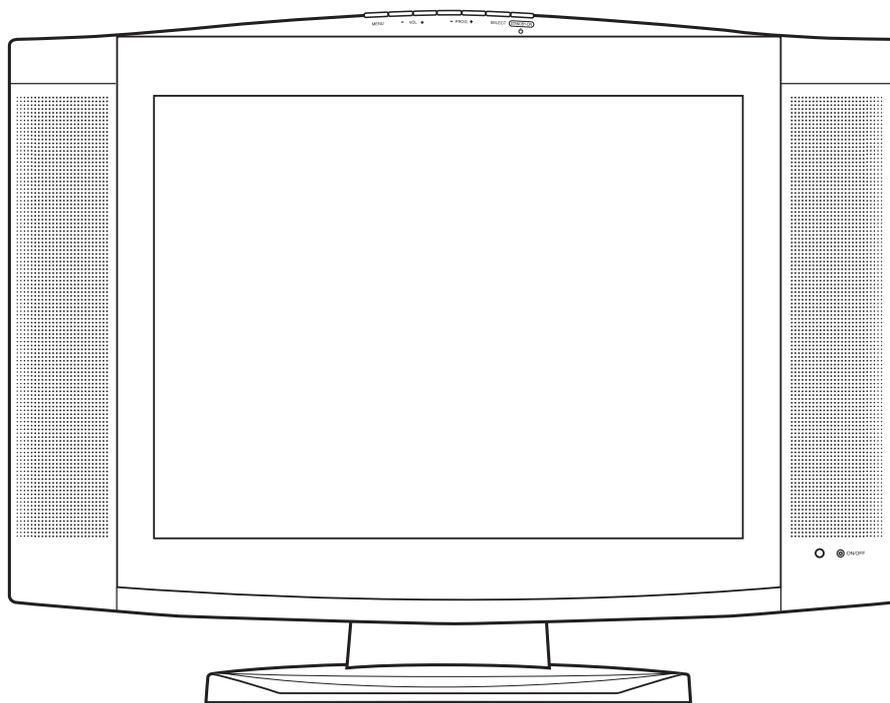




# SERVICE MANUAL

## 20" COLOR LCD TELEVISION LCD-A2005



# 20" COLOR LCD TELEVISION

## LCD-A2005

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**The LCD panel is manufactured to provide many years of useful life. Occasionally a few non active pixels may appear as a tiny spec of color. This is not to be considered a defect in the LCD screen.**

# SPECIFICATIONS

## <TUNER>

ANT. Input----- 80 dB $\mu$ V, Video: PAL 87.5%, Audio: 30 kHz dev (1 kHz Sin)

Test Input Signal----- 400Hz 30% modulation

Description	Condition	Unit	Nominal	Limit
1. Intermediate Freq.	Picture Sound	MHz	45.75	-
		MHz	41.25	-
2. Color Killer Sens.	CH-3	dB $\mu$ V	20	23
3. AFT Pull In Range (10mV input)	-	MHz	$\pm$ 1.6	$\pm$ 0.7

## <LCD PANEL>

Description	Condition	Unit	Nominal	Limit
1. Number of Pixels	Horizontal Vertical	pixels	640 x 3	-
		pixels	480	-
2. Brightness	-	cd/m <sup>2</sup>	450	-
3. Response Time	-	msec	16	-
4. Support Color	-	-	16mil.(8bit)	-
5. Viewing Angle	Horizontal Vertical	°	-85 to 85	-
		°	-85 to 70	-

## <VIDEO>

Description	Condition	Unit	Nominal	Limit
1. Over Scan	Horizontal Vertical	%	8.5	10 $\pm$ 5
		%	6.5	10 $\pm$ 5
2. Color Temperature	-	°K	8500	-
	x		0.29	0.29 $\pm$ 0.03
	y		0.30	0.30 $\pm$ 0.03
3. Resolution	Horizontal Vertical	line	400	<250
		line	350	<300

## <AUDIO>

All items are measured across 8 $\Omega$  load at speaker output terminal with L.P.F.

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power	10% THD: Lch/Rch	W	1.0/1.0	0.8/0.8
2. Audio Distortion	500mW: Lch/Rch	%	1.0/1.0	<3
3. Audio Freq. Response	-6dB: Lch	Hz	50 to 12K	-
	-6dB: Rch	Hz	50 to 12K	-
4. Audio S/N	RF	dB	60	45
	VIDEO 1	dB	60	45
	VIDEO 2	dB	60	45

### 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.

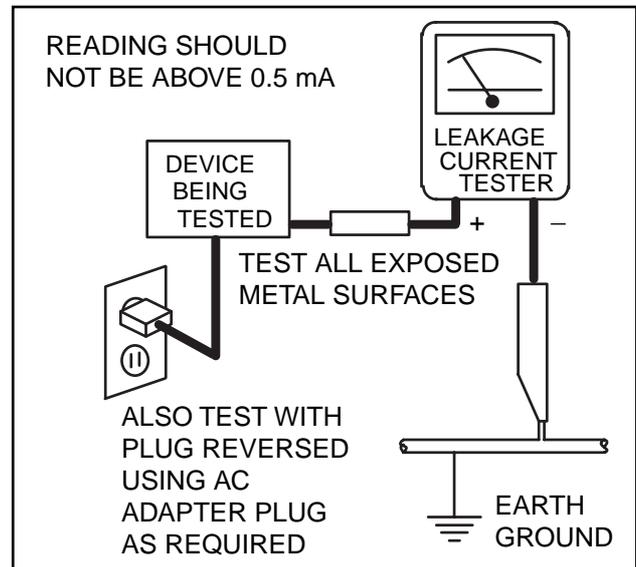
# IMPORTANT SAFETY PRECAUTIONS

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 LCD TV Circuit

1. **Before returning an instrument to the customer**, always make a safety check of the entire instrument, including, but not limited to, the following items:
  - a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**
  - b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the LCD module 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 230 V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American

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



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

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the LCD module.
3. **Design Alteration Warning** - Do not alter or add to the mechanical or electrical design of this LCD 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. Hot Chassis Warning -

- a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.
  - b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.
  - c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.
5. 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.
6. 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.

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

# 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	Clearance Distance (d), (d')
230 V	$\geq 3\text{mm}(d)$ $\geq 6\text{mm}(d')$

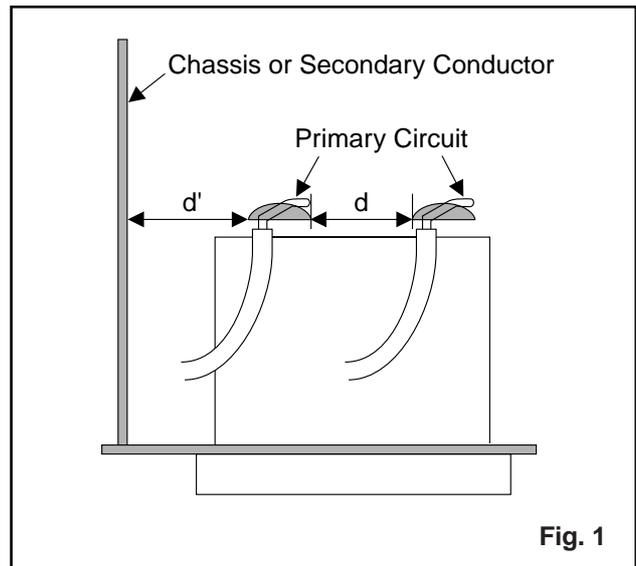
**Note:** This table is unofficial and for reference only. Be sure to confirm the precise values.

## 2. Leakage Current Test

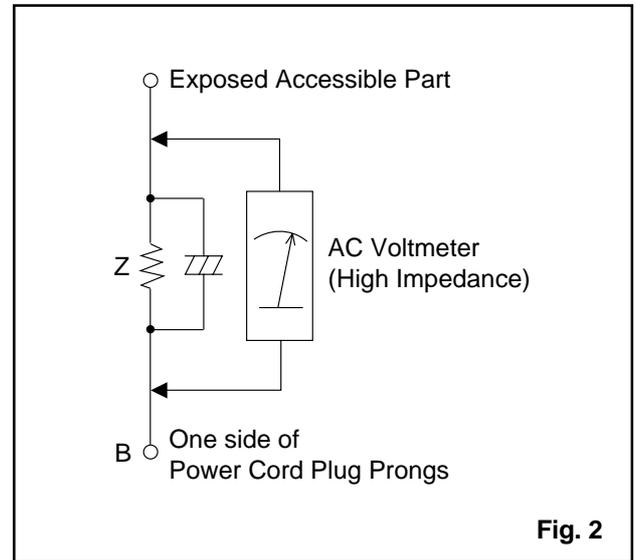
Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

### Measuring Method : (Power ON)

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



**Fig. 1**



**Fig. 2**

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

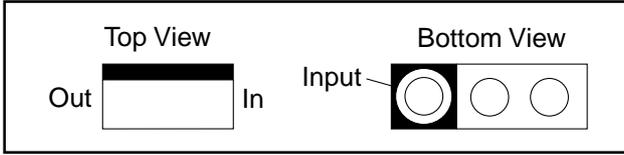
AC Line Voltage	Load Z	Leakage Current (i)	One side of power cord plug prongs (B) to:
230 V	2kΩ RES. Connected in parallel	$i \leq 0.7\text{mA AC Peak}$ $i \leq 2\text{mA DC}$	RF or Antenna terminals
	50kΩ RES. Connected in parallel	$i \leq 0.7\text{mA AC Peak}$ $i \leq 2\text{mA DC}$	A/V Input, Output

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

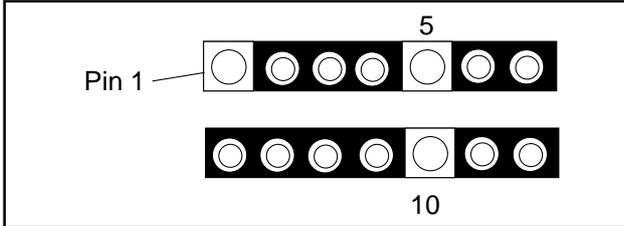
# STANDARD NOTES FOR SERVICING

## Circuit Board Indications

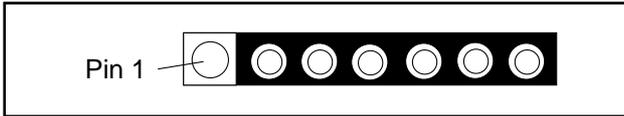
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

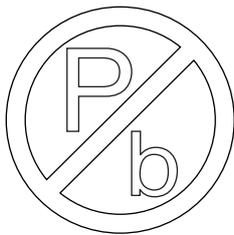


3. The 1st pin of every male connector is indicated as shown.



## Pb (Lead) Free Solder

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



Pb free mark

## How to Remove / Install Flat Pack-IC

### 1. Removal

**With Hot-Air Flat Pack-IC Desoldering Machine:**

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

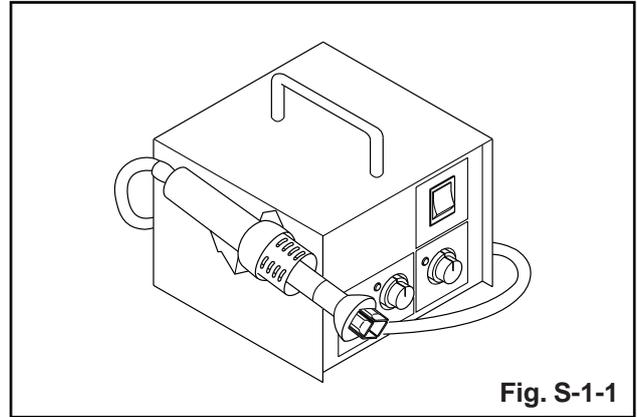


Fig. S-1-1

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

### CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
3. 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.

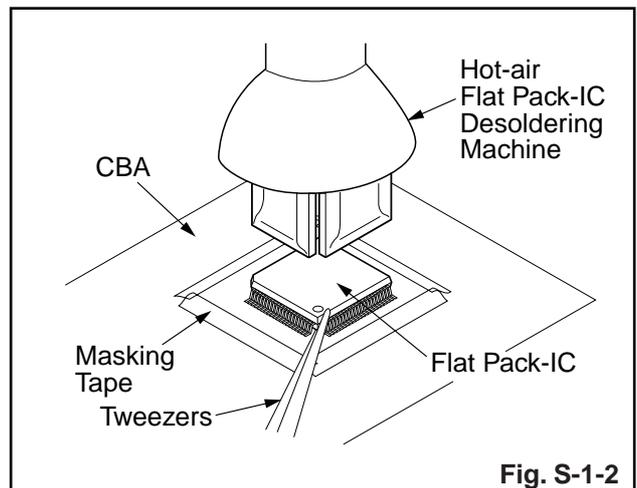
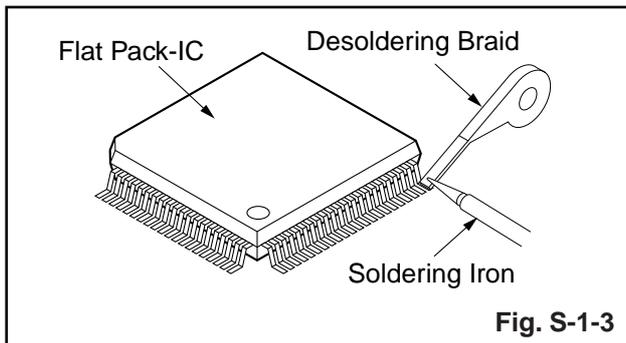


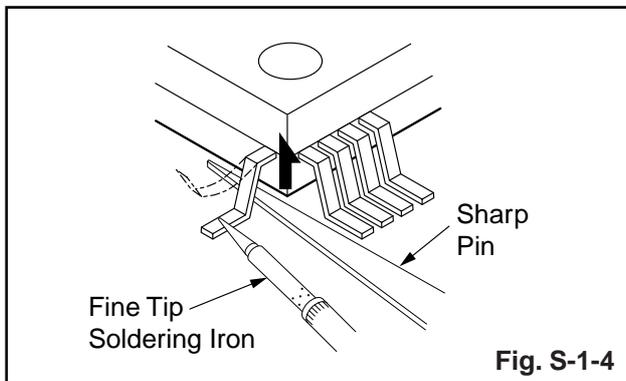
Fig. S-1-2

### 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)

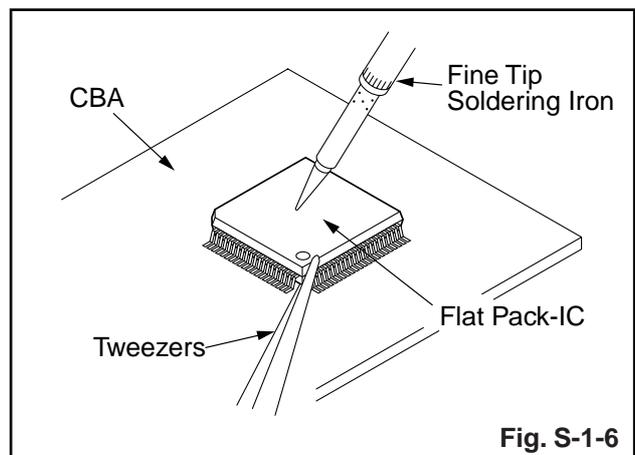
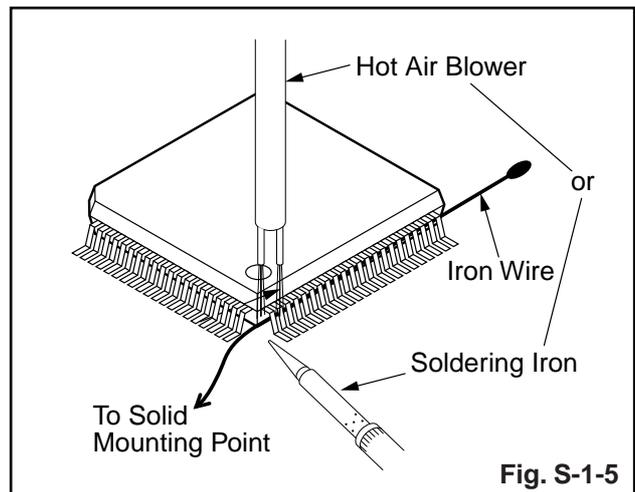


3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

### With Iron Wire:

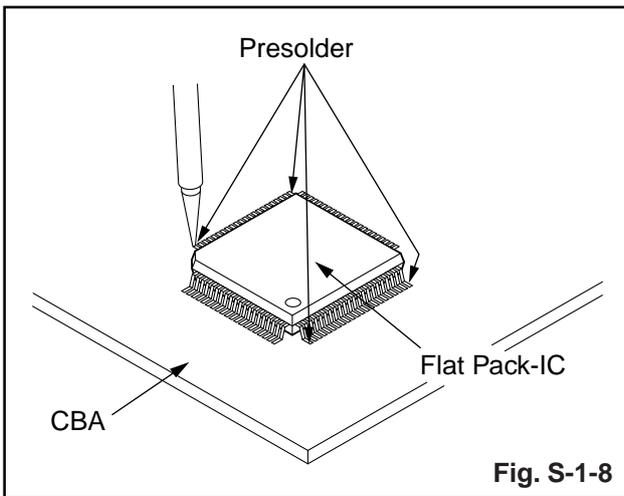
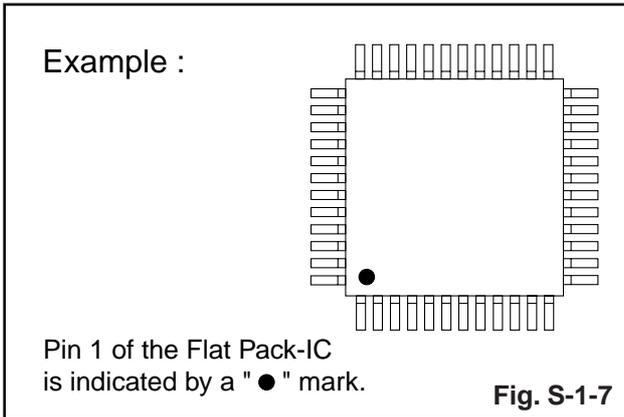
1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins 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 presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.



