

# PHILIPS

## 40" LCD TV chassis PL11.1

# Service Manual

### Contents


#### TYPE A

40PFL3706/F7	PHILIPS	(Serial No.: DS1)
40PFL3706/F7	PHILIPS	(Serial No.: XA1)
40PFL3000/F8	PHILIPS	(Serial No.: XA1)

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## **IMPORTANT SAFETY NOTICE**

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

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

<p><b>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.</b></p>
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# SPECIFICATIONS

## < TUNER / NTSC >

ANT. Input ----- 75  $\Omega$  Unbal., F type

Description	Condition	Unit	Nominal	Limit
1. AFT Pull-In Range	---	MHz	$\pm 2.3$	$\pm 2.1$
2. Synchronizing Sens.	TV.ch.4	dB $\mu$	18	20
	CA.ch.31	dB $\mu$	18	20
	CA.ch.87	dB $\mu$	18	23

## < TUNER / ATSC >

Description	Condition	Unit	Nominal	Limit
1. Received Freq. Range (-28dBm)	---	kHz	---	$\pm 100$
2. ATSC Dynamic Range (min / max)	ch.4	dBm	---	-76/0
	ch.10	dBm	---	-76/0
	ch.41	dBm	---	-76/+4

## < LCD PANEL >

Description	Condition	Unit	Nominal	Limit
1. Native Pixel Resolution	Horizontal	pixels	1920	---
	Vertical	pixels	1080	---
2. Brightness (w / filter)	---	cd/m <sup>2</sup>	310	---
3. Viewing Angle	Horizontal	°	-88 to 88	-70 to 70
	Vertical	°	-88 to 88	-70 to 70

## < VIDEO >

Description	Condition	Unit	Nominal	Limit
1. Over Scan	Horizontal	%	5	5 $\pm$ 5
	Vertical	%	5	5 $\pm$ 5
2. Color Temperature	---	°K	12000	---
	x		0.272	$\pm 3\%$
	y		0.278	$\pm 3\%$
	<Measurement condition> Input signal: Internal pattern (40/70% raster) Measurement point: Screen center Measuring instrument: Made of KONICA MINOLTA Luminance meter CA-310 Aging time: 60min. (Retail MODE / 100IRE Raster HDMI 1080i@60) MODE setting of TV: Shipment setting / Retail MODE Ambient temperature: 25°C $\pm$ 5°C			
3. Resolution (composite video)	Horizontal	line	400	---
	Vertical	line	350	---

## < 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 10% Distortion (ATSC 0 dBfs)	Lch/Rch	W	10.0/10.0	8.0/8.0
2. Audio Distortion (NTSC)	500mW: Lch/Rch	%	0.5/0.5	2.0/2.0
3. Audio Freq. Response (NTSC)	-6dB: Lch	Hz	70 to 10 k	100 to 8 k
	-6dB: Rch	Hz	70 to 10 k	100 to 8 k

# 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

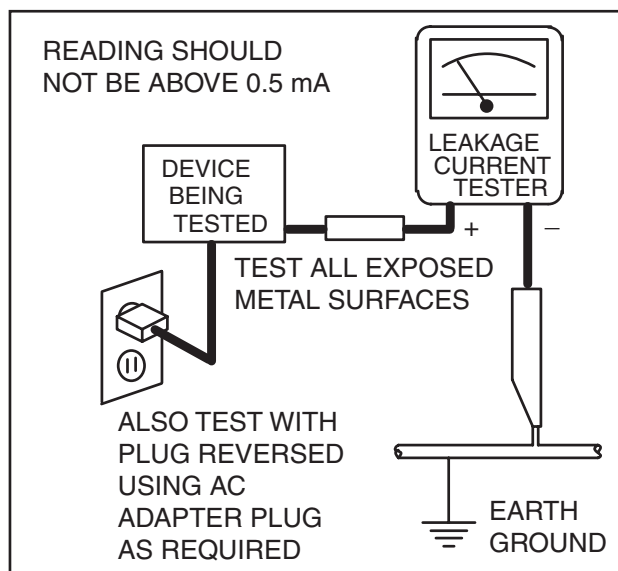
1. **Before returning an instrument to the customer**, always make a safety check of the entire instrument, including, but not limited to, the following items:

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 Liquid Crystal Panel and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.


c. **Antenna Cold Check** - With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

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



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

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the Liquid Crystal Panel.

3. **Design Alteration Warning** - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.
4. **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 1.0 V 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  on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The product's safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm they comply with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

## Precautions during Servicing

- A.** Parts identified by the **▲** symbol are critical for safety.  
Replace only with part number specified.
- B.** In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.  
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.
- C.** Use specified internal wiring. Note especially:
  - 1) Wires covered with PVC tubing
  - 2) Double insulated wires
  - 3) High voltage leads
- D.** Use specified insulating materials for hazardous live parts. Note especially:
  - 1) Insulation Tape
  - 2) PVC tubing
  - 3) Spacers
  - 4) Insulators for transistors.
- E.** When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.
- F.** Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)
- G.** Check that replaced wires do not contact sharp edged or pointed parts.
- H.** When a power cord has been replaced, check that 11~13 lb (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.** When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC supply outlet.
- L.** 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.

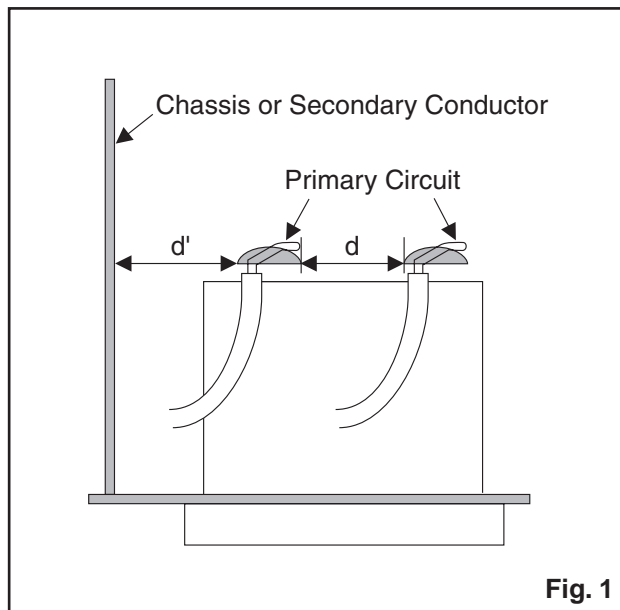
### 1. Clearance Distance

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	Region	Clearance Distance (d), (d')
110 to 130 V	U.S.A. or Canada	$\geq 3.2$ mm (0.126 inches)

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



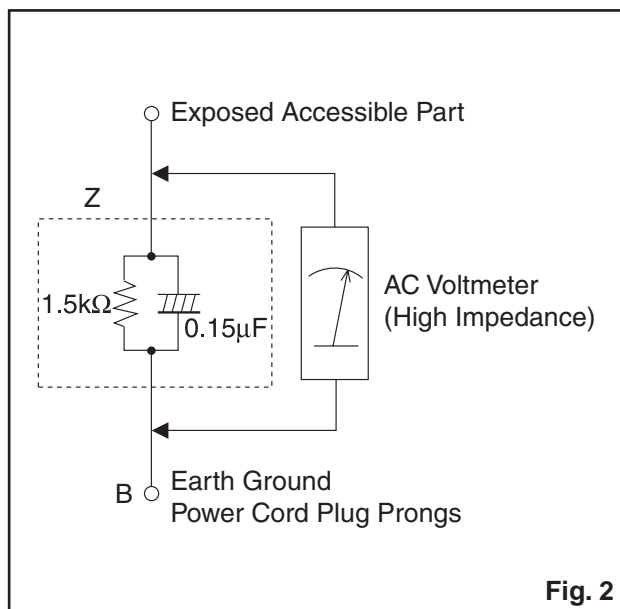
**Fig. 1**

### 2. Leakage Current Test

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

#### Measuring Method: (Power ON)

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



**Fig. 2**

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

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

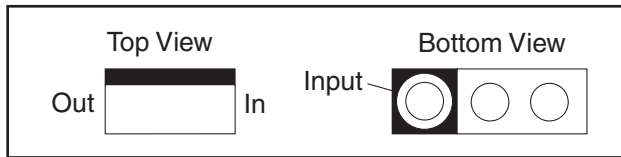
**Note:** This table is unofficial and for reference only. Be sure to confirm the precise values.



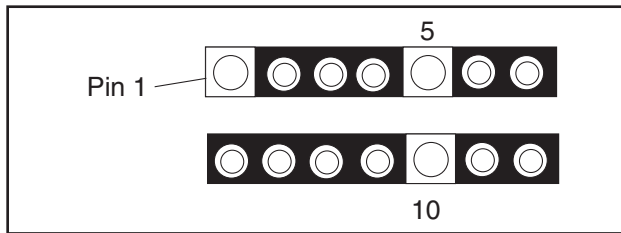
# STANDARD NOTES FOR SERVICING

## Circuit Board Indications

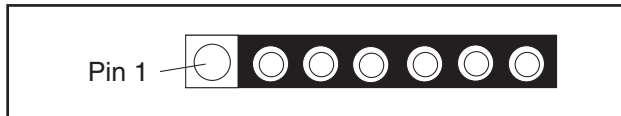
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

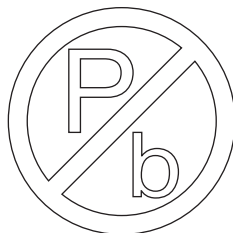


3. The 1st pin of every male connector is indicated as shown.



## Pb (Lead) Free Solder

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



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)

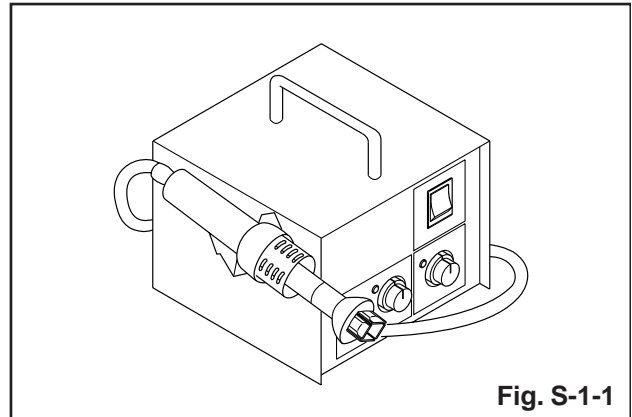


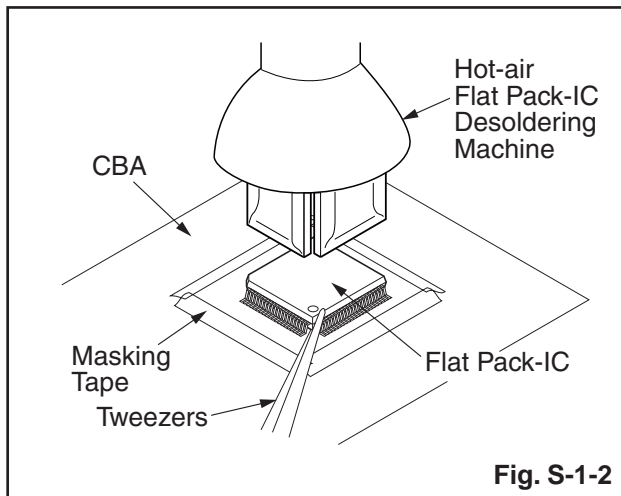
Fig. S-1-1

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:

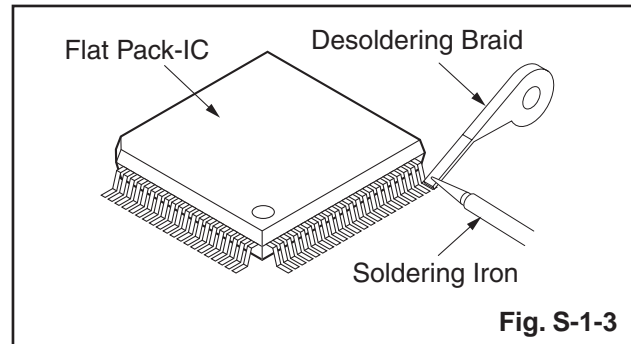
1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape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

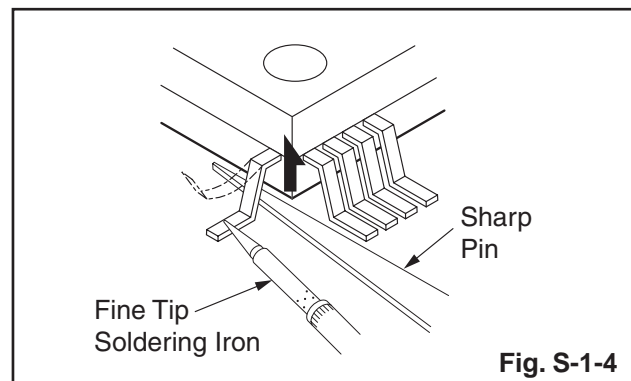


#### With Soldering Iron:

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)

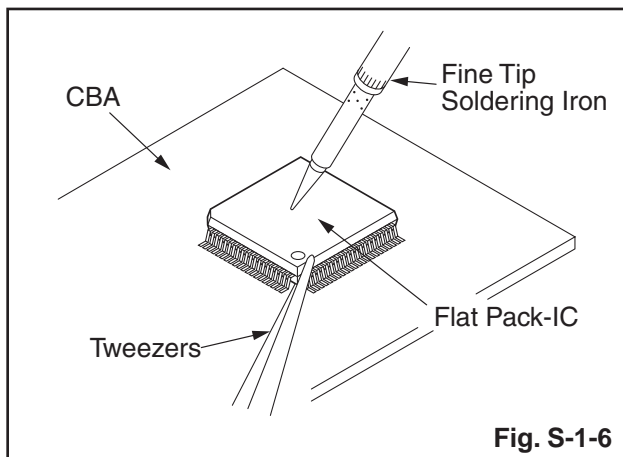
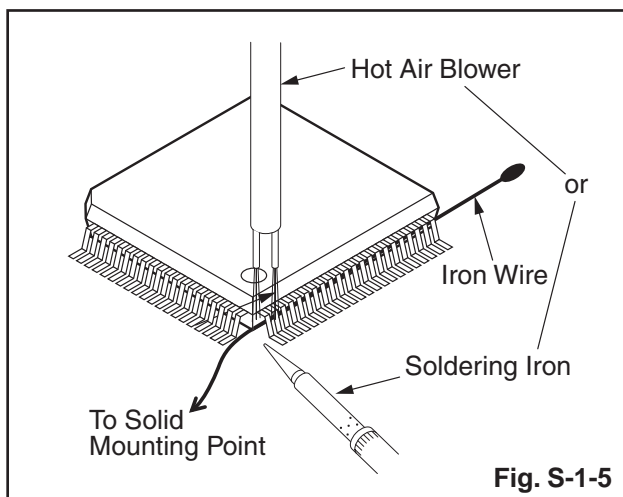


3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

### With Iron Wire:

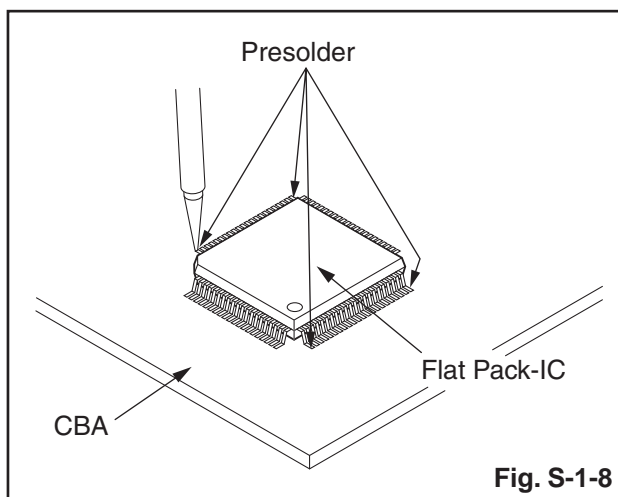
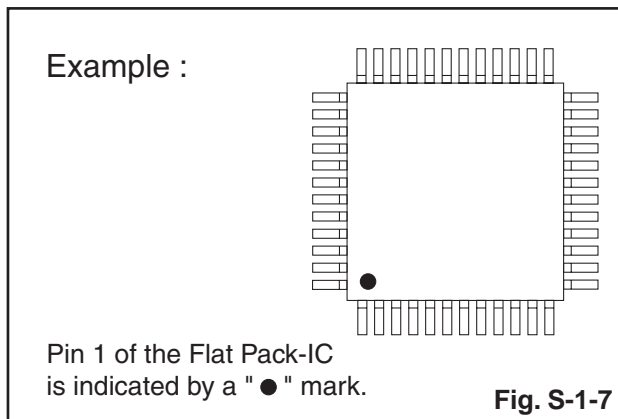
1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins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

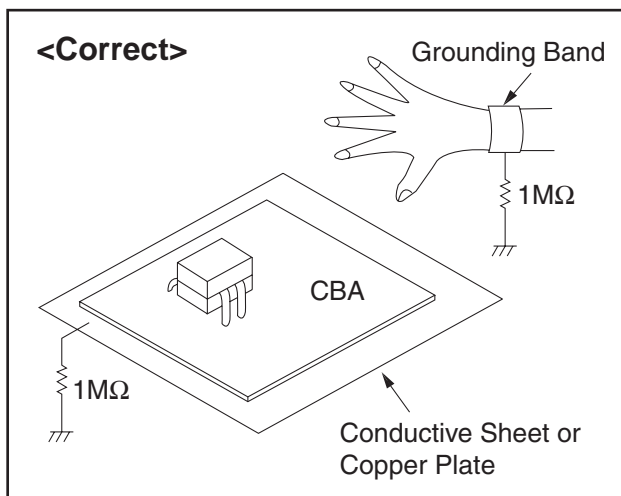
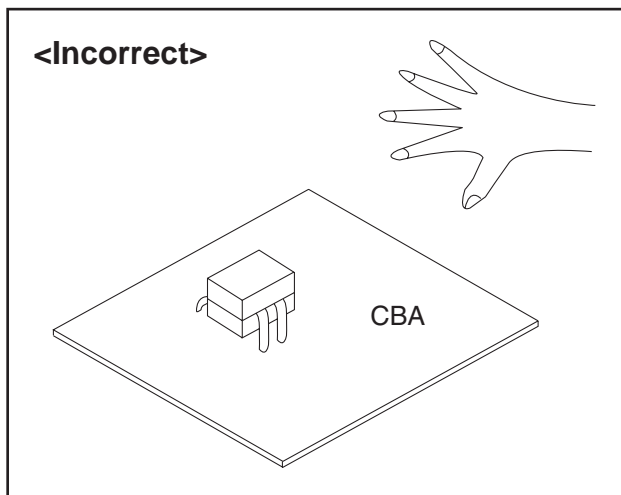
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

## 1. Ground for Human Body

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

## 2. Ground for Workbench

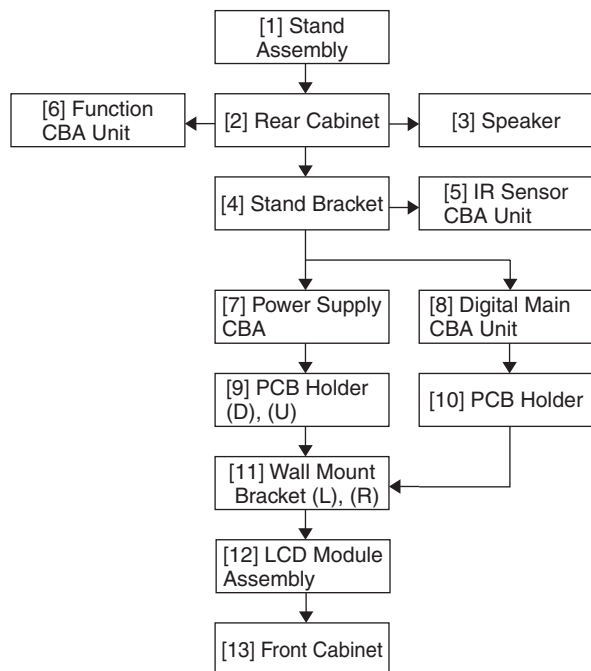
Be sure to place a conductive sheet or copper plate with proper grounding ( $1\text{ M}\Omega$ ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting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



