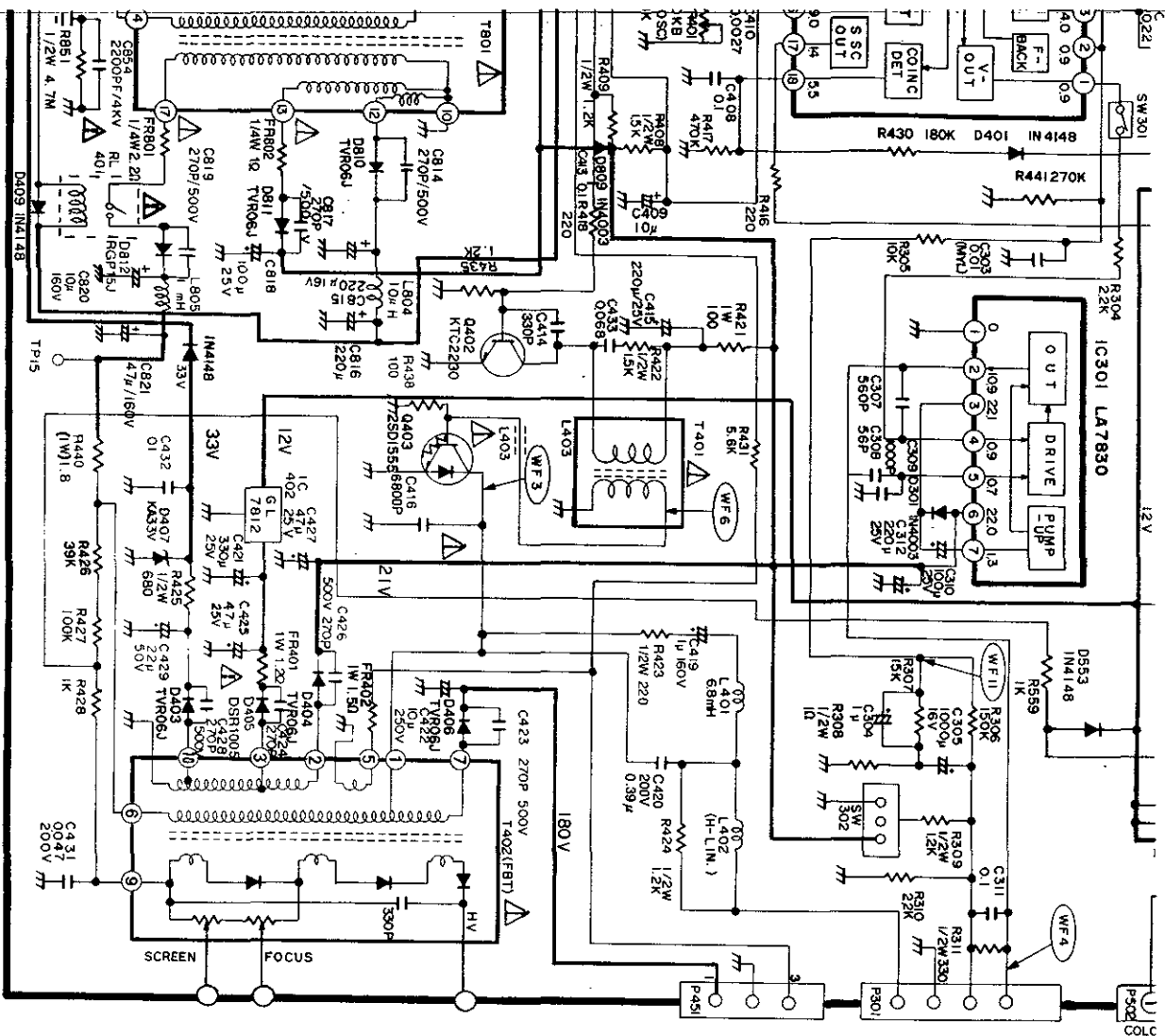
1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge build-up or exposure of the assembly.
3. Use only a *grounded-tip* soldering iron to solder or unsolder ES devices.
4. Use only an *anti-static* type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do *not* use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do *not* remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range of 500 °F to 600 °F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch, or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
 - a. Allow the soldering iron tip to reach the normal temperature (500 °F to 600 °F).
 - b. Heat the component lead until the solder melts.
 - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.
CAUTION: Work quickly to avoid overheating the circuit board printed foil.
6. Use the following soldering technique.
 - a. Allow the soldering iron tip to reach the normal temperature (500 °F to 600 °F).
 - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.

CIRCUIT DIAGRAM

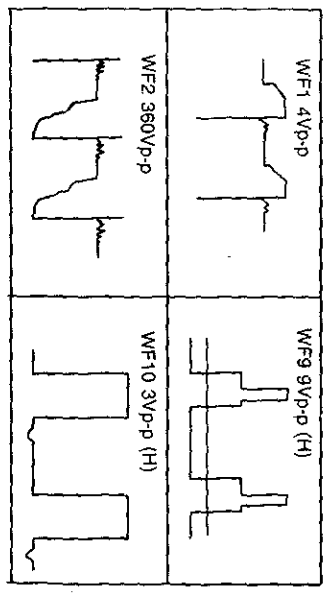
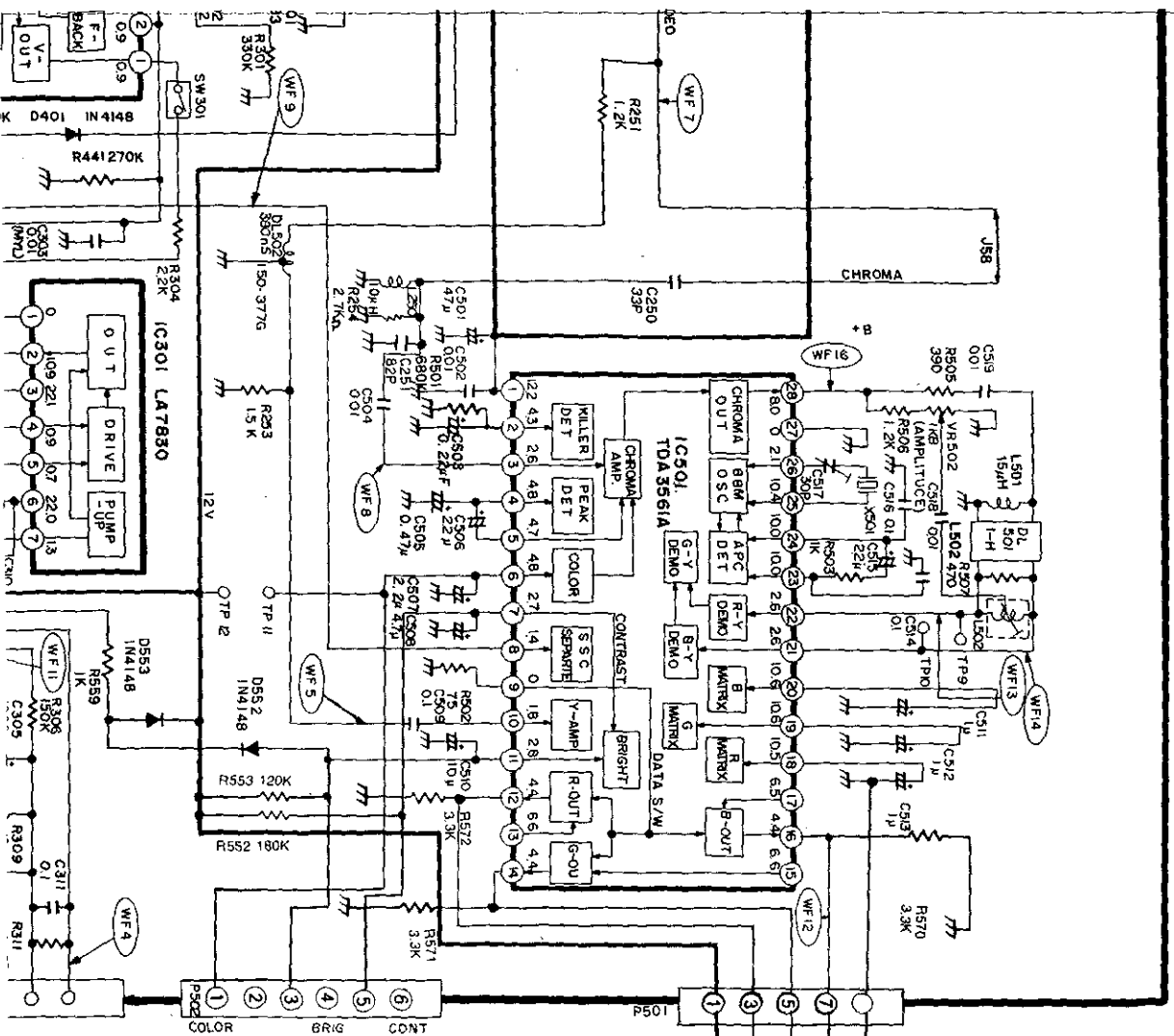




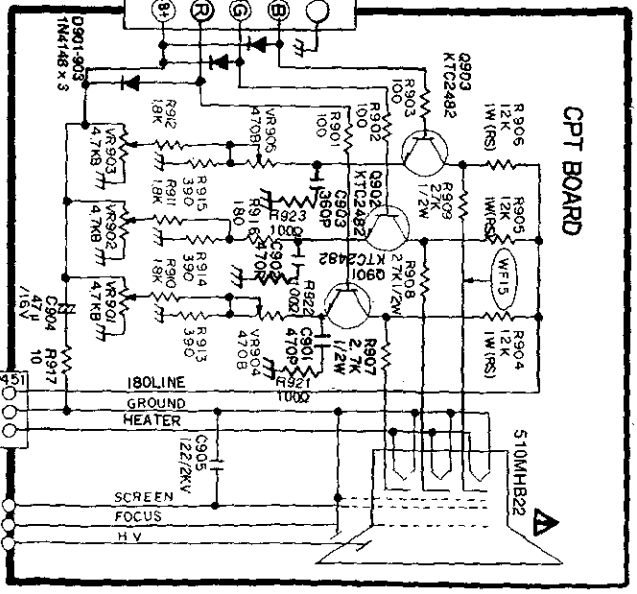
- OBSERVATION OF VOLTAGES AND WAVEFORMS**
1. Voltages read with VTVM from point shown to chassis ground, line voltage 180~270V volts, colour bar signal.
 2. Voltages reading may vary $\pm 20\%$.
 3. The schematic shown is representative only.
 4. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
 5. Check FINE TUNING, AGC, BRIGHTNESS, CONTRAST and COLOUR controls for best picture, make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS control is almost in maximum position.
 6. Waveforms are taken using a standard colour bar signal.

