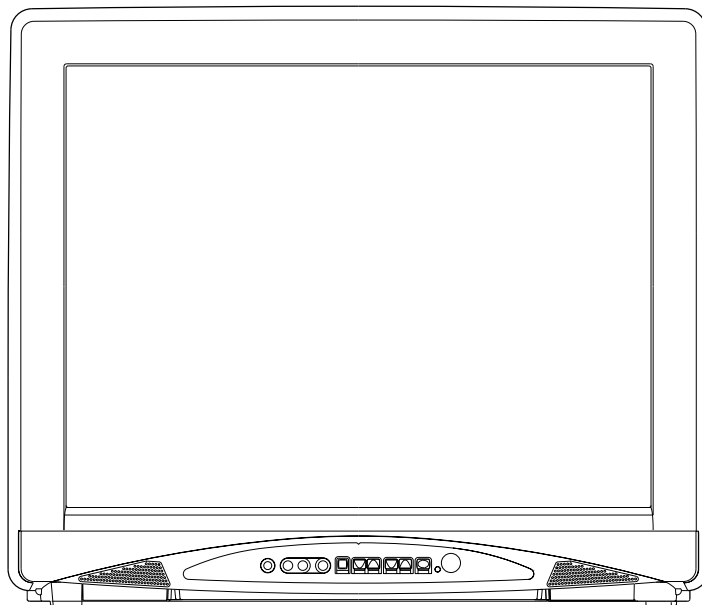


***SYLVANIA***

# **SERVICE MANUAL**

**27" COLOR TELEVISION**

**6427CTB**



# 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.

## TABLE OF CONTENTS

Specifications.....	1-1	CBA Views and Test Points .....	7-9
Important Safety Precautions.....	2-1	Wave Forms .....	8-1
Standard Notes for Servicing .....	3-1	Wiring Diagram.....	9-1
Disassembly Instructions .....	4-1	IC Pin Fuction.....	10-1
Electrical Adjustment Instructions .....	5-1	Cabinet Exploded View .....	11-1
Block Diagram.....	6-1	Packing Exploded View.....	11-3
Schematic Diagram / CBA's and Test Points .....	7-1	Parts List .....	12-1
Schematic Diagram .....	7-3		

# SPECIFICATIONS

## < TUNER >

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

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

## < DEFLECTION >

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

## < VIDEO & CHROMA >

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

## < AUDIO >

All items are measured across 8 $\Omega$  load at speaker output terminal.

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power	10% THD	W	1	0.8
2. Audio Distortion (w/LPF)	500mW	%	2	7
3. Audio Freq. Response	-3dB	Hz	70~11K	—

### 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:

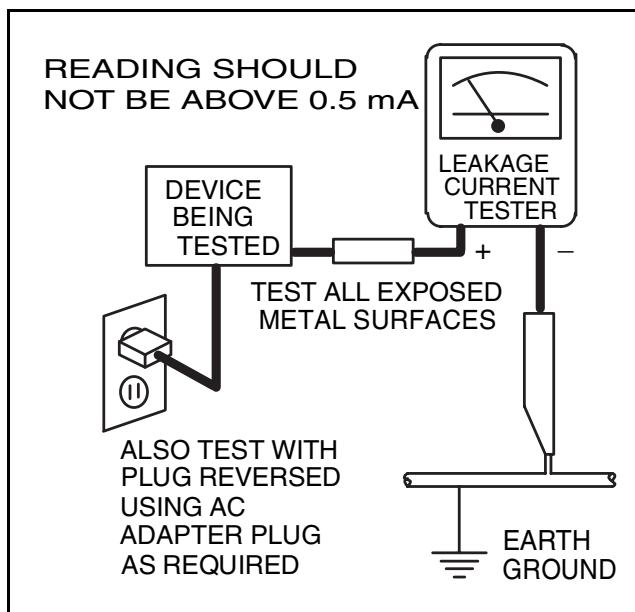
**a.** Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (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, non-metallic 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 120V 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 may be 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 (heatsinks, 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	USA or CANADA	$\geq 3.2$ mm (0.126 inches)

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

### 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.

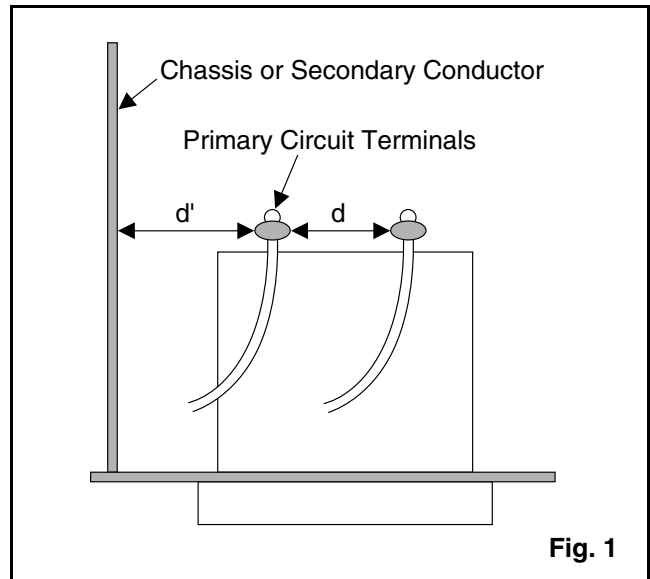
#### Measuring Method : (Power ON)

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.

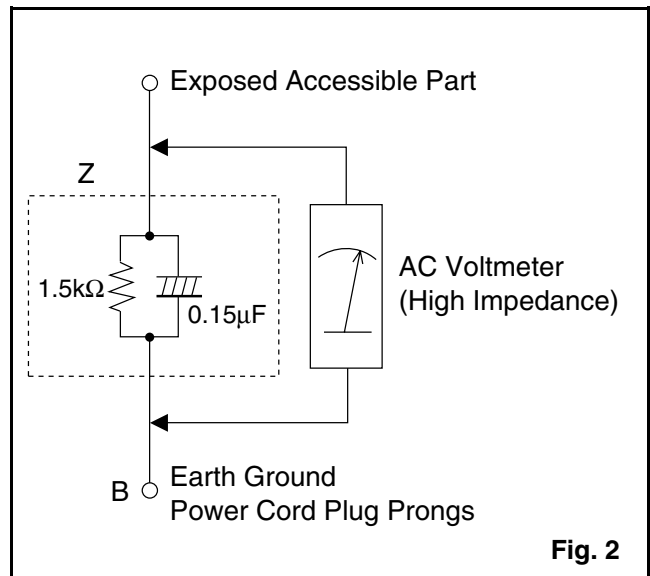
**Table 2 : Leakage current ratings for selected areas**

AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	USA	0.15 $\mu$ F CAP. & 1.5k $\Omega$ 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.



**Fig. 1**

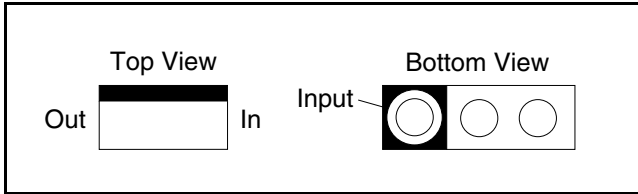


**Fig. 2**

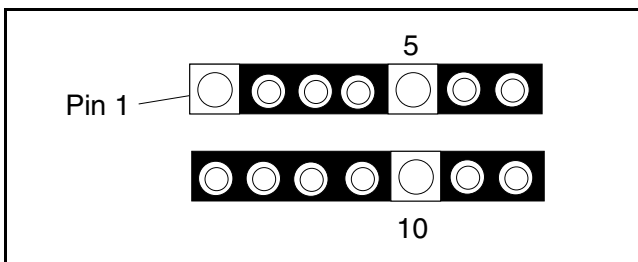
# STANDARD NOTES FOR SERVICING

## Circuit Board Indications

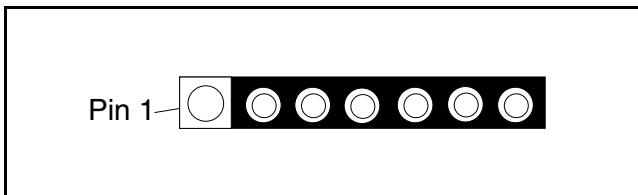
a. The output pin of the 3 pin Regulator ICs is indicated as shown.



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



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

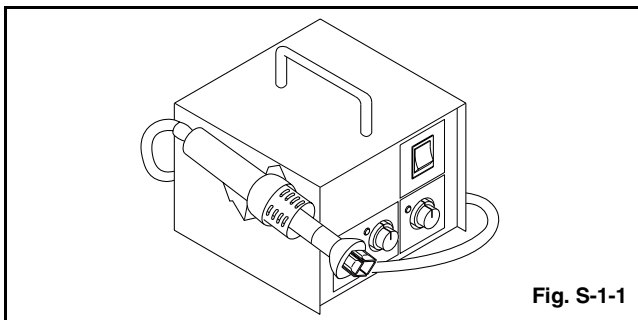


## How to Remove / Install Flat Pack-IC

### 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)



- (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. 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)
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.

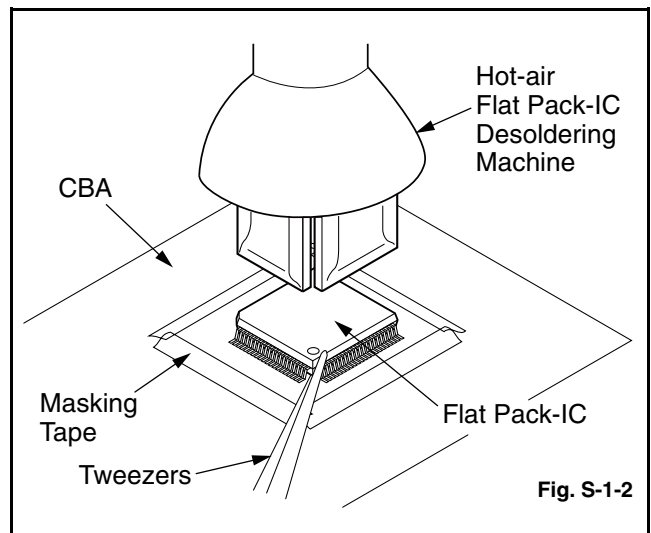
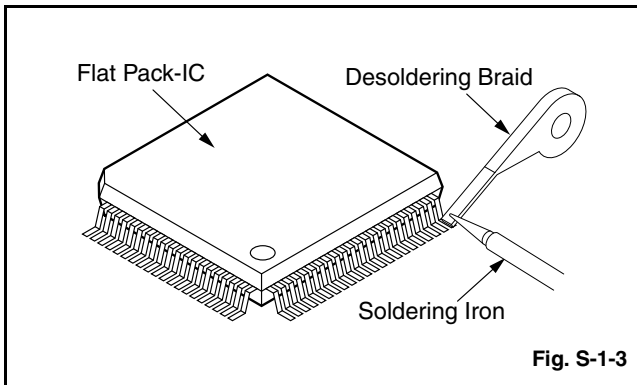


Fig. S-1-2

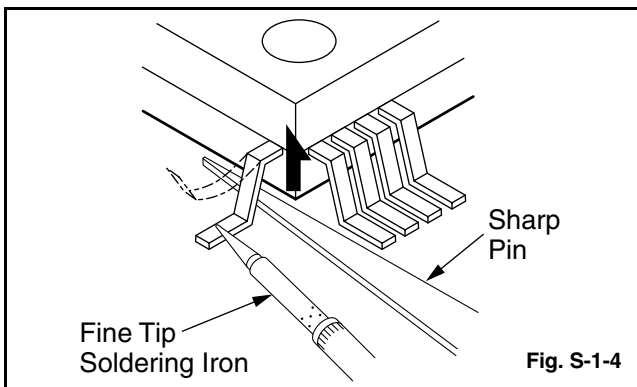


### With Soldering Iron:

- (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) 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)



- (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)

### With Iron Wire:

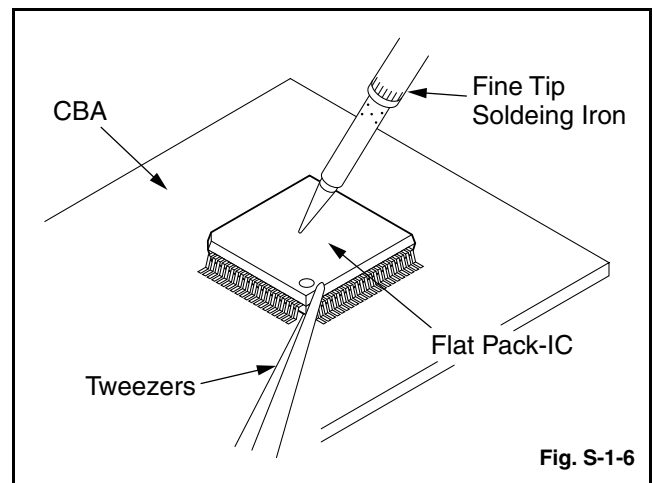
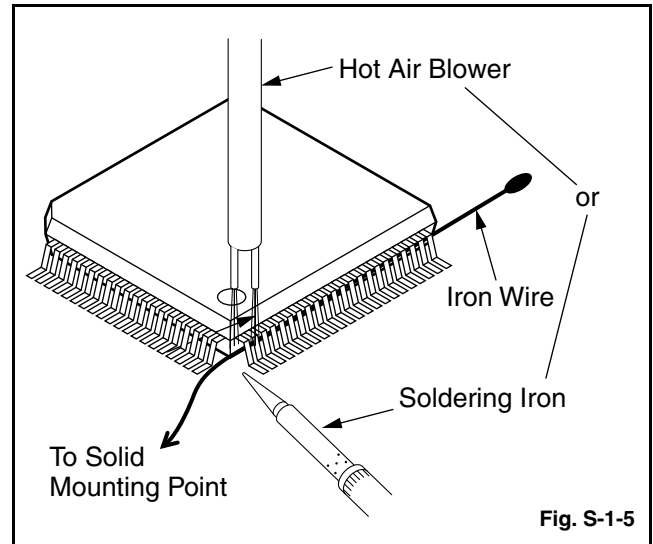
- (1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
- (2) Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
- (3) While heating 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)

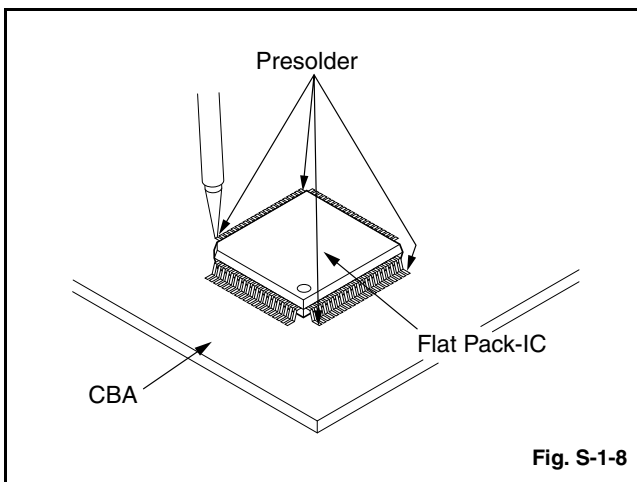
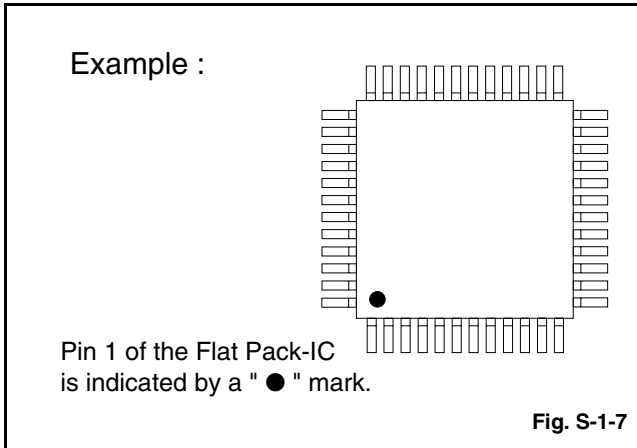
### Note:

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 pre-solder 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.



## Instructions for Handling Semiconductors

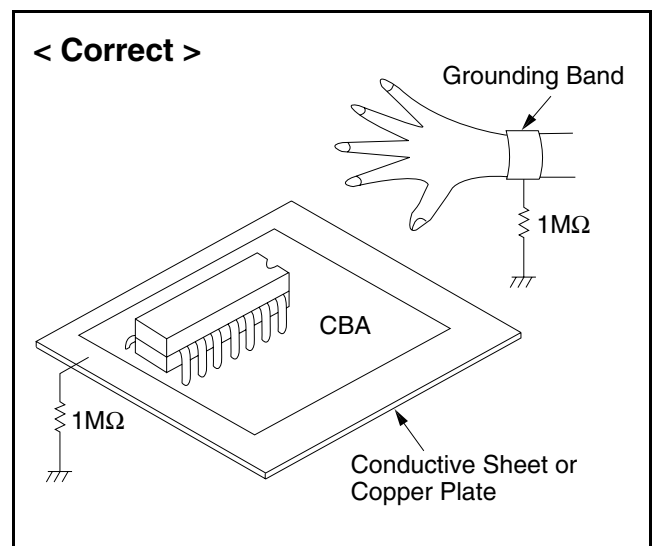
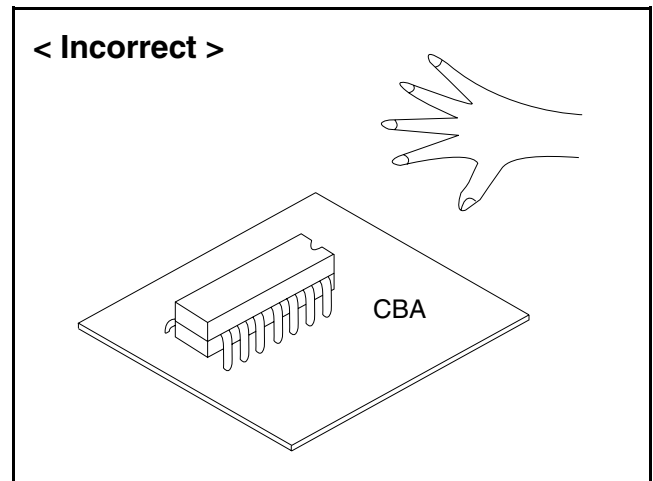
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

### 1. Ground for Human Body

Be sure to wear a grounding band ( $1M\Omega$ ) 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 ( $1M\Omega$ ) on the workbench or other surface, where the semiconductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors with your clothing.



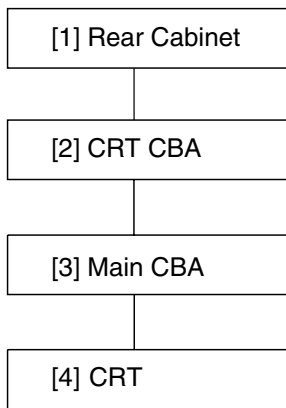
# DISASSEMBLY INSTRUCTIONS

## 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/*unlock/ release/unplug/ unclamp/desolder	Note
[1]	Rear Cabinet	1,2	7(S-1), 1(S-2), 1(S-4)	1
[2]	CRT CBA	4,5	CN501	2
[3]	Main CBA	3,5	CN571	3
[4]	CRT	4	4(S-3), Anode Cap	4



### 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 part to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.  
S=Screw, P=Spring, L=Locking Tab, CN=Connector, \*=Unhook, Unlock, Release, Unplug, or Desolder  
2(S-2) = two Screws (S-2)
- ⑤. Refer to the following "Reference Notes in the Table."

