

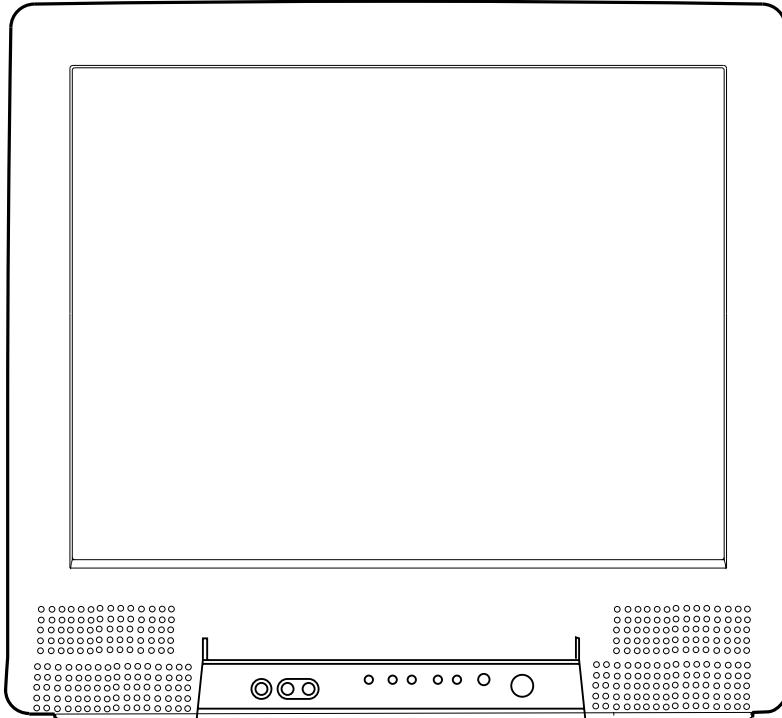
SYLVANIA

 **Emerson®**

SERVICE MANUAL

27" COLOR TELEVISION

6427FF/EWF2705



IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

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SPECIFICATIONS

< TUNER >

ANT. Input ----- 75 ohm Unbal., F type
 Reference Level----- 20 Vp-p (CRT Green Cathode)
 Test Input Signal ----- 400 Hz 30% modulation

Description	Condition	Unit	Nominal	Limit
1. Intermediate Freq.	Picture Sound	MHz MHz	45.75 41.25	--- ---
2. Peak Picture Sens	VHF CATV UHF	dB μ V dB μ V dB μ V	15 15 15	30 30 40
3. AFT Pull In Range (10 mV input)	---	MHz	\pm 2.0	\pm 0.7

< DEFLECTION >

Description	Condition	Unit	Nominal	Limit
1. Deflection Freq.	Horizontal Vertical	kHz Hz	15.734 60	--- ---
2. Linearity	Horizontal Vertical	% %	---	\pm 15 \pm 10
3. Over Scan	---	%	10	---
4. High Voltage	---	kV	29	---

< VIDEO & CHROMA >

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center Side Corner	mm mm mm	---	0.4 1.5 2.1
2. Brightness	APL 100%	Ft-L	25	15
3. Color Temperature	---	°K	9200 °K	---
4. Resolution	Horizontal Vertical	Line Line	250 300	---

< AUDIO >

All items are measured across 8 Ω load at speaker output terminal.

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power	10% THD	W	2	1.6
2. Audio Distortion (w/LPF)	500 mW	%	2	7
3. Audio Freq. Response	-3 dB	Hz	70 ~ 11 k	---

Note: Nominal specifications represent the design specifications. All units should be able to approximate these. Some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable. In no case should a unit fail to meet limit specifications.

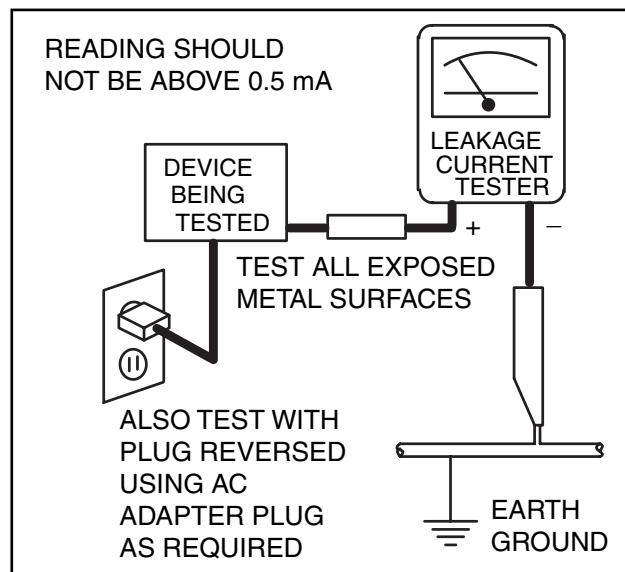
IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Safety Precautions for TV Circuit

- 1. Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:
 - a.** Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**
 - b.** Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.
 - c. Antenna Cold Check** - With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.
 - d. Leakage Current Hot Check** - With the instrument completely reassembled, plug the

AC line cord directly into a 120 V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

- e. X-Radiation and High Voltage Limits** - Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original.

- Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servicing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.
2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.
 3. **Design Alteration Warning** - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.
 4. **Picture Tube Implosion Protection Warning** - The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.
 5. **Hot Chassis Warning** -
 - a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without

an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.

- b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.
- c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.
6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and, e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.
7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.
8. **Product Safety Notice** - Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc.. Parts that have special safety characteristics are identified by a  on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The product's safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm they comply with the recognized product safety and electrical codes

of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

- A. Parts identified by the  symbol are critical for safety.
Replace only with part number specified.
- B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.
- C. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
- D. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers
 - 4) Insulators for transistors.
- E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.
- F. Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)
- G. Check that replaced wires do not contact sharp edged or pointed parts.
- H. When a power cord has been replaced, check that 5~6 kg of force in any direction will not loosen it.
- I. Also check areas surrounding repaired locations.
- J. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
- K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure
 - 1) Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector (discard it).
 - 2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

- 3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
- 4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.
- L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC supply outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d), (d')
110 to 130 V	U.S.A. or Canada	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

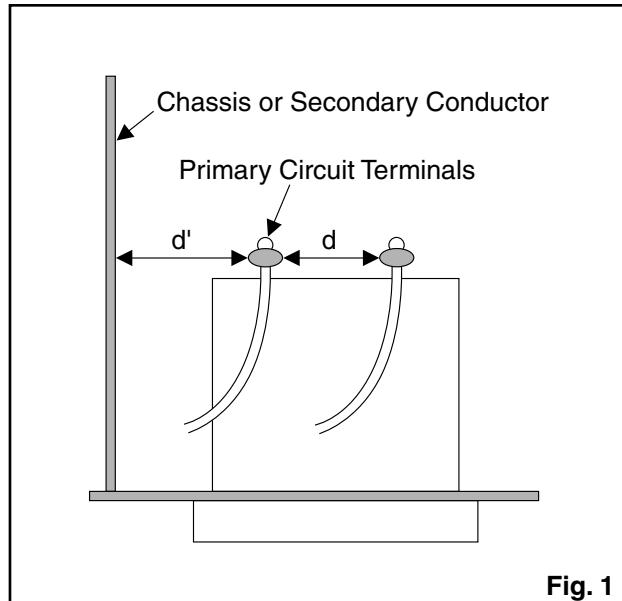


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method: (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z . See Fig. 2 and following table.

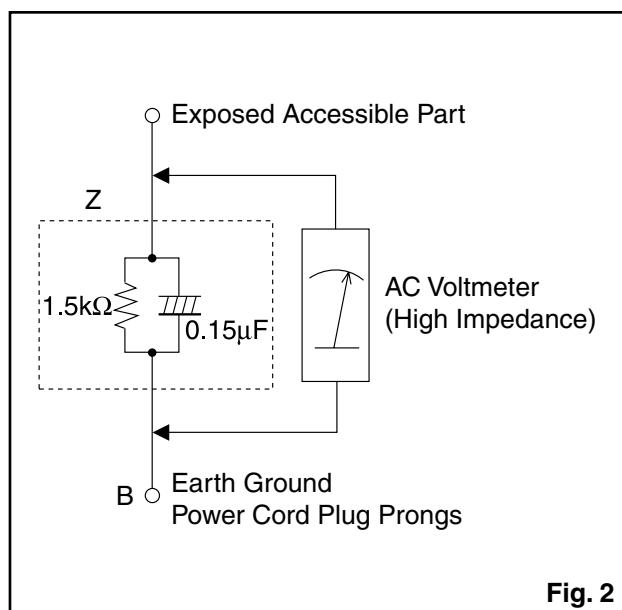


Fig. 2

Table 2: Leakage current ratings for selected areas

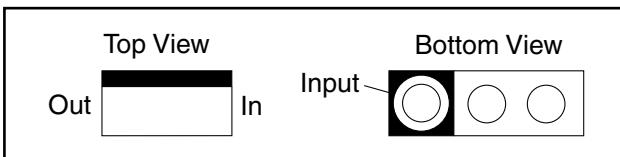
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	$0.15\mu\text{F}$ CAP. & $1.5\text{k}\Omega$ RES. Connected in parallel	$i \leq 0.5$ mA rms	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

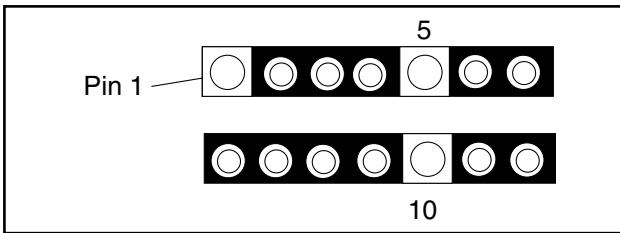
STANDARD NOTES FOR SERVICING

Circuit Board Indications

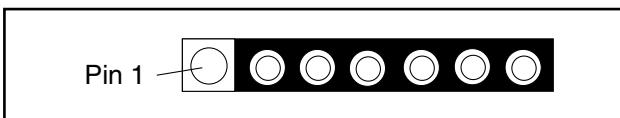
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

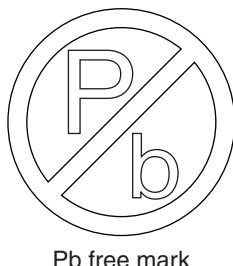


3. The 1st pin of every male connector is indicated as shown.



Pb (Lead) Free Solder

Pb free mark will be found on PCBs which use Pb free solder. (Refer to figure.) For PCBs with Pb free mark, be sure to use Pb free solder. For PCBs without Pb free mark, use standard solder.



How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

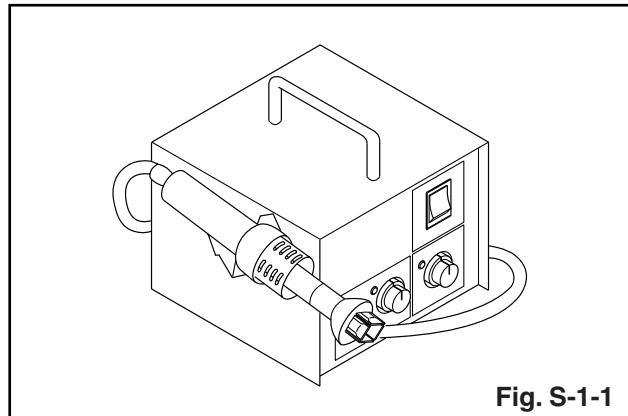


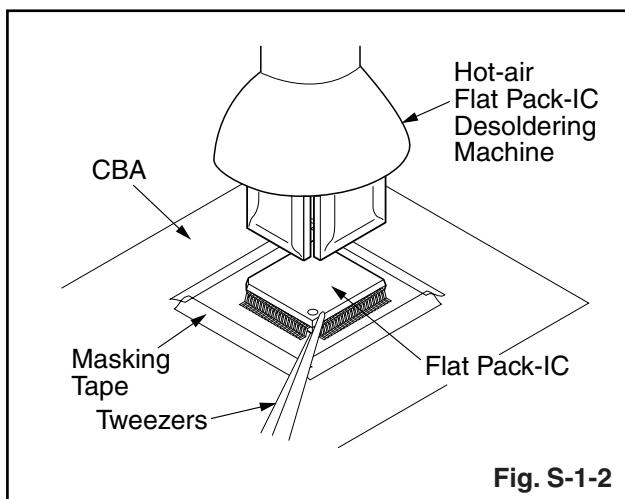
Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

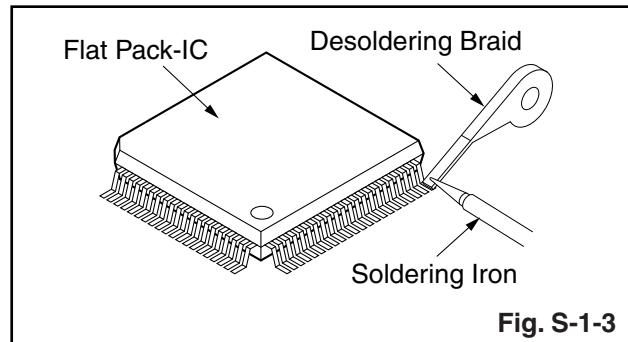
1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

- The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

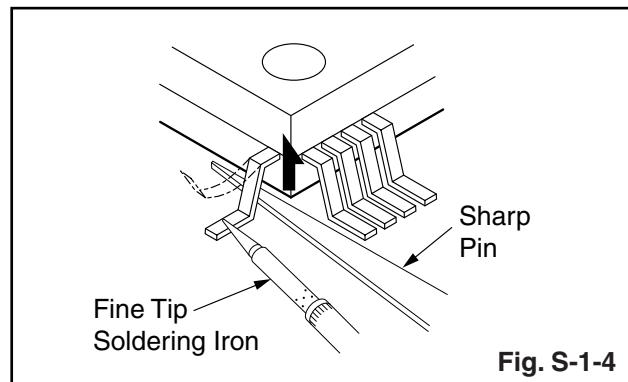


With Soldering Iron:

- Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)



- Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

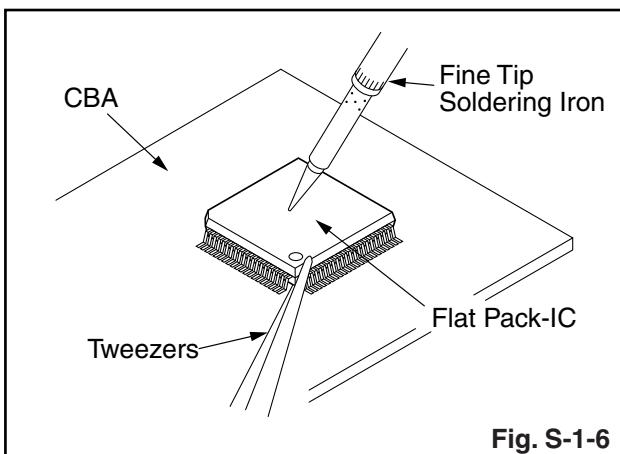
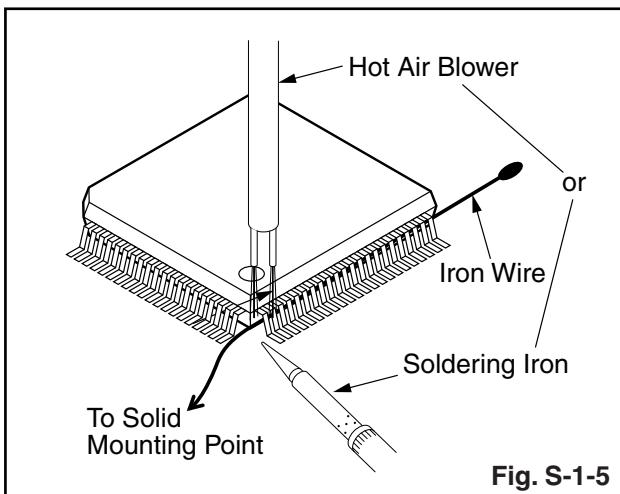


- Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
- Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

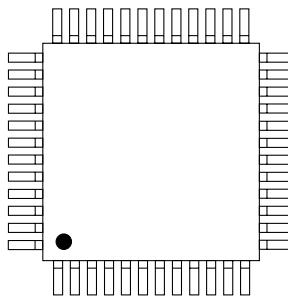
Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.



2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The “●” mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

Example :



Pin 1 of the Flat Pack-IC
is indicated by a "●" mark.

Fig. S-1-7

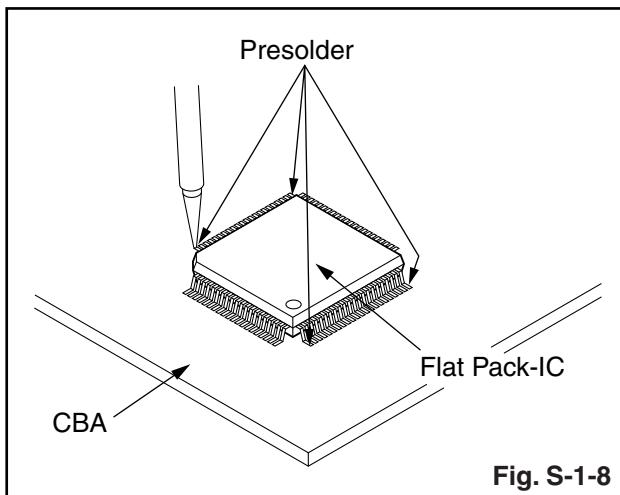


Fig. S-1-8

Instructions for Handling Semi-conductors

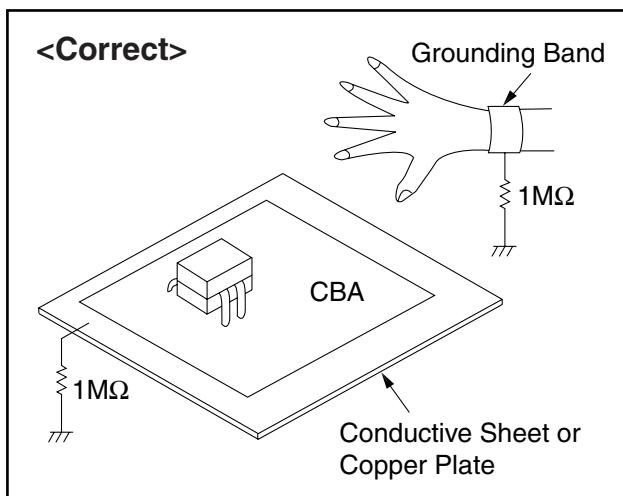
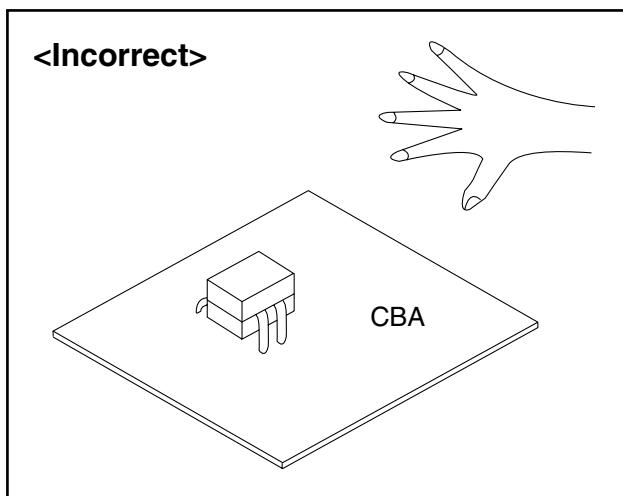
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band ($1\text{ M}\Omega$) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding ($1\text{ M}\Omega$) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.



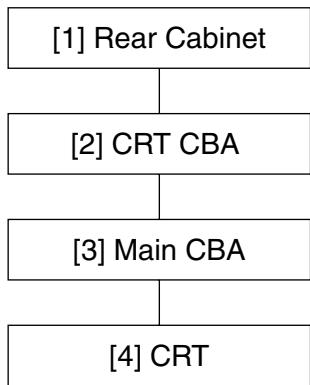
CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts, and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.

CAUTION!

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



2. Disassembly Method

Step/ Loc. No.	Part	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Unclamp/ Desolder	Note
[1]	Rear Cabinet	D1 D2	7(S-1), 5(S-2), (S-3)	1
[2]	CRT CBA	D4 D5	CN1501	2
[3]	Main CBA	D3 D5	CN801, CN802, CN571, CN691	3
[4]	CRT	D4	4(S-4), Anode Cap	4

↓ ↓ ↓ ↓ ↓
(1) (2) (3) (4) (5)

Note:

(1) Order of steps in procedure. When reassembling, follow the steps in reverse order. These numbers are also used as the Identification (location) No. of parts in figures.

(2) Parts to be removed or installed.

(3) Fig. No. showing procedure of part location

(4) Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.

