

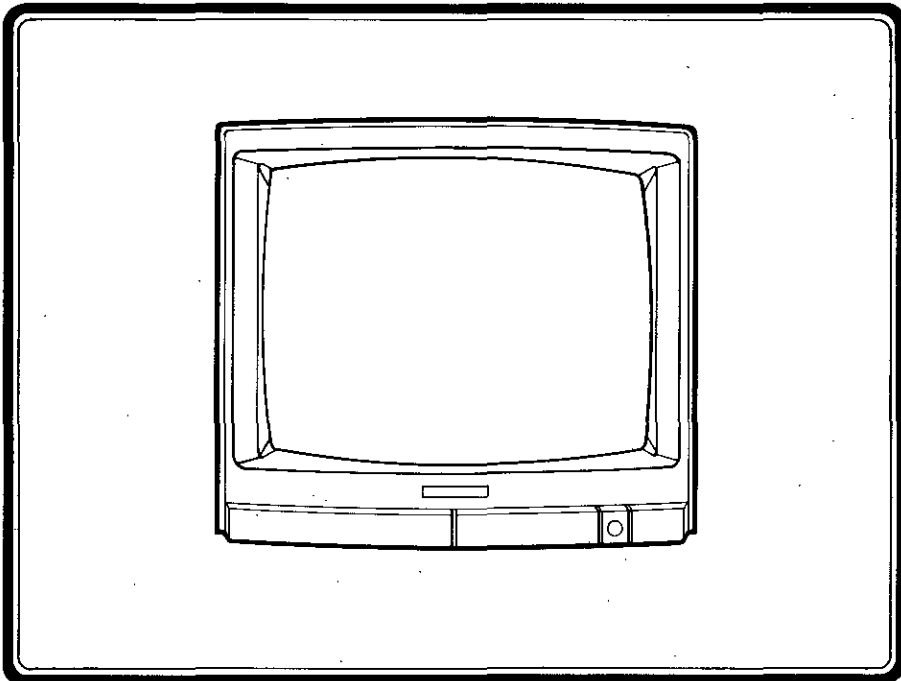
FRONT COUNTER

COLOUR TV SERVICE MANUAL

MASTER COPY
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

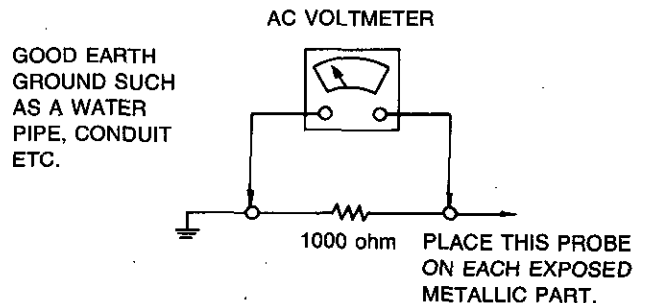
1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 24 ± 1.5 kV at High beam current (maximum brightness) under specified power source. The 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

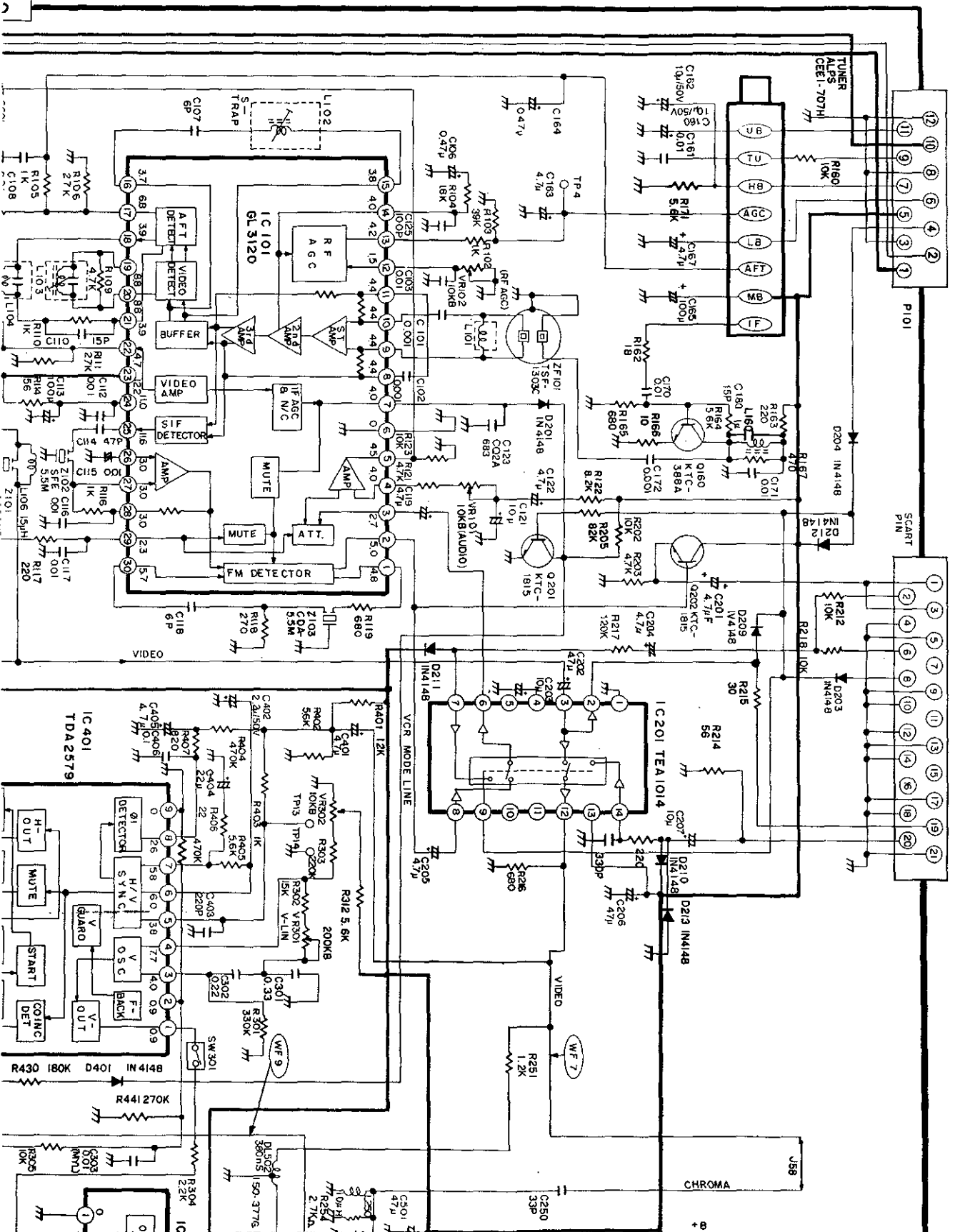
ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity:

