

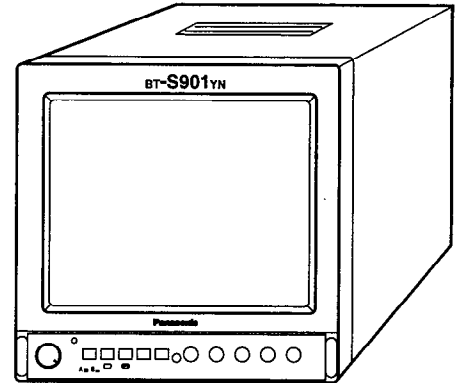
Service Manual

Simplified

Color Video Monitor

BT-S901YN

Chassis No. KMX-F903D



The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

Please file and use this simplified manual together with the service manual for Model No. BT-S901Y, Order No. KME9009164C1.

Specifications

Power Source

120 V AC, 50/60 Hz

Power Consumption

37 W

Maximum Ampere

0.75 A

Picture Tube

9 inches measured diagonally, 90-degree deflection

Speaker

2 1/2 inches round type, located on cabinet left

Speaker output

1.0 W(at 10 % distortion), 1.2 W(MAX) Impedance 16Ω

Television System

NTSC-M System (American TV Standard 525 line/60 field)

Operating Temperature

32 ~ 104 °F (0 ~ 40 °C)

Operating Humidity

20 ~ 80 % (non-condensing)

Design and specifications are subject to change without notice.

Weight and dimensions shown are approximate.

Connection Terminals (Input/Output)

Line A

- S-Video IN/OUT : Y 1.0 Vp-p, C 0.3 Vp-p, High or 75Ω switchable, 4P Mini DIN type
- Video IN/OUT : 1.0 Vp-p ± 10 %, High or 75Ω automatic, BNC type
- Audio IN/OUT : 0.5 Vrms ± 10 %, 10kΩ (min.) RCA phono type

Line B

- Video IN/OUT : 1.0 Vp-p ± 10 %, High or 75Ω automatic, BNC type
- Audio IN/OUT : 0.5 Vrms ± 10 %, 10kΩ (min.) RCA phono type

External Sync IN/OUT

- : 2.0 ~ 4.0 Vp-p (negative) High or 75Ω automatic, BNC type

Dimensions

- Width: 8²⁵/₃₂ inches (223 mm)
- Height: 9 inches (228.5 mm)
- Depth: 12¹¹/₁₆ inches (321.5 mm)

Weight

- 15.5 lbs (7.0 kg)

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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PRODUCT COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J IN EFFECT AS OF DATE OF MANUFACTURE.

IMPORTANT SAFETY NOTICE

There are special components used in Panasonic Monitor sets which are important for safety. These parts are shaded on the schematic diagram. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-Radiation, shock, fire, or other hazards. Do not modify the original design without permission of PANASONIC BROADCAST & TELEVISION SYSTEMS COMPANY.

WARNING: This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Any unauthorized changes or modifications to this equipment would void the users authority to operate.

SAFETY PRECAUTIONS

General Guidelines

1. It is advisable to insert an isolation transformer in the AC power line before servicing a hot chassis.
2. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations, are properly installed.
4. Before switching the power on, measure the resistance between B+ line and cold side chassis ground. Connect the "-" side of an ohmmeter to the B+ line, and the "+" side to chassis ground. Each line must have more resistance value than the specified one as follows:

| B+ Line | Minimum Resistance |
|---------|--------------------|
| 121V | 140 Ω |
| 27V | 150 Ω |
| 15V | 150 Ω |
| 12V | 140 Ω |

5. When the set is not used for a long period of time, unplug the AC power cord plug from the AC line outlet.
6. Potentials, as high as 22.0 \pm 1kV, are present when the set is in operation. Operating the set without the rear cover involves in a dangerous electrical shock from the set power supply. Servicing must not be attempted by anyone who is not thoroughly familiar with the necessary precautions when working on high voltage equipment. Always discharge the anode of the picture tube to chassis ground before handling the picture tube.
7. After servicing, make the following leakage current checks to prevent the customer from getting a dangerous electrical shock.

Leakage Current Cold Check

1. Unplug the AC power cord and short between the two prongs of the AC plug with a jumper wire.
2. Set the power switch of this set to ON position.
3. Measure the resistance value with an ohmmeter between the shorted AC plug and each exposed metallic part of the set cabinet such as screwheads, connectors, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 240k Ω and 5.2M Ω . When the exposed metal part does not have a return path to the chassis, the reading must be infinity.

Leakage Current Hot Check (See Fig. 1)

1. Plug the AC power cord directly into the AC line outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k Ω 10 watt resistor in parallel with a 0.15 μ F capacitor between each exposed metallic part of the set and an earth ground such as a water pipe.
3. Use an AC voltage meter with 1k Ω /volt or more sensitivity to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. The potential at any point should not exceed 0.75Vrms. A leakage current tester (Simpson Model 229 or the equivalent) may be used to make the hot checks. Leakage current must not exceed 500 μ A. If a measurement is outside of the specified limits, there is a possibility of a shock hazard, and the monitor should be repaired and rechecked before it is returned to the customer.

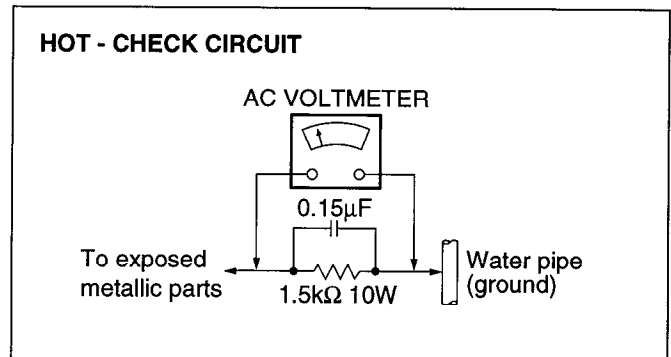


Fig. 1

X-Radiation

WARNING:

1. The potential sources of X-Radiation in the monitor set are the high voltage section and picture tube.
2. When using a picture tube test jig for service, make sure that the jig is capable of handling 22.0kV without causing X-Radiation.

Note : It is important to use an accurate, periodically calibrated high voltage meter.

1. Turn Bright and Contrast controls fully counterclockwise.
2. Set SERVICE switch to SERVICE position.
3. Measure the high voltage. The high voltage meter (electrostatic type) reading should indicate 22.0kV \pm 1.0kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
4. To prevent an X-radiation possibility, it is essential to use the specified picture tube.

HORIZONTAL OSC. DISABLE CIRCUIT TEST

SERVICE WARNING: This test must be made as a final check before the monitor is returned to the customer after repairs are made.

1. With rear cover removed, supply nominal 120 V AC to the monitor and turn on power switch.
2. Received a monoscope pattern signal and adjust user controls to normal position.
3. Turn off the power switch.
4. Connect 5k Ω control VR with its resistance maximum between TP92 and TP93.
5. Turn on the power switch again.
6. Turn the 5k Ω control VR slowly to decrease its resistance.
7. Confirm that the picture falls out of horizontal sync.
8. If the test fails, Horizontal Osc. Disable Circuit is not operating and must be repaired.
Refer to the Horizontal Osc. Disable Circuit Repair Procedure.

HORIZONTAL OSC. DISABLE CIRCUIT REPAIR PROCEDURE

- 1) Connect a DC voltmeter between the cathode of D510 and chassis ground of the main circuit board. If approximately 21V is not present on the cathode of D510, find the cause. Check R529, D510 and C525.
- 2) Connect a DC voltmeter between the cathode of D512 and chassis ground of the main circuit board. If approximately 12V is not present on the cathode of D512, find the cause. Check R524, R523 and D511.
- 3) Repeat step 2) procedure. If approximately 12V is not present on the cathode, Check D512, R522, Q504, R521 and IC401.
- 4) Carefully check above specified parts, and related circuits and parts. When the circuit is repaired, try the Horizontal Osc. Disable Circuit Test again.

HORIZONTAL OSC. DISABLE CIRCUIT EXPLANATION

1. Under normal operating conditions, zener diode D512 is CUT OFF since its breakdown voltage is not reached.
2. When the amplitude of the pulse applied to diode D510 increase, the cathode voltage of zener diode D512 rises, and D512 conducts.

3. The conduction of D512 increase the base voltage of Q504 and causes it to conduct.
4. This causes the pin ③ voltage of IC401 to decrease. As a result the horizontal oscillator frequency goes higher and the picture on the screen falls out of horizontal sync.

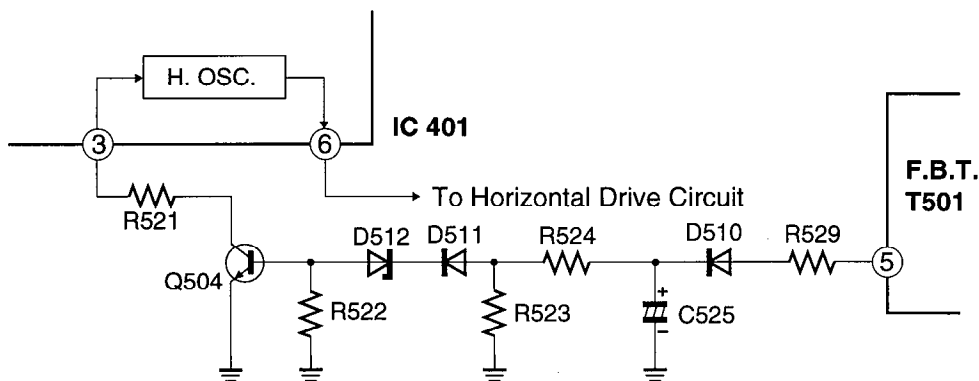


Fig. 2

ADJUSTMENTS

UNDERSCAN V.SIZE ADJUSTMENT

1. Apply a monoscope pattern to the monitor.
2. Push UNDERSCAN switch on the front panel.
3. Adjust U.S V-SIZE control (R411) until picture height becomes $6\text{ mm} \pm 1\text{ mm}$ shorter than picture tube screen at top and bottom as shown in figure 3.
4. If the picture is shifted upper or lower, adjust V-POSITION control (R418).

UNDERSCAN H.SIZE ADJUSTMENT

1. Apply a monoscope pattern to the monitor.
2. Push UNDERSCAN switch on the front panel.
3. Adjust U.S H-SIZE control (R566) until picture width becomes $4\text{ mm} \pm 1\text{ mm}$ shorter than picture tube screen at both sides as shown in figure 3.
4. If the picture is shifted left or right, adjust H-CENTER control (R520).

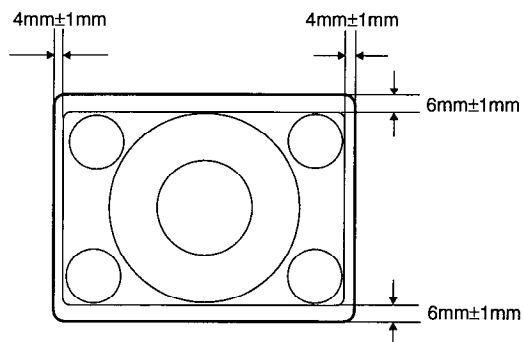


Figure 3

ALIGNMENTS

SUB-CONTRAST ALIGNMENT

1. Apply a studio color bar signal. Input signal should be 1.0 Vp-p. (video level 0.7 Vp-p, sync level 0.3 Vp-p).
2. Set BRIGHT (R350) and CONTRAST (R344) controls to center position (click point).
3. Set COLOR control (R613) fully counterclockwise.
4. Connect an oscilloscope to TP48 on C-board.
5. Adjust SUB-CONTRAST control (R327) to obtain 0.9 Vp-p from white level to black level. (See figure 4)

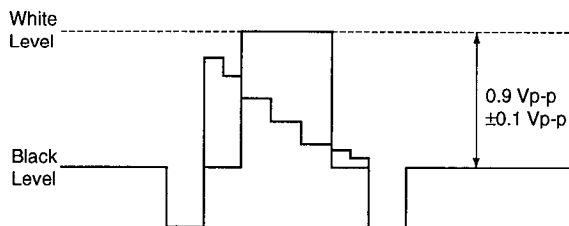


Figure 4

Replacement parts list

IMPORTANT SAFETY NOTICE

Components identified by the International symbol Δ have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

Abbreviation of part name and description

1. Resistor

Example:

ERD25TJ104 C 100KOHM, J, 1/4W

| TYPE | ALLOWANCE |
|-------------------------------|----------------|
| C : Carbon | F : $\pm 1\%$ |
| F : Fuse | G : $\pm 2\%$ |
| M : Metal Oxide Metal Film | J : $\pm 5\%$ |
| S : Solid | K : $\pm 10\%$ |
| W : Wire Wound | M : $\pm 20\%$ |

2. Capacitor

Example:

ECKF1H103ZF C 0.01PF, Z, 50V

| TYPE | ALLOWANCE |
|--------------------|--------------------------|
| C : Ceramic | C : $\pm 0.25\text{ pF}$ |
| E : Electrolytic | D : $\pm 0.5\text{ pF}$ |
| P : Polyester | F : $\pm 1\text{ pF}$ |
| PP : Polypropylene | J : $\pm 5\%$ |
| T : Tantalum | K : $\pm 10\%$ |
| | L : $\pm 15\%$ |
| | M : $\pm 20\%$ |
| | P : $+100\%, -0\%$ |
| | Z : $+80\%, -20\%$ |

Note: For G $\bigcirc\bigcirc$ of Ref. No., not indicate illustration of it part on "MECHANICAL PARTS LOCATION" of BT-S901Y Service Manual.

Printed circuit board assembly with mark (RTL) is no longer available after production discontinuation of the complete set.

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|-------------------------|----------|--------------|----------------------------|----------|--------------|
| MECHANICAL PARTS | | | | | |
| Δ | M1 | A22JWG098X | | B1 | XTB4+15AFZ |
| | M2 | TAST66C-8615 | | B2 | XTW3+6LFZ |
| | M3 | TXALY85375FA | | B5 | THE415-2 |
| Δ | M4 | EVVGU5F25B14 | | B6 | XTV3+12G |
| | M5 | TXFKA99MYPZ | | B7 | THW40807-9 |
| | M6 | PAKU330300 | | B8 | THN1948-2 |
| | M7 | TKK139208-1 | | B10 | XTN3+6FZ |
| | M8 | PAKK358201-1 | | B11 | XTW3+8L |
| | M9 | TTEA0008 | | B12 | XYA4+EF8 |
| | M10 | TBX1353500 | | G1 | PAPD351009-1 |
| Δ | M14 | TLK159025N | | G2 | PAPD351010-1 |
| | M16 | PAMX35902 | | G3 | PAPD352009-1 |
| Δ | M17 | TUC24557-1 | | G4 | PAPD352010-1 |
| | M18 | PAJB356002 | | G5 | PAQF35237-3 |
| | M19 | TBX2783100 | | G6 | PAQF37212 |
| | M20 | TMX13935-1 | | G7 | TES202-1 |
| Δ | M21 | TSXA114 | | G8 | TJC6319 |
| | M22 | TMM14416 | | G9 | TMM13902 |
| | M23 | PAKS35301 | | G10 | TMM81416 |
| | M24 | TBL173302 | | G11 | TPCA63701 |
| | M25 | TBMD301 | | G12 | TPE114115-1 |
| | M31 | TJS169070 | | G13 | TQF57277 |
| | M33 | TJS169071 | | G14 | TQF86202 |
| | M34 | TMM15511 | | G15 | TQZB664 |
| | U1 | TMM6428-1 | INTEGRATED CIRCUITS | | |
| | U2 | TMM16452 | | IC201 | AN5265 |
| | U4 | TMM15412-1 | | IC401 | AN5436N |
| | U5 | TMM13497 | | IC402 | AN5515X |
| | U6 | TMM6434 | | IC501 | MC14503BCP |
| | U7 | TMM6463-1 | | IC502 | UPC78M12AHF |
| | | | | IC601 | AN5316N |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|-------------|------------|-------------|----------|--------------|------------------|
| TRANSISTORS | | | | | |
| Q201 | 2SC3311A | TRANSISTOR | D506 | AU01Z | DIODE |
| Q202 | 2SC3311A | TRANSISTOR | D507 | TVSES1 | DIODE |
| Q308 | 2SA1309A | TRANSISTOR | D508 | TVSRGP10J | DIODE |
| Q351 | 2SC1473QNC | TRANSISTOR | D509 | MA165 | DIODE |
| Q352 | 2SC1473QNC | TRANSISTOR | D510 | TVSRGP10J | DIODE |
| Q353 | 2SC1473QNC | TRANSISTOR | D511 | MA27WA | DIODE |
| Q371 | 2SC3311A | TRANSISTOR | D512 | TVSRD12EBM | ZENER DIODE |
| Q372 | 2SC3311A | TRANSISTOR | D514 | MA165 | DIODE |
| Q373 | 2SC3311A | TRANSISTOR | D515 | MA165 | DIODE |
| Q374 | 2SC3311A | TRANSISTOR | D516 | MA165 | DIODE |
| Q375 | 2SC3311A | TRANSISTOR | D517 | MA165 | DIODE |
| Q380 | 2SC3311A | TRANSISTOR | D518 | MA165 | DIODE |
| Q401 | 2SC1383R | TRANSISTOR | D520 | MA27WA | DIODE |
| Q402 | 2SA1309A | TRANSISTOR | D524 | MA165 | DIODE |
| Q403 | 2SC3311A | TRANSISTOR | D551 | MA165 | DIODE |
| Q501 | 2SC1473A | TRANSISTOR | D552 | RD9.1ESAB2 | ZENER DIODE |
| Q502 | 2SD1439 | TRANSISTOR | D553 | MA165 | DIODE |
| Q504 | 2SC3311A | TRANSISTOR | D554 | RD5.1ESAB2 | ZENER DIODE |
| Q505 | 2SC3311A | TRANSISTOR | D601 | MA165 | DIODE |
| Q506 | 2SC3311A | TRANSISTOR | D602 | MA165 | DIODE |
| Q507 | 2SC3311A | TRANSISTOR | D801 | TVSRM10B | DIODE |
| Q508 | 2SB774 | TRANSISTOR | D802 | TVSRM10B | DIODE |
| Q509 | 2SA1309A | TRANSISTOR | D803 | TVSRM10B | DIODE |
| Q510 | 2SD889 | TRANSISTOR | D804 | TVSRM10B | DIODE |
| Q511 | 2SA1309A | TRANSISTOR | D805 | MA171 | DIODE |
| Q512 | 2SA1309A | TRANSISTOR | D806 | MA1068L | ZENER DIODE |
| Q513 | 2SD1266 | TRANSISTOR | D808 | TVSES1Z | DIODE |
| Q514 | 2SC3311A | TRANSISTOR | D809 | IN4003 | DIODE |
| Q515 | 2SD889 | TRANSISTOR | D810 | TVSRGP10J | DIODE |
| Q551 | 2SA1309A | TRANSISTOR | D811 | ERB44-08 | DIODE |
| Q602 | 2SA1309A | TRANSISTOR | D812 | TVSRGP10J | DIODE |
| Q603 | 2SA1309A | TRANSISTOR | D813 | TVSSR2KN | DIODE |
| Q610 | 2SC3311A | TRANSISTOR | D814 | ERPZ4B0M100B | POSISTOR |
| Q611 | 2SC3311A | TRANSISTOR | D815 | LN38GP | LED (GREEN) |
| Q801 | 2SC3872-LS | TRANSISTOR | D816 | TVSRGP10J | DIODE |
| Q802 | 2SB1322A | TRANSISTOR | D817 | P6KE130A | DIODE |
| Q803 | 2SD965 | TRANSISTOR | D3001 | MA4056M | ZENER DIODE |
| Q804 | 2SC3311A | TRANSISTOR | D3002 | MA165 | DIODE |
| Q3001 | 2SC3311A | TRANSISTOR | D3003 | MA4056M | ZENER DIODE |
| Q3002 | 2SC3311A | TRANSISTOR | D3004 | MA165 | DIODE |
| Q3003 | 2SC3311A | TRANSISTOR | D3005 | MA4056M | ZENER DIODE |
| Q3004 | 2SA1309A | TRANSISTOR | D3006 | MA165 | DIODE |
| Q3005 | 2SA1309A | TRANSISTOR | D3007 | MA27T-B | DIODE |
| Q3007 | 2SC3311A | TRANSISTOR | D3008 | MA4056M | ZENER DIODE |
| Q3008 | 2SC3311A | TRANSISTOR | D3009 | MA165 | DIODE |
| Q3009 | 2SA1309A | TRANSISTOR | D3010 | MA165 | DIODE |
| | | | D3011 | MA4056M | ZENER DIODE |
| | | | D3012 | MA165 | DIODE |
| DIODES | | | COILS | | |
| D310 | MA165 | DIODE | L304 | TLK817E | DELAY LINE |
| D314 | MA165 | DIODE | L306 | TLT470K266 | PEAKING COIL |
| D315 | MA165 | DIODE | L371 | EFDBN645B95G | DELAY LINE |
| D401 | TVSRD15EB1 | ZENER DIODE | L372 | EIK1EG024B | VIF COIL |
| D402 | MA165 | DIODE | L502 | ELH5L424 | LINEARITY COIL |
| D403 | TVSEM1Z | DIODE | L504 | TLUABTA151K | PEAKING COIL |
| D404 | MA165 | DIODE | L505 | TLT100K991K | PEAKING COIL 10U |
| D405 | TVSRD24EB1 | ZENER DIODE | L506 | TLTAMSKI103K | PEAKING COIL |
| D406 | MA27TA | DIODE | L507 | TLP13113E | CHOKO COIL |
| D407 | MA165 | DIODE | L601 | TLUABTA150K | PEAKING COIL |
| D408 | MA165 | DIODE | L603 | TLT222K993G | PEAKING COIL |
| D409 | MA165 | DIODE | L801 | ELF18D216 | LINE FILTER |
| D501 | MA165 | DIODE | L803 | TSC928-4 | CHOKO COIL |
| D503 | ES-01F | DIODE | | | |
| D504 | TVSRGP10J | DIODE | | | |
| D505 | MA167 | DIODE | | | |

