PHILIPS

40” LCD TV
chassis PL15.01

Service Manual

Contents

TYPE A

40PFL4901/F7	PHILIPS	(Serial No.: ME4)
40PFL4901/F8	PHILIPS	(Serial No.: XA1)
40PFL4911/F8	PHILIPS	(Serial No.: XA1)

TYPE B

FW40D36F	SANYO	(Serial No.: ME3)

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.

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.

TABLE OF CONTENTS

SPECIFICATIONS

< TUNER / NTSC >

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

< TUNER / ATSC >

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

< LCD PANEL >

Description	Condition	Unit	Nominal	Limit
1. Native Pixel Resolution	Horizontal Vertical	pixels pixels	1920 1080	--- ---
2. Brightness (w / filter)	---	cd/m^2	250 [TYPE A] 200 [TYPE B]	---
3. Viewing Angle	Horizontal Vertical	° °	-88 to 88 -88 to 88	--- ---

< VIDEO >

Description	Condition	Unit	Nominal	Limit
1. Over Scan	Horizontal Vertical	% %	5 5	5±5 5±5
2. Color Temperature	--- x y	°K	12000 0.272 0.278	--- ±3% ±3%
	<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 Vertical	line line	400 350	--- ---

< AUDIO >

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

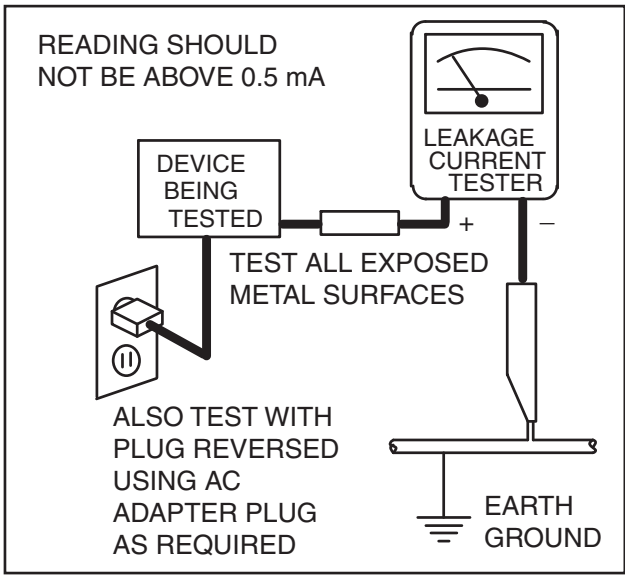
Description	Condition	Unit	Nominal	Limit
1. Audio MAX Output (ATSC 0dBfs)	Lch/Rch	W	8.0/8.0	7.0/7.0
2. Audio Distortion (NTSC)	500mW: Lch/Rch	%	0.5/0.5	3.0/3.0

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.

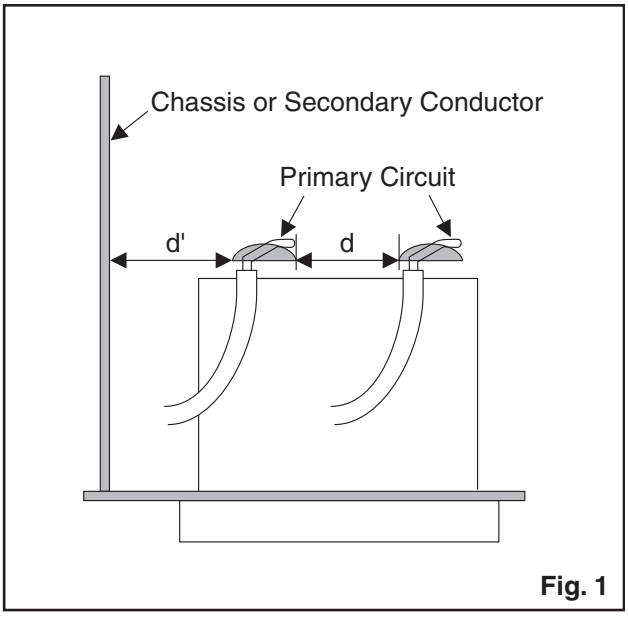


Fig. 1

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.

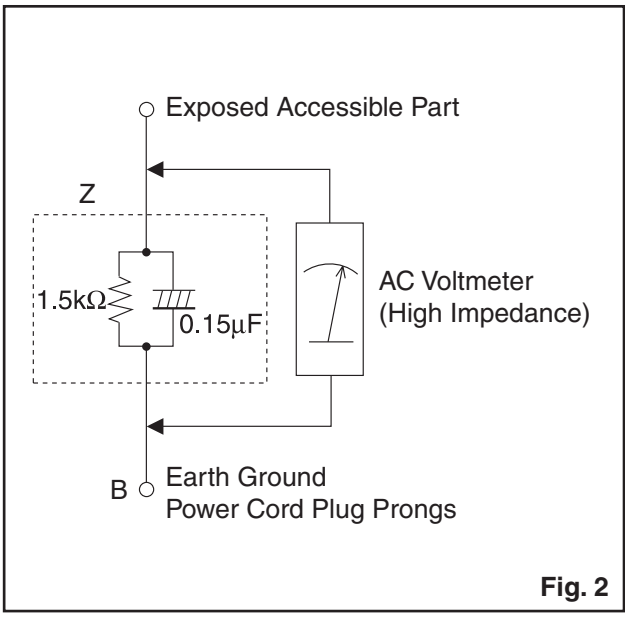


Fig. 2

Table 2: Leakage current ratings for selected areas

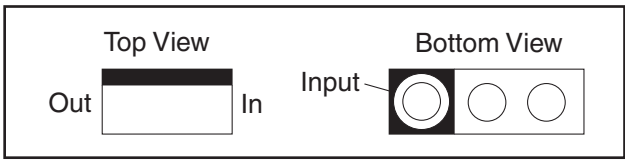
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA rms	Exposed accessible parts

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

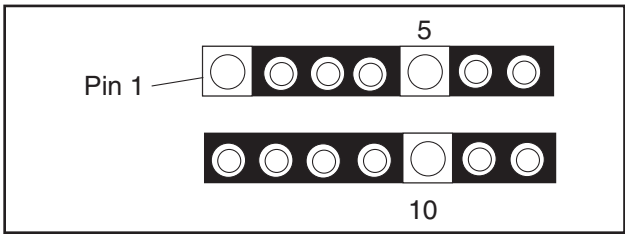
STANDARD NOTES FOR SERVICING

Circuit Board Indications

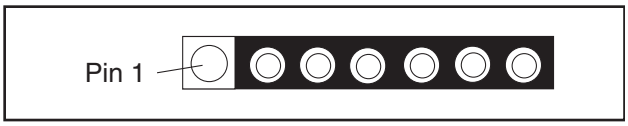
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

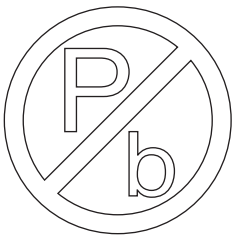


3. The 1st pin of every male connector is indicated as shown.



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)

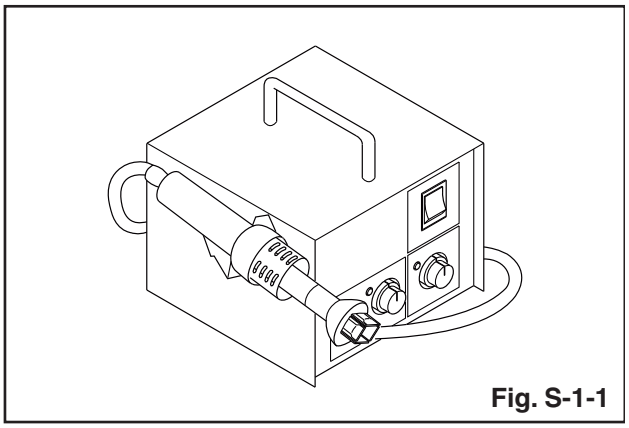


Fig. S-1-1

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.

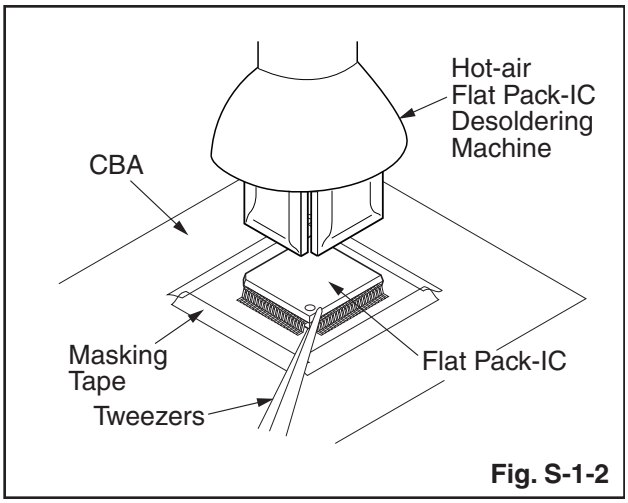


Fig. S-1-2

With Soldering Iron:

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

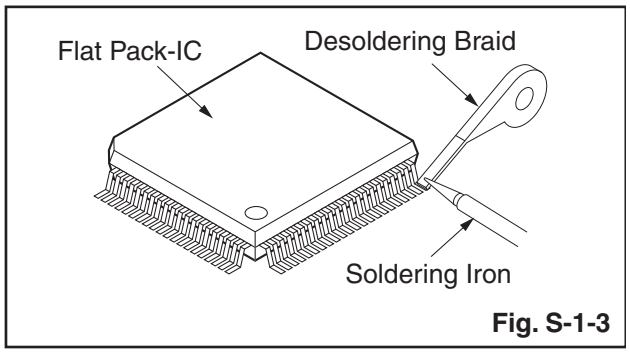


Fig. S-1-3

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)

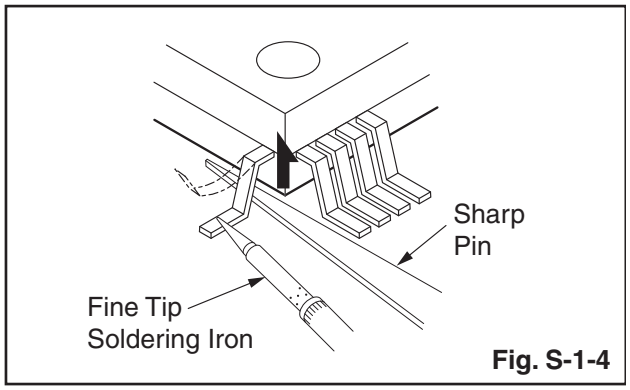


Fig. S-1-4

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.

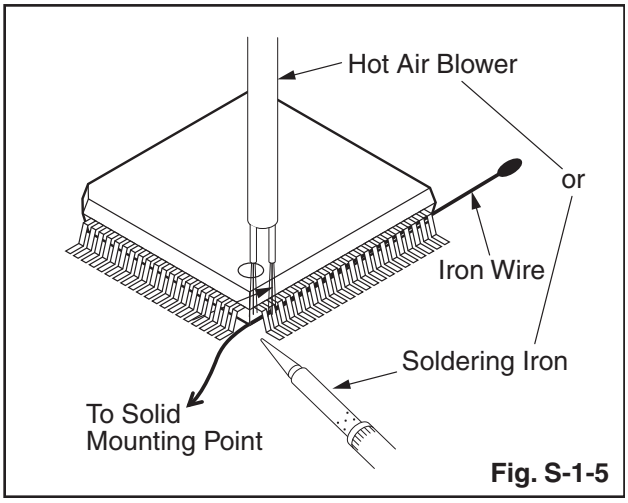


Fig. S-1-5

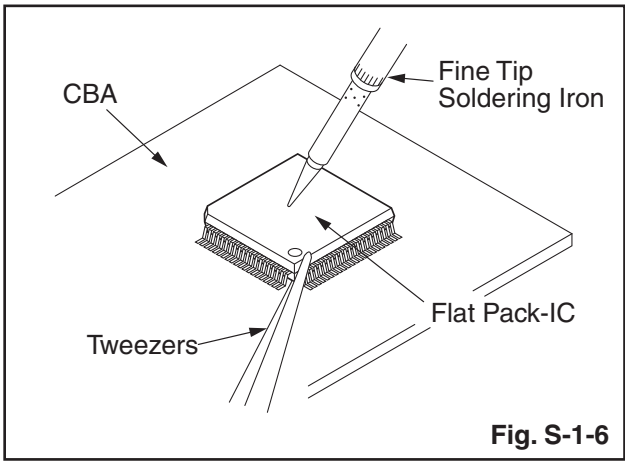


Fig. S-1-6

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.

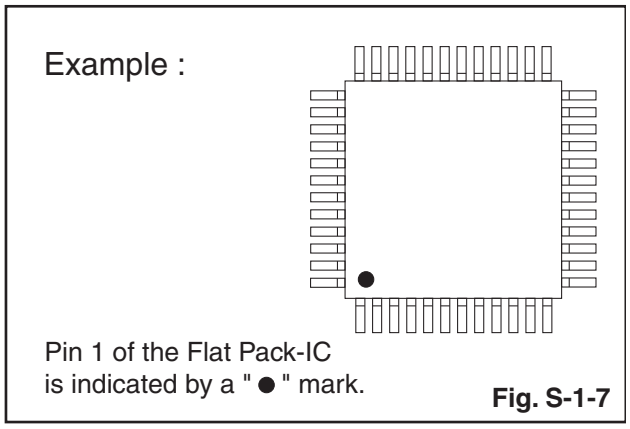


Fig. S-1-7

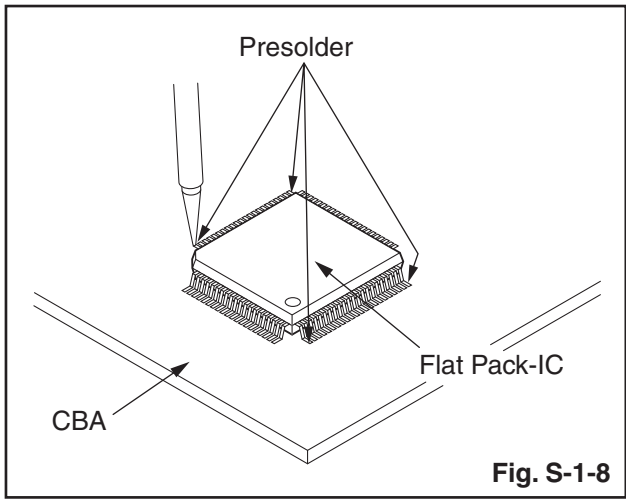


Fig. S-1-8

Instructions for Handling Semi-conductors

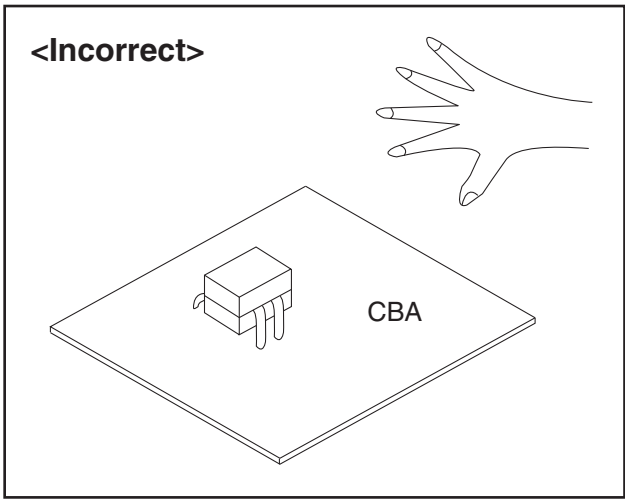
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

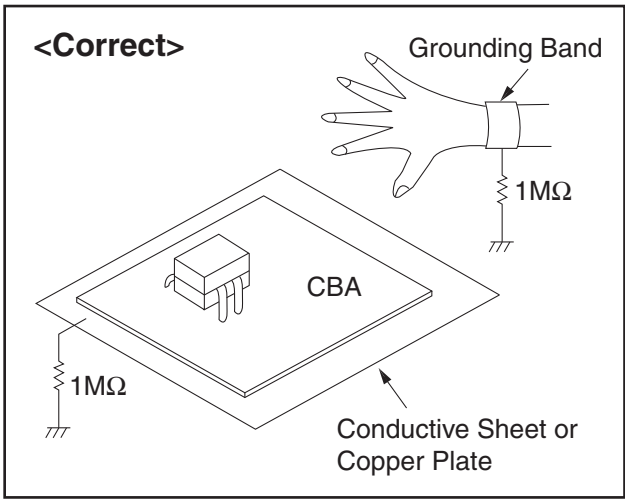
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) 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 MΩ) 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

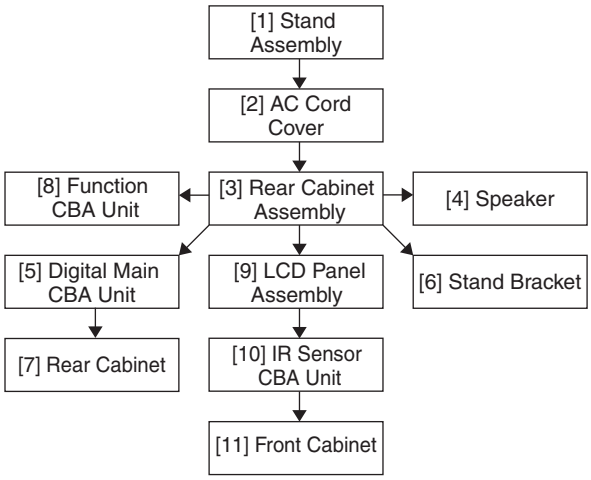
Screw Torque Specification

Ref. No.	Part Number	Part Name	Tightening Torque
L3	GBJP3080	SCREW BIND 3CHROM +P-TITE M3X8.0	5.2±0.9lb·in
L28	GCHS3080	SCREW F-PAN BLACK_NI +S-TITE M3X8.0	
L73	GCHP3100	SCREW F-PAN BLACK_NI +P-TITE M3X10.0	
SSK1	2ESA01818	STAND SCREW KIT A5G20UT(SEMS-SW PAN BLACK_NI + M4X20.0)	(approx. 8.7±0.9lb·in)*

*** : 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 Assembly	D1	4(S-1)	---
[2]	AC Cord Cover	D1	4(S-2)	---
[3]	Rear Cabinet Assembly	D2 W1	7(S-3), 13(S-4), 13(L-1), CN601, CN1101, CN3501*5, CN3901*5, CN3013*6, CN3101*6	1
[4]	Speaker	D3 W1	4(S-6), CN3801, Speaker Holder	---
[5]	Digital Main CBA Unit	D3 W1	6(S-7), Earth Spring	---
[6]	Stand Bracket	D3	2(S-8)	---
[7]	Rear Cabinet	D3	----------	---
[8]	Function CBA Unit	D4 W1	CN4001, Knob Frame, Function Knob, Hook	2
[9]	LCD Panel Assembly	D4	----------	---
[10]	IR Sensor CBA Unit	D4 W1	Sensor Shield, Hook	2
[11]	Front Cabinet	D4	Decoration Plate, LED Lens*5 *7, Leading Edge Cover*5 *7, Hook*5 *7	3

↓ (1) ↓ (2) ↓ (3) ↓ (4) ↓ (5)

***5 : TYPE A**

***6 : TYPE B**

***7 : 40PFL4701/F8**

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 Rear Cabinet Assembly.

- Do not pull the FFC Cable and Board Cable forcefully when you re-assemble.
- Be careful not to scratch the display panel when assembling.

2. When you disassemble/re-assemble the Function CBA Unit or the IR Sensor CBA Unit.

- Be careful not to break the hooks. If you pull with too much force, the hooks may be damaged.
- Make sure the hooks are securely in place when assembling.
- The Function CBA Unit, Function Knob and Knob Frame are fixed in place by the hooks. Make sure these hooks are not damaged. Make sure the Function CBA Unit, Function Knob and Knob Frame are securely in place when re-assembling.
- The IR Sensor CBA Unit and Sensor Shield are fixed in place by the hooks. Make sure these hooks are not damaged. Make sure the IR Sensor CBA Unit and Sensor Shield are securely in place when re-assembling.

3. When you disassemble/re-assemble the Front Cabinet.

- Make sure to replace the Decoration Plate, LED Lens[*5 *7] and Leading Edge Cover[*5 *7] to a new one when replacing the Front Cabinet.

***5 : TYPE A**

***7 : 40PFL4701/F8**

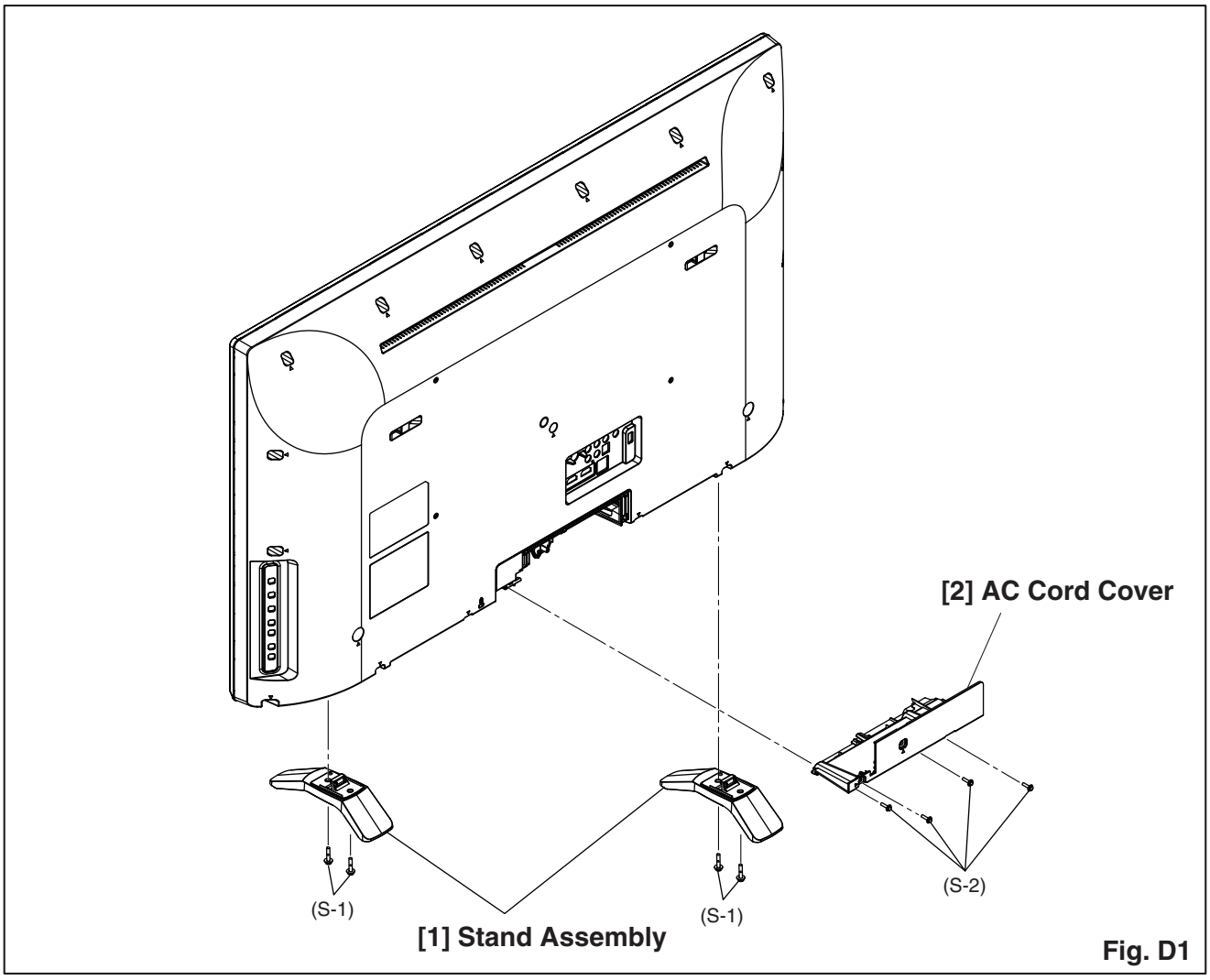


Fig. D1

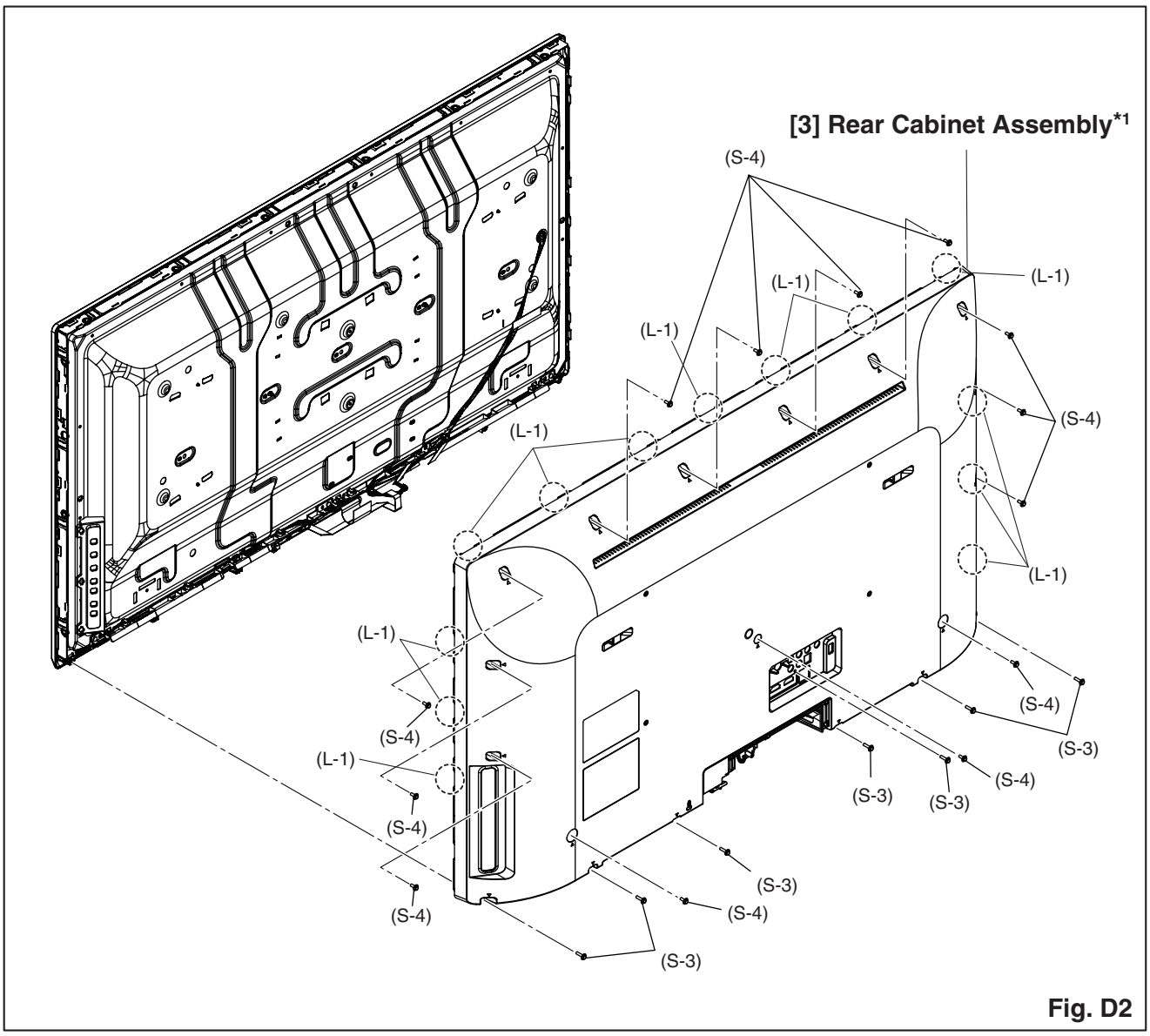


Fig. D2

*1: Make sure to read all the precautions on page 4-2 when you disassemble/re-assemble the Rear Cabinet Assembly.

