

PHILIPS

40" LCD TV chassis PL14.32

Service Manual

Contents

TYPE A

40PFL4609/F8 PHILIPS (Serial No.: XA1)

TYPE B

40PFL4409/F8 PHILIPS (Serial No.: XA1)

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

© 2014 Funai Electric Co., Ltd.

All rights reserved. No part of this manual may be reproduced, copied, transmitted, disseminated, transcribed, downloaded or stored in any storage medium, in any form or for any purpose without the express prior written consent of Funai. Furthermore, any unauthorized commercial distribution of this manual or any revision hereto is strictly prohibited.

Information in this document is subject to change without notice. Funai reserves the right to change the content herein without the obligation to notify any person or organization of such changes.

FUNAI with the  design is a registered trademark of Funai Electric Co., Ltd and may not be used in any way without the express written consent of Funai. All other trademarks used herein remain the exclusive property of their respective owners. Nothing contained in this manual should be construed as granting, by implication or otherwise, any license or right to use any of the trademarks displayed herein. Misuse of any trademarks or any other content in this manual is strictly prohibited. Funai shall aggressively enforce its intellectual property rights to the fullest extent of the law.

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	1-1
Important Safety Precautions	2-1
Standard Notes for Servicing	3-1
Cabinet Disassembly Instructions [TYPE A]	4-1
[TYPE B]	4-7
Electrical Adjustment Instructions [TYPE A]	5-1
[TYPE B]	5-4
How to Initialize the LCD TV	6-1
Firmware Renewal Mode [TYPE A]	7-1
[TYPE B]	7-2
Troubleshooting	8-1
Block Diagrams [TYPE A]	9-1
[TYPE B]	9-6
Schematic Diagrams / CBA and Test Points	10-1
Wiring Diagrams [TYPE A]	11-1
[TYPE B]	11-2
Exploded Views	12-1
Parts List	13-1
Revision History	14-1

SPECIFICATIONS

< TUNER / NTSC >

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

< TUNER / ATSC >

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

< LCD PANEL >

Description	Condition	Unit	Nominal	Limit
1. Native Pixel Resolution	Horizontal	pixels	1920	---
	Vertical	pixels	1080	---
2. Brightness (w / filter)		cd/m ²	270	---
3. Viewing Angle	Horizontal	°	-88 to 88	---
	Vertical	°	-88 to 88	---

< VIDEO >

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

< AUDIO >

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

Description	Condition	Unit	Nominal	Limit
1. Audio 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	2.0/2.0

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

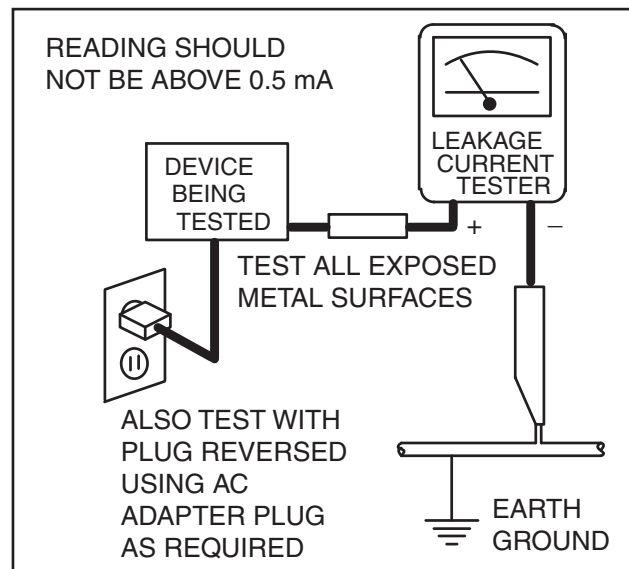
Safety Precautions for LCD TV Circuit

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

- a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**
- b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the Liquid Crystal Panel and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

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

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



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

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

3. **Design Alteration Warning** - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.
4. **Hot Chassis Warning** -
 - a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0 V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.
 - b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.
 - c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.
5. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and, e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.
6. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.
7. **Product Safety Notice** - Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a  on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The product's safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm they comply with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

- A.** Parts identified by the **▲** symbol are critical for safety.
Replace only with part number specified.
- B.** In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.
- C.** Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
- D.** Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers
 - 4) Insulators for transistors.
- E.** When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.
- F.** Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)
- G.** Check that replaced wires do not contact sharp edged or pointed parts.
- H.** When a power cord has been replaced, check that 11~13 lb (5~6 kg) of force in any direction will not loosen it.
- I.** Also check areas surrounding repaired locations.
- J.** Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
- K.** When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC supply outlet.
- L.** When installing parts or assembling the cabinet parts, be sure to use the proper screws and tighten certainly.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d), (d')
110 to 130 V	U.S.A. or Canada	≥ 3.2 mm (0.126 inches)

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

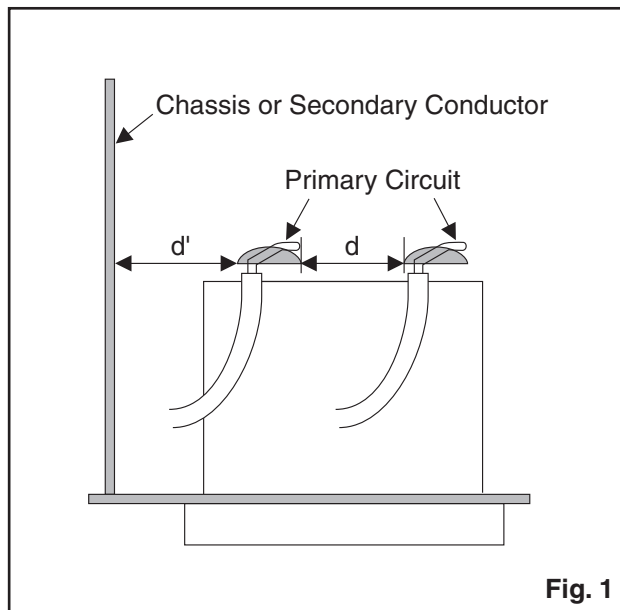


Fig. 1

2. Leakage Current Test

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

Measuring Method: (Power ON)

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

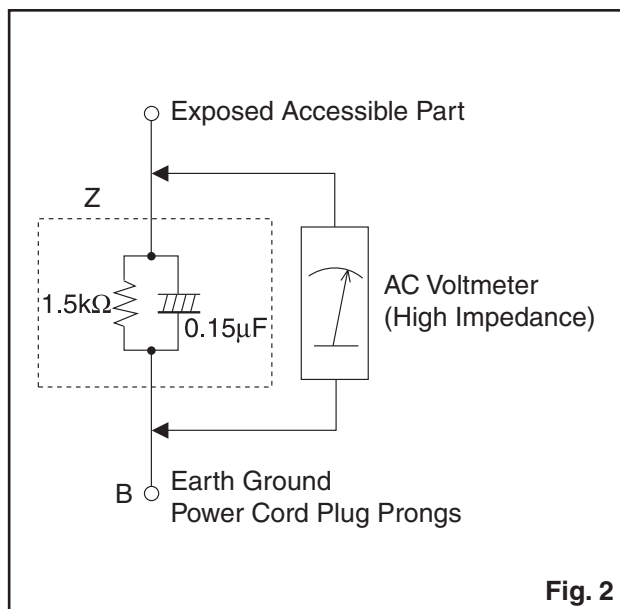


Fig. 2

Table 2: Leakage current ratings for selected areas

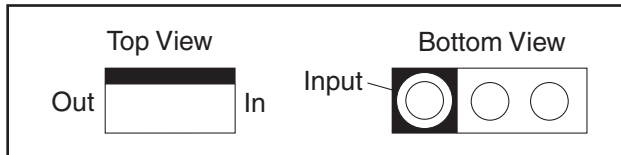
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	$0.15 \mu F$ CAP. & $1.5 k\Omega$ RES. Connected in parallel	$i \leq 0.5$ mA rms	Exposed accessible parts

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

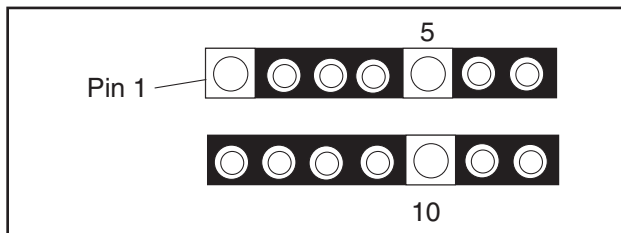
STANDARD NOTES FOR SERVICING

Circuit Board Indications

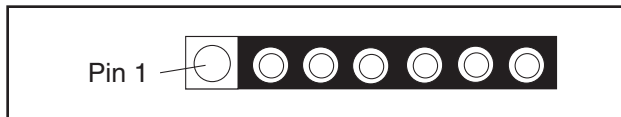
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

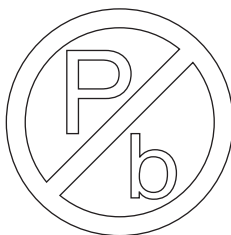


3. The 1st pin of every male connector is indicated as shown.



Pb (Lead) Free Solder

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



Pb free mark

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

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

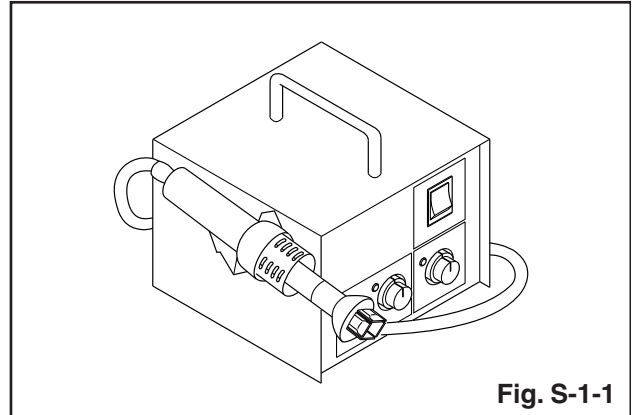


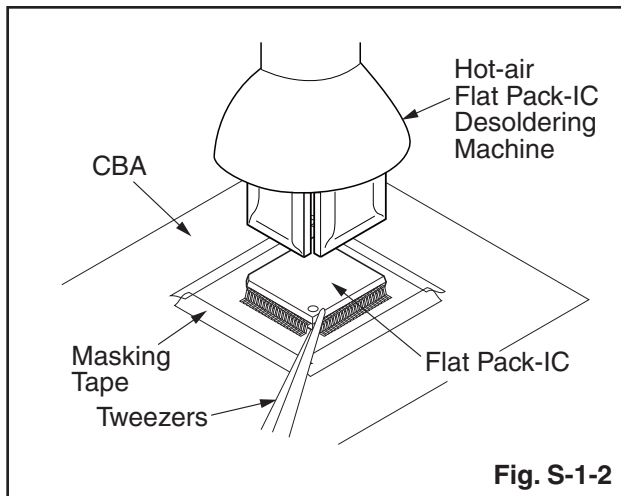
Fig. S-1-1

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

CAUTION:

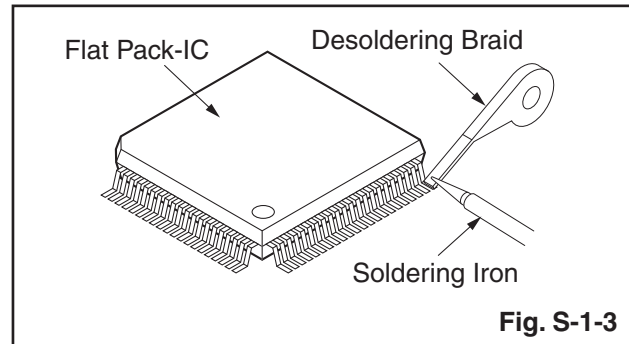
1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape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

3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

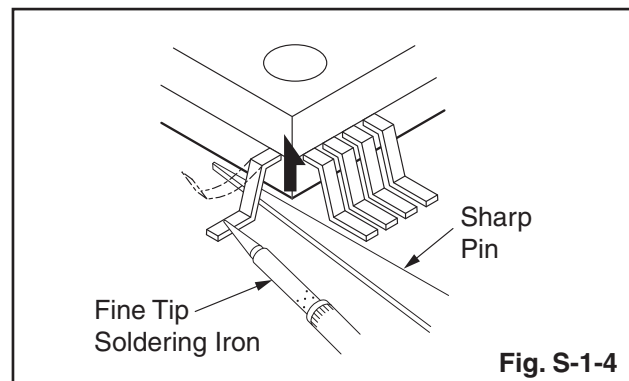


With Soldering Iron:

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



2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

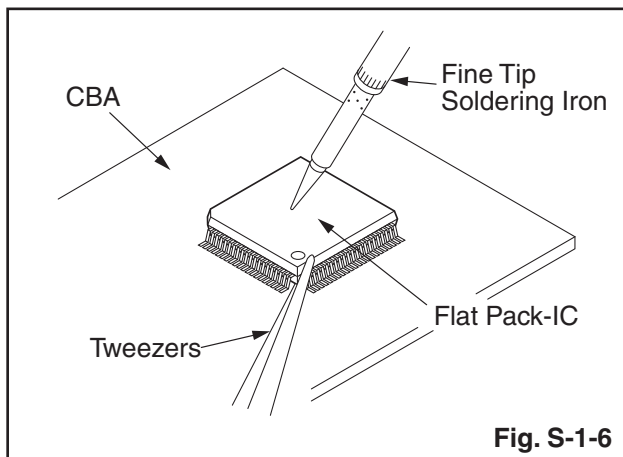
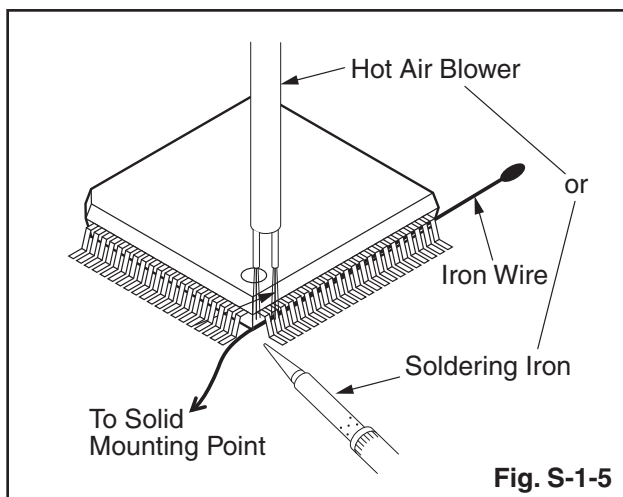


3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

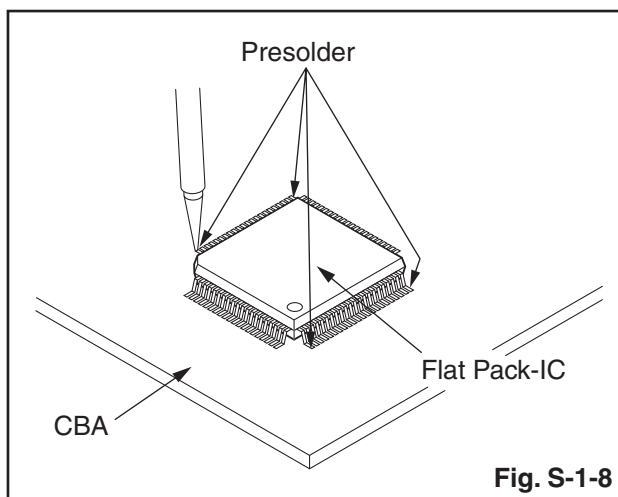
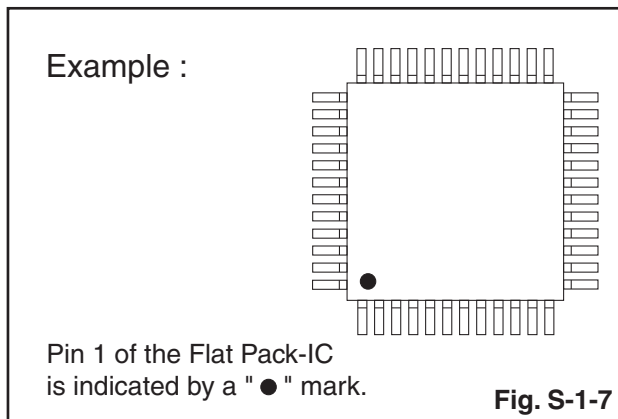
1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.



2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the pin 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.