P = Spring, L = Locking Tab, S = Screw,

CN = Connector

* = Unhook, Unlock, Release, Unplug, or Desolder

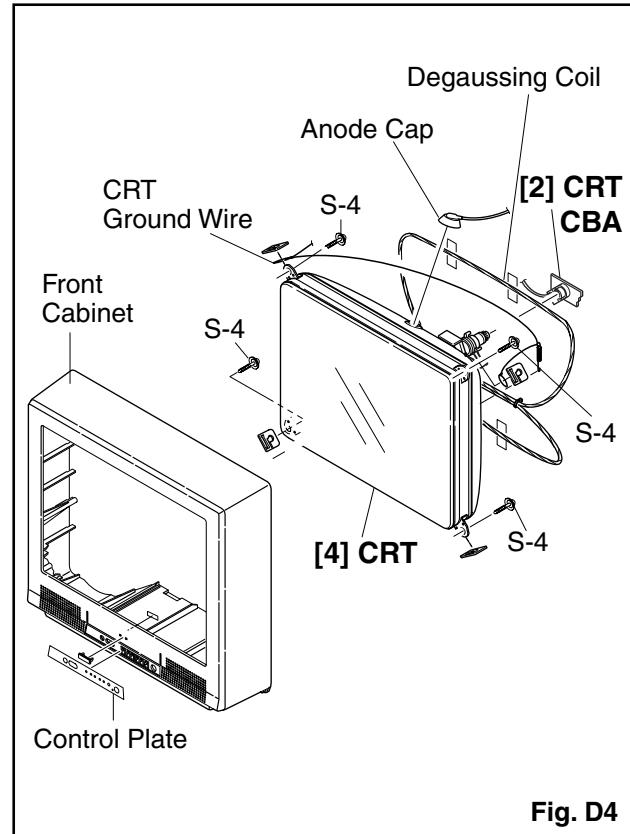
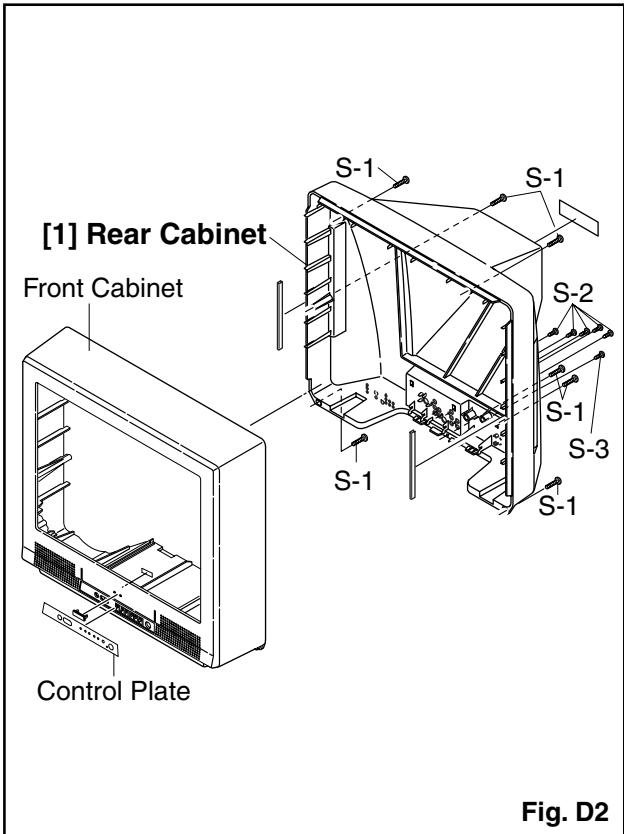
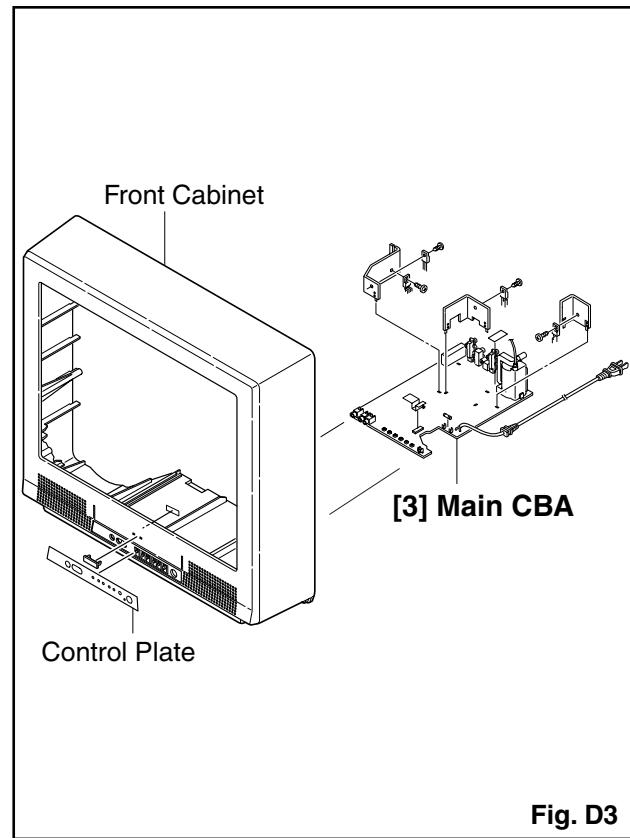
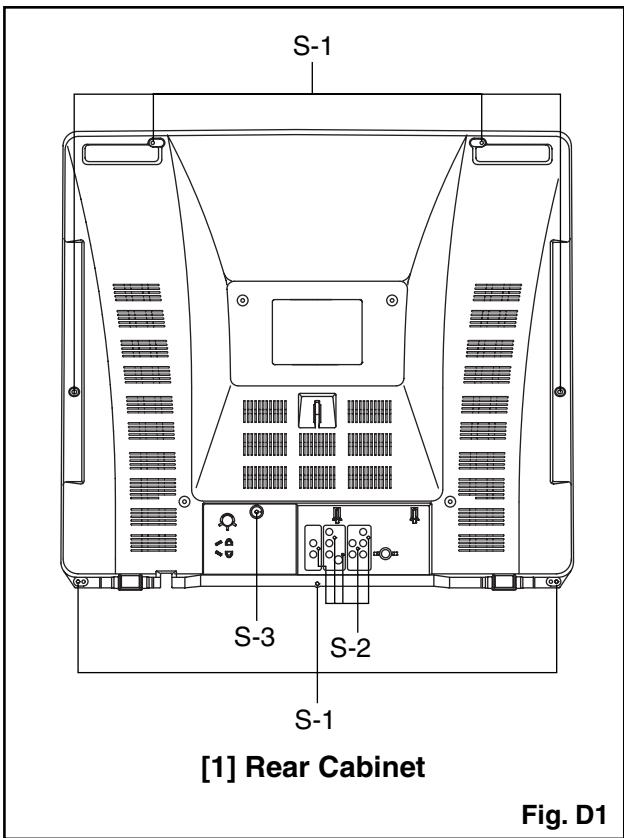
e.g. 2(S-2) = two Screws (S-2),

2(L-2) = two Locking Tabs (L-2)

(5) Refer to the following "Reference Notes in the Table."

Reference Notes in the Table

1. Removal of the Rear Cabinet: Remove screws 7(S-1), 5(S-2) and (S-3) then slide the Rear Cabinet backward.
2. Removal of the CRT CBA: Disconnect CN1501 then pull the CRT CBA backward.
3. Removal of the Main CBA: Disconnect CN801, CN802, CN571 and CN691 on the Main CBA then slide the Main CBA backward.
4. **CAUTION:** Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.
Removal of the CRT: Remove screws 4(S-4) and Anode Cap. then slide the CRT backward.



TV Cable Wiring Diagram

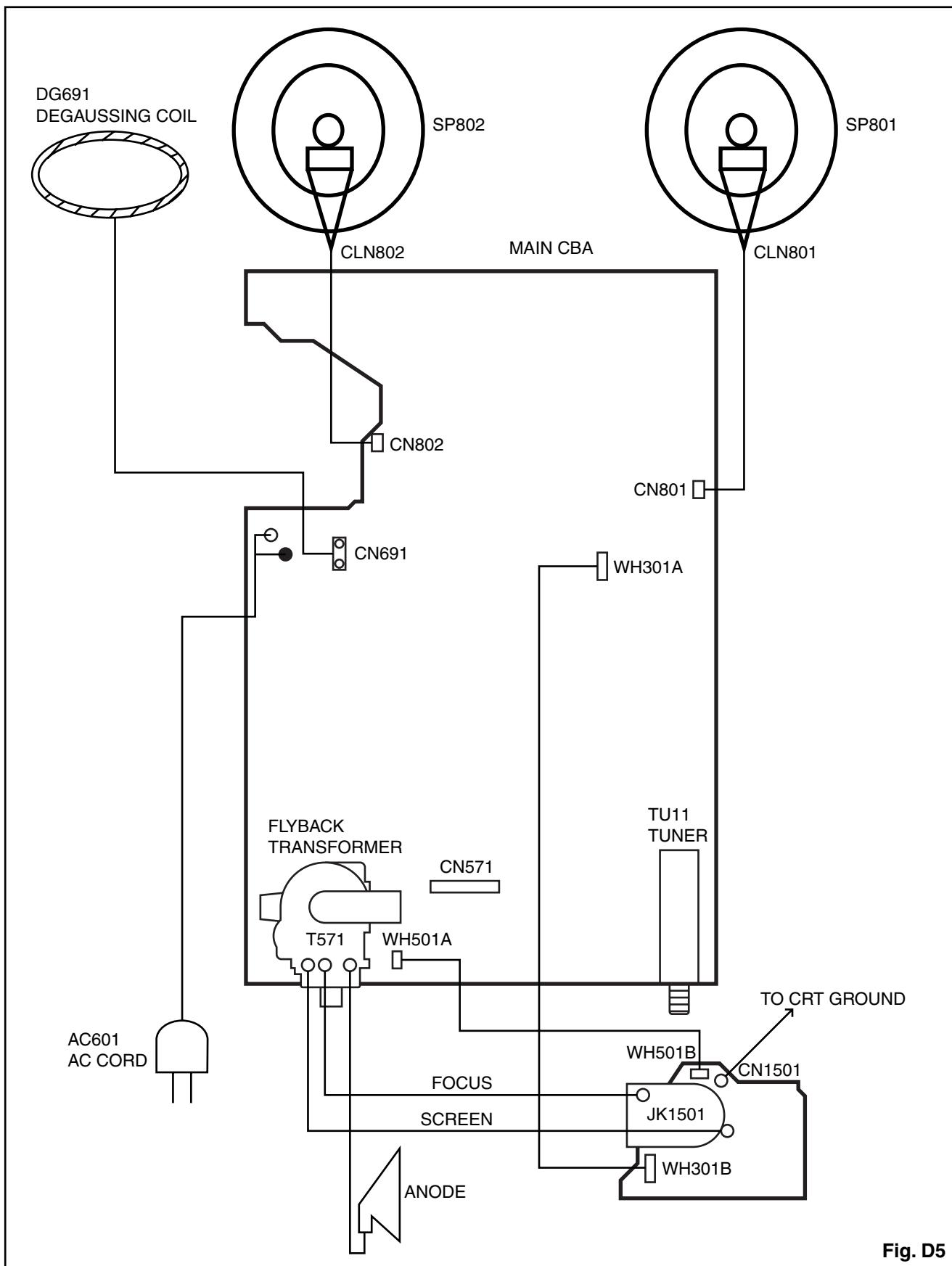


Fig. D5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is abbreviation for "Circuit Board Assembly."

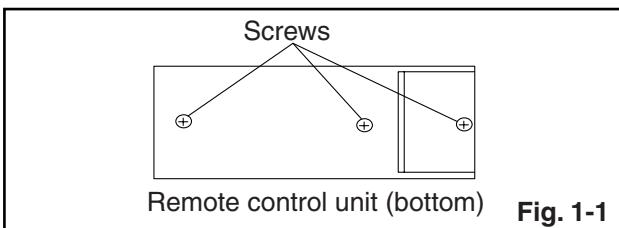
Note: Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

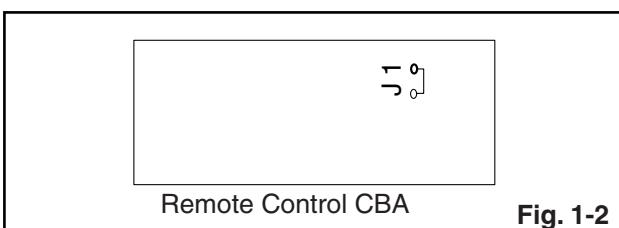
1. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
2. DC Voltmeter
3. Oscilloscope: Dual-trace with 10:1 probe, V-Range: 0.001~50 V/Div, F-Range: DC~AC-60 MHz
4. Plastic Tip Driver
5. Remote control unit: Part No. NE116UD
6. DC power supply 13.2V/5A

How to make Service remote control unit:

1. Prepare normal remote control unit. (Part No. NE116UD)
Remove 3 Screws from the back lid. (Fig. 1-1)



2. Added J1 (Jumper Wire) to the remote control CBA. (Fig. 1-2)



How to set up the service mode:

Service mode:

1. Use the service remote control unit.
2. Turn the power on. (Use main power on the TV unit.)
3. Press [SLEEP] button on the service remote control unit. Version of micro computer will display on the CRT. (Ex: 059-0.01)
4. **6427FF:**

Check the display on the lower left is "3652" and if it is not "3652" set it at "3652" according to "Initial Setting" on page 5-2.

EWF2705:

Check the display on the lower left is "3641" and if it is not "3641" set it at "3641" according to "Initial Setting" on page 5-2.

1. +B Adjustment

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and the unit does not operate correctly.

Test Point	Adj. Point	Mode	Input
TP601(+B) TP300(GND)	VR661	---	---
Tape	M. EQ.		Spec.
---	DC Voltmeter	+132±0.5 V DC.	

Note: TP601, TP300(GND), VR661 --- Main CBA

1. Connect DC Volt Meter to TP601 and TP300(GND).
2. Adjust VR661 so that the voltage of TP601 becomes $+132\pm0.5$ V DC.

2. Initial Setting

General

1. Enter the Service mode. (See page 5-1.)
2. Press [VOL ▼] button on the service remote control unit. Display changes "C/D," "7F," "LANGUAGE," "ACCESS CODE," "SOUND TYPE," "VIDEO TONE," "FM-MODE," "V-OUT," "VIDEO," "AV MEMO," "STABLE SOUND," "FILTER," "500," "YUV MEMORY," "NO SIG BRT," "A-MUTE POL," and "V-MENU" cyclically when [VOL ▼] button is pressed.
3. To set the following each data value, press [CH ▲ / ▼] buttons on the service remote control unit.

7F --- Set to "FF."

LANGUAGE --- Set to "SPA/FRA."

ACCESS CODE --- Set to "ON."

SOUND TYPE --- Set to "MTS."

VIDEO TONE --- Set to "ON."

FM-MODE --- Set to "OFF."

V-OUT --- Set to "OFF."

VIDEO

6427FF --- Set to "V1/V2/YUV."

EWF2705 --- Set to "V1/V2."

AV MEMO --- Set to "OFF."

STABLE SOUND --- Set to "OFF."

FILTER

6427FF --- Set to "ON."

EWF2705 --- Set to "OFF."

Adjusting the monitoring time --- Set to "500."

YUV MEMORY --- Set to "OFF."

NO SIG BRT --- Set to "0."

A-MUTE POL --- Set to "H."

V-MENU --- Set to "OFF."

3. Setting for BRIGHT, CONTRAST, COLOR, TINT, and SHARPNESS Data Values

General

1. Enter the Service mode. (See page 5-1.)
2. Press [MENU] button on the service remote control unit. Display changes "BRT," "CNT," "CLR," "S-CLR," "C-CLR," "TNT," "V-TINT," "S-TINT," "C-TINT," "SHARP," "S-SRP," and "C-SRP" cyclically when [MENU] button is pressed.

CNT

1. Press [MENU] button on the service remote control unit. Then select "CONTRAST" (CNT) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that the value of "CONTRAST" (CNT) becomes 84.

CLR

1. Press [MENU] button on the service remote control unit. Then select "COLOR" (CLR) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that the value of "COLOR" (CLR) becomes 56.

S-CLR

1. Press [MENU] button on the service remote control unit. Then select "S-COLOR" (S-CLR) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that the value of "S-COLOR" (S-CLR) becomes 56.

C-CLR (6427FF only)

1. Press [MENU] button on the service remote control unit. Then select "COMPONENT COLOR" (C-CLR) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that the value of "COMPONENT COLOR" (C-CLR) becomes 52.

TNT

1. Press [MENU] button on the service remote control unit. Then select "TINT" (TNT) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that the value of "TINT" (TNT) becomes 58.

V-TNT

1. Press [MENU] button on the service remote control unit. Then select "V-TINT" (V-TNT) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that the value of "V-TINT" (V-TNT) becomes 59.

S-TNT

1. Press [MENU] button on the service remote control unit. Then select "S-TINT" (S-TNT) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that the value of "S-TINT" (S-TNT) becomes 59.

C-TNT (6427FF only)

1. Press [MENU] button on the service remote control unit. Then select "COMPONENT TINT" (C-TNT) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that the value of "COMPONENT TINT" (C-TNT) becomes 64.

SHARP

1. Press [MENU] button on the service remote control unit. Then select "SHARPNESS" (SHARP) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit and select "40."

S-SRP

1. Press [MENU] button on the service remote control unit. Then select "S-SHARPNESS" (S-SRP) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit and select "42."

C-SRP (6427FF only)

1. Press [MENU] button on the service remote control unit. Then select "COMPONENT SHARPNESS" (C-SRP) display.
2. Press [CH ▲ / ▼] buttons on the service remote control unit and select "42."

Note: BRIGHT data value does not need to be adjusted at this moment.

4. H f₀ Adjustment

Purpose: To get correct horizontal frequency.

Note: Use service remote control unit.

1. Press [2] button on the service remote control unit and select H-ADJ mode. (By pressing [2] button the display will change from TV AGC to H-ADJ.)
2. Press [CH ▲ / ▼] buttons on the service remote control unit so that display will change "0" ~ "7". At this moment, Choose "4".
3. Turn the power off and on again. (Main Power button on the TV unit.)

5. Black Stretch Control Adjustment

Purpose: To show the fine black color.

Symptom of Misadjustment: Black color will not appear correctly.

Note: Use service remote control unit.

1. Enter the Service mode. (See page 5-1.)
2. Press [6] button on the service remote control unit. "B-S" is indicated.
3. Press [CH ▲ / ▼] buttons on the service remote control unit so that display will change "OFF," "0," and "1." Then choose "B-S OFF."
4. Press [6] button on the service remote control unit. "B-S2" is indicated.
5. Press [CH ▲ / ▼] buttons on the service remote control unit so that display will change "0" and "1." Then choose "B-S2 0."
6. Turn the power off and on again, using the main power button on the TV unit.

6. Purity Check

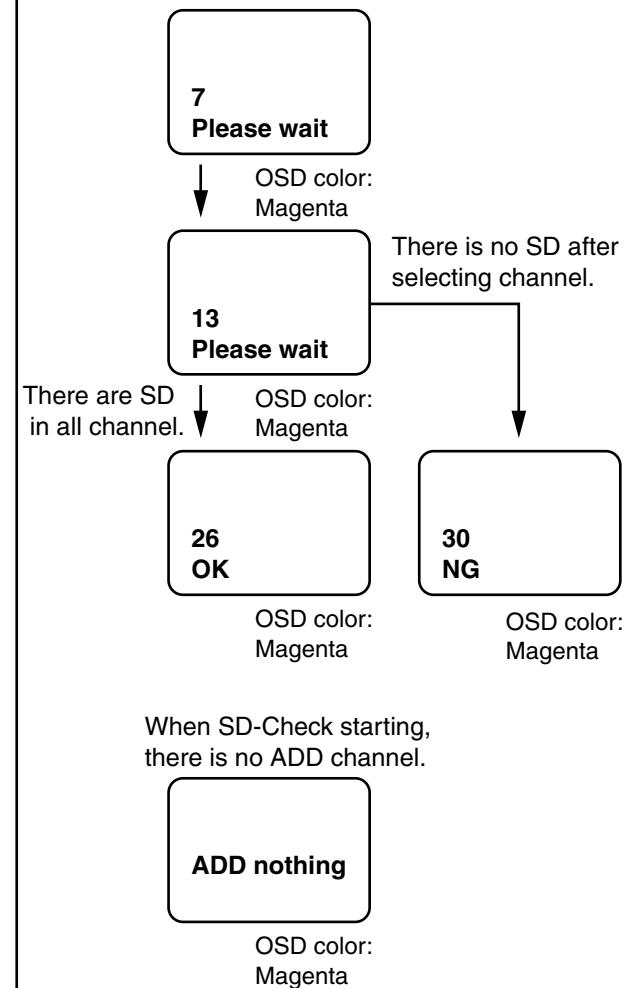
1. Enter the Service mode. (See page 5-1.)
2. Press [7] button on the remote control unit. Each time pressing [7] button on the service remote control unit, display changes Red mode, Green mode, Blue mode, and White mode cyclically.
3. Select White mode.
4. Turn the power off and on again. (Main power button on the TV unit.)

7. SD Check Mode

1. Enter the Service mode. (See page 5-1.)
2. Press [1] button on the remote control unit. The unit enter the SD-Check mode.
3. The unit starts selecting the added channel from first channel according to the memorized CH ADD/DELL data and CATV/TV data in RAM.

SD Check mode (Factory mode)

Press [1] button.



8. H. Position Adjustment

Purpose: To obtain correct horizontal position of screen image.

Symptom of Misadjustment: If H. Position is incorrect, horizontal position of image on the screen may not be properly displayed.

Test Point	Adj. Point	Mode	Input
---	[CH ▲ / ▼] buttons	RF	Monoscope
Tape	M. EQ.	Spec.	
---	Monoscope	90±5%	

Note: Use service remote control unit

1. Operate the unit for at least 20 minutes.
2. Enter the Service mode. (See page 5-1.)
3. Receive the monoscope pattern.
4. Press [8] button on the remote control unit. "H-P" is indicated.
5. Press [CH ▲ / ▼] buttons on the service remote control unit so that the monoscope pattern will be 90±5% of display size and the circle is round.
6. Turn the power off and on again. (Main power button on the TV unit.)

9. V. Size Adjustment

Purpose: To obtain correct vertical width of screen image.

Symptom of Misadjustment: If V. Size is incorrect, vertical size of image on the screen may not be properly displayed.

Test Point	Adj. Point	Mode	Input
---	[CH ▲ / ▼] buttons	RF	Monoscope
Tape	M. EQ.	Spec.	
---	Monoscope	90±5%	

Note: Use service remote control unit.

1. Operate the unit for at least 20 minutes.
2. Enter the Service mode. (See page 5-1.)
3. Receive the monoscope pattern.
4. Press [9] button on the service remote control unit and select "V-S" mode. (Display changes "V-S" and "V-P" cyclically when [9] button is pressed).
5. Press [CH ▲ / ▼] buttons on the service remote control unit so that the monoscope pattern will be 90±5% of display size and the circle is round.
6. Turn the power off and on again. (Main power button on the TV unit.)

10. V. Position Adjustment

Purpose: To obtain correct vertical width of screen image.

Symptom of misadjustment: If V. Position is incorrect, vertical height of image on the screen may not be properly displayed.

Test Point	Adj. Point	Mode	Input
---	[CH ▲ / ▼] buttons	RF	Monoscope
Tape	M. EQ.	Spec.	
---	Monoscope	See below.	

Note: Use service remote control unit

1. Operate the unit for at least 20 minutes.
2. Enter the Service mode. (See page 5-1.)
3. Receive the monoscope pattern.
4. Press [9] button on the service remote control unit and select "V-P" mode. (Display change "V-S" and "V-P" cyclically when [9] button is pressed).
5. Press [CH ▲ / ▼] buttons on the service remote control unit so that the top and bottom of the monoscope pattern will be equal of each other.
6. Turn the power off and on again. (Main power button on the TV unit.)

