

PHILIPS

39" LCD TV chassis PL13.11

Service Manual

Contents

TYPE A

39PFL2608/F7	PHILIPS	(Serial No.: DS1, DS2)
39PFL2908/F7	PHILIPS	(Serial No.: DS1)
39PFL4408/F8	PHILIPS	(Serial No.: XA1)

TYPE B

39PFL2708/F7	PHILIPS	(Serial No.: DS2)
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TYPE C


39PFL2708/F7	PHILIPS	(Serial No.: DS1)
39PFL4208/F8	PHILIPS	(Serial No.: XA1)

This service manual contains information of different types of models.
Make sure to refer to the section describing your model.

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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>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.</p>

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SPECIFICATIONS

< TUNER / NTSC >

Description	Condition	Unit	Nominal	Limit
1. AFT Pull-In Range	TV.ch.4	MHz	±2.3	±2.1
2. Synchronizing Sens.	TV.ch.4	dBμV	18	20
	CA.ch.31	dBμV	18	20
	CA.ch.87	dBμV	18	23

< TUNER / ATSC >

Description	Condition	Unit	Nominal	Limit
1. Received Freq. Range (-28dBm)	---	kHz	---	±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 ²	300	---
3. Viewing Angle	Horizontal	°	-88 to 88	---
	Vertical	°	-88 to 88	---

< VIDEO >

Description	Condition	Unit	Nominal	Limit
1. Over Scan	Horizontal	%	5	5±5
	Vertical	%	5	5±5
2. Color Temperature	---	°K	12000	---
	x		0.272	±5%
	y		0.278	±5%
	<Measurement Condition> Input signal: HDMI1 Raster (40/80IRE) 1080i@60 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 ± 5°C			
3. Resolution (composite video)	Horizontal	line	400	---
	Vertical	line	350	---

< AUDIO >

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

Description	Condition	Unit	Nominal	Limit
1. Audio Output 10% Distortion (ATSC 0dBfs)	Lch/Rch	W	8.0/8.0	7.0/7.0
2. Audio Distortion (NTSC)	500mW: Lch/Rch	%	0.5/0.5	2.0/2.0

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.

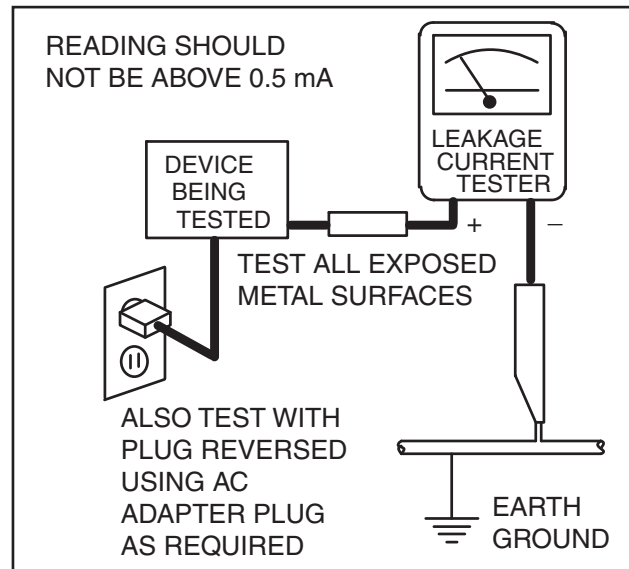
Safety Precautions for LCD TV Circuit

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	≥ 3.2 mm (0.126 inches)

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

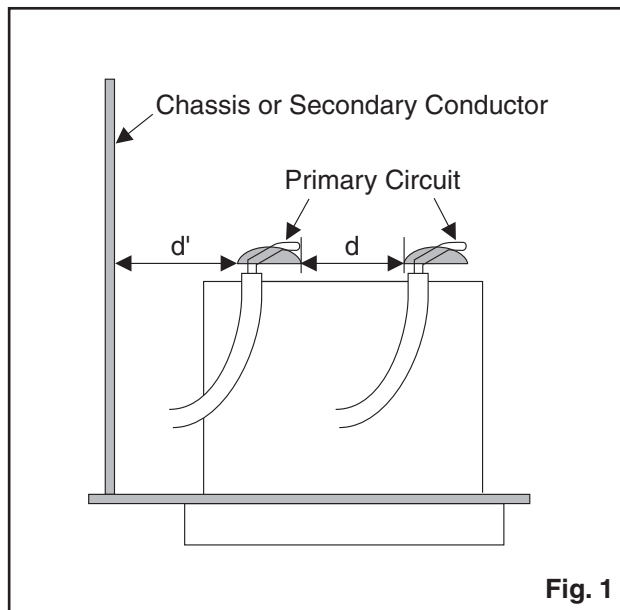


Fig. 1

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.

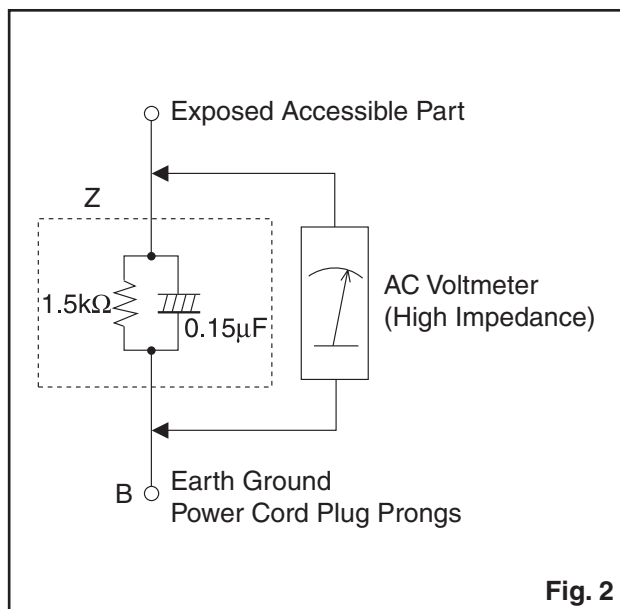


Fig. 2

Table 2: Leakage current ratings for selected areas

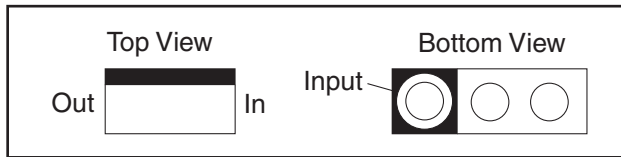
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	$0.15 \mu F$ CAP. & $1.5 k\Omega$ RES. Connected in parallel	$i \leq 0.5$ mA rms	Exposed accessible parts

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

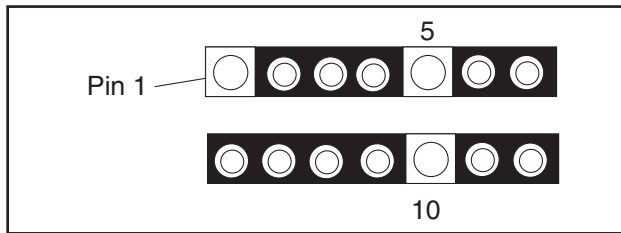
STANDARD NOTES FOR SERVICING

Circuit Board Indications

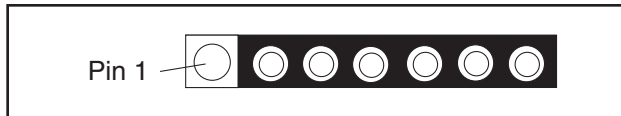
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

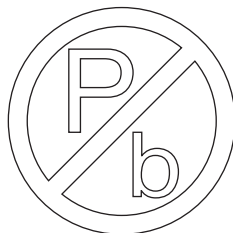


3. The 1st pin of every male connector is indicated as shown.



Pb (Lead) Free Solder

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



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)

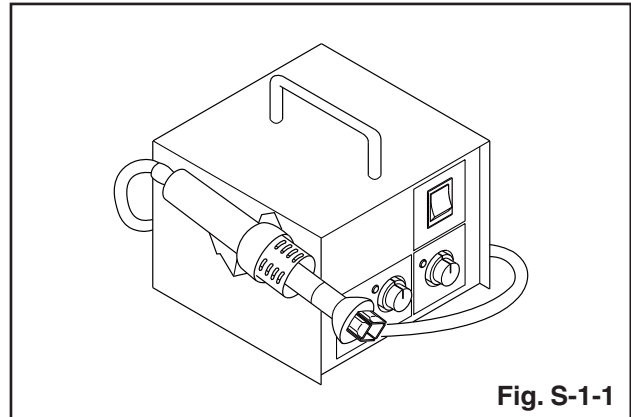


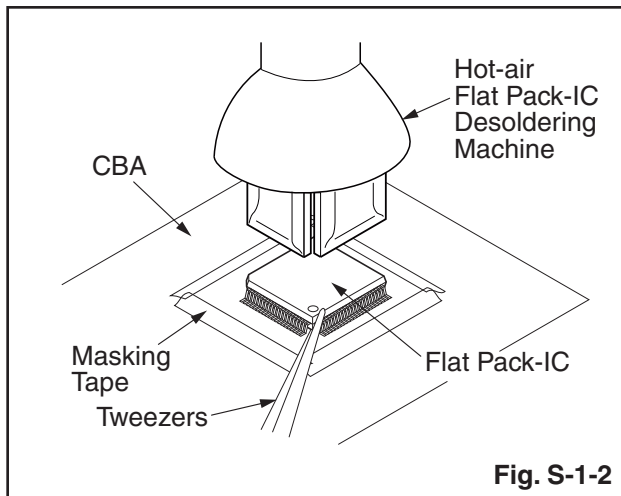
Fig. S-1-1

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:

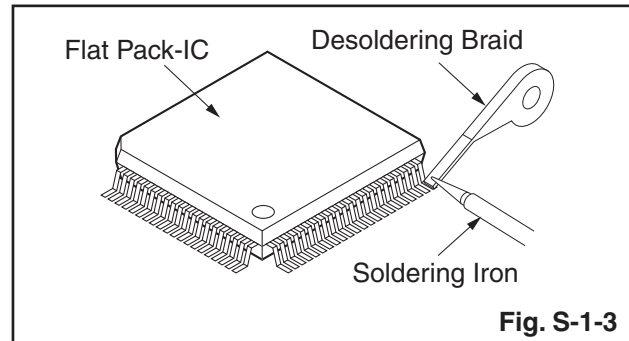
1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape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

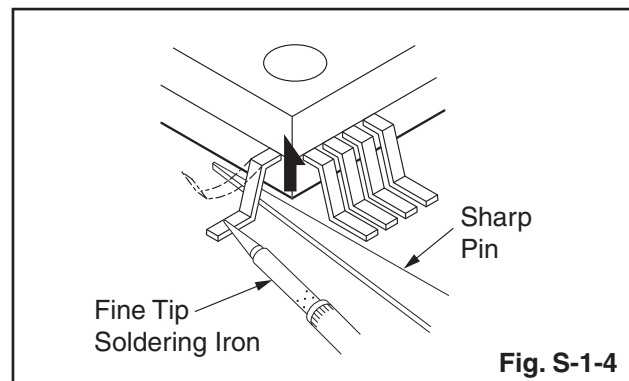


With Soldering Iron:

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)

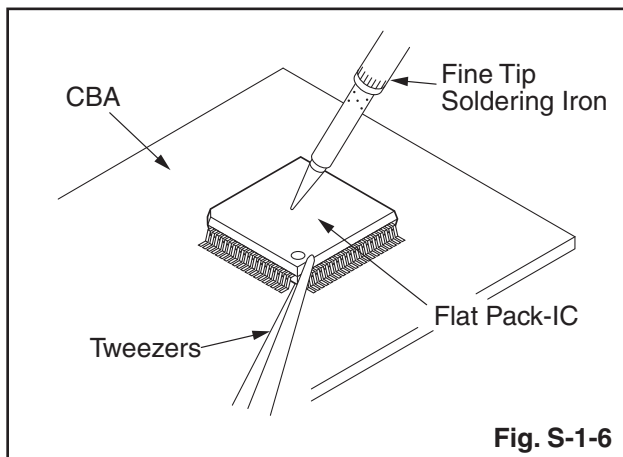
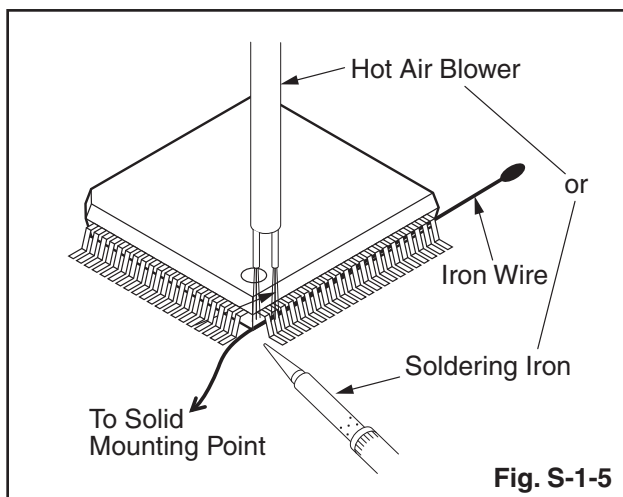


3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

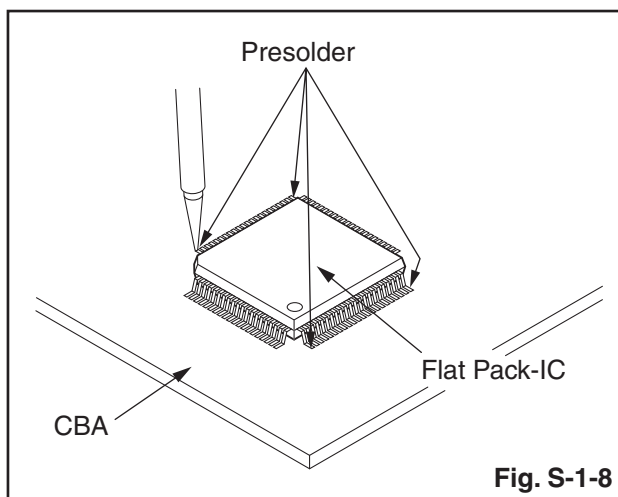
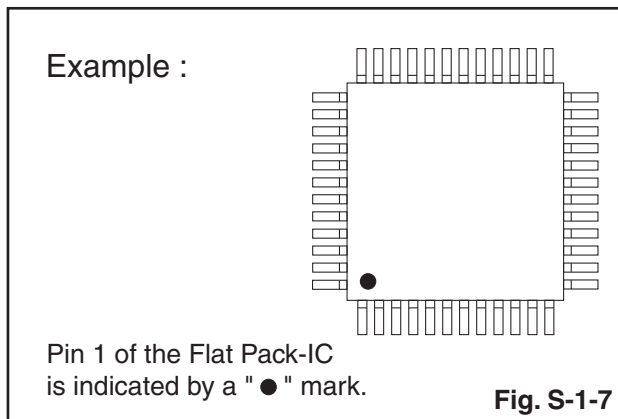
1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins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

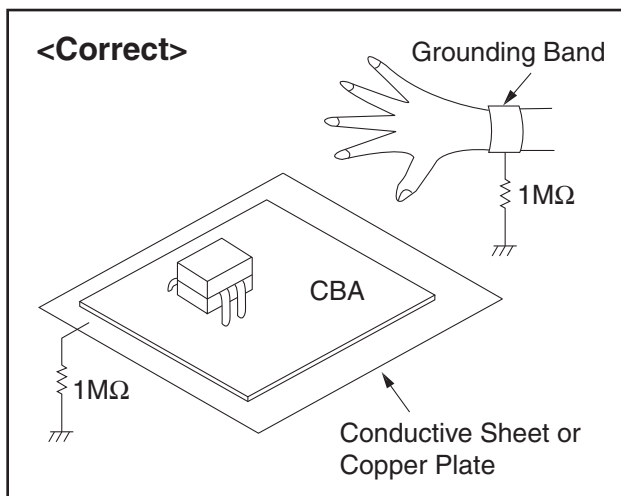
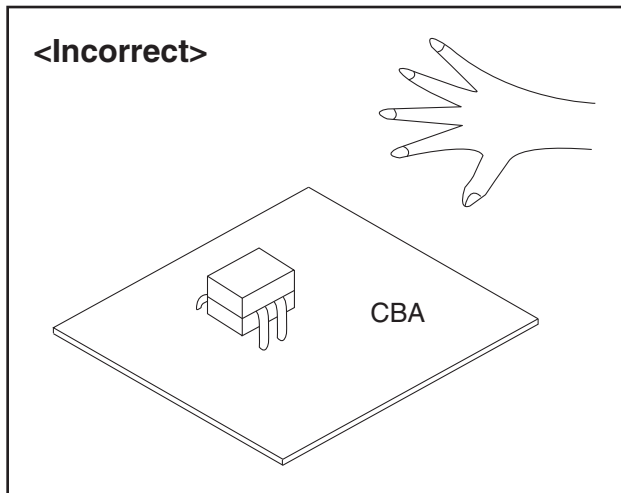
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

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

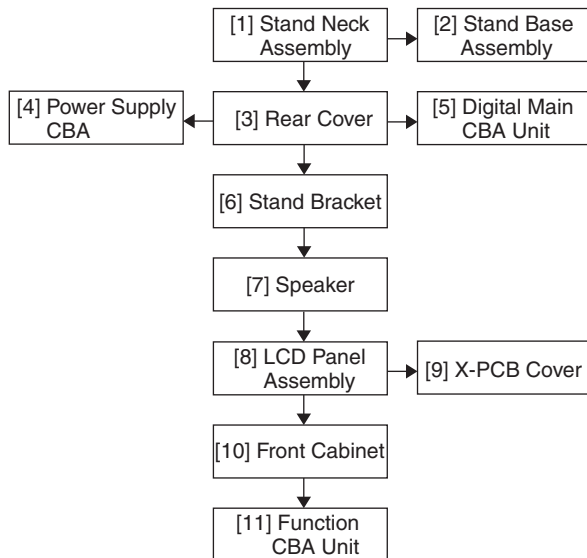
Screw Torque Specification

Ref. No.	Part Number	Part Name	Tightening Torque
L9	GBHP3120	SCREW P-TIGHT (3X12 BIND HEAD + BLK)	5.2±0.9lb·in
L23	GBJS3060	SCREW S-TIGHT (M3X6 BIND HEAD+)	6.1±0.9lb·in
L27	GBHS3080	SCREW S-TIGHT (M3X8 BIND HEAD+)	5.2±0.9lb·in
L35	GBJB3080	SCREW B-TIGHT (D3X8 BIND HEAD+)	6.1±0.9lb·in
L67	GBJS3100	SCREW S-TIGHT (M3X10 BIND HEAD+)	
SSK1	1ESA34647	STAND SCREW KIT (DOUBLE SEMS SCREW M4X20 + BLK)	(approx. 8.7±0.9lb·in)*
SSK2	1ESA34648	STAND SCREW KIT (DOUBLE SEMS SCREW M4X10 + BLK)	

* For reference

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 Neck Assembly	D1	4(S-1), 3(S-2)	---

Step/ Loc. No.	Part	Fig. No.	Removal	Note
[2]	Stand Base Assembly	D1	-----	---
[3]	Rear Cover	D1	2(S-3), 10(S-4)	---
[4]	Power Supply CBA	D2 D5	5(S-5), CN601, CN501, CN1001	---
[5]	Digital Main CBA Unit	D2 D5	4(S-6), CN3906*1, CN3013*2, CN3105*1, CN3101*2, CN3801, Jack Holder	---
[6]	Stand Bracket	D3	2(S-7)	---
[7]	Speaker	D3	-----	---
[8]	LCD Panel Assembly	D3	-----	---
[9]	X-PCB Cover	D4	3(S-8)	1
[10]	Front Cabinet	D4	4(S-9)	2
[11]	Function CBA Unit	D4	Sensor Lens, Shield Plate, Control Plate	2

↓ ↓ ↓ ↓ ↓
 (1) (2) (3) (4) (5)

*1: TYPE A

*2: TYPE B, C

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."

Important precautions concerning the LCD Panel Assembly:

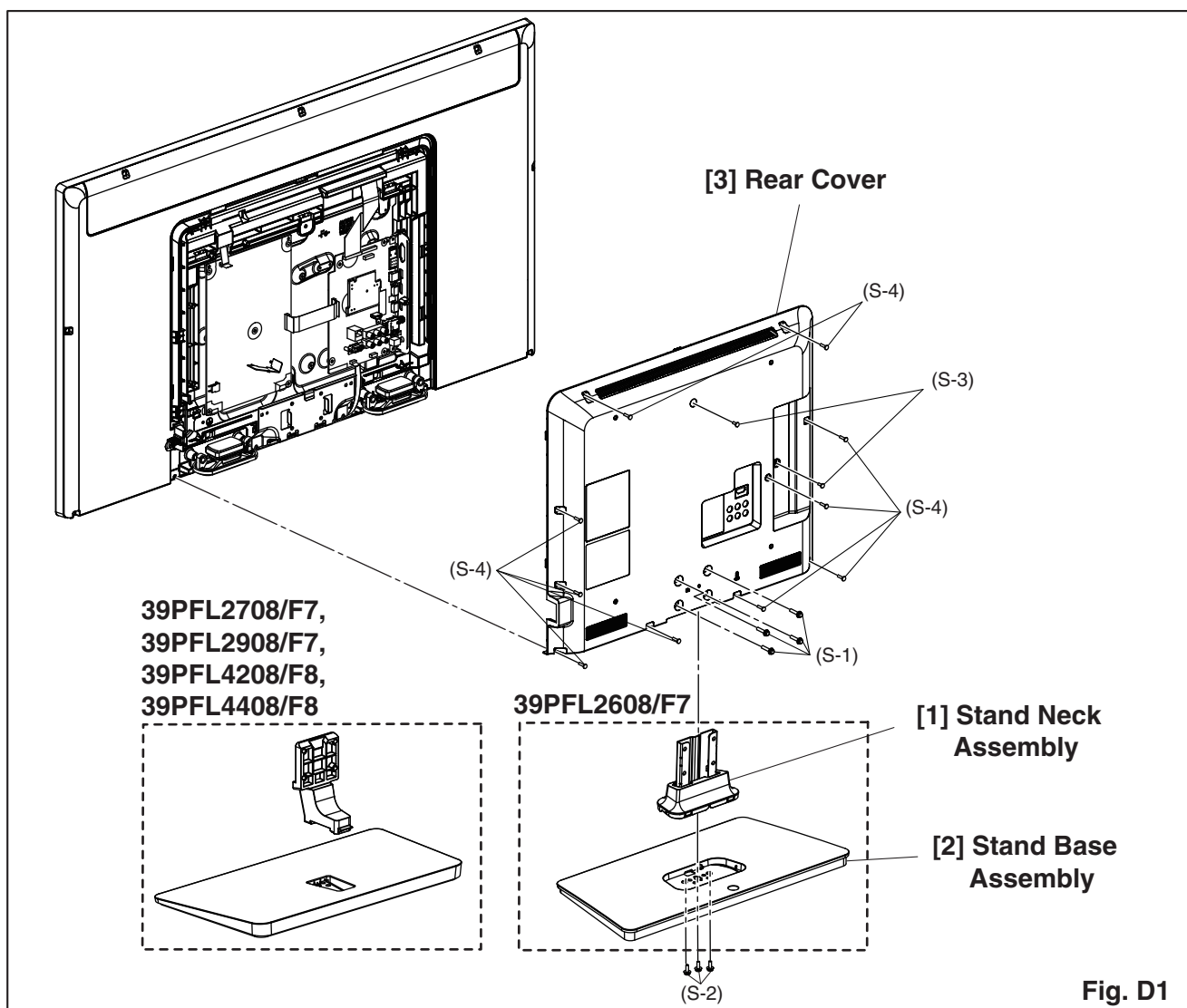
1. When you disassemble/re-assemble the X-PCB Cover

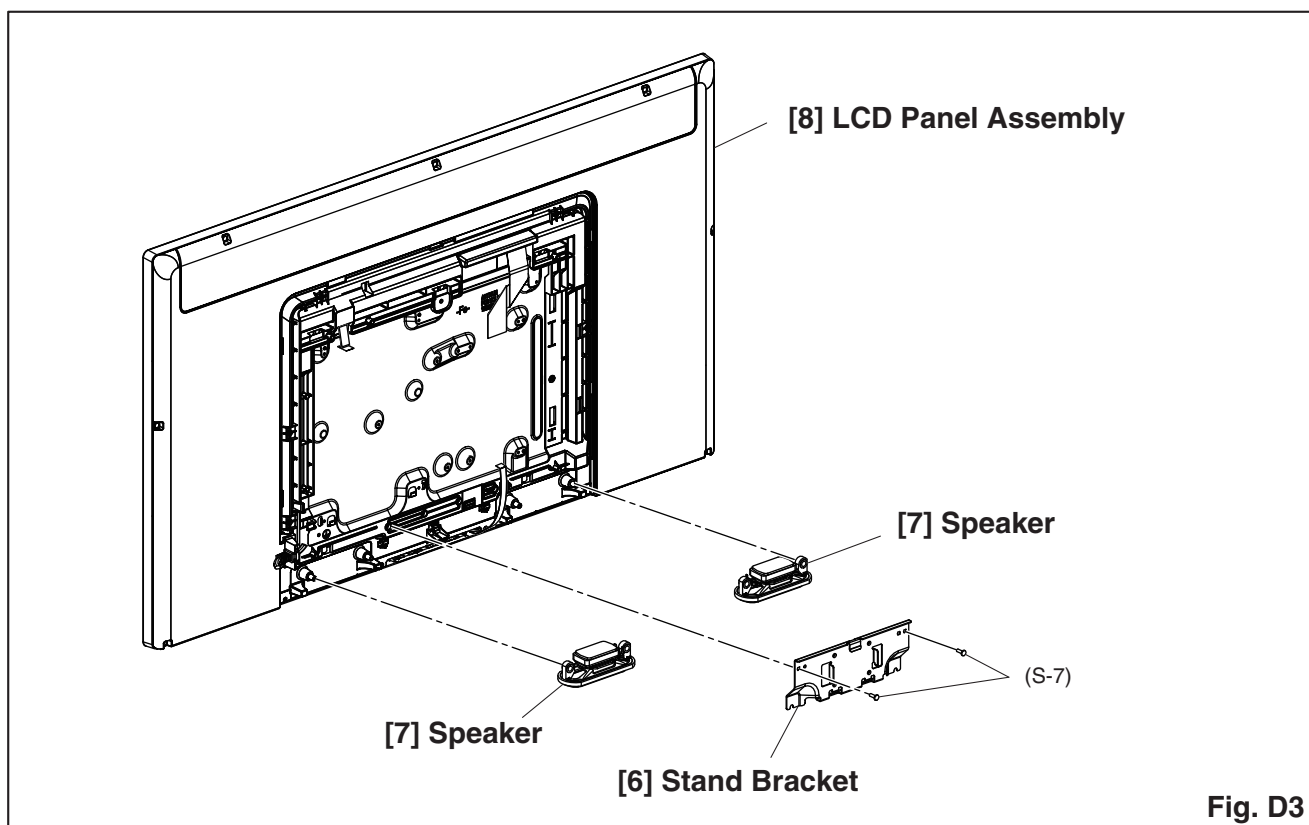
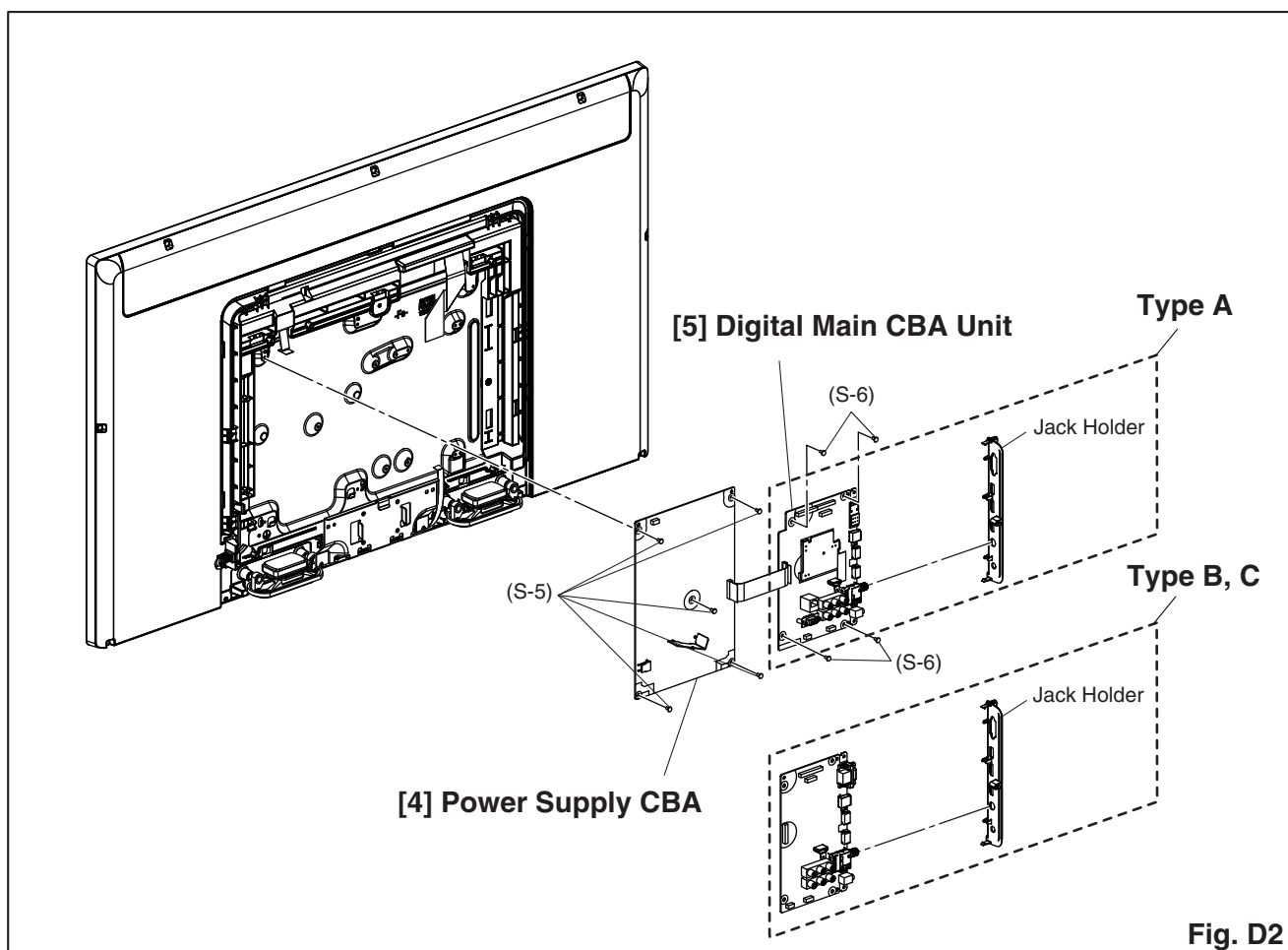
- Be careful not to break the hooks. If you pull with too much force, the hooks may be damaged.
- When disassembling, first hold the top and bottom of the X-PCB Cover on both ends and then moving toward the center, lift up the top side to detach the hooks.
- When assembling, be careful not to damage the X-PCB Board or the COF(Chip On Film).
- Make sure the hooks are securely in place when re-assembling.
- The screw tightening torque must be 5.2lb-in (6kgf-cm).

2. When you disassemble/re-assemble the Front Cabinet or Function CBA Unit

- Be careful not to break the hooks. If you pull with too much force, the hooks may be damaged.

- When disassembling, first detach the hooks on each end on the bottom side, then detach the remaining hooks moving toward the center.
- Make sure the hooks are securely in place when assembling.
- Be careful not to scratch the display panel when assembling.
- The Function CBA Unit and Sensor Lens are fixed in place by the hooks. Make sure these hooks are not damaged. Make sure the Function CBA Unit and Sensor Lens are securely in place when re-assembling.
- The screw tightening torque must be 5.2lb-in (6kgf-cm).
- After replacing the Front Cabinet or Function CBA Unit, make sure the tact switches operate normally.
- Make sure to replace the Control Plate to a new one when replacing the Front Cabinet.