Instructions for Handling Semi-conductors

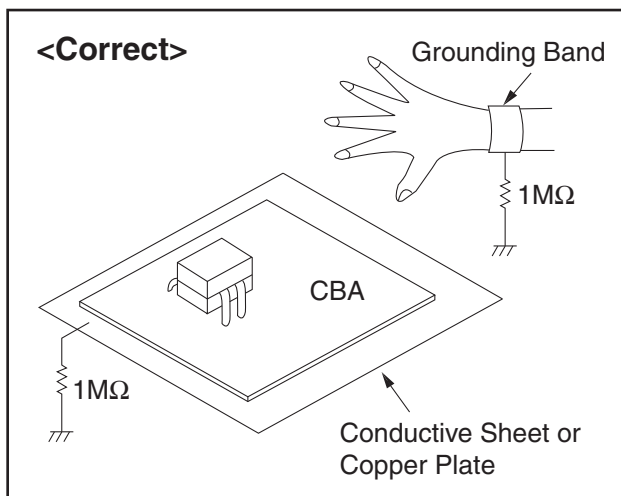
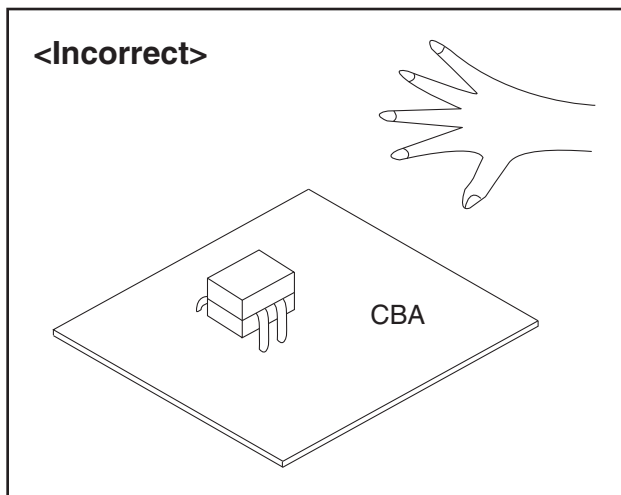
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

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

2. Ground for Workbench

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



CABINET DISASSEMBLY INSTRUCTIONS

[TYPE A]

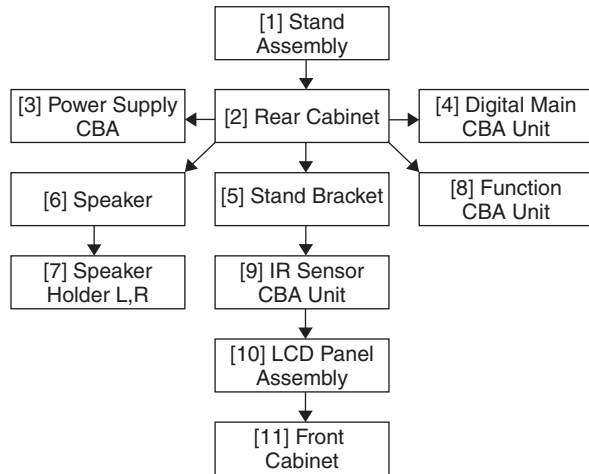
Screw Torque Specification

Ref. No.	Part Number	Part Name	Tightening Torque
L10	GCHP3120	SCREW F-PAN BLACK_NI +P-TITE M3X12.0	5.2±0.9lb-in
L23	GBJS3060	SCREW BIND 3CHROM +S-TITE M3X6.0	4.3±0.9lb-in
L28	GCHS3080	SCREW F-PAN BLACK_NI +S-TITE M3X8.0	5.2±0.9lb-in
SSK1	2ESA00484	STAND SCREW KIT (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	3(S-1)	---
[2]	Rear Cabinet	D1	14(S-2), 9(S-3)	---
[3]	Power Supply CBA	D2 D5	5(S-4), CN501, CN601, CN1101, CN1201	---

Step/ Loc. No.	Part	Fig. No.	Removal	Note
[4]	Digital Main CBA Unit	D2 D5	4(S-5), CN3105, CN3801, CN3906, Jack Holder	---
[5]	Stand Bracket	D3	-----	---
[6]	Speaker	D3	-----	---
[7]	Speaker Holder L,R	D3	2(S-6)	---
[8]	Function CBA Unit	D3 D5	CN4051, Function Knob, Knob Frame, Hook	2
[9]	IR Sensor CBA Unit	D3 D5	Sensor Shield, Hook	2
[10]	LCD Panel Assembly	D4	-----	---
[11]	Front Cabinet	D4	Decoration Plate, LED Lens, Leading Edge Cover, Hook	1

↓ ↓ ↓ ↓ ↓
 (1) (2) (3) (4) (5)

Note:

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

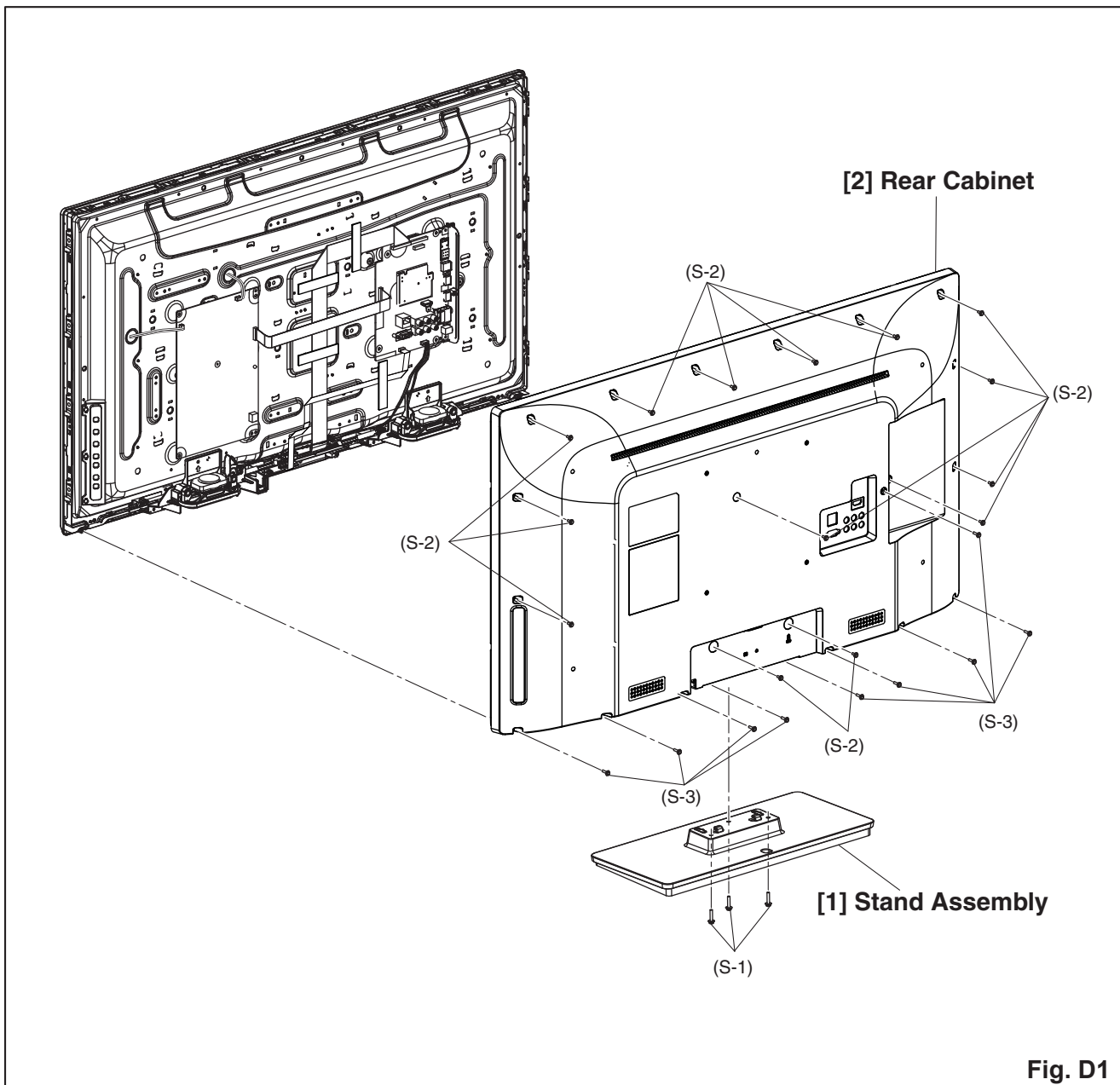
Important precautions concerning the LCD Panel Assembly:

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

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

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.



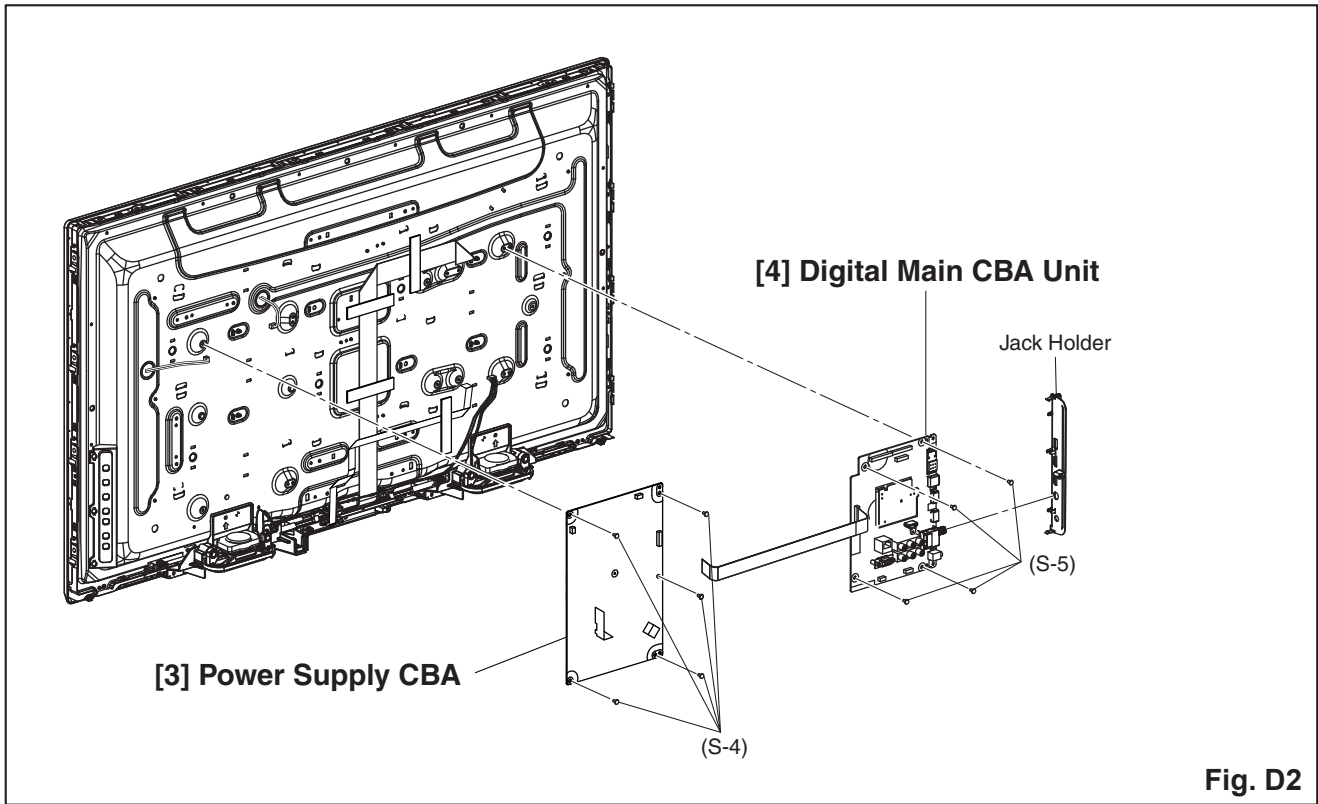
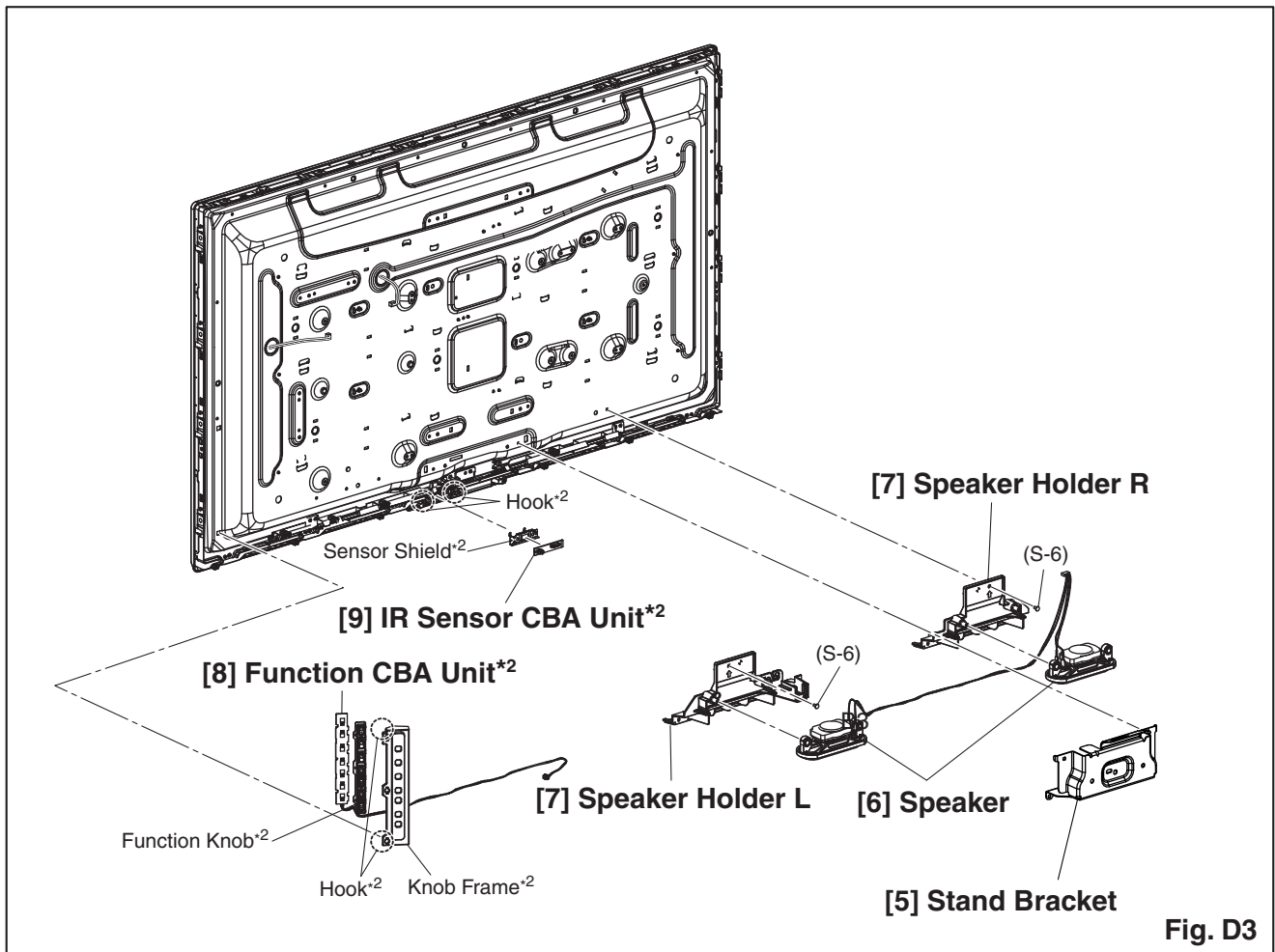


Fig. D2



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

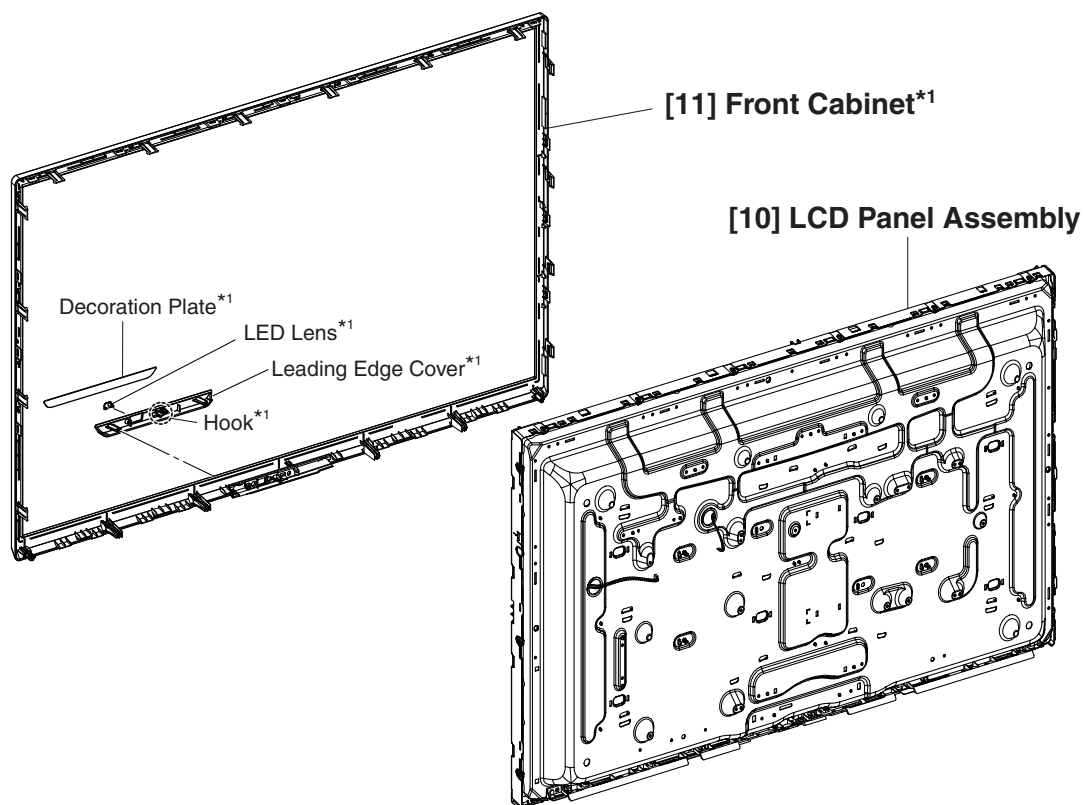
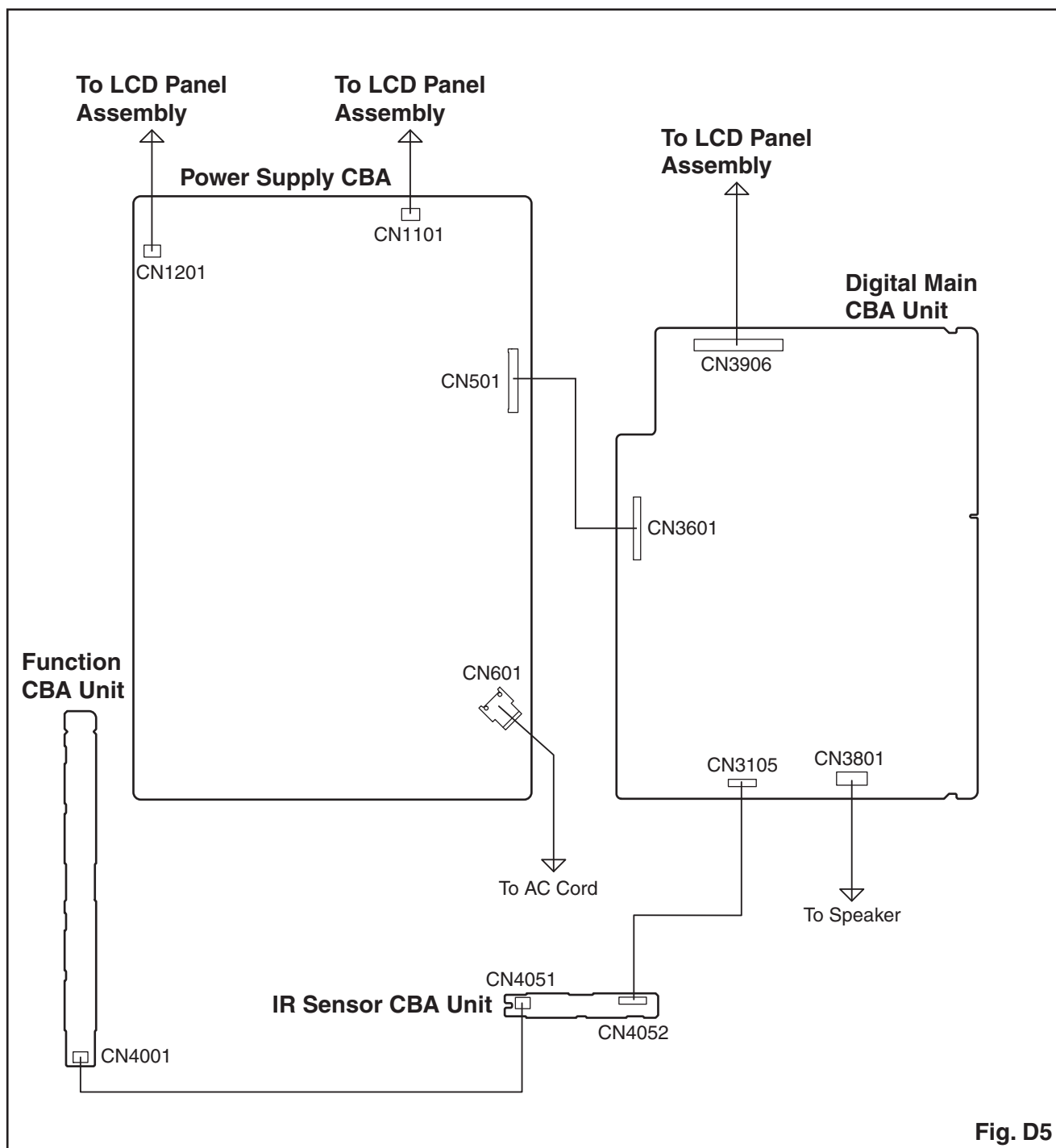


Fig. D4

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

TV Cable Wiring Diagram



[TYPE B]

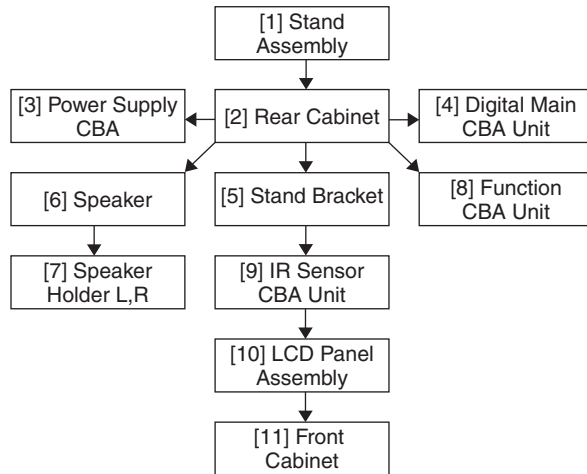
Screw Torque Specification

Ref. No.	Part Number	Part Name	Tightening Torque
L10	GCHP3120	SCREW F-PAN BLACK_NI +P-TITE M3X12.0	5.2±0.9lb-in
L23	GBJS3060	SCREW BIND 3CHROM +S-TITE M3X6.0	4.3±0.9lb-in
L28	GCHS3080	SCREW F-PAN BLACK_NI +S-TITE M3X8.0	5.2±0.9lb-in
SSK1	2ESA00484	STAND SCREW KIT (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	3(S-1)	---
[2]	Rear Cabinet	D1	14(S-2), 9(S-3)	---
[3]	Power Supply CBA	D2 D5	5(S-4), CN501, CN601, CN1101, CN1201	---

Step/ Loc. No.	Part	Fig. No.	Removal	Note
[4]	Digital Main CBA Unit	D2 D5	4(S-5), CN3105, CN3801, CN3906, Jack Holder	---
[5]	Stand Bracket	D3	-----	---
[6]	Speaker	D3	-----	---
[7]	Speaker Holder L,R	D3	2(S-6)	---
[8]	Function CBA Unit	D3 D5	CN4051, Function Knob, Knob Frame, Hook	2
[9]	IR Sensor CBA Unit	D3 D5	Sensor Shield, Hook	2
[10]	LCD Panel Assembly	D4	-----	---
[11]	Front Cabinet	D4	Decoration Plate, LED Lens, Leading Edge Cover, Hook	1

↓ ↓ ↓ ↓ ↓
 (1) (2) (3) (4) (5)

Note:

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

Important precautions concerning the LCD Panel Assembly:

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

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

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.