11. U-Pedestal Adjustment (6427FF only)

1. In VIDEO mode of V1, V2, or YUV, press [3] button on the service remote control unit and select "U-PED" mode. (Display changes "U-PED" and "V-PED" cyclically when [3] button is pressed).
2. Switch the VIDEO mode to YUV. (Refer to "Initial Setting" on page 5-2)
3. To select one appropriate value in "0" to "15," press [CH ▲ / ▼] buttons on the remote control unit.
4. Switch the VIDEO mode to previous mode.
5. Turn the power off and on again. (Main power button on the TV unit.)

12. V-Pedestal Adjustment (6427FF only)

1. In VIDEO mode of V1, V2, or YUV, press [3] button on the service remote control unit and select "V-PED" mode. (Display changes "U-PED" and "V-PED" cyclically when [3] button is pressed).
2. Switch the VIDEO mode to YUV. (Refer to "Initial Setting" on page 5-2)
3. To select one appropriate value in "0" to "15," press [CH ▲ / ▼] buttons on the remote control unit.
4. Switch the input mode to previous mode.
5. Turn the power off and on again. (Main power button on the TV unit.)

13. Software Reset

To reset software, press [5] button on the remote control unit for at least 5 seconds after pressing [CH RETURN] button on the remote control unit.

14. H. Size Adjustment

Purpose: To obtain correct horizontal size of screen image.

Symptom of Misadjustment: If H. Size is incorrect, horizontal size of image on the screen may not be properly displayed.

Test Point	Adj. Point	Mode	Input
---	VR562	RF	Monoscope
Tape	M. EQ.	Spec.	
---	Monoscope	90±5%	

Note: Use service remote control unit

1. Operate the unit for at least 20 minutes.
2. Receive the Monoscope Pattern.
3. Adjust VR562 so that the monoscope pattern will be 90±5% of display size and circle is round.
4. Turn the power off and on again. (Main power button on the TV unit.)

15. PIN Cushion Adjustment

Purpose: To obtain correct straight vertical line of screen image.

Symptom of Misadjustment: If H.Pin cushion is incorrect, vertical line of image on the screen may not be properly displayed.

Test Point	Adj. Point	Mode	Input
---	VR561	RF	Cross hatch
Tape	M. EQ.	Spec.	
---	Cross hatch	---	

Note: Use service remote control unit

1. Operate the unit for at least 20 minutes.
2. Receive the Cross hatch Pattern.
3. Adjust VR561 so that the cross hatch pattern will be straight line of display.
4. Turn the power off and on again. (Main power button on the TV unit.)

16. Cut-off Adjustment

Purpose: To adjust the beam current of R, G, B, and screen voltage.

Symptom of Misadjustment: White color may be reddish, greenish or bluish.

Test Point	Adj. Point	Mode	Input		
---	Screen-Control [CH ▲ / ▼] buttons	RF	Black Raster		
Tape	M. EQ.	Spec.			
---	Pattern Generator	See Reference Notes below.			
Figure					

Fig. 2

Note: Screen Control FBT --- Main CBA

FBT = Fly Back Transformer

Use service remote control unit

1. Degauss the CRT and allow CRT to operate for 20 minutes before starting the alignment.
2. Input the Black Raster Signal from RF Input.
3. Enter the Service mode. (See page 5-1.)
4. Press [VOL ▼] button on the service remote control unit and select "C/D" mode. (Display changes "C/D," "7F," "LANGUAGE," "ACCESS CODE," "SOUND TYPE," "VIDEO TONE," "FM-MODE," "V-OUT," "VIDEO," "AV MEMO," "STABLE SOUND," "FILTER," "500," "YUV MEMORY," "NO SIG BRT," "A-MUTE POL," and "V-MENU" cyclically when [VOL ▼] button is pressed.) then press "1." The display will momentarily show "CUT OFF R" (R= Red). Now there should be a horizontal line across the center of the picture tube. If needed gradually turn the screen control on the flyback, clockwise until the horizontal line appears. Adjust the Red Cut off by pressing [CH ▲ / ▼] buttons. Proceed to Step 5 when the Red Cut off adjustment is done.
5. Press [2] button. The display will momentarily show "CUT OFF G" (G = Green). Adjust the Green Cut off by pressing [CH ▲ / ▼] buttons. Proceed to step 6 when the Green Cut off adjustment is done.

6. Press [3] button. The display will momentarily show "CUT OFF B" (B = Blue). Adjust the Blue cut off by pressing [CH ▲ / ▼] buttons. When done with steps 4, 5 and 6 the horizontal line should be pure white if not, then attempt the Cut off adjustment again.

17. White Balance Adjustment

Purpose: To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment: White becomes bluish or reddish.

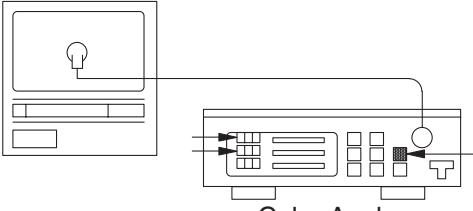
Test Point	Adj. Point	Mode	Input		
Screen	[CH ▲ / ▼] buttons	RF	White Raster (APL 100%)		
Tape	M. EQ.	Spec.			
---	Pattern Generator, Color analyzer	See below			
Figure					
 Color Analyzer					

Fig. 3

Note: Use service remote control unit

1. Operate the unit more than 20 minutes.
2. Face the unit to east. Degauss the CRT using Degaussing Coil.
3. Input the White Raster (APL 100%).
4. Set the color analyzer to the CHROMA mode and after zero point calibration, bring the optical receptor to the center on the tube surface (CRT).
5. Enter the Service mode. (See page 5-1.) Press [VOL ▼] button on the service remote control unit and select "C/D" mode. (Display changes "C/D," "7F," "LANGUAGE," "ACCESS CODE," "SOUND TYPE," "VIDEO TONE," "FM-MODE," "V-OUT," "VIDEO," "AV MEMO," "STABLE SOUND," "FILTER," "500," "YUV MEMORY," "NO SIG BRT," "A-MUTE POL," and "V-MENU" cyclically when [VOL ▼] button is pressed.) then Press [8] button on the service remote control Unit.
6. Press [4] button on the service remote control unit for Red adjustment. Press [5] button on the service remote control unit for Blue adjustment.

7. In each color mode, Press [CH ▲ / ▼] buttons to adjust the values of color.
8. Adjusting Red and Blue color so that the temperature becomes 9200K (x: 286 / y: 294)±3%.
9. At this time, Re-check that Horizontal line is white. If not, Re-adjust Cut-off Adjustment until the Horizontal Line becomes pure white.
10. Turn off and on again to return to normal mode. Receive APL 100% white signal and Check Chroma temperatures become 9200K (x: 286 / y: 294)±3%.

Note: Confirm that Cut Off Adj. is correct after this adjustment, and attempt Cut Off Adj. if needed.

18. Sub-Brightness Adjustment

Purpose: To get proper brightness.

Symptom of Misadjustment: If Sub-Brightness is incorrect, proper brightness cannot be obtained by adjusting the Brightness Control.

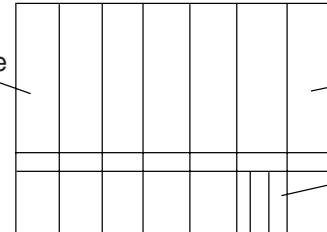
Test Point	Adj. Point	Mode	Input		
---	[CH ▲ / ▼] buttons	RF	IQW		
Tape	M. EQ.	Spec.			
---	Pattern Generator	See below			
Figure					
 Color Analyzer					

Fig. 4

Note: IQW Setup level --- 7.5 IRE
Use service remote control unit

1. Enter the Service mode. (See page 5-1.) Then input IQW signal from RF Input.
2. Press [MENU] button on the service remote control unit and Select "BRT" mode. (Display changes "BRT," "CNT," "CLR," "S-CLR," "C-CLR," "TNT," "V-TNT," "S-TNT," "C-TNT," "SHARP," "S-SRP," and "C-SRP" cyclically when [MENU] button is pressed). Press [CH ▲ / ▼] buttons so that the bar is just visible (See above figure).
3. Turn the power off and on again. (Main power button on the TV unit.)

19. Focus Adjustment

Purpose: Set the optimum Focus.

Symptom of Misadjustment: If Focus Adjustment is incorrect, blurred images are shown on the display.

Test Point	Adj. Point	Mode	Input
---	Focus Control	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below	

Note: Focus VR (FBT) --- Main CBA,
FBT = Fly Back Transformer

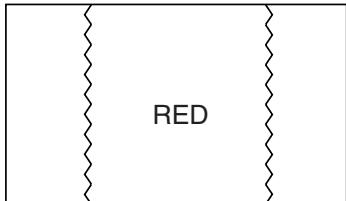
1. Operate the unit more than 30 minutes.
2. Face the unit to the East and Degauss the CRT using Degaussing Coil.
3. Input the Monoscope Pattern.
4. Adjust the Focus Control on the FBT to obtain clear picture.

The following adjustments normally are not attempted in the field. Only when replacing the CRT then adjust as a preparation.

20. Purity Adjustment

Purpose: To obtain pure color.

Symptom of Misadjustment: If Color Purity Adjustment is incorrect, large areas of color may not be properly displayed.

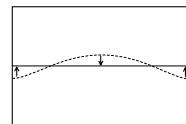
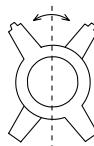
Test Point	Adj. Point	Mode	Input		
---	Deflection Yoke Purity Magnet	---	Red Color		
Tape	M. EQ.	Spec.			
---	Pattern Generator	See below			
Figure					
					
Fig. 5					

1. Set the unit facing east.
2. Operate the unit for over 30 minutes before adjusting.
3. Fully degauss the unit using an external degaussing coil.

4. Loosen the screw on the Deflection Yoke Clamper and pull the Deflection Yoke back away from the screen. (See Fig. 6)
5. Loosen the Ring Lock and adjust the Purity Magnets so that a red field is obtained at the center of the screen. Tighten Ring Lock. (See Fig. 5,6)
6. Slowly push the Deflection Yoke toward bell of CRT and set it where a uniform red field is obtained.
7. Tighten the clamp screw on the Deflection Yoke.

21. VRS Adjustment

1. Connect Oscilloscope and get the cross hatch pattern.
2. Adjust the two magnets for VRS adjustment like the below figure so that the cross hatch pattern becomes flat.



22. Convergence Adjustment

Purpose: To obtain proper convergence of red, green and blue beams.

Symptom of Misadjustment: If Convergence Adjustment is incorrect, the edge of white letters may have color edges.

Test Point	Adj. Point	Mode	Input
---	C.P. Magnet (RB) C.P. Magnet (RB-G) Deflection Yoke	---	Dot Pattern or Crosshatch
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below	

Figure

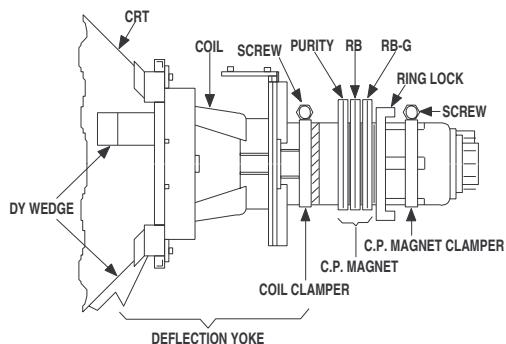


Fig. 6

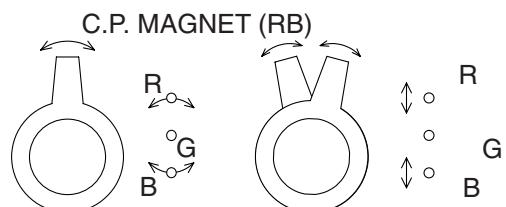


Fig. 7

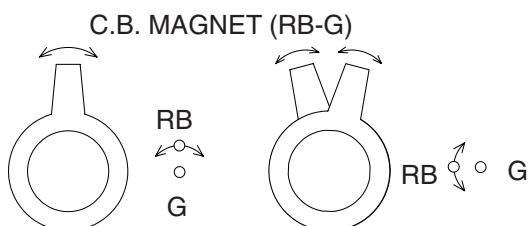


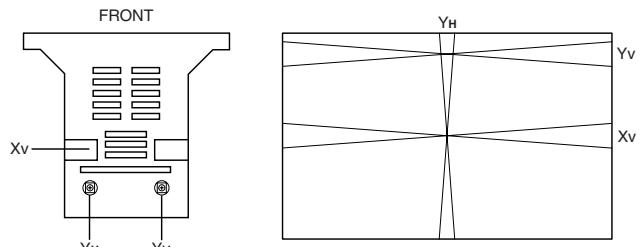
Fig. 8

1. Loosen the Ring Lock and align red with blue dots or Crosshatch at the center of the screen by rotating (RB) C.P. Magnets. (See Fig. 7)
2. Align red / blue with green dots at the center of the screen by rotating (RB-G) C.P. Magnet. (See Fig. 8)
3. Paintlock the C.P. Magnets after adjustment.

4. Remove the DY Wedges and slightly tilt the Deflection Yoke horizontally and vertically to obtain the best overall convergence.
5. Fix the Deflection Yoke by carefully inserting the DY Wedges between CRT and Deflection Yoke.

23. Yh, Yv, Xv Adjustment

1. Adjust the volume of Deflection Yoke(Yh, Yv, Xv) to get good convergence.



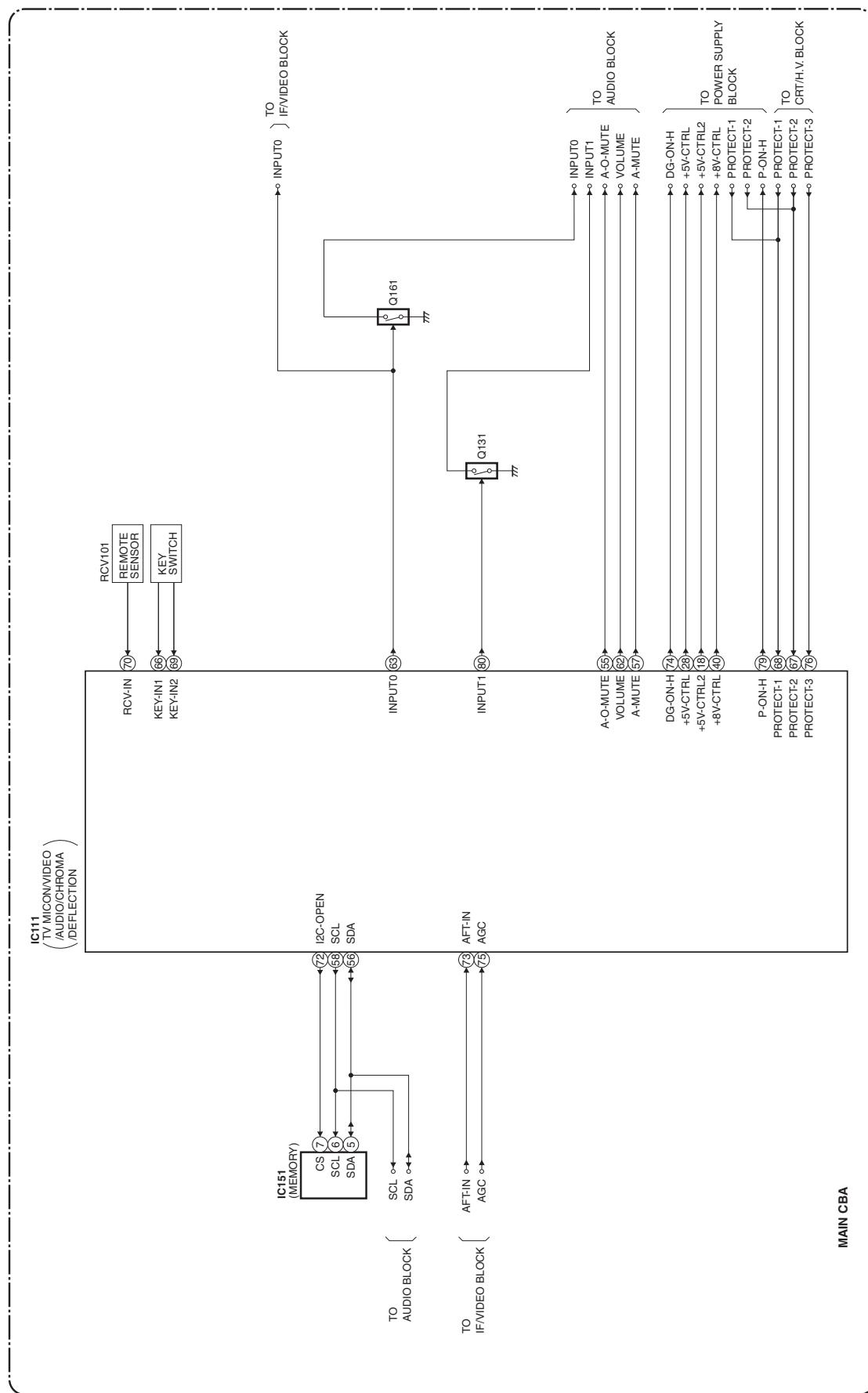
HOW TO INITIALIZE THE TELEVISION

To put the program back at the factory-default, initialize the television as the following procedure.

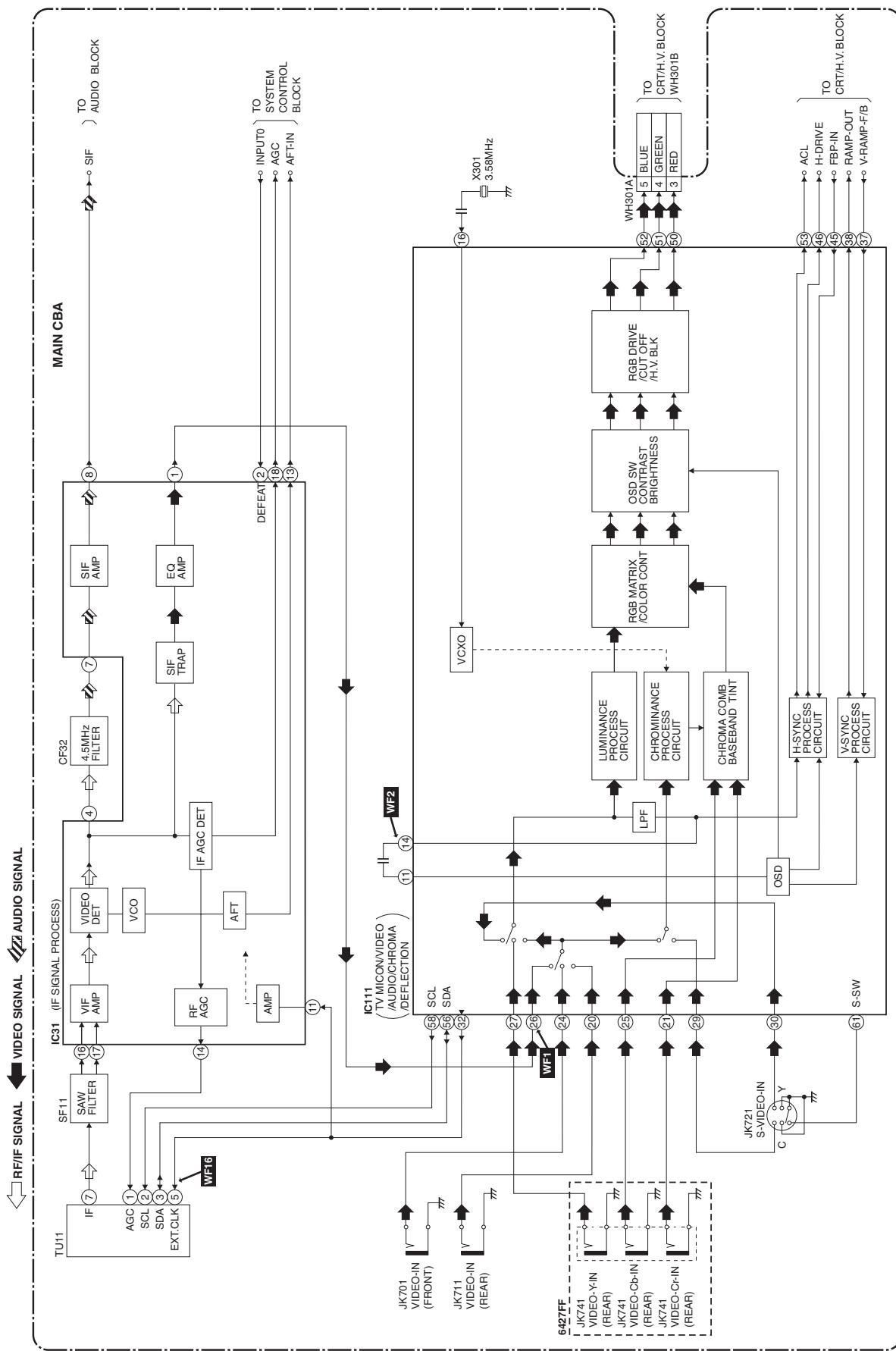
1. Use the service remote control unit.
2. Turn the power on. (Use main power on the TV unit.)
3. Press [SLEEP] button on the service remote control unit to enter the Service mode. (Refer to "How to Set up the Service mode" on page 5-1.)
4. Press [VOL ▼] button on the service remote control unit twice, and confirm that OSD indication is "7F = FF". If needed, set it to become "7F = FF" by pressing [CH ▲ / ▼] buttons on the service remote control unit.
5. Confirm that OSD indication on the four corners on TV screen changes from on and off light indication to red by pressing a [DISPLAY] button. (It takes one or two seconds.)
6. Turn the power off by pressing main power button on the TV unit, and unplug the AC cord from the AC outlet.