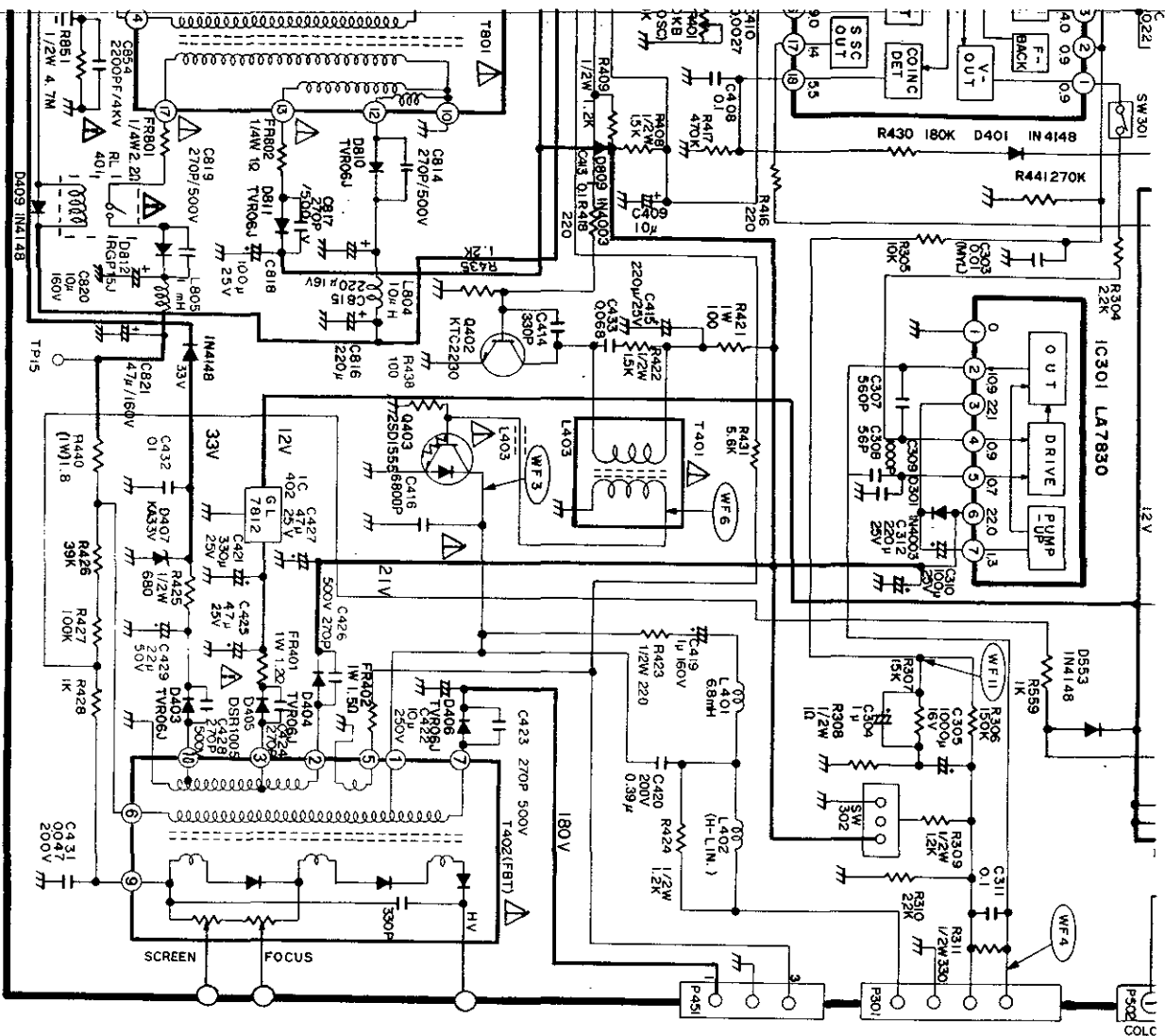
1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential 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.