# CABINET DISASSEMBLY INSTRUCTIONS

## 1. Disassembly Flowchart

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



## 2. Disassembly Method

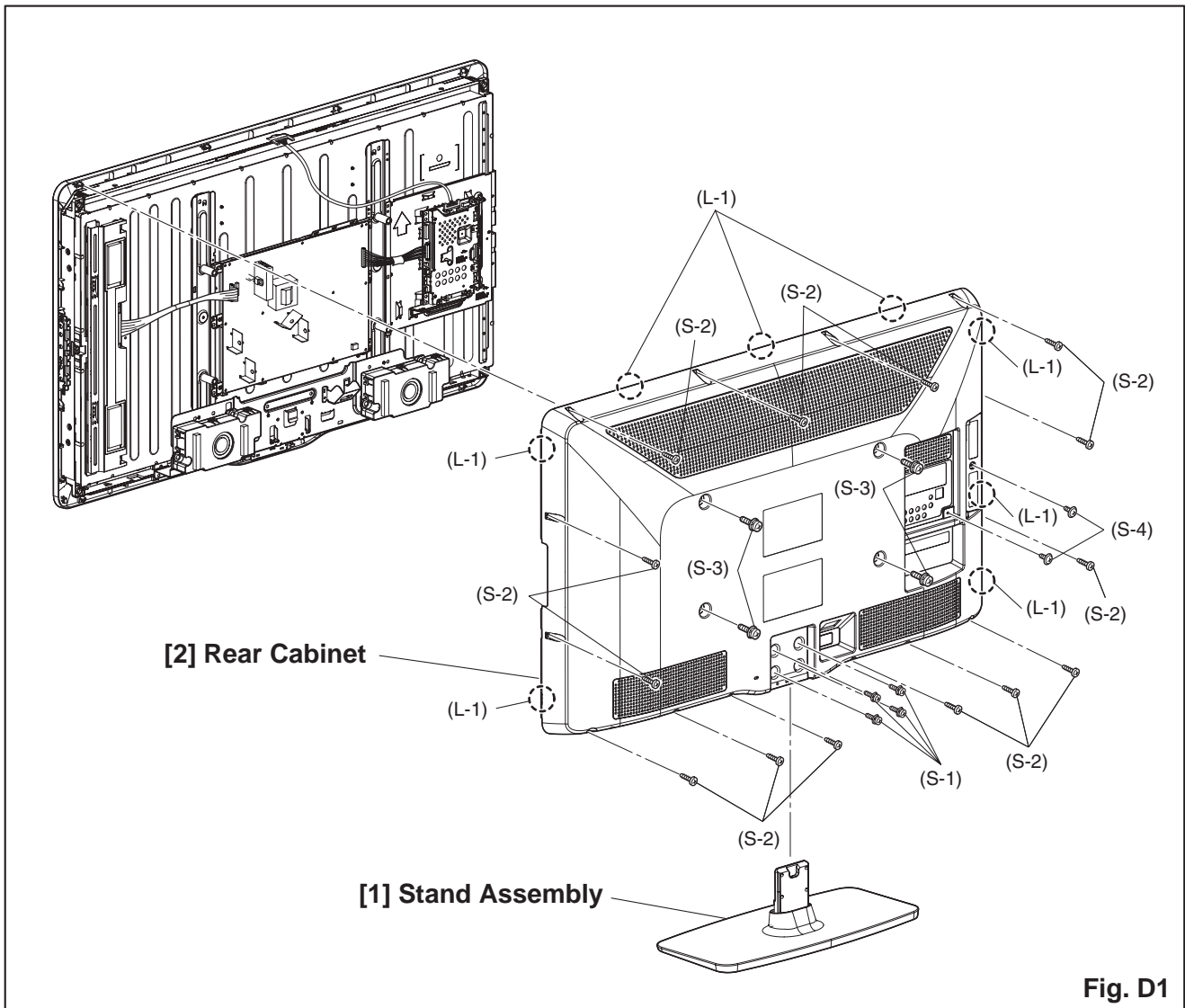
Step/ Loc. No.	Part	Fig. No.	Removal	Note
[1]	Stand Assembly	D1	4(S-1)	---
[2]	Rear Cabinet	D1	14(S-2), 4(S-3), 2(S-4), 8(L-1)	---
[3]	Speaker	D2	CN3803	---
[4]	Stand Bracket	D2	2(S-5), 4(S-6), (S-7), CN1601, CL1601, AC Inlet Holder	---
[5]	IR Sensor CBA Unit	D2 D5	CN3102, CN4051, Shield Plate	---
[6]	Function CBA Unit	D2 D5	Function Button, Knob Frame	---
[7]	Power Supply CBA	D3 D5	11(S-8), CN1801, CN1914	---

Step/ Loc. No.	Part	Fig. No.	Removal	Note
[8]	Digital Main CBA Unit	D3 D5	4(S-9), CN3901, Jack Holder(A), Jack Holder(B), Shield Box	---
[9]	PCB Holder (D), (U)	D4	6(S-10)	---
[10]	PCB Holder	D4	3(S-11), (S-12)	---
[11]	Wall Mount Bracket (L), (R)	D4	4(S-13)	---
[12]	LCD Module Assembly	D4	(S-14)	---
[13]	Front Cabinet	D4	-----	---

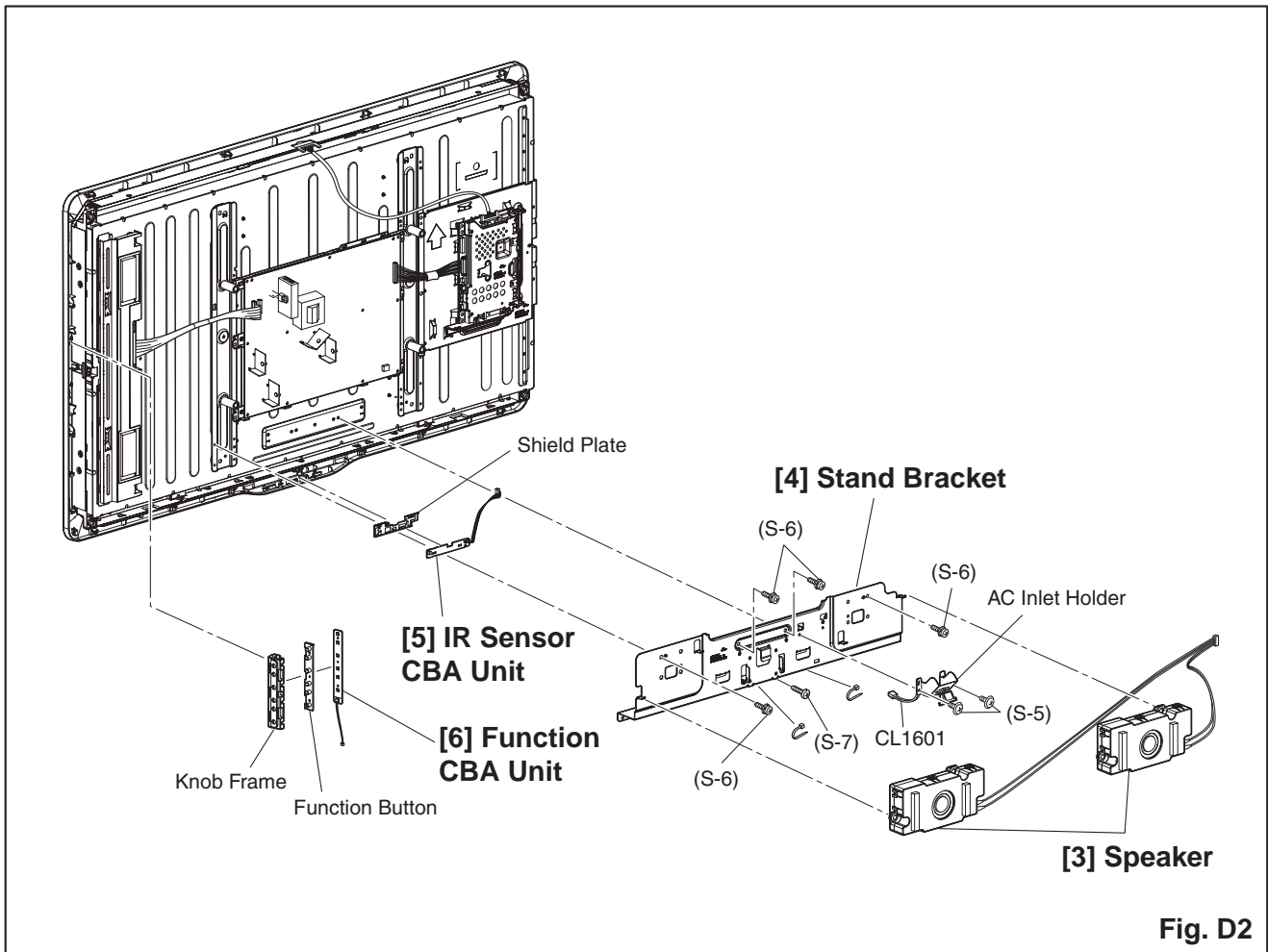
↓                      ↓                      ↓                      ↓                      ↓  
 (1)                      (2)                      (3)                      (4)                      (5)

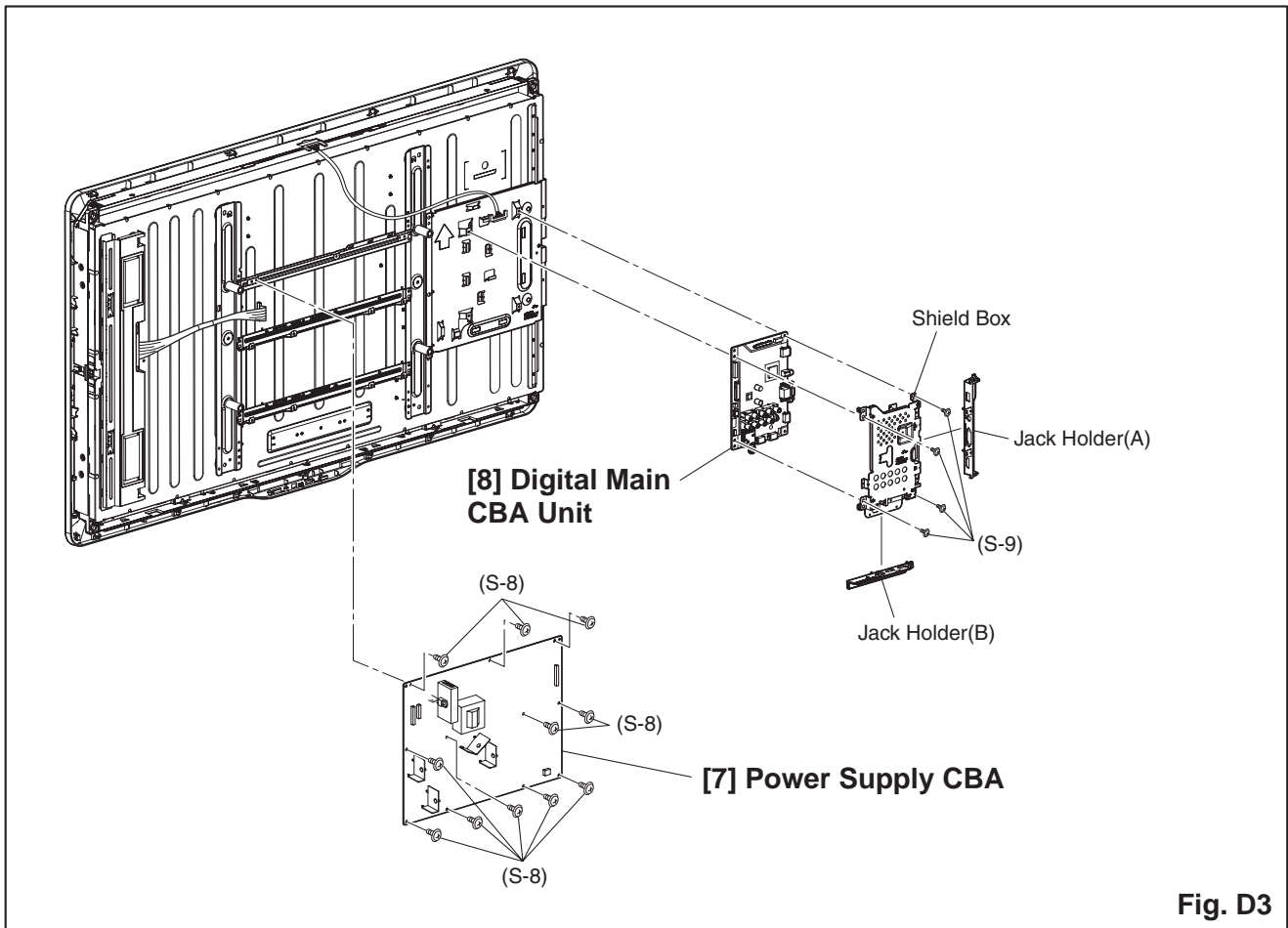
### Note:

- (1) Order of steps in procedure. When reassembling, follow the steps in reverse order. These numbers are also used as the Identification (location) No. of parts in figures.
- (2) Parts to be removed or installed.
- (3) Fig. No. showing procedure of part location
- (4) Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.  
 P = Spring, L = Locking Tab, S = Screw,  
 H = Hex Screw, CN = Connector  
 e.g. 2(S-2) = two Screws of (S-2),  
       2(L-2) = two Locking Tabs of (L-2)
- (5) Refer to the following "Reference Notes in the Table."



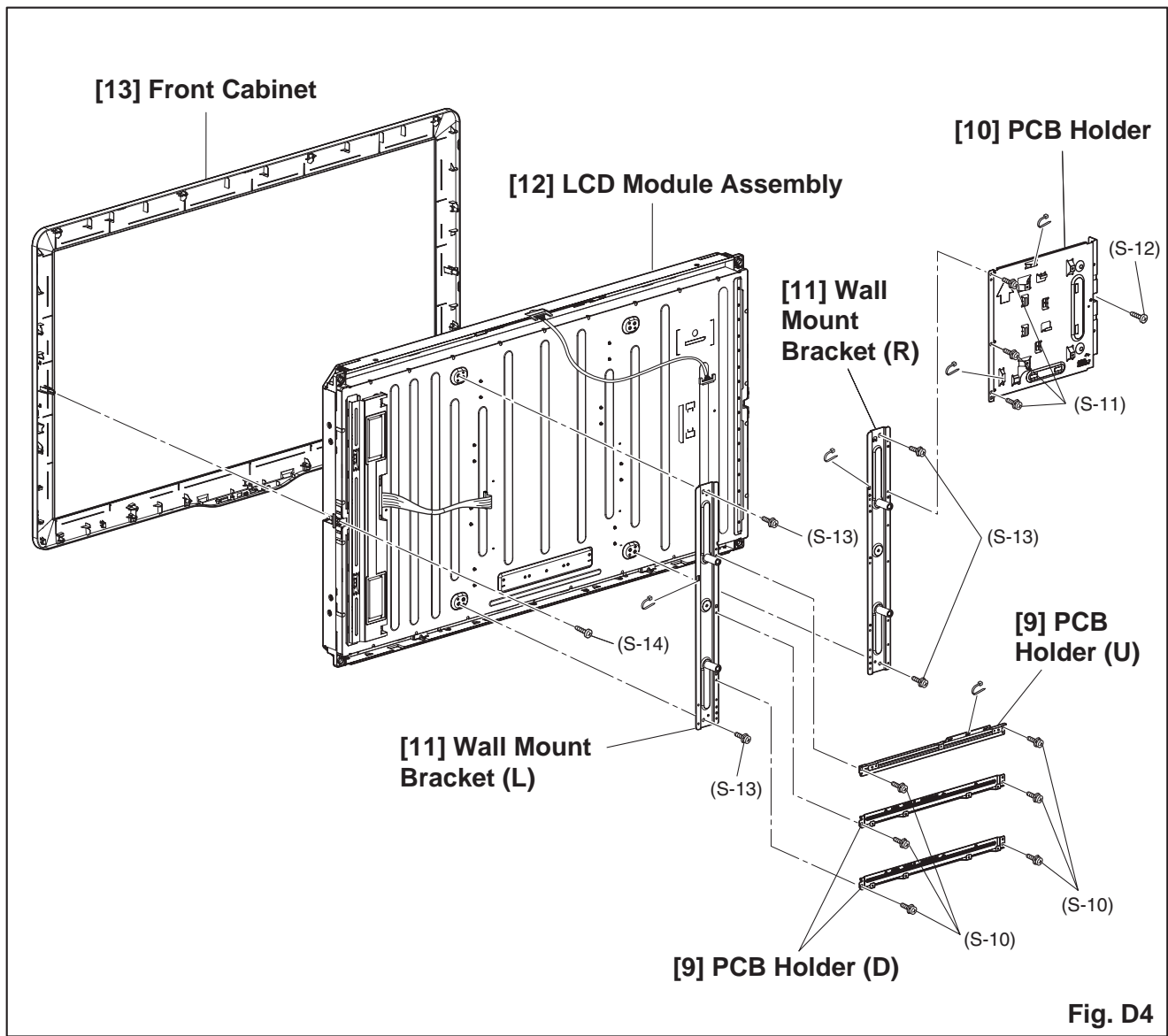
**Fig. D1**





**Fig. D3**





# TV Cable Wiring Diagram

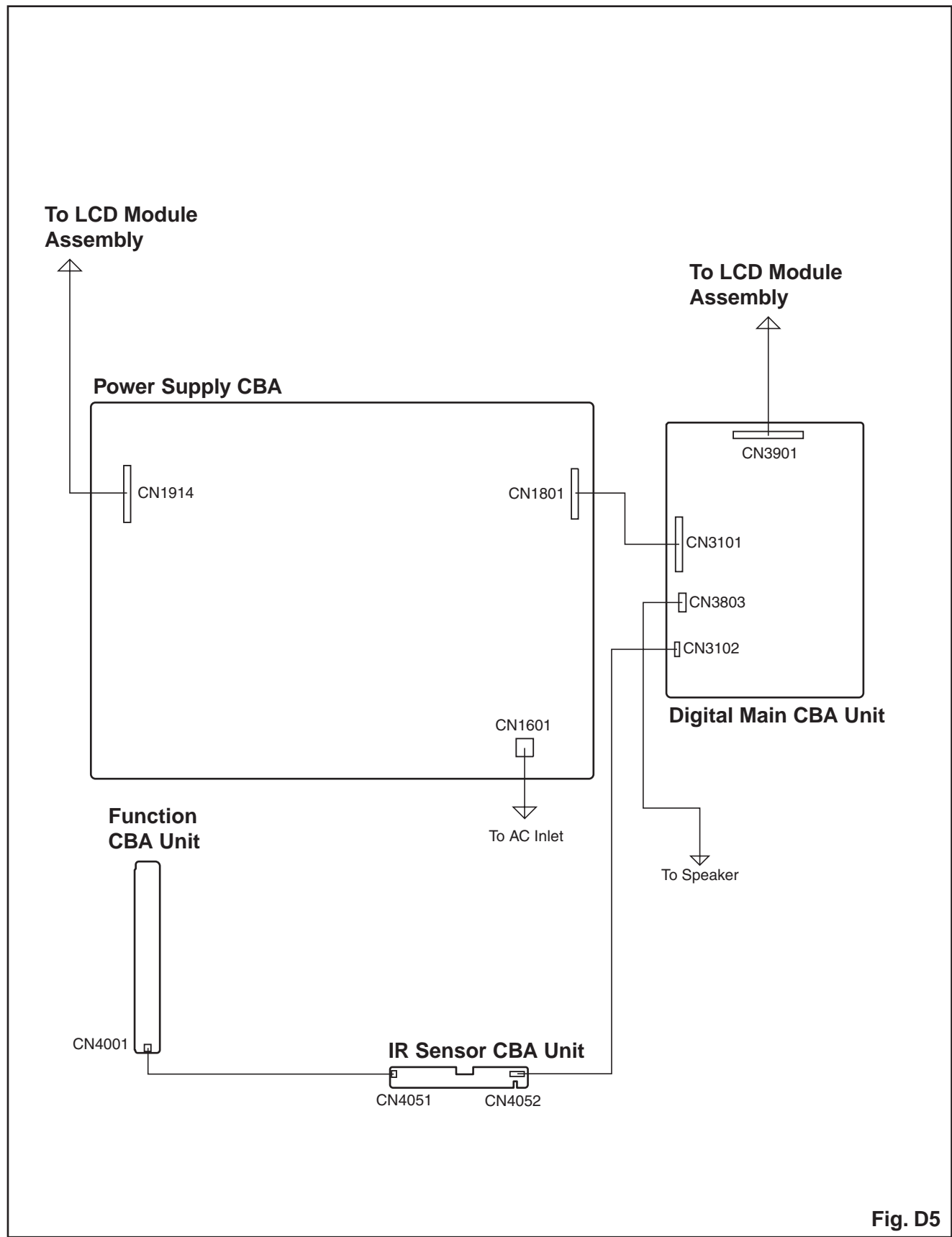


Fig. D5

# ELECTRICAL ADJUSTMENT INSTRUCTIONS

**General Note: “CBA” is abbreviation for “Circuit Board Assembly.”**

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

## Test Equipment Required

1. Remote control unit
2. Color Analyzer, CA-310 (KONICA MINOLTA Luminance meter) or measuring instrument as good as CA-310.