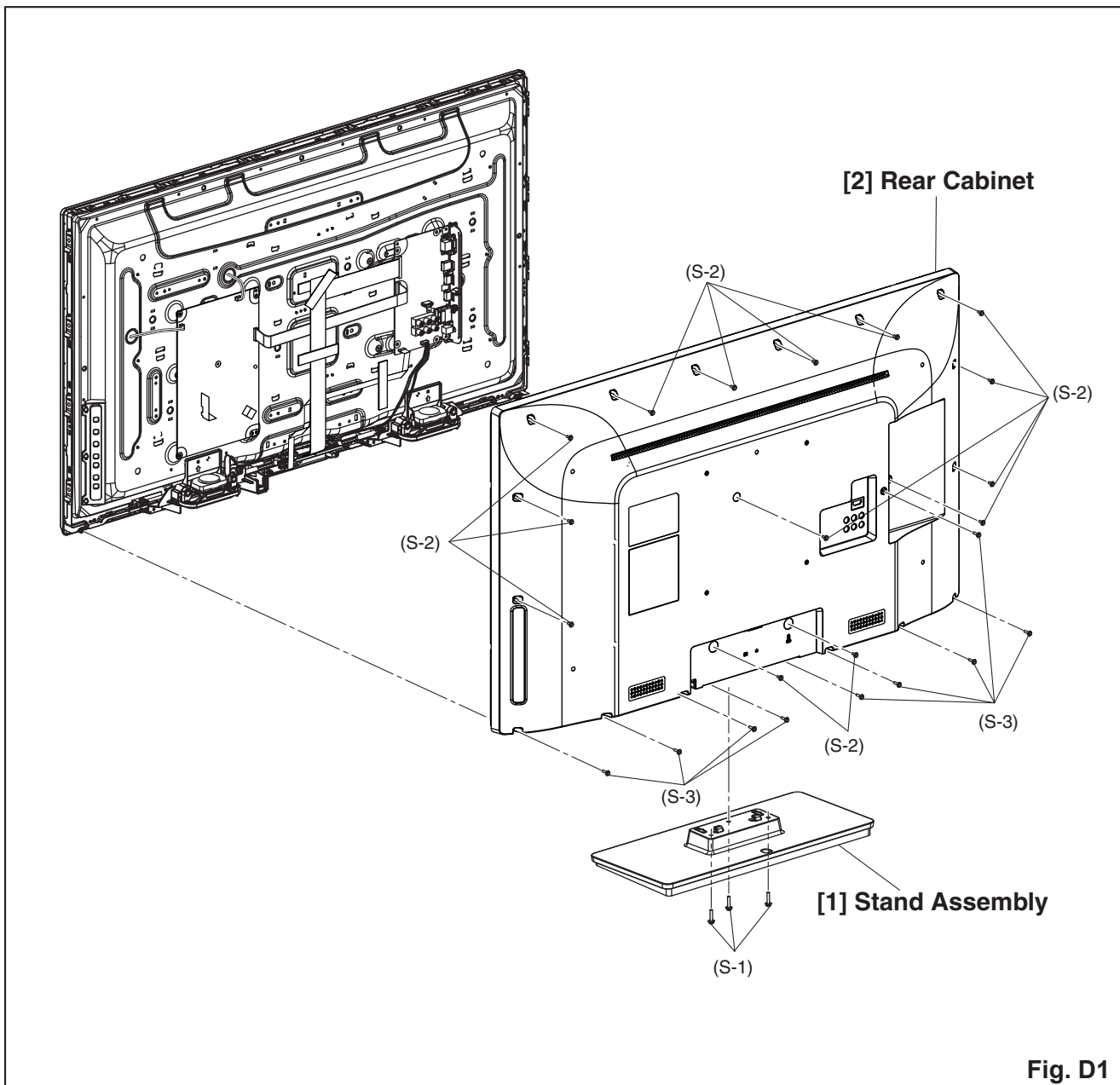


Fig. D1

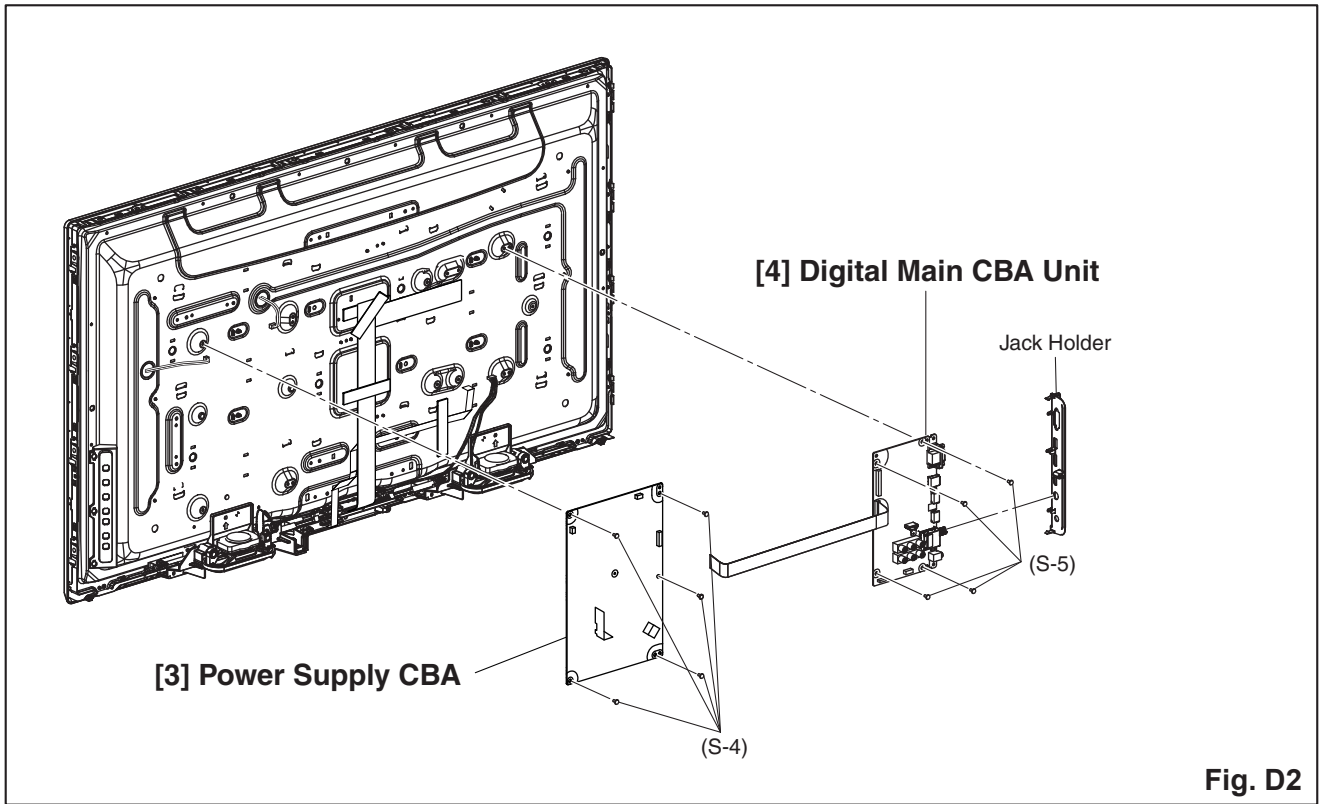
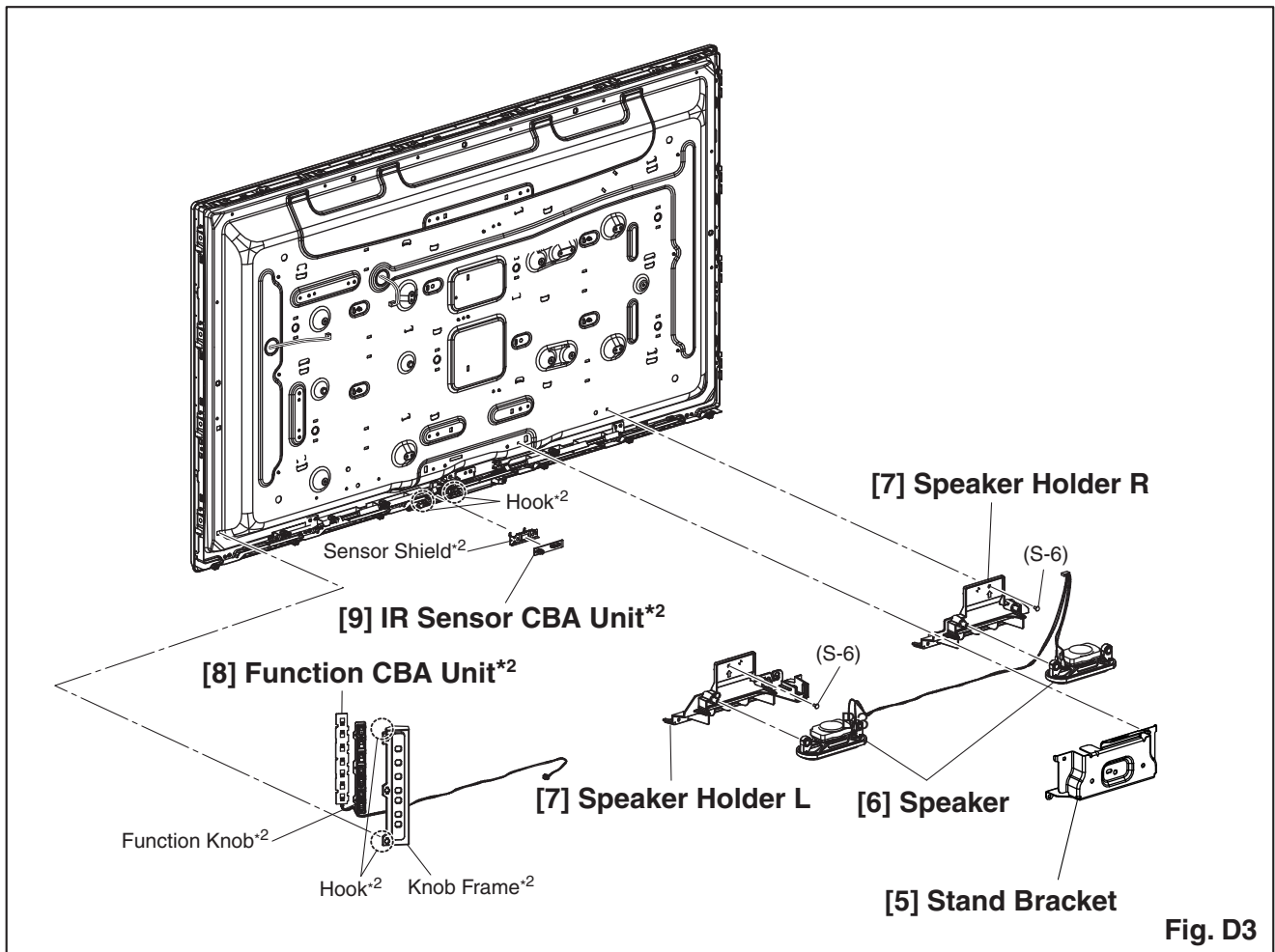


Fig. D2



***2: Make sure to read all the precautions on page 4-8 when you disassemble/re-assemble the Function CBA Unit or IR Sensor CBA Unit.**

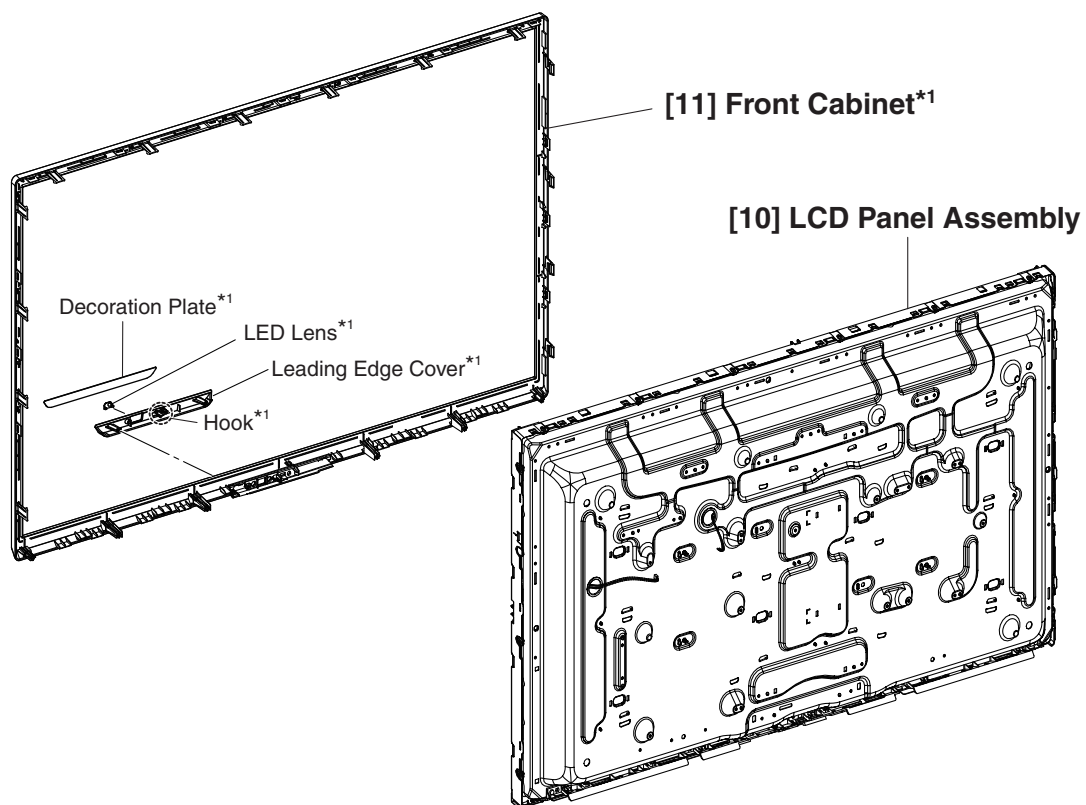
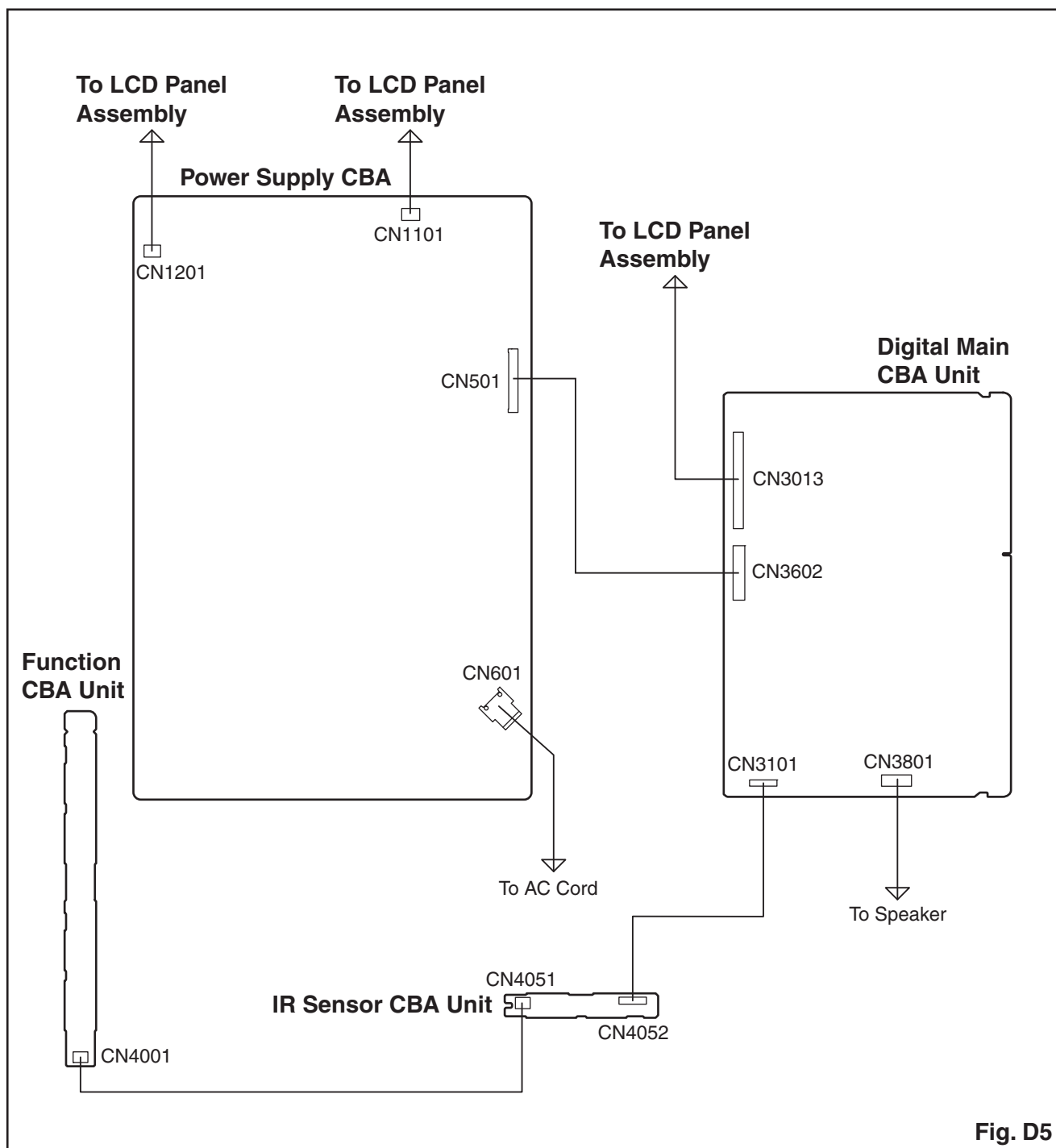


Fig. D4

***1: Make sure to read all the precautions on page 4-8 when you disassemble/re-assemble the Front Cabinet.**

TV Cable Wiring Diagram



[TYPE A]

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.