| | Ref. No. | Part No. | Description | | Ref. No. | Part No. | Description |
|---|----------|--------------|---------------------|---|----------|--------------|---------------------|
| | R515 | ERG2ANJ122 | M 1.2KOHM, J, 2W | | R614 | ERDS2TJ101 | C 100 OHM, J, 1/4W |
| △ | R516 | ERQ1AJP561S | F 560 OHM, J, 1W | | R615 | ERDS2TJ101 | C 100 OHM, J, 1/4W |
| | R517 | ERG2ANJ122 | M 1.2KOHM, J, 2W | | R616 | ERJ8GEYJ105 | M 1MOHM, J, 1/8W |
| △ | R518 | ERQ1AJP561S | F 560 OHM, J, 1W | | R617 | ERDS2TJ474 | C 470KOHM, J, 1/4W |
| △ | R519 | ERQ14AJ680P | F 68 OHM, J, 1/4W | | R618 | ERDS2TJ473 | C 47KOHM, J, 1/4W |
| | R520 | EVMJ6U10KB14 | CONTROL 10KOHMB | | R620 | ERDS2TJ473 | C 47KOHM, J, 1/4W |
| | R521 | ERDS2TJ103 | C 10KOHM, J, 1/4W | | R622 | ERJ8GEYJ332 | M 3.3KOHM, J, 1/8W |
| △ | R522 | ERDS2TJ103 | C 10KOHM, J, 1/4W | | R623 | ERDS2TJ103 | C 10KOHM, J, 1/4W |
| △ | R523 | ER0S2CKF2001 | M 2KOHM, F, 1/4W | | R624 | ERJ8GEYJ563 | M 56KOHM, J, 1/8W |
| △ | R524 | ER0S2CKF1271 | M 1.27KOHM, F, 1/4W | | R650 | ERJ8GEYJ822 | M 8.2KOHM, J, 1/8W |
| | R526 | ERJ8GEYJ472 | M 4.7KOHM, J, 1/8W | | R651 | ERJ8GEYJ393 | M 39KOHM, J, 1/8W |
| | R527 | ERDS2TJ392 | C 3.9KOHM, J, 1/4W | | R652 | ERJ8GEYJ102 | M 1KOHM, J, 1/8W |
| △ | R528 | ERQ12HJ6R8 | F 6.8 OHM, J, 1/2W | | R653 | ERJ8GEYJ101 | M 100 OHM, J, 1/8W |
| △ | R529 | ERQ12AZJ1R0P | F 1.0 OHM, J, 1/2W | | R654 | ERDS2TJ822 | C 8.2KOHM, J, 1/4W |
| △ | R530 | ERQ12HJ1R0 | F 1 OHM, J, 1/2W | | R655 | ERDS2TJ393 | C 39KOHM, J, 1/4W |
| | R531 | ERD25FJ1R0 | C 1 OHM, J, 1/4W | △ | R801 | FRF3AK2R7 | W 2.7 OHM, 3W |
| | R532 | ERDS2TJ223 | C 22KOHM, J, 1/4W | △ | R803 | ERG1ANJ683H | M 68KOHM, J, 1W |
| | R533 | ERD25FJ1R0 | C 1 OHM, J, 1/4W | △ | R804 | ER0S2CKF1431 | M 1.43KOHM, F, 1/4W |
| | R541 | ERJ8GEYJ102 | M 1KOHM, J, 1/8W | △ | R805 | ER0S2CKF2001 | M 2KOHM, F, 1/4W |
| | R542 | ERDS2TJ471 | C 470 OHM, J, 1/4W | △ | R806 | ERDS2TJ331 | C 330 OHM, J, 1/4W |
| | R543 | ERDS2TJ564 | C 560KOHM, J, 1/4W | △ | R807 | EVND4AA00B14 | CONTROL 10KOHMB |
| | R544 | ERDS2TJ392 | C 3.9KOHM, J, 1/4W | △ | R808 | ER0S2CKF2261 | M 2.26KOHM, F, 1/4W |
| | H545 | ERDS2TJ102 | C 1KOHM, J, 1/4W | | R809 | ERG1SJ331P | M 330 OHM, J, 1W |
| | R547 | ERJ8GEYJ102 | M 1KOHM, J, 1/8W | | R810 | ERG1SJ221P | M 220 OHM, J, 1W |
| | R548 | ERJ8GEYJ562 | M 5.6KOHM, J, 1/8W | | R812 | ERG1SJ271 | M 270 OHM, J, 1W |
| | R549 | ERDS2TJ102 | C 1KOHM, J, 1/4W | | R813 | ERG2ANJ330H | M 33 OHM, J, 2W |
| | R550 | ERJ8GEYJ223 | M 22KOHM, J, 1/8W | | R814 | ERX1ANJPR47S | M 0.47OHM, J, 1W |
| | R551 | ERJ8GEYJ392 | M 3.9KOHM, J, 1/8W | | R815 | ERDS2TJ102 | C 1KOHM, J, 1/4W |
| | R552 | ERJ8GEYJ102 | M 1KOHM, J, 1/8W | | R816 | ERDS2TJ102 | C 1KOHM, J, 1/4W |
| | R554 | ERDS2TJ823 | C 82KOHM, J, 1/4W | △ | R818 | ERQ12HJ1R0 | F 1 OHM, J, 1/2W |
| | R555 | EVND2AA03B14 | CONTROL 10KOHMB | | R819 | ERD25TJ152 | C 1.5KOHM, J, 1/4W |
| | R556 | ERDS2TJ153 | C 15KOHM, J, 1/4W | △ | R821 | ERDS1TJ563 | C 56KOHM, J, 1/2W |
| | R557 | ERJ8GEYJ223 | M 22KOHM, J, 1/8W | | R822 | ERQ14AJ2R2P | F 2.2 OHM, J, 1/4W |
| | R558 | ERDS2TJ472 | C 4.7KOHM, J, 1/4W | | R823 | ERJ8GEYJ562 | M 5.6KOHM, J, 1/8W |
| | R559 | ERDS2TJ102 | C 1KOHM, J, 1/4W | | R3001 | ERJ8GEYJ101 | M 100 OHM, J, 1/8W |
| | R560 | ERDS2TJ104 | C 100KOHM, J, 1/4W | | R3002 | ERJ8GEYJ822 | M 8.2KOHM, J, 1/8W |
| | R561 | ERJ8GEYJ103 | M 10KOHM, J, 1/8W | | R3003 | ERJ8GEYJ393 | M 39KOHM, J, 1/8W |
| | R562 | ERJ8GEYJ104 | M 100KOHM, J, 1/8W | | R3004 | ERJ8GEYJ101 | M 100 OHM, J, 1/8W |
| | R563 | ERJ8GEYJ103 | M 10KOHM, J, 1/8W | | R3005 | ERJ8GEYJ822 | M 8.2KOHM, J, 1/8W |
| | R564 | ERJ8GEYJ473 | M 47KOHM, J, 1/8W | | R3006 | ERJ8GEYJ393 | M 39KOHM, J, 1/8W |
| | R565 | ERDS2TJ473 | C 47KOHM, J, 1/4W | | R3007 | ERJ8GEYJ102 | M 1KOHM, J, 1/8W |
| | R566 | EVND4AA00B24 | CONTROL 20KOHMB | | R3008 | ERJ8GEYJ750 | M 75 OHM, J, 1/8W |
| | R567 | ERDS2TJ333 | C 33KOHM, J, 1/4W | | R3009 | ERJ8GEYJ750 | M 75 OHM, J, 1/8W |
| | R568 | ERJ8GEYJ223 | M 22KOHM, J, 1/8W | | R3010 | ERJ8GEYJ750 | M 75 OHM, J, 1/8W |
| | R569 | ERJ8GEYJ272 | M 2.7KOHM, J, 1/8W | | R3011 | ERJ8GEYJ562 | M 5.6KOHM, J, 1/8W |
| | R570 | ERD25TJ562 | C 5.6KOHM, J, 1/4W | | R3012 | ERJ8GEYJ562 | M 5.6KOHM, J, 1/8W |
| | R571 | ERJ8GEYJ152 | M 1.5KOHM, J, 1/8W | | R3013 | ERDS2TJ471 | C 470 OHM, J, 1/4W |
| △ | R572 | ERQ12HJ100 | F 10 OHM, J, 1/2W | | R3014 | ERJ8GEYJ821 | M 820 OHM, J, 1/8W |
| | R573 | ERDS2TJ472 | C 4.7KOHM, J, 1/4W | | R3015 | ERJ8GEYJ224 | M 220KOHM, J, 1/8W |
| | R574 | ERDS2TJ102 | C 1KOHM, J, 1/4W | | R3016 | ERJ8GEYJ272 | M 2.7KOHM, J, 1/8W |
| | R576 | ERDS2TJ822 | C 8.2KOHM, J, 1/4W | | R3017 | ERJ8GEYJ271 | M 270 OHM, J, 1/8W |
| | R577 | ERDS2TJ103 | C 10KOHM, J, 1/4W | | R3018 | ERJ8GEYJ471 | M 470 OHM, J, 1/8W |
| | R578 | ERDS2TJ102 | C 1KOHM, J, 1/4W | | R3019 | ERJ8GEYJ750 | M 75 OHM, J, 1/8W |
| | R579 | ERJ8GEYJ223 | M 22KOHM, J, 1/8W | | R3020 | ERJ8GEYJ101 | M 100 OHM, J, 1/8W |
| | R580 | ERDS2TJ223 | C 22KOHM, J, 1/4W | | R3021 | ERJ8GEYJ822 | M 8.2KOHM, J, 1/8W |
| | R581 | ERDS2TJ274 | C 270KOHM, J, 1/4W | | R3022 | ERJ8GEYJ393 | M 39KOHM, J, 1/8W |
| | R601 | ERJ8GEYJ561 | M 560 OHM, J, 1/8W | | R3023 | ERJ8GEYJ102 | M 1KOHM, J, 1/8W |
| | R602 | ERJ8GEYJ331 | M 330 OHM, J, 1/8W | | R3024 | ERJ8GEYJ101 | M 100 OHM, J, 1/8W |
| | R603 | ERJ8GEYJ152 | M 1.5KOHM, J, 1/8W | | R3025 | ERJ8GEYJ822 | M 8.2KOHM, J, 1/8W |
| | R604 | ERDS2TJ561 | C 560 OHM, J, 1/4W | | R3026 | ERJ8GEYJ393 | M 39KOHM, J, 1/8W |
| | R605 | ERJ8GEYJ224 | M 220KOHM, J, 1/8W | | R3027 | ERJ8GEYJ750 | M 75 OHM, J, 1/8W |
| | R606 | ERDS2TJ104 | C 100KOHM, J, 1/4W | | R3028 | ERJ8GEYJ101 | M 100 OHM, J, 1/8W |
| | R607 | EVND2AA03B14 | CONTROL 10KOHMB | | R3029 | ERJ8GEYJ392 | M 3.9KOHM, J, 1/8W |
| | R608 | ERDS2TJ152 | C 1.5KOHM, J, 1/4W | | R3030 | ERJ8GEYJ564 | M 560 OHM, J, 1/8W |
| | R609 | ERDS2TJ332 | C 3.3KOHM, J, 1/4W | | R3031 | ERJ8GEYJ102 | M 1KOHM, J, 1/8W |
| | R610 | ERDS2TJ153 | C 15KOHM, J, 1/4W | | R3032 | ERJ8GEYJ331 | M 330 OHM, J, 1/8W |
| | R611 | EVUE20E25B14 | CONTROL 10KOHMB | | | | |
| | R612 | ERJ8GEYJ273 | M 27KOHM, J, 1/8W | | | | |
| | R613 | EVUE20E25B14 | CONTROL 10 OHMB | | | | |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|------------|--------------|-------------------|----------|----------|---------------------------------|
| CAPACITORS | | | △ | C513 | ECKD3D102JBN C 1000PF, J, 2KV |
| | | | △ | C514 | ECKD3D102JBN C 1000PF, J, 2KV |
| | | | △ | C515 | ECKD3D152JBN C 1500PF, J, 2KV |
| | | | △ | C519 | ECQM4822JZ P 8200PF, J, 400V |
| | | | △ | C520 | ECQF2H184JZA P 0.18UF, J, 200V |
| | | | △ | C521 | ECA2EM3R3 E 3.3UF, 250V |
| | | | | C522 | ECA2CM101E E 100UF, 160V |
| | | | | C523 | ECA1VM221G E 220UF, 35V |
| | | | | C524 | ECA1VM331 E 330UF, 35V |
| | | | △ | C525 | ECA1HM100 E 10UF, 50V |
| | | | | C526 | ECA1HM330 E 33UF, 50V |
| | | | | C528 | ECA1HM2R2 E 2.2UF, 50V |
| | | | | C529 | ECUX1H391KBX C 390PF, K, 50V |
| | | | | C530 | ECUX1H221KBM C 220PF, K, 50V |
| | | | | C531 | ECCF1H560J C 56PF, J, 50V |
| | | | | C532 | ECQP1H472JZ P 4700PF, J, 50V |
| | | | | C533 | ECUX1H221KBM C 220PF, K, 50V |
| | | | | C534 | ECA1HW4R7UE E 4.7UF, 50V |
| | | | | C535 | ECUX1H151KCM C 150PF, K, 50V |
| | | | | C536 | ECUX1H391KBX C 390PF, K, 50V |
| | | | | C537 | ECA1VM470 E 47UF, 35V |
| | | | | C538 | ECKF1H331KB C 330PF, K, 50V |
| | | | | C539 | ECUX1H331KBX C 330PF, K, 50V |
| | | | | C551 | ECA1EM101 E 100UF, 25V |
| | | | | C552 | ECA1HM220 E 22UF, 50V |
| | | | | C601 | ECUX1H560JCW C 56PF, J, 50V |
| | | | | C602 | ECUX1H104ZFW C 0.1UF, Z, 50V |
| | | | | C604 | ECKF1H103ZF C 0.01UF, Z, 50V |
| | | | | C605 | ECQB1H273KF P 0.027UF, K, 50V |
| | | | | C606 | ECA1HMR47G E 0.47UF, 50V |
| | | | | C607 | ECEA1HN4R7U E 4.7UF, 50V |
| | | | | C608 | ECA1HMR22G E 0.22UF, 50V |
| | | | | C609 | ECQB1H393KF P 0.039UF, K, 50V |
| | | | | C610 | ECUX1H470JCX C 47PF, J, 50V |
| | | | | C611 | ECUX1H050DCW C 5 PF, D, 50V |
| | | | | C612 | ECA1HM2R2 E 2.2UF, 50V |
| | | | | C614 | ECUX1H152KBW C 1500PF, J, 50V |
| | | | | C615 | ECA1HM100 E 10UF, 50V |
| | | | | C650 | ECA1HM100 E 10UF, 50V |
| | | | | C651 | ECA1HM100 E 10UF, 50V |
| | | | | C652 | ECA1HM100 E 10UF, 50V |
| | | | | C653 | ECA1HM100 E 10UF, 50V |
| | | | △ | C801 | ECQU1A333MH P 0.033UF, M, 1 25V |
| | | | △ | C802 | ECQU1A333MH P 0.033UF, M, 1 25V |
| | | | △ | C803 | ECKDNB472ME C 4700PF, M |
| | | | △ | C805 | ECKD2H103PU7 C 0.01UF, 500V |
| | | | △ | C806 | ECKD2H103PU7 C 0.01UF, 500V |
| | | | △ | C807 | ECKD2H103PU7 C 0.01UF, 500V |
| | | | △ | C809 | EC0S2EP221BB E 220UF, 250V |
| | | | | C810 | ECQB1H104KF P 0.1UF, K, 50V |
| | | | | C811 | ECA1HM470G E 47UF, 50V |
| | | | | C812 | ECA1HM4R7G E 4.7UF, 50V |
| | | | | C813 | ECKF1H221KB C 220PF, K, 50V |
| | | | | C814 | ECKDNB221MB C 200PF, M, 50V |
| | | | △ | C815 | ECKDNB221MB C 200PF, M, 50V |
| | | | | C816 | ECKF1H103ZF C 0.01UF, Z, 50V |
| | | | | C819 | ECA2CM221WE E 220UF, 160V |
| | | | | C820 | ECA1VM222 E 2200UF, 35V |
| | | | | C821 | ECKD3D102KBP C 1000PF, K, 2KV |
| | | | | C3001 | ECA1HM100 E 10UF, 50V |
| | | | | C3002 | ECA1HM100 E 10UF, 50V |
| | | | | C3003 | ECA1HM100 E 10UF, 50V |
| | | | | C3004 | ECA1HM100 E 10UF, 50V |
| | | | | C3005 | ECUX1H683ZFX C 0.68UF, Z, 50V |
| | | | | C3006 | ECUX1H683ZFX C 0.68UF, Z, 50V |
| | | | | C3007 | ECUX1H470JCW C 47PF, J, 50V |
| | | | | C3008 | ECA1VM470 E 47UF, 35V |
| | | | | C3010 | ECA1HM100 E 10UF, 50V |
| | | | | C3011 | ECA1HM100 E 10UF, 50V |
| C201 | ECA1HM010 | E 1UF, 50V | | | |
| C202 | ECA1HM010 | E 1UF, 50V | | | |
| C203 | ECA1HM100 | E 10UF, 50V | | | |
| C204 | ECA1HM4R7G | E 4.7UF, 50V | | | |
| C206 | ECA1HM100 | E 10UF, 50V | | | |
| C207 | ECUX1H103ZFX | C 0.01UF, Z, 50V | | | |
| C208 | ECA1HM2R2 | E 2.2UF, 50V | | | |
| C209 | ECUX1H104ZFW | C 0.1UF, Z, 50V | | | |
| C210 | ECA1VM221G | E 220UF, 35V | | | |
| C211 | ECA1VM221G | E 220UF, 35V | | | |
| C212 | ECA1CM221 | E 220UF, 16V | | | |
| C213 | ECUX1H103ZFX | C 0.01UF, Z, 50V | | | |
| C214 | ECA1HM100 | E 10UF, 50V | | | |
| C215 | ECA1HM100 | E 10UF, 50V | | | |
| C216 | ECA1CM221 | E 220UF, 16V | | | |
| C308 | ECUX1H180JCM | C 18PF, J, 50V | | | |
| C311 | ECA1HM100 | E 10UF, 50V | | | |
| C312 | ECUX1H121KCM | C 120PF, K, 50V | | | |
| C314 | ECA1HM100 | E 10UF, 50V | | | |
| C315 | ECA1HM4R7G | E 4.7UF, 50V | | | |
| C316 | ECA1HM100 | E 10UF, 50V | | | |
| C317 | ECA1HM3R3G | E 3.3UF, 50V | | | |
| C318 | ECA1HM100 | E 10UF, 50V | | | |
| C320 | ECA1CM102 | E 1000UF, 16V | | | |
| C351 | ECKF1H331KB | C 330PF, K, 50V | | | |
| C352 | ECKF1H221KB | C 220PF, K, 50V | | | |
| C353 | ECKD3D681KBP | C 680PF, K, 2KV | | | |
| C358 | ECKF1H221KB | C 220PF, K, 50V | | | |
| C371 | ECA1HM220 | E 22UF, 50V | | | |
| C372 | ECUX1H103ZFW | C 0.01UF, Z, 50V | | | |
| C373 | ECUX1H103ZFW | C 0.01UF, Z, 50V | | | |
| C374 | ECUX1H333KBX | C 0.033UF, K, 50V | | | |
| C375 | ECA2CM4R7 | E 4.7UF, 160V | | | |
| C378 | ECUX1H333KBX | C 0.033UF, K, 50V | | | |
| C381 | ECUX1H391KBX | C 390PF, K, 50V | | | |
| C382 | ECUX1H391KBX | C 390PF, K, 50V | | | |
| C383 | ECUX1H391KBX | C 390PF, K, 50V | | | |
| C401 | ECA1CM221 | E 220UF, 16V | | | |
| C402 | ECUX1H103ZFW | C 0.01UF, Z, 50V | | | |
| C403 | ECQB1H273KF | P 0.027UF, K, 50V | | | |
| C404 | ECSF1CE225 | T 2.2UF, 16V | | | |
| C405 | ECSF1CE335 | T 3.3UF, 16V | | | |
| C406 | ECUX1H472KBW | C 4700PF, K, 50V | | | |
| C407 | ECA1HM100 | E 10UF, 50V | | | |
| C408 | ECA1HM4R7G | E 4.7UF, 50V | | | |
| C410 | ECA1CM102 | E 1000UF, 16V | | | |
| C411 | ECUX1H472KBW | C 4700PF, K, 50V | | | |
| C412 | ECA1HHG101 | E 100UF, 50V | | | |
| C413 | ECQM1472KZ | P 4700PF, K, 100V | | | |
| C417 | ECQB1H104KF | P 0.1UF, K, 50V | | | |
| C418 | ECKF1H102KB | C 1000PF, K, 50V | | | |
| C419 | ECQB1H153KF | P 0.015UF, K, 50V | | | |
| C420 | ECA1HM010 | E 1UF, 50V | | | |
| C421 | ECA1HM010 | E 1UF, 50V | | | |
| C422 | ECUX1H153KBM | C 0.015UF, K, 50V | | | |
| C423 | ECKF1H103ZF | C 0.01UF, Z, 50V | | | |
| C424 | ECUX1H473ZFX | C 0.047UF, Z, 50V | | | |
| C503 | ECA1HM2R2 | E 2.2UF, 50V | | | |
| C505 | ECUX1H561KBM | C 560PF, K, 50V | | | |
| C506 | ECQB1H153KF | P 0.015UF, K, 50V | | | |
| C507 | ECQB1H473KF | P 0.047UF, K, 50V | | | |
| C508 | ECQB1H223KF | P 0.022UF, K, 50V | | | |
| C509 | ECA1HM2R2 | E 2.2UF, 50V | | | |
| C510 | ECQK1682JZ | P 6800PF, J, 100V | | | |
| C511 | ECA1EM101 | E 100UF, 25V | | | |
| C512 | ECKD2H101KB2 | C 100PF, K, 500V | | | |

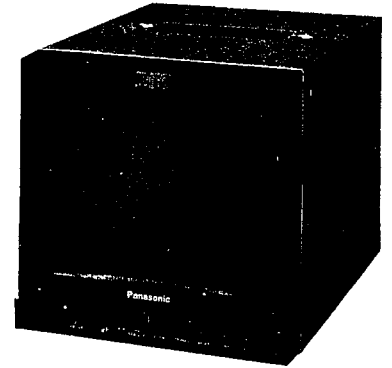
| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|----------|--------------|-----------------|----------|----------|------------------------------|
| C3012 | ECA1HM100 | E 10UF, 50V | | | |
| C3013 | ECA1HM100 | E 10UF, 50V | | | |
| C3014 | ECA1HM100 | E 10UF, 50V | | | |
| C3015 | ECUX1H221JCW | C 220PF, J, 50V | | | |
| OTHERS | | | | | |
| △ | RTL | TNP30938ZB | | | CIRCUIT BOARD A |
| | RTL | TNP31434ZB | | | CIRCUIT BOARD C |
| | RTL | TNP31768ZB | | | CIRCUIT BOARD D |
| | RTL | TNP31769ZB | | | CIRCUIT BOARD L |
| | F801 | XBA1F30NU100 | | | FUSE 125V 3A |
| | SW302 | ESB621282 | | | FUNCTION SWITCH |
| | SW401 | EVQR4AL13 | | | SERVICE SWITCH |
| | SW3001 | SSFYP22-08B | | | SLIDE SWITCH (75Ω/High) |
| | SW3002 | SSFYP22-08B | | | SLIDE SWITCH (VIDEO/S-VIDEO) |
| | X601 | TSS816N2 | | | CRYSTAL |
| △ | | TJS1A5081B | | | CRT SOCKET |
| | | TJS168960 | | | 2P CONNECTOR |
| | | TJS168980 | | | 4P CONNECTOR |
| | | TJS169010 | | | CONNECTOR |
| | | TJS169060 | | | 2P CONNECTOR |
| | | TJS5A9310 | | | 4P CONNECTOR |
| | | TJS5A9330 | | | 6P CONNECTOR |

Service Manual

Color Video Monitor

BT-S901Y

Chassis No. KMX-F903A



The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

Specifications

| | | | |
|-------------------------|--|---------------------|--|
| Power Input: | 120V AC, 50/60Hz | Sound Output: | 1.0W (at 10% distortion) 1.2W (max.) |
| Power Consumption: | 37W (average)/0.75A (max.) | Speaker: | 2 ¹ / ₂ inches round type Voice coil 16Ω |
| Video Input/Output: | S-Video signal <ul style="list-style-type: none"> • 1.0Vp-p for Y signal • 0.3Vp-p for C signal • High or 75Ω switchable • 4P mini DIN type connector Video signal <ul style="list-style-type: none"> • 1.0Vp-p ±10% • High or 75Ω automatic • BNC type connector | Automatic Circuits: | Automatic frequency and phase control Horizontal automatic frequency control Automatic degaussing Automatic Voltage regulator Automatic beam limiter |
| Audio Input/Output: | 0.5Vrms ±10% 10kΩ (min.) RCA phono type connector | Picture Tube: | A22JWG34X 37square inches 9 inches measured diagonally 90° deflection, In-line |
| Ext. Sync Input/Output: | 2.0~4.0Vp-p (negative) High or 75Ω automatic BNC type connector | Dimensions: | Width: 8 ²⁵ / ₃₂ inches (223mm) Depth: 12 ¹¹ / ₁₆ inches (321.5mm) Height: 9 inches (228.5mm) |
| Semiconductors: | 45 transistors 64 diodes 1 posistor 6 ICs | Weight: | 15.5 lbs. (7.0kg) |
| Anode Voltage: | 22.0kV ±1 kV (at 0 beam current) | | |

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Specifications are subject to change without notice.

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THIS MODEL COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT DATE OF MANUFACTURE.

IMPORTANT SAFETY NOTICE

There are special components used in Panasonic Video Monitor sets which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts **only** to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of Panasonic Communications & Systems Company.

ABBREVIATIONS USED IN THIS MANUAL

| | | | |
|-------------|--------------------------------|-------------|--|
| ABL | Automatic Beam Limiter | CRT | Cathode Ray Tube |
| APC | Automatic Phase Control | FBT | Flyback Transformer |
| DY | Deflection Yoke | HAFC | Horizontal Automatic Frequency Control |
| OTL | Output Transformerless | ACC | Automatic Color Control |
| SEPP | Single Ended Push-Pull Circuit | VR | Variable Resistor |
| AVR | Automatic Voltage Regulator | | |

SAFETY PRECAUTIONS

GENERAL GUIDELINES

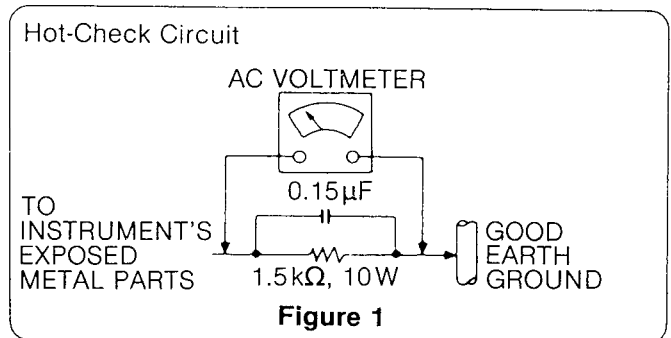
1. It is advisable to insert an isolation transformer in the power line and AC supply before servicing a hot chassis.
2. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, ensure that all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations, are properly installed.

4. Before turning the monitor on, measure the resistance between B+ line and chassis ground. Connect ⊖ side of an ohmmeter to the B+ lines, and ⊕ side to chassis ground. Each line should have more resistance than specified, as follows:

| B+ Line | Minimum Resistance |
|---------|--------------------|
| 121V | 140Ω |
| 27V | 150Ω |
| 15V | 150Ω |
| 12V | 140Ω |

5. When the monitor is not to be used for a long period of time, unplug the power cord from the AC outlet.
6. Potentials, as high as 22.0kV are present when this monitor is in operation. Operation of the monitor without the rear cover involves the danger of a shock hazard from the monitor power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the monitor chassis before handling the tube.
7. After servicing, perform the leakage current checks to prevent the customer from being exposed to shock hazards.

5. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot check. Leakage current must not exceed 0.5 milliamp. If a measurement is outside of the specified limits, there is a possibility of a shock hazard, and the monitor should be repaired and rechecked before it is returned to the customer.



LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Turn on the monitor's power switch.
3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the monitor, such as screwheads, connectors, control shafts, handle bracket, etc.

When the exposed metallic part has a return path to the chassis, the reading should be between 240kΩ and 5.2MΩ.

When the exposed metal does not have a return path to the chassis, the reading must be ∞.

LEAKAGE CURRENT HOT CHECK

(See figure 1.)

1. Plug the AC cord directly into the AC outlet.
DO NOT use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watt resistor, in parallel with a 0.15μF capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.

X-RADIATION

- WARNING:**
1. The potential source of X-Radiation in monitor sets is the High Voltage section and the picture tube.
 2. When using a picture tube test jig for service, ensure the jig is capable of handling 24.0kV without causing X-Radiation.

Note: It is important to use an accurate, periodically calibrated high voltage meter.

1. Turn Bright and Contrast controls fully counter-clockwise.
2. Set SERVICE switch to SERVICE position.
3. Measure the high voltage. The high voltage meter (electrostatic type) reading should indicate 22.0kV ± 1.0kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
4. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

HORIZONTAL OSC. DISABLE CIRCUIT TEST

SERVICE WARNING: This test must be made as a final check before the monitor is returned to the customer after repairs are made.