## Instructions for Handling Semi-conductors

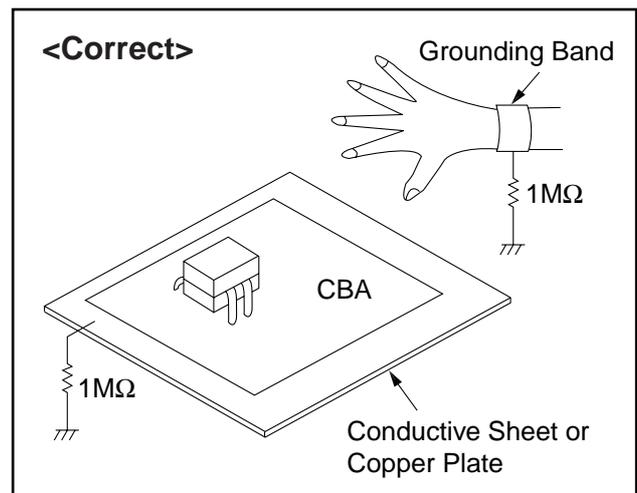
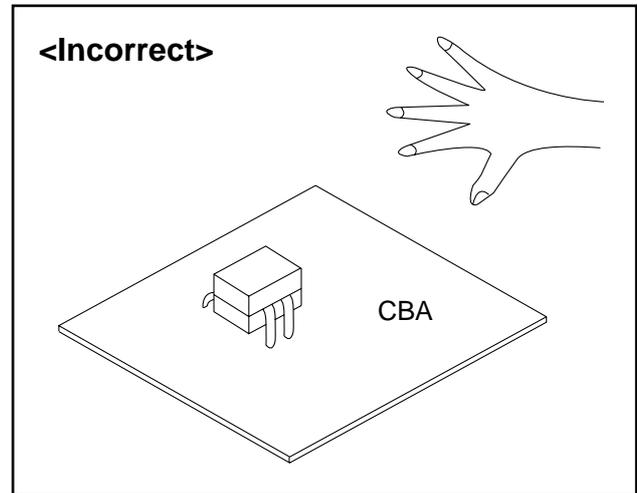
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

### 1. Ground for Human Body

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

### 2. Ground for Workbench

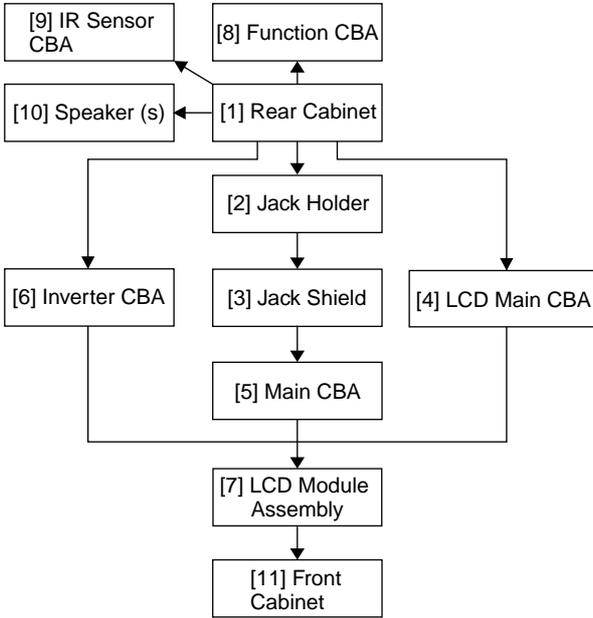
Be sure to place a conductive sheet or copper plate with proper grounding (1 M $\Omega$ ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors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



# CABINET DISASSEMBLY INSTRUCTIONS

## 1. Disassembly Flowchart

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



## 2. Disassembly Method

ID/ LOC · No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/UNLOCK/ RELEASE/UNPLUG/ DESOLDER	Note
[1]	Rear Cabinet	D1	11(S-1)	---
[2]	Jack Holder	D2	2(S-2), (S-3)	---
[3]	Jack Shield	D2	-----	---
[4]	LCD Main CBA	D2 D3	3(S-4), *CN310A, *CN311A, *CN313A, *CN101B, *CN102B, *CN103B	---
[5]	Main CBA	D2 D3	6(S-5), *CN801, *CN802, *CN405, *CN51, *CN53	---
[6]	Inverter CBA	D2 D3	6(S-6), *T1401, *T1402, *T1403, *T1404	---
[7]	LCD Module Assembly	D2 D3	13(S-7)	---
[8]	Function CBA	D2 D3	3(S-8)	---
[9]	IR Sensor CBA	D2 D3	2(S-9)	---
[10]	Speaker (s)	D2 D3	4(S-10)	---
[11]	Front Cabinet	D2	-----	---

↓ (1)      ↓ (2)      ↓ (3)      ↓ (4)      ↓ (5)

(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.





# HOW TO INITIALIZE THE LCD TELEVISION

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

## How to initialize the LCD television:

1. Turn the power on. (Use main power on the TV unit.)
2. To enter the service mode, press [STANDBY], [2], [7], [1], and [MUTE] buttons on the remote control unit in that order within 5 seconds.
  - To cancel the service mode, press [STANDBY] button on the remote control.
3. To initialize the LCD television, press "DISPLAY" button on the remote control unit.
4. Confirm "FF" indication on the upper right of the screen.

# 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. DC Voltmeter
2. Pattern Generator
3. Color Analyzer

## How to Set up the Service mode:

1. Turn the power on. (Use main power on the TV unit.)
2. Press [STANDBY], [2], [7], [1], and [MUTE] buttons on the remote control unit in that order within 5 seconds.
- To cancel the service mode, press [STANDBY] button on the remote control.

## 1. Initial Setting

### General

Enter the Service mode.

Set the each initial data as shown on table 1 below.

**Table 1: Initial Data**

ITEM	BUTTON (on the remote control)	DATA VALUE
BRT(PAL)	MENU → 1	134
CNT(PAL)		174
CLR-R(PAL)		74
CLR-B(PAL)		74
SHR(PAL)		143
S-BRT(PAL)	MENU → 2	134
S-CNT(PAL)		174
S-CLR-R(PAL)		74
S-CLR-B(PAL)		74
S-SHR(PAL)		143
C-BRT(PAL)	MENU → 3	134
C-CNT(PAL)		132
C-CLR-R(PAL)		154
C-CLR-B(PAL)		154
C-SHR(PAL)		143
BRT(SECAM)	MENU → 4	134
CNT(SECAM)		174
CLR-R(SECAM)		74
CLR-B(SECAM)		74
SHR(SECAM)		143
S-BRT(SECAM)	MENU → 5	134
S-CNT(SECAM)		174
S-CLR-R(SECAM)		74
S-CLR-B(SECAM)		74
S-SHR(SECAM)		143
C-BRT(SECAM)	MENU → 6	134
C-CNT(SECAM)		132
C-CLR-R(SECAM)		154
C-CLR-B(SECAM)		154
C-SHR(SECAM)		143
BRT(NTSC)	MENU → 7	134
CNT(NTSC)		174
CLR-R(NTSC)		70
CLR-B(NTSC)		70
TNT(NTSC)		148
SHR(NTSC)	143	
S-BRT(NTSC)	MENU → 8	134
S-CNT(NTSC)		174
S-CLR-R(NTSC)		70
S-CLR-B(NTSC)		70
S-TNT(NTSC)		148
S-SHR(NTSC)	143	

ITEM	BUTTON (on the remote control)	DATA VALUE
C-BRT(NTSC)	MENU → 9	134
C-CNT(NTSC)		132
C-CLR-R(NTSC)		154
C-CLR-B(NTSC)		154
C-TNT(NTSC)		148
C-SHR(NTSC)		143
BRIGHT	0	0
NORMAL	0	65
DARK	0	98
COR(C/D/S-1)	VOL. ▼ → 1	131
COG(C/D/S-1)	VOL. ▼ → 2	131
COB(C/D/S-1)	VOL. ▼ → 3	131
DR(C/D/S-1)	VOL. ▼ → 4	145
DG(C/D/S-1)	VOL. ▼ → 5	143
DB(C/D/S-1)	VOL. ▼ → 6	140
SBR(C/D/S-1)	VOL. ▼ → 7	0
SBB(C/D/S-1)	VOL. ▼ → 9	0
C-COR(C/D/S-2)	VOL. ▼ → 1	131
C-COG(C/D/S-2)	VOL. ▼ → 2	131
C-COB(C/D/S-2)	VOL. ▼ → 3	131
C-DR(C/D/S-2)	VOL. ▼ → 4	145
C-DG(C/D/S-2)	VOL. ▼ → 5	143
C-DB(C/D/S-2)	VOL. ▼ → 6	140
C-SBR(C/D/S-2)	VOL. ▼ → 7	0
C-SBB(C/D/S-2)	VOL. ▼ → 9	0
7F	VOL. ▼	FF
LAST POWER		OFF
SYSTEM		PAL-BG
NCM		ON
ASPECT		OFF
RUSSIAN		OFF

## 2. +B Adjustment

**Purpose:** To obtain correct operation.

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

Test Point	Adj. Point
TP401 (+B) TP300 (GND)	VR649
M. EQ.	Spec.
DC Voltmeter	+21.0±0.3V DC

**Note:** TP401(+B), TP300(GND), VR649 --- Main CBA

1. Connect DC Volt Meter to TP401 and TP300(GND).
2. Adjust VR649 so that the voltage of TP401 becomes +21.0±0.3V DC.

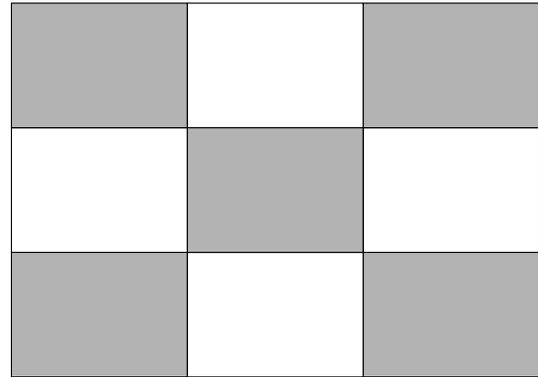
## 3. Flicker Adjustment

**Adjustment Point:** R977 (LCD Main CBA)

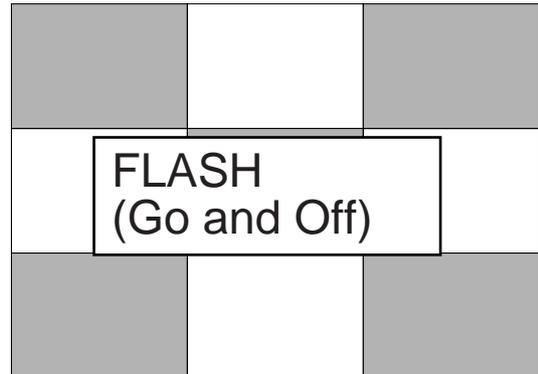
LCD Main CBA



1. Enter the Service mode.
2. Press "2" button on the remote control unit.  
The following screen appears.



3. If Flicker Adjustment is not fit, the screen become the following.



4. Adjust R977 so that flash stops.

The following adjustment normally are not attempted in the field. Only when replacing the LCD Panel then adjust as a preparation.

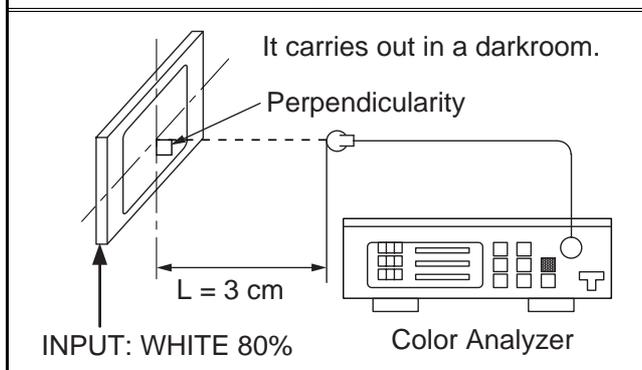
#### 4. White Balance Adjustment

**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	VOL. ▼ buttons	[RF/AV2(CVBS)] C/D/S-1 [AV1(RGB)] C/D/S-2	White Purity (APL 80%) or (APL 40%)
M. EQ.		Spec.	
Pattern Generator, Color analyzer		x: 260 to 320, y: 270 to 330	

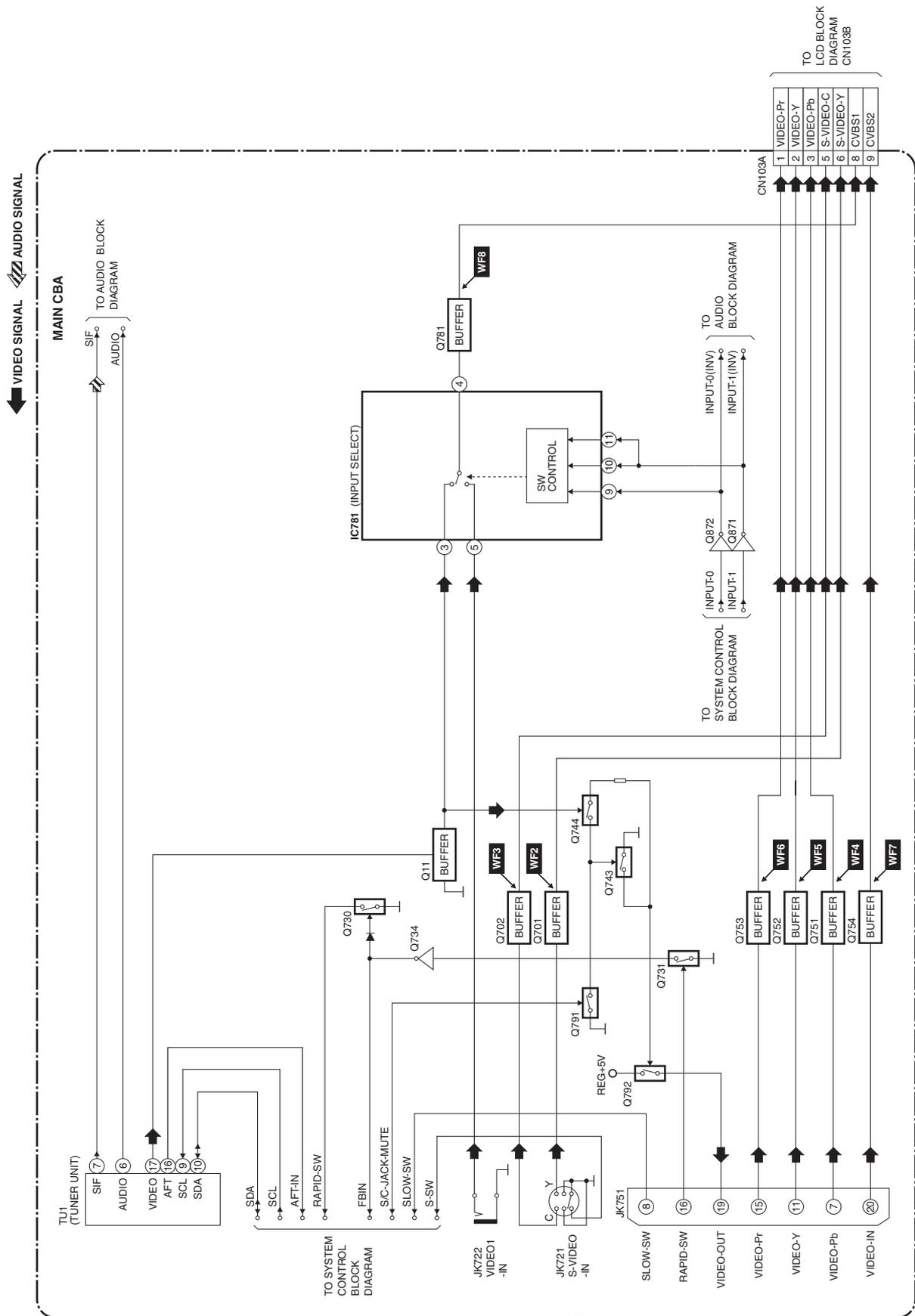
Figure



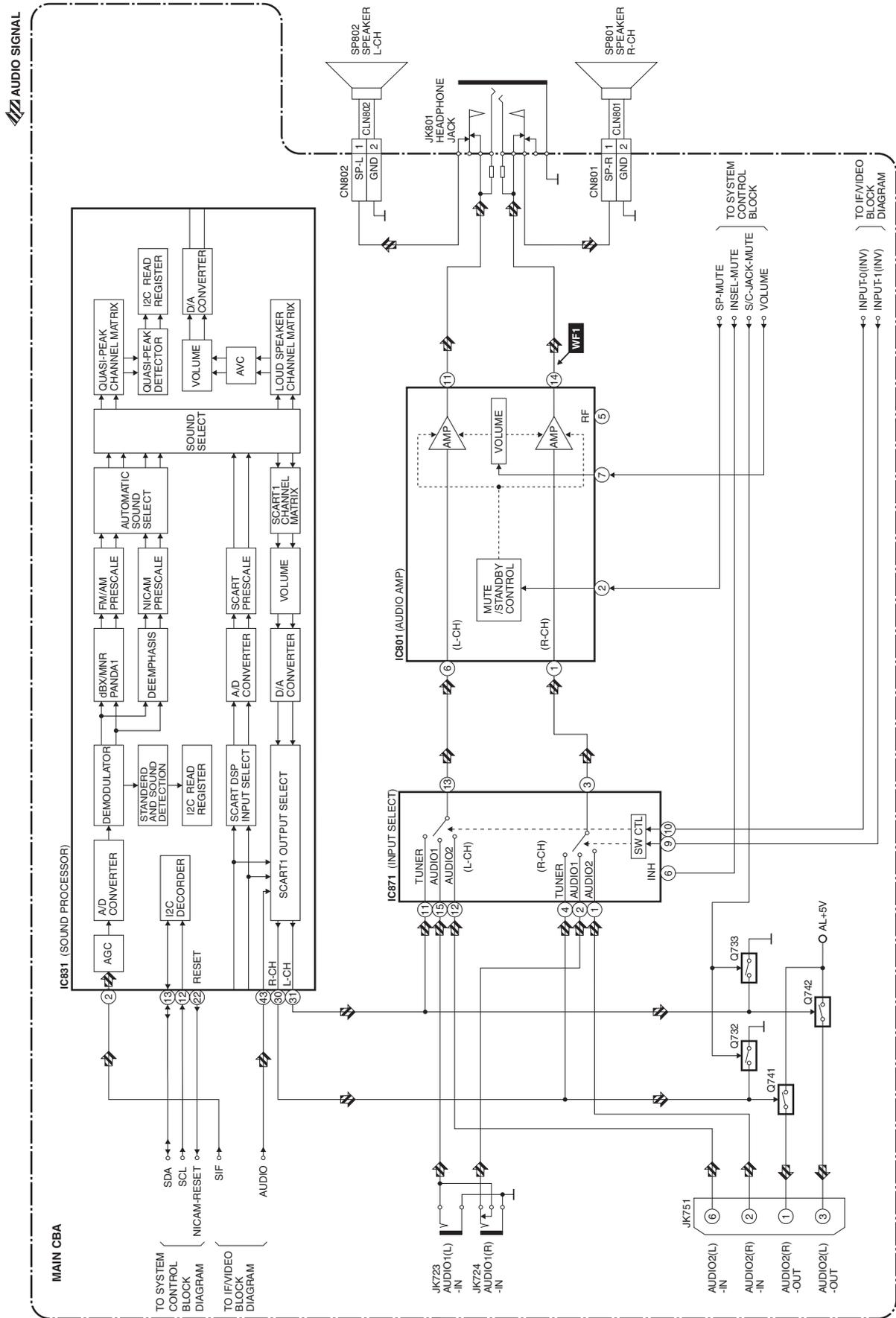
- Operate the unit for more than 20 minutes.
- Input the White Purity (APL 80% or APL 40%).
- Set the color analyzer to the CHROMA mode and bring the optical receptor to the center on the LCD-Panel surface after zero point calibration as shown above.  
**Note:** The optical receptor must be set perpendicularly to the LCD Panel surface.
- [RF/AV2(CVBS)]**  
Enter the Service mode. Press "VOL ▼" button on the remote control unit and select "C/D/S-1" mode.  
**[AV1(RGB)]**  
Enter the Service mode. Press "VOL ▼" button on the remote control unit and select "C/D/S-2" mode.
- [RF/AV2(CVBS)]**  
When "x" value and "y" value are not within specification, adjust "DB (C/D/S-1)" or "DR (C/D/S-1)". Refer to "1. Initial Setting."  
**Note:** "DB(C/D/S1)" or "DR(C/D/S1)" must be adjusted within  $\pm 10$ .  
**[AV1(RGB)]**  
When "x" value and "y" value are not within specification, adjust "C-DB(C/D/S-2)" or "C-DR(C/D/S-2)". Refer to "1. Initial Setting."  
**Note:** "C-DB(C/D/S-2)" or "C-DR(C/D/S-2)" must be adjusted within  $\pm 10$ .
- Turn the power off and on again. (Main power button on the TV unit.)