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

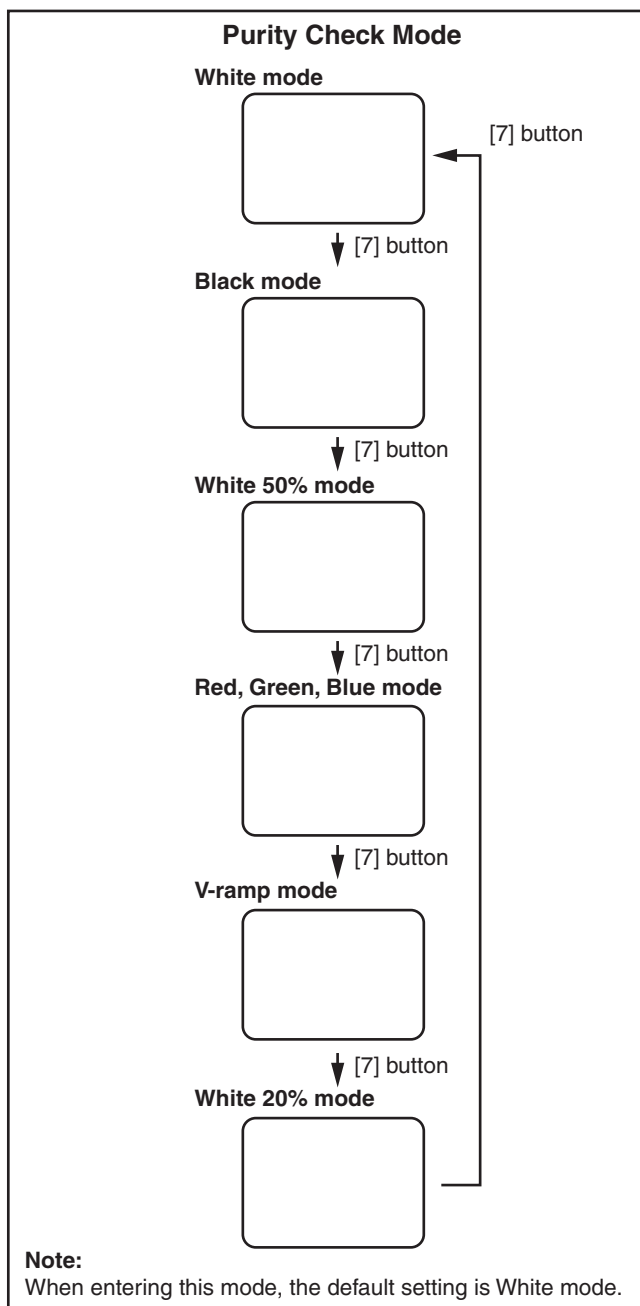
Service mode:

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.

[illegible]

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.



- 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 or Digital Main CBA.

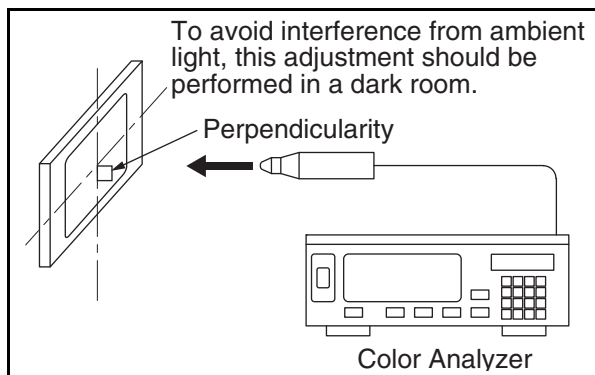
2. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

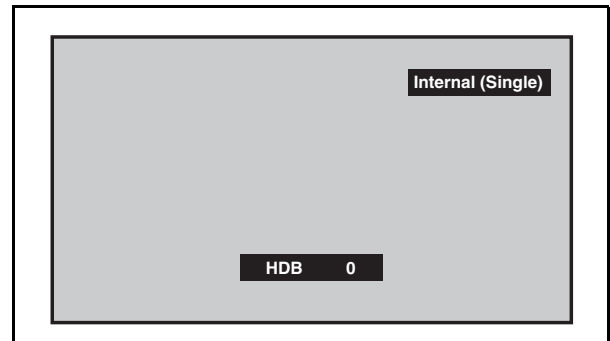
ITEM	SPECIFICATION
Color temperature	$x = 0.272 \pm 0.003$ $y = 0.278 \pm 0.003$
Input Signal	Internal pattern (30/50/80% raster)
Measurement point	Screen center
M. EQ.	CA-310 (KONICA MINOLTA Luminance meter) or measuring instrument as good as CA-310.
Aging time	60min. (Retail MODE/100IRE Raster HDMI 1080i@60)
MODE setting of TV	Shipment setting/ Retail MODE
Ambient temperature	$25^{\circ}\text{C} \pm 5^{\circ}\text{C}$

1. Operate the unit for more than 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.

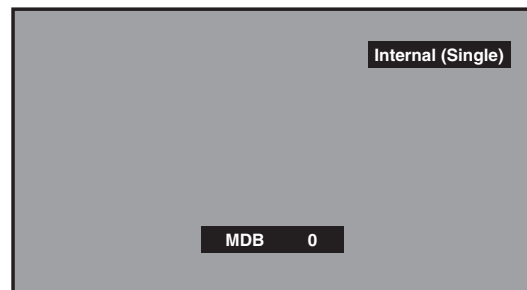


Note: The optical receptor must be set perpendicularly to the LCD Panel surface.

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.)

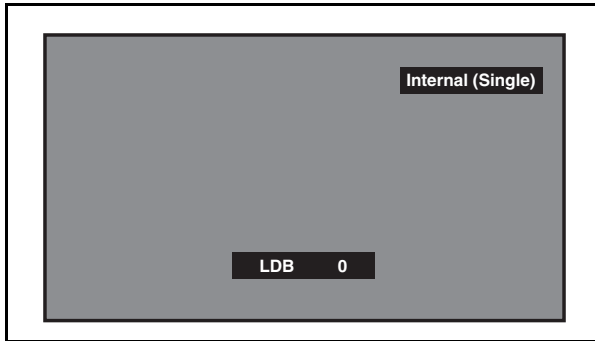


7. Press [CHANNEL UP/DOWN] buttons to adjust the color temperature becomes 12000°K ($x = 0.272 / y = 0.278 \pm 0.003$).
8. Press [1] button to select the "HDR" for High Drive Red adjustment ("HDR" appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
9. If necessary, adjust the "HDB" or "HDR" again
10. Press [6] button to select the "MDB" for Middle Drive Blue adjustment ("MDB" appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.



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

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



14. Press [7] button to select the “LDR” for Low Drive Red adjustment (“LDR” appears in the screen.) and press [CHANNEL UP/DOWN] buttons to adjust the color temperature.
15. If necessary, adjust the “LDB” or “LDR” again.
16. Press [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 15. Then check “Debugging Message” again. If “Drive settings are NG. Retry again.” is displayed, replace the LCD Panel or Digital Main CBA.
17. To cancel or to exit from the White Balance Adjustment, press [CH RETURN] or [PREV CH] button.

[TYPE B]

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.

"x" differs depending on the models.

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

Press "POWER" key to exit.

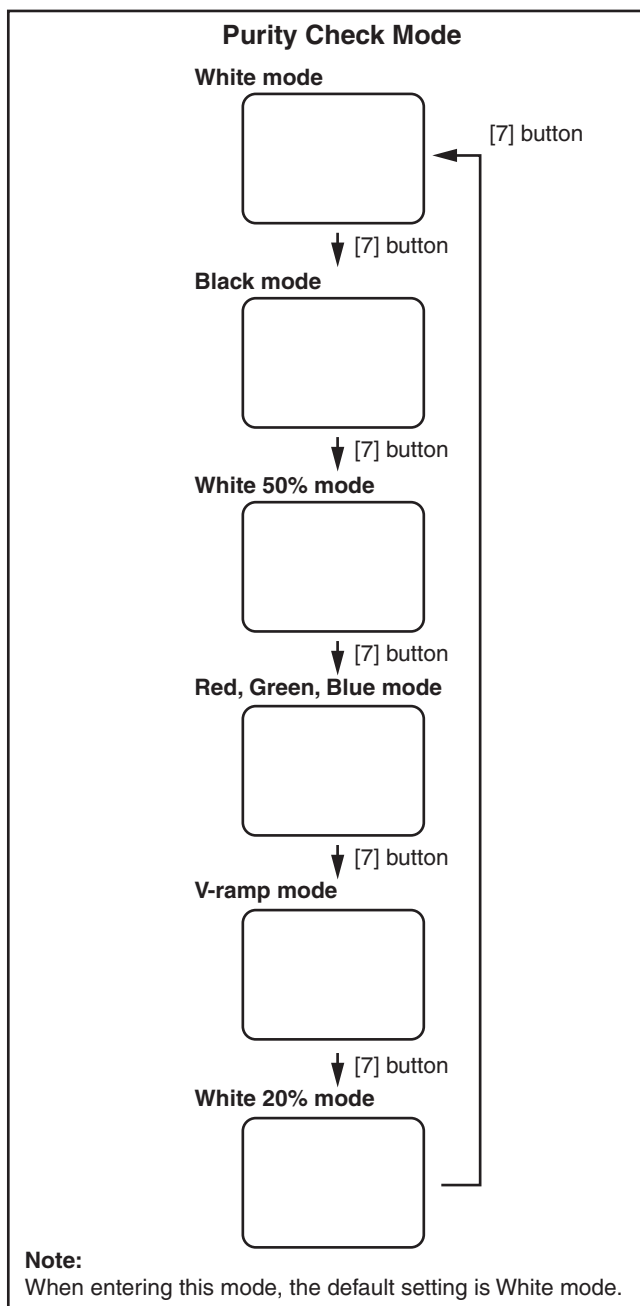
MAC address:  **.*.*.*.*.*.*.*
ESN:          *****

Flicker:      ****
Tuner:        ****
HDMI UART:    OFF          Total 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.

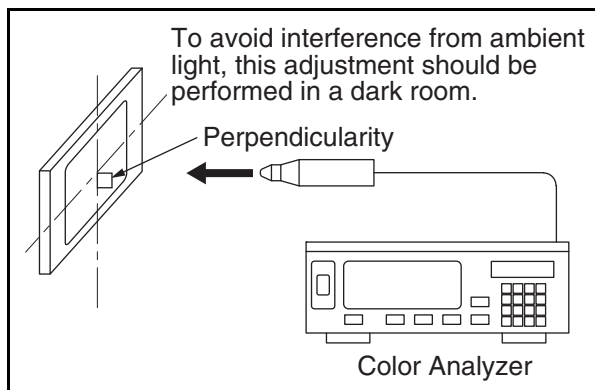
2. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

ITEM	SPECIFICATION
Color temperature	$x = 0.272 \pm 0.003$ $y = 0.278 \pm 0.003$
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	$25^{\circ}\text{C} \pm 5^{\circ}\text{C}$

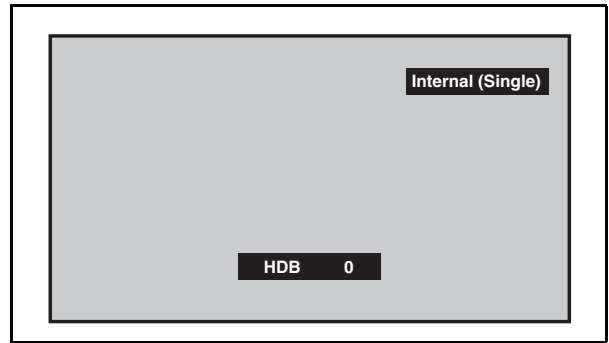
1. Operate the unit for more than 60 minutes.
2. Enter the service mode.
3. Press [VOLUME DOWN] button three times on the remote control unit to select "Drive setting" mode. "Drive" appears in the screen.
4. Set the color analyzer at the CHROMA mode and zero point calibration. Bring the optical receptor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



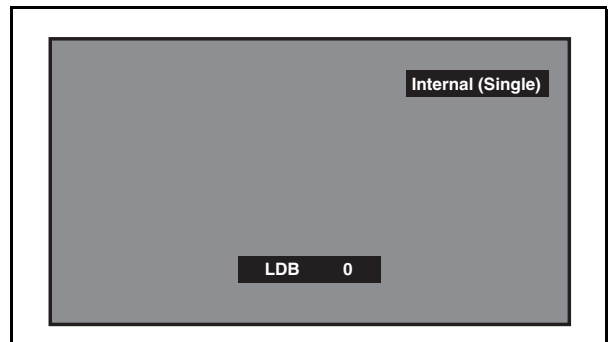
Note: The optical receptor must be set perpendicularly to the LCD Panel surface.

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

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



7. Press [CHANNEL UP/DOWN] buttons to adjust the color temperature becomes 12000°K ($x = 0.272 / y = 0.278 \pm 0.003$).
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 [ϕ] 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 [ϕ] button on the remote control unit.
3. Press [BACK] button to enter the Control Panel Key Confirmation Menu.
4. Press any button on the control panel.
5. Press [INFO] button to proceed with the self check mode.
6. Make sure to confirm the "INITIALIZED FINISH" appears in the green screen.
7. Unplug the AC Cord and plug it back on again.

FIRMWARE RENEWAL MODE

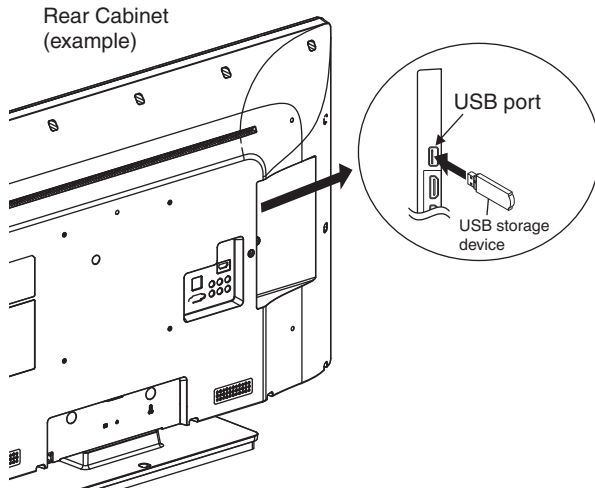
[TYPE A]

Equipment Required

- USB storage device
- Remote Control Unit

Firmware Update Procedure

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



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

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

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

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

"*" differs depending on the models.

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

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

- Select the file and press [OK] button.

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

"*" differs depending on the models.

Current Version: ***_***_***_*
New Version: ***_***_***_*
Are you sure you want to update?
No Yes

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

- 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.

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

Update your TV with new software: Done
Software update is successful. Please remove the USB storage device and restart the TV set.

Remove the USB storage device from the USB port.

Turn the power off and turn the power on again.

[TYPE B]

Equipment Required

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

Firmware Update Procedure

User Upgrade (Filename example: TVNB2***_00_PH_XX91_FB1.bin)

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

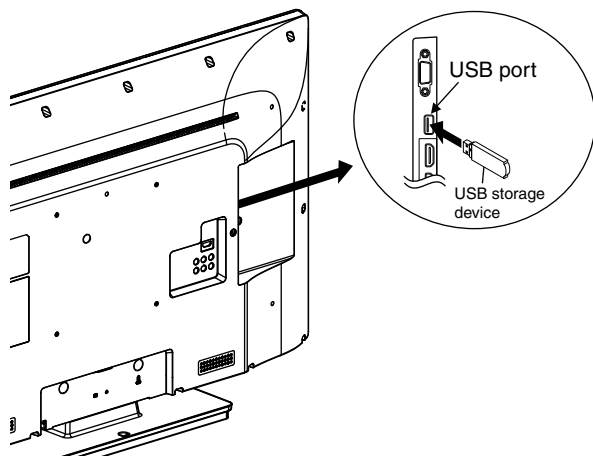
The User Upgrade and the Firmware Upgrade (Factory Upgrade) will be done by the same file. If you want to upgrade the firmware and initialize the setting values also, add "FACT_" at the beginning of the filename.

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

Update procedure

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

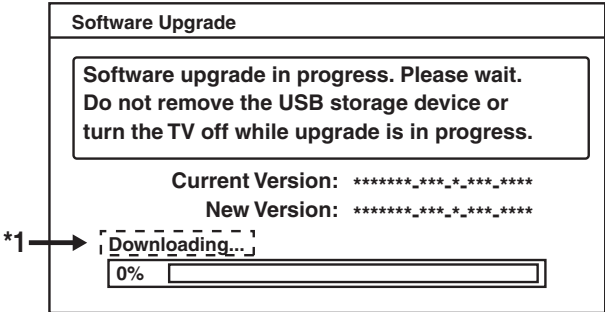
Rear Cabinet



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

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

"*" differs depending on the models.

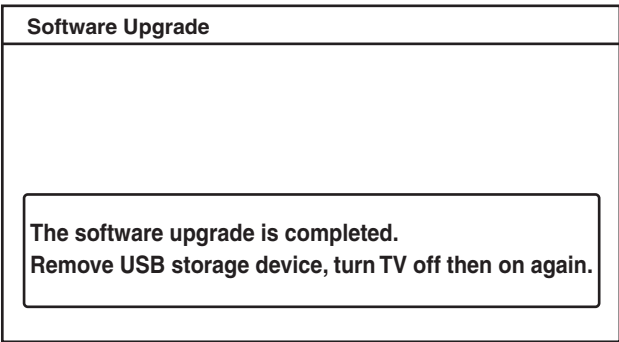


Note: If the above screen isn't displayed, repeat from step 1.

The appearance shown in *1 is described as follows.

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

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



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

Factory Upgrade (Firmware Upgrade/Flash Upgrade)

Firmware Upgrade

(Filename example: FACT_TVNB2***_00_PH_XX91_FB1.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_TVNB2***_00_PH_XX91_FB1.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.