BLOCK DIAGRAMS

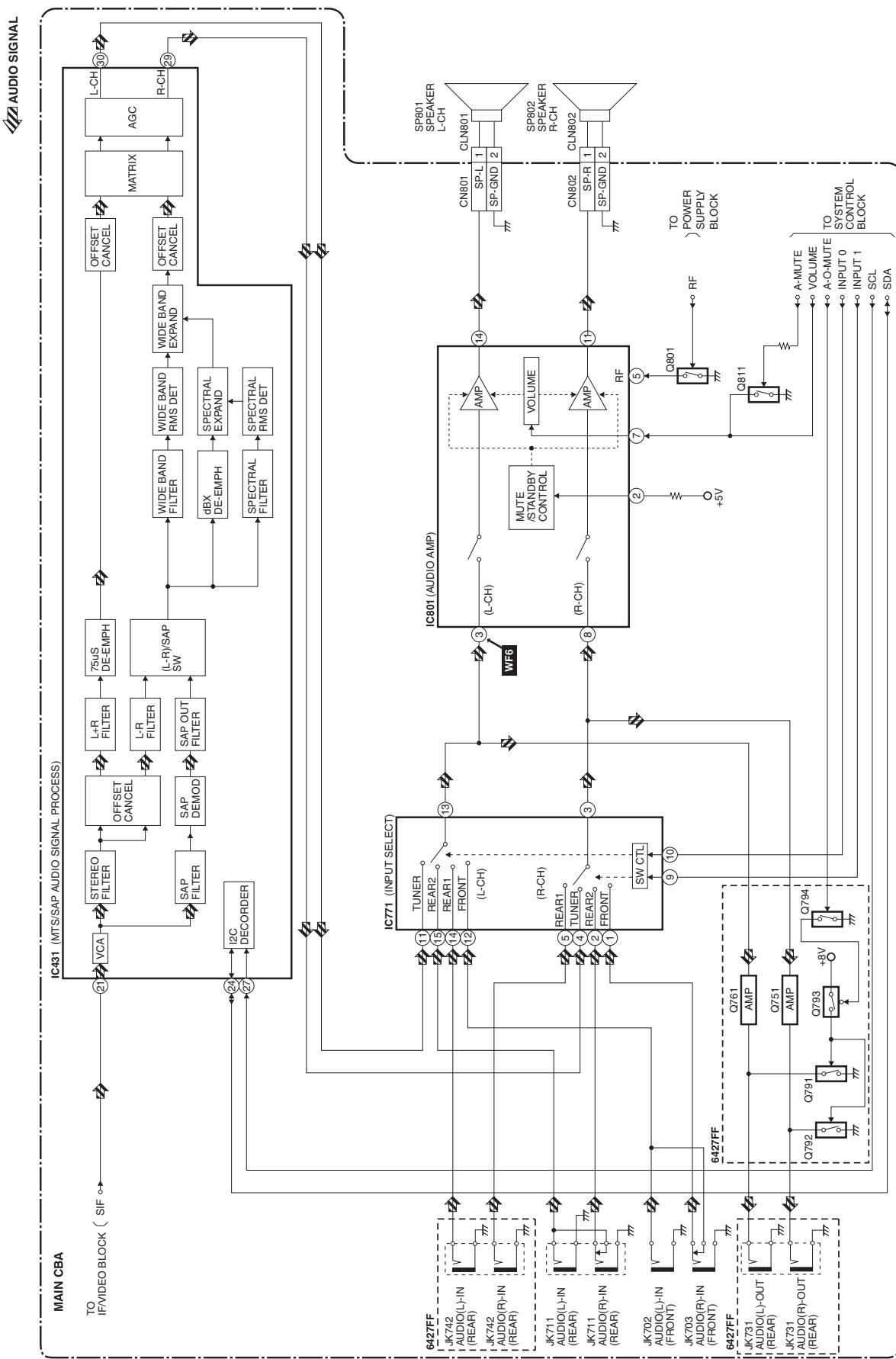
System Control Block Diagram



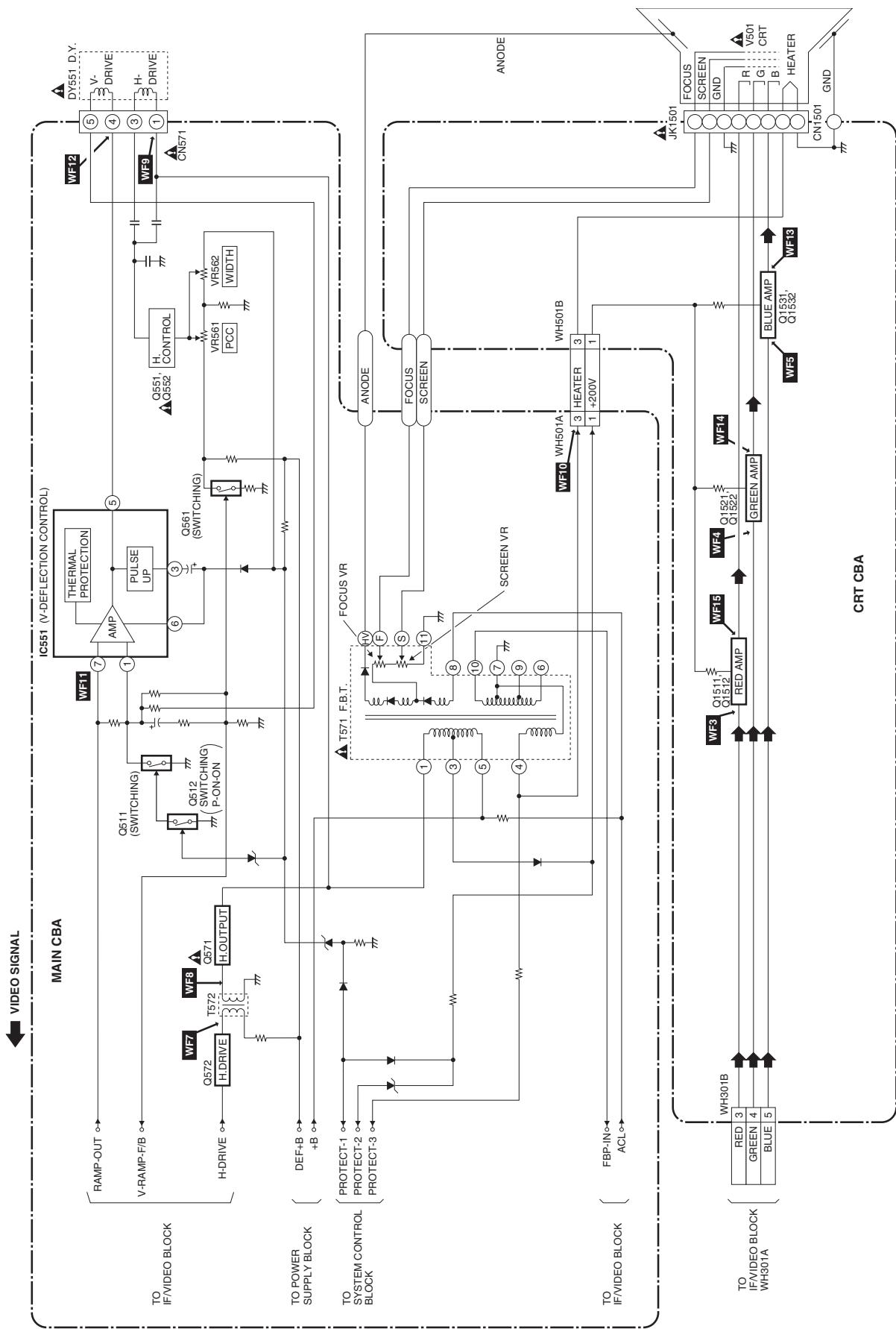
IF/Video Block Diagram



Audio Block Diagram



CRT/H.V. Block Diagram



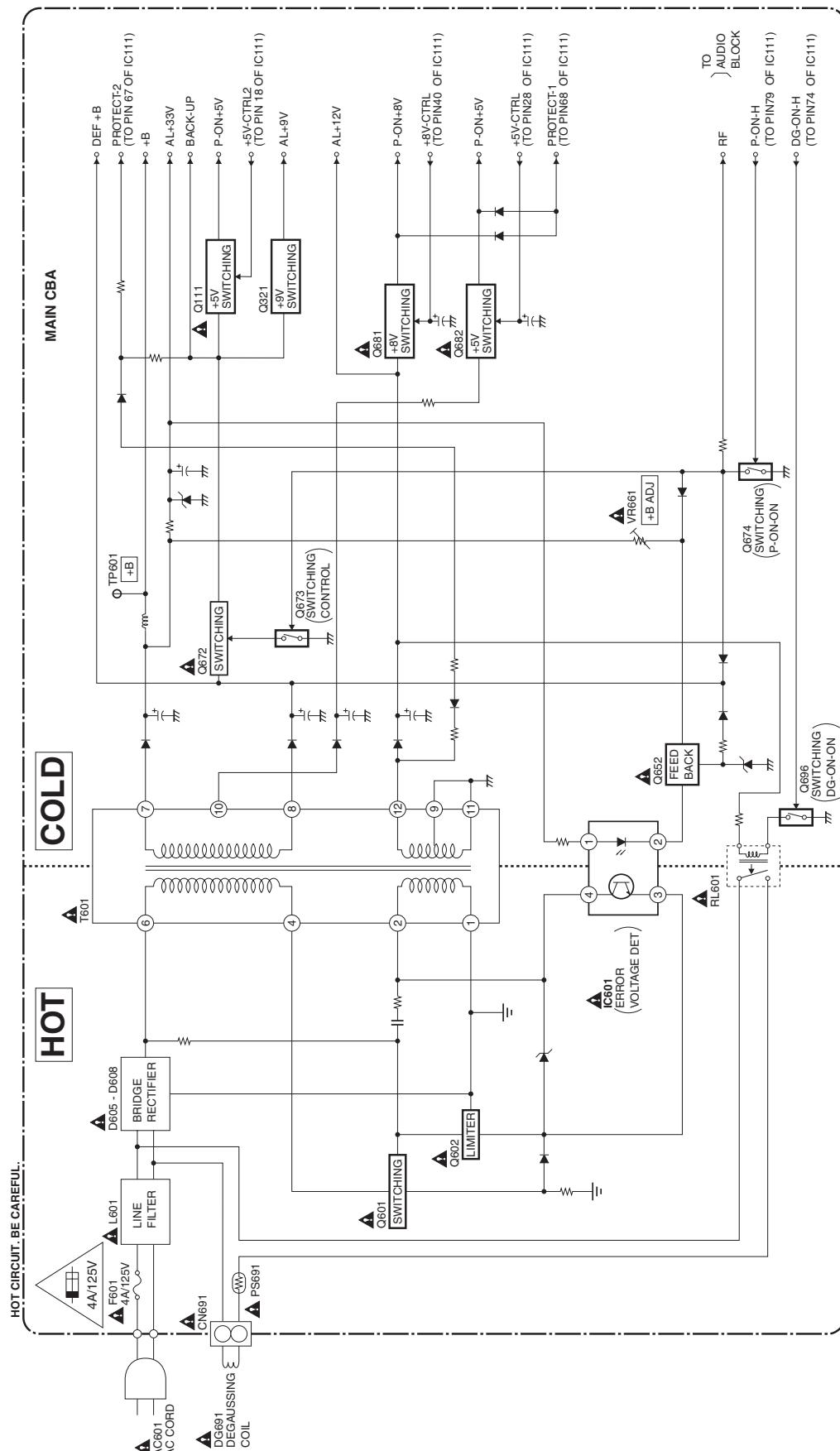
Power Supply Block Diagram

CAUTION !
 Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
 If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
 Otherwise it may cause some components in the power supply circuit to fail.

NOTE:
 The voltage for parts in hot circuit is measured using
 hot GND as a common terminal.

**CAUTION ! : For continued protection against risk of fire,
 replace only with same type 4 A, 125V fuse.**

ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "▲" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K = 10^3$, $M = 10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P = 10^{-6} \mu F$).
5. All voltages are DC voltages unless otherwise specified.

Note of Capacitors:

ML --- Mylar Cap. PP --- Metallized Film Cap. SC --- Semiconductor Cap. L --- Low Leakage type

Temperature Characteristics of Capacitors are noted with the following:

B --- $\pm 10\%$ CH --- 0 ± 60 ppm/ $^{\circ}C$ CSL --- $+350 \sim -1000$ ppm/ $^{\circ}C$

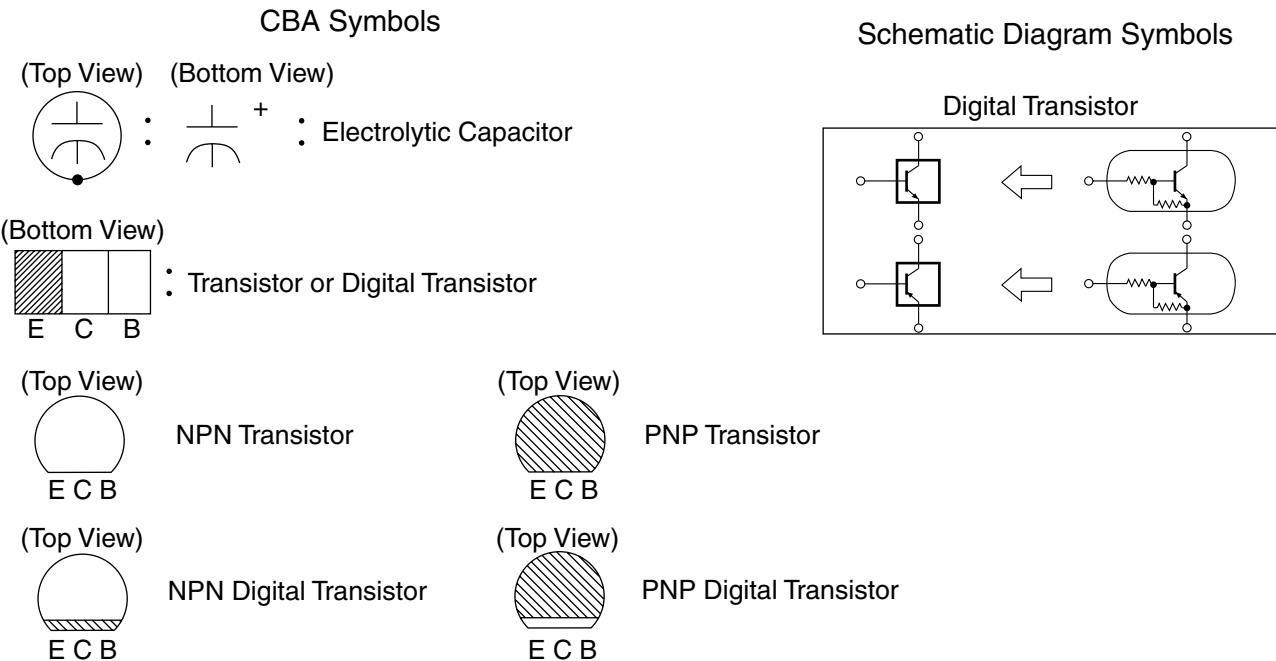
Tolerance of Capacitors are noted with the following:

Z --- $+80 \sim -20\%$

Note of Resistors:

CEM --- Cement Res. MTL --- Metal Res. F --- Fuse Res.

Capacitors and transistors are represented by the following symbols.



LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE_A,_V FUSE.

ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE_A,_V.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.

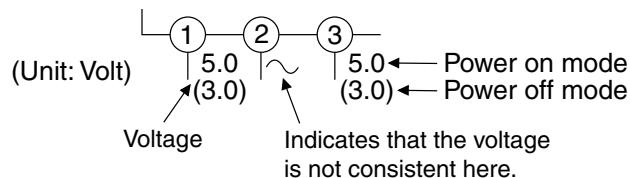
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Voltage indications on the schematics are as shown below:

Plug the TV power cord into a standard AC outlet.:.

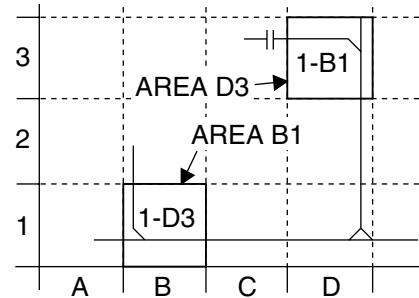


5. How to read converged lines

1-D3
↑
Distinction Area
Line Number
(1 to 3 digits)

Examples:

1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



6. Test Point Information

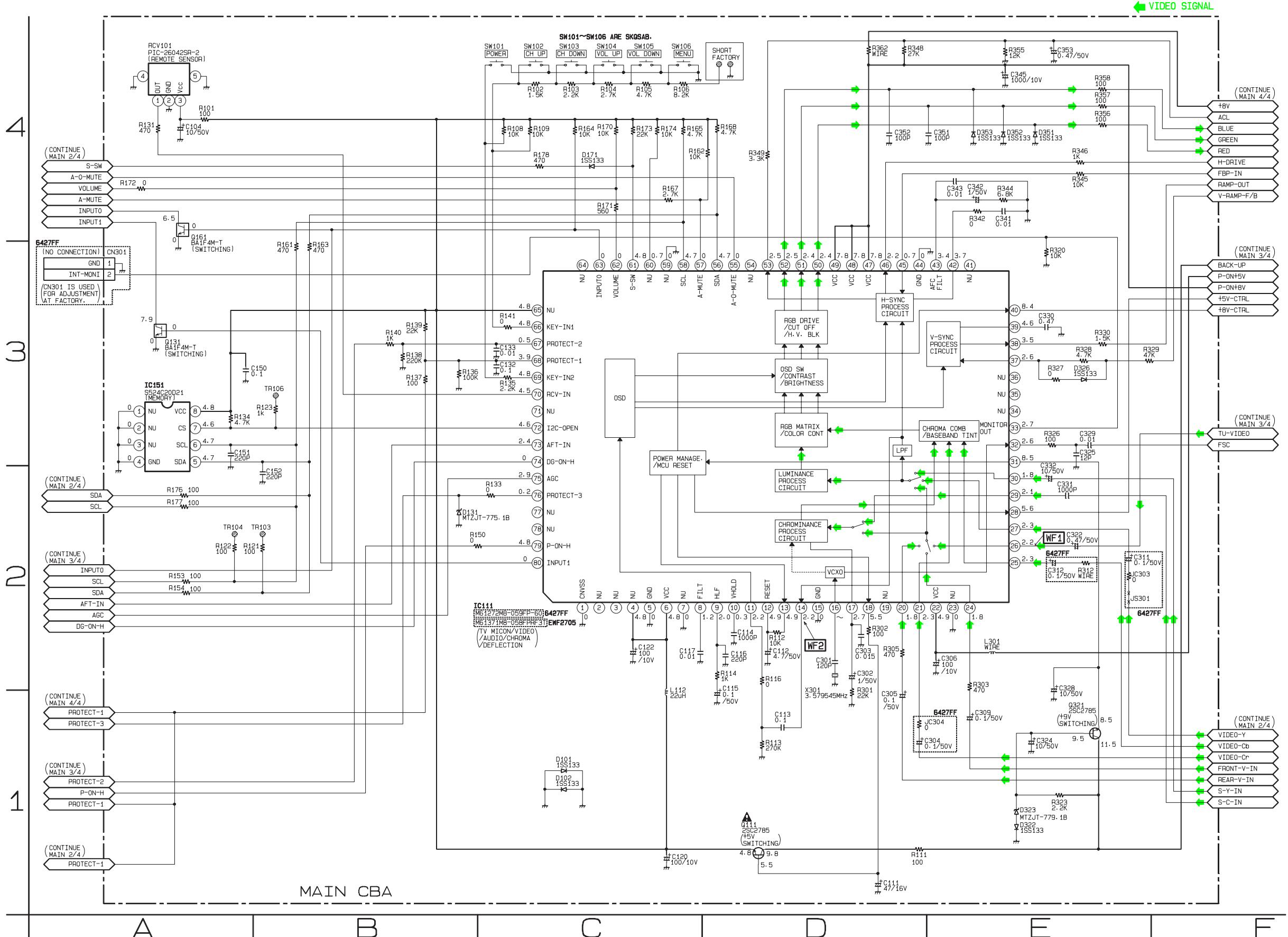
○ : Indicates a test point with a jumper wire across a hole in the PCB.

□→ : Used to indicate a test point with a component lead on foil side.

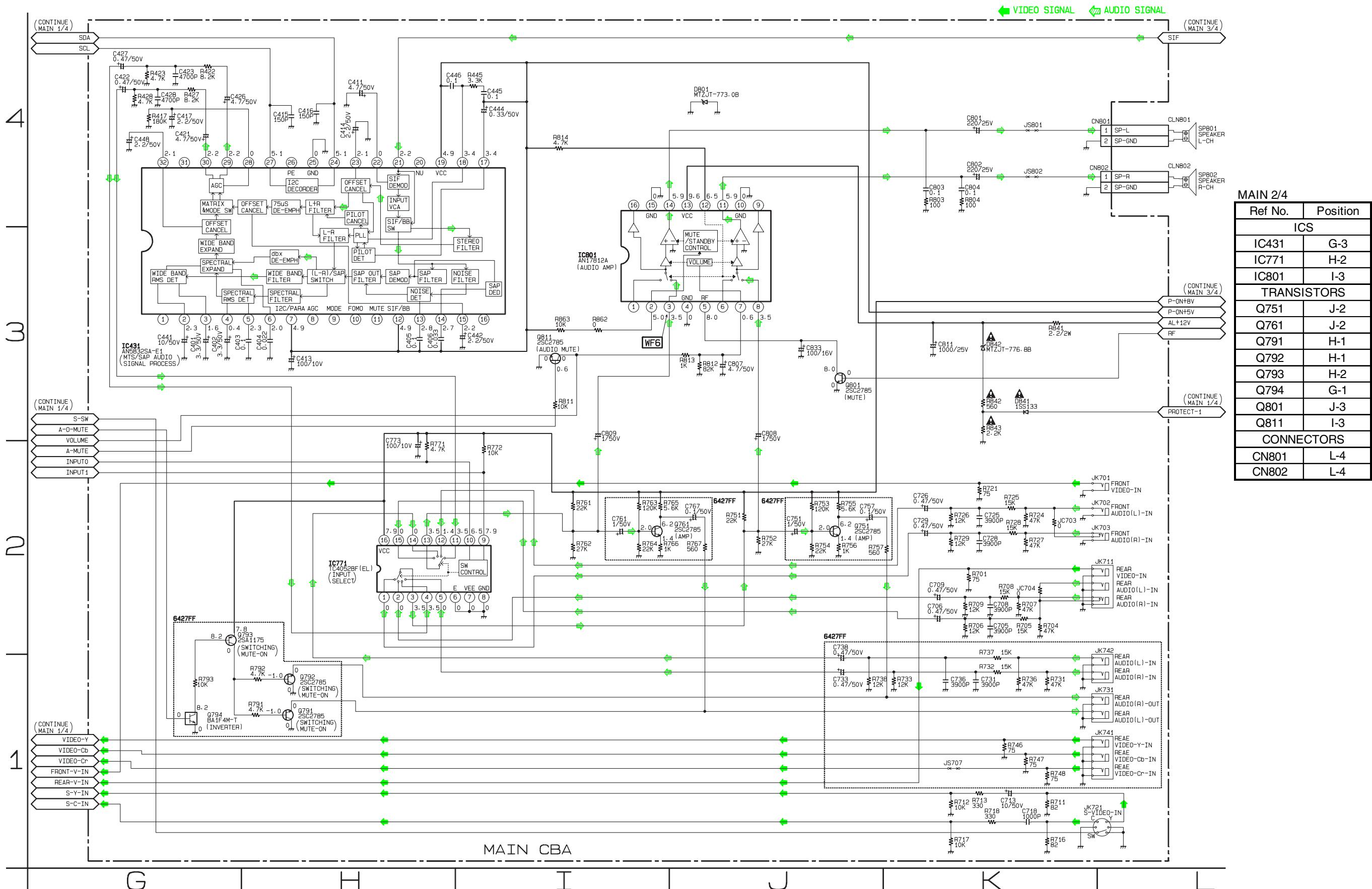
◎ : Used to indicate a test point with no test pin.