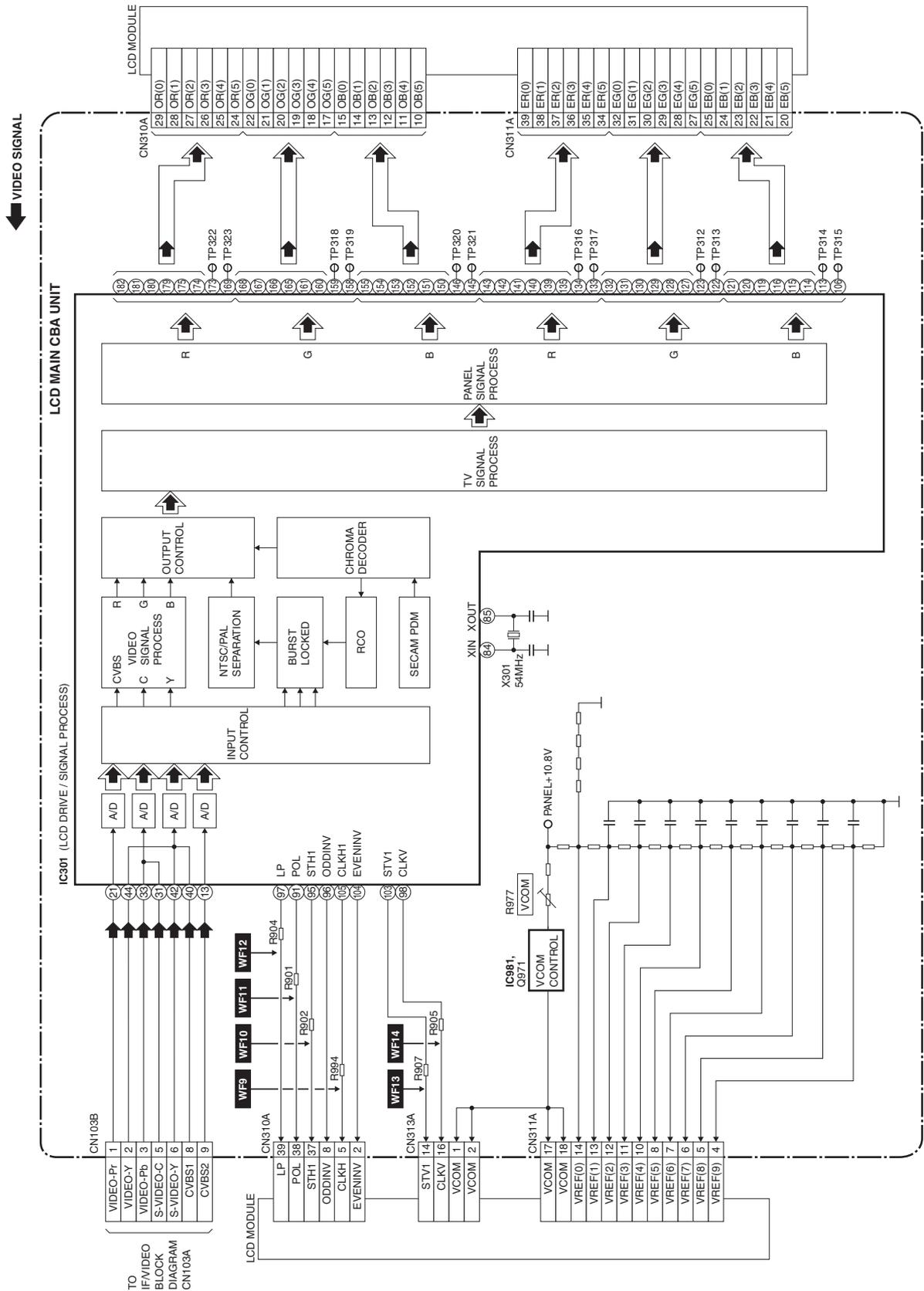
# IF/Video Block Diagram



# Audio Block Diagram

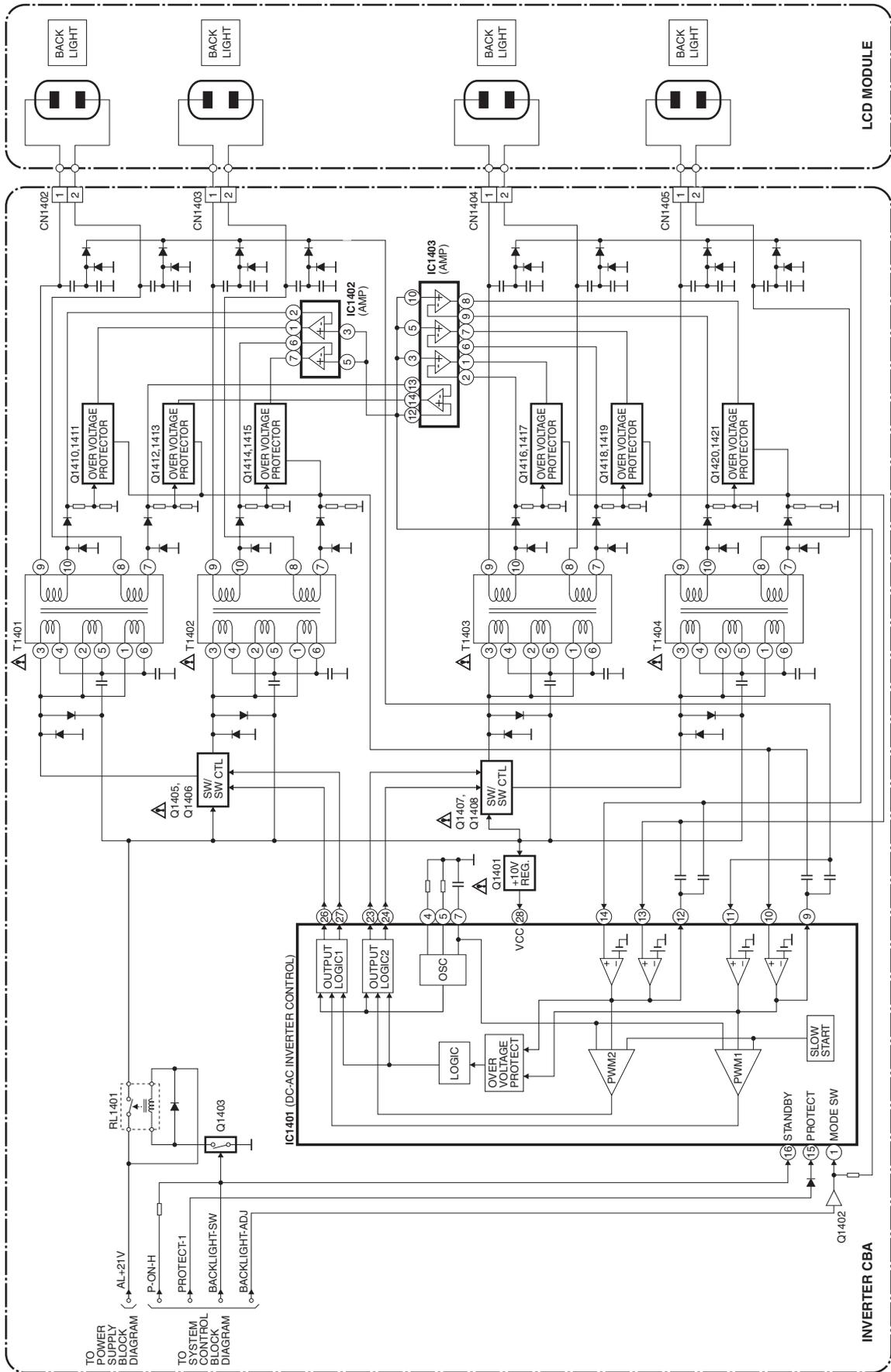


# LCD Block Diagram





# LCD Backlight Block Diagram



# SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

## Standard Notes

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

### Notes:

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

### Note of Capacitors:

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

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

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

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

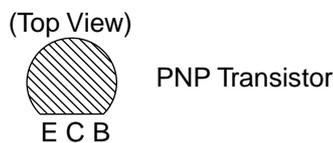
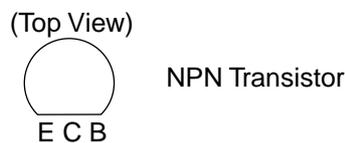
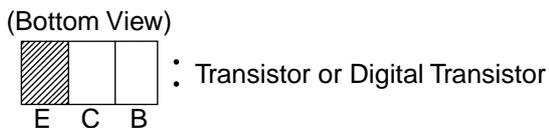
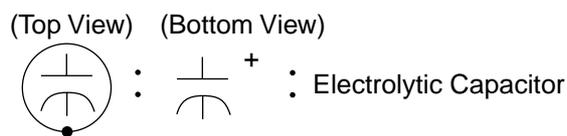
Z ---  $+80$ -- $-20\%$

### Note of Resistors:

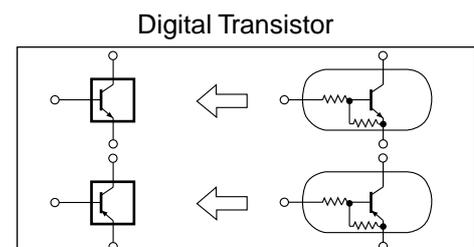
CEM --- Cement Res.    MTL --- Metal Res.    F --- Fuse Res.

### Capacitors and transistors are represented by the following symbols.

#### CBA Symbols



#### Schematic Diagram Symbols



## LIST 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.

### 2. CAUTION:

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

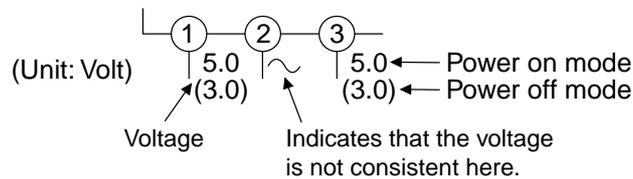
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

### 3. Note:

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

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

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

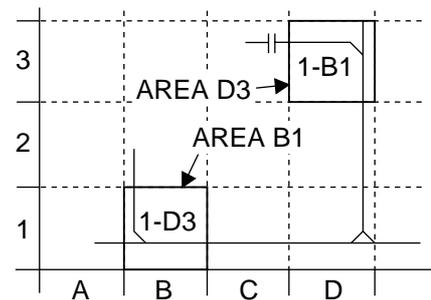


### 5. How to read converged lines

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

Examples:

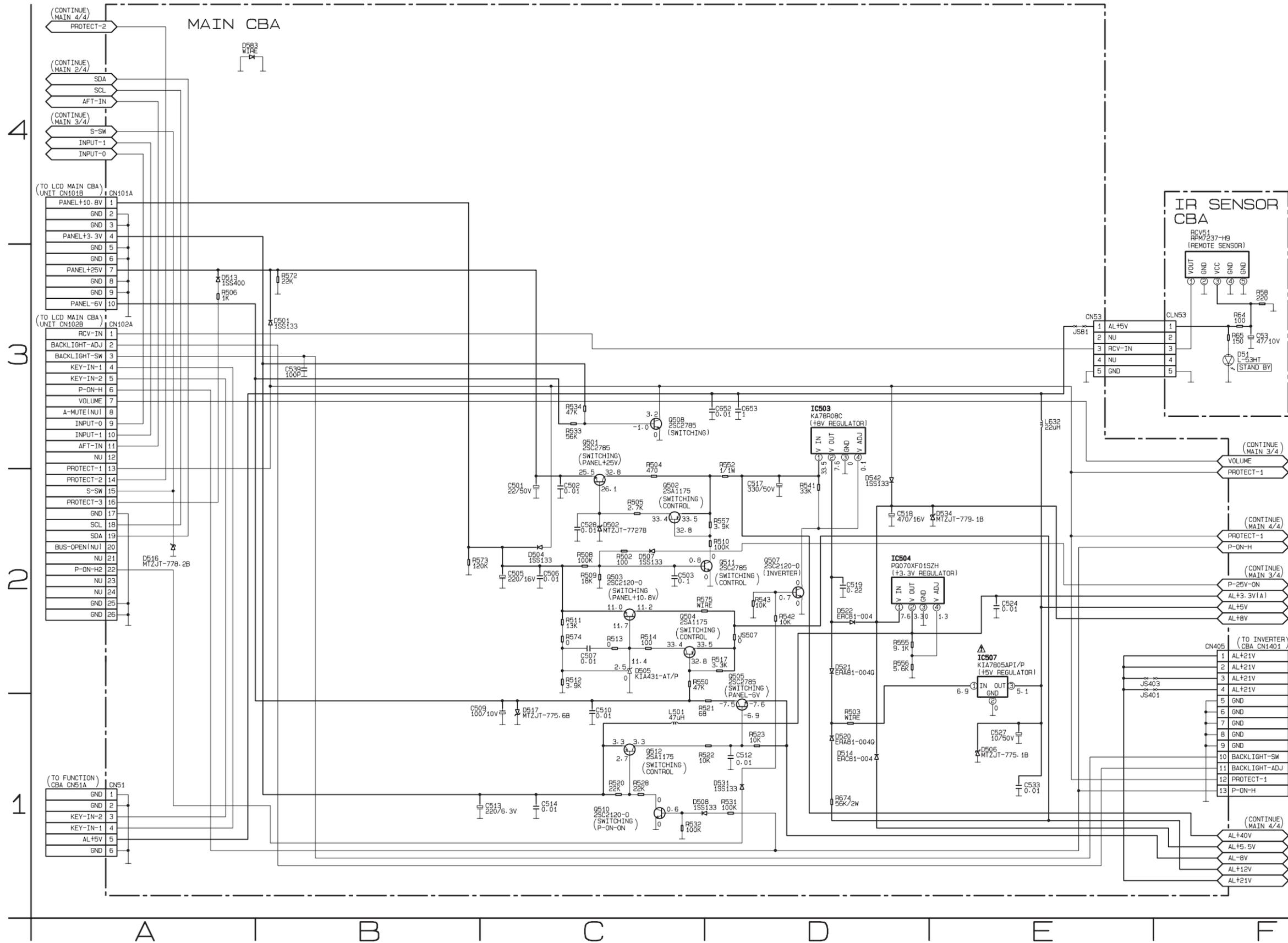
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



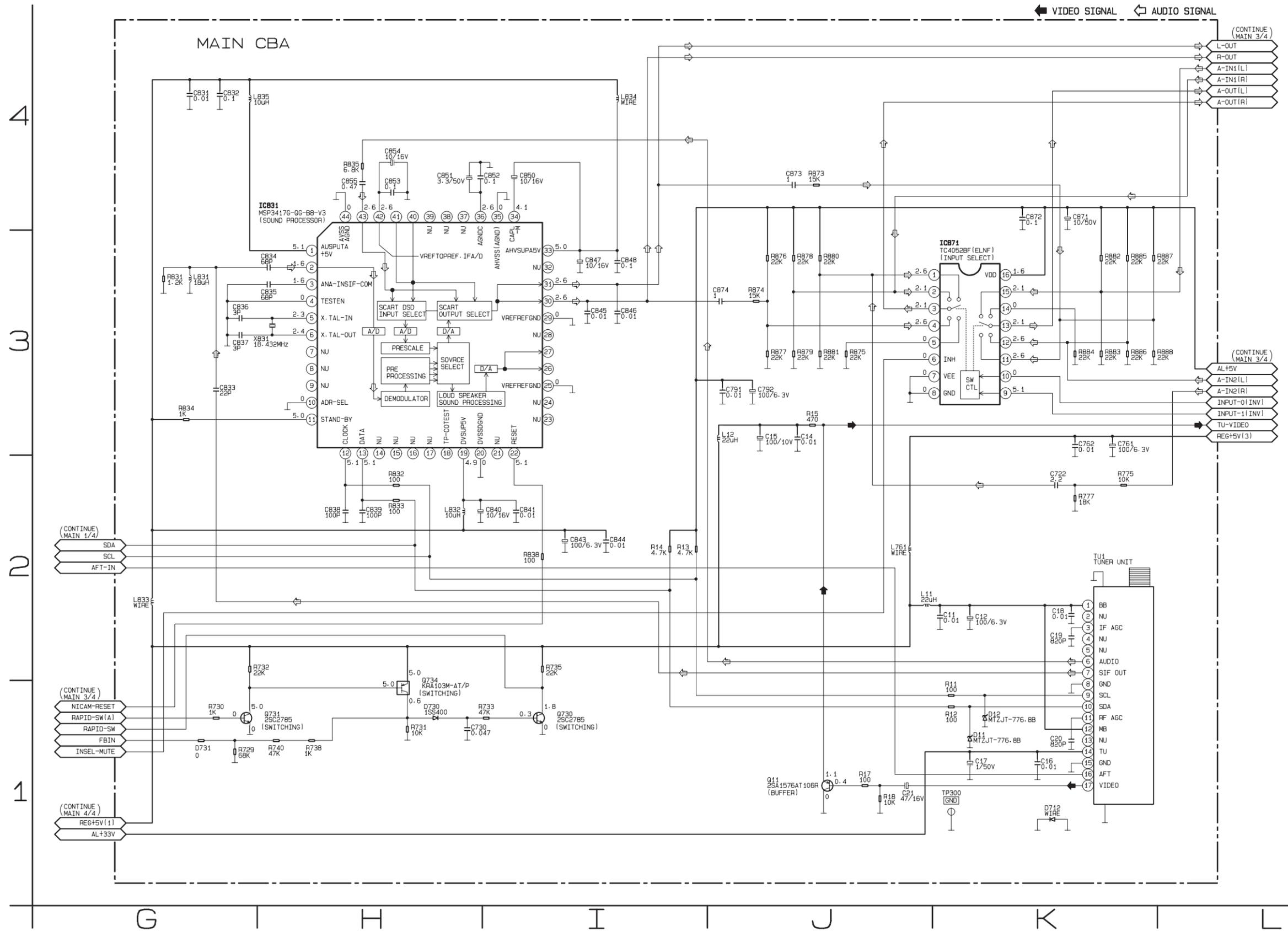
### 6. Test Point Information

- ⊙ : Indicates a test point with a jumper wire across a hole in the PCB.
- : Used to indicate a test point with a component lead on foil side.
- ⊘ : Used to indicate a test point with no test pin.
- : Used to indicate a test point with a test pin.

# Main 1/4 & IR Sensor Schematic Diagram



# Main 2/4 Schematic Diagram





# Main 4/4 Schematic Diagram

**CAUTION !**

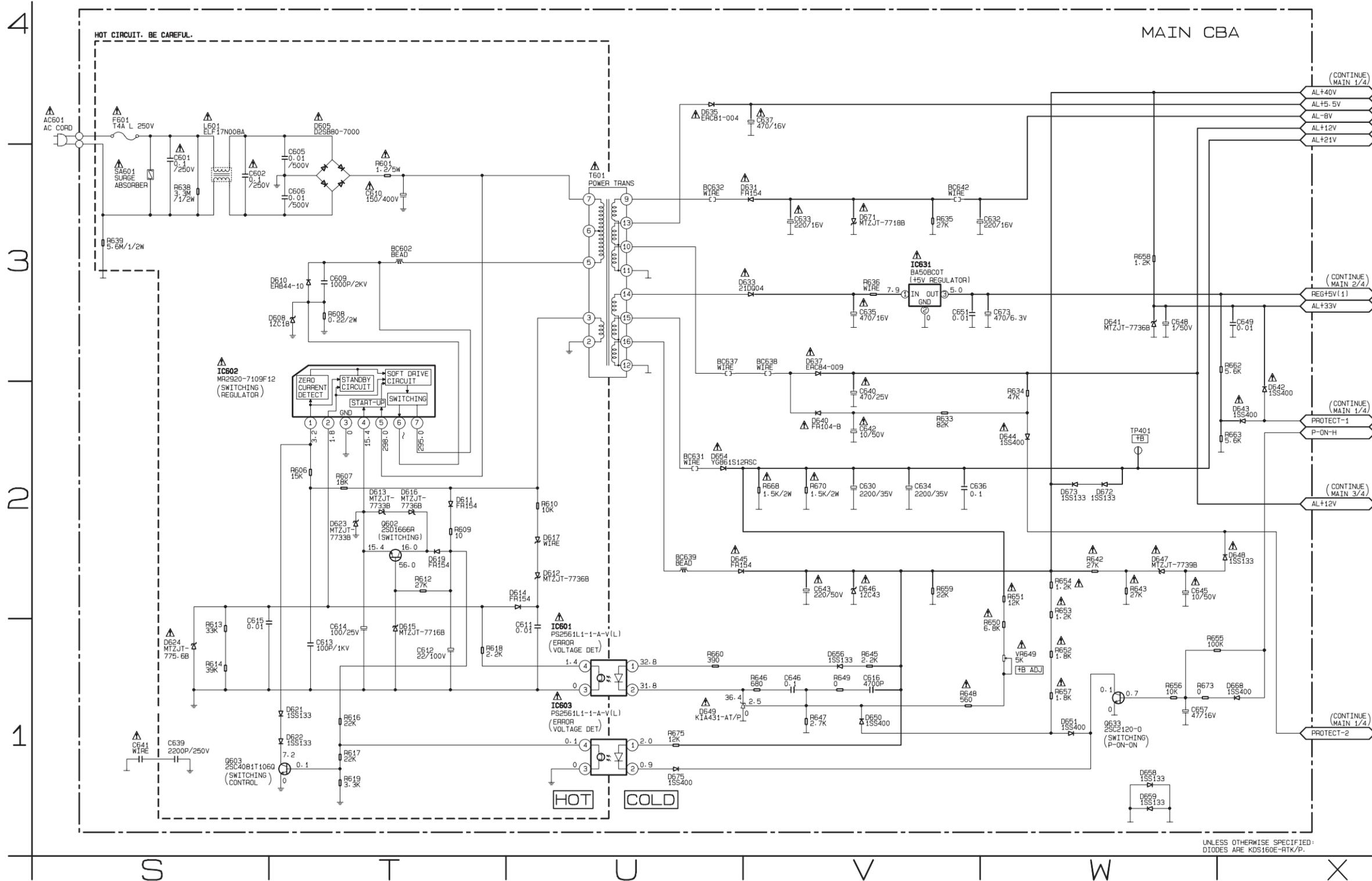
For continued protection against fire hazard, replace only with the same type fuse.