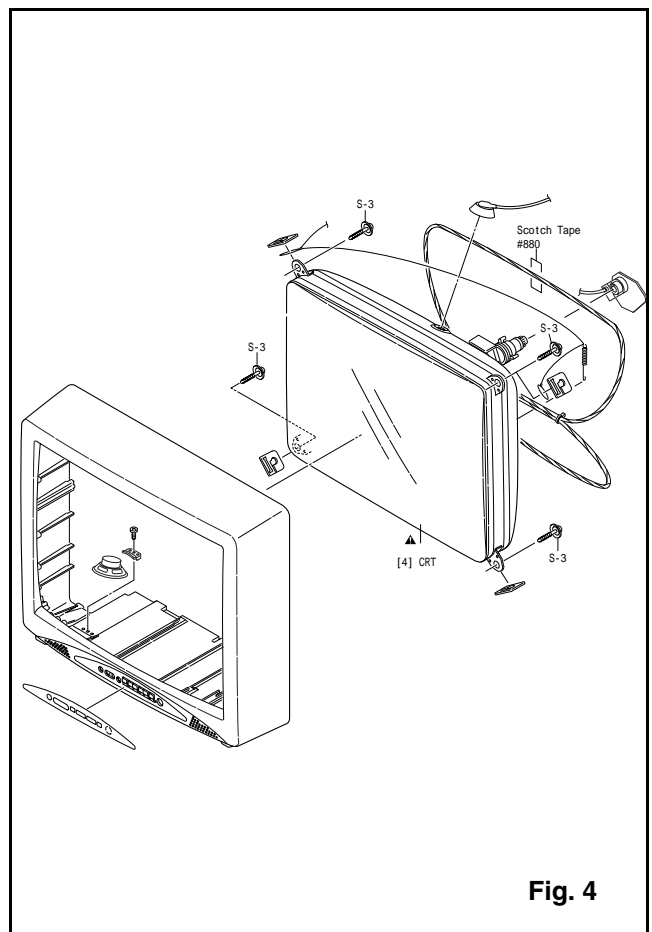
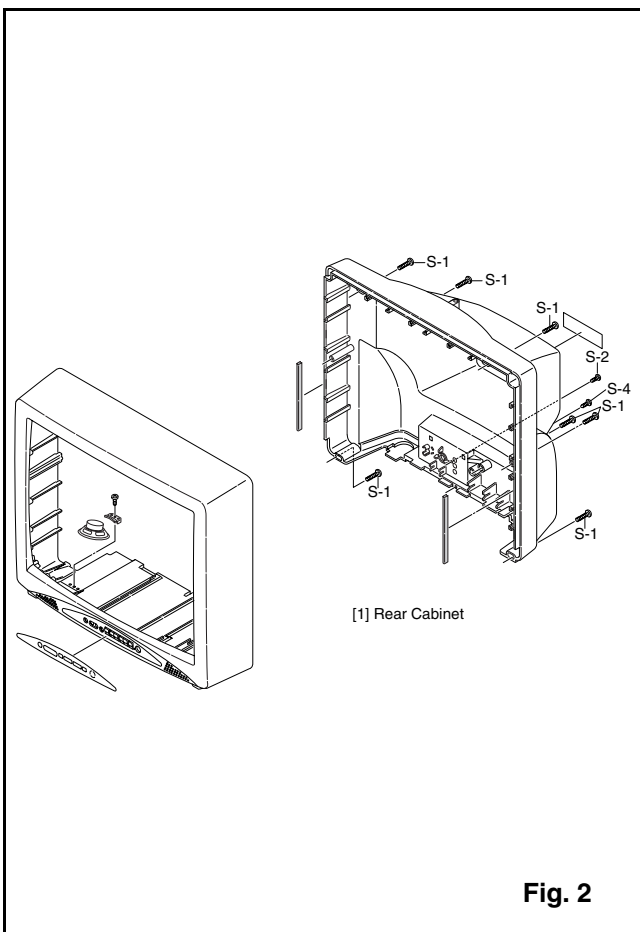
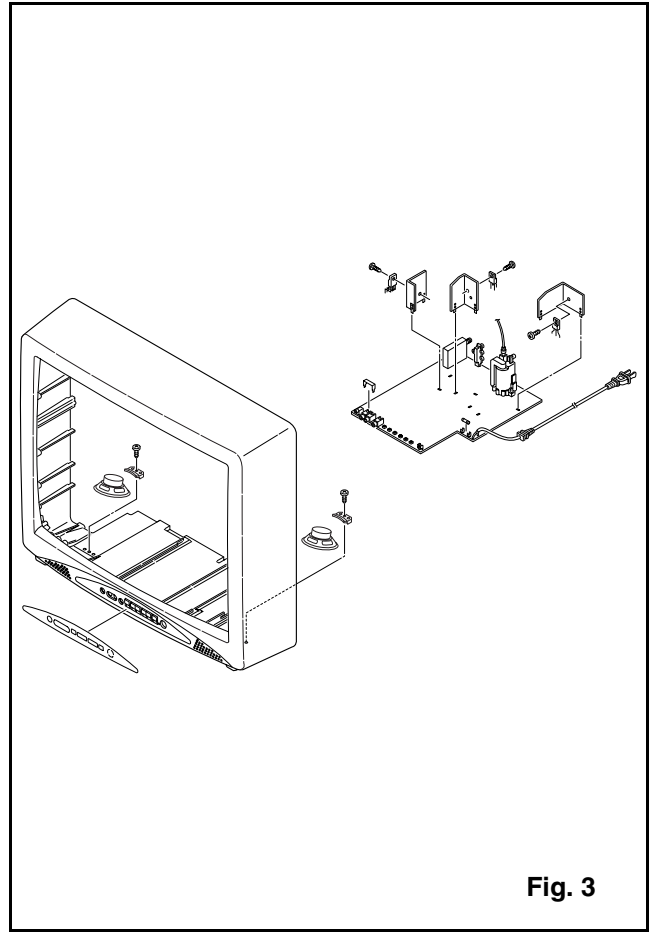
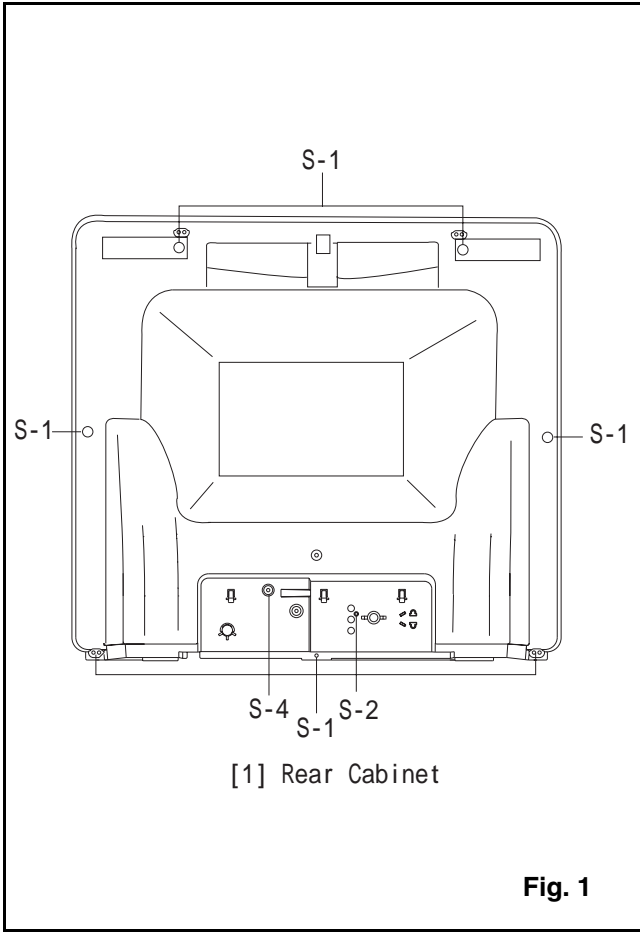
### Reference Notes in the Table

1. Removal of the Rear Cabinet. Remove screws 7(S-1), 1(S-2) and 1(S-4) then slide the Rear Cabinet backward.
2. Removal of the CRT CBA. Disconnect CN501 then pull the CRT CBA backward.
3. Removal of the Main CBA. Disconnect CN571 on the Main CBA then slide the Main CBA backward.

### Caution !

Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

4. Removal of the CRT. Remove screws 4(S-3) and Anode Cap. then slide the CRT backward.



# TV Cable Wiring Diagram

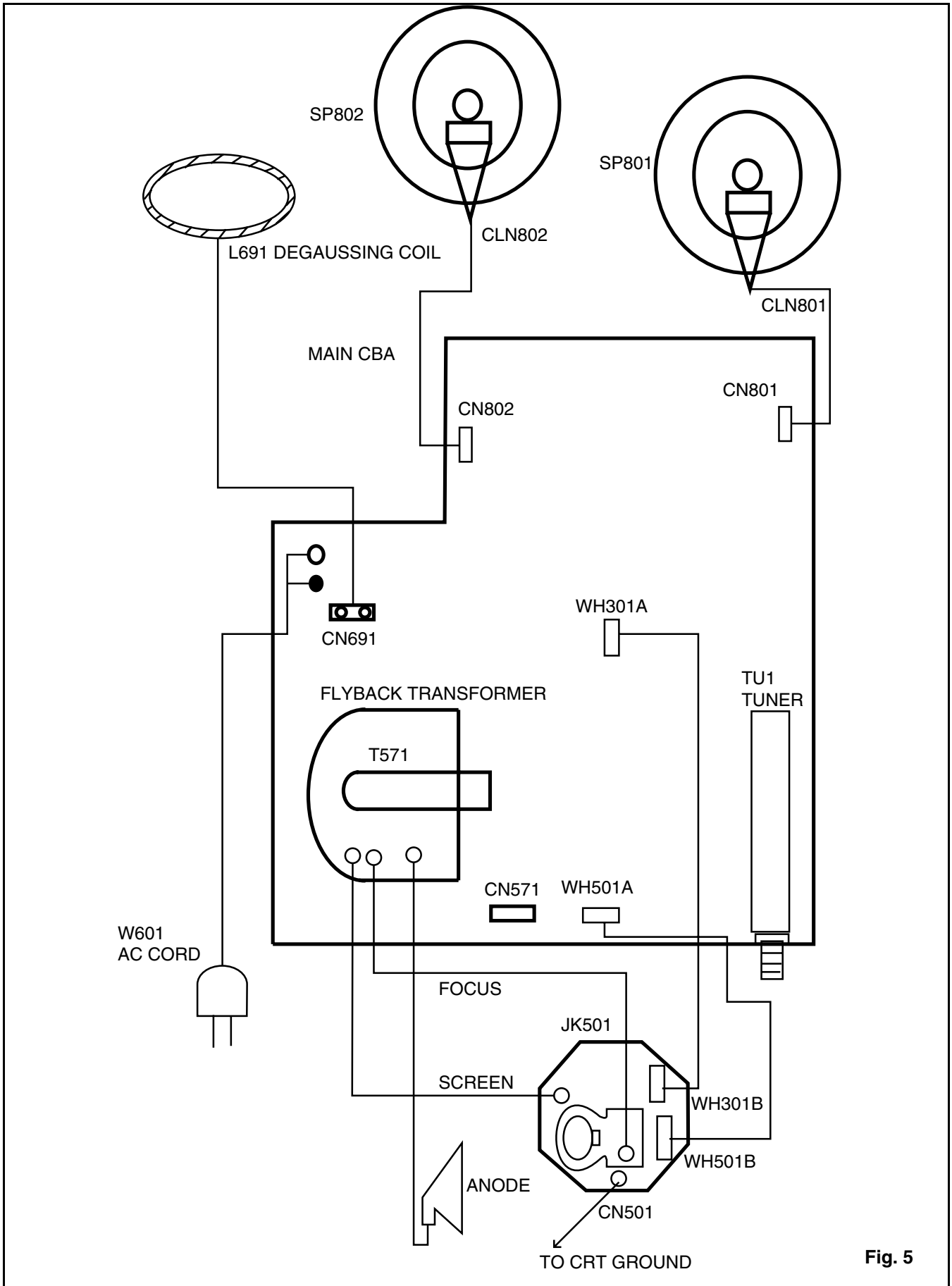


Fig. 5

# 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: 0.001~50V/Div,  
F-Range: DC~AC-60MHz
4. Plastic Tip Driver
5. Remote control unit: Part No. N0108UD or N0132UD
6. DC power supply 13.2V/5A

## 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: 054-0.13)
4. When CPU version is 054-0.13: Check the display on the lower left is "05-A" and if it is not "05-A", set it at "05-A" according to "3-1 FRENCH, ACCESS CODE, STEREO, VIDEO TONE".

## 1. DC 120V 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
J358 (+120V) J362 (GND)	VR661	---	---
Tape	M. EQ.	Spec.	
---	DC Voltmeter	+120±0.5V DC.	

**Note:** J358, J362(GND), VR661 --- Main CBA

1. Connect DC Volt Meter to J358 and J362(GND).
2. Adjust VR661 so that the voltage of J358 becomes +120±0.5V DC.

## 2. 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 ", " 1 ", " 2 " and " 3 ". Then choose " B-S OFF ".
4. Press " 6 " button on the Service remote control unit. " B-S\*2 " is indicated.
5. Press " CH ▲ / ▼ " buttons on the Service remote control unit so that display will change " 0", " 1 ". " 2 " and " 3 ". Then choose " B-S\*2 0".
6. Turn the power off and on again. (Main power button on the TV unit.)

## 3-1. Setting for 7F FRENCH and STEREO data Values

### General

1. Enter the Service mode. (See page 5-1)
2. Press " VOL ▼ " button on the Service remote control unit. Display changes " C/D ", " VCO ", " 7F ", " FRENCH ", " STEREO ", " ACCESS CODE " and " VIDEO TONE " cyclically when " VOL ▼ " button is pressed.

### 7F

1. Press " VOL ▼ " button on the Service remote control unit. Then select 7F display.
2. Press " CH ▲ / ▼ " buttons on the Service remote control unit. Then choose 7F=FF.

### FRENCH

1. Press " VOL ▼ " button on the Service remote control unit. Then select FRENCH display.

2. Press " CH ▲ / ▼ " buttons on the Service remote control unit. Then choose FRENCH=ON.

### STEREO

1. Press " VOL ▼ " button on the Service remote control unit. Then select STEREO display.
2. Press " CH ▲ / ▼ " buttons on the Service remote control unit. Then choose STEREO=ON.

**ACCESS CODE** ---- set to OFF

**VIDEO TONE** ---- set to OFF

**Note:** C/D and VCO data values are no need to adjust at this moment.

## 3-2. Setting for CONTRAST, COLOR, TINT, V-TINT and SHARP data Values

### General

1. Enter the Service mode. (See page 5-1)
2. Press " MENU " button on the Service remote control unit. Display changes " BRIGHT ", " CONTRAST ", " COLOR ", " TINT ", " V-TINT " and " SHARP " cyclically when " MENU " button is pressed.

### CONTRAST (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 92.

### COLOR (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.

### TINT (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 60.

### V-TINT (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 60.

### SHARP (SHARP)

1. Press " MENU " button on the Service remote control unit. Then select " SHARP " (SHARP) display.
2. Press " CH ▲ / ▼ " buttons on the Service remote control unit and select " SHARP OFF ".

**Note:** BRIGHT data value is no need to adjust at this moment.

## 4. H f<sub>0</sub> Adjustment

**Purpose:** To get correct horizontal frequency.

**Symptom of Misadjustment:** . If H f<sub>0</sub> adjustment is in correct, sqew distortion will appear on the screen.

Test Point	Adj. Point	Mode	Input
J364	CH ▲ / ▼ button ["H-ADJ"] MODE		----
Tape	M. EQ.	Spec.	
----	Frequency Counter	15.734 kHz±300Hz	

**Note:** J364 --- Main CBA

Use Service remote control unit.

1. Connect Frequency Counter to J303 and ground.
2. Set the unit to the VIDEO mode which is located before CH2 and no input is necessary. Enter the Service mode. (See Page 5-1)
3. Operate the unit for at least 20 minutes.
4. 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)
5. Press " CH ▲ / ▼ " button on the Service remote control unit so that the display will change " 0 " ~ " 7 ". At this moment, Choose display one of them from " 0 " ~ " 7 " when the Frequency Counter shows 15.734 kHz±300Hz or closer.
6. Turn the power off and on again. (Main Power button on the TV unit.)

## 5. VCO Adjustment

**Purpose:** To operate VCO correctly.

**Symptom of Misadjustment:** VCO does not work correctly and/or synchronization is faulty.

Test Point	Adj. Point	Mode	Input
---	---		No signal
Tape	M. EQ.	Spec.	
---	---	---	

**Note:** Use service remote control unit.

1. Disconnect the RF input and set the unit to Channel 4.
2. Enter the Service mode. (See Page 5-1)
3. Press " 3 " button on the Service remote control unit. The Auto VCO adjustment is started.
4. If the display color is changed from red to green, This adjustment is done.
5. Turn the Power off and on again. (Main power button on the TV unit.)

## 6. AGC Adjustment

**Purpose:** Set AGC (Auto Gain Control) Level.

**Symptom of Misadjustment:** AGC does not synchronize correctly when RF input level is too weak and picture distortion may occur if it is too strong.

Test Point	Adj. Point	Mode	Input
J363	CH ▲ / ▼ buttons	RF	Color Bar 67.25MHz 60dB $\mu$ V
Tape	M. EQ.	Spec.	
---	Pattern Generator DC Volt Meter	+2.5 $\pm$ 0.1VDC or +2.8 $\pm$ 0.1VDC by Tuner Type.	

**Notes:** J363 --- Main CBA

Use Service remote control unit.

1. Enter the Service mode. (See Page 5-1) Then press number " 2 " button on the Service remote control unit.
2. Receive the Color Bar signal for channel 4 (67.25MHz). (RF Input Level: 60dB $\mu$ V)
3. Press " CH ▲ / ▼ " buttons so that the voltage of J363 becomes +2.5 $\pm$ 0.1V DC. If the tuner is used TEDH9-300A. (Tuner type number)
4. Press " CH ▲ / ▼ " buttons so that the voltage of J363 becomes +2.8 $\pm$ 0.1V DC. If the tuner is used B8095AP. (Tuner type number)
5. Turn the Power off and on again. (Main power button on the TV unit.)

## 7. Black Level Adjustment

**Purpose:** Set Black Level

**Symptom of Misadjustment:** If black label is incorrect, Proper brightness can not be obtained by adjusting the Brightness Control.

**Note:** J1502, J1501 (GND) --- CRT CBA

1. Enter the Service mode. (See page 5-1).
2. Press " MENU " button on the Service remote control unit and select " BRT " mode. (Display changes " BRT ", " CNT ", " CLR " and " TNT " cyclically when MENU button is pressed).
3. Press " CH ▲ / ▼ " buttons on the Service remote control unit so that the value of " BRT " becomes 128.
4. Turn the power off and on again. (Main power button on the TV unit.)



## 8. C-Trap Adjustment

**Purpose:** To get minimum leakage of the color signal carrier.

**Symptom of Misadjustment:** If C- Trap Adjustment is incorrect, stripes will appear on the screen.

Test Point	Adj. Point	Mode	Input
J1502 (Blue) J1501 (GND)	CH ▲ / ▼ buttons	RF	Color Bar
<b>Tape</b>	<b>M. EQ.</b>	<b>Spec.</b>	
----	Oscilloscope	----	

**Note:** J1502, J1501 --- CRT CBA

Use Service remote control unit.

1. Connect Oscilloscope to J1502 and J1501 (GND) .
2. Enter the Service mode. (See Page 5-1) Receive color bar signal from RF Input.
3. Press " 0 " button on the Service remote control unit and select C-TRP Mode.
4. Press " CH ▲ / ▼ " buttons on the Service remote control unit so that the display will change " 0 ", " 1 ", " 2 " and " 3 ". Choose display " 0 ", " 1 ", " 2 " or " 3 " when B-Out (3.58MHz) value becomes minimum on the oscilloscope reading.
5. 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
---	Screen Control CH ▲ / ▼ buttons [ V-S ] Mode	RF	Monoscope
<b>Tape</b>	<b>M. EQ.</b>	<b>Spec.</b>	
---	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
---	Screen Control CH ▲ / ▼ buttons [ V-P ] Mode	RF	Monoscope
<b>Tape</b>	<b>M. EQ.</b>	<b>Spec.</b>	
---	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-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. 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
---	Screen Control CH ▲ / ▼ buttons [ H-P ] Mode	RF	Monoscope
<b>Tape</b>	<b>M. EQ.</b>	<b>Spec.</b>	
---	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 and select " H-P "mode.
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.)

## 12. 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.)

## 13. 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.)

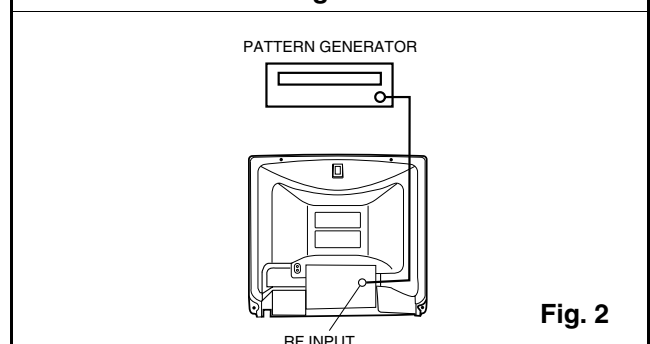
## 14. Cut-off Adjustment

**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

F.B.T= 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 ", "VCO ", " 7F ", " FRENCH ", " STEREO ", "ACCESS CODE" and "VIDEO TONE" 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 the " CH ▲ / ▼ " buttons. Proceed to Step 5 when the Red Cut off adjustment is done.
5. Press the " 2 " button. The display will momentarily show " CUT OFF G " (G=Green). Adjust the Green Cut off by pressing the " CH ▲ / ▼ " buttons. Proceed to step 6 when the Green Cut off adjustment is done.
6. Press the " 3 " button. The display will momentarily show " CUT OFF B " (B=Blue). Adjust the Blue cut off by pressing the " 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.

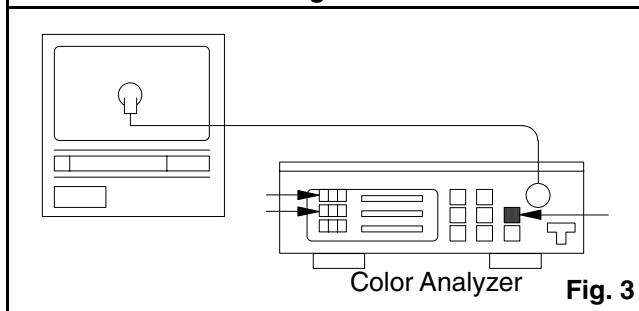
## 15. White Balance Adjustment

**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%)
<b>Tape</b>	<b>M. EQ.</b>	<b>Spec.</b>	
	Pattern Generator, Color analyzer	See below	

**Figure**



**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 . Press " VOL ▼ " button on the Service remote control unit and select " C/D " mode. (Display changes " C/D ", " VCO ", " 7F ", " FRENCH ", " STEREO ", " ACCESS CODE " and " VIDEO TONE " cyclically when " VOL ▼ " button is pressed.) then Press No. 8 button on the Service remote control Unit.
6. Press No. 4 button on the service remote control unit for Red adjustment. Press NO. 5 button on the Service remote control unit for Blue adjustment.
7. In each color mode, Press " CH ▲ / ▼ " button to adjust the values of color.
8. Adjusting Red and Blue color so that the tempreture 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.

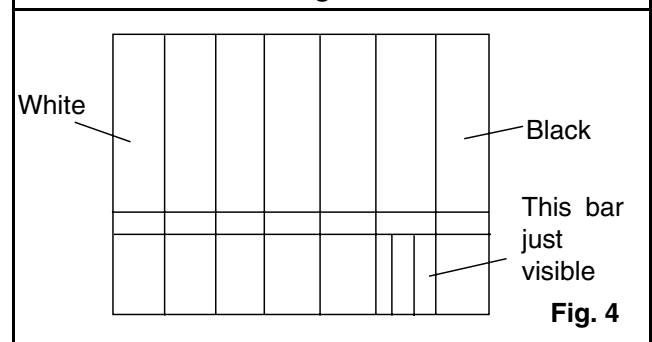
## 16. Sub-Brightness Adjustment

**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
<b>Tape</b>	<b>M. EQ.</b>	<b>Spec.</b>	
---	Pattern Generator	See below	

**Figure**



**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 ", and " TNT " 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.)

## 17. 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
<b>Tape</b>	<b>M. EQ.</b>	<b>Spec.</b>	
---	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 2 adjustments normally are not attempted in the field. Only when replacing the CRT then adjust as a preparation.

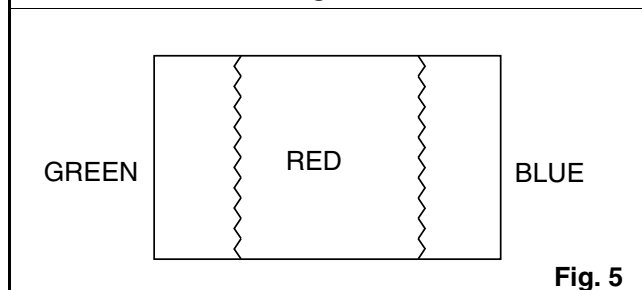
## 18. Purity Adjustment

**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



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.