1. With rear cover removed, supply nominal 120V AC to the monitor and turn on power switch.
2. Receive a monoscope pattern signal and adjust user controls to normal position.
3. Turn off the power switch.
4. Connect 5kΩ control VR with its resistance maximum between TP92 and TP93.
5. Turn on the power switch again.
6. Turn the 5kΩ control VR slowly to decrease its resistance.
7. Confirm that the picture falls out of horizontal sync.
8. If the test fails, Horizontal Osc. Disable Circuit is not operating and must be repaired.

Refer to the Horizontal Osc. Disable Circuit Repair Procedure.

HORIZONTAL OSC. DISABLE CIRCUIT REPAIR PROCEDURE

- 1) Connect a DC voltmeter between the cathode of D510 and chassis ground of the main circuit board. If approximately 21V is not present on the cathode of D510, find the cause. Check R529, D510 and C525.
- 2) Connect a DC voltmeter between the cathode of D512 and chassis ground of the main circuit board. If approximately 12V is not present on the cathode of D512, find the cause. Check R524, R523 and D511.
- 3) Repeat step 2) procedure. If approximately 12V is present on the cathode, check D512, R522, Q504, R521 and IC401.
- 4) Carefully check above specified parts, and related circuits and parts. When the circuit is repaired, try the Horizontal Osc. Disable Circuit Test again.

HORIZONTAL OSC. DISABLE CIRCUIT EXPLANATION

1. Under normal operating conditions, zener diode D512 is CUT OFF since its breakdown voltage is not reached.
2. When the amplitude of the pulse applied to diode D510 increases, the cathode voltage of zener diode D512 rises, and D512 conducts.

3. The conduction of D512 increases the base voltage of Q504 and causes it to conduct.
4. This causes the pin ③ voltage of IC401 to decrease.

As a result the horizontal oscillator frequency goes higher and the picture on the screen falls out of horizontal sync.

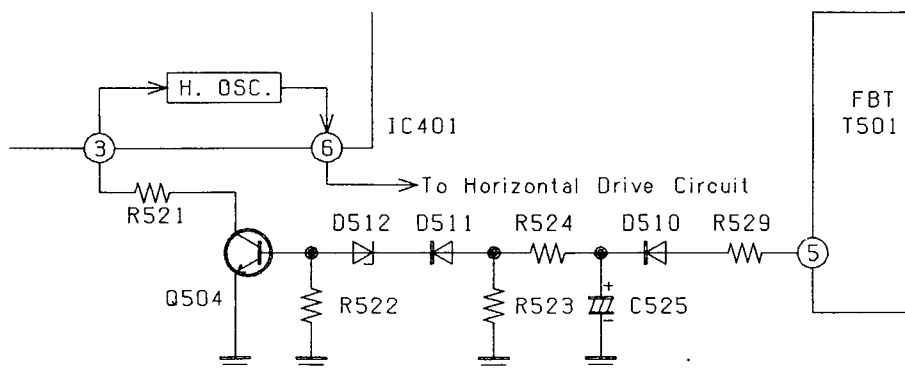


Figure 2

USER CONTROL LOCATIONS AND OPERATIONS

USER CONTROL LOCATIONS

(Front View)

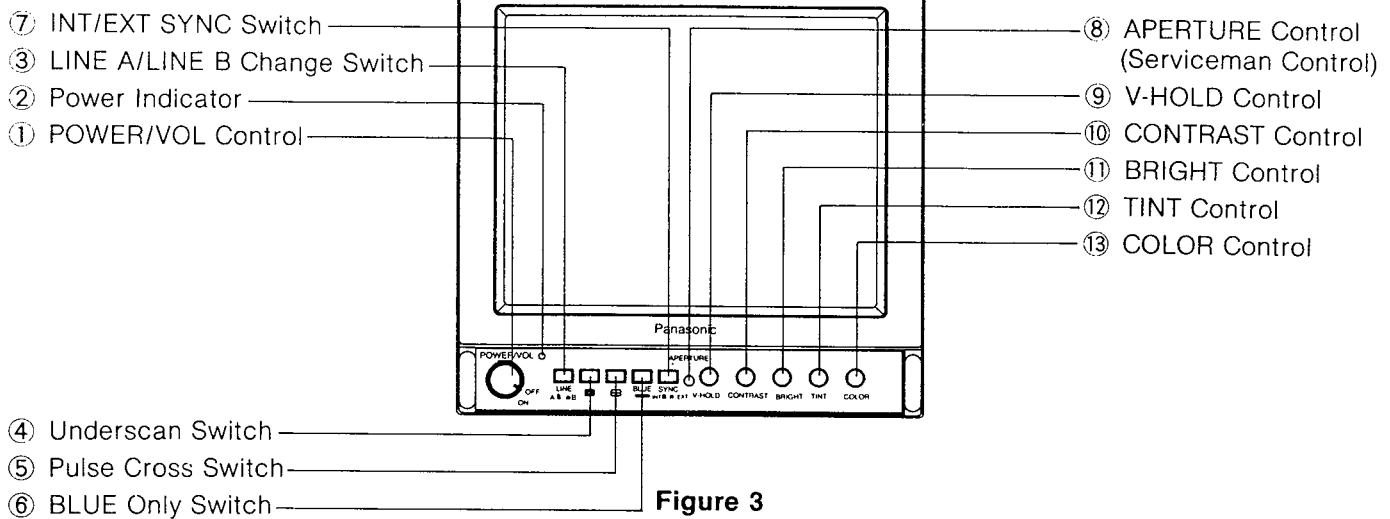


Figure 3

OPERATIONS

| | |
|--|---|
| <p>① POWER/VOL Control</p> | <p>1. Turn clockwise to turn the monitor on. Turn counterclockwise to turn the monitor off. 2. Adjust this control for the appropriate audio level.</p> |
| <p>② Power Indicator</p> | <p>The Power Indicator will light when the monitor is turned on.</p> |
| <p>③ LINE A/LINE B Change Switch</p> <p>A ■ B ■</p> | <p>LINE A: Receives video signal from the VIDEO IN terminal or S-VIDEO signal from the S-VIDEO IN terminal, and audio signal from AUDIO IN terminal. LINE B: Receives video and audio signals from the VIDEO IN and AUDIO IN terminals.</p> |
| <p>④ Underscan Switch (□)</p> | <p>Decreases the overall picture size to allow the corners to be seen.</p> |
| <p>⑤ Pulse Cross Switch (⊕)</p> | <p>Receives cross pulse to allow vertical and horizontal syncs to be seen in the picture.</p> |
| <p>⑥ BLUE Only Switch (BLUE)</p> | <p>Defeats the red and green signals. This feature is used for monitor balancing with the SMPTE color bar signal.</p> |
| <p>⑦ INT/EXT SYNC Switch</p> | <p>Set the INT/EXT SYNC Switch to EXT Position when connecting an external composite sync signal to the monitor.</p> |
| <p>⑧ APERTURE Control (Serviceman Control)</p> | <p>Adjust the APERTURE control for proper sharpness. (Turn right for sharper picture.)</p> |
| <p>⑨ V-HOLD Control</p> | <p>Adjust the V-Hold control if the picture rolls up or down.</p> |
| <p>⑩ CONTRAST Control</p> | <p>Adjust the contrast level for proper overall contrast. There is a click position for normal level.</p> |
| <p>⑪ BRIGHT Control</p> | <p>Adjust the brightness level for proper overall picture brightness. There is a click position for normal level.</p> |
| <p>⑫ TINT Control</p> | <p>Adjust the Tint control for proper chroma phase of flesh tones.</p> |
| <p>⑬ COLOR Control</p> | <p>Adjust the Color control to set the chroma (saturation) level.</p> |

GENERAL CONNECTION AND APPLICATIONS
TERMINAL BOARD ON REAR COVER

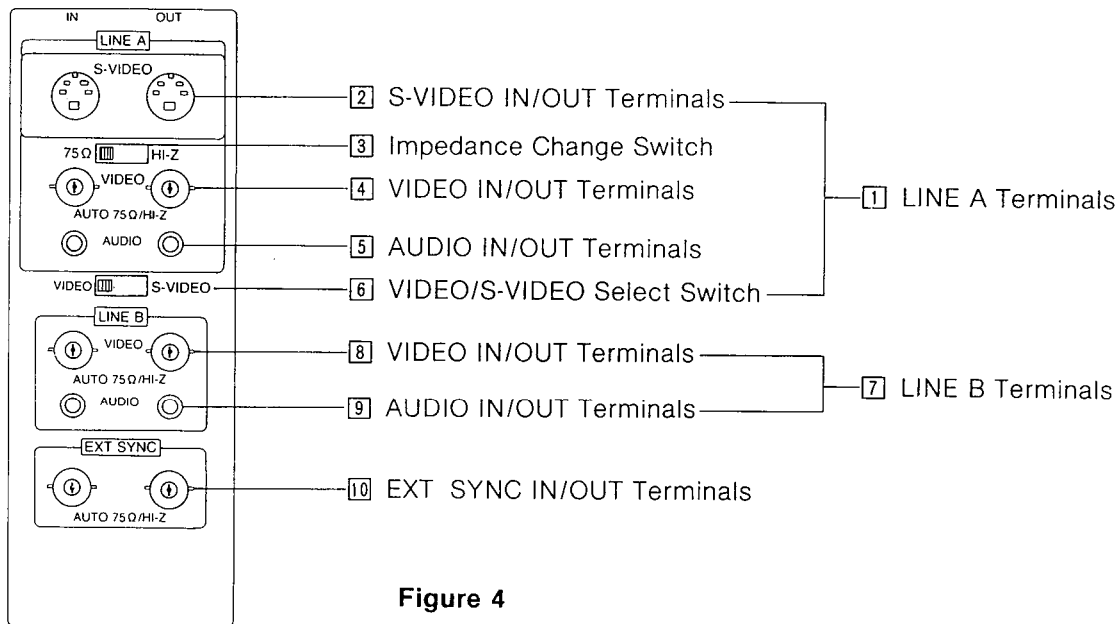


Figure 4

| | |
|--------------------------------------|---|
| <p>1 LINE A Terminals</p> | <p>Available when LINE A / LINE B Change Switch on the front panel is set to "LINE A".</p> |
| <p>2 S-VIDEO IN/OUT Terminals</p> | <p>Connect S-VIDEO signal to IN terminal. The same signal is available at the OUT terminal.</p> |
| <p>3 Impedance Change Switch</p> | <p>Set this switch to 75Ω for the S-VIDEO termination or to HI-Z for bridge-connection to next unit.</p> |
| <p>4 VIDEO IN/OUT Terminals</p> | <p>Connect video signal to IN terminal. The same signal is available at the OUT terminal.</p> |
| <p>5 AUDIO IN/OUT Terminals</p> | <p>Connect audio signal to IN terminal. The same signal is available at the OUT terminal.</p> |
| <p>6 VIDEO/S-VIDEO Select Switch</p> | <p>When the video signal is applied, set this switch to VIDEO position and when the S-VIDEO signal is applied, set this switch to S-VIDEO position.</p> |
| <p>7 LINE B Terminals</p> | <p>Available when LINE A/LINE B Change Switch on the front panel is set to "LINE B".</p> |
| <p>8 VIDEO IN/OUT Terminals</p> | <p>Connect video signal to IN terminal. The same signal is available at the OUT terminal.</p> |
| <p>9 AUDIO IN/OUT Terminals</p> | <p>Connect audio signal to IN terminal. The same signal is available at the OUT terminal.</p> |
| <p>10 EXT SYNC IN/OUT Terminals</p> | <p>Connect an external composite sync signal to this terminal when a non-composite video signal is applied to the video terminals (4 or 8).</p> |

Note: 1. The video and the external sync input/output terminals are equipped with "Automatic Termination Switch". If only input signal is applied, they are terminated by 75 ohm, and if both input/output signals applied, they are opened to high impedance.

2. It is possible to connect up to 10 monitors in series by looping through the S-VIDEO IN and S-VIDEO OUT or the VIDEO IN and VIDEO OUT terminals. There may be a possibility of a brightness reduction or interference if more than 10 units are connected. Please carefully confirm that these problems do not exist with the units before connection.

SIGNAL LEVEL AND TERMINAL IMPEDANCE

| Terminal \ Item | | Level | Impedance | Remarks |
|-----------------|--------|--------------------------|--------------------------|--|
| S-VIDEO | INPUT | Y: 1.0Vp-p C: 0.3Vp-p | High/75Ω (Switchable) | Y signal includes sync signal and C signal does not include it |
| | OUTPUT | Y: 1.0Vp-p C: 0.3Vp-p | High/75Ω (Switchable) | |
| VIDEO | INPUT | 1.0Vp-p (0.7Vp-p) | High/75Ω (Automatic) | Signal measures 1.0Vp-p with sync, or 0.7Vp-p without sync. |
| | OUTPUT | 1.0Vp-p (0.7Vp-p) | High/75Ω (Automatic) | |
| AUDIO | INPUT | -6dB | 10kΩ | 1Vrms=0dB (at 400Hz) |
| | OUTPUT | -6dB | 10kΩ | |
| EXT SYNC | INPUT | 2.0~4.0Vp-p | High/75Ω (Automatic) | Negative vertical and horizontal sync |
| | OUTPUT | 2.0~4.0Vp-p | High/75Ω (Automatic) | |

Note: Only the S-VIDEO input/output terminals are not equipped with "Automatic Termination Switch".
If only the input terminal is used, the impedance change switch must be set to 75Ω, and if both input and output terminals are used, the impedance change switch must be set to HI-Z for high impedance.

CONNECTION TO OTHER EQUIPMENTS

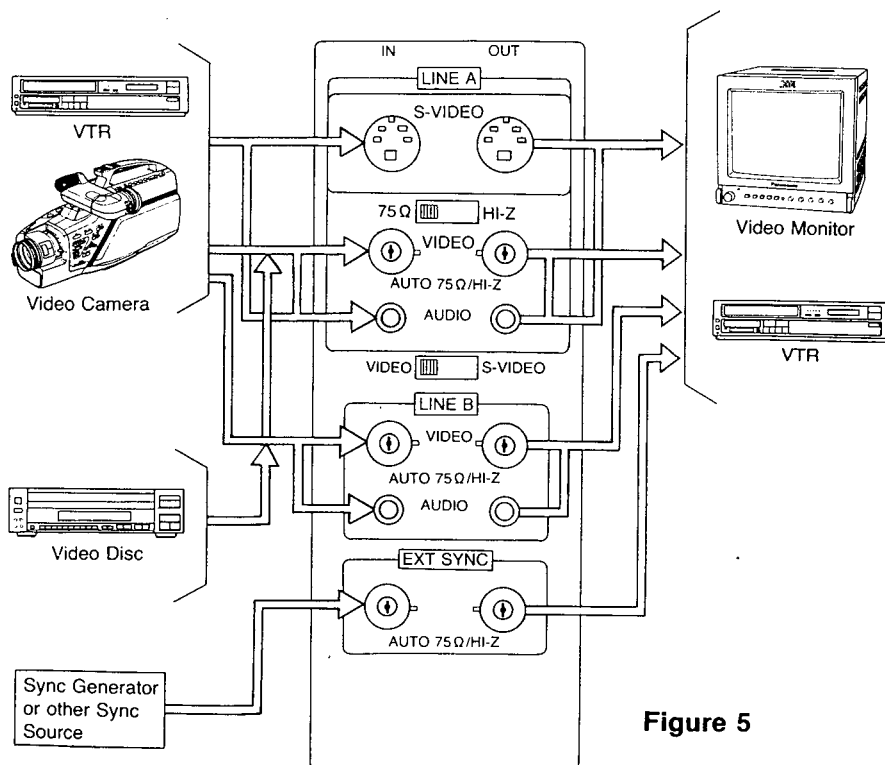


Figure 5

DISASSEMBLY INSTRUCTIONS

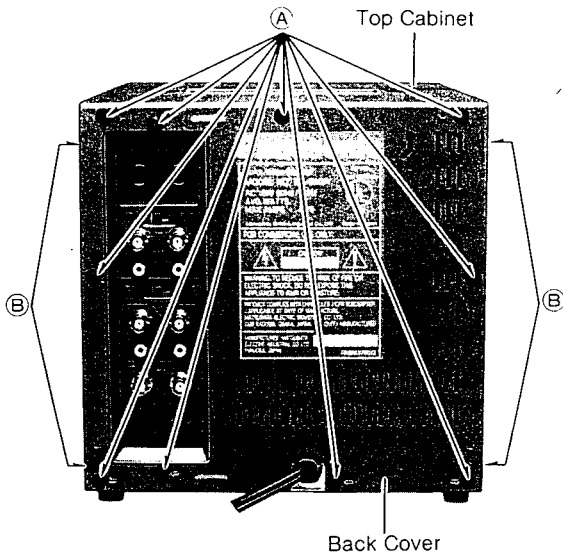


Figure 6

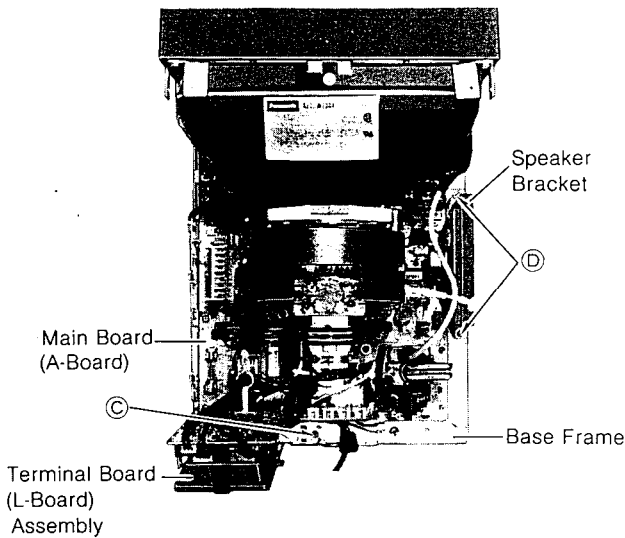


Figure 7

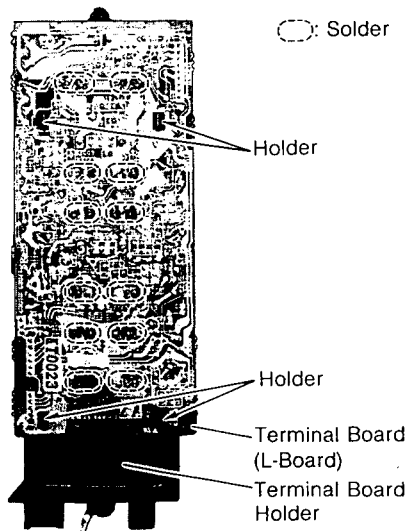


Figure 8

Caution: When servicing or replacing the CRT, it is important that the anode high voltage be completely discharged, as high voltage (1kV) may remain on the anode for an extended time after power off.

1. Back Cover Removal

- a) Remove 10 screws **A** from the back cover.
- b) Pull the back cover toward you and remove it.

Note: Remove only the screws **A** indicated by ⇐ mark and 4 screws **B** in order to remove back cover and top cabinet together.

2. Top Cabinet Removal

- a) Remove 4 screws **B** from the top cabinet, and then carefully pull the top cabinet toward you.

3. Terminal Board (L-Board) Removal

- a) Remove 1 screw **C** from the base frame.
- b) Disconnect connectors CO-1L, CO-2L, CO-3L, CO-4L and CO-5L from the terminal board (L-board) assembly.
- c) Remove the terminal board (L-board) assembly.
- d) Unsolder the points indicated in fig. 8 and remove the terminal board holder from the terminal board (L-Board).

4. Speaker Block Removal

- a) Remove 2 screws **D** from the speaker bracket.
- b) Remove the speaker block from the base frame.

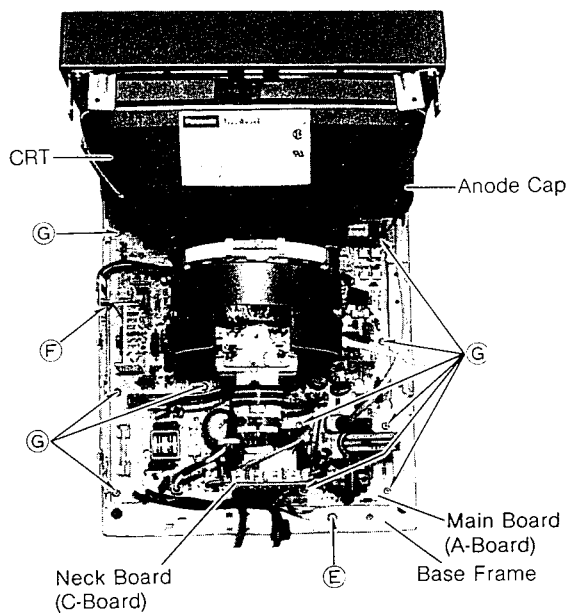


Figure 9

5. Main Board (A-Board) Removal

- a) Disconnect the neck board (C-board) and the anode cap from the CRT.
- b) Disconnect the DY connector, degaussing coil connector, power switch connector (CO-1A) and LED board (D-board) connector (CO-5A) from the main board (A-board).
- c) Disconnect CRT grounding strap connector (CO-1C) from the neck board (C-board).
- d) Remove 2 screws ⑤ and ⑥ from the base frame.
- e) Remove 10 screws ⑦ from the main board (A-board).
- f) Remove the main board (A-board) from the base frame.

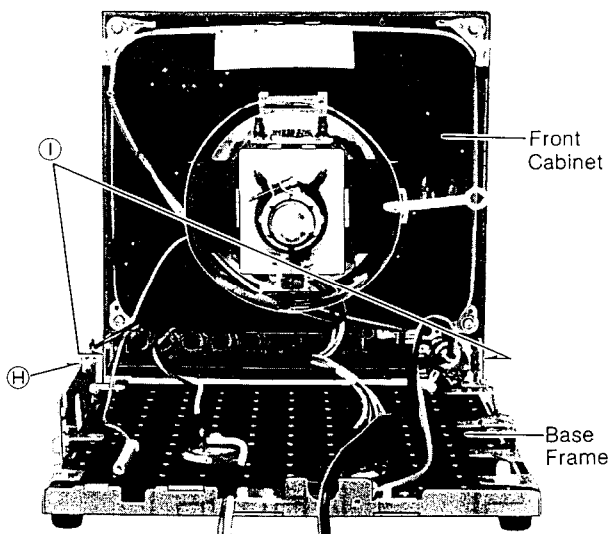


Figure 10

6. Base Frame Removal

- a) Remove the power switch knob from the front cabinet.
- b) Remove 1 screw ④ from the base frame.
- c) Place the unit with the CRT face down on a rubber mat or other soft surface to protect the CRT and the cabinet.
- d) Remove 2 screws ① from the front cabinet.
- e) Remove the base frame from the front cabinet.

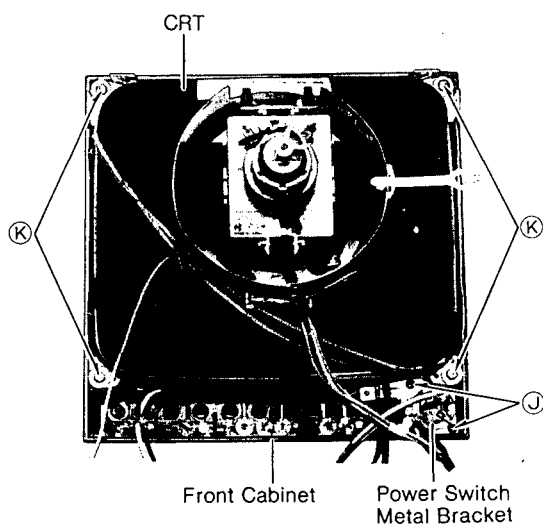


Figure 11

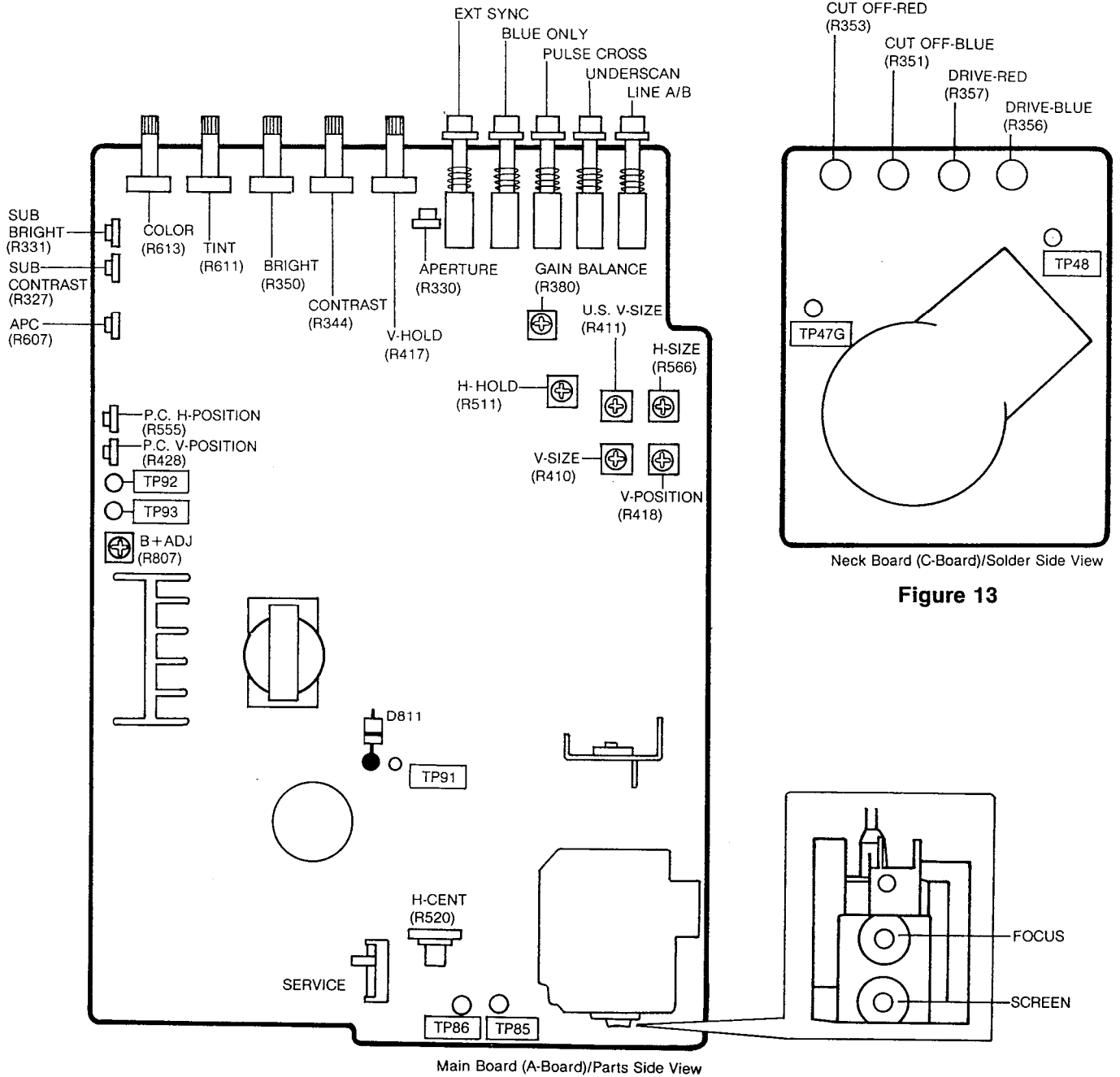
7. Power Switch Block and CRT Removal

- a) Remove 2 screws ⑧ from the power switch metal bracket.
- b) Remove the power switch metal bracket from the front cabinet.
- c) Remove 4 screws ⑨ from the CRT.
- d) Remove the CRT from the front cabinet.