## How to set up the service mode:

### Service mode:

1. Turn the power on.
2. Press [MENU] button to display Setup menu.
3. Select “Features”.
4. Select “Current Software Info”.
5. Press [0], [6], [2], [5], [9], [6] and [INFO] buttons on the remote control unit in this order. The following screen appears.

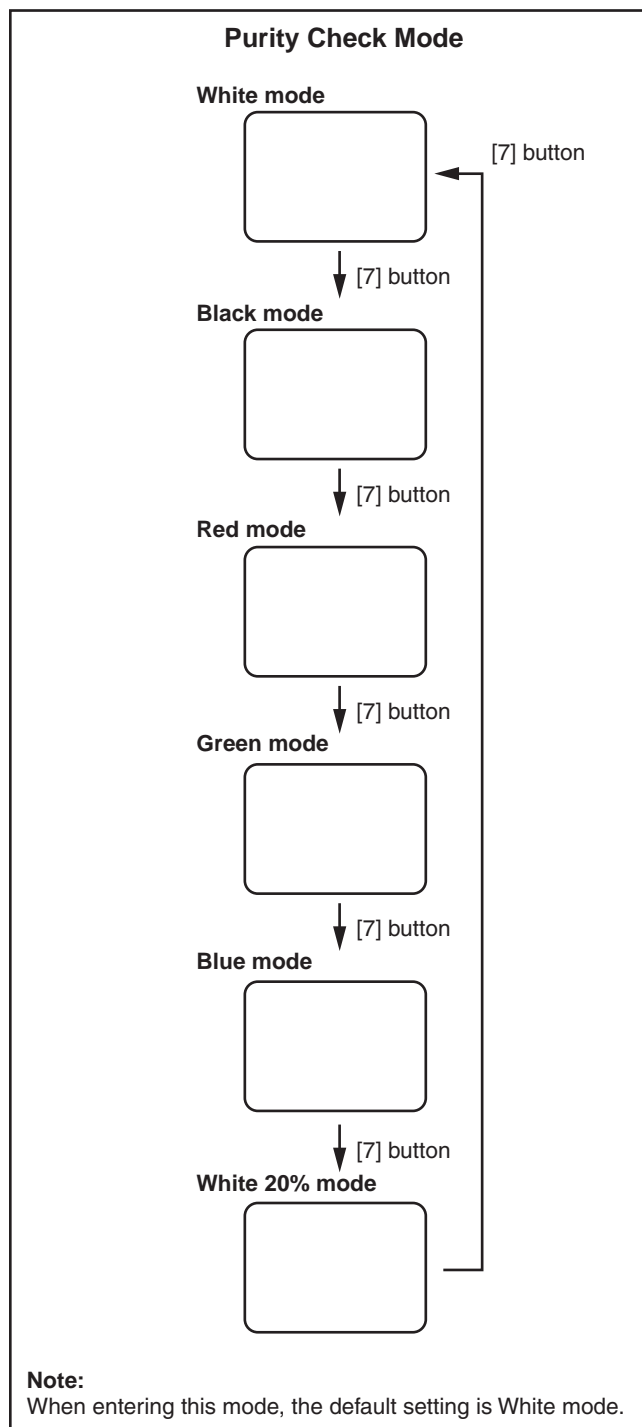
"\*" differs depending on the models.

Code:	*****_*_*_*_*_*_*_*_*
Pic code:	*****_*_*_*_*_*_*_*_*
Panel-Option code:	**_*_*_*_*_*_*_*_*
MIPS:	Push 0 key
Press "POWER" key to exit.	
Tuner:	****_*_*_*_*_*_*_*_*
Safety:	Safety_Non
HDMI EDID:	**
PC EDID:	**
Total Watch Time:	*****
Lightsensor:	*****

## 1. Purity Check Mode

This mode cycles through full-screen displays of red, green, blue, and white to check for non-active pixels.

1. Enter the Service mode.
2. Each time the [7] button on the remote control unit is pressed, the display changes as follows.



3. To cancel or to exit from the Purity Check Mode, press [PREV CH] button.

**The White Balance Adjustment should be performed when replacing the LCD Panel or Digital Main CBA.**

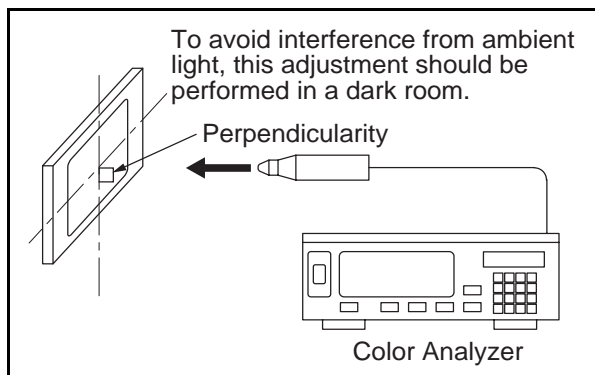
## 2. White Balance Adjustment

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

**Symptom of Misadjustment:** White becomes bluish or reddish.

ITEM	SPECIFICATION
Color temperature	$x = 0.272 \pm 0.002$ $y = 0.278 \pm 0.002$
Input Signal	Internal pattern (40/70% raster)
Measurement point	Screen center
M. EQ.	CA-310 (KONICA MINOLTA Luminance meter) or measuring instrument as good as CA-310.
Aging time	60min. (Retail MODE/100IRE Raster HDMI 1080i@60)
MODE setting of TV	Shipment setting/ Retail MODE
Ambient temperature	$25^{\circ}\text{C} \pm 5^{\circ}\text{C}$

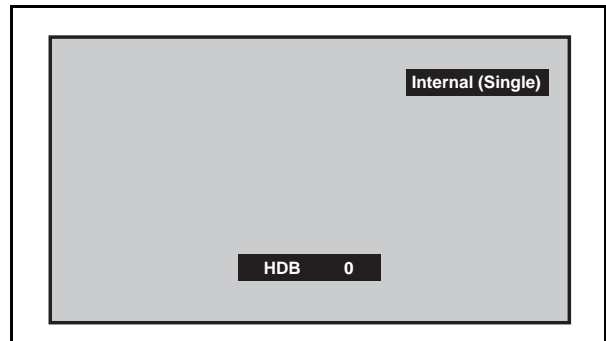
1. Operate the unit for more than 60 minutes.
2. Enter the Service mode.
3. Press [VOL -] button three times on the remote control unit to select "Drive setting" mode. "Drive" appears on the screen.
4. Set the color analyzer at the CHROMA mode and zero point calibration. Bring the optical receptor pointing at the center of the LCD-Panel.



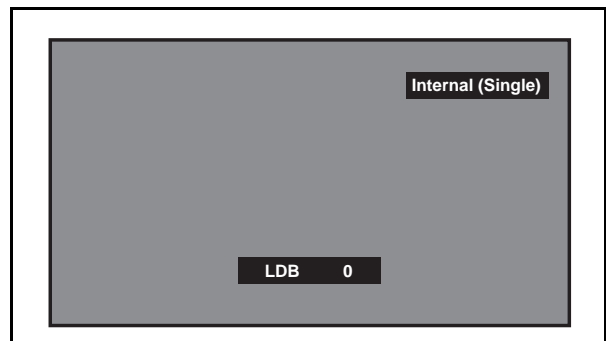
**Note:** The optical receptor must be set perpendicularly to the LCD Panel surface.

5. Press [3] button to select the "HDB" for High Drive Blue adjustment. ("HDB" appears on the screen.)

6. Press [MENU] button. The internal Raster signal appears on the screen. ("Internal (Single)" appears on the upper right of the screen as shown below.)



7. Press [CH + or -] buttons to adjust the color temperature becomes 12000°K ( $x = 0.272 / y = 0.278 \pm 0.002$ ).
8. Press [1] button to select the "HDR" for High Drive Red adjustment ("HDR" appears on the screen.) and press [CH + or -] buttons to adjust the color temperature.
9. If necessary, adjust the "HDB" or "HDR" again.
10. Press [6] button to select the "LDB" for Low Drive Blue adjustment ("LDB" appears on the screen.) and press [CH + or -] buttons to adjust the color temperature.



11. Press [4] button to select the "LDR" for Low Drive Red adjustment ("LDR" appears on the screen.) and press [CH + or -] buttons to adjust the color temperature.
12. If necessary, adjust the "LDB" or "LDR" again.
13. Press [VOL -] button to shift to the "Debugging Message" mode.  
If there is no message under "[WB]" section, this adjustment completes.  
If "Drive settings are NG. Retry." is displayed, repeat above steps from 5. to 12. Then check "Debugging Message" again. If "Drive settings are NG. Retry." is displayed, replace the LCD Panel or Digital Main CBA.
14. To cancel or to exit from the White Balance Adjustment, press [PREV CH] button.

# HOW TO INITIALIZE THE LCD TV

The purpose of initialization is to place the set in a new out of box condition. The customer will be prompted to select a language and program channels after the set has been initialized.

To put the program back at the factory-default, initialize the LCD TV using the following procedure.

1. Turn the power on.
2. Enter the service mode.
  - To cancel the service mode, press [⏻] button on the remote control unit.
3. Press [FREEZE] button on the remote control unit to initialize the LCD television.
4. "INITIALIZED" will appear in the upper right of the screen. "INITIALIZED" color will change to green from red when initializing is completed.

# FIRMWARE RENEWAL MODE

## Equipment Required

- USB storage device
- Remote Control Unit

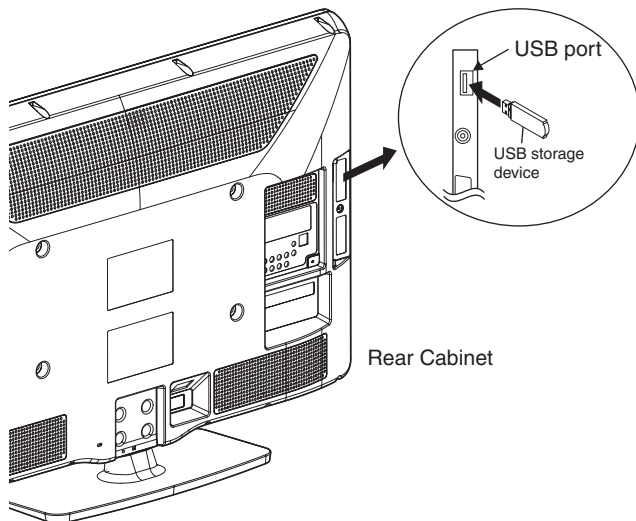
## Firmware Update Procedure

**Note:** There are two states (the User Upgrade and the Factory Upgrade) in firmware update.

User Upgrade	Upgrade the firmware only. The setting values are not initialized.
Factory Upgrade (Firmware upgrade)	Upgrade the firmware and initialize the setting values.
Factory Upgrade (Flash upgrade)	Upgrade the firmware and initialize the setting values along with the setting data adjusted at the factory such as White Balance, etc.

The identification of User Upgrade and Factory Upgrade are done by the filename.

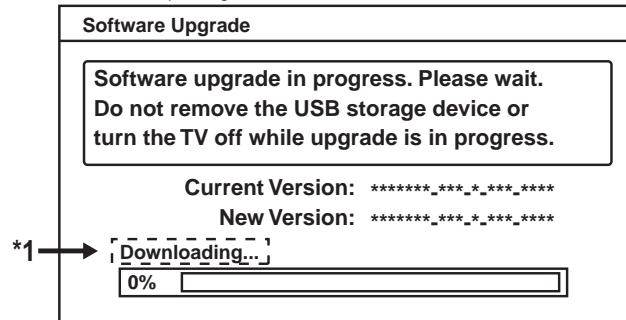
- Turn the power off and unplug the AC Cord.
- Insert the USB storage device to the USB port as shown below.



- Plug the AC cord in the wall outlet and turn the power on.

- The update will start and the following will appear on the screen.

"\*" differs depending on the models.

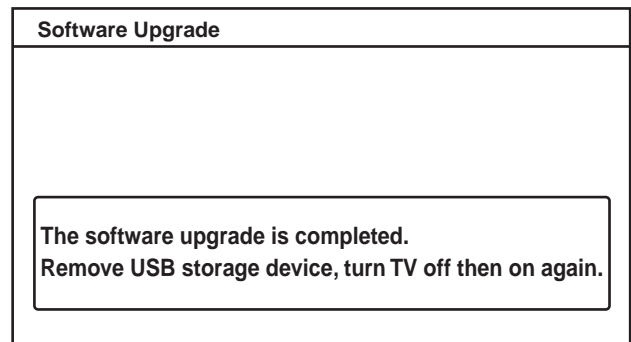


**Note:** If the above screen isn't displayed, repeat from step 1.

The appearance shown in \*1 is described as follows.

Appearance	State
Downloading...	Downloading the firmware from the USB storage device.
Writing...	Writing the downloaded firmware in flash memory.
Checking...	Checking the new firmware.

- When the firmware update is completed, the following will appear on the screen.



Remove the USB storage device from the USB port.

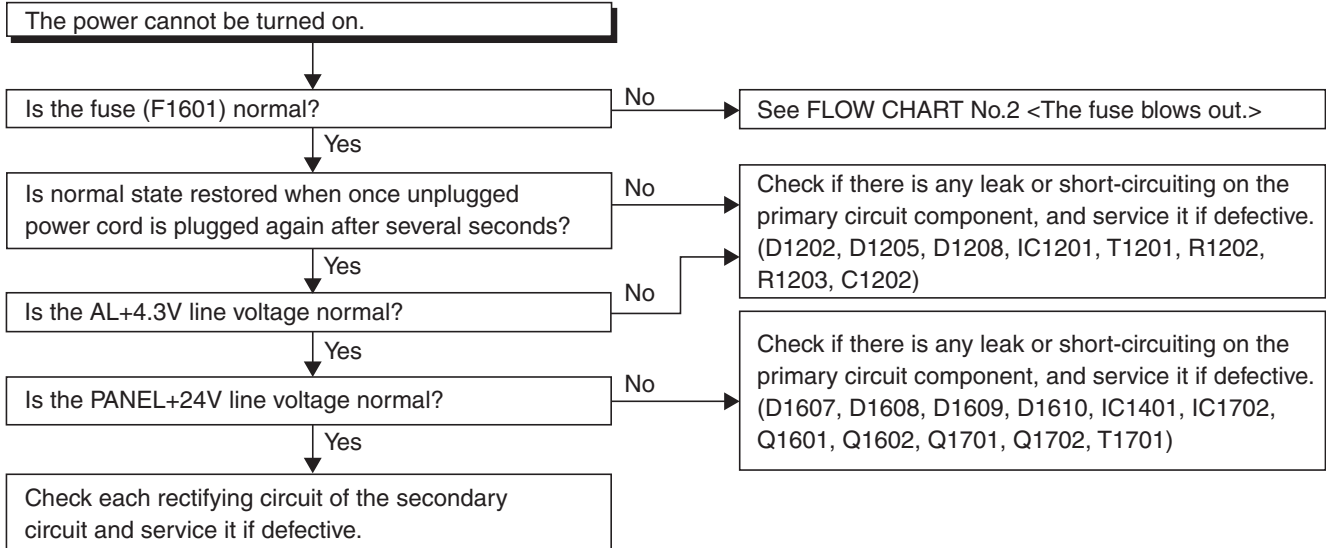
Turn the power off and turn the power on again.

**Note:**

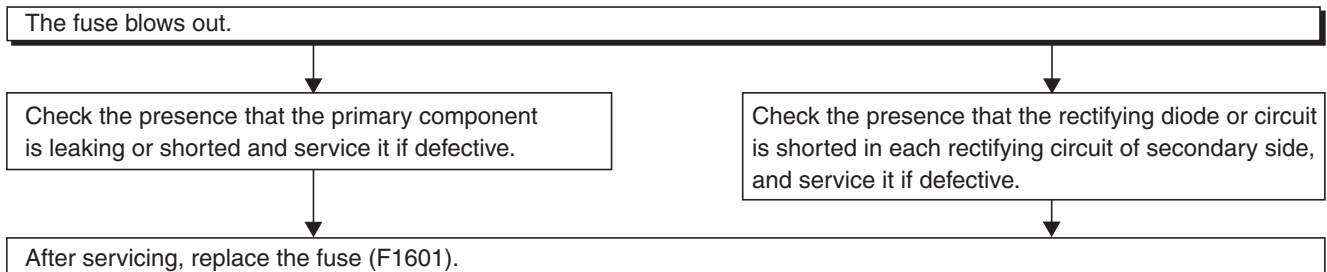
When the Factory Upgrade is used, after restarting TV, shift to initial screen menu in service mode. "INITIALIZED" will appear on the upper right of the screen. "INITIALIZED" color will change to green from red when initializing is completed.