● : Used to indicate a test point with a test pin.

Main 1/4 Schematic Diagram



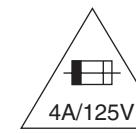
Main 2/4 Schematic Diagram



Main 3/4 Schematic Diagram

CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

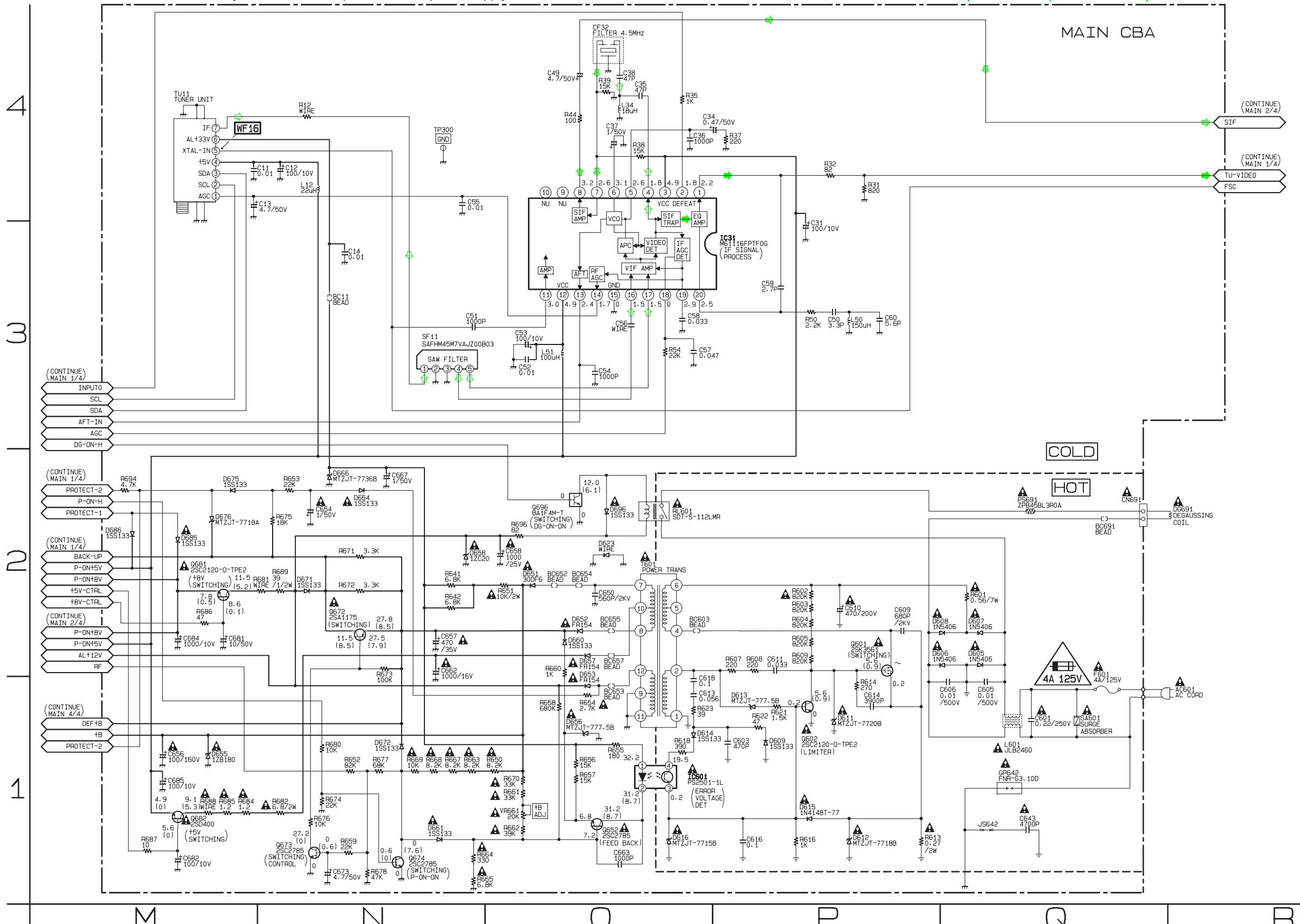


CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse.

ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

NOTE:

The voltage for parts in hot circuit is measured using hot GND as a common terminal.

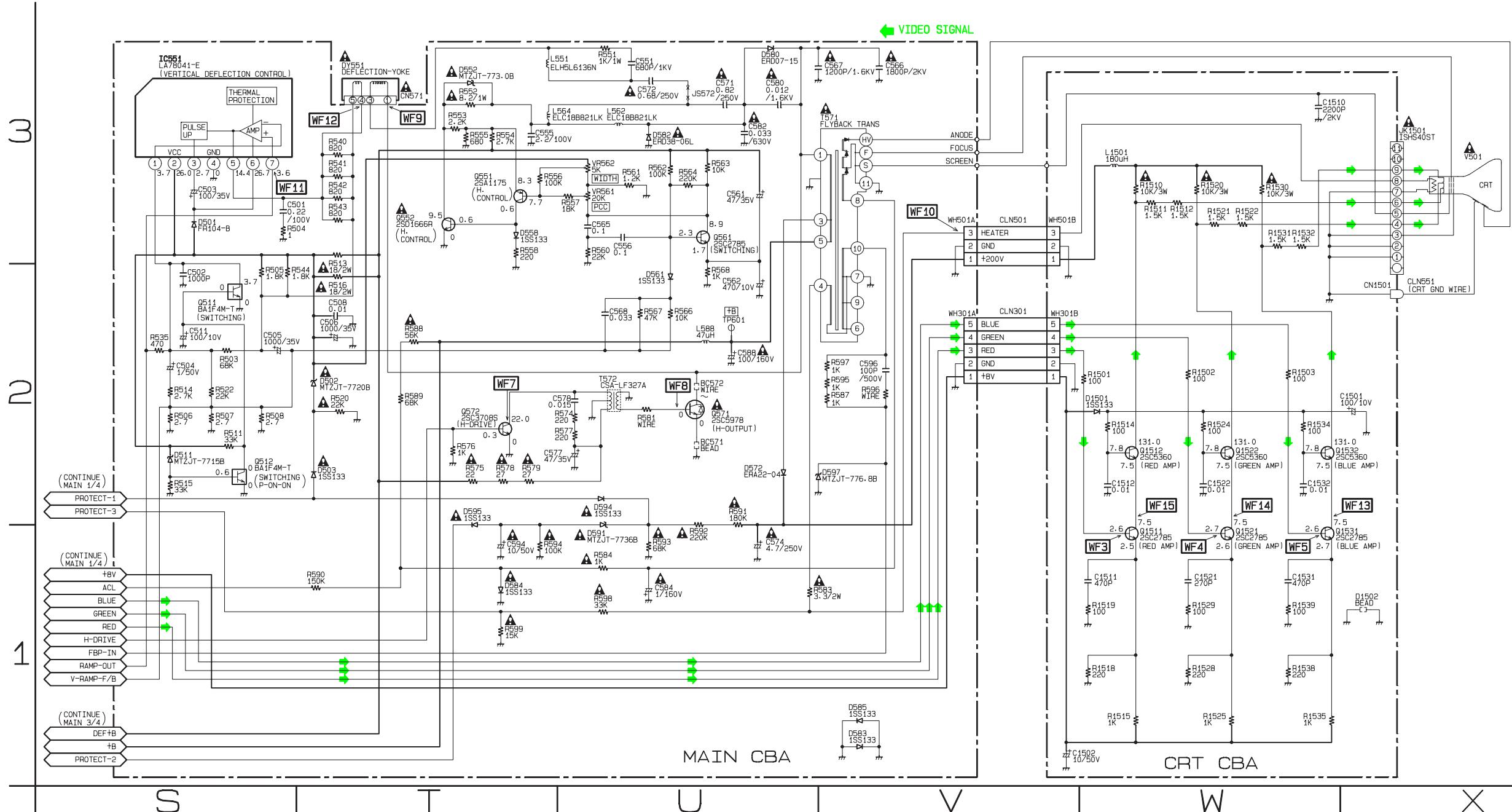


MAIN 3/4	
Ref No.	Position
ICS	
IC31	P-3
IC601	O-1
TRANSISTORS	
Q601	P-2
Q602	P-1
Q652	O-1
Q672	N-2
Q673	N-1
Q674	N-1
Q681	M-2
Q682	M-1
Q696	O-2
CONNECTOR	
CN691	Q-2
TEST POINT	
TP300	N-4
VARIABLE RESISTOR	
VR661	O-1

Main 4/4 & CRT Schematic Diagram

Ref No.	Position	Ref No.	Position	
IC		CONNECTORS		
IC551	S-3	CN571	T-3	
TRANSISTORS		WH301A	V-2	
Q511	S-2	WH501A	V-3	
Q512	S-2	TEST POINT		
Q551	T-3	TP601	U-2	
Q552	T-3	VARIABLE RESISTORS		
Q561	U-3	VR561	U-3	
Q571	U-2	VR562	U-3	
Q572	T-2			

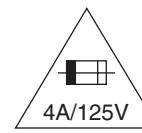
CRT	
Ref No.	Position
TRANSISTORS	
Q1511	W-1
Q1512	W-2
Q1521	W-1
Q1522	W-2
Q1531	X-1
Q1532	X-2
CONNECTORS	
CN1501	X-2
WH301B	V-2
WH501B	V-3



Main CBA Top View

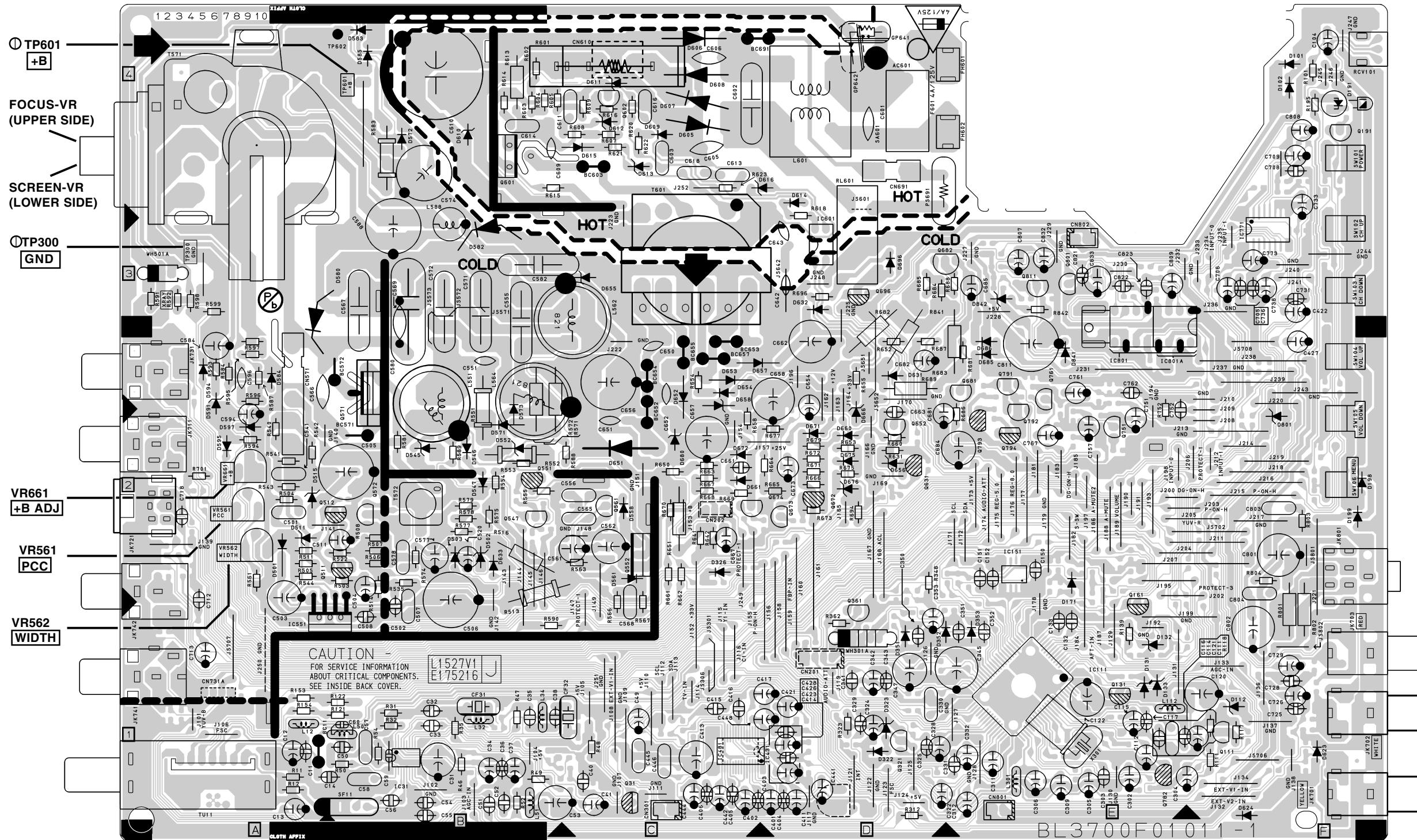
CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse.

ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

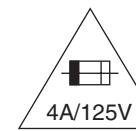


Ref No.	Position
ICS	
IC31	B-1
IC111	E-1
IC151	E-2
IC431	D-1
IC551	A-1
IC601	D-3
IC771	F-3
IC801	E-3
TRANSISTORS	
Q111	F-1
Q131	E-1
Q161	E-2
Q321	D-1
Q511	A-2
Q512	B-2
Q551	B-2
Q552	C-2
Q561	C-2
Q571	B-2
Q572	B-2
Q601	B-4
Q602	C-4
Q652	D-2
Q672	D-2
Q673	D-2
Q674	D-3
Q681	E-3
Q682	D-3
Q696	D-3
Q751	E-2
Q761	E-3
Q791	E-3
Q792	E-2
Q793	E-2
Q794	E-2
Q801	E-3
Q811	E-3
CONNECTORS	
CN301	C-1
CN571	A-3
CN691	D-4
CN801	E-1
CN802	E-3
WH301A	D-1
WH501A	A-3
TEST POINTS	
TP300	A-3
TP601	B-4
VARIABLE RESISTORS	
VR561	A-2
VR562	A-2
VR661	A-2

Main CBA Bottom View

CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



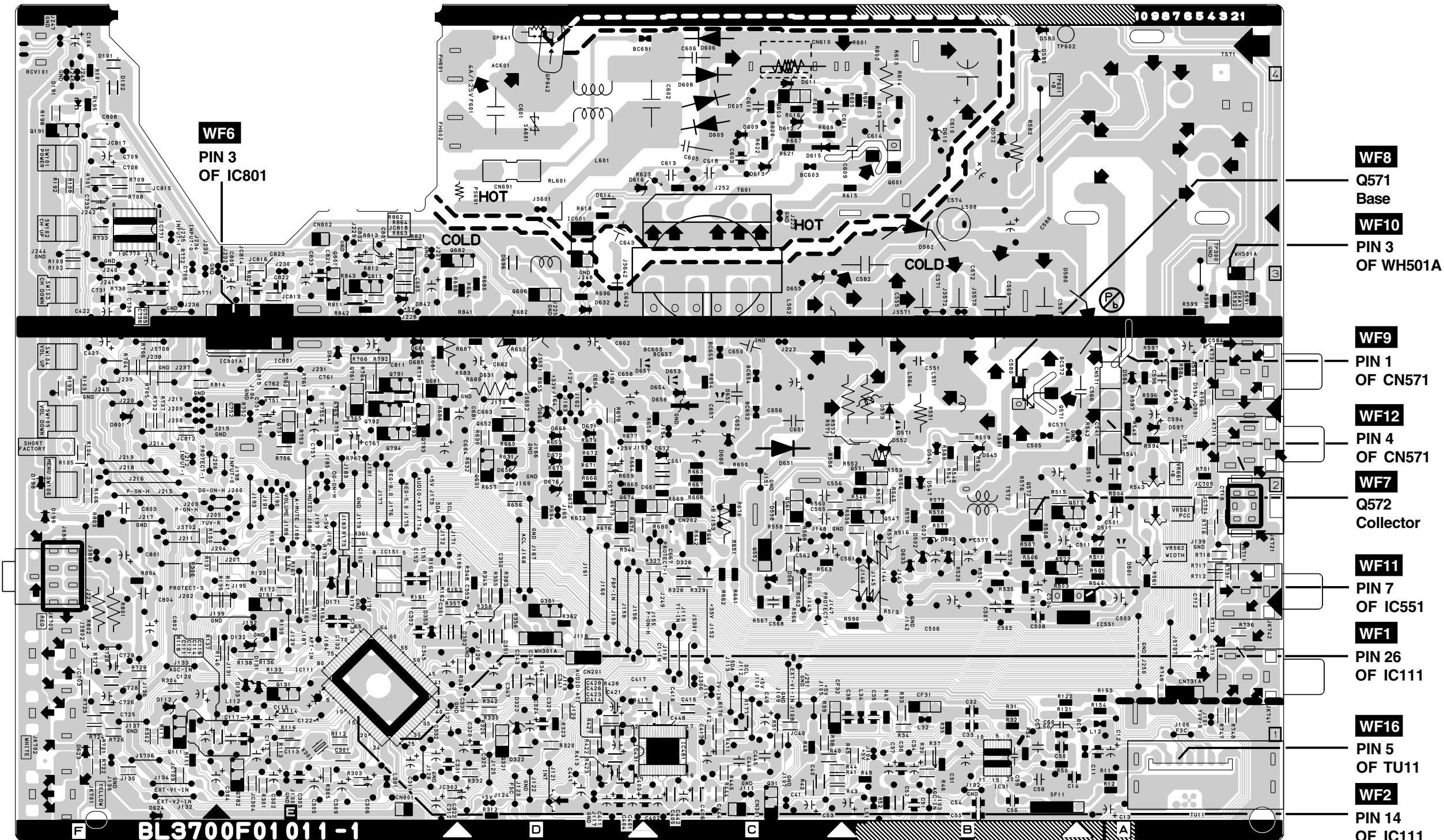
CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse.

ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

NOTE:

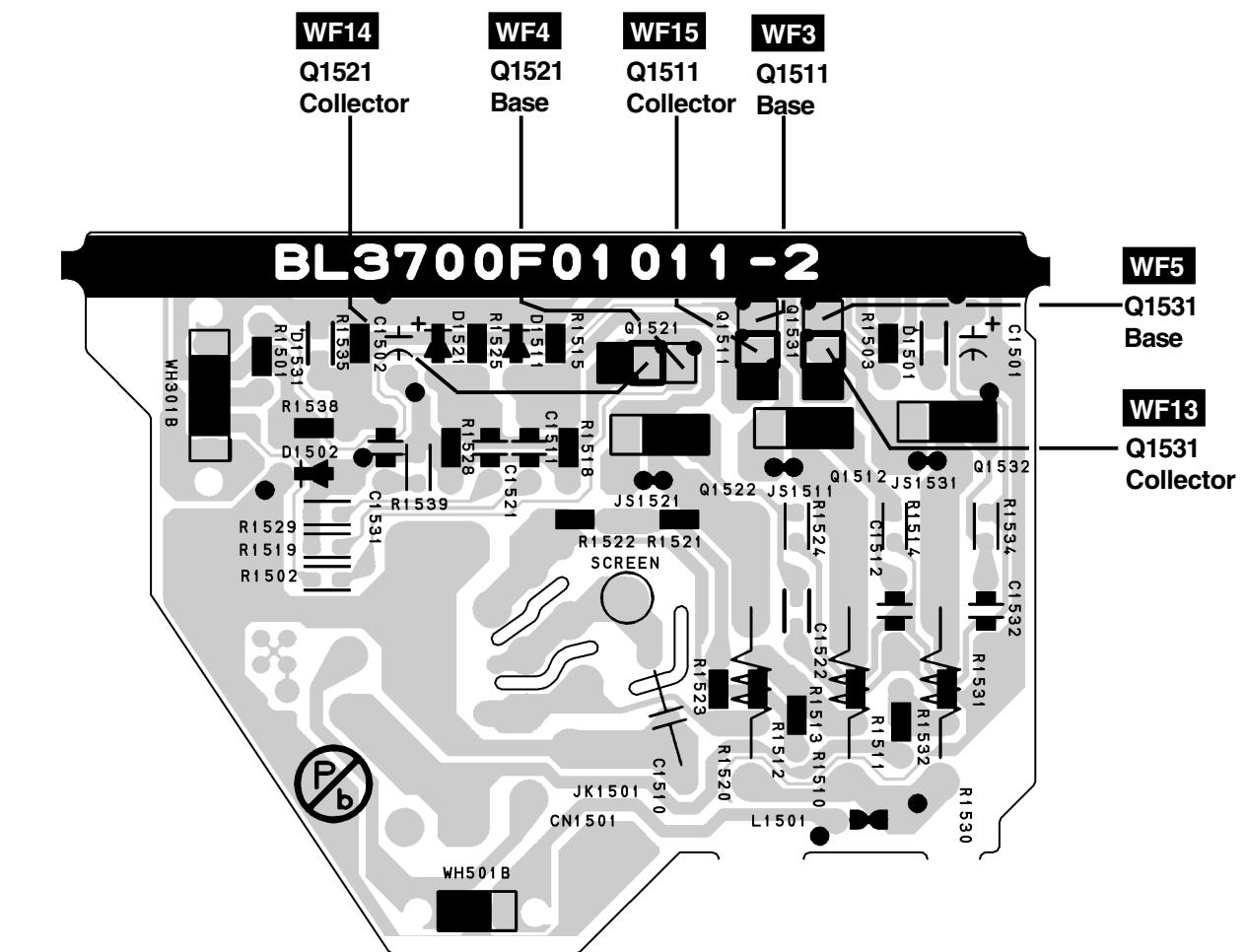
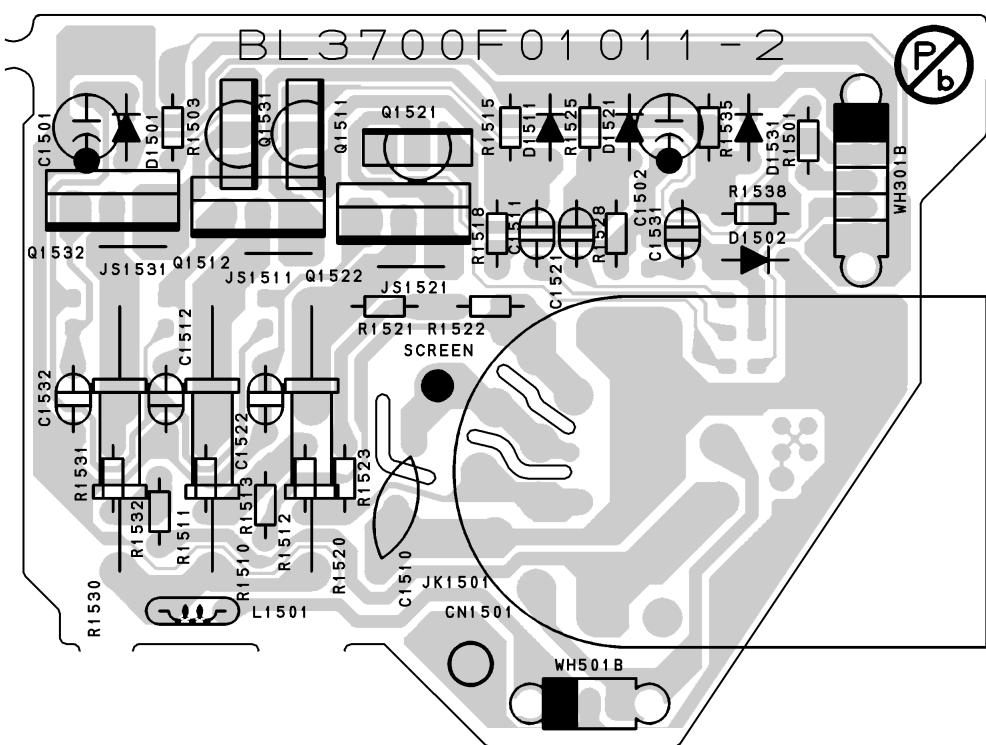
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