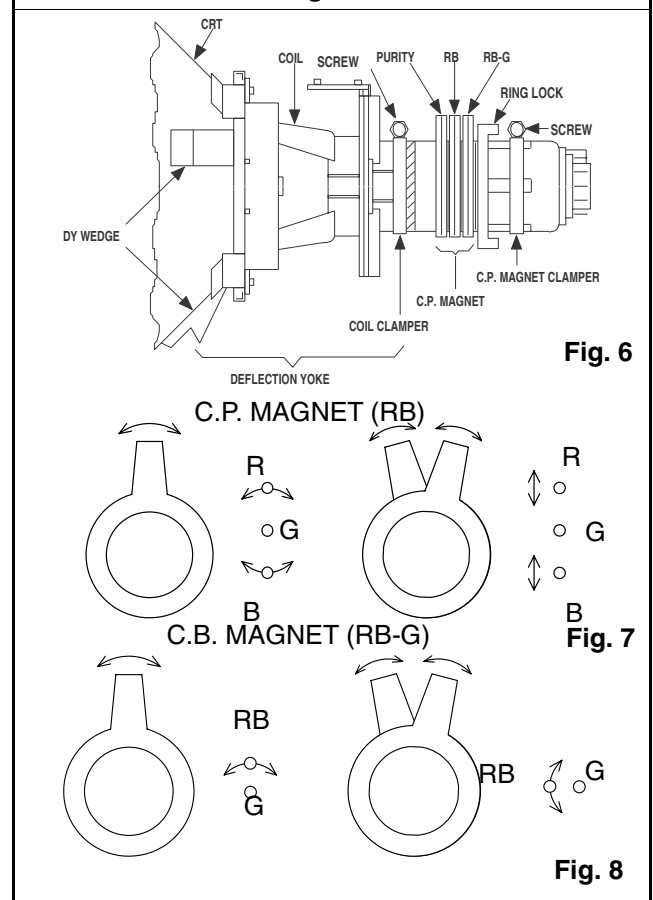
## 19. Convergence Adjustment

**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.	

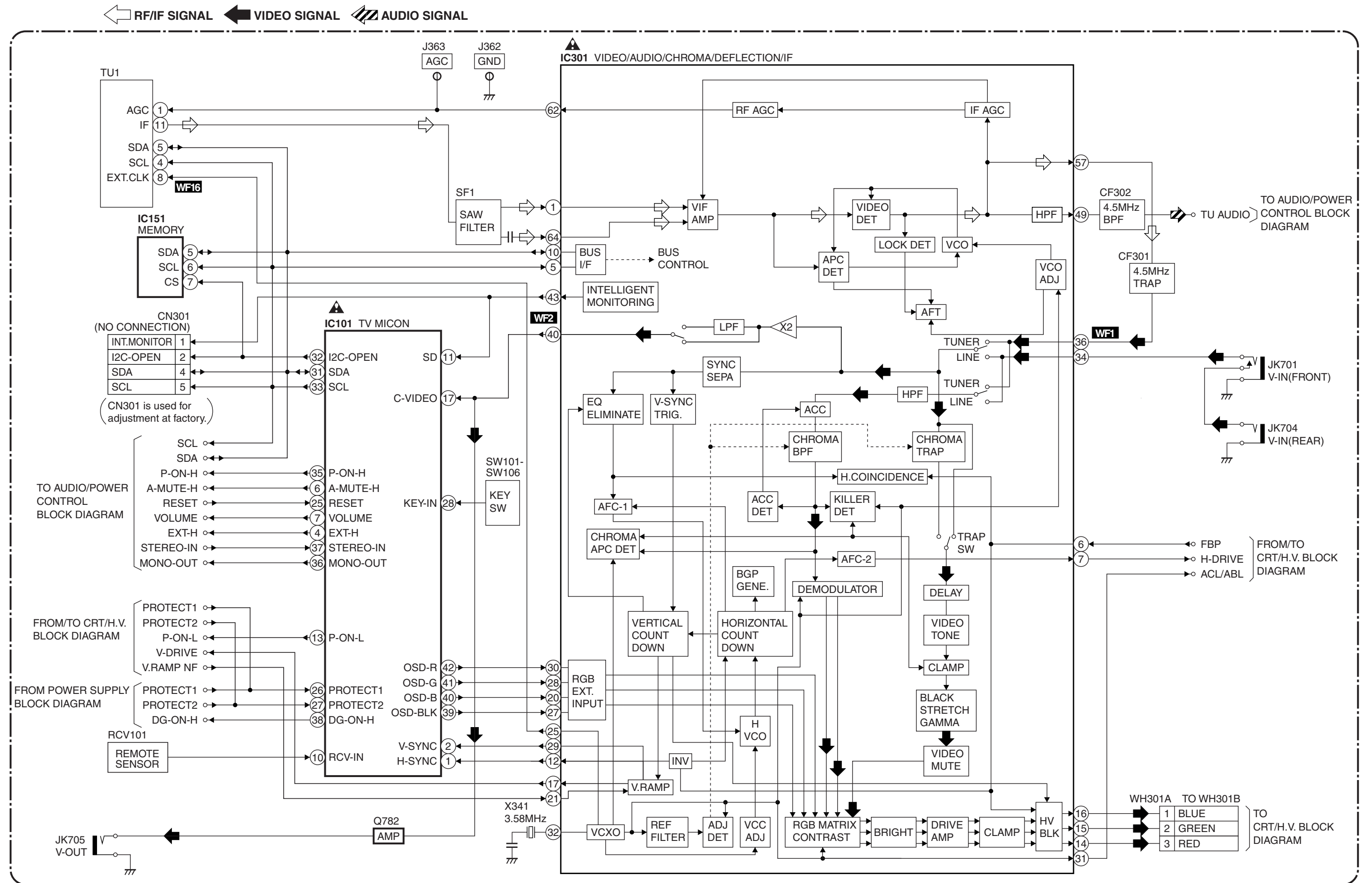
Figures



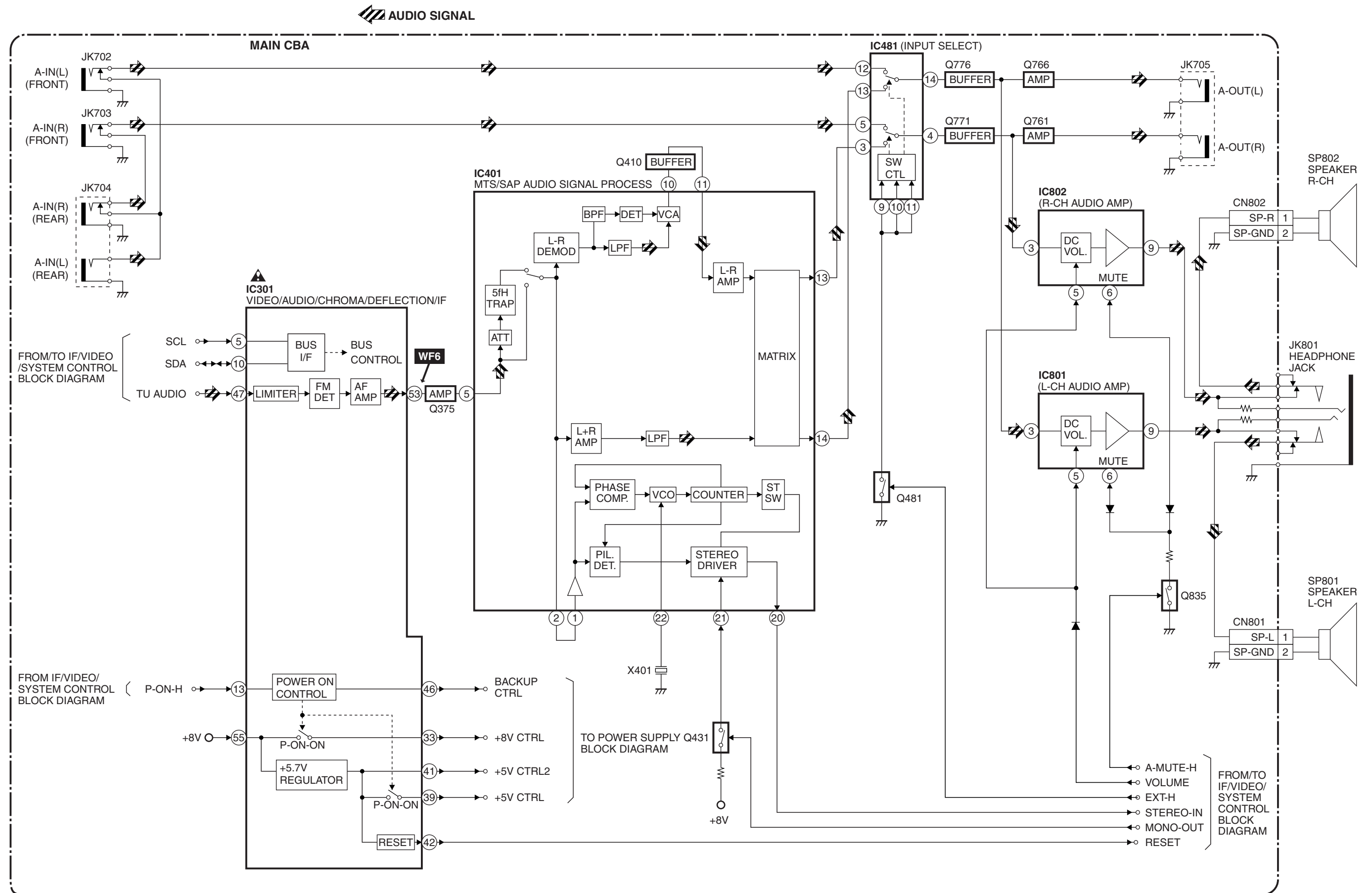
1. Loosen the Ring Lock and align red with blue dots or Crosshatch at the center of the screen by rotating (RB) C.P. Magnets. (See Fig. 7)
2. Align red / blue with green dots at the center of the screen by rotating (RB-G) C.P. Magnet. (See Fig. 8)
3. Fix the C.P. Magnets by tightening the Ring Lock.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

# BLOCK DIAGRAMS

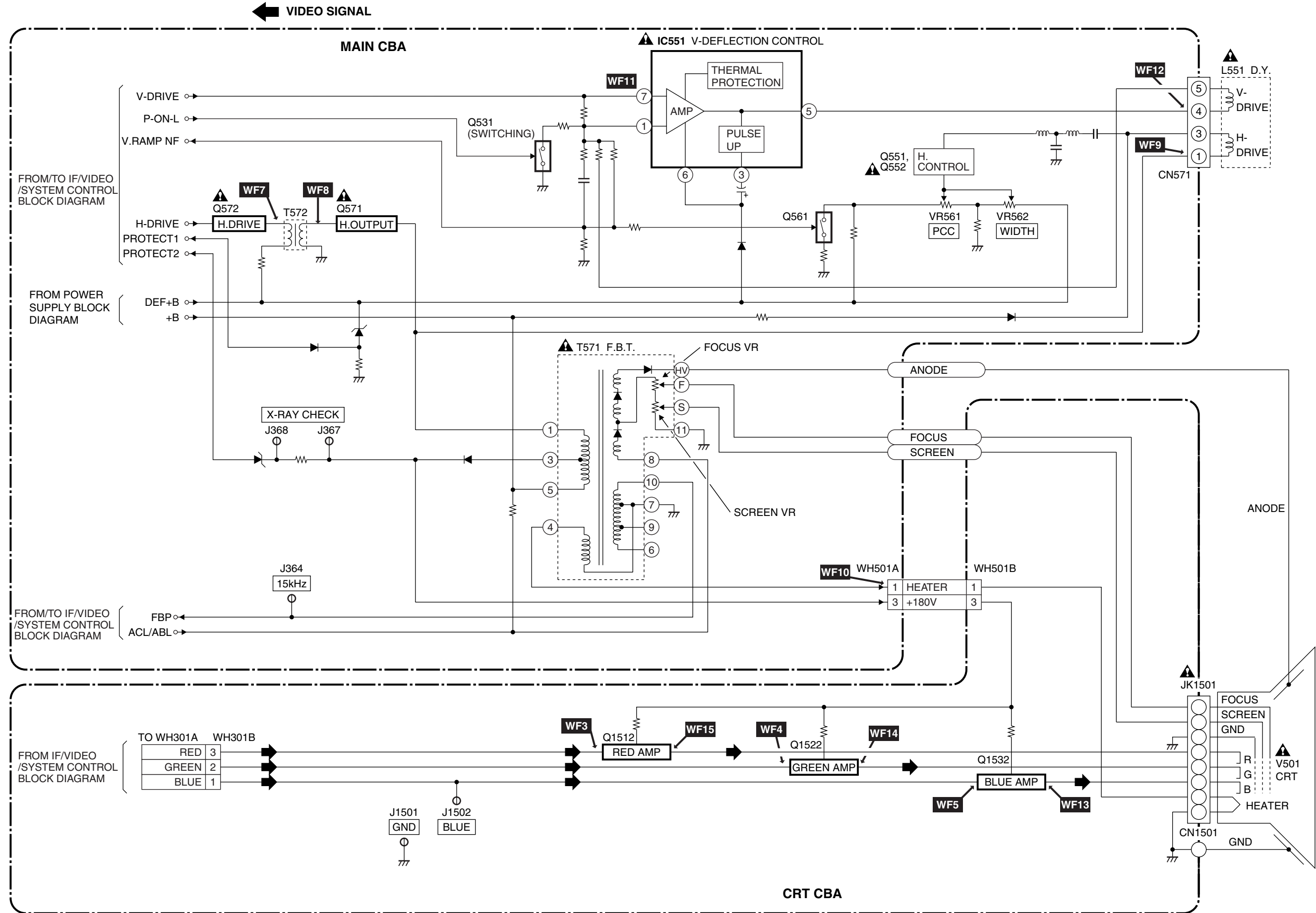
## IF/Video/System Control Block Diagram



# Audio/Power Control Block Diagram



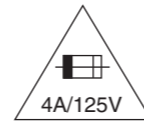
# CRT/H.V. Block Diagram



# Power Supply Block Diagram

**CAUTION !**

Fixed voltage 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.



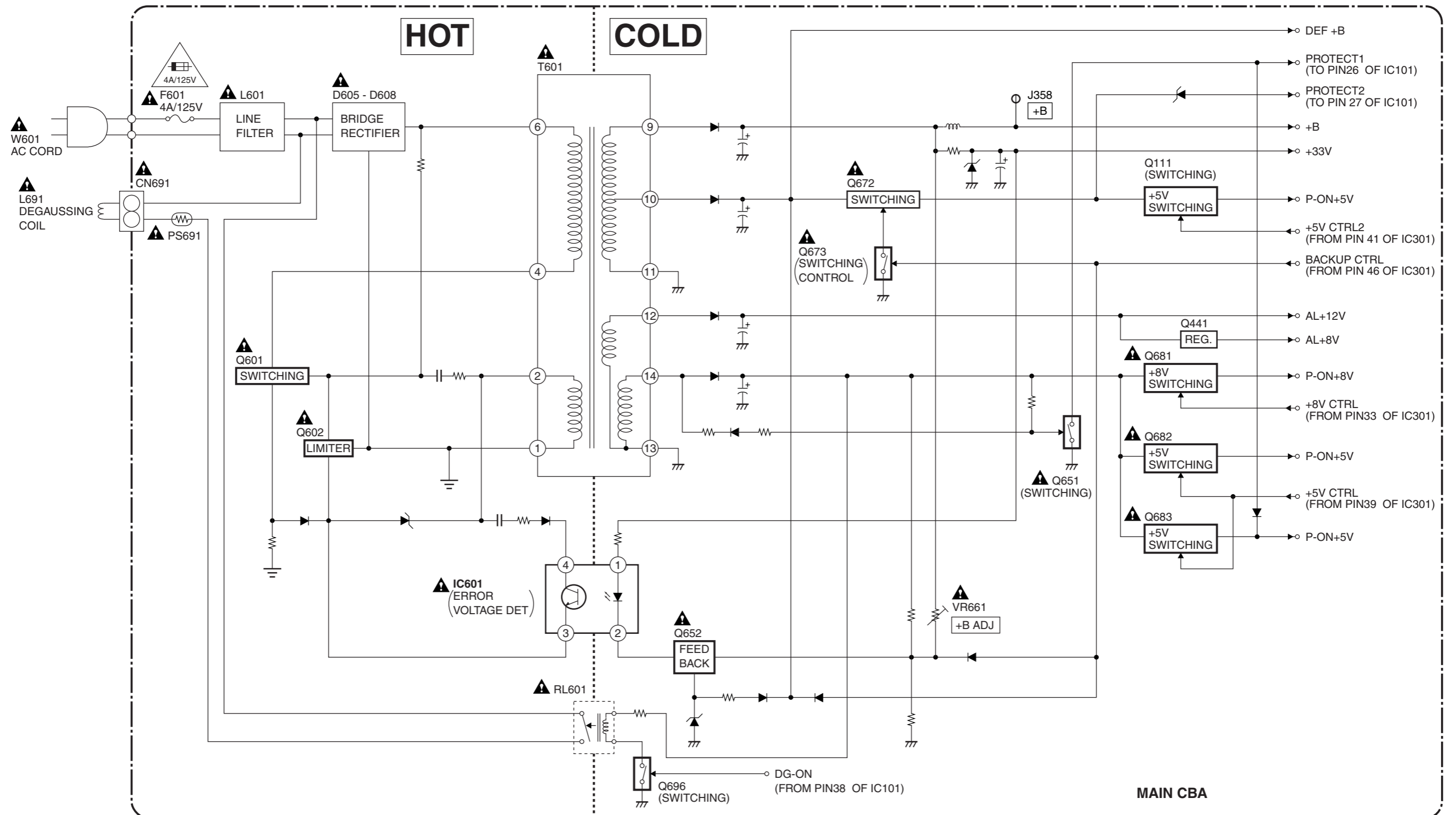
**CAUTION**

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE FUSE.  
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES  
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.  
**RISK OF FIRE-REPLACE FUSE AS MARKED.**

"This symbol means fast operating fuse."  
"Ce symbole représente un fusible à fusion rapide."

**NOTE :**

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





# 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.

### Note:

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  $\mu F$  ( $P=10^{-6}\mu F$ ).
5. All voltages are DC voltages unless otherwise specified.

### Note of Capacitors:

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

### Temperature Characteristics of Capacitors are noted with the following:

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

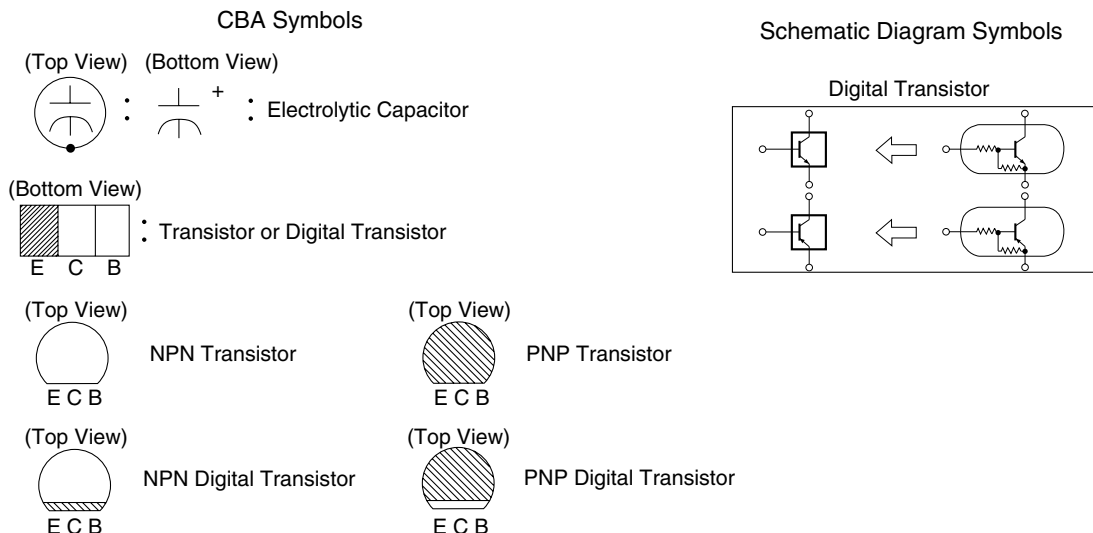
### Tolerance of Capacitors are noted with the following:

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

### Note of Resistors:

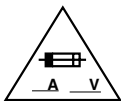
CEM --- Cement Res.    MTL --- Metal Res.    F --- Fuse Res.

Capacitors and transistors are represented by the following symbols.



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

1. **CAUTION:** FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE. ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.



RISK OF FIRE-REPLACE FUSE AS MARKED.