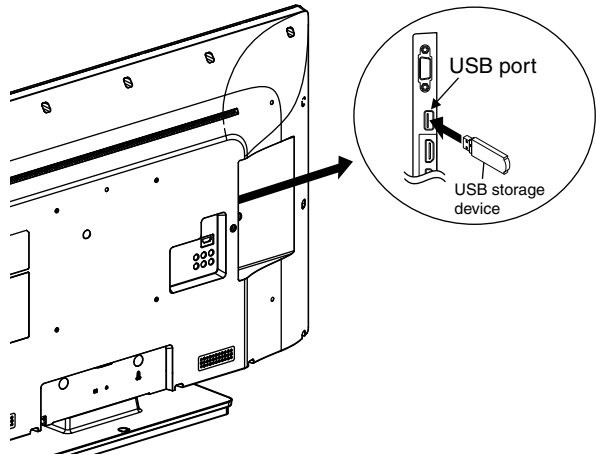
The Flash Upgrade will be done by it's unique file.

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

Update procedure

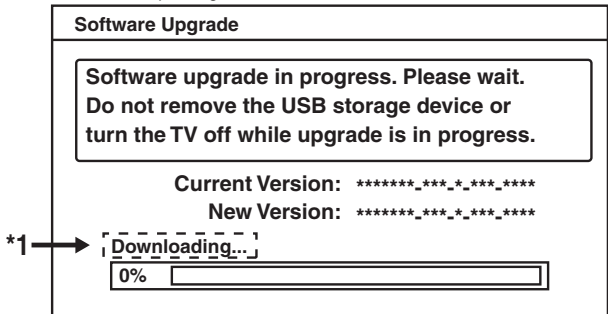
- 1. Turn the power off.
- 2. Insert the USB storage device to the USB port as shown below.

Rear Cabinet



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

"*" differs depending on the models.

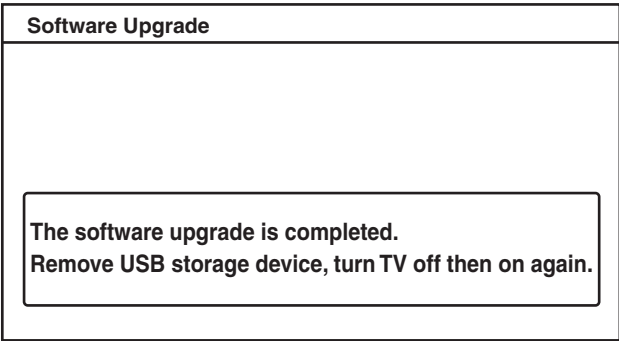


Note: If the above screen isn't displayed, repeat from step 1.

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.

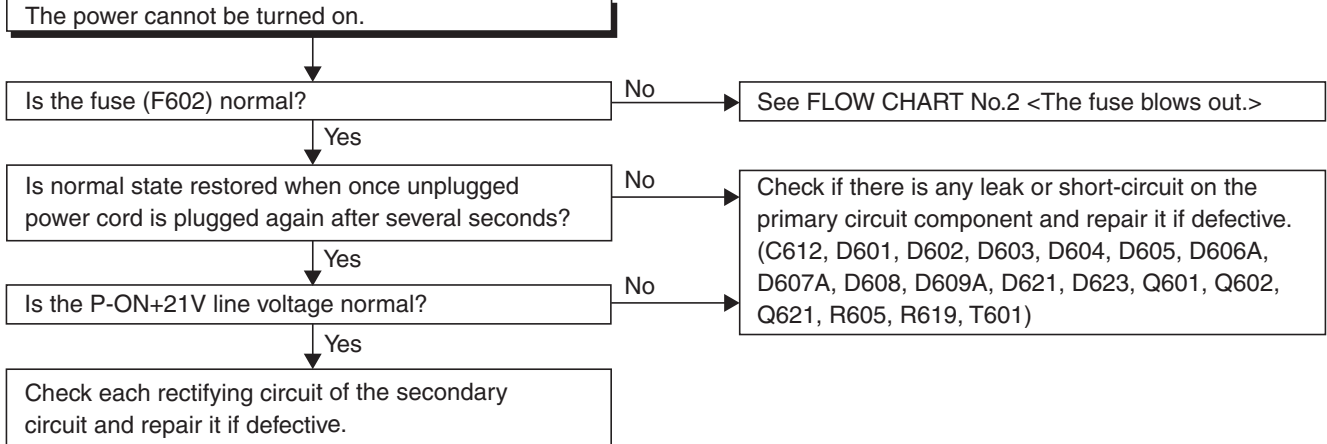
Service mode initial screen with a word "INITIALIZED" will appear in the screen. The color of the word "INITIALIZED" will change from red to green when initialization is completed.

TROUBLESHOOTING

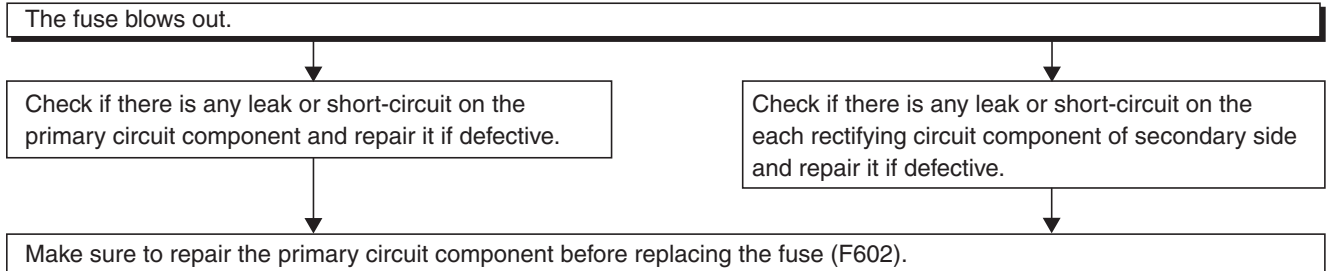
Note: This Troubleshooting section covers the entire PL14.32 chassis models. Thus some Reference number of parts shown below may not be used depending on the model. Please refer to the parts list for each model.

[Power Supply Section]

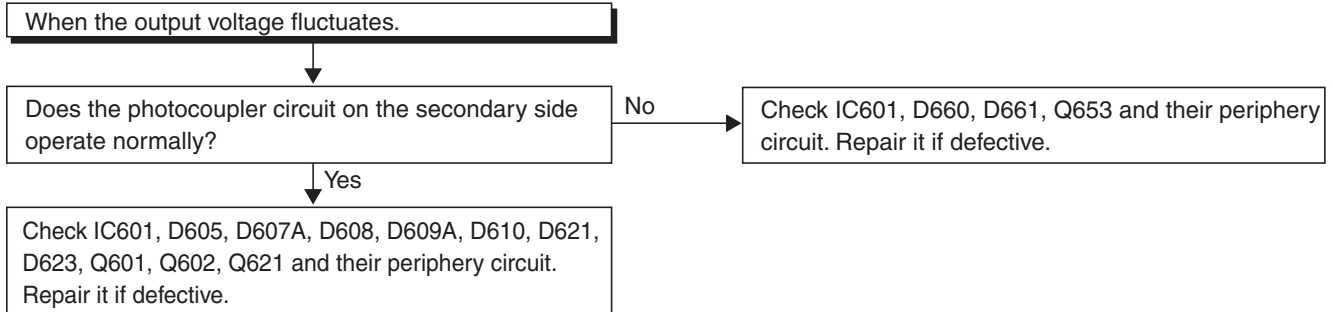
FLOW CHART NO.1



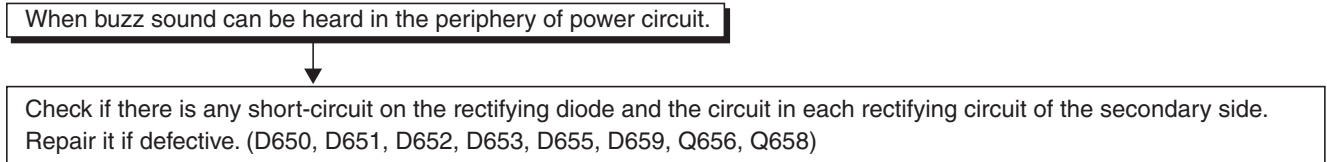
FLOW CHART NO.2



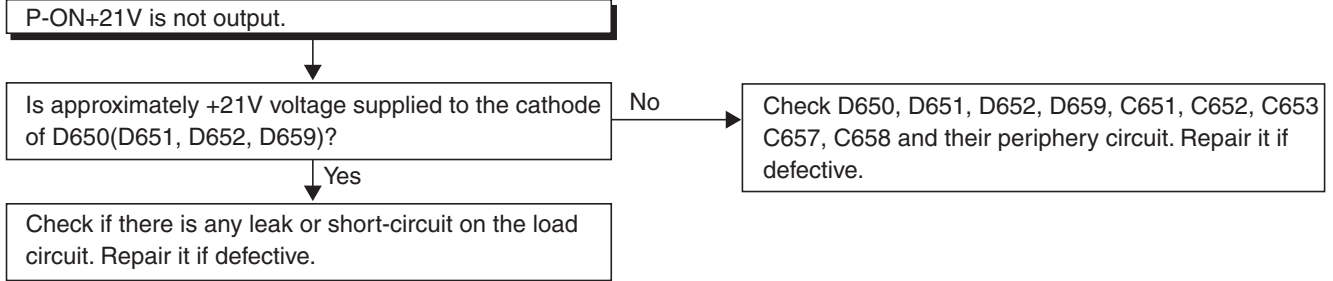
FLOW CHART NO.3



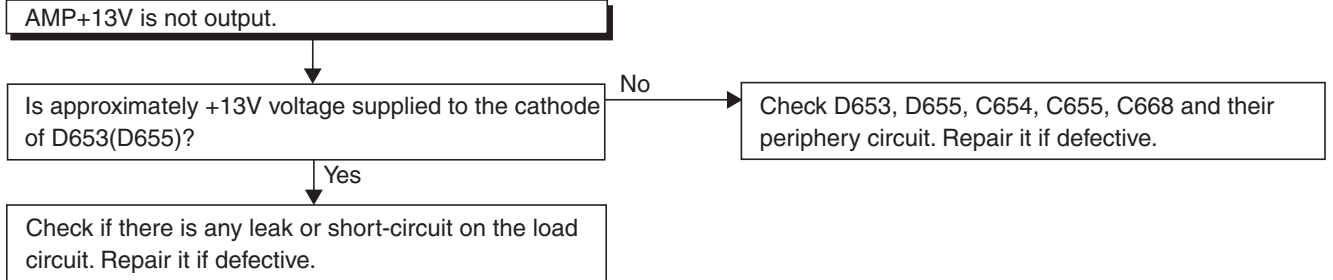
FLOW CHART NO.4



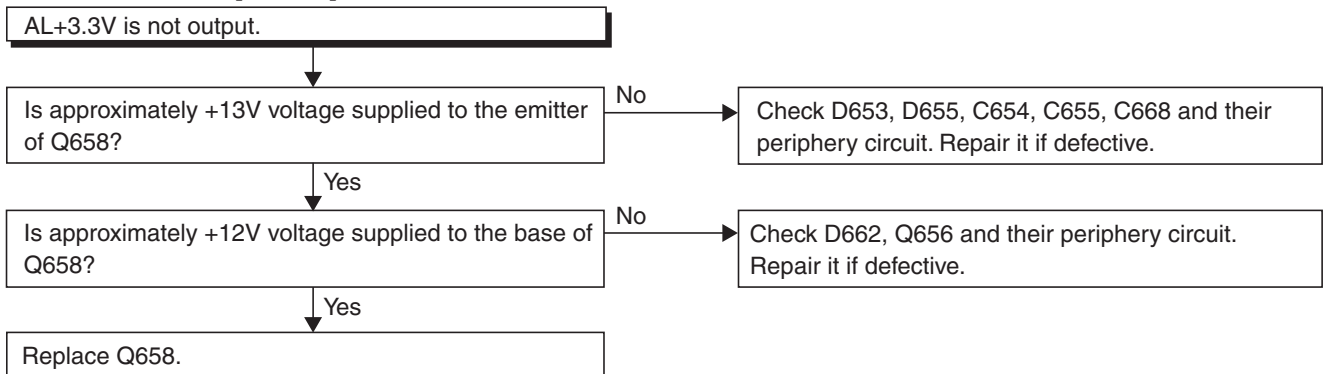
FLOW CHART NO.5



FLOW CHART NO.6

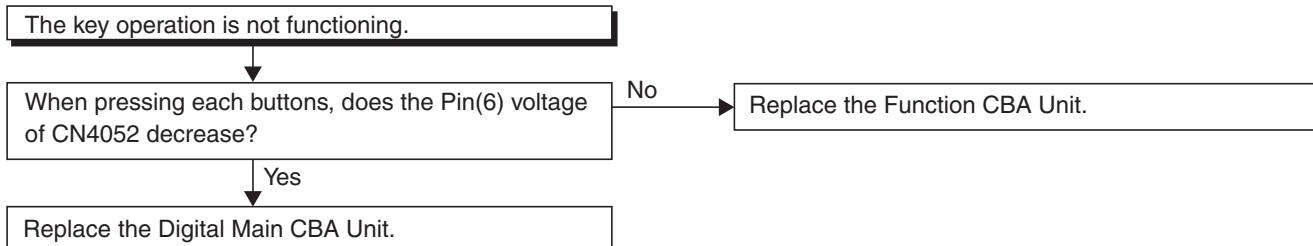


FLOW CHART NO.7 [TYPE A]

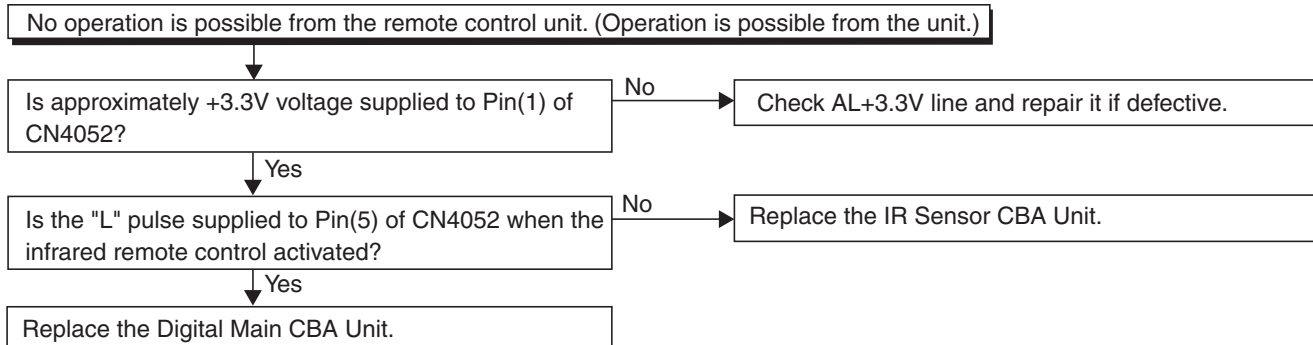


[Video Signal Section]

FLOW CHART NO.1

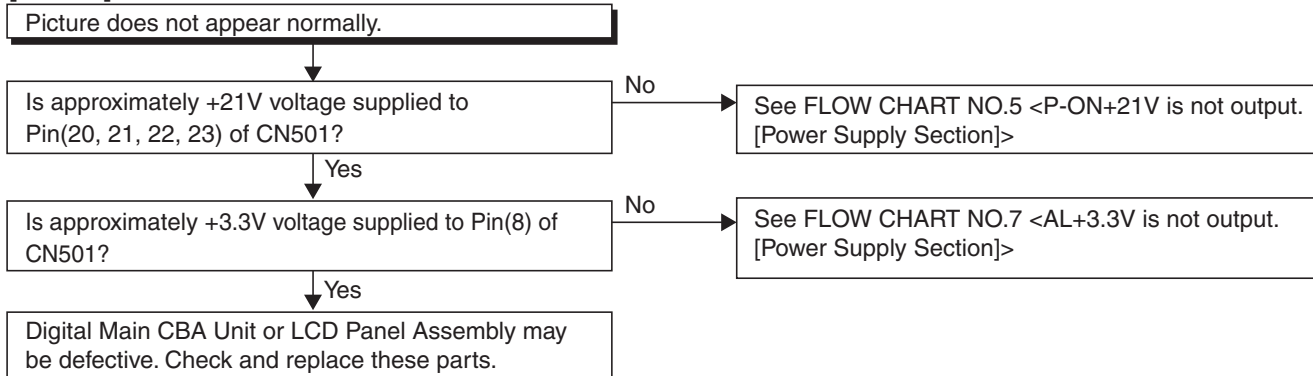


FLOW CHART NO.2

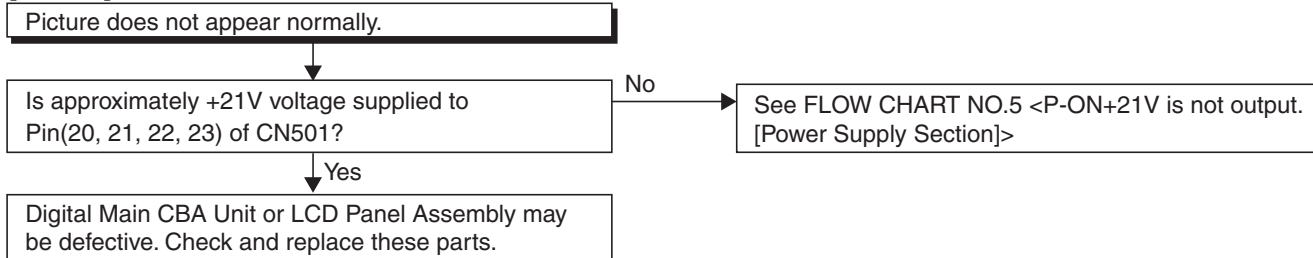


FLOW CHART NO.3

[TYPE A]



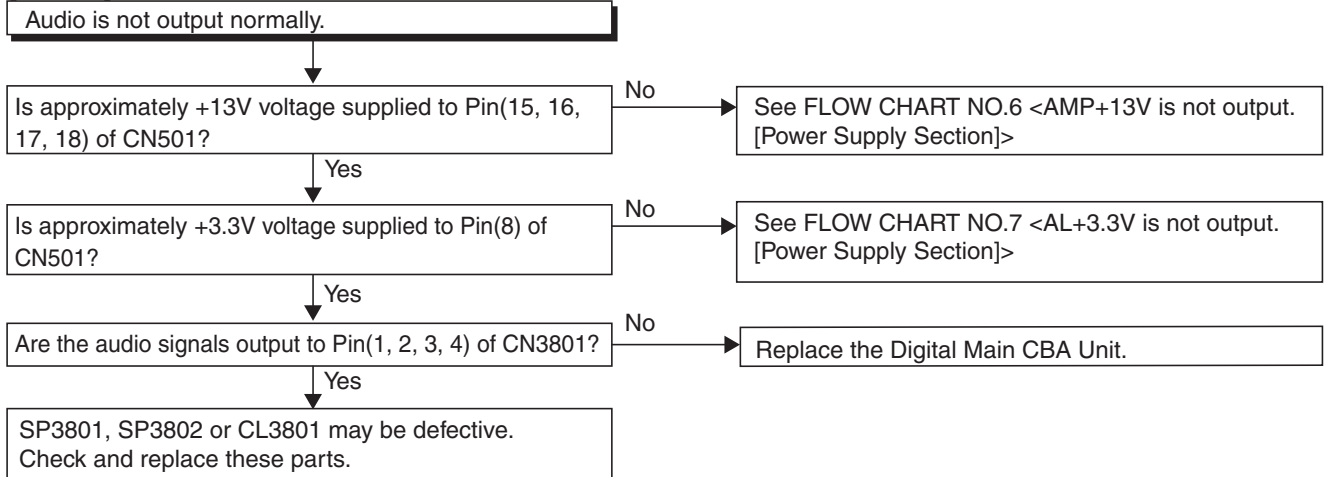
[TYPE B]