# TROUBLESHOOTING

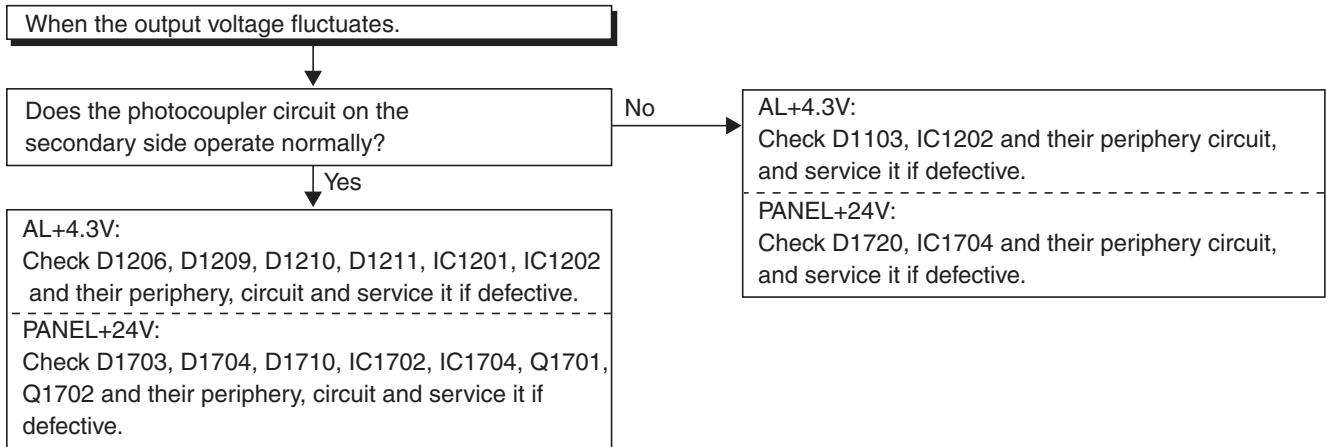
## FLOW CHART NO.1



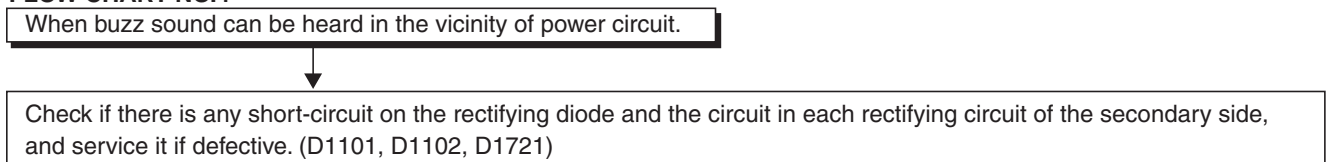
## FLOW CHART NO.2



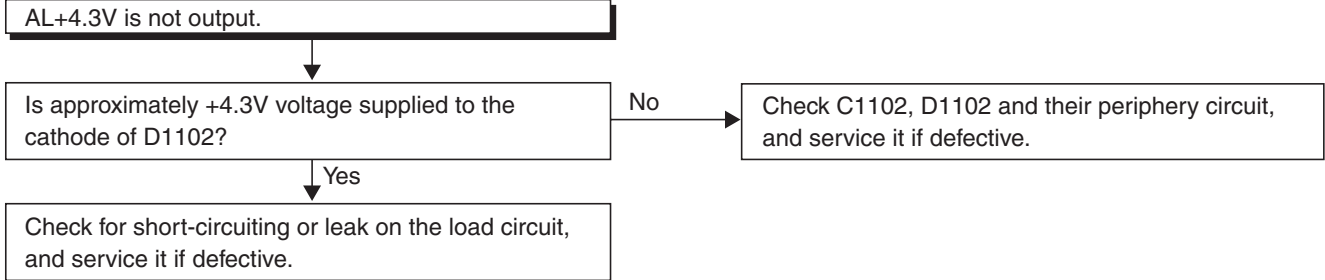
## FLOW CHART NO.3



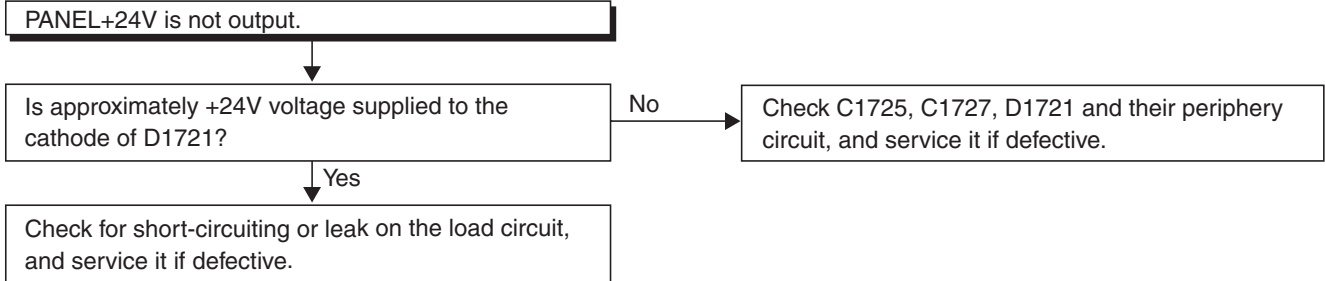
## FLOW CHART NO.4



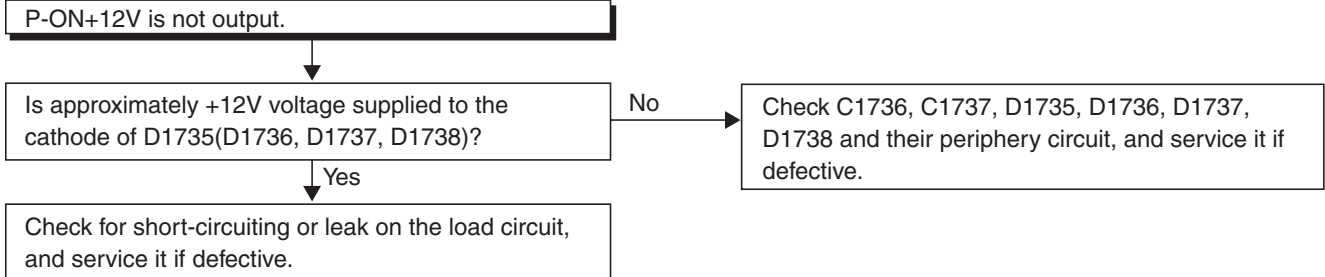
#### FLOW CHART NO.5



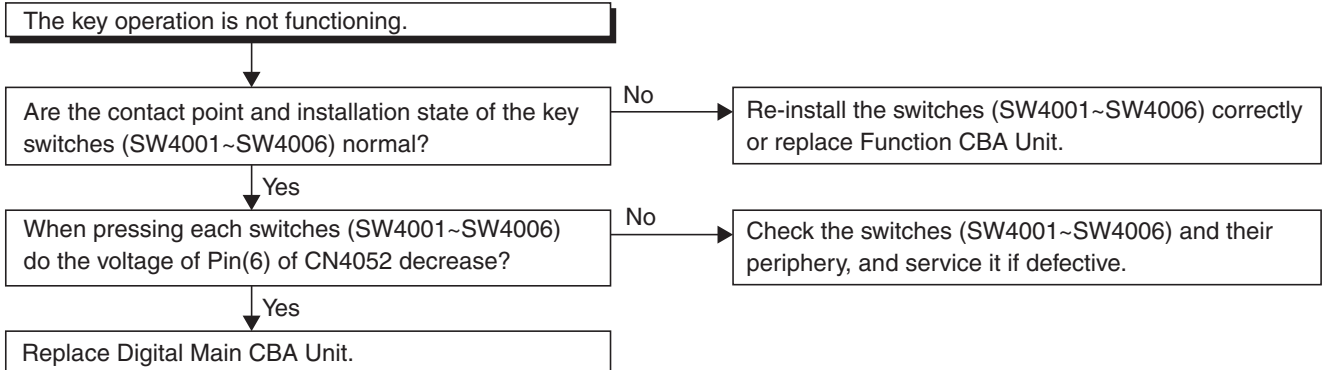
#### FLOW CHART NO.6



#### FLOW CHART NO.7



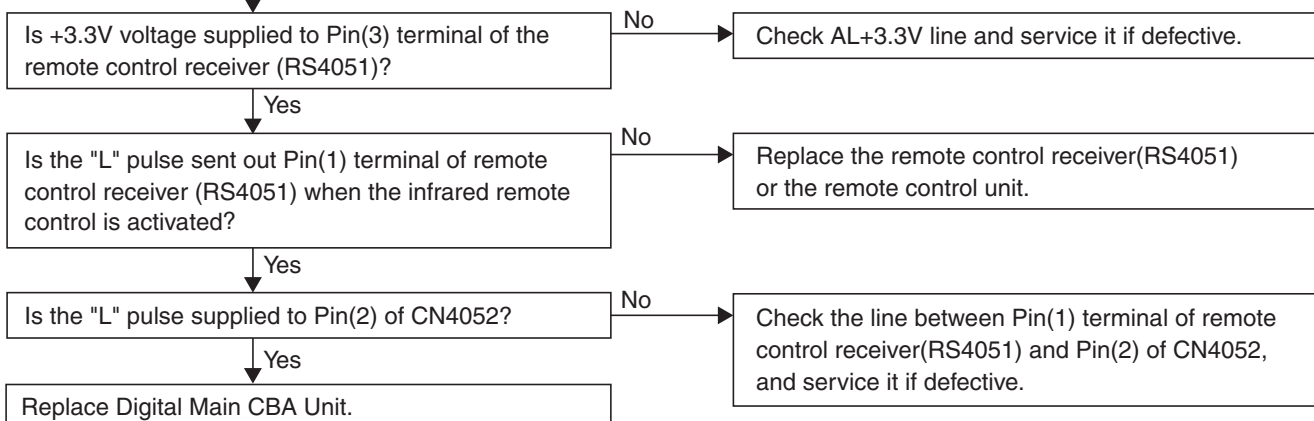
#### FLOW CHART NO.8





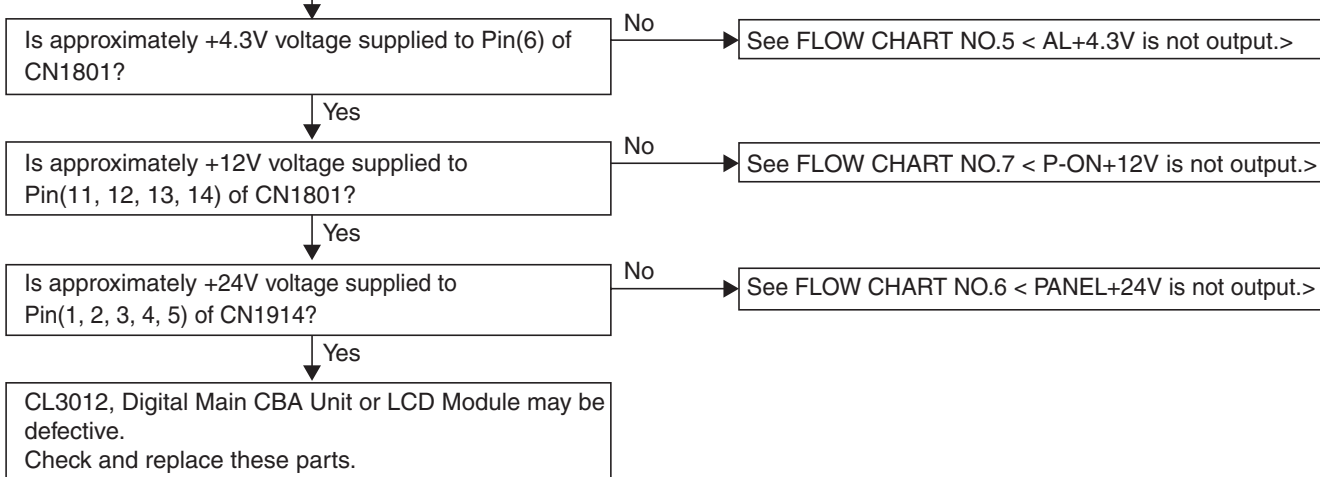
### FLOW CHART NO.9

No operation is possible from the remote control unit. (Operation is possible from the unit.)



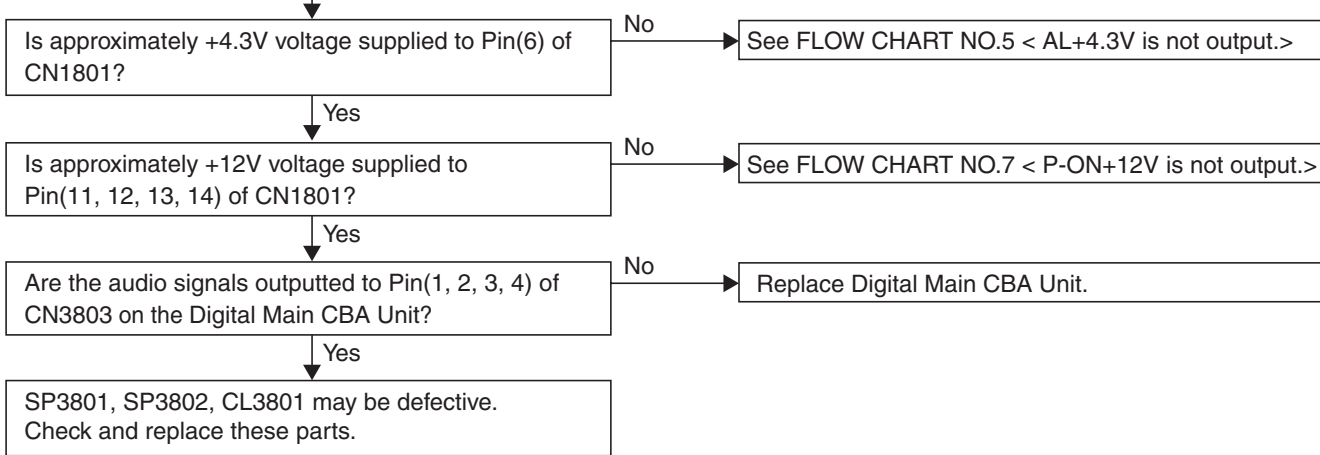
### FLOW CHART NO.10

Picture does not appear normally.



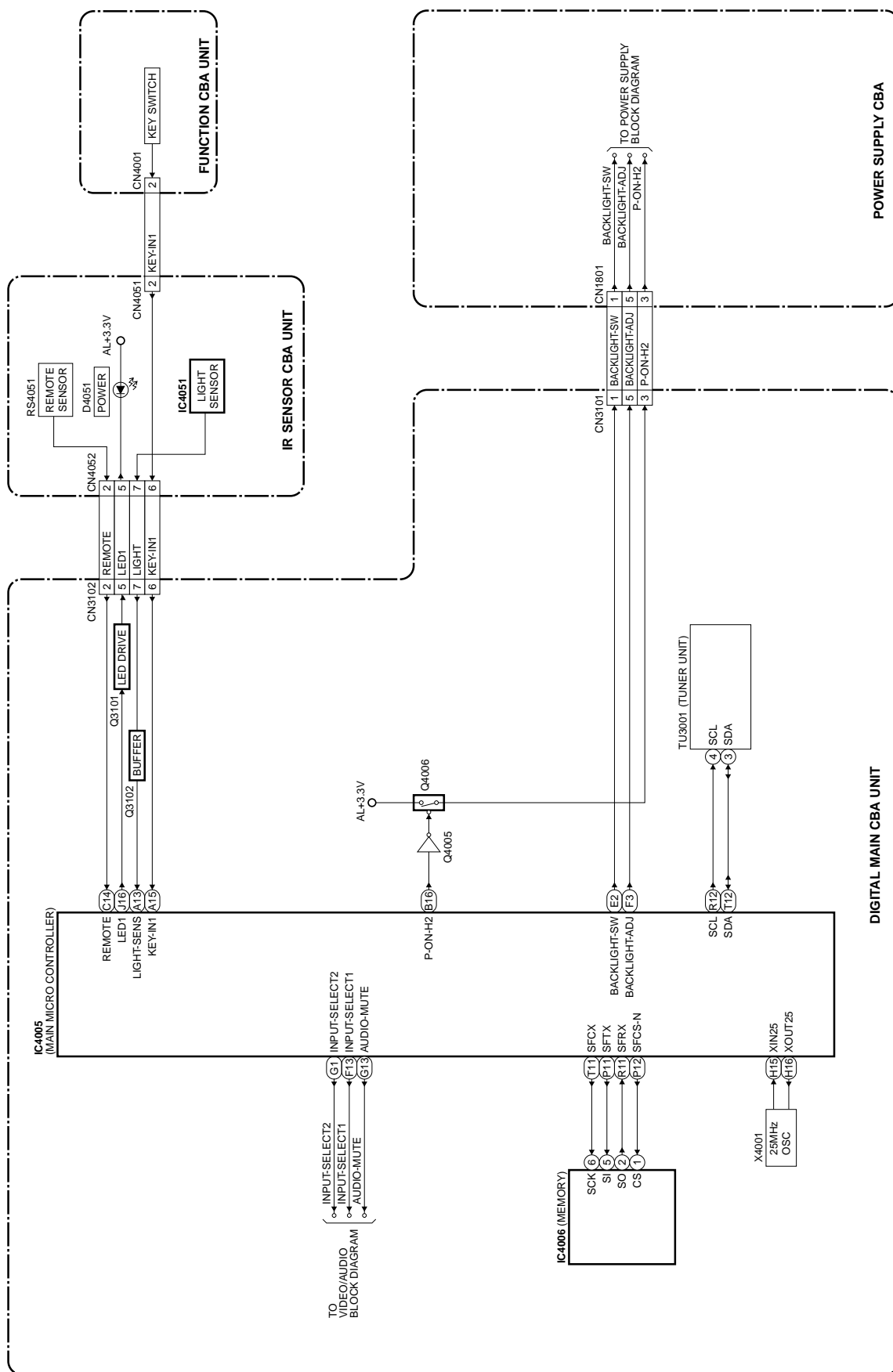
### FLOW CHART NO.11

Audio is not outputted normally.