2. **CAUTION:**

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F001) 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:**

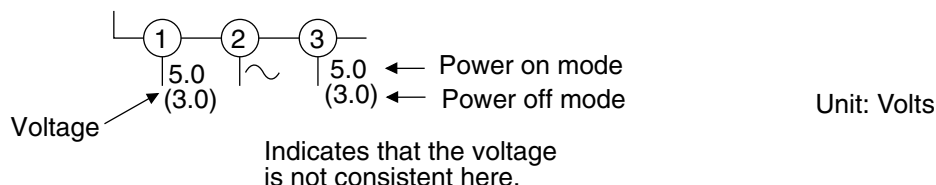
- (1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
- (2) To maintain original function and reliability of repaired units, use only original replacement parts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

4. Wire Connectors

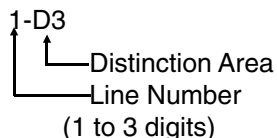
- (1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).
- (2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

5. Note: Mark "•" is a leadless (chip) component.

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

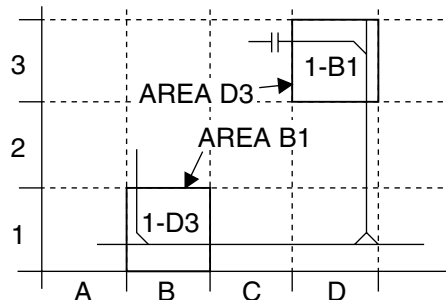


7. How to read converged lines



Examples:

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



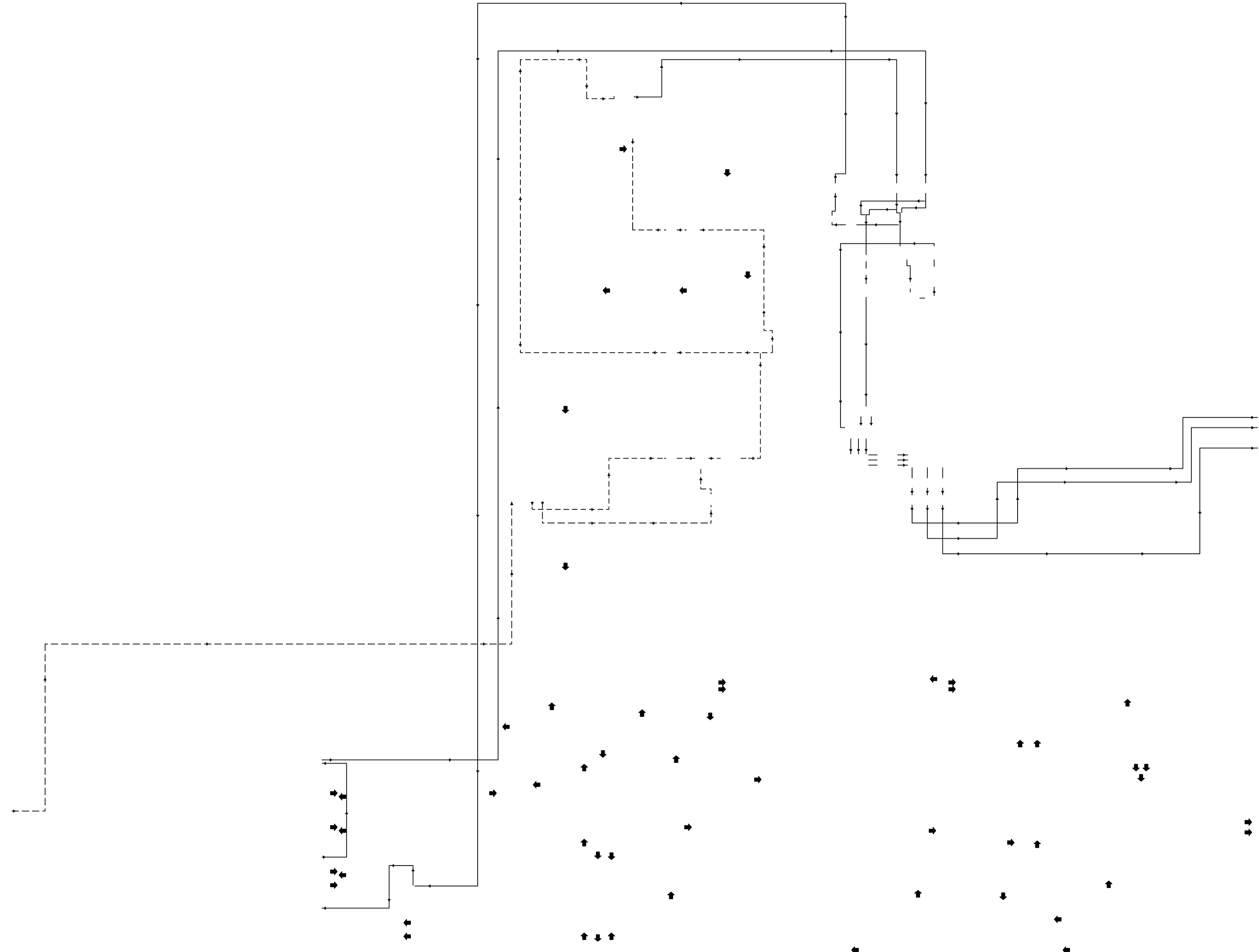
8. Test Point Information

- : 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.



A5	B5	C5	D5	E5	F5	G5
A4	B4	C4	D4	E4	F4	G4
A3	B3	C3	D3	E3	F3	G3
A2	B2	C2	D2	E2	F2	G2
A1	B1	C1	D1	E1	F1	G1

--- IF SIGNAL  
— VIDEO SIGNAL  
◀ AUDIO SIGNAL



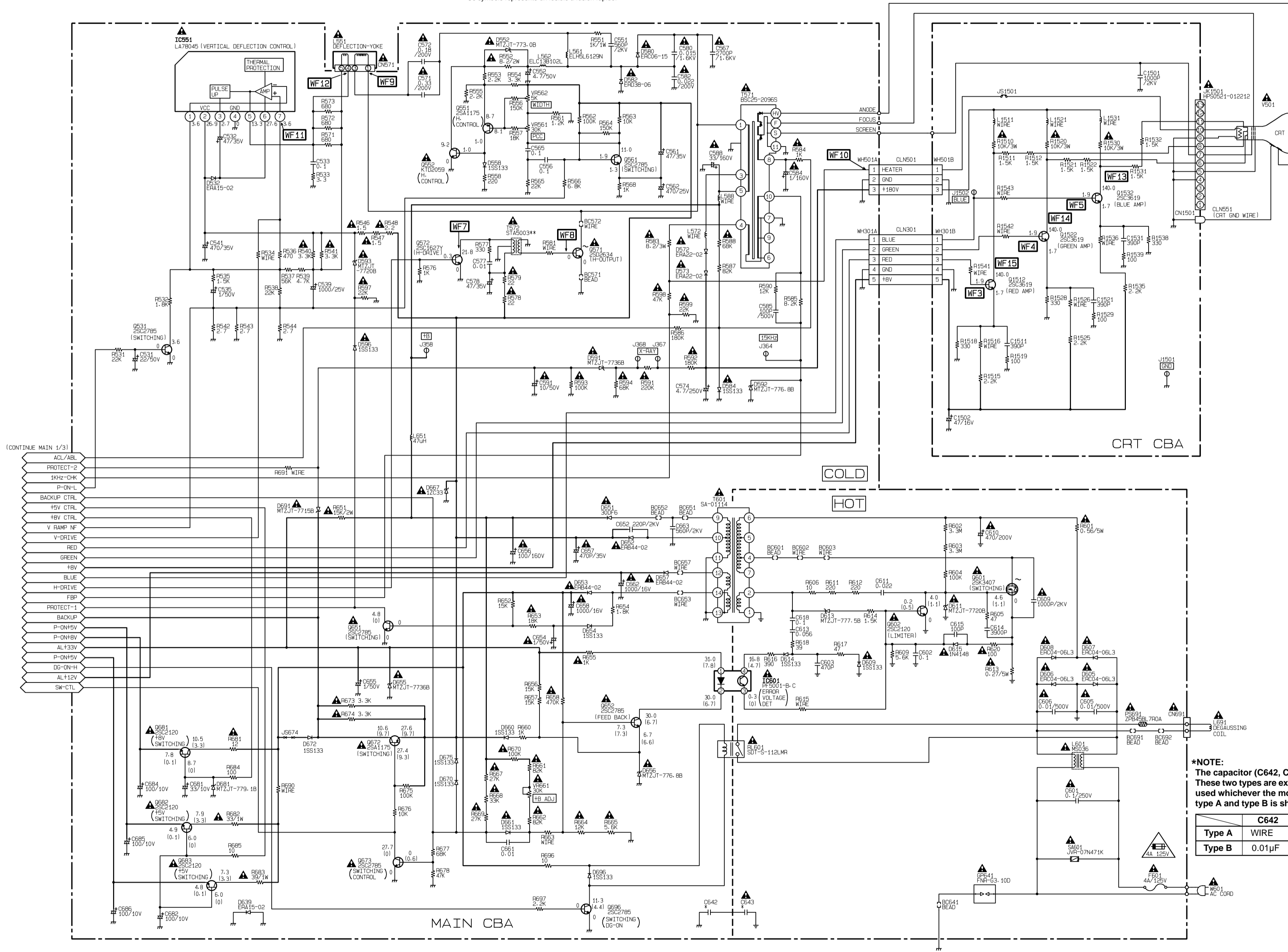
# Main 2/3 & CRT Schematic Diagram

**CAUTION!**  
Fixed voltage 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 FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.  
**RISK OF FIRE-REPLACE FUSE AS MARKED.**  
\*This symbol means fast operating fuse.\*  
\*Ce symbole représente un fusible à fusion rapide.\*

**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.



Ref No.	Position
<b>TRANSISTORS</b>	
Q1512	M-4
Q1522	M-4
Q1532	M-4
<b>TEST POINTS</b>	
J1501	M-3
J1502	L-4
<b>CONNECTORS</b>	
CN1501	M-4
WH301B	L-4
WH501B	L-5

Ref No.	Position
<b>ICS</b>	
IC501	I-5
IC601	K-2
<b>TRANSISTORS</b>	
Q571	H-4
Q551	J-4
Q552	J-4
Q561	K-4
Q571	K-4
Q672	J-4
Q601	M-2
Q602	L-2
Q651	I-2
Q652	K-2
Q672	I-2
Q673	I-1
Q681	H-2
Q682	H-1
Q683	H-1
Q696	K-1
<b>TEST POINTS</b>	
J358	J-4
J364	K-4
J367	K-4
J368	K-4
<b>CONNECTORS</b>	
CN571	I-5
CN691	M-2
WH301A	L-4
WH501A	L-4
<b>VARIABLE RESISTORS</b>	
VR561	J-5
VR562	J-5
VR661	J-1

**\*NOTE:**  
The capacitor (C642, C643) is either type A or type B. These two types are exchangeable and can be equally used whichever the model is. The difference between type A and type B is shown in the table below.

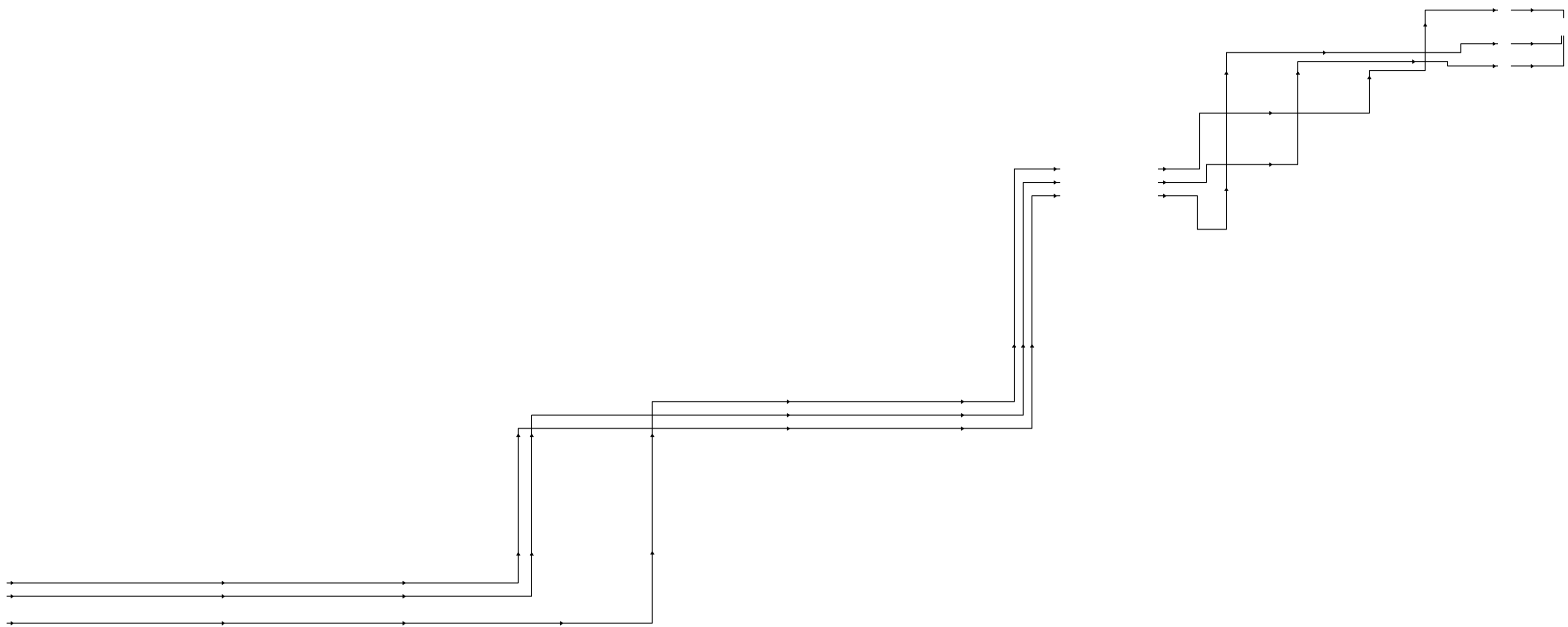
	C642	C643
Type A	WIRE	4700pF
Type B	0.01µF	0.01µF

U  
4  
W  
N  
1

H I J K L M N

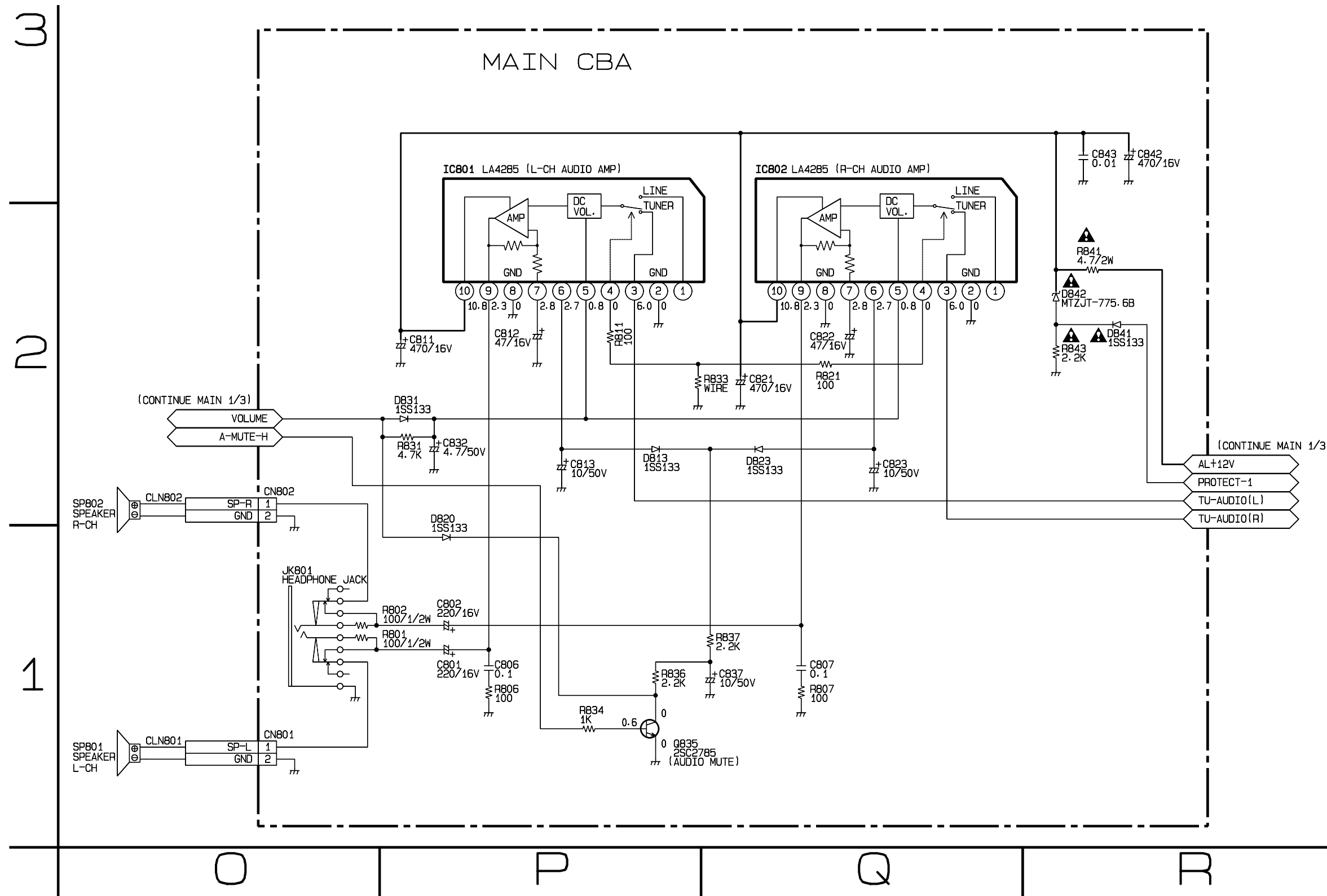
H5	I5	J5	K5	L5	M5	N5
H4	I4	J4	K4	L4	M4	N4
H3	I3	J3	K3	L3	M3	N3
H2	I2	J2	K2	L2	M2	N2
H1	I1	J1	K1	L1	M1	N1

VIDEO SIGNAL





# Main 3/3 Schematic Diagram



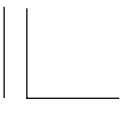
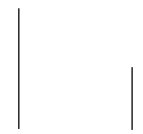
MAIN 3/3

Ref No.	Position
ICS	
IC801	P-3
IC802	Q-3
TRANSISTORS	
Q835	P-1
CONNECTORS	
CN801	O-1
CN802	O-2

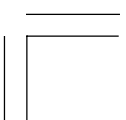
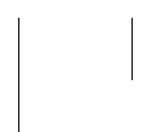
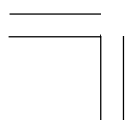
7-9

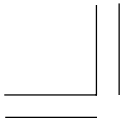
7-10

L1501SCM3

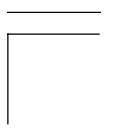
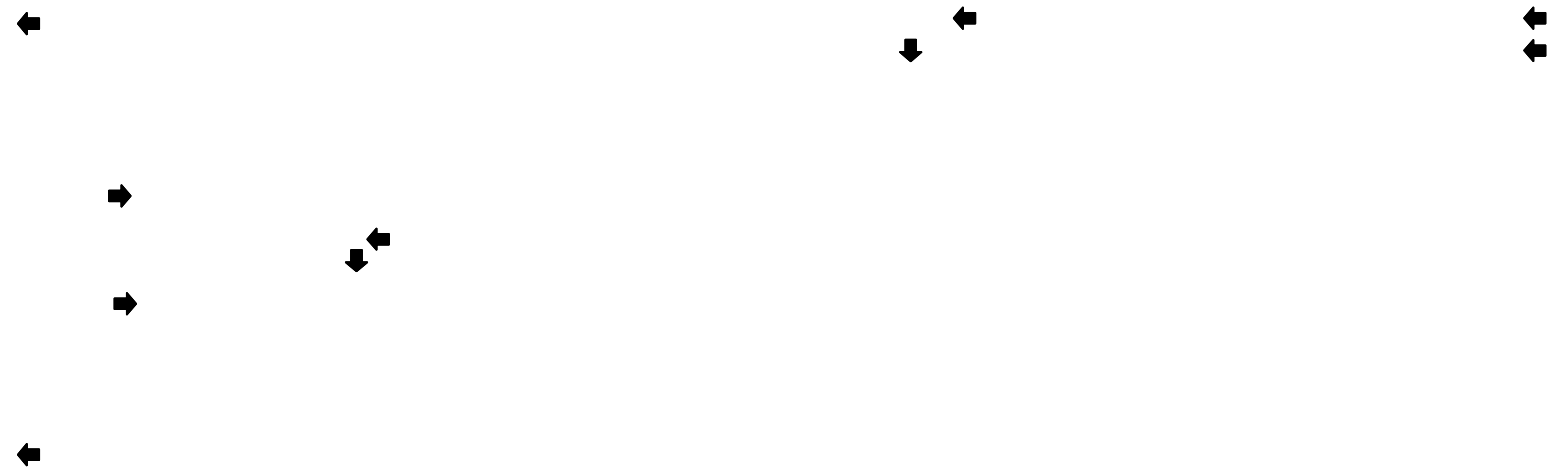
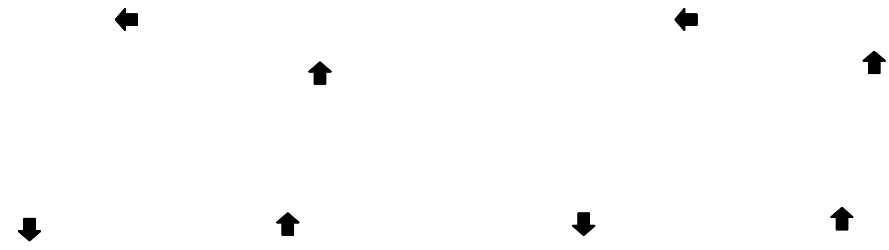