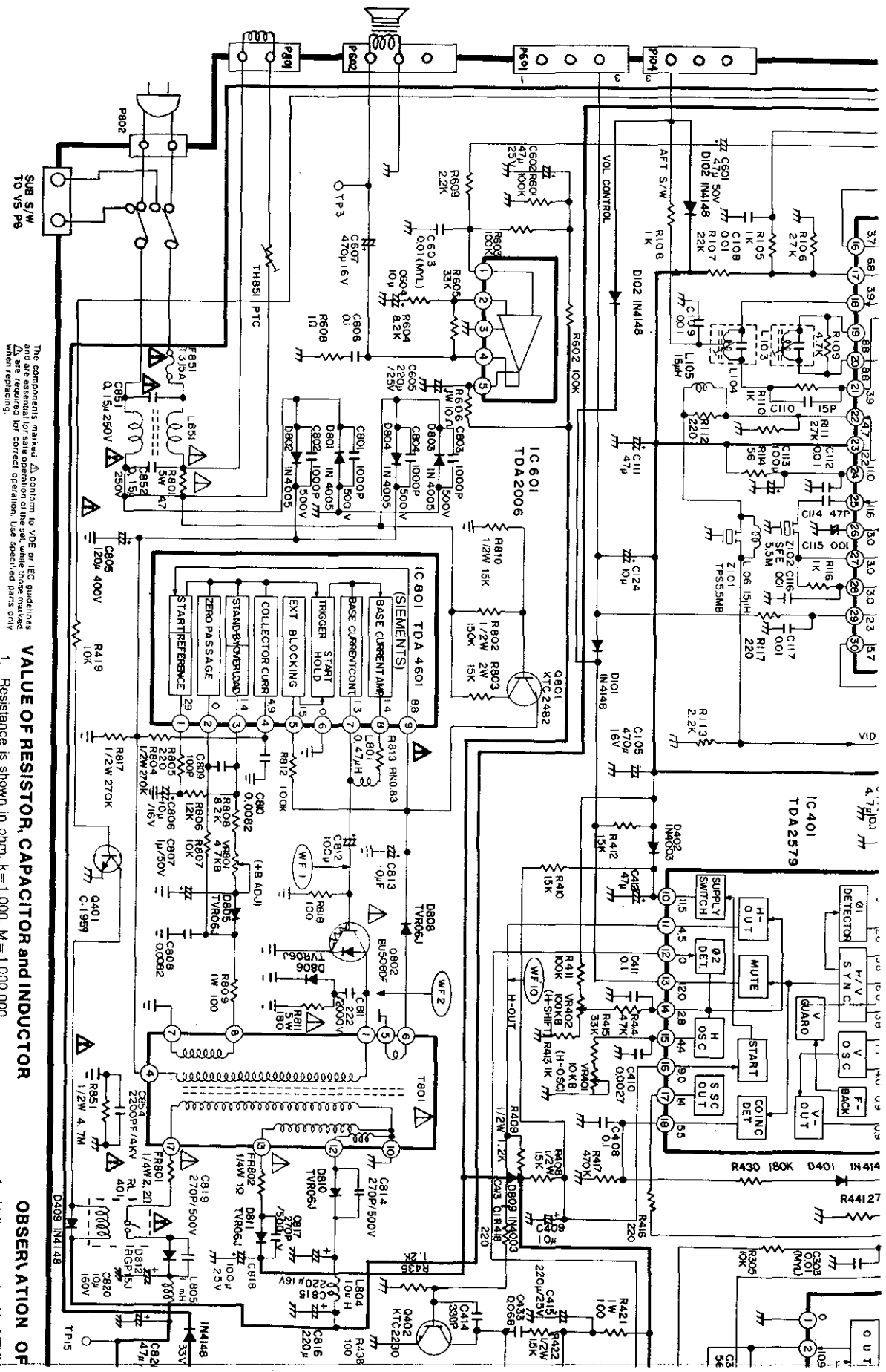
CIRCUIT DIAGRAM





- 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) |
| | WF2 360Vp-p |
| | WF3 860Vp-p (H) |
| | WF4 38Vp-p (V) |
| | WF5 500mVp-p (H) |
| | WF6 10Vp-p (H) |
| | WF7 1.7Vp-p (H) |
| | WF8 200mVp-p (H) |
| | WF9 2Vp-p (H) |
| | WF11 800mVp-p (V) |
| | WF12 7Vp-p (H) |
| | WF13 200mVp-p (H) |
| | WF14 200mVp-p (H) |
| | WF15 95Vp-p (H) |
| | WF16 2Vp-p (H) |



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 otherwise 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