**NOTE:**

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

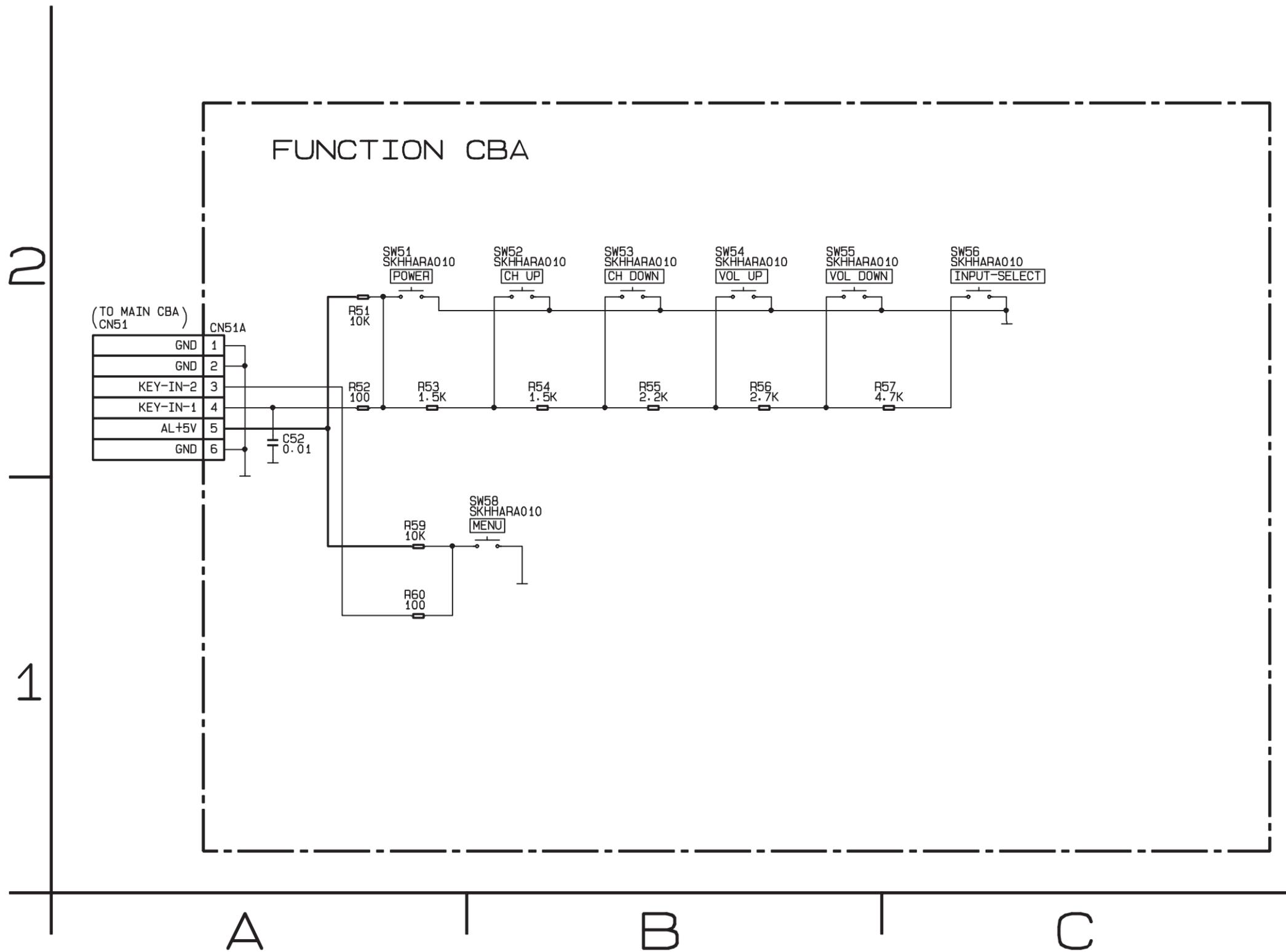
**CAUTION !**

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

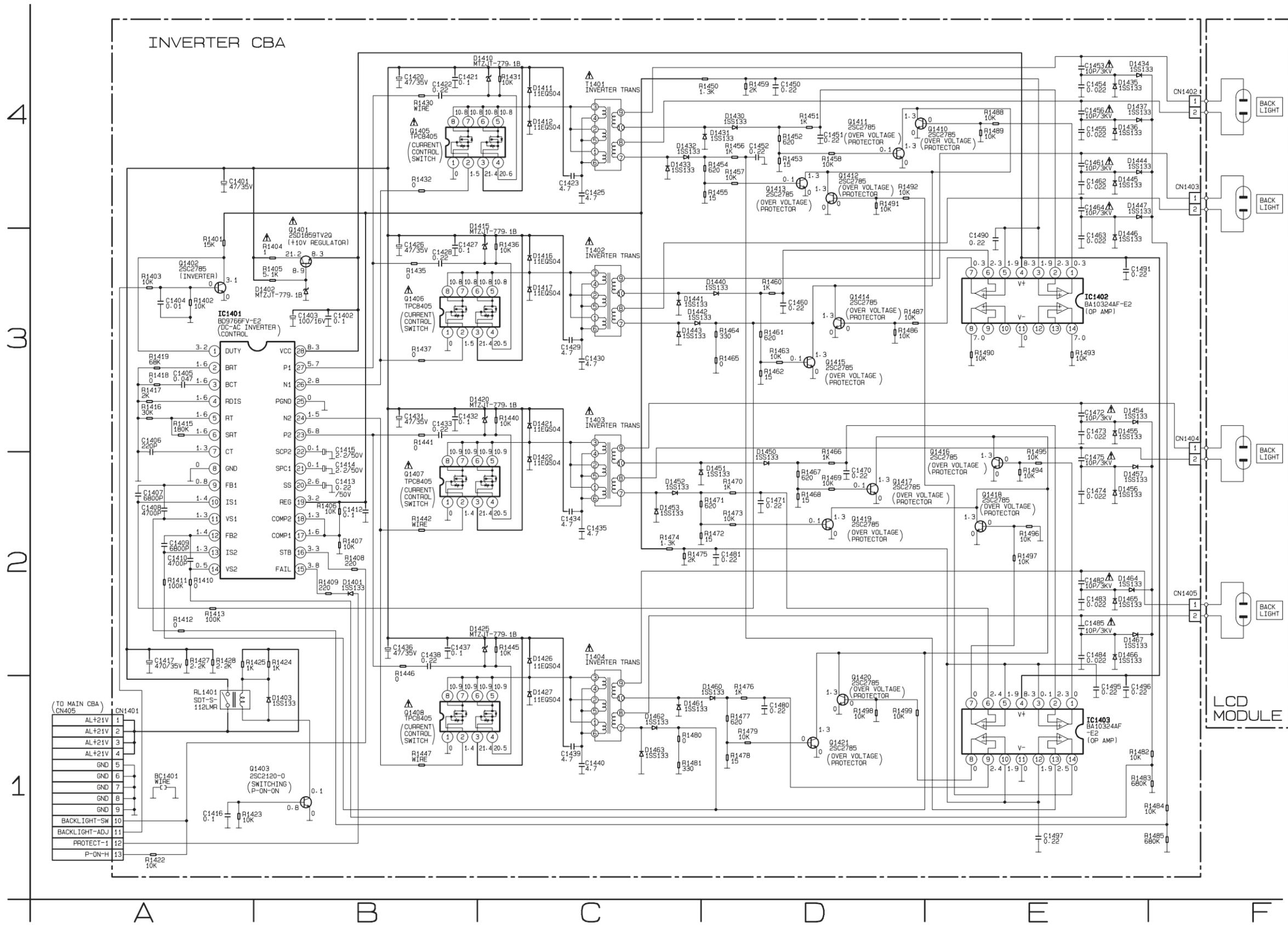


UNLESS OTHERWISE SPECIFIED: DIODES ARE KDS160E-RTK/P.

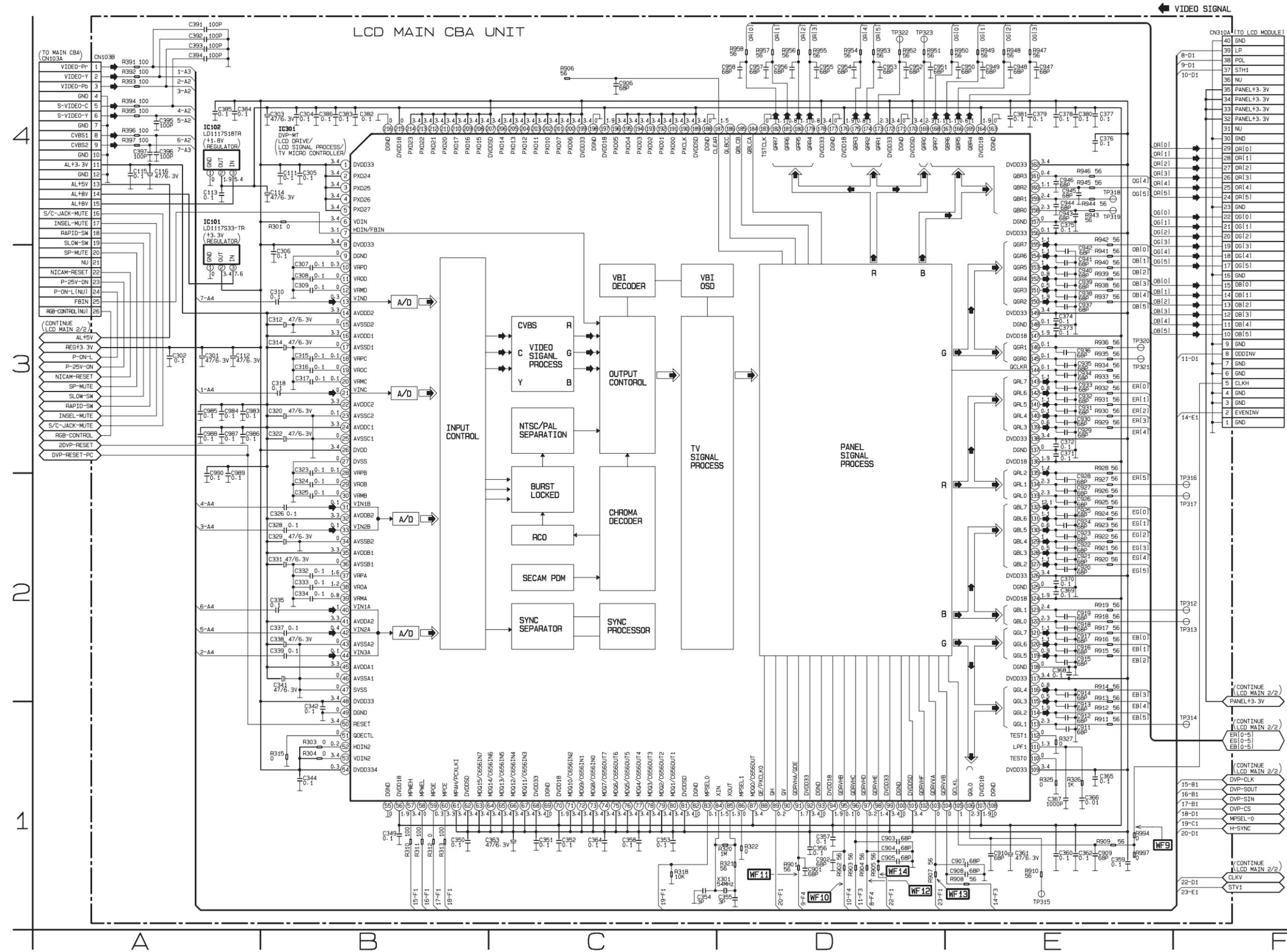
# Function Schematic Diagram



# Inverter Schematic Diagram



# LCD Main 1/2 Schematic Diagram





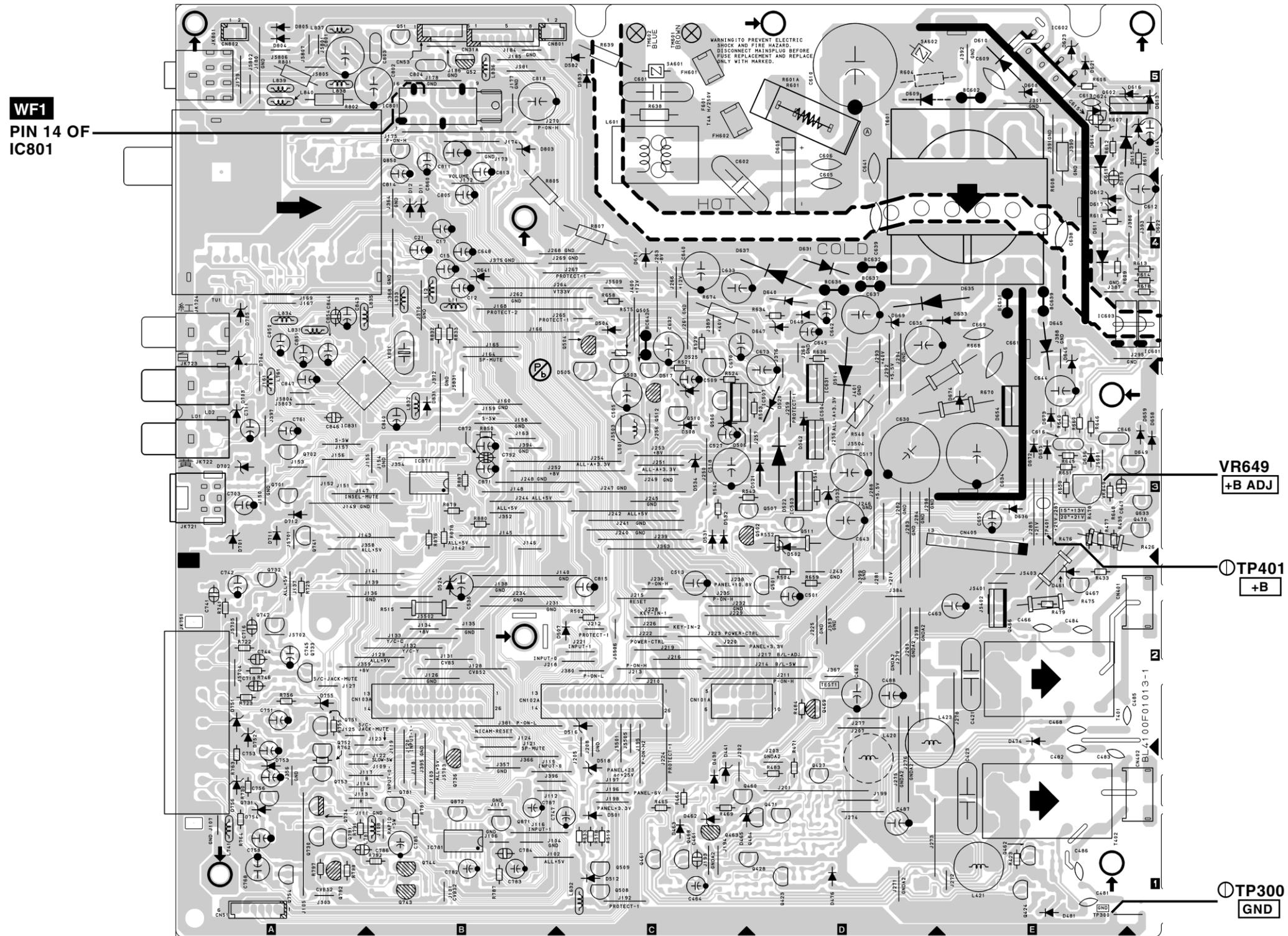
# Main CBA Top View

**CAUTION !**  
For continued protection against fire hazard, replace only with the same type fuse.

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

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

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 Bottom View

**CAUTION !**  
For continued protection against fire hazard, replace only with the same type fuse.

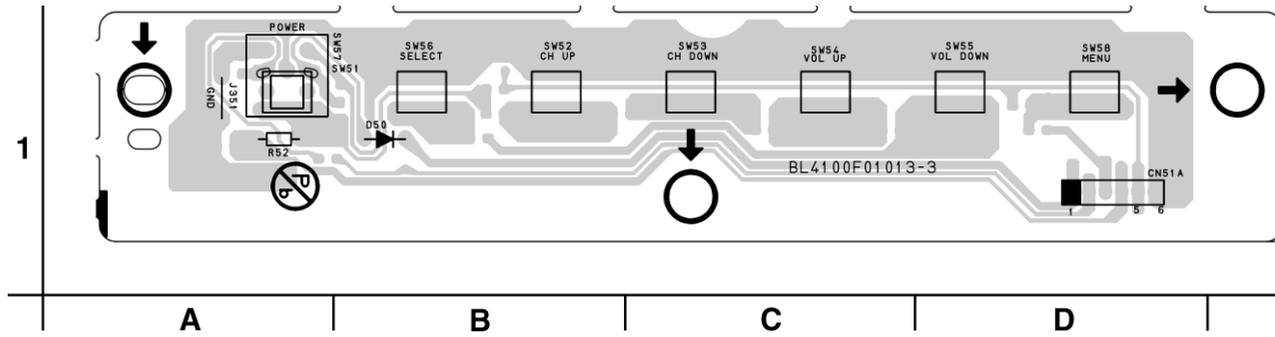
**NOTE:**  
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

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

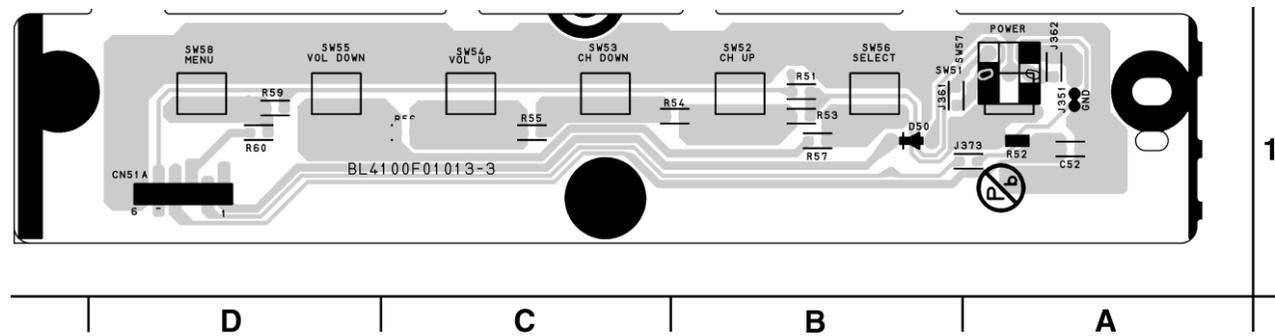
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used.  
Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.