Caution: Do not lift the CRT by the neck.

ADJUSTMENTS

MAIN PARTS LOCATION CHART



Neck Board (C-Board)/Solder Side View

Figure 13

Main Board (A-Board)/Parts Side View

Figure 12

A. SERVICING ADJUSTMENTS

VERTICAL HOLD ADJUSTMENT

Adjust V-HOLD control (R417) and set it at the point where vertical movement (horizontal lines) stops.

APERTURE ADJUSTMENT

Adjust APERTURE control (R330) for proper sharpness control (R330).

FOCUS ADJUSTMENT

Adjust FOCUS control on the FBT to obtain the sharpest and clearest picture.

B. INTERNAL ADJUSTMENT

When measuring voltage with a VTVM, be sure to use the test points located on the conductor side of the circuit boards.

B+ VOLTAGE (+121V) ADJUSTMENT

1. Set BRIGHT (R350) and CONTRAST (R344) controls to minimum and service switch to SERVICE position.
2. Connect a DC voltmeter between TP91 and chassis ground on main board (A-board).
3. Adjust B+ ADJ. control (R807) for $121.0V \pm 0.5V$.

HIGH VOLTAGE CONFIRMATION

1. Adjust white balance. (See page 12.)
2. Set BRIGHT (R350) and CONTRAST (R344) controls to minimum and service switch to SERVICE position.
3. Using a calibrated high voltage meter (electrostatic type) confirm that the high voltage is within the range of $22.0kV \pm 1.0kV$.

Note: Be certain that B+ voltage is $121.0V \pm 0.5V$ during the high voltage confirmation.

HORIZONTAL HOLD ADJUSTMENT

Adjust H-HOLD control (R511) and set it at the point where horizontal movement (diagonal lines) stops.

VERTICAL SIZE ADJUSTMENT

Adjust V-SIZE control (R410) until picture becomes symmetrical from top to bottom.

VERTICAL POSITION ADJUSTMENT

Adjust V-POSITION control (R418) until picture becomes vertical center.

H-RASTER CENTER ADJUSTMENT

Adjust H-CENTER control (R520) until picture becomes centered horizontally.

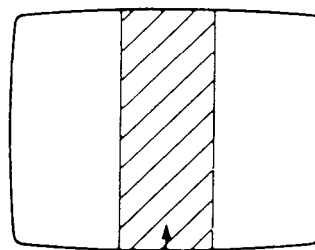
COLOR PURITY ADJUSTMENT

(See figures 14 and 16)

1. Operate the monitor for 20 minutes, with BRIGHT (R350) and CONTRAST (R344) controls at maximum position to warm up the CRT.
2. Degauss the monitor fully by using an external degaussing coil.
3. Roughly adjust convergence. (See page 12.)
4. Apply a black and white video signal.

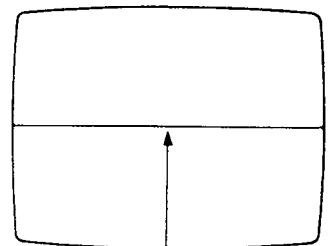
5. Turn RED and BLUE CUT OFF controls (R353 and R351) fully counterclockwise to obtain a green field. Adjust DRIVE controls (R357 and R356) if green field is not obtained.
6. Loosen the deflection yoke clamp screw and move the deflection yoke as close to the purity magnet as possible.
7. Release the purity magnets by cutting the white lacquer which locks the purity and convergence magnets. Then, adjust the purity magnet to set the vertical green raster precisely at the center of the screen. (See figure 14.)
8. Slowly move the deflection yoke forward and adjust for the best overall green screen.
9. Tighten the deflection yoke clamp screw.
10. Produce the blue and red raster with CUT OFF controls (R353 and R351) and observe that good purity is obtained on the respective field.
11. Observe that a uniform white raster is obtained by adjusting R and B CUT OFF controls (R353 and R351). If the screen is not uniformly white, repeat above procedure.

Note: Purity correction magnet may be effective to control purity slightly.



Green Raster

Figure 14



Horizontal Line

Figure 15

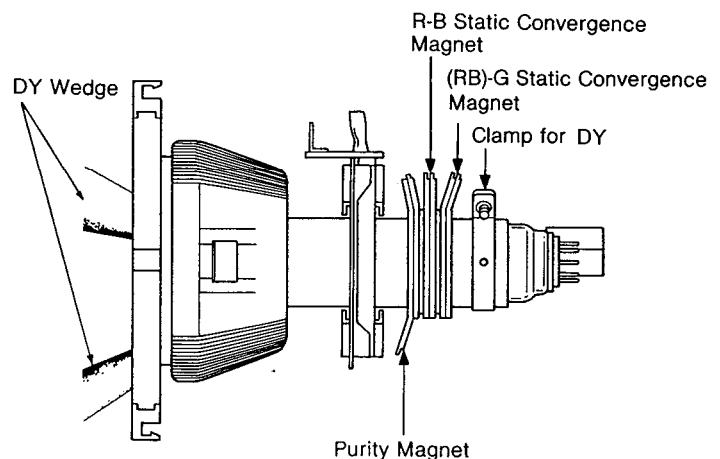


Figure 16

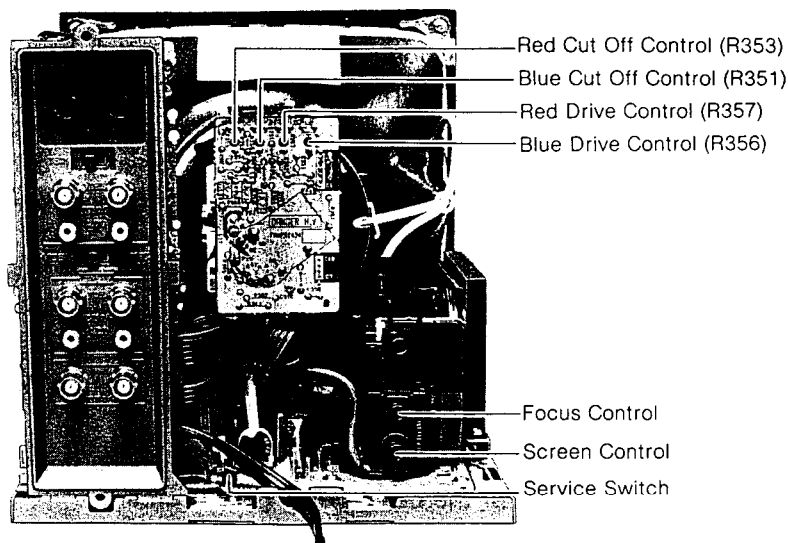


Figure 17

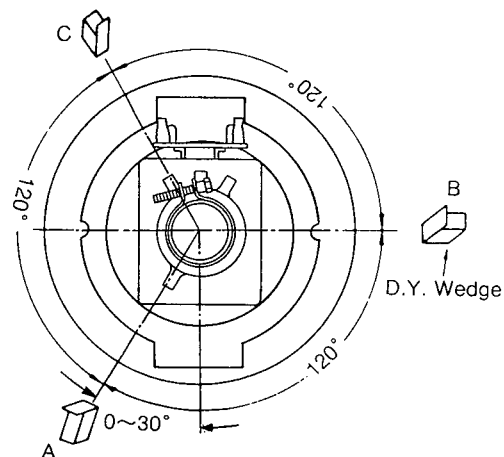


Figure 18

CONVERGENCE ADJUSTMENT

Note: Before adjusting convergence, vertical size and focus adjustments must be completed.

1. Apply a crosshatch signal.
2. The brightness level should be no higher than necessary to obtain a clear pattern.
3. Release the convergence magnet by cutting the white lacquer which locks the purity and convergence magnets. Then, converge the red and blue lines at the center of the screen by rotating the R-B static convergence magnet. (See figure 16.)
4. Align the converged red/blue lines with the green lines at the center of the screen by rotating the (RB)-G static convergence magnet. (See figure 16.)
5. Remove the DY wedges (see figure 16) and slightly tilt (do not rotate) the deflection yoke horizontally and vertically to obtain good overall convergence.
6. Secure the deflection yoke by reinserting the wedges. (See figure 18.)
7. If purity error is found, repeat the purity adjustments.
8. After the color purity and the convergence adjustments are completed, lock the magnets with white lacquer or silicone rubber.

Note:

1. Wedge A shown in figure 18 should be fixed within a range of $0^{\circ} \sim 30^{\circ}$ to the left of the vertical line as shown.
2. After inserting wedge A, insert wedges B and C. The wedges should be set 120° apart from each other.
3. Be certain that the three wedges are firmly fixed and the deflection yoke is tightly clamped in place. Otherwise the deflection yoke may shift its position and cause a loss of convergence and purity.

WHITE BALANCE ADJUSTMENT

(See figures 15 and 17.)

1. Apply a black and white video pattern.
2. Set TINT control (R611) to center and BRIGHT (R350), CONTRAST (R344) and COLOR (R613) controls to minimum position.
3. Set SERVICE switch to SERVICE position.
4. Turn two CUT OFF controls (R353 and R351) fully counterclockwise, then turn each control forward (clockwise) 90° .
5. Turn SCREEN control fully counterclockwise.
6. Connect a VTVM between TP47G and chassis ground on C-Board.
7. Adjust BRIGHT control (R350) so that the reading of VTVM becomes $105V \pm 1V$.
 If BRIGHT control (R350) can not reach 105V, adjust SUB-BRIGHT control (R331) additionally.
8. Slowly turn SCREEN control clockwise until a dim green horizontal line appears on the picture tube screen.
9. Make the horizontal line white by turning two CUT OFF controls which were previously set in step (4).

10. Return SERVICE switch to FAST position.
11. Alternately adjust Red and Blue DRIVE controls (R357 and R356) to produce a normal black and white picture. Check the black and white picture detail for proper black and white retention (no coloration) from lowlights to highlights and at all brightness levels for proper tracking. Proper tracking at all brightness levels can be obtained when SCREEN control, CUT OFF controls, and DRIVE controls are properly adjusted. If the results are unsatisfactory, repeat all the above steps.

SUB-BRIGHT CONTROL ADJUSTMENT

This is factory adjusted. Usually no further adjustment is required in the field. However, when the A-board, C-board or CRT is replaced, the following adjustment is necessary:

1. Apply a cross hatch pattern signal.
2. Set BRIGHT (R350) and CONTRAST (R344) controls at their click position.
3. Connect the DC currentmeter between TP85 and TP86 (positive lead of the voltmeter to TP85 and negative lead to TP86).
4. Adjust SUB-BRIGHT control (R331) so that the reading of the currentmeter becomes approximately $170\mu\text{A}$ for proper picture brightness.

Note: For this adjustment NTSC Pattern Generator, model LCG-396 manufactured by Leader Electronics Corp. (Japan) is recommended.

UNDERSCAN V. SIZE ADJUSTMENT

1. Apply a monoscope pattern to the monitor.
2. Push UNDERSCAN switch on the front panel.
3. Adjust U.S. V-SIZE control (R411) until picture height becomes $4\text{mm} \pm 1\text{mm}$ shorter than picture tube screen at top and bottom as shown in figure 19.
4. If the picture is shifted upper or lower, adjust V-POSITION control (R418).

UNDERSCAN H. SIZE ADJUSTMENT

1. Apply a monoscope pattern to the monitor.
2. Push UNDERSCAN switch on the front panel.
3. Adjust H-SIZE control (R566) until picture width becomes $6\text{mm} \pm 1\text{mm}$ shorter than picture tube screen at both sides as shown in figure 19.
4. If the picture is shifted left or right, adjust H-CENTER control (R520).

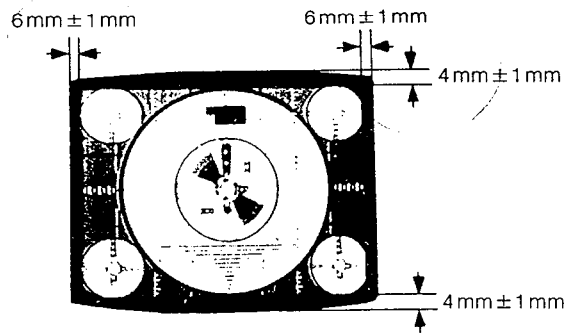


Figure 19

PULSE CROSS V-POSITION ADJUSTMENT

1. Apply a monoscope pattern to the monitor.
2. Push PULSE CROSS switch on the front panel.
3. Adjust P.C. V-POSITION control (R428) until horizontal blanking line becomes at the vertical center on picture tube screen. (See figure 20.)

PULSE CROSS H-POSITION ADJUSTMENT

1. Apply a monoscope pattern to the monitor.
2. Push PULSE CROSS switch on the front panel.
3. Adjust P.C. H-POSITION control (R555) until the length between left screen edge and vertical blanking line becomes approximately 35mm. (See figure 20.)

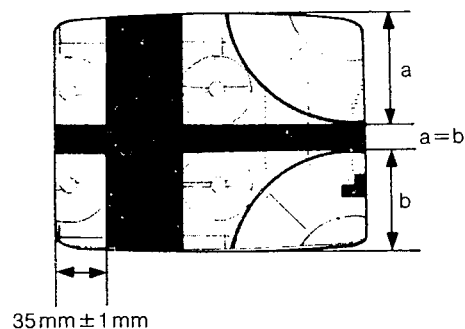


Figure 20

ALIGNMENTS

SUB-CONTRAST ALIGNMENT

1. Apply a studio color bar signal.
Input signal should be 1.0Vp-p.
(video level 0.7Vp-p, sync level 0.3Vp-p).
2. Set BRIGHT (R350) and CONTRAST (R344) controls fully clockwise.
3. Set COLOR control (R613) fully counterclockwise.
4. Connect an oscilloscope to TP48 on C-board.
5. Adjust SUB-CONTRAST control (R327) to obtain 1.5Vp-p \pm 0.1Vp-p from white level to black level.
(See figure 21.)

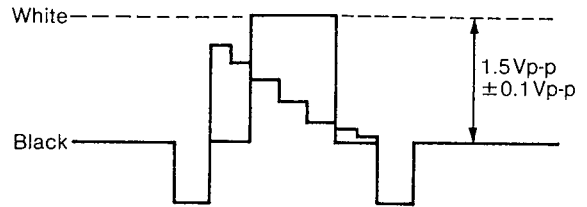


Figure 21

COMB FILTER ALIGNMENT

Preparation

1. Connect an oscilloscope to TP100.

Alignment Procedure

1. Apply a studio color bar signal.
2. Adjust GAIN BALANCE control (R380) to set 3.58MHz sub carrier to the minimum amplitude.
(See figure 22.)
3. Adjust the coil (L372) to set 3.58MHz sub carrier to the minimum amplitude.
4. Adjust GAIN BALANCE control (R380) to set 3.58MHz sub carrier to the minimum amplitude.

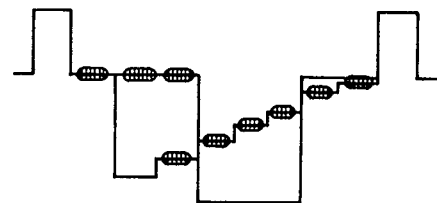
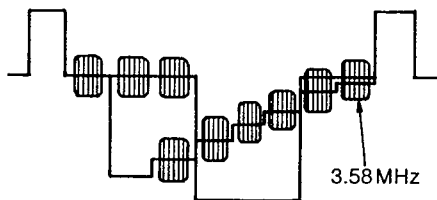


Figure 22

APC ALIGNMENT

Preparation

1. Prepare a C-jumper (0.33μF).
2. Connect a digital multi-meter between terminal ⑭ of IC601 and chassis ground.

Alignment Procedure

1. Apply a color video signal.
2. Measure the voltage of terminal ⑭ of IC601.
3. Connect the C-jumper between terminal ⑦ of IC601 and chassis ground.
4. Then apply a black and white video signal.
5. Adjust APC control (R607) so that the reading of the multi-meter becomes equal to the voltage measured at step 2.

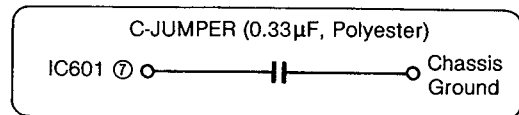
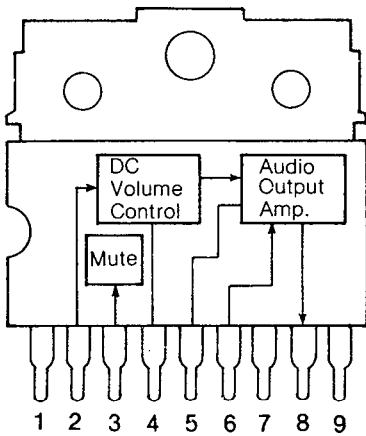


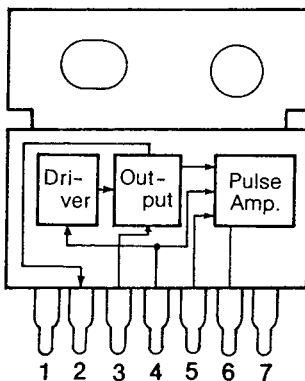
Figure 23

COMPONENT REFERENCE GUIDE



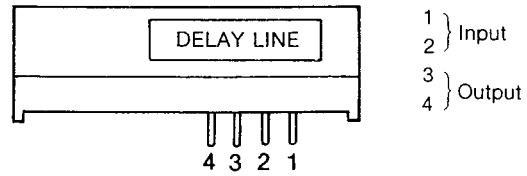
**AN5265
(IC201)
Sound Output**

| Pin No. | Pin Name |
|---------|----------------|
| 1 | Vcc 1 |
| 2 | Sound Input |
| 3 | Mute |
| 4 | Volume Control |
| 5 | Filter |
| 6 | Feedback |
| 7 | GND |
| 8 | Sound Output |
| 9 | Vcc 2 |

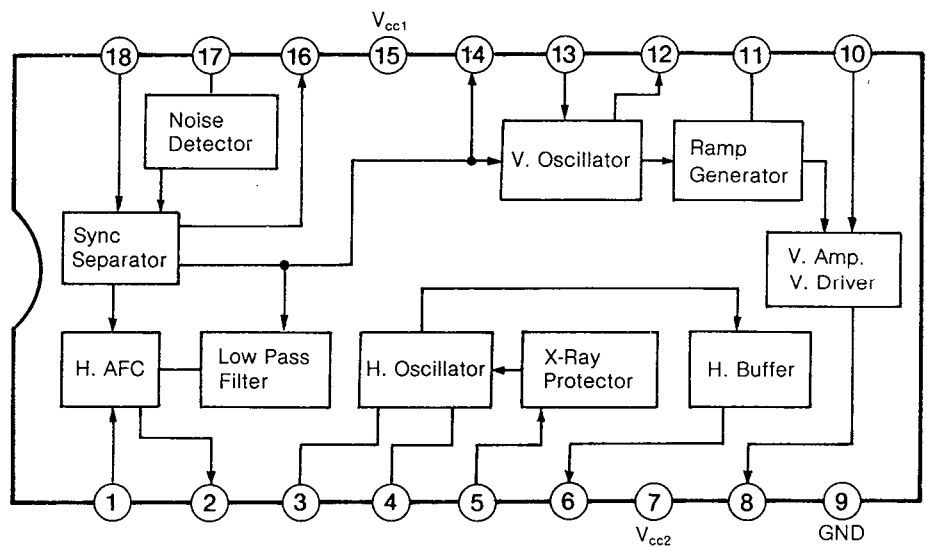
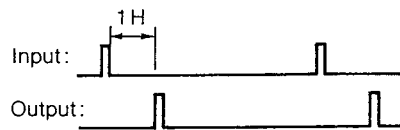


**AN5515X
(IC402)
V. Deflection Output**

| Pin No. | Pin Name |
|---------|---------------------------|
| 1 | GND |
| 2 | Output |
| 3 | Supply Voltage for Output |
| 4 | Input |
| 5 | Trigger Pulse Input |
| 6 | Pulse Amp. Output |
| 7 | Vcc |

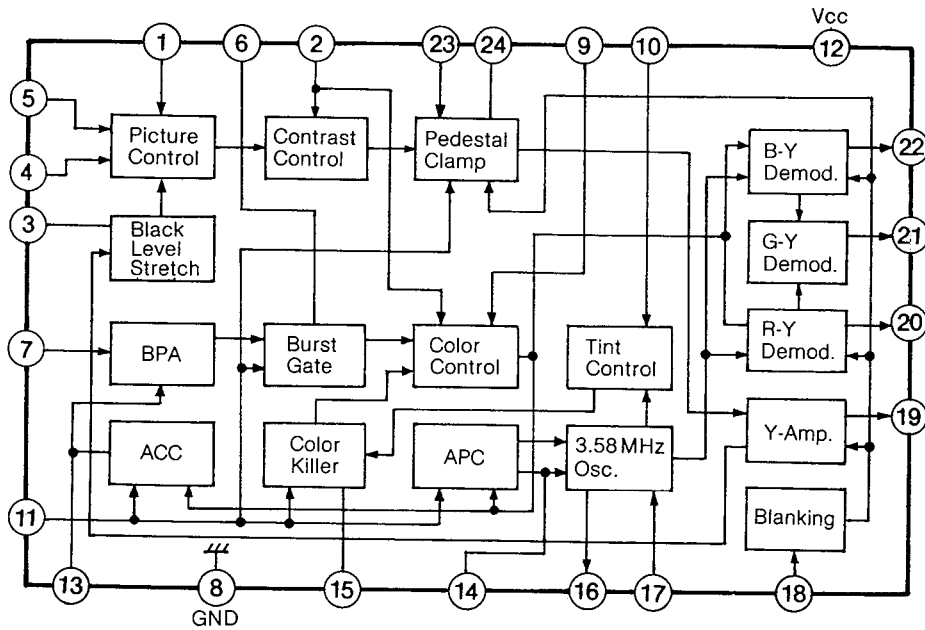


**EFDMA645B95G
(L371)
Delay Line**



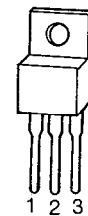
**AN5436N
(IC401)
Deflection Signal Processing**

| Pin No. | Pin Name | Pin No. | Pin Name |
|---------|-----------------------|---------|-----------------------|
| 1 | AFC Ref. Signal Input | 10 | DC, AC Feedback Input |
| 2 | H. AFC Output | 11 | V. Sawtooth Capacitor |
| 3 | H. Hold Volume | 12 | V. Pulse Output |
| 4 | H. Osc. Capacitor | 13 | V. Hold Volume |
| 5 | X-Ray Protector Input | 14 | V. Integral Capacitor |
| 6 | H. Output | 15 | Vcc 1 |
| 7 | Vcc 2 | 16 | Sync Sep. Output |
| 8 | V. Output | 17 | Noise Detect Input |
| 9 | GND | 18 | Video Signal Input |



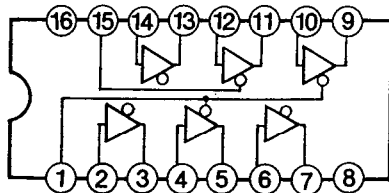
AN5316N
(IC601)
Video/Chrominance Signal Processing

| Pin No. | Pin Name | Pin No. | Pin Name |
|---------|------------------------|---------|-----------------------|
| 1 | Picture Control | 13 | ACC Filter |
| 2 | Contrast Control | 14 | APC Filter |
| 3 | Black Level Filter | 15 | Color Killer Filter |
| 4 | Video Input 1 | 16 | 3.58MHz Osc. Output |
| 5 | Video Input 2 | 17 | 3.58MHz Osc. Input |
| 6 | Chrominance By-pass | 18 | Blanking Pulse Input |
| 7 | Chrominance Input | 19 | Y Output |
| 8 | GND | 20 | (R-Y) Output |
| 9 | Color Control | 21 | (G-Y) Output |
| 10 | Tint Control | 22 | (B-Y) Output |
| 11 | Burst Gate Pulse Input | 23 | Brightness Control |
| 12 | Vcc | 24 | Pedestal Clamp Filter |