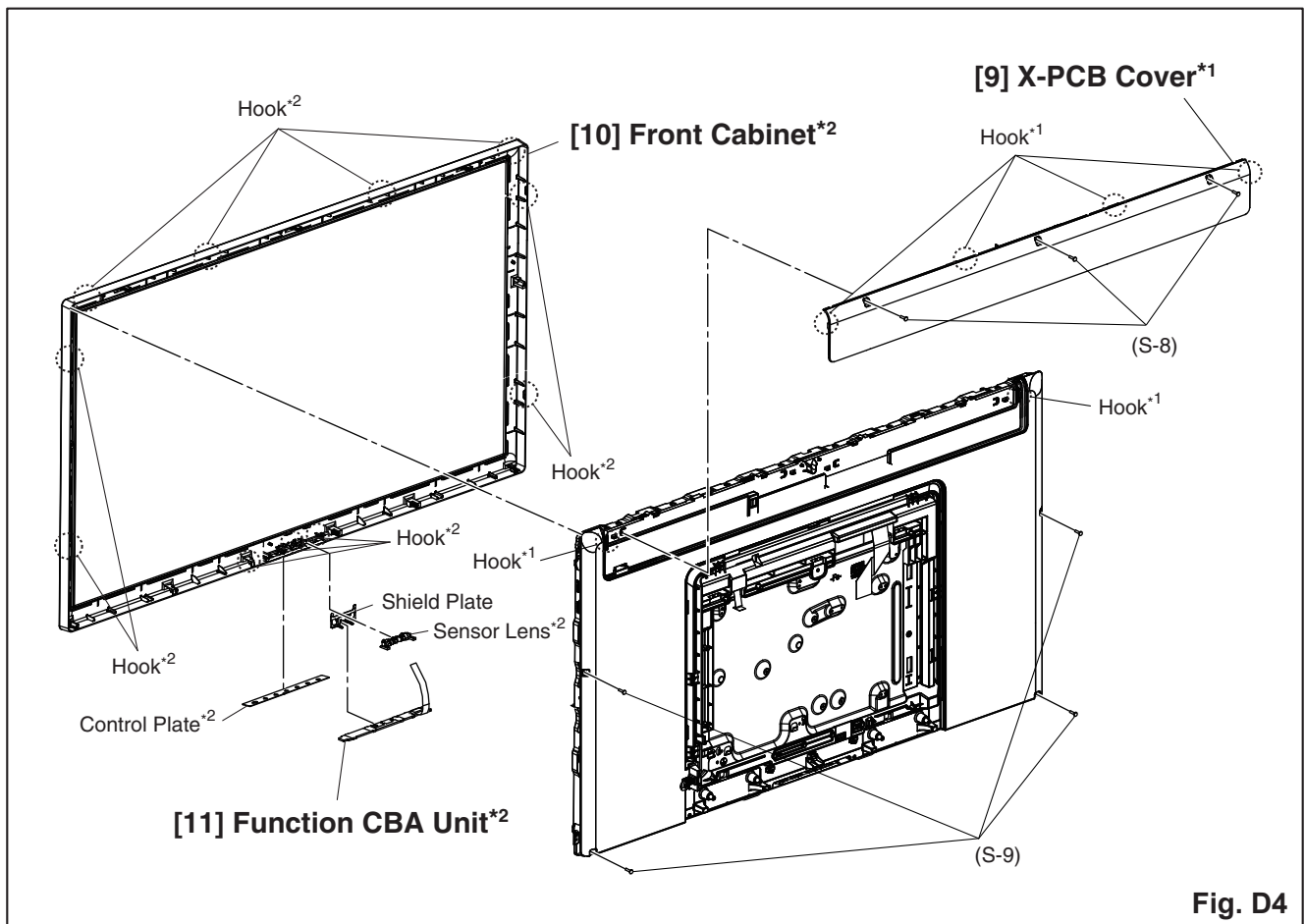
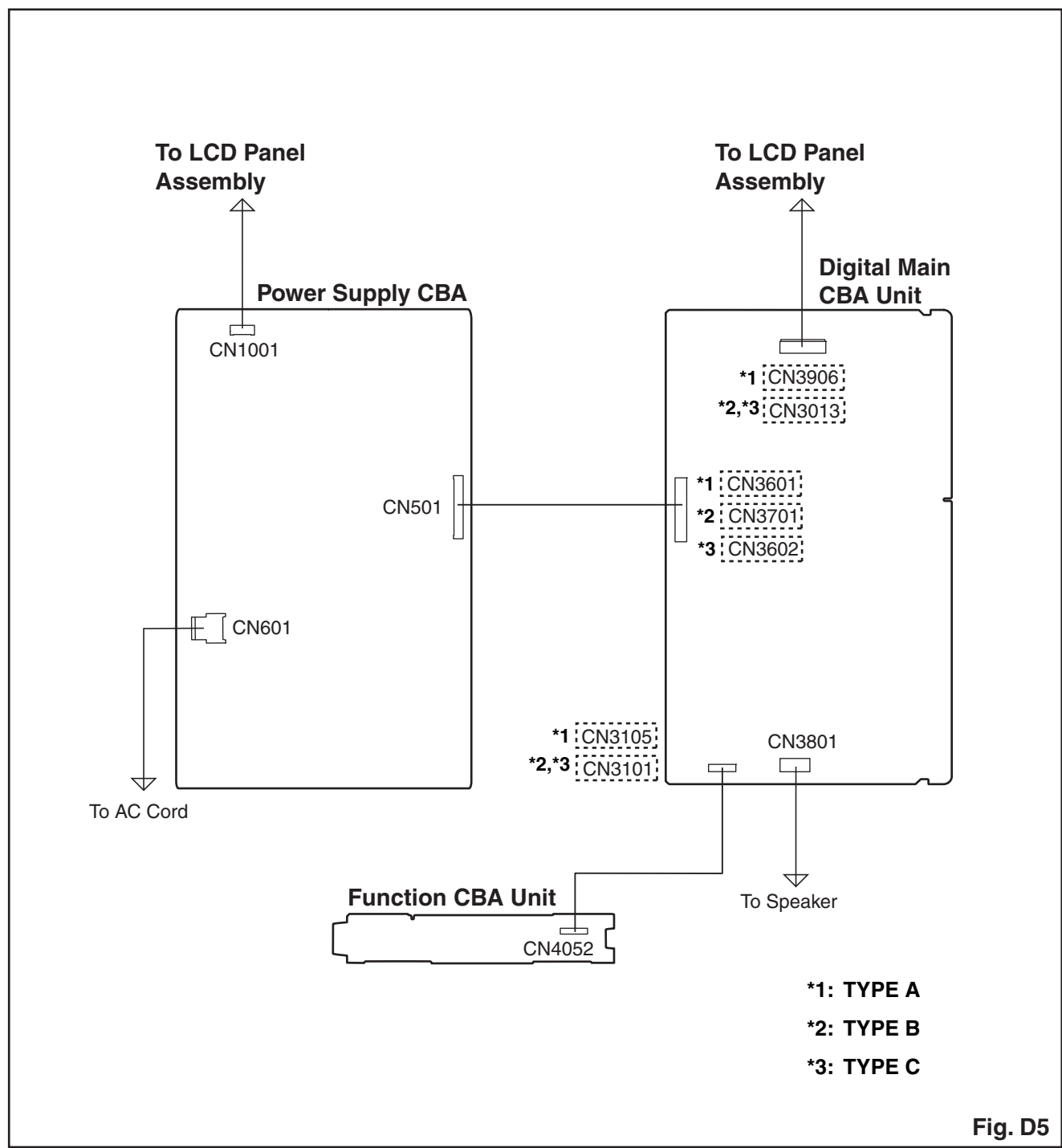


Fig. D4

***1:** Make sure to read all the precautions on page 4-2 when you disassemble/re-assemble the X-PCB Cover.

***2:** Make sure to read all the precautions on page 4-2 when you disassemble/re-assemble the Front Cabinet or Function CBA Unit.

TV Cable Wiring Diagram



2. VCOM Adjustment

Test Point	Adj. Point
Screen	[CHANNEL UP/DOWN] buttons
M. EQ.	Spec.
Color analyzer	See below

Figure

1. Operate the unit for more than 60 minutes.
2. Set the color analyzer at the zero point calibration and bring the optical receptor pointing at the center of the LCD-Panel.
Note: The optical receptor must be set perpendicular to the LCD Panel surface.
3. Enter the service mode.
4. Press [2] button on the remote control unit.
5. Press [CHANNEL UP/DOWN] buttons on the remote control unit so that the color analyzer value becomes minimum.
6. To cancel or to exit from the VCOM Adjustment, press [CH RETURN] or [PREV CH] button.

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

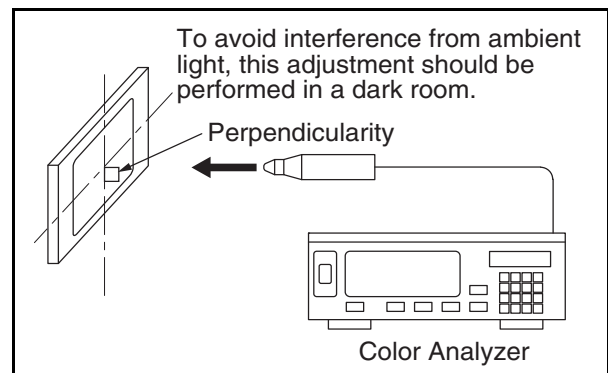
3. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

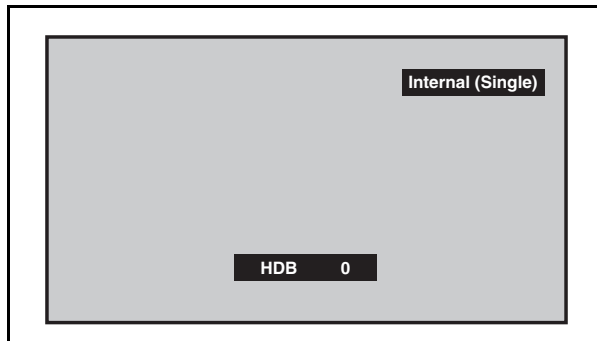
ITEM	SPECIFICATION
Color temperature	$x = 0.272 \pm 0.005$ $y = 0.278 \pm 0.005$
Input Signal	Internal pattern (30/50/80% raster)
Measurement point	Screen center
M. EQ.	CA-310 (KONICA MINOLTA Luminance meter) or measuring instrument as good as CA-310.
Aging time	60min. (Retail MODE/100IRE Raster HDMI 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 [VOLUME DOWN] button three times on the remote control unit to select "Drive setting" mode. "Drive" appears in 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.

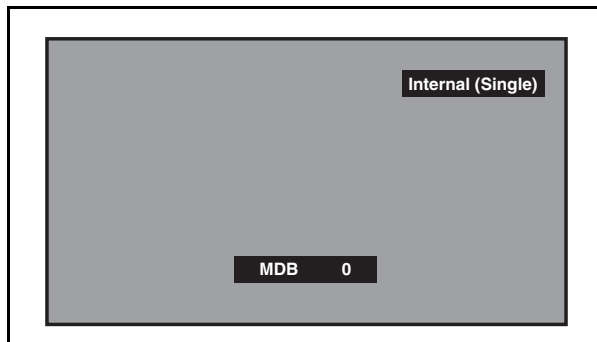


Note: The optical receptor must be set perpendicularly to the LCD Panel surface.

5. Press [3] button to select the “HDB” for High Drive Blue adjustment. (“HDB” appears in the screen.)
6. Press [MENU] button. The internal Raster signal appears in the screen. (“Internal (Single)” appears in the upper right of the screen as shown below.)

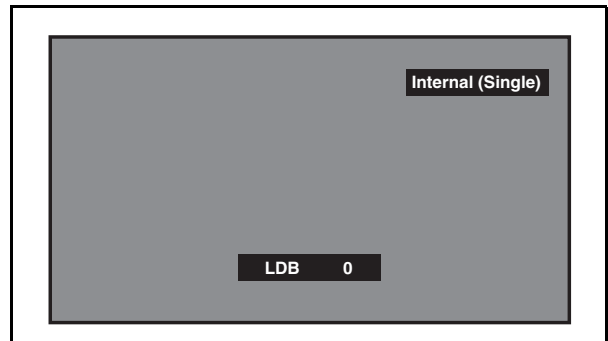


7. Press [CHANNEL UP/DOWN] buttons to adjust the color temperature becomes 12000°K ($x= 0.272 / y= 0.278 \pm 0.005$).
8. Press [1] button to select the “HDR” for High Drive Red adjustment (“HDR” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
9. If necessary, adjust the “HDB” or “HDR” again.
10. Press [6] button to select the “MDB” for Middle Drive Blue adjustment (“MDB” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.



11. Press [4] button to select the “MDR” for Middle Drive Red adjustment (“MDR” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
12. If necessary, adjust the “MDB” or “MDR” again.

13. Press [9] button to select the “LDB” for Low Drive Blue adjustment (“LDB” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.



14. Press [7] button to select the “LDR” for Low Drive Red adjustment (“LDR” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
15. If necessary, adjust the “LDB” or “LDR” again.
16. Press [CH RETURN] or [PREV CH] to shift to the initial screen in the service mode.
If [White Balance] message with a green color is displayed on the upper right of the screen, this adjustment completes.
If [White Balance] message with a red color is displayed, repeat above steps from 5. to 15. Then check the initial screen in the service mode again.
If [White Balance] message with a red color is displayed, replace the LCD Panel or Digital Main CBA.
17. To cancel or to exit from the White Balance Adjustment, press [CH RETURN] or [PREV CH] button.

[TYPE B, C]

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 “Software Upgrade”.
5. Select “Current Software Info”.
6. 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

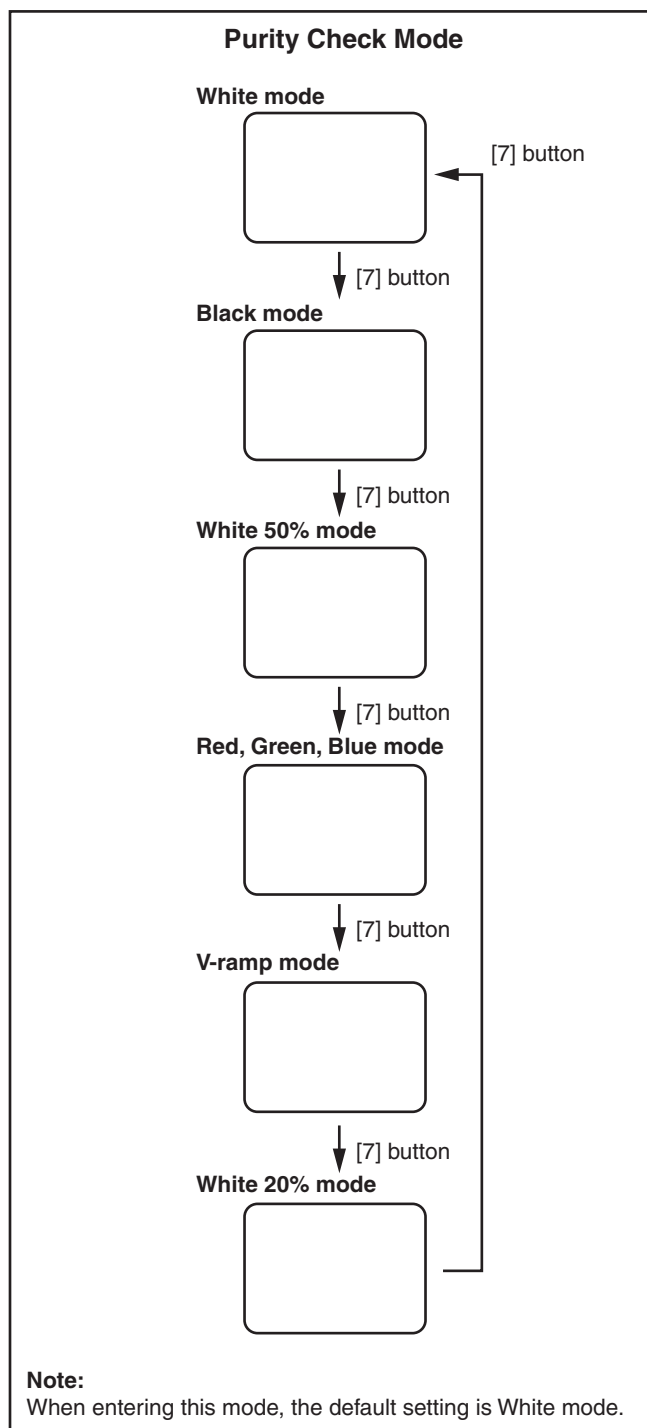
Press “POWER” key to exit.

Safety:	Safety_Non		
HDMI EDID:	**		
HDMI UART:	OFF	Total Watch Time:	*****
Touch Sensor Ver:	-.-- / ---	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.

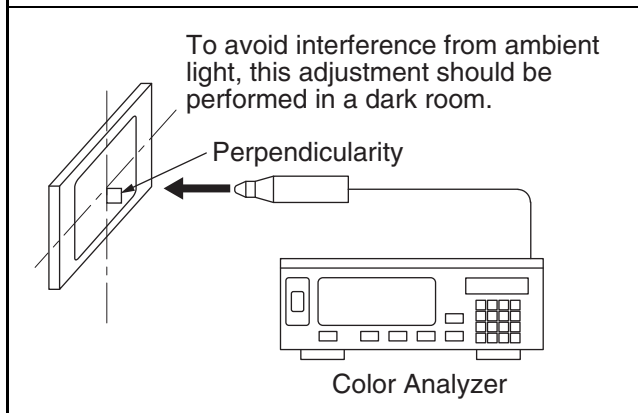


3. To cancel or to exit from the Purity Check Mode, press [CH RETURN] or [PREV CH] button.

2. VCOM Adjustment

Test Point	Adj. Point
Screen	[CHANNEL UP/DOWN] buttons
M. EQ.	Spec.
Color analyzer	See below

Figure



1. Operate the unit for more than 60 minutes.
2. Set the color analyzer at the zero point calibration and bring the optical receptor pointing at the center of the LCD-Panel.
Note: The optical receptor must be set perpendicular to the LCD Panel surface.
3. Enter the service mode.
4. Press [2] button on the remote control unit.
5. Press [CHANNEL UP/DOWN] buttons on the remote control unit so that the color analyzer value becomes minimum.
6. To cancel or to exit from the VCOM Adjustment, press [CH RETURN] or [PREV CH] button.

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

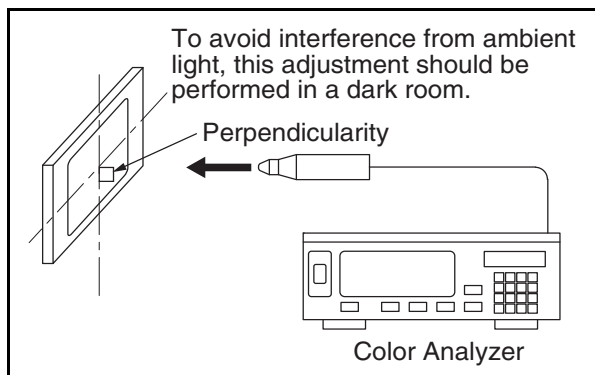
3. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

ITEM	SPECIFICATION
Color temperature	$x = 0.272 \pm 0.005$ $y = 0.278 \pm 0.005$
Input Signal	Internal pattern (40/80% 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	$25^{\circ}\text{C} \pm 5^{\circ}\text{C}$

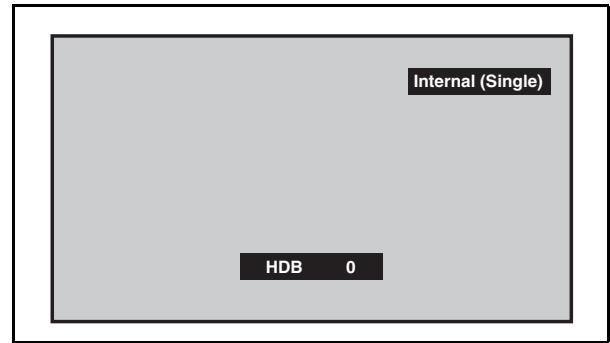
1. Operate the unit for more than 60 minutes.
2. Enter the service mode.
3. Press [VOLUME DOWN] button three times on the remote control unit to select "Drive setting" mode. "Drive" appears in the screen.
4. Set the color analyzer at the CHROMA mode and zero point calibration. Bring the optical receptor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



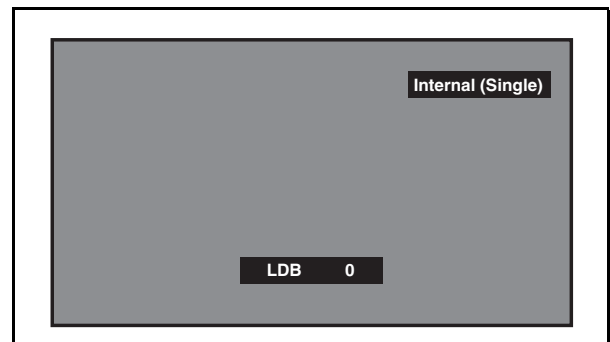
Note: The optical receptor must be set perpendicularly to the LCD Panel surface.

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

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



7. Press [CHANNEL UP/DOWN] buttons to adjust the color temperature becomes 12000°K ($x = 0.272 / y = 0.278 \pm 0.005$).
8. Press [1] button to select the "HDR" for High Drive Red adjustment ("HDR" appears in the screen.) and press [CHANNEL UP/DOWN] 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 in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.



11. Press [4] button to select the "LDR" for Low Drive Red adjustment ("LDR" appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
12. If necessary, adjust the "LDB" or "LDR" again.
13. Press [VOLUME DOWN] 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 again." is displayed, repeat above steps from 5. to 12. Then check "Debugging Message" again. If "Drive settings are NG. Retry again." is displayed, replace the LCD Panel or Digital Main CBA.
14. To cancel or to exit from the White Balance Adjustment, press [CH RETURN] or [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.

NOTE: Disconnect any device from the USB Port before you conduct on this procedure.

[TYPE A]

1. Turn the power on.
2. Enter the service mode.
 - To cancel the service mode, press [⏻] button on the remote control unit.
3. Press [BACK] button to enter the Control Panel Key Confirmation Menu.
4. Press any button on the control panel.
5. Press [INFO] button to proceed with the self check mode.
6. Make sure to confirm the "INITIALIZED : OK" appears in the green screen.
7. Unplug the AC Cord and plug it back on again.

[TYPE B, C]

1. Turn the power on.
2. Enter the service mode.
 - To cancel the service mode, press [⏻] button on the remote control unit.
3. Press [BACK] button to enter the Panel Key Confirmation Menu.
4. Press any button on the control panel.
5. Press [INFO] button to proceed with the self check mode.
6. Make sure to confirm the "INITIALIZED FINISH" appears in the green screen.
7. Unplug the AC Cord and plug it back on again.

FIRMWARE RENEWAL MODE

[TYPE A]

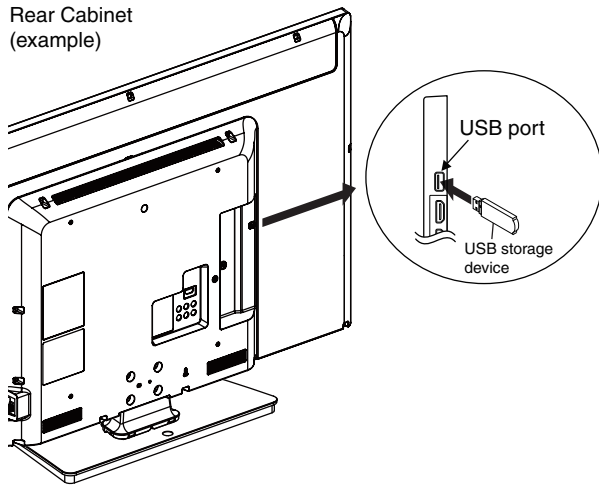
Equipment Required

1. USB storage device
2. Remote Control Unit

Firmware Update Procedure

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

Rear Cabinet
(example)



3. Plug the AC Cord and turn the power on.
4. After few seconds, the menu mode will appear in the screen.

Note:

After 30 seconds without an operation, the menu mode will disappear automatically.
To display the menu mode again, press the [MENU] button on the remote control unit.

5. Select "Setup" and press the [OK] button to display the setup menu.
6. Select "Software".
7. Select "Software update".
8. Select "USB".
9. Press the [OK] button on the remote control unit to enter the update mode.

Update file selection screen appears as follows.
(Files included in the USB storage device are displayed.)

"*" differs depending on the models.

Select an upgrade file	**** * .upg	
	**** * .upg	
	**** * .upg	
Cancel		1 2 3

Note:

To cancel the update mode, select "Cancel" and press the [OK] button.

10. Select the file and press [OK] button.
11. The update will start and the following will appear in the screen.

"*" differs depending on the models.

Current Version: ***-***-***

New Version: ***-***-***

Are you sure you want to update?

No

Yes

Note:

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

12. Select "Yes" and press the [OK] button to update.

Note:

Do not remove the USB storage device or turn the TV off while update is in progress.

13. When the firmware update is completed, the following will appear in the screen.

Update your TV with new software: Done

Software update is successful.

Please remove the USB storage device and restart the TV set.

Remove the USB storage device from the USB port.
Turn the power off and turn the power on again.

[TYPE B, C]

Equipment Required

- a. USB storage device
- b. Remote Control Unit

Firmware Update Procedure

User Upgrade (Filename example: TVNB012_00_PF_XX91_BC.ecc or TVNB1012_00_PG_XX91_BA0.bin)

Upgrade the firmware only. The setting values will not be initialized.

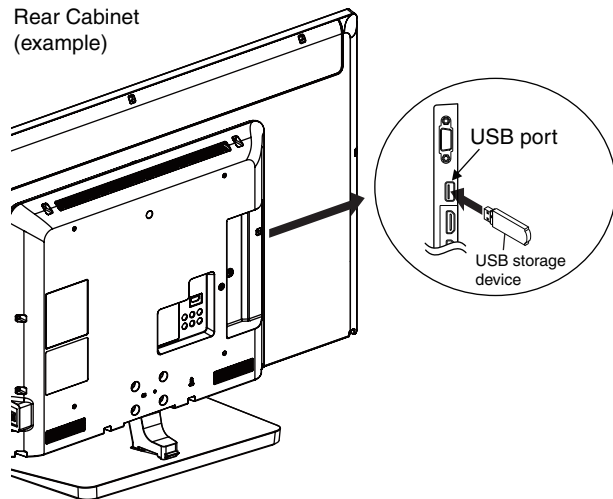
The User Upgrade and the Firmware Upgrade (Factory Upgrade) will be done by the same file. If you want to upgrade the firmware and initialize the setting values also, add "FACT_" at the beginning of the filename.

If you want to upgrade the firmware only and leave the setting values as they are, eliminate the "FACT_" from the filename.

Update procedure

1. Turn the power on.
2. Press [MENU] button to display Menu.
3. Select "Features".
4. Select "Software Upgrade".
5. Select "Upgrade" to display Upgrade screen.
6. Press [OK] button to display Software Upgrade screen.
7. Select "USB" and press [OK] button.
8. Insert the USB storage device to the USB port as shown below.

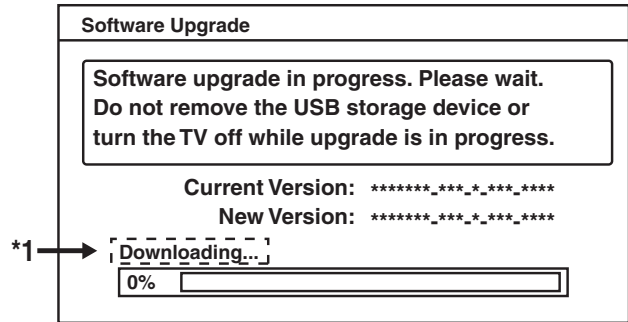
Rear Cabinet
(example)



9. Select "Check" and press [OK] button.
10. Select "Upgrade" and press [OK] button to start software upgrade.

11. The update will start and the following will appear in the screen.

"*" differs depending on the models.

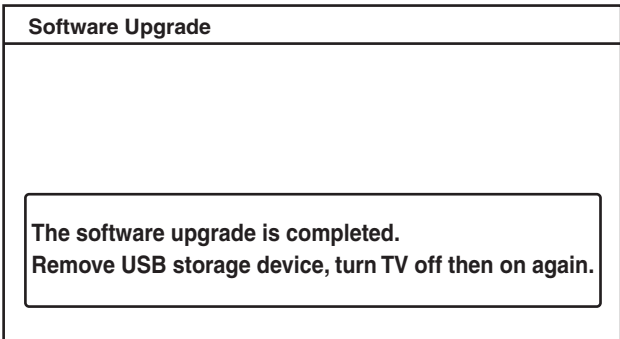


Note: If the above screen isn't displayed, repeat from step 1.

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.

12. When the firmware update is completed, the following will appear in the screen.



Remove the USB storage device from the USB port.
Turn the power off and turn the power on again.

Factory Upgrade (Firmware Upgrade/Flash Upgrade)

Firmware Upgrade

(Filename example: FACT_TVNB012_00_PF_XX91_BC.ecc or FACT_TVNB1012_00_PG_XX91_BA0.bin)

Upgrade the firmware and initialize the setting values.

The User Upgrade and the Firmware Upgrade (Factory Upgrade) will be done by the same file. If you want to upgrade the firmware and initialize the setting values also, add "FACT_" at the beginning of the filename.

If you want to upgrade the firmware only and leave the setting values as they are, eliminate the "FACT_" from the filename.

Flash Upgrade

(Filename example: ALL_TVNB012_00_PF_XX91_BC.ecc or ALL_TVNB1012_00_PG_XX91_BA0.bin)

Upgrade the firmware and initialize the setting values along with the factory default such as White Balance, etc.

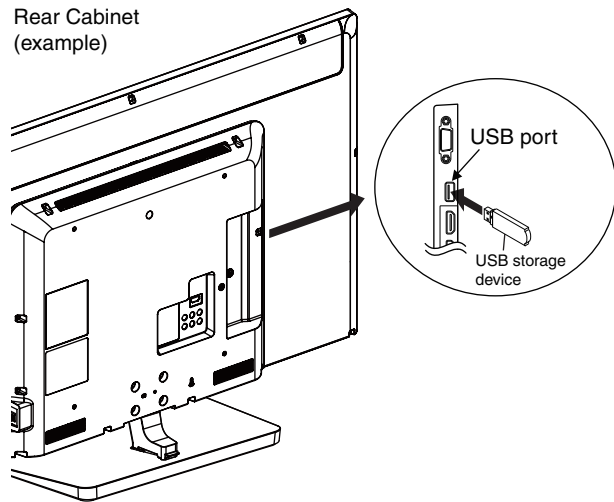
Before the upgrade, you will need to make a note of all the factory default so you will be able to set it back on the TV after the initialization.

The Flash Upgrade will be done by it's unique file.

The User Upgrade/Firmware Upgrade (Factory Upgrade) file cannot be used for this upgrade.

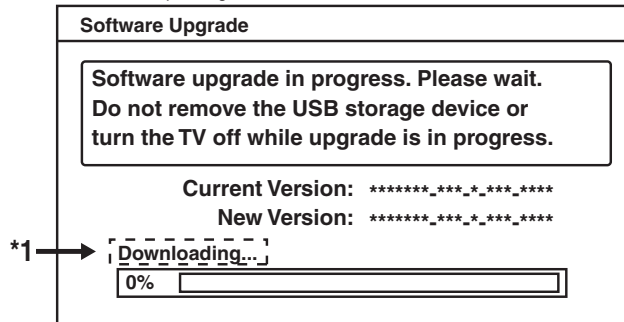
Update procedure

1. Turn the power off.
2. Insert the USB storage device to the USB port as shown below.



3. Turn the power on.
4. The update will start and the following will appear in the screen.

"*" differs depending on the models.

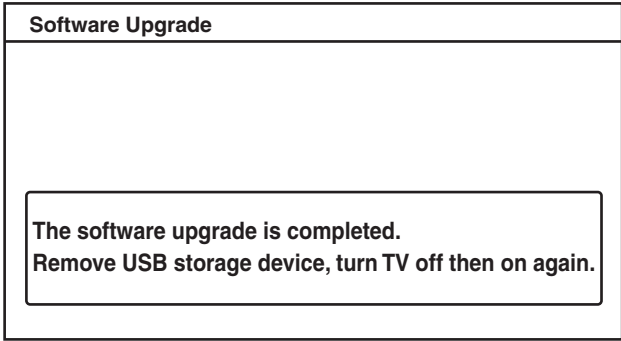


Note: If the above screen isn't displayed, repeat from step 1.

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.

5. When the firmware update is completed, the following will appear in the screen.



Remove the USB storage device from the USB port.

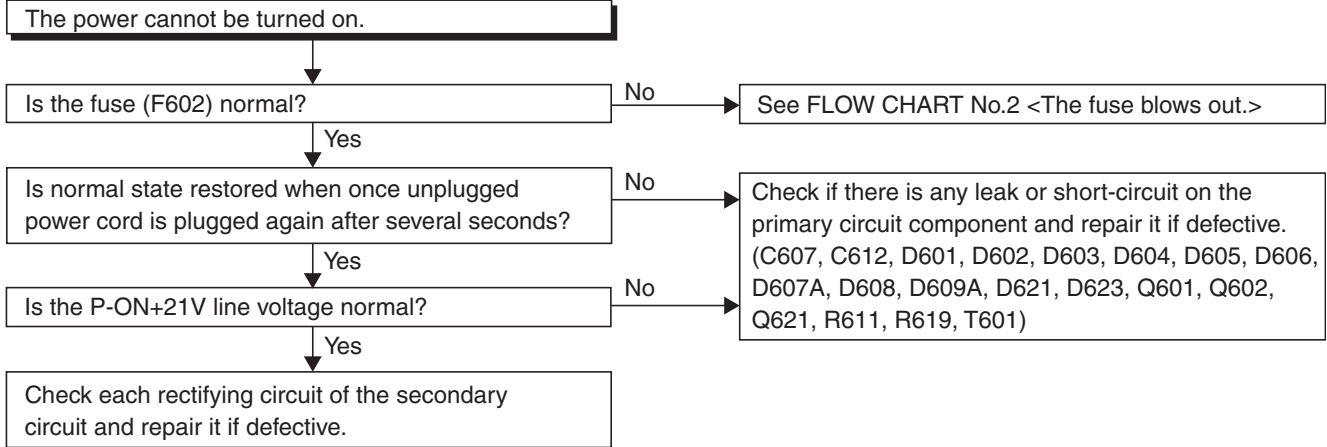
Turn the power off and turn the power on again.

Service mode initial screen with a word "INITIALIZED" will appear in the screen. The color of the word "INITIALIZED" will change from red to green when initialization is completed.