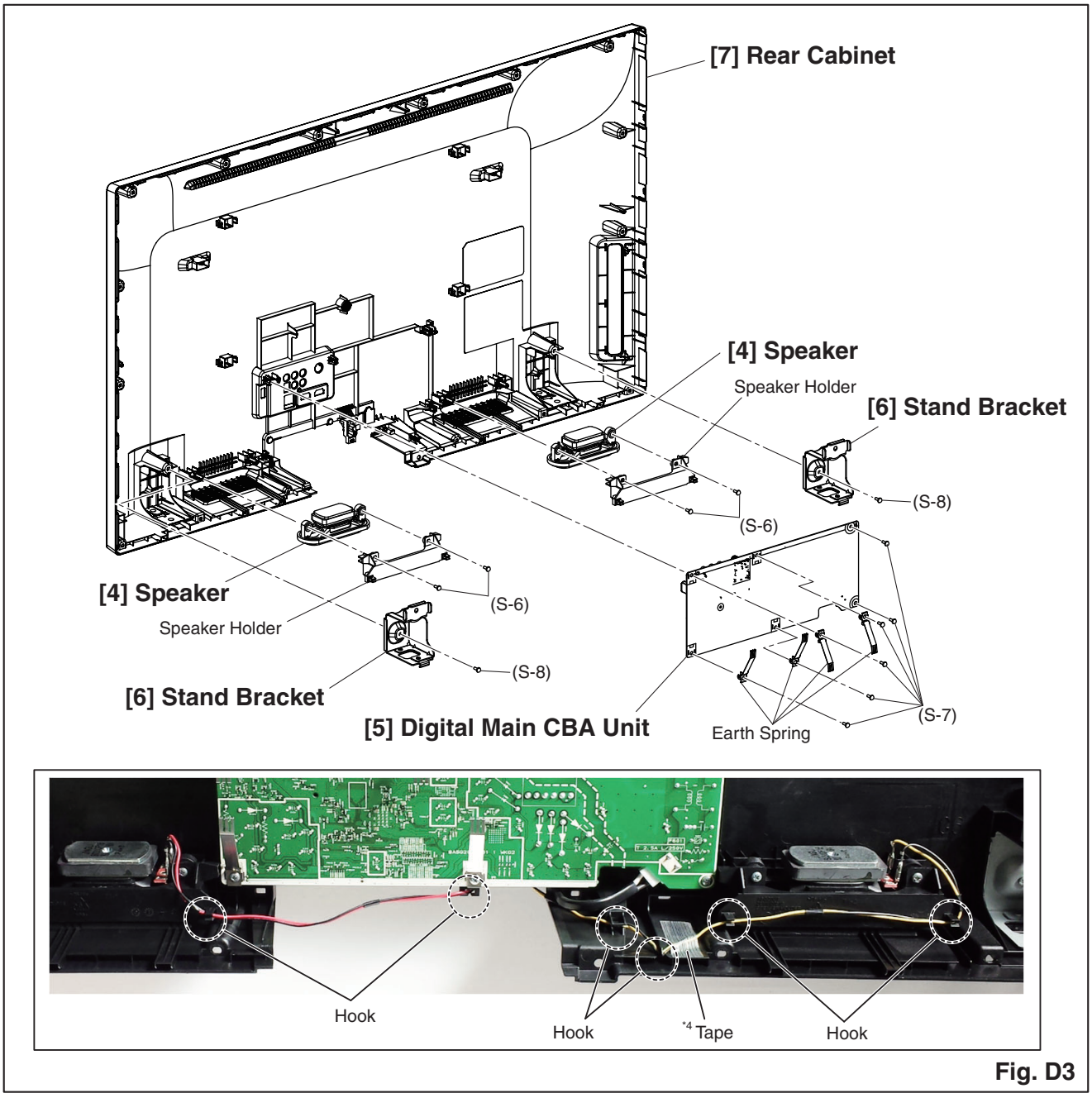


Fig. D3

***4: When assembling the rear cabinet, make sure to tape the speaker cable (CL3801) in place in order to prevent them from slipping off of the hook.**

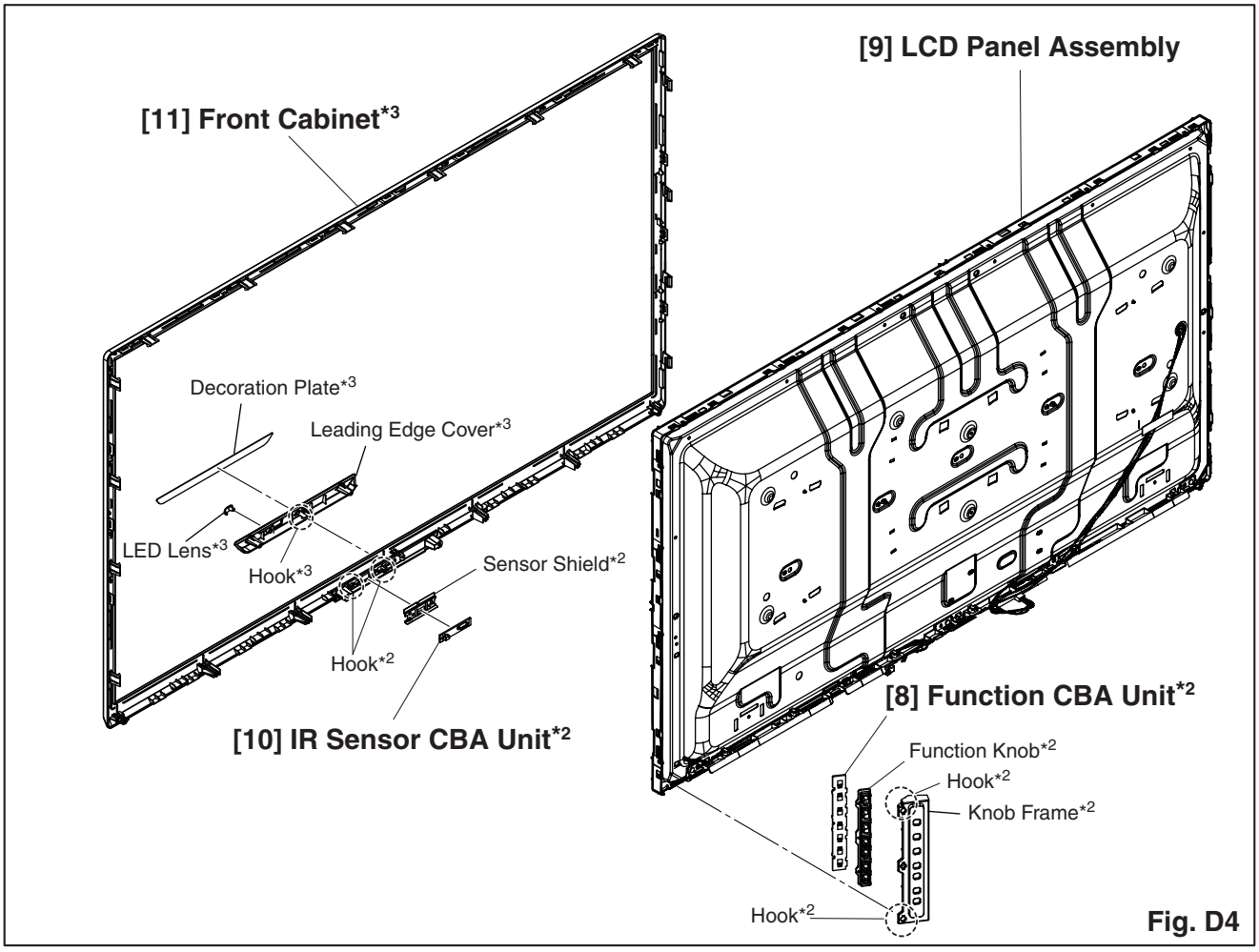


Fig. D4

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

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

3. How to Replace the Front Cabinet

Disassembly Method

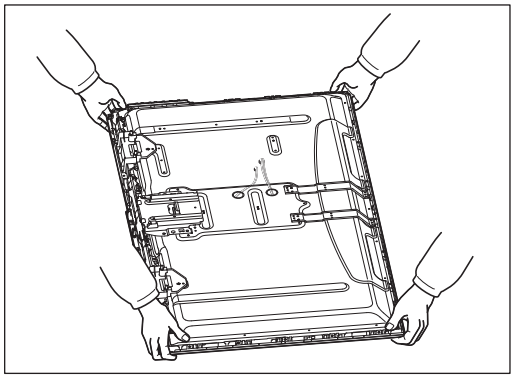
CAUTION ⚠:

Disassembly MUST be performed in a CR (Clean Room).

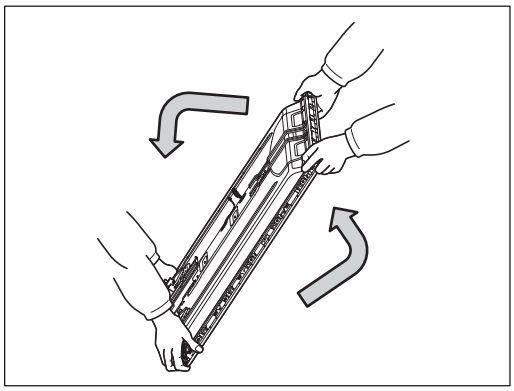
Make sure to perform disassembly operations by following “2.Disassembly Method”, until Fig. D3 beforehand to remove the CBA units, speakers, etc.

Note: Turning over the unit requires two workers and a wide flat table.

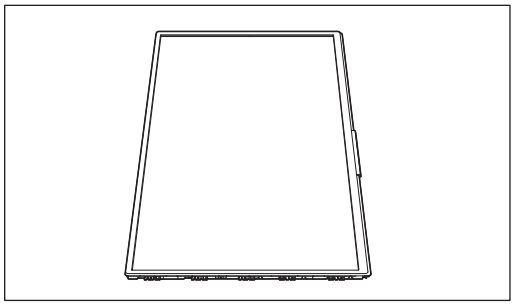
1. Hold the four corners of the LCD Panel Assembly.



2. With the X-PCB side down, slowly lift and tilt the unit until it is in a vertical position.

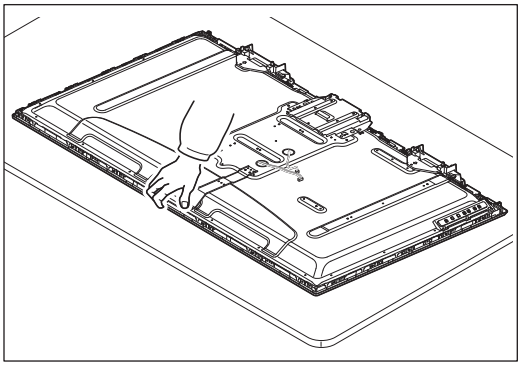
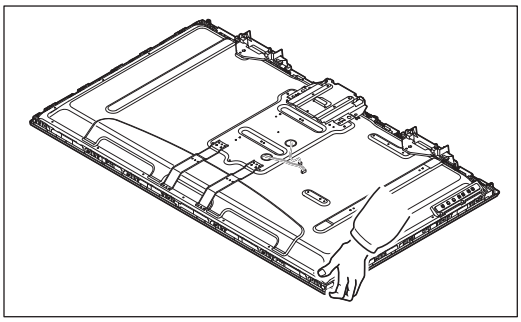
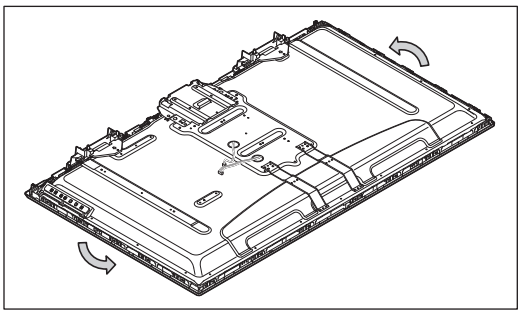
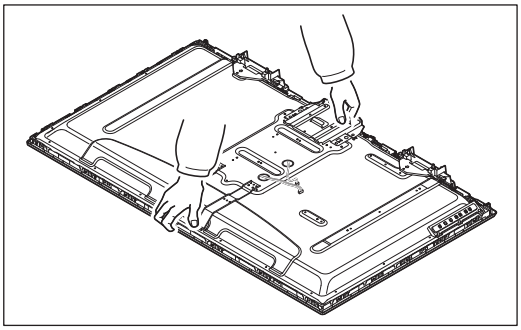
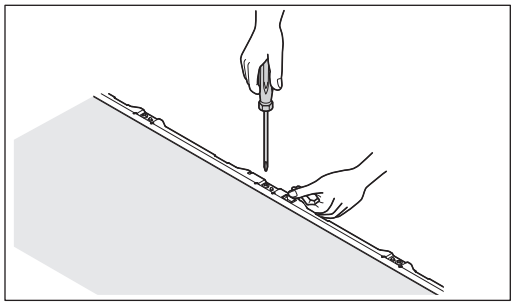


3. From a vertical position, turn the top of the unit toward the other side.
4. Slowly put the LCD Panel Assembly down.



5. Take off a hooks and remove the Front Cabinet.

Work Prohibitions

Lift middle part (same for upper and lower side) NG		Cause colour spots (Diffusing sheet overlap) At worst, cell can be broken.
Lift 1 corner only NG		Cause colour spots (Diffusing sheet overlap) At worst, cell can be broken.
Rotate to reverse direction at left and right (SET is prone to be twisted NG)		Cause colour spots (Diffusing sheet overlap) At worst, cell can be broken.
When handling repairing parts (no rear cabinet), DO NOT lift middle part of SET		The middle of upper & lower side is the weakest point for Rear Frame, can cause it to deform easily towards opening direction. For that reason, the following symptoms may occur. • Irregularity will appear (diffusing sheet will come out from cell guide) • Light leakage will happen (CELL will come out)
Bezel reassembly requires jigs; otherwise, support Rear Frame when screwing so that the Rear Frame will not open.		If a jig is not working effectively, the following symptoms may occur. • Rear Frame will deform towards opening direction • Diffusing plate will fall off from Rear Frame • Irregularity will appear on sheet (diffusing sheet will come out from cell guide) • Cell will be either get between cell guide or fall off.

TV Cable Wiring Diagram

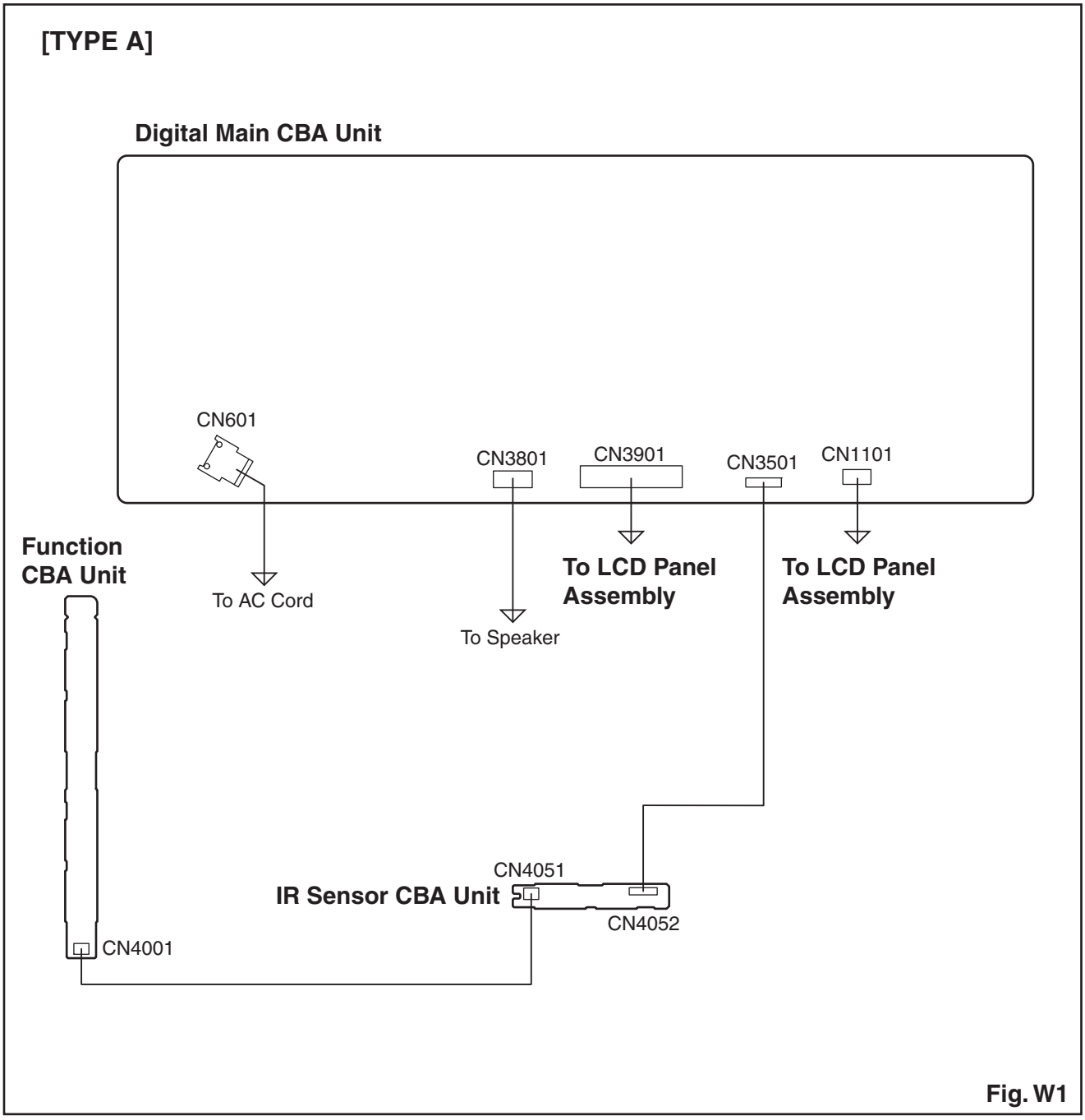


Fig. W1

[TYPE B]

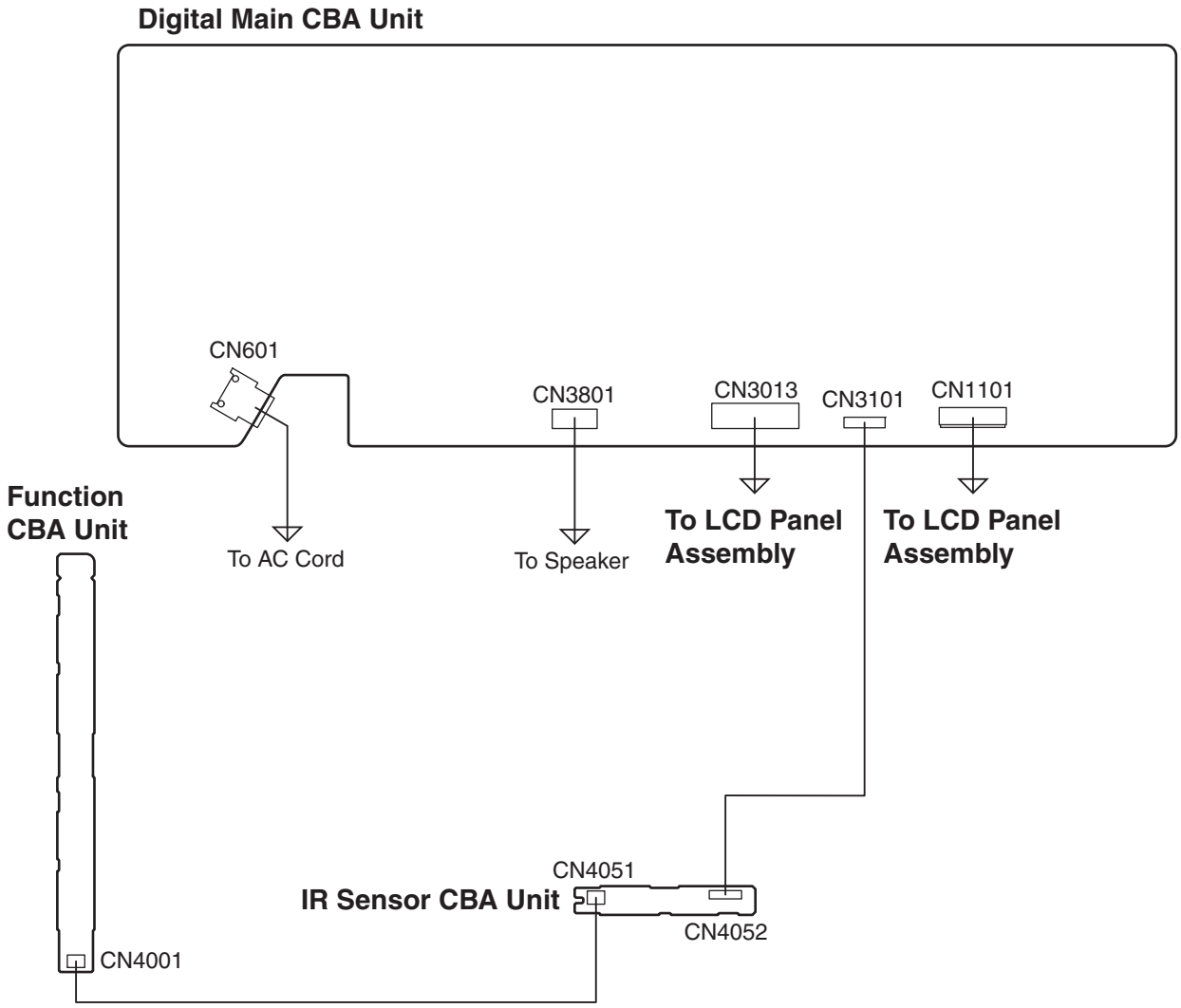

Digital Main CBA Unit
CN601
CN3801
CN3013
CN3101
CN1101
Function
CBA Unit
To AC Cord
To Speaker
To LCD Panel
Assembly
To LCD Panel
Assembly
CN4051
IR Sensor CBA Unit
CN4052
CN4001

Fig. W1

ELECTRICAL ADJUSTMENT INSTRUCTIONS

[TYPE A]

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 [0], [6], [2], [5], [9], [6] and [INFO] buttons on the remote control unit in this order. The following screen appears.