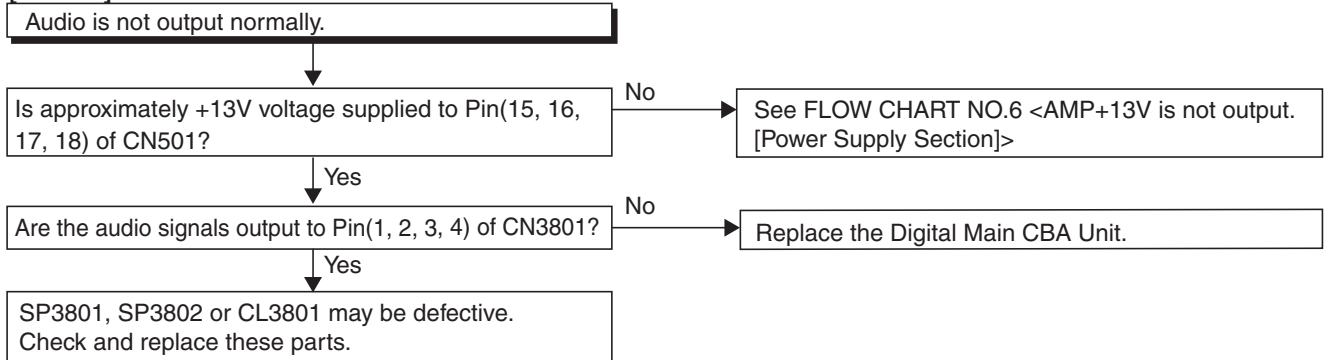
[Audio Signal Section]

FLOW CHART NO.1

[TYPE A]



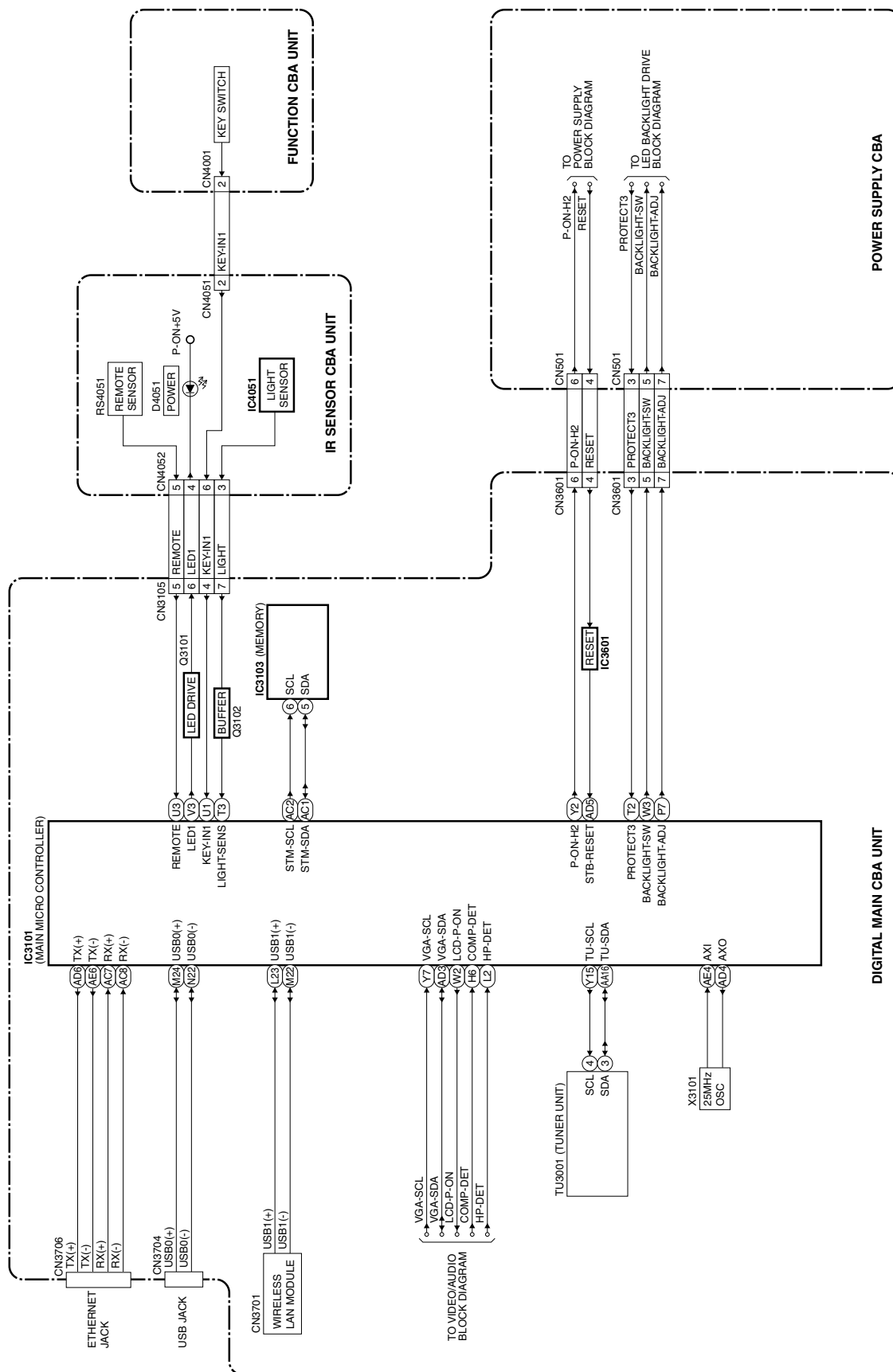
[TYPE B]



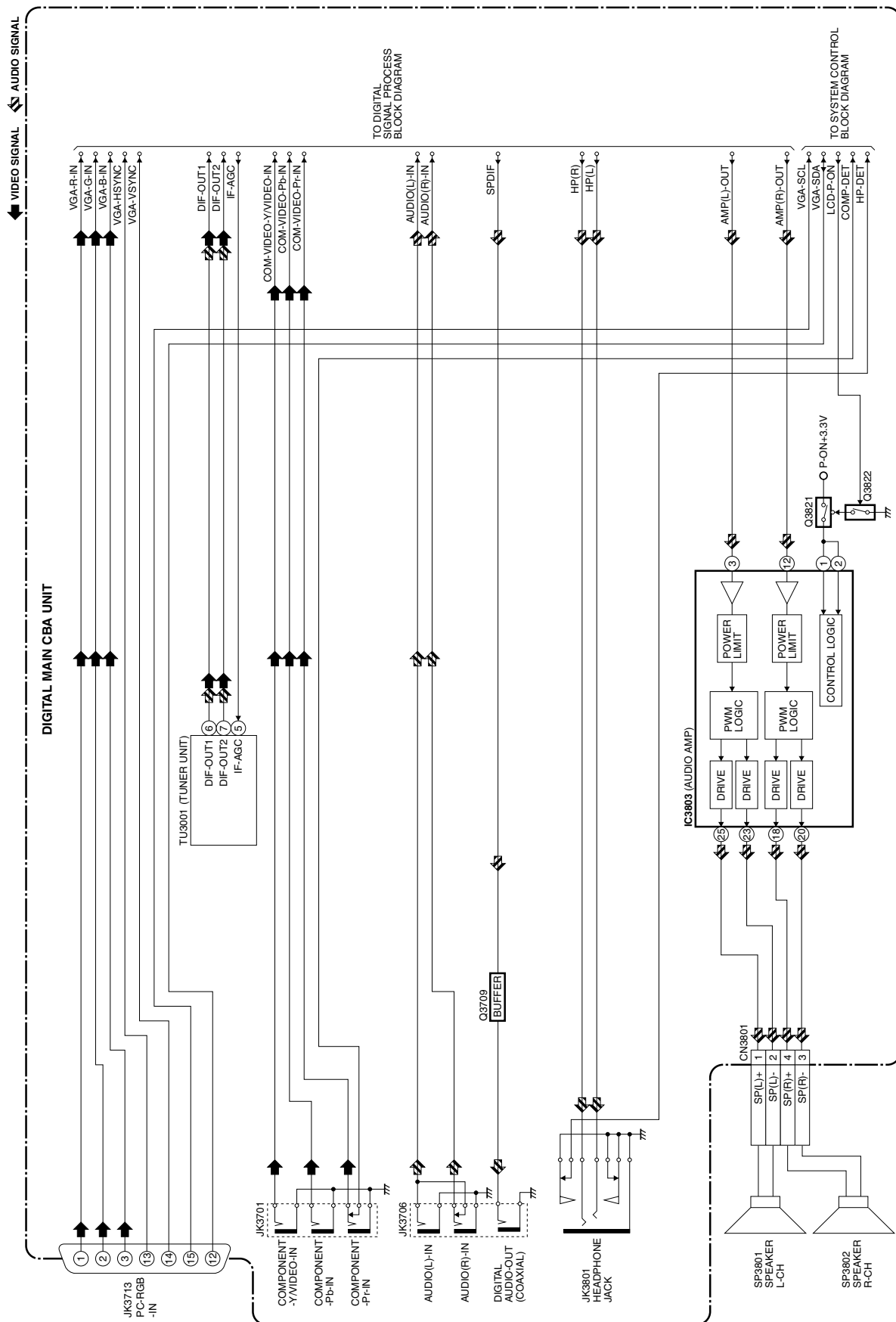
BLOCK DIAGRAMS

[TYPE A]