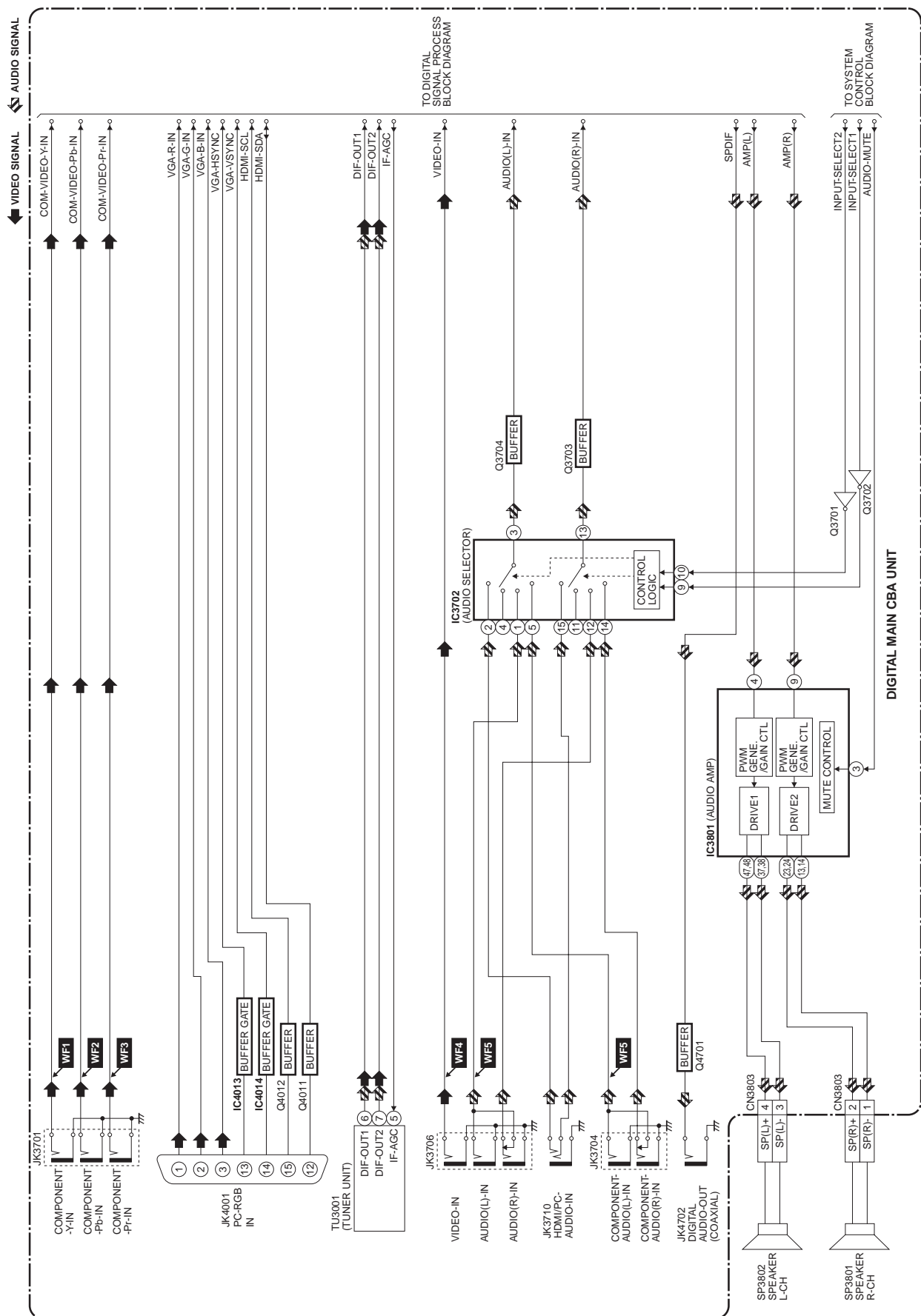


# BLOCK DIAGRAMS

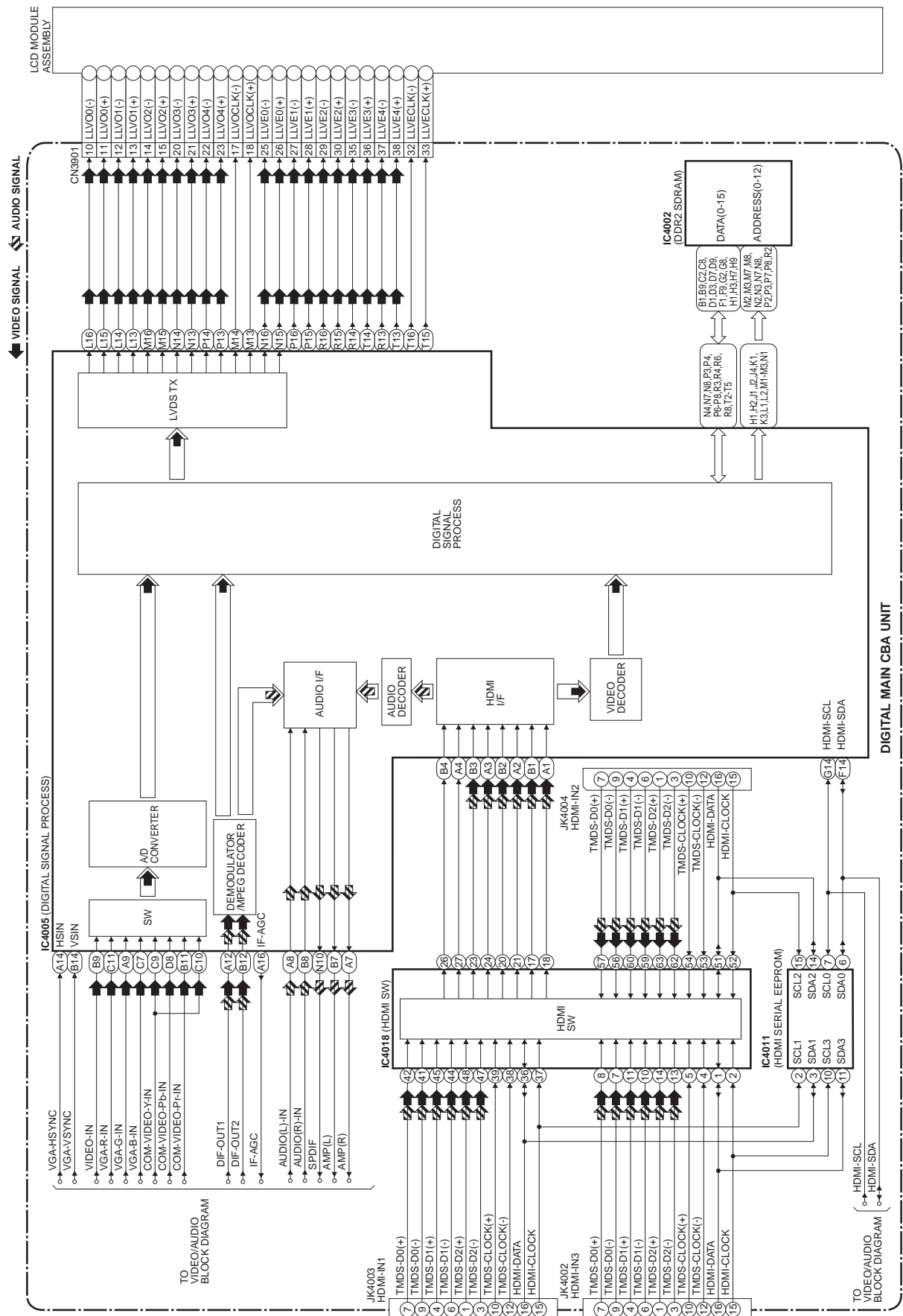
## 1. System Control Block Diagram



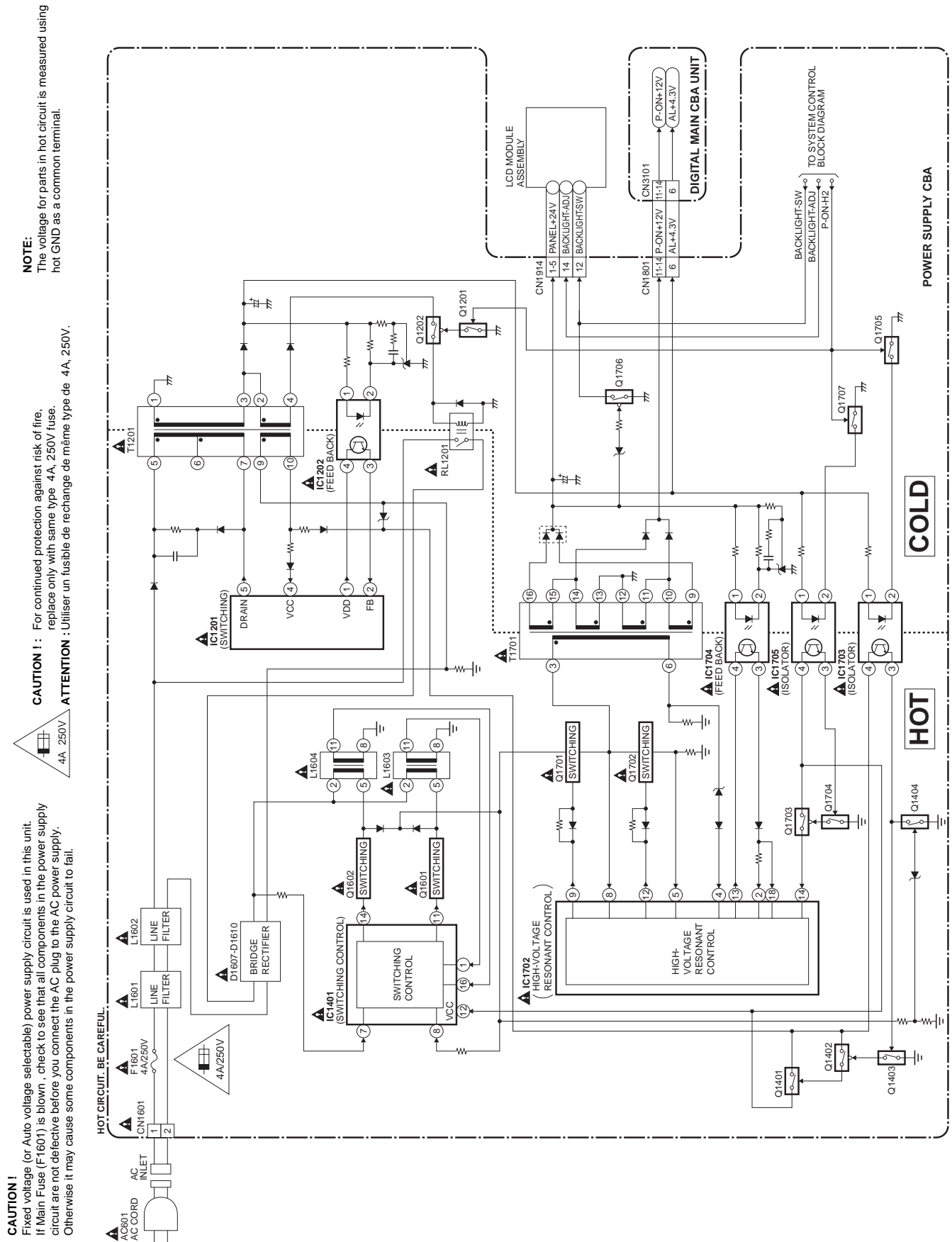
## 2. Video/Audio Block Diagram



### 3. Digital Signal Process Block Diagram



## 4. Power Supply Block Diagram



# SCHEMATIC DIAGRAMS / CBA AND TEST POINTS

## Standard Notes

### WARNING

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.
6. This schematic diagrams are masterized version that should cover the entire PL11.1 chassis models. Thus some parts in detail illustrated on this schematic diagrams may vary depend on the model within the PL11.1 chassis. Please refer to the parts lists for each models.
7. The Circuit Board layout illustrated on this service manual is the latest version for this chassis at the moment of making this service manual. Depend on the mass production date of each model, the actual layout of each Board may differ slightly from this version.

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

### 1. CAUTION:

**CAUTION:** FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE\_A,\_V FUSE.

**ATTENTION:** UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE\_A,\_V.

### 2. CAUTION:

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

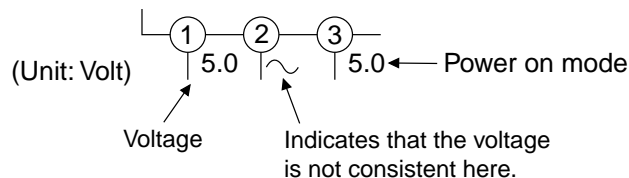
If Main Fuse (F1601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

### 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.:

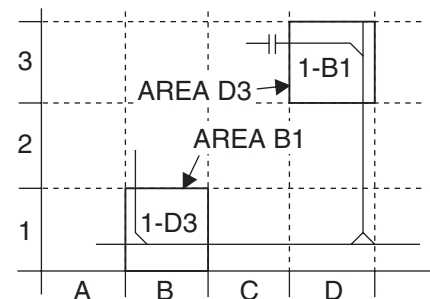


### 5. How to read converged lines

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.

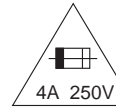
□→ : Used to indicate a test point with a component lead on foil side.

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

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

The reference number of parts on Schematic Diagrams/CBA can be retrieved by application search function.

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



**CAUTION ! :** For continued protection against risk of fire,  
replace only with same type 4A, 250V fuse.

**ATTENTION :** Utiliser un fusible de rechange de même type de 4A, 250V.

A vertical axis with tick marks and labels 1, 2, 3, and 4.