### Function CBA Top View

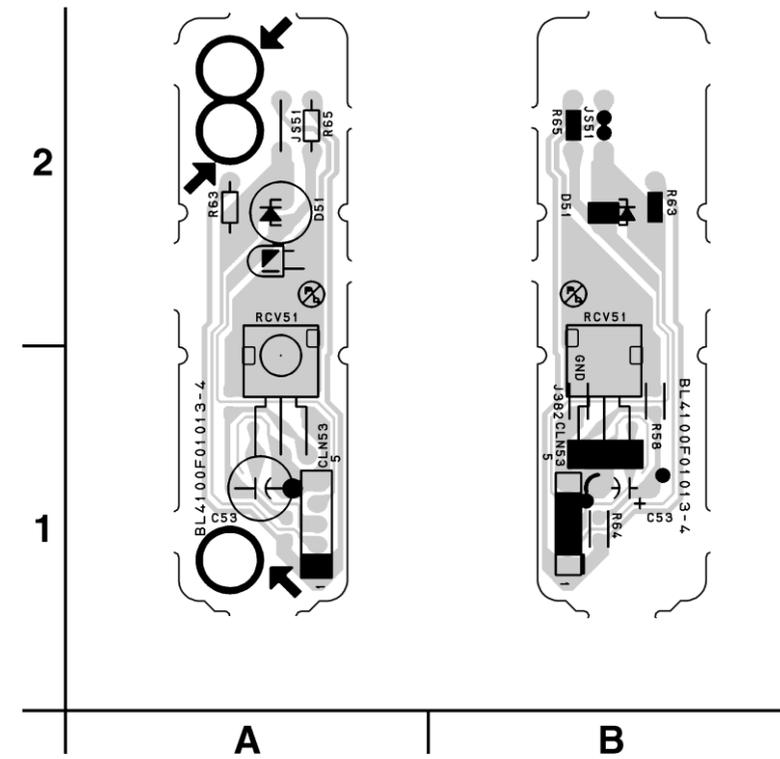


### Function CBA Bottom View



BL4100F01013-3

### IR Sensor CBA Top & Bottom View



BL4100F01013-4

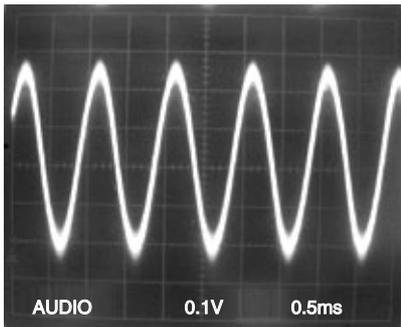


# WAVEFORMS

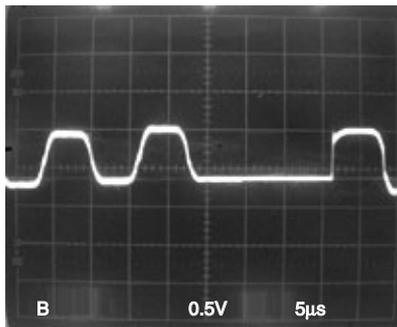
**WF1 ~ WF8 =** Waveforms to be observed at  
Waveform check points.  
(Shown in Schematic Diagram.)

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

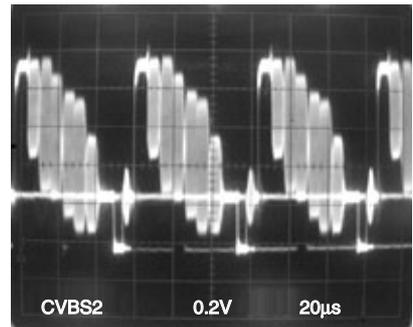
**WF1** Pin 14 of IC801



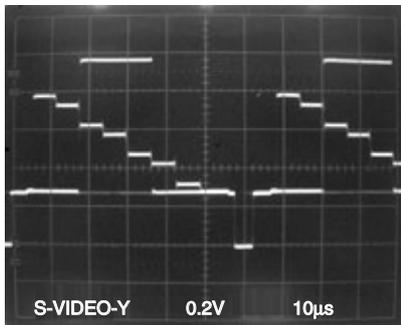
**WF4** Q751 EMITTER



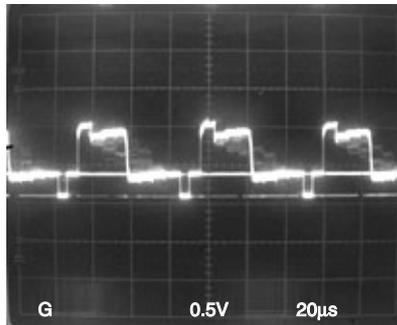
**WF7** Q754 EMITTER



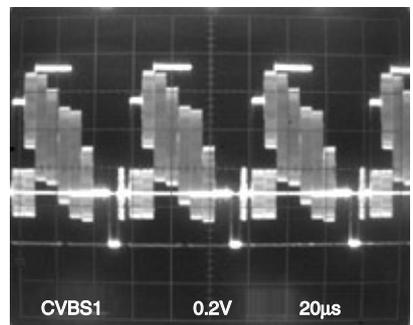
**WF2** Q701 EMITTER



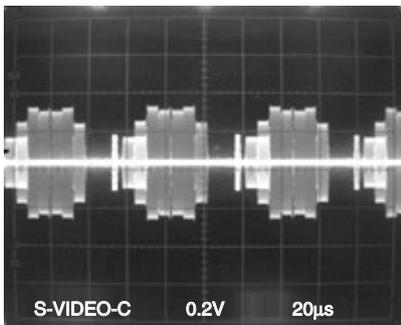
**WF5** Q752 EMITTER



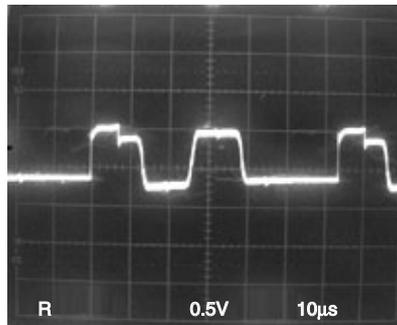
**WF8** Q781 EMITTER



**WF3** Q702 EMITTER



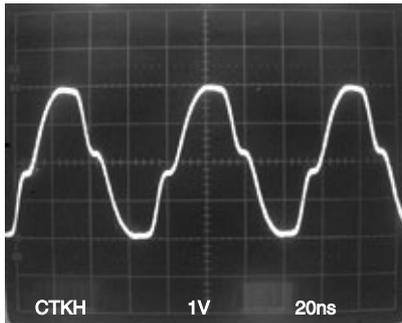
**WF6** Q753 EMITTER



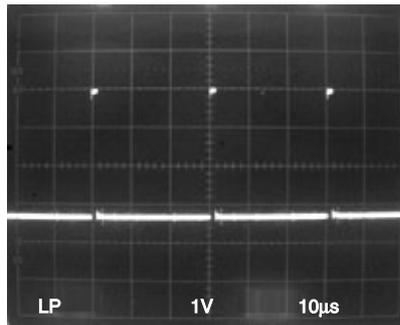
**WF9 ~ WF14 =** Waveforms to be observed at  
Waveform check points.  
(Shown in Schematic Diagram.)

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

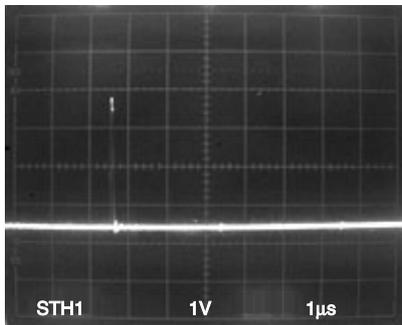
**WF9** R994



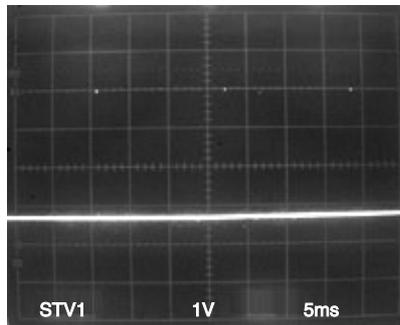
**WF12** R904



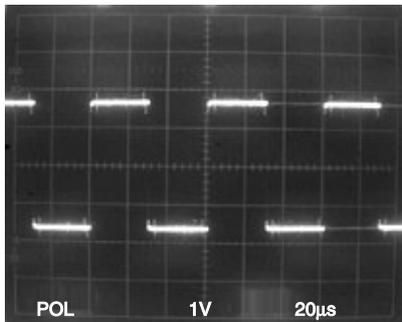
**WF10** R902



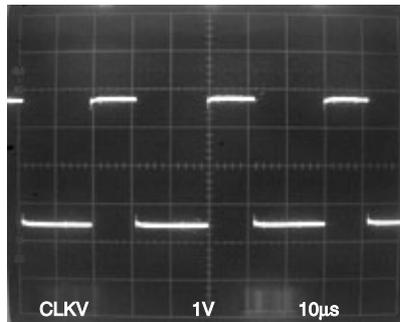
**WF13** R907



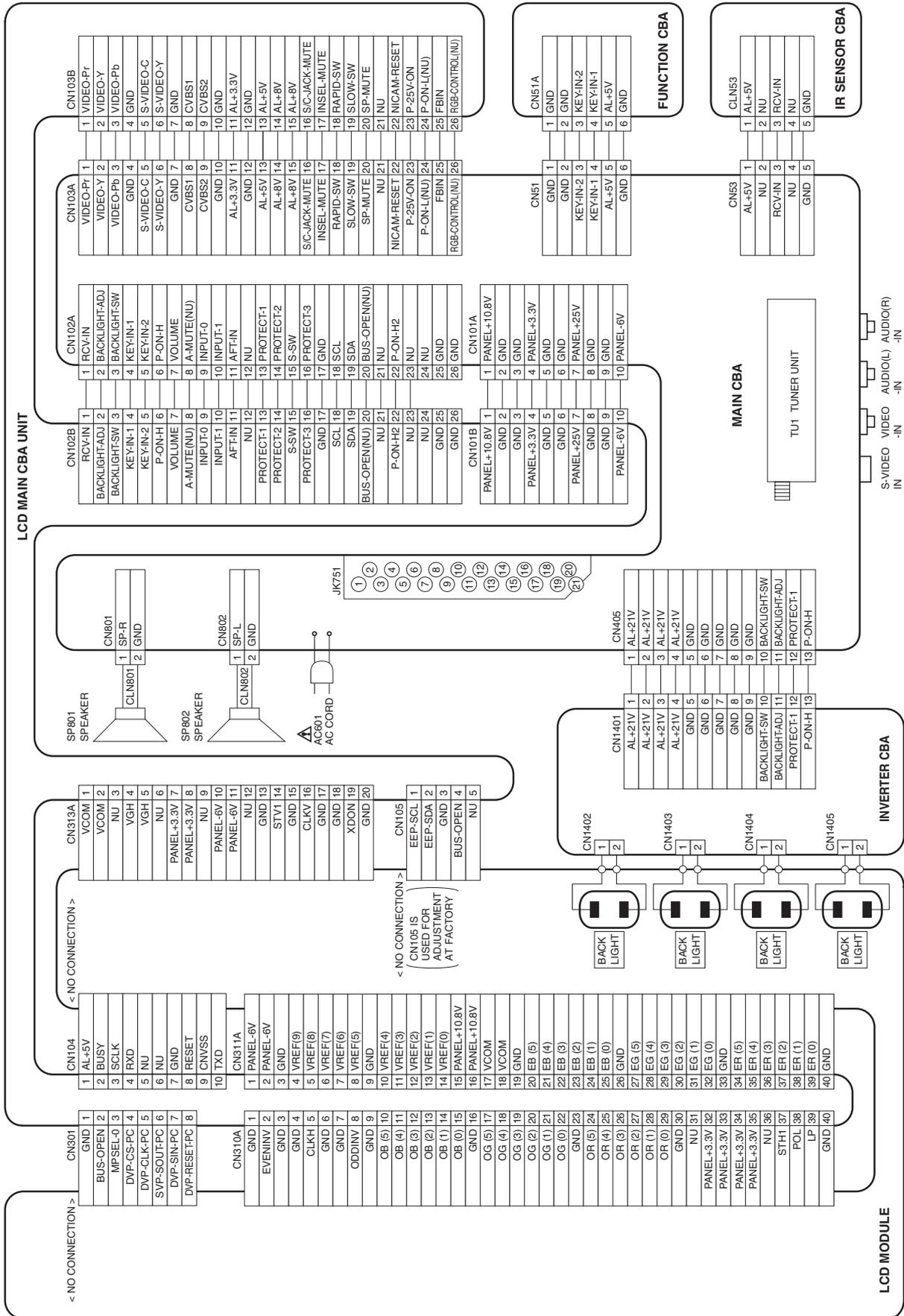
**WF11** R901



**WF14** R905

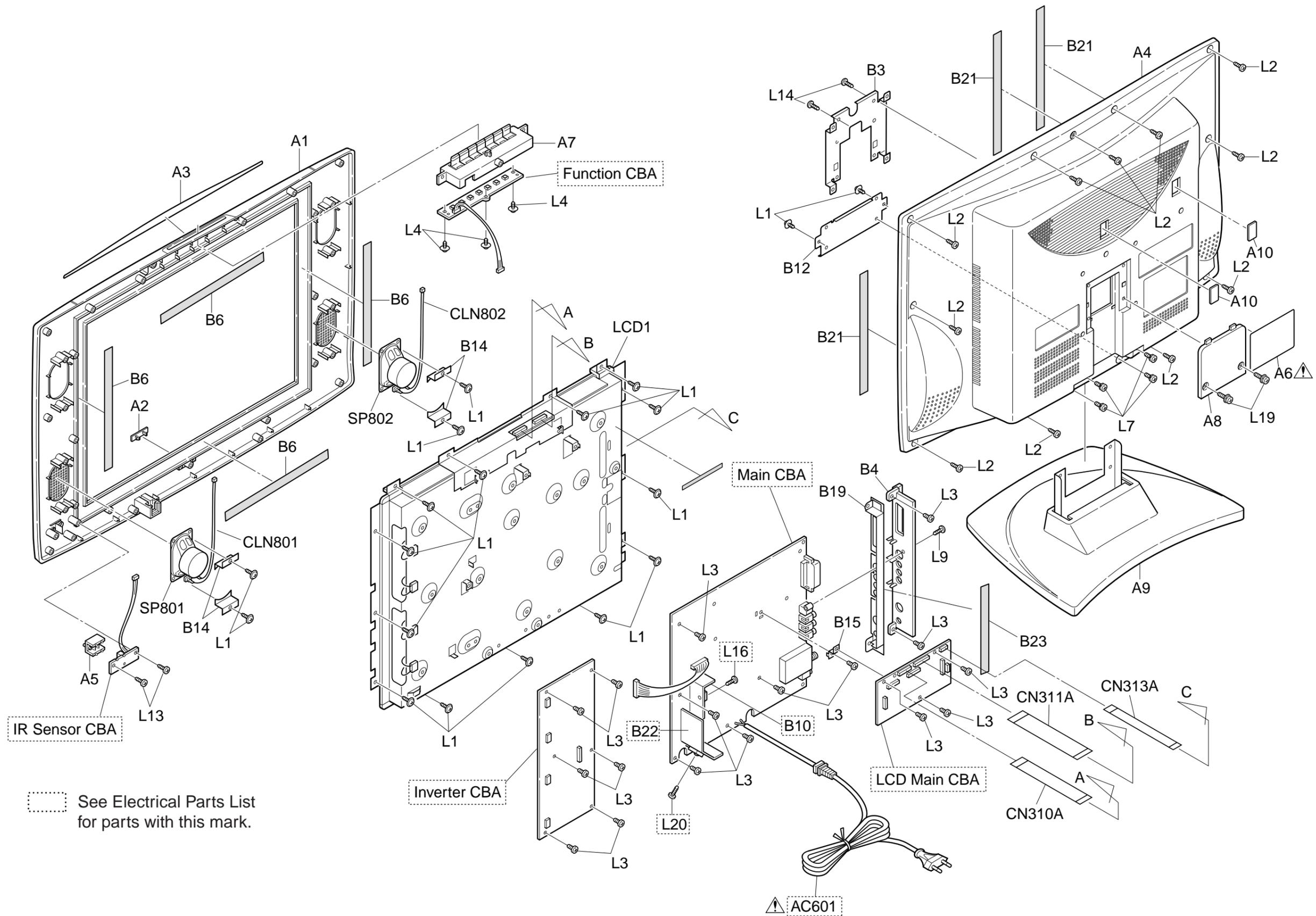


# WIRING DIAGRAMS



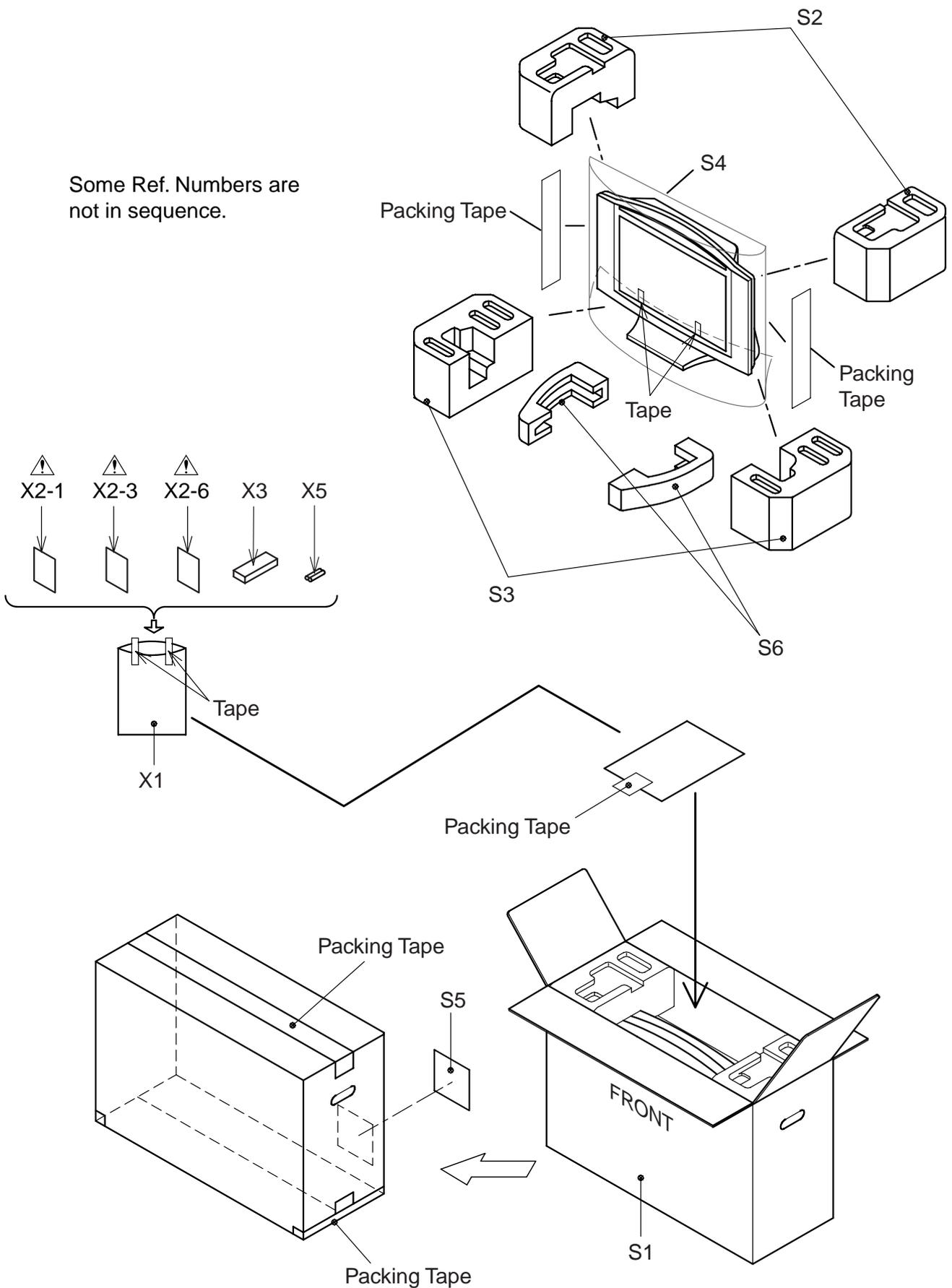
# EXPLODED VIEWS

## Cabinet



# Packing

Some Ref. Numbers are not in sequence.