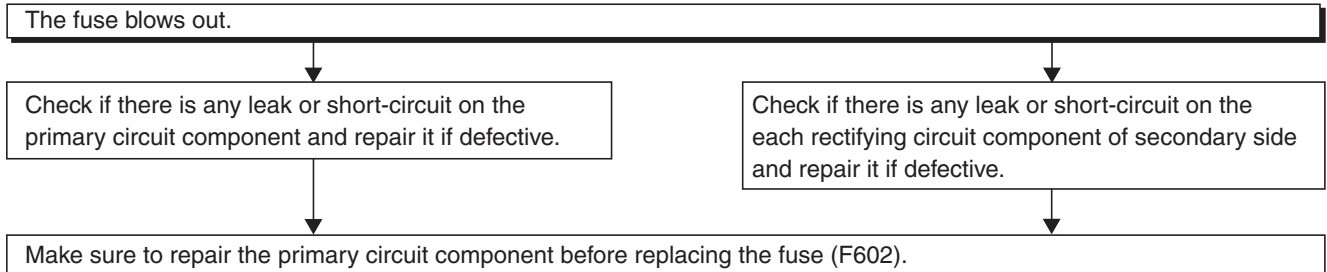
TROUBLESHOOTING

[Power Supply Section]

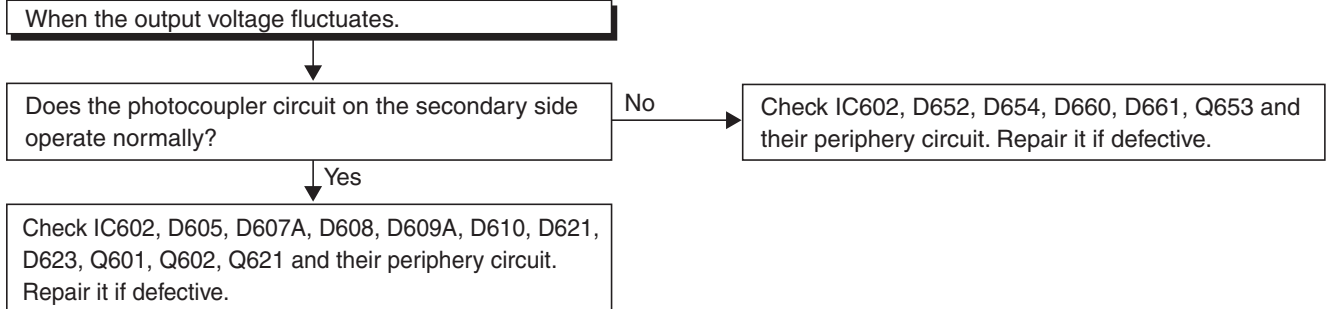
FLOW CHART NO.1



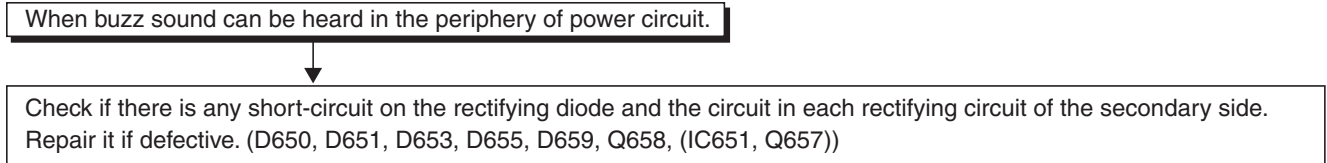
FLOW CHART NO.2



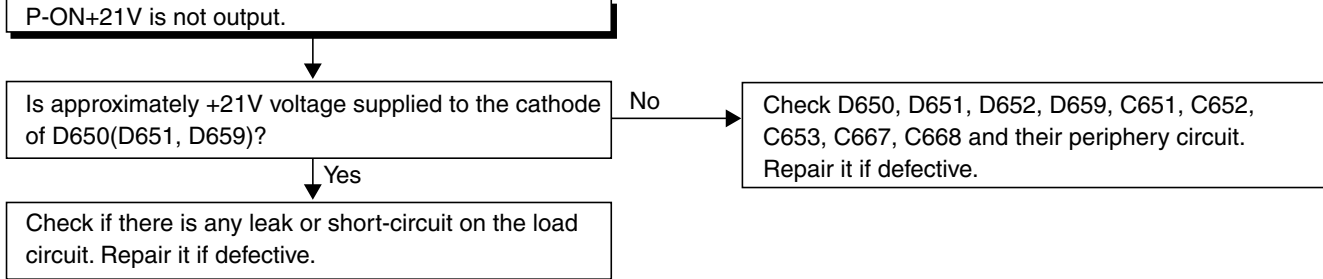
FLOW CHART NO.3



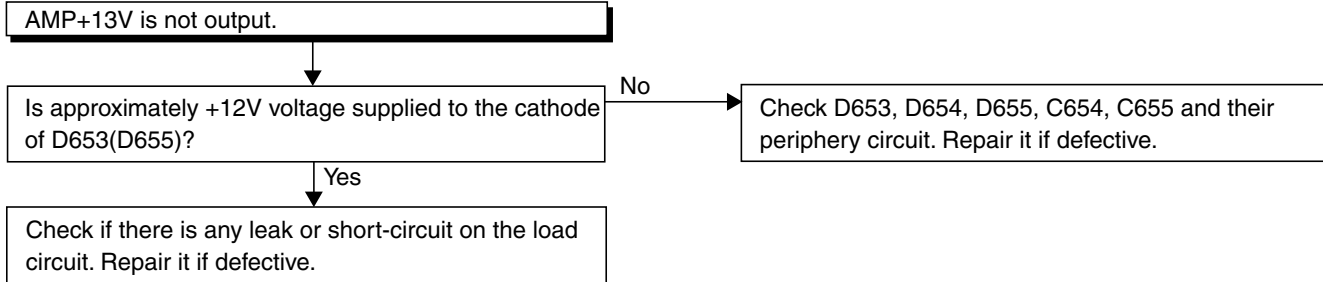
FLOW CHART NO.4



FLOW CHART NO.5

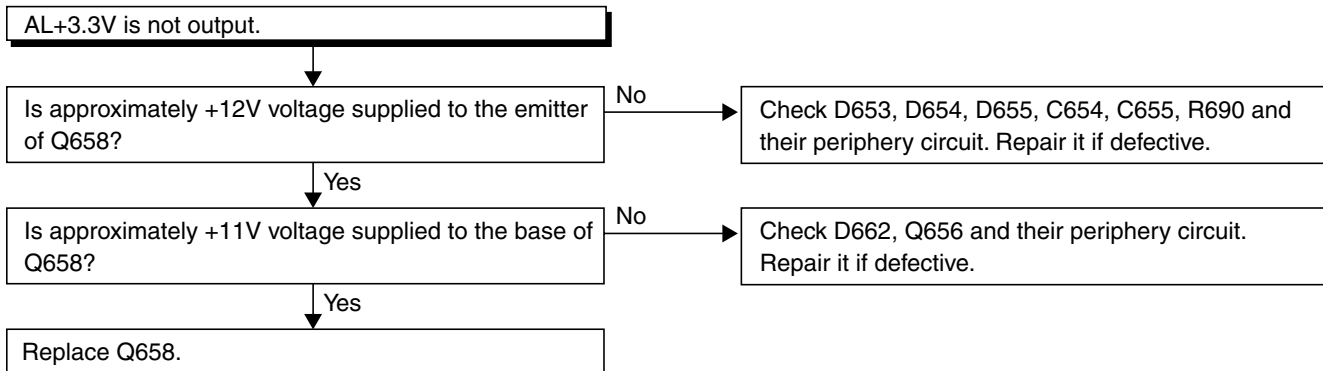


FLOW CHART NO.6

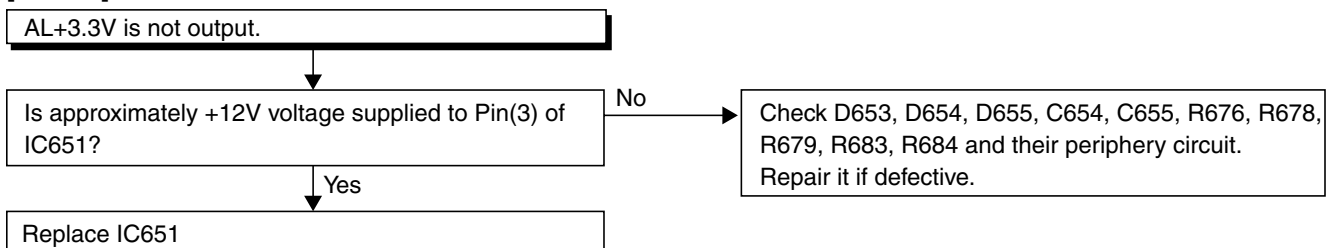


FLOW CHART NO.7

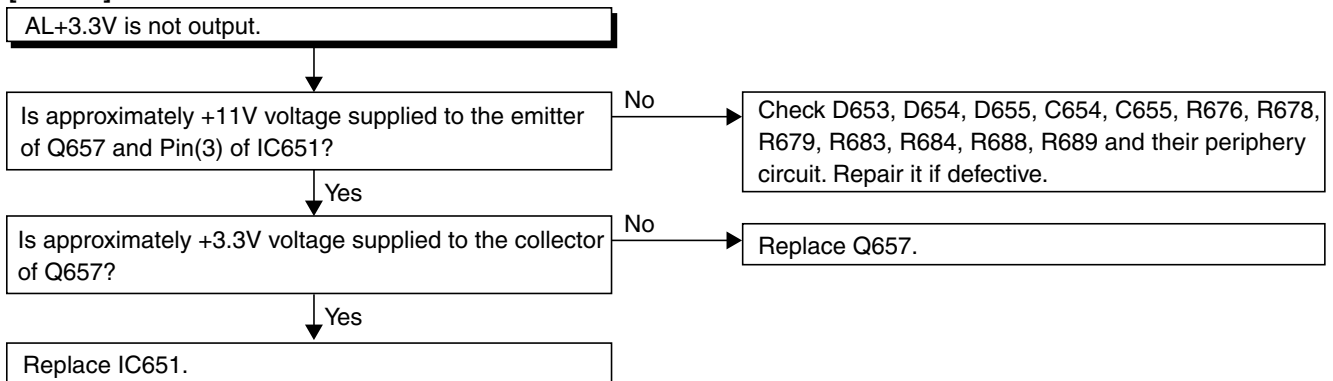
[TYPE A]



[TYPE B]

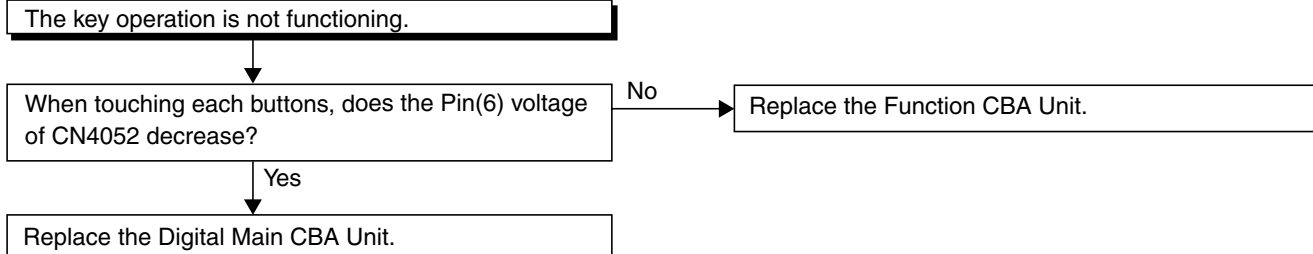


[TYPE C]

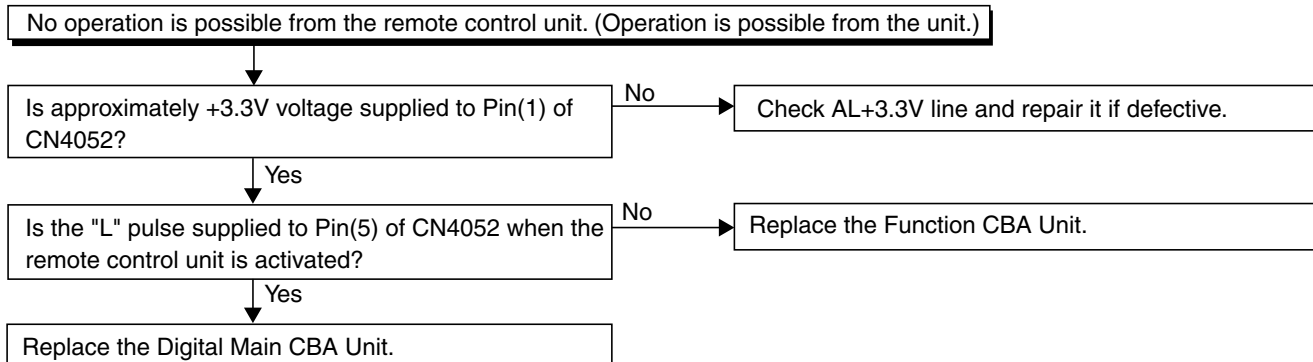


[Video Signal Section]

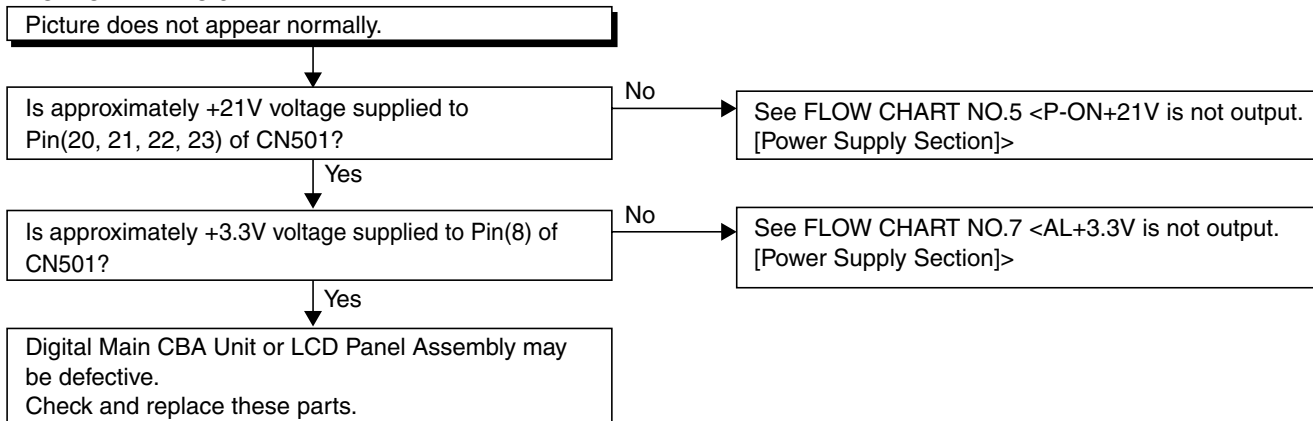
FLOW CHART NO.1



FLOW CHART NO.2

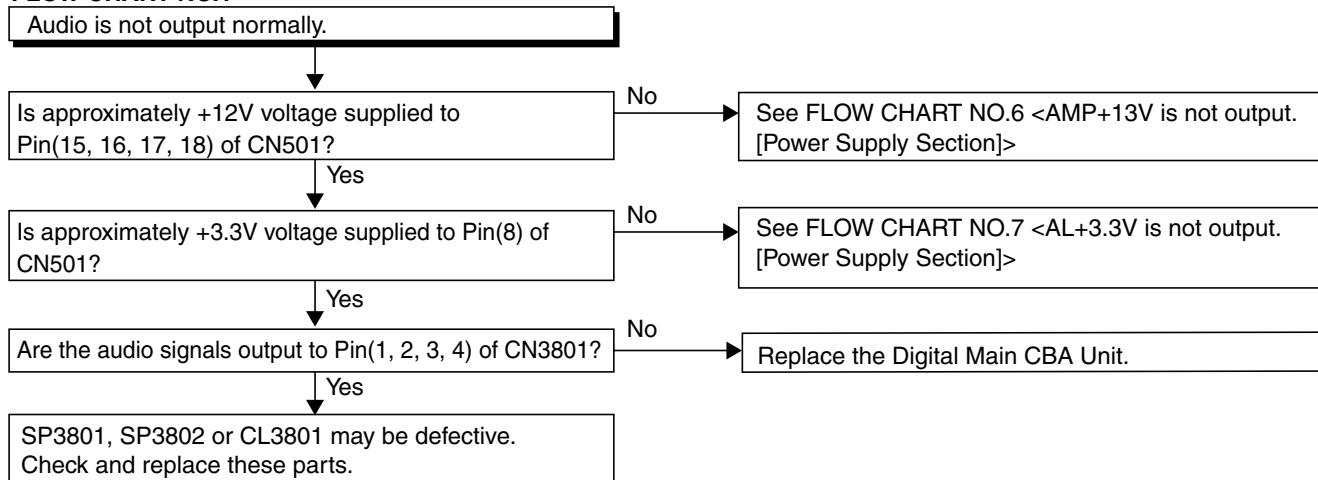


FLOW CHART NO.3



[Audio Signal Section]

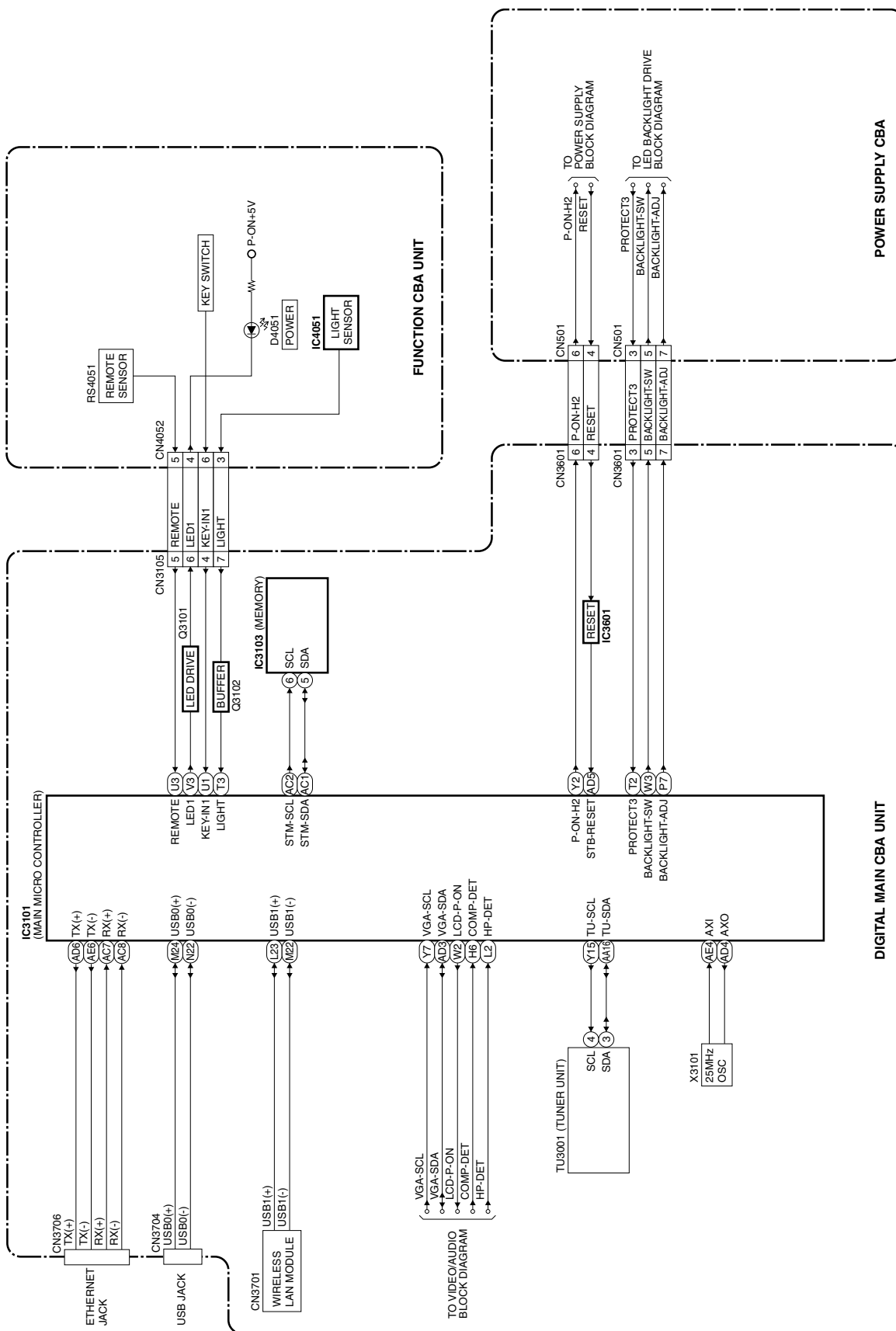
FLOW CHART NO.1



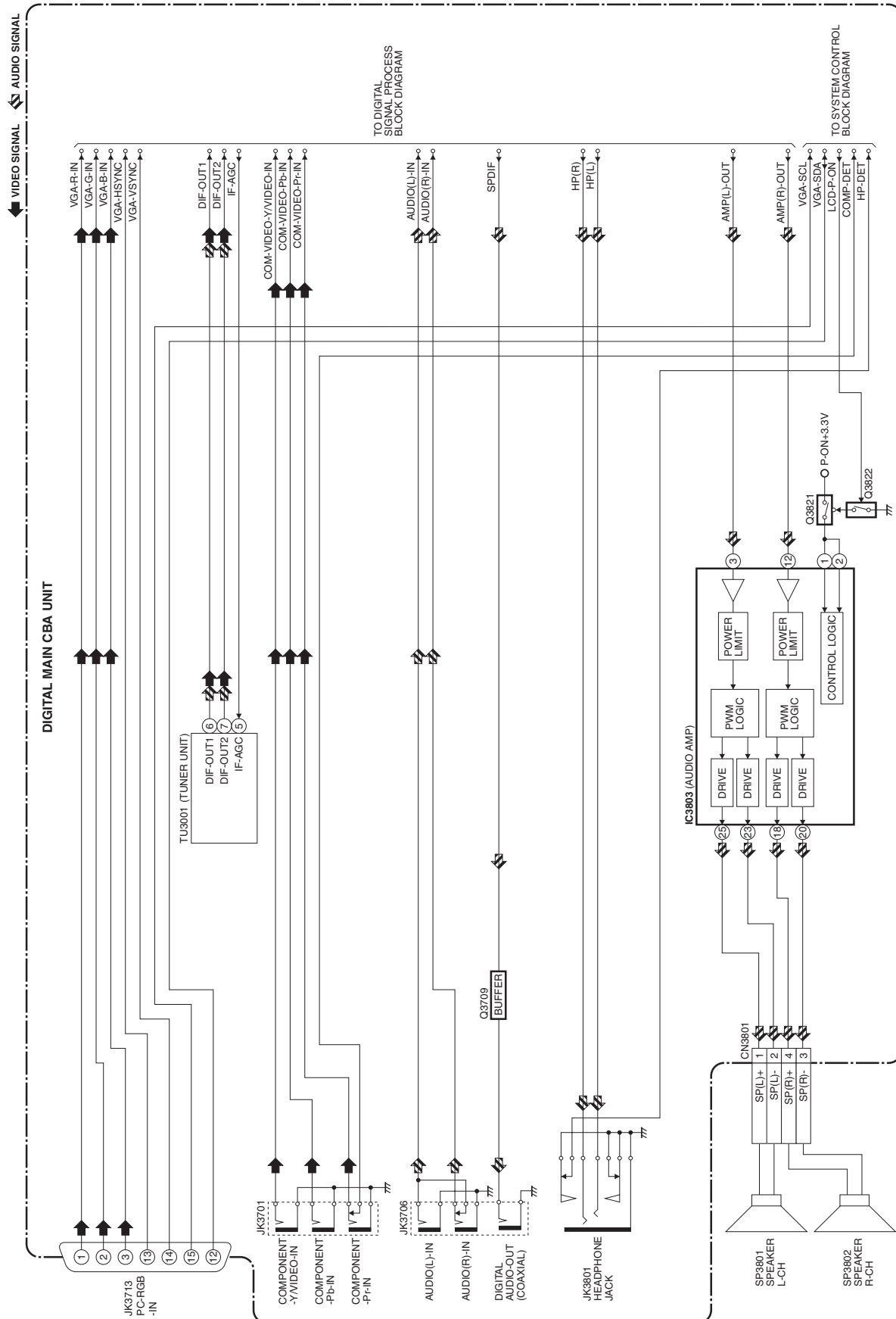
BLOCK DIAGRAMS

[TYPE A]