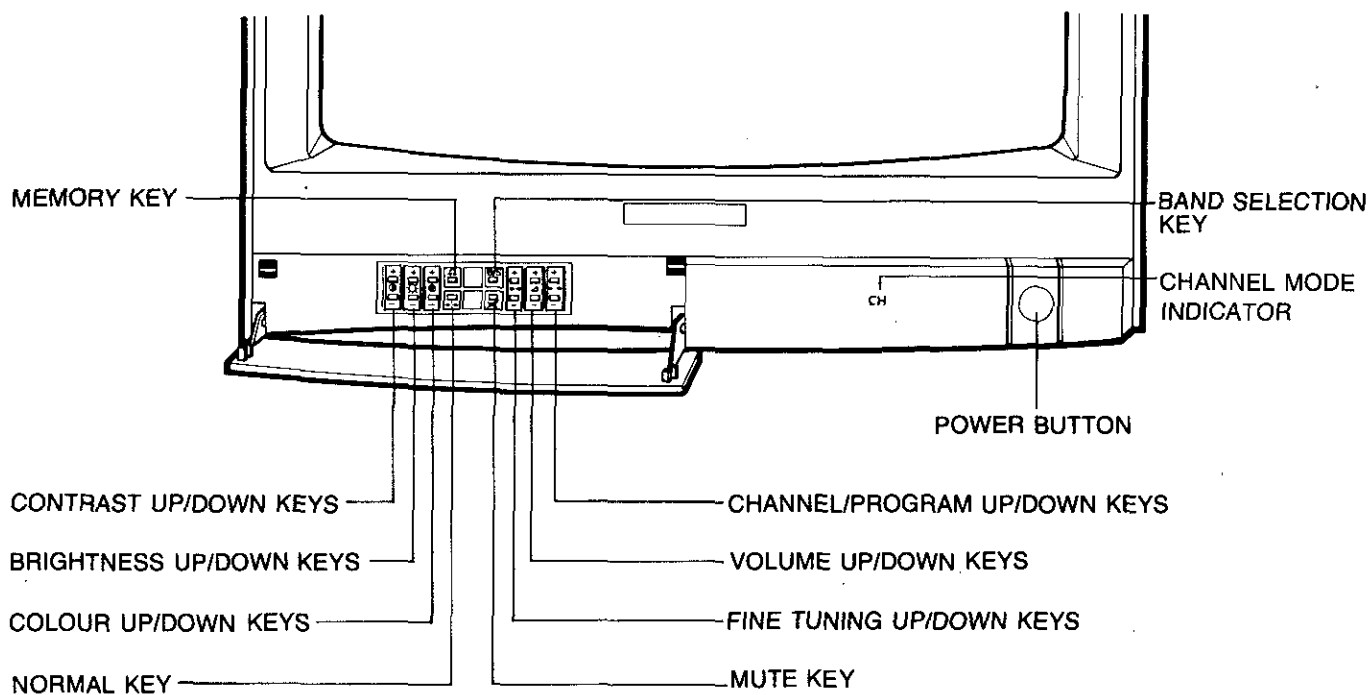


Figure 1

BACK

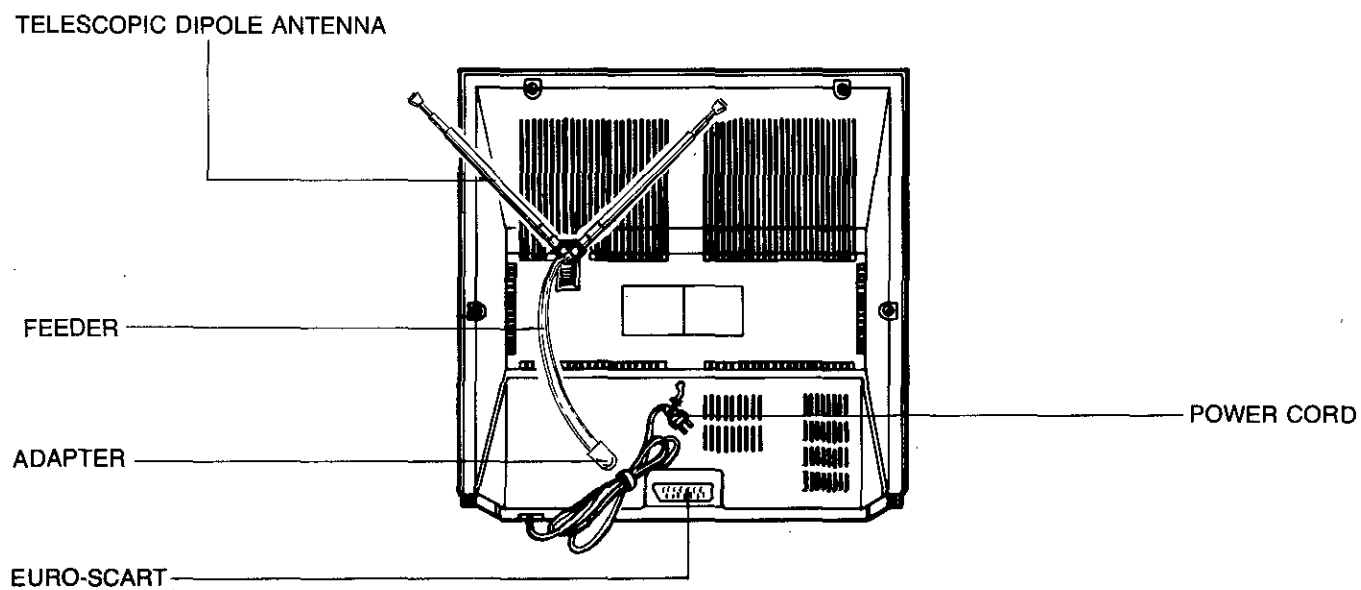
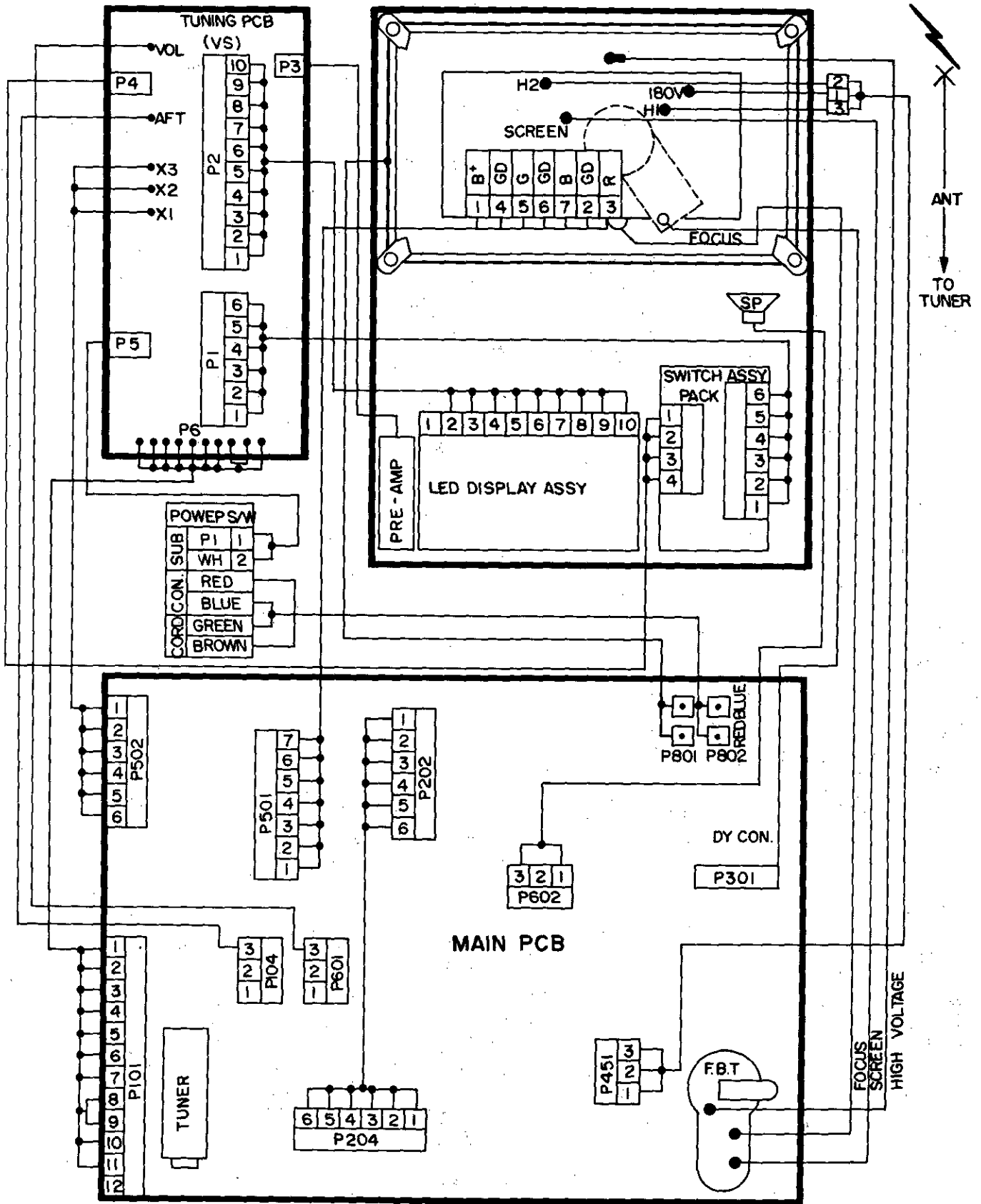