# MECHANICAL PARTS LIST

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

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

Ref. No.	Description	Part No.
A1	FRONT CABINET L4200EA	1EM020125
A2	BRAND BADGE L0230JA--FUNAI~	0EM409021A
A3	CONTROL PLATE L4200EA	1EM220077
A4	REAR CABINET L4200EA	1EM020116
A5	SENSOR/LED LENS L0301UB	1EM220004
A6, 	RATING LABEL L4264EE	-----
A7	FUNCTION KNOB L4200EA	1EM320157
A8	REAR COVER L4200EA	1EM320158
A9	TILT STAND ASSEMBLY L0301UB	1EMN20039A
A10	CONNECTER CAP L4200EA	1EM420585
B3	20V STAND HOLDER L4200EA	1EM320141
B4	JACK HOLDER L4100EA	1EM120097
B6	CLOTH(15X190XT 0.5) L0100JA	0EM407894
B12	20V TILT STAND HOLDER L4200EA	1EM320145
B14	SPEAKER HOLDER L0110UA	0EM407855C
B19	JACK SHIELD L4100EA	1EM320140
B21	CLOTH(10X180XT0.5) L0336JG	0EM408827
B23	CLOTH(12X125XT 0.5) L0101JB	0EM408489
CLN801	SPEAKER WIRE WX1L4200-003	WX1L4200-003
CLN802	SPEAKER WIRE 2P 2P	WX1L0300-007
L1	SCREW P-TIGHT 3X12 WASHER HEAD+	GCJP3120
L2	SCREW P-TIGHT 3X12 BIND HEAD+ BLK	GBHP3120
L4	SCREW P-TIGHT M3*10 WASHERHEAD+	GCJP3100
L7	DOUBLE SEMS SCREW M4X12 + BLAK	FPH34120
L13	SCREW P-TIGHT M3*12 BIND+	GBJP3120
L14	SCREW P-TIGHT M3X8 BIND HEAD+	GBJP3080
L19	DOUBLE SEMS SCREW M4X9 + BLACK L0130UA	0EM408146A
LCD1	LCD MODULE ASSEMBLY UC000XF	1FSA10101
SP801	SPEAKER S0407F10	DSD0807XQ002
SP802	SPEAKER S0407F10	DSD0807XQ002
<b>PACKING</b>		
S1	CARTON L4264EE	1EM422444
S2	STYROFOAM TOP L0301UB	1EM020018A
S3	STYROFOAM BOTTOM L0301UB	1EM020019A
S4	SET BAG L0301UB	1EM320014
S5	SERIAL NO. LABEL L4200EA	-----
S6	STYROFOAM STAND BOTTOM L0301UB	1EM020020A
S20	BAG REMOCON STD REMOCON	0VM406766
<b>ACCESSORIES</b>		
X1	BAG POLYETHYLENE 235X365XT0.03	0EM408420
X3	REMOTE CONTROL 192/ERC001/NE309RD	NE309RD
X5	DRY BATTERY R6P/2S or	XB0M451T0001
	DRY BATTERY(SUNRISE) R6SSE/2S	XB0M451MS002
X2-1, 	OWNERS MANUAL L4264EE	1EMN21269
X2-3, 	OWNERS MANUAL L4264EE	1EMN21270
X2-6, 	OWNERS MANUAL L4264EE	1EMN21271

# ELECTRICAL PARTS LIST

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

## NOTES:

- Parts that are 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%

## LCD MAIN CBA UNIT

Ref. No.	Description	Part No.
	LCD MAIN CBA UNIT	1ESA11998

## MMA CBA

Ref. No.	Description	Part No.
	MMA CBA Consists of the following:	1ESA11996
	MAIN CBA	-----
	FUNCTION CBA	-----
	IR SENSOR CBA	-----

## MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA Consists of the following	-----
<b>CAPACITORS</b>		
C11	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C12	ELECTROLYTIC CAP. 100µF/ 6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100µF/ 6.3V M or	CA0K101SP085
	ELECTROLYTIC CAP. 100µF/ 6.3V M	CE0KMASTM101
C14	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C15	ELECTROLYTIC CAP. 100µF/ 10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/ 10V M or	CA1A101SP085
	ELECTROLYTIC CAP. 100µF/ 10V M	CE1AMASTM101
C16	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C17	ELECTROLYTIC CAP. 1µF/ 50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/ 50V M or	CA1J1R0SP085
	ELECTROLYTIC CAP. 1µF/ 50V M	CE1JMASTM1R0
C18	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C19	CHIP CERAMIC CAP. B K 820pF/50V	CHD1JK30B821
C20	CHIP CERAMIC CAP. B K 820pF/50V	CHD1JK30B821
C21	ELECTROLYTIC CAP. 47µF/ 16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47µF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP. 47µF/ 16V M	CE1CMASTM470
C501	ELECTROLYTIC CAP. 22µF/ 50V M or	CE1JMASDL220
	ELECTROLYTIC CAP. 22µF/ 50V M or	CA1J220SP085
	ELECTROLYTIC CAP. 22µF/ 50V M	CE1JMASTM220
C502	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C503	CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C505	ELECTROLYTIC CAP. 220µF/ 16V M or	CE1CMASDL221
	ELECTROLYTIC CAP. 220µF/ 16V M or	CA1C221SP085
	ELECTROLYTIC CAP. 220µF/ 16V M	CE1CMASTM221
C506	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103

Ref. No.	Description	Part No.
C507	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C509	ELECTROLYTIC CAP. 100µF/ 10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/ 10V M or	CA1A101SP085
	ELECTROLYTIC CAP. 100µF/ 10V M	CE1AMASTM101
C510	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C512	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C513	ELECTROLYTIC CAP. 220µF/ 6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220µF/ 6.3V M or	CA0K221SP085
	ELECTROLYTIC CAP. 220µF/ 6.3V M	CE0KMASTM221
C514	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C517	ELECTROLYTIC CAP. 330µF/ 50V M or	CE1JMZPDL331
	ALUMINUM ELECTROLYTIC CAP. 330µF/ 50V M or	CE1JMZNTM331
	ELECTROLYTIC CAP. 330µF/ 50V M	CA1J331SP084
C518	ELECTROLYTIC CAP. 470µF/ 16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/ 16V M or	CA1C471SP085
	ELECTROLYTIC CAP. 470µF/ 16V M	CE1CMASTM471
C519	CHIP CERAMIC CAP.(1608) B K 0.22µF/ 25V	CHD1EK30B224
C524	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C527	ELECTROLYTIC CAP. 10µF/ 50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/ 50V M or	CA1J100SP085
	ALUMINUM ELECTROLYTIC CAP. 10µF/ 50V M	CE1JMASTM100
C528	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C533	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C536	ELECTROLYTIC CAP. 330µF/ 6.3V M or	CE0KMASDL331
	ELECTROLYTIC CAP. 330µF/ 6.3V M or	CA0K331SP085
	ALUMINUM ELECTROLYTIC CAP. 330µF/ 6.3V M	CE0KMASTM331
C539	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C601 	METALIZED FILM CAP. 0.1µF/ 250V or	CT2E104MS037
	FILM CAP.(MP) 0.1µF/ 250V K or	CT2E104DC011
	LINE ACROSS CAP. 0.1U/250V	CT2E104DC015
C602 	METALIZED FILM CAP. 0.1µF/ 250V or	CT2E104MS037
	FILM CAP.(MP) 0.1µF/ 250V K or	CT2E104DC011
	LINE ACROSS CAP. 0.1U/250V	CT2E104DC015
C605	CERAMIC CAP. B K 0.01µF/ 500V	CCD2JKP0B103
C606	CERAMIC CAP. B K 0.01µF/ 500V	CCD2JKP0B103
C609	CERAMIC CAP. BN 1000pF/2KV or	CCD3DKA0B102
	CERAMIC CAP. 1000pF/2KV or	CA3D102PAN04
	CERAMIC CAP. RB 1000pF/2KV or	CA3D102TE006
	CERAMIC CAP. BL 1000pF/2KV	CA3D102XF003
C610 	CAP ELE LQ SERIES 150µF/ 400V/M/85	CA2H151NC234
C611	CERAMIC CAP.(AX) B 0.01µF/ 50V	CK1JKT0B103
C612	ELECTROLYTIC CAP. 22µF/ 100V M or	CE2AMASDL220
	ALUMINUM ELECTROLYTIC CAP. 22µF/ 100V M	CE2AMASTM220
C613	CERAMIC CAP. B K 100pF/1KV or	CCD3AKD0B101
	CERAMIC CAP. B K 100pF/1KV or	CA3A101MR028
	CERAMIC CAP. B K 100pF/1KV	CCD3AKP0B101
C614	ELECTROLYTIC CAP. 100µF/ 25V M or	CE1EMASDL101
	ELECTROLYTIC CAP. 100µF/ 25V M or	CA1E101SP085
	ALUMINUM ELECTROLYTIC CAP. 100µF/ 25V M	CE1EMASTM101
C615	CERAMIC CAP.(AX) B K 0.01µF/ 50V	CA1J103TU011
C616	FILM CAP.(P) 0.0047µF/ 50V J or	CMA1JJS00472
	FILM CAP.(P) 0.0047µF/ 50V J or	CA1J472MS029
	POLYESTER FILM CAP. (PB FREE) 0.0047µF/ 100V J	CA2A472DT018
C630 	ELECTROLYTIC CAP. 2200µF/ 35V M or	CE1GMZPDL222
	ELECTROLYTIC CAP. 2200µF/ 35V M or	CE1GMZNLD222
	ALUMINUM ELECTROLYTIC CAP. 2200µF/ 35V M	CE1GMZNTM222
C632	ELECTROLYTIC CAP. 220µF/ 16V M or	CE1CMASDL221
	ELECTROLYTIC CAP. 220µF/ 16V M or	CA1C221SP085
	ELECTROLYTIC CAP. 220µF/ 16V M	CE1CMASTM221
C633 	ELECTROLYTIC CAP. 220µF/ 16V M or	CE1CMASDL221

Ref. No.	Description	Part No.
△	ELECTROLYTIC CAP. 220μF/ 16V M or	CA1C221SP085
△	ELECTROLYTIC CAP. 220μF/ 16V M	CE1CMASTM221
C634△	ELECTROLYTIC CAP. 2200μF/ 35V M(105°C) or	CE1GMAYTJ222
△	ELECTROLYTIC CAP. 2200μF/ 35V M(105°C)	CA1G222SP090
C635△	ELECTROLYTIC CAP. 470μF/ 16V M or	CE1CMASDL471
△	ELECTROLYTIC CAP. 470μF/ 16V M or	CA1C471SP085
△	ELECTROLYTIC CAP. 470μF/ 16V M	CE1CMASTM471
C636△	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C637△	ELECTROLYTIC CAP. 470μF/ 16V M or	CE1CMASDL471
△	ELECTROLYTIC CAP. 470μF/ 16V M or	CA1C471SP085
△	ELECTROLYTIC CAP. 470μF/ 16V M	CE1CMASTM471
C639△	SAFETY CAP. 2200pF/250V KX	CA2E222MR050
C640	ELECTROLYTIC CAP. 470μF/ 25V M or	CE1EMASDL471
	ELECTROLYTIC CAP. 470μF/ 25V M or	CA1E471SP085
	ALUMINUM ELECTROLYTIC CAP 470μF/ 25V M	CE1EMASTM471
C641△	PCB JUMPER D0.6-P10.0	JW10.0T
C642△	ELECTROLYTIC CAP. 10μF/ 50V M or	CE1JMASDL100
△	ELECTROLYTIC CAP. 10μF/ 50V M or	CA1J100SP085
△	ALUMINUM ELECTROLYTIC CAP 10μF/ 50V M	CE1JMASTM100
C643	ELECTROLYTIC CAP. 220μF/ 50V M or	CE1JMASDL221
	ELECTROLYTIC CAP. 220μF/ 50V M or	CA1J221SP085
	ELECTROLYTIC CAP. 220μF/ 50V M	CE1JMASTM221
C645△	ELECTROLYTIC CAP. 10μF/ 50V M or	CE1JMASDL100
△	ELECTROLYTIC CAP. 10μF/ 50V M or	CA1J100SP085
△	ALUMINUM ELECTROLYTIC CAP 10μF/ 50V M	CE1JMASTM100
C646	FILM CAP.(P) 0.1μF/ 50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1μF/ 50V J or	CA1J104MS029
	POLYESTER FILM CAP. (PB FREE) 0.1μF/ 100V J	CA2A104DT018
C648△	ELECTROLYTIC CAP. 1μF/ 50V M or	CE1JMASDL1R0
△	ELECTROLYTIC CAP. 1μF/ 50V M or	CA1J1R0SP085
△	ELECTROLYTIC CAP. 1μF/ 50V M	CE1JMASTM1R0
C649	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C651	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C652△	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C653	CHIP CERAMIC CAP. F Z 1μF/ 10V	CHD1AZ30F105
C657	ELECTROLYTIC CAP. 47μF/ 16V M H7 or	CE1CMAVSL470
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V H7	CE1CMAVSM470
C673	ELECTROLYTIC CAP. 470μF/ 6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470μF/ 6.3V M or	CA0K471SP085
	ELECTROLYTIC CAP. 470μF/ 6.3V M	CE0KMASTM471
C702	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C703	ELECTROLYTIC CAP. 47μF/ 16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V M	CE1CMASTM470
C704	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C707	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C708	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C710	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C711	ELECTROLYTIC CAP. 47μF/ 16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V M	CE1CMASTM470
C712	CHIP CERAMIC CAP.(1608) B K 5600pF/50V	CHD1JK30B562
C713	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C714	CHIP CERAMIC CAP.(1608) B K 5600pF/50V	CHD1JK30B562
C715	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C716	CERAMIC CAP.(AX) CH J 560pF/50V	CCK1JJTCH561
C717	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C718	CERAMIC CAP.(AX) CH J 560pF/50V	CCK1JJTCH561
C719	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C720	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C721	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C722	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C723	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C730	CHIP CERAMIC CAP.(1608) B K 0.047μF/ 50V	CHD1JK30B473
C742	ELECTROLYTIC CAP. 47μF/ 16V M or	CE1CMASDL470

Ref. No.	Description	Part No.
	ELECTROLYTIC CAP. 47μF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V M	CE1CMASTM470
C743	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C745	ELECTROLYTIC CAP. 47μF/ 16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V M	CE1CMASTM470
C746	CHIP CERAMIC CAP. F Z 2.2μF/ 10V	CHD1AZ30F225
C747	ELECTROLYTIC CAP. 33μF/ 16V M H7 or	CE1CMAVSL330
	ALUMINUM ELECTROLYTIC CAP 33μF/ 16V H7	CE1CMAVSM330
C751	ELECTROLYTIC CAP. 47μF/ 16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V M	CE1CMASTM470
C752	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C753	ELECTROLYTIC CAP. 47μF/ 16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V M	CE1CMASTM470
C754	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C756	ELECTROLYTIC CAP. 47μF/ 16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V M	CE1CMASTM470
C757	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C758	ELECTROLYTIC CAP. 47μF/ 16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47μF/ 16V M or	CA1C470SP085
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V M	CE1CMASTM470
C759	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C761	ELECTROLYTIC CAP. 100μF/ 6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100μF/ 6.3V M or	CA0K101SP085
	ELECTROLYTIC CAP. 100μF/ 6.3V M	CE0KMASTM101
C762	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C767	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C768	ELECTROLYTIC CAP. 470μF/ 6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470μF/ 6.3V M or	CA0K471SP085
	ELECTROLYTIC CAP. 470μF/ 6.3V M	CE0KMASTM471
C781	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C782	ELECTROLYTIC CAP. 47μF/ 16V M H7 or	CE1CMAVSL470
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V H7	CE1CMAVSM470
C783	ELECTROLYTIC CAP. 10μF/ 50V M H7 or	CE1JMAVSL100
	ALUMINUM ELECTROLYTIC CAP 10μF/ 50V H7	CE1JMAVSM100
C784	CERAMIC CAP.(AX) B 0.1μF/ 50V	CCK1JKT0B104
C785	ELECTROLYTIC CAP. 47μF/ 16V M H7 or	CE1CMAVSL470
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V H7	CE1CMAVSM470
C787	ELECTROLYTIC CAP. 47μF/ 16V M H7 or	CE1CMAVSL470
	ALUMINUM ELECTROLYTIC CAP 47μF/ 16V H7	CE1CMAVSM470
C791	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C792	ELECTROLYTIC CAP. 100μF/ 6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100μF/ 6.3V M or	CA0K101SP085
	ELECTROLYTIC CAP. 100μF/ 6.3V M	CE0KMASTM101
C801	ELECTROLYTIC CAP. 470μF/ 16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470μF/ 16V M or	CA1C471SP085
	ELECTROLYTIC CAP. 470μF/ 16V M	CE1CMASTM471
C802	ELECTROLYTIC CAP. 470μF/ 16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470μF/ 16V M or	CA1C471SP085
	ELECTROLYTIC CAP. 470μF/ 16V M	CE1CMASTM471
C803	FILM CAP.(P) 0.1μF/ 50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1μF/ 50V J or	CA1J104MS029
	POLYESTER FILM CAP. (PB FREE) 0.1μF/ 100V J	CA2A104DT018
C804	FILM CAP.(P) 0.1μF/ 50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1μF/ 50V J or	CA1J104MS029
	POLYESTER FILM CAP. (PB FREE) 0.1μF/ 100V J	CA2A104DT018
C810	CHIP CERAMIC CAP. F Z 1μF/ 10V	CHD1AZ30F105
C811	ELECTROLYTIC CAP. 100μF/ 16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100μF/ 16V M or	CA1C101SP085
	ELECTROLYTIC CAP. 100μF/ 16V M	CE1CMASTM101