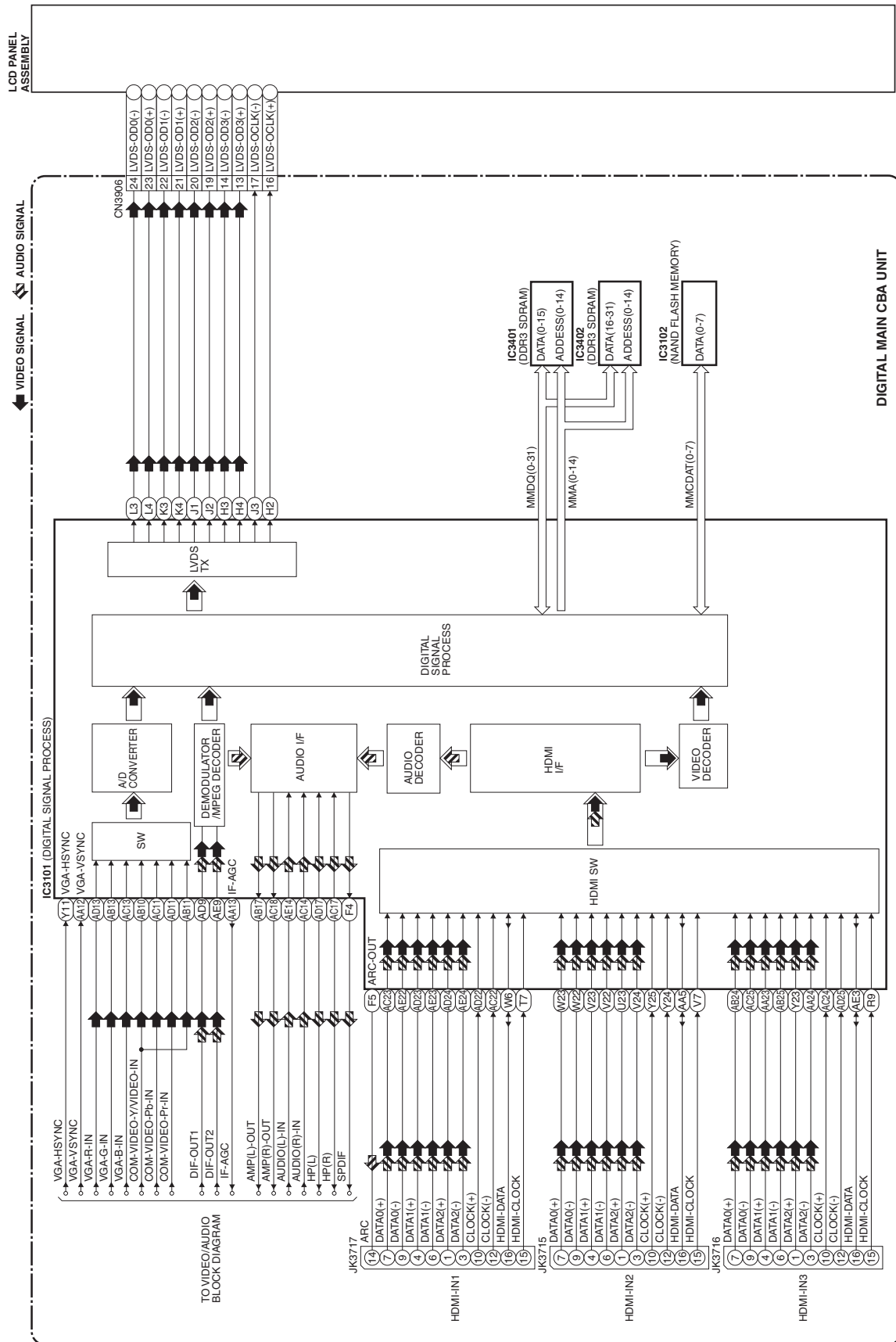
1. System Control Block Diagram



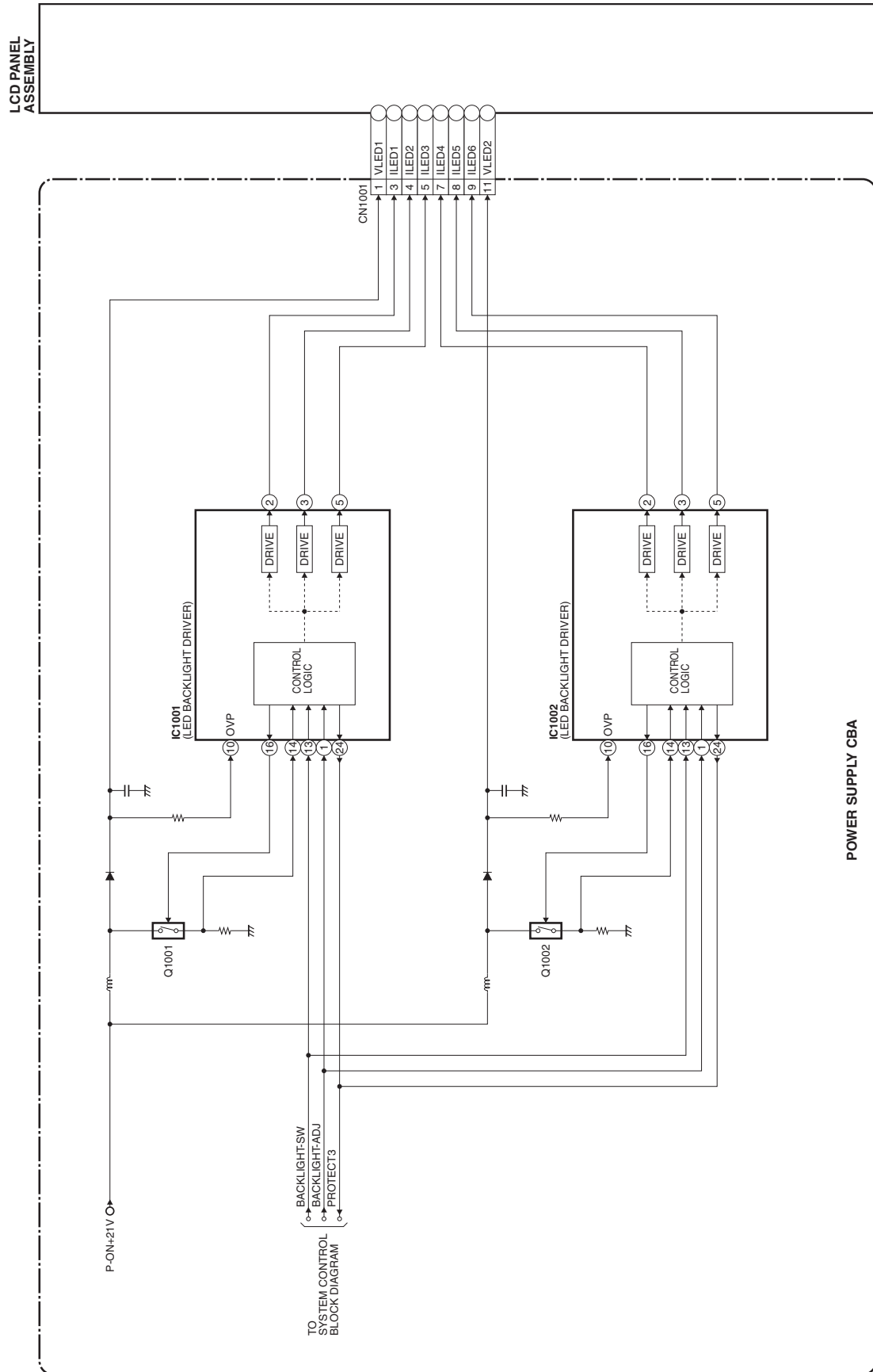
2. Video/Audio Block Diagram



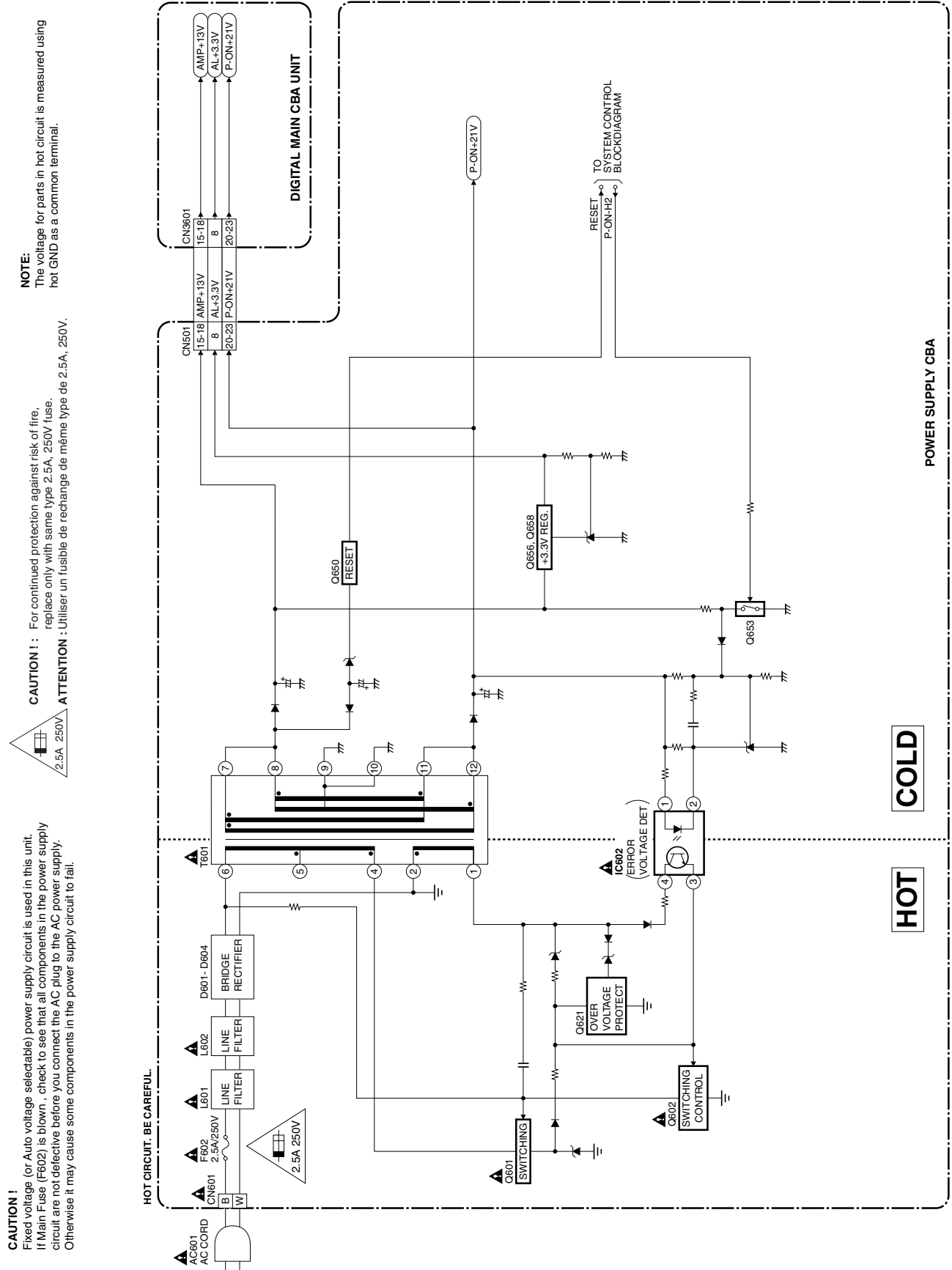
3. Digital Signal Process Block Diagram



4. LED Backlight Drive Block Diagram

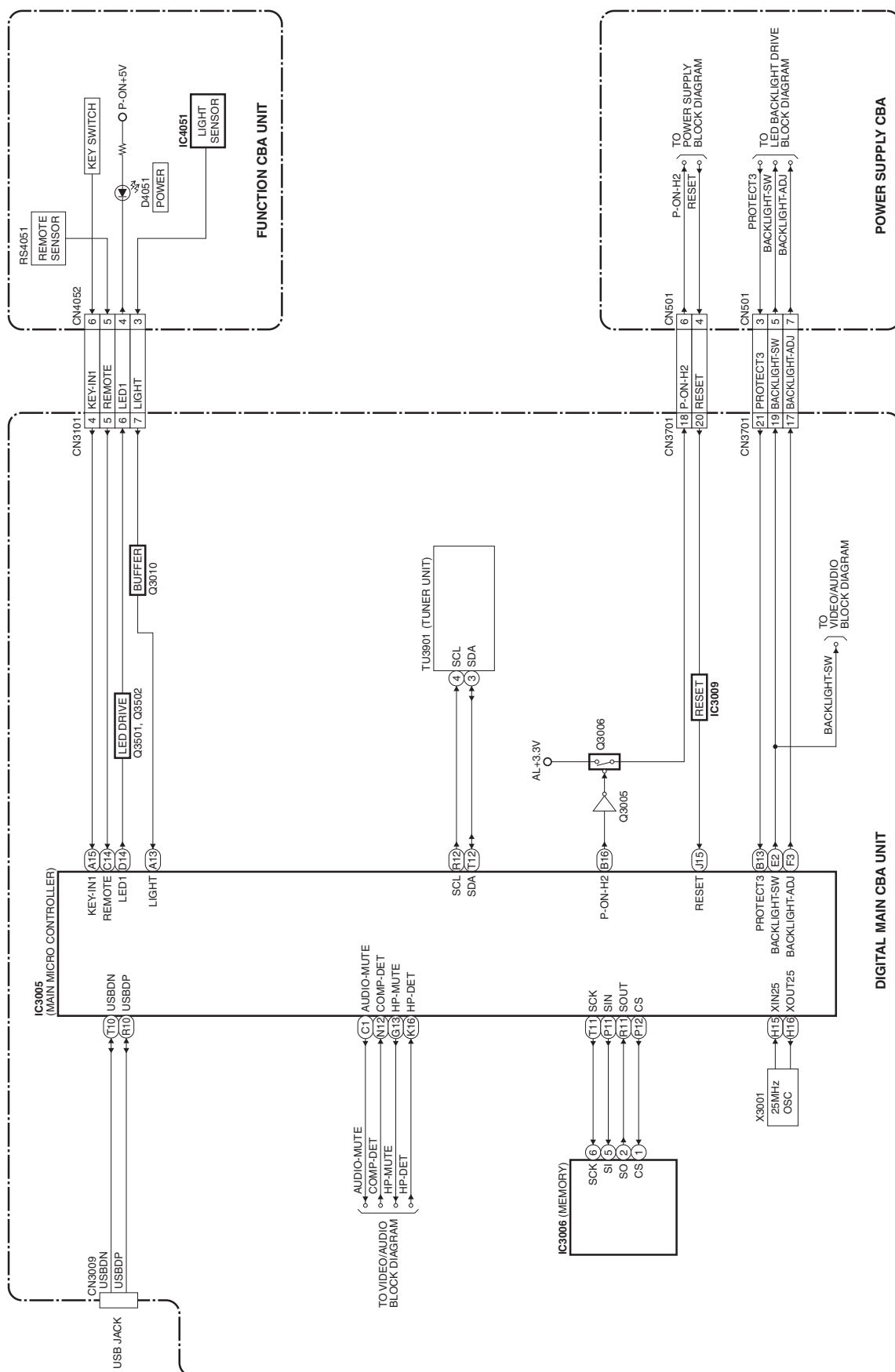


5. Power Supply Block Diagram

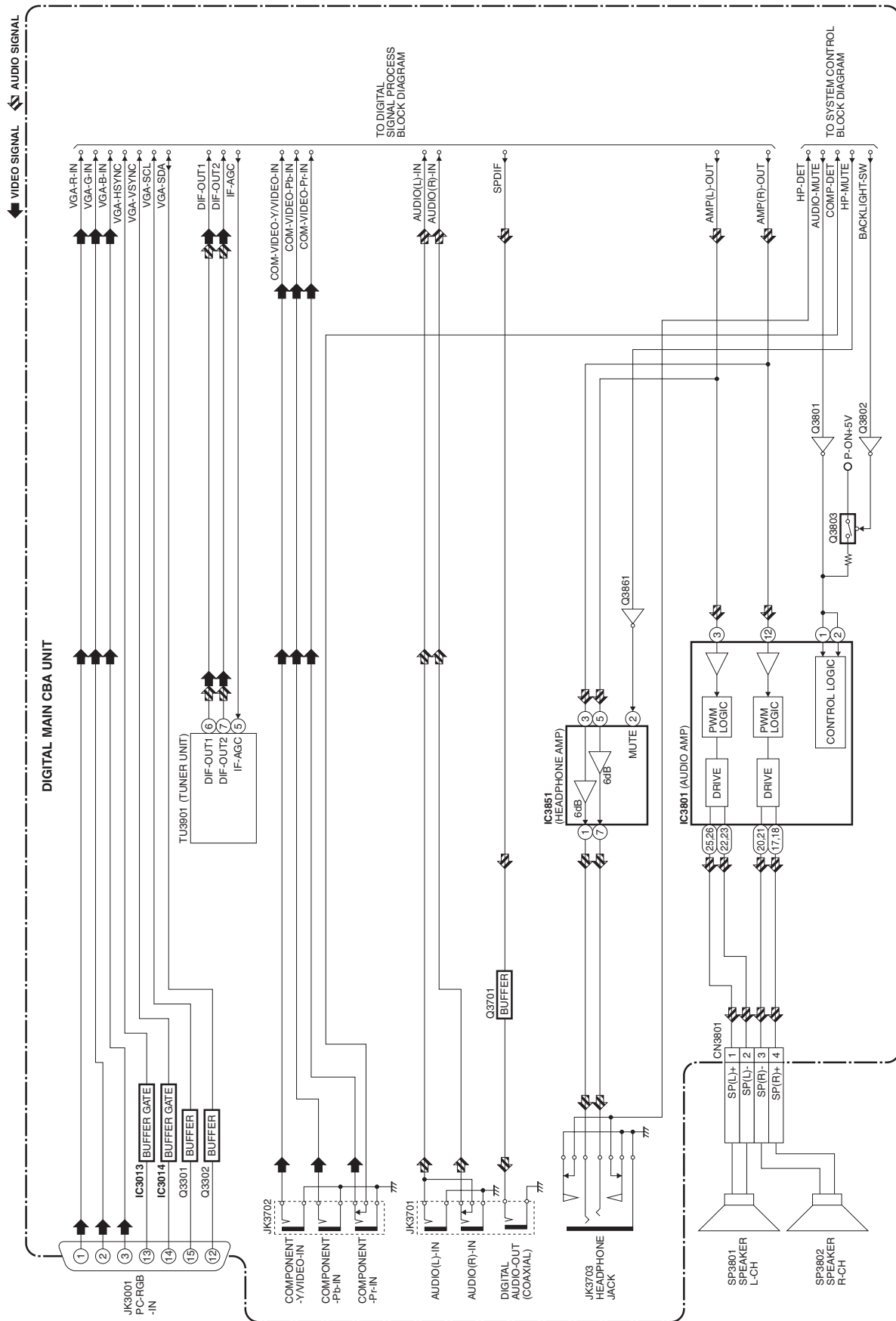


[TYPE B]
1. System Control Block Diagram

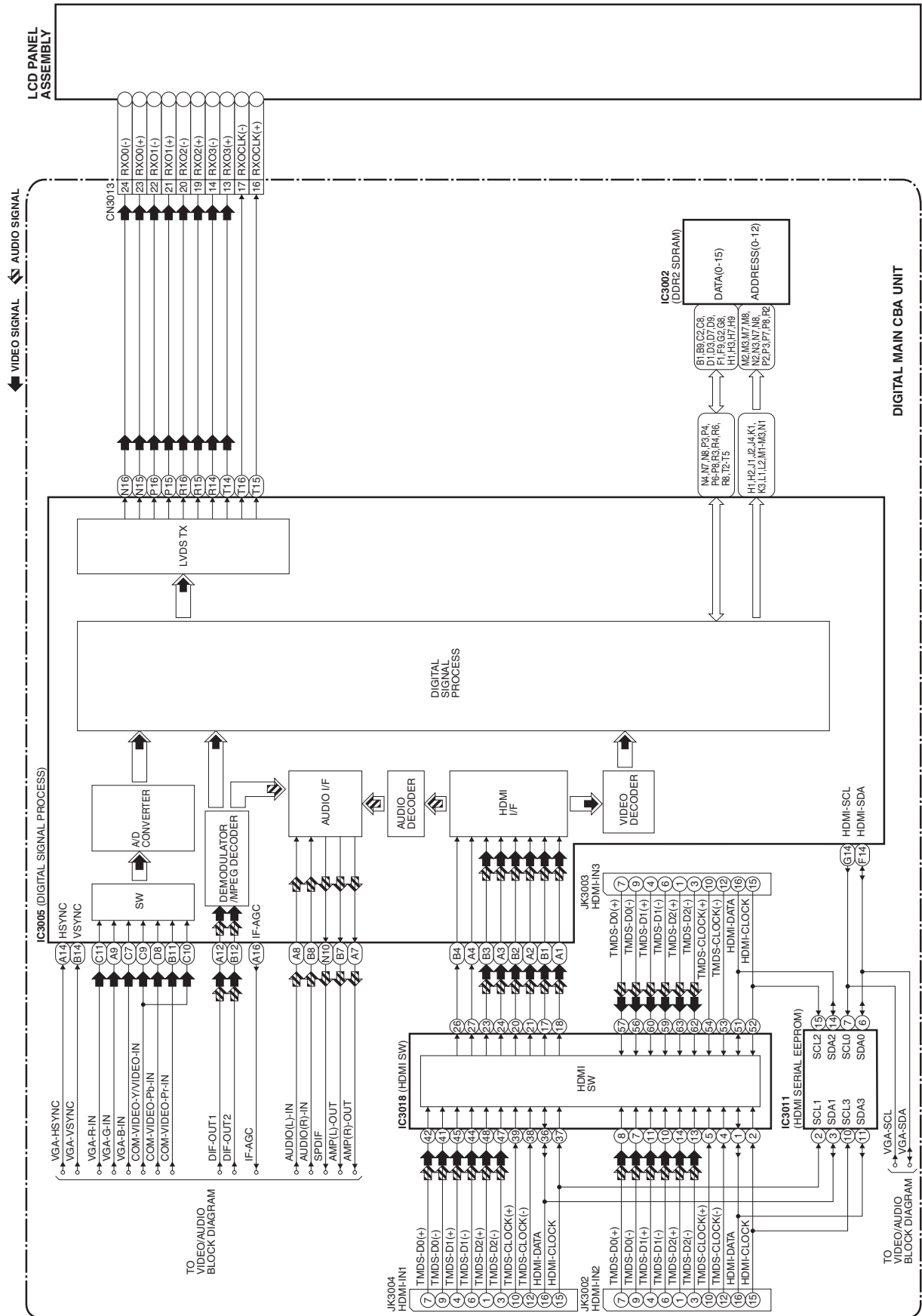
[TYPE B]
1. System Control Block Diagram



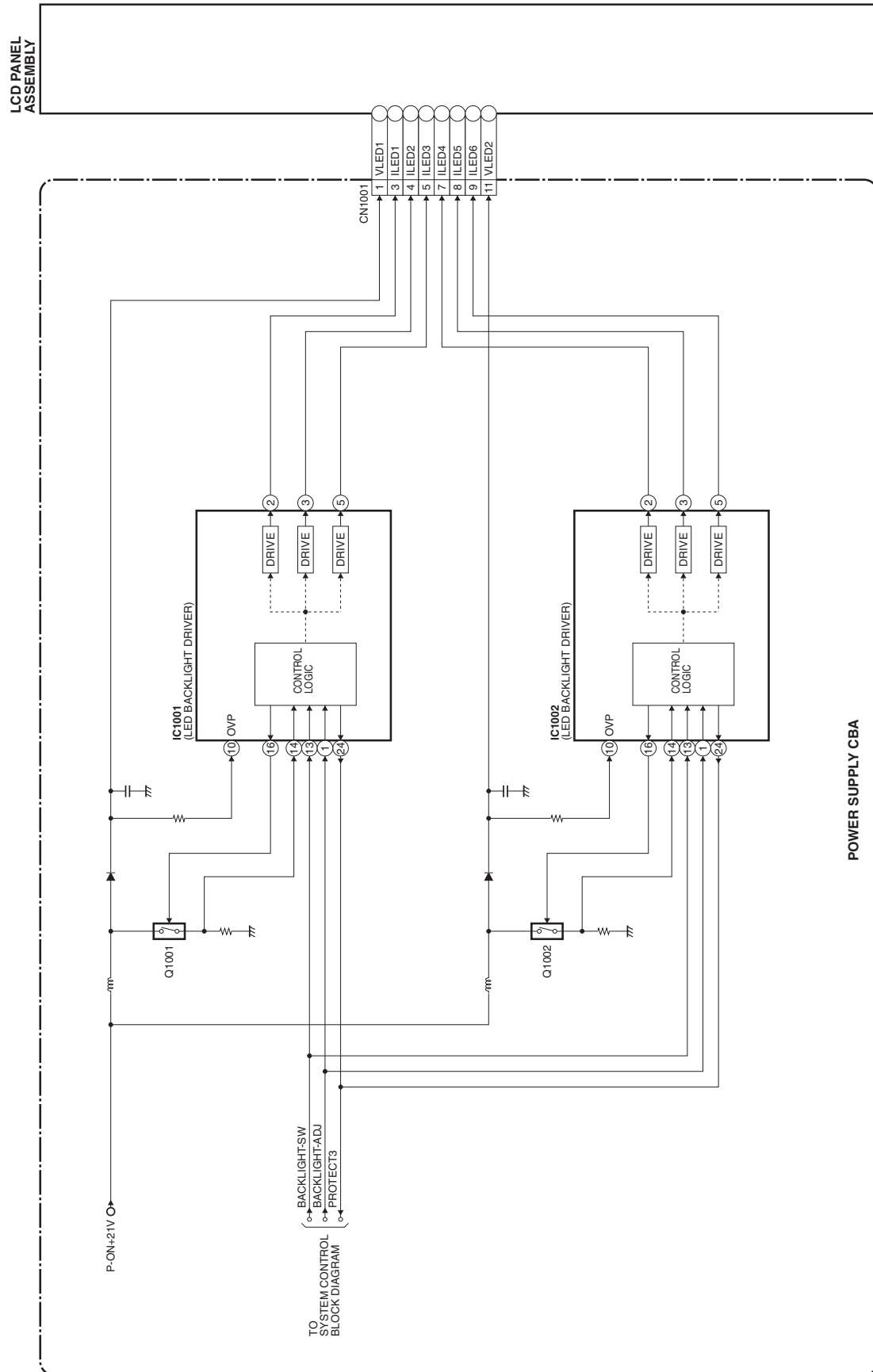
2. Video/Audio Block Diagram



3. Digital Signal Process Block Diagram



4. LED Backlight Drive Block Diagram



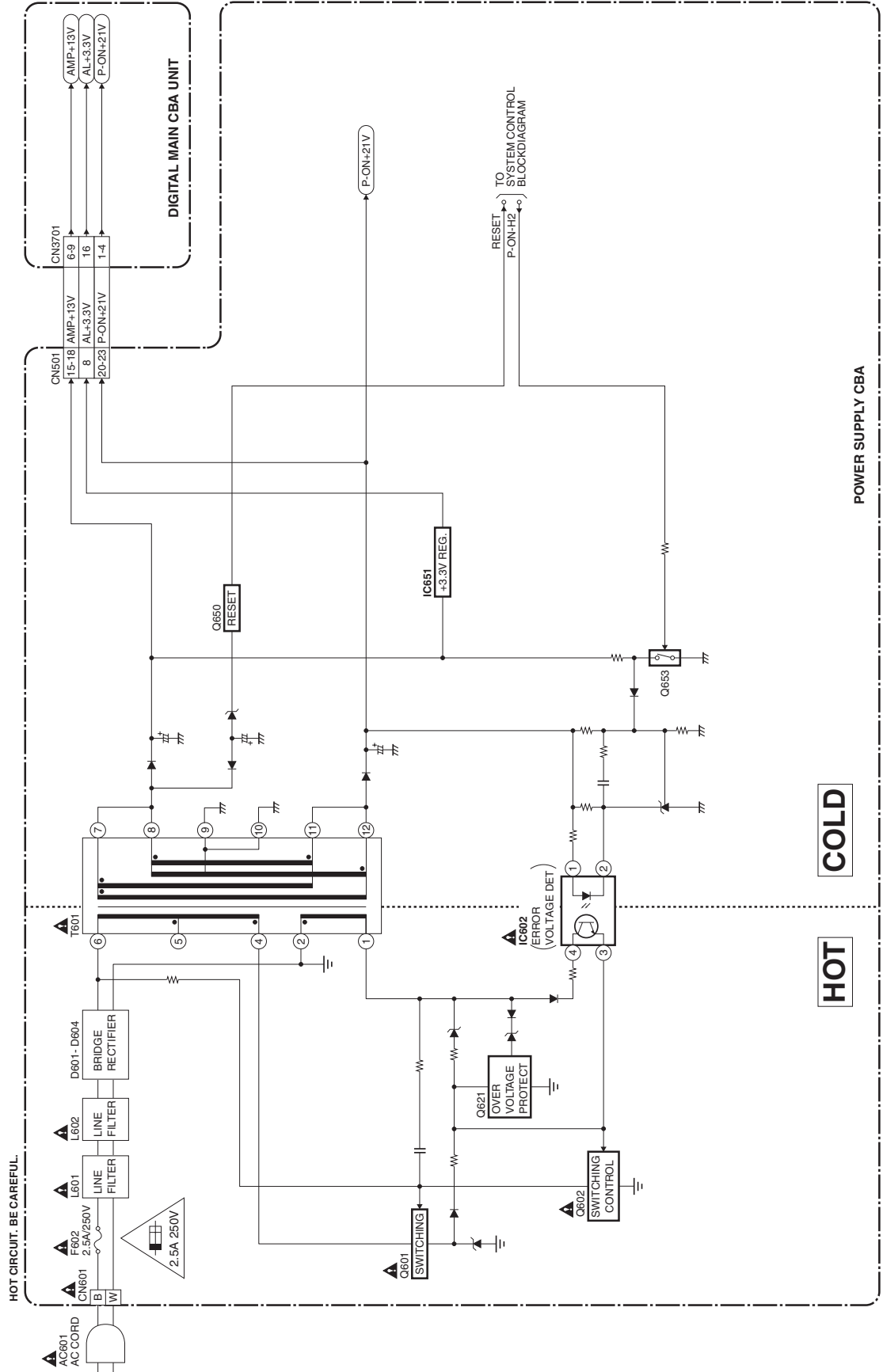
5. Power Supply Block Diagram

CAUTION ! Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F602) 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 2.5A, 250V fuse.

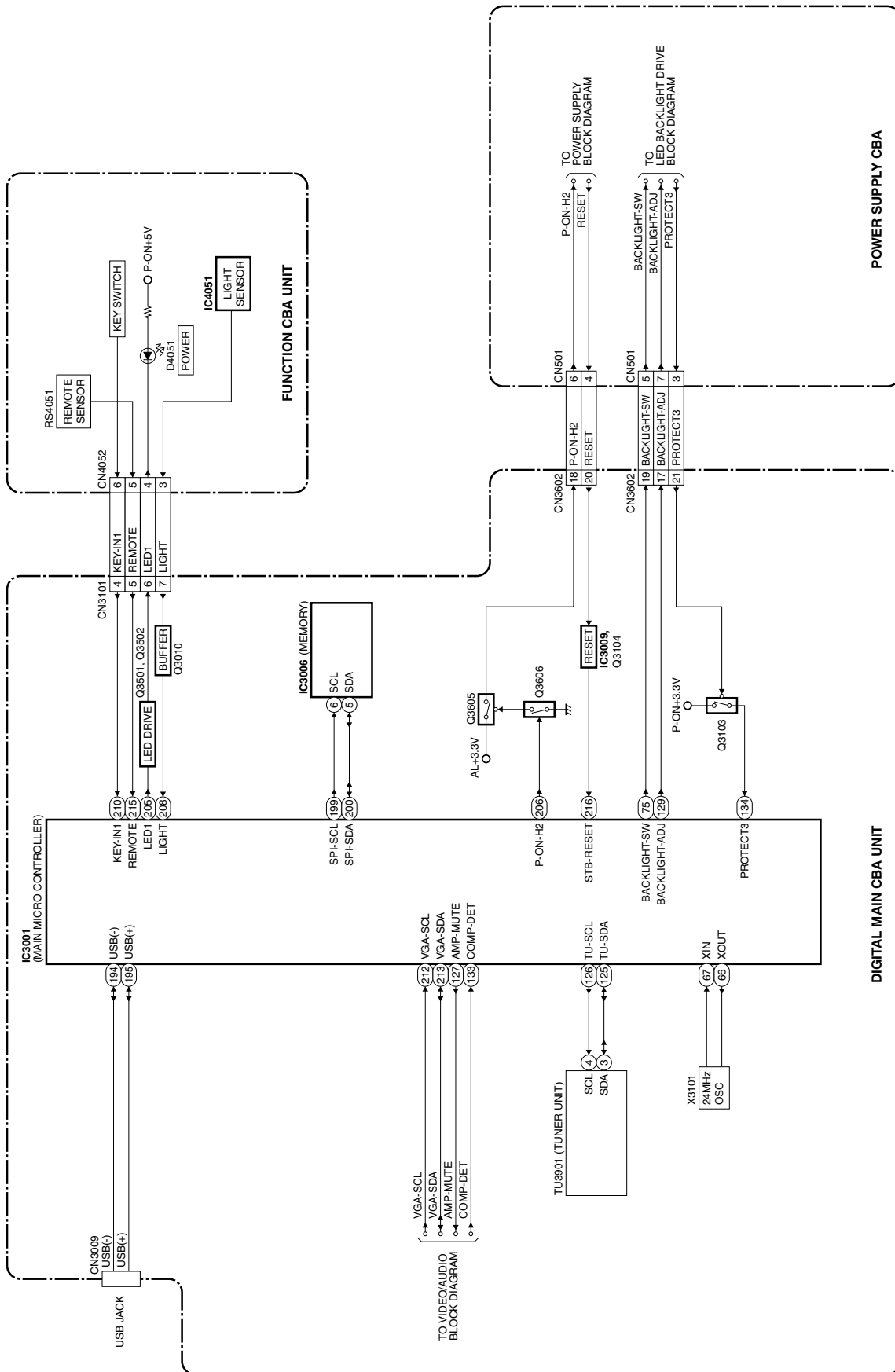
ATTENTION : Utiliser un fusible de rechange de même type de 2.5A, 250V.

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

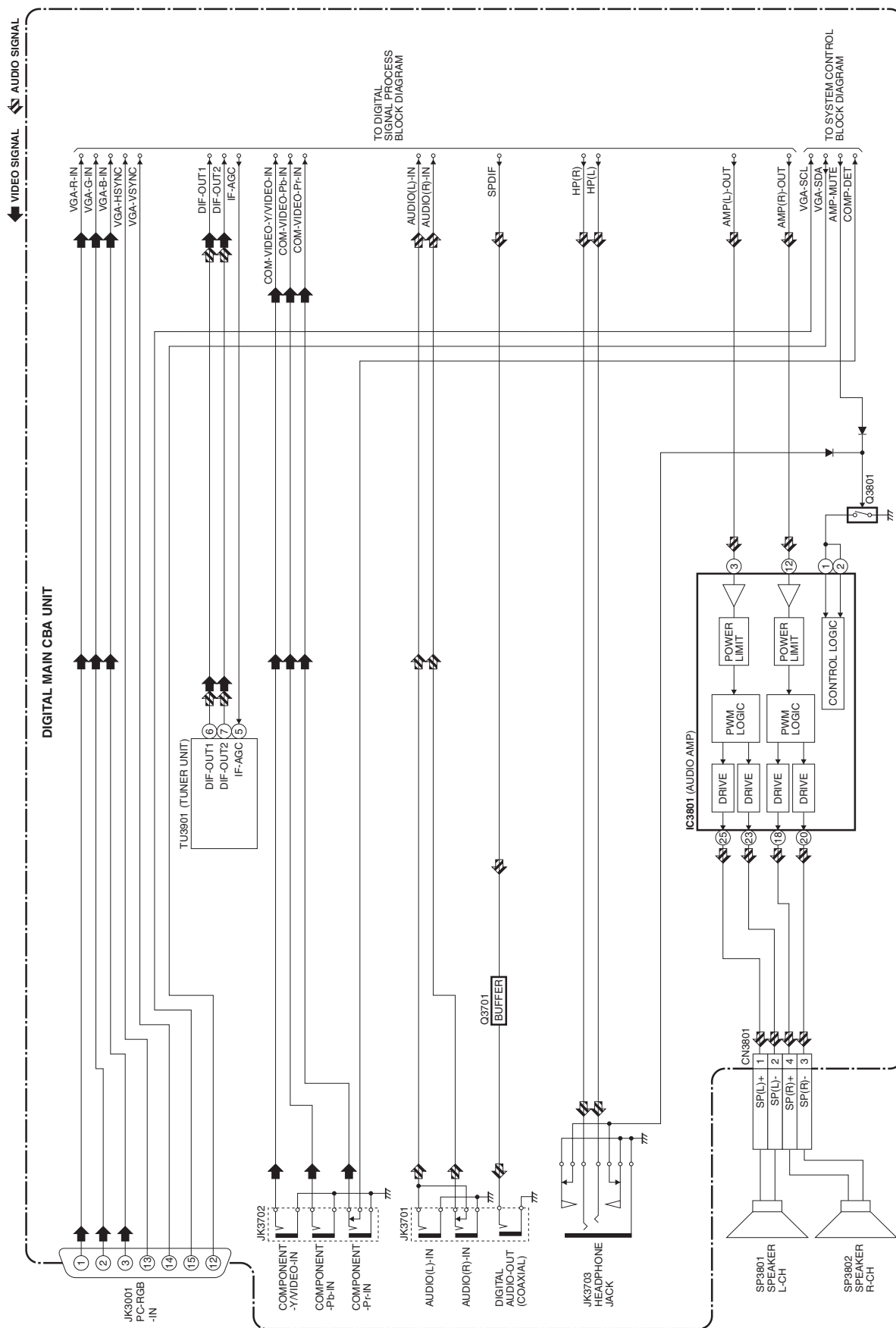


[TYPE C]

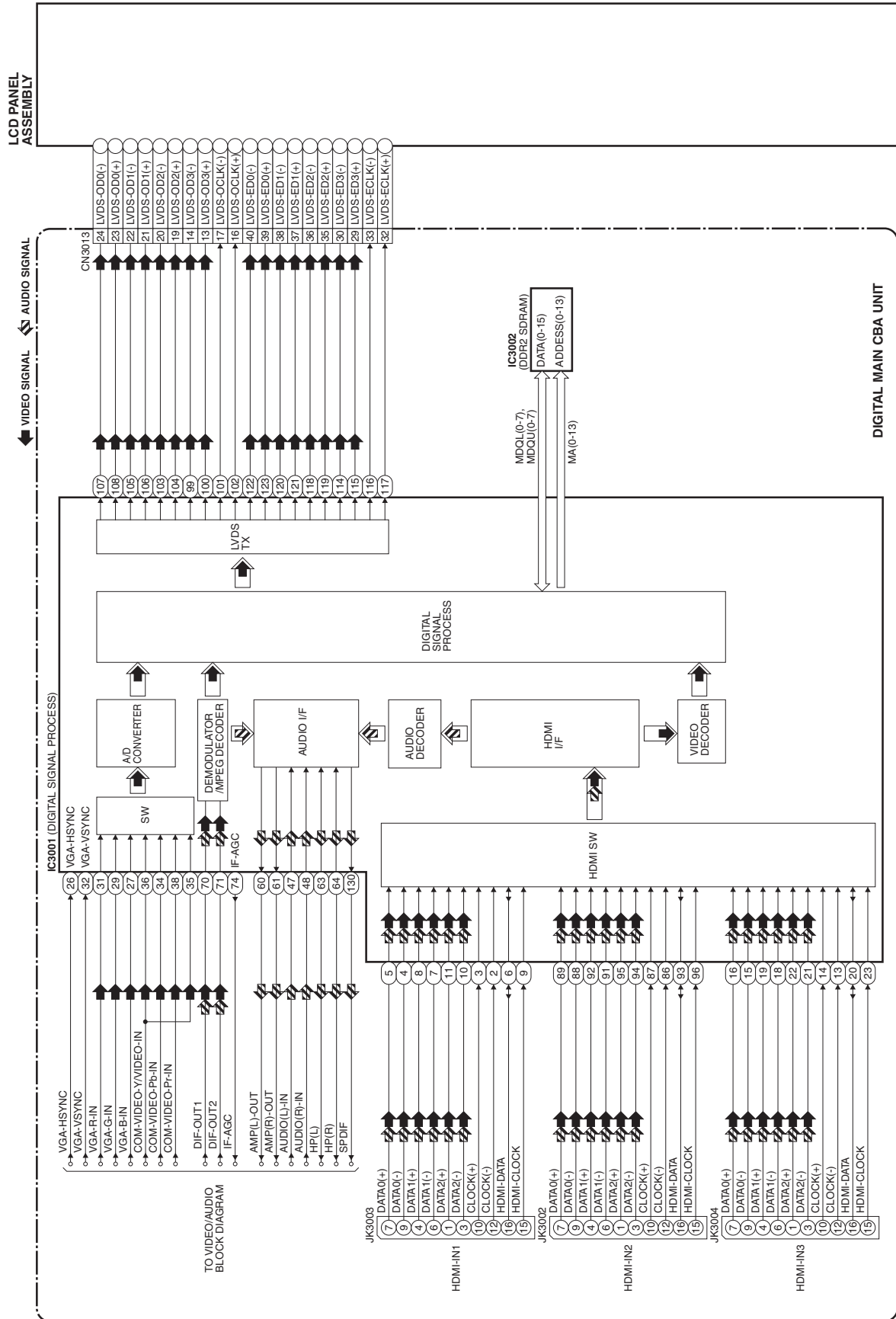
1. System Control Block Diagram



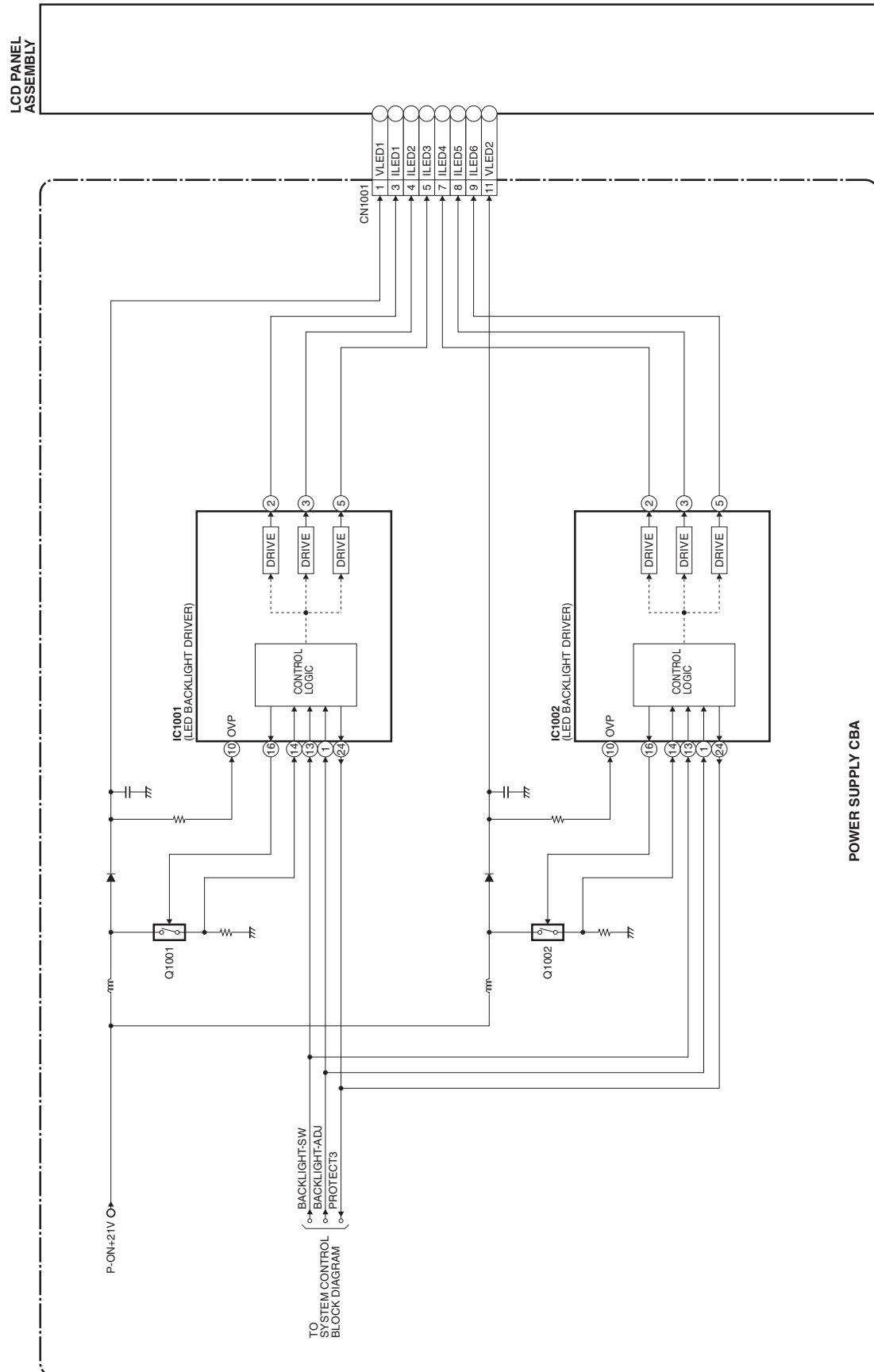
2. Video/Audio Block Diagram



3. Digital Signal Process Block Diagram



4. LED Backlight Drive Block Diagram

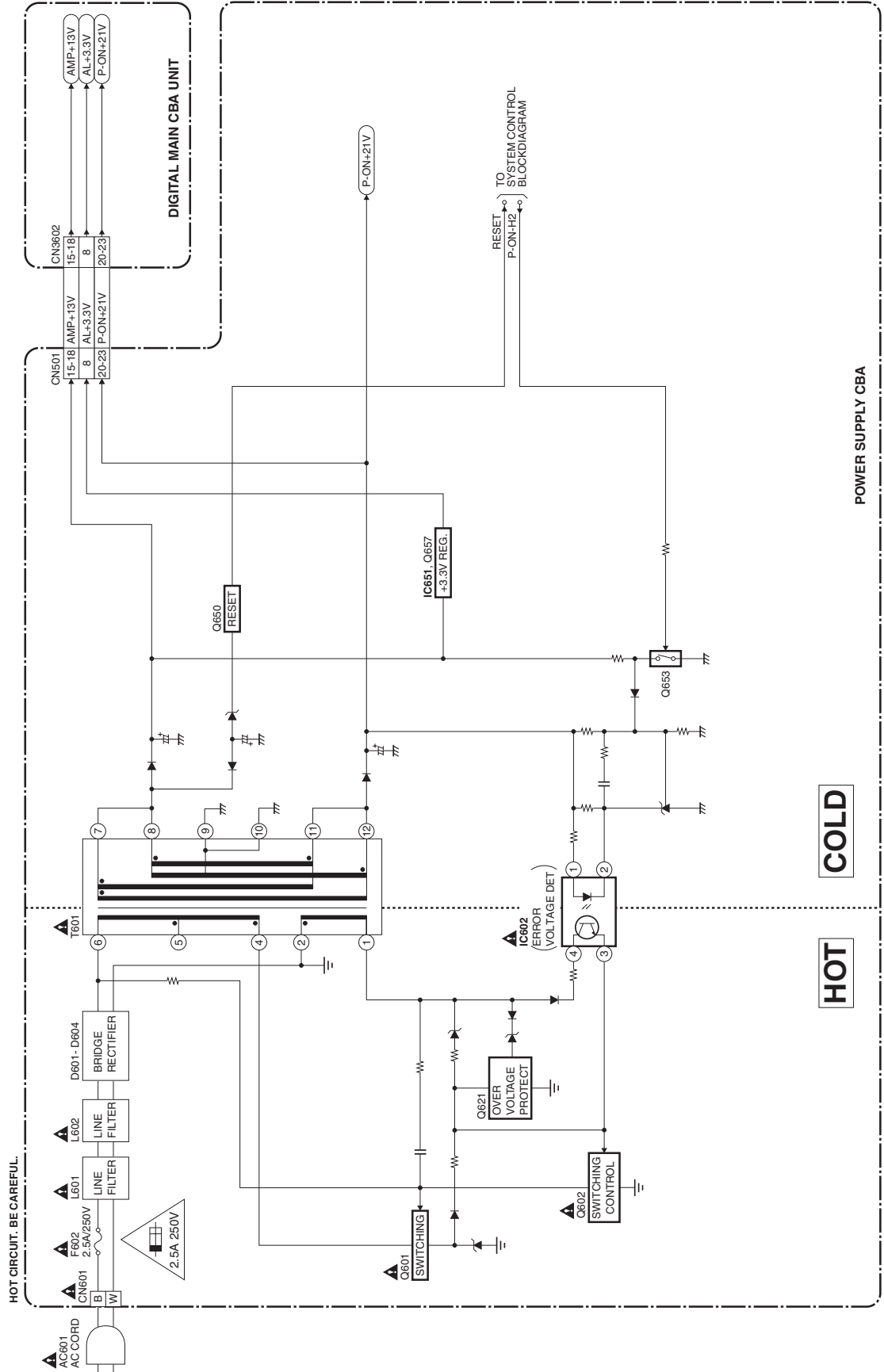


5. Power Supply Block Diagram

CAUTION ! Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F602) 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 2.5A, 250V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 2.5A, 250V.