LA78M12
(IC502)
Regulator IC (+12V)

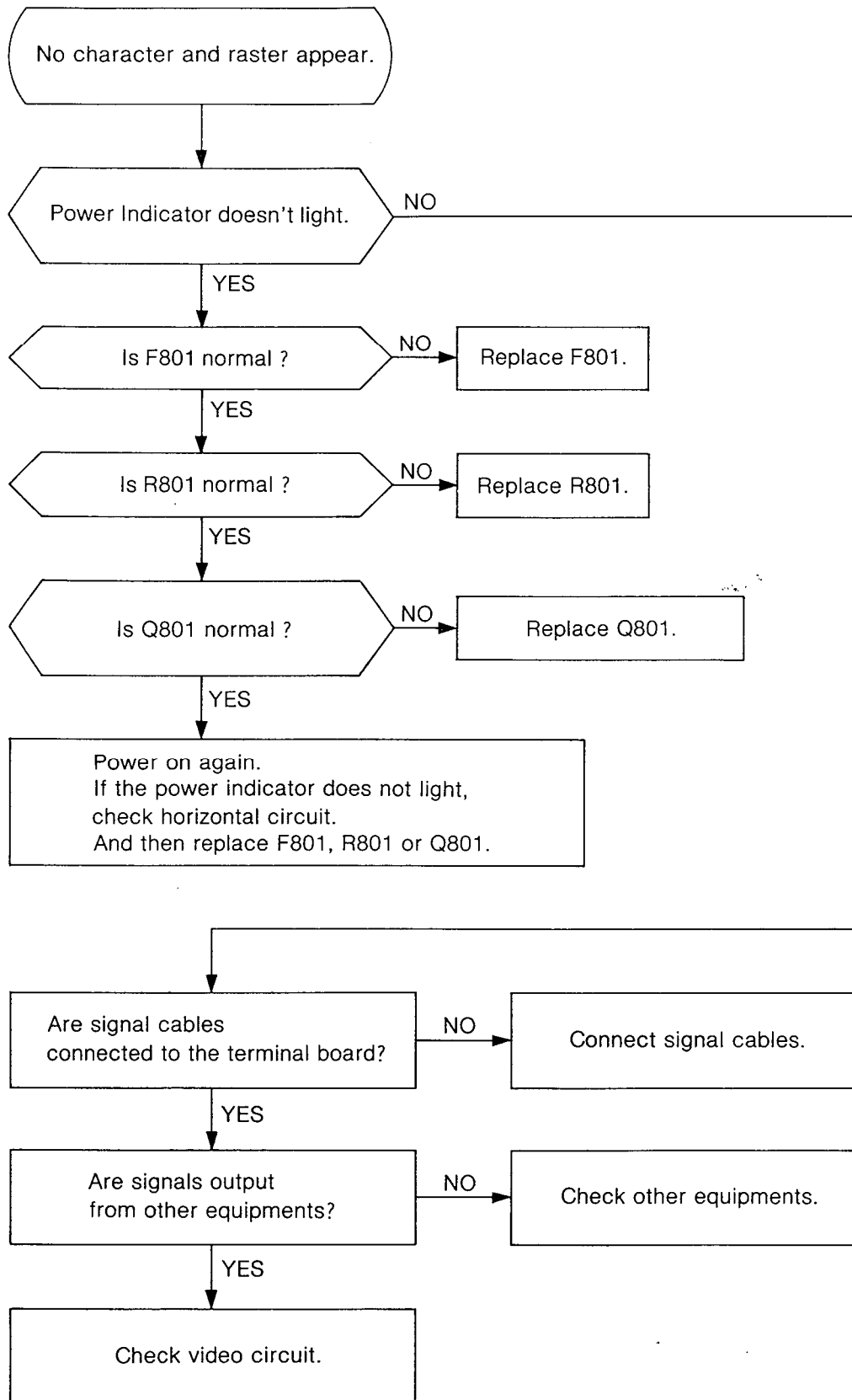
1: Input
2: GND
3: Output

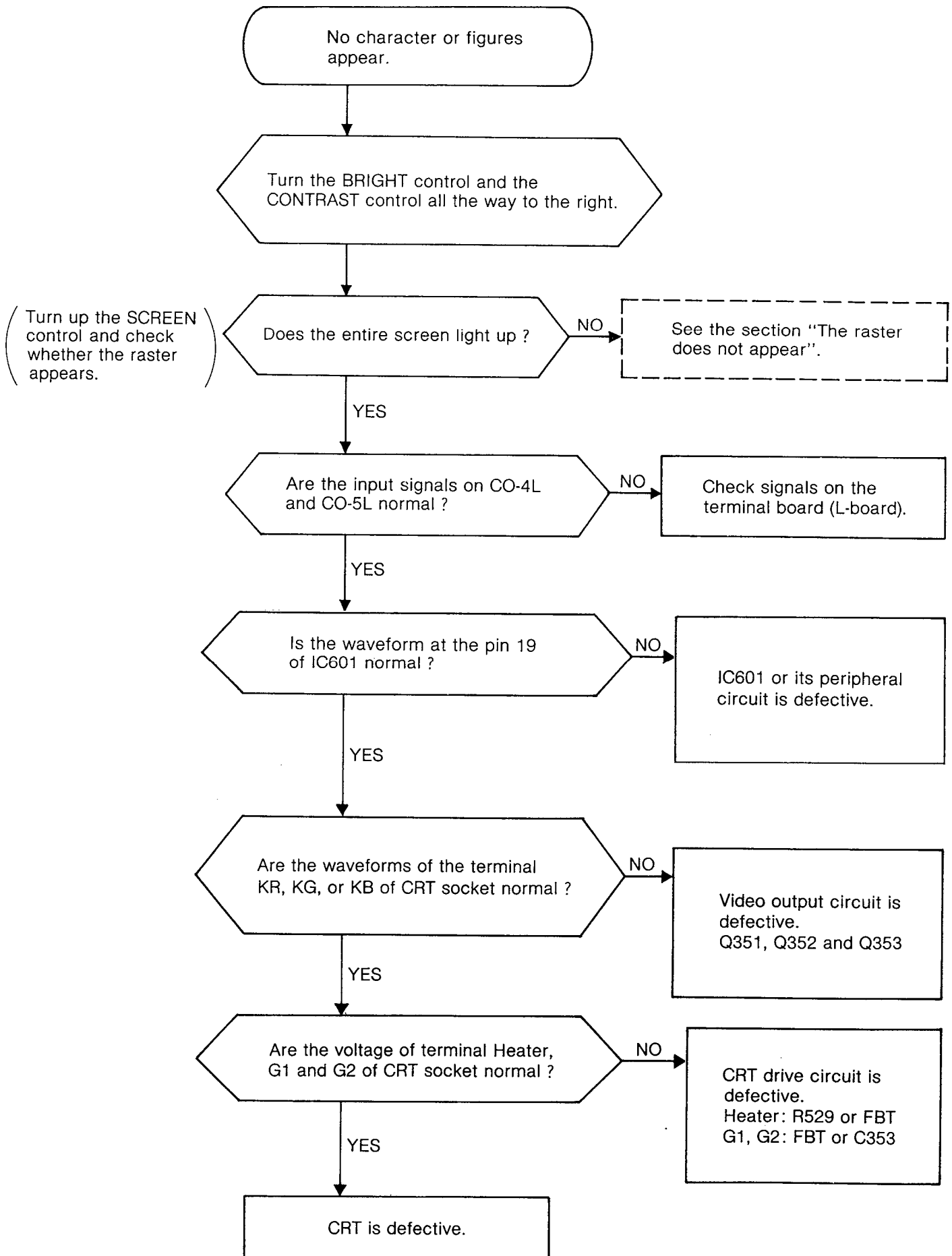


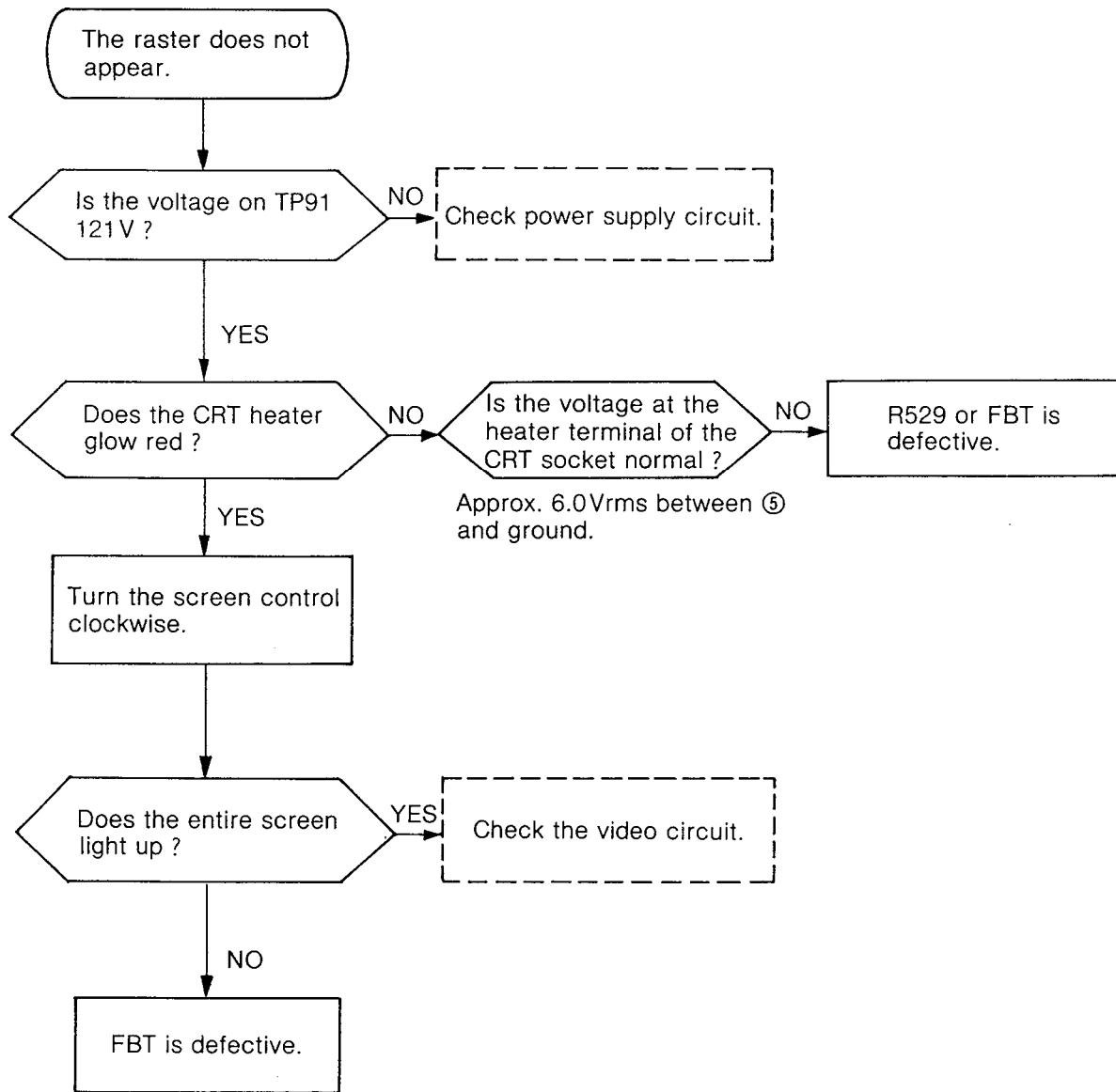
TVSUPD4503BC
(IC501)
3 State Driver

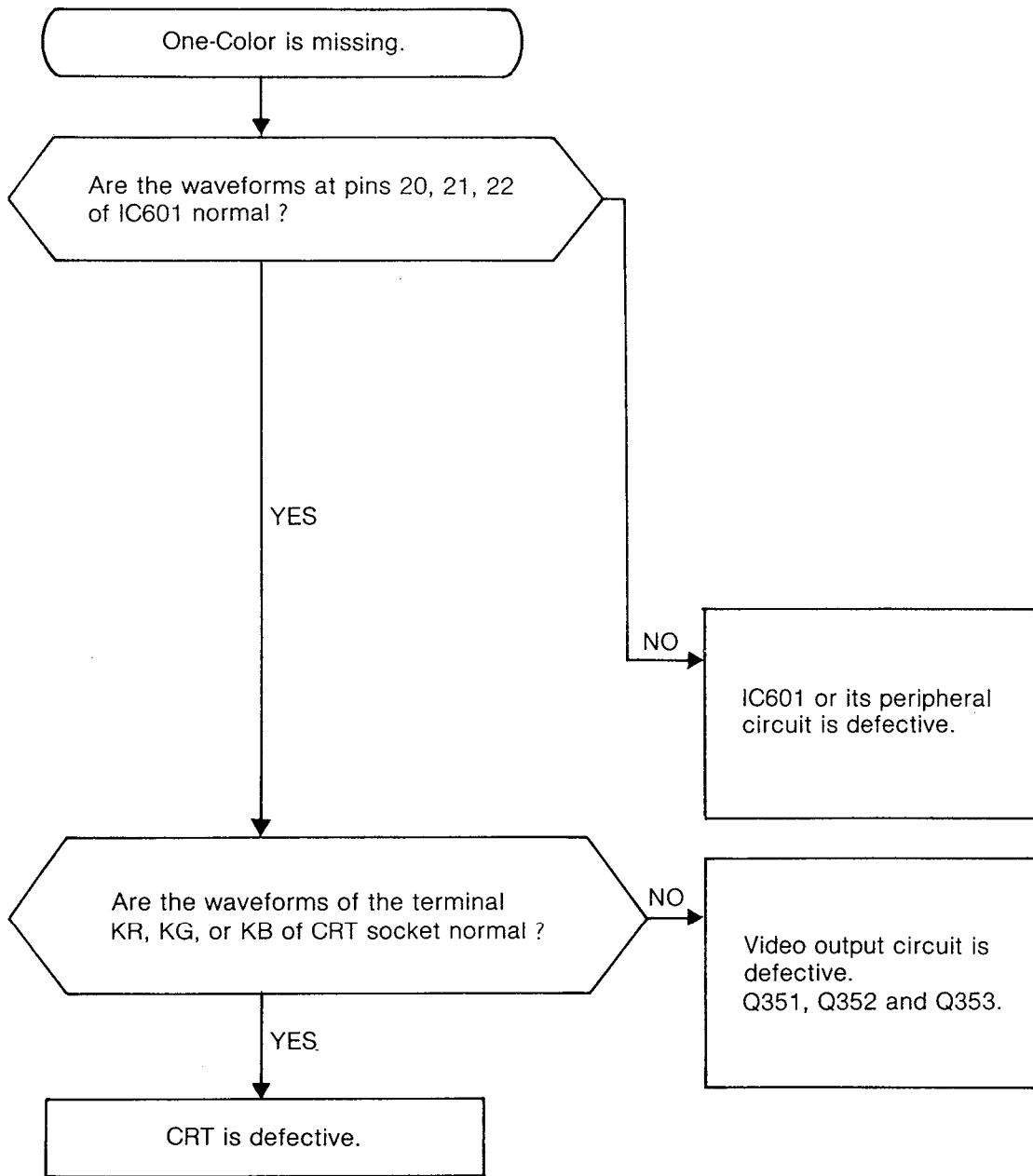
| Pin No. | Pin Name |
|---------|----------------|
| 1 | Output Control |
| 2 | 1A |
| 3 | 1Y |
| 4 | 2A |
| 5 | 2Y |
| 6 | 3A |
| 7 | 3Y |
| 8 | GND |
| 9 | 4A |
| 10 | 4Y |
| 11 | 5A |
| 12 | 5Y |
| 13 | 6A |
| 14 | 6Y |
| 15 | Output Control |
| 16 | Vcc |

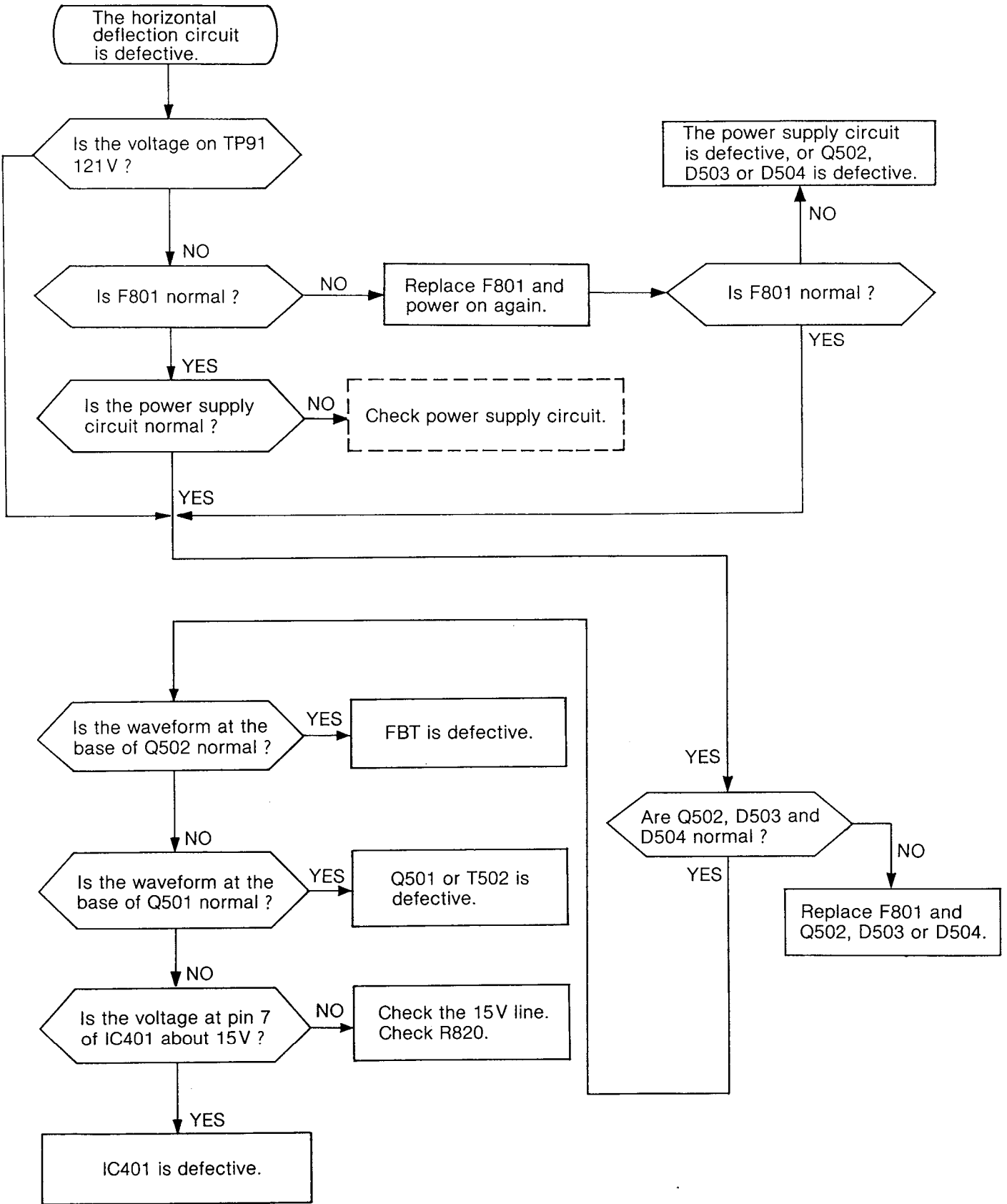
TROUBLESHOOTING FLOW CHART

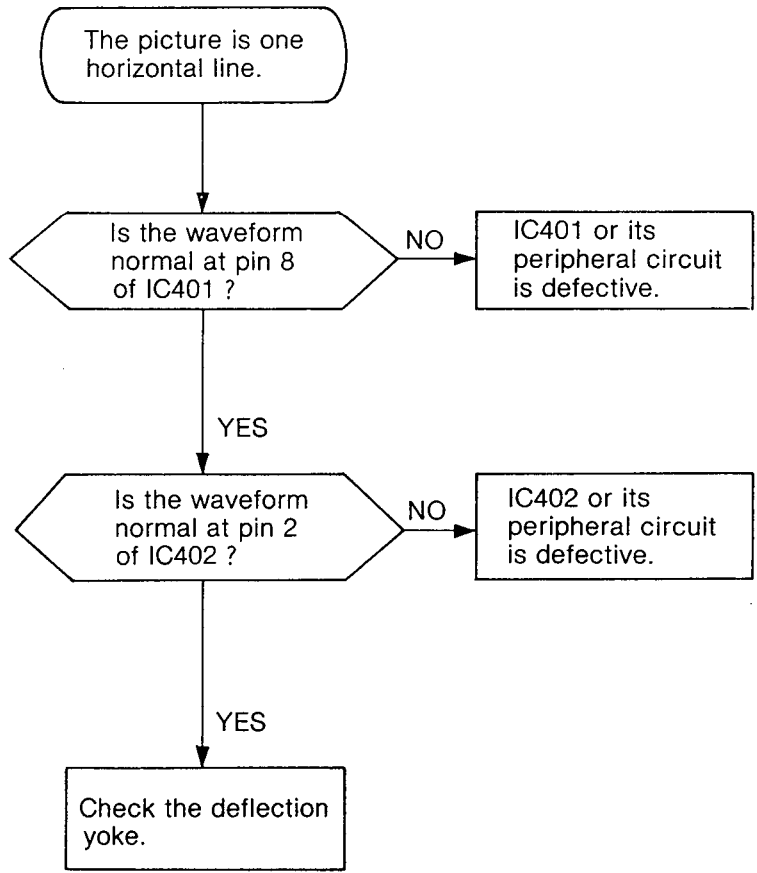
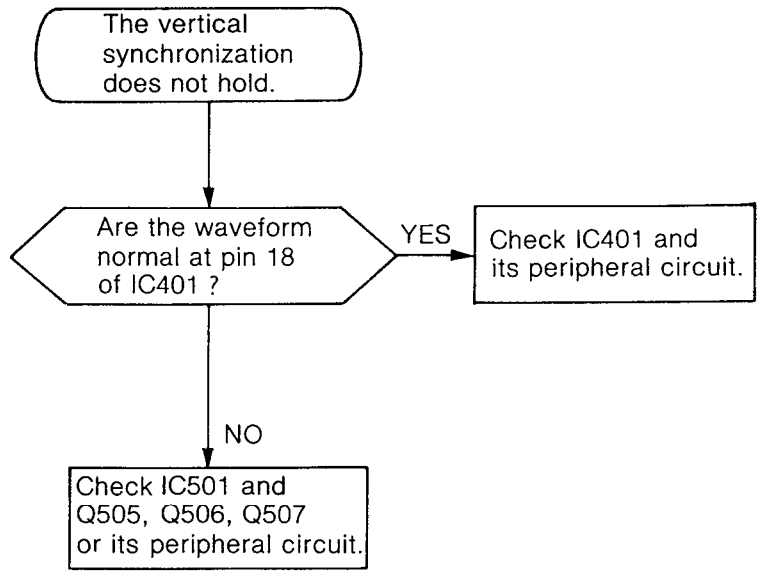












CLAMPING AND WIRING POSITIONS OF INTERNAL LEADS

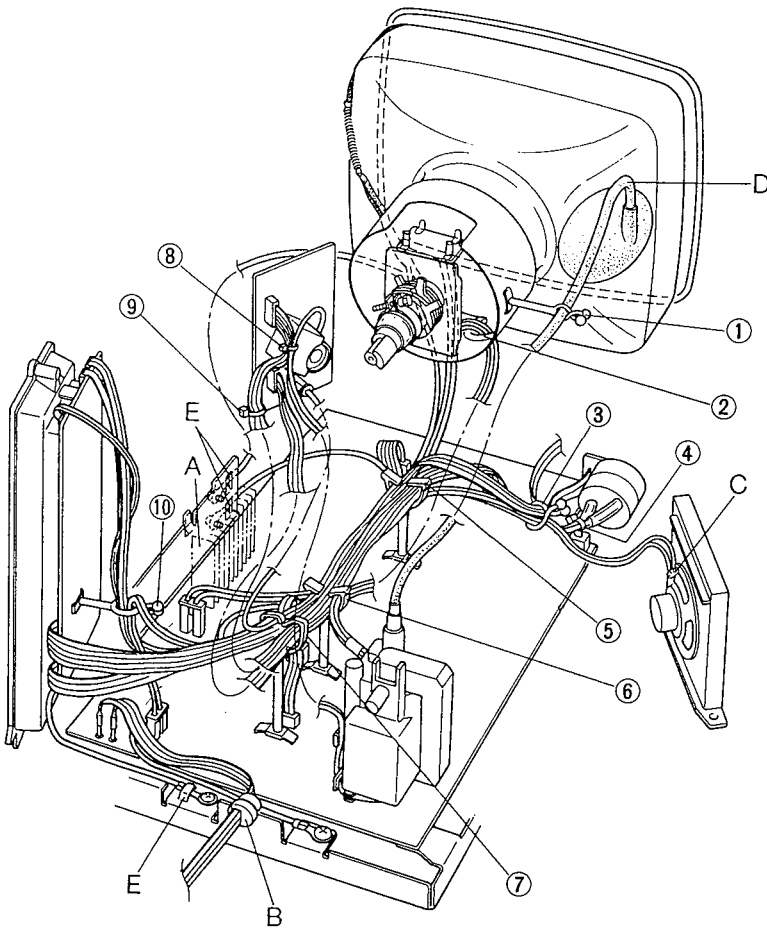


Figure 24

Caution:

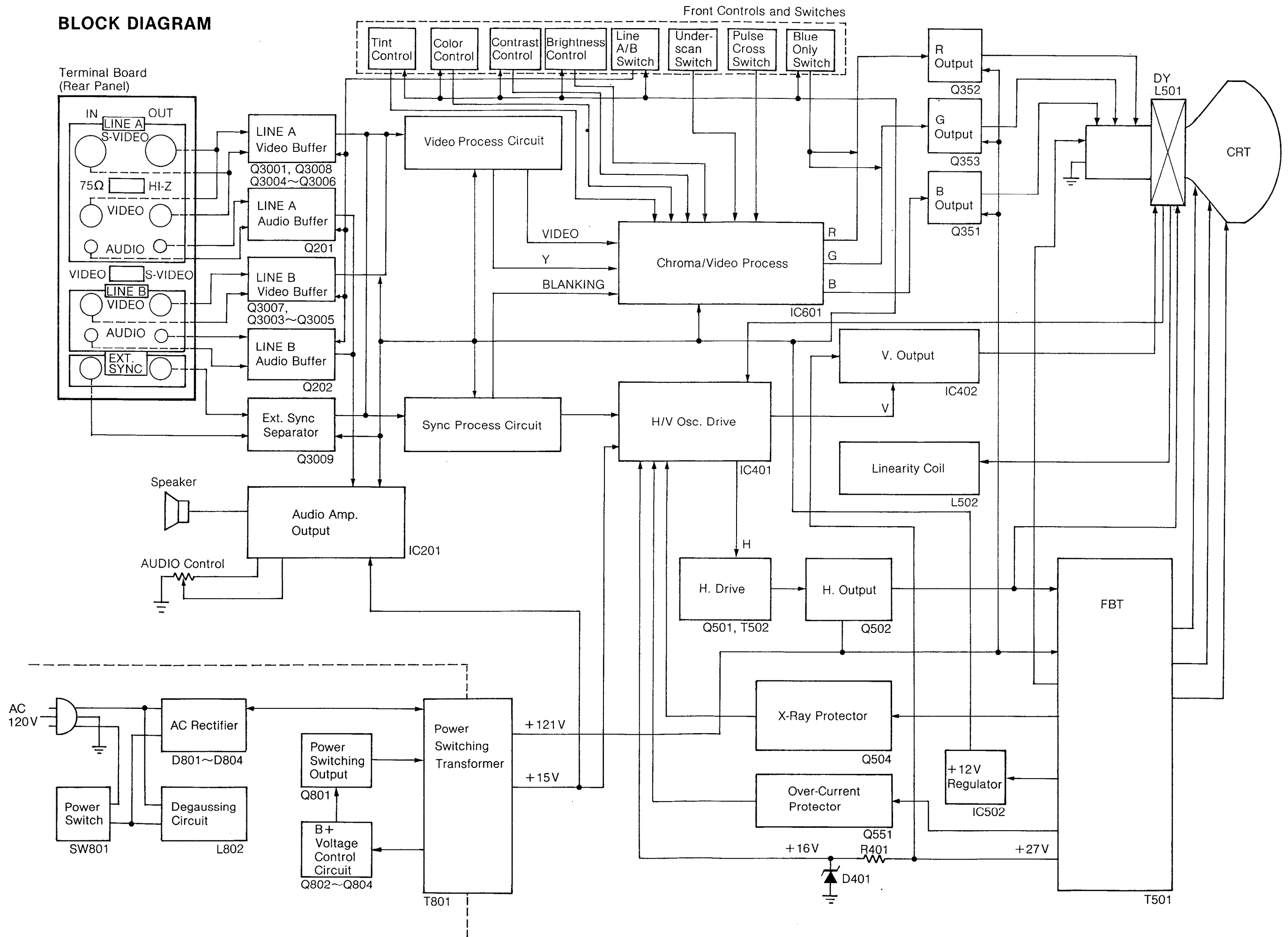
- A. Arrange all leads in order not to touch this heat sink.
- B. Fix the power cord bushing in order not to stretch the power cord.
- C. Fix the speaker to the speaker bracket so that the leads should be located in left upper side by seeing from the inside.
- D. Fit the anode cap so that the anode lead should be located in the upper part.
- E. Fix the leads by screws through these arches.

| Clamper | Clamp Lead | Clamper | Clamp Lead |
|---------|---|---------|---|
| ① | <ul style="list-style-type: none"> • A lead from the anode cap | | |
| ② | <ul style="list-style-type: none"> • Four leads from DY | | |
| ③ | <ul style="list-style-type: none"> • A cable from the speaker/CO-1L • Two leads from the power switch • A cable from the power switch/CO-2L • A cable from D-Board/CO-5A • A cable from A-Board/CO-4L | ⑦ | <ul style="list-style-type: none"> • A cable from the speaker/CO-1L • A cable from A-Board/CO-3L • A cable from A-Board/CO-4L • A cable from A-Board/CO-5L • A cable from the power switch/CO-2L • A cable from A-Board/A1-A6 • Two leads from the Degaussing Coil • A 1P lead from Grounding Strap |
| ④ | <ul style="list-style-type: none"> • Two leads from the power switch | ⑧ | <ul style="list-style-type: none"> • Two leads from FBT • A cable from A-Board/A1-A6 |
| ⑤ | <ul style="list-style-type: none"> • A cable from the speaker/CO-1L • A cable from A-Board/CO-4L • A cable from A-Board/CO-5L • Two leads from the power switch • A cable from the power switch/CO-2L • A cable from A-Board/A1-A6 • Two leads from the Degaussing Coil • A GND lead from A17 • A 1P lead from Grounding Strap/CO-1C | ⑨ | <ul style="list-style-type: none"> • A cable from A-Board/A1-A6 |
| | | ⑩ | <ul style="list-style-type: none"> • A cable from A-Board/CO-3L • A cable from the power switch/CO-2L • A cable from the speaker/CO-1L • Two leads from Degaussing Coil |
| ⑥ | <ul style="list-style-type: none"> • A cable from the speaker/CO-1L • A cable from A-Board/CO-4L • A cable from A-Board/CO-5L • Two leads from the power switch • A cable from the power switch/CO-2L • A cable from A-Board/A1-A6 • Two leads from the Degaussing Coil • A GND lead from A17 • A 1P lead from Grounding Strap/CO-1C • Four leads from DY | | |

MEMO

A series of horizontal dotted lines for writing.

BLOCK DIAGRAM



SCHEMATIC DIAGRAM AND CIRCUIT BOARD

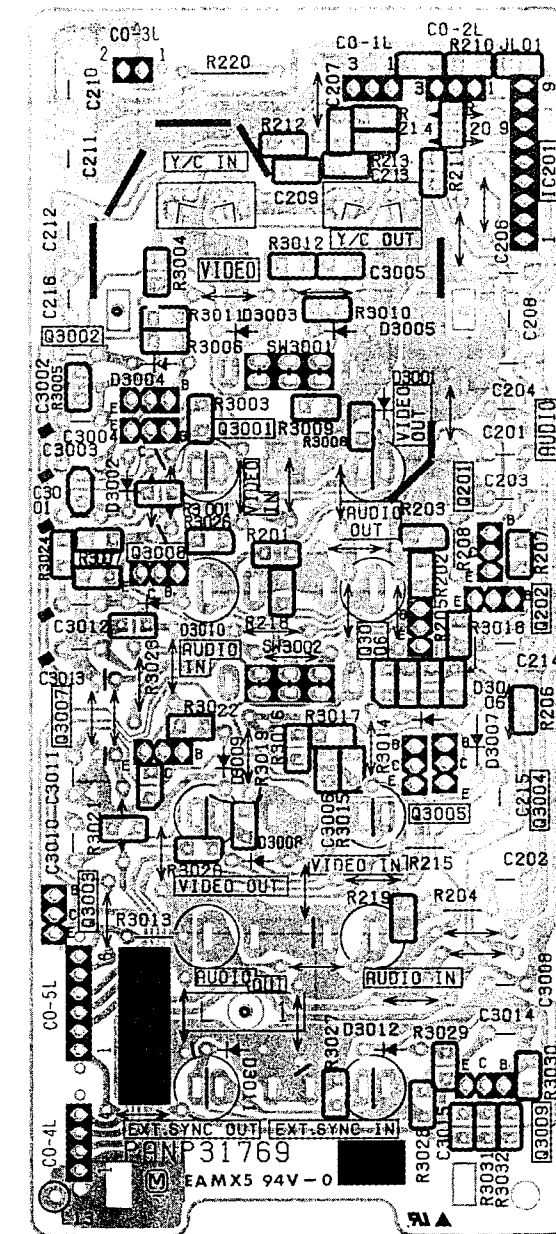
IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

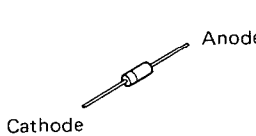
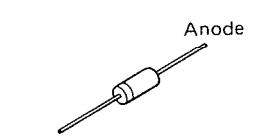
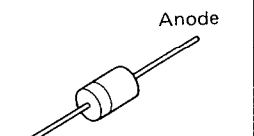
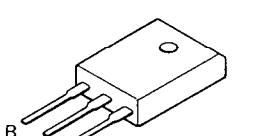
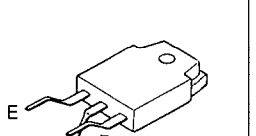
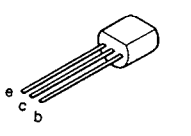
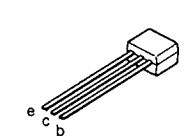
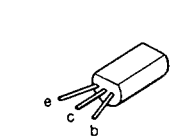
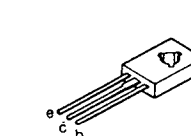
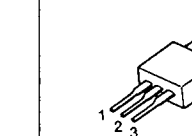
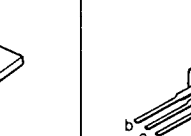
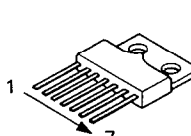
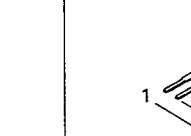
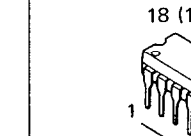
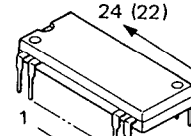
NOTE:

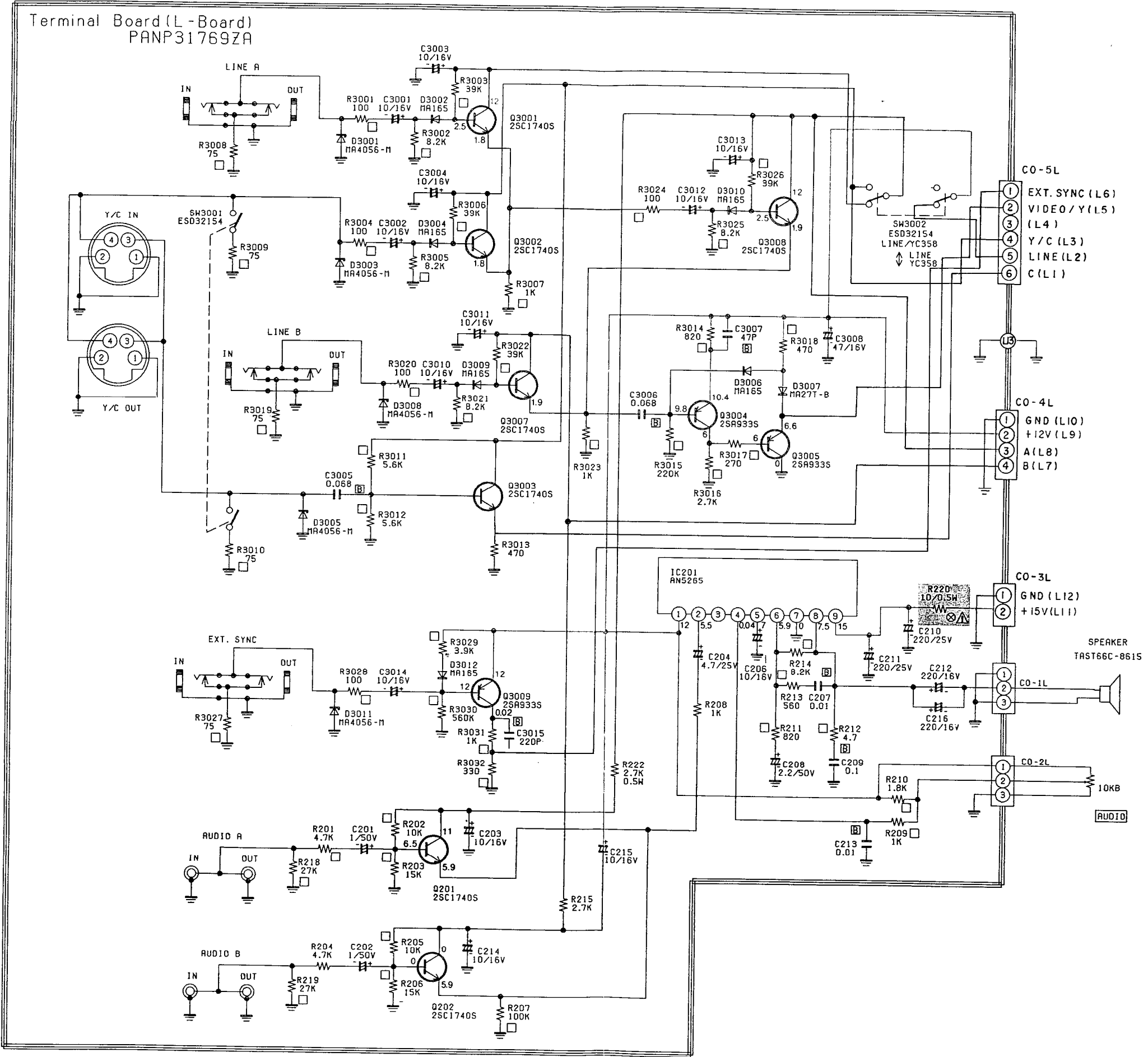
- All resistors are carbon 1/4W resistor, unless otherwise noted with the following marks.
Unit of resistance is OHM (Ω), (K = 1,000, M = 1,000,000).
 - Δ : Solid
 - \square : Chip (1/8W)
 - \circ : Non-flammable
 - \boxtimes : Cement
 - \sim : Thermistor
 - \otimes : Fuse
 - \boxtimes : Metal Oxide
 - \odot : Metal Film
 - L : Leadless Type
- CAPACITOR
All capacitors are ceramic 50V capacitor, unless otherwise noted with the following marks.
Unit of capacitance is μ F, unless otherwise noted.
 - H : Electrolytic
 - NH : NH Type
 - Z : Z Type
 - T : Tantalum
 - S : Polystyrene
 - X : Polypropylene
 - M : Metalized Polyester
 - \square : Chip (SL)
 - \boxtimes : Chip (not SL)
- COIL
Unit of inductance is μ H.
- TEST POINT
: Test point position.
- VOLTAGE MEASUREMENT
Voltage is measured by a volt ohm meter with DC 20k OHM/V receiving a rainbow color bar signal when all customer's controls are set to the maximum position.
- When arrow mark (\rightarrow) is found, connection is easily found along with the direction of an arrow.
- This schematic diagram is the latest at the time of printing and subject to change without notice.

Terminal Board (L-Board)

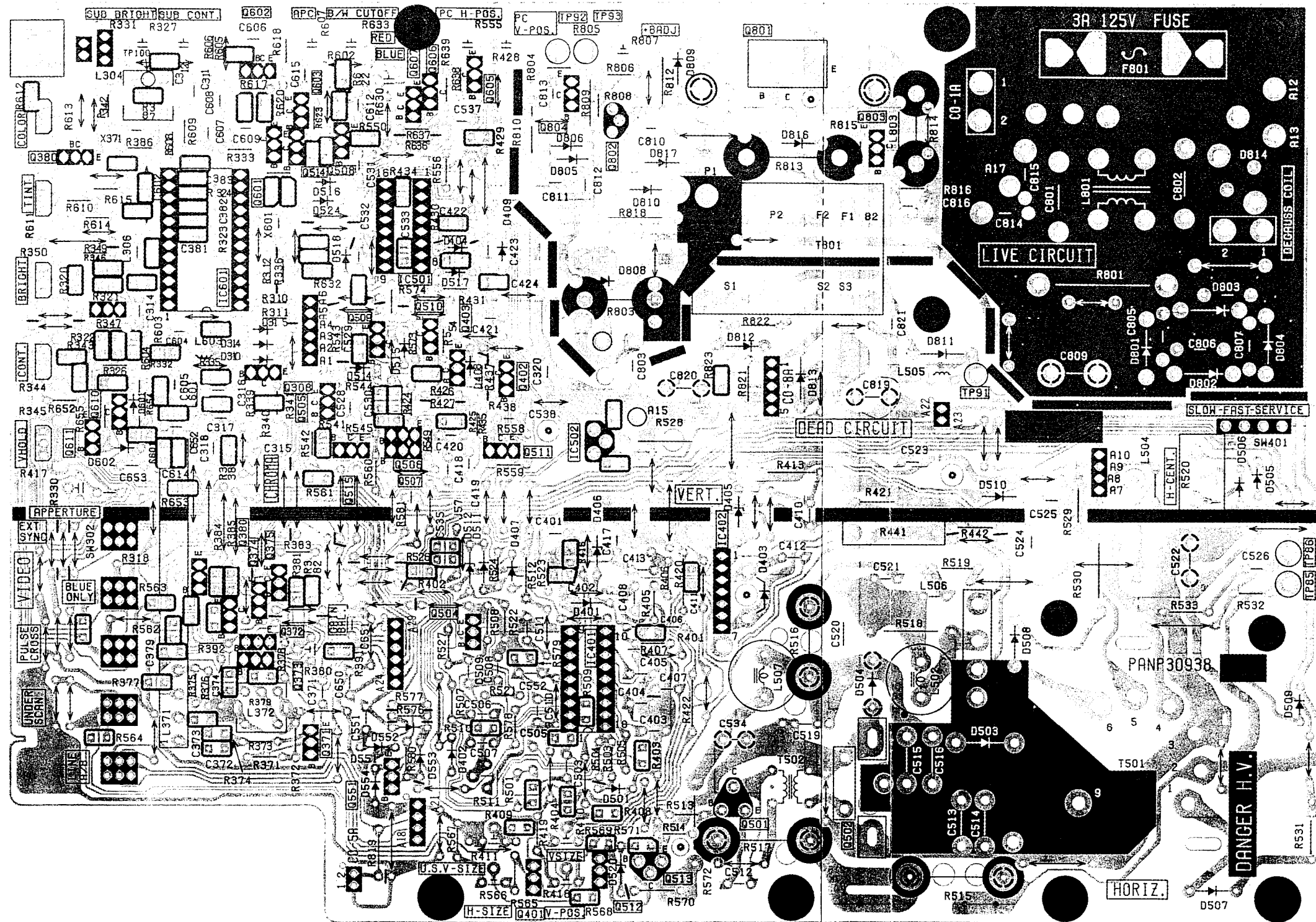


PANP31769ZA/Solder Side View

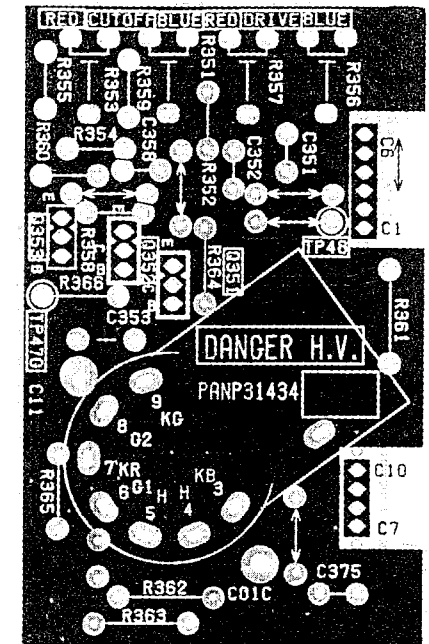
| | | | | | |
|---|--|--|---|--|--|
|  MA150 MA1068-L MA165 MA4056-M MA167 TVSRD5.1ESB2 MA171 TVSRD9.1ESB2 MA27W-A TVSRD12EBM MA27T-A TVSRD16EB1 MA27T-B TVSRD24EB1 |  TVSEM-1Z P6KE130A ES01F AU01Z TVSRGP10J TVSES-1 IN4003 EM2B ERB44-08 TVSES-1Z |  R2KN-1 |  2SC3872-LS |  2SD1439-Q | |
|  2SD889-R 2SB774-R 2SC1473-QRNC 2SD965-R |  2SA933S 2SC1740S |  2SC1383-NC 2SC1473AH |  2SA885-R |  L78M12 |  2SD1266 |
|  AN5515X |  AN5265 |  AN5436N (18 Pin) TVSUPD4503BC (16 Pin) |  AN5316N (24 Pin) AN5332N (22 Pin) | | |



Main Board (A-Board)



Neck Board (C-Board)



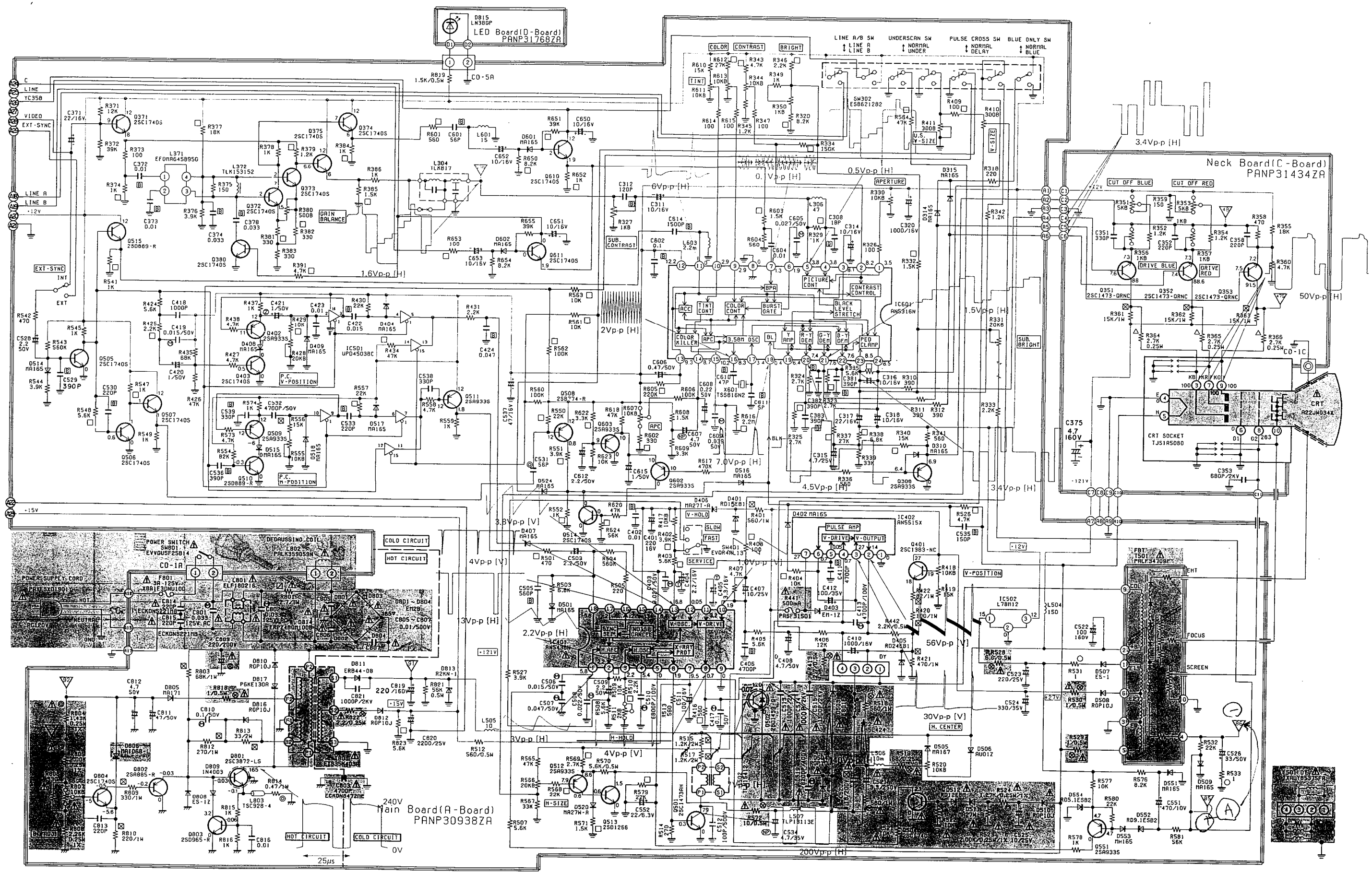
PANP31434ZA/Solder Side View

LED Board (C-Board)

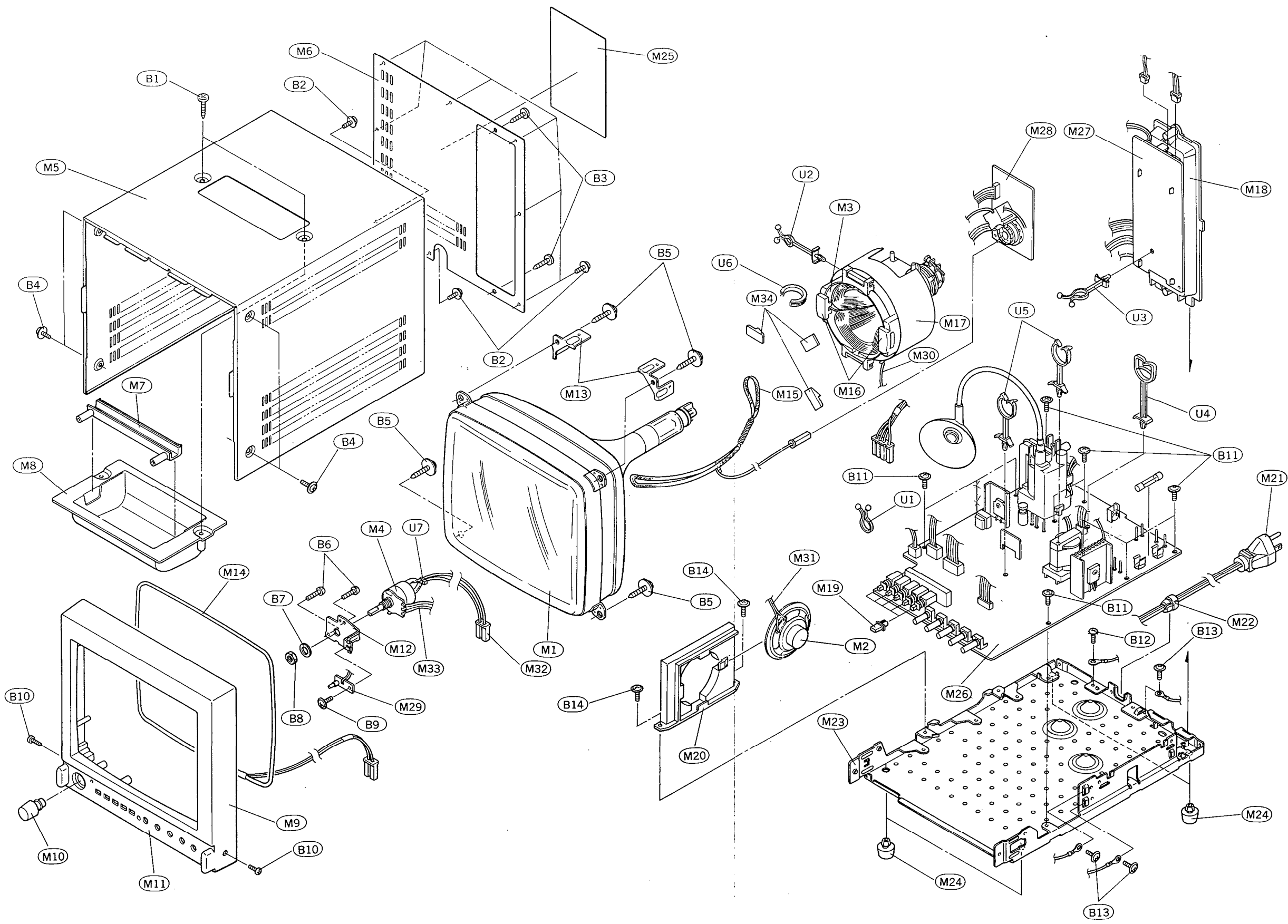


PANP31768ZA/Solder Side View

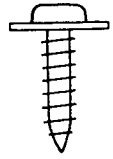



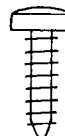

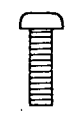



PANP30938ZA/Solder Side View



MECHANICAL PARTS LOCATION



**Screws for BT-S901Y
(Real Size)**

| | |
|---|---|
|  |  |
| THE415-2 | XYA4+EF8 |
| B5 | B12 |
|  |  |
| (Black) | |
| XTW3+6LFZ | XTW3+6L |
| B2, B4 | B9, B11, B13, B14 |
|  |  |
| XTB4+15AFZ | XTV3+12G |
| B1, B3 | B6 |
|  |  |
| XSN3+10S | XTN3+6FZ |
| Screw/Q502 | B10 |
|  |  |
| XYN3+C10 | XYN3+C8 |
| Screw/Q801 | Screw/IC402 |

REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by shaded area have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

Warning

After servicing R577 (H.V. ADJUST), cover the ocntrl volume with UL tube and fill up silicon rubber in it so as the volume is not turned.