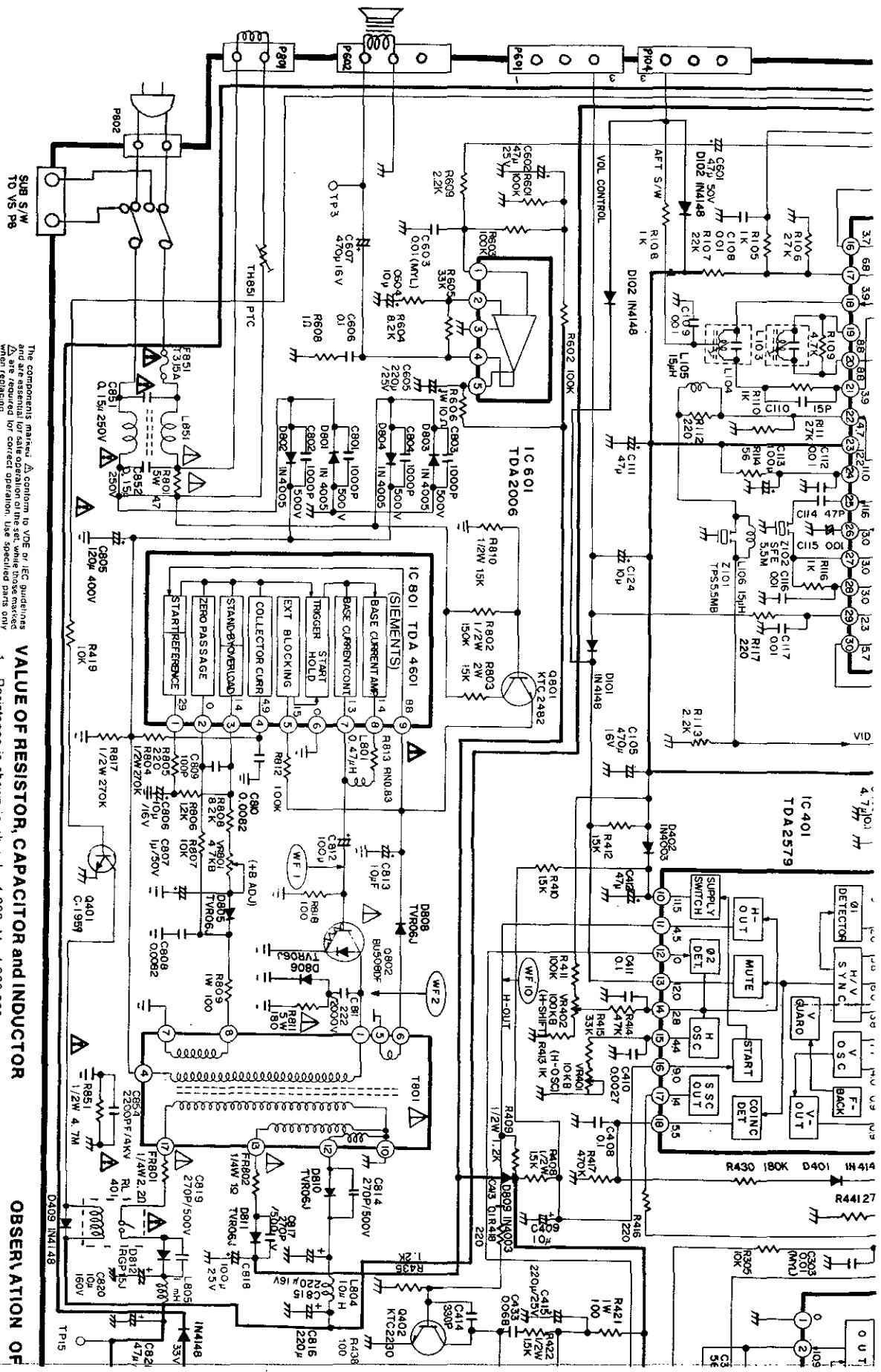
	WF10 3Vp-p (H)		WF11 1.7Vp-p (H)
	WF2 360Vp-p		WF12 7Vp-p (H)
	WF3 860Vp-p (H)		WF13 200mVp-p (H)
	WF4 38Vp-p (V)		WF14 200mVp-p (H)
	WF5 500mVp-p (H)		WF15 95Vp-p (H)
	WF6 10Vp-p (H)		WF16 2Vp-p (H)
	WF7 1.7Vp-p (H)		
	WF8 200mVp-p (H)		

UIT DIAGRAM (PC-08X8)



NOTICE
 Since this is a basic circuit diagram,
 The value of components and some partical connection
 are subject to be changed for improvement.





The components marked Δ conform to VDE or IEC guidelines and are essential for safe operation of the set, while those marked ∇ are required for correct operation. Use specified parts only when replacing.

VALUE OF RESISTOR, CAPACITOR AND INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000.
2. Unless other wise noted in schematic, all capacitor values less than 1 are expressed in nfd and the values more than 1 in pf.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μ H, and the values less than 1 in H.

OBSERVATION OF

1. Voltages read with VTVM ground, line voltage 180~
2. Voltages reading may vary
3. The schematic shown is re
4. All waveforms are taken usi a low capacity probe.

- c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.

CAUTION: Work quickly to avoid overheating the circuit board printed foil.

- d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Removal/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output Transistor Device Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heatsink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heatsink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicularly to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.

CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board, to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board, causing the foil to separate from, or "lift-off", the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections

To repair a defective copper pattern at IC connections, use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections):

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary.)
2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the cut-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area, and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.

CAUTION: Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

BLUE: NEUTRAL BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows: The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

If a 13 Amp (BS1363) Plug or any other type of Plug is used a 5 Amp Fuse must be fitted, either in the Plug or Adapter, or on the Distribution board.