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



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 μF ($P = 10^{-6} \mu F$).
5. All voltages are DC voltages unless otherwise specified.
6. This schematic diagrams are masterized version that should cover the entire PL13.11 chassis models.
Thus some parts in detail illustrated on this schematic diagrams may vary depend on the model within the PL13.11 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.

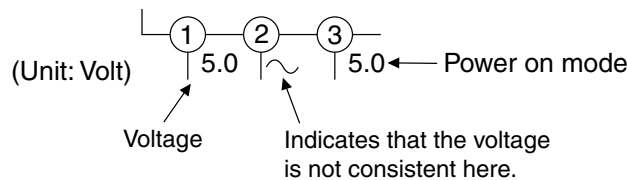
If Main Fuse (F602) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

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.:

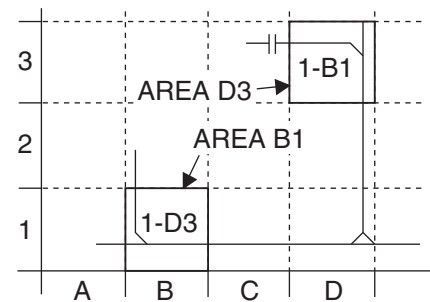


5. How to read converged lines

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.

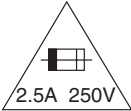
● : Used to indicate a test point with a test pin.

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

Power Supply 1 Schematic Diagram

CAUTION !

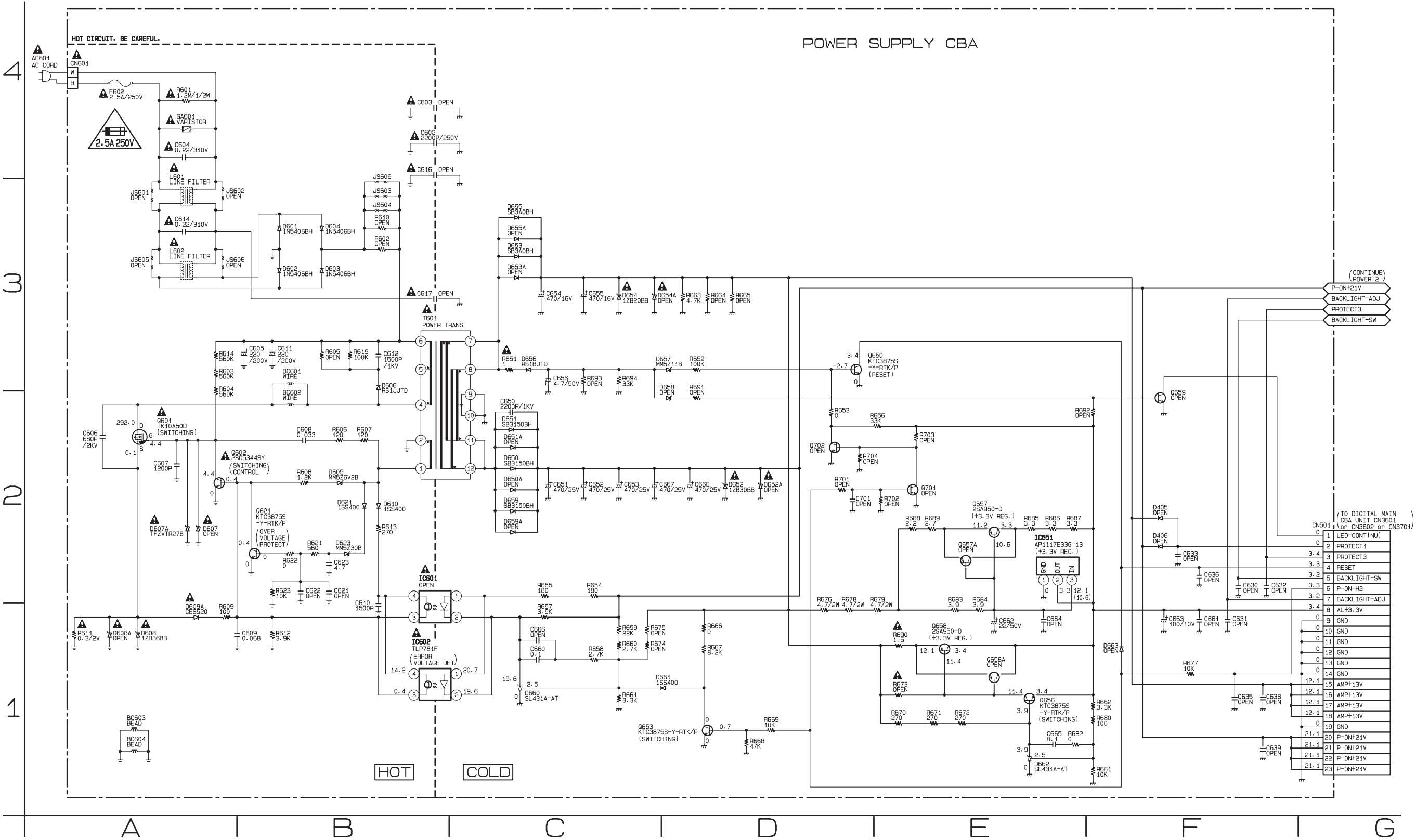
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F602) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.



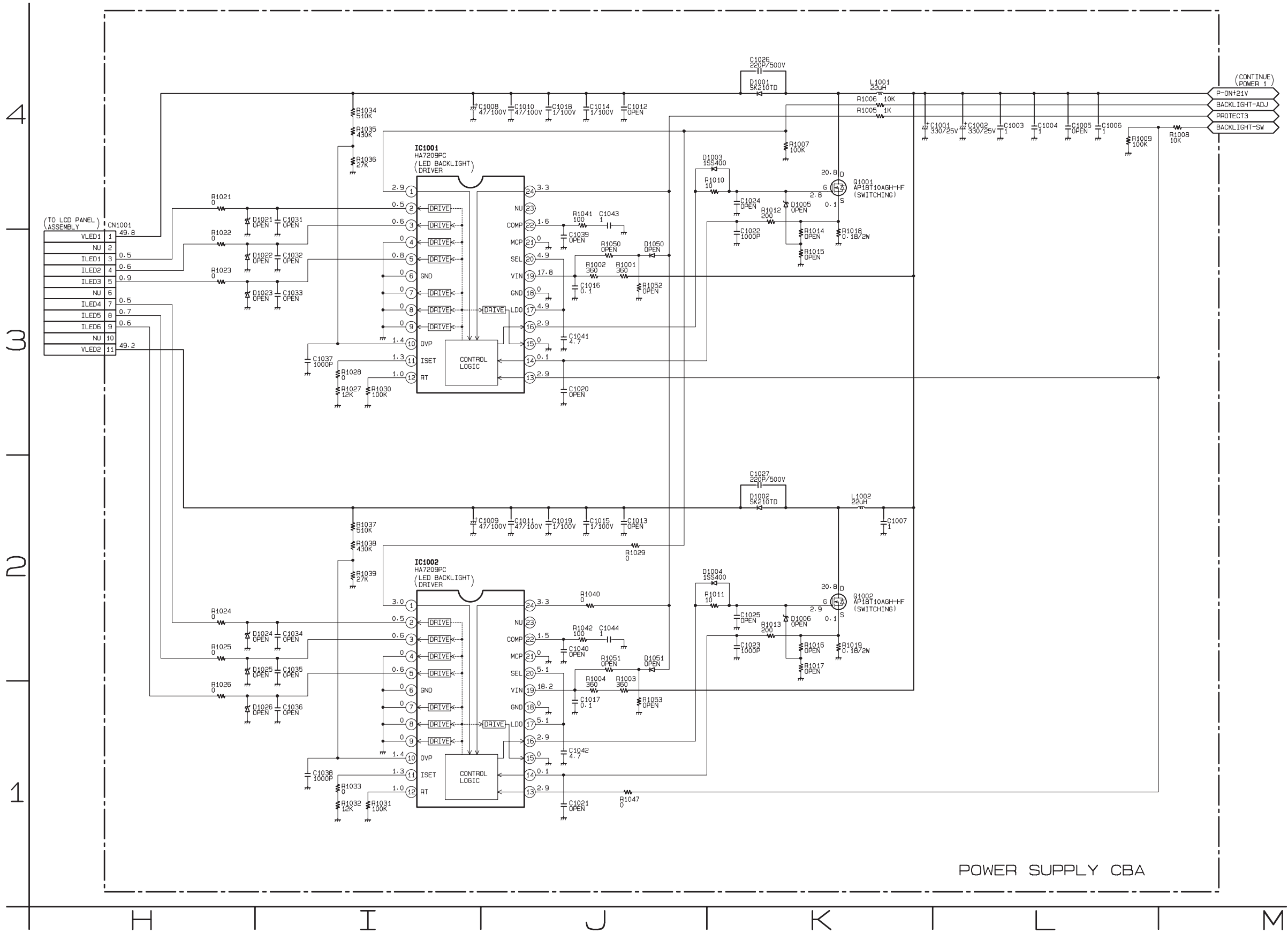
CAUTION ! : For continued protection against risk of fire,
replace only with same type 2.5A, 250V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 2.5A, 250V.

NOTE:

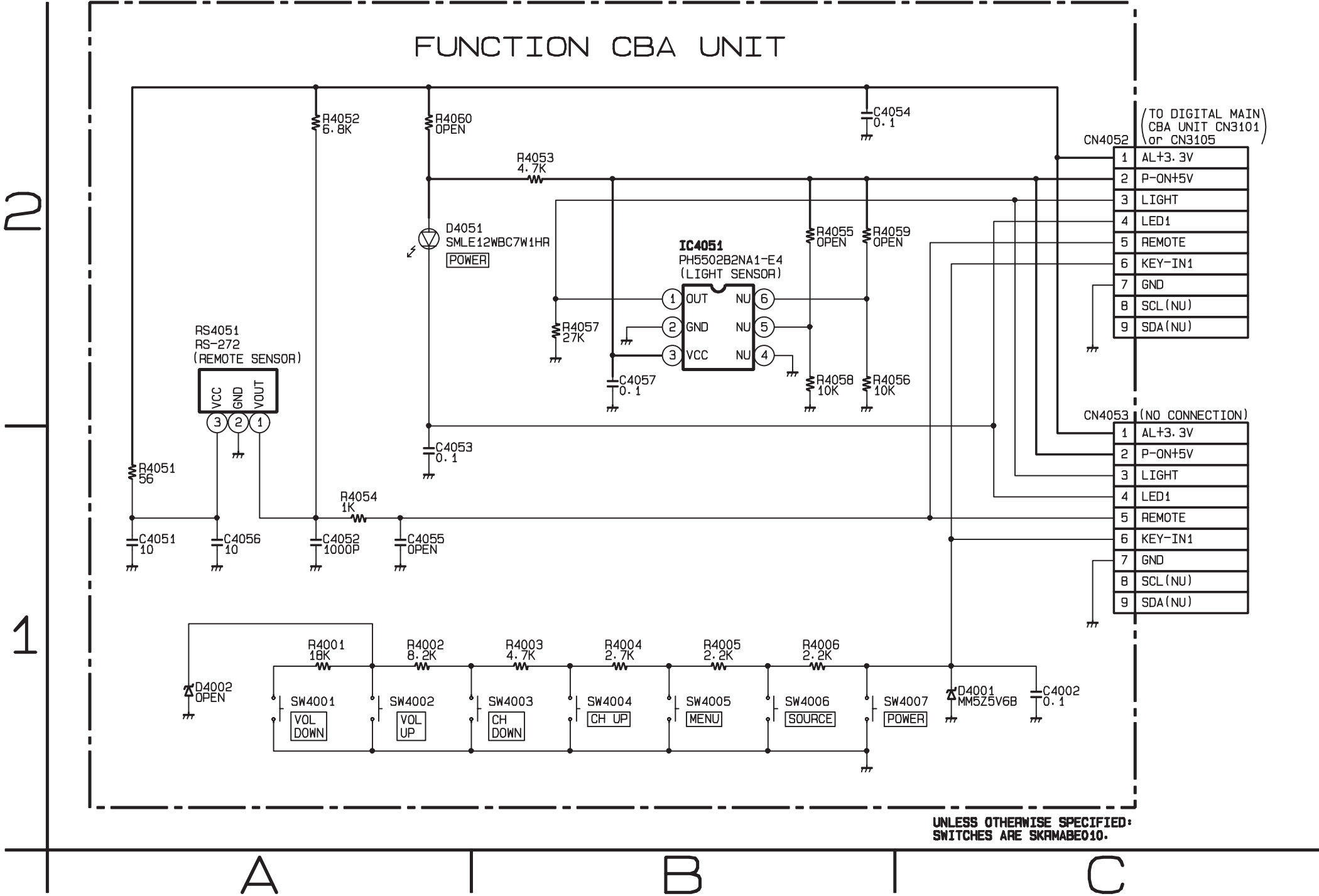
The voltage for parts in hot circuit is measured using
hot GND as a common terminal.



Power Supply 2 Schematic Diagram

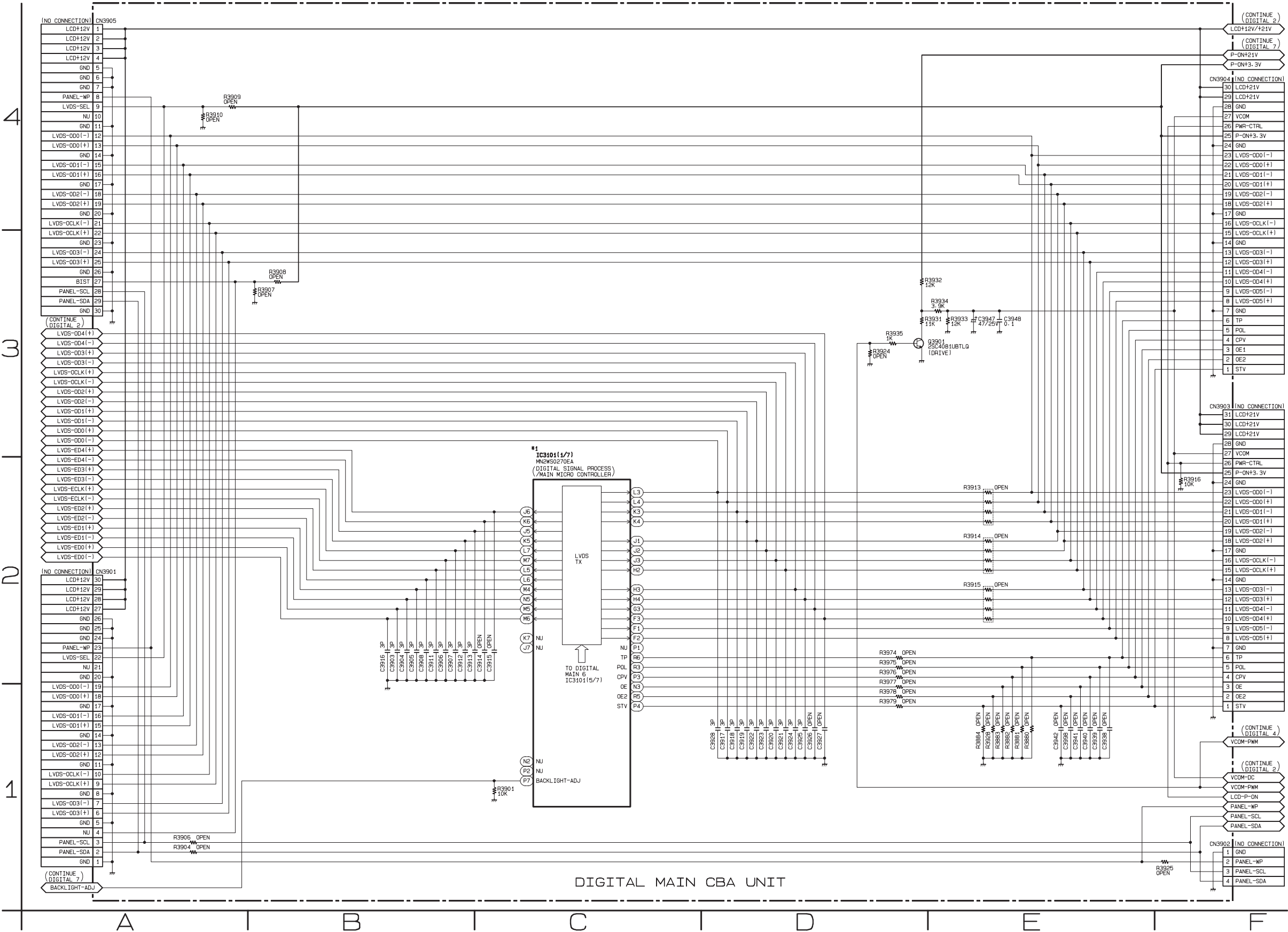


Function Schematic Diagram

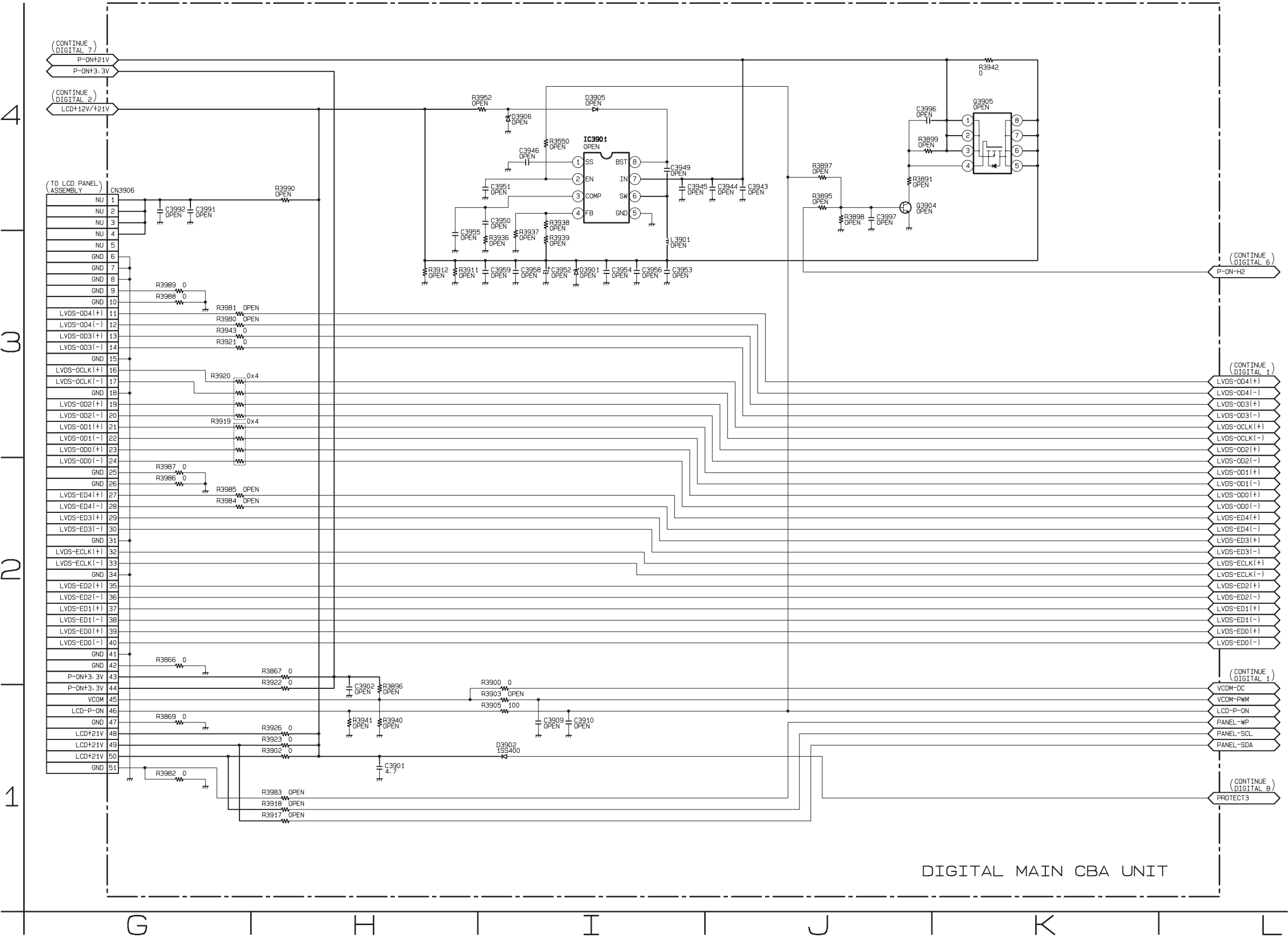


Digital Main 1 Schematic Diagram [TYPE A]

*1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into seven and shown as IC3101 (1/7) ~ IC3101 (7/7) in this Digital Main Schematic Diagram Section.



Digital Main 2 Schematic Diagram [TYPE A]

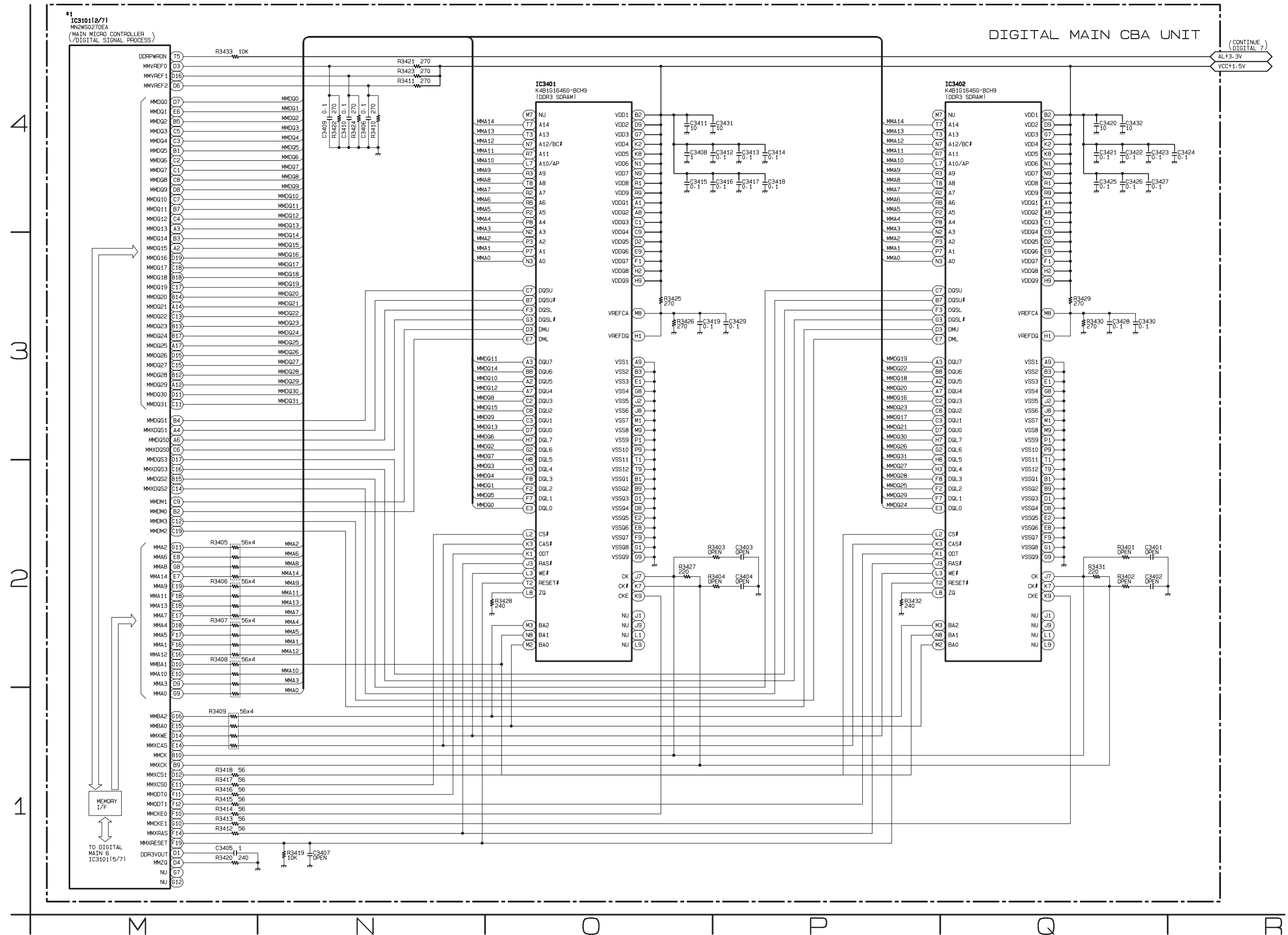


Digital Main 3 Schematic Diagram [TYPE A]

***1 NOTE:**

The order of pins shown in this diagram is different from that of actual IC3101.

IC3101 is divided into seven and shown as IC3101 (1/7) ~ IC3101 (7/7) in this Digital Main Schematic Diagram Section.

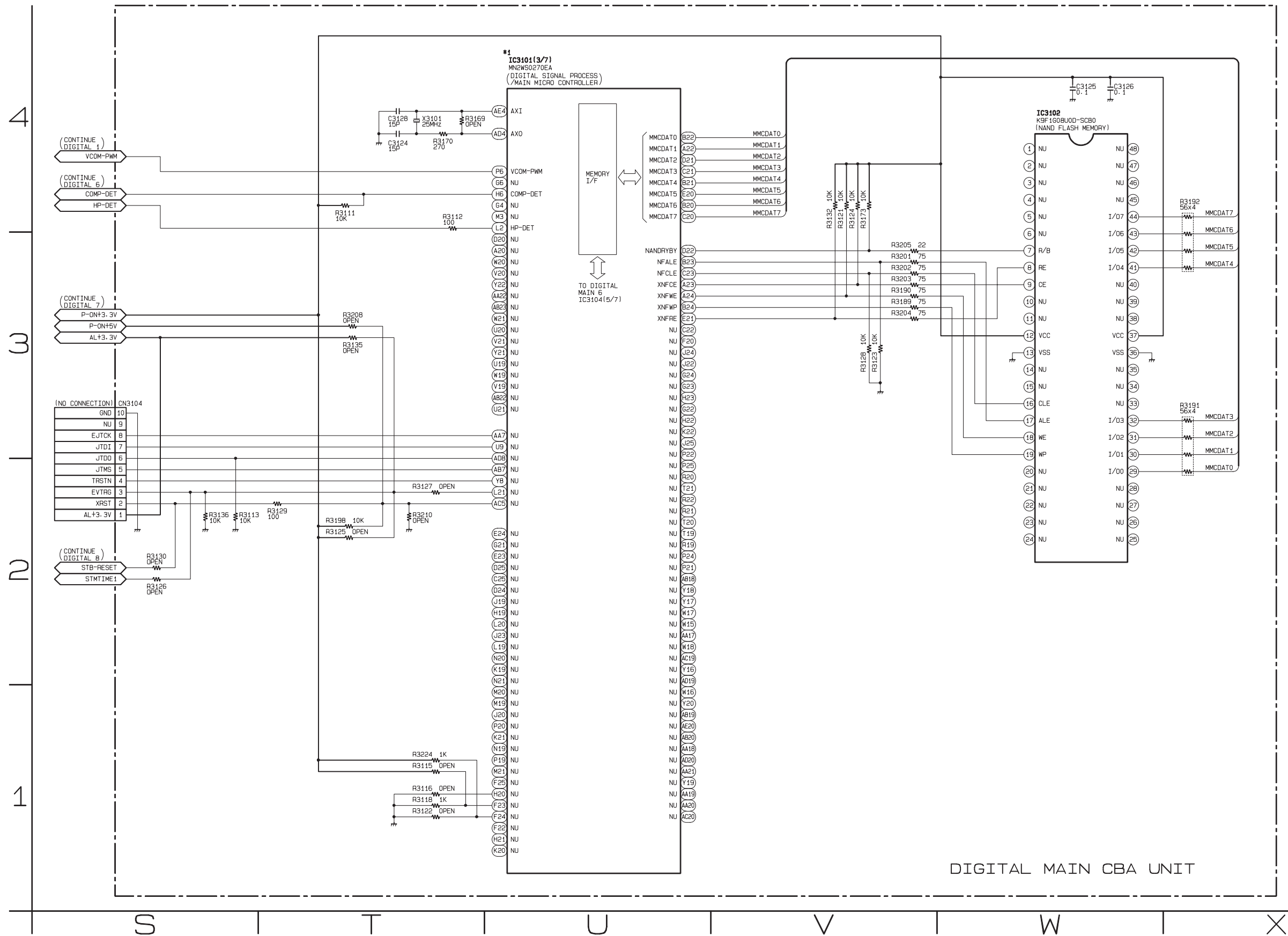


Digital Main 4 Schematic Diagram [TYPE A]

***1 NOTE:**

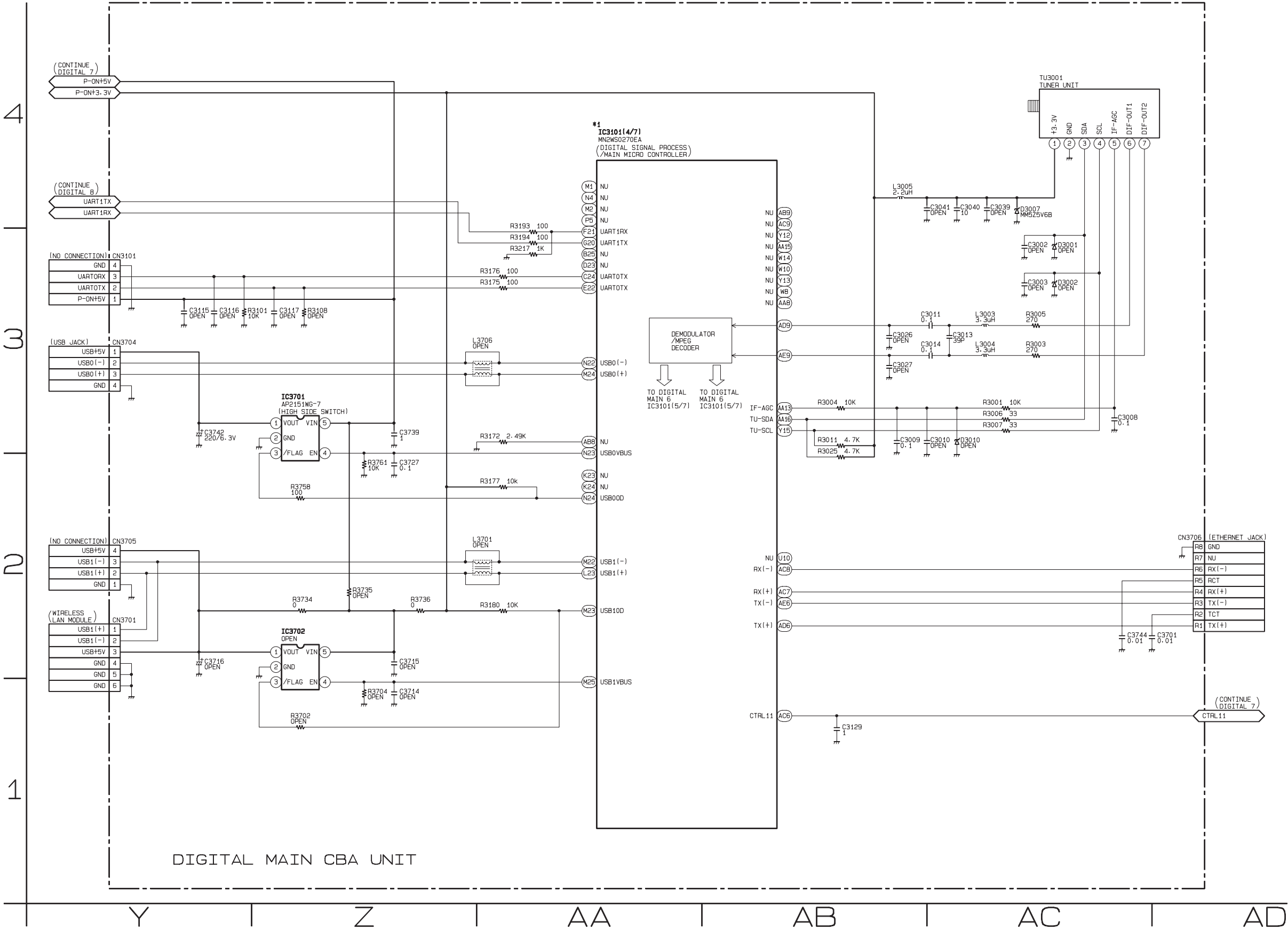
The order of pins shown in this diagram is different from that of actual IC3101.

IC3101 is divided into seven and shown as IC3101 (1/7) ~ IC3101 (7/7) in this Digital Main Schematic Diagram Section.



Digital Main 5 Schematic Diagram [TYPE A]

*1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into seven and shown as IC3101 (1/7) ~ IC3101 (7/7) in this Digital Main Schematic Diagram Section.