CRT CBA Top View

CRT CBA Bottom View

Ref No.	Position
TRANSISTORS	
Q1511	A-2
Q1512	A-2
Q1521	A-2
Q1522	A-2
Q1531	A-2
Q1532	A-2
CONNECTORS	
CN1501	B-1
WH301B	B-2
WH501B	B-1



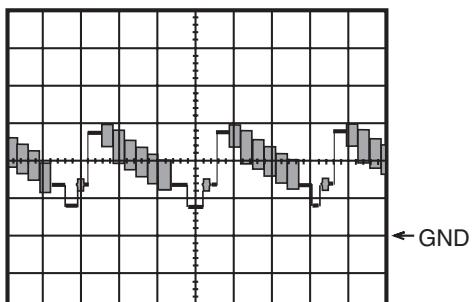
WAVEFORMS

WF1 ~ WF16 = Waveforms to be observed at
Waveform check points.
(Shown in Schematic Diagram.)

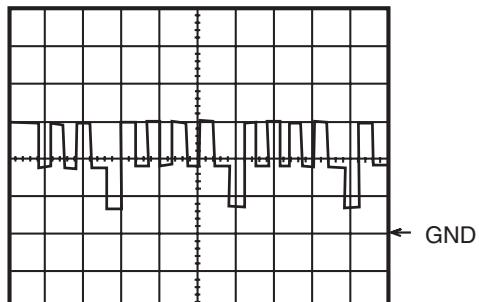
Input: NTSC Color Bar Signal (with 1kHz Audio Signal)

INITIAL POSITION: Unplug unit from AC outlet for at least 5 minutes.
reconnect to AC outlet and then turn power on.

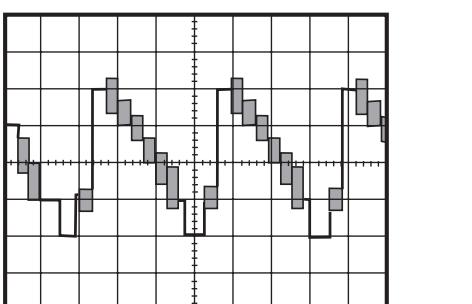
(Brightness---Center Color---Center Tint --- Center Contrast---Approx 70%)



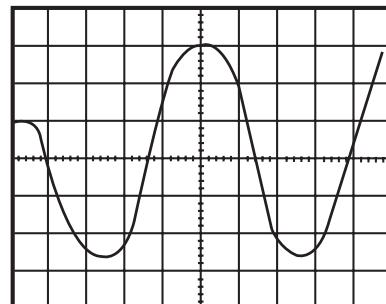
WF1 1DIV: 0.5V 20 μ s
IC 111 Pin 26



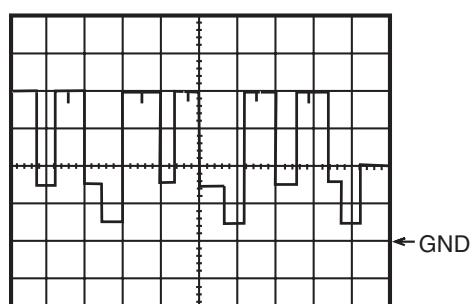
WF5 1DIV: 2V 20 μ s
Q 1531 Base



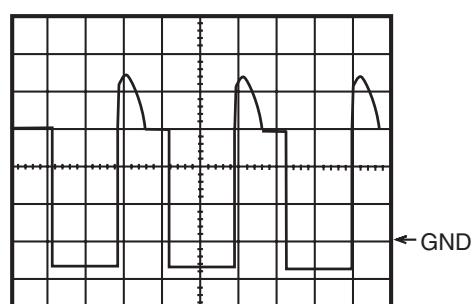
WF2 1DIV: 0.5V 20 μ s
IC 111 Pin 14



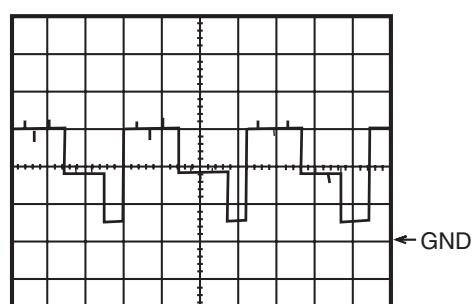
WF6 1DIV: 0.2V 20ms
IC 801 Pin 3



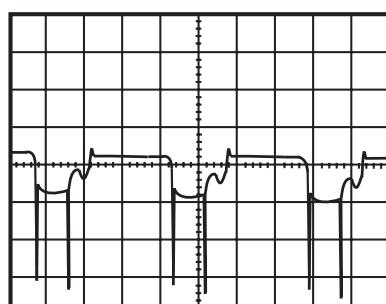
WF3 1DIV: 2V 20 μ s
Q1511 Base



WF7 1DIV: 10V 20 μ s
Q 572 Collector



WF4 1DIV: 2V 20 μ s
Q 1521 Base



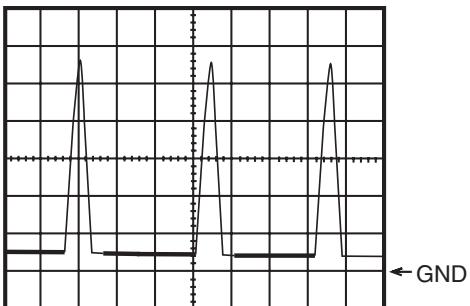
WF8 1DIV: 5V 20 μ s
Q 571 Base

WF1 ~ WF16 = Waveforms to be observed at
Waveform check points.
(Shown in Schematic Diagram.)

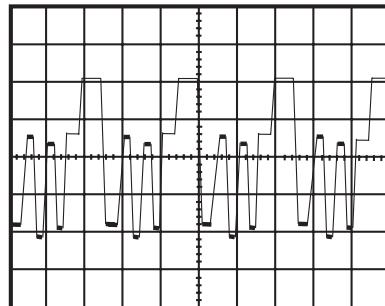
Input: NTSC Color Bar Signal (with 1kHz Audio Signal)

INITIAL POSITION: Unplug unit from AC outlet for at least 5 minutes.
reconnect to AC outlet and then turn power on.

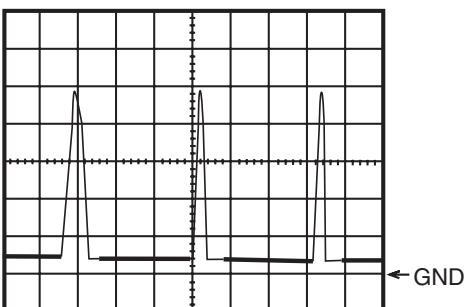
(**Brightness---Center Color---Center Tint --- Center Contrast---Approx 70%**)



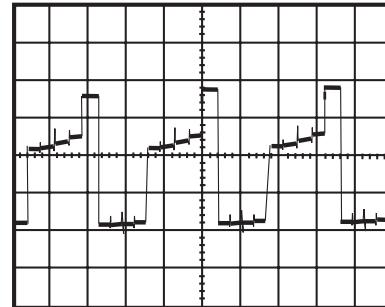
WF9 1DIV: 200V 20μs
CN 571 Pin 1



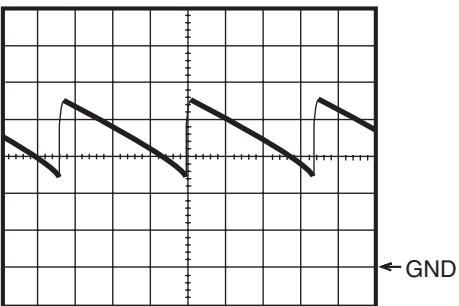
WF13 1DIV: 20V 20μs
Q 1531 Collector



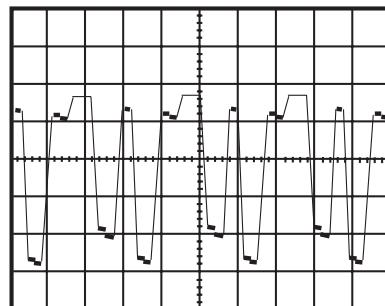
WF10 1DIV: 5V 20μs
WH501A Pin 3



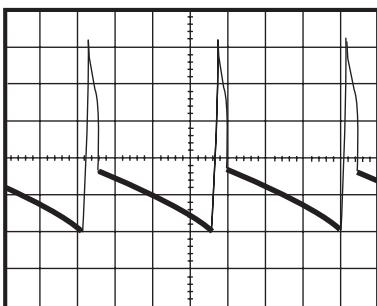
WF14 1DIV: 20V 20μs
Q 1521 Collector



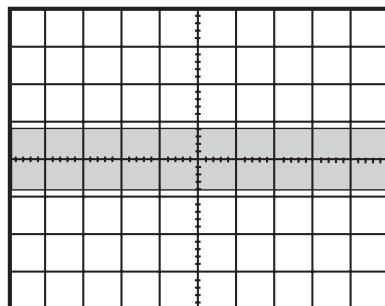
WF11 1DIV: 1V 5ms
IC 551 Pin 7



WF15 1DIV: 20V 20μs
Q 1511 Collector

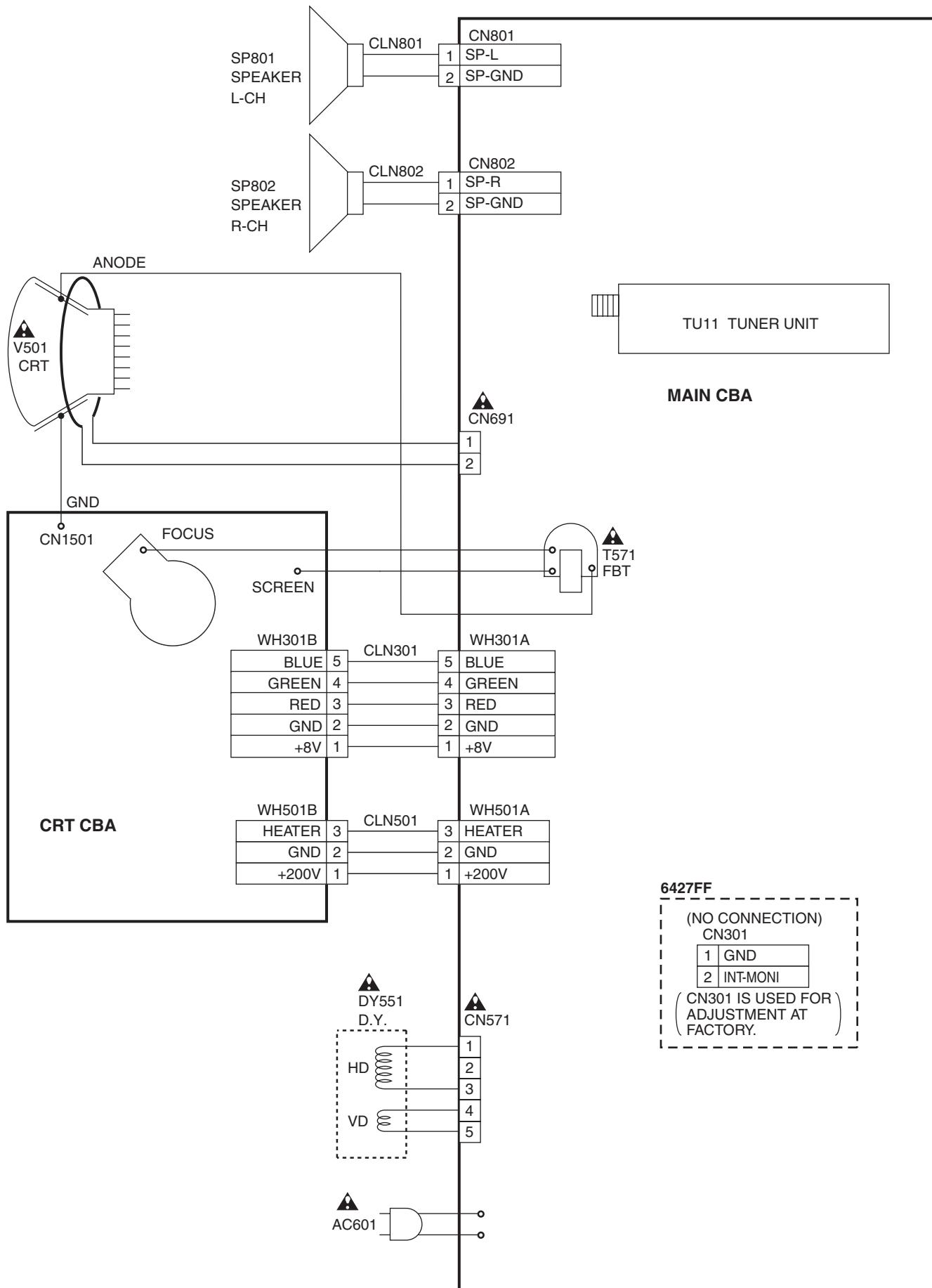


WF12 1DIV: 10V 5ms
CN 571 Pin 4



WF16 1DIV: 0.2V 20μs
TU 11 Pin 5

WIRING DIAGRAM



IC PIN FUNCTION DESCRIPTIONS

Comparison Chart of Models and Marks

Model	Mark
6427FF	A
EWF2705	B

IC111 (TV Micro Controller)

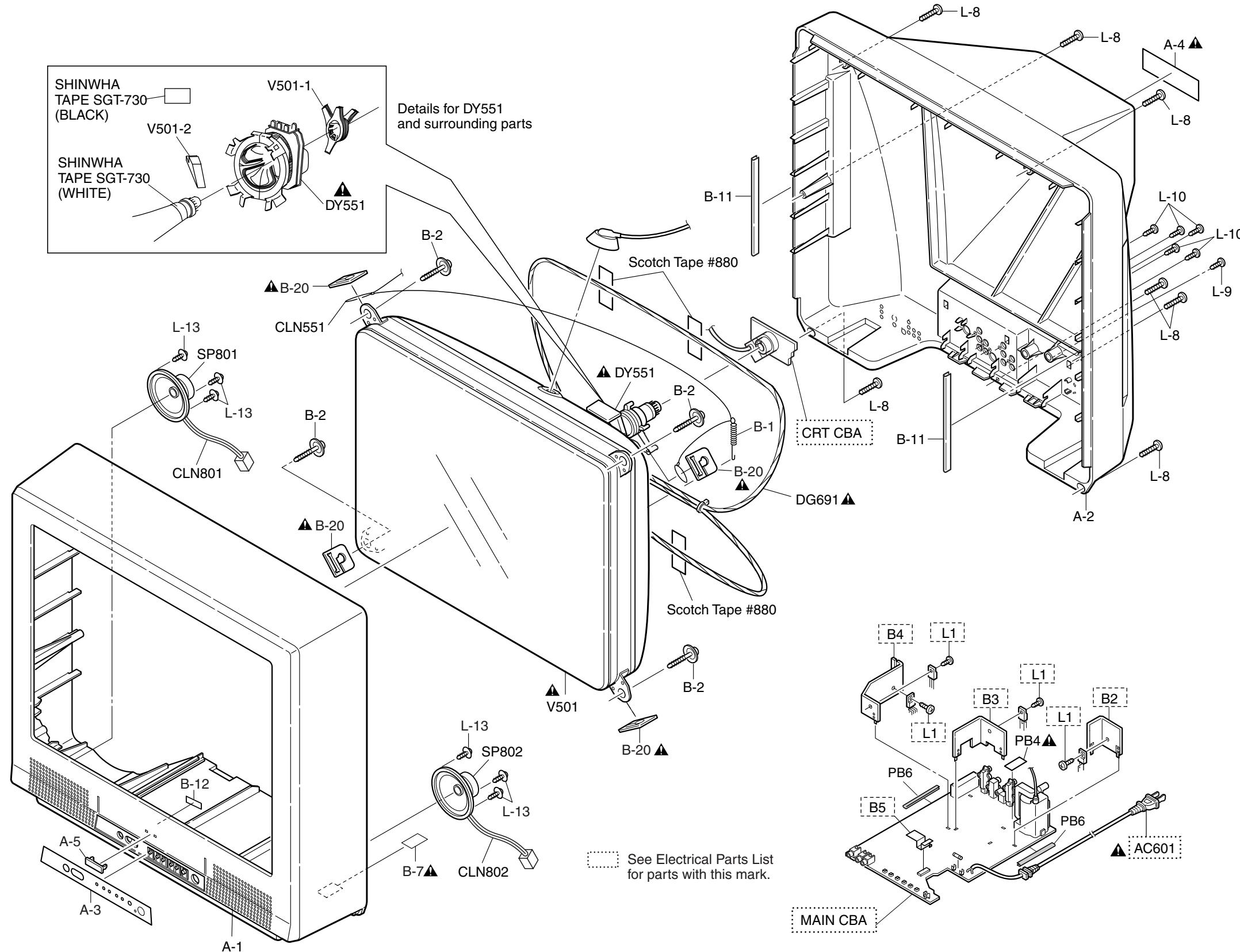
Pin No.	Mark	Signal Name	Function
1		CNVSS	GND
2		N.U.	Not Used
3		N.U.	Not Used
4		N.U.	Not Used
5		GND	GND
6		VCC	ALL+5V
7		N.U.	(GND)
8		FILT	FILT
9		HLF	Filter for CCD
10		VHOLD	VHOLD
11		CVIN	Input for Video Signal
12		RESET	RESET
13		MCU RESET OUT	RESET Signal Output
14		Y-SW OUT	Composite Signal Output
15		GND	GND
16		3.58 X'TAL	3.58MHz Crystal
17		C-APC	CHROMINANCE APC
18		MCU 5.7REG OUT	Micro controller Control Voltage Output
19		N.U.	Not Used
20		CVBS IN 3	Composite Signal Input 3
21	A	V-IN	Cr Signal Input
	B	N.U.	Not Used
22		VCC	VCC
23		N.U.	(GND)
24		CVBS IN2	Composite Signal Input 2
25	A	V-IN	Cb Signal Input
	B	N.U.	Not Used
26		CVBS IN1	Composite Signal Input 1
27	A	Y-IN	Y Signal Input
	B	N.U.	Not Used
28		5.7V REG OUT	5.7V Output

Pin No.	Mark	Signal Name	Function
29		C(Y/C) IN	Chrominance Signal Input
30		Y(Y/C) IN	Luminance Signal Input
31		V REG VCC	DC 8.7V Input
32		FSC OUT	Clock Output 3.58MHz
33	A	MONITOR OUT	Monitor Out
	B	N.U.	Not Used
34		N.U.	Not Used
35		N.U.	Not Used
36		N.U.	Not Used
37		V RAMP F/B	V Ramp Feed Back
38		V RAMP OUT	Vertical Output
39		V RAMP CAP	V Ramp OSC Capacitor
40		8.7 VREG OUT	DC 8.7V Output
41		N.U.	Not Used
42		H VCO F/B	H Vco Feed Back
43		AFC FILT	Horizontal AFC Filter
44		GND	GND
45		FBP IN	Flyback Pulse Input
46		H-OUT	H Pulse Output
47		VCC	Vcc
48		VCC	Vcc
49		VCC	Vcc
50		R OUT	Red Output
51		G OUT	Green Output
52		B OUT	Blue Output
53		ACL	IB-Input
54		N.U.	Not Used
55		A-O-MUTE	Mute Signal of Audio Output
56		SDA	I2C-BUS Controller Interface (Data)
57		A-MUTE	Audio Mute
58		SCL	I2C-BUS Controller Interface (Clock)
59		N.U.	(GND)
60		N.U.	Not Used
61		S-SW	Detecting S-VIDEO Jack Connection
62		VOLUME	Volume
63		INPUT0	Input Select 0