O3	P3	Q3	R3
O2	P2	Q2	R2
O1	P1	Q1	R1





← Audio

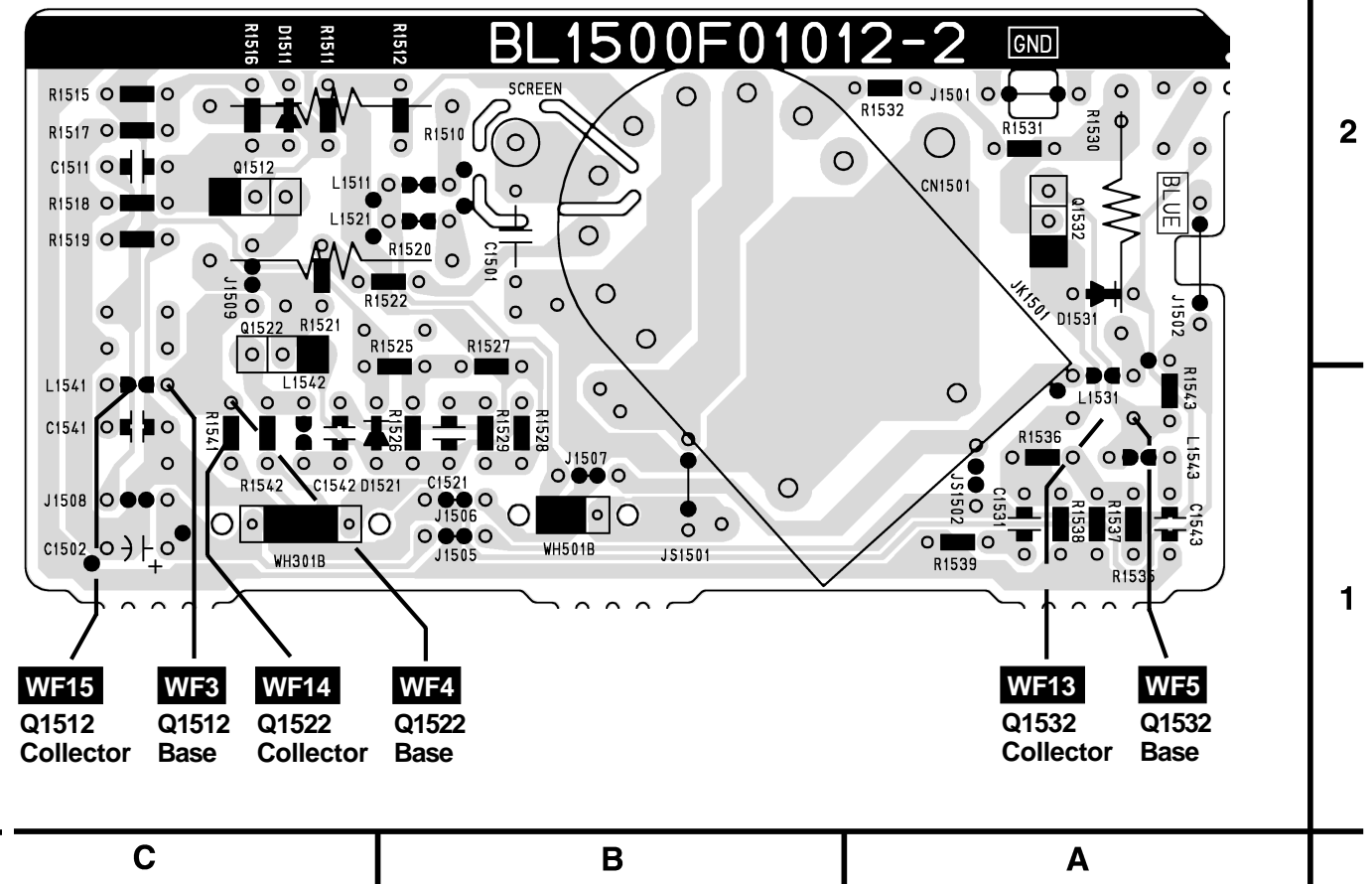
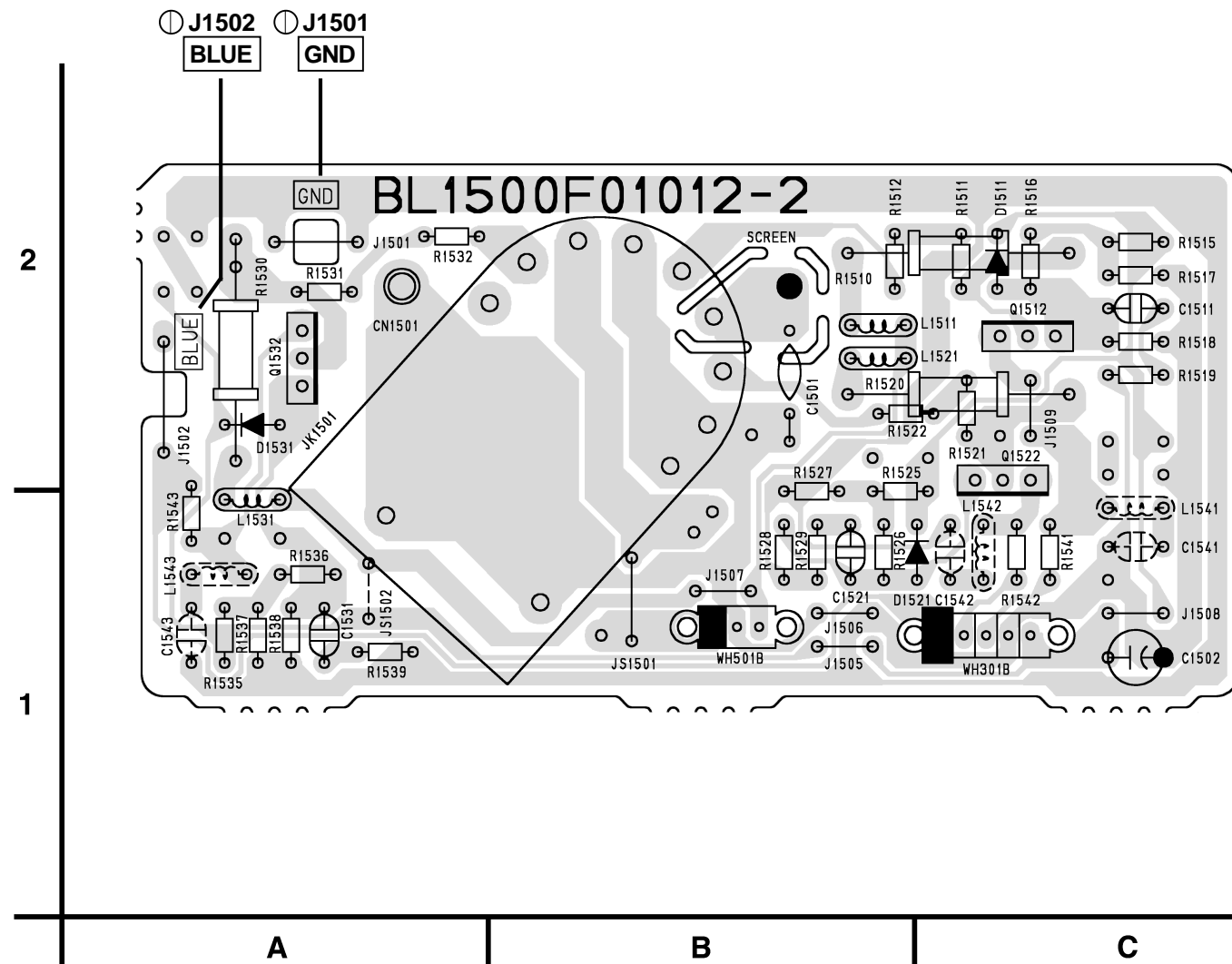


CRT CBA Top View

CRT CBA Bottom View

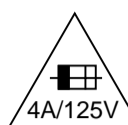
CRT CBA

Ref No.	Position
TRANSISTORS	
Q1512	C-1
Q1522	C-1
Q1532	A-1
TEST POINTS	
J1501	A-2
J1502	A-2
CONNECTORS	
CN1501	A-2
WH301B	C-1
WH501B	B-1



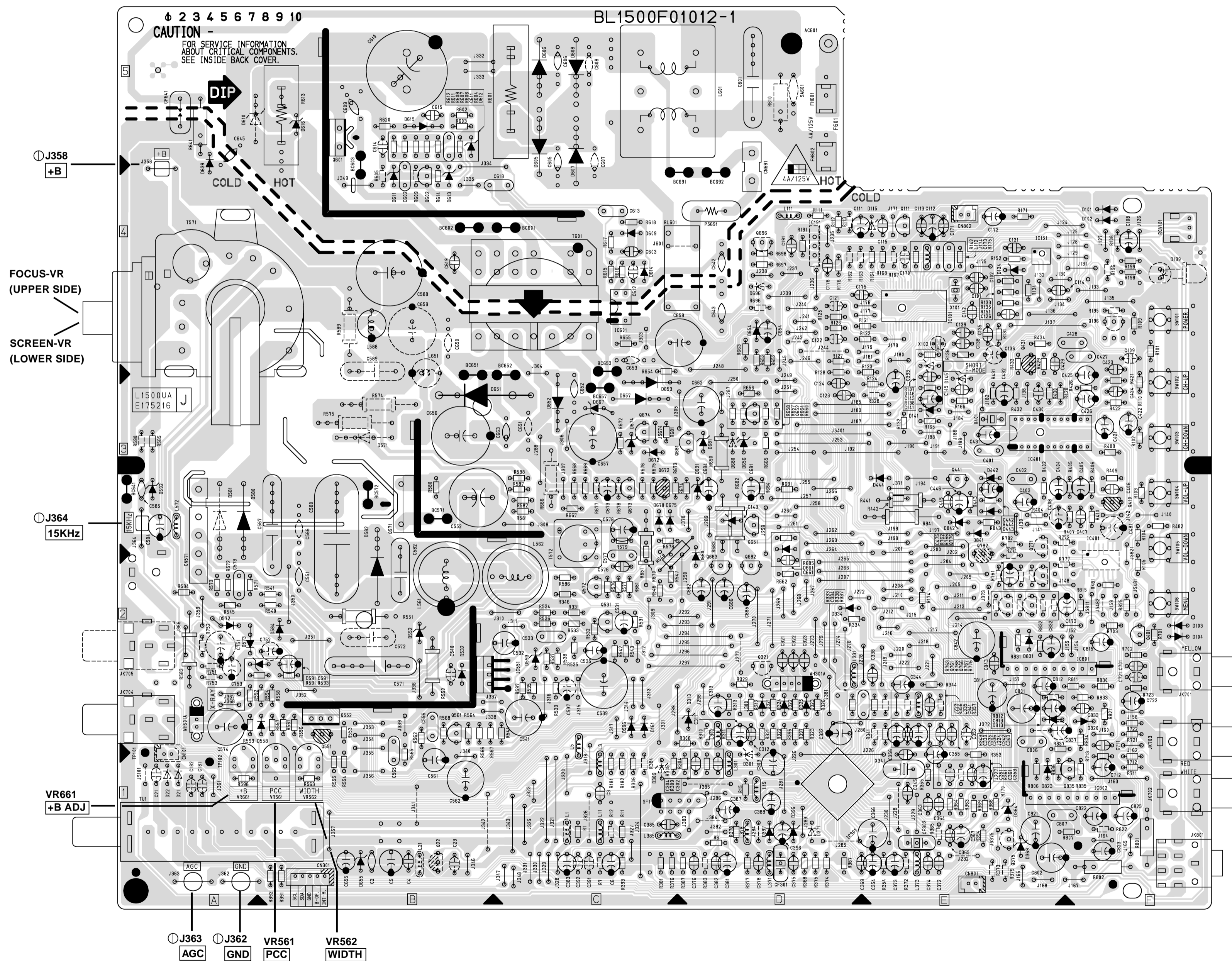
Main CBA Top View

**CAUTION !**  
Fixed voltage 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 FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE FUSE.  
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES  
D'INCENDIE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.  
**RISK OF FIRE-REPLACE FUSE AS MARKED.**  
This symbol means fast operating fuse.  
Ce symbole représente un fusible à fusion rapide.

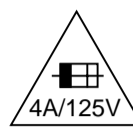
**BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.**



MAIN CBA	
Ref No.	Position
ICs	
IC101	E-4
IC151	E-4
IC301	D-1
IC401	E-3
IC481	F-2
IC551	C-2
IC601	C-4
IC801	F-2
IC802	F-1
TRANSISTORS	
Q111	E-4
Q375	E-1
Q410	F-3
Q431	E-4
Q441	E-3
Q481	F-2
Q531	C-2
Q551	B-2
Q552	B-2
Q561	B-2
Q571	B-3
Q572	C-2
Q601	B-5
Q602	B-4
Q651	D-3
Q652	D-3
Q672	C-3
Q673	C-3
Q681	D-3
Q682	D-2
Q683	D-2
Q696	D-4
Q761	E-2
Q766	E-2
Q771	E-2
Q776	E-2
Q782	E-2
Q835	F-1
TEST POINTS	
J358	A-5
J362	A-1
J363	A-1
J364	A-3
J367	A-2
J368	A-2
CONNECTORS	
CN301	B-1
CN571	A-2
CN691	D-5
CN801	E-1
CN802	E-4
WH301A	D-2
WH501A	A-2
VARIABLE RESISTORS	
VR561	B-1
VR562	B-1
VR661	A-1

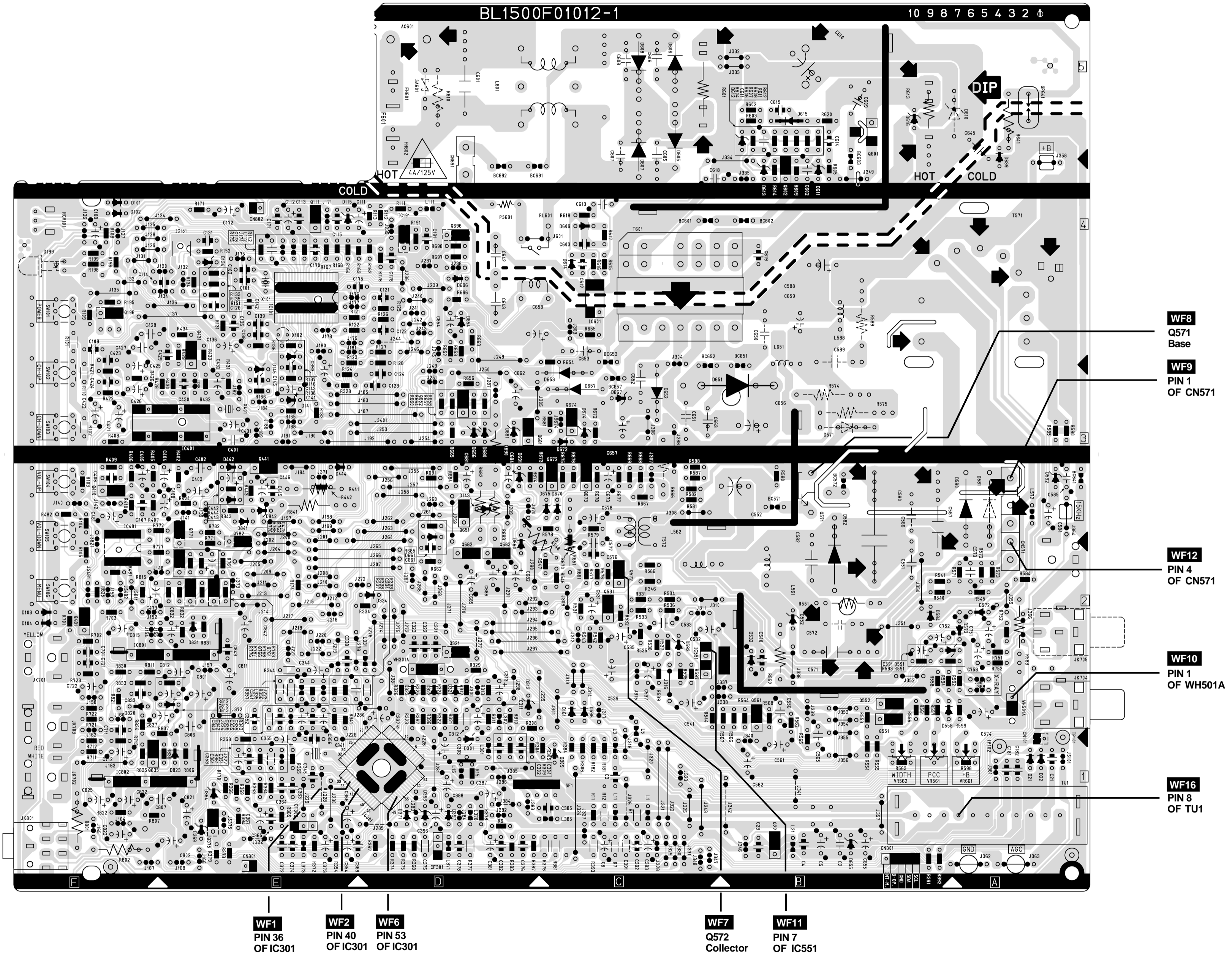
Main CBA Bottom View

**CAUTION !**  
Fixed voltage 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 FIRE HAZARD,  
REPLACE ONLY WITH THE SAME TYPE FUSE.  
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES  
D'INCENDIE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.  
**RISK OF FIRE-REPLACE FUSE AS MARKED.**  
This symbol means fast operating fuse.  
Ce symbole représente un fusible à fusion rapide.

**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.**



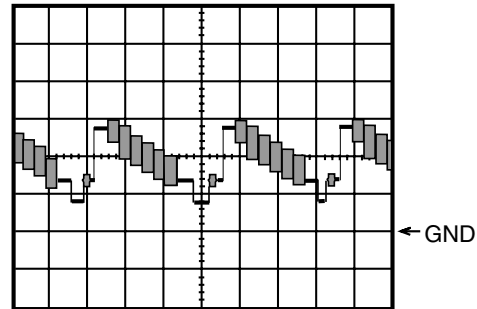
# WAVEFORMS

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

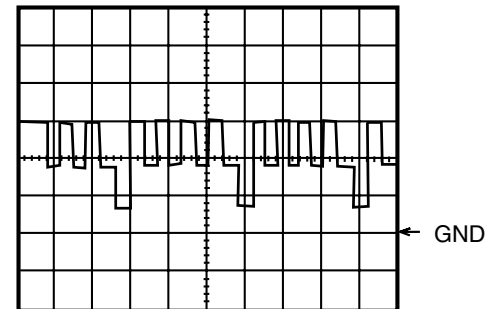
**Input:** NTSC Color Bar Signal (with 1kHz Audio Signal)

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

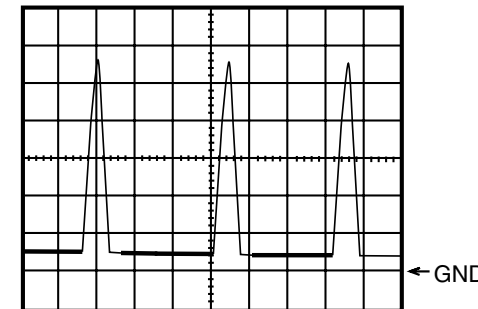
(Brightness---Center Color---Center Tint --- Center Contrast---Approx 70%)



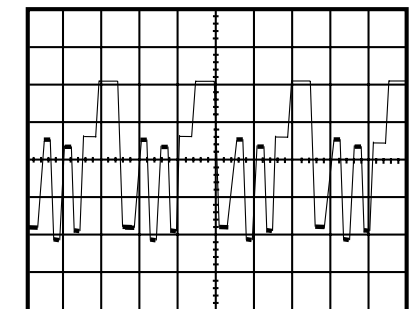
**WF1** 1DIV: 0.5V 20 $\mu$ sec  
IC301 Pin 36



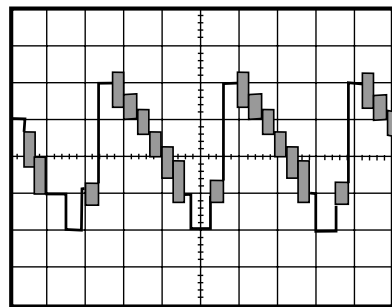
**WF5** 1DIV: 2V 20 $\mu$ sec  
Q 1532 Base



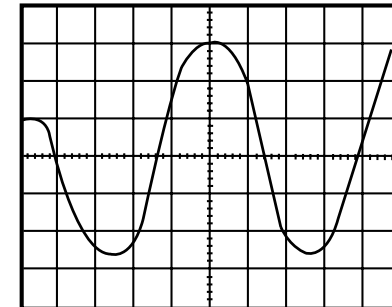
**WF9** 1DIV: 200V 20 $\mu$ sec  
CN 551 Pin 1



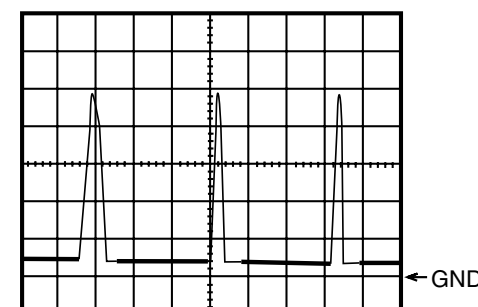
**WF13** 1DIV: 20V 20 $\mu$ sec  
Q1532 Collector



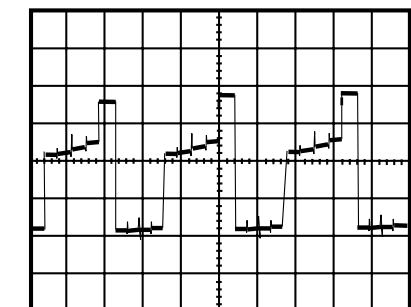
**WF2** 1DIV: 0.5V 20 $\mu$ sec  
IC 301 Pin 40



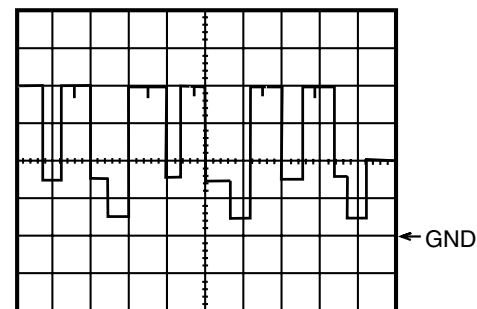
**WF6** 1DIV: 0.2V 20msec  
IC 301 Pin 53



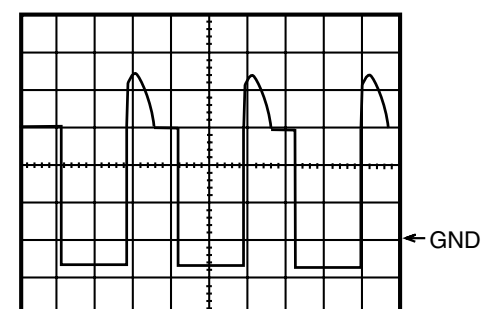
**WF10** 1DIV: 5V 20 $\mu$ sec  
WH501A Pin 2



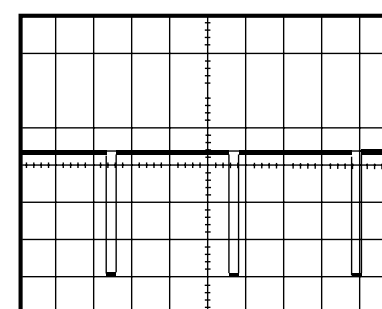
**WF14** 1DIV: 20V 20 $\mu$ sec  
Q 1522 Collector



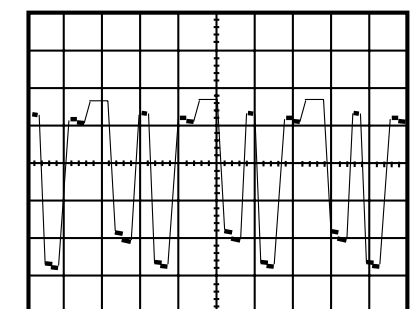
**WF3** 1DIV: 2V 20 $\mu$ sec  
Q512 Base



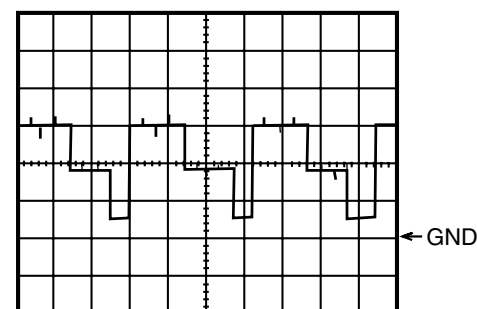
**WF7** 1DIV: 10V 20 $\mu$ sec  
Q 572 Collector



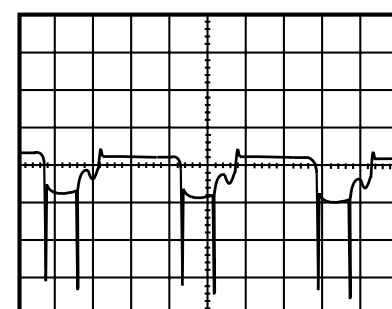
**WF11** 1DIV: 2V 5msec  
IC 551 Pin 7



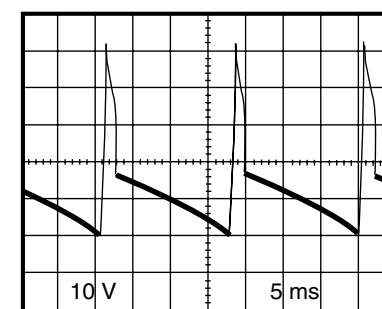
**WF15** 1DIV: 20V 20 $\mu$ sec  
Q 1512 Collector