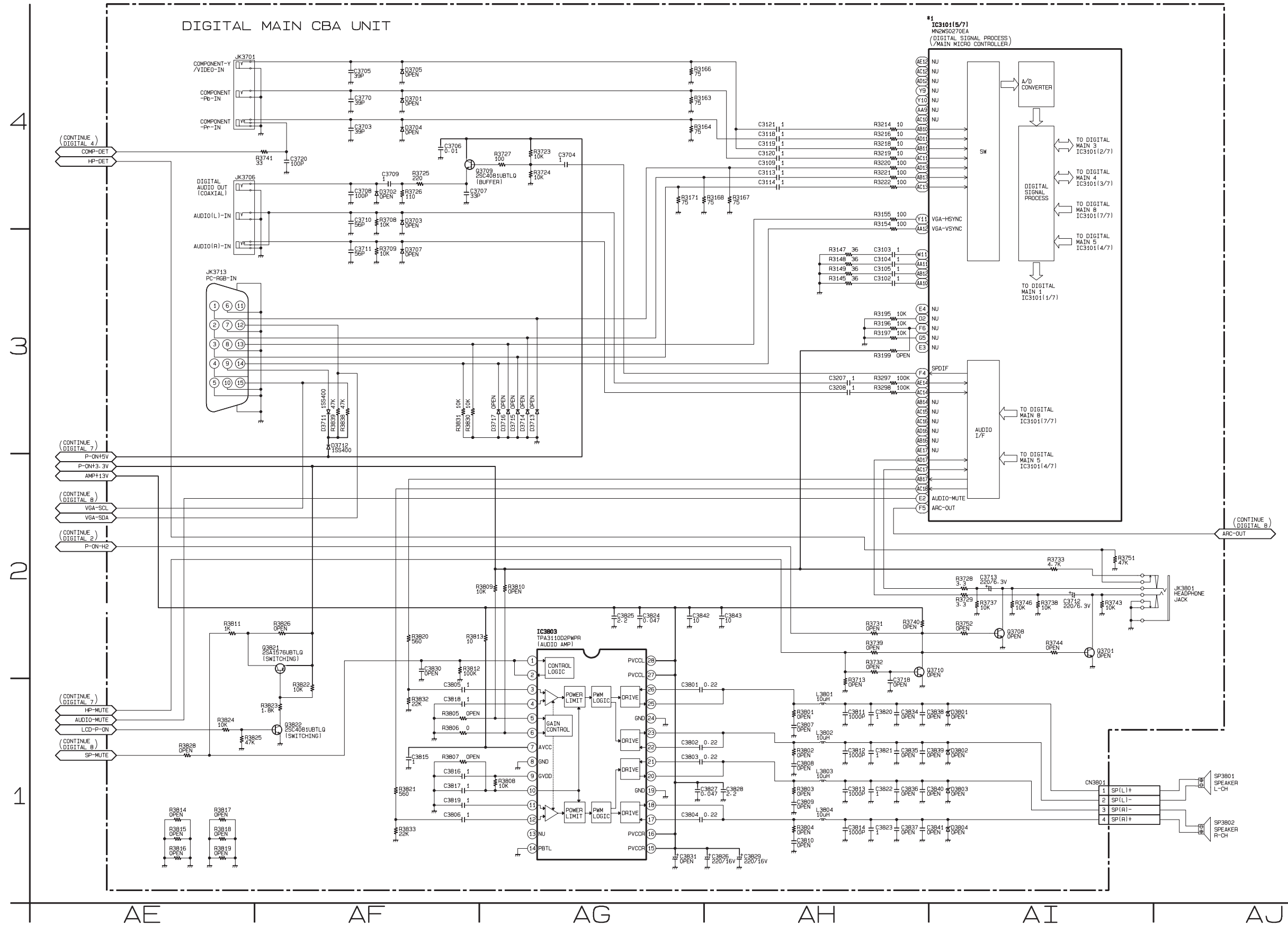


Digital Main 6 Schematic Diagram [TYPE A]

***1 NOTE:**

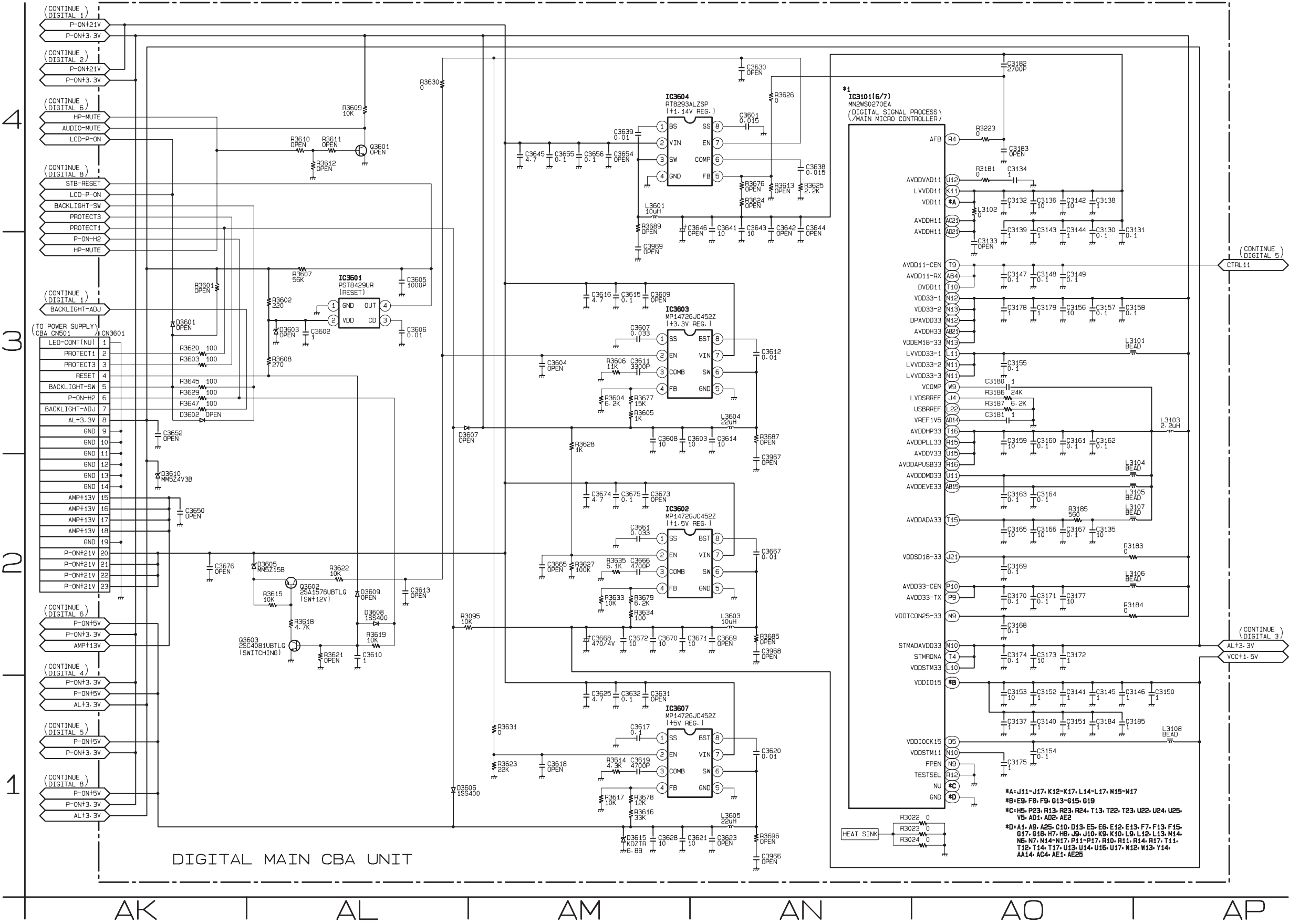
The order of pins shown in this diagram is different from that of actual IC3101.

IC3101 is divided into seven and shown as IC3101 (1/7) ~ IC3101 (7/7) in this Digital Main Schematic Diagram Section.



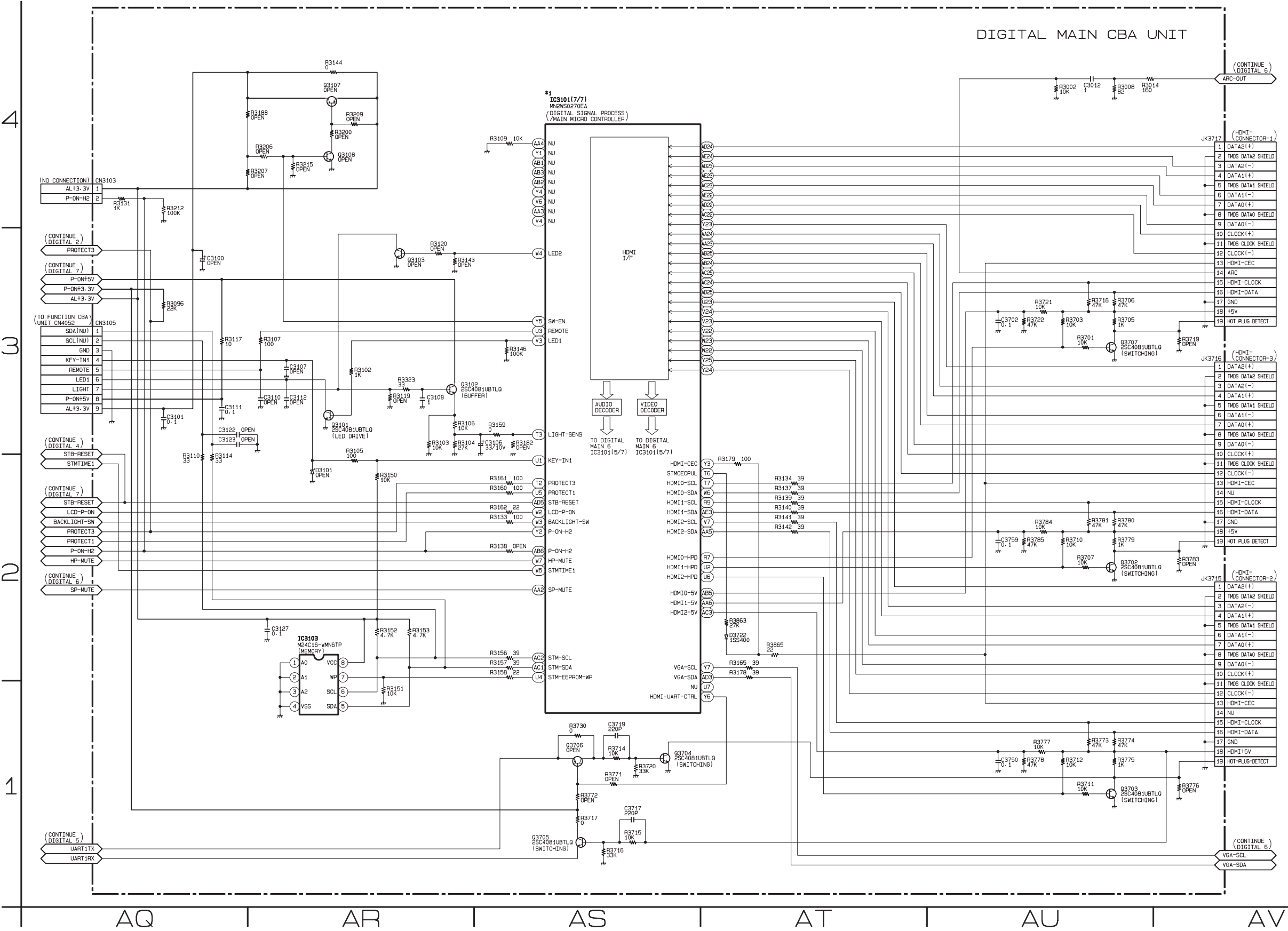
Digital Main 7 Schematic Diagram [TYPE A]

*1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into seven and shown as IC3101 (1/7) ~ IC3101 (7/7) in this Digital Main Schematic Diagram Section.



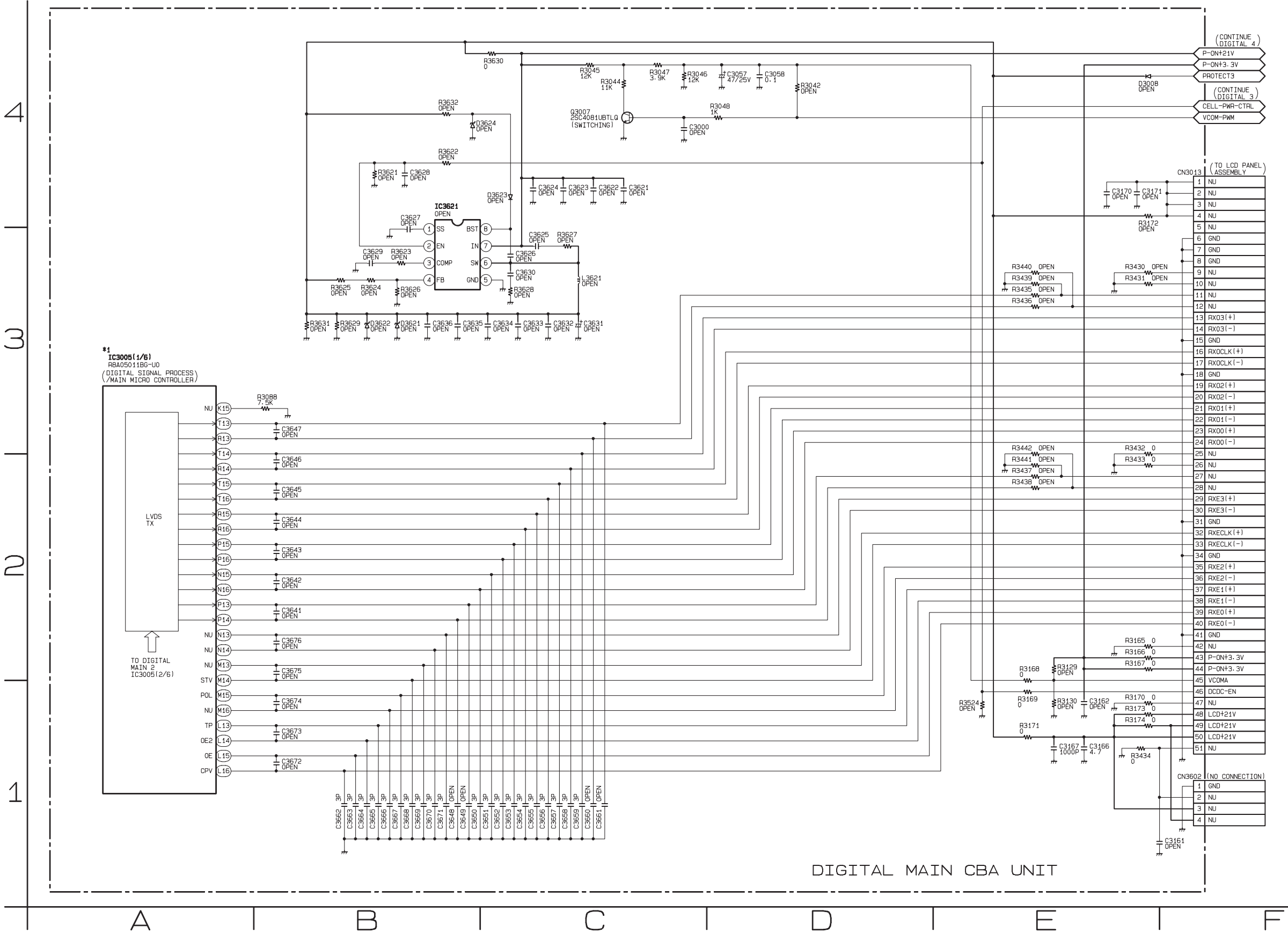
Digital Main 8 Schematic Diagram [TYPE A]

*1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into seven and shown as IC3101 (1/7) ~ IC3101 (7/7) in this Digital Main Schematic Diagram Section.



Digital Main 1 Schematic Diagram [TYPE B]

*1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3005.
IC3005 is divided into six and shown as IC3005 (1/6) ~ IC3005 (6/6) in this Digital Main Schematic Diagram Section.

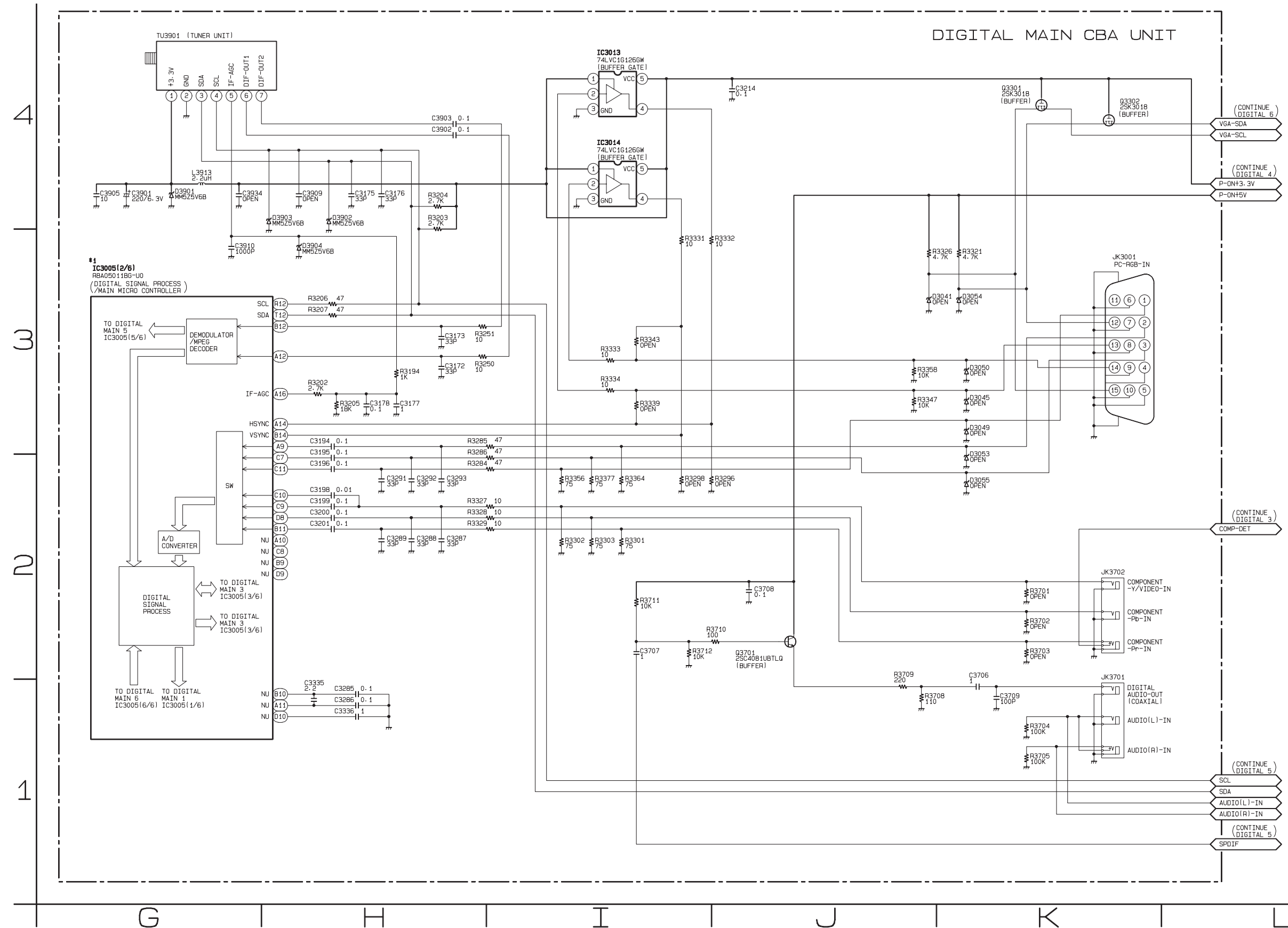


Digital Main 2 Schematic Diagram [TYPE B]

***1 NOTE:**

The order of pins shown in this diagram is different from that of actual IC3005.

IC3005 is divided into six and shown as IC3005 (1/6) ~ IC3005 (6/6) in this Digital Main Schematic Diagram Section.



4 |

3

2



M

N

0

P

Q

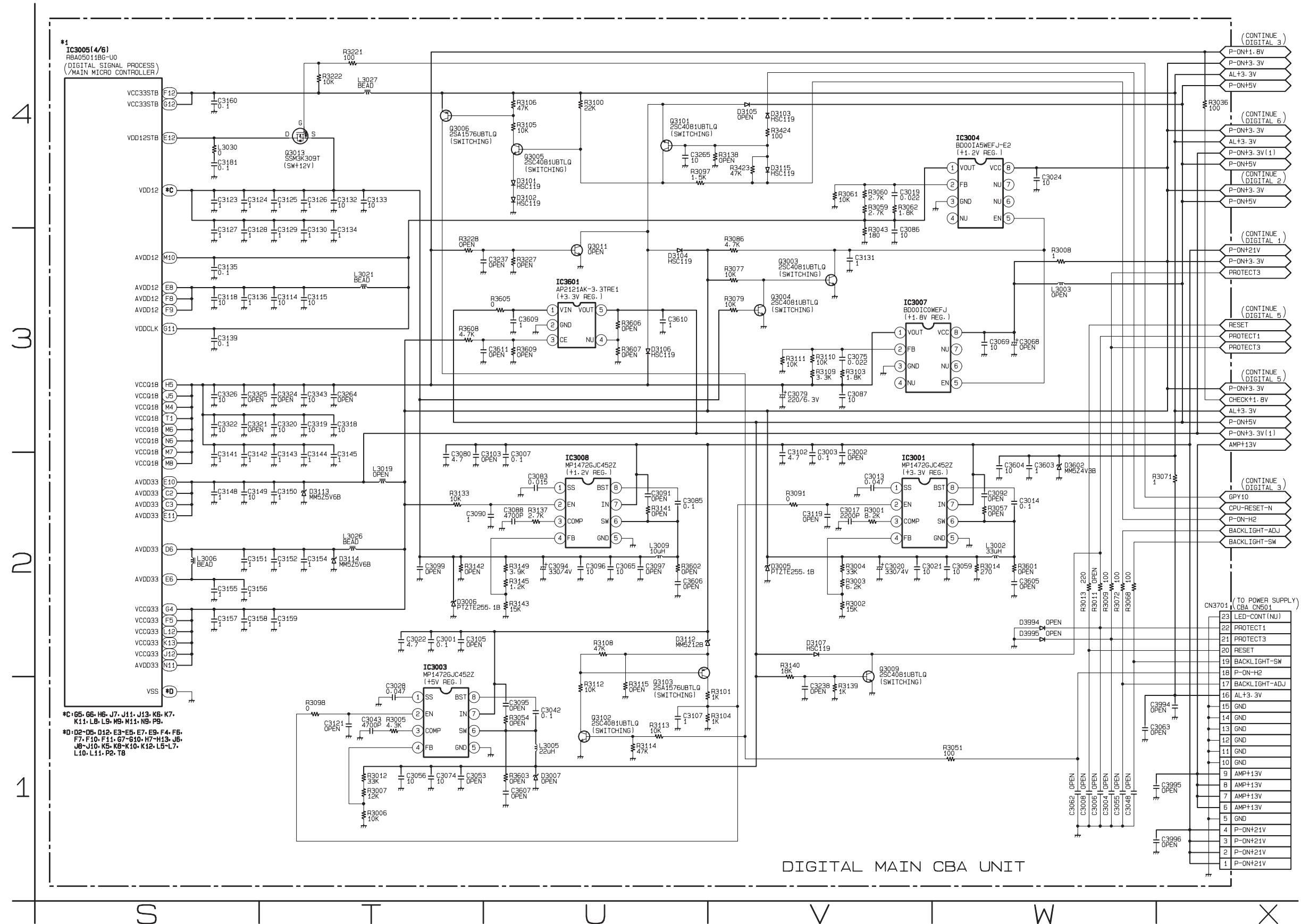
R

Digital Main 4 Schematic Diagram [TYPE B]

***1 NOTE:**

The order of pins shown in this diagram is different from that of actual IC3005.

IC3005 is divided into six and shown as IC3005 (1/6) ~ IC3005 (6/6) in this Digital Main Schematic Diagram Section.

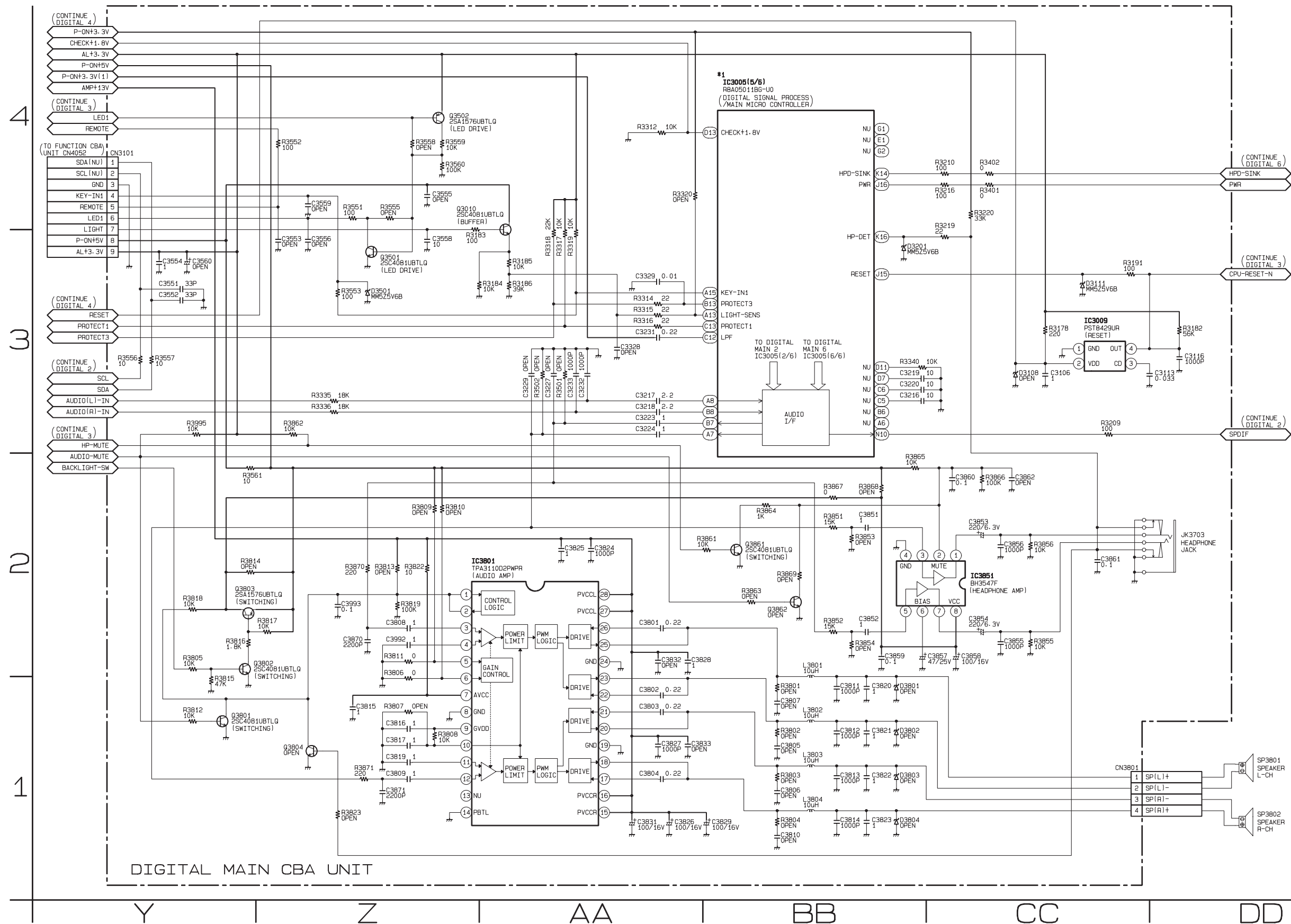


Digital Main 5 Schematic Diagram [TYPE B]

***1 NOTE:**

The order of pins shown in this diagram is different from that of actual IC3005.

IC3005 is divided into six and shown as IC3005 (1/6) ~ IC3005 (6/6) in this Digital Main Schematic Diagram Section.

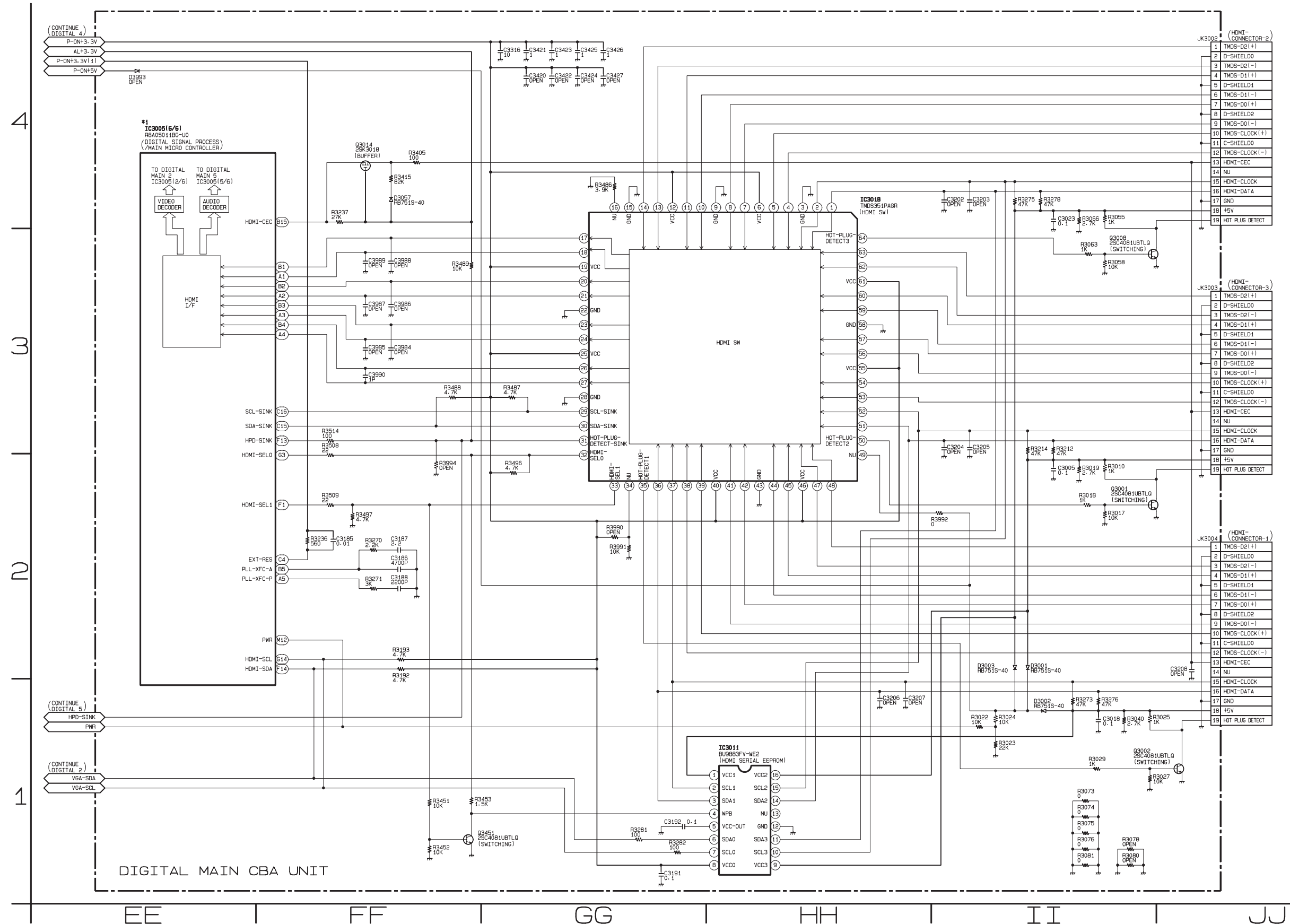


Digital Main 6 Schematic Diagram [TYPE B]

***1 NOTE:**

The order of pins shown in this diagram is different from that of actual IC3005.

IC3005 is divided into six and shown as IC3005 (1/6) ~ IC3005 (6/6) in this Digital Main Schematic Diagram Section.

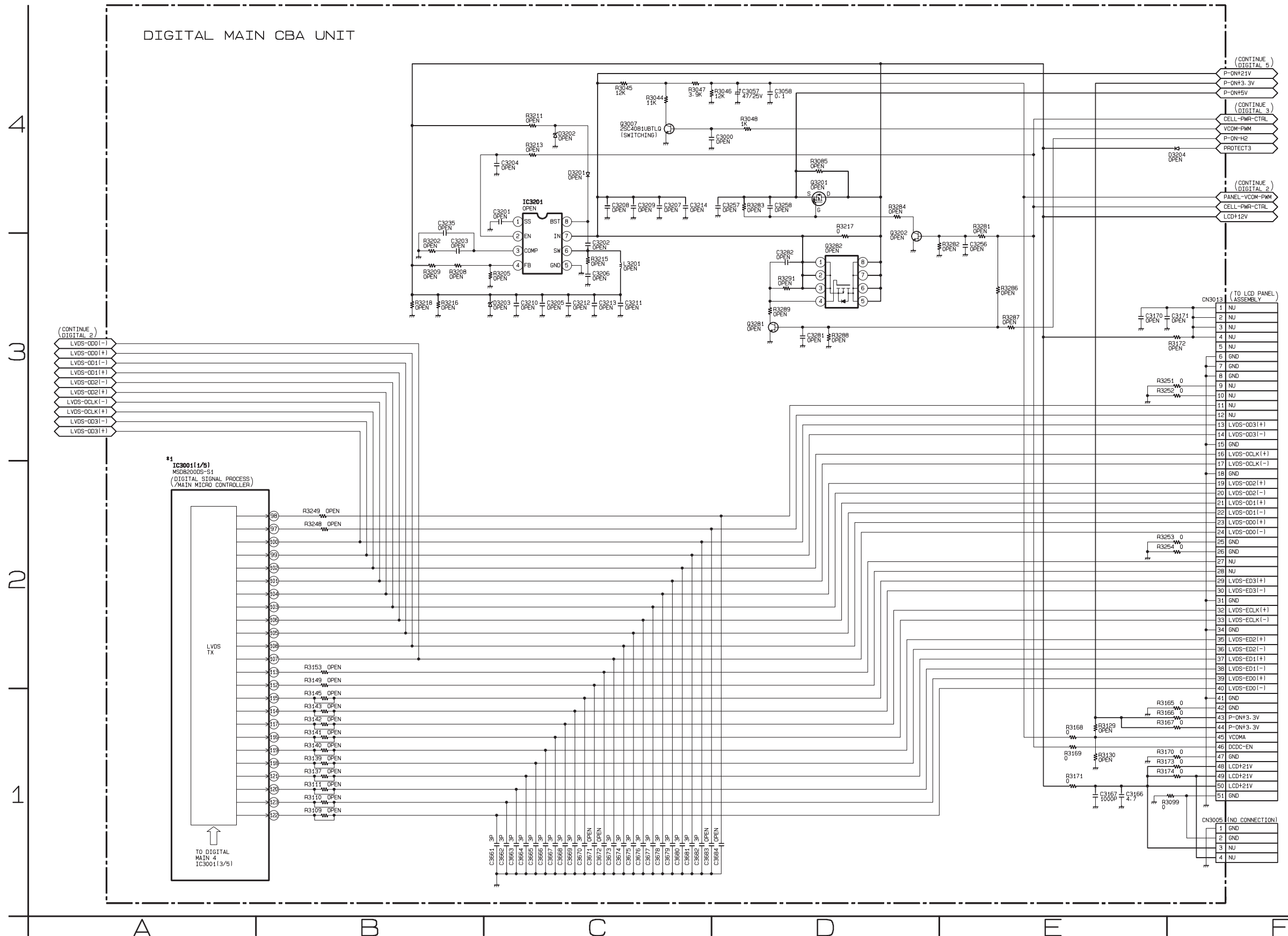


Digital Main 1 Schematic Diagram [TYPE C]

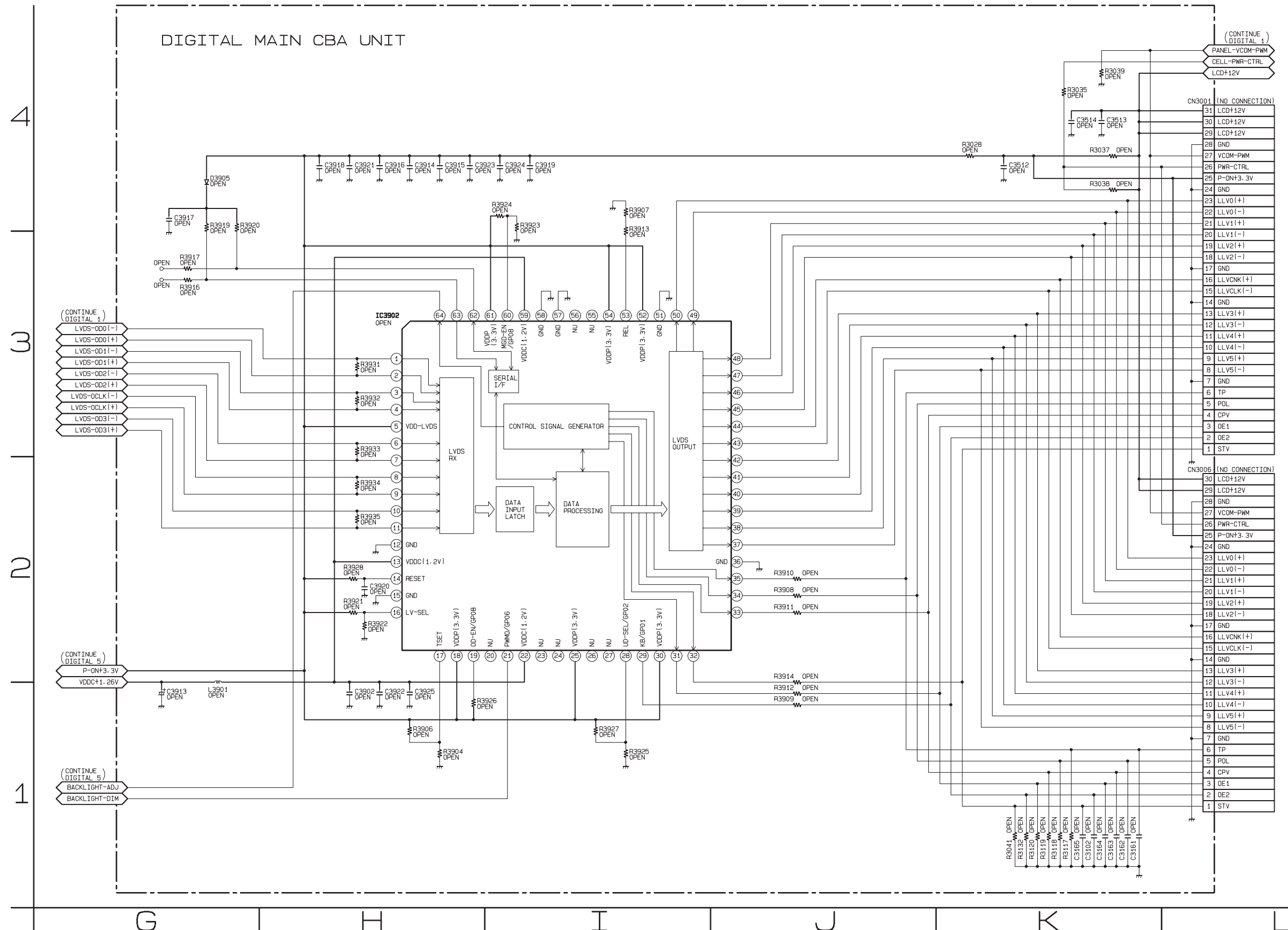
***1 NOTE:**

The order of pins shown in this diagram is different from that of actual IC3001.