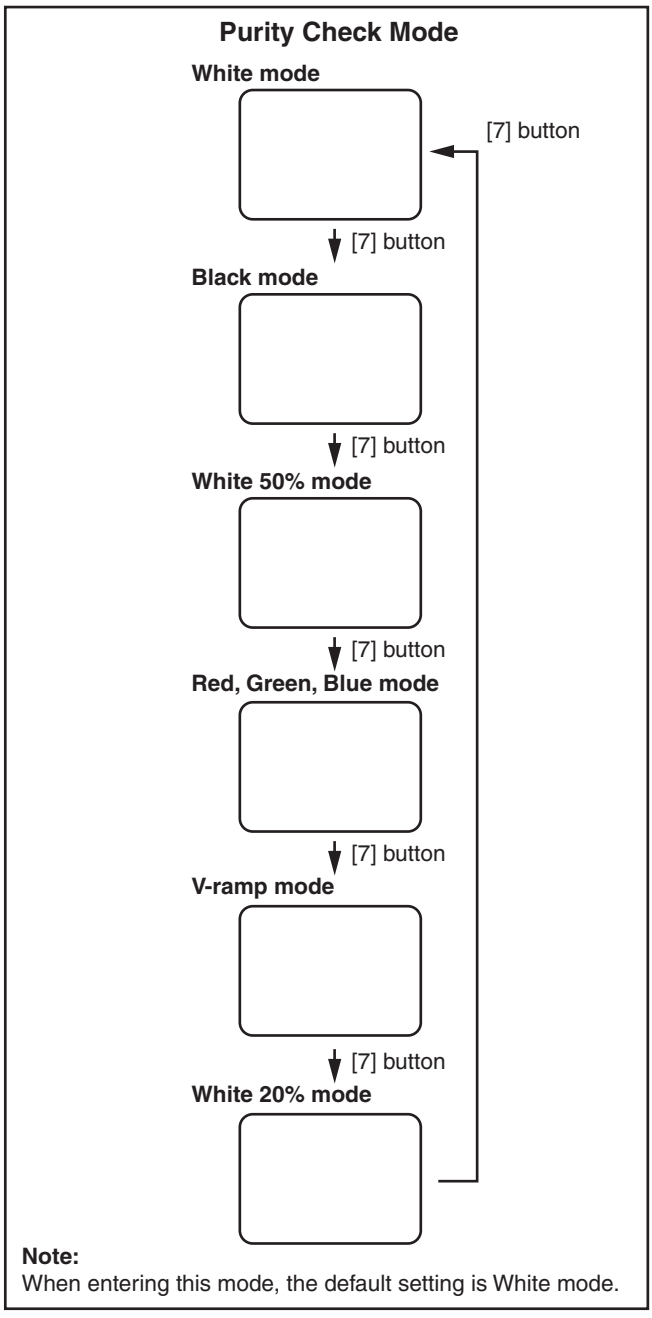
"*" differs depending on the models.

```
[current]
File code:          ***-****_***_*
Total checksum:     Push "0" key          White Balance
Panel-Option code:  **-***-***-***-***-***
                      ***-***-***-***-***

          Press "POWER" key to exit.

              MAC address:  **:**:**:**:**:**
              ESN:          ****************************
Flicker:      *****
Tuner:        ****          Total Watch Time:  *****
HDMI UART:    OFF           User Watch Time    *****
Touch Sensor Ver: ------ / -.--.--  System Time:  **:**
EDID:         Push "0" key  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.

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

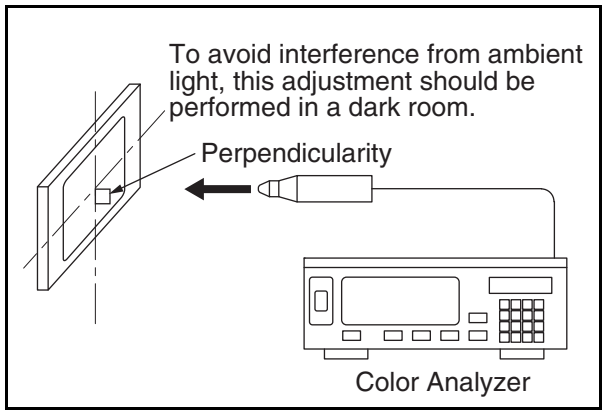
2. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

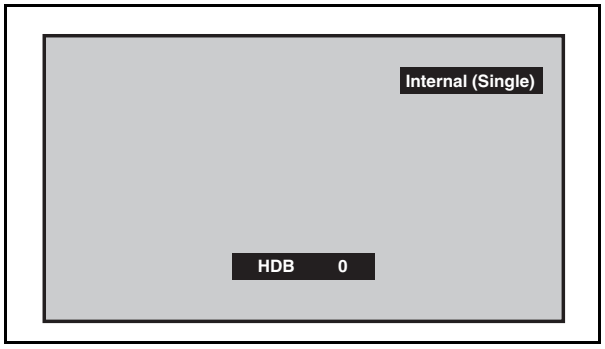
ITEM	SPECIFICATION
Color temperature	x= 0.272 ± 0.003 y= 0.278 ± 0.003
Input Signal	Internal pattern (30/80% raster)
Measurement point	Screen center
M. EQ.	CA-310 (KONICA MINOLTA Luminance meter) or measuring instrument as good as CA-310.
Aging time	60min. (Retail MODE/100IRE Raster HDMI 1080i@60)
MODE setting of TV	Shipment setting/ Retail MODE
Ambient temperature	25°C ± 5°C

1. Operate the unit for more than 30 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.

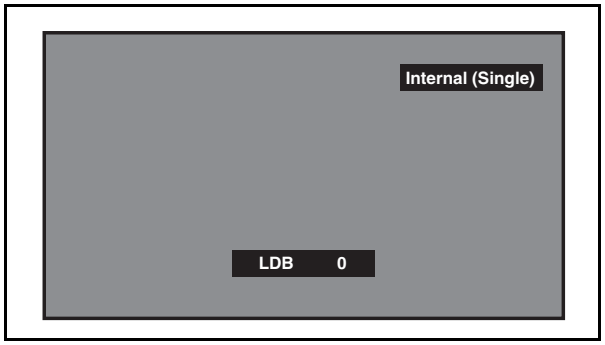


Note: The optical receptor must be set perpendicularly to the LCD Panel surface.

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 ± 0.003).
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”, “HDR” again.
10. 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.



11. 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.
12. Press [8] button to select the “LDG” for Low Drive Green adjustment (“LDG” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
13. If necessary, adjust the “LDB”, “LDR” or “LDG” again.

14. 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 13. Then check “Debugging Message” again. If “Drive settings are NG. Retry again.” is displayed, replace the LCD Panel or Digital Main CBA.
15. To cancel or to exit from the White Balance Adjustment, press [CH RETURN] or [PREV CH] button.

ELECTRICAL ADJUSTMENT INSTRUCTIONS

[TYPE B]

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], [4], [2], [5], [7], [4] and [INFO] buttons on the remote control unit in this order. The following screen appears.

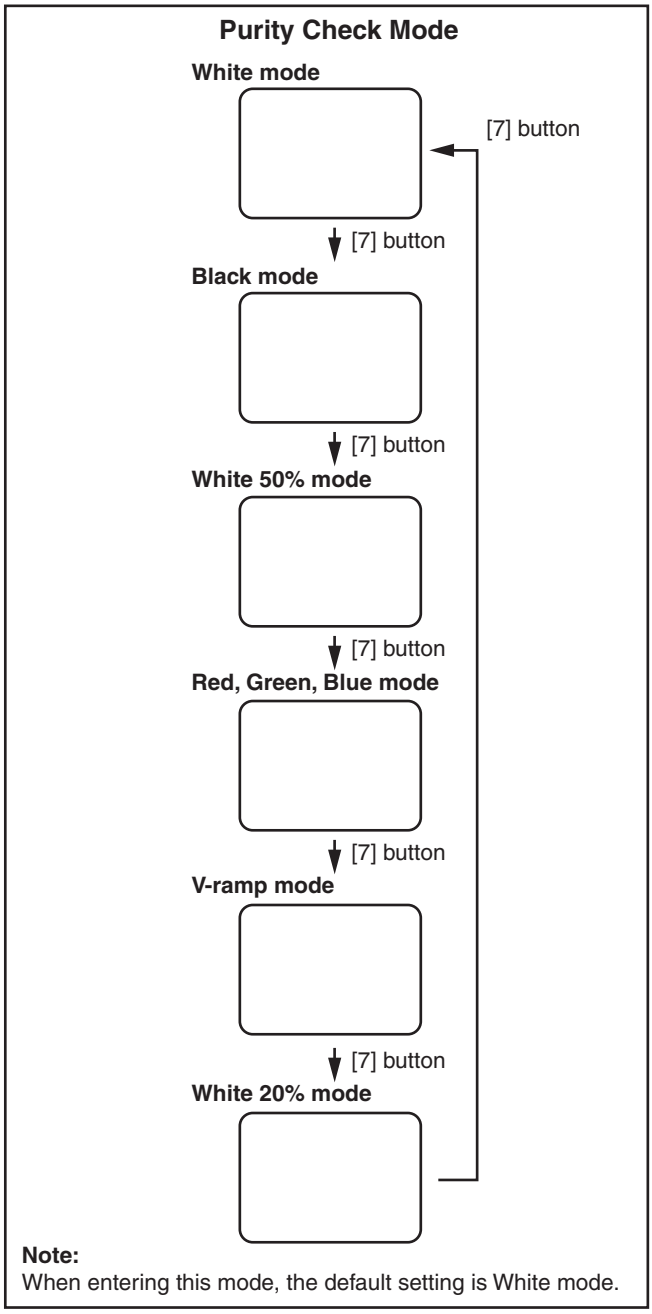
"⋆" differs depending on the models.

Code:	*******-**-**-****-**		
Pic code1:	**-***-**-*****-***		
Pic code2:	**-**-**-**-**-**-**-**		
Panel-Option code:	**-***-***-***-***-***-***		
MIPS:	**		
Press "POWER" key to exit.			
HDMI EDID:	**		
HDMI UART:	**OFF**		
Flicker	*****	**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.

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

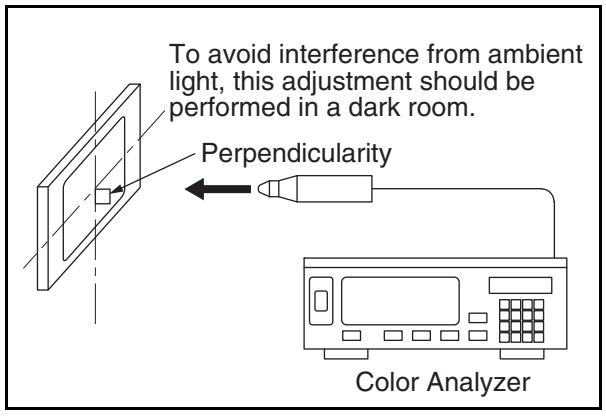
2. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

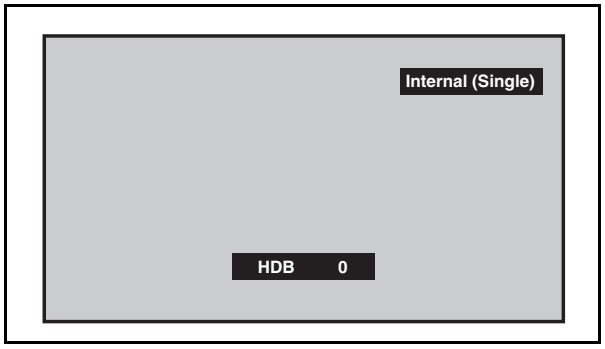
ITEM	SPECIFICATION
Color temperature	x= 0.272 ± 0.003 y= 0.278 ± 0.003
Input Signal	Internal pattern (40/80% raster)
Measurement point	Screen center
M. EQ.	CA-310 (KONICA MINOLTA Luminance meter) or measuring instrument as good as CA-310.
Aging time	60min. (Retail MODE/100IRE Raster HDMI 1080i@60)
MODE setting of TV	Shipment setting/ Retail MODE
Ambient temperature	25°C ± 5°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.

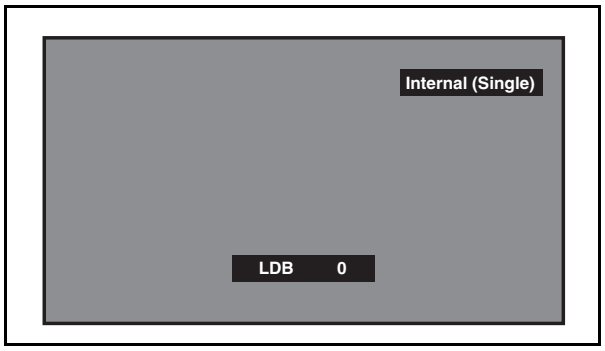


Note: The optical receptor must be set perpendicularly to the LCD Panel surface.

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 ± 0.003).
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. Press [2] button to select the “HDG” for High Drive Green adjustment (“HDG” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
10. If necessary, adjust the “HDB”, “HDR” or “HDG” again.
11. 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.



12. 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.
13. Press [5] button to select the “LDG” for Low Drive Green adjustment (“LDG” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
14. If necessary, adjust the “LDB”, “LDR” or “LDG” again.

15. 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 14. Then check “Debugging Message” again. If “Drive settings are NG. Retry again.” is displayed, replace the LCD Panel or Digital Main CBA.
16. 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 all buttons 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]

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 all buttons 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

a. USB storage device

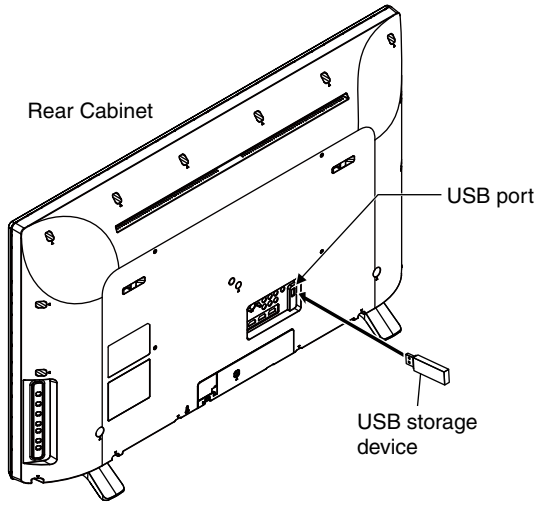
b. Remote Control Unit

Firmware Update Procedure

User Upgrade (Filename example: PHL-0C0HB_***_*.upg)
Upgrade the firmware only. The setting values will not be initialized.

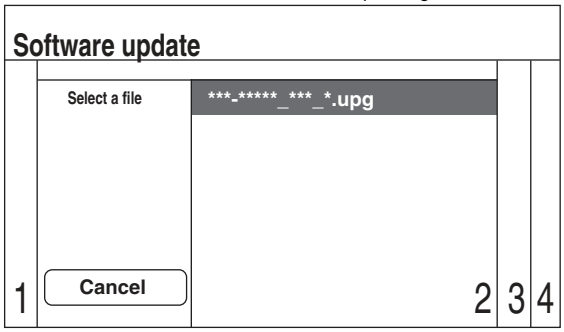
Update procedure

1. Plug the AC Cord and turn the power on.
2. Insert the USB storage device to the USB port as shown below.



3. Press the [MENU] button on the remote control unit.
4. Select “Setup” and press the [OK] button to display the setup menu.
5. Select “Update software” and press the [OK] button on the remote control unit.
6. Select “USB” and 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.)

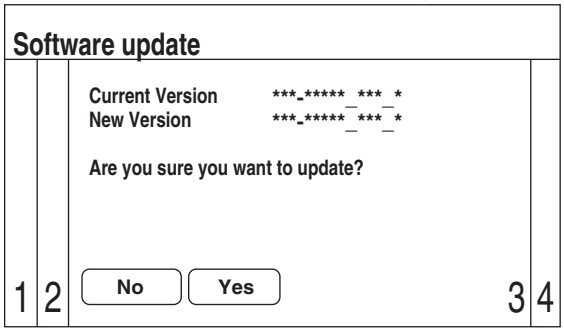
"⋆" differs depending on the models.



Note: To cancel the update mode, select “Cancel” and press the [OK] button.

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

"⋆" differs depending on the models.



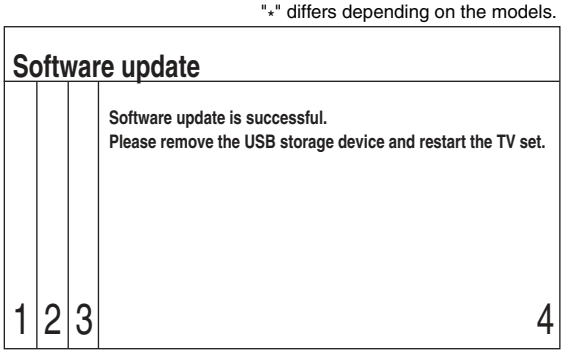
Note: If the above screen isn’t displayed, repeat from step 1.

9. 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.