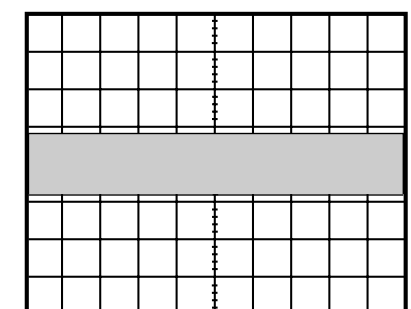
**WF4** 1DIV: 2V 20 $\mu$ sec  
Q 522 Base



**WF8** 1DIV: 5V 20 $\mu$ sec  
Q 571 Base



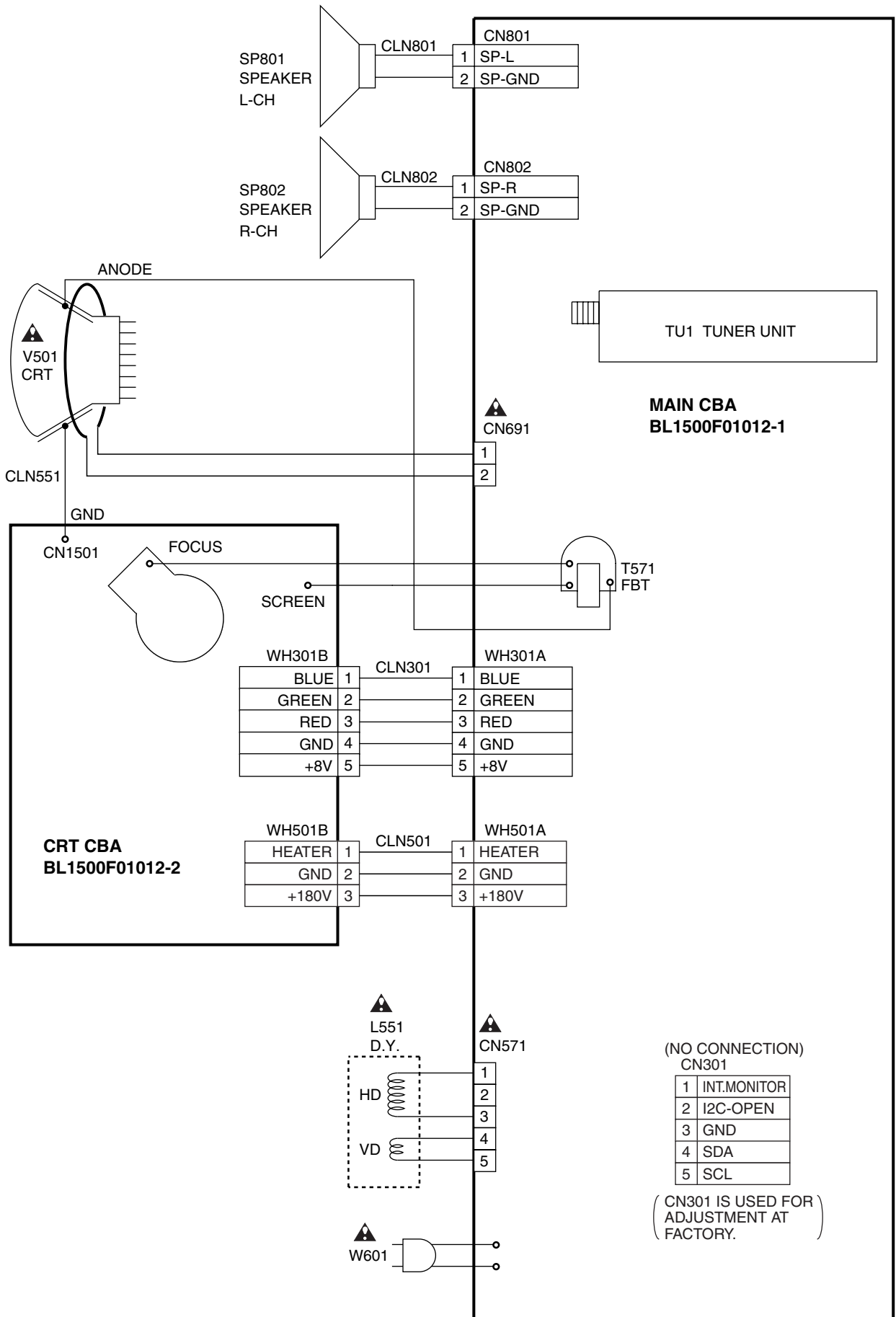
**WF12** 1DIV: 10V 5msec  
CN 551 Pin 4



**WF16** 1DIV: 0.2V 20 $\mu$ sec  
TU 1 Pin 8



# WIRING DIAGRAM





# IC PIN FUNCTIONS

## IC101 (TV Micro Computer)

Pin No.	Signal Name	Function
1	H SYNC	Input For Horizontal Synchronize Signal
2	V SYNC	Input For Vertical Synchronize Signal
3	NU	Not Used
4	EXT-H	Ext-H
5	NU	Not Used
6	A-MUTE	Audio Mute
7	VOLUME	Volume
8	FM-SW	FM Switch
9	NU	Not Used
10	RCV-IN	Input For Remote Control
11	SD	Detection SD signal
12	1kHz-CHK	Power Supply Protection
13	P-ON-L	Output for P-ON-L
14	VCC	+5V
15	HLF	Filter for CCD
16	VHOLD	VHOLD
17	CVIN	Input for Video Signal
18	CN Vss	GND
19	XIN	Input for Oscillator
20	XOUT	Output for Oscillator
21	VSS	GND
22	VCC	+5V
23	NU	Not Used
24	NU	Not Used
25	RESET	RESET
26	PROTECT-1	Power Supply Protection
27	PROTECT-2	Power Supply Protection
28	KEY IN	Key Input (Main)
29	NU	Not Used
30	NU	Not Used
31	SDA	I2C-BUS Controller Interface (Data)
32	I2C-OPEN	White Balance Adjustment Judgement
33	SCL	I2C-BUS Controller Interface (Clock)

Pin No.	Signal Name	Function
34	SPOT-KIH	SPOT-KIH
35	P-ON-H	Output for P-ON-H
36	MONO-OUT	MONO-OUT
37	STEREO-IN	STEREO-IN
38	DG-ON-H	DG-ON-H
39	OSD-BLK	Picture Shut Down Output
40	OSD-B	Blue Output
41	OSD-G	Green Output
42	OSD-R	Red Output

## IC301 (IF/Video/Chrominance/Deflection)

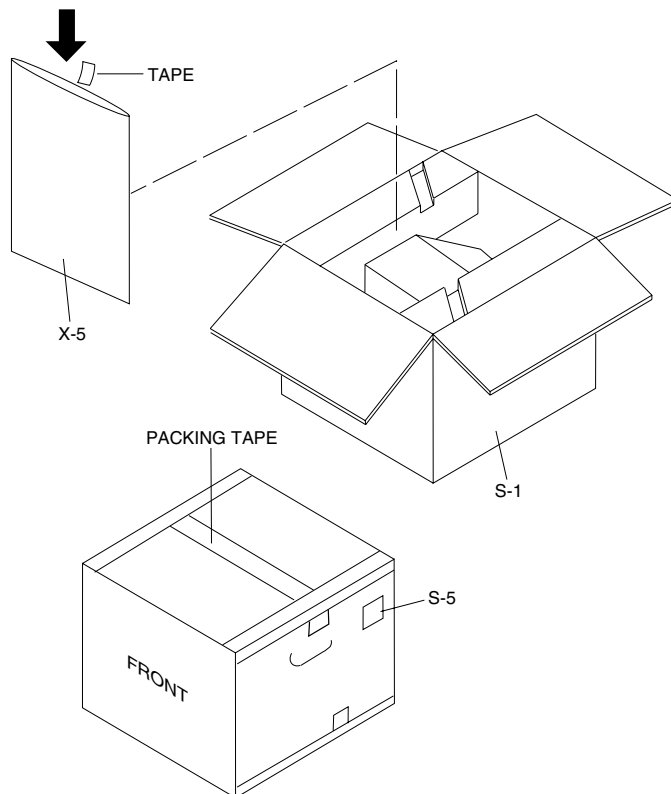
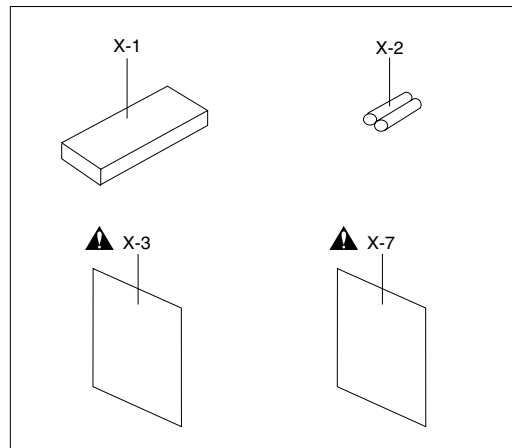
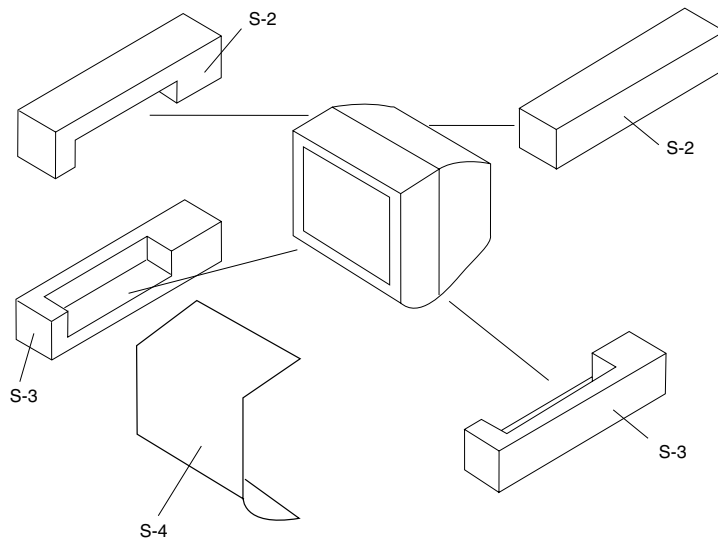
Pin No.	Signal Name	Function
1	IF IN 2	IF INput 2
2	IF-VCC1	IF-VCC 1
3	IF-VCC2	IF VCC 2
4	H. VCO-FB	H. VCO-FB
5	SCL	SCL
6	FBP- IN	FBP Input
7	H-OUT	H-Output
8	DEF GND 1	DEF GND 1
9	DEF GND 2	DEF GND 2
10	SDA	SDA
11	AFC FILTER 1	AFC Filter 1
12	INV. FBP-OUT	INV. FBP-OUT
13	P-ON-CTRL	Power on Control Output
14	R-OUT	R Output
15	G-OUT	G Output
16	B-OUT	B Output
17	V-OUT	Vertical Out
18	VCC 1	Start up VCC 1
19	VCC 2	Start up VCC 2
20	B-IN	OSD Blue Input
21	V-RAMP NF	V Ramp NF

Pin No.	Signal Name	Function
22	V RAMP	Filter for V Ramp
23	VC-VCC1	VC VCC 1
24	VC-VCC2	VC VCC 2
25	FSC-OUT	Freq. Sub carrier Output
26	SPOT-KILLER	Spot-Killer
27	FAST BLK	Fast Blanking Input
28	G-IN	OSD Green Input
29	V PULSE OUT	V-Pulse Output
30	R-IN	OSD Red Input
31	ACL/ABL	ACL/ABL
32	X-TAL 3.58	Chroma Osc
33	8.7V OUT	8.7V Output
34	EXT-IN	External Input
35	CHROMA APC FILTER	Filter for CHROMA APC
36	TV-IN	TV Input
37	VC GND 1	VC GND 1
38	VC GND 2	VC GND 2
39	VC GND 3	VC GND 3
40	Y-SW OUT	Y-SW Output
41	5.7V OUT	5.7V Output
42	Reset	MCU Reset Output
43	INTERIGENT MONITOR	Interigent Monitor Out
44	Hi Vcc 1	Hi Vcc 1
45	Hi Vcc 2	Hi Vcc 2
46	SW. REG. CONT.	Switching Reg. Control Output
47	SIF LIMITER-IN	SIF Limitter Input
48	IF AGC FILTER 2	Filter for IF AGC
49	QIF OUT	QIF Output
50	AUDIO OUT	Audio Output
51	AUDIO BYPASS	Filter for Audio Bypass

Pin No.	Signal Name	Function
52	EXT AUDIO IN	External Audio In
53	FM DETECT OUT	RF Output
54	VIF VCO-FB	VIF VCO-FB
55	REG. Vcc IN	REG. Vcc Input
56	VIDEO APC FILTER	Filter for Video APC
57	VIDEO OUT	Video Out
58	IF GND 1	GND 1
59	IF GND 2	GND 2
60	AFT OUT	AFT Out
61	QIF IN	QIF Input
62	RF AGC OUT	RF AGC Out
63	IF AGC FILTER 1	Filter for IF AGC
64	IF IN 1	IF Input 1



# Packing



# 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:

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

- Mylar is a registered trademark of E. I. Du Pont de Nemours and Company.

Ref.No.	Description	Part No.
<b>MECHANICAL PARTS</b>		
A1X	FRONT CABINET ASSEMBLY	0EM201422
A- 1	FRONT CABINET	0EM000443
A- 3	CONTROL PLATE	0EM301392
B- 4 ▲	CRITICAL PARTS WARNING LABEL	24LH199
A2X	REAR CABINET ASSEMBLY	0EM201423
A- 2	REAR CABINET	0EM101064
A- 4 ▲	RATING LABEL	0EM406302
AC 601 ▲	AC CORD (See Electrical Parts list)	
B- 1	TENSION SPRING	26WH006
B- 2	SCREW, M6 CRT M6	0EM400995
B- 9 ▲	CHASSIS NO. LABEL	0EM406244
B- 6	HEAT SINK (See Electrical Parts list)	
B- 7	HEAT SINK (See Electrical Parts list)	
B- 8	HEAT SINK (See Electrical Parts list)	
B- 10	JACK HOLDER (See Electrical Parts list)	
B- 11	CLOTH	0EM405041
B- 20 ▲	DEGAUSS HOLDER	0EM405869
B- 21	SPEAKER HOLDER	0EM405691
CLN551	CRT GND WIRE CRT GND	WX1L1200-007
CLN801	WIRE ASSEMBLY SPEAKER WIRE(180MM)	WX1L9800-001
CLN802	WIRE ASSEMBLY SPEAKER WIRE(180MM)	WX1L1131-001
L- 1	B-TITE SCREW 3X8 (See Electrical Parts list)	
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, P-TIGHT 3X12 BIND HEAD+	GBMP3120
L 551 ▲	DEFLECTION YOKE ODY-C29029	LLBY00ZQS006
L 691	DEGAUSSING COIL F-029	LLBH00ZTM029
SP 801	SPEAKER S08F02B or	DSD0808XQ010
	SPEAKER J-F097-C5	DSD0808DCP01
SP 802	SPEAKER S08F02B or	DSD0808XQ010

Ref.No.	Description	Part No.
	SPEAKER J-F097-C5	DSD0808DCP01
V 501 ▲	CRT A68KTB359X(B) or	TCRT190QS024
▲	CRT A68KTB359X(PB) or	TCRT190QS025
▲	CRT A68KTB259X2 or	TCRT190QS021
▲	CRT A68KTB259X(P)	TCRT190QS023
V501-2	WEDGE FT-00110W or	XV10000T4001
	WEDGE DB25SR	XV10000D9001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001

## ACCESSORIES AND PACKING PARTS

S- 1	CARTON L1501CB	0EM406303
S- 2	STYROFOAM TOP ASSEMBLY	0EM405907
S- 3	STYROFOAM BOTTOM ASSEMBLY	0EM405908
S- 4	SET SHEET	0EM403887
S- 5	SERIAL NO. LABEL L1501CB	0EM406304
X- 1	REMOTE CONTROL UNIT or	N0108UD
	REMOTE CONTROL UNIT	N0132UD
X- 2	DRY BATTERY R6P UM3 or	XB0M451GH001
	DRY BATTERY R6P/2S or	XB0M451T0001
	DRY BATTERY(SUNRISE) R6SSE/2S or	XB0M451MS002
	DRY BATTERY R6P(AR)2PX or	XB0M451HU002
	DRY BATTERY R6P(AR)2PX ICI	XB0M451HU003
X- 3 ▲	OWNER'S MANUAL	0EMN01787
X- 5	POLYETHYLENE BAG	Z325350
X- 7 ▲	QUICK SETUP GUIDE	0EMN01726

## ELECTRICAL PARTS

### MMA-326 CBA

	MMA-326 CBA	0ESA04083
	MAIN CBA	-----
	CRT CBA	-----

### MAIN CBA

#### CAPACITORS

C 2	CERAMIC CAP.(AX) F Z 0.01µF/50V or	CA1J103TU014
	CERAMIC CAP. YV Z 0.01µF/50V or	CCD1JZSYV103
	CERAMIC CAP. F Z 0.01µF/50V	CCD1JZS0F103
C 4	CERAMIC CAP.(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 5	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASTL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C 6	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASTL4R7
	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C 108	ELECTROLYTIC CAP. 47µF/16V M or	CE1CMASTL470
	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C 111	ELECTROLYTIC CAP. 47µF/16V M or	CE1CMASTL470
	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C 112	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASTL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C 130	CERAMIC CAP.(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 131	CERAMIC CAP.(AX) B K 220pF/50V	CCA1JKT0B221
C 135	CERAMIC CAP.(AX) B K 220pF/50V	CCA1JKT0B221
C 136	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASTL4R7
	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C 141	CERAMIC CAP.(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 142	CERAMIC CAP.(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 143	CERAMIC CAP.(AX) F Z 0.1µF/50V or	CA1J104TU014

Ref.No.	Description	Part No.
	CERAMIC CAP(AX) F Z 0.1µF/50V	CCA1JZT0F104
C 171	CERAMIC CAP(AX) B K 220pF/50V	CCA1JKT0B221
C 172	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010
C 173	FILM CAP.(P) 0.001µF/50V J or	CMA1JJS00102
	FILM CAP.(P) 0.001µF/50V J or	CA1J102MS029
	FILM CAP.(P) 0.001µF/50V J TV or	CMB1JJS00102
	MYLAR CAP. 0.001µF/50V K	2250102S
C 175	CERAMIC CAP(AX) B K 470pF/50V	CCA1JKT0B471
C 176	CERAMIC CAP(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 303	ELECTROLYTIC CAP. 220µF/10V M or	CE1AMASTL221
	ELECTROLYTIC CAP. 220µF/10V M	CE1AMASDL221
C 304	CERAMIC CAP(AX) Y M 0.01µF/16V	CDA1CMT0Y103
C 311	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010
C 312	CERAMIC CAP(AX) Y M 0.01µF/16V	CDA1CMT0Y103
C 313	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASTL4R7
	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C 321	CERAMIC CAP(AX) SL J 47pF/50V	CCA1JJS00104
C 322	CERAMIC CAP(AX) SL J 47pF/50V	CCA1JJS00104
C 323	CERAMIC CAP(AX) SL J 47pF/50V	CCA1JJS00104
C 332	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASTL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASDL471
C 334	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 336	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASTL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C 338	CERAMIC CAP(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 339	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 341	PCB JUMPER D0.6-P5.0	JW5.0T
C 342	PCB JUMPER D0.6-P5.0	JW5.0T
C 343	PCB JUMPER D0.6-P5.0	JW5.0T
C 344	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASTLR10
	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASTL0R1
	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASDLR10
	ELECTROLYTIC CAP. 0.1µF/50V M	CE1JMASDL0R1
C 345	CERAMIC CAP(AX) CH J 47pF/50V or	CA1J470TU008
	CERAMIC CAP. CH J 47pF/50V	CCD1JJSCH470
C 353	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASTLR10
	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASTL0R1
	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASDLR10
	ELECTROLYTIC CAP. 0.1µF/50V M	CE1JMASDL0R1
C 354	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASTLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASDLR47
C 355	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010
C 356	CERAMIC CAP(AX) Y N 0.015µF/6V	CDA0KNT0Y153
C 361	CERAMIC CAP(AX) F Z 0.1µF/50V or	CA1J104TU014
	CERAMIC CAP(AX) F Z 0.1µF/50V	CCA1JZT0F104
C 366	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASTL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASDL471
C 367	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100

Ref.No.	Description	Part No.
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 369	CERAMIC CAP(AX) Y N 0.022µF/6V	CDA0KNT0Y223
C 372	PCB JUMPER D0.6-P5.0	JW5.0T
C 373	ELECTROLYTIC CAP. 2.2µF/50V M LL or	CE1JMASLL2R2
	ELECTROLYTIC CAP. 2.2µF/50V LL	CE1JMASLH2R2
C 374	CERAMIC CAP(AX) B K 150pF/50V	CCA1JKT0B151
C 376	CERAMIC CAP(AX) Y M 0.01µF/16V	CDA1CMT0Y103
C 378	CERAMIC CAP(AX) B K 180pF/50V	CCA1JKT0B181
C 381	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASTLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASDLR47
C 382	CERAMIC CAP(AX) B K 100pF/50V	CCA1JKT0B101
C 383	CERAMIC CAP(AX) Y M 0.01µF/16V	CDA1CMT0Y103
C 387	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010
C 388	ELECTROLYTIC CAP. 0.22µF/50V M or	CE1JMASTLR22
	ELECTROLYTIC CAP. 0.22µF/50V M	CE1JMASDLR22
C 393	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASTLR10
	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASTL0R1
	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASDLR10
	ELECTROLYTIC CAP. 0.1µF/50V M	CE1JMASDL0R1
C 396	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 401	FILM CAP.(P) 0.0047µF/50V J or	CMA1JJS00472
	FILM CAP.(P) 0.0047µF/50V J or	CA1J472MS029
	FILM CAP.(P) 0.0047µF/50V J TV or	CMB1JJS00472
	MYLAR CAP. 0.0047µF/50V K	2250472S
C 402	MYLAR CAP. 0.22µF/50V J or	CMA1JJS00224
	FILM CAP.(P) 0.22µF/50V J or	CA1J224MS029
	FILM CAP.(P) 0.22µF/50V J TV or	CMB1JJS00224
	MYLAR CAP. 0.22µF/50V K	2250224S
C 403	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010
C 404	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASTLR10
	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASTL0R1
	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASDLR10
	ELECTROLYTIC CAP. 0.1µF/50V M	CE1JMASDL0R1
C 405	ELECTROLYTIC CAP. 47µF/16V M or	CE1CMASL470
	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C 406	CERAMIC CAP(AX) F Z 0.1µF/50V or	CA1J104TU014
	CERAMIC CAP(AX) F Z 0.1µF/50V	CCA1JZT0F104
C 408	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010
C 421	PCB JUMPER D0.6-P5.0	JW5.0T
C 422	PCB JUMPER D0.6-P5.0	JW5.0T
C 423	CERAMIC CAP(AX) X K 3300pF/16V	CDA1CKT0X332
C 424	CERAMIC CAP(AX) X K 3300pF/16V	CDA1CKT0X332
C 425	ELECTROLYTIC CAP. 2.2µF/50V M or	CE1JMASTL2R2
	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C 426	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 427	FILM CAP.(P) 0.0027µF/50V J or	CMA1JJS00272
	FILM CAP.(P) 0.0027µF/50V J or	CA1J272MS029
	FILM CAP.(P) 0.0027µF/50V J TV or	CMB1JJS00272
	MYLAR CAP. 0.0027µF/50V K	2250272S
C 428	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104