Figure 2

WIRING DIAGRAM

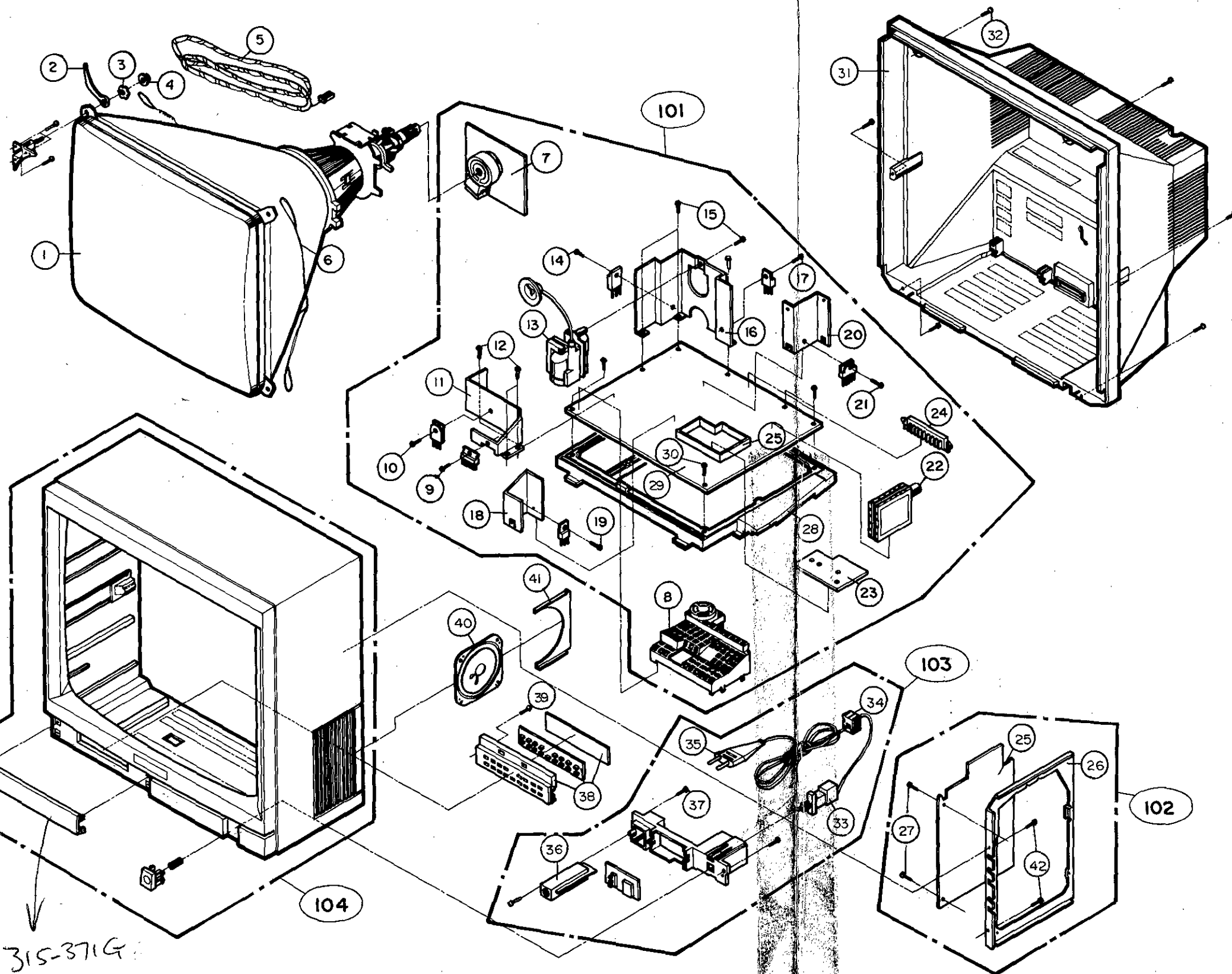


COMPONENT LOCATION GUIDE

(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 |

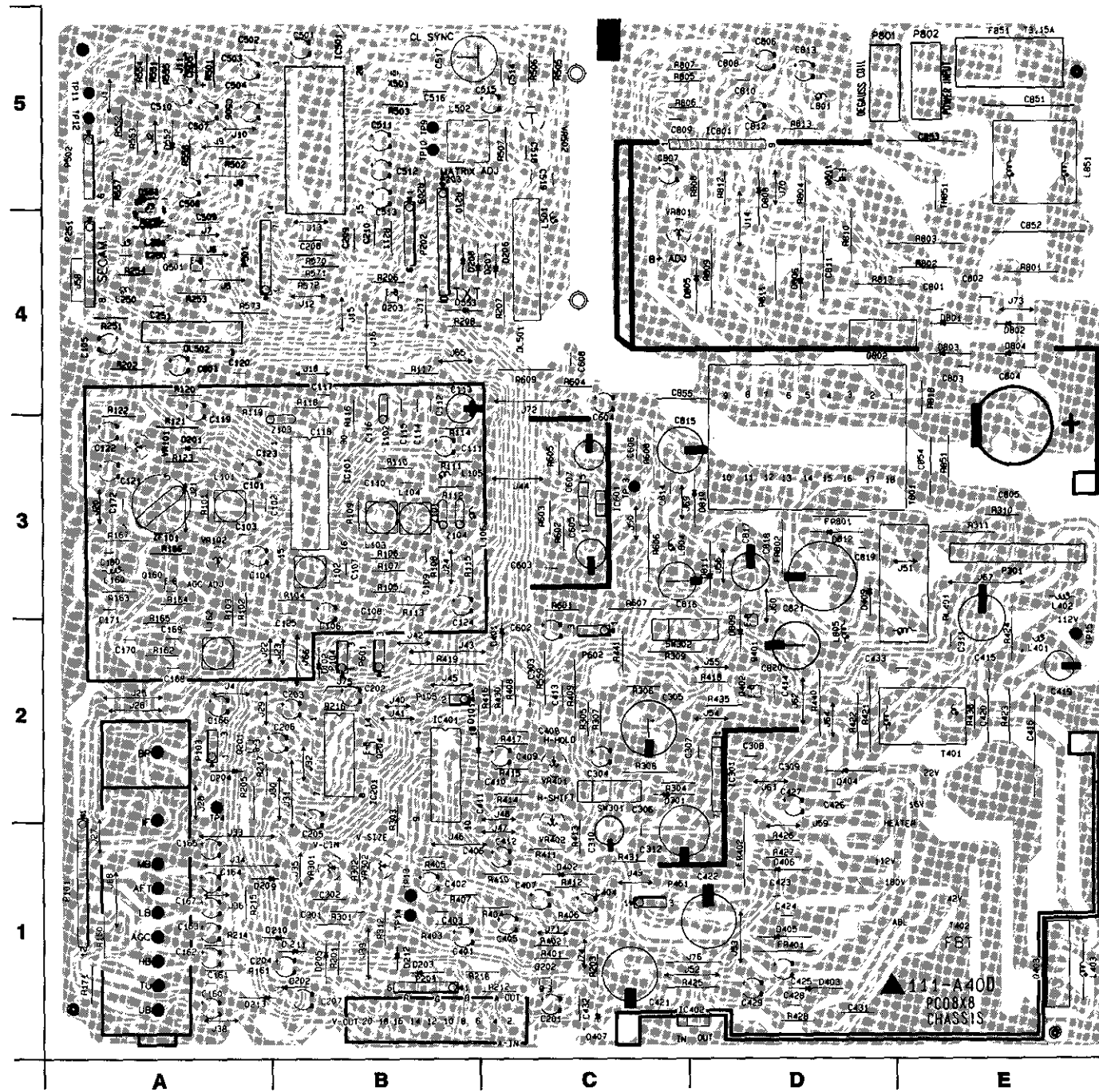
SUB ASSY

| NO. | DESCRIPTION | Q'TY | PART NO. | REMARKS |
|-----|--------------------|------|----------|---------|
| 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 |