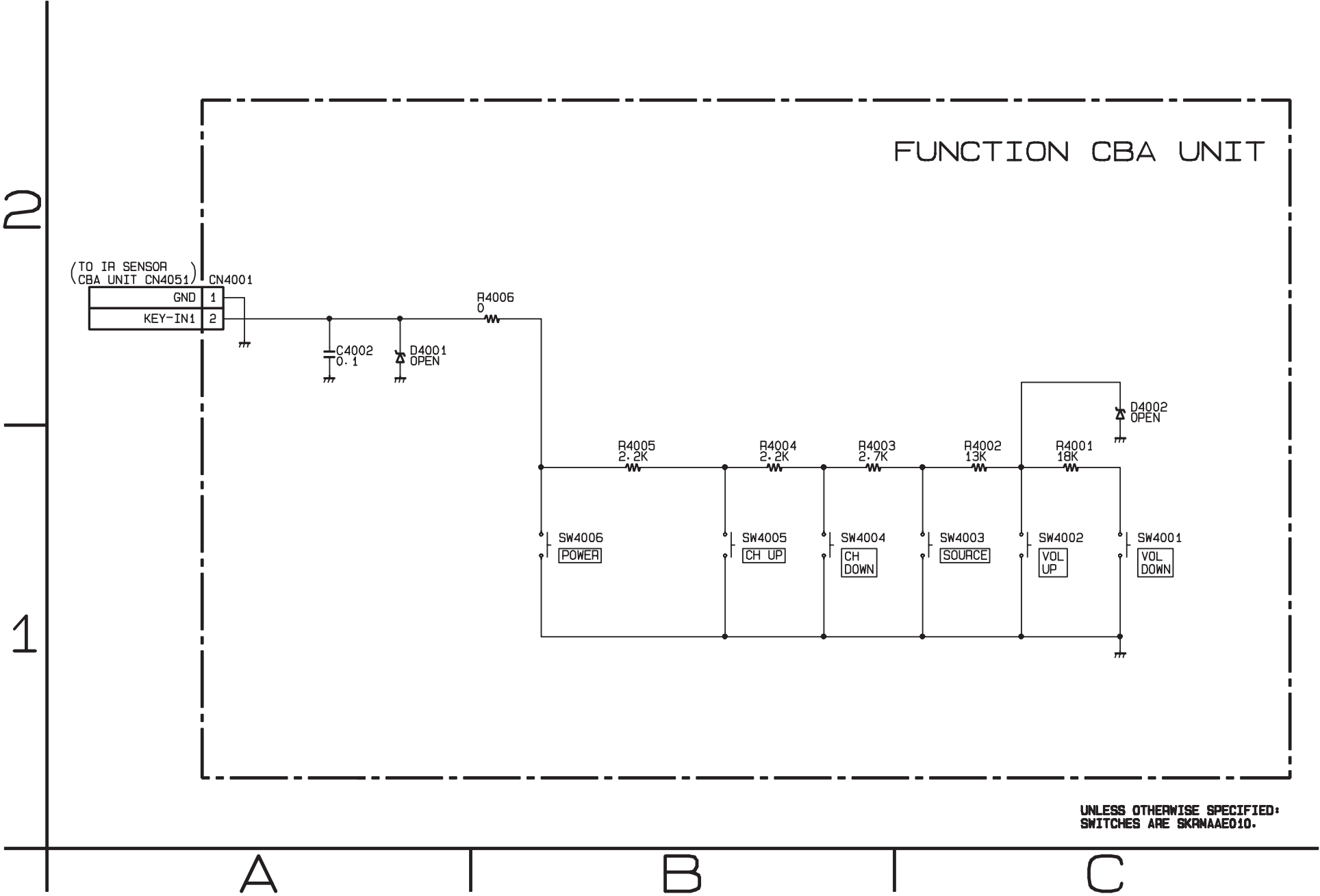
## 4

3

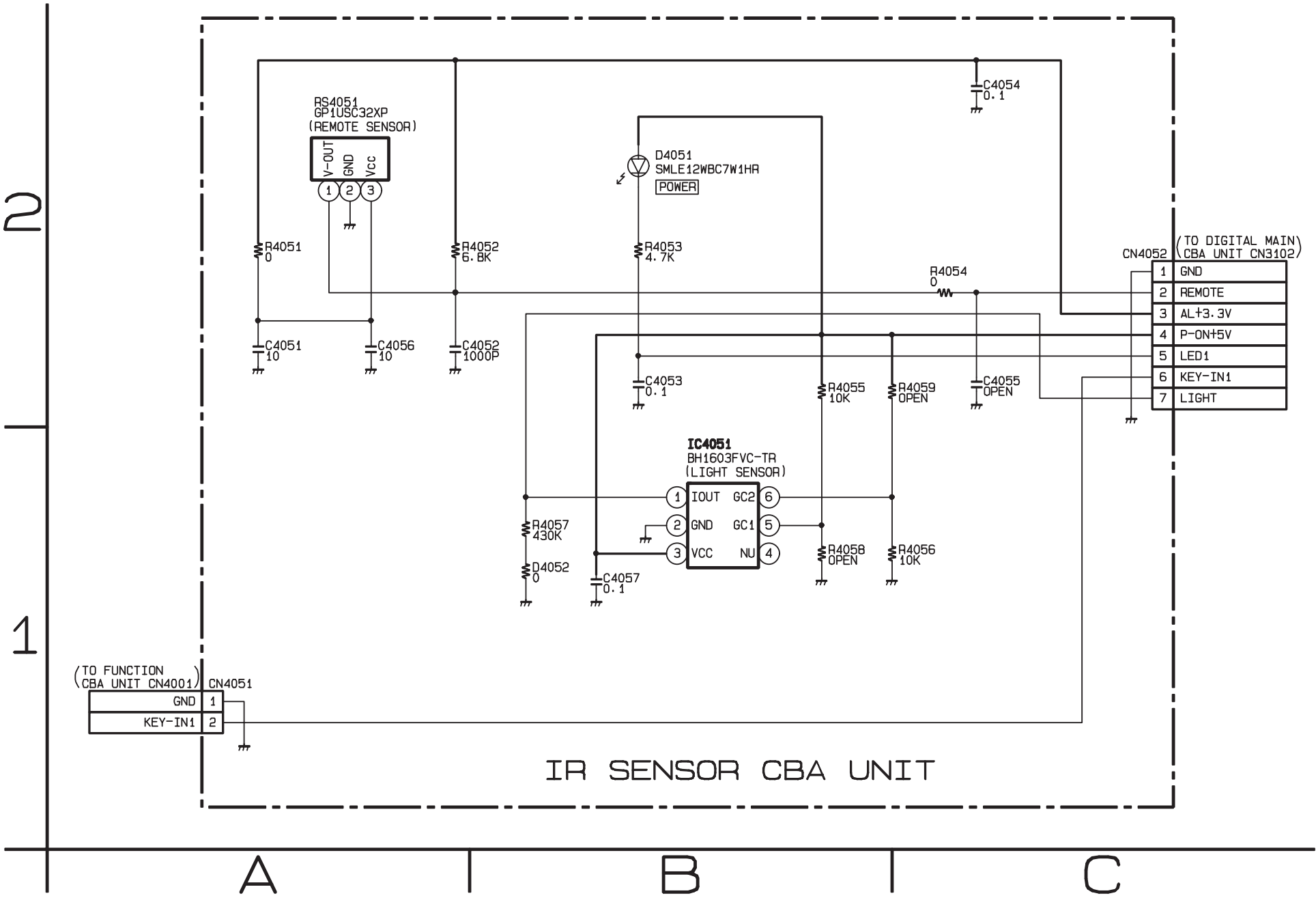
2



Function Schematic Diagram



IR Sensor Schematic Diagram

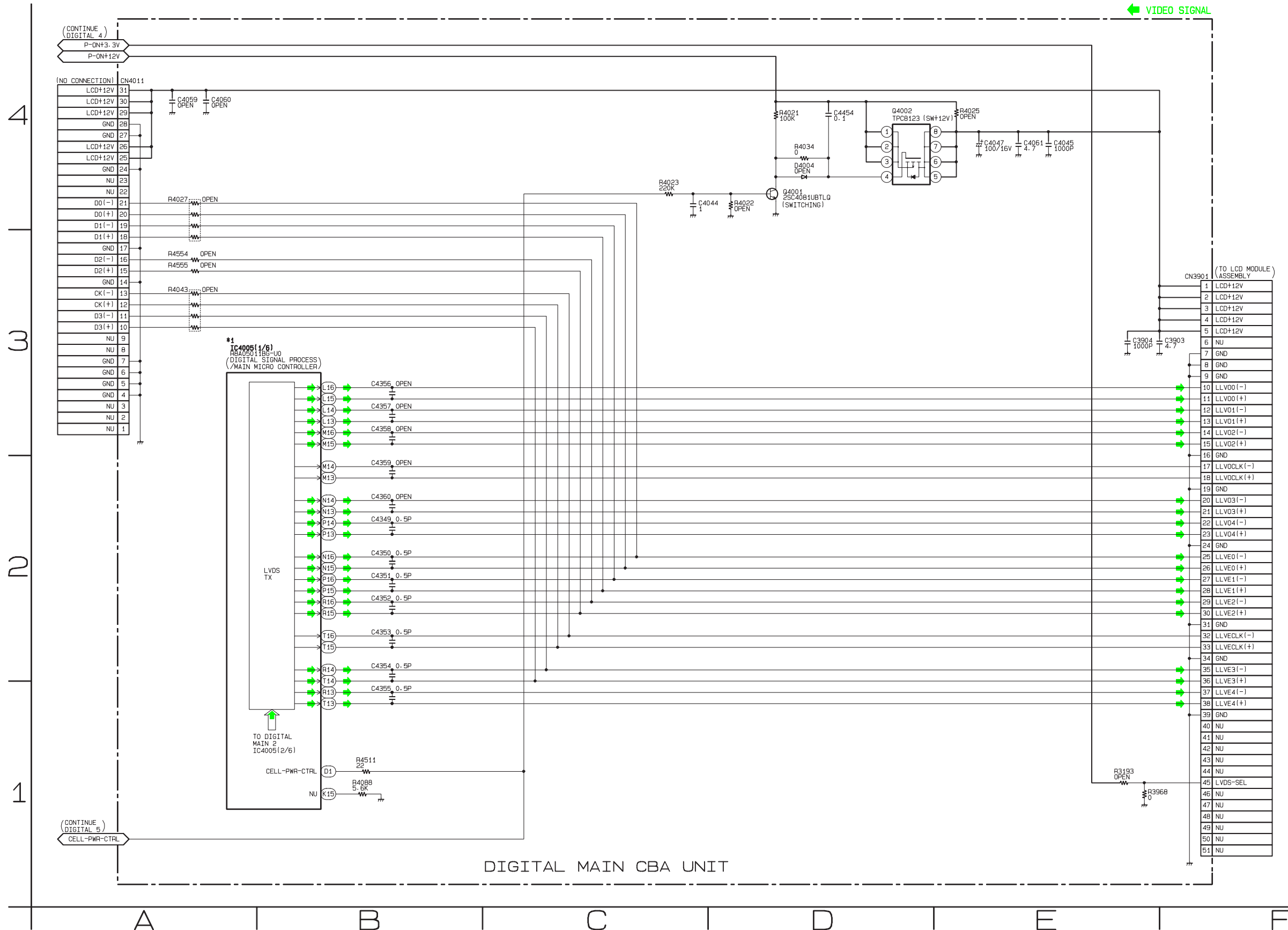


## Digital Main 1 Schematic Diagram

**\*1 NOTE:**

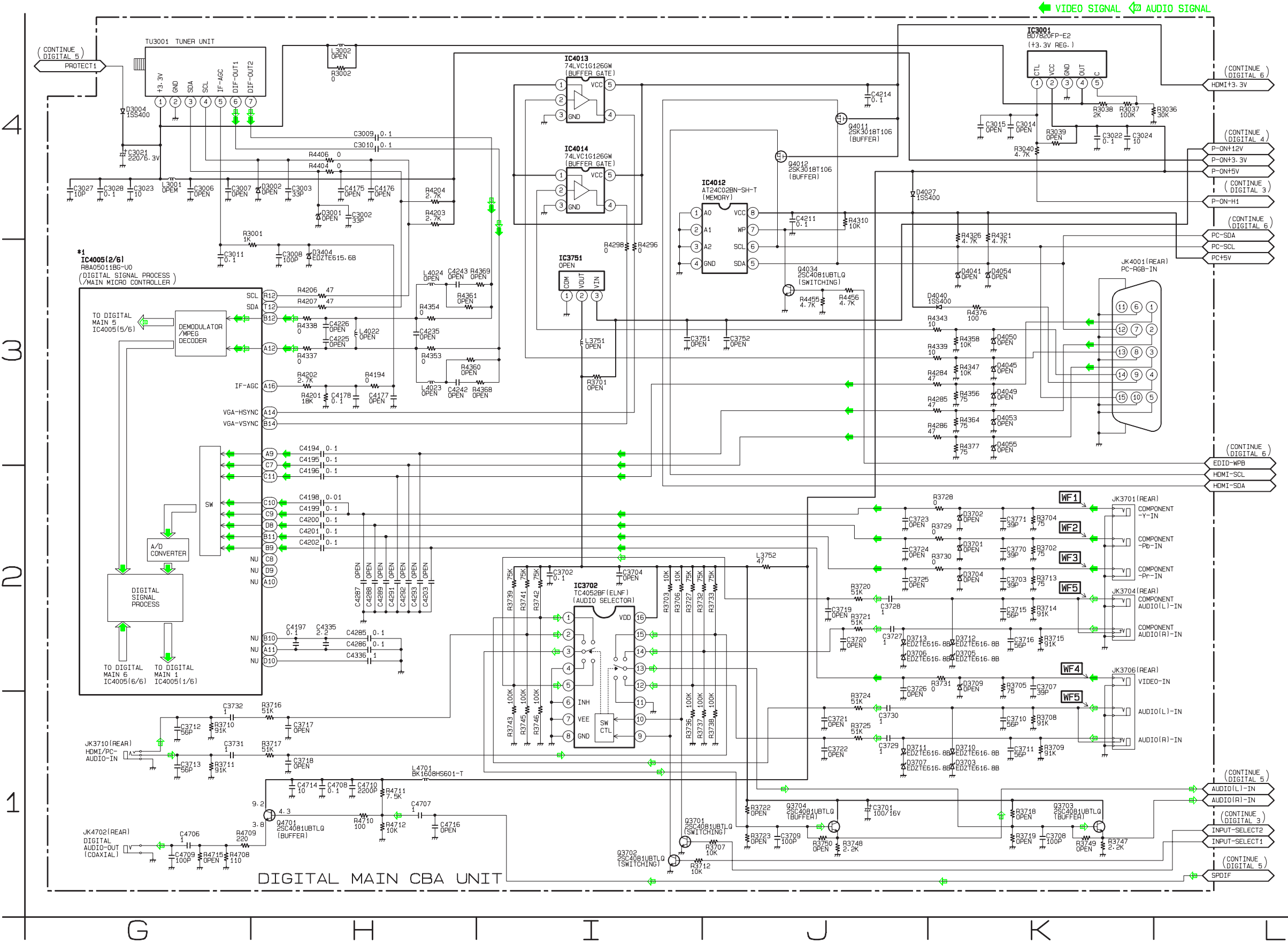
The order of pins shown in this diagram is different from that of actual IC4005.

IC4005 is divided into six and shown as IC4005 (1/6) ~ IC4005 (6/6) in this Digital Main Schematic Diagram Section.



Digital Main 2 Schematic Diagram

\*1 NOTE:  
The order of pins shown in this diagram is different from that of actual IC4005.  
IC4005 is divided into six and shown as IC4005 (1/6) ~ IC4005 (6/6) in this Digital Main Schematic Diagram Section.



## 2

IC4005 is divided into six and shown as IC4005 (1/6) ~ IC4005 (6/6) in this Digital Main Schematic Diagram Section.

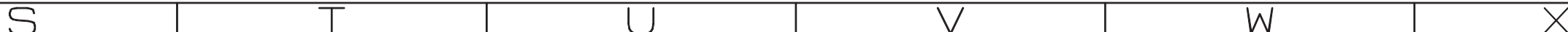


## 4

## 3

2

1





## 4

3

2

1





## 4 |

3

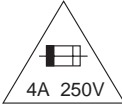
2



# Power Supply CBA Top View

**CAUTION !**

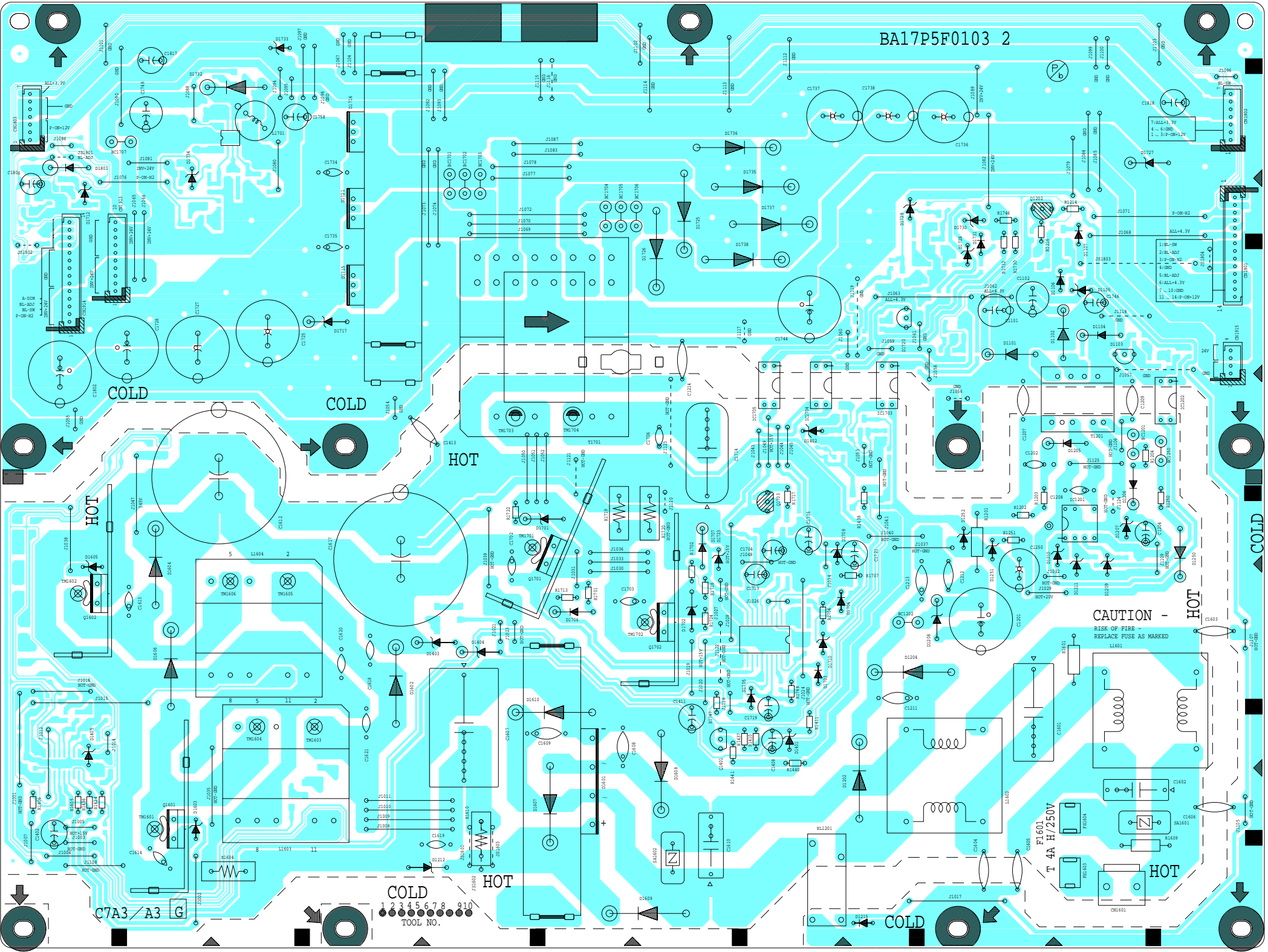
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.  
If Main Fuse (F1601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.  
Otherwise it may cause some components in the power supply circuit to fail.



**CAUTION ! :** For continued protection against risk of fire,  
replace only with same type 4A, 250V fuse.  
**ATTENTION :** Utiliser un fusible de rechange de même type de 4A, 250V.

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

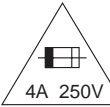
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing.  
Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.



# Power Supply CBA Bottom View

**CAUTION !**

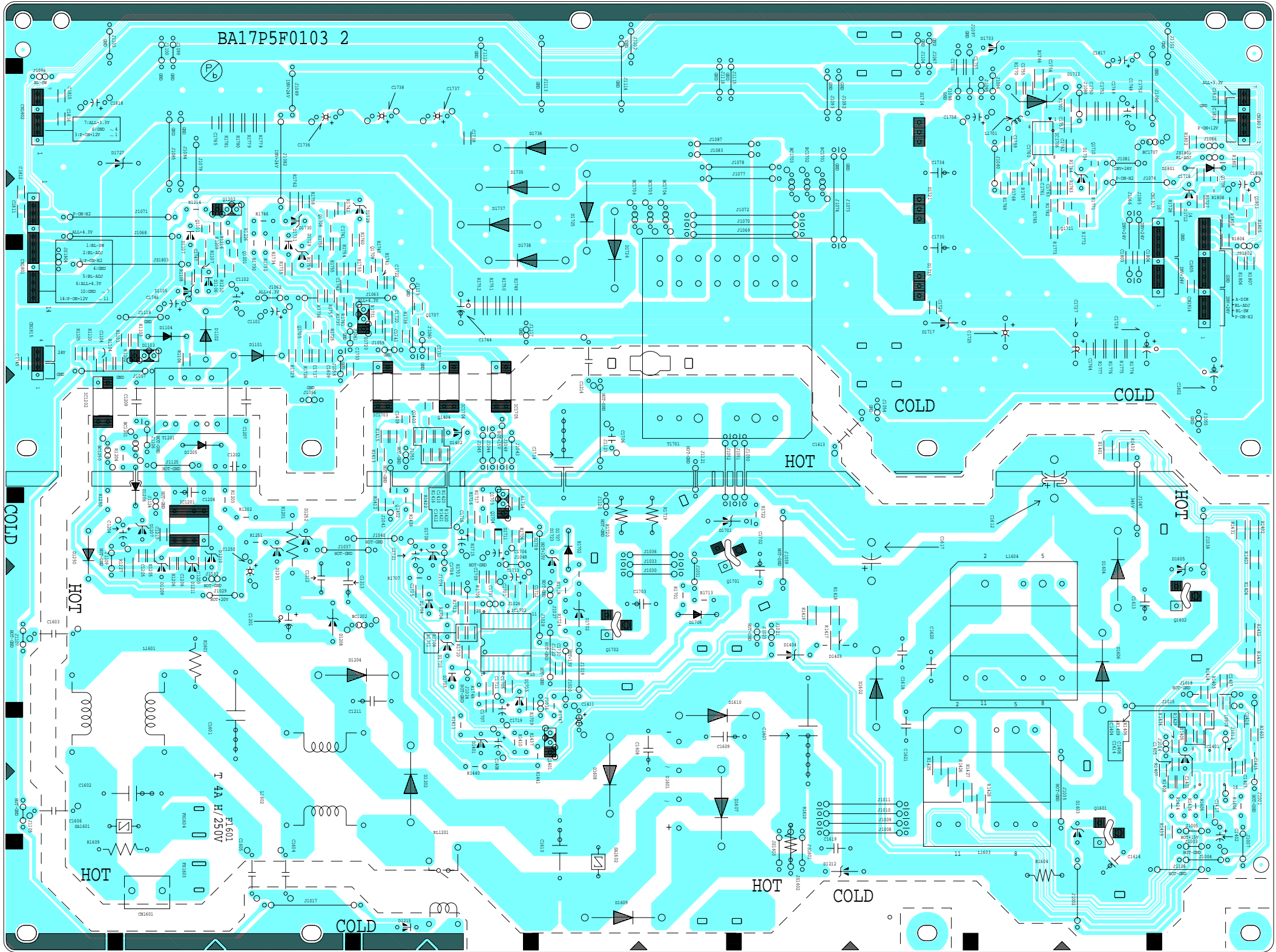
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.  
If Main Fuse (F1601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.  
Otherwise it may cause some components in the power supply circuit to fail.



**CAUTION ! :** For continued protection against risk of fire,  
replace only with same type 4A, 250V fuse.  
**ATTENTION :** Utiliser un fusible de rechange de même type de 4A, 250V.

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

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

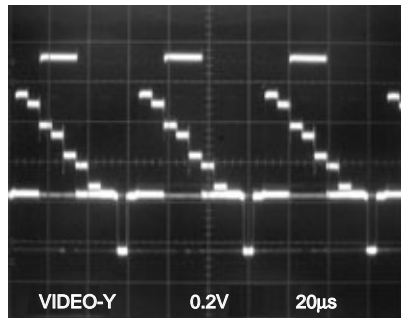


# WAVEFORMS

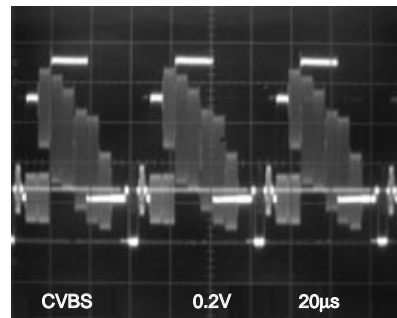
**WF1 ~ WF5 =** Waveforms to be observed at  
Waveform check points.  
(Shown in Schematic Diagram.)