Ref.No.	Description	Part No.
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 429	CERAMIC CAP.(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 431	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010
C 432	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 442	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 445	CERAMIC CAP.(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 446	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASTL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C 473	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 475	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 481	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASDL101
C 531	ELECTROLYTIC CAP. 22µF/50V M or	CE1JMASTL220
	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASDL220
C 532	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASTL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASDL470
C 533	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 535	ELECTROLYTIC CAP. 1µF/50V M LL or	CE1JMASLL010
	ELECTROLYTIC CAP. 1µF/50V M LL	CE1JMASLL1R0
C 539	ELECTROLYTIC CAP. 1000µF/25V M or	CE1EMZNTL102
	ELECTROLYTIC CAP. 1000µF/25V M or	CE1EMZADL102
	ELECTROLYTIC CAP. 1000µF/25V M	CE1EMZNDL102
C 541	ELECTROLYTIC CAP. 470µF/35V M(VR) or	CE1GMZNTL471
	ELECTROLYTIC CAP. 470µF/35V M or	CE1GMZADL471
	ELECTROLYTIC CAP. 470µF/35V M	CE1GMZNDL471
C 551	CERAMIC CAP. LB 560pF/2KV or	CA3D561KG004
	CERAMIC CAP. BN 560pF/2KV or	CCD3DKA0B561
	CERAMIC CAP. 560pF/2KV	CA3D561PAN04
C 552	ELECTROLYTIC CAP. 4.7µF/50V M NP	622Z707
C 556	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 561	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASTL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASDL470
C 562	ELECTROLYTIC CAP. 470µF/25V M or	CE1EMZNTL471
	ELECTROLYTIC CAP. 470µF/25V M or	CE1EMZNDL471
	ELECTROLYTIC CAP. 470µF/25V M	CE1EMZADL471
C 565	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 567	PP CAP. 0.0027µF/1.6KV J or	CA3C272VC010
	PP CAP. 0.0027µF/1.6KV J or	CT3C272MS039
	METALLIZED FILM CAP. 0.0027µF/1.6KV J	CT3C272KF015
C 571	PP CAP. 0.33µF/200V J or	CA2D334VC012
	PP CAP. 0.33µF/250V J or	CT2E334MS041
	PP CAP. 0.33µF/200V J	CA2D334KF002
C 572	PP CAP. 0.18µF/200V J or	CA2D184VC012

Ref.No.	Description	Part No.
	PP CAP. 0.18µF/250V J or	CT2E184MS041
	PP CAP. 0.18µF/200V J	CA2D184KF002
C 574 ▲	ELECTROLYTIC CAP. 4.7µF/250V M or	CE2EMASTL4R7
▲	ELECTROLYTIC CAP. 4.7µF/250V M	CE2EMASDL4R7
C 577	FILM CAP.(P) 0.01µF/50V J or	CMA1JJS00103
	FILM CAP.(P) 0.01µF/50V J or	CA1J103MS029
	FILM CAP.(P) 0.01µF/50V J TV or	CMB1JJS00103
	MYLAR CAP. 0.01µF/50V K	2250103S
C 578	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASTL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASDL470
C 580 ▲	PP CAP. 0.015µF/1.6KV J or	CA3C153VC010
▲	PP CAP. 0.015µF/1.6KV J or	CT3C153MS039
▲	METALLIZED FILM CAP. 0.015µF/1.6KV J	CT3C153KF015
C 582	PP CAP. 0.022µF/200V J or	CA2D223VC013
	PP CAP. 0.022µF/200V J	CT2D223KF011
C 582 ▲	PP CAP. 0.022µF/200V K	CBP2DKD00223
C 584 ▲	ELECTROLYTIC CAP. 1µF/160V M or	CE2CMASTL1R0
▲	ELECTROLYTIC CAP. 1µF/160V M	CE2CMASDL1R0
C 585	CERAMIC CAP. B K 100pF/500V	CCD2JKS0B101
C 588	ELECTROLYTIC CAP. 33µF/160V M or	CE2CMZPDL330
	ELECTROLYTIC CAP. 33µF/160V M W/F	CE2CMZNDL330
C 591 ▲	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
▲	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 601 ▲	METALLIZED FILM CAP. 0.1µF/250V or	CT2E104MS037
▲	FILM CAP.(MP) 0.1µF/250V M or	CT2E104DC009
▲	FILM CAP.(MP) 0.1µF/250V K	CT2E104DC011
C 602	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 603	CERAMIC CAP.(AX) B K 470pF/50V	CCA1JKT0B471
C 605 ▲	CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZD0F103
▲	CERAMIC CAP. 0.01µF/AC250V	CCD2EZA0F103
C 606 ▲	CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZD0F103
▲	CERAMIC CAP. 0.01µF/AC250V	CCD2EZA0F103
C 609	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKD0B102
	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKP0B102
	CERAMIC CAP. B K 1000pF/2KV	CA3D102MR030
C 610	ELECTROLYTIC CAP. 470µF/200V or	CA2D471NC013
	ELECTROLYTIC CAP. 470µF/200V M	CE2DMZNDL471
C 611	FILM CAP.(P) 0.022µF/50V J or	CMA1JJS00223
	FILM CAP.(P) 0.022µF/50V J or	CA1J223MS029
	FILM CAP.(P) 0.022µF/50V J TV or	CMB1JJS00223
	MYLAR CAP. 0.022µF/50V K	2250223S
C 613	FILM CAP.(P) 0.056µF/50V J or	CMA1JJS00563
	FILM CAP.(P) 0.056µF/50V J or	CA1J563MS029
	FILM CAP.(P) 0.056µF/50V J TV or	CMB1JJS00563
	MYLAR CAP. 0.056µF/50V KT	2250563S
C 614	CERAMIC CAP.(AX) B K 0.0039µF/50V	CA1J392TU011
C 615	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
C 618	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 652	CERAMIC CAP. B K 220pF/2KV or	CCD3DKD0B221
	CERAMIC CAP. B K 220pF/2KV or	CCD3DKP0B221
	CERAMIC CAP. B K 220pF/2KV	CA3D221MR030
C 654 ▲	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
▲	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
▲	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
▲	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010

Ref.No.	Description	Part No.
C 655	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASTL010
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL010
C 656 ▲	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPTL101
▲	ELECTROLYTIC CAP. 100µF/160V M	CE2CMZNDL101
C 657	ELECTROLYTIC CAP. 470µF/35V M(VR) or	CE1GMZNTL471
	ELECTROLYTIC CAP. 470µF/35V M or	CE1GMZADL471
	ELECTROLYTIC CAP. 470µF/35V M	CE1GMZNDL471
C 658	ELECTROLYTIC CAP. 1000µF/16V M(VR/HC) or	CE1CMZNTL102
	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZADL102
	ELECTROLYTIC CAP. 1000µF/16V M	CE1CMZNDL102
C 661	CERAMIC CAP.(AX) F Z 0.01µF/25V	CDA1EZT0F103
C 662	ELECTROLYTIC CAP. 1000µF/16V M(VR/HC) or	CE1CMZNTL102
	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZADL102
	ELECTROLYTIC CAP. 1000µF/16V M	CE1CMZNDL102
C 663	CERAMIC CAP. LB 560pF/2KV or	CA3D561KG004
	CERAMIC CAP. BN 560pF/2KV or	CCD3DKA0B561
	CERAMIC CAP. 560pF/2KV	CA3D561PAN04
C 681	ELECTROLYTIC CAP. 33µF/10V M or	CE1AMASTL330
	ELECTROLYTIC CAP. 33µF/10V M	CE1AMASDL330
C 682	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASTL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C 684	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASTL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C 685	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASTL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C 686	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASTL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C 701	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
C 711	CERAMIC CAP.(AX) X K 3300pF/16V	CDA1CKT0X332
C 712	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASTLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASDLR47
C 721	CERAMIC CAP.(AX) X K 3300pF/16V	CDA1CKT0X332
C 722	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASTLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASDLR47
C 751	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASTL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASDL471
C 752	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASTLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASDLR47
C 753	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASTLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASDLR47
C 801	ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASTL221
	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASDL221
C 802	ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASTL221
	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASDL221
C 806	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 807	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J or	CA1J104MS029
	FILM CAP.(P) 0.1µF/50V J TV or	CMB1JJS00104
	MYLAR CAP. 0.1µF/50V K	2250104S
C 811	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASTL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C 812	ELECTROLYTIC CAP. 47µF/16V M or	CE1CMASTL470
	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C 813	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 821	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASTL471

Ref.No.	Description	Part No.
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C 822	ELECTROLYTIC CAP. 47µF/16V M or	CE1CMASTL470
	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C 823	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 832	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASTL4R7
	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C 837	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASTL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C 842	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASTL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C 843	CERAMIC CAP.(AX) F Z 0.01µF/25V	CDA1EZT0F103
<b>CONNECTORS</b>		
CN 301	CONNECTOR BASE, 5P	J3TUA05TG001
CN 571	CONNECTOR BASE, 5P or	J3TVC05TG002
	CONNECTOR BASE, 5P or	J3RTC05JG001
	CONNECTOR BASE, 5P	1730812
CN 691	CONNECTOR BASE, 2P or	J3TVC02TG002
	CONNECTOR BASE, 2P	J3RTC02JG001
CN 801	STRAIGHT CONNECTOR BASE or	J383C02UG002
	STRAIGHT PIN HEADER, 2P	1770258
CN 802	STRAIGHT CONNECTOR BASE or	J383C02UG002
	STRAIGHT PIN HEADER, 2P	1770258
<b>DIODES</b>		
D 101	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 102	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 103	PCB JUMPER D0.6-P5.0	JW5.0T
D 134	ZENER DIODE MTZJF-775.6B	QDTB0MTZJ5R6
D 146	CERAMIC CAP.(AX) F Z 0.1µF/50V or	CA1J104TU014
	CERAMIC CAP.(AX) F Z 0.1µF/50V	CCA1JZT0F104
D 161	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 301	ZENER DIODE MTZJF-775.1B	QDTB0MTZJ5R1
D 321	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 322	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 323	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 334	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 396	ZENER DIODE MTZJF-778.2B	QDTB0MTZJ8R2
D 397	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 442	ZENER DIODE MTZJF-779.1B	QDTB0MTZJ9R1
D 443	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	DIODE 1SS176TPA7	1SS176T
D 444	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148 or	NDTZ001N4148



Ref.No.	Description	Part No.
	DIODE 1SS176TPA7	1SS176T
D 532	DIODE 1N5397-B or RECTIFIER DIODE ERA15-02	NDLZ001N5397 AERA1502****
D 552	ZENER DIODE MTZJT-773.0B	QDTB00MTZJ3R0
D 558	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 572 ▲	DIODE FR104-B or RECTIFIER DIODE ERA22-02 or RECTIFIER DIODE 10ELS2	NDLZ000FR104 QDPZ0ERA2202 QDQZ0010ELS2
D 573	DIODE FR104-B or RECTIFIER DIODE ERA22-02 or RECTIFIER DIODE 10ELS2	NDLZ000FR104 QDPZ0ERA2202 QDQZ0010ELS2
D 580	FAST RECOVERY DIODE ERC06-15 or DIODE ERD07-15L	QDWZ0ERC0615 QD4ZERD0715L
D 582	FAST RECOVERY DIODE ERD38-06	QDQZ0ERD3806
D 584 ▲	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 591 ▲	ZENER DIODE MTZJT-7736B or ZENER DIODE MTZJT-7736A	QDTB00MTZJ36 QDTA00MTZJ36
D 592	ZENER DIODE MTZJT-776.8B	QDTB00MTZJ6R8
D 593	ZENER DIODE MTZJT-7720B	QDTB00MTZJ20
D 596 ▲	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 605	DIODE 1N5406 or DIODE ERC04-06L3	NDLZ001N5406 QD4Z0ERC0406
D 606	DIODE 1N5406 or DIODE ERC04-06L3	NDLZ001N5406 QD4Z0ERC0406
D 607	DIODE 1N5406 or DIODE ERC04-06L3	NDLZ001N5406 QD4Z0ERC0406
D 608	DIODE 1N5406 or DIODE ERC04-06L3	NDLZ001N5406 QD4Z0ERC0406
D 609	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 611	ZENER DIODE MTZJT-7720B	QDTB00MTZJ20
D 613	ZENER DIODE MTZJT-777.5B	QDTB00MTZJ7R5
D 614	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 639	DIODE 1N5397-B or RECTIFIER DIODE ERA15-02	NDLZ001N5397 AERA1502****
D 651	FAST RECOVERY DIODE 30DF6 or DIODE ERD29-06J	QDWZ00030DF6 QD4Z0ERD2906
D 652 ▲	DIODE FR154 or FAST RECOVERY DIODE ERB44-02	NDLZ000FR154 QDPZ0ERB4402
D 653 ▲	DIODE FR154 or FAST RECOVERY DIODE ERB44-02	NDLZ000FR154 QDPZ0ERB4402
D 654	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 655 ▲	ZENER DIODE MTZJT-7736B or ZENER DIODE MTZJT-7736A	QDTB00MTZJ36 QDTA00MTZJ36
D 656 ▲	ZENER DIODE MTZJT-776.8B	QDTB00MTZJ6R8
D 657	DIODE FR154 or FAST RECOVERY DIODE ERB44-02	NDLZ000FR154 QDPZ0ERB4402
D 660	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T

Ref.No.	Description	Part No.
D 661 ▲	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 667 ▲	DIODE 1ZC33 or ZENER DIODE RD33FB	QDQZ0001ZC33 QDQZ000RD33F
D 670	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 672	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 675	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 681	ZENER DIODE MTZJT-779.1B	QDTB00MTZJ9R1
D 691	ZENER DIODE MTZJT-7715B	QDTB00MTZJ15
D 696	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 813	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 820	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 823	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 831	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 841	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148 or DIODE 1SS176TPA7	QDTZ001SS133 NDTZ001N4148 1SS176T
D 842	ZENER DIODE MTZJT-775.6B	QDTB00MTZJ5R6
<b>ICS</b>		
IC 101 ▲	IC:TV MICOM M3727GM8-054FP	QSZAA0SMB054
IC 151	IC:MEMORY AT24C01A-10SC or IC(EEPROM) M24C01-MN6 or IC:MEMORY BR24C01AF-W or IC:MEMORY BR24C01AF	NSMMA0SAZ011 NSMMA0SSS027 QSMBA0SRM002 QSMMA0SRM002
IC 301 ▲	IC:CHROMA/IF 1 CHIP M61206FP-61 or IC:CHROMA/IF 1 CHIP M61206FP	QSZAB0RMB011 QSZAA0RMB011
IC 401	IC:USA STEREO DECODER LA7765	QSZBA0SSY003
IC 481	IC:ANALOG MULTIPLEXERS HCF4053BM1 or SW IC TC4053BF	NSZBA0SSS002 QSMBA0STS002
IC 551 ▲	IC:VERTICAL OUTPUT LA78041 or IC:VERTICAL OUTPUT LA78045	QSZBA0SSY006 QSZBA0SSY004
IC 601 ▲	PHOTO COUPLER PF5001-B,C or PHOTOCOUPLER LTV-817B-F or PHOTOCOUPLER LTV-817C-F	QPE300PF5001 NPEB0LTV817F NPEC0LTV817F
IC 801	IC:AF POWER AMP LA4285	QSZBA0SSY002
IC 802	IC:AF POWER AMP LA4285	QSZBA0SSY002
<b>COILS</b>		
L 3	PCB JUMPER D0.6-P5.0	JW5.0T
L 5	INDUCTOR 22UH-K-5FT or INDUCTOR 22UH-K	LLARKBSTU220 LLARKDQKA220
L 11	PCB JUMPER D0.6-P5.0	JW5.0T
L 15	INDUCTOR 1.2UH-J-26T or INDUCTOR 1.2UH-K-26T	LLAXJATTU1R2 LLAXKDTKA1R2

Ref.No.	Description	Part No.
L 111 ▲	INDUCTOR 22UH-K-5FT or	LLARKBSTU220
▲	INDUCTOR 22UH-K	LLARKDQKA220
L 112	INDUCTOR 22UH-J-26T or	LLAXJATTU220
	INDUCTOR 22UH-K-26T	LLAXKDTKA220
L 301	PCB JUMPER D0.6-P5.0	JW5.0T
L 302	PCB JUMPER D0.6-P5.0	JW5.0T
L 331	PCB JUMPER D0.6-P5.0	JW5.0T
L 335	INDUCTOR 100UH-K-5FT or	LLARKBSTU101
	INDUCTOR 100UH-K	LLARKDQKA101
L 371	INDUCTOR 12UH-J-26T or	LLAXJATTU120
	INDUCTOR 12UH-K-26T	LLAXKDTKA120
L 373	INDUCTOR 15UH-J-26T or	LLAXJATTU150
	INDUCTOR 15UH-K-26T	LLAXKDTKA150
L 378	INDUCTOR 3.3UH-J-26T or	LLAXJATTU3R3
	INDUCTOR 3.3UH-K-26T	LLAXKDTKA3R3
L 561	LINEARITY COIL STS007 or	LLBD00ZY2002
	LINEARITY COIL ELH5L6129N	LLBD00ZMS007
L 562	LINEARITY COIL ST02LN or	LLBD00ZY2003
	CHOKE COIL ELC13B102L	LLC102KMS001
L 572 ▲	PCB JUMPER D0.6-P5.0	JW5.0T
L 588	PCB JUMPER D0.6-P5.0	JW5.0T
L 601 ▲	LINE FILTER JLB2808 or	LLBG00ZXB004
▲	LINE FILTER MS036	LLBG00ZY2009
L 651	CHOKE COIL 47UH-K or	LLBD00PKV007
	POT COIL 47UH K or	LLBD**DMM001
	POT COIL 47UH K	LLBD00DQE001
<b>TRANSISTORS</b>		
Q 111 ▲	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
▲	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
▲	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
▲	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
▲	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
▲	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
▲	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
▲	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 375	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 410	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q 431	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q 441	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198

Ref.No.	Description	Part No.
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 481	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 531	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 551	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q 552	TRANSISTOR KTD2059(O) or	NQ400KTD2059
	TRANSISTOR KTD2059(Y) or	NQ4Y0KTD2059
	TRANSISTOR 2SD1825	Q2SD1825****
Q 561	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 571 ▲	TRANSISTOR 2SD2634	QQZZ02SD2634
Q 572 ▲	TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q 601 ▲	FET 2SK3407	QFFZ02SK3407
Q 602 ▲	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
▲	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q 651 ▲	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
▲	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
▲	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
▲	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
▲	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
▲	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
▲	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
▲	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 652 ▲	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
▲	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
▲	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
▲	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
▲	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
▲	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
▲	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
▲	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 672 ▲	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
▲	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
▲	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
▲	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ

Ref.No.	Description	Part No.
▲	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
▲	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q 673 ▲	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
▲	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
▲	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
▲	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
▲	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
▲	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
▲	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
▲	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 681 ▲	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
▲	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
▲	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q 682 ▲	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
▲	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
▲	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q 683 ▲	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
▲	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
▲	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q 696	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 761	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 766	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 771	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 776	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q 782	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267

Ref.No.	Description	Part No.
	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP or	2SA1318UZ
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q 835	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198GR TO-92 or	NQS40KTC3198
	TRANSISTOR 2SC3331(T)-AANP or	2SC3331TZ
	TRANSISTOR 2SC3331(U)-AANP or	2SC3331UZ
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
<b>RESISTORS</b>		
R 6	PCB JUMPER D0.6-P5.0	JW5.0T
R 11	PCB JUMPER D0.6-P5.0	JW5.0T
R 101	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 102	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R 103	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 104	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 105	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R 108	PCB JUMPER D0.6-P5.0	JW5.0T
R 109	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 110	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 112 ▲	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
▲	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 121	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 122	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 123	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 124	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 125	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 126	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 127	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 128	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 132	PCB JUMPER D0.6-P5.0	JW5.0T
R 133	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 134	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 135	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 136	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 137	PCB JUMPER D0.6-P5.0	JW5.0T
R 138	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 151	PCB JUMPER D0.6-P5.0	JW5.0T
R 152	PCB JUMPER D0.6-P5.0	JW5.0T
R 163	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R 164	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R 165	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 166	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R 168	PCB JUMPER D0.6-P5.0	JW5.0T
R 170	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 171	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R 174	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R 175	CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R 176	PCB JUMPER D0.6-P5.0	JW5.0T
R 181	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 182	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 304	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222