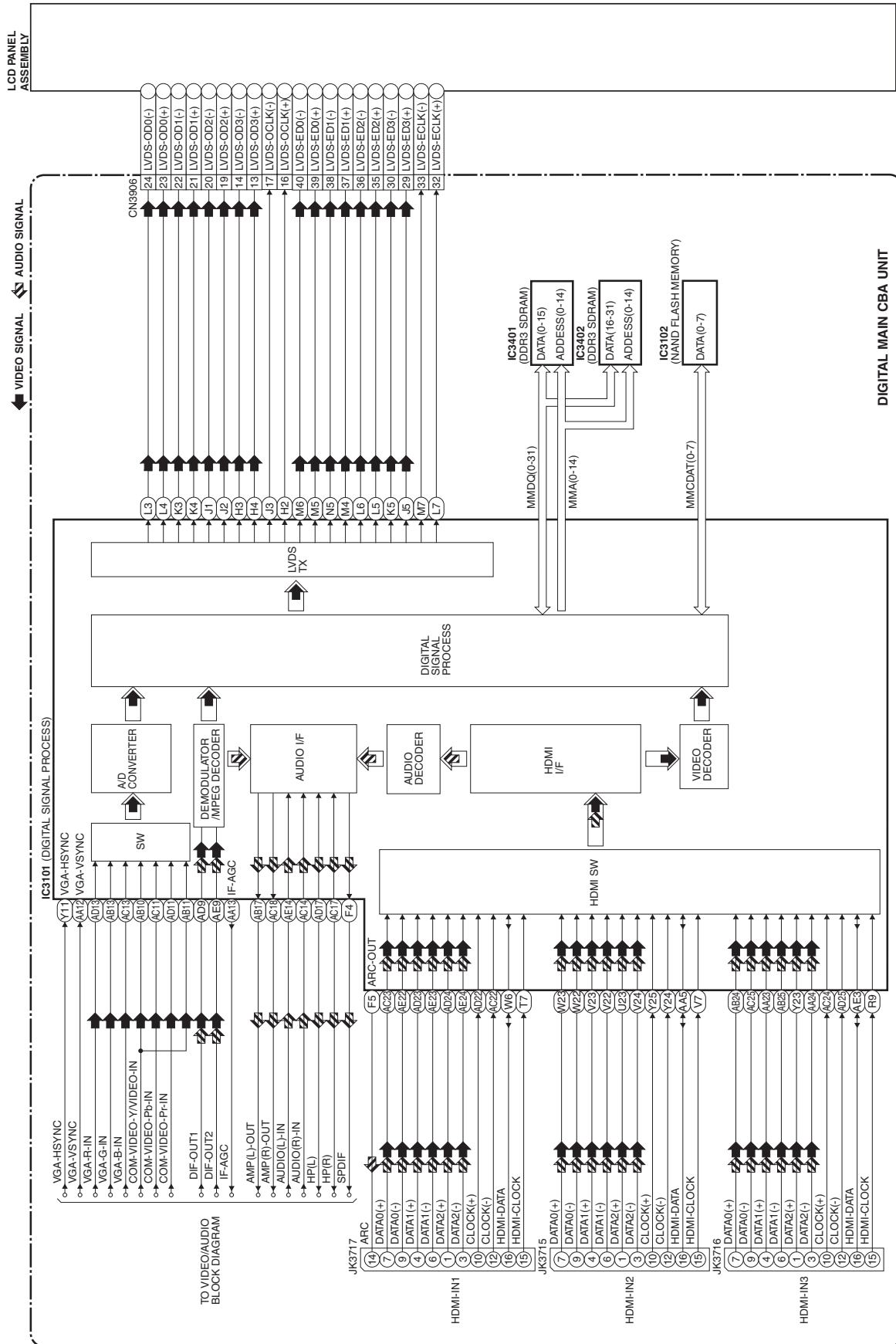
1. System Control Block Diagram



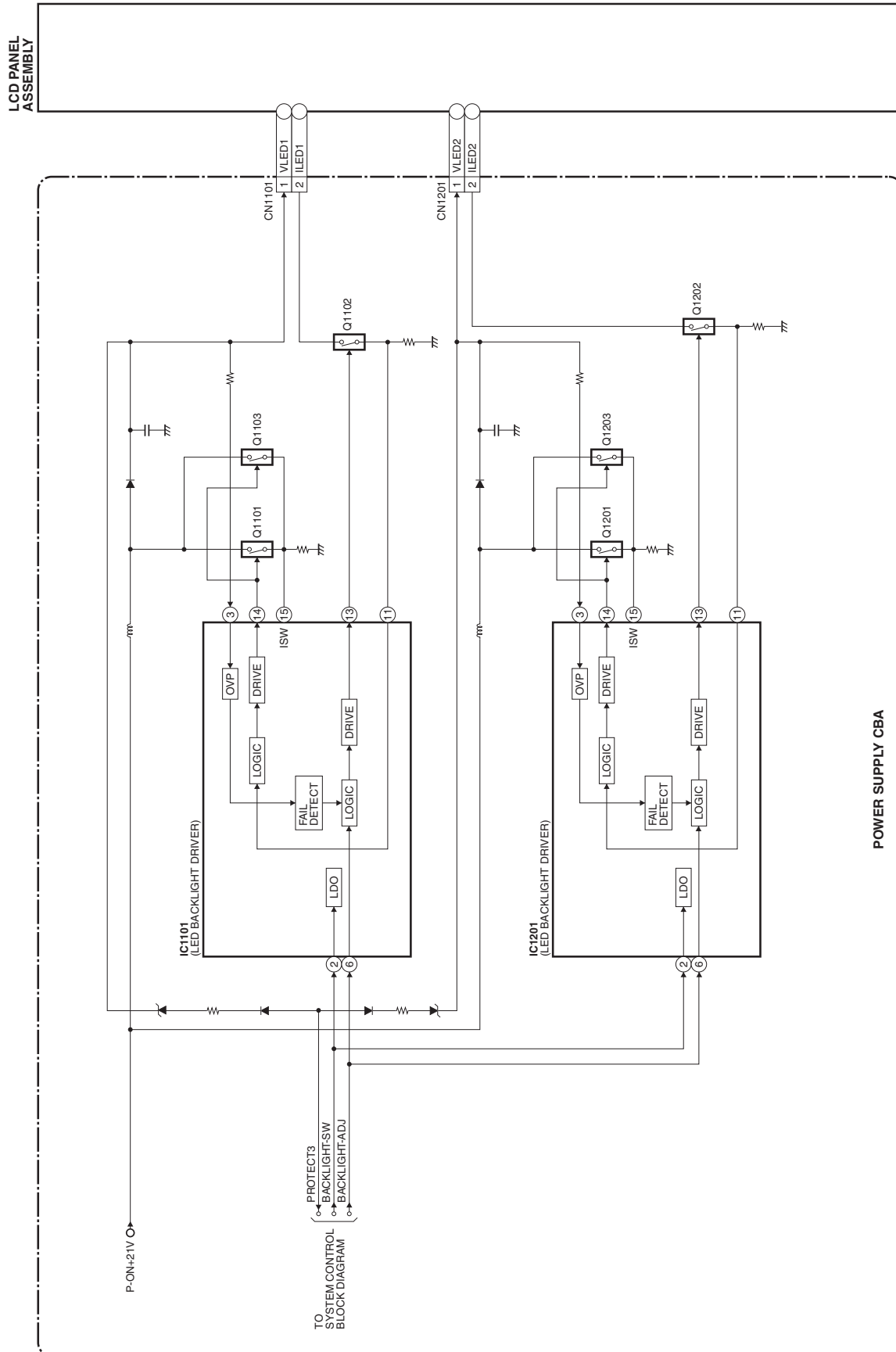
2. Video/Audio Block Diagram



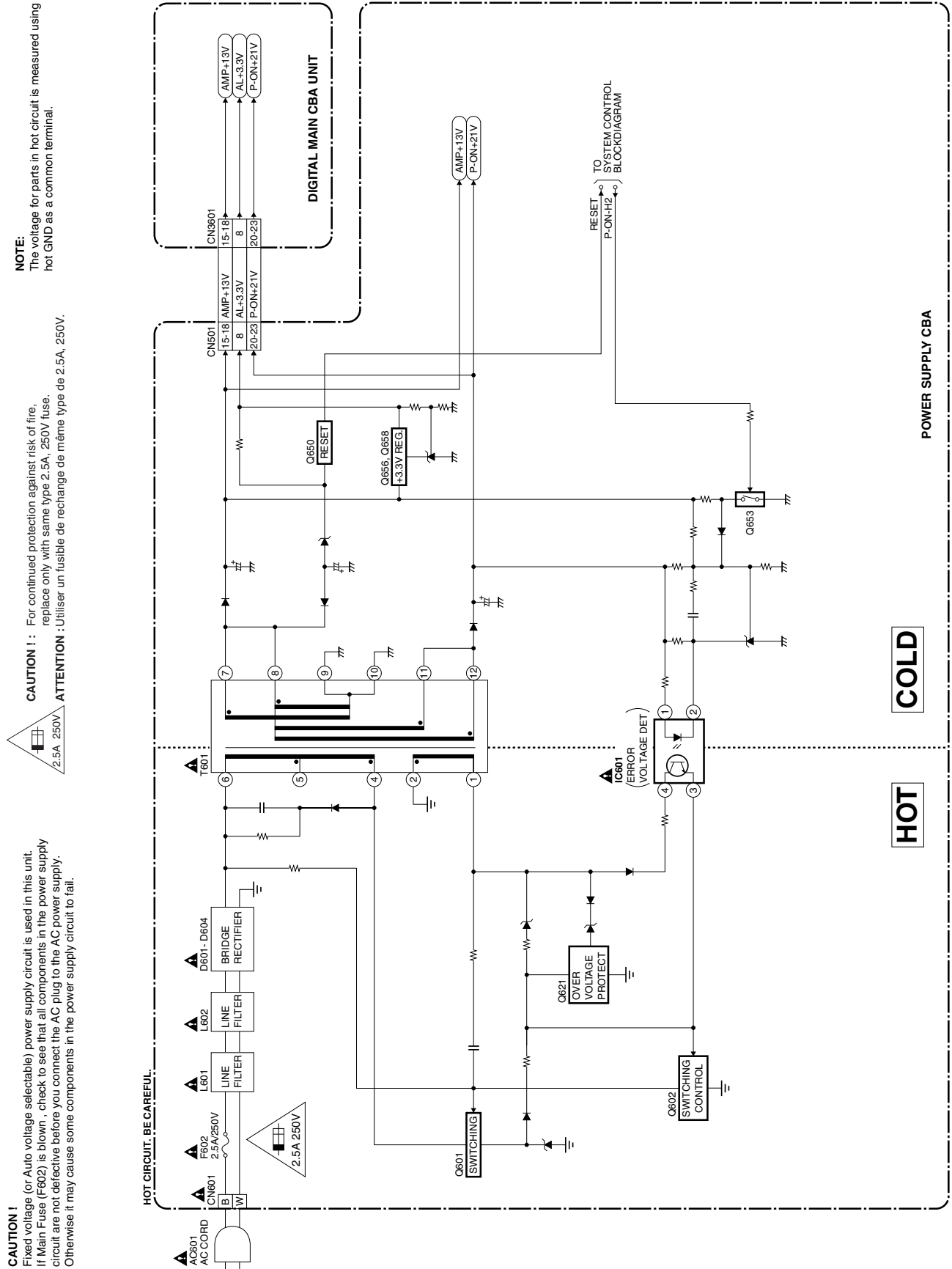
3. Digital Signal Process Block Diagram



4. LED Backlight Drive Block Diagram

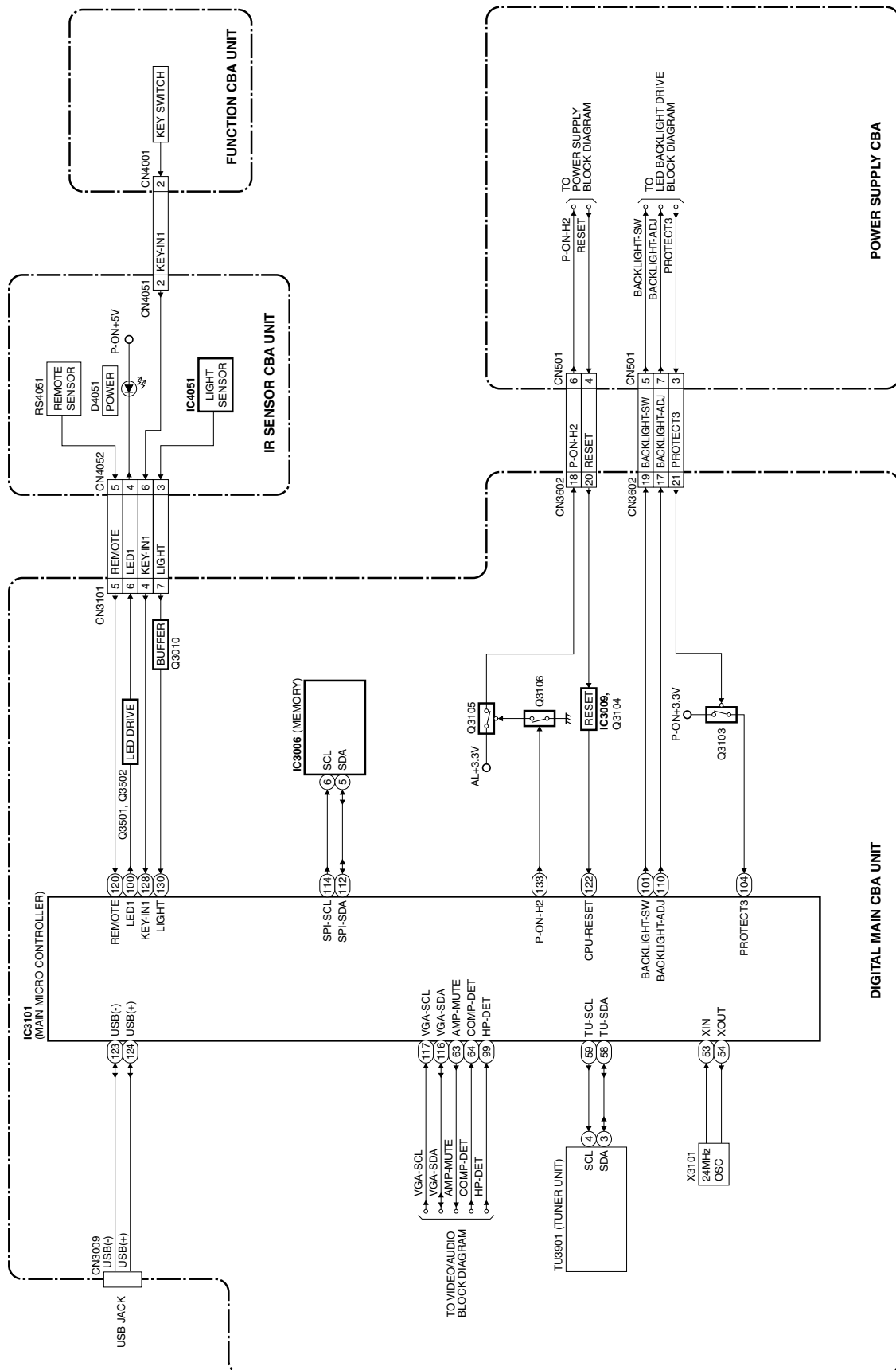


5. Power Supply Block Diagram

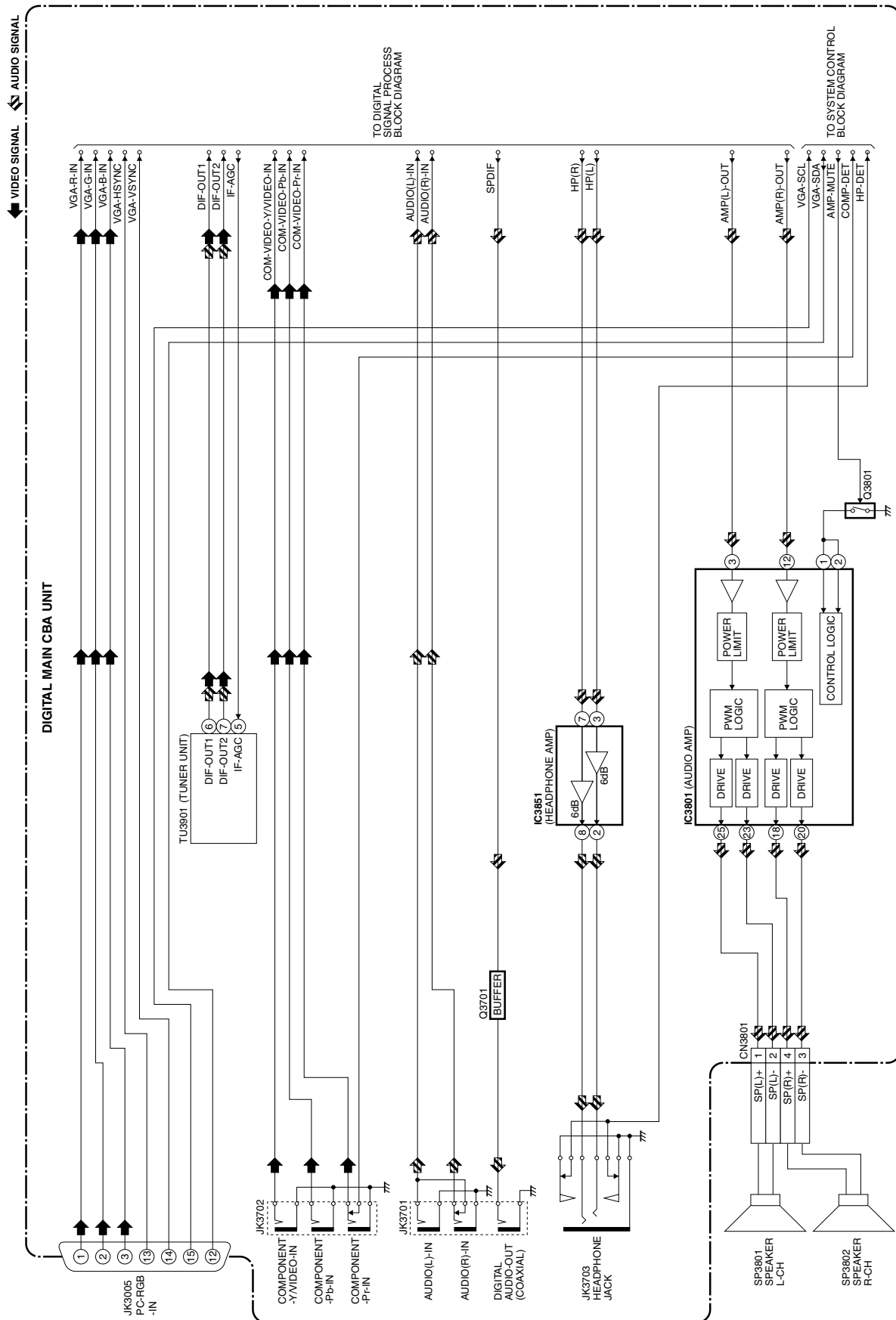


[TYPE B]

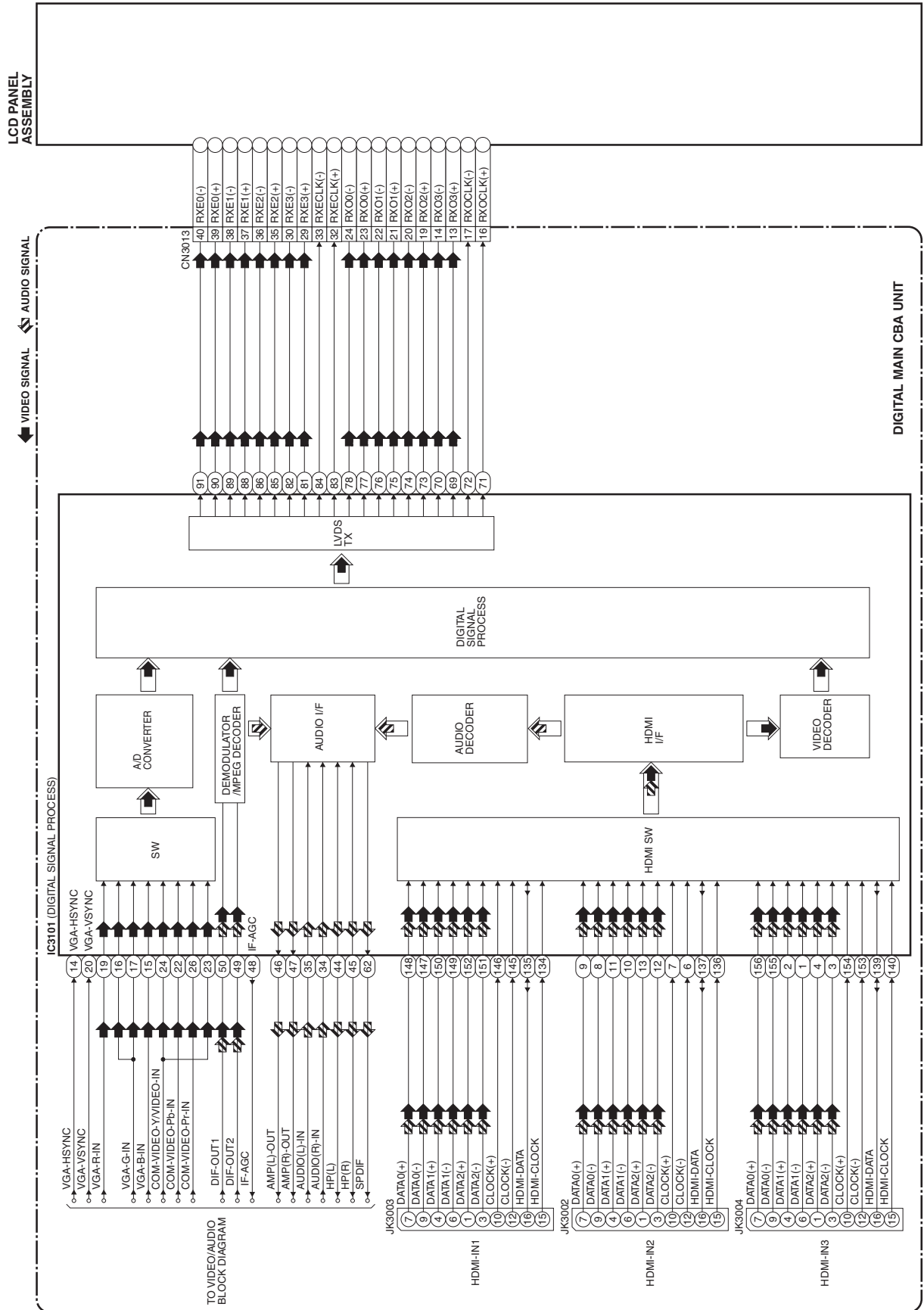
1. System Control Block Diagram



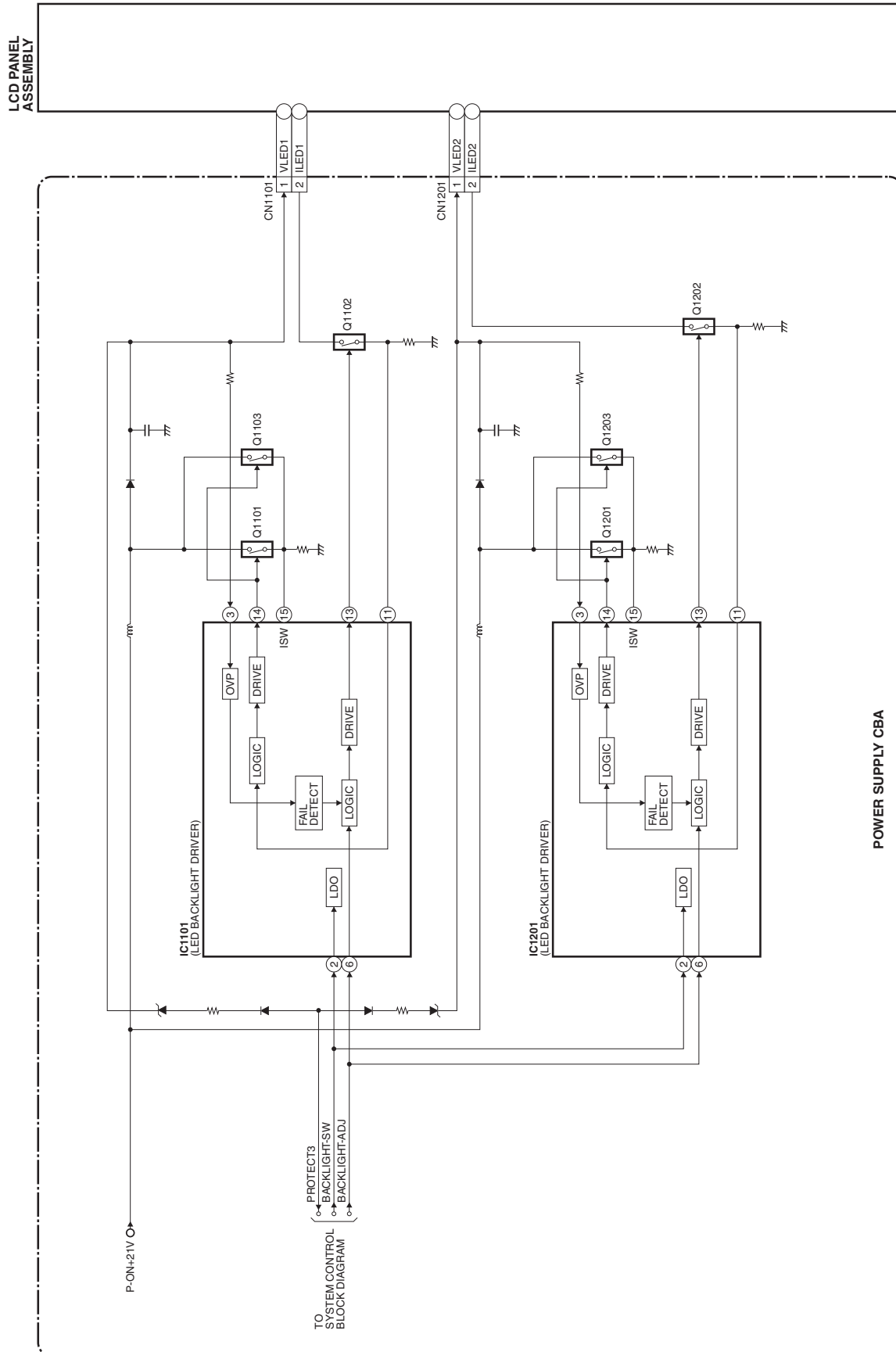
2. Video/Audio Block Diagram



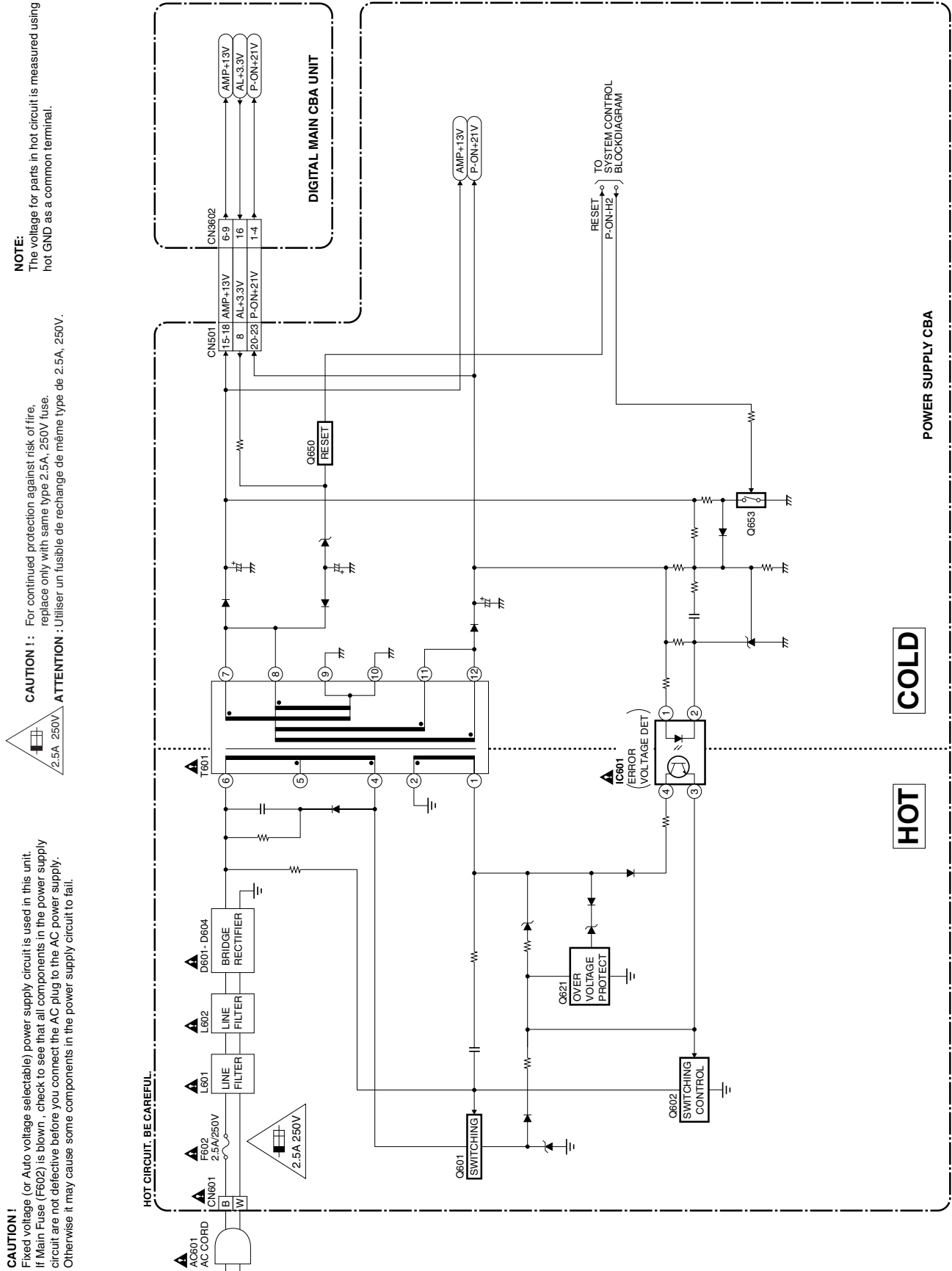
3. Digital Signal Process Block Diagram



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 ($P = 10^{-6} \mu F$).
5. All voltages are DC voltages unless otherwise specified.
6. This schematic diagrams are masterized version that should cover the entire PL14.32 chassis models.
Thus some parts in detail illustrated on this schematic diagrams may vary depend on the model within the PL14.32 chassis.
Please refer to the parts lists for each models.
7. The Circuit Board layout illustrated on this service manual is the latest version for this chassis at the moment of making this service manual.
Depend on the mass production date of each model, the actual layout of each Board may differ slightly from this version.