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

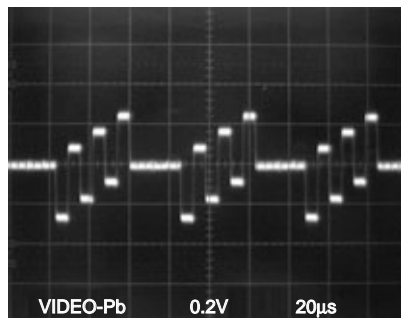
**WF1** JK3701 (Y-IN)



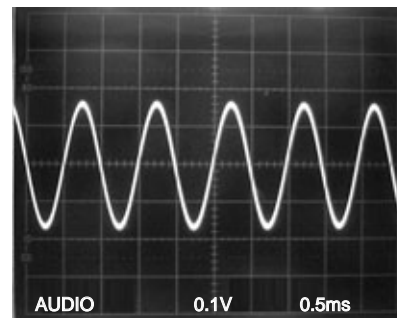
**WF4** JK3706 (VIDEO-IN)



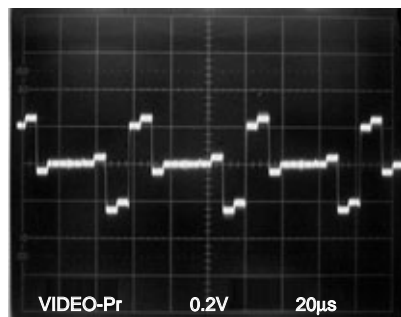
**WF2** JK3701 (Pb-IN)



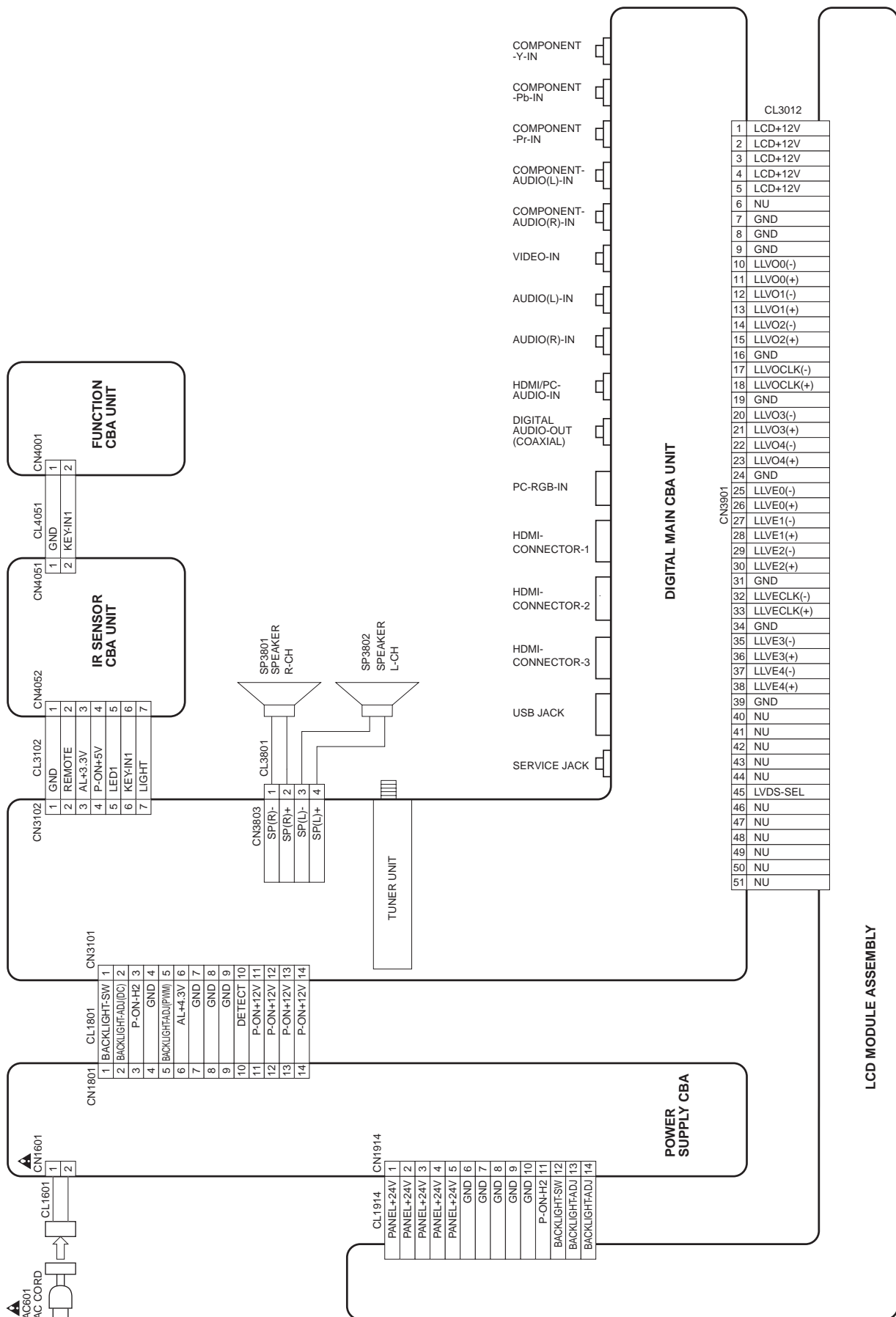
**WF5** JK3704, JK3706 (AUDIO(L)-IN)



**WF3** JK3701 (Pr-IN)



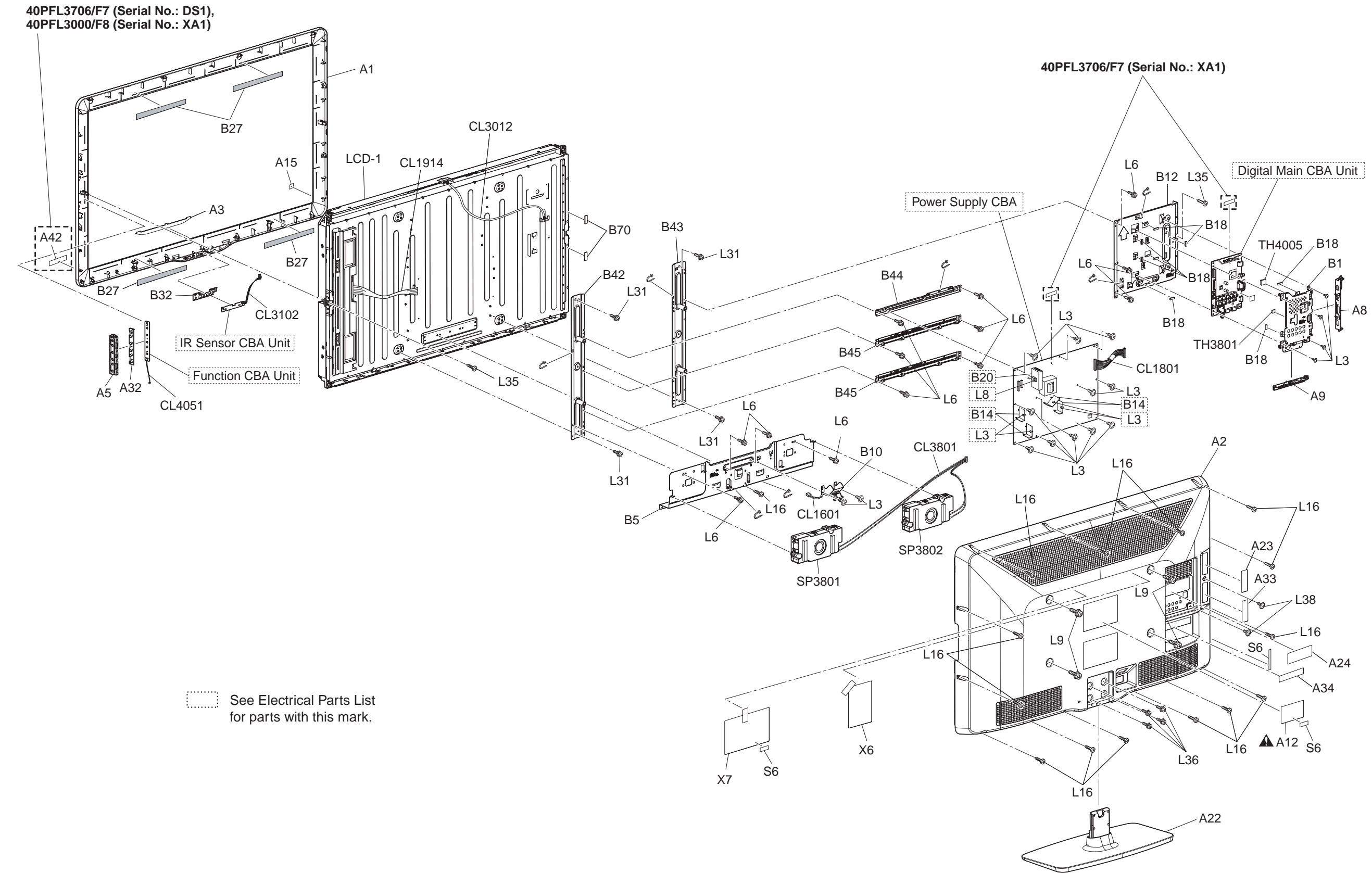
# WIRING DIAGRAM



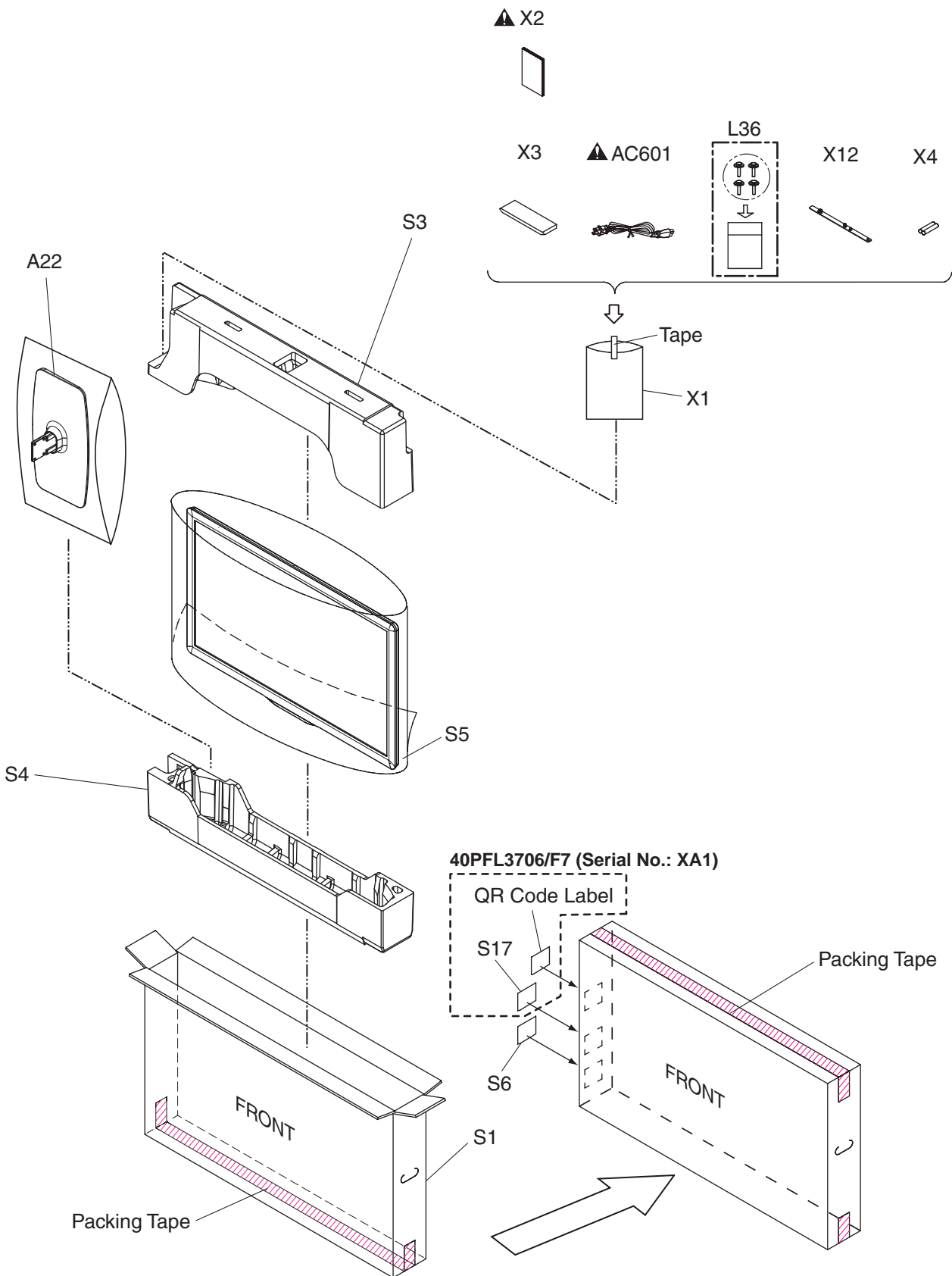


EXPLODED VIEWS

Cabinet




Packing



# PARTS LIST

[40PFL3706/F7 (Serial No.: DS1), 40PFL3000/F8 (Serial No.: XA1)]

## Mechanical Parts

**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 A17P5UH	1EM027405
A2	REAR CABINET A17P6UH	1EM027426
A3	DECORATION PANEL A11P4UH	1EM225283
A5	KNOB FRAME A17P6UH	1EM330419
A8	JACK HOLDER(A) A17P6UH	1EM225783
A9	JACK HOLDER(B) A17P6UH	1EM225784
A12 	RATING LABEL A17P6UH	-----
A15	ENERGY STAR LABEL A91F2UH	-----
A22	40W5000 STAND ASSEMBLY A17P5UH	1EM027409
A23	JACK LABEL A A17P6UH	1EM435077
A24	JACK LABEL D A17P6UH	1EM435080
A32	FUNCTION BUTTON A11P4UH	1EM329857
A33	JACK LABEL B A17P6UH	1EM435078
A34	JACK LABEL C A17P6UH	1EM435079
A42	ENERGY GUIDE LABEL A17P6UH	-----
B1	SHIELD BOX A17P6UH	1EM126055
B5	STAND BRACKET A17P6UH	1EM027427
B10	AC INLET HOLDER A01P0UH	1EM327037
B12	PCB HOLDER A17P6UH	1EM126054
B18	GASKET A8AF0UH	1EM425861
B27	CLOTH(10X180XT0.5) L0336JG	0EM408827
B32	SHIELD PLATE A11P4UH	1EM329858
B42	WALL MOUNT BRACKET(L) A17P6UH	1EM225785
B43	WALL MOUNT BRACKET(R) A17P6UH	1EM225786
B44	PCB HOLDER(U) A17P1UH	1EM225843
B45	PCB HOLDER(D) 40W A17P5UH	1EM126034
B70	GASKET(A) A73F0EP	1EM424765
CL1601	WIRE ASSEMBLY 2PIN 2PIN/90MM/WHITE BLK	WX1A17P5-305
CL1801	WIRE ASSEMBLY 14PIN 14PIN/180MM	WX1A17P6-312
CL1914	WIRE ASSEMBLY 14PIN 14PIN/265MM	WX1A17P0-204
CL3012	LVDS WIRE ASSEMBLY 51PIN 51PIN/540MM	WX1A17P6-311
CL3102	WIRE ASSEMBLY 7PIN 7PIN/390MM	WX1A17P6-324
CL3801	WIRE ASSEMBLY 4PIN 4PIN/600MM/330MM	WX1A17P6-323
CL4051	WIRE ASSEMBLY 2PIN 2PIN/730MM	WX1A17P6-325
L3	ASSEMBLED SCREW(D9/M3X5) A14P1UH	1EM433298
L6	DOUBLE SEMS SCREW M4X6 M4X6	FPJ34060
L9	DOUBLE SEMS SCREW M8X18 M8X18	FPJ38180
L16	SCREW P-TIGHT 3X12 BIND HEAD+ BLK	GBHP3120
L31	DOUBLE SEMS SCREW M5X8 M5X8 PAN HEAD+	FPJ35080
L35	SCREW P-TIGHT 3X14 WASHER HEAD+	GCJP3140
L36	STAND SCREW KIT A17P5UH	1ESA28287
L38	SCREW S-TIGHT 3X8 WASHER HEAD+BLAC	GCHS3080

Ref. No.	Description	Part No.
LCD-1	TFT-LCD MODULE 40W 60HZ LTA400HM09	UDULCD0SM021
SP3801	SPEAKER MAGNETIC BOX 8OHM/10W SB-05F71A	DS08050XQ013
SP3802	SPEAKER MAGNETIC BOX 8OHM/10W SB-05F71A	DS08050XQ013
TH3801	THERMOSTAR TMS-L-2 7X7HC	XK10000X4006
TH4005	THERMAL SHEET TMS-14-20 12X12	XK10000X4011
<b>PACKING</b>		
S1	CARTON A17P6UH	1EM330857
S3	STYROFOAM TOP A17P5UH	1EM027865
S4	STYROFOAM BOTTOM A17P5UH	1EM027866
S5	SET BAG A91H2UH	1EM325897
S6	SERIAL NO. LABEL A01PBUH	-----
<b>ACCESSORIES</b>		
AC601 	CORD W/O A GND WIRE UL/CSA/ 162/NO/ BLACK	WAV0162LW001
X1	BAG POLYETHYLENE 235X365XT0.03	0EM408420A
X2 	OWNERS MANUAL A17P6UH	1EMN28064
X3	REMOTE CONTROL TRANSMITTER YKF259-001	URMT34JHG001
X4	BATTERY R03-B500/01S	XB0M451CZB01
X6	QUICK START GUIDE A17P6UH	1EMN28065
X7	REGISTRATION CARD(PHILIPS) A11P4UH	1EMN27321
X12	CABLE MANAGEMENT TIE(BLACK) A01F2UH	1EM431197



# Electrical Parts

**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%

## DIGITAL ASSEMBLY

Ref. No.	Description	Part No.
	DIGITAL ASSEMBLY Consists of the following:	A17P6MMA-001
	DIGITAL MAIN CBA UNIT FUNCTION CBA UNIT IR SENSOR CBA UNIT	A17P6MMA-001-DM A17P6MMA-001-FN A17P6MMA-001-IR

## POWER SUPPLY CBA

Ref. No.	Description	Part No.
	POWER SUPPLY CBA Consists of the following:	A17P6MPW-001
<b>CAPACITORS</b>		
C1101	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASDL471
C1102	ELECTROLYTIC CAP. 1000µF/10V M	CE1AMASDL102
C1104	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1201	ELECTROLYTIC CAP. 22µF/200V	CE2DMZNDL220
C1202	CAP CERAMIC HV 1000pF/1KV B K	CA3A102TE006
C1203	CHIP CERAMIC CAP.(1608) B K 0.22µF/25V	CHD1EK30B224
C1204	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0
C1205	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C1206	CHIP CERAMIC CAP. B K 330pF/50V	CHD1JK30B331
C1208	CAP CERAMIC SL J 15pF/2KV	CCD3DJNSL150
C1210	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1214▲	CAP CERAMIC 470pF/250V KX	CA2E471MR100
C1250	ELECTROLYTIC CAP. 220µF/35V M	CE1GMASDL221
C1401	CHIP CERAMIC CAP. B K 1200pF/50V	CHD1JK30B122
C1402	ELECTROLYTIC CAP. 100µF/25V M	CE1EMASDL101
C1403	CHIP CERAMIC CAP.(1608) B K 0.22µF/25V	CHD1EK30B224
C1404	CHIP CERAMIC CAP.(1608) B K 2.2µF/10V	CHD1AK30B225
C1405	CHIP CERAMIC CAP. B K 1200pF/50V	CHD1JK30B122
C1406	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1407	CHIP CERAMIC CAP. B K 1200pF/50V	CHD1JK30B122
C1408	ELECTROLYTIC CAP. 33µF/50V M	CE1JMASDL330
C1409	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1410	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V	CHD1JK30B223
C1411	RES CARBON FILM T 1/4W J 1.5k Ω	RCX4152T1001
C1412	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1413▲	CAP CERAMIC 470pF/250V KX	CA2E471MR100
C1414	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1415	CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220

Ref. No.	Description	Part No.
C1416	CHIP CERAMIC CAP.(1608) CH J 22pF/50V	CHD1JJ3CH220
C1417	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1601▲	CAP METALIZED FILM 1.0µF/310V /KLE-MX	CTA1050DC001
C1602▲	CAP METALIZED FILM 0.1µF/310V /KLE-MX	CTA1040DC001
C1605▲	CAP CERAMIC 470pF/250V KX	CA2E471MR100
C1606▲	CAP CERAMIC 470pF/250V KX	CA2E471MR100
C1607▲	CAP METALIZED FILM J1.0µF/630V/J/MPEF	CA2K105DT048
C1610▲	CAP METALIZED FILM 0.22µF/310V /KLE-MX	CTA2240DC001
C1612	CAP ELECTROLYTIC 180µF/400V M	CA2H181DYG10
C1613	CERAMIC CAP. 220pF/2KV	CA3D221PAN04
C1614	CERAMIC CAP. 220pF/2KV	CA3D221PAN04
C1618	CERAMIC CAP. BL 1500pF/2KV	CA3D152XF003
C1701	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1702	CERAMIC CAP. RB 330pF/2KV	CA3D331TE006
C1703	CERAMIC CAP. RB 330pF/2KV	CA3D331TE006
C1704	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASDL220
C1705	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1706	CERAMIC CAP. B K 100pF/1KV	CCD3AKD0B101
C1707	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1708	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1709	CHIP CERAMIC CAP. B K 330pF/50V	CHD1JK30B331
C1710	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1711	CHIP CERAMIC CAP.(1608) B K 0.47µF/16V	CHD1CK30B474
C1712	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1713	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASDL220
C1714	CAP METALIZED FILM J0.039µF/630V/J/MPEF	CA2K393DT045
C1715	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C1716	ELECTROLYTIC CAP. 33µF/50V M	CE1JMASDL330
C1717	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1718	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1719	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C1720	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V	CHD1JK30B473
C1721	ELECTROLYTIC CAP. 47µF/50V M	CE1JMASDL470
C1722	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1725	ELECTROLYTIC CAP. 2200µF/35V M	CE1GMZNDL222
C1726	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1727	ELECTROLYTIC CAP. 2200µF/35V M	CE1GMZNDL222
C1731	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1732	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1733	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1736	ELECTROLYTIC CAP. 2200µF/16V M	CE1CMZNDL222
C1737	ELECTROLYTIC CAP. 2200µF/16V M	CE1CMZNDL222
C1739	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1741	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1742	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1743	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C1746	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0
C1747	CHIP CERAMIC CAP. B K 1200pF/50V	CHD1JK30B122
C1804	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
<b>CONNECTORS</b>		
CN1601▲	CONNECTOR B2P3-VH(LF)(SN)	J3VH020JG001
CN1801	CONNECTOR PRINT OSU B14B-PH-K-S(LF)(SN)	J3PHC14JG029
CN1914	CONNECTOR PRINT OSU B14B-PH-K-S(LF)(SN)	J3PHC14JG029
<b>DIODES</b>		
D1101	DIODE FR104-B	NDLZ000FR104
D1102	SCHOTTKY BARRIER DIODE SB240-B/P	NDWZ000SB240
D1103	SHUNT REGULATOR KIA2431AP-AT/P	NSZBA0TJY054
D1104	DIODE FR104-B	NDLZ000FR104