Ref.No.	Description	Part No.
R 305	PCB JUMPER D0.6-P5.0	JW5.0T
R 306	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 308	CARBON RES. 1/4W J 1k Ω or CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 310	PCB JUMPER D0.6-P5.0	JW5.0T
R 311	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R 312	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 313	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 321	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 322	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 323	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 324	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 325	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 326	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 329	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 331	CARBON RES. 1/4W J 1k Ω or CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 333	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R 334	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R 338	CARBON RES. 1/4W J 470 Ω or CARBON RES. 1/6W J 470 Ω	RCX4JATZ0471 RCX6JATZ0471
R 343	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R 344	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R 346	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R 355	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R 363	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 364	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 366	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 368	PCB JUMPER D0.6-P5.0	JW5.0T
R 369	PCB JUMPER D0.6-P5.0	JW5.0T
R 375	CARBON RES. 1/4W J 270 Ω or CARBON RES. 1/6W J 270 Ω	RCX4JATZ0271 RCX6JATZ0271
R 376	CARBON RES. 1/4W J 4.7M Ω	RCX4JATZ0475
R 377	CARBON RES. 1/4W J 82 Ω or CARBON RES. 1/6W J 82 Ω	RCX4JATZ0820 RCX6JATZ0820
R 378	CARBON RES. 1/4W J 470 Ω or CARBON RES. 1/6W J 470 Ω	RCX4JATZ0471 RCX6JATZ0471
R 379	CARBON RES. 1/4W J 1k Ω or CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 381	CARBON RES. 1/4W J 680 Ω or CARBON RES. 1/6W J 680 Ω	RCX4JATZ0681 RCX6JATZ0681
R 387	CARBON RES. 1/4W J 4.7M Ω	RCX4JATZ0475
R 391	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 392	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 393	CARBON RES. 1/4W J 1k Ω or CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 394	CARBON RES. 1/4W J 220 Ω or CARBON RES. 1/6W J 220 Ω	RCX4JATZ0221 RCX6JATZ0221
R 396 ▲	CARBON RES. 1/4W J 220 Ω or ▲ CARBON RES. 1/6W J 220 Ω	RCX4JATZ0221 RCX6JATZ0221
R 397 ▲	CARBON RES. 1/4W J 220 Ω or ▲ CARBON RES. 1/6W J 220 Ω	RCX4JATZ0221 RCX6JATZ0221
R 402	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562

Ref.No.	Description	Part No.
R 404	PCB JUMPER D0.6-P5.0	JW5.0T
R 405	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 406	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R 407	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R 408	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 409	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 410	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 421	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 422	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 426	CARBON RES. 1/4W J 220 Ω or CARBON RES. 1/6W J 220 Ω	RCX4JATZ0221 RCX6JATZ0221
R 428	CARBON RES. 1/4W J 470 Ω or CARBON RES. 1/6W J 470 Ω	RCX4JATZ0471 RCX6JATZ0471
R 429	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 430	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 431	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 432	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 434	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 441	FIXED METAL OXIDE FILM RES. 1W J 10 Ω or METAL OXIDE FILM RES. 1W J 10 Ω or METAL RES. 1W J 10 Ω or METAL OXIDE FILM RES. 1W J 10 Ω	RN01100KE007 RN01100ZU001 RN01100UB001 RN01100DP003
R 442	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 443	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 444	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R 481	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 482	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 531	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 532	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R 533	CARBON RES. 1/4W J 3.3 Ω or CARBON RES. 1/6W J 3.3 Ω	RCX4JATZ03R3 RCX6JATZ03R3
R 534	PCB JUMPER D0.6-P5.0	JW5.0T
R 535	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 536	CARBON RES. 1/4W J 470 Ω or CARBON RES. 1/6W J 470 Ω	RCX4JATZ0471 RCX6JATZ0471
R 537	CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R 538	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 539	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 540	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 541	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 542	CARBON RES. 1/4W J 2.7 Ω or CARBON RES. 1/6W J 2.7 Ω	RCX4JATZ02R7 RCX6JATZ02R7
R 543	CARBON RES. 1/4W J 2.7 Ω or CARBON RES. 1/6W J 2.7 Ω	RCX4JATZ02R7 RCX6JATZ02R7
R 544	CARBON RES. 1/4W J 2.7 Ω or CARBON RES. 1/6W J 2.7 Ω	RCX4JATZ02R7 RCX6JATZ02R7
R 546	CARBON RES. 1/4W J 1.5 Ω or CARBON RES. 1/6W J 1.5 Ω	RCX4JATZ01R5 RCX6JATZ01R5
R 547	CARBON RES. 1/4W J 1.5 Ω or CARBON RES. 1/6W J 1.5 Ω	RCX4JATZ01R5 RCX6JATZ01R5
R 548	FUSE RES. 1/2W J 2.2 Ω or FUSE RES. 1/2W J 2.2 Ω or FUSE RES. 1/2W J 2.2 Ω	RFX22R2HH001 RFX22R2KA007 RFX22R2UB001
R 551	FIXED METAL OXIDE FILM RES. 1W J 1k Ω or METAL OXIDE FILM RES. 1W J 1k Ω or METAL RESISTOR 1W J 1k Ω or METAL OXIDE FILM RES. 1W J 1k Ω	RN01102KE007 RN01102ZU001 RN01102UB001 RN01102DP003
R 552	FIXED METAL OXIDE FILM RES. 2W J 8.2 Ω or FIXED METAL OXIDE FILM RES. 2W J 8.2 Ω or METAL OXIDE FILM RES. 2W J 8.2 Ω	RN02JZQZ08R2 RN02JZPZ08R2 RN028R2ZU001
R 553	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222

Ref.No.	Description	Part No.
R 554	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 555	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 556	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R 557	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R 558	CARBON RES. 1/4W J 220 Ω or CARBON RES. 1/6W J 220 Ω	RCX4JATZ0221 RCX6JATZ0221
R 561	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R 562	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R 563	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 564	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R 565	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 566	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R 568	CARBON RES. 1/4W J 1k Ω or CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 571	CARBON RES. 1/4W J 680 Ω or CARBON RES. 1/6W J 680 Ω	RCX4JATZ0681 RCX6JATZ0681
R 572	CARBON RES. 1/4W J 680 Ω or CARBON RES. 1/6W J 680 Ω	RCX4JATZ0681 RCX6JATZ0681
R 573	CARBON RES. 1/4W J 680 Ω or CARBON RES. 1/6W J 680 Ω	RCX4JATZ0681 RCX6JATZ0681
R 576	CARBON RES. 1/4W J 1k Ω or CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 577	CARBON RES. 1/4W J 330 Ω or CARBON RES. 1/6W J 330 Ω	RCX4JATZ0331 RCX6JATZ0331
R 578	CARBON RES. 1/4W J 22 Ω or CARBON RES. 1/6W J 22 Ω	RCX4JATZ0220 RCX6JATZ0220
R 579 ▲	CARBON RES. 1/4W J 22 Ω or ▲ CARBON RES. 1/6W J 22 Ω	RCX4JATZ0220 RCX6JATZ0220
R 581	PCB JUMPER D0.6-P5.0	JW5.0T
R 583	FIXED METAL OXIDE FILM RES. 3W J 8.2 Ω or FIXED METAL OXIDE FILM RES. 3W J 8.2 Ω or METAL OXIDE FILM RES. 3W J 8.2 Ω	RN03JZQZ08R2 RN03JZPZ08R2 RN038R2ZU001
R 584 ▲	CARBON RES. 1/4W J 1k Ω or ▲ CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 585	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R 586	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R 587	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R 588	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R 590	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R 591	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R 592	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R 593	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R 594	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R 597	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 598	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R 599	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 601	CEMENT RES. 5W K 0.56 Ω or CEMENT RES. 5W K 0.56 Ω	RW05R56PG001 RW05R56DP007
R 602	CARBON RES. 1/4W J 3.3M Ω	RCX4JATZ0335
R 603	CARBON RES. 1/4W J 3.3M Ω	RCX4JATZ0335
R 604	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R 605	CARBON RES. 1/4W J 47 Ω or CARBON RES. 1/6W J 47 Ω	RCX4JATZ0470 RCX6JATZ0470
R 606	CARBON RES. 1/4W J 10 Ω or CARBON RES. 1/6W J 10 Ω	RCX4JATZ0100 RCX6JATZ0100
R 609	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R 611	CARBON RES. 1/4W J 220 Ω or CARBON RES. 1/6W J 220 Ω	RCX4JATZ0221 RCX6JATZ0221
R 612	CARBON RES. 1/4W J 220 Ω or CARBON RES. 1/6W J 220 Ω	RCX4JATZ0221 RCX6JATZ0221
R 613 ▲	CEMENT RES. 5W K 0.27 Ω or	RW05R27DP005

Ref.No.	Description	Part No.
▲	CEMENT RESISTOR 5W K 0.27 Ω	RW05R27PG001
R 614	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 615	PCB JUMPER D0.6-P5.0	JW5.0T
R 616	CARBON RES. 1/4W J 390 Ω or CARBON RES. 1/6W J 390 Ω	RCX4JATZ0391 RCX6JATZ0391
R 617 ▲	CARBON RES. 1/4W J 47 Ω or ▲ CARBON RES. 1/6W J 47 Ω	RCX4JATZ0470 RCX6JATZ0470
R 618	CARBON RES. 1/4W J 39 Ω or CARBON RES. 1/6W J 39 Ω	RCX4JATZ0390 RCX6JATZ0390
R 620	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 651 ▲	METAL OXIDE FILM RES. 2W J 15k Ω or ▲ METAL OXIDE FILM RES. 2W J 15k Ω or ▲ METAL RESISTOR 2W J 15k Ω or ▲ METAL OXIDE FILM RES. 2W J 15k Ω	RN02153KE007 RN02153ZU001 RN02153UB001 RN02153DP004
R 652	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R 653	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R 654	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R 655 ▲	CARBON RES. 1/4W J 1k Ω or ▲ CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 656	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R 657	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R 658	CARBON RES. 1/4W J 470k Ω	RCX4JATZ0474
R 660	CARBON RES. 1/4W J 1k Ω or CARBON RES. 1/6W J 1k Ω	RCX4JATZ0102 RCX6JATZ0102
R 661 ▲	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R 662 ▲	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R 663	PCB JUMPER D0.6-P5.0	JW5.0T
R 664	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R 665	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R 667 ▲	CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R 668 ▲	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R 669	CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R 670	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R 673 ▲	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 674 ▲	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R 675	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R 676	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 677	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R 678	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R 681 ▲	CARBON RES. 1/4W J 12 Ω or ▲ CARBON RES. 1/6W J 12 Ω	RCX4JATZ0120 RCX6JATZ0120
R 682 ▲	FIXED METAL OXIDE FILM RES. 1W J 33 Ω or ▲ METAL OXIDE FILM RES. 1W J 33 Ω or ▲ METAL RES. 1W J 33 Ω or ▲ METAL OXIDE FILM RES. 1W J 33 Ω	RN01330KE007 RN01330ZU001 RN01330UB001 RN01330DP003
R 683 ▲	FIXED METAL OXIDE FILM RES. 1W J 39 Ω or ▲ METAL OXIDE FILM RES. 1W J 39 Ω or ▲ FIXED METAL OXIDE FILM RES. 1W J 39 Ω or ▲ METAL OXIDE FILM RES. 1W J 39 Ω	RN01390KE007 RN01390ZU001 RN01390UB001 RN01390DP003
R 684	CARBON RES. 1/4W J 100 Ω or CARBON RES. 1/6W J 100 Ω	RCX4JATZ0101 RCX6JATZ0101
R 685	CARBON RES. 1/4W J 10 Ω or CARBON RES. 1/6W J 10 Ω	RCX4JATZ0100 RCX6JATZ0100
R 690	PCB JUMPER D0.6-P12.5	JW12.5T
R 691	PCB JUMPER D0.6-P5.0	JW5.0T
R 696	CARBON RES. 1/4W J 10 Ω or CARBON RES. 1/6W J 10 Ω	RCX4JATZ0100 RCX6JATZ0100
R 697	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 701	CARBON RES. 1/4W J 75 Ω or CARBON RES. 1/6W J 75 Ω	RCX4JATZ0750 RCX6JATZ0750

Ref.No.	Description	Part No.
R 702	PCB JUMPER D0.6-P5.0	JW5.0T
R 703	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 711	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R 712	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R 713	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 721	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R 722	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R 723	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R 751	CARBON RES. 1/4W J 75 Ω or	RCX4JATZ0750
	CARBON RES. 1/6W J 75 Ω	RCX6JATZ0750
R 752	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 753	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 761	CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
	CARBON RES. 1/6W J 220 Ω	RCX6JATZ0221
R 762	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 763	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R 766	CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
	CARBON RES. 1/6W J 220 Ω	RCX6JATZ0221
R 767	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 768	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R 771	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R 772	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 776	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R 777	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 782	CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
	CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R 801	CARBON RES. 1/2W J 100 Ω or	RCX2JZQZ0101
	CARBON RES. 1/2W J 100 Ω or	RCX2101KA013
	CARBON RES. 1/2W J 100 Ω	RCX2JZPZ0101
R 802	CARBON RES. 1/2W J 100 Ω or	RCX2JZQZ0101
	CARBON RES. 1/2W J 100 Ω or	RCX2101KA013
	CARBON RES. 1/2W J 100 Ω	RCX2JZPZ0101
R 806	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 807	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 811	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 815	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 821	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 825	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R 831	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R 833	PCB JUMPER D0.6-P5.0	JW5.0T
R 834	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R 836	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 837	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 841	FIXED METAL OXIDE FILM RES. 2W J 4.7 Ω or	RN02JZQZ04R7
	FIXED METAL OXIDE FILM RES. 2W J 4.7 Ω or	RN02JZPZ04R7

Ref.No.	Description	Part No.
	METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7ZU001
R 843	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
<b>SWITCHES</b>		
SW 101	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH SKHHAM	SST0101AL029
SW 102	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH SKHHAM	SST0101AL029
SW 103	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH SKHHAM	SST0101AL029
SW 104	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH SKHHAM	SST0101AL029
SW 105	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH SKHHAM	SST0101AL029
SW 106	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH SKHHAM	SST0101AL029
<b>MISCELLANEOUS</b>		
AC 601 ▲	AC CORD LA-2413	WAC0172LW007
B- 6	HEAT SINK(PEN)ASSEMBLY	OEM405718
B- 7	HEAT SINK(PEM)ASSEMBLY	OEM405716
B- 8	HEAT SINK(PEL)ASSEMBLY	OEM405714
B- 10	JACK HOLDER L9304UZ	OEM404325
BC 571	BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC 572	PCB JUMPER D0.6-P5.0	JW5.0T
BC 601	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC 602	PCB JUMPER D0.6-P5.0	JW5.0T
BC 603	PCB JUMPER D0.6-P5.0	JW5.0T
BC 641	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC 651	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC 652	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC 653	PCB JUMPER D0.6-P5.0	JW5.0T
BC 657	PCB JUMPER D0.6-P5.0	JW5.0T
BC 691	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC 692	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
CF 301	4.5M TRAP XT4.5MB2 or	FBE455PLN001
	CERAMIC TRAP 4.5MHz or	FBE455PMR003
	CERAMIC TRAP 4.5MHz	FBE455PMS001
CF 302	4.5M FILTER LTH4.5MCB or	FBB455PLN001
	CERAMIC FILTER SF5H4.5MCB or	FBB455PMR001
	CERAMIC FILTER 4.5MHz	FBB455PMS001
CLN301	WIRE ASSEMBLY WX1L1200-102	WX1L1200-102
CLN501	WIRE ASSEMBLY WX1L1200-103	WX1L1200-103
F 601 ▲	FUSE 4A/125V 237 TYPE or	PAGJ20CAG402
▲	FUSE STC4A125V U/CT	PAGE20CW3402
FH 601	FUSE HOLDER MSF-015 or	XH01Z00LY001
	FUSE HOLDER FH-V-03078 or	XH01Z00DK001
	HOLDER, FUSE CNT41-0014	1790424
FH 602	FUSE HOLDER MSF-015 or	XH01Z00LY001
	FUSE HOLDER FH-V-03078 or	XH01Z00DK001
	HOLDER, FUSE CNT41-0014	1790424
GP 641 ▲	GAP: FNR-G3.10D	FAZ000LD6005
JK 701	RCA JACK 1P(YELLOW)WITH SWITCH AV1-09S-3	JYRL010RP009
JK 702	RCA JACK 1P(WHITE)WITH SWITCH AV1-09S-4	JYRL010RP010
JK 703	RCA JACK 1P(RED)WITH SW ITCH AV1-09S-2	JYRL010RP008
JK 704	RCA JACK 3P MSP-293V3-324	JYRL030LY005

Ref.No.	Description	Part No.
JK 705	RCA JACK 3P MSP-213V1-423	JXRLO30LY010
JK 801	HEADPHONE JACK MSJ-035-10A B	JYSL020LY002
L- 1	B-TITE SCREW 3X8 BIND + CHROME	GBMB3080
PS 691 ▲	THERMISTOR ZPB45BL7R0A	QNZZ45BL7R0A
RCV101	REMOCON RECEIVE UNIT PIC-26042SR-2 or	USESJRSKK032
	REMOCON RECEIVE UNIT PIC-37042SR	USESJRSKK034
RL 601 ▲	POWER RELAY SDT-S-112LMR or	MRNDC12QN014
▲	POWER RELAY RPEF-12-901 or	MRNDC12KB002
▲	RELAY GD12D1-O(M)-II	MRNDC12DEC02
SA 601 ▲	SURGE ABSORBER AVR-S07D471KAAS or	QVQZ0AVRS07D
▲	SURGE ABSORBER JVR-07N471K or	NVQZVR07N471
▲	VARIATOR ENC471D-07A	QVQZ0471D07A
SF 1	SAW FILTER SAFGP45M7VHBZL2B03	FBB456PMR004
T 571 ▲	FLYBACK TRANS BSC25-2096S	LTF00CPS2028
T 572 ▲	HORIZONTAL DRAIVE TRANS STA5003**	LTH00CPY2003
T 601 ▲	SWICHING TRANS KD-01706 or	LTT00CPKT071
▲	SWITCHING TRANS SA-01114	LTT00CPSA099
TU 1	TUNER TEDH9-300A	UTUNNTUAL025
VR 561	CARBON P.O.T. 30k Ω B or	VRCB303KA011
	CARBON P.O.T. 30k Ω B	VRCB303HH014
VR 562	CARBON P.O.T. 5k Ω B or	VRCB502KA011
	CARBON P.O.T. 5k Ω B	VRCB502HH014
VR 661 ▲	CARBON P.O.T. 30k Ω B or	VRCB303KA011
▲	CARBON P.O.T. 30k Ω B	VRCB303HH014
X 101	CERAMIC RESONATOR KBR-8.0MKC or	FY0805PKC002
	CERAMIC RESONATOR CSTS0800MG03 or	FYL805PMR001
	CERAMIC RESONATOR ZTT 8.00MHz or	FY0805PLN001
	CERAMIC RESONATOR FCR8.0MC	FY0805PTE001
X 341	X'TAL 3.579545 MHz	FXD355LLN003
X 401	CERAMIC RESONATOR CSB378F2	FY0374PMR001
When C643 is 4700pF:		
C 642	PCB JUMPER D0.6-P10.0	JW10.0T
C 643 ▲	SAFETY CAP. 4700pF/250V KX	CA2E472MR050
When C643 is 0.01μF:		
C 642 ▲	SAFETY CAP. 10000pF/250V or	CCG2EMA0F103
▲	SAFETY CAP. F M 0.01μF/250V or	CCG2EMPOF103
▲	CERAMIC CAP. 0.01μF F CS	CCG2HMNOF103
C 643 ▲	SAFETY CAP. 10000pF/250V or	CCG2EMA0F103
▲	SAFETY CAP. F M 0.01μF/250V or	CCG2EMPOF103
▲	CERAMIC CAP. 0.01μF F CS	CCG2HMNOF103
<b>CRT CBA</b>		
<b>CAPACITORS</b>		
C 1501	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKD0B102
	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKP0B102
	CERAMIC CAP. B K 1000pF/2KV	CA3D102MR030
C 1502	ELECTROLYTIC CAP. 47μF/16V M or	CE1CMASL470
	ELECTROLYTIC CAP. 47μF/16V M	CE1CMASDL470
C 1511	CERAMIC CAP.(AX) B K 390pF/50V	CCA1JKT0B391
C 1521	CERAMIC CAP.(AX) B K 390pF/50V	CCA1JKT0B391
C 1531	CERAMIC CAP.(AX) B K 390pF/50V	CCA1JKT0B391
<b>DIODE</b>		
D 615 ▲	SWITCHING DIODE 1N4148 T-77	QDTZ001N4148
<b>TRANSISTORS</b>		
Q 1512	TRANSISTOR 2SC3619	QQ9Z02SC3619
Q 1522	TRANSISTOR 2SC3619	QQ9Z02SC3619
Q 1532	TRANSISTOR 2SC3619	QQ9Z02SC3619
<b>RESISTORS</b>		
R 1510	FIXED METAL OXIDE FILM RES. 3W J 10k Ω or	RN03103KE008
	METAL RESISTOR 3W J 10k Ω or	RN03103ZU001
	METAL RES. 3W J 10k Ω or	RN03103UB503

Ref.No.	Description	Part No.
	FIXED METAL OXIDE FILM RES. 3W J 10k Ω	RN03103DP005
R 1511	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 1512	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 1515	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 1516	PCB JUMPER D0.6-P5.0	JW5.0T
R 1518	CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
	CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R 1519	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 1520	FIXED METAL OXIDE FILM RES. 3W J 10k Ω or	RN03103KE008
	METAL RESISTOR 3W J 10k Ω or	RN03103ZU001
	METAL RES. 3W J 10k Ω or	RN03103UB503
	FIXED METAL OXIDE FILM RES. 3W J 10k Ω	RN03103DP005
R 1521	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 1522	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 1525	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 1526	PCB JUMPER D0.6-P5.0	JW5.0T
R 1528	CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
	CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R 1529	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 1530	FIXED METAL OXIDE FILM RES. 3W J 10k Ω or	RN03103KE008
	METAL RESISTOR 3W J 10k Ω or	RN03103ZU001
	METAL RES. 3W J 10k Ω or	RN03103UB503
	FIXED METAL OXIDE FILM RES. 3W J 10k Ω	RN03103DP005
R 1531	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 1532	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R 1535	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R 1536	PCB JUMPER D0.6-P5.0	JW5.0T
R 1538	CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
	CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R 1539	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R 1541	PCB JUMPER D0.6-P5.0	JW5.0T
R 1542	PCB JUMPER D0.6-P5.0	JW5.0T
R 1543	PCB JUMPER D0.6-P5.0	JW5.0T
<b>MISCELLANEOUS</b>		
CN1501	PIN CONNECTOR 005P-5100	JTEA001TG001
JK1501 ▲	CRT SOCKET ISHS40ST or	JSCC290PK006
▲	CRT SOCKET HPS0521-012212	JSCC290HD012
L 1511	PCB JUMPER D0.6-P5.0	JW5.0T
L 1521	PCB JUMPER D0.6-P5.0	JW5.0T
L 1531	PCB JUMPER D0.6-P5.0	JW5.0T

6427CTB

L1501CB