Ref. No.	Description	Part No.
C812	CHIP CERAMIC CAP F Z 1µF/ 10V	CHD1AZ30F105
C813	PCB JUMPER D0.6-P5.0	JW5.0T
C814	PCB JUMPER D0.6-P5.0	JW5.0T
C815	ELECTROLYTIC CAP 1µF/ 50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP 1µF/ 50V M or	CA1J1R0SP085
	ELECTROLYTIC CAP 1µF/ 50V M	CE1JMASTM1R0
C818	ELECTROLYTIC CAP 470µF/ 16V M or	CE1CMASDL471
	ELECTROLYTIC CAP 470µF/ 16V M or	CA1C471SP085
	ELECTROLYTIC CAP 470µF/ 16V M	CE1CMASTM471
C819	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C820	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C831	CHIP CERAMIC CAP. F Z 0.01µF/ 50V	CHD1JZ30F103
C832	CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C833	CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220
C834	CHIP CERAMIC CAP.(1608) CH J 68pF/50V	CHD1JJ3CH680
C835	CHIP CERAMIC CAP.(1608) CH J 68pF/50V	CHD1JJ3CH680
C836	CHIP CERAMIC CAP. CH D 3pF/50V or	CHD1JD3CH3R0
	CHIP CERAMIC CAP. CH C 3pF/50V or	CHD1JC3CH3R0
	CHIP CERAMIC CAP. CJ C 3pF/50V	CHD1JC3CJ3R0
C837	CHIP CERAMIC CAP. CH D 3pF/50V or	CHD1JD3CH3R0
	CHIP CERAMIC CAP. CH C 3pF/50V or	CHD1JC3CH3R0
	CHIP CERAMIC CAP. CJ C 3pF/50V	CHD1JC3CJ3R0
C838	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C839	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C840	ELECTROLYTIC CAP 10µF/ 16V M or	CE1CMASDL100
	ELECTROLYTIC CAP 10µF/ 16V M or	CA1C100SP085
	ELECTROLYTIC CAP 10µF/ 16V M	CE1CMASTM100
C841	CHIP CERAMIC CAP. F Z 0.01µF/ 50V	CHD1JZ30F103
C843	ELECTROLYTIC CAP 100µF/ 6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP 100µF/ 6.3V M or	CA0K101SP085
	ELECTROLYTIC CAP 100µF/ 6.3V M	CE0KMASTM101
C844	CERAMIC CAP.(AX) B 0.01µF/ 50V	CCK1JKT0B103
C845	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C846	CERAMIC CAP.(AX) B 0.01µF/ 50V	CCK1JKT0B103
C847	ELECTROLYTIC CAP 10µF/ 16V M or	CE1CMASDL100
	ELECTROLYTIC CAP 10µF/ 16V M or	CA1C100SP085
	ELECTROLYTIC CAP 10µF/ 16V M	CE1CMASTM100
C848	CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C850	ELECTROLYTIC CAP 10µF/ 16V M or	CE1CMASDL100
	ELECTROLYTIC CAP 10µF/ 16V M or	CA1C100SP085
	ELECTROLYTIC CAP 10µF/ 16V M	CE1CMASTM100
C851	ELECTROLYTIC CAP 3.3µF/ 50V M or	CE1JMASDL3R3
	ELECTROLYTIC CAP 3.3µF/ 50V M or	CA1J3R3SP085
	ALUMINUM ELECTROLYTIC CAP 3.3µF/ 50V M	CE1JMASTM3R3
C852	CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C853	CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C854	ELECTROLYTIC CAP 10µF/ 16V M or	CE1CMASDL100
	ELECTROLYTIC CAP 10µF/ 16V M or	CA1C100SP085
	ELECTROLYTIC CAP 10µF/ 16V M	CE1CMASTM100
C855	CHIP CERAMIC CAP. F Z 0.47µF/ 16V	CHD1CZ30F474
C860	ELECTROLYTIC CAP 22µF/ 16V M or	CE1CMASDL220
	ELECTROLYTIC CAP 22µF/ 16V M or	CA1C220SP085
	ALUMINUM ELECTROLYTIC CAP 22µF/ 16V M	CE1CMASTM220
C871	ELECTROLYTIC CAP 10µF/ 50V M or	CE1JMASDL100
	ELECTROLYTIC CAP 10µF/ 50V M or	CA1J100SP085
	ALUMINUM ELECTROLYTIC CAP 10µF/ 50V M	CE1JMASTM100
C872	CERAMIC CAP.(AX) B 0.1µF/ 50V	CCK1JKT0B104
C873	CHIP CERAMIC CAP. F Z 1µF/ 10V	CHD1AZ30F105
C874	CHIP CERAMIC CAP. F Z 1µF/ 10V	CHD1AZ30F105
C875	CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C876	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C877	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
CONNECTORS		
CN51	PH CONNECTOR TOP 6P B6B-PH-K-S (LF)(SN)	J3PHC06JG029
CN53	CONNECTOR PRINT OSU B5B-PH-K-S (LF)(SN)	J3PHC05JG029
CN405	WIRE ASSEMBLY 13P WX1L4200-006	WX1L4200-006

Ref. No.	Description	Part No.
CN801	CONNECTOR PRINT OSU 008283021200000S+ or	J383C02UG004
	CONNECTOR PRINT OSU 2P 292161-2	J31FC02AP001
CN802	CONNECTOR PRINT OSU 008283021200000S+ or	J383C02UG004
	CONNECTOR PRINT OSU 2P 292161-2	J31FC02AP001
CN101A	CONNECTOR 10P TKC-W10P-B1 BLK ST	JCTKT10TG008
CN102A	CONNECTOR 26P TKC-W26P-B1 BLK ST	JCTKT26TG008
CN103A	CONNECTOR 26P TKC-W26P-B1 BLK ST	JCTKT26TG008
DIODES		
D11	ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8
	ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D12	ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8
	ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D501▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148	NDTZ001N4148
D502	ZENER DIODE MTZJT-7727B or	QDTB00MTZJ27
	ZENER DIODE DZ-27BSBT265	NDTB00DZ27BS
D504▲	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148	NDTZ001N4148
D505	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
D506	ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
	ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D507	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D508	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D513	SWITCHING DIODE 1SS400 or	QD1Z001SS400
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D514	SCHOTTKY BARRIER DIODE ERC81-004	QDPZERC81004
D516	ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
	ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D517	ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
	ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D520	SCHOTTKY BARRIER DIODE ERA81-004Q	QDLZRA81004Q
D521	SCHOTTKY BARRIER DIODE ERA81-004Q	QDLZRA81004Q
D522	SCHOTTKY BARRIER DIODE ERC81-004	QDPZERC81004
D524	ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
	ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D531	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D534	ZENER DIODE MTZJT-779.1B or	QDTB0MTZJ9R1
	ZENER DIODE DZ-9.1BSBT265	NDTB0DZ9R1BS
D542	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D583	PCB JUMPER D0.6-P5.0	JW5.0T
D605▲	DIODE D2SB80-7000	QDWZ00D2SB80
D608▲	DIODE ZENER 1ZC18(Q)	QDLZ001ZC18Q
D610▲	FAST RECOVERY DIODE ERB44-10	QDLZ0ERB4410
D611▲	DIODE FR154 or	NDLZ000FR154
▲	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D612	ZENER DIODE MTZJT-7736B or	QDTB00MTZJ36
	ZENER DIODE DZ-36BSBT265	NDTB00DZ36BS
D613	ZENER DIODE MTZJT-7733B or	QDTB00MTZJ33
	ZENER DIODE DZ-33BSBT265	NDTB00DZ33BS
D614	DIODE FR154 or	NDLZ000FR154
	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D615	ZENER DIODE MTZJT-7716B or	QDTB00MTZJ16
	ZENER DIODE DZ-16BSBT265	NDTB00DZ16BS
D616▲	ZENER DIODE MTZJT-7736B or	QDTB00MTZJ36
▲	ZENER DIODE DZ-36BSBT265	NDTB00DZ36BS
D617	PCB JUMPER D0.6-P5.0	JW5.0T
D619	DIODE FR154 or	NDLZ000FR154
	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D621	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D622	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148

Ref. No.	Description	Part No.
D623	ZENER DIODE MTZJT-7733B or	QDTB00MTZJ33
	ZENER DIODE DZ-33BSBT265	NDTB00DZ33BS
D624	ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
▲	ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D631	DIODE FR154 or	NDLZ000FR154
▲	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D633	SCHOTTKY BARRIER DIODE 21DQ04 or	QDQZ0021DQ04
▲	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D635	SCHOTTKY BARRIER DIODE ERC81-004	QDPZERC81004
D637	SCHOTTKY BARRIER DIODE ERC84-009	QDLZERC84009
D640	DIODE FR104-B	NDLZ000FR104
D641	ZENER DIODE MTZJT-7736B or	QDTB00MTZJ36
▲	ZENER DIODE DZ-36BSBT265	NDTB00DZ36BS
D642	SWITCHING DIODE 1SS400 or	QD1Z001SS400
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D643	SWITCHING DIODE 1SS400 or	QD1Z001SS400
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D644	SWITCHING DIODE 1SS400 or	QD1Z001SS400
▲	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D645	DIODE FR154 or	NDLZ000FR154
▲	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D646	DIODE 1ZC43(Q)	QDLZ001ZC43Q
D647	ZENER DIODE MTZJT-7739B or	QDTB00MTZJ39
▲	ZENER DIODE DZ-39BSBT265	NDTB00DZ39BS
D648	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148	NDTZ001N4148
D649	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
D650	SWITCHING DIODE 1SS400 or	QD1Z001SS400
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D651	SWITCHING DIODE 1SS400 or	QD1Z001SS400
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D654	SCHOTTKY BARRIER DIODE YG861S12RSC or	QDQZYG861S12
	SCHOTTKY BARRIER DIODE YG811S09R	QDWZYG811S09
D656	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
▲	SWITCHING DIODE 1N4148	NDTZ001N4148
D658	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D659	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D668	SWITCHING DIODE 1SS400 or	QD1Z001SS400
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D671	ZENER DIODE MTZJT-7718B or	QDTB00MTZJ18
	ZENER DIODE DZ-18BSBT265	NDTB00DZ18BS
D672	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D673	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D675	SWITCHING DIODE 1SS400 or	QD1Z001SS400
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D712	PCB JUMPER D0.6-P5.0	JW5.0T
D730	SWITCHING DIODE 1SS400 or	QD1Z001SS400
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D731	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
D751	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D752	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D753	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D754	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D755	ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
	ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D756	ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
	ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D802	SWITCHING DIODE 1SS400 or	QD1Z001SS400

Ref. No.	Description	Part No.
	SWITCHING DIODE KDS160E-RTK/P	ND1ZKDS160EP
D803	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D804	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D805	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
<b>ICs</b>		
IC503	IC REGULATOR KA78R08C or	NSZBA0SF3119
	IC REGULATOR KA78R08TU or	NSZBA0SF3129
	VOLTAGE REGULATOR KIA78R08API/P	NSZBA0SJOY037
IC504	VOLTAGE REGULATOR PQ070XF01SZH	QSZA0SSH054
IC507	IC VOLTAGE REGULATOR 5V KIA7805API/P or	NSZBA0SJOY041
	VOLTAGE REGULATOR KA7805A	NSZBA0SF3052
IC601	PHOTO COUPLER PS2561L1-1-A-V(L)	QPEL561L11AV
IC602	POWER SUPPLY IC MODULE MR2920-7109F12	QSZA0SSD004
IC603	PHOTO COUPLER PS2561L1-1-A-V(L)	QPEL561L11AV
IC631	LOW DROP VOLTAGE REGULATOR BA50BCOT	QSZA0SRM092
IC781	IC SWITCH TC4053BF(EL N F) or	QSZA0TTS163
	IC ANALOG MULTIPLEXERS CD4053BCSJX_NL or	NSZBA0TF3138
	IC ANALOG MULTIPLEXER CD4053BNSR	NSZBA0TTY093
IC801	IC AN17812A	QSZA0SMS017
IC831	IC AUDIO PROCESSOR MSP3417G-QG-B8-V3	NSZBA0SP3005
IC871	IC SWITCHING TC4052BF(ELNF) or	QSZA0TTS162
	IC SWITCHING CD4052BCSJX_NL or	NSZBA0TF3137
	IC SWITCHING CD4052BNSR	NSZBA0TTY091
<b>COILS</b>		
L11	INDUCTOR 22μH-K-5FT	LLARKBSTU220
L12	INDUCTOR 22μH-K-5FT	LLARKBSTU220
L501	CHOKE COIL 47μH or	LLBD00PKV022
	FIXED INDUCTORS(PB FREE) LGB0810TLF-470K	LLBD00PU6010
L601	LINE FILTER ELF17N008A	LLBG00ZMS048
L632	INDUCTOR 22μH-J-26T	LLAXJATTU220
L741	INDUCTOR 12μH-J-26T	LLAXJATTU120
L761	PCB JUMPER D0.6-P5.0	JW5.0T
L781	INDUCTOR 22μH-K-5FT	LLARKBSTU220
L831	INDUCTOR 18μH-J-26T	LLAXJATTU180
L832	INDUCTOR 10μH-J-26T	LLAXJATTU100
L833	PCB JUMPER D0.6-P5.0	JW5.0T
L834	PCB JUMPER D0.6-P5.0	JW5.0T
L835	INDUCTOR 10μH-J-26T	LLAXJATTU100
L836	PCB JUMPER D0.6-P5.0	JW5.0T
L837	PCB JUMPER D0.6-P5.0	JW5.0T
L838	INDUCTOR 2.2μH-J-26T	LLAXJATTU2R2
L839	INDUCTOR 2.2μH-J-26T	LLAXJATTU2R2
L840	INDUCTOR 2.2μH-K-5FT	LLARKBSTU2R2
<b>TRANSISTORS</b>		
Q11	TRANSISTOR 2SA1576A T106R	QQ1R2SA1576A
Q501	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q502	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267-GR-AT/P or	NQS1KTA1267P
	TRANSISTOR KTA-1266-GR-AT/P or	NQS4KTA1266P
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ
	TRANSISTOR 2SA1318(U)-AANP	2SA1318UZ
Q503	TRANSISTOR 2SC2120-O(TE2 F T) or	QQS02SC2120F
	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q504	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267-GR-AT/P or	NQS1KTA1267P
	TRANSISTOR KTA-1266-GR-AT/P or	NQS4KTA1266P
	TRANSISTOR 2SA1318(T)-AANP or	2SA1318TZ



Ref. No.	Description	Part No.
R17	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R18	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R502	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R503	PCB JUMPER D0.6-P5.0	JW5.0T
R504	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R505	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R506	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R508	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R509	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R510	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R511	CHIP RES. 1/10W F 13k Ω or CHIP RES. 1/10W F 13k Ω	RRXAFR5H1302 RRXAFR5Z1302
R512	CHIP RES. 1/10W F 3.9k Ω or CHIP RES.(1608) 1/10W F 3.9k Ω	RRXAFR5H3901 RRXAFR5Z3901
R513	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R514	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R515	METAL OXIDE FILM RES. 2W J 6.8 Ω or METAL OXIDE FILM RES. 2W J 6.8 Ω	RN026R8ZU001 RN026R8DP004
R517	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R520	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R521	CARBON RES. 1/4W J 68 Ω	RCX4JATZ0680
R522	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R523	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R528	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R531	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R532	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R533	CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R534	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R541	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R542	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R543	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R550	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R552	METAL OXIDE FILM RES. 1W J 1 Ω or METAL OXIDE FILM RES. 1W J 1 Ω	RN011R0ZU001 RN011R0DP003
R555	CHIP RES. 1/10W F 9.1k Ω or CHIP RES.(1608) 1/10W F 9.1k Ω	RRXAFR5H9101 RRXAFR5Z9101
R556	CHIP RES. 1/10W F 5.6k Ω or CHIP RES. 1/10W F 5.6k Ω	RRXAFR5H5601 RRXAFR5Z5601
R557	CHIP RES. 1/10W J 3.9k Ω	RRXAJR5Z0392
R572	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R573	CHIP RES. 1/10W J 120k Ω	RRXAJR5Z0124
R574	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R575	PCB JUMPER D0.6-P5.0	JW5.0T
R601 <sup>△</sup>	CEMENT RESISTOR 5W K 1.2 Ω or <sup>△</sup> CEMENT RESISTOR 5W J 1.2 Ω H 10MM	RW051R2PG001 RW051R2PAK10
R606	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R607	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R608	METAL OXIDE FILM RES. 2W J 0.22 Ω or METAL OXIDE FILM RES. 2W J 0.22 Ω	RN02R22ZU001 RN02R22DP004
R609	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R610	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R612	CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R613 <sup>△</sup>	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R614	CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R616	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R617	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R618	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R619	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R633	CHIP RES. 1/10W J 82k Ω	RRXAJR5Z0823
R634 <sup>△</sup>	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R635 <sup>△</sup>	CHIP RES. 1/10W J 27k Ω	RRXAJR5Z0273
R636	PCB JUMPER D0.6-P5.0	JW5.0T
R638	CARBON RES. 1/2W J 3.3M Ω or GLASS GLAZE RES. 1/2W J 3.3M Ω	RCX2335DP001 RXX2JZLZ0335
R639	SPECIAL POWER TYPE ANTI-SURGE RES. 1/ 2W J 5.6M Ω or CARBON RES. 1/2W K 5.6M Ω or	RCX2565DP003 RCX2565FS001

Ref. No.	Description	Part No.
	GLASS GLAZE RES. 1/2W J 5.6M Ω	RXX2JZLZ0565
R642 <sup>△</sup>	CHIP RES. 1/10W J 27k Ω	RRXAJR5Z0273
R643 <sup>△</sup>	CHIP RES. 1/10W J 27k Ω	RRXAJR5Z0273
R645	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R646	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R647	CHIP RES. 1/10W F 2.7k Ω or CHIP RES.(1608) 1/10W F 2.7k Ω	RRXAFR5H2701 RRXAFR5Z2701
R648 <sup>△</sup>	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R649	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R650 <sup>△</sup>	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R651 <sup>△</sup>	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R652 <sup>△</sup>	CHIP RES. 1/10W F 1.8k Ω or <sup>△</sup> CHIP RES. 1/10W F 1.8k Ω	RRXAFR5H1801 RRXAFR5Z1801
R653 <sup>△</sup>	CHIP RES. 1/10W F 1.2k Ω or <sup>△</sup> CHIP RES.(1608) 1/10W F 1.2k Ω	RRXAFR5H1201 RRXAFR5Z1201
R654 <sup>△</sup>	CHIP RES. 1/10W F 1.2k Ω or <sup>△</sup> CHIP RES.(1608) 1/10W F 1.2k Ω	RRXAFR5H1201 RRXAFR5Z1201
R655	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R656	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R657	CHIP RES. 1/10W F 1.8k Ω or CHIP RES. 1/10W F 1.8k Ω	RRXAFR5H1801 RRXAFR5Z1801
R658	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R659	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R660	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R662	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R663	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R668	METAL OXIDE FILM RES. 2W J 1.5k Ω or METAL OXIDE FILM RES. 2W J 1.5k Ω	RN02152ZU001 RN02152DP004
R670	METAL OXIDE FILM RES. 2W J 1.5k Ω or METAL OXIDE FILM RES. 2W J 1.5k Ω	RN02152ZU001 RN02152DP004
R673	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R674	METAL OXIDE FILM RES. 2W J 56 Ω or METAL OXIDE FILM RES. 2W J 56 Ω	RN02560ZU001 RN02560DP004
R675	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R701	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R702	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R704	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R705	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R706	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R707	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R708	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R710	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R711	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R712	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R713	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R714	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R716	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R717	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R718	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R719	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R720	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R721	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R722	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R723	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R724	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R725	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R726	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R727	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R729	CHIP RES. 1/10W J 68k Ω	RRXAJR5Z0683
R730	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R731	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R732	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R733	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R735	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R737	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R738	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R740	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473

Ref. No.	Description	Part No.
R741	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R743	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R744	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R745	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R746	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R748	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R749	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R750	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R751	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R752	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R753	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R754	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R755	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R756	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R758	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R759	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R760	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R761	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R762	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R763	CARBON RES. 1/4W J 75 Ω	RCX4JATZ0750
R764	CARBON RES. 1/4W J 75 Ω	RCX4JATZ0750
R765	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R766	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R767	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R768	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R769	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R770	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R771	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R772	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R773	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R774	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R775	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R776	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R777	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R778	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R780	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R781	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R783	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R784	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R785	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R786	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R787	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R788	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R789	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R790	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R791	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R792	PCB JUMPER D0.6-P5.0	JW5.0T
R793	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R794	CHIP RES. 1/10W J 820 Ω	RRXAJR5Z0821
R795	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R796	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R797	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R798	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R799	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R801	CARBON RES. 1/2W J 100 Ω	RCX2JZQZ0101
R802	CARBON RES. 1/2W J 100 Ω	RCX2JZQZ0101
R803	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R804	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R805 <sup>△</sup>	METAL OXIDE FILM RES. 2W J 2.2 Ω or	RN022R2ZU001
<sup>△</sup>	METAL OXIDE FILM RES. 2W J 2.2 Ω	RN022R2DP004
R807 <sup>△</sup>	METAL OXIDE FILM RES. 2W J 2.2 Ω or	RN022R2ZU001
<sup>△</sup>	METAL OXIDE FILM RES. 2W J 2.2 Ω	RN022R2DP004
R812	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R813	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R814	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R815	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R816	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272