CONTROLS LOCATION

FRONT

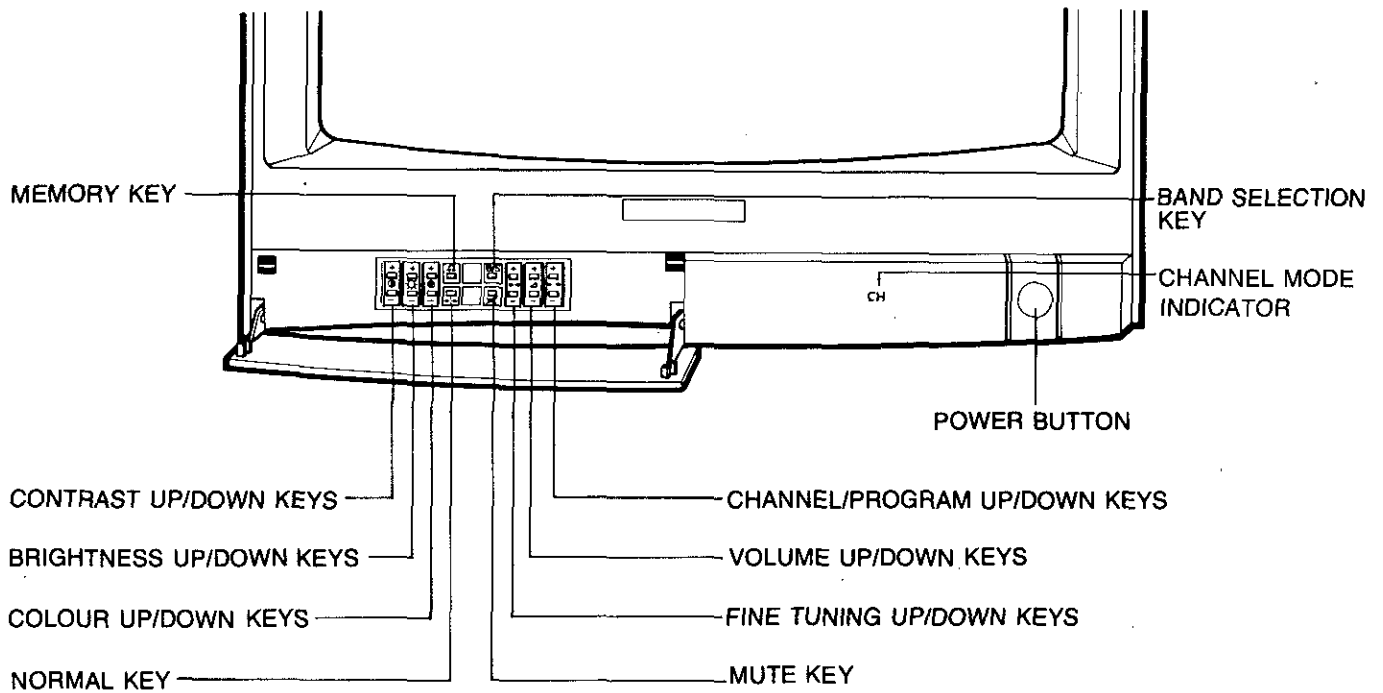


Figure 1

BACK

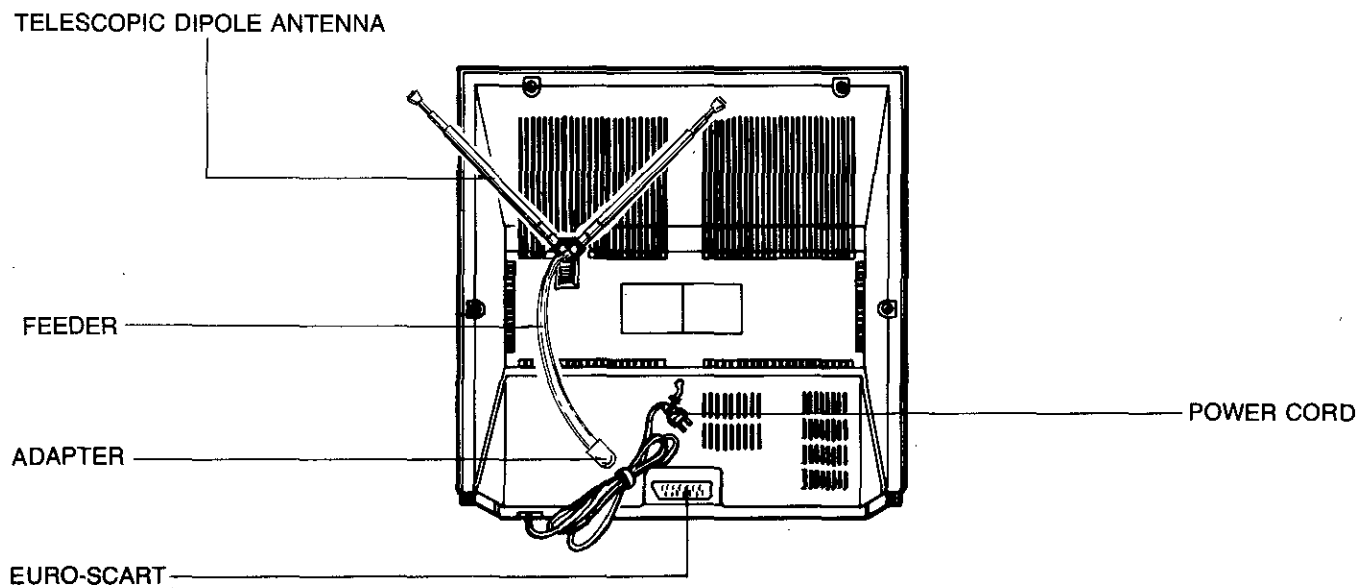
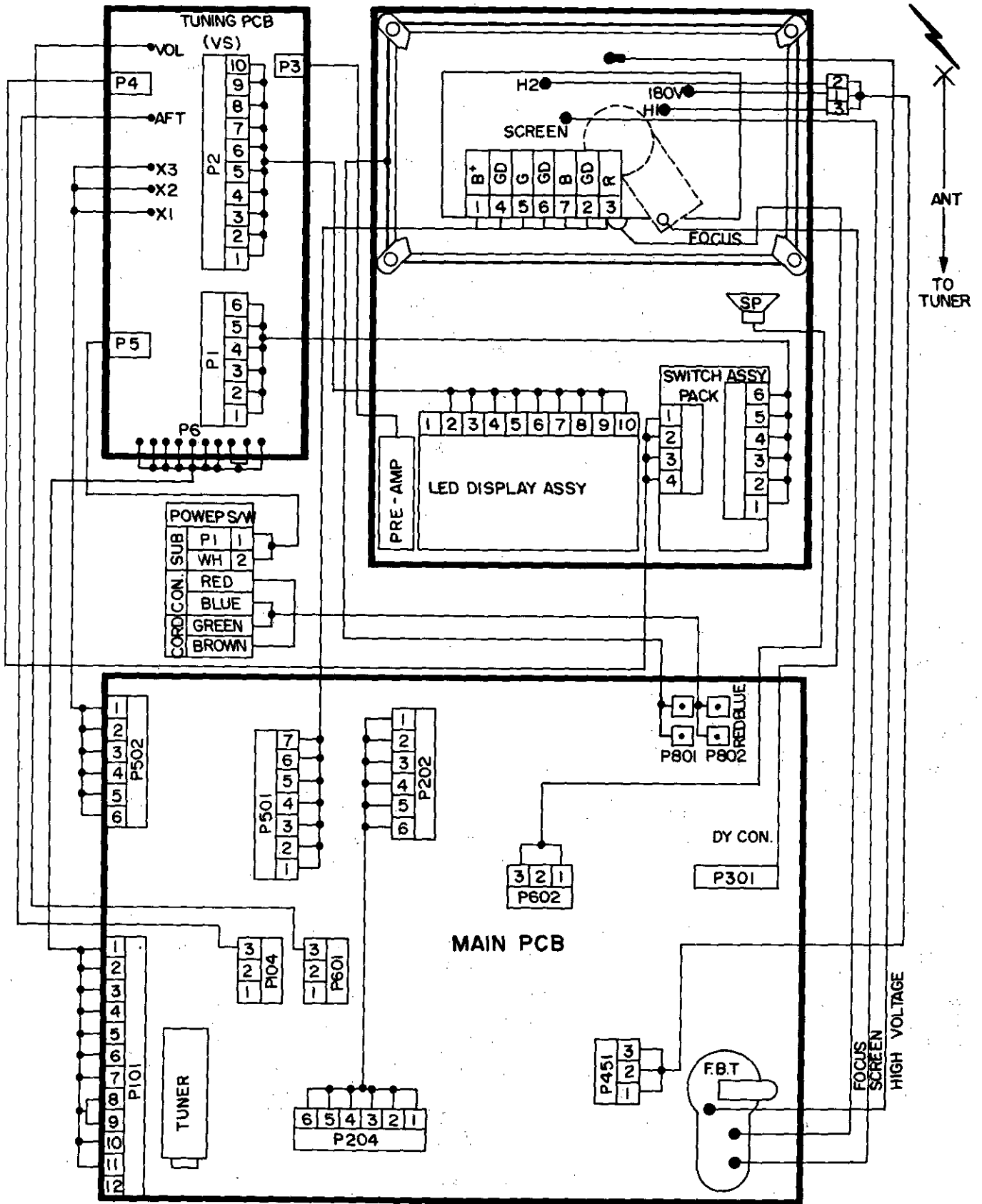


Figure 2

WIRING DIAGRAM

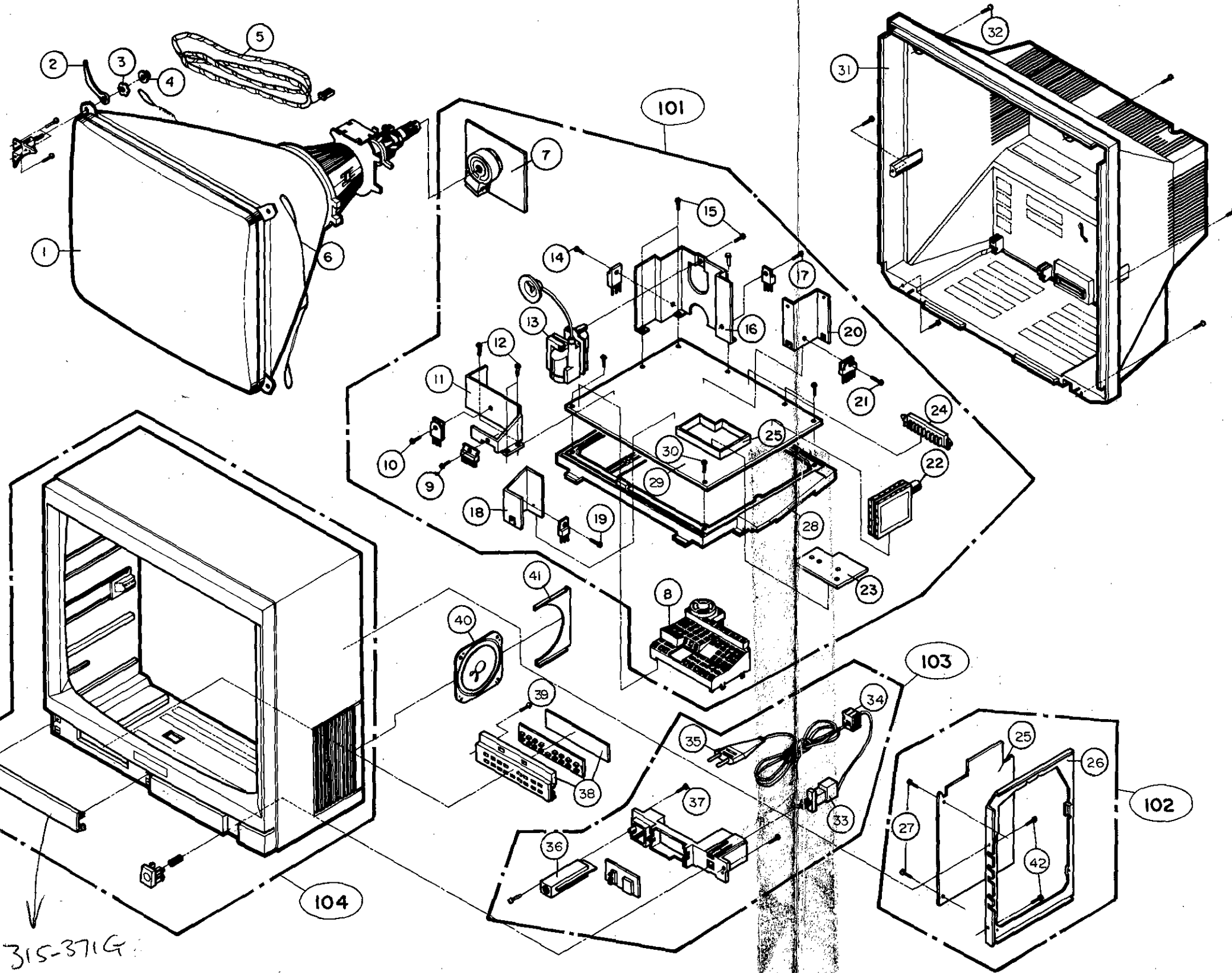


COMPONENT LOCATION GUIDE

(Refer to pages from 9 to 10)

R101	3A	R405	1B	VR301	1B	C307	2D	C804	4E	D406	1D
R102	3A	R406	1C	VR302	1B	C308	2D	C805	3E	D407	1C
R103	3A	R407	1B	VR401	2C	C309	2D	C806	5D	D409	3D
R104	3B	R408	2C	VR402	2C	C310	1C	C807	5C	D504	4B
R105	3B	R409	2C	VR502	5C	C311	2E	C808	5D	D505	4B
R106	3B	R410	1C	VR801	5C	C312	1C	C809	5D	D506	4B
R107	3B	R411	1C	FR401	1D	C401	1B	C810	5D	D551	5A
R108	3B	R412	1C	FR402	1D	C402	1B	C811	4D	D552	5A
R109	3B	R413	2C	FR801	3D	C403	1B	C812	5D	D801	4E
R110	3B	R414	2C	FR802	3D	C404	1C	C813	5D	D802	4E
R111	3B	R415	2C			C405	1C	C814	3C	D803	4E
R112	3B	R416	2C	C101	3A	C406	1B	C815	4C	D804	4E
R113	3B	R417	2C	C102	3B	C407	1C	C816	3C	D805	4D
R114	4B	R418	2D	C103	3A	C408	2C	C817	3D	D806	4D
R115	3B	R419	2B	C104	3A	C409	2C	C818	3D	D808	5D
R116	4B	R421	2D	C105	4A	C410	2C	C819	3D	D809	3D
R117	4B	R422	2D	C106	3B	C411	2C	C820	2D	D810	3D
R118	4B	R423	2E	C107	3B	C412	1C	C821	3D	D811	3D
R119	4A	R424	3E	C108	3B	C413	2C	C851	5E	D812	3D
R120	4A	R425	1D	C109	3B	C414	2D	C852	4E		
R121	4A	R426	2D	C110	3B	C415	2E	C853	5E	Q160	3A
R122	4A	R427	1D	C111	3B	C416	2E	C854	3E	Q201	2A
R123	3A	R428	1D	C112	4B	C419	2E			Q202	1C
R160	1A	R430	2C	C113	4B	C420	2E	L101	3A	Q203	4B
R161	1A	R431	1C	C114	3B	C421	1C	L102	3B	Q204	2B
R162	2A	R501	5A	C115	3B	C422	1D	L103	3B	Q401	2D
R163	3A	R502	5A	C116	3B	C423	1D	L104	3B	Q402	2D
R164	3A	R503	5B	C117	4B	C424	1D	L105	3B	Q403	1E
R165	3A	R505	5C	C118	4B	C425	1D	L106	3C	Q801	5D
R166	3A	R506	5C	C119	4A	C426	2D	L160	3A	Q802	4D
R167	3A	R507	5C	C120	4A	C427	2D	L162	3A		
R201	1B	R551	5A	C121	3A	C428	1D	L250	4A	IC101	3B
R202	4A	R552	5A	C122	3A	C429	1D	L251	4A	IC201	2B
R203	1C	R553	5A	C123	3B	C431	1D	L401	2E	IC301	2D
R205	2A	R554	5A	C124	3B	C432	1C	L402	3E	IC401	2B
R206	4B	R555	5A	C125	3C	C433	2D	L403	1E	IC402	1D
R207	4C	R556	5A	C160	1A	C434	1C	L501	5C	IC501	5B
R208	4B	R557	5A	C161	1A	C501	5B	L502	5B	IC601	3C
R209	5B	R558	4B	C162	1A	C502	5A	L801	5D	IC801	5D
R211	4B	R559	2C	C163	1A	C503	5A	L804	3C		
R212	1C	R601	3C	C164	1A	C504	5A	L851	5E	P101	1A
R213	1A	R602	3C	C165	1A	C505	5A			P103	2A
R214	1A	R603	3C	C166	2A	C506	5A	DL501	4C	P104	2B
R215	1A	R604	4C	C167	1A	C507	5A	DL502	4A	P202	4B
R216	2B	R605	3C	C168	2A	C508	5A	T401	2E	P203	5B
R217	2A	R606	3C	C169	2A	C509	5A	T402	1E	P204	1B
R218	1C	R607	3C	C170	2A	C510	5A	T801	4D	P251	4A
R251	4A	R608	3C	C171	3A	C511	5B			P301	3E
R253	4A	R609	4C	C172	3A	C512	5B	D101	2B	P451	1C
R254	4A	R801	4E	C201	1C	C513	5B	D201	3A	P501	4A
R255	5A	R802	4E	C202	2B	C514	5C	D202	1B	P502	5A
R301	1B	R803	4E	C203	2B	C515	5C	D203	1B	P601	2B
R302	1B	R804	5D	C204	1A	C516	5B	D204	2A	P602	2C
R303	2B	R805	5D	C205	2B	C517	5B	D205	1B	P801	5D
R304	2C	R806	5D	C206	2B	C518	5C	D206	4C	P802	5E
R305	2C	R807	5D	C207	1B	C519	5C	D207	4C	SW301	2C
R306	2C	R808	5D	C208	4B	C601	4A	D208	4B	SW302	2C
R307	2C	R809	4D	C209	4B	C602	3C	D209	1B	X501	5B
R308	2C	R810	4D	C210	4B	C603	3C	D210	1B	TH851	5E
R309	2C	R811	4D	C250	4A	C604	4C	D211	1B	Z102	3B
R310	3E	R812	5D	C251	4A	C605	3C	D212	1B	Z103	4B
R311	3E	R813	5D	C301	1B	C606	3C	D301	2C	Z104	3B
R312	1B	R817	4D	C302	1B	C607	3C	D401	3C	ZF101	3A
R401	1C	R818	4E	C303	2C	C608	4C	D402	1C	RL401	3E
R402	1C	R851	3E	C304	2C	C801	4E	D403	1D	F851	5E
R403	1B	VR101	3A	C305	2C	C802	4E	D404	2D	LB05	3D
R404	1C	VR102	3A	C306	2C	C803	4E	D405	1D		