IC3001 is divided into five and shown as IC3001 (1/5) ~ IC3001 (5/5) in this Digital Main Schematic Diagram Section.



Digital Main 2 Schematic Diagram [TYPE C]



4

3

2

1



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

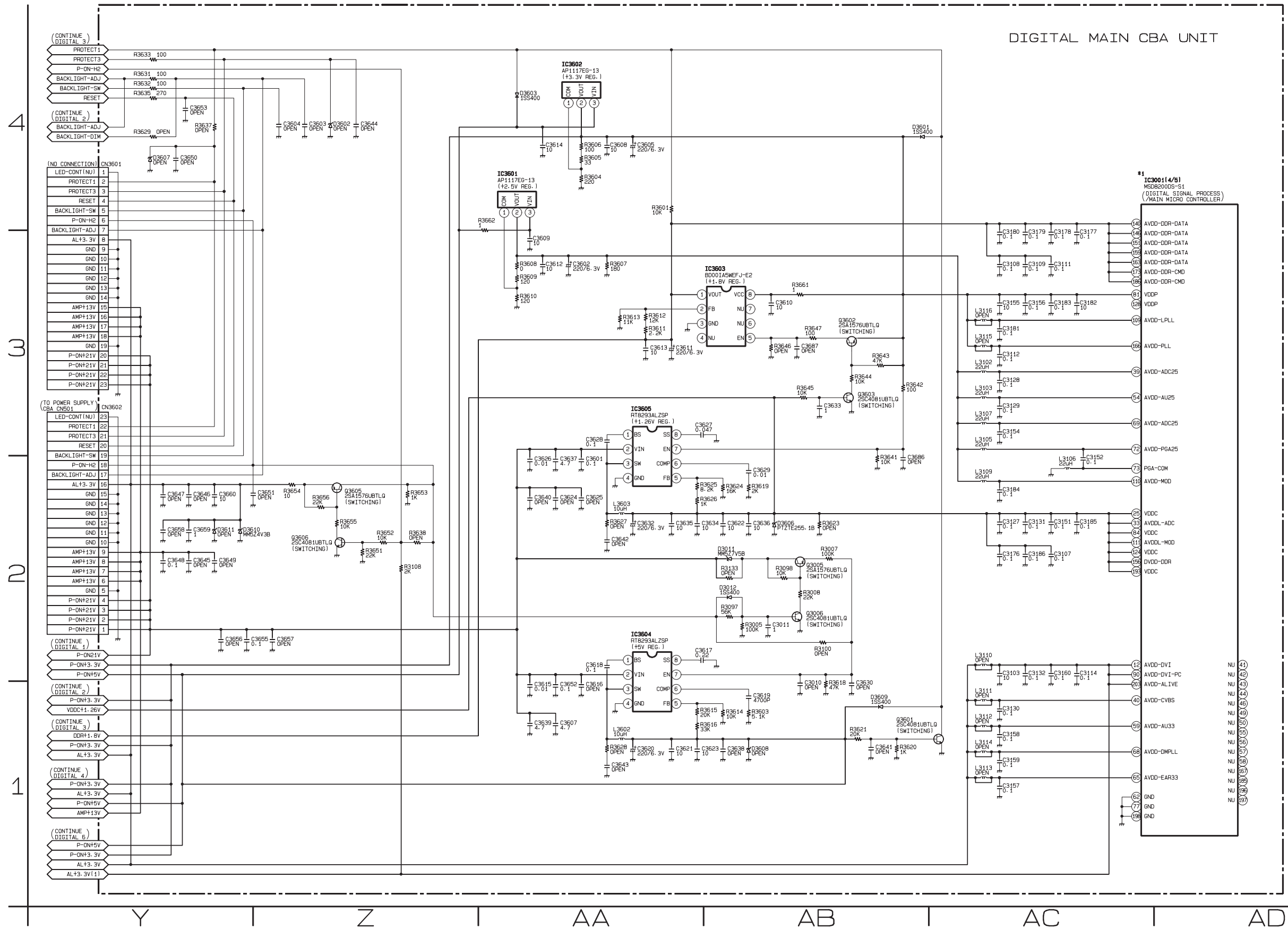
IC3001 is divided into five and shown as IC3001 (1/5) ~ IC3001 (5/5) in this Digital Main Schematic Diagram Section.

Digital Main 5 Schematic Diagram [TYPE C]

***1 NOTE:**

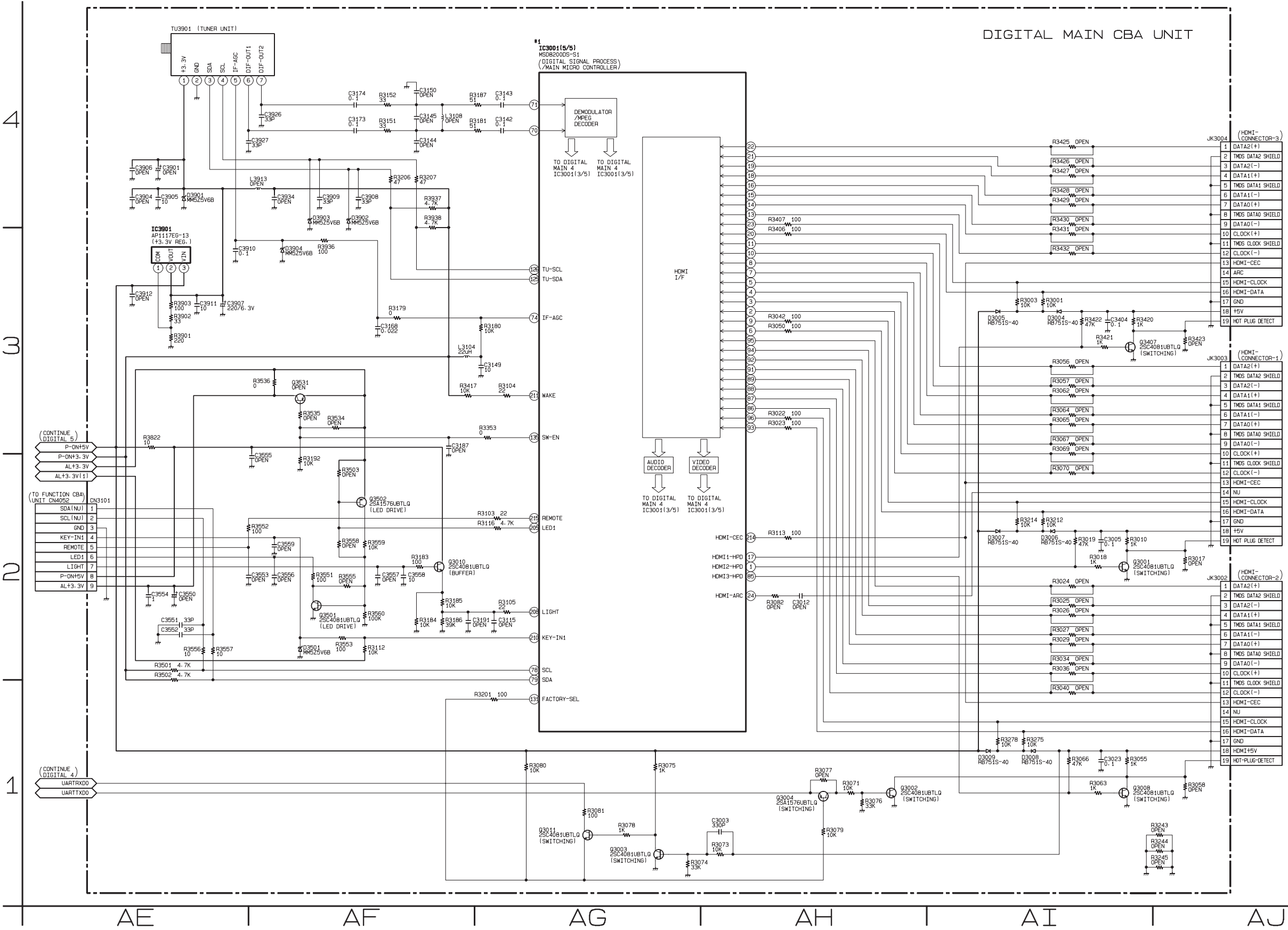
The order of pins shown in this diagram is different from that of actual IC3001.

IC3001 is divided into five and shown as IC3001 (1/5) ~ IC3001 (5/5) in this Digital Main Schematic Diagram Section.



Digital Main 6 Schematic Diagram [TYPE C]

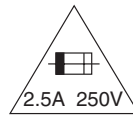
*1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3001.
IC3001 is divided into five and shown as IC3001 (1/5) ~ IC3001 (5/5) in this Digital Main Schematic Diagram Section.



Power Supply CBA Top View

CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F602) 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.



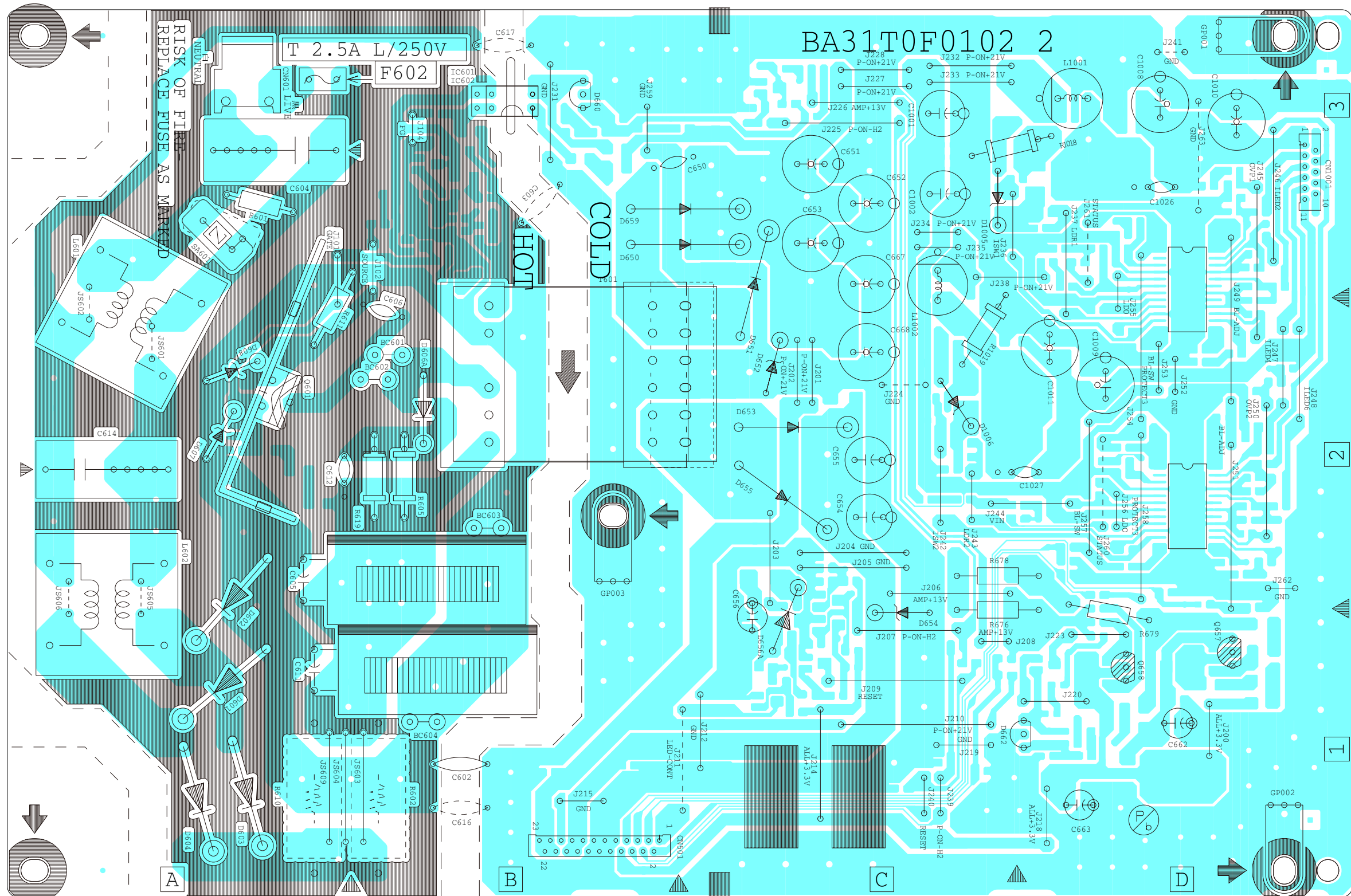
CAUTION ! : For continued protection against risk of fire, replace only with same type 2.5A, 250V fuse.

ATTENTION : Utiliser un fusible de rechange de même type de 2.5A, 250V.

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.

NOTE:

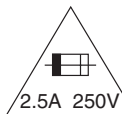
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



Power Supply CBA Bottom View

CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F602) 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.



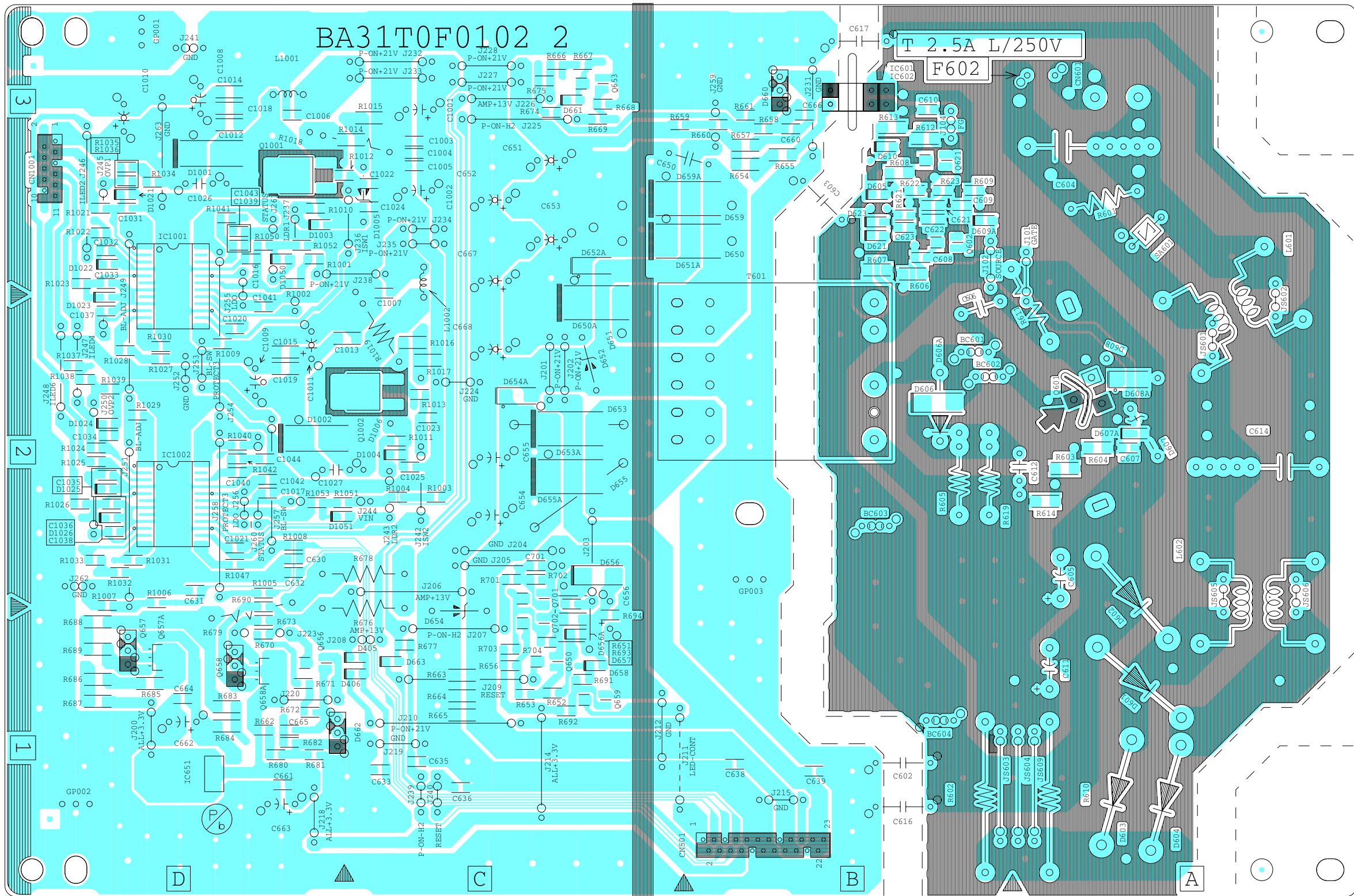
CAUTION ! : For continued protection against risk of fire,
replace only with same type 2.5A, 250V fuse.

ATTENTION : Utiliser un fusible de rechange de même type de 2.5A, 250V.

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.

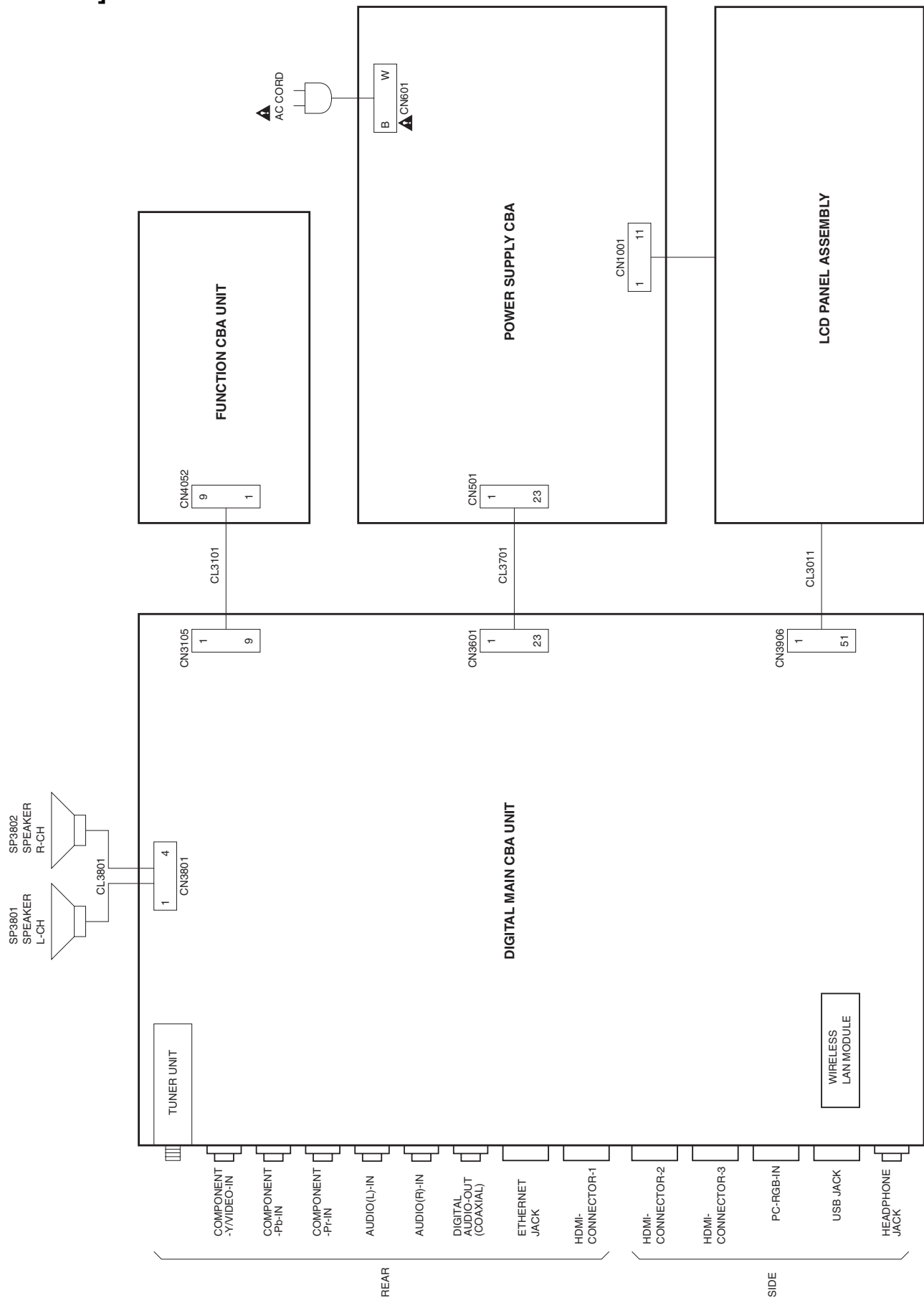
NOTE:

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

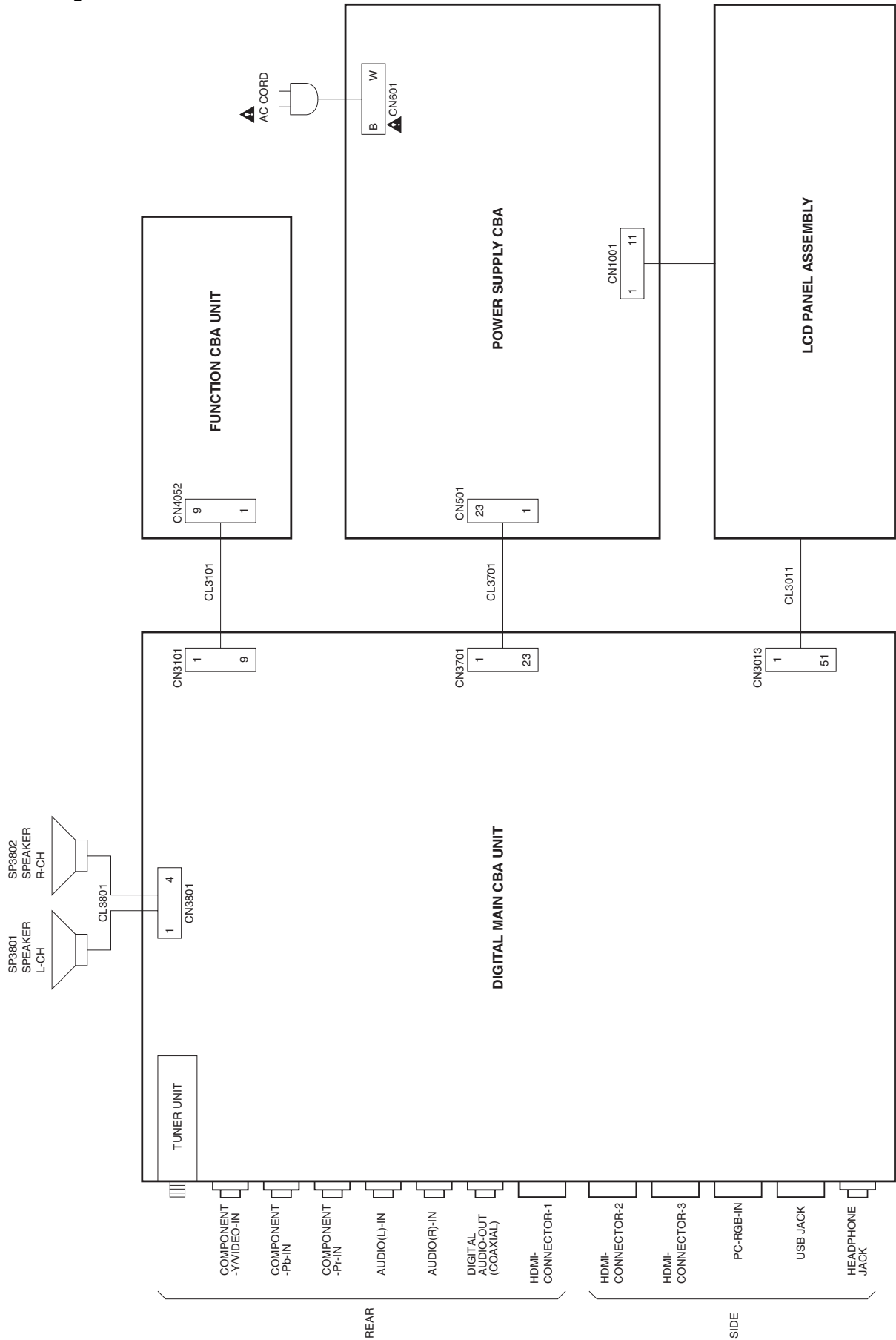


WIRING DIAGRAM

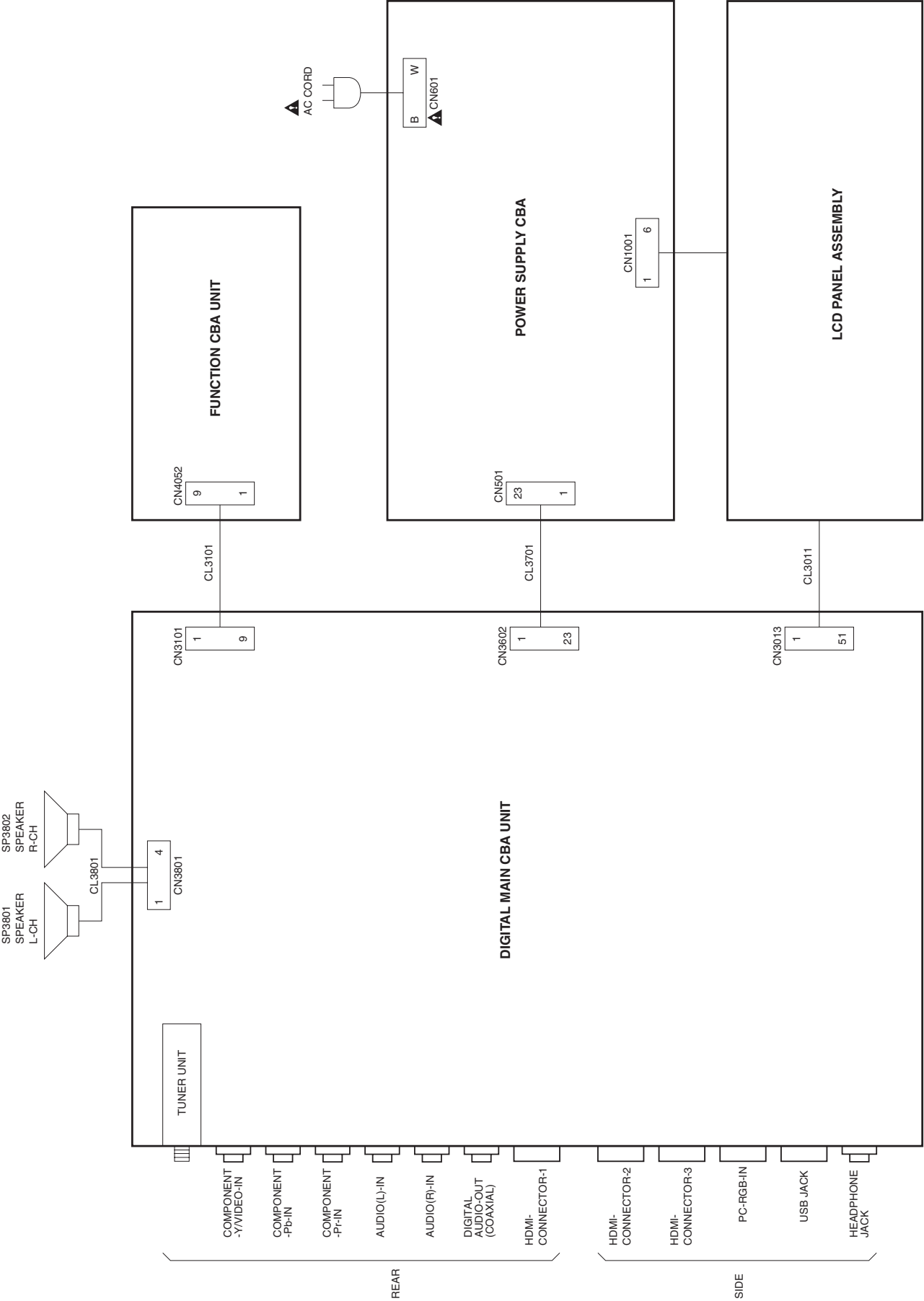
[TYPE A]



[TYPE B]

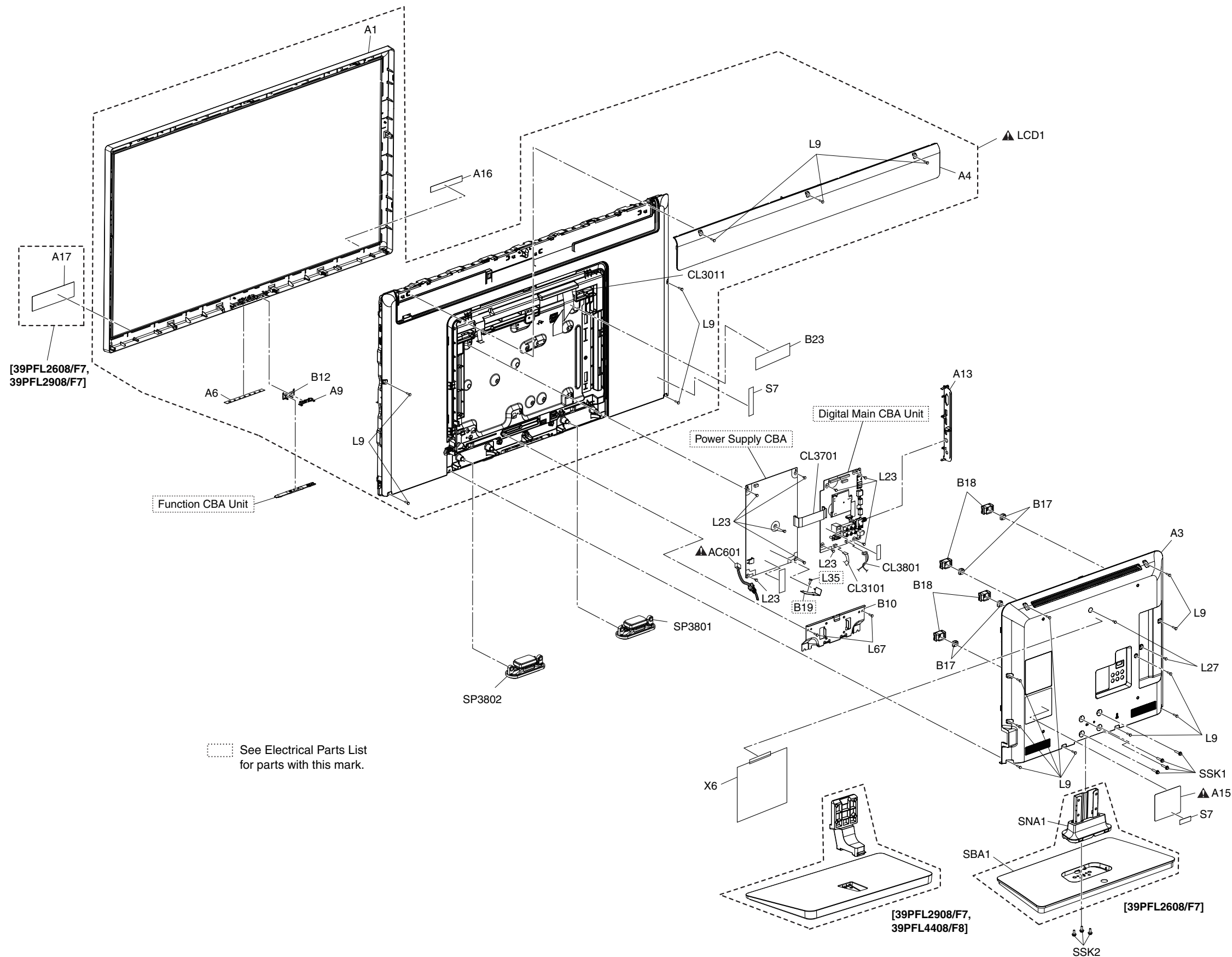


[TYPE C]