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

"*" differs depending on the models.



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

11. Updating software is started, the following will appear in the screen.

12. After finished the updating software, TV set will automatically reboot.

[TYPE B]

Equipment Required

a. USB storage device

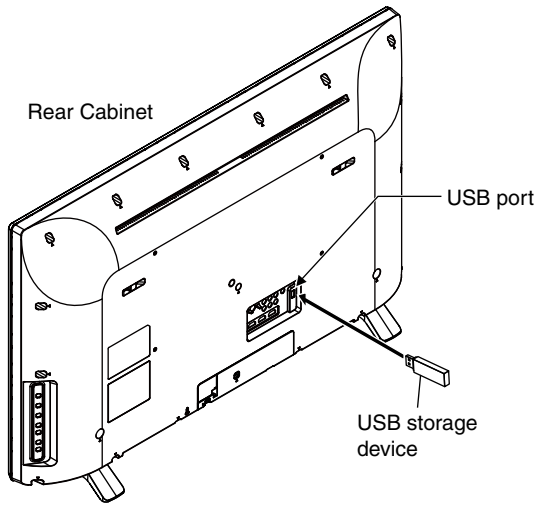
b. Remote Control Unit

Firmware Update Procedure

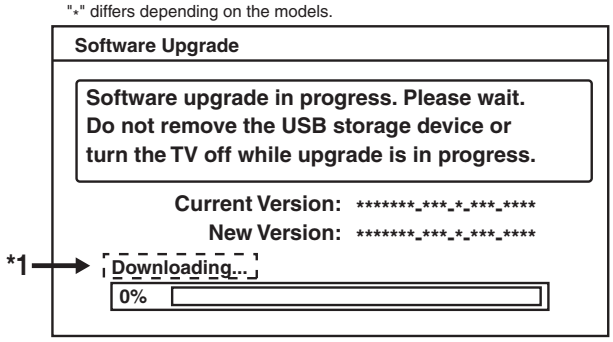
User Upgrade (Filename example: TVNB3xxx_00_3H_XX91_HC10.bin)
Upgrade the firmware only. The setting values will not be initialized.
The User Upgrade and the Firmware Upgrade (Factory Upgrade) will be done by the same file. If you want to upgrade the firmware and initialize the setting values also, add “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.



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.

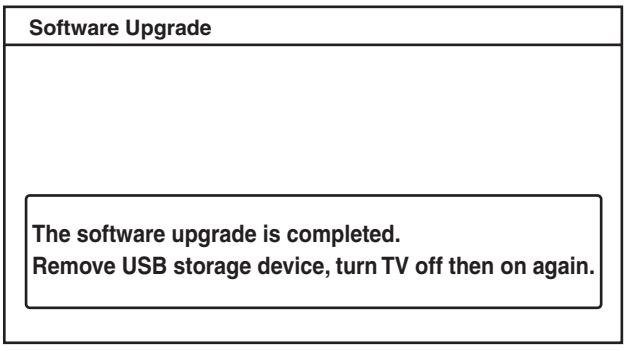


Note: If the above screen isn’t displayed, repeat from step 1.

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_TVNB3xxx_00_3H_XX91_HC10.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_TVNB3xxx_00_3H_XX91_HC10.bin)

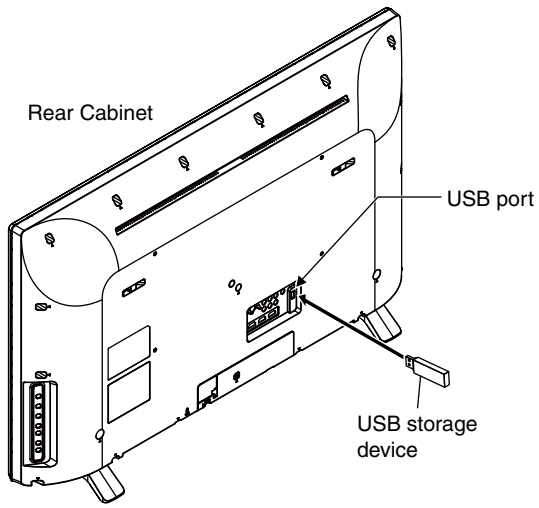
Upgrade the firmware and initialize the setting values along with the factory default such as White Balance, etc. Before the upgrade, you will need to make a note of all the factory default so you will be able to set it back on the TV after the initialization.

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.

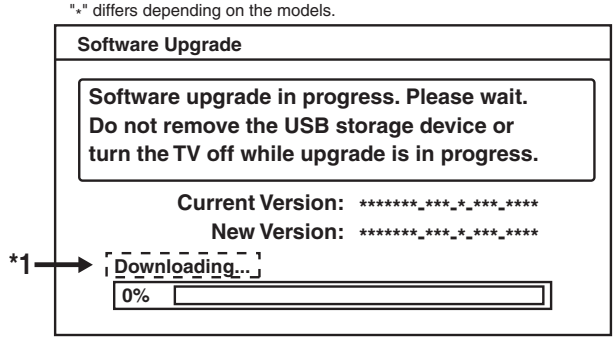
Update procedure

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.

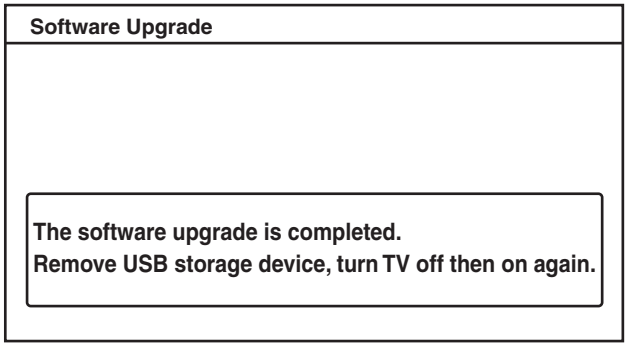


Note: If the above screen isn’t displayed, repeat from step 1.

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.

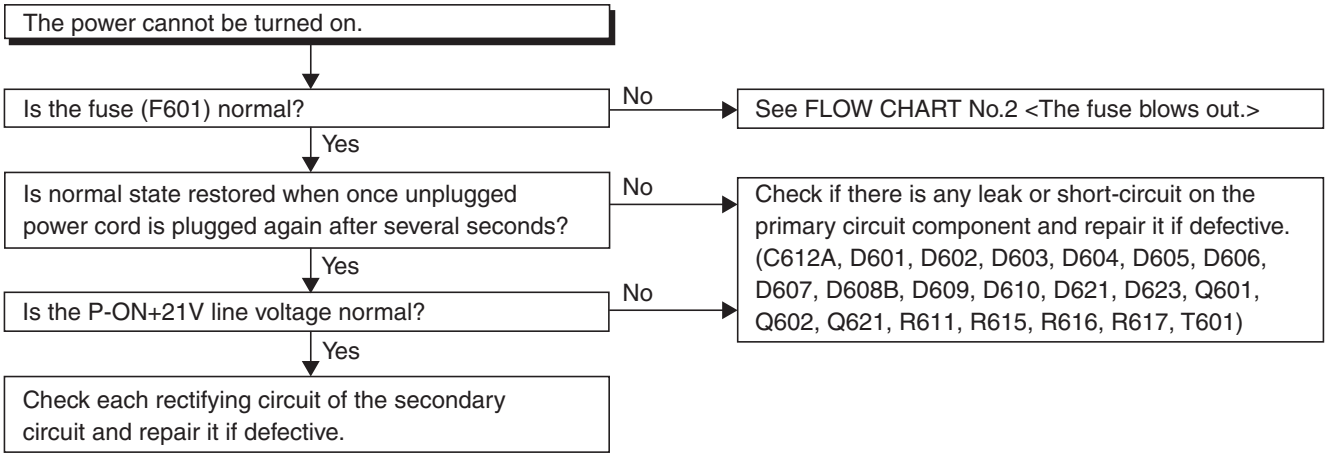


Remove the USB storage device from the USB port.
Turn the power off and turn the power on again. Service mode initial screen with a word “INITIALIZED” will appear in the screen. The color of the word “INITIALIZED” will change from red to green when initialization is completed.

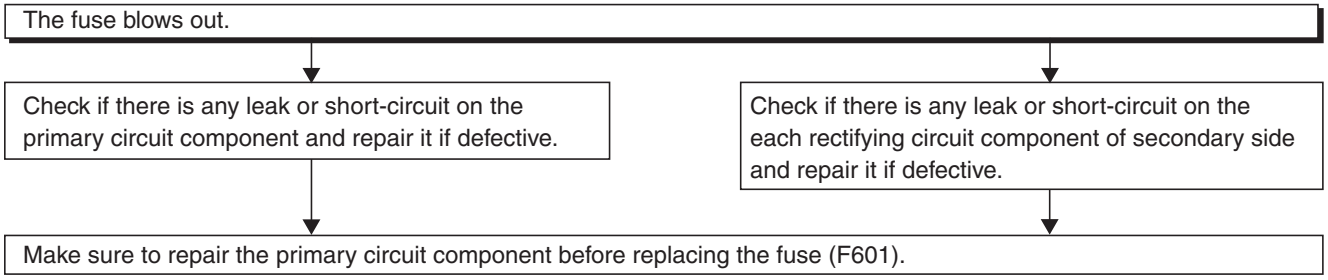
TROUBLESHOOTING

[Power Supply Section] [TYPE A]

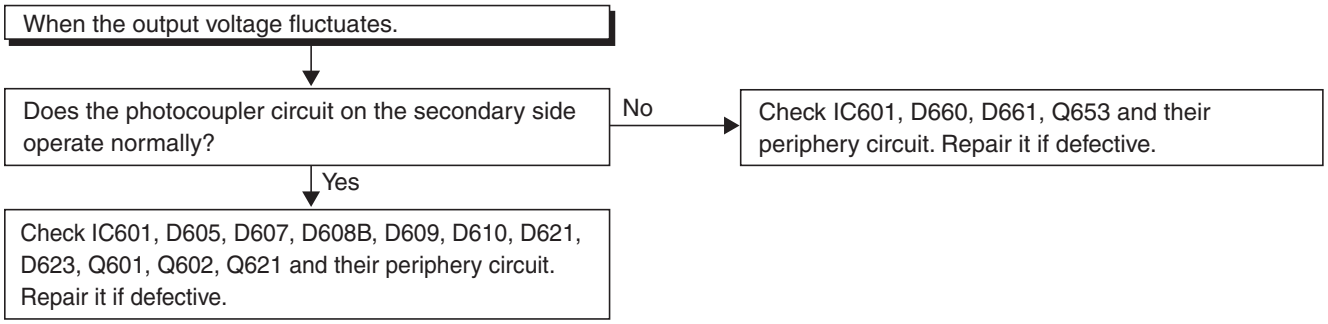
FLOW CHART NO.1



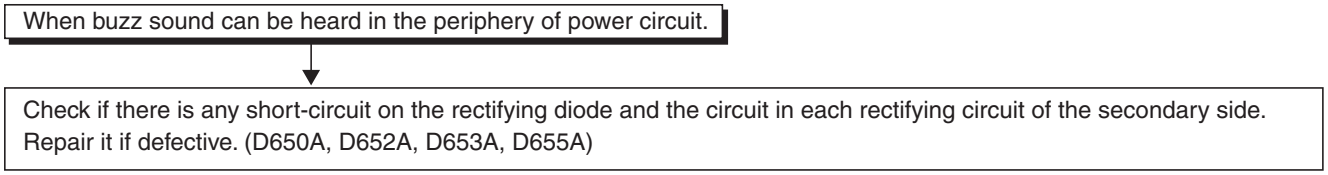
FLOW CHART NO.2



FLOW CHART NO.3



FLOW CHART NO.4



FLOW CHART NO.5

P-ON+21V is not output.

↓

Is approximately +21V voltage supplied to the cathode of D650A (D652A)?

No → Check D650A, D652A, D658, C650A,C652, C653, C657, R650 and their periphery circuit. Repair it if defective.

↓ Yes

Check if there is any leak or short-circuit on the load circuit. Repair it if defective.

FLOW CHART NO.6

AMP+13V is not output.

↓

Is approximately +13V voltage supplied to the cathode of D653A (D655A)?

No → Check D653A, D655A, C654, C655, C668 and their periphery circuit. Repair it if defective.

↓ Yes

Check if there is any leak or short-circuit on the load circuit. Repair it if defective.

[Power Supply Section] [TYPE B]

FLOW CHART NO.1

The power cannot be turned on.

↓

Is the fuse (F601) normal?

No → See FLOW CHART No.2 <The fuse blows out.>

↓ Yes

Is normal state restored when once unplugged power cord is plugged again after several seconds?

No → Check if there is any leak or short-circuit on the primary circuit component and repair it if defective. (C612A, D601, D602, D603, D604, D605, D606, D607, D608B, D609, D621, D623, Q601, Q602, Q621, R611, R615, R616, R617, T601)

↓ Yes

Is the P-ON+21V line voltage normal?

No → (see above)

↓ Yes

Check each rectifying circuit of the secondary circuit and repair it if defective.

FLOW CHART NO.2

The fuse blows out.

↓

Check if there is any leak or short-circuit on the primary circuit component and repair it if defective.

Check if there is any leak or short-circuit on the each rectifying circuit component of secondary side and repair it if defective.

↓

Make sure to repair the primary circuit component before replacing the fuse (F601).

FLOW CHART NO.3

When the output voltage fluctuates.

↓

Does the photocoupler circuit on the secondary side operate normally?

No → Check IC601, D660A, D661, Q653 and their periphery circuit. Repair it if defective.

↓ Yes

Check IC601, D605, D607, D608B, D609, D610, D621, D623, Q601, Q602, Q621 and their periphery circuit. Repair it if defective.

FLOW CHART NO.4

When buzz sound can be heard in the periphery of power circuit.

↓

Check if there is any short-circuit on the rectifying diode and the circuit in each rectifying circuit of the secondary side. Repair it if defective. (D650A, D652A, D653A, D655A)

FLOW CHART NO.5

P-ON+21V is not output.

↓

Is approximately +21V voltage supplied to the cathode of D650A (D652A)?

No → Check D650A, D652A, D658, C652, C653, C657, C658 and their periphery circuit. Repair it if defective.

↓ Yes

Check if there is any leak or short-circuit on the load circuit. Repair it if defective.

FLOW CHART NO.6

AMP+13V is not output.

↓

Is approximately +13V voltage supplied to the cathode of D653A (D655A)?

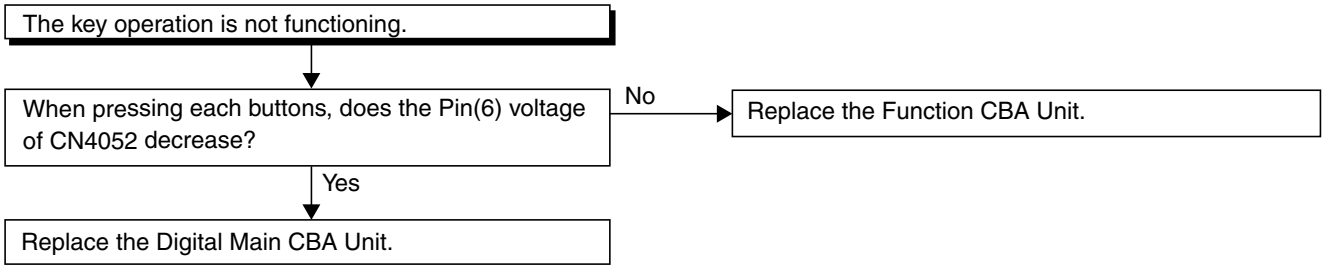
No → Check D653A, D655A, C654, C655, C668 and their periphery circuit. Repair it if defective.

↓ Yes

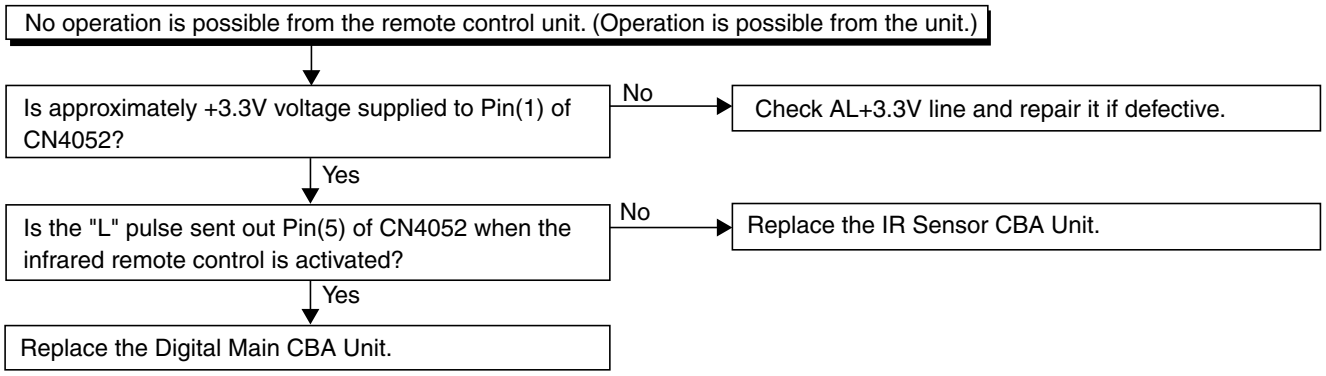
Check if there is any leak or short-circuit on the load circuit. Repair it if defective.

[Video Signal Section]

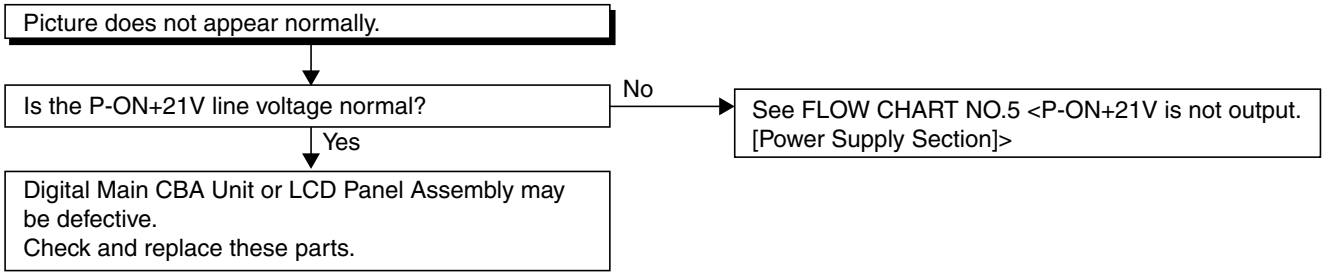
FLOW CHART NO.1



FLOW CHART NO.2

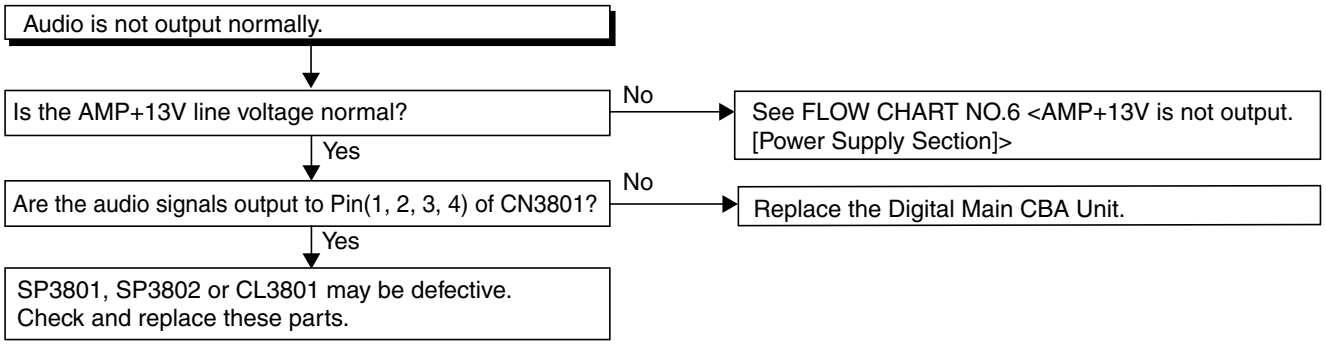


FLOW CHART NO.3



[Audio Signal Section]

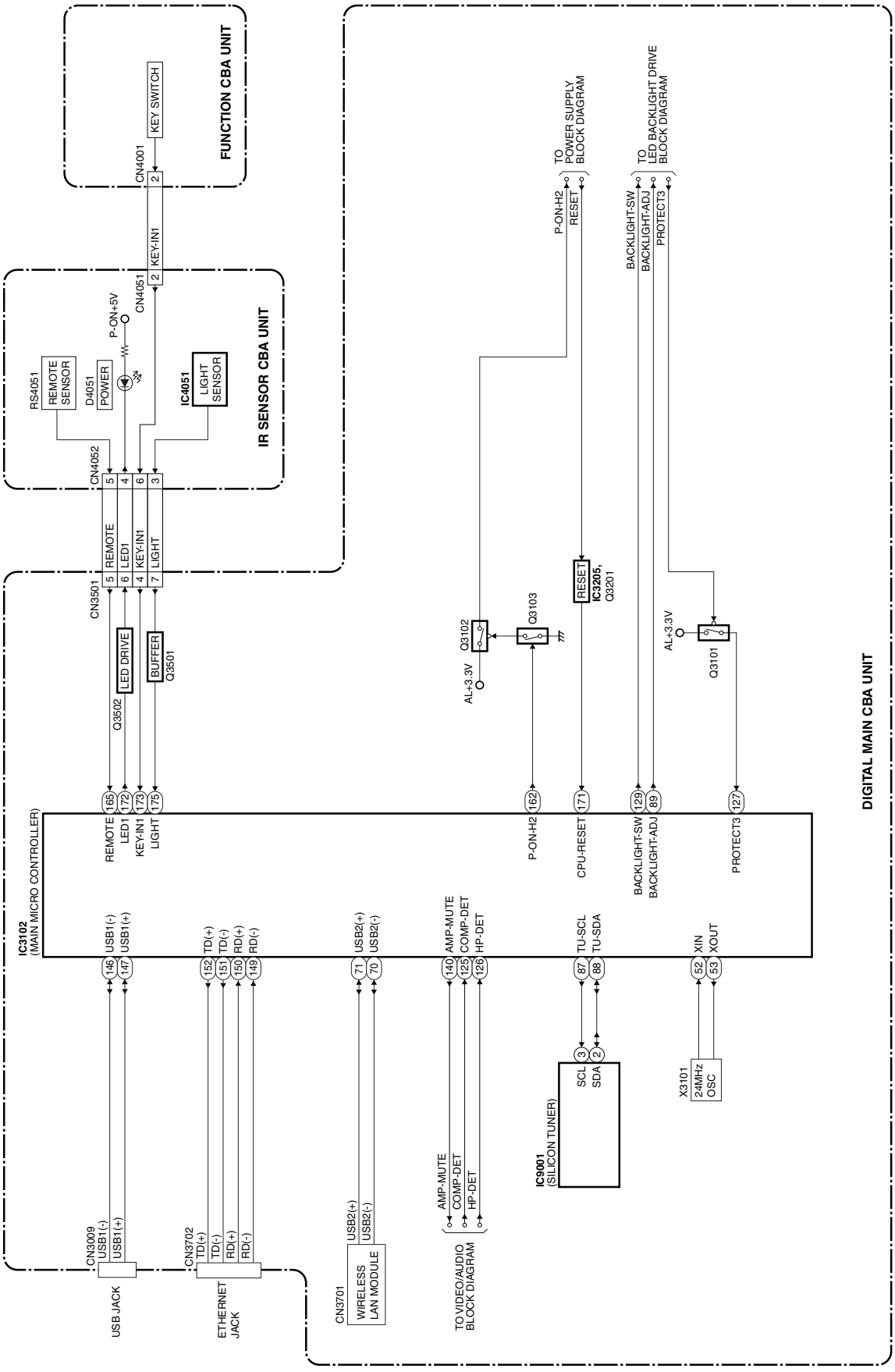
FLOW CHART NO.1



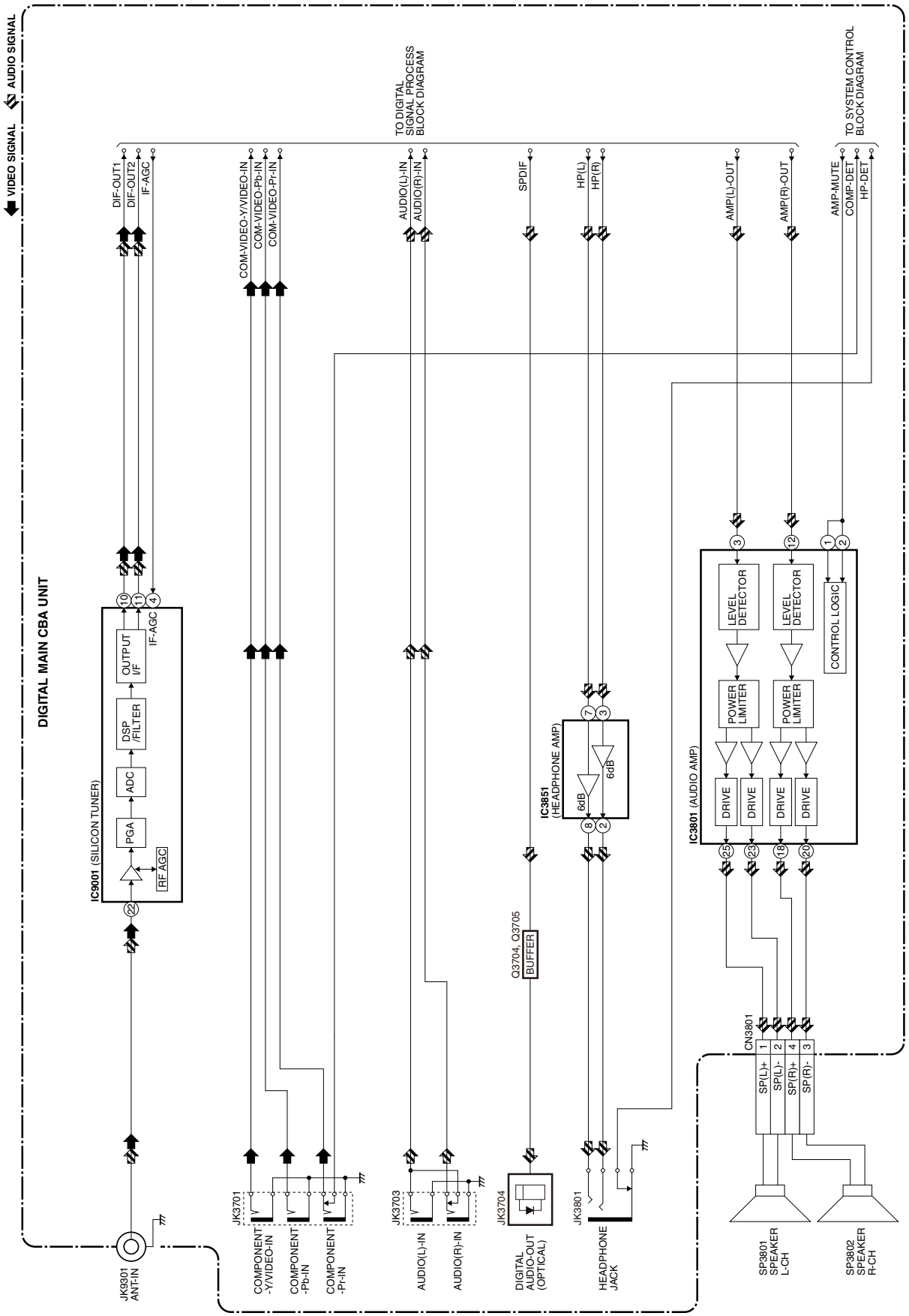
BLOCK DIAGRAMS

[TYPE A]