RESISTOR

| PART NAME & DESCRIPTION | | | |
|-------------------------|-------------|-----------|-------|
| TYPE | | ALLOWANCE | |
| C | Carbon | F | ± 1% |
| F | Fuse | J | ± 5% |
| M | Metal Oxide | K | ± 10% |
| S | Solid | M | ± 20% |
| W | Wire Wound | G | ± 2% |

Part No.

Description

Example: ERD25TJ104 (C) 100K (J) 1/4W

CAPACITOR

| PART NAME & DESCRIPTION | | | |
|-------------------------|---------------|-----------|-----------|
| TYPE | | ALLOWANCE | |
| C | Ceramic | C | ± 0.25pF |
| E | Electrolytic | D | ± 0.5pF |
| P | Polyester | F | ± 1pF |
| S | Styrol | J | ± 5% |
| T | Tantalum | K | ± 10% |
| PP | Polypropylene | L | ± 15% |
| | | M | ± 20% |
| | | P | +100% -0% |
| | | Z | +80% -20% |

Part No.

Description

Example: ECKF1H103ZF (C) 0.01µF (Z) 50V

Mechanical Parts

| No. | Part No. | Description |
|-------------------------|--------------|---------------------------|
| MECHANICAL PARTS | | |
| M 1 | A22JWG34X | CRT |
| M 2 | TAST66C-8615 | Speaker |
| M 3 | TXALY85375FA | DY |
| M 4 | EVVGU5E25B14 | Power Switch 10KohmB |
| M 5 | PAKA3504 | Top Cabinet |
| M 6 | PAYK1S901Y | Back Cover Complete |
| M 7 | TKK139208-1 | Handle |
| M 8 | PAKK358201 | Handle Cover |
| M 9 | PAKE3505A01 | Front Cabinet Complete |
| M 10 | TBX1353500 | Power/Volume Knob |
| M 11 | PAKP3510060 | Front Control Panel |
| M 12 | PAUX37901 | PowerSwitch Metal Bracket |
| M 13 | PAUW35904 | Top Cabinet Fix Metal |
| M 14 | PAK359059N | Degaussing Coil |
| M 15 | PAXF3A01901Y | CRT Grounding Strap |
| M 16 | PAMX35902 | DY Shield Case Bracket |
| M 17 | TUC24557 | DY Shield Case |
| M 18 | PAJB356002 | Terminal Board Holder |
| M 19 | TBX2783100 | Front Control Knob |
| M 20 | TMX13935-1 | Speaker Bracket |
| M 21 | PAXFSX01901Y | Power Supply Cord |
| M 22 | TMM14416 | Power Cord Bushing |
| M 23 | PAKS35301 | Base Frame |
| M 24 | TBL173302 | Foot |
| M 25 | PABM375013 | Name Plate |
| M 26 | PANP30938ZA | A-Board Complete |
| M 27 | PANP31769ZA | L-Board Complete |
| M 28 | PANP31434ZA | C-Board Complete |

| No. | Part No. | Description |
|------|--------------|---------------------------|
| M 29 | PANP31768ZA | D-Board Complete |
| M 30 | PAXAJE01901Y | 1P GND Lead |
| M 31 | PAXAJT13901Y | Speaker Lead/CO-1L |
| M 32 | PAXAJT03901Y | Power Switch Lead/CO-1A |
| M 33 | PAXAJT02901Y | Volume Lead/CO-2L |
| M 34 | TMM17538 | DY Wedge |
| U 1 | TMM6463 | Clamper |
| U 2 | TMM16452 | Clamper |
| U 3 | TMM5439 | Clamper |
| U 4 | TMM15412-1 | Clamper |
| U 5 | TMM13497 | Clamper |
| U 6 | TMM6434 | C Bushing |
| U 7 | TMM17498 | Plastic Wire Tie |
| B 1 | XTB4+15AFZ | Screw/Handle |
| B 2 | XTW3+6LFZ | Screw/Back Cover |
| B 3 | XTB4+15AFZ | Screw/Term. Board Holder |
| B 4 | XTW3+6LFZ | Screw/Top Cabinet |
| B 5 | THE415-2 | Screw/CRT |
| B 6 | XTV3+12G | Screw/Power SW Fix Metal |
| B 7 | THW40807-9 | Washer/Power Switch |
| B 8 | THN1948-2 | Nut/Power Switch |
| B 9 | XTW3+6L | Screw/D-Board |
| B 10 | XTN3+6FZ | Screw/Base Frame |
| B 11 | XTW3+6L | Screw/A-Board |
| B 12 | XYA4+EF8 | Screw/Power Cord GND Lead |
| B 13 | XTW3+6L | Screw/1P GND Lead |
| B 14 | XTW3+6L | Screw/Speaker Bracket |

BT-S901Y

Main Board (A-Board)

| No. | Part No. | Description |
|------------------|--------------|----------------------|
| RESISTORS | | |
| R 310 | ERDS2TJ391 | C 390ohm, J, 1/4W |
| R 311 | ERDS2TJ391 | C 390ohm, J, 1/4W |
| R 312 | ERDS2TJ391 | C 390ohm, J, 1/4W |
| R 318 | ERDS2TJ221 | C 220ohm, J, 1/4W |
| R 320 | ERJ8GEYJ822 | C 8.2Kohm, J, 1/8W |
| R 323 | ERJ8GEYJ272 | C 2.7Kohm, J, 1/8W |
| R 324 | ERJ8GEYJ272 | C 2.7Kohm, J, 1/8W |
| R 325 | ERJ8GEYJ272 | C 2.7Kohm, J, 1/8W |
| R 326 | ERDS2TJ101 | C 100ohm, J, 1/4W |
| R 327 | EVND2AA03B13 | Sub. Contrast 1KohmB |
| R 329 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W |
| R 330 | EVND2AA03B14 | Aperture 10KohmB |
| R 331 | EVND2AA03B24 | Sub. Bright 20KohmB |
| R 332 | ERJ8GEYJ152 | C 1.5Kohm, J, 1/8W |
| R 333 | ERDS2TJ222 | C 2.2Kohm, J, 1/4W |
| R 334 | ERJ8GEYJ154 | C 150Kohm, J, 1/8W |
| R 335 | ERJ8GEYJ562 | C 5.6Kohm, J, 1/8W |
| R 336 | ERDS2TJ561 | C 560ohm, J, 1/4W |
| R 337 | ERJ8GEYJ273 | C 27Kohm, J, 1/8W |
| R 338 | ERJ8GEYJ682 | C 6.8Kohm, J, 1/8W |
| R 339 | ERDS2TJ333 | C 33Kohm, J, 1/4W |
| R 340 | ERJ8GEYJ153 | C 15Kohm, J, 1/8W |
| R 341 | ERDS2TJ561 | C 560ohm, J, 1/4W |
| R 342 | ERDS2TJ122 | C 1.2Kohm, J, 1/4W |
| R 343 | ERJ8GEYJ472 | C 4.7Kohm, J, 1/8W |
| R 344 | EVUE30E25B14 | Contrast 10KohmB |
| R 345 | ERDS2TJ122 | C 1.2Kohm, J, 1/4W |
| R 346 | ERJ8GEYJ222 | C 2.2Kohm, J, 1/8W |
| R 347 | ERDS2TJ101 | C 100ohm, J, 1/4W |
| R 349 | ERDS2TJ102 | C 1Kohm, J, 1/4W |
| R 350 | EVUE30E25B13 | Bright 1KohmB |
| R 371 | ERDS2TJ123 | C 12Kohm, J, 1/4W |
| R 372 | ERDS2TJ393 | C 39Kohm, J, 1/4W |
| R 373 | ERDS2TJ101 | C 100ohm, J, 1/4W |
| R 374 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W |
| R 375 | ERDS2TJ151 | C 150ohm, J, 1/4W |
| R 376 | ERDS2TJ392 | C 3.9Kohm, J, 1/4W |
| R 377 | ERJ8GEYJ183 | C 18Kohm, J, 1/8W |
| R 378 | ERDS2TJ102 | C 1Kohm, J, 1/4W |
| R 379 | ERJ8GEYJ122 | C 1.2Kohm, J, 1/8W |
| R 380 | EVND8AA00B52 | Gain Balance 500ohmB |
| R 381 | ERJ8GEYJ331 | C 330ohm, J, 1/8W |
| R 382 | ERJ8GEYJ331 | C 330ohm, J, 1/8W |
| R 383 | ERDS2TJ331 | C 330ohm, J, 1/4W |
| R 384 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W |
| R 385 | ERJ8GEYJ152 | C 1.5Kohm, J, 1/8W |
| R 386 | ERDS2TJ102 | C 1Kohm, J, 1/4W |
| R 391 | ERJ8GEYJ472 | C 4.7Kohm, J, 1/8W |
| R 401 | ERG1SJ561P | M 560ohm, J, 1W |
| R 402 | ERJ8GEYJ392 | C 3.9Kohm, J, 1/8W |
| R 403 | ERJ8GEYJ562 | C 5.6Kohm, J, 1/8W |

| No. | Part No. | Description |
|-------|--------------|------------------------|
| R 404 | ERJ8GEYJ103 | C 10Kohm, J, 1/8W |
| R 405 | ERDS2TJ562 | C 5.6Kohm, J, 1/4W |
| R 406 | ERDS2TJ123 | C 12Kohm, J, 1/4W |
| R 407 | ERDS2TJ472 | C 4.7Kohm, J, 1/4W |
| R 408 | ERJ8GEYJ101 | C 100ohm, J, 1/8W |
| R 409 | ERJ8GEYJ101 | C 100ohm, J, 1/8W |
| R 410 | EVND8AA00B32 | V-Size 300ohmB |
| R 411 | EVND8AA00B32 | U.S. V-Size 300ohmB |
| R 413 | ERQ12AJ2R7P | F 2.7ohm, J, 1/2W |
| R 416 | ERJ8GEYJ561 | C 560ohm, J, 1/8W |
| R 417 | EVUE20E25B14 | V-Hold 10KohmB |
| R 418 | EVND8AA00B14 | V. Position 10KohmB |
| R 419 | ERDS2TJ153 | C 15Kohm, J, 1/4W |
| R 420 | ERG1SJ101P | M 100ohm, J, 1W |
| R 421 | ERG1ANJ471H | M 470ohm, J, 1W |
| R 422 | ERG1SJ820P | M 82ohm, J, 1W |
| R 424 | ERDS2TJ562 | C 5.6Kohm, J, 1/4W |
| R 425 | ERJ8GEYJ222 | C 2.2Kohm, J, 1/8W |
| R 426 | ERDS2TJ473 | C 47Kohm, J, 1/4W |
| R 427 | ERDS2TJ472 | C 4.7Kohm, J, 1/4W |
| R 428 | EVND2AA03B24 | P.C.V-Position 20KohmB |
| R 429 | ERJ8GEYJ103 | C 10Kohm, J, 1/8W |
| R 430 | ERDS2TJ223 | C 22Kohm, J, 1/4W |
| R 431 | ERDS2TJ222 | C 2.2Kohm, J, 1/4W |
| R 434 | ERJ8GEYJ473 | C 47Kohm, J, 1/8W |
| R 435 | ERDS2TJ683 | C 68Kohm, J, 1/4W |
| R 437 | ERDS2TJ102 | C 1Kohm, J, 1/4W |
| R 438 | ERDS2TJ472 | C 4.7Kohm, J, 1/4W |
| R 441 | PASF31501 | Fuse 500mA |
| R 442 | ERDS1TJ222 | C 2.2Kohm, J, 1/2W |
| R 501 | ERJ8GEYJ471 | C 470ohm, J, 1/8W |
| R 503 | ERDS2TJ682 | C 6.8Kohm, J, 1/4W |
| R 504 | ERDS2TJ564 | C 560Kohm, J, 1/4W |
| R 505 | ERDS2TJ221 | C 220ohm, J, 1/4W |
| R 507 | ERDS2TJ562 | C 5.6Kohm, J, 1/4W |
| R 508 | ERDS2TJ562 | C 5.6Kohm, J, 1/4W |
| R 509 | ERJ8GEYJ103 | C 10Kohm, J, 1/8W |
| R 510 | ERJ8GEYJ222 | C 2.2Kohm, J, 1/8W |
| R 511 | EVND8AA00B23 | H-Hold 2KohmB |
| R 512 | ERDS1TJ561 | C 560ohm, J, 1/2W |
| R 513 | ERDS2TJ561 | C 560ohm, J, 1/4W |
| R 514 | ERDS2TJ271 | C 270ohm, J, 1/4W |
| R 515 | ERG2ANJ122H | M 1.2Kohm, J, 2W |
| R 516 | ERQ1AJ561S | F 560ohm, J, 1W |
| R 517 | ERG2ANJ122H | M 1.2Kohm, J, 2W |
| R 518 | ERQ1AJ561S | F 560ohm, J, 1W |
| R 519 | ERQ14AJ680P | F 68ohm, J, 1/4W |
| R 520 | EVMJ6U10KB14 | H. Center 10KohmB |
| R 521 | ERDS2TJ103 | C 10Kohm, J, 1/4W |
| R 522 | ERDS2TJ103 | C 10Kohm, J, 1/4W |
| R 523 | EROS2CKF2001 | M 2.00Kohm, F, 1/4W |
| R 524 | EROS2CKF1271 | M 1.27Kohm, F, 1/4W |
| R 526 | ERJ8GEYJ472 | C 4.7Kohm, J, 1/8W |

| No. | Part No. | Description | No. | Part No. | Description |
|-------|--------------|------------------------|------------|--------------|---------------------|
| R 527 | ERDS2TJ392 | C 3.9Kohm, J, 1/4W | R 609 | ERDS2TJ332 | C 3.3Kohm, J, 1/4W |
| R 528 | ERQ12HJ6R8P | F 6.8ohm, J, 1/2W | R 610 | ERDS2TJ153 | C 15Kohm, J, 1/4W |
| R 529 | ERQ12AZJ1R0P | F 1ohm, J, 1/2W | R 611 | EVUE20E25B14 | Tint 10KohmB |
| R 530 | ERQ12HJ1R0P | F 1ohm, J, 1/2W | | | |
| R 531 | ERD25FJ1R0P | C 1ohm, J, 1/4W | R 612 | ERJ8GEYJ273 | C 27Kohm, J, 1/8W |
| R 532 | ERDS2TJ223 | C 22Kohm, J, 1/4W | R 613 | EVUE20E25B14 | Color 10KohmB |
| | | | R 614 | ERDS2TJ101 | C 100ohm, J, 1/4W |
| R 533 | ERD25FJ1R0P | C 1ohm, J, 1/4W | R 615 | ERDS2TJ101 | C 100ohm, J, 1/4W |
| R 541 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W | R 616 | ERJ8GEYJ225 | C 2.2Mohm, J, 1/8W |
| R 542 | ERDS2TJ471 | C 470ohm, J, 1/4W | R 617 | ERDS2TJ474 | C 470Kohm, J, 1/4W |
| R 543 | ERDS2TJ564 | C 560Kohm, J, 1/4W | R 618 | ERDS2TJ473 | C 47Kohm, J, 1/4W |
| R 544 | ERDS2TJ392 | C 3.9Kohm, J, 1/4W | R 620 | ERDS2TJ473 | C 47Kohm, J, 1/4W |
| R 545 | ERDS2TJ102 | C 1Kohm, J, 1/4W | R 622 | ERJ8GEYJ332 | C 3.3Kohm, J, 1/8W |
| R 547 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W | R 623 | ERDS2TJ103 | C 10Kohm, J, 1/4W |
| R 548 | ERJ8GEYJ562 | C 5.6Kohm, J, 1/8W | | | |
| R 549 | ERDS2TJ102 | C 1Kohm, J, 1/4W | R 624 | ERJ8GEYJ563 | C 56Kohm, J, 1/8W |
| R 550 | ERJ8GEYJ223 | C 22Kohm, J, 1/8W | R 650 | ERJ8GEYJ822 | C 8.2Kohm, J, 1/8W |
| | | | R 651 | ERJ8GEYJ393 | C 39Kohm, J, 1/8W |
| R 551 | ERJ8GEYJ392 | C 3.9Kohm, J, 1/8W | R 652 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W |
| R 552 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W | R 653 | ERJ8GEYJ101 | C 100ohm, J, 1/8W |
| R 554 | ERDS2TJ823 | C 82Kohm, J, 1/4W | R 654 | ERDS2TJ822 | C 8.2Kohm, J, 1/4W |
| R 555 | EVND2AA03B14 | P.C.H-Position 10KohmB | R 655 | ERDS2TJ393 | C 39Kohm, J, 1/4W |
| R 556 | ERDS2TJ153 | C 15Kohm, J, 1/4W | R 801 | ERF3AK2R7 | W 2.7ohm, K, 3W |
| R 557 | ERJ8GEYJ223 | C 22Kohm, J, 1/8W | R 803 | ERG1ANJ683H | M 68Kohm, J, 1W |
| R 558 | ERDS2TJ472 | C 4.7Kohm, J, 1/4W | R 804 | EROS2CKF1431 | M 1.43Kohm, F, 1/4W |
| R 559 | ERDS2TJ102 | C 1Kohm, J, 1/4W | | | |
| R 560 | ERDS2TJ104 | C 100Kohm, J, 1/4W | R 805 | EROS2CKF2001 | M 2.00Kohm, F, 1/4W |
| R 561 | ERJ8GEYJ103 | C 10Kohm, J, 1/8W | R 806 | ERDS2TJ331 | C 330ohm, J, 1/4W |
| | | | R 807 | EVND8AA00B14 | B+ Adj. 10KohmB |
| R 562 | ERJ8GEYJ104 | C 100Kohm, J, 1/8W | R 808 | EROS2CKF2261 | M 2.26Kohm, F, 1/4W |
| R 563 | ERJ8GEYJ103 | C 10Kohm, J, 1/8W | R 809 | ERG1SJ331P | M 330ohm, J, 1W |
| R 564 | ERJ8GEYJ473 | C 47Kohm, J, 1/8W | R 810 | ERG1SJ221P | M 220ohm, J, 1W |
| R 565 | ERDS2TJ473 | C 47Kohm, J, 1/4W | R 812 | ERG1SJ271P | M 270ohm, J, 1W |
| R 566 | EVND8AA00B24 | H-Size 20KohmB | R 813 | ERG2ANJ330H | M 33ohm, J, 2W |
| R 567 | ERDS2TJ333 | C 33Kohm, J, 1/4W | R 814 | ERX1ANJPR47S | M 0.47ohm, J, 1W |
| R 568 | ERJ8GEYJ223 | C 22Kohm, J, 1/8W | R 815 | ERDS2TJ102 | C 1Kohm, J, 1/4W |
| R 569 | ERJ8GEYJ272 | C 2.7Kohm, J, 1/8W | | | |
| R 570 | ERDS1TJ562 | C 5.6Kohm, J, 1/2W | R 816 | ERDS2TJ102 | C 1Kohm, J, 1/4W |
| R 571 | ERJ8GEYJ152 | C 1.5Kohm, J, 1/8W | R 818 | ERQ12HJ1R0P | F 1ohm, J, 1/2W |
| | | | R 819 | ERDS1TJ152 | C 1.5Kohm, J, 1/2W |
| R 572 | ERQ12HJ100P | F 10ohm, J, 1/2W | R 821 | ERDS1TJ563 | C 56Kohm, J, 1/2W |
| R 573 | ERDS2TJ472 | C 4.7Kohm, J, 1/4W | R 822 | ERQ14AJ2R2P | F 2.2ohm, J, 1/4W |
| R 574 | ERDS2TJ102 | C 1Kohm, J, 1/4W | R 823 | ERJ8GEYJ562 | C 5.6Kohm, J, 1/8W |
| R 576 | ERDS2TJ822 | C 8.2Kohm, J, 1/4W | | | |
| R 577 | ERDS2TJ103 | C 10Kohm, J, 1/4W | CAPACITORS | | |
| R 578 | ERDS2TJ102 | C 1Kohm, J, 1/4W | C 308 | ECUX1H180JCM | C 18pF, J, 50V |
| R 579 | ERJ8GEYJ223 | C 22Kohm, J, 1/8W | C 311 | ECEA1CU100 | E 10uF, 16V |
| R 580 | ERDS2TJ223 | C 22Kohm, J, 1/4W | C 312 | ECUX1H121KCM | C 120pF, K, 50V |
| R 581 | ERDS2TJ563 | C 56Kohm, J, 1/4W | C 314 | ECEA1CU100 | E 10uF, 16V |
| R 601 | ERJ8GEYJ561 | C 560ohm, J, 1/8W | C 315 | ECEA1EU4R7 | E 4.7uF, 25V |
| | | | C 316 | ECEA1CU100 | E 10uF, 16V |
| R 602 | ERJ8GEYJ331 | C 330ohm, J, 1/8W | C 317 | ECEA1CU220 | E 22uF, 16V |
| R 603 | ERJ8GEYJ152 | C 1.5Kohm, J, 1/8W | C 318 | ECEA1CU100 | E 10uF, 16V |
| R 604 | ERDS2TJ561 | C 560ohm, J, 1/4W | C 320 | ECEA1CU102 | E 1000uF, 16V |
| R 605 | ERJ8GEYJ224 | C 220Kohm, J, 1/8W | C 371 | ECEA1CU220 | E 22uF, 16V |
| R 606 | ERDS2TJ104 | C 100Kohm, J, 1/4W | | | |
| R 607 | EVND2AA03B14 | APC 10KohmB | C 372 | ECUX1H103ZFM | C 0.01uF, Z, 50V |
| R 608 | ERDS2TJ152 | C 1.5Kohm, J, 1/4W | C 373 | ECUX1H103ZFM | C 0.01uF, Z, 50V |