Ref. No.	Description	Part No.
D1105	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D1106	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1107	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1202▲	DIODE GENERAL PURPOSE 1N5406-BU	NDLZ1N5406BU
D1205	DIODE SCHOTTKY BARRIER 1H8-A2	NDTZ0001H8A2
D1206	DIODE FR104-B	NDLZ000FR104
D1207	DIODE ZENER 33BSB-T26	NDTB033BST26
D1208	DIODE ZENER 1ZB220-YBB	NDWZ01ZB220Y
D1209▲	DIODE ZENER 39BSB-T26	NDTB039BST26
D1210▲	DIODE ZENER 39BSB-T26	NDTB039BST26
D1211▲	DIODE ZENER 39BSB-T26	NDTB039BST26
D1215	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1250	DIODE FAST RECOVERY FR103-B/P	NDWZ0FR103BP
D1252	DIODE ZENER 24BSB-T26	NDTB024BST26
D1401	DIODE ZENER 16BSB-T26	NDTB016BST26
D1402	DIODE ZENER 24BSB-T26	NDTB024BST26
D1405	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D1603	DIODE ZENER 27BSB-T26	NDTB027BST26
D1604	DIODE FAST RECOVERY 30PFB60	QDWZ030PFB60
D1605	DIODE ZENER 27BSB-T26	NDTB027BST26
D1606	DIODE FAST RECOVERY 30PFB60	QDWZ030PFB60
D1607▲	DIODE GENERAL PURPOSE 1N5406-BU	NDLZ1N5406BU
D1608▲	DIODE GENERAL PURPOSE 1N5406-BU	NDLZ1N5406BU
D1609▲	DIODE GENERAL PURPOSE 1N5406-BU	NDLZ1N5406BU
D1610▲	DIODE GENERAL PURPOSE 1N5406-BU	NDLZ1N5406BU
D1703	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1704	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1705▲	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1706	SCHOTTKY BARRIER DIODE SB140	NDWZ000SB140
D1707	SCHOTTKY BARRIER DIODE SB140	NDWZ000SB140
D1708	DIODE ZENER 4V7BSB-T26	NDTB4R7BST26
D1710	DIODE ZENER 27BSB-T26	NDTB027BST26
D1712	DIODE ZENER 18BSB-T26	NDTB018BST26
D1720	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
D1721	DIODE SILICON YG865C08RSC-P	QDWZG865C08R
D1728	DIODE ZENER 27BSD-T26	NDTD027BST26
D1729	DIODE ZENER 16BSB-T26	NDTB016BST26
D1735	SCHOTTKY BARRIER DIODE SB340	NDWZ000SB340
D1736	SCHOTTKY BARRIER DIODE SB340	NDWZ000SB340
D1737	SCHOTTKY BARRIER DIODE SB340	NDWZ000SB340
D1738	SCHOTTKY BARRIER DIODE SB340	NDWZ000SB340
<b>ICS</b>		
IC1201▲	IC SWITCHING POWER SUPPLY MIP2F30MSSCF DIP7-A1	QSCA0S0MS012
IC1202▲	PHOTO COUPLER PS2561L1-1-A-V(L)	QPEL561L11AV
IC1401▲	IC DUAL-PHASE PFC CONTROLLER UCC28061DR	NSCA0T0TY049
IC1702▲	IC 0V-SWITCHING RESONANT CONVE TEA1611T/N1.518	NSCA0TNXP002
IC1703▲	PHOTO COUPLER PS2561L1-1-A-V(L)	QPEL561L11AV
IC1704▲	PHOTO COUPLER PS2561L1-1-A-V(L)	QPEL561L11AV
IC1705▲	PHOTO COUPLER PS2561L1-1-A-V(L)	QPEL561L11AV
<b>COILS</b>		
L1601▲	COIL LINE FILTER ST1011ET28H-015/19MH	LLEG0Z0Y2031
L1602▲	COIL LINE FILTER ST1011ET28H-015/19MH	LLEG0Z0Y2031
L1603▲	COIL EF 11727	LLEE0Z0KT003
L1604▲	COIL EF 11727	LLEE0Z0KT003
<b>TRANSISTORS</b>		
Q1101	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1201	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1202	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q1401	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q1402	PNP TRANSISTOR SMD 2SA1576UBTLQ	QQ1Q2SA1576U


Ref. No.	Description	Part No.
Q1403	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1404	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1601▲	MOS FET TK7A50D(FUNAI)	QEWZTK7A50DQ
Q1602▲	MOS FET TK7A50D(FUNAI)	QEWZTK7A50DQ
Q1701▲	FET MOS TK5A50D(FUNAI)	QEWZTK5A50DQ
Q1702▲	FET MOS TK5A50D(FUNAI)	QEWZTK5A50DQ
Q1703	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q1704	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1705	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1706	PNP TRANSISTOR SMD 2SA1576UBTLQ	QQ1Q2SA1576U
Q1707	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1708	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1709	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
<b>RESISTORS</b>		
R1101	RES CHIP 1608 1/10W F 68.0k $\Omega$	RTW6802HH008
R1102	RES CHIP 1608 1/10W F 51.1k $\Omega$	RTW5112HH008
R1103	RES CHIP 1608 1/10W F 47.0k $\Omega$	RTW4702HH008
R1104	RES CHIP 1608 1/10W J 1.0k $\Omega$	RRXA102HH013
R1105	RES CHIP 1608 1/10W J 390 $\Omega$	RRXA391HH013
R1106	RES CHIP 1608 1/10W J 2.2 $\Omega$	RRXA2R2HH013
R1107	RES CHIP 1608 1/10W F 20.0k $\Omega$	RTW2002HH008
R1108	RES CHIP 1608 1/10W F 91.0k $\Omega$	RTW9102HH008
R1110	RES CHIP 1608 1/10W J 3.3k $\Omega$	RRXA332HH013
R1201▲	METAL OXIDE FILM RES. 2W J 1 $\Omega$	RN021R0ZU001
R1202	RES CARBON FILM T 1/4W J 100k $\Omega$	RCX4104T1001
R1203	RES CARBON FILM T 1/4W J 100k $\Omega$	RCX4104T1001
R1204	RES CARBON FILM T 1/4W J 100 $\Omega$	RCX4101T1001
R1205	RES CHIP 1608 1/10W J 470k $\Omega$	RRXA474HH013
R1206	RES CHIP 1608 1/10W J 36k $\Omega$	RRXA363HH013
R1209	RES CHIP 1608 1/10W J 6.8k $\Omega$	RRXA682HH013
R1210	RES CHIP 1608 1/10W J 47k $\Omega$	RRXA473HH013
R1214	RES CARBON FILM T 1/4W J 2.2 $\Omega$	RCX42R2T1001
R1216	RES CARBON FILM T 1/4W J 1.0k $\Omega$	RCX4102T1001
R1226	RES CHIP 1608 1/10W J 4.7k $\Omega$	RRXA472HH013
R1250	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
R1401	RES CHIP 3216 1/4W F 825k $\Omega$	RTC8253HH020
R1402	RES CHIP 3216 1/4W F 825k $\Omega$	RTC8253HH020
R1403	RES CHIP 3216 1/4W F 619k $\Omega$	RTC6193HH020
R1404	RES CHIP 3216 1/4W F 619k $\Omega$	RTC6193HH020
R1405	RES CHIP 1608 1/10W F 51.1k $\Omega$	RTW5112HH008
R1406	RES CHIP 1608 1/10W J 120k $\Omega$	RRXA124HH013
R1407	RES CHIP 1608 1/10W F 2.74k $\Omega$	RTW2741HH008
R1408	RES CHIP 1608 1/10W F 33.2k $\Omega$	RTW3322HH008
R1409	RES CHIP 1608 1/10W J 5.6k $\Omega$	RRXA562HH013
R1410	RES CARBON FILM T 1/4W J 47 $\Omega$	RCX4470T1001
R1411	RES CARBON FILM T 1/4W J 100 $\Omega$	RCX4101T1001
R1412	RES CHIP 1608 1/10W J 10k $\Omega$	RRXA103HH013
R1413	RES CHIP 1608 1/10W J 4.7k $\Omega$	RRXA472HH013
R1414	RES CHIP 1608 1/10W 0 $\Omega$	RRXA000HH014
R1415	RES CHIP 1608 1/10W J 4.7k $\Omega$	RRXA472HH013
R1416	RES CHIP 1608 1/10W J 39k $\Omega$	RRXA393HH013
R1417	RES CHIP 3216 1/4W F 100k $\Omega$	RTC1003HH020
R1418	RES CHIP 3216 1/4W F 100k $\Omega$	RTC1003HH020
R1419	RES CHIP 3216 1/4W F 100k $\Omega$	RTC1003HH020
R1420	RES CHIP 1608 1/10W F 26.7k $\Omega$	RTW2672HH008
R1421	RES CHIP 1608 1/10W 0 $\Omega$	RRXA000HH014
R1422	RES CHIP 3216 1/4W F 100k $\Omega$	RTC1003HH020
R1423	RES CHIP 1608 1/10W J 220k $\Omega$	RRXA224HH013
R1424	RES CARBON FILM T 1/4W J 100 $\Omega$	RCX4101T1001
R1425	RES CHIP 3216 1/4W F 825k $\Omega$	RTC8253HH020
R1426	RES CHIP 3216 1/4W F 825k $\Omega$	RTC8253HH020
R1427	RES CHIP 3216 1/4W F 619k $\Omega$	RTC6193HH020

Ref. No.	Description	Part No.
R1428	RES CHIP 3216 1/4W F 619k $\Omega$	RTC6193HH020
R1430	RES CHIP 3216 1/4W F 825k $\Omega$	RTC8253HH020
R1431	RES CHIP 3216 1/4W F 825k $\Omega$	RTC8253HH020
R1432	RES CHIP 3216 1/4W F 619k $\Omega$	RTC6193HH020
R1433	RES CHIP 3216 1/4W F 619k $\Omega$	RTC6193HH020
R1436	RES CARBON FILM T 1/4W J 18k $\Omega$	RCX4183T1001
R1437	RES CARBON FILM T 1/4W J 47 $\Omega$	RCX4470T1001
R1438	RES CARBON FILM T 1/4W J 100 $\Omega$	RCX4101T1001
R1439	RES CHIP 1608 1/10W J 2.2k $\Omega$	RRXA222HH013
R1440	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
R1441	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
R1603	RES CHIP 1608 1/10W J 22k $\Omega$	RRXA223HH013
R1604	RES CEMENT 5W J 0.022 $\Omega$	RWJL22PAK002
R1605	RES CARBON FILM T 1/4W J 4.7 $\Omega$	RCX44R7T1001
R1606	RES CARBON FILM T 1/4W J 4.7 $\Omega$	RCX44R7T1001
R1607	RES CHIP 1608 1/10W J 2.2k $\Omega$	RRXA223HH013
R1609▲	RES CARBON FILM 1/2W J 1.2M $\Omega$	RCJ125PAK003
R1701	RES CARBON FILM T 1/4W J 10 $\Omega$	RCX4100T1001
R1702	RES CARBON FILM T 1/4W J 10 $\Omega$	RCX4100T1001
R1703	RES CHIP 1608 1/10W J 10k $\Omega$	RRXA103HH013
R1704	RES CARBON FILM T 1/4W J 3.3k $\Omega$	RCX4332T1001
R1705	RES CHIP 1608 1/10W J 39k $\Omega$	RRXA393HH013
R1706	RES CHIP 1608 1/10W J 470 $\Omega$	RRXA471HH013
R1707	RES CARBON FILM T 1/4W J 1.0k $\Omega$	RCX4102T1001
R1708	RES CHIP 1608 1/10W J 68k $\Omega$	RRXA683HH013
R1709	RES CHIP 1608 1/10W J 1.0k $\Omega$	RRXA102HH013
R1710	RES CHIP 1608 1/10W J 10k $\Omega$	RRXA103HH013
R1711	RES CHIP 1608 1/10W J 33k $\Omega$	RRXA333HH013
R1712	RES CHIP 1608 1/10W J 68k $\Omega$	RRXA683HH013
R1713	RES CARBON FILM T 1/4W J 47 $\Omega$	RCX4470T1001
R1714	RES CHIP 1608 1/10W J 10k $\Omega$	RRXA103HH013
R1715	RES CHIP 1608 1/10W J 22k $\Omega$	RRXA223HH013
R1716	RES CHIP 1608 1/10W J 47k $\Omega$	RRXA473HH013
R1717	RES CARBON FILM T 1/4W J 2.2k $\Omega$	RCX4222T1001
R1718	RES CARBON FILM T 1/4W J 47 $\Omega$	RCX4470T1001
R1719	CEMENT RESISTOR 2W J 0.18 $\Omega$	RWJR18PAK001
R1720	CEMENT RESISTOR 2W J 0.18 $\Omega$	RWJR18PAK001
R1722	RES CARBON FILM T 1/4W J 10k $\Omega$	RCX4103T1001
R1724	RES CARBON FILM T 1/4W J 10k $\Omega$	RCX4103T1001
R1725	RES CHIP 1608 1/10W J 2.2k $\Omega$	RRXA222HH013
R1726	RES CHIP 1608 1/10W J 47k $\Omega$	RRXA473HH013
R1727	RES CHIP 1608 1/10W J 5.1k $\Omega$	RRXA512HH013
R1728	RES CHIP 1608 1/10W J 4.7k $\Omega$	RRXA472HH013
R1729	RES CHIP 1608 1/10W J 220 $\Omega$	RRXA221HH013
R1730	RES CARBON FILM T 1/4W J 150 $\Omega$	RCX4151T1001
R1731	RES CHIP 1608 1/10W J 2.7k $\Omega$	RRXA272HH013
R1732	RES CARBON FILM T 1/4W J 3.9k $\Omega$	RCX4392T1001
R1734	RES CHIP 1608 1/10W F 2.20k $\Omega$	RTW2201HH008
R1735	RES CHIP 1608 1/10W F 2.20k $\Omega$	RTW2201HH008
R1736	RES CHIP 1608 1/10W F 2.20k $\Omega$	RTW2201HH008
R1737	RES CHIP 1608 1/10W F 22.0 $\Omega$	RTW22R0HH008
R1739	RES CHIP 1608 1/10W J 390 $\Omega$	RRXA391HH013
R1740	RES CHIP 1608 1/10W 0 $\Omega$	RRXA000HH014
R1741	RES CHIP 1608 1/10W J 47k $\Omega$	RRXA473HH013
R1742	RES CHIP 1608 1/10W J 10k $\Omega$	RRXA103HH013
R1746	RES CARBON FILM T 1/4W J 150 $\Omega$	RCX4151T1001
R1747	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
R1748	RES CARBON FILM T 1/4W J 6.8k $\Omega$	RCX4682T1001
R1753	RES CHIP 1608 1/10W J 3.3k $\Omega$	RRXA332HH013
R1754	RES CHIP 1608 1/10W J 10k $\Omega$	RRXA103HH013
R1755	RES CHIP 1608 1/10W J 10k $\Omega$	RRXA103HH013
R1756	RES CHIP 1608 1/10W J 3.3k $\Omega$	RRXA332HH013
R1757	RES CHIP 1608 1/10W F 2.20k $\Omega$	RTW2201HH008

Ref. No.	Description	Part No.
R1758	RES CHIP 1608 1/10W F 2.20k $\Omega$	RTW2201HH008
R1759	RES CHIP 1608 1/10W J 2.7k $\Omega$	RRXA272HH013
R1760	RES CHIP 1608 1/10W J 2.7k $\Omega$	RRXA272HH013
R1761	RES CHIP 1608 1/10W F 430 $\Omega$	RTW4300HH008
R1802	RES CHIP 1608 1/10W J 1.0k $\Omega$	RRXA102HH013
R1804	RES CHIP 1608 1/10W 0 $\Omega$	RRXA000HH014
R1806	RES CHIP 1608 1/10W J 10k $\Omega$	RRXA103HH013
<b>MISCELLANEOUS</b>		
B14	POW HEAT SINK A7120UH	1EM423993
B20	HEAT SINK EAQ ASSEMBLY A17P5UH	1EM434720
BC1201	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC1202	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC1250	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC1701	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
BC1702	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
BC1703	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
BC1704	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
BC1705	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
BC1706	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
F1601▲	FUSE 4A/250V(PB FREE) 0215004.MXP	PBGZ20BAG021
FH1603	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
FH1604	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
JS1601	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
JS1602	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
JS1603	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
JS1802	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
JS1803	WIRE COPPER 6111-06003-0120	XZ40C0SHG002
L3	SCREW B-TIGHT D3X8 BIND HEAD+	GBJB3080
L8	SCREW B-TIGHT D3X8 BIND HEAD+	GBJB3080
RL1201▲	RELAY SDT-SS-105DM	MRLEC05QN001
SA1601▲	SURGE ABSORBER 470V+-10PER	NVQZ10D471KB
T1201▲	TRANS POWER 11726	LTT1PC0KT006
T1701▲	TRANS RESONANCE LP-3925HB08-03	LTZ4PZYJN001
TM1601	EYELET L0700UZ	1EM423448
TM1602	EYELET L0700UZ	1EM423448
TM1603	EYELET L0700UZ	1EM423448
TM1604	EYELET L0700UZ	1EM423448
TM1605	EYELET L0700UZ	1EM423448
TM1606	EYELET L0700UZ	1EM423448
TM1701	EYELET L0700UZ	1EM423448
TM1702	EYELET L0700UZ	1EM423448
TM1703	EYELET L0700UZ	1EM423449
TM1704	EYELET L0700UZ	1EM423449



# PARTS LIST [40PFL3706/F7 (Serial No.: XA1)]

## Mechanical Parts


**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.

### Different parts from the original model 40PFL3706/F7 (Serial No. : DS1)

Ref. No.	Description	Part No.
A12 	RATING LABEL A17PAMA	-----
A42	Not used	
S1	CARTON A17PAMA	1EM330880
S17	CARTON LABEL A17PAMA	-----
X2 	OWNERS MANUAL A17Q7UD	1EMN28199

# Electrical Parts

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

## NOTES:

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

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

## Different parts from the original model 40PFL3706/F7 (Serial No. : DS1)

There are no different parts from the original model 40PFL3706/F7 (Serial No : DS1).  
Refer to the parts list for the original model 40PFL3706/F7 (Serial No : DS1).

# REVISION HISTORY

## Chassis PL11.1

- 2011-04-22 40PFL3706/F7 (Serial No.: DS1) added
- 2011-11-05 40PFL3000/F8 (Serial No.: XA1) added  
**Note:** Identical product to the 40PFL3706/F7 (Serial No.: DS1).
- 2011-11-28 40PFL3706/F7 (Serial No.: XA1) added

# COMPARISON LIST OF MODEL NAME

## Chassis PL11.1

40PFL3706/F7	(DS1)	A17P6UH
	(XA1)	A17PAMA
40PFL3000/F8	(XA1)	A17PFMA