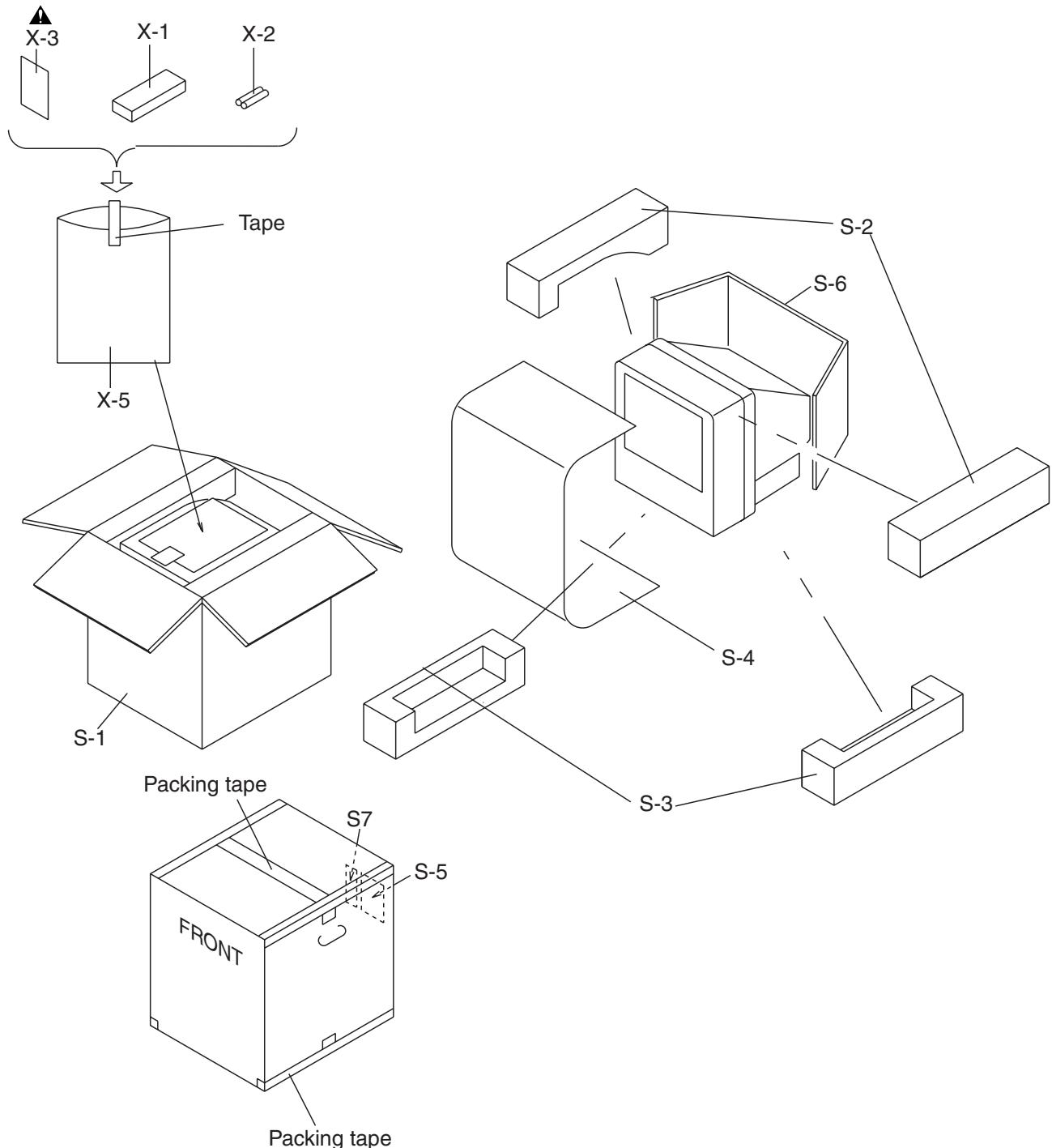
Pin No.	Mark	Signal Name	Function
64		N.U.	Not Used
65		N.U.	Not Used
66		KEY-IN 1	Key Input 1 (Main)
67		PROTECT-2	Power Supply Protection
68		PROTECT-1	Power Supply Protection
69		KEY-IN 2	Key Input 2 (Main)
70		RCV-IN	Input For Remote Control
71		N.U.	Not Used
72		I2C-OPEN	White Balance Adjustment Judgement
73		AFT-IN	AFT Voltage Input
74		DG-ON-H	Degaussing Coil Control
75		AGC	AGC Voltage Input
76		PROTECT-3	Power Supply Protection
77		N.U.	Not Used
78		N.U.	Not Used
79		P-ON-H	Output for P-ON-H
80		INPUT 1	Input Select 1

EXPLODED VIEWS

Cabinet



Packing



MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a **▲** have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that are not assigned part numbers (-----) are not available.

Comparison Chart of Models and Marks

Model	Mark
6427FF	A
EWF2705	B

Ref. No.	Mark	Description	Part No.
A-1	A	FRONT CABINET L2800UA	OEM101410
A-1	B	FRONT CABINETL2807UH	OEM101451
A-2	A	REAR CABINET L2800UA	OEM101409
A-2	B	REAR CABINET L2802UCL2802UC	1EM020017
A-3	A	CONTROL PLATE L6610UA	OEM301899
A-3	B	CONTROL PLATEL6616UG	OEM301889
A-4▲	A	RATING LABEL L3800UA	-----
A-4▲	B	RATING LABELL3801UB	-----
A-5	A	BRAND BADGE L L1520UA~SYLVANIA~	OEM406577
A-5	B	BADGE L BRANDTD351UB-EMERSON-	OEM407162
B-1		SPRING TENSION B0080B0:EM40808	26WH006
B-2		SCREW L1500UA	OEM406142
B-7▲		LABEL CRITICAL PARTS WARN ING B8007C3:EM41210	-----
B-11		CLOTH 190X15XT0.5	TS7623
B-12		CLOTH 110X15XT2.0	OEM406734
B-20▲		DEGAUSS HOLDER L1520UA	OEM406700
CLN551		CRT GND WIRE	WX1L6615-001
CLN801		WIRE ASSEMBLY SPEAKER WIRE(180MM)	WX1L9800-001
CLN802		WIRE ASSEMBLY WX1L2700-001	WX1L2700-001
DG691▲		DEGAUSSING COIL ZTM-58	LLBH00ZTM058
L-8		SCREW, P-TIGHT 4X18 BIND HEAD +	GBMP4180
L-9		SCREW TAPPING M4X14	DBU14140
L-10		SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
L-13		SCREW, ASSEMBLED 12:M3X12	OEM406746
PB4▲		CHASSIS NO. LABEL L1527P2	-----
PB6		CLOTH(65) L7735TR:65X10X0.5T	OEM402149
SP801		SPEAKER S08F38	DSD0808XQ016
SP802		SPEAKER S08F38	DSD0808XQ016
PACKING			
S-1	A	CARTON L3800UA	1EM420567
S-1	B	CARTONL3801UB	1EM420860
S-2		STYROFOAM TOP ASSEMBLY L1520UA	OEM406512
S-3		STYROFOAM BOTTOM ASSEMBLY L1520UA	OEM406513
S-4		SHEET SET PCEC:003502019816	OEM403887
S-5	A	SERIAL NO. LABEL L3800UA	-----
S-5	B	SERIAL NO. LABELL3801UB	-----
S-6		HOLD PAD L1520UA	OEM406681
S7	B	LABEL, EAS(H3761UD) MAKER NO.ZLLFNSLE1	-----

Ref. No.	Mark	Description	Part No.
ACCESSORIES			
X-1	A	REMOTE CONTROL NE122UD	NE122UD
X-1	B	REMOTE CONTROL NE116UD	NE116UD
X-2		DRY BATTERY R6P/2S	XBO451T0001
X-3▲	A	OWNER'S MANUAL ENGLISH/SPANISH	1EMN20191
X-3▲	B	OWNERS MANUAL ENGLISH/SPANISH	1EMN20268
X-5		BAG POLYETHYLENE 235X365XT0.03	0EM408420
Note:			
1. V501 (CRT) HAS COUPLE OF SUBSTITUTIONAL PARTS AND EACH PARTS ALSO HAS MATCHING COMBINATION WITH DY551. PLEASE SEE TABLE 1 FOR DETAILS OF MATCHING COMBINATION.			
2. DY551 (DEFLECTION YOKE) HAS MATCHING COMBINATION WITH V501. PLEASE SEE TABLE 1 FOR DETAILS OF MATCHING COMBINATION.			
CRT TYPE A			
DY551▲		DEFLECTION YOKE SCD-29319	LLBY00ZQS018
V501▲		CRT A68QCP693X	TCRT190SM032
V501-1		PCM JH88DTA	XM04000BV010
V501-2		WEDGE FT-00110W	XV10000T4001
CRT TYPE B			
DY551▲		DEFLECTION YOKE 6150Z-1248V	LLBY00ZGS010
V501▲		CRT A68QCU770X	TCRT190GS045
V501-1		PCM JH88DTA	XM04000BV010
V501-2		WEDGE FT-00110W	XV10000T4001
CRT TYPE C			
DY551▲		DEFLECTION YOKE KDY4UWG78X	LLBY00ZMS033
V501▲		CRT A68LZU185X	TCRT190MS017
V501-1		PCM JH88DTA	XM04000BV010
V501-2		WEDGE FT-00110W	XV10000T4001

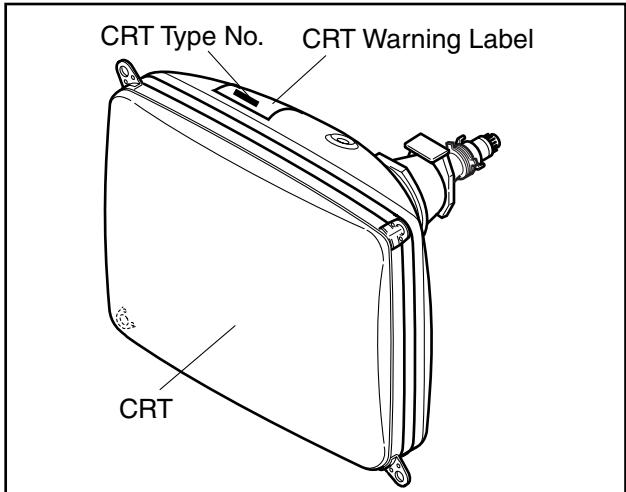
Table 1 (V501 and DY551 Combination)

Note 1: Purity and Convergence Adjustments must be performed following CRT replacement. Refer to Electrical Adjustment Instructions.

Note 2: Please confirm CRT Type No. on the CRT Warning Label which is located on the CRT. Then See the Table 1 for V501 and DY551 combination chart. Please refer this CRT, Deflection Yoke combination chart for parts order.

V501: CRT Type No.	V501: CRT Part No.	DY551: Deflection Yoke Part No.
A68QCP693X	TCRT190SM032	LLBY00ZQS018
A68QCU770X	TCRT190GS045	LLBY00ZGS010
A68LZU185X	TCRT190MS017	LLBY00ZMS033

CRT Warning Label Location



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a  have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (-----) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% D.....±0.5% F.....±1%
 G.....±2% J.....±5% K.....±10%
 M.....±20% N.....±30% Z.....+80/-20%

Comparison Chart of Models and Marks

Model	Mark
6427FF	A
EWF2705	B

MMA CBA

Ref. No.	Mark	Description	Part No.
A B		MMA CBA MMA CBA Consists of the following:	1ESA10413 1ESA10672
		MAIN CBA CRT CBA	-----

MAIN CBA

Ref. No.	Mark	Description	Part No.
		MAIN CBA Consists of the following:	-----
CAPACITORS			
C11		CERAMIC CAP(AX) F Z 0.01μF/25V	CCA1EZTFZ103
C12		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C13		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C14		CERAMIC CAP(AX) B K 0.01μF/50V	CA1J103TU011
C31		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C34		ELECTROLYTIC CAP. 0.47μF/50V M	CE1JMASDLR47
C35		CERAMIC CAP(AX) SL J 47pF/50V	CCA1JJTSLSL470
C36		CERAMIC CAP(AX) B K 1000pF/50V	CCA1JKT0B102
C37		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C38		CERAMIC CAP(AX) SL J 47pF/50V	CCA1JJTSLSL470
C49		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C50		CERAMIC CAP(AX) CH K 3.3pF/50V	CCA1JKTCH3R3
C51		CERAMIC CAP(AX) B K 1000pF/50V	CCA1JKT0B102
C52		CHIP CERAMIC CAP. B K 0.01μF/50V	CHD1JKB0B103
C53		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C54		CERAMIC CAP(AX) B K 1000pF/50V	CCA1JKT0B102
C55		CERAMIC CAP(AX) F Z 0.01μF/25V	CCA1EZTFZ103
C56		PCB JUMPER D0.6-P5.0	JW5.0T
C57		FILM CAP(P) 0.047μF/50V J	CMA1JJS00473
C58		FILM CAP(P) 0.033μF/50V J	CMA1JJS00333
C59		CERAMIC CAP(AX) CH K 2.7pF/50V	CCA1JKTCH2R7
C60		CERAMIC CAP(AX) CH K 5.6pF/50V	CCA1JKTCH5R6

Ref. No.	Mark	Description	Part No.
C104		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C111		ELECTROLYTIC CAP. 47μF/16V M	CE1CMASDL470
C112		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C113		CHIP CERAMIC CAP. F Z 0.1μF/25V	CHD1EZB0F104
C114		FILM CAP(P) 0.001μF/50V J	CMA1JJS00102
C115		ELECTROLYTIC CAP. 0.1μF/50V M	CE1JMASDL0R1
C116		CERAMIC CAP(AX) B K 220pF/50V	CCA1JKT0B221
C117		CERAMIC CAP(AX) Y K 0.01μF/16V	CCA1CKT0Y103
C120		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C122		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C132		CERAMIC CAP(AX) F Z 0.1μF/50V	CA1J104TU014
C133		CERAMIC CAP(AX) F Z 0.01μF/25V	CCA1EZTFZ103
C150		CHIP CERAMIC CAP. F Z 0.1μF/25V	CHD1EZB0F104
C151		CERAMIC CAP(AX) B K 220pF/50V	CCA1JKT0B221
C152		CERAMIC CAP(AX) B K 220pF/50V	CCA1JKT0B221
C301		CHIP CERAMIC CAP. CH J 120pF/50V	CHD1JJBCB121
C302		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C303		CERAMIC CAP(AX) B K 0.015μF/50V	CA1J153TU011
C304	A	ELECTROLYTIC CAP. 0.1μF/50V M	CE1JMASDL0R1
C305		ELECTROLYTIC CAP. 0.1μF/50V M	CE1JMASDL0R1
C306		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C309		ELECTROLYTIC CAP. 0.1μF/50V M	CE1JMASDL0R1
C311	A	ELECTROLYTIC CAP. 0.1μF/50V M	CE1JMASDL0R1
C312	A	ELECTROLYTIC CAP. 0.1μF/50V M	CE1JMASDL0R1
C322		ELECTROLYTIC CAP. 0.47μF/50V M	CE1JMASDLR47
C324		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C325		CERAMIC CAP(AX) SL J 12pF/50V	CCA1JJTSLSL120
C328		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C329		CERAMIC CAP(AX) F Z 0.01μF/25V	CCA1EZTFZ103
C330		STACKED FILM CAP. 0.47μF/50V J	CMA1JJS00474
C331		CERAMIC CAP(AX) B K 1000pF/50V	CCA1JKT0B102
C332		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C341		CHIP CERAMIC CAP. B K 0.01μF/50V	CHD1JKB0B103
C342		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C343		CHIP CERAMIC CAP. B K 0.01μF/50V	CHD1JKB0B103
C345		ELECTROLYTIC CAP. 1000μF/10V M	CE1AMASDL102
C351		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCB101
C352		CERAMIC CAP(AX) B K 100pF/50V	CCA1JKT0B101
C353		ELECTROLYTIC CAP. 0.47μF/50V M	CE1JMASDLR47
C401		ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASDL3R3
C402		ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASDL3R3
C403		CERAMIC CAP(AX) F Z 0.1μF/50V	CA1J104TU014
C404		CERAMIC CAP(AX) B K 0.022μF/50V	CA1J223TU011
C405		CHIP CERAMIC CAP. F Z 0.1μF/25V	CHD1EZB0F104
C406		CHIP CERAMIC CAP. B K 0.033μF/25V	CHD1EKB0B333
C411		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C413		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C414		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C415		CHIP CERAMIC CAP. CH J 150pF/50V	CHD1JJBCB151
C416		CHIP CERAMIC CAP. CH J 150pF/50V	CHD1JJBCB151
C417		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C421		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C422		ELECTROLYTIC CAP. 0.47μF/50V M H7	CE1JMASSLR47
C423		CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C426		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C427		ELECTROLYTIC CAP. 0.47μF/50V M H7	CE1JMASSLR47
C428		CERAMIC CAP(AX) X K 4700pF/16V	CCA1CKT0X472
C441		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C442		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C444		ELECTROLYTIC CAP. 0.33μF/50V M	CE1JMASDLR33

Ref. No.	Mark	Description	Part No.
C445		FILM CAP(P) 0.1 μ F/50V J	CMA1JJS00104
C446		FILM CAP(P) 0.1 μ F/50V J	CMA1JJS00104
C448		ELECTROLYTIC CAP. 2.2 μ F/50V M	CE1JMASDL2R2
C501		FILM CAP(P) 0.22 μ F/100V J	CMA2AJS00224
C502		CERAMIC CAP(AX) B K 1000pF/50V	CCA1JKT0B102
C503		ELECTROLYTIC CAP. 100 μ F/35V M	CE1GMASDL101
C504		ELECTROLYTIC CAP. 1 μ F/50V LL	CE1JMASLH1R0
C505		ELECTROLYTIC CAP. 1000 μ F/35V M	CE1GMZNTL102
C506		ELECTROLYTIC CAP. 1000 μ F/35V M	CE1GMZNTL102
C508		CERAMIC CAP(AX) F Z 0.01 μ F/25V	CCA1EZTFZ103
C511		ELECTROLYTIC CAP. 100 μ F/10V M	CE1AMASDL101
C551		CERAMIC CAP. B K 680pF/1KV	CCD3AKD0B681
C555		METALIZED PLYESTER CAP. 2.2 μ F/100V J	CT2A225MS065
C556		FILM CAP(P) 0.1 μ F/50V J	CMA1JJS00104
C561		ELECTROLYTIC CAP. 47 μ F/35V M	CE1GMASDL470
C562		ELECTROLYTIC CAP. 470 μ F/10V M	CE1AMASDL471
C565		FILM CAP(P) 0.1 μ F/50V J	CMA1JJS00104
C566▲		CERAMIC CAP. BN 1800pF/2KV	CCD3DKA0B182
C567▲		PP CAP 0.0012 μ F/1.6KV J	CA3C122VC010
C568		FILM CAP(P) 0.033 μ F/50V J	CMA1JJS00333
C571▲		PP CAP 0.82 μ F/250V J	CT2E824MS041
C572▲		PP CAP 0.68 μ F/250V J	CT2E684MS041
C574▲		ELECTROLYTIC CAP. 4.7 μ F/250V M	CE2EMASTL4R7
C577		ELECTROLYTIC CAP. 47 μ F/35V M	CE1GMASDL470
C578		FILM CAP(P) 0.015 μ F/50V J	CMA1JJS00153
C580▲		PP CAP. 0.012 μ F/1.6KV J	CA3C123VC010
C582▲		P.P. CAPACITOR 0.033 μ F/630V J	CT2K33KF011
C584▲		ELECTROLYTIC CAP. 1 μ F/160V M	CE2CMASDL1R0
C588▲		ELECTROLYTIC CAP. 100 μ F/160V M	CE2CMZPTL101
C594▲		ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C596		CERAMIC CAP. B K 100pF/500V	CCD2JKS0B101
C601▲		METALLIZED FILM CAP. 0.22 μ F/250V	CT2E224MS037
C603		CERAMIC CAP(AX) B K 470pF/50V	CCA1JKT0B471
C605		CERAMIC CAP F Z 0.01 μ F/500V	CCD2JZP0F103
C606		CERAMIC CAP F Z 0.01 μ F/500V	CCD2JZP0F103
C609		CERAMIC CAP. BN 680pF/2KV	CCD3DKA0B681
C610▲		ELECTROLYTIC CAP. 470 μ F/200V	CA2D471NC013
C611		FILM CAP(P) 0.033 μ F/50V J	CMA1JJS00333
C613		FILM CAP(P) 0.056 μ F/50V J	CMA1JJS00563
C614		CERAMIC CAP(AX) X K 3900pF/16V	CCA1CKT0X392
C616		FILM CAP(P) 0.1 μ F/50V J	CMA1JJS00104
C618		FILM CAP(P) 0.1 μ F/50V J	CMA1JJS00104
If C642 is 0.01 μ F, then C643 is 0.01 μ F.			
C642▲		SAFETY CAP. 10000pF/250V	CCG2EMA0F103
C643▲		SAFETY CAP. 10000pF/250V	CCG2EMA0F103
If C643 is 4700pF, then JS642 (PCBJUMPER) is used.			
C643▲		SAFETY CAP. 4700pF/250V KX	CA2E472MR050
JS642		PCB JUMPER D0.6-P10.0	JW10.0T
C650		CERAMIC CAP. BN 560pF/2KV	CCD3DKA0B561
C654▲		ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL1R0
C656▲		ELECTROLYTIC CAP. 100 μ F/160V M	CE2CMZPTL101
C657▲		ELECTROLYTIC CAP. 470 μ F/35V M(VR)	CE1GMZNTL471
C658▲		ELECTROLYTIC CAP. 1000 μ F/25V M	CE1EMZNTL102
C662▲		ELECTROLYTIC CAP. 1000 μ F/16V M(VR/HC)	CE1CMZNTL102
C663		CERAMIC CAP(AX) B K 1000pF/50V	CCA1JKT0B102
C667		ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL1R0
C673		ELECTROLYTIC CAP. 4.7 μ F/50V M	CE1JMASDL4R7
C681		ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C682		ELECTROLYTIC CAP. 100 μ F/10V M	CE1AMASDL101
C684		ELECTROLYTIC CAP. 1000 μ F/10V M	CE1AMASDL102
C685		ELECTROLYTIC CAP. 100 μ F/10V M	CE1AMASDL101