| No. | Part No. | Description |
|-------|--------------|--------------------|
| C 374 | ECUX1H333KBH | C 0.033uF, K, 50V |
| C 375 | ECEA2CU4R7 | E 4.7uF, 160V |
| C 378 | ECUX1H333KBH | C 0.033uF, K, 50V |
| C 381 | ECUX1H391KBM | C 390pF, K, 50V |
| C 382 | ECUX1H391KBM | C 390pF, K, 50V |
| C 383 | ECUX1H391KBM | C 390pF, K, 50V |
| C 401 | ECEA1CU221 | E 220uF, 16V |
| C 402 | ECUX1H103ZFM | C 0.01uF, Z, 50V |
| C 403 | ECQM1H273KV | P 0.027uF, K, 50V |
| C 404 | ECSF1CE225 | T 2.2uF, 16V |
| C 405 | ECSF1CE335 | T 3.3uF, 16V |
| C 406 | ECUX1H472KBM | C 4700pF, K, 50V |
| C 407 | ECEA1EU100 | E 10uF, 25V |
| C 408 | ECEA1HU4R7 | E 4.7uF, 50V |
| C 410 | ECEA1CU102 | E 1000uF, 16V |
| C 411 | ECUX1H472KBM | C 4700pF, K, 50V |
| C 412 | ECEA1VU101 | E 100uF, 35V |
| C 413 | ECQM1472KZ | P 4700pF, K, 100V |
| C 417 | ECQM1H104KV | P 0.1uF, K, 50V |
| C 418 | ECKF1H102KB | C 1000pF, K, 50V |
| C 419 | ECQM1H153KV | P 0.015uF, K, 50V |
| C 420 | ECEA1HU010 | E 1uF, 50V |
| C 421 | ECEA50Z1B | E 1uF, 50V |
| C 422 | ECUX1H153KBM | C 0.015uF, K, 50V |
| C 423 | ECKF1H103ZF | C 0.01uF, Z, 50V |
| C 424 | ECUX1H473ZFM | C 0.047uF, Z, 50V |
| C 503 | ECEA1HU2R2 | E 2.2uF, 50V |
| C 505 | ECUX1H561KBM | C 560pF, K, 50V |
| C 506 | ECQM1H153KV | P 0.015uF, K, 50V |
| C 507 | ECQM1H473KV | P 0.047uF, K, 50V |
| C 508 | ECQM1H223KV | P 0.022uF, K, 50V |
| C 509 | ECEA1HU2R2 | E 2.2uF, 50V |
| C 510 | ECQK1682JZ | P 6800pF, J, 100V |
| C 511 | ECEA1CU101 | E 100uF, 16V |
| C 512 | ECKD2H101KB2 | C 100pF, K, 500V |
| C 513 | ECKD3D102JBN | C 1000pF, J, 2KV |
| C 514 | ECKD3D102JBN | C 1000pF, J, 2KV |
| C 515 | ECKD3D152JBN | C 1500pF, J, 2KV |
| C 519 | ECQM4822JZ | P 8200pF, J, 400V |
| C 520 | ECQF2H184JZ | PP 0.18uF, J, 200V |
| C 521 | ECEA2EU3R3 | E 3.3uF, 250V |
| C 522 | ECEA2CU101 | E 100uF, 160V |
| C 523 | ECEA1EU221 | E 220uF, 25V |
| C 524 | ECEA1VU331 | E 330uF, 35V |
| C 525 | ECEA1EU100 | E 10uF, 25V |
| C 526 | ECEA1HU330 | E 33uF, 50V |
| C 528 | ECEA1HU2R2 | E 2.2uF, 50V |
| C 529 | ECUX1H391KBM | C 390pF, K, 50V |
| C 530 | ECUX1H221KBM | C 220pF, K, 50V |
| C 531 | ECCF1H560J5 | C 56pF, J, 50V |
| C 532 | ECQP1H472JZ | PP 4700pF, J, 50V |
| C 533 | ECUX1H221KBM | C 220pF, K, 50V |
| C 534 | ECEA35W4R7Q | E 4.7uF, 35V |
| C 535 | ECUX1H151KCM | C 150pF, K, 50V |

| No. | Part No. | Description |
|--------|--------------|----------------------|
| C 536 | ECUX1H391KBM | C 390pF, K, 50V |
| C 537 | ECEA1CU470 | E 47uF, 16V |
| C 538 | ECKF1H331KB | C 330pF, K, 50V |
| C 539 | ECUX1H331KBM | C 330pF, K, 50V |
| C 551 | ECEA1AU471 | E 470uF, 10V |
| C 552 | ECEAOJU220 | E 22uF, 6.3V |
| C 601 | ECUX1H560JCM | C 56pF, J, 50V |
| C 602 | ECUX1H104ZFM | C 0.1uF, Z, 50V |
| C 604 | ECKF1H103ZF | C 0.01uF, Z, 50V |
| C 605 | ECQM1H273KV | P 0.027uF, K, 50V |
| C 606 | ECEA1HUR47 | E 0.47uF, 50V |
| C 607 | ECEA1HN4R7S | E 4.7uF, 50V |
| C 608 | ECEA1HUR22 | E 0.22uF, 50V |
| C 609 | ECQM1H393KV | P 0.039uF, K, 50V |
| C 610 | ECUX1H470JCM | C 47pF, J, 50V |
| C 611 | ECUX1H050DCM | C 5pF, D, 50V |
| C 612 | ECEA1HU2R2 | E 2.2uF, 50V |
| C 614 | ECUX1H152KBM | C 1500pF, K, 50V |
| C 615 | ECEA1HU010 | E 1uF, 50V |
| C 650 | ECEA1CU100 | E 10uF, 16V |
| C 651 | ECEA1CU100 | E 10uF, 16V |
| C 652 | ECEA1CU100 | E 10uF, 16V |
| C 653 | ECEA1CU100 | E 10uF, 16V |
| C 801 | ECQU1A333MH | P 0.033uF, M, 125VAC |
| C 802 | ECQU1A333MH | P 0.033uF, M, 125VAC |
| C 803 | ECKDNS472ME | C 4700pF, 125VAC |
| C 805 | ECKD2H103PU7 | C 0.01uF, P, 500V |
| C 806 | ECKD2H103PU7 | C 0.01uF, P, 500V |
| C 807 | ECKD2H103PU7 | C 0.01uF, P, 500V |
| C 809 | ECET2DR221SW | E 220uF, 200V |
| C 810 | ECQM1H104KV | P 0.1uF, K, 50V |
| C 811 | ECEA1HU470 | E 47uF, 50V |
| C 812 | ECEA1HU4R7 | E 4.7uF, 50V |
| C 813 | ECKF1H221KB | C 220pF, K, 50V |
| C 814 | ECKDNS221MB | C 220pF, 125VAC |
| C 815 | ECKDNS221MB | C 220pF, 125VAC |
| C 816 | ECKF1H103ZF | C 0.01uF, Z, 50V |
| C 819 | ECEA2CU221W | E 220uF, 160V |
| C 820 | ECEA1EU222 | E 220uF, 25V |
| C 821 | ECKD3D102KBN | C 1000pF, K, 2KV |
| DIODES | | |
| D 310 | MA165 | Diode |
| D 314 | MA165 | Diode |
| D 315 | MA165 | Diode |
| D 401 | TVSRD15EB1 | Zener Diode Vz=15V |
| D 402 | MA165 | Diode |
| D 403 | TVSEM-1Z | Diode |
| D 404 | MA165 | Diode |
| D 405 | TVSRD24EB1 | Zener Diode Vz=24V |
| D 406 | MA27T-A | Diode |
| D 407 | MA165 | Diode |
| D 408 | MA165 | Diode |

| No. | Part No. | Description |
|----------------------------|--------------|-----------------------------|
| D 409 | MA165 | Diode |
| D 501 | MA165 | Diode |
| D 503 | ES01F | Diode |
| D 504 | TVSRGP10J | Diode |
| D 505 | MA167 | Diode |
| D 506 | AU01Z | Diode |
| D 507 | TVSES-1 | Diode |
| D 508 | TVSRGP10J | Diode |
| D 509 | MA165 | Diode |
| D 510 | TVSRGP10J | Diode |
| D 511 | MA27W-A | Diode |
| D 512 | TVSRD12EBM | Zener Diode Vz=12V |
| D 514 | MA165 | Diode |
| D 515 | MA165 | Diode |
| D 516 | MA165 | Diode |
| D 517 | MA165 | Diode |
| D 518 | MA165 | Diode |
| D 520 | MA27W-A | Diode |
| D 524 | MA165 | Diode |
| D 551 | MA165 | Diode |
| D 552 | TVSRD9.1ESB2 | Zener Diode Vz=9.1V |
| D 553 | MA165 | Diode |
| D 554 | TVSRD5.1ESB2 | Zener Diode Vz=5.1V |
| D 601 | MA165 | Diode |
| D 602 | MA165 | Diode |
| D 801 | EM2B | Diode |
| D 802 | EM2B | Diode |
| D 803 | EM2B | Diode |
| D 804 | EM2B | Diode |
| D 805 | MA171 | Diode |
| D 806 | MA1068-L | Zener Diode Vz=6.8V |
| D 808 | TVSES-1Z | Diode |
| D 809 | 1N4003 | Diode |
| D 810 | TVSRGP10J | Diode |
| D 811 | ERB44-08 | Diode |
| D 812 | TVSRGP10J | Diode |
| D 813 | R2KN-1 | Diode |
| D 814 | ERPZ4BOM100B | Posistor |
| D 816 | TVSRGP10J | Diode |
| D 817 | P6KE130A | Diode |
| INTEGRATED CIRCUITS | | |
| IC 401 | AN5436N | Deflection Signal Process |
| IC 402 | AN5515X | V. Deflection Output |
| IC 501 | TVSUPD4503BC | 3 State Driver |
| IC 502 | L78M12 | +12V Regulator |
| IC 601 | AN5316N | Video/Chroma Signal Process |
| COILS | | |
| L 304 | TLK817 | Delay Line |
| L 306 | TLT470K266 | Peaking Coil |
| L 371 | EFDMA645B95G | Delay Line (1H) |
| L 372 | TLK153152 | Peaking Coil |
| L 502 | ELH5L424 | Linearity Coil |
| L 504 | TLUABTA151K | Peaking Coil |

| No. | Part No. | Description |
|---------------------|--------------|------------------------|
| L 505 | TLT100K991R | Peaking Coil |
| L 506 | TLTAMSKI103K | Peaking Coil |
| L 507 | TLP13113E | Choke Coil |
| L 601 | TLUABTA150K | Peaking Coil |
| L 603 | TLT222K993G | Peaking Coil |
| L 801 | ELF18D216 | Line Filter |
| L 803 | TSC928-4 | Ferrite Choke |
| TRANSISTORS | | |
| Q 308 | 2SA933S | Video Buffer |
| Q 371 | 2SC1740S | Video Buffer |
| Q 372 | 2SC1740S | Differential Amp. |
| Q 373 | 2SC1740S | Differential Amp. |
| Q 374 | 2SC1740S | Chroma Buffer |
| Q 375 | 2SC1740S | Video Buffer |
| Q 380 | 2SC1740S | Comb Switch |
| Q 401 | 2SC1383-NC | V. Position |
| Q 402 | 2SA933S | V. Sync Delay |
| Q 403 | 2SC1740S | V. Sync Delay |
| Q 501 | 2SC1473AH | H. Drive |
| Q 502 | 2SD1439-Q | H. Output |
| Q 504 | 2SC1740S | X-Ray Protector |
| Q 505 | 2SC1740S | Sync Separator |
| Q 506 | 2SC1740S | Sync Inverter |
| Q 507 | 2SC1740S | Sync Buffer |
| Q 508 | 2SB774-R | Sync Differential |
| Q 509 | 2SA933S | H. Sync Delay |
| Q 510 | 2SD889-R | H. Sync Delay |
| Q 511 | 2SA933S | H. Sync Inverter |
| Q 512 | 2SA933S | H. Size/Under Scan |
| Q 513 | 2SD1266 | H. Size/Under Scan |
| Q 514 | 2SC1740S | Burst Color Killer |
| Q 515 | 2SD889-R | Sync Buffer |
| Q 551 | 2SA933S | Current Protector |
| Q 602 | 2SA933S | Burst Color Killer |
| Q 603 | 2SA933S | Burst Color Killer |
| Q 610 | 2SC1740S | Chroma Amp. |
| Q 611 | 2SC1740S | Chroma Amp. |
| Q 801 | 2SC3872-LS | Power Switching Output |
| Q 802 | 2SA885-R | Drive/Q801 |
| Q 803 | 2SD965-R | Current Protector |
| Q 804 | 2SC1740S | Error Detector |
| TRANSFORMERS | | |
| T 501 | PALF34709F | FBT |
| T 502 | TLH15412 | H. Drive Trans. |
| T 801 | ETS35K403A | Power Switching Trans. |
| OTHERS | | |
| X 601 | TSS816N2 | Crystal Osc. |
| SW 302 | ESB621282 | Function Switch |
| SW 401 | EVQR4AL13 | Service Switch |
| F 801 | XBA1F30NU100 | Fuse 125V/3A |
| A17 | PAXAJE04901Y | 1P GND Lead |

BT-S901Y

| No. | Part No. | Description |
|---------|--------------|------------------|
| A18-A21 | PAXAJT08901Y | 4P Coupler/CO-4L |
| A22-A23 | PAXAJT06901Y | 2P Coupler/CO-3L |
| A24-A29 | PAXAJT09901Y | 6P Coupler/CO-5L |
| CO-5A | TJS168960 | 2P Connector |
| A-1 | TMM13497 | Clamper |
| A-2 | TMM13497 | Clamper |
| A-3 | TMM15412-1 | Clamper |
| | XTV3+8B | Screw/FBT |
| | XNG3BS | Nut/IC402 |
| | XYN3+C8 | Screw/IC402 |
| | TUC27735-1 | Heat Sink/IC402 |
| | N018K | Mica Sheet/Q502 |
| | TUC37746 | Heat Sink/Q502 |
| | XNG3BS | Nut/Q502 |
| | XSN3+10S | Screw/Q502 |
| | XWA3B | Washer/Q502 |
| | XWG3 | Washer/Q502 |
| | PAUC35601 | Heat Sink/Q801 |
| | XWG3 | Washer/Q801 |
| | XYN3+C10 | Screw/Q801 |
| | TJS5A9310 | 4P Cable Holder |
| | TJS5A9330 | 6P Cable Holder |

Neck Board (C-Board)

| No. | Part No. | Description |
|-------------|--------------|---------------------|
| RESISTORS | | |
| R 351 | EVN61AA00B53 | Cut Off Blue 5KohmB |
| R 352 | ERDS2TJ122 | C 1.2Kohm, J, 1/4W |
| R 353 | EVN61AA00B53 | Cut Off Red 5KohmB |
| R 354 | ERDS2TJ122 | C 1.2Kohm, J, 1/4W |
| R 355 | ERDS2TJ183 | C 18Kohm, J, 1/4W |
| R 356 | EVN61AA00B13 | Drive Blue 1KohmB |
| R 357 | EVN61AA00B13 | Drive Red 1KohmB |
| R 358 | ERDS2TJ471 | C 470ohm, J, 1/4W |
| R 359 | ERDS2TJ151 | C 150ohm, J, 1/4W |
| R 360 | ERDS2TJ472 | C 4.7Kohm, J, 1/4W |
| R 361 | ERG1SJ153P | M 15Kohm, J, 1W |
| R 362 | ERG1SJ153P | M 15Kohm, J, 1W |
| R 363 | ERG1SJ153P | M 15Kohm, J, 1W |
| R 364 | ERC14GK272 | S 2.7Kohm, K, 1/4W |
| R 365 | ERC14GK272 | S 2.7Kohm, K, 1/4W |
| R 366 | ERC14GK272 | S 2.7Kohm, K, 1/4W |
| CAPACITORS | | |
| C 351 | ECKF1H331KB | C 330pF, K, 50V |
| C 352 | ECKF1H221KB | C 220pF, K, 50V |
| C 353 | ECKD3D681KBN | C 680pF, K, 2KV |
| C 358 | ECKF1H221KB | C 220pF, K, 50V |
| TRANSISTORS | | |
| Q 351 | 2SC1473-QRNC | Video Output |
| Q 352 | 2SC1473-QRNC | Video Output |

| No. | Part No. | Description |
|--------|--------------|-----------------|
| Q 353 | 2SC1473-QRNC | Video Output |
| OTHERS | | |
| | TJS1A5080 | CRT Socket |
| | TJS5A9310 | 4P Cable Holder |
| | TJS5A9330 | 6P Cable Holder |

Terminal Board (L-Board)

| No. | Part No. | Description |
|-----------|-------------|--------------------|
| RESISTORS | | |
| R 201 | ERJ8GEYJ472 | C 4.7Kohm, J, 1/8W |
| R 202 | ERJ8GEYJ103 | C 10Kohm, J, 1/8W |
| R 203 | ERJ8GEYJ153 | C 15Kohm, J, 1/8W |
| R 204 | ERDS2TJ472 | C 4.7Kohm, J, 1/4W |
| R 205 | ERJ8GEYJ103 | C 10Kohm, J, 1/8W |
| R 206 | ERJ8GEYJ153 | C 15Kohm, J, 1/8W |
| R 207 | ERJ8GEYJ104 | C 100Kohm, J, 1/8W |
| R 208 | ERDS2TJ102 | C 1Kohm, J, 1/4W |
| R 209 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W |
| R 210 | ERJ8GEYJ182 | C 1.8Kohm, J, 1/8W |
| R 211 | ERJ8GEYJ821 | C 820ohm, J, 1/8W |
| R 212 | ERJ8GEYJ4R7 | C 4.7ohm, J, 1/8W |
| R 213 | ERJ8GEYJ561 | C 560ohm, J, 1/8W |
| R 214 | ERJ8GEYJ822 | C 8.2Kohm, J, 1/8W |
| R 215 | ERDS2TJ272 | C 2.7Kohm, J, 1/4W |
| R 218 | ERJ8GEYJ273 | C 27Kohm, J, 1/8W |
| R 219 | ERJ8GEYJ273 | C 27Kohm, J, 1/8W |
| R 220 | ERQ12AJ100P | F 10ohm, J, 1/2W |
| R 222 | ERDS1TJ272 | C 2.7Kohm, J, 1/2W |
| R3001 | ERJ8GEYJ101 | C 100ohm, J, 1/8W |
| R3002 | ERJ8GEYJ822 | C 8.2Kohm, J, 1/8W |
| R3003 | ERJ8GEYJ393 | C 39Kohm, J, 1/8W |
| R3004 | ERJ8GEYJ101 | C 100ohm, J, 1/8W |
| R3005 | ERJ8GEYJ822 | C 8.2Kohm, J, 1/8W |
| R3006 | ERJ8GEYJ393 | C 39Kohm, J, 1/8W |
| R3007 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W |
| R3008 | ERJ8GEYJ750 | C 75ohm, J, 1/8W |
| R3009 | ERJ8GEYJ750 | C 75ohm, J, 1/8W |
| R3010 | ERJ8GEYJ750 | C 75ohm, J, 1/8W |
| R3011 | ERJ8GEYJ562 | C 5.6Kohm, J, 1/8W |
| R3012 | ERJ8GEYJ562 | C 5.6Kohm, J, 1/8W |
| R3013 | ERDS2TJ471 | C 470ohm, J, 1/4W |
| R3014 | ERJ8GEYJ821 | C 820ohm, J, 1/8W |
| R3015 | ERJ8GEYJ224 | C 220Kohm, J, 1/8W |
| R3016 | ERJ8GEYJ272 | C 2.7Kohm, J, 1/8W |
| R3017 | ERJ8GEYJ271 | C 270ohm, J, 1/8W |
| R3018 | ERJ8GEYJ471 | C 470ohm, J, 1/8W |
| R3019 | ERJ8GEYJ750 | C 75ohm, J, 1/8W |
| R3020 | ERJ8GEYJ101 | C 100ohm, J, 1/8W |
| R3021 | ERJ8GEYJ822 | C 8.2Kohm, J, 1/8W |

| No. | Part No. | Description |
|-------|-------------|--------------------|
| R3022 | ERJ8GEYJ393 | C 39Kohm, J, 1/8W |
| R3023 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W |
| R3024 | ERJ8GEYJ101 | C 100ohm, J, 1/8W |
| R3025 | ERJ8GEYJ822 | C 8.2Kohm, J, 1/8W |
| R3026 | ERJ8GEYJ393 | C 39Kohm, J, 1/8W |
| R3027 | ERJ8GEYJ750 | C 75ohm, J, 1/8W |
| R3028 | ERJ8GEYJ101 | C 100ohm, J, 1/8W |
| R3029 | ERJ8GEYJ392 | C 3.9Kohm, J, 1/8W |
| R3030 | ERJ8GEYJ564 | C 560Kohm, J, 1/8W |
| R3031 | ERJ8GEYJ102 | C 1Kohm, J, 1/8W |
| R3032 | ERJ8GEYJ331 | C 330ohm, J, 1/8W |

CAPACITORS

| | | |
|-------|--------------|------------------|
| C 201 | ECEA1HU010 | E 1uF, 50V |
| C 202 | ECEA1HU010 | E 1uF, 50V |
| C 203 | ECEA1CU100 | E 10uF, 16V |
| C 204 | ECEA1EU4R7 | E 4.7uF, 25V |
| C 206 | ECEA1CU100 | E 10uF, 16V |
| C 207 | ECUX1H103ZFM | C 0.01uF, Z, 50V |
| C 208 | ECEA1HU2R2 | E 2.2uF, 50V |
| C 209 | ECUX1H104ZFM | C 0.1uF, Z, 50V |
| C 210 | ECEA1EU221 | E 220uF, 25V |
| C 211 | ECEA1EU221 | E 220uF, 25V |

| | | |
|-------|--------------|-------------------|
| C 212 | ECEA1CU221 | E 220uF, 16V |
| C 213 | ECUX1H103ZFM | C 0.01uF, Z, 50V |
| C 214 | ECEA1CU100 | E 10uF, 16V |
| C 215 | ECEA1CU100 | E 10uF, 16V |
| C 216 | ECEA1CU221 | E 220uF, 16V |
| C3001 | ECEA1CU100 | E 10uF, 16V |
| C3002 | ECEA1CU100 | E 10uF, 16V |
| C3003 | ECEA1CU100 | E 10uF, 16V |
| C3004 | ECEA1CU100 | E 10uF, 16V |
| C3005 | ECUX1H683ZFH | C 0.068uF, Z, 50V |

| | | |
|-------|--------------|-------------------|
| C3006 | ECUX1H683ZFH | C 0.068uF, Z, 50V |
| C3007 | ECUX1H470JCM | C 47pF, J, 50V |
| C3008 | ECEA1CU470 | E 47uF, 16V |
| C3010 | ECEA1CU100 | E 10uF, 16V |
| C3011 | ECEA1CU100 | E 10uF, 16V |
| C3012 | ECEA1CU100 | E 10uF, 16V |
| C3013 | ECEA1CU100 | E 10uF, 16V |
| C3014 | ECEA1CU100 | E 10uF, 16V |
| C3015 | ECUX1H221JCM | C 220pF, J, 50V |

DIODES

| | | |
|-------|----------|---------------------|
| D3001 | MA4056-M | Zener Diode Vz=5.6V |
| D3002 | MA165 | Diode |
| D3003 | MA4056-M | Zener Diode Vz=5.6V |
| D3004 | MA165 | Diode |
| D3005 | MA4056-M | Zener Diode Vz=5.6V |
| D3006 | MA165 | Diode |
| D3007 | MA27T-B | Diode |
| D3008 | MA4056-M | Zener Diode Vz=5.6V |
| D3009 | MA165 | Diode |
| D3010 | MA165 | Diode |
| D3011 | MA4056-M | Zener Diode Vz=5.6V |
| D3012 | MA165 | Diode |

| No. | Part No. | Description |
|-----|----------|-------------|
|-----|----------|-------------|

INTEGRATED CIRCUITS

| | | |
|--------|--------|--------------|
| IC 201 | AN5265 | Audio Output |
|--------|--------|--------------|

TRANSISTORS

| | | |
|-------|----------|-------------------|
| Q 201 | 2SC1740S | Audio Buffer |
| Q 202 | 2SC1740S | Audio Buffer |
| Q3001 | 2SC1740S | Video Buffer |
| Q3002 | 2SC1740S | Video Buffer |
| Q3003 | 2SC1740S | Video Buffer |
| Q3004 | 2SA933S | Video Amp & Clamp |
| Q3005 | 2SA933S | Video Buffer |
| Q3007 | 2SC1740S | Video Buffer |
| Q3008 | 2SC1740S | Video Amp & Clamp |
| Q3009 | 2SA933S | Ext. Sync Buffer |

OTHERS

| | | |
|--------|--------------|----------------------|
| SW3001 | ESD32154 | 75Ω/HI-Z Change |
| SW3002 | ESD32154 | Video/S-Video Change |
| L13 | PAXAJE03901Y | 1P GND Lead |
| CO-1L | TJS169070 | 3P L-Type Connector |
| CO-2L | TJS169071 | 3P L-Type Connector |
| CO-3L | TJS169060 | 2P Connector |
| CO-4L | TJS168980 | 4P Connector |
| CO-5L | TJS169010 | 6P Connector |
| L-1 | TMM5439 | Clamper |
| | PAMM35405 | 2P Cable Holder |
| | TJS5A9310 | 4P Cable Holder |
| | TJS5A9330 | 6P Cable Holder |

LED Board (C-Board)

| No. | Part No. | Description |
|-----|----------|-------------|
|-----|----------|-------------|

DIODES

| | | |
|-------|--------|-----|
| D 815 | LN38GP | LED |
|-------|--------|-----|

OTHERS

| | | |
|-------|--------------|------------------|
| | KL-02 | LED Spacer |
| D1-D2 | PAXAJT07901Y | 2P Coupler/CO-5A |

Packing Parts

| No. | Part No. | Description |
|-----|----------|-------------|
|-----|----------|-------------|

PACKING

| | | |
|------|--------------|------------------------|
| P 1 | PAPC3511001 | Packing Case |
| P 2 | PAPD351009 | Cushion (Top Front) |
| P 3 | PAPD351010 | Cushion (Top Rear) |
| P 4 | PAPD352009 | Cushion (Bottom Front) |
| P 5 | PAPD352010 | Cushion (Bottom Rear) |
| P 6 | PAQB310026 | Operating Instructions |
| P 7 | TQB817002-1 | Safety Instructions |
| P 8 | TQD67180631A | Warranty Card |
| P 9 | VQA0053 | Service Center List |
| P 10 | TQE616 | Cover for O/I |
| P 11 | TPE114115 | Cover for Unit |