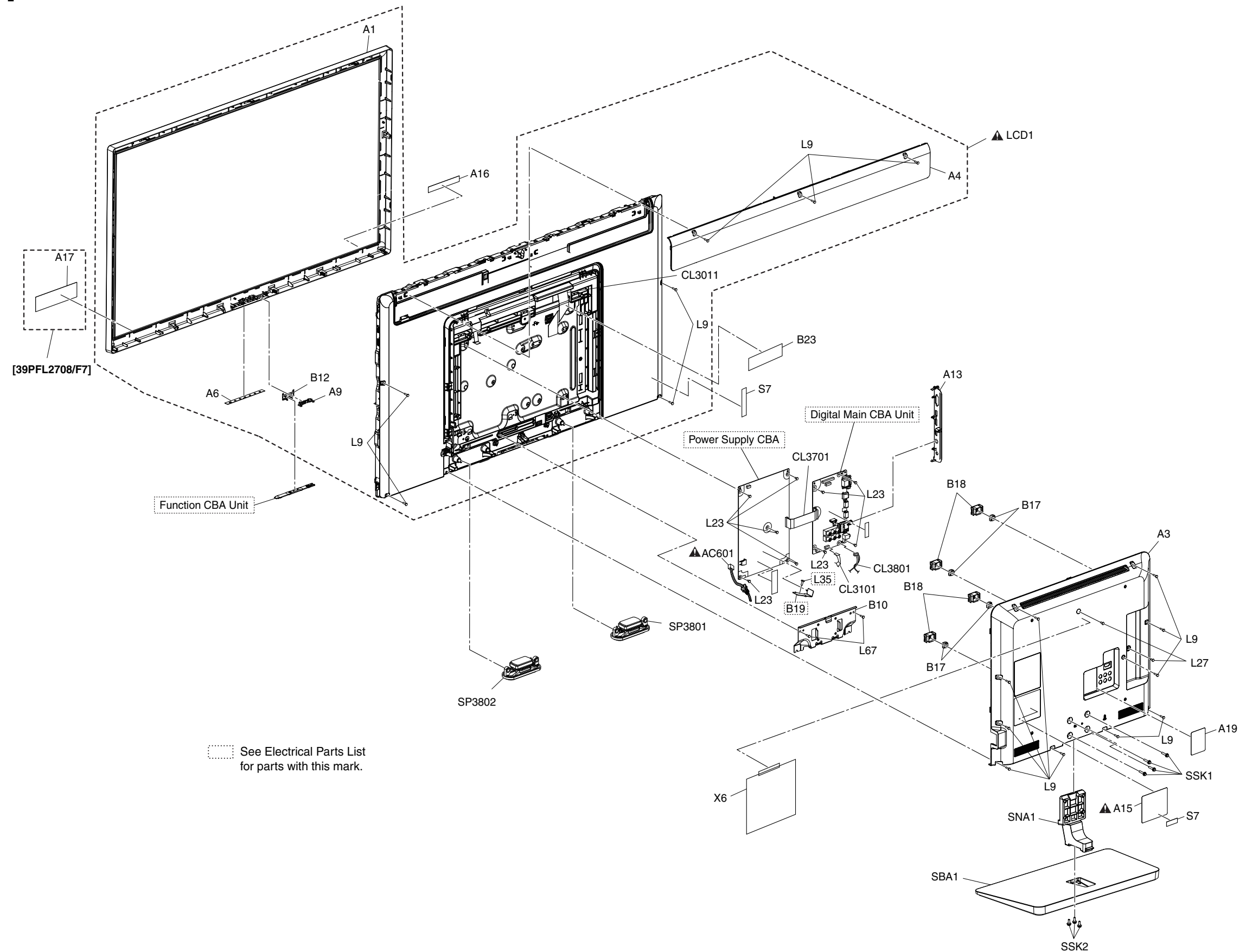


EXPLODED VIEWS

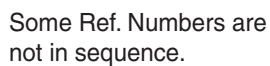
[TYPE A]



[TYPE B, C]



Packing



TYPE A

PARTS LIST [39PFL2608/F7 (Serial No.: DS1)]

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.
A3	REAR COVER A3RP0UH	1EM030705
A13	JACK HOLDER A37U0UH	1EM334736
A15▲	RATING LABEL A3RTBUH	-----
A16	LOGO LABEL A3RM0UT	-----
A17	ENERGY GUIDE LABEL A3RTBUH	-----
AC601▲	AC CORD W/O A GND WIRE UL/CSA/1700/NO/BLACK	WAC172LTE005
B10	STAND HOLDER A31T0UH	1EM127914
B17	WALL MOUNT BRACKET A11N0UH	1EM434637
B18	WALL MOUNT COVER A2170UT	1EM332137
B23	WIRE LABEL A3AF0UT	-----
CL3101	FFC WIRE ASSEMBLY 9PIN 9PIN/WHITE/130MM	WX1A31T0S102
CL3701	FFC WIRE ASSEMBLY 23PIN 23PIN/WHITE/75MM	WX1A3RP0S101
CL3801	WIRE ASSEMBLY 4PIN 4PIN/320MM&90MM	WX1A31T0C301
L9	SCREW P-TIGHT 3X12 BIND HEAD+ BLK	GBHP3120
L23	SCREW S-TIGHT M3X6 BIND HEAD+	GBJS3060
L27	SCREW S-TIGHT M3X8 BIND HEAD+	GBHS3080
L67	SCREW S-TIGHT M3X10 BIND HEAD+	GBJS3100
SBA1	STAND BASE ASSEMBLY A31T0UH	1EM030366
SNA1	STAND NECK ASSEMBLY A31T0UH	1EM030365
SP3801	SPEAKER MAGNETIC 8Ω8W S0310F15	DS08110XQ003
SP3802	SPEAKER MAGNETIC 8Ω8W S0310F15	DS08110XQ003
SSK1	STAND SCREW KIT A31T0UH(DOUBLE SEMS SCREW M4X20 + BLK)	1ESA34647
SSK2	STAND SCREW KIT A31T0UH(DOUBLE SEMS SCREW M4X10 + BLK)	1ESA34648
PACKING		
S1	CARTON A3RTBUH	2EMC00041
S3	STYROFOAM TOP A31T0UH	1EM030609
S4	STYROFOAM BOTTOM A31T0UH	1EM030610A
S6	SET BAG A31PBUH	2EMC00084
S7	SERIAL NO. LABEL A01PBUH	-----
ACCESSORIES		
X1	POLYETHYLENE BAG HDPE 180X340XT0.03	1EM435579
X2▲	OWNERS MANUAL A3RT0UH	2EMN00086
X3	REMOTE CONTROL UNIT YKF340-001	URMT39JHG003
X4	BATTERY R03-B500/01S	XB0M451CZB01
X6	QUICK START GUIDE A3RT0UH	1EMN30387
X7	REGISTRATION CARD(PHILIPS) A11P4UH	1EMN27321

LCD PANEL ASSEMBLY

Ref. No.	Description	Part No.
LCD1▲	LCD PANEL ASSEMBLY	U30T1P1
	Consists of the following	
A1	FRONT CABINET A31T2UH	1EM127996
A4	X-PCB COVER A31T0UH	1EM228323
A6	CONTROL PLATE A31F0UT	1EM334317
A9	SENSOR LENS A31F0UT	1EM334217
B12	SHIELD PLATE A31F0UT	1EM334218
CL3011	FFC WIRE ASSEMBLY 51PIN(W/SHIELD) 51P/FFC/SHIELD/307MM	WX1A3RT0P402
L9	SCREW P-TIGHT 3X12 BIND HEAD+ BLK	GBHP3120
	LCD MODULE	-----

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 MAIN CBA UNIT

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A3RTBMMA-007
CN3701	WIRELESS LAN MODULE WM5504	UWLMDLACM002
IC3101	IC MAIN PH1-SLD8 MN2WS0270EA	QSCA0R0MS053
IC3102	IC NAND FLASH 1GB K9F1G08U0D-SCB0	NSCA0R0SM037
IC3103	16KBIT EEPROM M24C16-WMN6TTP	NSZBA0TSS259
IC3601	IC RESET IC-PST8429UR	QSCA0T0MM075
IC3602	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3603	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3604	IC DCDC CONVERTER RT8293ALZSP	NSCA0T00B017
IC3607	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3701	IC USB HIGH-SIDE SW AP2151WG-7/SOT25/5PI	NSCA0TDES015
IC3803	IC D-CLASS AUDIO POWER AMPLIFI TPA3110D2PWPR	NSCA0T0TY073
TU3001	TUNER UNIT U9001UH	U9001UH
	When you replace one of the below ICs on this CBA, replace with the one that has the same part number. Do not mix ICs with different part number.	
IC3401	IC 1GB DDR3 SDRAM K4B1G1646G-BCH9	NSCA0R0SM043
IC3402	IC 1GB DDR3 SDRAM K4B1G1646G-BCH9	NSCA0R0SM043
	or	
IC3401	IC 1GB DDR3 SDRAM H5TQ1G63DFR-H9C	NSCA0R0HY018
IC3402	IC 1GB DDR3 SDRAM H5TQ1G63DFR-H9C	NSCA0R0HY018
	or	
IC3401	IC 1GB DDR3 SDRAM H5TQ1G63EFR-H9C	NSCA0R0HY035
IC3402	IC 1GB DDR3 SDRAM H5TQ1G63EFR-H9C	NSCA0R0HY035

FUNCTION CBA UNIT

Ref. No.	Description	Part No.
	FUNCTION CBA UNIT	A3RT0MSW-001
IC4051	IC LIGHT SENSOR PH5502B2NA1-E4	QP1ZPH5502B2

POWER SUPPLY CBA

Ref. No.	Description	Part No.
	POWER SUPPLY CBA Consists to the following	A3RT0MPW-002

Ref. No.	Description	Part No.
CAPACITORS		
C602▲	SAFTY CAP. 2200pF/250V KX	CA2E222MR101
C604▲	CAP METALLIZED FILM 0.22μF/310V /K/LE-MX	CTA2240DC001
C605	CAP ELE 220μF/200V/M/85	CEB2210S6016
C606	CERAMIC CAP. 680pF/2kV	CA3D681PAN04
C607	CHIP CERAMIC CAP. B K 1200pF/50V	CHD1JK30B122
C608	CHIP CERAMIC CAP.(1608) B K 0.033μF/50V	CHD1JK30B333
C609	CHIP CERAMIC CAP. B K 0.068μF/50V	CHD1JK30B683
C610	CHIP CERAMIC CAP. B K 1500pF/50V	CHD1JK30B152
C611	CAP ELE 220μF/200V/M/85	CEB2210S6016
C612	CAP CERAMIC HV 1500PF 1kV B K	CA3A152TE006
C614▲	CAP METALLIZED FILM 0.22μF/310V /K/LE-MX	CTA2240DC001
C623	CHIP CERAMIC CAP.(1608) B K 4.7μF/6.3V	CHD0KK30B475
C650	CAP CERAMIC HV 2200pF/1kV B K	CA3A222TE006
C651	CAP ELE 470μF/25V/M/85	CED4710V8006
C652	CAP ELE 470μF/25V/M/85	CED4710V8006
C653	CAP ELE 470μF/25V/M/85	CED4710V8006
C654	CAP ELE 470μF/16V/M/85	CEC4710V8006
C655	CAP ELE 470μF/16V/M/85	CEC4710V8006
C656	CAP ELE 4.7μF/50V/M/85	CEF4R70V8006
C660	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C663	CAP ELE 100μF/10V/M/85	CEB1010V8006
C665	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C667	CAP ELE 470μF/25V/M/85	CED4710V8006
C668	CAP ELE 470μF/25V/M/85	CED4710V8006
C1001	CAP ELE 330μF/25V/M/85	CED3310V8006
C1002	CAP ELE 330μF/25V/M/85	CED3310V8006
C1003	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1004	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1006	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1007	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1008	CAP ELE 47μF/100V/M/85	CEH4700V8006
C1009	CAP ELE 47μF/100V/M/85	CEH4700V8006
C1010	CAP ELE 47μF/100V/M/85	CEH4700V8006
C1011	CAP ELE 47μF/100V/M/85	CEH4700V8006
C1014	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
C1015	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
C1016	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1017	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1018	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
C1019	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
C1022	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1023	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1026	CAP CERAMIC HV 220pF/500V/B/K	CCA221YNA001
C1027	CAP CERAMIC HV 220pF/500V/B/K	CCA221YNA001
C1037	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1038	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1041	CHIP CERAMIC CAP.(1608) B K 4.7μF/6.3V	CHD0KK30B475
C1042	CHIP CERAMIC CAP.(1608) B K 4.7μF/6.3V	CHD0KK30B475
C1043	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1044	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
CONNECTORS		
CN501	FFC CONNECTOR IMSA-9615S-23A-PP-A	JC96J23ER007
CN601▲	CONNECTOR S2P3-VH (LF)(SN)	JCVHC02JG002
CN1001	FFC CONNECTOR IMSA-9615S-11A-PP-A	JC96J11ER007
DIODES		
D601	DIODE 1N5406BH	NDL1001N5406
D602	DIODE 1N5406BH	NDL1001N5406
D603	DIODE 1N5406BH	NDL1001N5406

Ref. No.	Description	Part No.
D604	DIODE 1N5406BH	NDL1001N5406
D605	ZENER DIODE MM5Z6V2B	ND1BMM5Z6V2B
D606	DIODE FAST RECOVERY RS1J1TD	ND1Z0RS1J1TD
D607A▲	ZENER DIODE SMD TFZVTR27B	QD1B00TFZV27
D608▲	DIODE ZENER 1ZB36BB	NDWZ0001ZB36
D609A▲	DIODE SCHOTTKY SMD CES520.L3F(D	QD1Z00CES520
D610	SWITCHING DIODE 1SS400 TE61	QD1Z001SS400
D621	SWITCHING DIODE 1SS400 TE61	QD1Z001SS400
D623	ZENER DIODE MM5Z30B	ND1B0MM5Z30B
D650	DIODE SCHOTTKY SB3150BH	NDWZ00SB3150
D651	DIODE SCHOTTKY SB3150BH	NDWZ00SB3150
D652▲	DIODE ZENER 1ZB30BB	NDWZ0001ZB30
D653	DIODE SCHOTTKY SB3A0BH	NDWZ000SB3A0
D654▲	DIODE ZENER 1ZB20BB	NDWZ0001ZB20
D655	DIODE SCHOTTKY SB3A0BH	NDWZ000SB3A0
D656	DIODE FAST RECOVERY RS1BJTD	ND1Z0RS1BJTD
D657	ZENER DIODE MM5Z11B	ND1B0MM5Z11B
D659	DIODE SCHOTTKY SB3150BH	NDWZ00SB3150
D660	IC SHUNT REGULATOR SL431A-AT	NSZBA0TAUK01
D661	SWITCHING DIODE 1SS400 TE61	QD1Z001SS400
D662	IC SHUNT REGULATOR SL431A-AT	NSZBA0TAUK01
D1001	DIODE SCHOTTKY SMD SK210TD	ND1Z0SK210TD
D1002	DIODE SCHOTTKY SMD SK210TD	ND1Z0SK210TD
D1003	SWITCHING DIODE 1SS400 TE61	QD1Z001SS400
D1004	SWITCHING DIODE 1SS400 TE61	QD1Z001SS400
ICS		
IC602▲	IC PHOTOCOUPLER TLP781F(D4-FUNBLL F)	QPEL781FBLLF
IC1001	IC LED BACKLIGHT CONTROLLER HA7209PC /SOP /24PIN	NSCA0T00H003
IC1002	IC LED BACKLIGHT CONTROLLER HA7209PC /SOP /24PIN	NSCA0T00H003
COILS		
L601▲	LINE FILTER JLB24136	LLEG0Z0XB032
L602▲	LINE FILTER JLB24136	LLEG0Z0XB032
L1001	POWER INDUCTORS CWKBNP-220K	LLF2200KV002
L1002	POWER INDUCTORS CWKBNP-220K	LLF2200KV002
TRANSISTORS		
Q601▲	FET MOS TK10A50D(LS1FN3 QM	QEEZTK10A50D
Q602▲	NPN TRANSISTOR SMD 2SC5344SY	NQZY2SC5344S
Q621	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q650	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q653	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q656	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q658	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q1001	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
Q1002	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
RESISTORS		
R601▲	RES. CARBON FILM J 1/2W J 1.2M Ω	RCX2125T1003
R603	RES CHIP 3216 1/4W J 560k Ω	RRX4564HH034
R604	RES CHIP 3216 1/4W J 560k Ω	RRX4564HH034
R606	RES CHIP 3216 1/4W J 120 Ω	RRX4121HH034
R607	RES CHIP 3216 1/4W J 120 Ω	RRX4121HH034
R608	RES CHIP 3216 1/4W J 1.2k Ω	RRX4122HH034
R609	RES CHIP 1608 1/10W J 100 Ω	RRXA101HH013
R611▲	METAL OXIDE RES. 2W J 0.3 Ω	RN02R30ZU001
R612	RES CHIP 3216 1/4W J 3.9k Ω	RRX4392HH034
R613	RES CHIP 3216 1/4W J 270 Ω	RRX4271HH034
R614	RES CHIP 3216 1/4W J 560k Ω	RRX4564HH034
R619	METAL OXIDE FILM RES. 1W J 100k Ω	RN01104ZU001
R621	RES CHIP 1608 1/10W J 560 Ω	RRXA561HH013
R622	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R623	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R651▲	RES CHIP 1608 1/10W J 1.0 Ω	RRXA1R0HH013


Ref. No.	Description	Part No.
R652	RES CHIP 1608 1/10W F 100k Ω	RTW1003HH008
R653	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R654	RES CHIP 3216 1/4W J 180 Ω	RRX4181HH034
R655	RES CHIP 3216 1/4W J 180 Ω	RRX4181HH034
R656	RES CHIP 1608 1/10W F 33.0k Ω	RTW3302HH008
R657	RES CHIP 3216 1/4W J 3.9k Ω	RRX4392HH034
R658	RES CHIP 1608 1/10W J 2.7k Ω	RRXA272HH013
R659	RES CHIP 1608 1/10W F 22.0k Ω	RTW2202HH008
R660	RES CHIP 1608 1/10W F 2.70k Ω	RTW2701HH008
R661	RES CHIP 1608 1/10W F 3.30k Ω	RTW3301HH008
R662	RES CHIP 1608 1/10W F 3.30k Ω	RTW3301HH008
R663	RES CHIP 3216 1/4W J 4.7k Ω	RRX4472HH034
R666	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R667	RES CHIP 1608 1/10W J 8.2k Ω	RRXA822HH013
R668	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R669	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R670	RES CHIP 1608 1/10W J 270 Ω	RRXA271HH013
R671	RES CHIP 1608 1/10W J 270 Ω	RRXA271HH013
R672	RES CHIP 1608 1/10W J 270 Ω	RRXA271HH013
R677	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R680	RES CHIP 1608 1/10W J 100 Ω	RRXA101HH013
R681	RES CHIP 1608 1/10W F 10.0k Ω	RTW1002HH008
R682	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R690▲	RES CHIP 1608 1/10W J 1.5 Ω	RRXA1R5HH013
R694	RES CHIP 1608 1/10W J 33k Ω	RRXA333HH013
R1001	RES CHIP 1608 1/10W J 360 Ω	RRXA361HH013
R1002	RES CHIP 1608 1/10W J 360 Ω	RRXA361HH013
R1003	RES CHIP 1608 1/10W J 360 Ω	RRXA361HH013
R1004	RES CHIP 1608 1/10W J 360 Ω	RRXA361HH013
R1005	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R1006	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1007	RES CHIP 1608 1/10W J 100k Ω	RRXA104HH013
R1008	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1009	RES CHIP 1608 1/10W J 100k Ω	RRXA104HH013
R1010	RES CHIP 1608 1/10W J 10 Ω	RRXA100HH013
R1011	RES CHIP 1608 1/10W J 10 Ω	RRXA100HH013
R1012	RES CHIP 1608 1/10W J 200 Ω	RRXA201HH013
R1013	RES CHIP 1608 1/10W J 200 Ω	RRXA201HH013
R1018	METAL OXIDE FILM RES. 2W J 0.18 Ω	RN02R18ZU001
R1019	METAL OXIDE FILM RES. 2W J 0.18 Ω	RN02R18ZU001
R1021	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1022	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1023	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1024	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1025	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1026	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1027	RES CHIP 1608 1/10W F 13.0k Ω	RTW1302HH008
R1028	RES CHIP 1608 1/10W F 330 Ω	RTW3300HH008
R1029	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1030	RES CHIP 1608 1/10W F 100k Ω	RTW1003HH008
R1031	RES CHIP 1608 1/10W F 100k Ω	RTW1003HH008
R1032	RES CHIP 1608 1/10W F 13.0k Ω	RTW1302HH008
R1033	RES CHIP 1608 1/10W F 330 Ω	RTW3300HH008
R1034	RES CHIP 1608 1/10W F 510k Ω	RTW5103HH008
R1035	RES CHIP 1608 1/10W F 430k Ω	RTW4303HH008
R1036	RES CHIP 1608 1/10W F 27.0k Ω	RTW2702HH008
R1037	RES CHIP 1608 1/10W F 510k Ω	RTW5103HH008
R1038	RES CHIP 1608 1/10W F 430k Ω	RTW4303HH008
R1039	RES CHIP 1608 1/10W F 27.0k Ω	RTW2702HH008
R1040	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1041	RES CHIP 1608 1/10W F 100 Ω	RTW1000HH008
R1042	RES CHIP 1608 1/10W F 100 Ω	RTW1000HH008
R1047	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014

Ref. No.	Description	Part No.
MISCELLANEOUS		
B19	HEAT SINK PNL A31T0UH	1EM439707
BC601	WIRE CP STP-S-0.50	XZ40F0REN001
BC602	WIRE CP STP-S-0.50	XZ40F0REN001
BC603	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC604	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
F602▲	FUSE TIME RAG SLT250V2.5A	PDGSLB0NG252
JS603	WIRE CP STP-S-0.50	XZ40F0REN001
JS604	WIRE CP STP-S-0.50	XZ40F0REN001
JS609	WIRE CP STP-S-0.50	XZ40F0REN001
L35	SCREW B-TIGHT D3X8 BIND HEAD+	GBJB3080
SA601▲	VARISTOR 10D 471K SVR	NVQZVR10D471
T601▲	TRANS POWER BCK-28F0	LTT2PCMEK058

TYPE A


PARTS LIST [39PFL2608/F7 (Serial No.: DS2)]

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 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
A17	ENERGY GUIDE LABEL A3RTCUH	-----
LCD1 	LCD PANEL ASSEMBLY	U30T9P0

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


Different parts from the original model 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
	POWER SUPPLY CBA	A3RTCMPW-001
R1027	RES CHIP 1608 1/10W F 12.0k Ω	RTW1202HH008
R1028	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1032	RES CHIP 1608 1/10W F 12.0k Ω	RTW1202HH008
R1033	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014

TYPE A


PARTS LIST [39PFL2908/F7 (Serial No.: DS1)]

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 39PFL2608/F7 (Serial No. : DS1)

Ref. No.	Description	Part No.
A15 	RATING LABEL A3RT0UH	-----
A17	ENERGY GUIDE LABEL A3RT0UH	-----
SBA1	STAND BASE ASSEMBLY A31T2UH	1EM030546
SNA1	STAND NECK A31T2UH	1EM030545A
S1	CARTON A3RT0UH	1EM334658

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 39PFL2608/F7 (Serial No. : DS1)

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A3RT0MMA-003

TYPE A



PARTS LIST [39PFL4408/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.

Different parts from the original model 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
A15 	RATING LABEL A3RTAMA	-----
A16	LOGO LABEL A3RFAMA	-----
A17	Not used	-----
SBA1	STAND BASE ASSEMBLY A31T2UH	1EM030546
SNA1	STAND NECK A31T2UH	1EM030545A
S1	CARTON A3RTAMA	2EMC00031
S12	CARTON LABEL A3RTAMA	-----
X2 	OWNERS MANUAL A3RTAMA	2EMN00024A
X6	QUICK START GUIDE A3RTAMA	2EMN00025
X7	Not used	

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 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A3RTAMMA-004

TYPE B




PARTS LIST [39PFL2708/F7 (Serial No.: DS2)]

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 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
A3	REAR COVER A31T0UH	1EM030350
A13	JACK HOLDER A3AU0UH	1EM334651
A15 	RATING LABEL A31T2UH	-----
A16	LOGO LABEL A31M2UT	-----
A17	ENERGY GUIDE LABEL A31T2UH	-----
A19	JACK LABEL A31T0UH	1EM440016
CL3701	FFC WIRE ASSEMBLY 23PIN 23PIN/WHITE/ 110MM	WX1A31T0S103
SBA1	STAND BASE ASSEMBLY A31T2UH	1EM030546
SNA1	STAND NECK A31T2UH	1EM030545A
S1	CARTON A31T2UH	1EM334657
X2 	OWNERS MANUAL A31T2UH	2EMN00084
X3	REMOTE CONTROL UNIT YKF335-001	URMT39JHG001
X6	QUICK START GUIDE A31T2UH	1EMN30381
LCD1 	LCD PANEL ASSEMBLY	U30T1P0
CL3011	FFC WIRE ASSEMBLY 51PIN(W/SHIELD) 51P/ FFC/SHIELD/270MM	WX1A31T0P402

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%

Ref. No.	Description	Part No.
	POWER SUPPLY CBA	A31TBMPW-001
C662	CAP ELE 22µF/50V/M85	CEF2200V8006
IC651	IC REGULATOR AP1117E33G-13/3PIN	NSCA0TDES017
R676	WIRE CP STP-S-0.50	XZ40F0REN001
R678	METAL OXIDE RES. 2W J 0.3 Ω	RN02R30ZU001
R679	METAL OXIDE RES. 2W J 0.3 Ω	RN02R30ZU001
R683	RES CHIP 3216 1/4W 0 Ω	RRX4000HH036
R684	RES CHIP 3216 1/4W 0 Ω	RRX4000HH036


Different parts from the original model 39PFL2608/F7 (Serial No. : DS1)

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A31TCMMA-001
CN3701	Not used	
IC3001	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3002	IC 512MB DDR2 SDRAM K4T51163QJ-BCE7	NSCA0R0SM048
IC3003	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3004	IC REGULATOR BD00IA5WEFJ-E2	QSCA0T0RM233
IC3005	IC DTV-C7V R8A05011BG-U0/256FHP	QSAA0R0HT057
IC3006	32MBIT C-MOS SERIAL FLASH S25FL032P0XMF1010/S	QSCA0R0FJ008
IC3007	IC LDO REGULATOR BD00IC0WEFJ/HTSOP- J8	QSCA0T0RM397
IC3008	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3009	IC RESET IC-PST8429UR	QSCA0T0MM075
IC3011	IC EEPROM BU9883FV-WE2	QSCA0T0RM105
IC3013	IC SINGLE BUS BUFFER 74LVC1G126GW	NSCA0TNXP004
IC3014	IC SINGLE BUS BUFFER 74LVC1G126GW	NSCA0TNXP004
IC3018	IC HDMI SW TMD5351PAGR /PAG-64	NSCA0T0TY068
IC3019	IC USB HIGH-SIDE SW AP2151WG-7/SOT25/ 5PI	NSCA0TDES015
IC3101	Not used	
IC3102	Not used	
IC3103	Not used	
IC3601	IC REGULATOR AP2121AK-3.3TRE1	NSCA0TBCD026
IC3602	Not used	
IC3603	Not used	
IC3604	Not used	
IC3607	Not used	
IC3701	Not used	
IC3801	IC D-CLASS AUDIO POWER AMPLIFI TPA3110D2PWPR	NSCA0T0TY073
IC3803	Not used	
IC3851	IC HEADPHONE AMP BH3547F SOP 8PIN	QSZBA0TRM119
TU3901	TUNER UNIT U9001UH	U9001UH
TU3001	Not used	
IC3401	Not used	
IC3402	Not used	
	FUNCTION CBA UNIT	A31TCMSW-001

TYPE C




PARTS LIST [39PFL2708/F7 (Serial No.: DS1)]

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 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
A3	REAR COVER A31T0UH	1EM030350
A13	JACK HOLDER A3AU0UH	1EM334651
A15 	RATING LABEL A31T2UH	-----
A16	LOGO LABEL A31M2UT	-----
A17	ENERGY GUIDE LABEL A31T2UH	-----
A19	JACK LABEL A31T0UH	1EM440016
CL3701	FFC WIRE ASSEMBLY 23PIN 23PIN/WHITE/ 110MM	WX1A31T0S103
SBA1	STAND BASE ASSEMBLY A31T2UH	1EM030546
SNA1	STAND NECK A31T2UH	1EM030545A
S1	CARTON A31T2UH	1EM334657
X2 	OWNERS MANUAL A31T2UH	2EMN00084
X3	REMOTE CONTROL UNIT YKF335-001	URMT39JHG001
X6	QUICK START GUIDE A31T2UH	1EMN30381
LCD1 	LCD PANEL ASSEMBLY	U30T1P0
CL3011	FFC WIRE ASSEMBLY 51PIN(W/SHIELD) 51P/ FFC/SHIELD/270MM	WX1A31T0P402


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%

Ref. No.	Description	Part No.
R662	Not used	
R670	Not used	
R671	Not used	
R672	Not used	
R676	METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7ZU001
R678	METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7ZU001
R679	METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7ZU001
R680	Not used	
R681	Not used	
R682	Not used	
R683	RES CHIP 3216 1/4W J 3.9 Ω	RRX43R9HH034
R684	RES CHIP 3216 1/4W J 3.9 Ω	RRX43R9HH034
R685	RES CHIP 3216 1/4W J 3.3 Ω	RRX43R3HH034
R686	RES CHIP 3216 1/4W J 3.3 Ω	RRX43R3HH034
R687	RES CHIP 3216 1/4W J 3.3 Ω	RRX43R3HH034
R688	RES CHIP 3216 1/4W J 2.2 Ω	RRX42R2HH034
R689	RES CHIP 3216 1/4W J 2.7 Ω	RRX42R7HH034
R690 	Not used	


Different parts from the original model 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A31T2MMA-004
CN3701	Not used	
IC3001	IC MSD8200DS-S1	NSAA0RMST001
IC3002	IC 512MB DDR2 SDRAM K4T51163QJ-BCE7	NSCA0R0SM048
IC3006	IC 32M-BIT SERIAL FLASH MEMORY W25Q32FVSSIG	NSCA0R0ZM018
IC3009	IC RESET IC-PST8429UR	QSCA0T0MM075
IC3019	IC USB HIGH-SIDE SW AP2151WG-7/SOT25/5PI	NSCA0TDES015
IC3101	Not used	
IC3102	Not used	
IC3103	Not used	
IC3601	REGULATOR AP1117EG-13	NSCA0TDES012
IC3602	REGULATOR AP1117EG-13	NSCA0TDES012
IC3603	IC REGULATOR BD00IA5WEFJ-E2	QSCA0T0RM233
IC3605	IC DCDC CONVERTER RT8293ALZSP	NSCA0T00B017
IC3607	Not used	
IC3701	Not used	
IC3801	IC D-CLASS AUDIO POWER AMPLIFI TPA3110D2PWPR	NSCA0T0TY073
IC3803	Not used	
IC3901	REGULATOR AP1117EG-13	NSCA0TDES012
TU3001	Not used	
TU3901	TUNER UNIT U9001UH	U9001UH
IC3401	Not used	
IC3402	Not used	
	FUNCTION CBA UNIT	A31T2MSW-001
	POWER SUPPLY CBA	A31T0MPW-002
C662	CAP ELE 22µF/50V/M/85	CEF2200V8006
C665	Not used	
D662	Not used	
IC651	IC REGULATOR AP1117E33G-13/3PIN	NSCA0TDES017
Q656	Not used	
Q657	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q658	Not used	

TYPE C




PARTS LIST [39PFL4208/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.

Different parts from the original model 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
A3	REAR COVER A31T0UH	1EM030350
A13	JACK HOLDER A3AU0UH	1EM334651
A15 	RATING LABEL A31TAMA	-----
A16	LOGO LABEL A31MAMA	-----
A17	Not used	-----
A19	JACK LABEL A31T0UH	1EM440016
CL3701	FFC WIRE ASSEMBLY 23PIN 23PIN/WHITE/ 110MM	WX1A31T0S103
SBA1	STAND BASE ASSEMBLY A31T2UH	1EM030546
SNA1	STAND NECK A31T2UH	1EM030545A
S1	CARTON A31TAMA	2EMC00014
S12	CARTON LABEL A31TAMA	-----
X2 	OWNERS MANUAL A31TAMA	1EMN30390
X3	REMOTE CONTROL UNIT YKF335-001	URMT39JHG001
X6	QUICK START GUIDE A31TAMA	1EMN30391
X7	Not used	
LCD1 	LCD PANEL ASSEMBLY	U30T1P0
CL3011	FFC WIRE ASSEMBLY 51PIN(W/SHIELD) 51P/ FFC/SHIELD/270MM	WX1A31T0P402


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%

Ref. No.	Description	Part No.
R662	Not used	
R670	Not used	
R671	Not used	
R672	Not used	
R676	METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7ZU001
R678	METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7ZU001
R679	METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7ZU001
R680	Not used	
R681	Not used	
R682	Not used	
R683	RES CHIP 3216 1/4W J 3.9 Ω	RRX43R9HH034
R684	RES CHIP 3216 1/4W J 3.9 Ω	RRX43R9HH034
R685	RES CHIP 3216 1/4W J 3.3 Ω	RRX43R3HH034
R686	RES CHIP 3216 1/4W J 3.3 Ω	RRX43R3HH034
R687	RES CHIP 3216 1/4W J 3.3 Ω	RRX43R3HH034
R688	RES CHIP 3216 1/4W J 2.2 Ω	RRX42R2HH034
R689	RES CHIP 3216 1/4W J 2.7 Ω	RRX42R7HH034
R690 	Not used	

Different parts from the original model 39PFL2608/F7 (Serial No.: DS1)

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A31TAMMA-002
CN3701	Not used	
IC3001	IC MSD8200DS-S1	NSAA0RMST001
IC3002	IC 512MB DDR2 SDRAM K4T51163QJ-BCE7	NSCA0R0SM048
IC3006	IC 32M-BIT SERIAL FLASH MEMORY W25Q32FVSSIG	NSCA0R0ZM018
IC3009	IC RESET IC-PST8429UR	QSCA0T0MM075
IC3019	IC USB HIGH-SIDE SW AP2151WG-7/SOT25/5PI	NSCA0TDES015
IC3101	Not used	
IC3102	Not used	
IC3103	Not used	
IC3601	REGULATOR AP1117EG-13	NSCA0TDES012
IC3602	REGULATOR AP1117EG-13	NSCA0TDES012
IC3603	IC REGULATOR BD00IA5WEFJ-E2	QSCA0T0RM233
IC3605	IC DCDC CONVERTER RT8293ALZSP	NSCA0T00B017
IC3607	Not used	
IC3701	Not used	
IC3801	IC D-CLASS AUDIO POWER AMPLIFI TPA3110D2PWPR	NSCA0T0TY073
IC3803	Not used	
IC3901	REGULATOR AP1117EG-13	NSCA0TDES012
TU3001	Not used	
TU3901	TUNER UNIT U9001UH	U9001UH
IC3401	Not used	
IC3402	Not used	
	FUNCTION CBA UNIT	A31T2MSW-001
	POWER SUPPLY CBA	A31T0MPW-002
C662	CAP ELE 22µF/50V/M/85	CEF2200V8006
C665	Not used	
D662	Not used	
IC651	IC REGULATOR AP1117E33G-13/3PIN	NSCA0TDES017
Q656	Not used	
Q657	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q658	Not used	

REVISION HISTORY

Chassis PL13.11

- 2013/02/28 39PFL2608/F7 (Serial No.: DS1) Added
- 2013/03/27 39PFL2708/F7 (Serial No.: DS2) Added
- 2013/04/19 39PFL2908/F7 (Serial No.: DS1) Added
- 2013/04/30 39PFL4208/F8 (Serial No.: XA1) Added
- 2013/06/05 39PFL4408/F8 (Serial No.: XA1) Added
- 2013/06/28 39PFL2608/F7 (Serial No.: DS2) Added
- 2013/08/17 39PFL2708/F7 (Serial No.: DS1) Added

COMPARISON LIST OF MODEL NAMES

Chassis PL13.11

39PFL2608/F7	(DS1)	A3RTBUH	TYPE A
	(DS2)	A3RTCUIH	TYPE A
39PFL2708/F7	(DS1)	A31T2UH	TYPE C
	(DS2)	A31TCUIH	TYPE B
39PFL2908/F7	(DS1)	A3RT0UH	TYPE A
39PFL4208/F8	(XA1)	A31TAMA	TYPE C
39PFL4408/F8	(XA1)	A3RTAMA	TYPE A