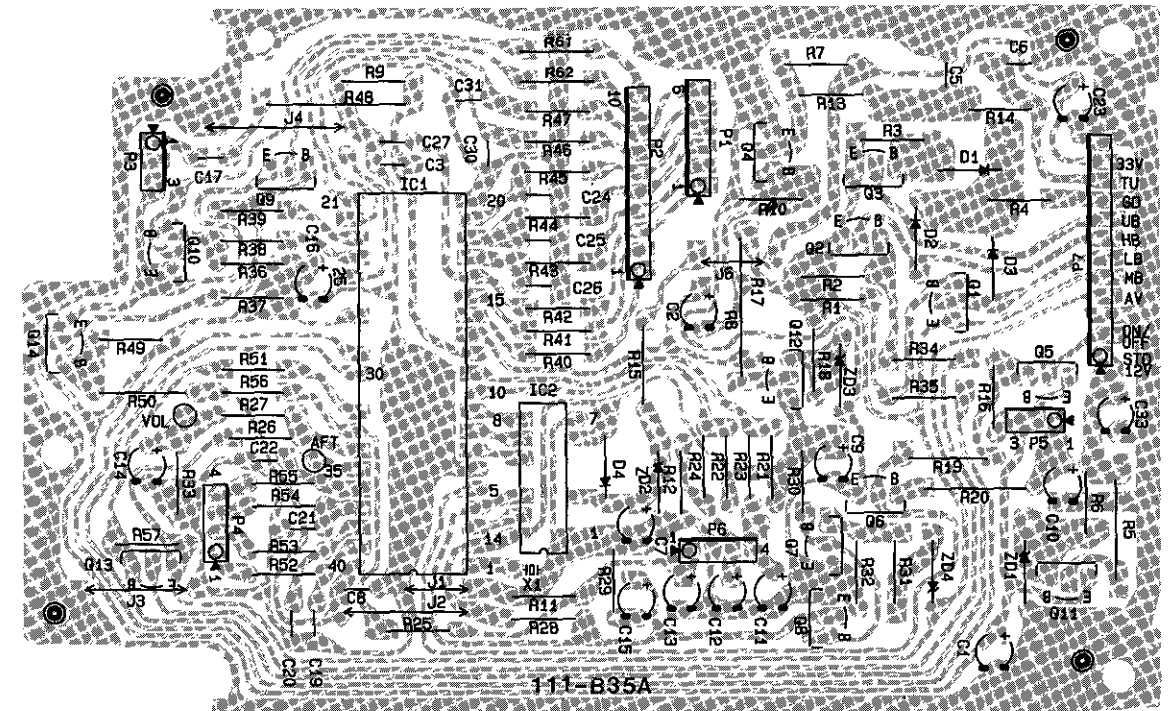
315-371G

PRINTED CIRCUIT BOARD

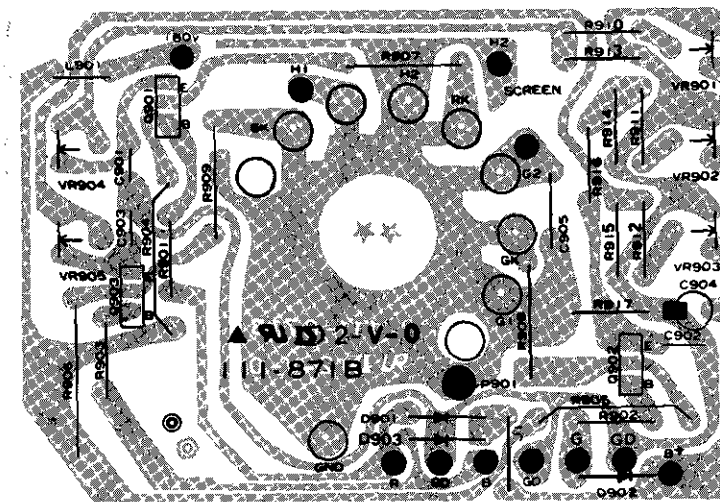
MAIN P.C. BOARD (COMPONENT SIDE)



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 | Fusible, 1.2 ohm 1W | SP (071A) |
| FR402 | 180-305G | Fusible, 1.5 ohm 1W | SP (111B) |
| FR801 | 180-286J | Fusible, 2.2 ohm 0.25W | SP (071A) |
| FR802 | 180-140A | Fusible, 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) |

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

| 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 | | | |

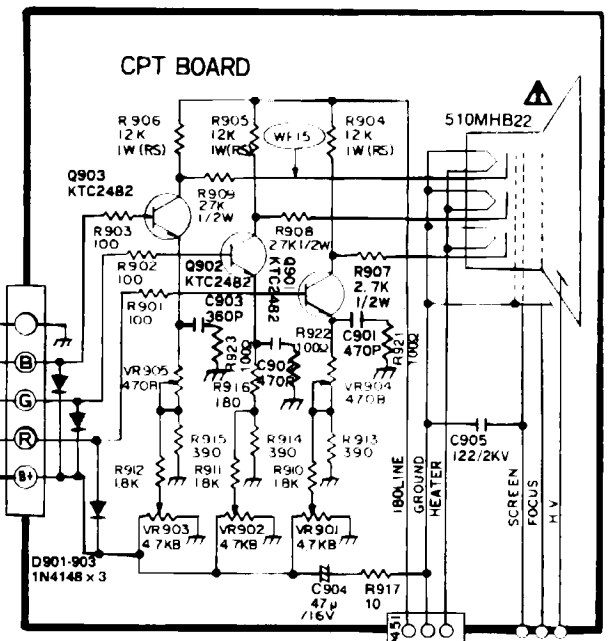
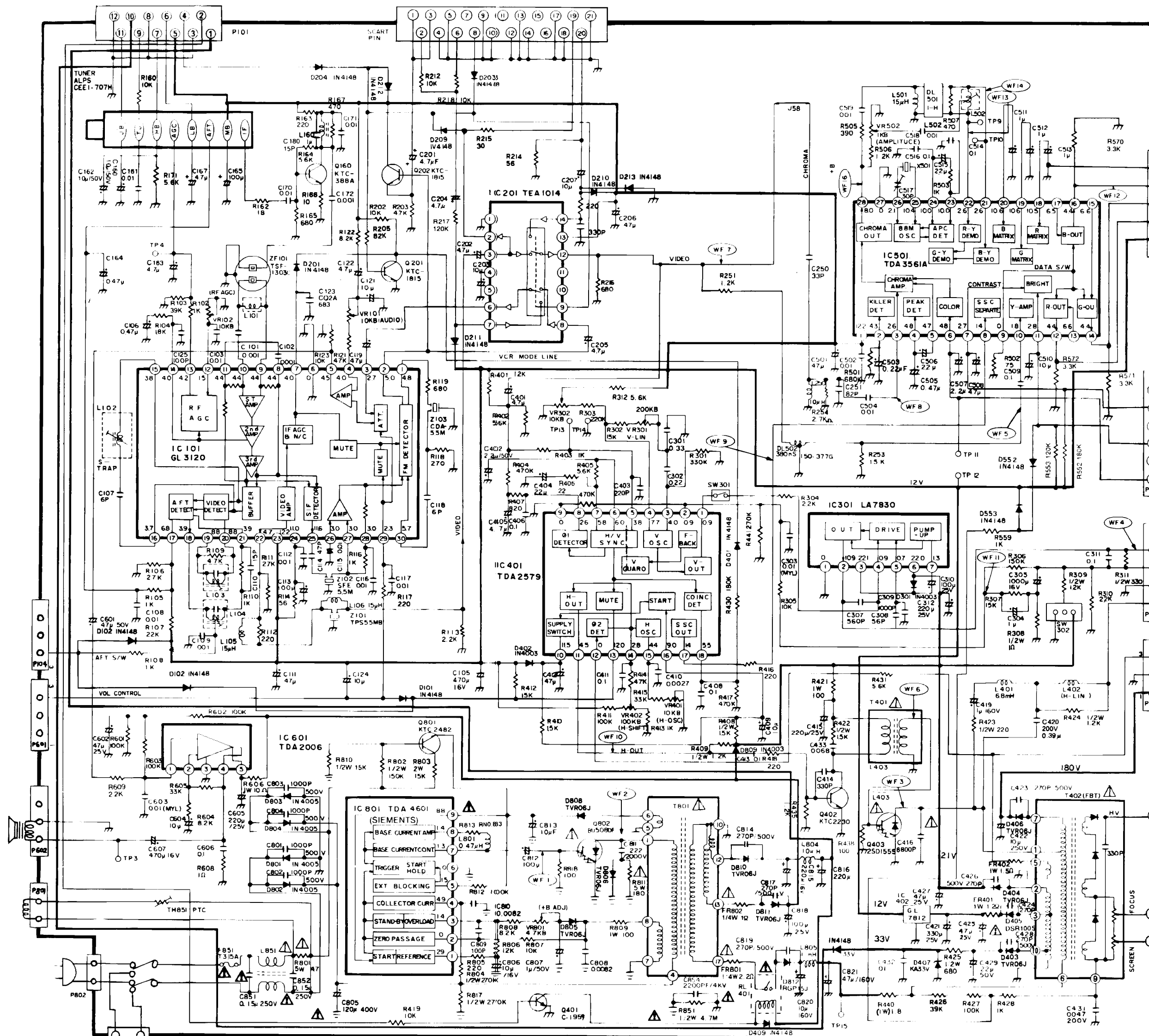
| LOCATION NO. | PART NO. | DESCRIPTION | RE-MARKS |
|--------------------------------|----------|------------------------|----------|
| 3. CPT P.C.BOARD (110-A31Q) | | | |
| RESISTOR | | | |
| R901 | 01157073 | RD, 100 ohm | SP |
| R902 | 01157073 | RD, 100 ohm | SP |
| R903 | 01157073 | RD, 100 ohm | 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 ± 5% | SP |
| C902 | 02300154 | CC, 560pF ± 5% | SP |
| C903 | 02300152 | CC, 470pF ± 5% | SP |
| C904 | 08110317 | CE, 47uF/16V | SP |
| C905 | 02201561 | CK, 0.0012uF/2KV ± 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 | PIN PLUG | SP |
| | 381-094C | SOCKET, PCS-624 | 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 |