EXPLODED VIEW



SP: Serviceable Parts
NSP: Not Serviceable Parts

NO.	DESCRIPTION	Q'TY	PART NO.	REMARKS
1	CPT, 510MHB22TC-0357BE	1	112-257A	SP
2	HOLDER, METAL ASSY	4	341-335A	SP
3	WASHER	4	334-039A	SP
4	HNW508	4	03120104	SP
5	COIL, DEGAUSSING	1	150-276B	SP
6	LEAD SET, EARTH	1	170-326R	SP
7	PCB ASSY	1	110-A31Q	SP
8	COVER, SAFETY	1	303-B74A	SP
9	SCREW, TAP-TITE C TYPE	1	332-069B	SP
10	SCREW, TAP-TITE C TYPE	1	332-069D	SP
11	PLATE, HEAT SINK	1	407-757A	NSP
12	RTS1 +3 x 12	3	03281004	SP
13	FBT	1	154-125B	SP
14	SCREW, TAP-TITE C TYPE	1	332-069D	SP
15	RTS1 +3 x 12	4	03281004	SP
16	PLATE, HEAT SINK	1	407-755A	NSP
17	SCREW, TAP-TITE C TYPE	1	332-069D	SP
18	PLATE, HEAT SINK	1	407-734C	SP
19	SCREW, TAP-TITE C TYPE	1	332-069D	SP
20	PLATE, HEAT SINK	1	407-756A	NSP
21	SCREW, TAP-TITE C TYPE	1	332-069D	SP
22	TUNER	1	113-095G	SP
23	COVER SHIELD	1	303-A88A	SP
24	SOCKET ASSY, 21PIN PERI-SOCKET	1	381-090A	SP
25	PCB ASSY, TUNING	1	110-E89A	SP
26	SUPPORTER, VS PCB	1	343-554B	SP
27	SCREW, WASHER	3	332-036A	SP
28	FRAME, MAIN	1	312-200A	SP
29	PCB ASSY, MAIN	1	110-D83Y	SP
30	SCREW, WASHER	5	332-036F	SP
31	COVER, BACK	1	303-B98F	SP
32	TTS1 +4 x 16	6	03232305	SP
33	MAIN SWITCH	1	140-134B	SP
34	HOLDER, POWER CORD	1	341-242D	SP
35	POWER CORD	1	174-102B	SP
36	PRE-AMP ASSY	1	106-031D	SP
37	RTS1 +3 x 12	2	03281004	SP
38	SWITCH ASSY, CONTROL	1	140-237D	SP
39	RTS1 +3 x 12	1	03281004	SP
40	SPEAKER	1	120-035H	SP
41	SUPPORTER, SPEAKER	1	343-544A	SP
42	TTS1 +4 x 14	2	03232304	SP

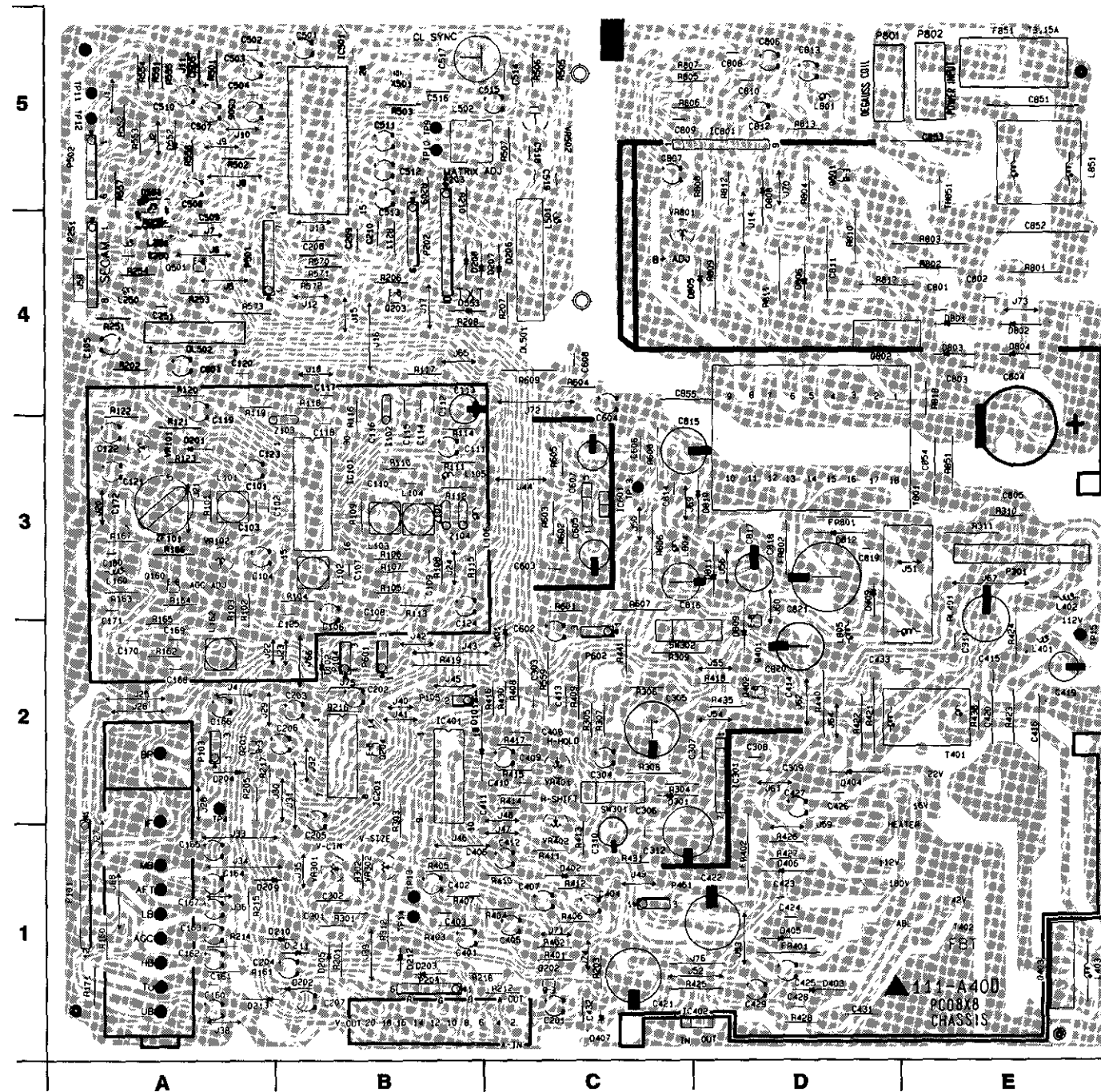
SUB ASSY

101	CHASSIS ASSY, MAIN	1	309-794H	SP
102	BOARD ASSY, TUNING	1	401-540B	SP
103	DISPLAY ASSY	1	262-004D	SP
104	CABINET ASSY	1	300-718C	SP