Ref. No.	Description	Part No.
R817	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R831	CHIP RES. 1/10W J 1.2k Ω	RRXAJR5Z0122
R832	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R833	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R834	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R835	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R838	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R851	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R853	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R871	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R872	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R873	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R874	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R875	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R876	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R877	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R878	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R879	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R880	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R881	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R882	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R883	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R884	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R885	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R886	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R887	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R888	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
<b>MISCELLANEOUS</b>		
AC601 <sup>△</sup>	AC CORD PE8G2CG1H0A-057	WAE0172LW013
B10	HEAT SINK PKB ASSEMBLY L4100EA	1EM420583
B22	HEAT SINK PIS ASSEMBLY L0200UA or	0EM408833A
	HEAT SINK PKP ASSEMBLY L4200EA	1EM420855
BC602	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC631	PCB JUMPER D0.6-P5.0	JW5.0T
BC632	PCB JUMPER D0.6-P5.0	JW5.0T
BC637	PCB JUMPER D0.6-P5.0	JW5.0T
BC638	PCB JUMPER D0.6-P5.0	JW5.0T
BC639	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC642	PCB JUMPER D0.6-P5.0	JW5.0T
F601 <sup>△</sup>	FUSE 4A/250V(PB FREE) 0215004.MXP	PBGZ20BAG021
FH601	FUSE HOLDER MSF-015	XH01200LY001
FH602	FUSE HOLDER MSF-015	XH01200LY001
JK721	JACK SW DIN PCB L DIN-409C or	JYEL040YUQ01
	Y/C JACK 1P(SW) DMDC1-01-021	JYEL040RP001
JK722	JACK RCA PCB L RCA-112(2)-04(YL)	JXRL010YUQ10
JK723	JACK RCA PCB L RCA-112(2)-04(WH)	JXRL010YUQ11
JK724	JACK SW RCA PCB L RCA-112-03(RD)	JYRL010YUQ02
JK751	RGB CONNECTOR MRC-021V-05 ABS(B110)	JXGL210LY008
JK801	JACK SW HPEP SML PCB L PJ-323-7	JYSL020YUQ02
JS81	PCB JUMPER D0.6-P7.5	JW7.5T
JS401	PCB JUMPER D0.6-P5.0	JW5.0T
JS403	PCB JUMPER D0.6-P5.0	JW5.0T
JS504	PCB JUMPER D0.6-P5.0	JW5.0T
JS505	PCB JUMPER D0.6-P7.5	JW7.5T
JS507	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JS703	PCB JUMPER D0.6-P5.0	JW5.0T
JS806	PCB JUMPER D0.6-P5.0	JW5.0T
JS831	PCB JUMPER D0.6-P7.5	JW7.5T
L16	SCREW B-TIGHT 3X8 BIND HEAD+	GBJB3080
L20	SCREW B-TIGHT D3X10 BIND HEAD+	GBJB3100
SA601 <sup>△</sup>	SURGE ABSORBER 470V+10PER	NVQZ10D471KB
SA602 <sup>△</sup>	SURGE ABSORBER 470V+10PER	NVQZ10D471KB
T601 <sup>△</sup>	SWITCHING TRANS 5713	LTT00EPKT172
TM601	EYELET TYPE D-1	0VM406868
TM602	EYELET TYPE D-1	0VM406868
TP300	PCB JUMPER D0.6-P7.5	JW7.5T
TP401	PCB JUMPER D0.6-P17.5	JW17.5T

Ref. No.	Description	Part No.
VR649/A	CARBON P.O.T. VZ067TL1 B502 PB(F)	VRCB502HH014
X831	XTAL 18.432MHz	FXD186LLN001

## FUNCTION CBA

Ref. No.	Description	Part No.
	FUNCTION CBA Consists of the following:	-----
<b>CAPACITOR</b>		
C52	CHIP CERAMIC CAP. F Z 0.01μF/ 50V	CHD1JZ30F103
<b>CONNECTOR</b>		
CN51A	WIRE ASSEMBLY 6P WX1L4200-005	WX1L4200-005
<b>RESISTORS</b>		
R51	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R52	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R53	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R54	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R55	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R56	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R57	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R59	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R60	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
<b>SWITCHES</b>		
SW51	TACT SWITCH SKHHARA010 or TACT SWITCH KSMC622A	SST0101AL060 SST0101HH031
SW52	TACT SWITCH SKHHARA010 or TACT SWITCH KSMC622A	SST0101AL060 SST0101HH031
SW53	TACT SWITCH SKHHARA010 or TACT SWITCH KSMC622A	SST0101AL060 SST0101HH031
SW54	TACT SWITCH SKHHARA010 or TACT SWITCH KSMC622A	SST0101AL060 SST0101HH031
SW55	TACT SWITCH SKHHARA010 or TACT SWITCH KSMC622A	SST0101AL060 SST0101HH031
SW56	TACT SWITCH SKHHARA010 or TACT SWITCH KSMC622A	SST0101AL060 SST0101HH031
SW58	TACT SWITCH SKHHARA010 or TACT SWITCH KSMC622A	SST0101AL060 SST0101HH031

## IR SENSOR CBA

Ref. No.	Description	Part No.
	IR SENSOR CBA Consists of the following:	-----
<b>CAPACITORS</b>		
C53	ELECTROLYTIC CAP. 47μF/ 10V M or ELECTROLYTIC CAP. 47μF/ 10V M or ALUMINUM ELECTROLYTIC CAP. 47μF/ 10V M	CE1AMASDL470 CA1A470SP085 CE1MASTM470
<b>DIODE</b>		
D51	LED L-53HT	NP4Z000L53HT
<b>RESISTORS</b>		
R58	CHIP RES. 1/10W J 220 Ω	RRXAJB5Z0221
R64	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R65	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
<b>MISCELLANEOUS</b>		
CLN53	WIRE ASSEMBLY 5P WX1L4200-004	WX1L4200-004
JS51	PCB JUMPER D0.6-P5.0	JW5.0T
RCV51	PHOTO LINK MODULE RPM7237-H9	USESJRSRM006

## INVERTER CBA

Ref. No.	Description	Part No.
	INVERTER CBA Consists of the following:	1ESA10484
<b>CAPACITORS</b>		
C1401	ELECTROLYTIC CAP. 47μF/ 35V M or ELECTROLYTIC CAP. 47μF/ 35V M or ELECTROLYTIC CAP. 47μF/ 35V M	CE1GMASDL470 CA1G470SP085 CE1MASTM470
C1402	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104

Ref. No.	Description	Part No.
C1403	ELECTROLYTIC CAP. 100μF/ 16V M or ELECTROLYTIC CAP. 100μF/ 16V M or ELECTROLYTIC CAP. 100μF/ 16V M	CE1CMASDL101 CA1C101SP085 CE1CMASTM101
C1404	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C1405	CHIP CERAMIC CAP.(1608) B K 0.047μF/ 50V	CHD1JK30B473
C1406	CHIP CERAMIC CAP. CH J 220pF/50V	CHD1JJ3CH221
C1407	CHIP CERAMIC CAP.(1608) B K 6800pF/50V	CHD1JK30B682
C1408	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1409	CHIP CERAMIC CAP.(1608) B K 6800pF/50V	CHD1JK30B682
C1410	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1412	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C1413	ELECTROLYTIC CAP. 0.22μF/ 50V M or ELECTROLYTIC CAP. 0.22μF/ 50V M or ELECTROLYTIC CAP. 0.22μF/ 50V M	CE1JMASDLR22 CA1JR22SP085 CE1JMASTMR22
C1414	ELECTROLYTIC CAP. 2.2μF/ 50V M or ELECTROLYTIC CAP. 2.2μF/ 50V M or ALUMINUM ELECTROLYTIC CAP. 2.2μF/ 50V M	CE1JMASDL2R2 CA1J2R2SP085 CE1JMASTM2R2
C1415	ELECTROLYTIC CAP. 2.2μF/ 50V M or ELECTROLYTIC CAP. 2.2μF/ 50V M or ALUMINUM ELECTROLYTIC CAP. 2.2μF/ 50V M	CE1JMASDL2R2 CA1J2R2SP085 CE1JMASTM2R2
C1416	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C1417	ALUMINUM ELECTROLYTIC CAP. 470μF/ 35V M or ELECTROLYTIC CAP. 470μF/ 35V M or ELECTROLYTIC CAP. 470μF/ 35V M	CE1GMZNTM471 CE1GMZADL471 CE1GMZPDL471
C1420	ELECTROLYTIC CAP. 47μF/ 35V M	CA1G470SP096
C1421	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C1422	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1423	CHIP CERAMIC CAP. B K 4.7μF/ 25V	CHF1EK30B475
C1425	CHIP CERAMIC CAP. B K 4.7μF/ 25V	CHF1EK30B475
C1426	ELECTROLYTIC CAP. 47μF/ 35V M	CA1G470SP096
C1427	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C1428	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1429	CHIP CERAMIC CAP. B K 4.7μF/ 25V	CHF1EK30B475
C1430	CHIP CERAMIC CAP. B K 4.7μF/ 25V	CHF1EK30B475
C1431	ELECTROLYTIC CAP. 47μF/ 35V M	CA1G470SP096
C1432	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C1433	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1434	CHIP CERAMIC CAP. B K 4.7μF/ 25V	CHF1EK30B475
C1435	CHIP CERAMIC CAP. B K 4.7μF/ 25V	CHF1EK30B475
C1436	ELECTROLYTIC CAP. 47μF/ 35V M	CA1G470SP096
C1437	CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C1438	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1439	CHIP CERAMIC CAP. B K 4.7μF/ 25V	CHF1EK30B475
C1440	CHIP CERAMIC CAP. B K 4.7μF/ 25V	CHF1EK30B475
C1450	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1451	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1452	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1453	CERAMIC CAP. SL D 10pF/3KV	CCD3FDASL100
C1454	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C1455	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C1456	CERAMIC CAP. SL D 10pF/3KV	CCD3FDASL100
C1460	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1461	CERAMIC CAP. SL D 10pF/3KV	CCD3FDASL100
C1462	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C1463	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C1464	CERAMIC CAP. SL D 10pF/3KV	CCD3FDASL100
C1470	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1471	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1472	CERAMIC CAP. SL D 10pF/3KV	CCD3FDASL100
C1473	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C1474	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C1475	CERAMIC CAP. SL D 10pF/3KV	CCD3FDASL100
C1480	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1481	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1482	CERAMIC CAP. SL D 10pF/3KV	CCD3FDASL100
C1483	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223

Ref. No.	Description	Part No.
C1484	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C1485	CERAMIC CAP. SL D 10pF/3KV	CCD3FDASL100
C1490	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1491	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1495	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1496	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
C1497	CHIP CERAMIC CAP.(1608) B K 0.22μF/ 25V	CHD1EK30B224
<b>CONNECTORS</b>		
CN1401	CONNECTOR BASE TOP 13P B13B-PH-K-S(LF)(SN)	J3PHC13JG029
CN1402	BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
CN1403	BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
CN1404	BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
CN1405	BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
<b>DIODES</b>		
D1401	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1402	ZENER DIODE MTZJT-779.1B or ZENER DIODE DZ-9.1BSBT265	QDTB0MTZJ9R1 NDTB0DZ9R1BS
D1403	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1410	ZENER DIODE MTZJT-779.1B or ZENER DIODE DZ-9.1BSBT265	QDTB0MTZJ9R1 NDTB0DZ9R1BS
D1411	SCHOTTKY BARRIEA DIODE 11EQS04 or SCHOTTKY BARRIER DIODE ERA81-004Q	QD4Z011EQS04 QDLZRA81004Q
D1412	SCHOTTKY BARRIEA DIODE 11EQS04 or SCHOTTKY BARRIER DIODE ERA81-004Q	QD4Z011EQS04 QDLZRA81004Q
D1415	ZENER DIODE MTZJT-779.1B or ZENER DIODE DZ-9.1BSBT265	QDTB0MTZJ9R1 NDTB0DZ9R1BS
D1416	SCHOTTKY BARRIEA DIODE 11EQS04 or SCHOTTKY BARRIER DIODE ERA81-004Q	QD4Z011EQS04 QDLZRA81004Q
D1417	SCHOTTKY BARRIEA DIODE 11EQS04 or SCHOTTKY BARRIER DIODE ERA81-004Q	QD4Z011EQS04 QDLZRA81004Q
D1420	ZENER DIODE MTZJT-779.1B or ZENER DIODE DZ-9.1BSBT265	QDTB0MTZJ9R1 NDTB0DZ9R1BS
D1421	SCHOTTKY BARRIEA DIODE 11EQS04 or SCHOTTKY BARRIER DIODE ERA81-004Q	QD4Z011EQS04 QDLZRA81004Q
D1422	SCHOTTKY BARRIEA DIODE 11EQS04 or SCHOTTKY BARRIER DIODE ERA81-004Q	QD4Z011EQS04 QDLZRA81004Q
D1425	ZENER DIODE MTZJT-779.1B or ZENER DIODE DZ-9.1BSBT265	QDTB0MTZJ9R1 NDTB0DZ9R1BS
D1426	SCHOTTKY BARRIEA DIODE 11EQS04 or SCHOTTKY BARRIER DIODE ERA81-004Q	QD4Z011EQS04 QDLZRA81004Q
D1427	SCHOTTKY BARRIEA DIODE 11EQS04 or SCHOTTKY BARRIER DIODE ERA81-004Q	QD4Z011EQS04 QDLZRA81004Q
D1430	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1431	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1432	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1433	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1434	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1435	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1436	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1437	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1440	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1441	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1442	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148

Ref. No.	Description	Part No.
D1443	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1444	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1445	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1446	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1447	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1450	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1451	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1452	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1453	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1454	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1455	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1456	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1457	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1460	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1461	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1462	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1463	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1464	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1465	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1466	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
D1467	SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1N4148	QDTZ001SS133 NDTZ001N4148
<b>ICS</b>		
IC1401	IC BD9766FV-E2	QSZBA0TRM062
IC1402	IC BA10324AF-E2 or IC(OPAMP) LM324NSR	QSZBA0TRM032 NSZBA0TTY190
IC1403	IC BA10324AF-E2 or IC(OPAMP) LM324NSR	QSZBA0TRM032 NSZBA0TTY190
<b>TRANSISTORS</b>		
Q1401	TRANSISTOR 2SD1859 TV2 Q	QQSQ02SD1859
Q1402	TRANSISTOR 2SC2785(F) or TRANSISTOR 2SC2785(H) or TRANSISTOR 2SC2785(J) or TRANSISTOR KTC3199-GR-AT/P or TRANSISTOR KTC3198-GR-AT/P	QQSF02SC2785 QQSH02SC2785 QQSJ02SC2785 NQS4KTC3199P NQS4KTC3198P
Q1403	TRANSISTOR 2SC2120-O(TE2 F T) or TRANSISTOR 2SC2120-Y(TE2 F T)	QQS02SC2120F QQSY2SC2120F
Q1405	FET TPC8405(TE12 L Q)	QF2ZTPC8405Q
Q1406	FET TPC8405(TE12 L Q)	QF2ZTPC8405Q
Q1407	FET TPC8405(TE12 L Q)	QF2ZTPC8405Q
Q1408	FET TPC8405(TE12 L Q)	QF2ZTPC8405Q
Q1410	TRANSISTOR 2SC2785(F) or TRANSISTOR 2SC2785(H) or TRANSISTOR 2SC2785(J) or TRANSISTOR KTC3199-GR-AT/P or TRANSISTOR KTC3198-GR-AT/P	QQSF02SC2785 QQSH02SC2785 QQSJ02SC2785 NQS4KTC3199P NQS4KTC3198P
Q1411	TRANSISTOR 2SC2785(F) or	QQSF02SC2785

Ref. No.	Description	Part No.
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1412	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1413	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1414	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1415	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1416	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1417	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1418	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1419	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1420	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
Q1421	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199-GR-AT/P or	NQS4KTC3199P
	TRANSISTOR KTC3198-GR-AT/P	NQS4KTC3198P
<b>RESISTORS</b>		
R1401	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R1402	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1403	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1404	CHIP RES. 1/10W J 1 Ω	RRXAJR5Z01R0
R1405	CHIP RES. 1/10W J 5.1k Ω	RRXAJR5Z0512
R1406	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1407	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1408	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1409	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R1410	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1411	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1412	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000

Ref. No.	Description	Part No.
R1413	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1415	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R1416	CHIP RES. 1/10W F 30k Ω	RRXAFR5H3002
R1417	CHIP RES. 1/10W F 2k Ω	RRXAFR5H2001
R1418	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1419	CHIP RES. 1/10W J 68k Ω	RRXAJR5Z0683
R1422	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1423	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1424	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1425	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1427	METAL RESISTOR 2W J 2.2k Ω or	RN02222ZU001
	METAL RESISTOR 2W J 2.2k Ω	RN02222DP004
R1428	METAL RESISTOR 2W J 2.2k Ω or	RN02222ZU001
	METAL RESISTOR 2W J 2.2k Ω	RN02222DP004
R1430	PCB JUMPER D0.6-P5.0	JW5.0T
R1431	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1432	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1435	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1436	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1437	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1440	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1441	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1442	PCB JUMPER D0.6-P5.0	JW5.0T
R1445	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1446	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1447	PCB JUMPER D0.6-P5.0	JW5.0T
R1450	CHIP RES. 1/10W F 1.3k Ω	RRXAFR5H1301
R1451	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1452	CHIP RES. 1/10W F 620 Ω	RRXAFR5H6200
R1453	CHIP RES.(1608) 1/10W F 15 Ω	RRXAFR5H15R0
R1454	CHIP RES. 1/10W F 620 Ω	RRXAFR5H6200
R1455	CHIP RES.(1608) 1/10W F 15 Ω	RRXAFR5H15R0
R1456	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1457	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1458	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1459	CHIP RES. 1/10W F 2k Ω	RRXAFR5H2001
R1460	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1461	CHIP RES. 1/10W F 620 Ω	RRXAFR5H6200
R1462	CHIP RES.(1608) 1/10W F 15 Ω	RRXAFR5H15R0
R1463	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1464	CHIP RES. 1/10W F 330 Ω	RRXAFR5H3300
R1465	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1466	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1467	CHIP RES. 1/10W F 620 Ω	RRXAFR5H6200
R1468	CHIP RES.(1608) 1/10W F 15 Ω	RRXAFR5H15R0
R1469	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1470	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1471	CHIP RES. 1/10W F 620 Ω	RRXAFR5H6200
R1472	CHIP RES.(1608) 1/10W F 15 Ω	RRXAFR5H15R0
R1473	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1474	CHIP RES. 1/10W F 1.3k Ω	RRXAFR5H1301
R1475	CHIP RES. 1/10W F 2k Ω	RRXAFR5H2001
R1476	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1477	CHIP RES. 1/10W F 620 Ω	RRXAFR5H6200
R1478	CHIP RES.(1608) 1/10W F 15 Ω	RRXAFR5H15R0
R1479	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1480	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1481	CHIP RES. 1/10W F 330 Ω	RRXAFR5H3300
R1482	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1483	CHIP RES. 1/10W J 680k Ω	RRXAJR5Z0684
R1484	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1485	CHIP RES. 1/10W J 680k Ω	RRXAJR5Z0684
R1486	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1487	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1488	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1489	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1490	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103

Ref. No.	Description	Part No.
R1491	CARBON RES. 1/4W J 10k $\Omega$	RCX4JATZ0103
R1492	CHIP RES. 1/10W J 10k $\Omega$	RRXAJR5Z0103
R1493	CHIP RES. 1/10W J 10k $\Omega$	RRXAJR5Z0103
R1494	CHIP RES. 1/10W J 10k $\Omega$	RRXAJR5Z0103
R1495	CHIP RES. 1/10W J 10k $\Omega$	RRXAJR5Z0103
R1496	CHIP RES. 1/10W J 10k $\Omega$	RRXAJR5Z0103
R1497	CHIP RES. 1/10W J 10k $\Omega$	RRXAJR5Z0103
R1498	CHIP RES. 1/10W J 10k $\Omega$	RRXAJR5Z0103
R1499	CHIP RES. 1/10W J 10k $\Omega$	RRXAJR5Z0103
<b>MISCELLANEOUS</b>		
BC1401	PCB JUMPER D0.6-P5.0	JW5.0T
RL1401	POWER RELAY SDT-S-112LMR	MRNDC12QN014
T1401	INVERTER TRANS ETJV25ZB12AC	LTZ00CPMS004
T1402	INVERTER TRANS ETJV25ZB12AC	LTZ00CPMS004
T1403	INVERTER TRANS ETJV25ZB12AC	LTZ00CPMS004
T1404	INVERTER TRANS ETJV25ZB12AC	LTZ00CPMS004