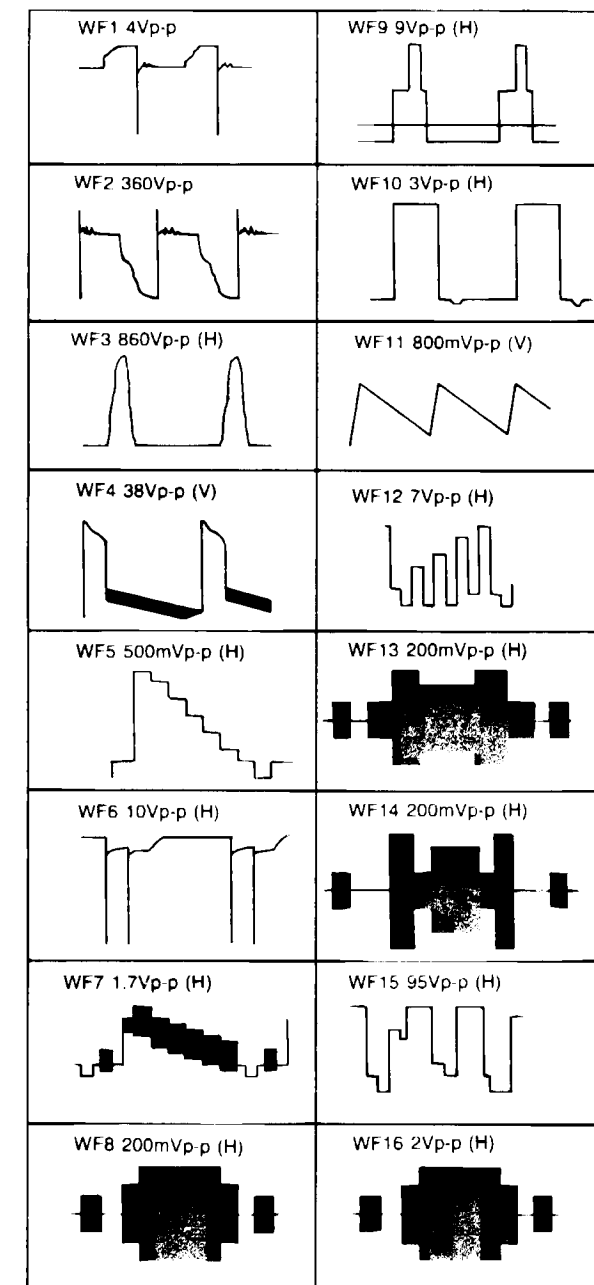
| LOCATION NO. | PART NO. | DESCRIPTION | RE-MARKS |
|-------------------------|----------|--------------------------------|----------|
| C20 | 08200760 | CK, 1000pF ± 10% | SP |
| C21 | 08200760 | CK, 1000pF ± 10% | SP |
| C22 | 08200760 | CK, 1000pF ± 10% | SP |
| C23 | 08110507 | CE, 1uF | SP |
| 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>E.PROM</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, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 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