Ref. No.	Mark	Description	Part No.
C705		CERAMIC CAP(AX) X K 3900pF/16V	CCA1CKT0X392
C706		ELECTROLYTIC CAP. 0.47 μ F/50V M	CE1JMASDLR47
C708		CHIP CERAMIC CAP. B K 3900pF/50V	CHD1JKB0B392
C709		ELECTROLYTIC CAP. 0.47 μ F/50V M	CE1JMASDLR47
C713		ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C718		CERAMIC CAP(AX) B K 1000pF/50V	CCA1JKT0B102
C725		CHIP CERAMIC CAP. B K 3900pF/50V	CHD1JKB0B392
C726		ELECTROLYTIC CAP. 0.47 μ F/50V M	CE1JMASDLR47
C728		CHIP CERAMIC CAP. B K 3900pF/50V	CHD1JKB0B392
C729		ELECTROLYTIC CAP. 0.47 μ F/50V M	CE1JMASDLR47
C731	A	CERAMIC CAP(AX) X K 3900pF/16V	CCA1CKT0X392
C733	A	ELECTROLYTIC CAP. 0.47 μ F/50V M	CE1JMASDLR47
C736	A	CERAMIC CAP(AX) X K 3900pF/16V	CCA1CKT0X392
C738	A	ELECTROLYTIC CAP. 0.47 μ F/50V M	CE1JMASDLR47
C751	A	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL1R0
C757	A	ELECTROLYTIC CAP. 0.1 μ F/50V M	CE1JMASDL0R1
C761	A	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL1R0
C767	A	ELECTROLYTIC CAP. 0.1 μ F/50V M	CE1JMASDL0R1
C773		ELECTROLYTIC CAP. 100 μ F/10V M	CE1AMASDL101
C801		ELECTROLYTIC CAP. 220 μ F/25V M	CE1EMASDL221
C802		ELECTROLYTIC CAP. 220 μ F/25V M	CE1EMASDL221
C803		FILM CAP(P) 0.1 μ F/50V J	CMA1JJS00104
C804		FILM CAP(P) 0.1 μ F/50V J	CMA1JJS00104
C807		ELECTROLYTIC CAP. 4.7 μ F/50V M	CE1JMASDL4R7
C808		ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL1R0
C809		ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL1R0
C811		ELECTROLYTIC CAP. 1000 μ F/25V M	CE1EMZNTL102
C833		ELECTROLYTIC CAP. 100 μ F/16V M	CE1CMASDL101

CONNECTORS

CN301	A	STRAIGHT CONNECTOR BASE 00 8283 0212 00 000	J383C02UG002
CN571▲		CONNECTOR BASE, 5P TV-50P-05-V3	J3TVC05TG002
CN691▲		CONNECTOR BASE, 2P TV-50P-02-V3	J3TVC02TG002
CN801		STRAIGHT CONNECTOR BASE 00 8283 0212 00 000	J383C02UG002
CN802		STRAIGHT CONNECTOR BASE 00 8283 0212 00 000	J383C02UG002

DIODES

D101		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D102		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D131		ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D171		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D322		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D323		ZENER DIODE MTZJT-779.1B	QDTB0MTZJ9R1
D326		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D351		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D352		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D353		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D501		DIODE FR104-B	NDLZ000FR104
D502▲		ZENER DIODE MTZJT-7720B	QDTB0MTZJ20
D503▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D511		ZENER DIODE MTZJT-7715B	QDTB0MTZJ15
D552▲		ZENER DIODE MTZJT-773.0B	QDTB0MTZJ3R0
D558		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D561		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D572		FAST RECOVERY DIODE ERA22-04	QDPZ0ERA2204
D580		DIODE ERD07-15	QDLZ0ERD0715
D582▲		FAST RECOVERY DIODE ERD38-06L	AERD3806L000
D583		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D584▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D585		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D591▲		ZENER DIODE MTZJT-7736B	QDTB0MTZJ36

Ref. No.	Mark	Description	Part No.
D594▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D595▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D597		ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
D605▲		DIODE 1N5406	NDLZ001N5406
D606▲		DIODE 1N5406	NDLZ001N5406
D607▲		DIODE 1N5406	NDLZ001N5406
D608▲		DIODE 1N5406	NDLZ001N5406
D609		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D611▲		ZENER DIODE MTZJT-7720B	QDTB00MTZJ20
D612▲		ZENER DIODE MTZJT-7718B	QDTB00MTZJ18
D613		ZENER DIODE MTZJT-777.5B	QDTB0MTZJ7R5
D614		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D615▲		SWITCHING DIODE 1N4148 T-77	QDTZ001N4148
D616▲		ZENER DIODE MTZJT-7715B	QDTB00MTZJ15
D623		PCB JUMPER D0.6-P5.0	JW5.0T
D651▲		FAST RECOVERY DIODE 30DF6	QDWZ00030DF6
D652▲		DIODE FR154	NDLZ000FR154
D653▲		DIODE FR154	NDLZ000FR154
D654▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D655▲		ZENER DIODE 1ZB180	QDQZ001ZB180
D656▲		ZENER DIODE MTZJT-777.5B	QDTB0MTZJ7R5
D657▲		DIODE FR154	NDLZ000FR154
D658▲		DIODE 1ZC20	QDQZ0001ZC20
D660		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D661▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D666		ZENER DIODE MTZJT-7736B	QDTB00MTZJ36
D671		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D672		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D675		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D676		ZENER DIODE MTZJT-7718A	QDTA00MTZJ18
D685▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D686		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D696▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D801		ZENER DIODE MTZJT-773.0B	QDTB0MTZJ3R0
D841▲		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D842▲		ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
ICS			
IC31		IC:VIF/SIF M61116FP TF0G	QSZBA0SHT034
IC111	A	IC M61272M8-059FP-60	QSZAA0RMB183
IC111	B	MICRO COMPUTER/VCD (PB FREE) M61271M8-058FP RF3T	QSZAC0RMB182
IC151		IC:MEMORY SS24C20D21	NSZBA0SSM028
IC431		IC:MTS DECORDER AN5832SA-E1	QSZBA0TMS003
IC551		IC:VERTICAL OUTPUT LA78041-E	QSZBA0SSY006
IC601▲		PHOTO COUPLER PS2501-1L	QPELOPS25011
IC771		IC:SWITCHING TC4052BF(EL)	QSZBA0TTS096
IC801		IC AN17812A	QSZBA0SMS017
COILS			
L12		INDUCTOR 22 μ H-K-5FT	LLARKBSTU220
L34		INDUCTOR 18 μ H-J-26T	LLAXJATTU180
L50		INDUCTOR 150 μ H-J-26T	LLAXJATTU151
L51		INDUCTOR 100 μ H-J-5FT	LLARJCSTU101
L112		INDUCTOR 22 μ H-K-5FT	LLARKBSTU220
L301		PCB JUMPER D0.6-P5.0	JW5.0T
L551		LINEARITY COIL ELH5L6136N	LLBD00PMS008
L562		CHOKE COIL ELC18B821LK	LLC821KMS001
L564		CHOKE COIL ELC18B821LK	LLC821KMS001
L588		CHOKE COIL 47 μ H-K	LLBD00PKV007
L601▲		LINE FILTER JLB2460	LLBG00ZXB012
TRANSISTORS			
Q111▲		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q131		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q161		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M

Ref. No.	Mark	Description	Part No.
Q321		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q511		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q512		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q551		TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q552▲		TRANSISTOR 2SD1666R	QQER02SD1666
Q561		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q571▲		TRANSISTOR 2SC5978	QQZZ02SC5978
Q572		TRANSISTOR 2SC3708S	QQSS02SC3708
Q601▲		MOS FET 2SK3561	QFWZ02SK3561
Q602▲		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q652▲		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q672▲		TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q673		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q674		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q681▲		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q682▲		TRANSISTOR 2SD400(E)	QQUE002SD400
Q696▲		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q751	A	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q761	A	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q791	A	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q792	A	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q793	A	TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q794	A	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q801		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q811		TRANSISTOR 2SC2785(F)	QQSF02SC2785
RESISTORS			
R12		PCB JUMPER D0.6-P5.0	JW5.0T
R31		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R32		CARBON RES. 1/4W J 82 Ω	RCX4JATZ0820
R35		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R37		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJB5Z0221
R38		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R39		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R44		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R50		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R54		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R101		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R102		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R103		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R104		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R105		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R106		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R108		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R109		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R111		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R112		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R113		CHIP RES.(1608) 1/10W J 270k Ω	RRXAJB5Z0274
R114		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R116		CHIP RES. 1/10W J 0 Ω	RRXAJB5Z0000
R121		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R122		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R123		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R131		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R133		CHIP RES. 1/10W J 0 Ω	RRXAJB5Z0000
R134		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R135		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R136		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R137		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R138		CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R139		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R140		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R141		CHIP RES. 1/10W J 0 Ω	RRXAJB5Z0000

Ref. No.	Mark	Description	Part No.
R150		CHIP RES. 1/10W J 0 Ω	RRXAJB5Z0000
R153		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R154		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R161		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R162		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R163		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R164		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R165		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R167		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R168		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R170		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R171		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJB5Z0561
R172		CHIP RES. 1/10W J 0 Ω	RRXAJB5Z0000
R173		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R174		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R176		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R177		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R178		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R301		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R302		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R303		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R305		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R312	A	PCB JUMPER D0.6-P5.0	JW5.0T
R320		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R323		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R326		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R327		CHIP RES. 1/10W J 0 Ω	RRXAJB5Z0000
R328		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R329		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R330		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R342		CHIP RES. 1/10W J 0 Ω	RRXAJB5Z0000
R344		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R345		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R346		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R348		CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R349		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R355		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R356		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R357		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R358		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R362		PCB JUMPER D0.6-P5.0	JW5.0T
R417		CHIP RES.(1608) 1/10W J 180k Ω	RRXAJB5Z0184
R422		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R423		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R427		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R428		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R445		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R503		CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R504		CARBON RES. 1/4W J 1 Ω	RCX4JATZ01R0
R505		CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R506		CARBON RES. 1/4W J 2.7 Ω	RCX4JATZ02R7
R507		CARBON RES. 1/4W J 2.7 Ω	RCX4JATZ02R7
R508		CARBON RES. 1/4W J 2.7 Ω	RCX4JATZ02R7
R511		CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R513▲		METAL OXIDE FILM RES. 2W J 18 Ω	RN02180ZU001
R514		CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R515		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJB5Z0333
R516▲		METAL OXIDE FILM RES. 2W J 18 Ω	RN02180ZU001
R520▲		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R522		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R535		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R540		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R541		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821

Ref. No.	Mark	Description	Part No.
R542		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R543		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R544		CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R551		METAL OXIDE FILM RES. 1W J 1k Ω	RN01102ZU001
R552▲		METAL OXIDE FILM RES. 1W J 8.2 Ω	RN018R2ZU001
R553		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R554		CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R555		CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R556		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R557		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R558		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJB5Z0221
R560		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R561		CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R562		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R563		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R564		CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R566		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R567		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R568		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R574		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R575▲		CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R576		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R577		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R578▲		CARBON RES. 1/4W J 27 Ω	RCX4JATZ0270
R579▲		CARBON RES. 1/4W J 27 Ω	RCX4JATZ0270
R581		PCB JUMPER D0.6-P5.0	JW5.0T
R583▲		METAL OXIDE FILM RES. 2W J 3.3 Ω	RN023R3ZU001
R584▲		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R587		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R588▲		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R589		CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R590		CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R591▲		CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R592▲		CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R593▲		CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R594▲		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R595		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R596		PCB JUMPER D0.6-P5.0	JW5.0T
R597		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R598▲		CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R599▲		CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R601▲		CEMENT RES. 7W K 0.56 Ω	RW07R56DP007
R602▲		CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R603		CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R604		CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R605		CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R607		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R608		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R609		CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R613▲		METAL OXIDE FILM RES. 2W J 0.27 Ω	RN02JZLZ0R27
R614		CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R616		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R618		CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R621		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R622		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R623		CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R641		CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R642		CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R650▲		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R651▲		METAL OXIDE FILM RES. 2W J 10k Ω	RN02103ZU001
R652		CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R653		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R654▲		CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272

Ref. No.	Mark	Description	Part No.
R655		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R656		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R657		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R658		CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R659		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R660		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R661▲		CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R662▲		CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R663▲		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R664▲		CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R665▲		CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R667▲		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R668▲		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R669▲		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R670▲		CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R671		CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R672		CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R673		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R674		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R675		CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R676		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R677		CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R678		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R680		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R681		PCB JUMPER D0.6-P5.0	JW5.0T
R682▲		METAL OXIDE FILM RES. 2W J 6.8 Ω	RN026R8ZU001
R684▲		CARBON RES. 1/4W J 1.2 Ω	RCX4JATZ01R2
R685▲		CARBON RES. 1/4W J 1.2 Ω	RCX4JATZ01R2
R686		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R687		CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R688▲		PCB JUMPER D0.6-P5.0	JW5.0T
R689		CARBON RES. 1/2W J 39 Ω	RCX2JZQZ0390
R694		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R696		CARBON RES. 1/4W J 82 Ω	RCX4JATZ0820
R701		CARBON RES. 1/4W J 75 Ω	RCX4JATZ0750
R704		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R705		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R706		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R707		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R708		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R709		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R711		CHIP RES.(1608) 1/10W J 82 Ω	RRXAJB5Z0820
R712		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R713		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R716		CHIP RES.(1608) 1/10W J 82 Ω	RRXAJB5Z0820
R717		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R718		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R721		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750
R724		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R725		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R726		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R727		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R728		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R729		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R731	A	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R732	A	CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R733	A	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R736	A	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R737	A	CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R738	A	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R746	A	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750
R747	A	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750
R748	A	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750

Ref. No.	Mark	Description	Part No.
R751		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R752		CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R753	A	CHIP RES.(1608) 1/10W J 120k Ω	RRXAJB5Z0124
R754	A	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R755	A	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R756	A	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R757	A	CHIP RES.(1608) 1/10W J 560 Ω	RRXAJB5Z0561
R761		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R762		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJB5Z0273
R763	A	CHIP RES.(1608) 1/10W J 120k Ω	RRXAJB5Z0124
R764	A	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R765	A	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R766	A	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R767	A	CHIP RES.(1608) 1/10W J 560 Ω	RRXAJB5Z0561
R771		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R772		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R791	A	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R792	A	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R793	A	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R803		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R804		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R811		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R812		CHIP RES.(1608) 1/10W J 82k Ω	RRXAJB5Z0823
R813		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R814		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R841		METAL OXIDE FILM RES. 2W J 2.2 Ω	RN022R2ZU001
R842▲		CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R843▲		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R862		CHIP RES. 1/10W J 0 Ω	RRXAJB5Z0000
R863		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103

SWITCHES

SW101		TAUT SWITCH SKQSAB	SST0101AL038
SW102		TAUT SWITCH SKQSAB	SST0101AL038
SW103		TAUT SWITCH SKQSAB	SST0101AL038
SW104		TAUT SWITCH SKQSAB	SST0101AL038
SW105		TAUT SWITCH SKQSAB	SST0101AL038
SW106		TAUT SWITCH SKQSAB	SST0101AL038

MISCELLANEOUS

AC601▲		AC CORD PB8K9F4110AB057	WAC0172LW020
B2		HEAT SINK(PIJ)ASSEMBLY L2700UA	0EM408529
B3		HEAT SINK(PIH)ASSEMBLY L2700UA	0EM408525
B4		HEAT SINK(PII)ASSEMBLY L2700UA	0EM408527
B5		HEAT SINK(PIK) L2800UA	0EM408530
BC11		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC571		BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC572		PCB JUMPER D0.6-P5.0	JW5.0T
BC603		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC652		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC653		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC654		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC655		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC657		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC691		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
CLN301		WIRE ASSEMBLY WX1L1200-102	WX1L1200-102
CLN501		WIRE ASSEMBLY WX1L1520-101	WX1L1520-101
CF32		CERAMIC FILTER SFSRA4M50CF00-B0	FBB455PMR004
F601▲		FUSE 4A/125V 237 TYPE	PAGJ20CAG402
FH601		FUSE HOLDER MSF-015	XH01Z00LY001
FH602		FUSE HOLDER MSF-015	XH01Z00LY001
GP641▲		GAP. FNR-G3.10D	FAZ000LD6005
GP642▲		GAP. FNR-G3.10D	FAZ000LD6005

Ref. No.	Mark	Description	Part No.
JC303	A	CHIP RES. 1/10W J 0Ω	RRXAJB5Z0000
JC304	A	CHIP RES. 1/10W J 0Ω	RRXAJB5Z0000
JC703		CHIP RES. 1/10W J 0Ω	RRXAJB5Z0000
JC704		CHIP RES. 1/10W J 0Ω	RRXAJB5Z0000
JK701		RCA JACK(YELLOW) MTJ-032-06B-20	JXRL010LY050
JK702		RCA JACK(WHITE) MTJ-032-06B-22	JXRL010LY052
JK703		RCA JACK 1P(RED)WITH SW ITCH AV1-09S-2	JYRL010RP008
JK711		RCA JACK 3P (SW) MSP-213-V2-432	JYRL030LY008
JK721		Y/C JACK 1P(SW) MDC-070V1-A	JYEL040LY002
JK731	A	RCA JACK MSP-382V-12 PBSN	JXRL020LY063
JK741	A	RCA JACK 3P(GBR) MSP-213VS5	JXRL030LY028
JK742	A	RCA JACK MSP-382V-12 PBSN	JXRL020LY063
JS301	A	PCB JUMPER D0.6-P12.5	JW12.5T
JS572		PCB JUMPER D0.6-P5.0	JW5.0T
JS707	A	PCB JUMPER D0.6-P15.0	JW15.0T
JS801		PCB JUMPER D0.6-P5.0	JW5.0T
JS802		PCB JUMPER D0.6-P7.5	JW7.5T
L1		SCREW, B-TIGHT D3X8 BIND HEAD+	GBMB3080
PS691▲		THERMISTOR ZPB45BL3R0A	QNBZ45BL3R0A
RCV101		REMOCON RECEIVE UNIT PIC-26042SR-2	USESJRSKK032
RL601▲		POWER RELAY SDT-S-112LMR	MRNDC12QN014
SA601▲		SURGE ABSORBER PVR-07D471KB	NVQZ07D471KB
SF11		SAW FILTER SAFHM45M7VAJZ00B03	FBB456PMR012
T571▲		FLYBACK TRANSFORMER JF0501-21147	LTF00CPXB046
T572		HORIZONTAL DRAIVE TRANS CSA-LF327A	LTH00CPSA006
T601▲		SWITCHING TRANSFOMER 4809-S03	LTTO0CPKT163
TP300		PCB JUMPER D0.6-P10.0	JW10.0T
TP601		PCB JUMPER D0.6-P20.0	JW20.0T
TU11		TUNER UNIT TEFH9X-001A	UTUNNTUAL042
VR561		CARBON P.O.T. 20kΩ B	VRCB203KA011
VR562		CARBON P.O.T. 5kΩ B	VRCB502KA011
VR661▲		CARBON P.O.T. 20kΩ B	VRCB203KA011
X301		XTAL 3.579545 MHz	FXD355LLN003

CRT CBA

Ref. No.	Mark	Description	Part No.
		CRT CBA Consists of the following:	-----
CAPACITORS			
C1501		ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C1502		ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C1510		CERAMIC CAP. B K 2200pF/2KV	CCD3DKD0B222
C1511		CERAMIC CAP(AX) B K 470pF/50V	CCA1JKT0B471
C1512		CERAMIC CAP(AX) B K 0.01µF/50V	CA1J103TU011
C1521		CERAMIC CAP(AX) B K 270pF/50V	CCA1JKT0B271
C1522		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1531		CERAMIC CAP(AX) B K 470pF/50V	CCA1JKT0B471
C1532		CERAMIC CAP(AX) B K 0.01µF/50V	CA1J103TU011
CONNECTOR			
CN1501		PIN CONNECTOR 005P-5100	JTEA001TG001
DIODES			
D1501		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1502		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
COIL			
L1501		INDUCTOR 180µH-J-5FT	LLARJCSTU181
TRANSISTORS			
Q1511		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q1512		TRANSISTOR 2SC5360	QQ9Z02SC5360
Q1521		TRANSISTOR 2SC2785(F)	QQSF02SC2785

Ref. No.	Mark	Description	Part No.
Q1522		TRANSISTOR 2SC5360	QQ9Z02SC5360
Q1531		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q1532		TRANSISTOR 2SC5360	QQ9Z02SC5360
RESISTORS			
R1501		CARBON RES. 1/4W J 100Ω	RCX4JATZ0101
R1502		CHIP RES.(1608) 1/10W J 100Ω	RRXAJB5Z0101
R1503		CARBON RES. 1/4W J 100Ω	RCX4JATZ0101
R1510▲		METAL RESISTOR 3W J 10kΩ	RN03103ZU001
R1511		CARBON RES. 1/4W J 1.5kΩ	RCX4JATZ0152
R1512		CARBON RES. 1/4W J 1.5kΩ	RCX4JATZ0152
R1514		CHIP RES.(1608) 1/10W J 100Ω	RRXAJB5Z0101
R1515		CARBON RES. 1/4W J 1kΩ	RCX4JATZ0102
R1518		CARBON RES. 1/4W J 220Ω	RCX4JATZ0221
R1519		CHIP RES.(1608) 1/10W J 100Ω	RRXAJB5Z0101
R1520▲		METAL RESISTOR 3W J 10kΩ	RN03103ZU001
R1521		CARBON RES. 1/4W J 1.5kΩ	RCX4JATZ0152
R1522		CARBON RES. 1/4W J 1.5kΩ	RCX4JATZ0152
R1524		CHIP RES.(1608) 1/10W J 100Ω	RRXAJB5Z0101
R1525		CARBON RES. 1/4W J 1kΩ	RCX4JATZ0102
R1528		CARBON RES. 1/4W J 220Ω	RCX4JATZ0221
R1529		CHIP RES.(1608) 1/10W J 100Ω	RRXAJB5Z0101
R1530▲		METAL RESISTOR 3W J 10kΩ	RN03103ZU001
R1531		CARBON RES. 1/4W J 1.5kΩ	RCX4JATZ0152
R1532		CARBON RES. 1/4W J 1.5kΩ	RCX4JATZ0152
R1534		CHIP RES.(1608) 1/10W J 100Ω	RRXAJB5Z0101
R1535		CARBON RES. 1/4W J 1kΩ	RCX4JATZ0102
R1538		CARBON RES. 1/4W J 220Ω	RCX4JATZ0221
R1539		CHIP RES.(1608) 1/10W J 100Ω	RRXAJB5Z0101
MISCELLANEOUS			
JK1501	▲	CRT SOCKET ISHS40ST	JSCC290PK006

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