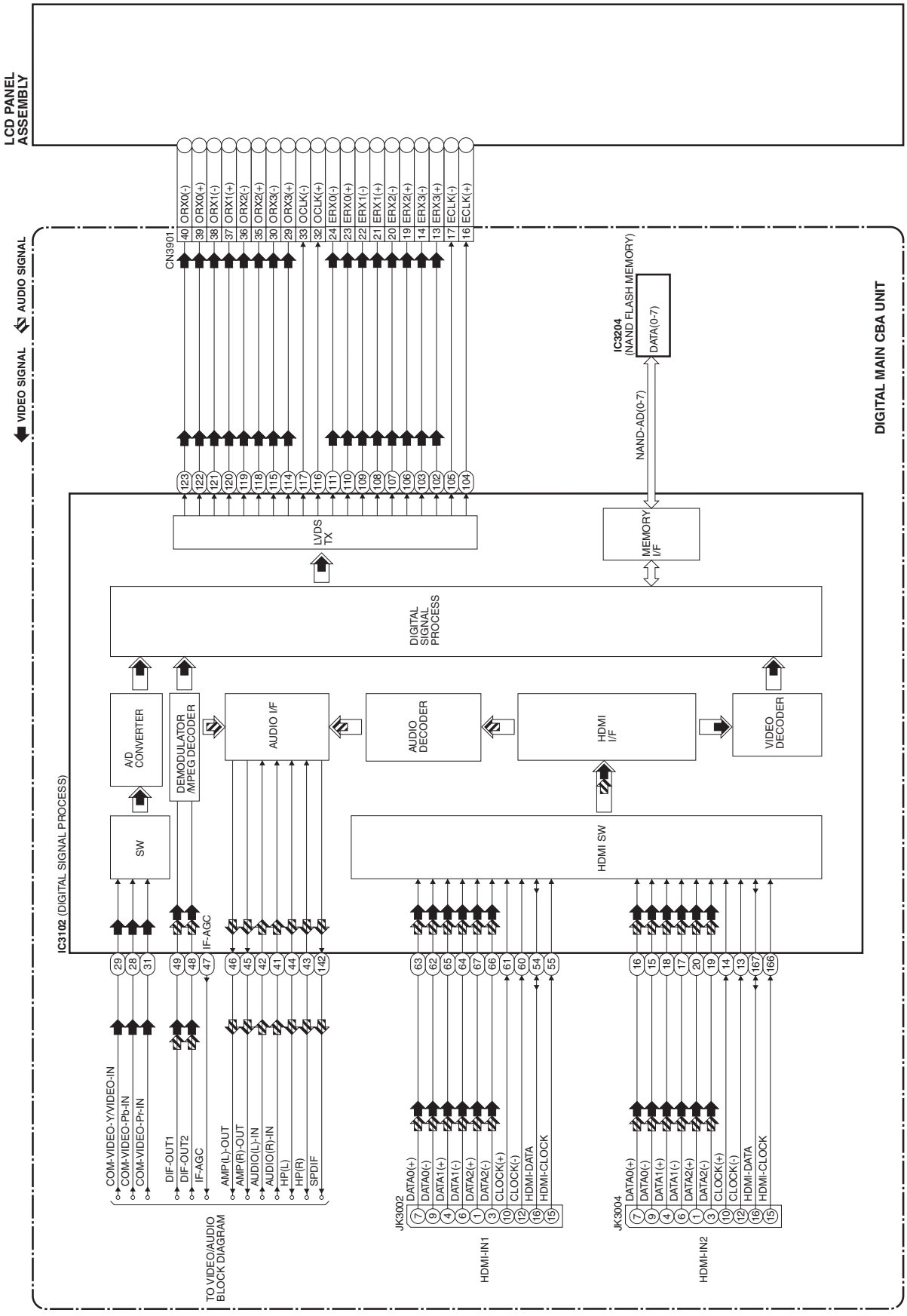
1. System Control Block Diagram



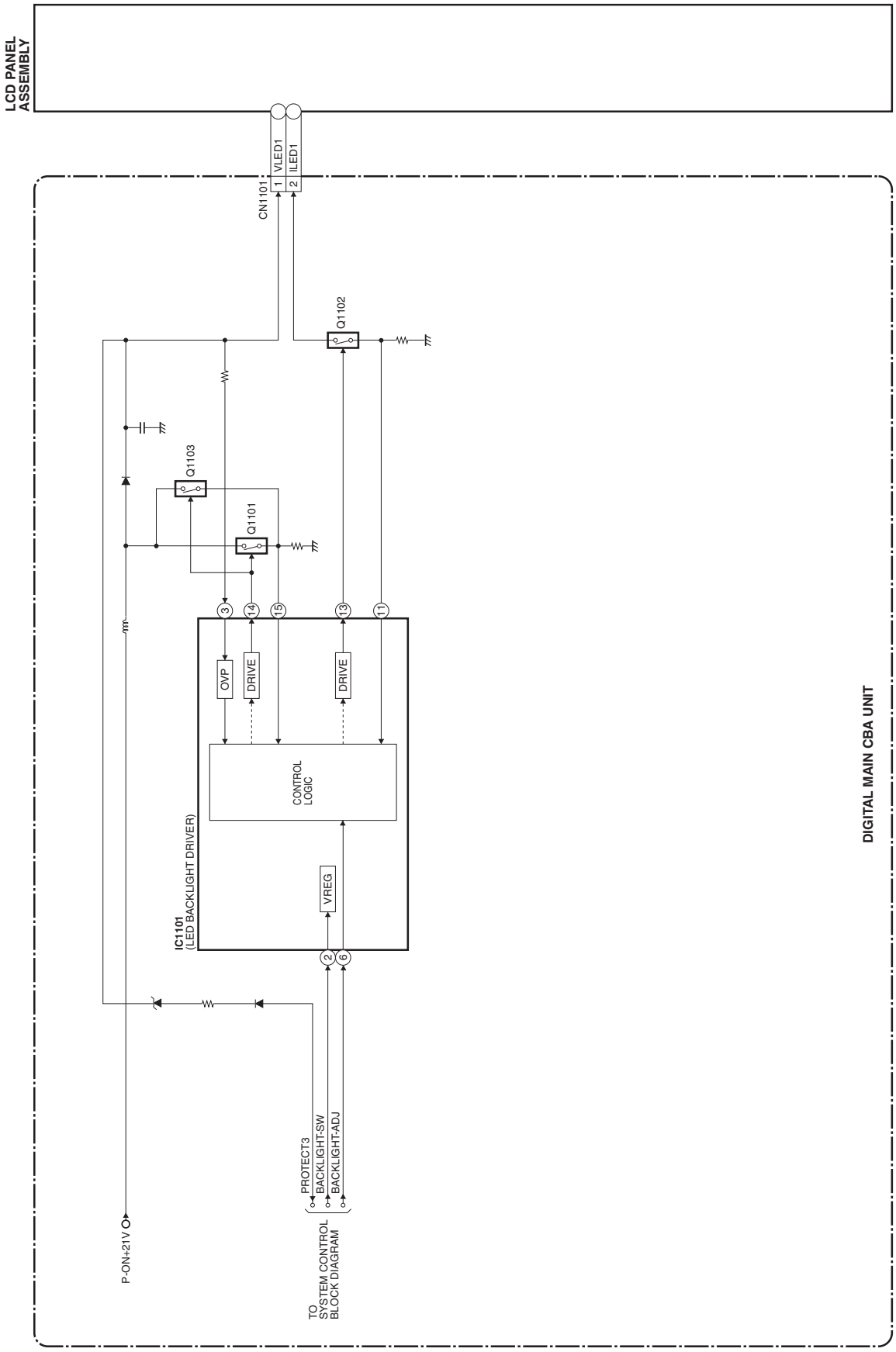
2. Video/Audio Block Diagram



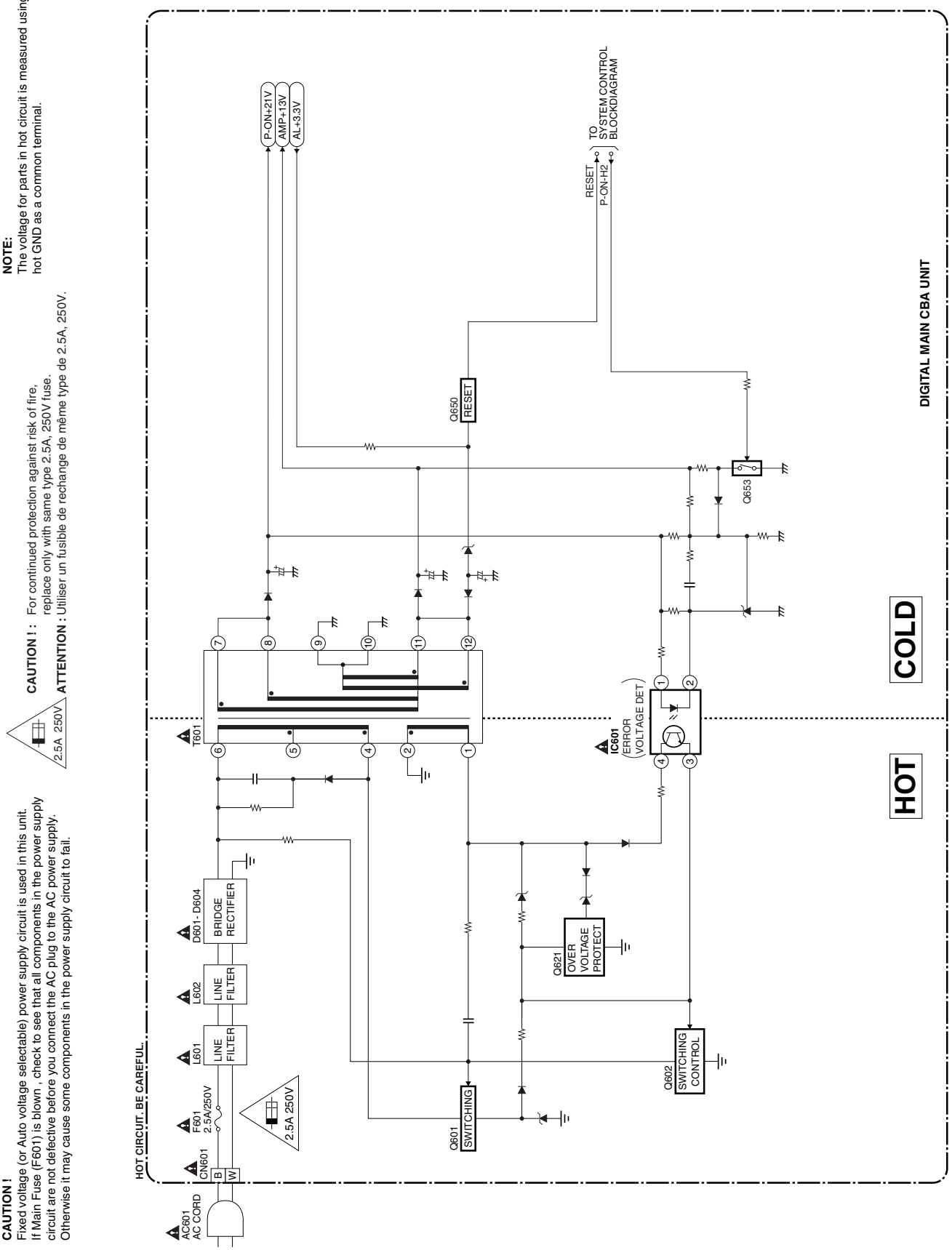
3. Digital Signal Process Block Diagram



4. LED Backlight Drive Block Diagram



5. Power Supply Block Diagram



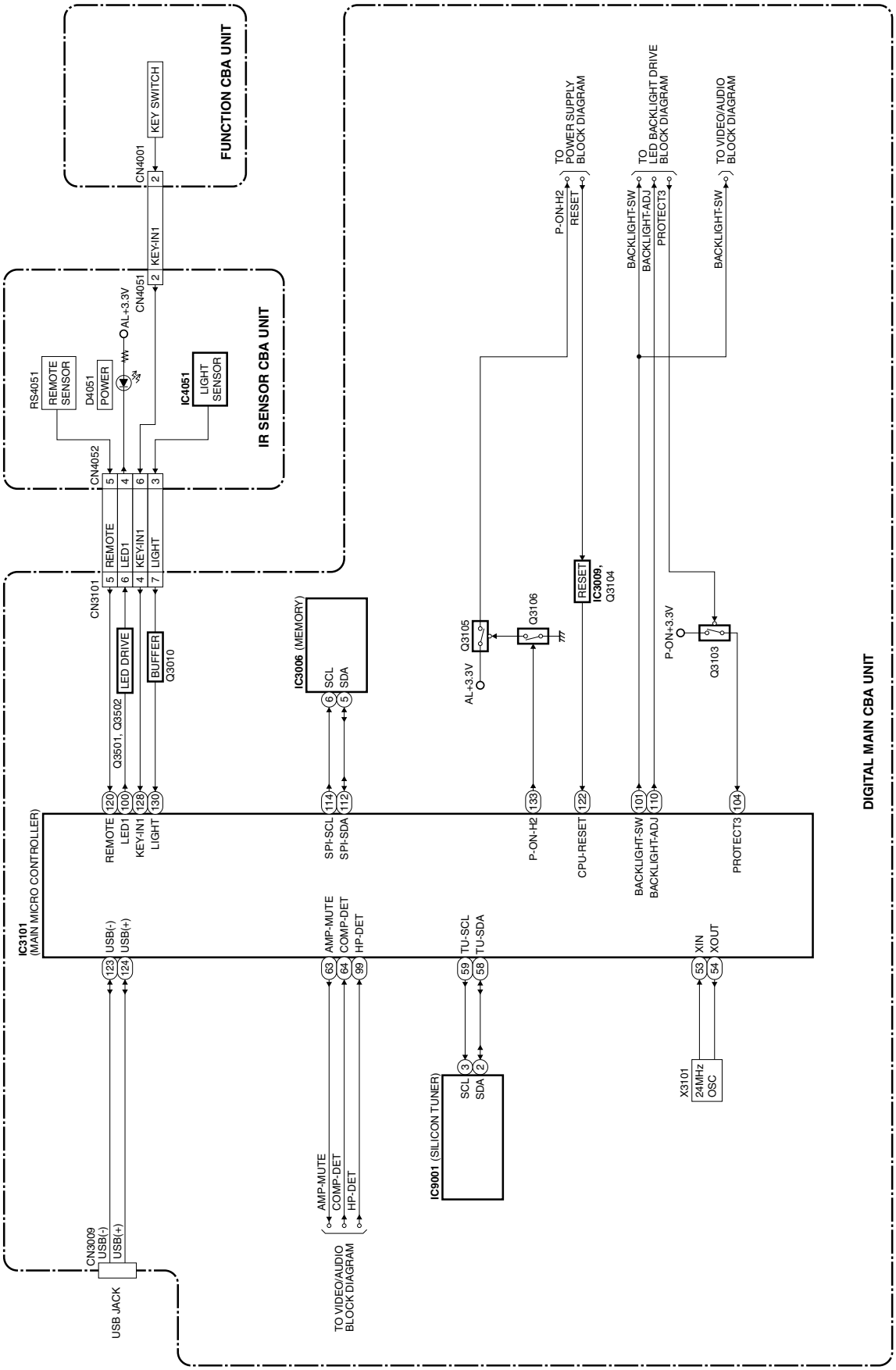
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

2.5A 250V

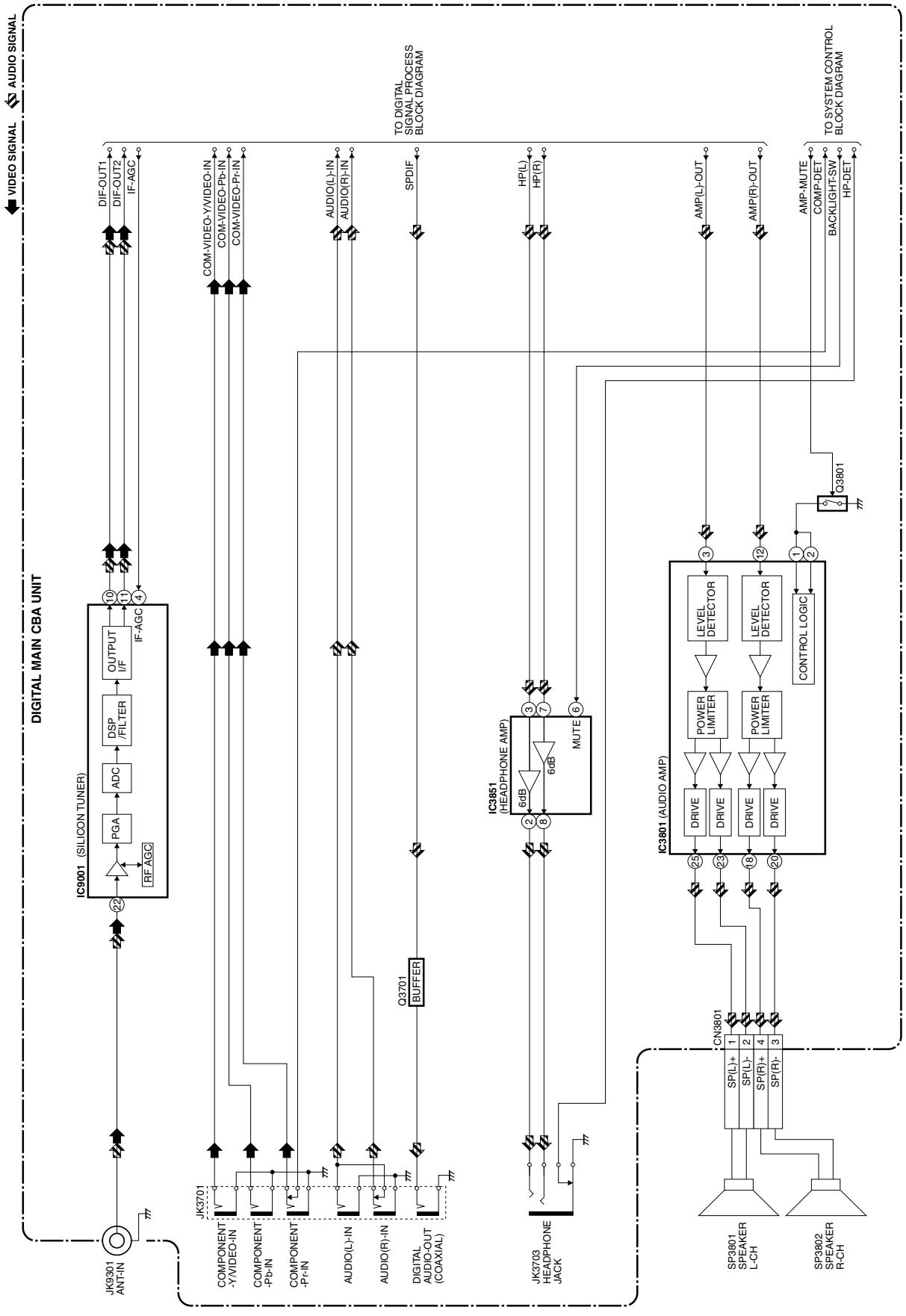
CAUTION ! : For continued protection against risk of fire, replace only with same type 2.5A, 250V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 2.5A, 250V.

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

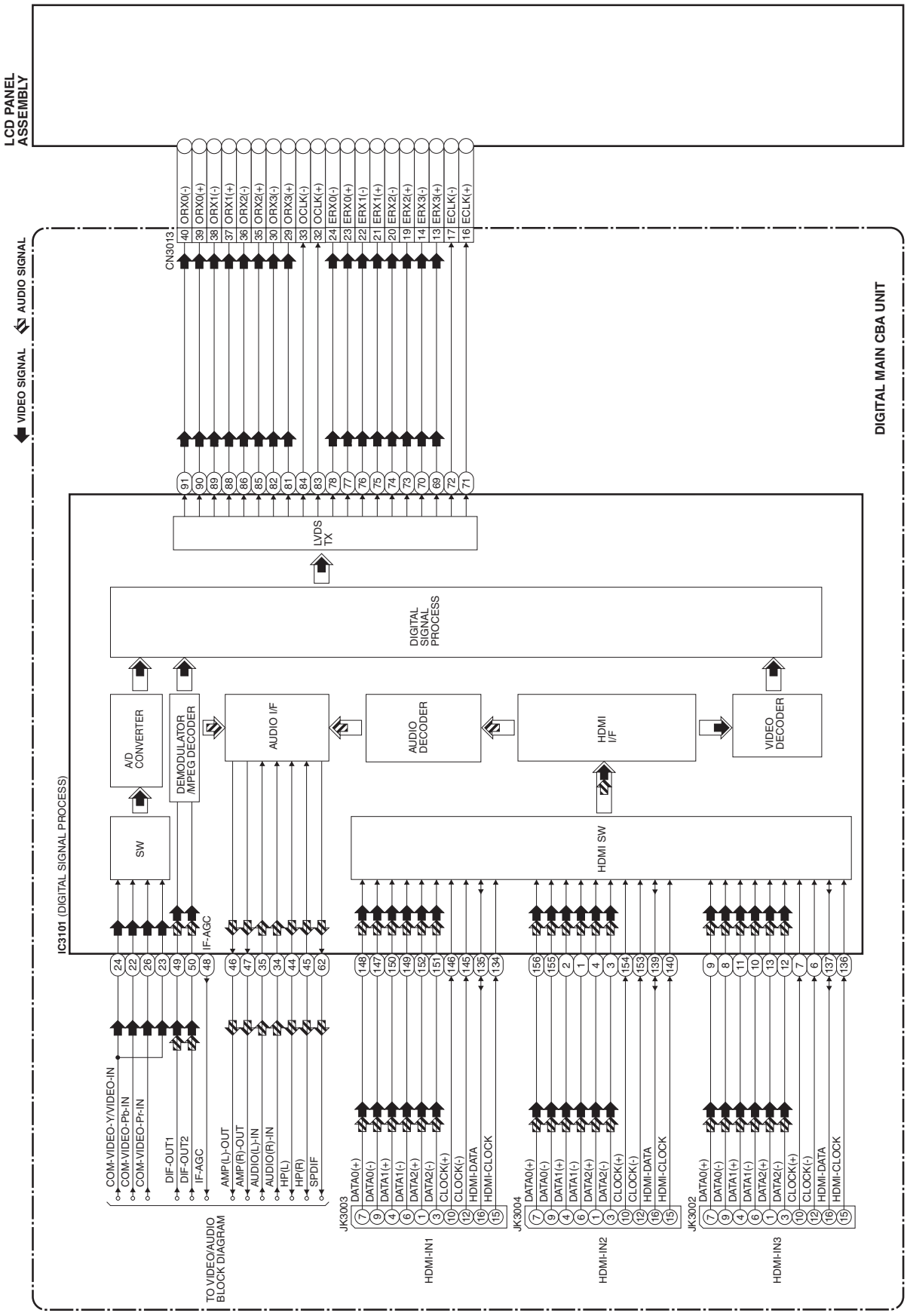
[TYPE B]
1. System Control Block Diagram



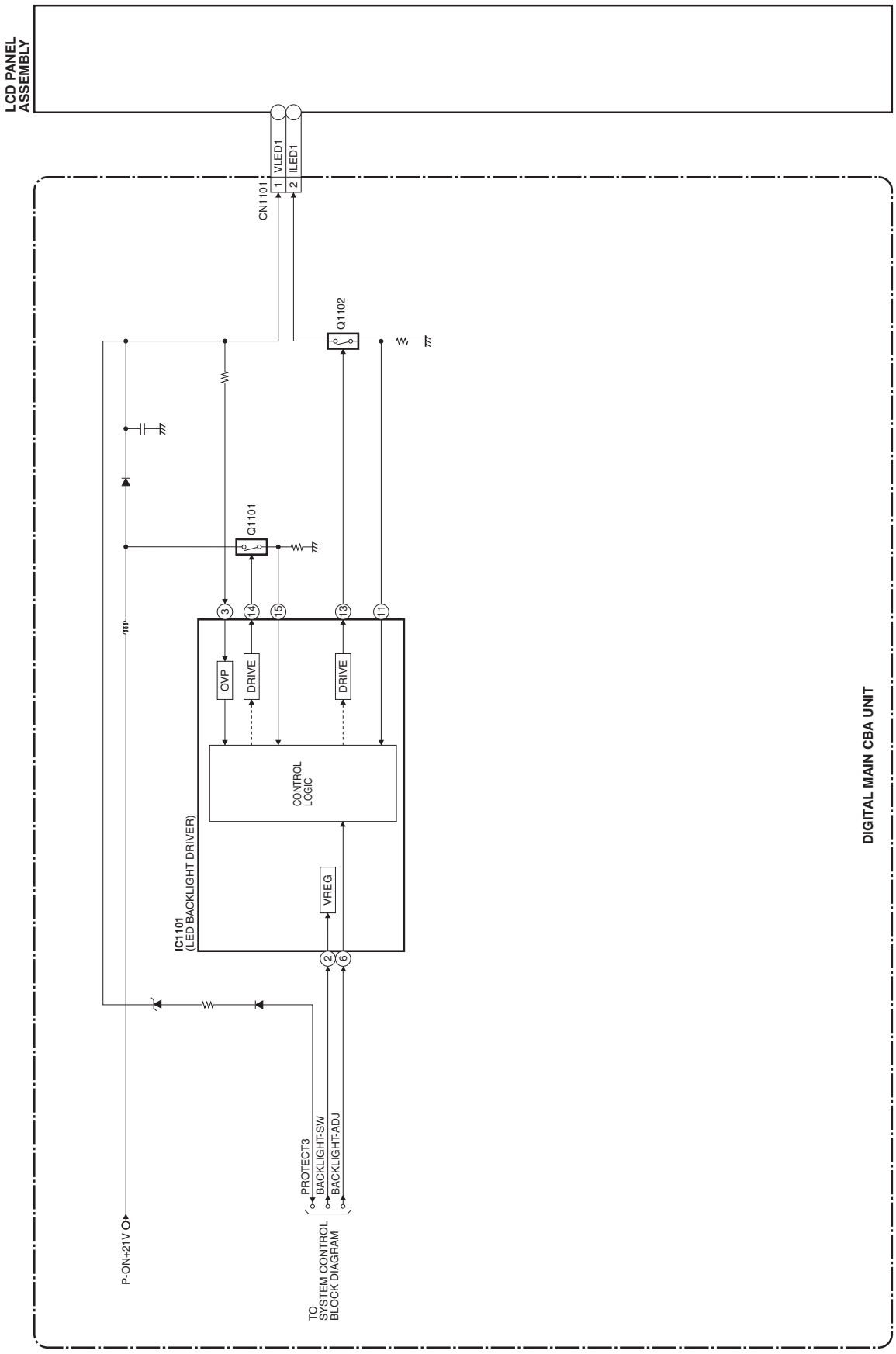
2. Video/Audio Block Diagram



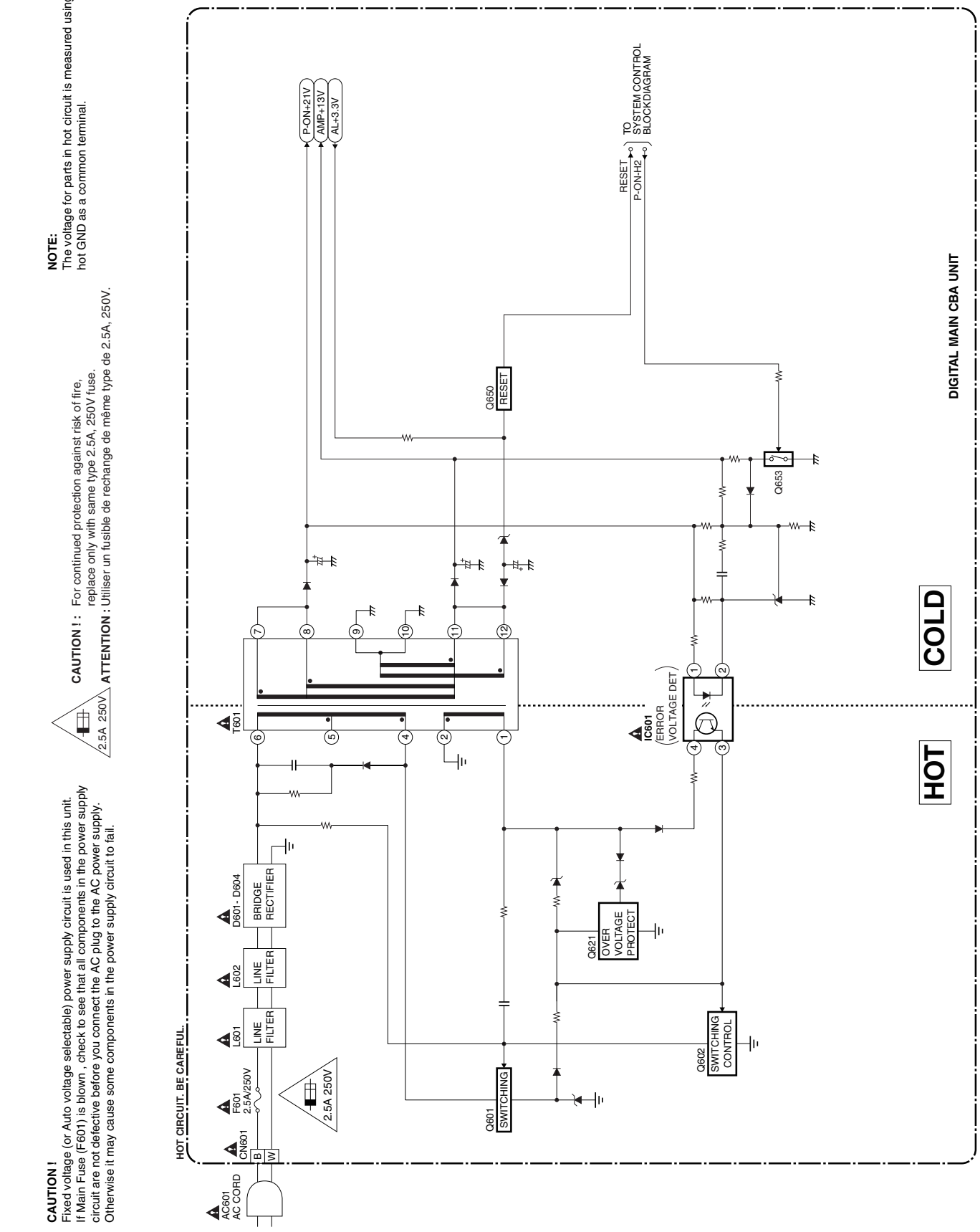
3. Digital Signal Process Block Diagram



4. LED Backlight Drive Block Diagram



5. Power Supply Block Diagram



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 ($P = 10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.
6. This schematic diagrams are masterized version that should cover the entire PL15.01 chassis models.
   Thus some parts in detail illustrated on this schematic diagrams may vary depend on the model within the PL15.01 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:

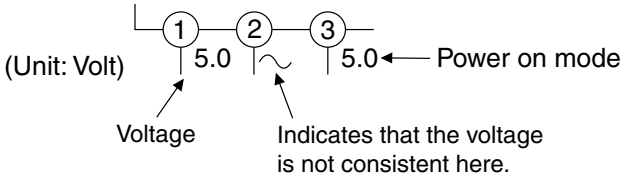
Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the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

3. Note:

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

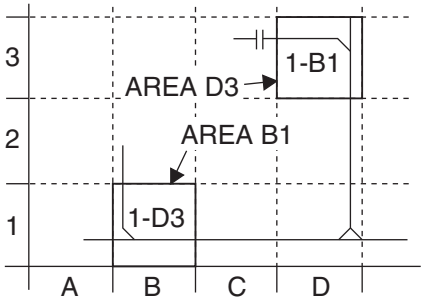
4. Voltage indications on the schematics are as shown below:

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



5. How to read converged lines

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.

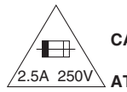
: Used to indicate a test point with no test pin.

: 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.

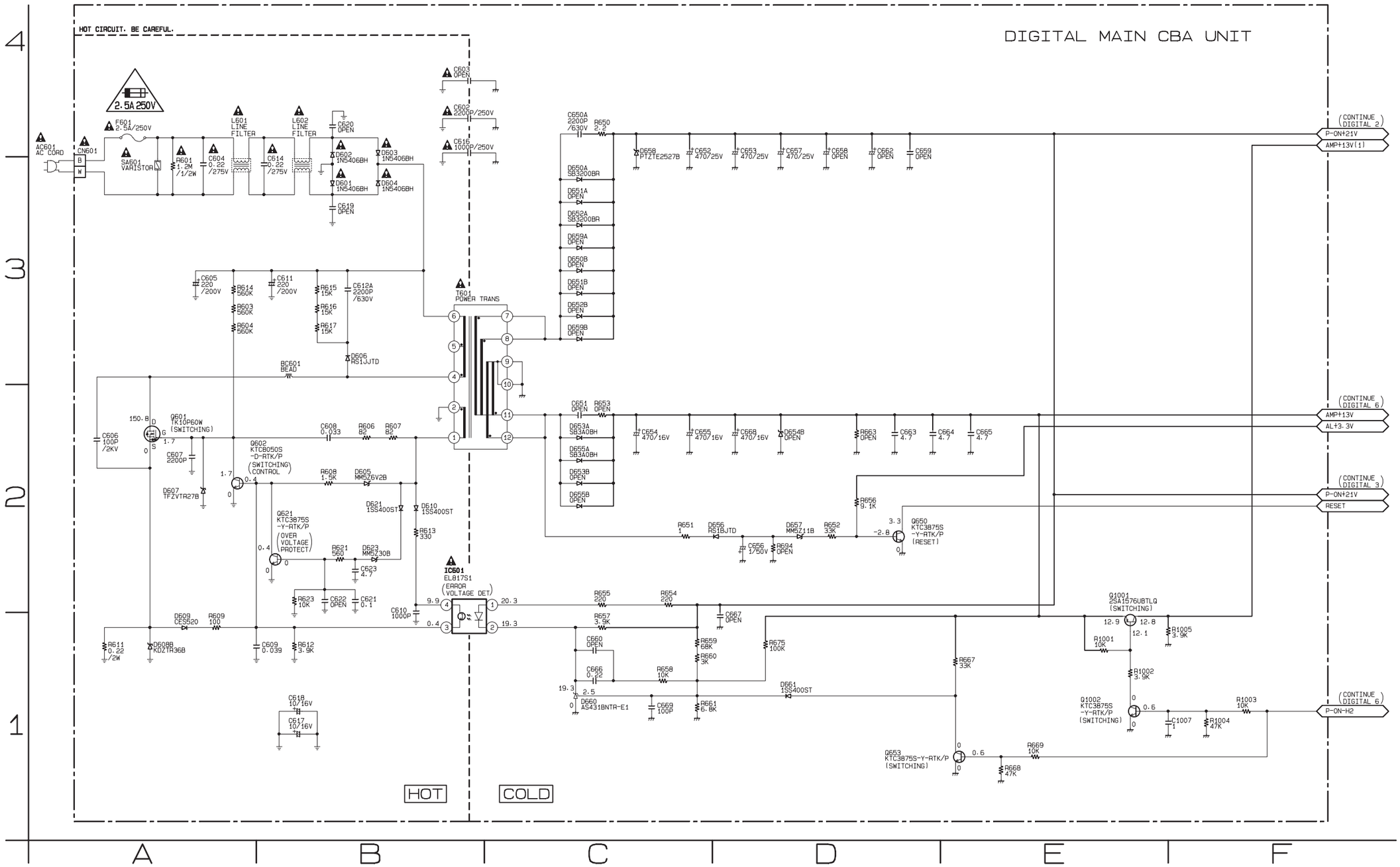
Digital Main 1 Schematic Diagram [TYPE A]

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

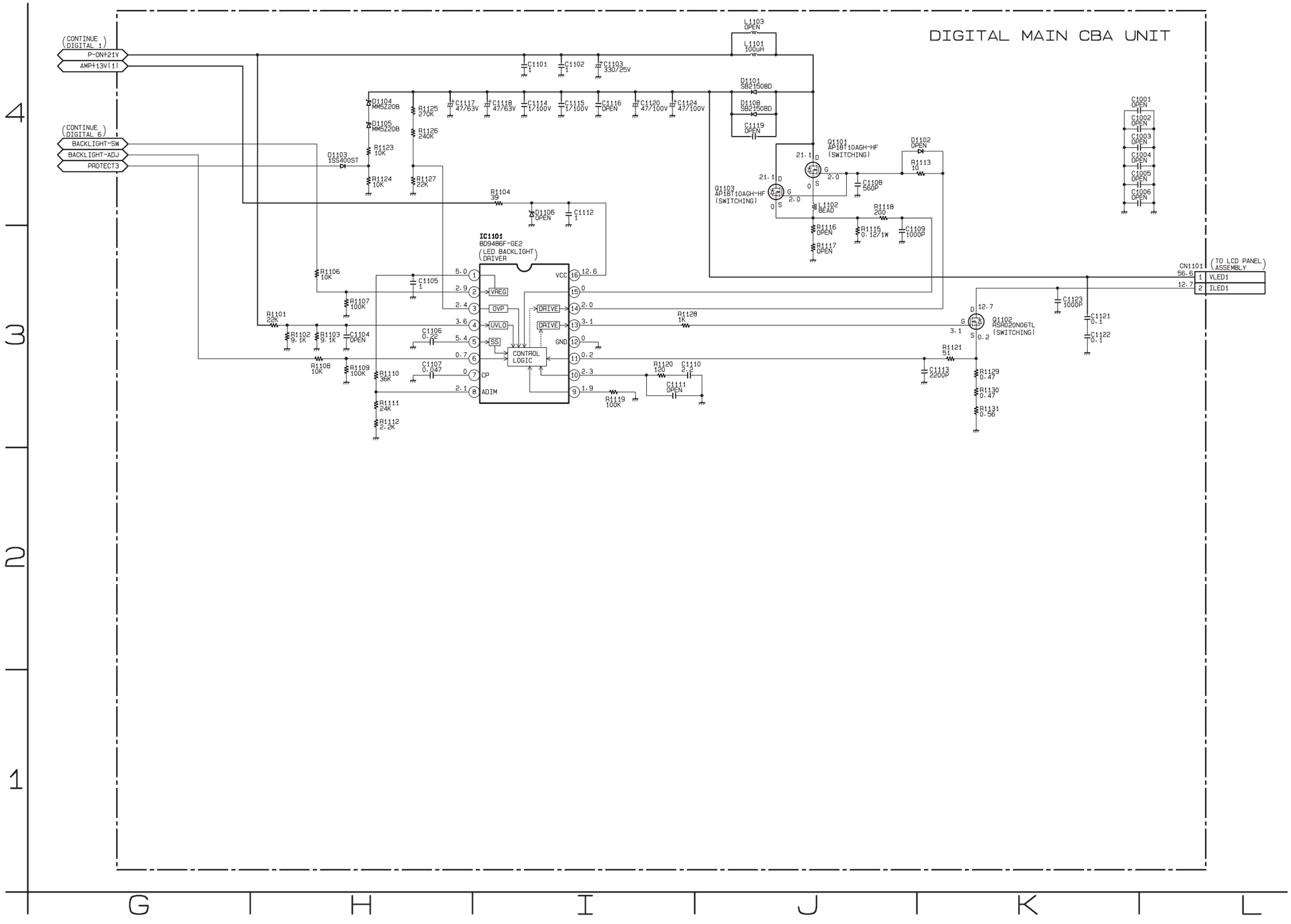


CAUTION ! : For continued protection against risk of fire, replace only with same type 2.5A, 250V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 2.5A, 250V.

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

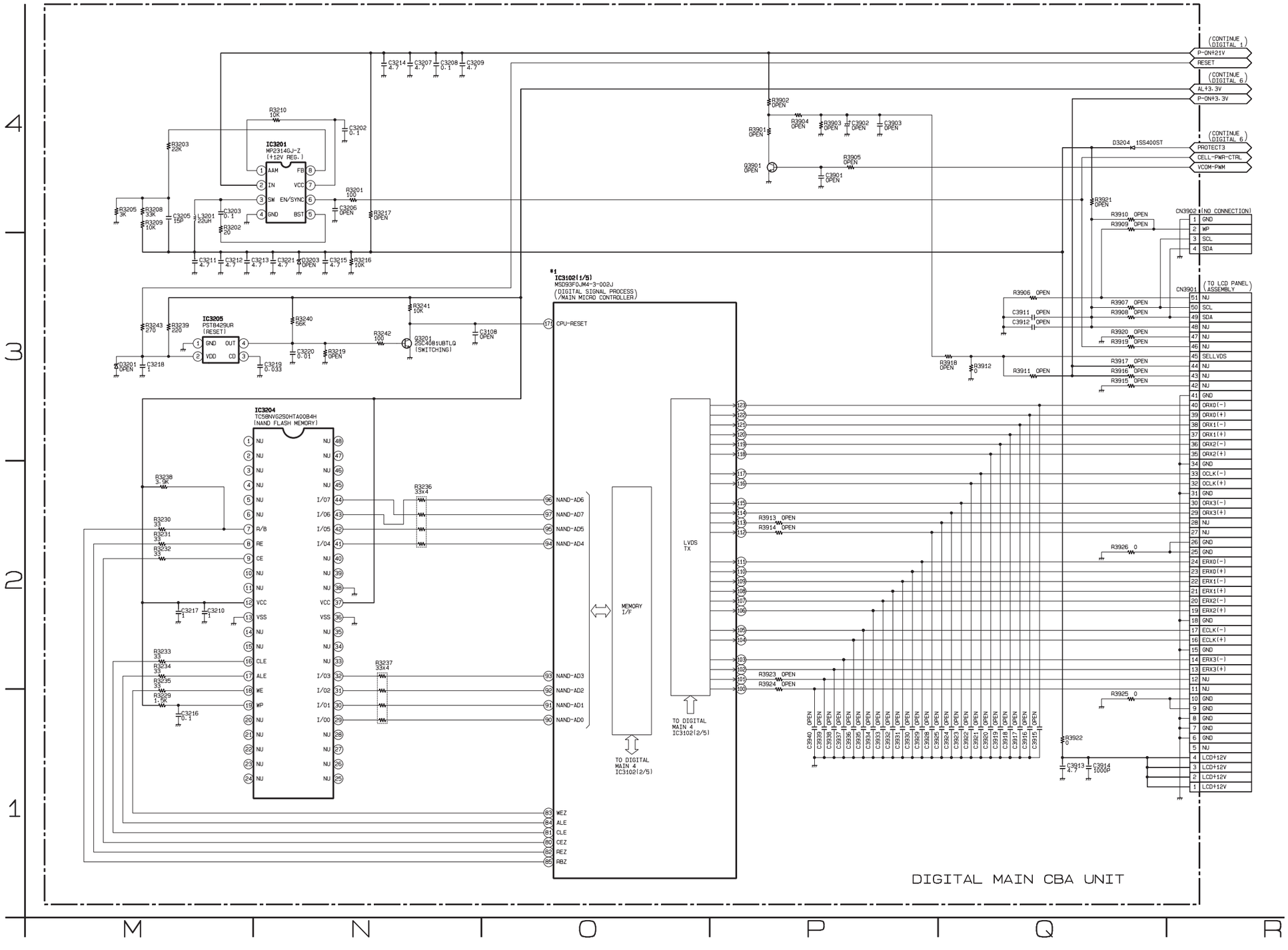


Digital Main 2 Schematic Diagram [TYPE A]



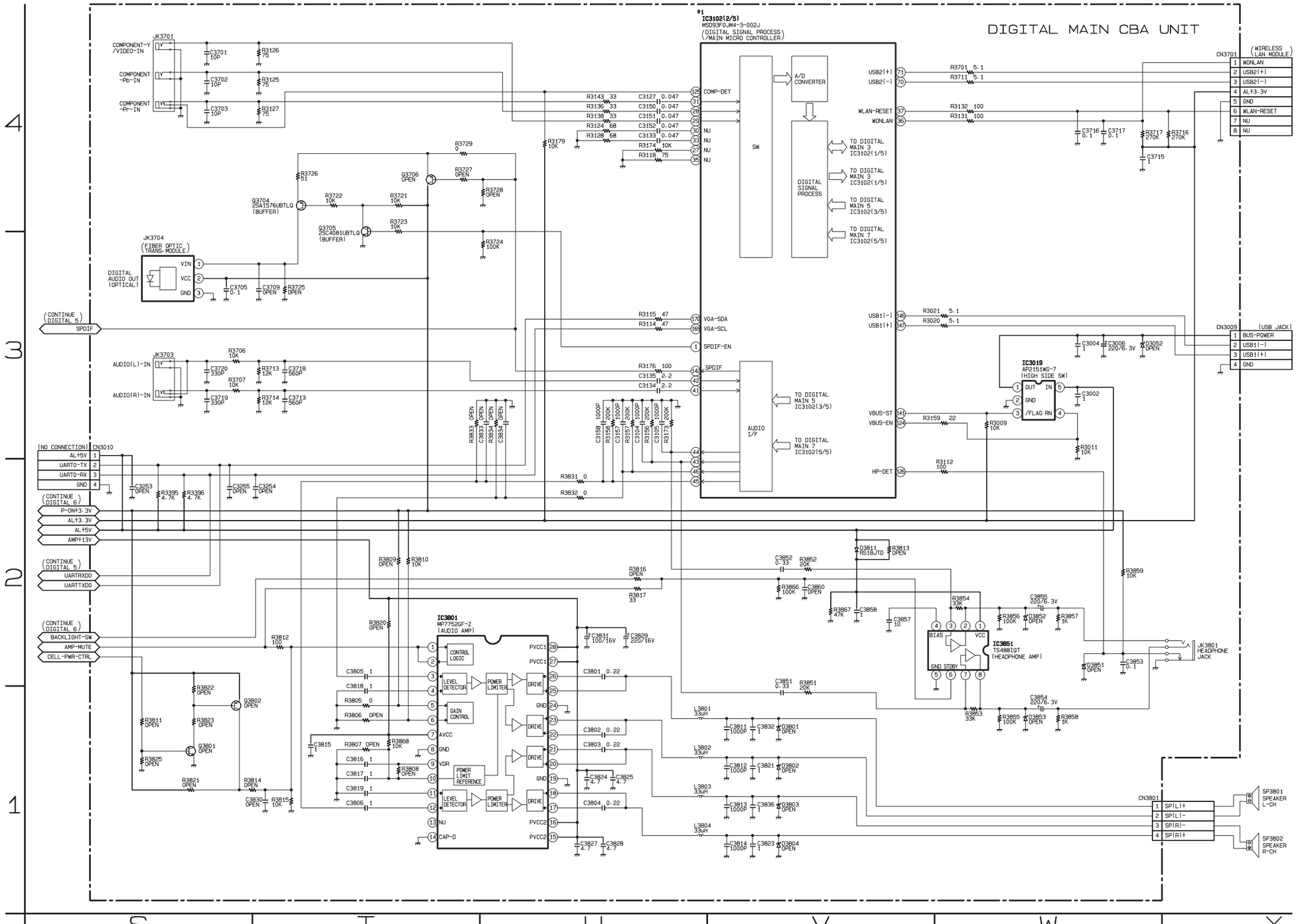
Digital Main 3 Schematic Diagram [TYPE A]

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3102.
IC3102 is divided into five and shown as IC3102 (1/5) ~ IC3102 (5/5) in this Digital Main Schematic Diagram Section.



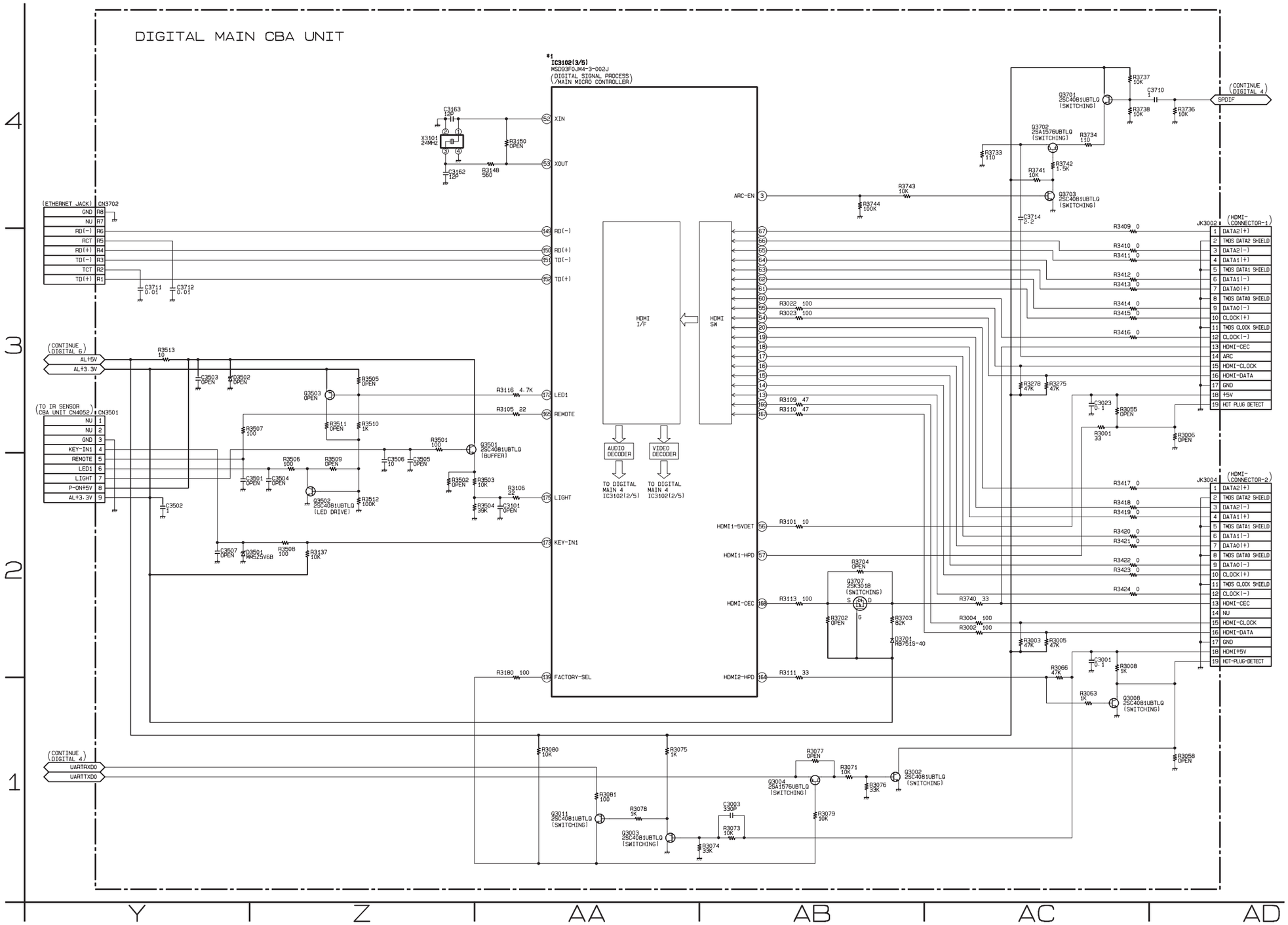
Digital Main 4 Schematic Diagram [TYPE A]

∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3102.
IC3102 is divided into five and shown as IC3102 (1/5) ~ IC3102 (5/5) in this Digital Main Schematic Diagram Section.



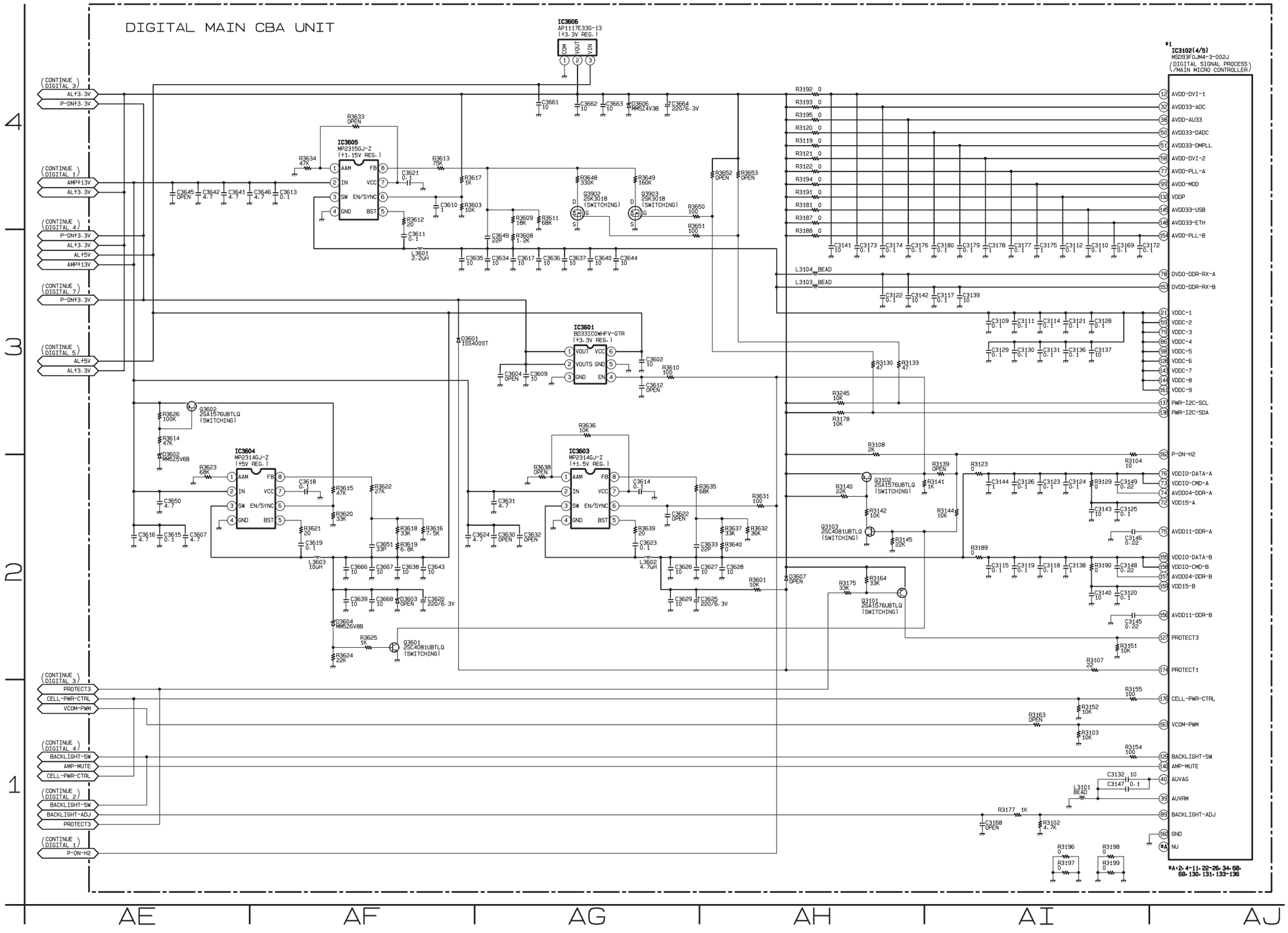
Digital Main 5 Schematic Diagram [TYPE A]

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3102.
IC3102 is divided into five and shown as IC3102 (1/5) ~ IC3102 (5/5) in this Digital Main Schematic Diagram Section.



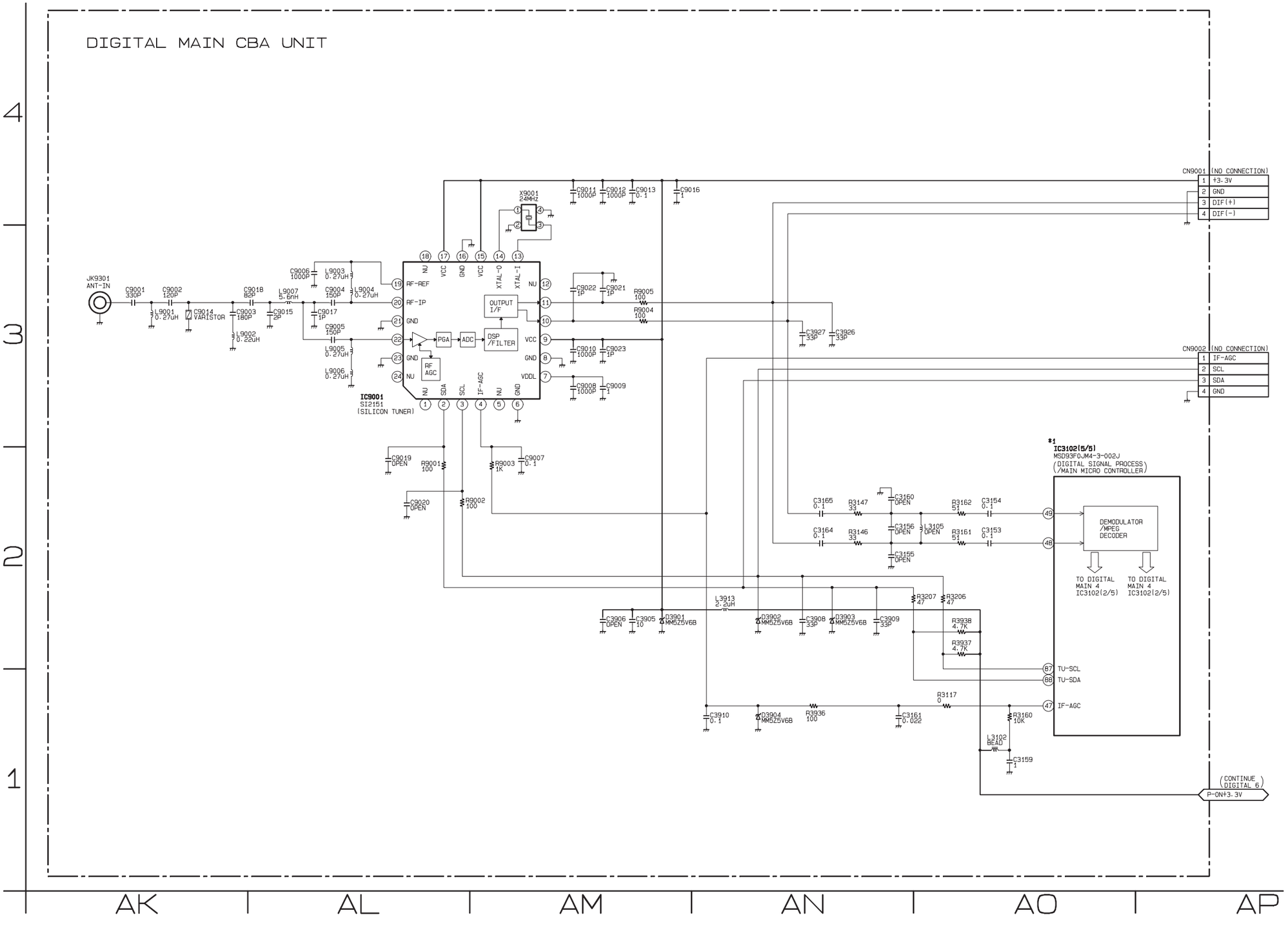
Digital Main 6 Schematic Diagram [TYPE A]

∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3102.
IC3102 is divided into five and shown as IC3102 (1/5) ~ IC3102 (5/5) in this Digital Main Schematic Diagram Section.



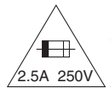
Digital Main 7 Schematic Diagram [TYPE A]

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3102.
IC3102 is divided into five and shown as IC3102 (1/5) ~ IC3102 (5/5) in this Digital Main Schematic Diagram Section.



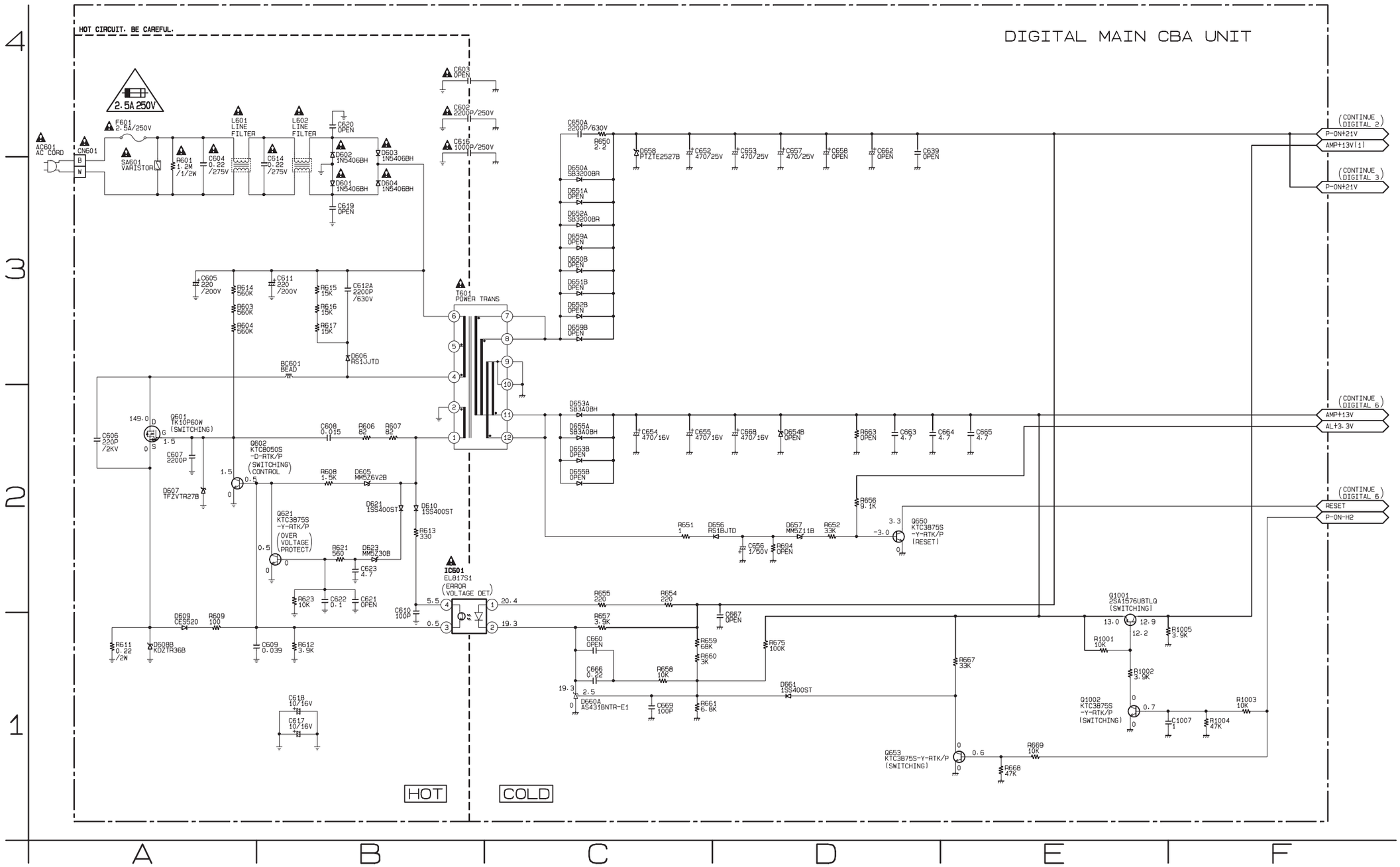
Digital Main 1 Schematic Diagram [TYPE B]

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

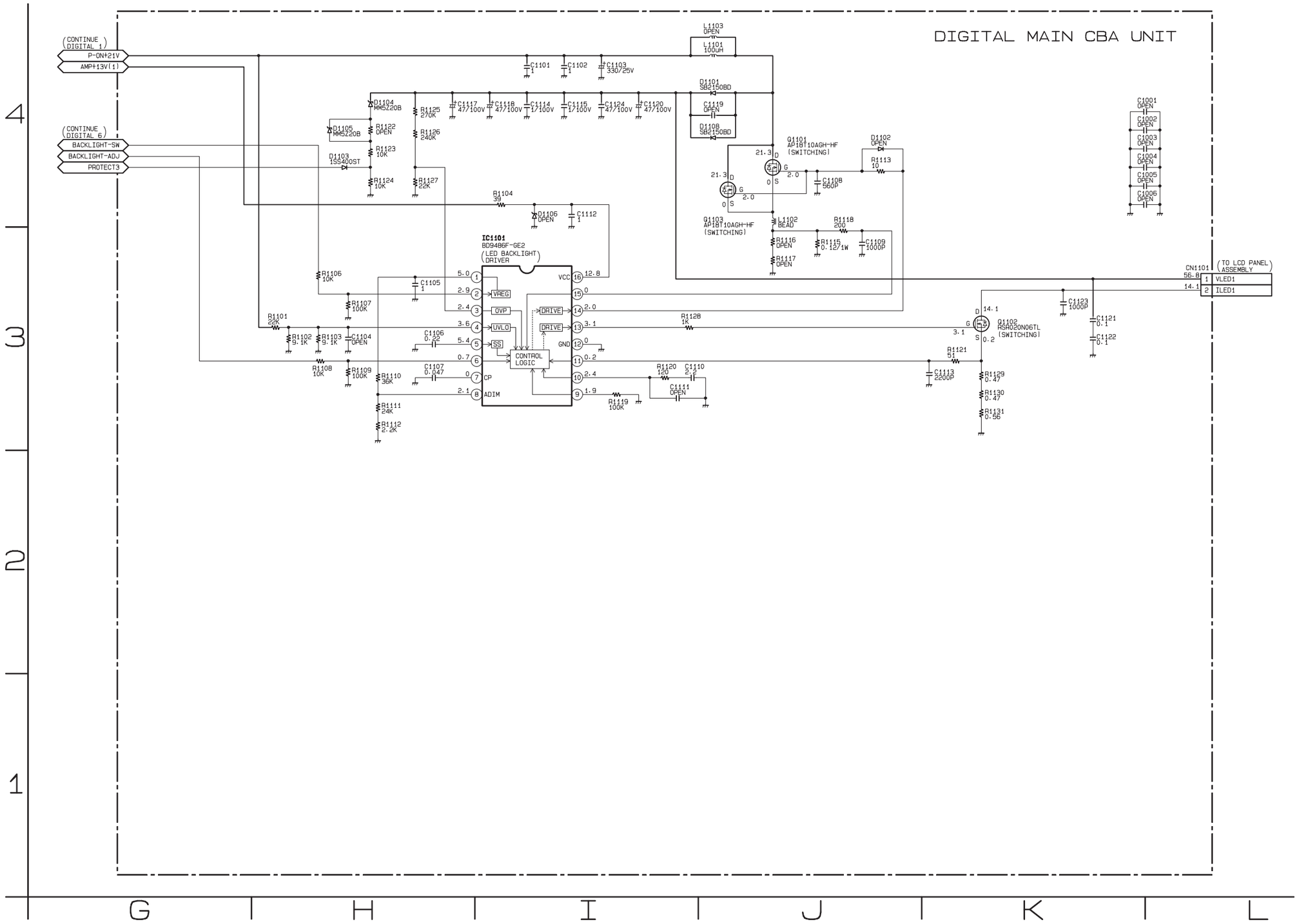


CAUTION ! : For continued protection against risk of fire, replace only with same type 2.5A, 250V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 2.5A, 250V.

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

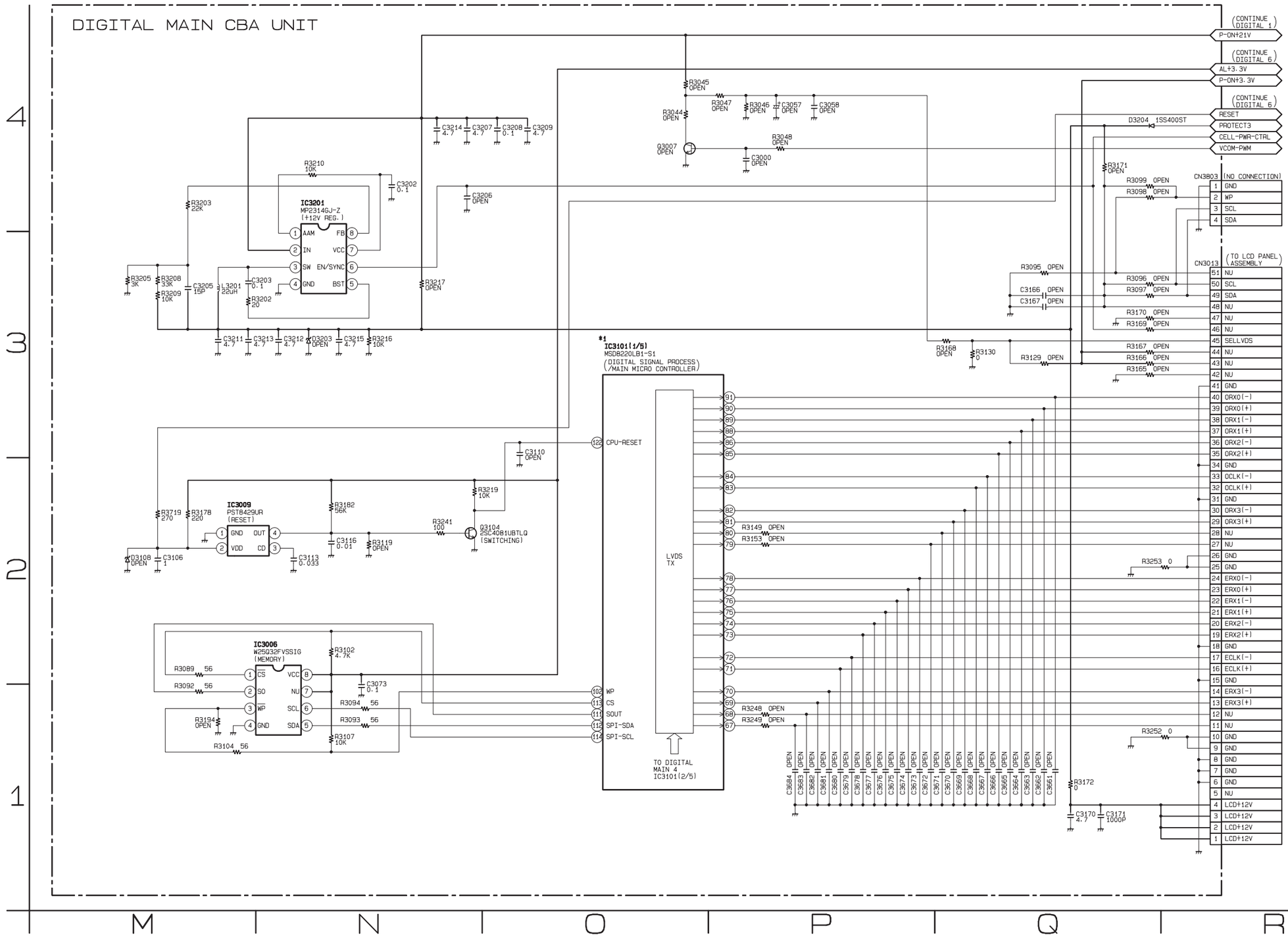


Digital Main 2 Schematic Diagram [TYPE B]



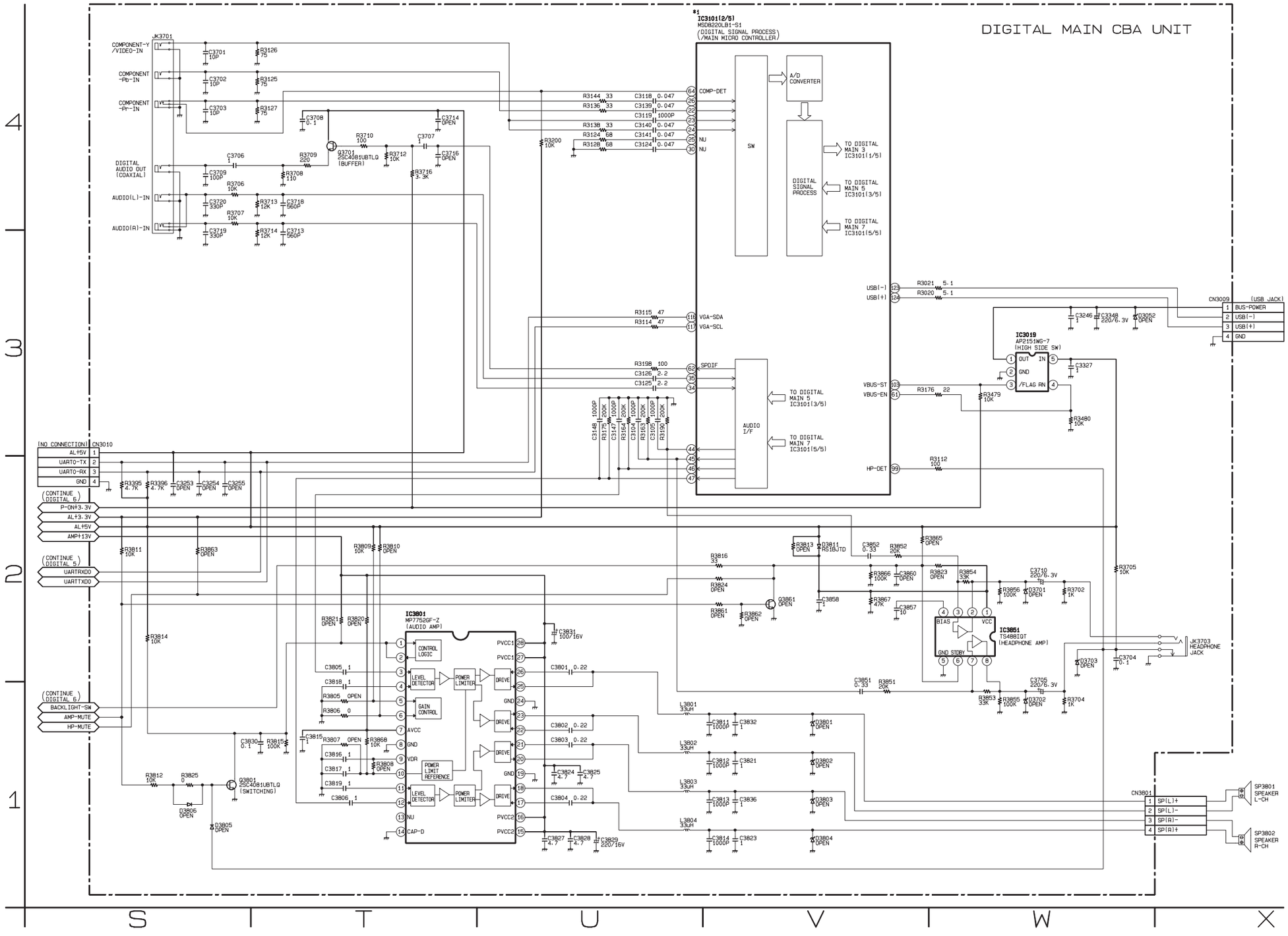
Digital Main 3 Schematic Diagram [TYPE B]

＊1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into five and shown as IC3101 (1/5) ~ IC3101 (5/5) in this Digital Main Schematic Diagram Section.



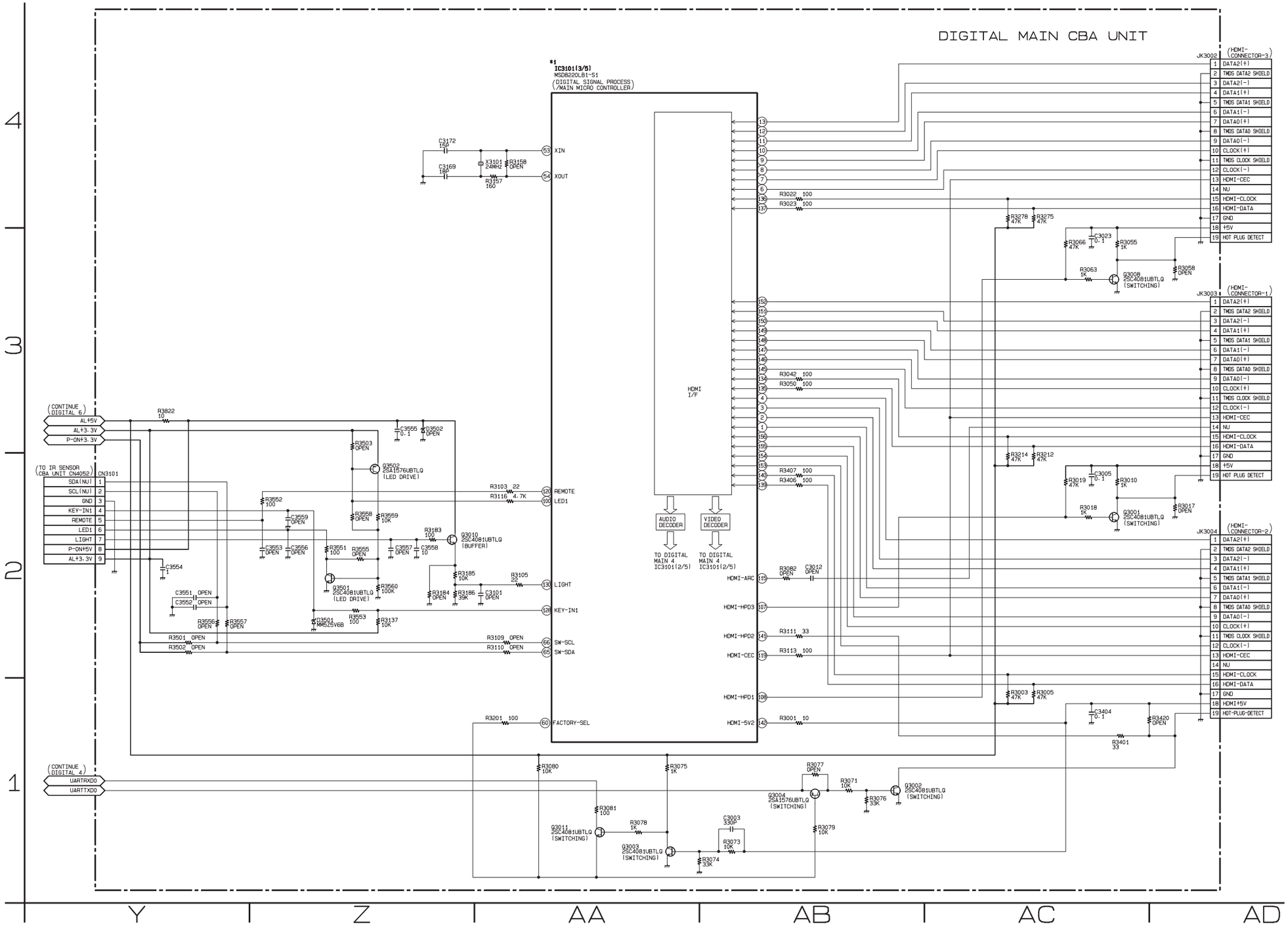
Digital Main 4 Schematic Diagram [TYPE B]

∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into five and shown as IC3101 (1/5) ~ IC3101 (5/5) in this Digital Main Schematic Diagram Section.



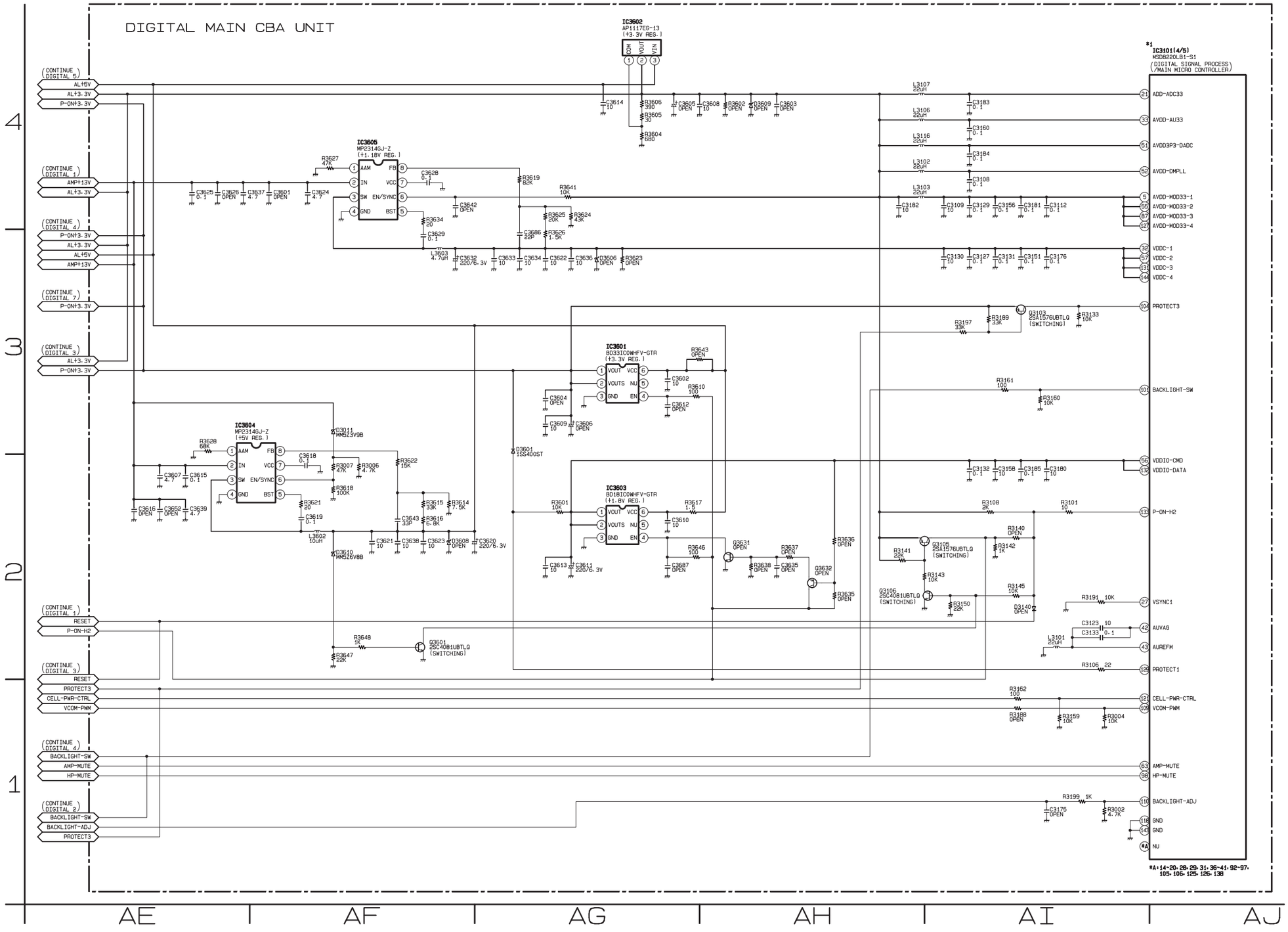
Digital Main 5 Schematic Diagram [TYPE B]

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into five and shown as IC3101 (1/5) ~ IC3101 (5/5) in this Digital Main Schematic Diagram Section.



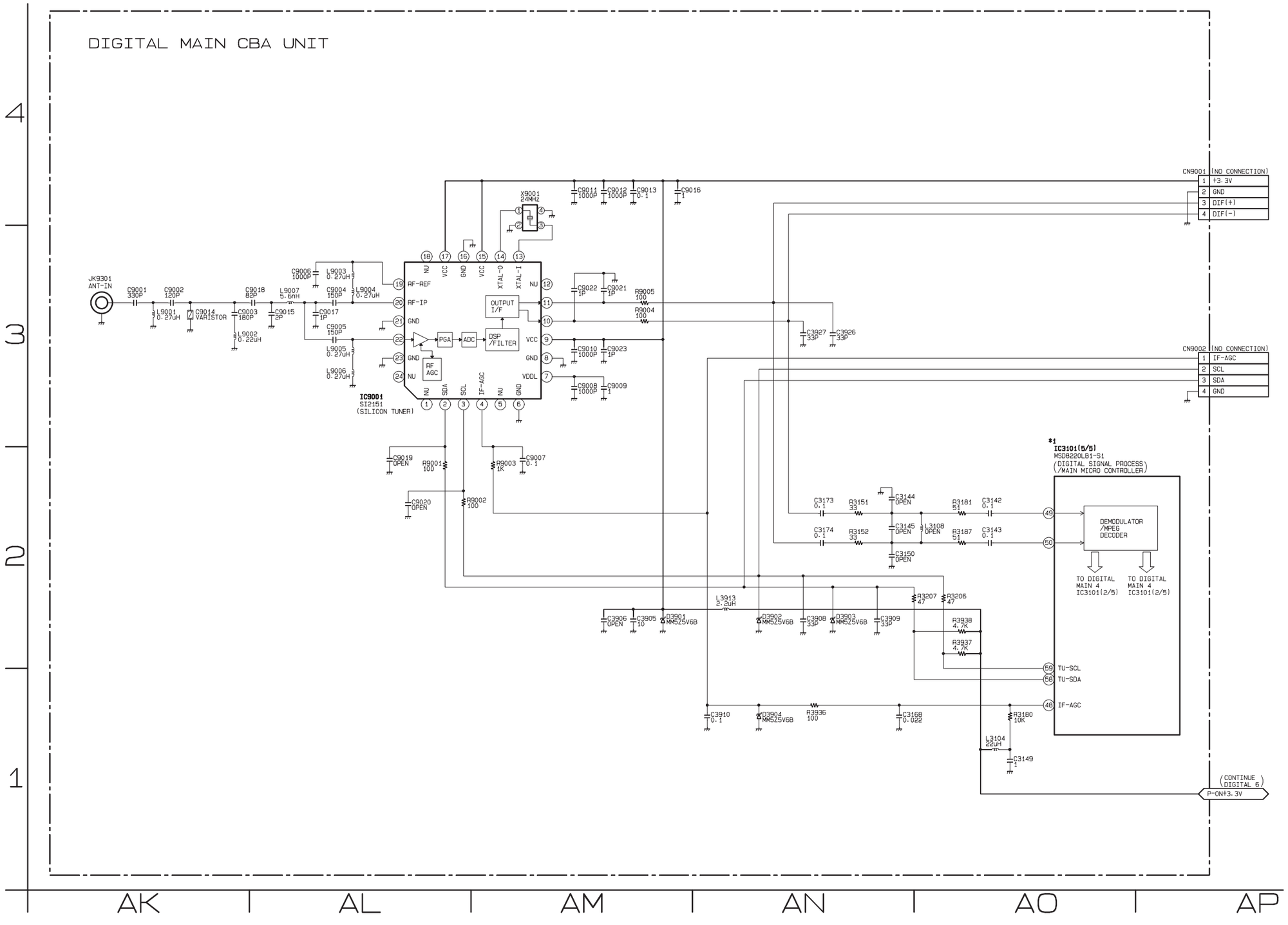
Digital Main 6 Schematic Diagram [TYPE B]

∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into five and shown as IC3101 (1/5) ~ IC3101 (5/5) in this Digital Main Schematic Diagram Section.

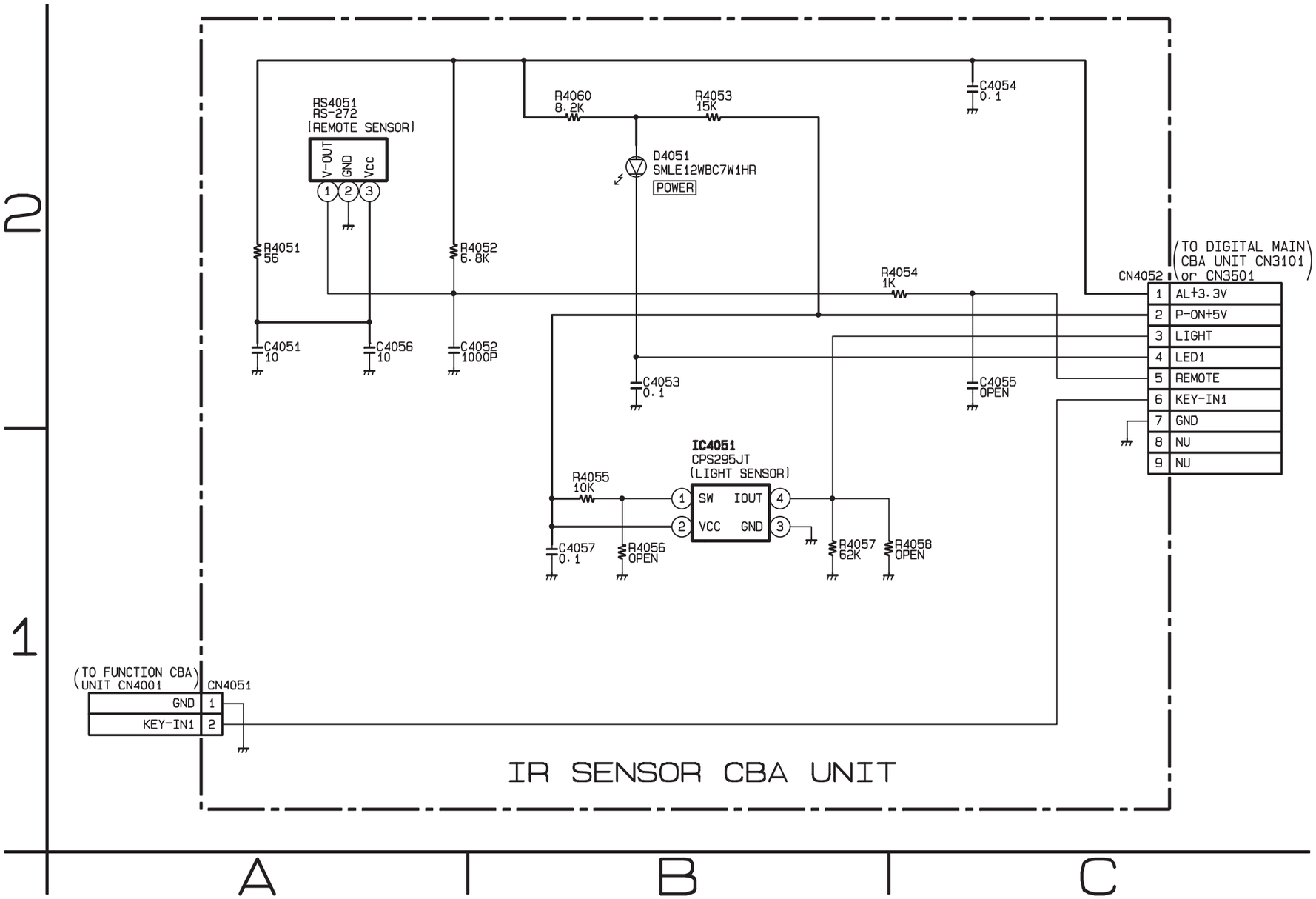


Digital Main 7 Schematic Diagram [TYPE B]

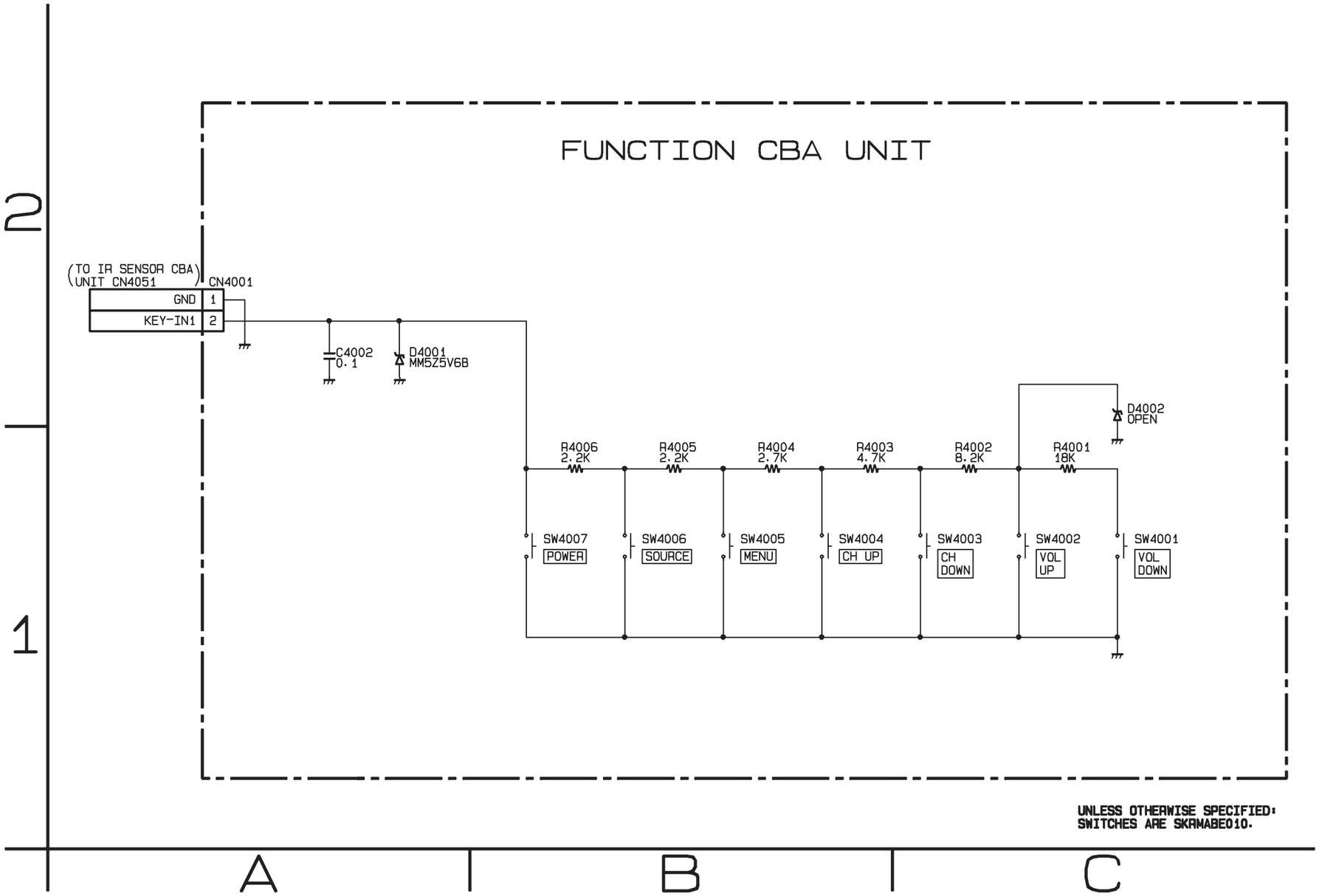
∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into five and shown as IC3101 (1/5) ~ IC3101 (5/5) in this Digital Main Schematic Diagram Section.



IR Sensor Schematic Diagram



Function Schematic Diagram



UNLESS OTHERWISE SPECIFIED:
SWITCHES ARE SKRMABE010.

Digital Main CBA Top View [TYPE A]

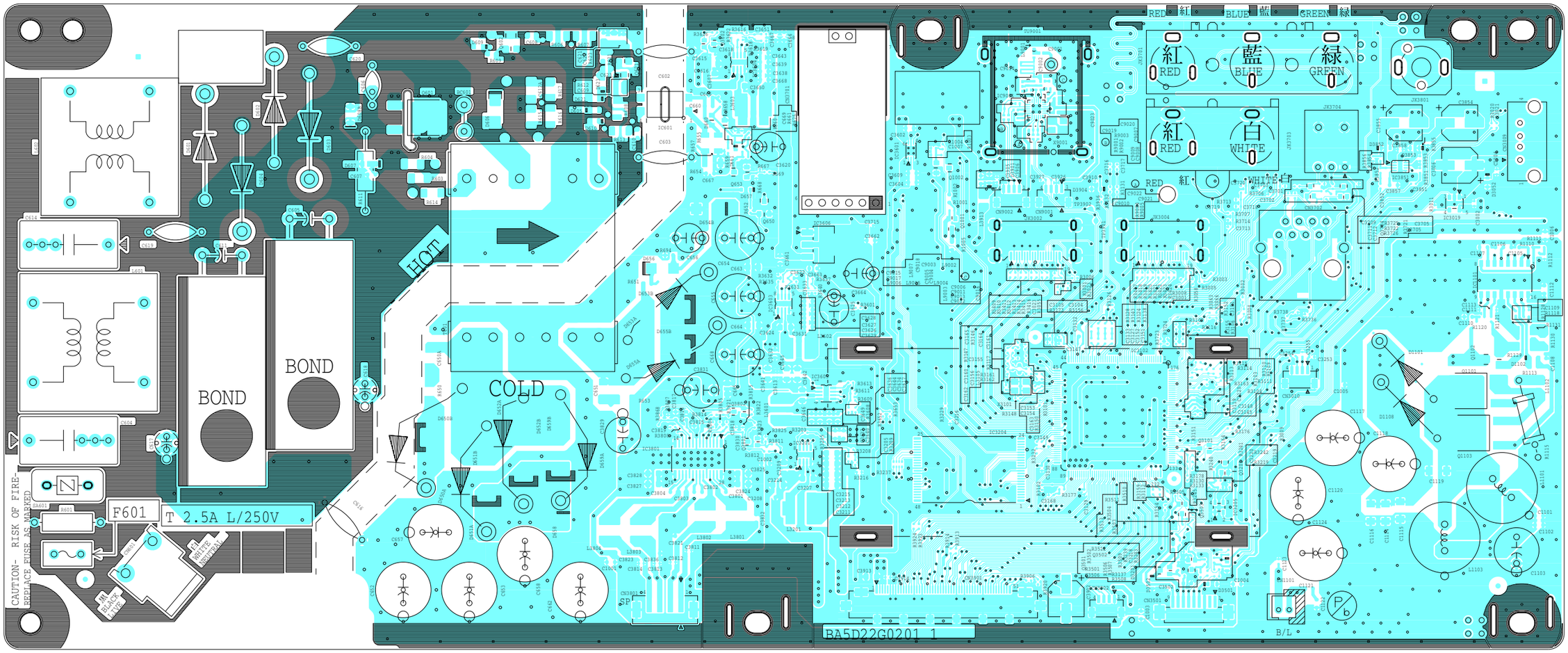