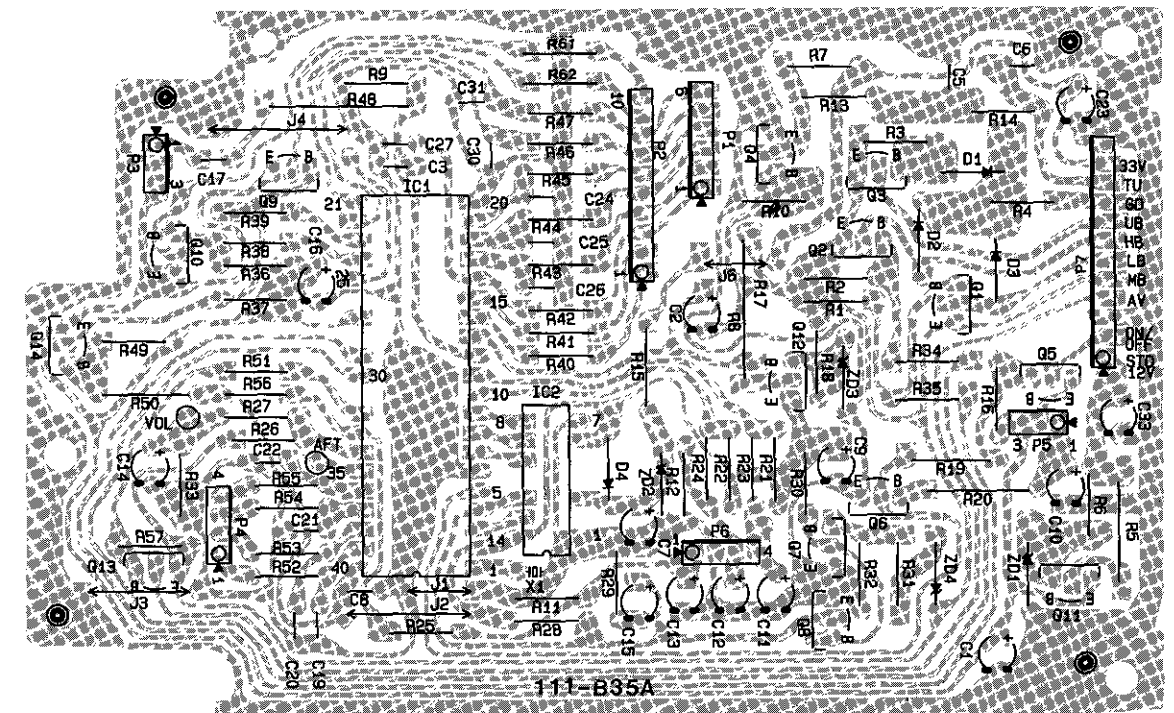
315-371G

PRINTED CIRCUIT BOARD

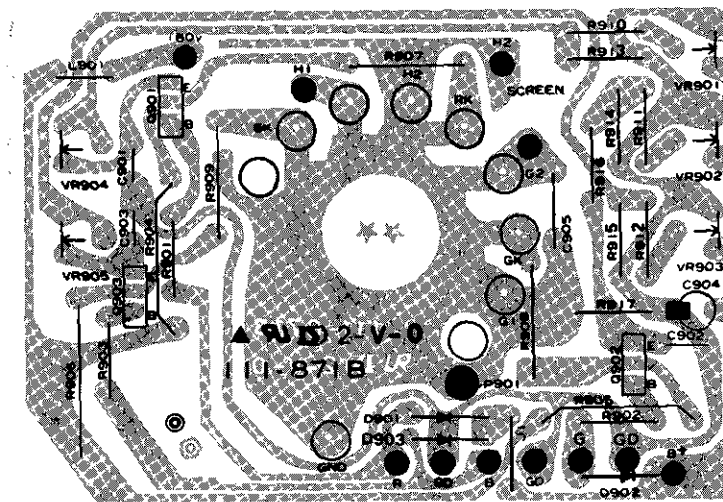
MAIN P.C. BOARD (COMPONENT SIDE)



TUNING P.C. BOARD (COMPONENT SIDE)



CPT P.C. BOARD (COMPONENT SIDE)



REPLACEMENT PARTS LIST

CAUTION: Before replacing any of these components, read carefully the "SAFETY PRECAUTIONS" on page 3. Do not degrade the safety of the receiver through improper servicing.

ABBREVIATIONS: Capacitors CC: Ceramic (TC), MYL: Mylar, CE: Electrolytic, CK: Ceramic (Hi-K)
PP: Polypropylene film MPP: Metal Polypropylene film MPE: Metal Polyester film
Resistors RD: Carbon film, RS: Metal Oxide film, RN: Metal film, RV: Variable or Semifix

NOTE: 1. All Capacitors are $\pm 20\%$, 50Volts and all resistor, $\pm 5\%$, 1/8W unless otherwise noted.
2. SP marked parts at the remarks mean the parts which are the serviceable parts.
NSP marked parts at the remarks mean the parts which are not serviceable parts.

1. ASSEMBLED P.C. BOARD

LOCATION NO.	ASSEMBLY PART NO.	DESCRIPTION	RE-MARKS
111-A40D	110-D83Y	P.C. BOARD ASSY, MAIN	SP
111-871B	110-A31Q	P.C. BOARD ASSY, CPT	SP
110-B35A	110-E89A	P.C. BOARD ASSY, TUNING	SP

2. MAIN P.C. BOARD (110-D83Y)

LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
RESISTOR			
R102	01157097	RD, 1K ohm	SP (071A)
R103	01157135	RD, 39K ohm	SP (071A)
R104	01157103	RD, 1.8K ohm	SP (071A)
R105	01157097	RD, 1K ohm	SP (071Q)
R106	01157131	RD, 27K ohm	SP (071Q)
R107	01157129	RD, 22K ohm	SP (071Q)
R108	01157097	RD, 1K ohm	SP (071Q)
R109	01157113	RD, 4.7K ohm	SP (071L)
R110	01157097	RD, 1K ohm	SP (071Q)
R111	01157107	RD, 2.7K ohm	SP (071A)
R112	01157081	RD, 220 ohm	SP (071A)
R113	01157105	RD, 2.2K ohm	SP (071A)
R114	01157067	RD, 56 ohm	SP (071A)
R116	01157097	RD, 1K ohm	SP (071A)
R117	01157081	RD 220 ohm	SP (071A)
R118	01157083	RD, 270 ohm	SP (071A)
R119	01157093	RD, 680 ohm	SP (071A)
R121	01157113	RD, 4.7K ohm	SP (071A)
R122	01157119	RD, 8.2K ohm	SP (071A)
R123	01157121	RD, 10K ohm	SP (071A)
R160	01157121	RD, 10K ohm	SP (071A)
R162	01157055	RD, 18 ohm	SP (071L)
R163	01157081	RD, 220 ohm	SP (071A)
R164	01157115	RD, 5.6K ohm	SP (071A)
R165	01157093	RD, 680 ohm	SP (071A)
R166	01157055	RD, 18 ohm	SP (071L)
R167	01157089	RD, 470 ohm	SP (071L)
R171	01165115	RD, 5.6K ohm 1/6W	SP (071L)
R202	01157121	RD, 10K ohm	SP (082B)
R203	01157113	RD, 4.7K ohm	SP (082B)
R205	01157143	RD, 82K ohm	SP (082B)
R212	01157121	RD, 10K ohm	SP (082B)
R214	01157070	RD, 75 ohm	SP (082B)
R215	01157063	RD, 39 ohm	SP (082B)
R216	01157093	RD, 680 ohm	SP (071A)

LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
R217	01157147	RD, 120K ohm	SP (082B)
R218	01157121	RD, 10K ohm	SP (082B)
R251	01157099	RD, 1.2K ohm	SP (071H)
R253	01157101	RD, 1.5K ohm	SP (071A)
R254	01157107	RD, 2.7K ohm	SP (071A)
R301	01157157	RD, 330K ohm	SP (071A)
R302	01157125	RD, 15K ohm	SP (071A)
R303	01157153	RD, 220K ohm	SP (071A)
R304	01157105	RD, 2.2K ohm	SP (071A)
R305	01157121	RD, 10K ohm	SP (071A)
R306	01157149	RD, 150K ohm	SP (071A)
R307	01157125	RD, 15K ohm	SP (071A)
R308	01505025	RN, 1 ohm 1/2W	SP (111B)
R309	01154099	RD, 1.2K ohm 1/2W	SP (071A)
R310	01157105	RD, 2.2K ohm	SP (071A)
R311	01154085	RD, 330 ohm 1/2W	SP (071A)
R312	01157117	RD, 6.8K ohm	SP (071A)
R401	01157123	RD, 12K ohm	SP (071A)
R402	01157115	RD, 5.6K ohm	SP (071A)
R403	01157097	RD, 1K ohm	SP (071A)
R404	01157161	RD, 470K ohm	SP (071A)
R405	01157115	RD, 5.6K ohm	SP (071A)
R406	01157057	RD, 22 ohm	SP (071A)
R407	01157095	RD, 820 ohm	SP (071A)
R408	01154101	RD, 1.5K ohm 1/2W	SP (071A)
R409	01154099	RD, 1.2K ohm 1/2W	SP (071A)
R410	01157101	RD, 1.5K ohm	SP (071A)
R411	01157145	RD, 100K ohm	SP (071A)
R412	01157125	RD, 15K ohm	SP (071A)
R413	01157097	RD, 1K ohm	SP (071A)
R414	01157137	RD, 47K ohm	SP (071A)
R415	01157133	RD, 33K ohm	SP (071A)
R416	01157081	RD, 220 ohm	SP (071A)
R417	01157161	RD, 470K ohm	SP (071A)
R418	01157081	RD, 220 ohm	SP (071A)
R419	01157121	RD, 10K ohm	SP (082A)
R421	01332073	RS, 100 ohm 1W	SP (071A)
R422	01154101	RD, 1.5K ohm 1/2W	SP (071A)
R423	01154081	RD, 220 ohm 1/2W	SP (071A)
R424	01154099	RD, 1.2K ohm 1/2W	SP (071A)
R425	01154093	RD, 680 ohm 1/2W	SP (071Q)
R426	01157137	RD, 47K ohm	SP (111B)
R427	01157145	RD, 100K ohm	SP (071A)
R428	01157097	RD, 1K ohm	SP (071A)

LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
R430	01157151	RD, 180K ohm	SP (082B)
R431	01157115	RD, 5.6K ohm	SP (071A)
R435	01157099	RD, 1.2K ohm	SP (071A)
R438	01157073	RD, 100 ohm	SP (071A)
R440	01332031	RS, 1.8 ohm 1W	SP (071A)
R441	01157155	RD, 270K ohm	SP (071A)
R501	01157165	RD, 680K ohm	SP (071A)
R502	01157070	RD, 75 ohm	SP (071A)
R503	01157097	RD, 1K ohm	SP (071A)
R505	01157087	RD, 390 ohm	SP (071A)
R506	01157099	RD, 1.2K ohm	SP (071A)
R507	01157089	RD, 470 ohm	SP (071A)
R552	01157151	RD, 180K ohm	SP (071Q)
R553	01157147	RD, 120K ohm	SP (071A)
R559	01157097	RD, 1K ohm	SP (071A)
R570	01157109	RD, 3.3K ohm	SP (071A)
R571	01157109	RD, 3.3K ohm	SP (071A)
R572	01157109	RD, 3.3K ohm	SP (071A)
R573	01157117	RD, 6.8K ohm	SP (082B)
R601	01157145	RD, 100K ohm	SP (071A)
R602	01157145	RD, 100K ohm	SP (071A)
R603	01157145	RD, 100K ohm	SP (071A)
R604	01157119	RD, 8.2K ohm	SP (071A)
R605	01157133	RD, 33K ohm	SP (071A)
R606	01521049	RN, 10 ohm 1W	SP (071A)
R608	01157025	RD, 1 ohm	SP (071A)
R609	01157105	RD, 2.2K ohm	SP (071A)
R801	180-142V	RWR, 4.7 ohm 5W $\pm 5\%$	SP (071A)
R802	01154149	RD, 150K ohm 1/2W	SP (071A)
R803	01335125	RS, 15K ohm 2W	SP (071A)
R804	01154155	RD, 270K ohm 1/2W	SP (071A)
R805	01157081	RD, 220 ohm	SP (071A)
R806	01157099	RD, 1.2K ohm	SP (071A)
R807	01157121	RD, 10K ohm	SP (071A)
R808	01157119	RD, 8.2K ohm	SP (071A)
R809	01332073	RS, 100 ohm 1W	SP (071A)
R810	01154125	RD, 15K ohm 1/2W	SP (071A)
R811	180-142E	RWR, 180 ohm 5W	SP (071A)
R812	01157145	RD, 100K ohm	SP (071A)
R813	01518023	RN, 0.82 ohm	SP (071A)
R817	01154155	RD, 270K ohm 1/2W	SP (071A)
R818	01157073	RD, 100 ohm	SP (071A)
R851	180-042B	COMP, 4.7M ohm 1/2W	SP (071A)
VR101	180-422H	RV, 10KB	SP (071A)
VR102	180-422H	RV, 10KB	SP (071A)
VR301	180-422M	RV, 200KB	SP (071A)
VR302	180-422H	RV, 10KB	SP (071A)
VR401	180-422H	RV, 10KB	SP (071A)
VR402	180-422L	RV, 100KB	SP (071A)
VR502	180-422D	RV, 1KB	SP (071A)
VR801	180-422G	RV, 5KB	SP (071A)
FR401	180-305D	Fusable, 1.2 ohm 1W	SP (071A)
FR402	180-305G	Fusable, 1.5 ohm 1W	SP (111B)
FR801	180-286J	Fusable, 2.2 ohm 0.25W	SP (071A)
FR802	180-140A	Fusable, 1 ohm 0.25W $\pm 5\%$	SP (071A)
CAPACITOR			
C101	08200760	CK, 1000pF $\pm 10\%$	SP (071A)
C102	08200760	CK, 1000pF $\pm 10\%$	SP (071A)

LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
C103	08200972	CK, 0.01uF $+80\%$, -20%	SP (071A)
C105	02110323	CE, 470uF/16V	SP (071A)
C106	08110505	CE, 0.47uF	SP (071A)
C107	08300708	CC, 6pF $\pm 0.5P$	SP (071L)
C108	08200972	CK, 0.01uF $+80\%$, -20%	SP (071Q)
C109	08200972	CK, 0.01uF $+80\%$, -20%	SP (071Q)
C110	08300716	CC, 15pF $\pm 5\%$	SP (071A)
C111	08110317	CE, 47uF/16V	SP (071A)
C112	08200972	CK, 0.01uF $+80\%$, -20%	SP (071A)
C113	08110319	CE, 10uF/16V	SP (071A)
C114	08300728	CC, 47pF $\pm 5\%$	SP (071A)
C115	08200972	CK, 0.01uF $+80\%$, -20%	SP (071A)
C116	08200972	CK, 0.01uF $+80\%$, -20%	SP (071A)
C117	08200972	CK, 0.01uF $+80\%$, -20%	SP (071A)
C118	08300708	CC, 6pF $\pm 0.5P$	SP (071A)
C119	08110511	CE, 4.7uF	SP (071A)
C121	08110313	CE, 10uF/16V	SP (071A)
C122	08110511	CE, 4.7uF	SP (071A)
C123	02705336	MYL, 0.068uF/100V $\pm 10\%$	SP (071A)
C124	08110313	CE, 10uF/16V	SP (071A)
C125	08300736	CC, 100pF $\pm 5\%$	SP (071A)
C160	08110313	CE, 10uF/16V	SP (071A)
C161	02705331	MYL, 0.01uF/100V $\pm 10\%$	SP (071A)
C162	08110313	CE, 10uF/16V	SP (071L)
C163	08110311	CE, 4.7uF/16V	SP (071A)
C164	08110505	CE, 0.47uF	SP (071Q)
C165	08110319	CE, 10uF/16V	SP (071A)
C167	08110511	CE, 4.7uF	SP (071L)
C170	08200972	CK, 0.01uF $+80\%$, -20%	SP (071A)
C171	08200972	CK, 0.01uF $+80\%$, -20%	SP (071A)
C172	08200760	CK, 1000pF $\pm 10\%$	SP (071A)
C201	08110511	CE, 4.7uF	SP (082B)
C202	08110511	CE, 4.7uF	SP (082B)
C203	08110313	CE, 10uF/16V	SP (082B)
C204	08110511	CE, 4.7uF	SP (082B)
C205	08110511	CE, 4.7uF	SP (082B)
C206	08110317	CE, 47uF/16V	SP (071A)
C207	08110313	CE, 10uF/16V	SP (082B)
C250	08300724	CC, 33pF $\pm 5\%$	SP (071A)
C251	08300734	CC, 82pF $\pm 5\%$	SP (071L)
C301	181-155B	MYL, 0.33uF/100V $\pm 10\%$	SP (071A)
C302	181-155A	MYL, 0.22uF/100V $\pm 10\%$	SP (071A)
C303	02705331	MYL, 0.01uF/100V $\pm 10\%$	SP (071A)
C304	08110507	CE, 1uF	SP (071A)
C305	02110325	CE, 1000uF/16V	SP (071A)
C307	08300154	CC, 560pF $\pm 5\%$	SP (071A)
C308	08300730	CC, 56pF $\pm 5\%$	SP (071A)
C309	08200760	CK, 1000pF $\pm 10\%$	SP (071A)
C310	08110419	CE, 100uF/25V	SP (071A)
C311	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)
C312	02110421	CE, 220uF/25V	SP (071A)
C401	08110511	CE, 4.7uF	SP (071A)
C402	08110509	CE, 2.2uF	SP (071A)
C403	08300144	CC, 220pF $\pm 5\%$	SP (071A)
C404	08110315	CE, 22uF/16V	SP (071A)
C405	08110511	CE, 4.7uF	SP (071A)
C406	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)
C408	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)
C409	08110513	CE, 10uF	SP (071A)

LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS	LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
C410	181-057F	PE, 0.0027uF/100V	SP (071A)	C813	08110513	CE, 10uF	SP (071A)
C411	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)	C814	08201046	CK, 270pF/500V $\pm 10\%$	SP (082A)
C412	08110317	CE, 47uF/16V	SP (071A)	C815	02110321	CE, 220uF/16V	SP (082A)
C413	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)	C816	02110321	CE, 200uF/16V	SP (071A)
C414	02201048	CK, 330pF/500V $\pm 10\%$	SP (071A)	C817	08201046	CK, 270pF/500V $\pm 10\%$	SP (071A)
C415	02110421	CE, 220uF/25V	SP (071A)	C818	08110419	CE, 100uF/25V	SP (071A)
C416	181-131B	MPP, 0.0082uF/1.6KV	SP (111B)	C819	08201046	CK, 270pF/500V $\pm 10\%$	SP (071A)
C419	08110707	CE, 1uF/160V	SP (071A)	C820	02110713	CE, 10uF/160V	SP (071A)
C420	181-059W	PP, 0.39uF/200V	SP (111B)	C821	02110717	CE, 47uF/160V	SP (071A)
C421	02140422	CE, 330uF/25V	SP (071A)	C851	181-408B	CAPACITOR 0.15uF/16V	SP (071L)
C422	02140813	CE, 10uF/250V \leftarrow	SP (071A)	C852	181-408B	CAPACITOR 0.15uF/16V	SP (071L)
C423	08201046	CK, 270pF/500V $\pm 10\%$	SP (071A)	C854	181-157B	ECK-DNS, 0.0022uF	SP (071A)
C424	08201046	CK, 270pF/500V $\pm 10\%$	SP (071A)	COIL AND TRANSFORMER			
C425	08110417	CE, 47uF/25V	SP (071A)	J70	150-109C	COIL, PEAKING SPL4.7uH	SP (071A)
C426	08201046	CK, 270pF/500V $\pm 10\%$	SP (071A)	L101	150-489A	COIL, SAW MATCHING	SP (071A)
C427	08110417	CE, 47uF/25V	SP (071A)	L102	150-327N	COIL, APC TRAP	SP (071L)
C428	08201046	CK, 270pF/500V $\pm 10\%$	SP (071A)	L103	150-327M	COIL, VIF	SP (071A)
C429	08110515	CE, 22uF	SP (071A)	L104	150-327Q	COIL, AFT	SP (071Q)
C431	181-059D	PP, 0.047uF/200V	SP (071A)	L105	150-109G	COIL, PEAKING 10uH	SP (071A)
C432	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071Q)	L106	150-109N	COIL, PEAKING 15uH	SP (071A)
C433	02705336	MYL, 0.088uF/100V $\pm 10\%$	SP (071A)	L160	150-167D	COIL, CHOKE 1.0uH	SP (071L)
C501	08110317	CE, 47uF/16V	SP (071A)	L250	150-109G	COIL, PEAKING 10uH	SP (071L)
C502	08200972	CK, 0.01uF +80%, -20%	SP (071A)	L401	150-1096	COIL, PEAKING 6800uH $\pm 5\%$	SP (071A)
C503	08110503	CE, 0.22uF	SP (071A)	L402	150-224C	COIL, LINEARITY	SP (111B)
C504	08200972	CK, 0.01uF +80%, -20%	SP (071A)	L403	125-022B	CORE, FERRITE SM-2CRHW 3.5 x 12 x 1B	NSP (071A)
C505	08110505	CE, 0.47uF	SP (071A)	L501	150-109N	COIL, PEAKING 15uH	SP (071A)
C506	08110509	CE, 2.2uF	SP (071A)	L502	150-163G	COIL, MATRIX ADJ	SP (071A)
C507	08110509	CE, 2.2uF	SP (071A)	L801	04040009	PL 0.47uH $\pm 10\%$	SP (071A)
C508	08110511	CE, 4.7uF	SP (071A)	L804	150-109G	COIL, PEAKING SPL 10uH	SP (082A)
C509	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)	L805	150-235E	HOR. CHOKE COIL, 1MH	SP (071A)
C510	08110313	CE, 10uF/16V	SP (071A)	L851	150-151A	COIL, LINE FILTER	SP (071L)
C511	08110507	CE, 1uF	SP (071A)	DL501	175-013A	DELAY LINE 1H SD-11P1D	SP (071A)
C512	08110507	CE, 1uF	SP (071A)	DL502	150-377G	COIL, DELAY LINE	SP (071A)
C513	08110507	CE, 1uF	SP (071A)	T401	151-116B	TRANS, H. DRIVE	SP (111B)
C514	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)	T402	154-125B	FBT	SP (071B)
C515	08110509	CE, 2.2uF	SP (071A)	T801	151-305A	TRANS, SMPS	SP (071A)
C516	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)	DIODE			
C517	181-069B	CAPACITOR, TRIMMER	SP (071A)	D101	06200226	1N4148TA	SP (071A)
C518	02705331	MYL, 0.01uF/100V $\pm 10\%$	SP (071A)	D102	06200226	1N4148TA	SP (071A)
C519	02705331	MYL, 0.01uF/100V $\pm 10\%$	SP (071A)	D201	06200226	1N4148TA	SP (082B)
C601	08110511	CE, 4.7uF	SP (071A)	D203	06200226	1N4148TA	SP (082B)
C602	08110417	CE, 47uF/25V	SP (071A)	D204	06200226	1N4148TA	SP (082B)
C603	02705331	MYL, 0.01uF/100V $\pm 10\%$	SP (071A)	D209	06200226	1N4148TA	SP (082B)
C604	08110313	CE, 10uF/16V	SP (071A)	D210	06200226	1N4148TA	SP (082B)
C605	02110421	CE, 220uF/25V	SP (071A)	D211	06200226	1N4148TA	SP (082B)
C606	02705337	MYL, 0.1uF/100V $\pm 10\%$	SP (071A)	D212	06200226	1N4148TA	SP (082B)
C607	02110323	CE, 470uF/16V	SP (071A)	D213	06200226	1N4148TA	SP (082B)
C801	08201060	CK, 0.001uF/500V $\pm 10\%$	SP (071A)	D301	06220070	1N4003TA	SP (071A)
C802	08201060	CK, 0.001uF/500V $\pm 10\%$	SP (071A)	D401	06200226	1N4148TA	SP (082B)
C803	08201060	CK, 0.001uF/500V $\pm 10\%$	SP (071A)	D402	06220070	1N4003TA	SP (071A)
C804	08201060	CK, 0.001uF/500V $\pm 10\%$	SP (071A)	D403	06200363	TVR-06J	SP (071A)
C805	181-124A	CE, 200uF/400V	SP (071L)	D404	06200363	TVR-06J	SP (071A)
C806	08110313	CE, 10uF/16V	SP (071A)	D405	06200418	DSR1005 1A/600V	SP (071A)
C807	08110507	CE, 1uF	SP (071A)	D406	06200363	TVR-06J	SP (071A)
C808	181-057Q	PE, 0.0082uF/100V	SP (071A)	D407	167-006B	IC, KA33V	SP (071Q)
C809	08300736	CC, 100pF $\pm 5\%$	SP (071A)				
C810	02706627	MYL, 0.0047uF/100V	SP (071A)				
C811	181-131E	MPP, 0.0022uF/2KV	SP (071A)				
C812	08110319	CE, 10uF/16V	SP (071A)				

LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
D409	06200226	1N4148TA	SP (082A)
D552	06200226	1N4148TA	SP (071A)
D553	06200226	1N4148TA	SP (071A)
D801	06220225	1N4005TA	SP (071A)
D802	06220225	1N4005TA	SP (071A)
D803	06220225	1N4005TA	SP (071A)
D804	06220225	1N4005TA	SP (071A)
D805	06200363	TVR-06J	SP (071A)
D806	06200363	TVR-06J	SP (071A)
D808	06200363	TVR-06J	SP (071A)
D809	06220070	1N4003TA	SP (071A)
D810	06200363	TVR-06J	SP (082A)
D811	06200363	TVR-06J	SP (071A)
D812	06220202	RGP15J	SP (071A)
TRANSISTOR			
Q160	06120025	KTC388A	SP (071A)
Q201	06120168	KTC1815-O	SP (082A)
Q202	06120168	KTC1815-O	SP (082A)
Q401	06120172	KTC1959-Y	SP (082A)
Q402	06120225	KTC2230A	SP (071A)
Q403	06130134	2SD1555	SP (H-OUT)
Q501	06120168	KTC1815-O	SP (082B)
Q801	06120218	KTC2482	SP (071A)
Q802	06120291	BU508DF	SP (SMPS)
IC			
IC101	06300616	IC, GL3120	SP (071H)
IC201	06300170	IC, TEA1014	SP (082B)
IC301	06300360	IC, LA7830	SP (071A)
IC401	06300381	IC, TDA2579	SP (071A)
IC402	06300218	IC, GL7812	SP (H-OUT)
IC501	06300754	TDA-3560(TFK)	SP (071A)
IC601	06300386	IC, TDA2006	SP (S-OUT)
IC801	06300323	IC, TDA4601	SP (071A)
MISCELLANEOUS			
TUNER	113-095G	VTSA-1SDH	SP (071A)
SW301	140-111A	SWITCH, SVC P12T21	SP (071A)
SW302	140-111A	SWITCH, SVC P12T21	SP (071A)
X501	156-007A	OSC. X-TAL 8.86MHz	SP (071A)
TH851	163-012A	THERMISTOR, PTH 451A02 BG180M290	SP (071A)
F851	131-027A	FUSE, GLASS TUBE	SP (071L)
Z101	166-031B	TRAP, CERAMIC TPS 5.5MB	SP (071L)
Z102	166-002D	FILTER, CERAMIC SFE5.5MB	SP (071L)
Z103	166-032D	FILTER, CERAMIC CDA 5.5MD	SP (071L)
ZF101	166-089A	FILTER, SAW OFWG1303C	SP (071L)
P101	366-921L	WAFER IL-G12	SP (071A)
P104	366-921B	WAFER IL-G3	SP (071Q)
P451	366-921B	WAFER IL-G3	SP (071A)
P501	366-921F	WAFER IL-G7	SP (071A)
P502	366-921E	WAFER IL-G6	SP (071A)
P601	366-921B	WAFER IL-G3	SP (071A)
P602	366-921B	WAFER IL-G3	SP (071A)
RL401	141-005B	RELAY, VS12MB	SP (082A)
SCART	381-090A	21 PIN PERI-SOCKET	SP (082A)
SOCKET			

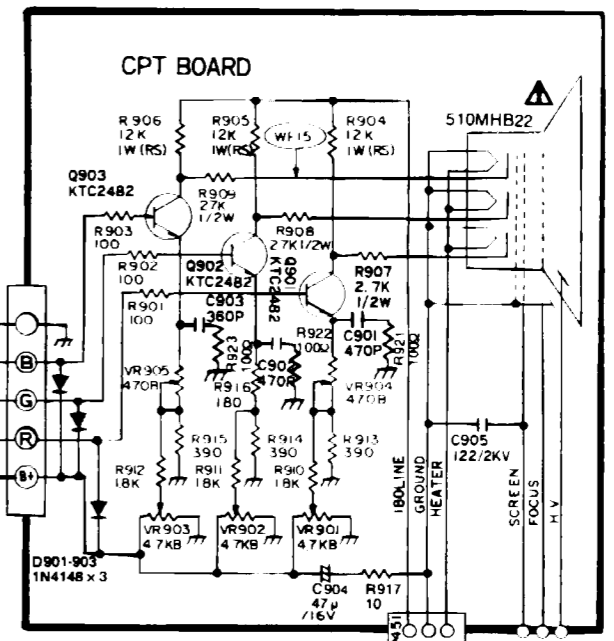
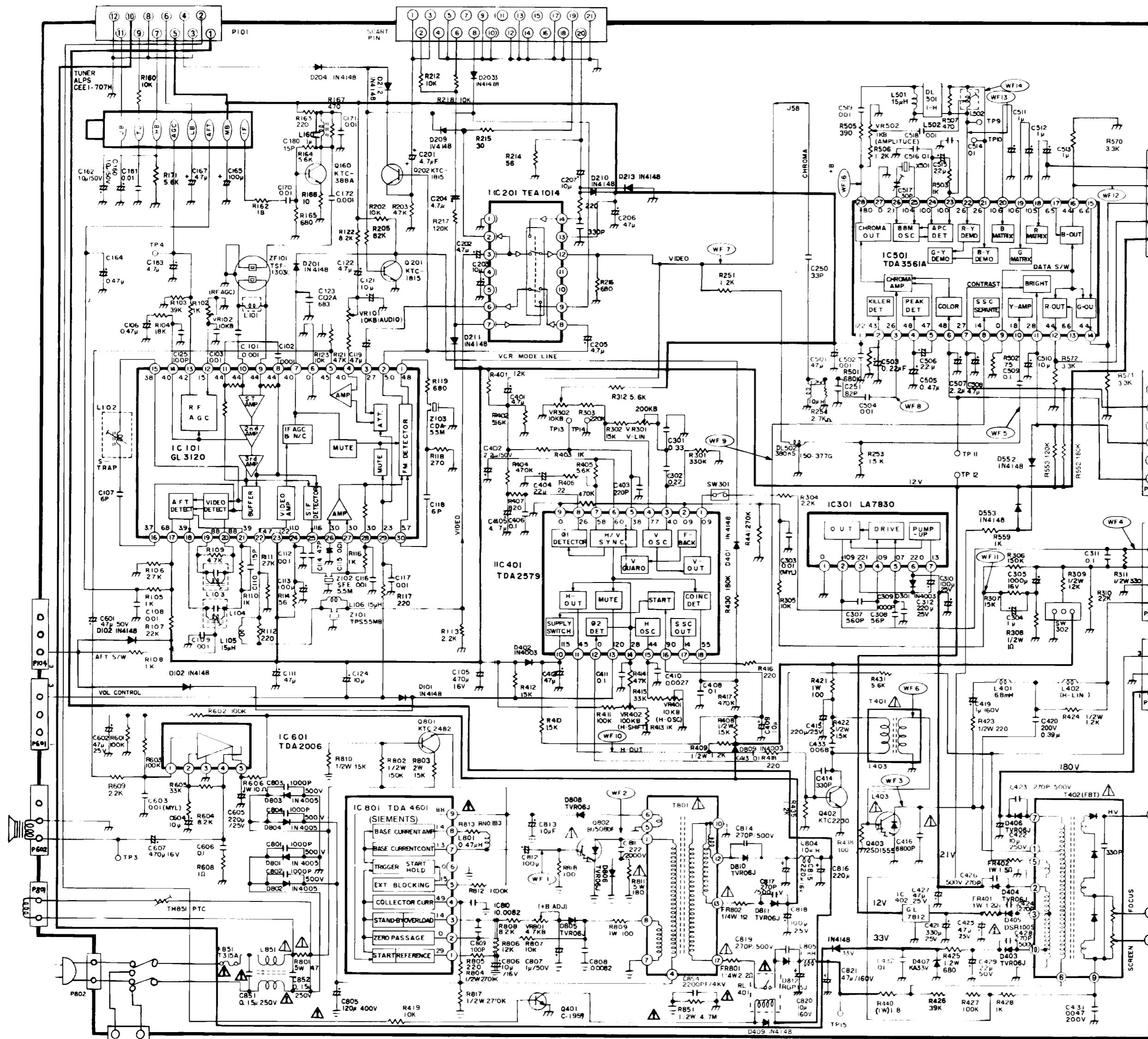
LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
3. CPT P.C. BOARD (110-A31Q)			
RESISTOR			
R901	01157073	RD, 100 ohm	SP
R902	01157073	RD, 100 ohm	SP
R903	01157073	RD, 100 ohm	SP
R904	01332123	RS, 12K ohm 1W	SP
R905	01332123	RS, 12K ohm 1W	SP
R906	01332123	RS, 12K ohm 1W	SP
R910	01157103	RD, 1.8K ohm	SP
R911	01157103	RD, 1.8K ohm	SP
R912	01157103	RD, 1.8K ohm	SP
R913	01157087	RD, 390 ohm	SP
R914	01157087	RD, 390 ohm	SP
R915	01157087	RD, 390 ohm	SP
R916	01157079	RD, 180 ohm	SP
R917	01157049	RD, 10 ohm	SP
R921	01157073	RD, 100 ohm	SP
R922	01157073	RD, 100 ohm	SP
R923	01157073	RD, 100 ohm	SP
VR901	180-422G	RV, 5KB	SP
VR902	180-422G	RV, 5KB	SP
VR903	180-422G	RV, 5KB	SP
VR904	180-422C	RV, 500B	SP
VR905	180-422C	RV, 500B	SP
CAPACITOR			
C901	02300154	CC, 560pF $\pm 5\%$	SP
C902	02300154	CC, 560pF $\pm 5\%$	SP
C903	02300152	CC, 470pF $\pm 5\%$	SP
C904	08110317	CE, 47uF/16V	SP
C905	02201561	CK, 0.0012uF/2KV $\pm 10\%$	SP
DIODE			
D901	06200226	1N4148TA	SP
D902	06200226	1N4148TA	SP
D903	06200226	1N4148TA	SP
TRANSISTOR			
Q901	06120218	KTC2482	SP
Q902	06120218	KTC2482	SP
Q903	06120218	KTC2482	SP
MISCELLANEOUS			
P901	366-009B 381-094C	PIN PLUG SOCKET, PCS-624	SP SP
4. TUNING P.C. BOARD (110-E89A)			
RESISTOR			
R1	01157137	RD, 47K ohm	SP
R2	01157137	RD, 47K ohm	SP
R3	01157137	RD, 47K ohm	SP
R4	01157121	RD, 10K ohm	SP
R5	01154085	RD, 330 ohm 1/2W	SP
R7	01157133	RD, 33K ohm	SP
R8	01157121	RD, 10K ohm	SP
R9	01157155	RD, 270K ohm	SP
R10	01157117	RD, 6.8K ohm	SP

LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
R11	01157131	RD, 27K ohm	SP
R12	01157131	RD, 27K ohm	SP
R13	01157139	RD, 56K ohm	SP
R14	01157125	RD, 15K ohm	SP
R15	01157103	RD, 1.8K ohm	SP
R16	01157121	RD, 10K ohm	SP
R17	01314069	RS, 68 ohm 1W	SP
R18	01157093	RD, 680 ohm	SP
R19	01157121	RD, 10K ohm	SP
R20	01157129	RD, 22K ohm	SP
R21	01157107	RD, 2.7K ohm	SP
R22	01157107	RD, 2.7K ohm	SP
R23	01157129	RD, 22K ohm	SP
R24	01157129	RD, 22K ohm	SP
R25	01157139	RD, 56K ohm	SP
R26	01157117	RD, 6.8K ohm	SP
R27	01157109	RD, 3.3K ohm	SP
R28	01157137	RD, 47K ohm	SP
R29	01157097	RD, 1K ohm	SP
R30	01157121	RD, 10K ohm	SP
R31	01157111	RD, 3.9K ohm	SP
R32	01157111	RD, 3.9K ohm	SP
R33	01157137	RD, 47K ohm	SP
R34	01157121	RD, 10K ohm	SP
R35	01157121	RD, 10K ohm	SP
R36	01157121	RD, 10K ohm	SP
R37	01157121	RD, 10K ohm	SP
R38	01157121	RD, 10K ohm	SP
R39	01157121	RD, 10K ohm	SP
R48	01157121	RD, 10K ohm	SP
R49	01157121	RD, 10K ohm	SP
R50	01157121	RD, 10K ohm	SP
R52	01157097	RD, 1K ohm	SP
R53	01157097	RD, 1K ohm	SP
R54	01157097	RD, 1K ohm	SP
R55	01157097	RD, 1K ohm	SP
R56	01157121	RD, 10K ohm	SP
R57	01157121	RD, 10K ohm	SP
R61	01157073	RD, 100 ohm	SP
R62	01157073	RD, 100 ohm	SP
CAPACITOR			
C1	08110317	CE, 47uF/16V	SP
C2	08110507	CE, 1uF	SP
C3	08300150	CC, 390pF ± 5%	SP
C5	02705337	MYL, 0.1uF/100V ± 10%	SP
C6	02705337	MYL, 0.1uF/100V ± 10%	SP
C7	08110507	CE, 1uF	SP
C8	08200972	CK, 0.01uF +80% -20%	SP
C9	08110315	CE, 22uF/16V	SP
C10	08110511	CE, 4.7uF	SP
C11	08110507	CE, 1uF	SP
C12	08110507	CE, 1uF	SP
C13	08110507	CE, 1uF	SP
C14	08110511	CE, 4.7uF	SP
C15	08110503	CE, 0.22uF	SP
C16	08110317	CE, 47uF/16V	SP
C17	02705331	MYL, 0.01uF/100V ± 10%	SP
C19	08200760	CK, 1000pF ± 10%	SP

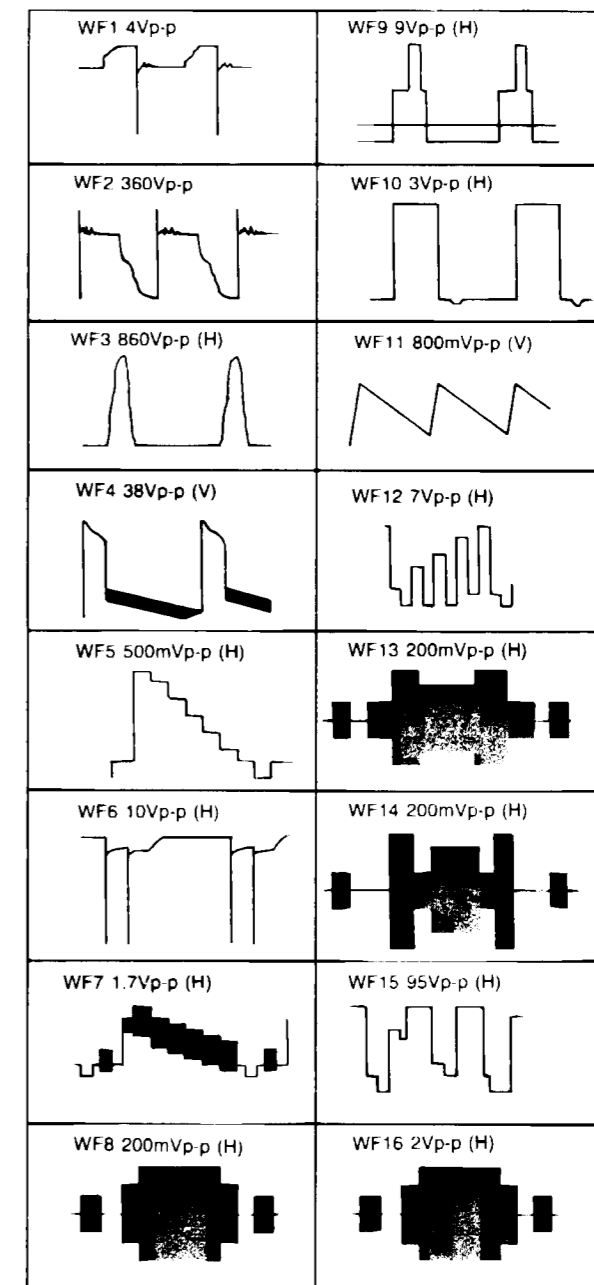
LOCATION NO.	PART NO.	DESCRIPTION	RE-MARKS
C20	08200760	CK, 1000pF ± 10%	SP
C21	08200760	CK, 1000pF ± 10%	SP
C22	08200760	CK, 1000pF ± 10%	SP
C23	08110507	CE, 1uF	SP
C24	08200760	CK, 1000pF ± 10%	SP
C25	08200760	CK, 1000pF ± 10%	SP
C26	08200760	CK, 1000pF ± 10%	SP
C27	08200760	CK, 1000pF ± 10%	SP
C30	08200760	CK, 1000pF ± 10%	SP
C31	08200760	CK, 1000pF ± 10%	SP
C33	02110323	CE, 470uF/16V	SP
DIODE			
D1	06200226	1N4148TA	SP
D2	06200226	1N4148TA	SP
D3	06200226	1N4148TA	SP
D4	06200226	1N4148TA	SP
D7	06200226	1N4148TA	SP
ZD1	06220228	Z5.6 BMTA	SP
ZD2	06220300	Z20 BMTA	SP
ZD3	06220228	Z5.6 BMTA	SP
ZD4	06220234	Z9.1 BMTA	SP
TRANSISTOR			
Q1	06100083	KTA1015-O	SP
Q2	06100083	KTA1015-O	SP
Q3	06100083	KTA1015-O	SP
Q4	06120168	KTA1815-O	SP
Q5	06100083	KTA1015-O	SP
Q6	06120168	KTA1815-O	SP
Q7	06120168	KTA1815-O	SP
Q8	06120168	KTA1815-O	SP
Q9	06100083	KTA1015-O	SP
Q10	06100083	KTA1015-O	SP
Q11	06120173	KTC2120-O	SP
Q12	06120213	KTC2236A-O	SP
Q14	06100083	KTA1015-O	SP
IC			
IC1	06300728	IC, SAA1293 <i>MICRO PROC.</i>	SP
IC2	06300729	IC, MDA2062 <i>EPROM</i>	SP
MISCELLANEOUS			
XTL1	156-008B	X-TAL 4000MHz HC18/U	SP
P1	366-921E	WAFER IL-G6	SP
P2	366-921J	WAFER IL-G10	SP
P3	366-921B	WAFER IL-G3	SP
P4	366-921C	WAFER IL-G4	SP
P5	366-921B	WAFER IL-G3	SP
5. MISCELLANEOUS			
	450-018A	ADAPTER, ANT	SP
	150-276B	COIL, DEGAUSSING	SP
	132-204C	ANT ASSY, ROD	SP
	120-035H	SPEAKER, 090A21-864K14	SP
	140-134B	SWITCH, MAIN 70060-014	SP
	174-102B	CORD, POWER	SP
	105-045H	TRANSMITTER, ASSY	SP
CPT	112-257A	150MHB22TC 03S7BE	SP
	140-237D	SWITCH ASSY, CONTROL	SP
	106-031D	PRE-AMP ASSY	SP

(MEMORY)

CIRCUIT DIAGRAM (PC-08X8)



NOTICE
 Since this is a basic circuit diagram,
 the value of components and some partial connection
 are subject to be changed for improvement.



For components, refer to column 1, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000.

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

- Resistance is shown in ohm, k=1,000, M=1,000,000
- Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in mfd and the values more than 1 in pF
- Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μ H, and the values less than 1 in H.

OBSERVATION OF VOLTAGES AND WAVEFORMS

- Voltages read with V1VM from point shown to chassis ground, line voltage 180-270V volts, colour bar signal
- Voltages reading may vary $\pm 20\%$
- The schematic shown is representative only
- All waveforms are taken using a wide band oscilloscope and a low capacity probe

- Check FINE TUNING, AGC, BRIGHTNESS, CONTRAST and COLOUR controls for best picture, make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS control is almost in maximum position.
- Waveforms are taken using a standard colour bar signal.

VS TUNING SYSTEM SCHEMATIC DIAGRAM