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

2.5A 250V

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.



Digital Main CBA Bottom View [TYPE A]

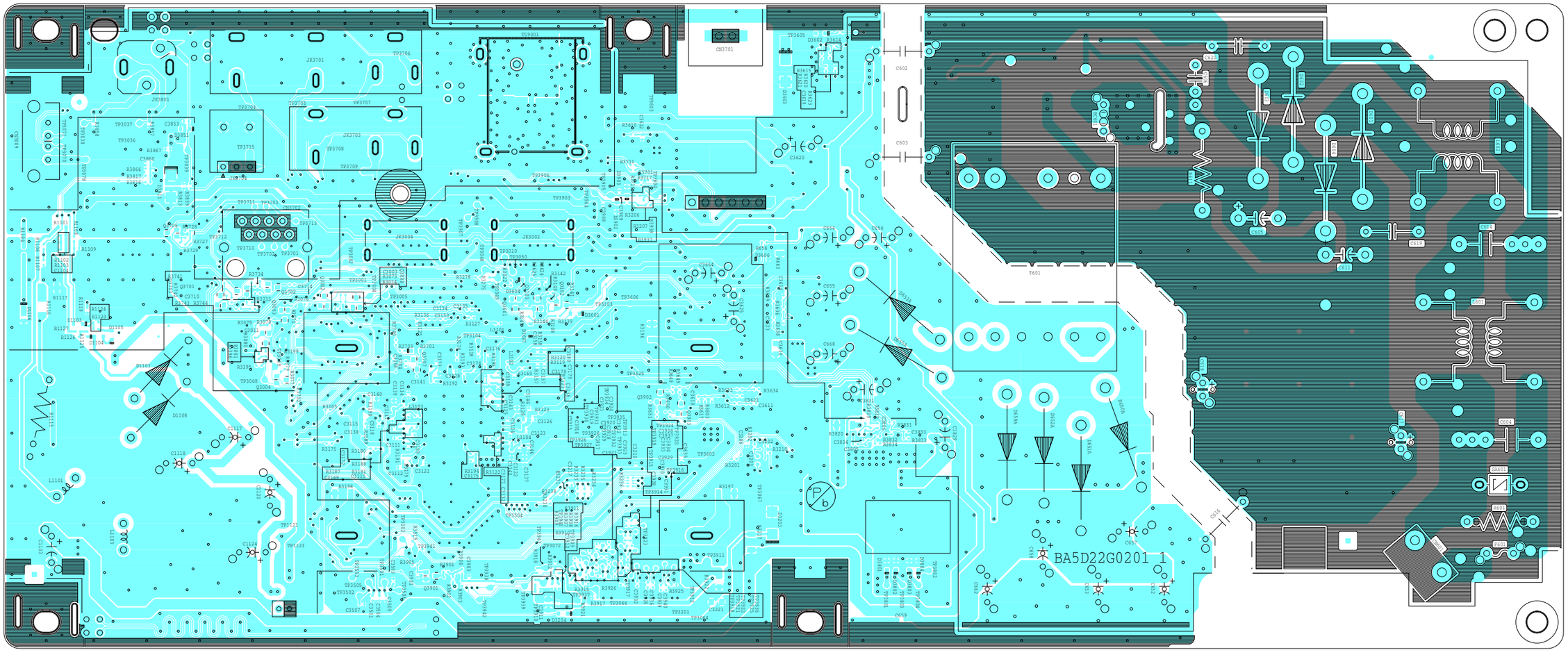
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

2.5A 250V

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.

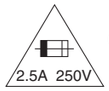
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing. Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.

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



Digital Main CBA Top View [TYPE B]

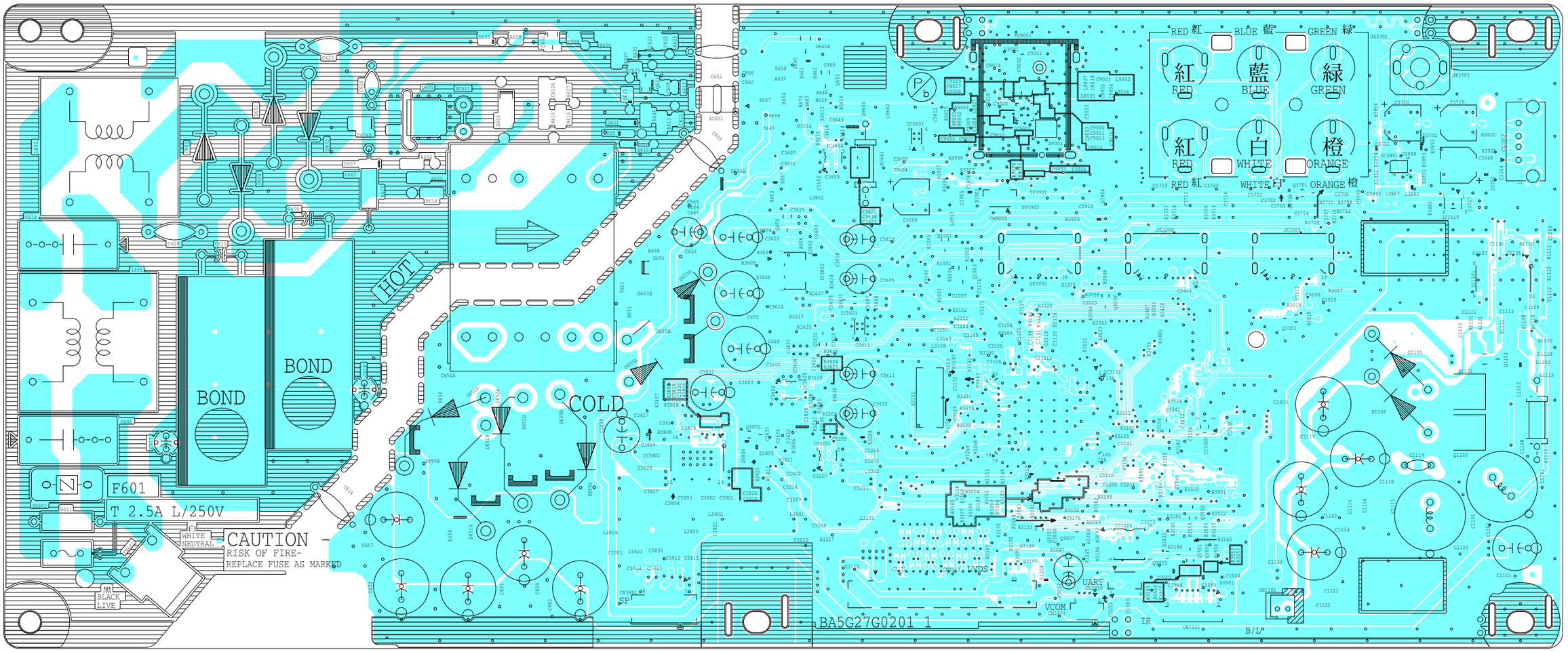
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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



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

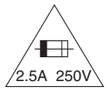
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing. Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.

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



Digital Main CBA Bottom View [TYPE B]

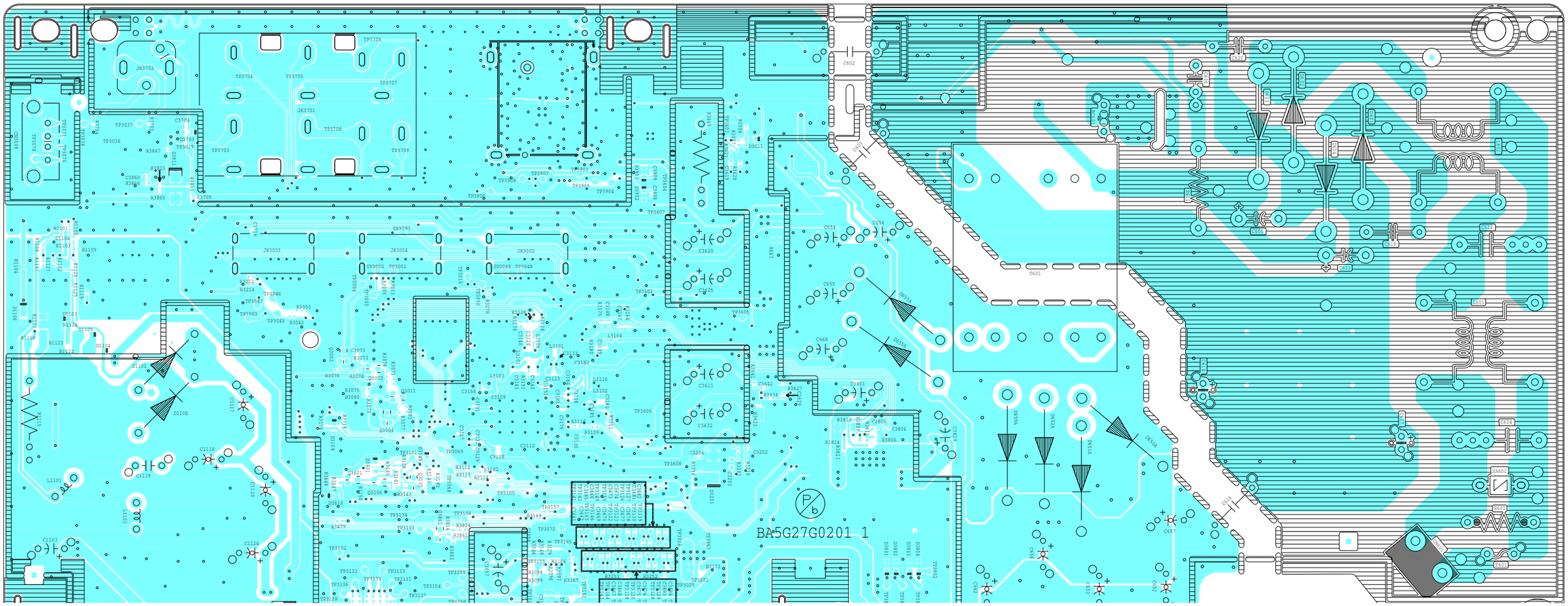
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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



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

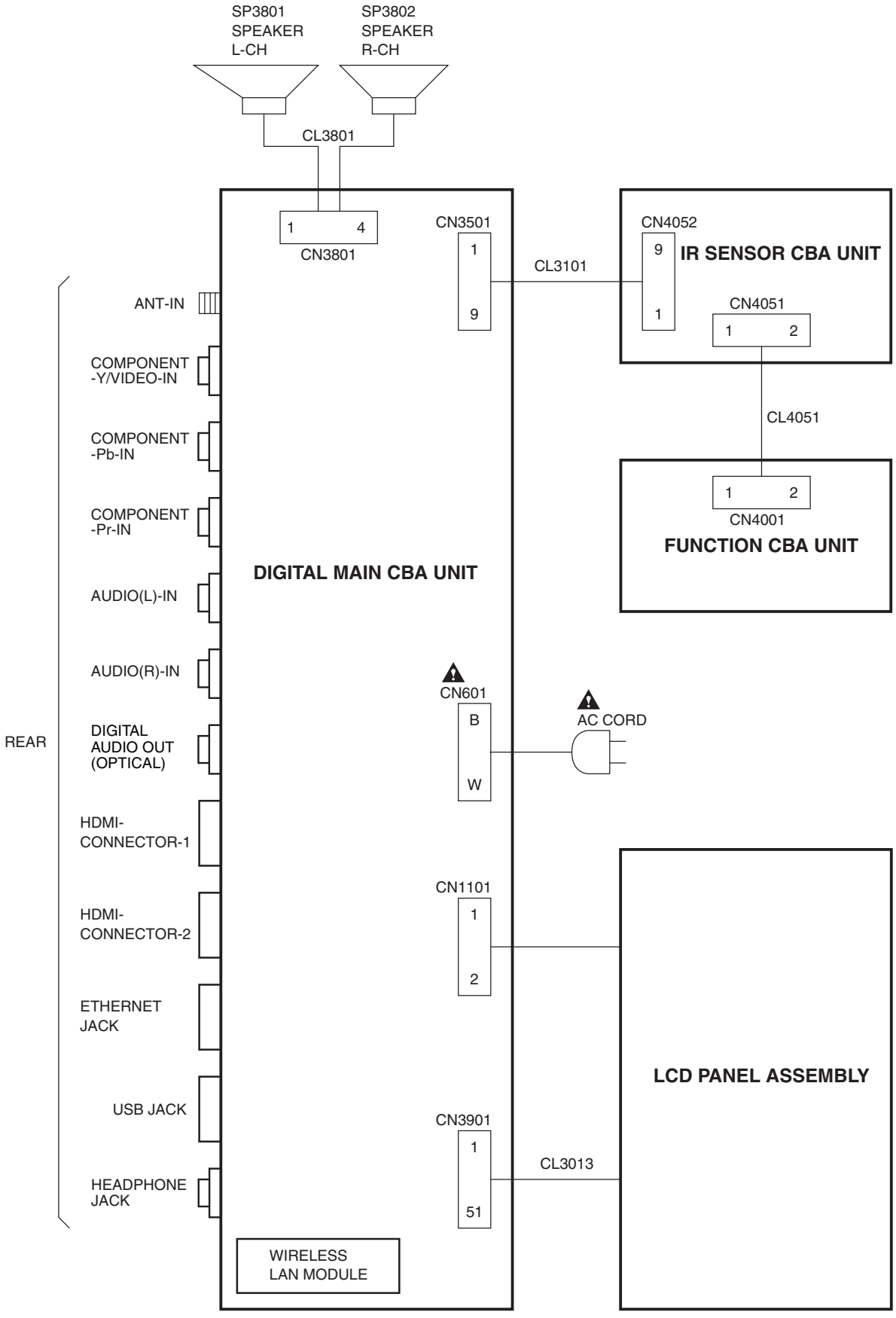
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing. Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.

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

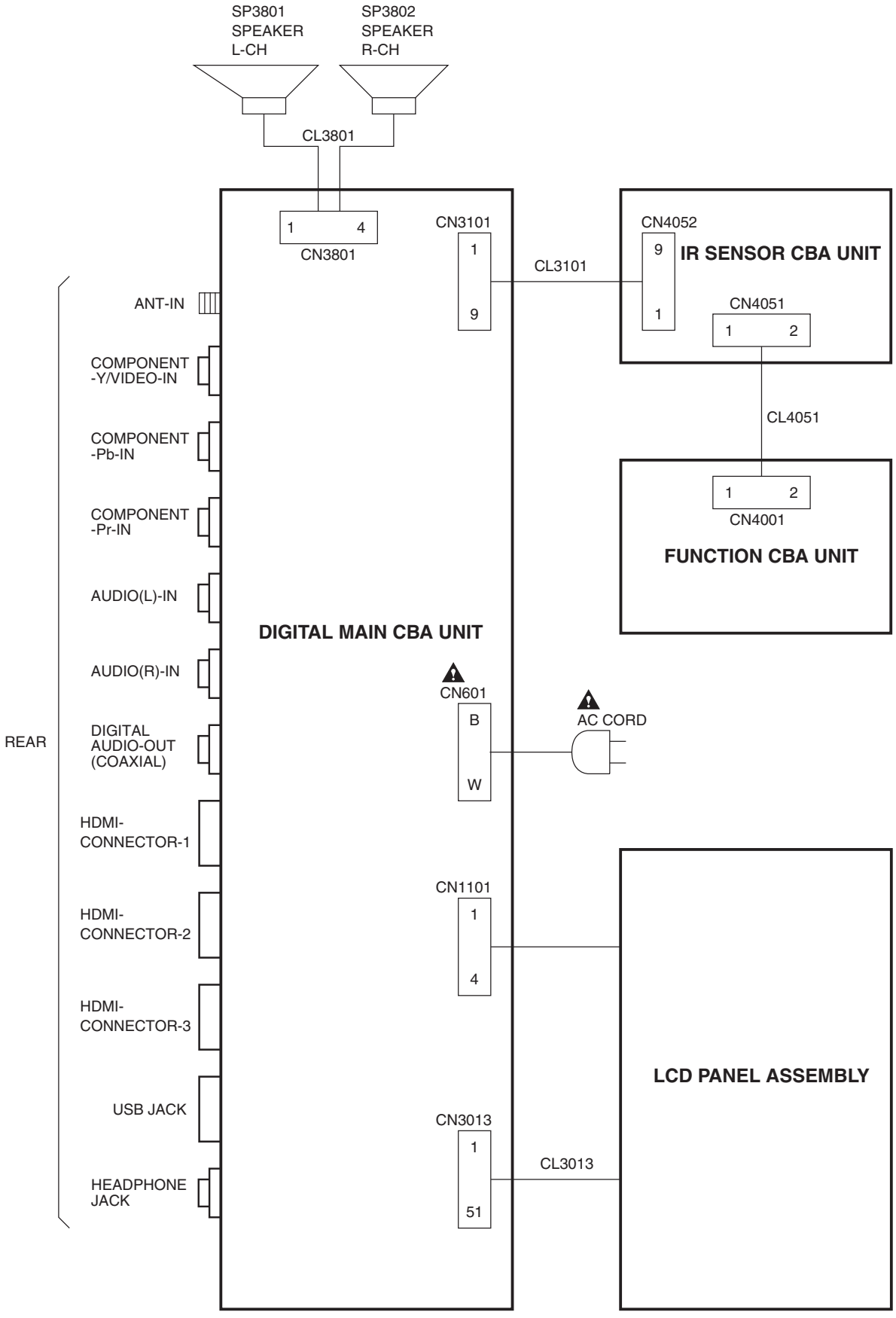


WIRING DIAGRAM

[TYPE A]

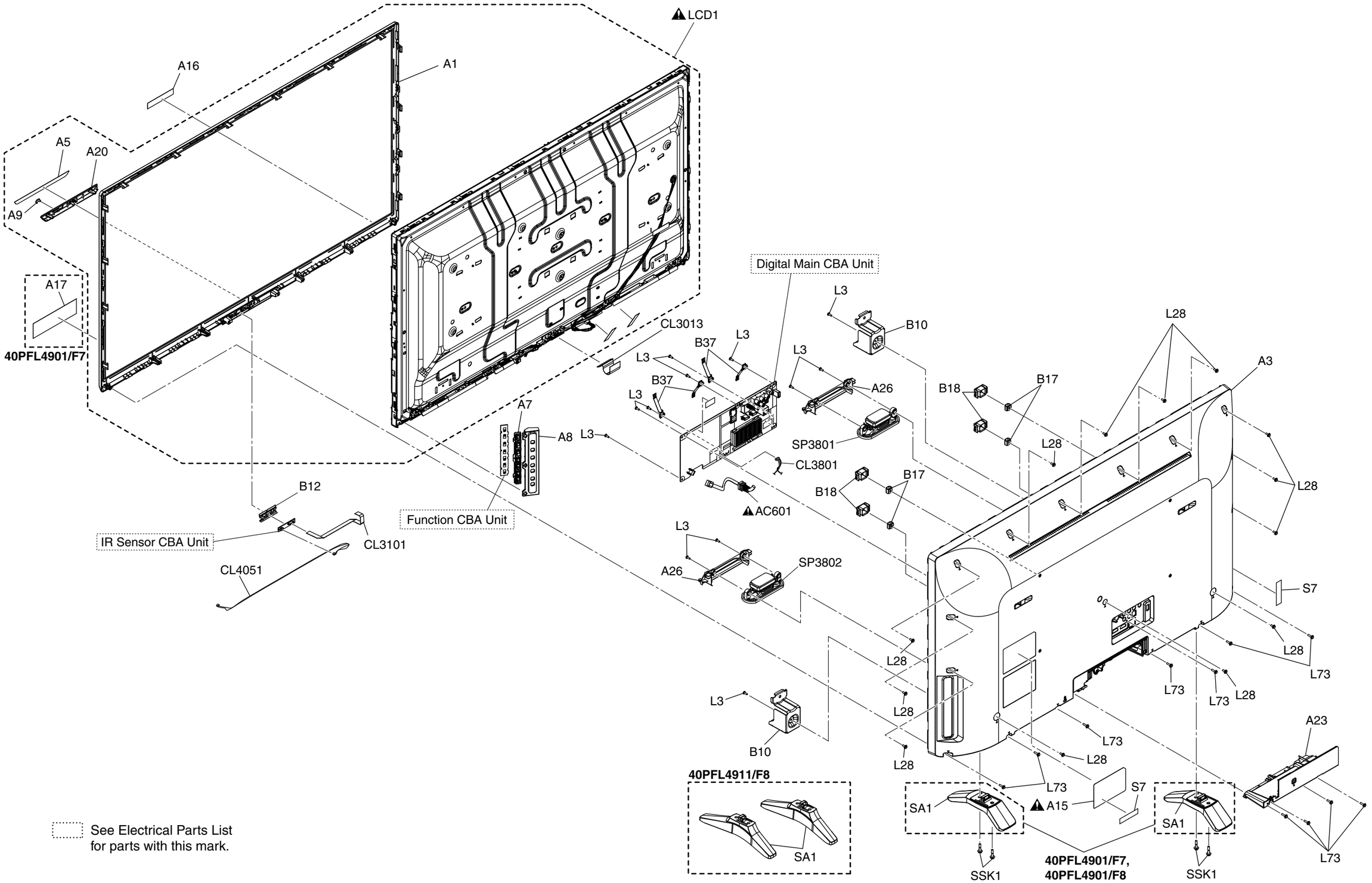


[TYPE B]


SP3801
SPEAKER
L-CH
SP3802
SPEAKER
R-CH
CL3801
1
4
CN3801
CN3101
1
9
CL3101
CN4052
9
1
IR SENSOR CBA UNIT
CN4051
1
2
CL4051
1
2
CN4001
FUNCTION CBA UNIT
ANT-IN
COMPONENT
-Y/VIDEO-IN
COMPONENT
-Pb-IN
COMPONENT
-Pr-IN
AUDIO(L)-IN
AUDIO(R)-IN
DIGITAL
AUDIO-OUT
(COAXIAL)
REAR
HDMI-
CONNECTOR-1
HDMI-
CONNECTOR-2
HDMI-
CONNECTOR-3
USB JACK
HEADPHONE
JACK
DIGITAL MAIN CBA UNIT
CN601
B
W
AC CORD
CN1101
1
4
CN3013
1
51
CL3013
LCD PANEL ASSEMBLY

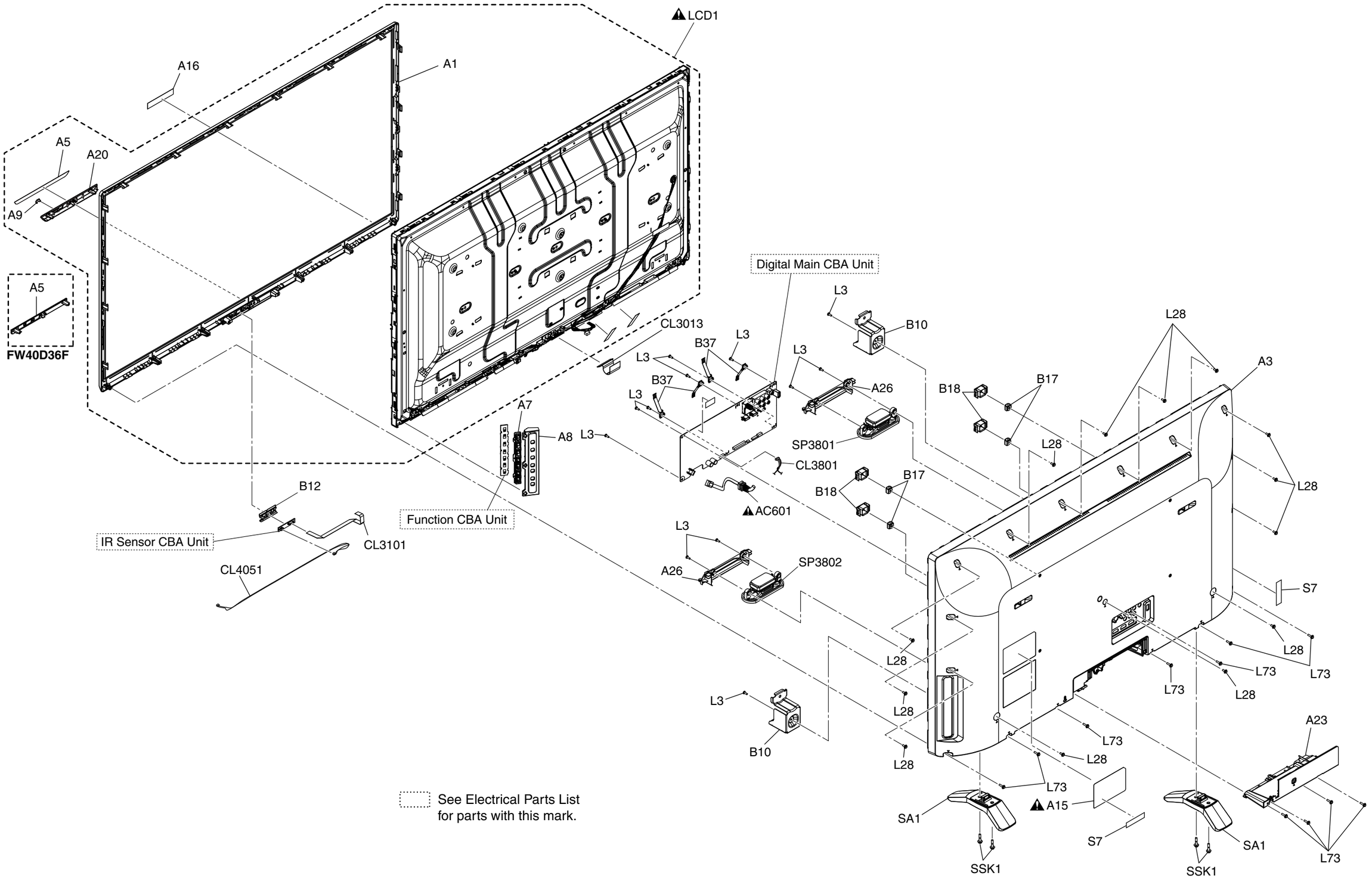
EXPLODED VIEWS

[TYPE A]

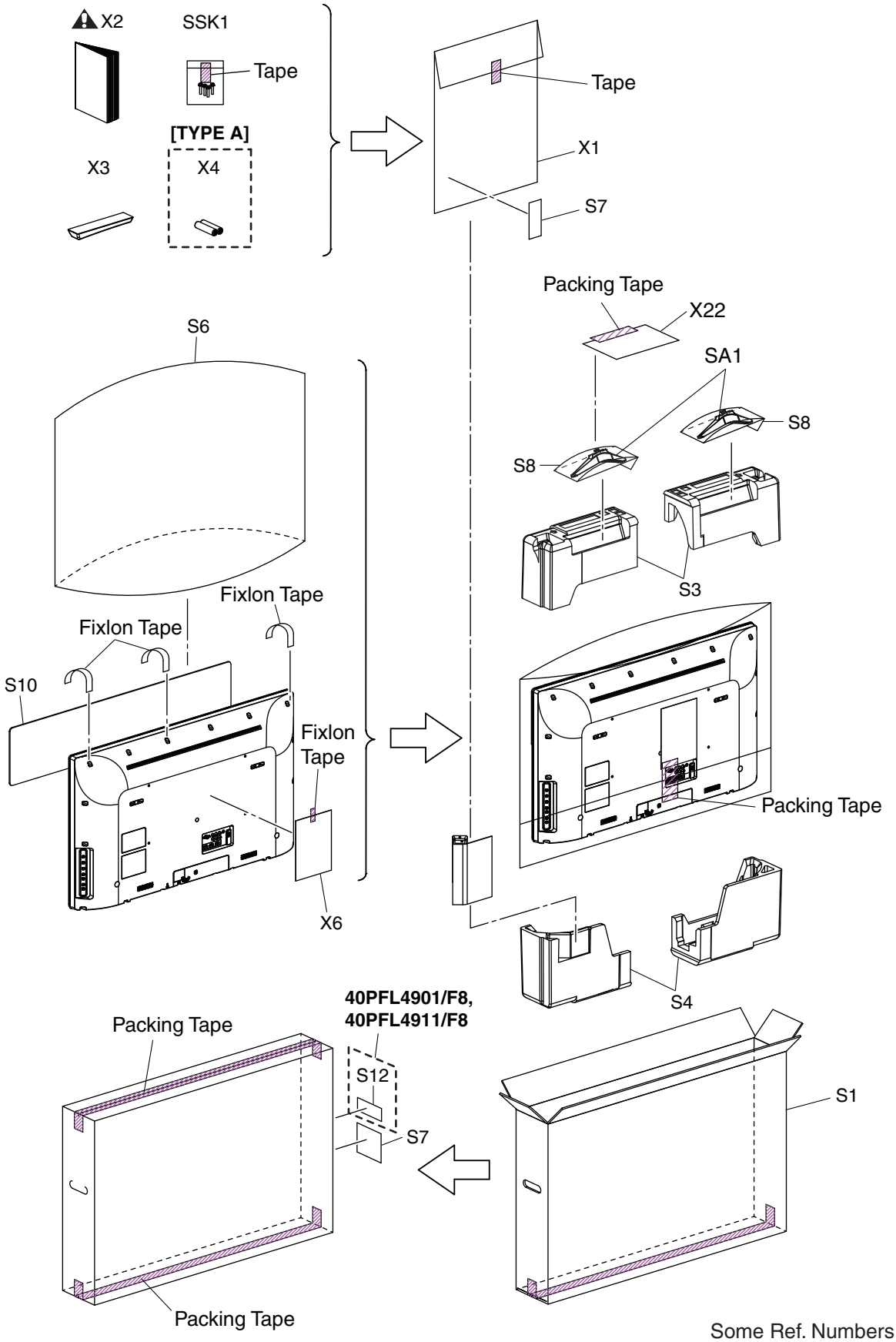


See Electrical Parts List for parts with this mark.

[TYPE B]


LCD1
A16
A1
A5
A20
A9
A5
FW40D36F
Digital Main CBA Unit
L3
B10
CL3013
B37
L3
L3
B37
L3
A26
SP3801
A7
A8
L3
CL3801
AC601
B18
B17
L28
A3
B18
B17
L28
L28
B12
IR Sensor CBA Unit
CL3101
CL4051
Function CBA Unit
L3
A26
SP3802
L3
B10
L28
L28
L28
L73
L73
L28
S7
L28
L73
L73
L28
A23
L73
L28
L73
SA1
A15
S7
SA1
L73
SSK1
SSK1
See Electrical Parts List
for parts with this mark.

Packing



Some Ref. Numbers are not in sequence.

TYPE A

PARTS LIST [40PFL4901/F7 (Serial No.: ME4)]

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	Parts No.
A3	REAR CABINET A5D24UT	2EMM00727A
A7	FUNCTION KNOB A4GF1UT	2EMM00237
A8	KNOB FRAME A4DFAUT	2EMM00325
A15⚠	RATING LABEL A5D22UT	----------
A16	LOGO LABEL A5DFGUT	----------
A17	ENERGY GUIDE LABEL A5D22UT	----------
A23	AC CORD COVER A5G20UT	2EMM00511
A26	SPEAKER HOLDER A5G20UT	2EMM00513
AC601⚠	AC CORD W/O A GND WIRE /T_ UL/CSA/1680/ NO/BLACK	WAC162TWF001
B10	STAND BRACKET A5G20UT	2EMS00282
B12	SENSOR SHIELD A4GF1UT	2EMS00133
B17	WALL_MOUNT_BRACKET A11N0UH	1EM434637
B18	WALL_MOUNT_COVER A2170UT	1EM332137
B37	EARTH SPRING A5G20UT	2EMS00283A
CL3013	FFC WIRE ASSEMBLY 51PIN(W/SHIELD) 51P/ FFC/SHIELD/66MM	WX1A5G20T411
CL3101	FFC WIRE ASSEMBLY 9PIN 9PIN/WHITE/ 225MM	WX1A5G20S111
CL3801	WIRE ASSEMBLY 4PIN 4PIN/260MM&380MM	WX1A5G20A321
CL4051	WIRE ASSEMBLY 2PIN 2PIN/450MM	WX1A5G20A302
L3	SCREW BIND 3CHROM +P-TITE M3X8.0 M3X8 BIND HEAD+	GBJP3080
L28	SCREW F-PAN BLACK_NI +S-TITE M3X8.0 3X8 WASHER HEAD+BLAC	GCHS3080
L73	SCREW F-PAN BLACK_NI +P-TITE M3X10.0 3X10 WASHER HEAD+BLD	GCHP3100
SA1	50W STAND ASSEMBLY A6AU4UT	2ESA04229
SP3801	SPEAKER MAGNETIC 8OHM/8W S0310F15	DS08110XQ003
SP3802	SPEAKER MAGNETIC 8OHM/8W S0310F15	DS08110XQ003
SSK1	STAND SCREW KIT A5G20UT(SEMS-SW PAN BLACK_NI + M4X20.0)	2ESA01818

Ref.No.	Description	Parts No.
	PACKING	
S1	CARTON A5D22UT	2EMC00988
S3	STYROFOAM TOP A5G27UT	2EMC01006
S4	STYROFOAM BOTTOM A5G27UT	2EMC01007
S6	SET BAG A3UT1PT	2EMC00109A
S7	SERIAL NO. LABEL A4GF1UT	----------
S8	STAND BAG A5G20UT	2EMC00647
S10	PROTECTION CARTON A4D2EUT	2EMC00863
	ACCESSORIES	
X1	POLYETHYLENE BAG HDPE 180X340XT0.03	1EM435579
X2⚠	OWNERS MANUAL A5D22UT	2EMN00446
X3	REMOTE CONTROL UNIT YKF399-001	URMT42JHG005
X4	BATTERY DRY R03(SIZE AAA)	XB00M0RKT001
X6	QUICK START GUIDE A5D22UT	2EMN00447
X22	WARNING MESSAGE FLIER A3ATHUT	2EMN00092

LCD PANEL ASSEMBLY

Ref. No.	Description	Part No.
LCD1⚠	LCD PANEL ASSEMBLY	U5A25PA
	Consists of the following	
A1	FRONT CABINET A4G2EMA	2EMM00480
A5	DECORATION PLATE A4DFAUT	2EMH00294
A9	LED LENS A4DFAUT	2EMM00301A
A20	LEADING EDGE COVER A4DFAUT	2EMM00288
	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:

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%

DIGITAL MAIN CBA UNIT

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A5D22MMA-002
	Following parts can be supplied.	
	CAPACITORS	
C602⚠	CAP CERAMIC SAFETY 2200pF/250V E M KX	CJMR222M42E1
C604⚠	CAP METALLIZED FILM 0.22µF/275V/K	CTA224PKR001
C605	CAP ELE 220µF/200V/M/85	CEA2210S6016
C606	CERAMIC CAP. 100pF/2kV	CA3D101PAN04
C607	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C608	CHIP CERAMIC CAP.(1608) B K 0.033µF/50V	CHD1JK30B333
C609	CHIP CERAMIC CAP. B K 0.039µF/50V	CHD1JK30B393
C610	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C611	CAP ELE 220µF/200V/M/85	CEA2210S6016
C612A	CAP CHIP X7R C3216X7R2J222KT	CHD2220TE009
C614⚠	CAP METALLIZED FILM 0.22µF/275V/K	CTA224PKR001
C616⚠	CAP CERAMIC SAFETY 1000pF/250V E M KX	CJMR102M42E1
C617	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C618	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C621	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C623	CHIP CERAMIC CAP.(1608) B K 4.7µF/6.3V	CHD0KK30B475
C650A	CAP CHIP X7R C3216X7R2J222KT	CHD2220TE009
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 1µF/50V/M/85	CEF1R00V8006
C657	CAP ELE 470µF/25V/M/85	CED4710V8006
C663	CHIP CERAMIC CAP.(2125) B K 4.7µF/16V	CHE1CK30B475
C664	CHIP CERAMIC CAP.(2125) B K 4.7µF/16V	CHE1CK30B475
C665	CHIP CERAMIC CAP.(2125) B K 4.7µF/16V	CHE1CK30B475
C666	CHIP CERAMIC CAP.(1608) B K 0.22µF/25V	CHD1EK30B224
C668	CAP ELE 470µF/16V/M/85	CEC4710V8006
C669	CHIP CERAMIC CAP.(1005) CH J 100pF/50V	CHB1JJ3CH101
C1007	CHIP CERAMIC CAP.(1005) B K 1µF/6.3V	CHB0KK30B105
C1101	CHIP CERAMIC CAP.(1608) B K 1µF/25V	CHD1EK30B105
C1102	CHIP CERAMIC CAP.(1608) B K 1µF/25V	CHD1EK30B105
C1103	CAP ELE 330µF/25V/M/85	CED3310V8006
C1105	CHIP CERAMIC CAP.(1608) B K 1µF/25V	CHD1EK30B105
C1106	CHIP CERAMIC CAP.(1608) B K 0.22µF/25V	CHD1EK30B224
C1107	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V	CHD1JK30B473
C1108	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JK30B561
C1109	CHIP CERAMIC CAP.(1005) B K 1000pF/50V	CHB1JK30B102
C1110	CHIP CERAMIC CAP.(1608) B K 2.2µF/16V	CHTU225KBCD1
C1112	CHIP CERAMIC CAP.(1608) B K 1µF/25V	CHD1EK30B105
C1113	CHIP CERAMIC CAP.(1005) B K 2200pF/50V	CHB1JK30B222
C1114	CHIP CERAMIC CAP.(3216) X7R K 1.0µF/100V	CA2A105MR080
C1115	CHIP CERAMIC CAP.(3216) X7R K 1.0µF/100V	CA2A105MR080
C1117	CAP ELE 47µF/100V/M/85	CEH4700V8006
C1118	CAP ELE 47µF/100V/M/85	CEH4700V8006
C1120	CAP ELE 47µF/100V/M/85	CEH4700V8006
C1121	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1122	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1123	CHIP CERAMIC CAP.(1005) B K 1000pF/50V	CHB1JK30B102
C1124	CAP ELE 47µF/100V/M/85	CEH4700V8006
	CONNECTORS	
CN601⚠	CONNECTOR S2P3-VH (LF)(SN)	JCVHC02JG002
CN1101	CONNECTOR PRINT OSU JS-1125-02KK	J3JT02CHY002
CN3701	WIRELESS LAN MODULE WM5208	UWLMDLACM006
	DIODES	
D601⚠	DIODE 1N5406BH	NDL1001N5406
D602⚠	DIODE 1N5406BH	NDL1001N5406
D603⚠	DIODE 1N5406BH	NDL1001N5406
D604⚠	DIODE 1N5406BH	NDL1001N5406
D605	ZENER DIODE MM5Z6V2B	ND1BMM5Z6V2B
D606	DIODE FAST RECOVERY RS1JJTD	ND1Z0RS1JJTD
D607	ZENER DIODE SMD TFZVTR27B	QD1B00TFZV27
D608B	DIODE ZENER KDZTR36B	QD1B000KDZ36
D609	DIODE SCHOTTKY SMD CES520.L3F(D	QD1Z00CES520
D610	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D621	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D623	ZENER DIODE MM5Z30B	ND1B0MM5Z30B
D650A	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D652A	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D653A	DIODE SCHOTTKY SB3A0BH	NDWZ000SB3A0
D655A	DIODE SCHOTTKY SB3A0BH	NDWZ000SB3A0
D656	DIODE FAST RECOVERY RS1BJTD	ND1Z0RS1BJTD
D657	ZENER DIODE MM5Z11B	ND1B0MM5Z11B
D658	ZENER DIODE PTZTE2527B	QD1B000PTZ27
D660	IC SHUNT REGULATOR AS431BNTR-E1	NSCA0TBCD041
D661	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D1101	DIODE SCHOTTKY BARRIER SB2150BD	NDWZ00SB2150
D1103	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D1104	ZENER DIODE MM5Z20B	ND1B0MM5Z20B
D1105	ZENER DIODE MM5Z20B	ND1B0MM5Z20B
D1108	DIODE SCHOTTKY BARRIER SB2150BD	NDWZ00SB2150
	ICS	
IC601⚠	PHOTO COUPLER EL817S1(C)(TU)-F	NP2C0EL817S1
IC1101	IC LED BACKLIGHT CONTROLLER BD9486F-GE2/SOP/16P	QSCA0T0RM425
IC3019	IC USB HIGH-SIDE SW AP2151WG-7/SOT25/5PI	NSCA0TDES015
IC3102	IC MSD93F0JM4-3-002J	NSAA0RMST005
IC3201	IC DC-DC CONVERTER MP2314GJ-Z TSOT23-8	NSCA0T09M025
IC3204	IC NAND FLASH 4GB TC58NVG2S0HTA00B4H	QSCA0R0TS150
IC3205	IC RESET IC-PST8429UR	QSCA0T0MM075
IC3601	IC REGULATOR BD33IC0WHFV-GTR	QA3R300RM003
IC3603	IC DC-DC CONVERTER MP2314GJ-Z TSOT23-8	NSCA0T09M025

Ref. No.	Description	Part No.
IC3604	IC DC-DC CONVERTER MP2314GJ-Z TSOT23-8	NSCA0T09M025
IC3605	IC DC-DC CONVERTER MP2315GJ-Z TSOT23-8	NSCA0T09M026
IC3606	IC REGULATOR AP1117E33G-13 /3PIN	NSCA0TDES017
IC3801	IC D-CLASS AUDIO POWER AMPLIFI MP7752GF-Z	NSCA0T09M031
IC3851	IC STEREO HEADPHONE AMPLIFIER TS488IQT DFN8 8PIN	NSCA0T0SS070
IC9001	IC SILICON TUNER SI2151-A10-GMR	NSCA0T05S010
	COILS	
L601⚠	COIL LINE FILTER LCL-2457	LLEG0ZMEK017
L602⚠	COIL LINE FILTER LCL-2457	LLEG0ZMEK017
L1101	COIL POWER INDUCTORS DIP RP1315BNP-101M/100µH	LLF1010SF013
L1102	COIL CHIP BEADS PZ2012D121-2R5T(F)	LLF121SSN006
	TRANSISTORS	
Q601	FET MOS TK10P60W.RVQ(S	QF2ZTK10P60W
Q602	NPN TRANSISTOR SMD KTC8050S-D-RTK/P	NQ1DKTC8050S
Q621	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q650	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q653	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q1001	PNP TRANSISTOR SMD 2SA1576UBTLQ	QQ1Q2SA1576U
Q1002	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q1101	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
Q1102	MOS FET /_1 RSR020N06TL	QF1ZSR020N06
Q1103	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
	RESISTORS	
R601⚠	RES CARBON FILM /T_ 1/2W J 1.2 M Ω	RCJ125RYL001
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 82 Ω	RRX4820HH034
R607	RES CHIP 3216 1/4W J 82 Ω	RRX4820HH034
R608	RES CHIP 3216 1/4W J 1.5k Ω	RRX4152HH034
R609	RES CHIP 1608 1/10W J 100 Ω	RRXA101HH013
R611	METAL OXIDE FILM RES. 2W J 0.22 Ω	RN02R22ZU001
R612	RES CHIP 1608 1/10W J 3.9k Ω	RRXA392HH013
R613	RES CHIP 3216 1/4W J 330 Ω	RRX4331HH034
R614	RES CHIP 3216 1/4W J 560k Ω	RRX4564HH034
R615	RES CHIP 3216 1/4W J 15k Ω	RRX4153HH034
R616	RES CHIP 3216 1/4W J 15k Ω	RRX4153HH034
R617	RES CHIP 3216 1/4W J 15k Ω	RRX4153HH034
R621	RES CHIP 1608 1/10W J 560 Ω	RRXA561HH013
R623	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R650	RES CHIP 3216 1/4W J 2.2 Ω	RRX42R2HH034
R651	RES CHIP 1608 1/10W J 1.0 Ω	RRXA1R0HH013
R652	RES CHIP 1005 1/16W F 33.0k Ω	RTV3302HH004
R654	RES CHIP 3216 1/4W J 220 Ω	RRX4221HH034
R655	RES CHIP 3216 1/4W J 220 Ω	RRX4221HH034
R656	RES CHIP 1005 1/16W F 9.1k Ω	RTV9101HH004
R657	RES CHIP 3216 1/4W J 3.9k Ω	RRX4392HH034
R658	CHIP RES.(1005) 1/16W J 10k Ω	RRXG103HH004
R659	CHIP RES 1/16W F 68k Ω	RTV6802HH004
R660	RES CHIP 1005 1/16W F 3k Ω	RTV3001HH004
R661	RES CHIP 1005 1/16W F 6.8k Ω	RTV6801HH004
R667	RES CHIP 1005 1/16W J 33k Ω	RRXG333HH004
R668	CHIP RES. 1/16W J 47k Ω	RRXG473HH004
R669	CHIP RES.(1005) 1/16W J 10k Ω	RRXG103HH004
R675	RES CHIP 1005 1/16W F 100k Ω	RTV1003HH004
R1001	CHIP RES.(1005) 1/16W J 10k Ω	RRXG103HH004
R1002	RES CHIP 1608 1/10W J 3.9k Ω	RRXA392HH013
R1003	CHIP RES.(1005) 1/16W J 10k Ω	RRXG103HH004
R1004	CHIP RES. 1/16W J 47k Ω	RRXG473HH004
R1005	RES CHIP 1608 1/10W J 3.9k Ω	RRXA392HH013
R1101	RES CHIP 1608 1/10W F 22.0k Ω	RTW2202HH008
R1102	RES CHIP 1005 1/16W F 9.1k Ω	RTV9101HH004
R1103	RES CHIP 1005 1/16W F 9.1k Ω	RTV9101HH004
R1104	RES CHIP 1608 1/10W J 39 Ω	RRXA390HH013
R1106	CHIP RES.(1005) 1/16W J 10k Ω	RRXG103HH004
R1107	CHIP RES. 1/16W J 100k Ω	RRXG104HH004
R1108	CHIP RES.(1005) 1/16W J 10k Ω	RRXG103HH004
R1109	CHIP RES. 1/16W J 100k Ω	RRXG104HH004
R1110	RES CHIP 1005 1/16W F 36.0k Ω	RTV3602HH004
R1111	RES CHIP 1005 1/16W F 24.0k Ω	RTV2402HH004
R1112	RES CHIP 1005 1/16W F 2.2k Ω	RTV2201HH004
R1113	RES CHIP 1608 1/10W J 10 Ω	RRXA100HH013
R1115	METALOXIDE RES 1W J 0.12Ω	RNJR12PAK001
R1118	CHIP RES.(1005) 1/16W J 200 Ω	RRXG201HH004
R1119	RES CHIP 1005 1/16W F 100k Ω	RTV1003HH004
R1120	RES CHIP 1005 1/16W J 120 Ω	RRXG121HH004
R1121	CHIP RES. 1/16W J 51 Ω	RRXG510HH004
R1123	CHIP RES.(1005) 1/16W J 10k Ω	RRXG103HH004
R1124	CHIP RES.(1005) 1/16W J 10k Ω	RRXG103HH004
R1125	RES CHIP 1005 1/16W F 270k Ω	RTV2703HH004
R1126	RES CHIP 1005 1/16W F 240k Ω	RTV2403HH004
R1127	RES CHIP 1005 1/16W F 22k Ω	RTV2202HH004
R1128	CHIP RES.(1005) 1/16W J 1k Ω	RRXG102HH004
R1129	RES CHIP 3216 1/4W F 0.470 Ω	RTR470RYL011
R1130	RES CHIP 3216 1/4W F 0.470 Ω	RTR470RYL011
R1131	RES CHIP 3216 1/4W F 0.560 Ω	RTR560RYL011
	MISCELLANEOUS	
B29	TUNER FRAME FT A5RL0UT	2EMS00366
BC601	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
F601⚠	FUSE TIME RAG 2010T2.5A1	PDG21B0W3252
SA601⚠	VARISTOR 10D 471K SVR	NVQZVR10D471
T601⚠	TRANS POWER BCK-28KA	LTT3PCMEK034

MSW ASSEMBLY

Ref. No.	Description	Part No.
	MSW ASSEMBLY	A5D22MSW-001
	Consists of the following	
	FUNCTION CBA UNIT	A5D22MSW-001-FN
	IR SENSOR CBA UNIT	A5D22MSW-001-IR
IC4051	IC LIGHT SENSOR CPS295JT	QP1ZCPS295JT

TYPE A

PARTS LIST [40PFL4901/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 40PFL4901/F7 (Serial No. : ME4)

Ref. No.	Description	Part No.
A15⚠	RATING LABEL A5D23MA	---------
A16	LOGO LABEL A6LF3MA	---------
A17	Not used	
S1	CARTON A5D23MA	2EMC01014
S12	CARTON LABEL A5D23MA	---------
X2⚠	OWNERS MANUAL A5D23MA	2EMN00448
X3	REMOTE CONTROL UNIT YKF340-007	URMT41JHG007
X6	QUICK START GUIDE A5D23MA	2EMN00449
LCD1⚠	LCD PANEL ASSEMBLY	U5A25PB

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 40PFL4901/F7 (Serial No. : ME4)

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A5D23MMA-001
CN1101	PH CONNECTOR TOP 2P B2B-PH-K-S (LF)(SN)	J3PHC02JG029
R601	RES. CARBON FILM J 1/2W J 1.2M Ω	RCX2125T1003

TYPE A

PARTS LIST [40PFL4911/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 40PFL4901/F8 (Serial No. : XA1)

Ref. No.	Description	Part No.
A15⚠	RATING LABEL A5D2AMA	---------
SA1	50W STAND ASSEMBLY A5D2AMA	2ESA04956
S1	CARTON A5D2AMA	2EMC01040
S12	CARTON LABEL A5D2AMA	---------
A5	DECORATION PLATE A5D2AMA	2EMH00951

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 40PFL4901/F8 (Serial No. : XA1)

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A5D2AMMA-001

TYPE B

PARTS LIST [FW40D36F (Serial No.: ME3)]

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 40PFL4901/F7 (Serial No. : ME4)

Ref. No.	Description	Part No.
A3	REAR CABINET A5G20UT	2EMM00510C
A5	DECORATION PLATE A4GF1UT	2EMM00234
A8	KNOB FRAME A5GREUH	2EMM00667
A15⚠	RATING LABEL A5G29MT	---------
A16	LOGO LABEL A3AF0UT	---------
A17	Not used	
S1	CARTON A5G29MT	2EMC01083
X2⚠	OWNERS MANUAL A5G29MT	2EMN00496
X3	REMOTE CONTROL UNIT NH312UP	NH312UP
X4	Not used	
X6	QUICK START GUIDE A5G29MT	2EMN00497
LCD1⚠	LCD PANEL ASSEMBLY	U5A23SA
A1	FRONT CABINET A5D24UT	2EMM00736
A5	Not used	
A9	Not used	
A20	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 40PFL4901/F7 (Serial No. : ME4)

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A5G29MMA-001
C606	CERAMIC CAP. 220pF/2kV	CA3D221PAN04
C608	CHIP CERAMIC CAP.(1608) B K 0.015µF/50V	CHD1JK30B153
C610	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C621	Not used	
C622	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1110	CAP CHIP CERAMIC (1608) B K 2.2µF/16V	CHD1CK30B225
CN3701	Not used	
D660	Not used	
D660A	IC SHUNT REGULATOR AS431BNTR-E1	NSCA0TBCD041
IC3006	IC 32M-BIT SERIAL FLASH MEMORY W25Q32FVSSIG	NSCA0R0ZM018
IC3009	IC RESET IC-PST8429UR	QSCA0T0MM075
IC3101	IC MSD8220LB1-S1 MSD8220LB1-S1 EPLQFP	NSAA0RMST002
IC3102	Not used	
IC3204	Not used	
IC3205	Not used	
IC3602	REGULATOR AP1117EG-13	NSCA0TDES012
IC3603	IC REGULATOR BD18IC0WHFV-GTR	QA1R800RM003
IC3605	IC DC-DC CONVERTER MP2314GJ-Z TSOT23-8	NSCA0T09M025
IC3606	Not used	
R1131	RES CHIP 3216 1/4W F 0.56 Ω	RTR560RYL007
	FUNCTION CBA UNIT	A5G25MSW-001
	Consists of the following	
	FUNCTION CBA UNIT	A5G25MSW-001-FN
	IR SENSOR CBA UNIT	A5G25MSW-001-IR

REVISION HISTORY

Chassis PL15.01

- 2016/04/13 40PFL4901/F7 (Serial No.: ME4) First draft added
- 2016/05/13 FW40D36F (Serial No.: ME3) First draft added
- 2016/06/21 40PFL4901/F8 (Serial No.: XA1) First draft added
- 2016/06/21 40PFL4911/F8 (Serial No.: XA1) First draft added

COMPARISON LIST OF MODEL NAMES

Chassis PL15.01

40PFL4901/F7	(ME4)	A5D22UT	TYPE A
40PFL4901/F8	(XA1)	A5D23MA	TYPE A
40PFL4911/F8	(XA1)	A5D2AMA	TYPE A
FW40D36F	(ME3)	A5G29MT	TYPE B