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

1. CAUTION:

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE_A,_V FUSE.

ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE_A,_V.

2. CAUTION:

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

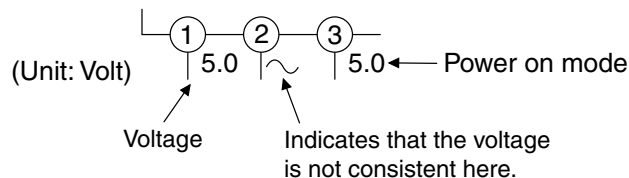
If Main Fuse (F602) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

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

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

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



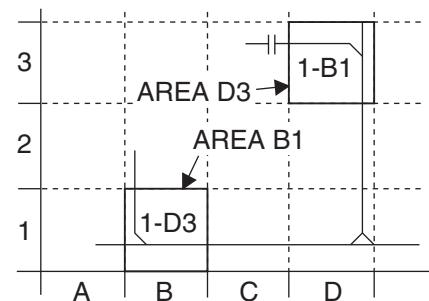
5. How to read converged lines

1-D3

 Distinction Area
 Line Number
 (1 to 3 digits)

Examples:

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



6. Test Point Information

: Indicates a test point with a jumper wire across a hole in the PCB.

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

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

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

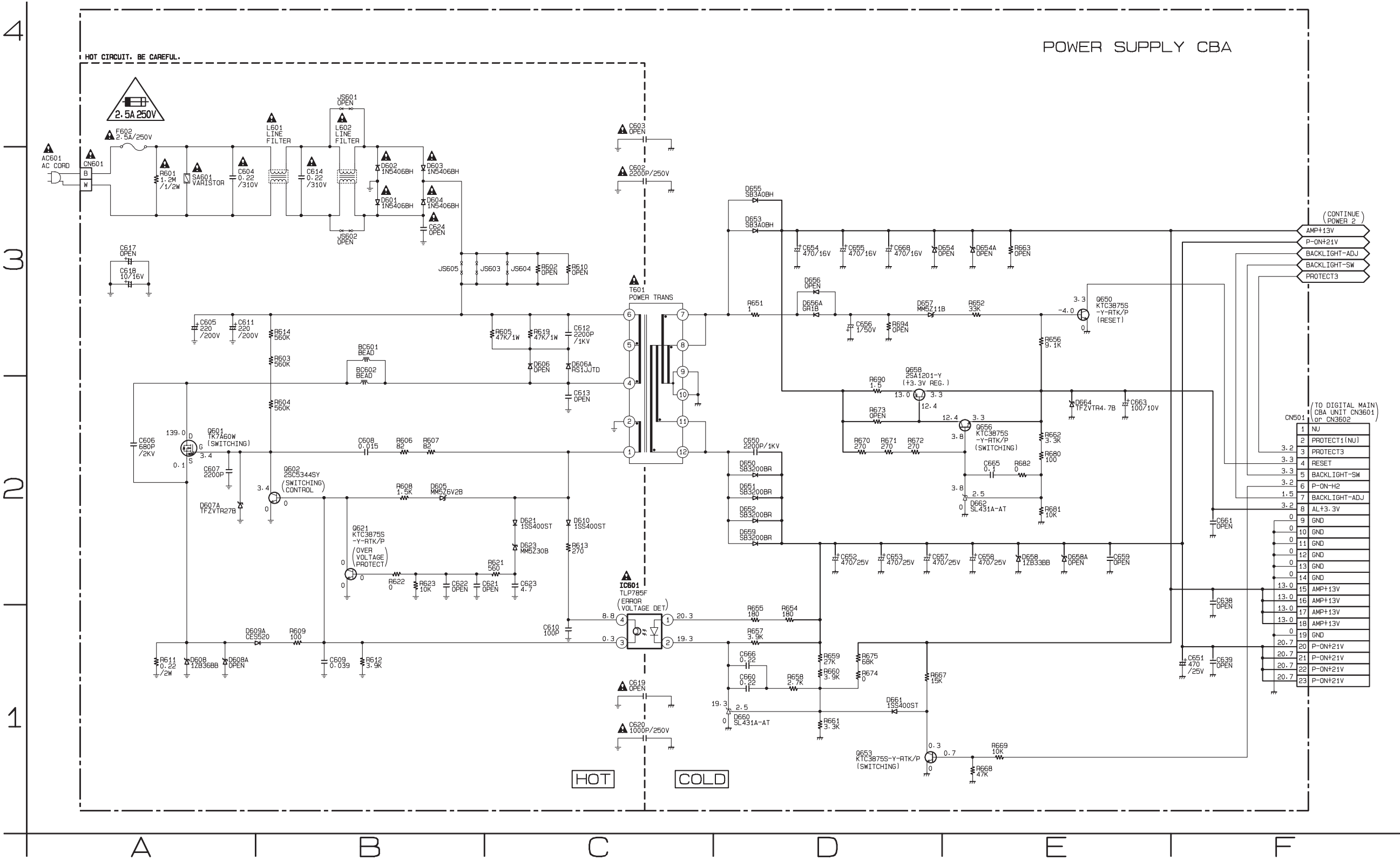
The reference number of parts on Schematic Diagrams/CBA can be retrieved by application search function.

Power Supply 1 Schematic Diagram

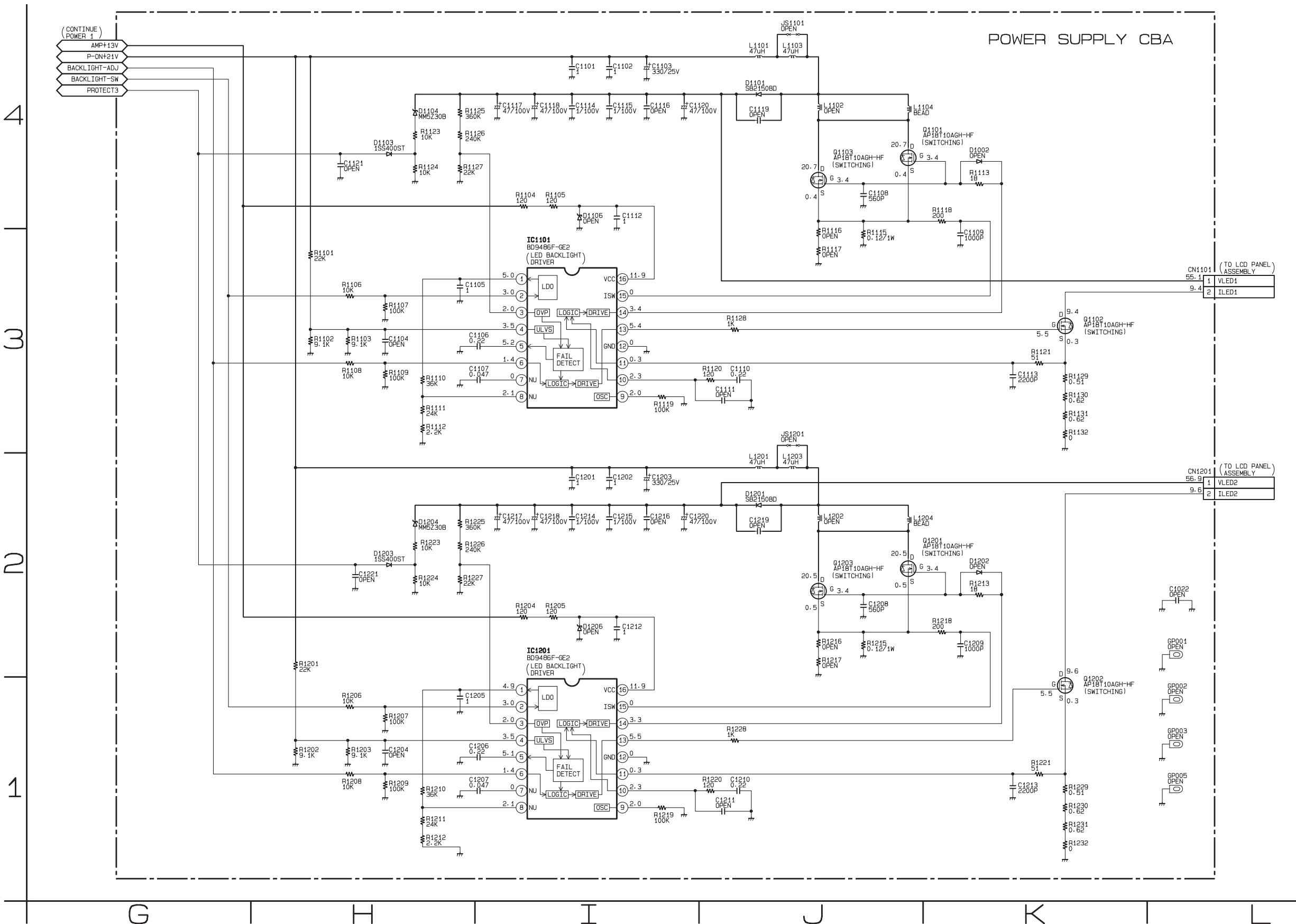
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F602) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

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

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

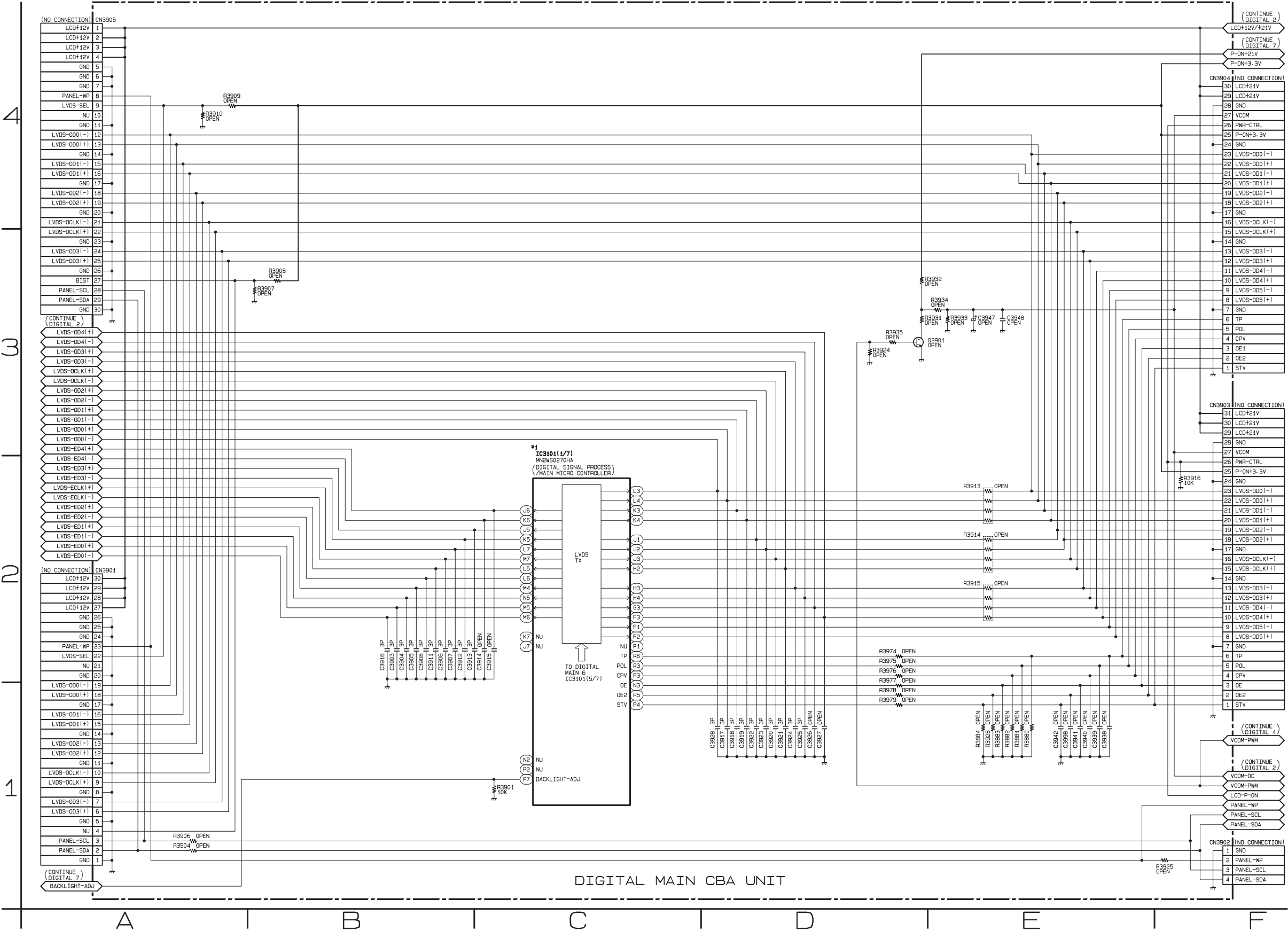


Power Supply 2 Schematic Diagram

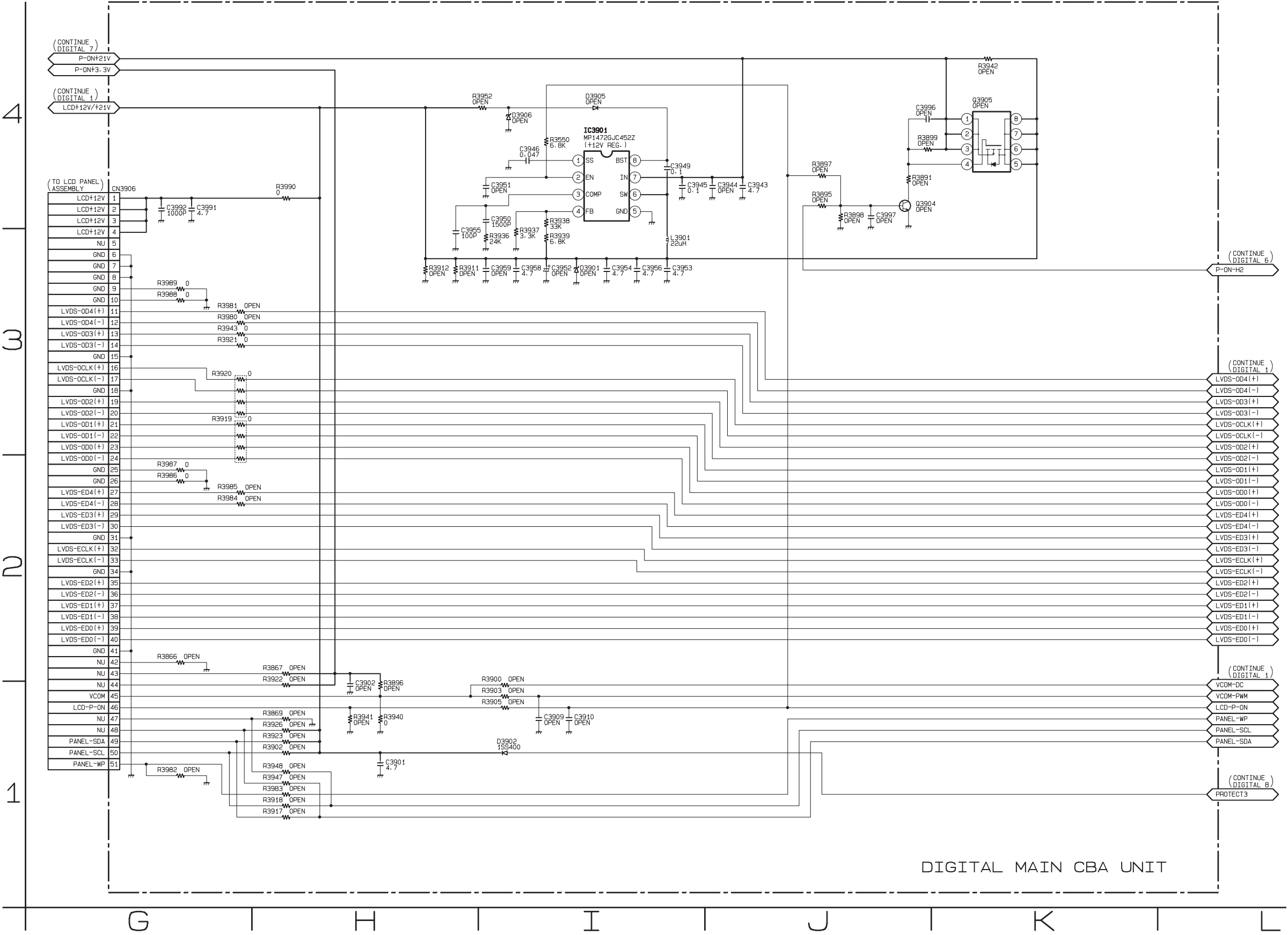


Digital Main 1 Schematic Diagram [TYPE A]

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

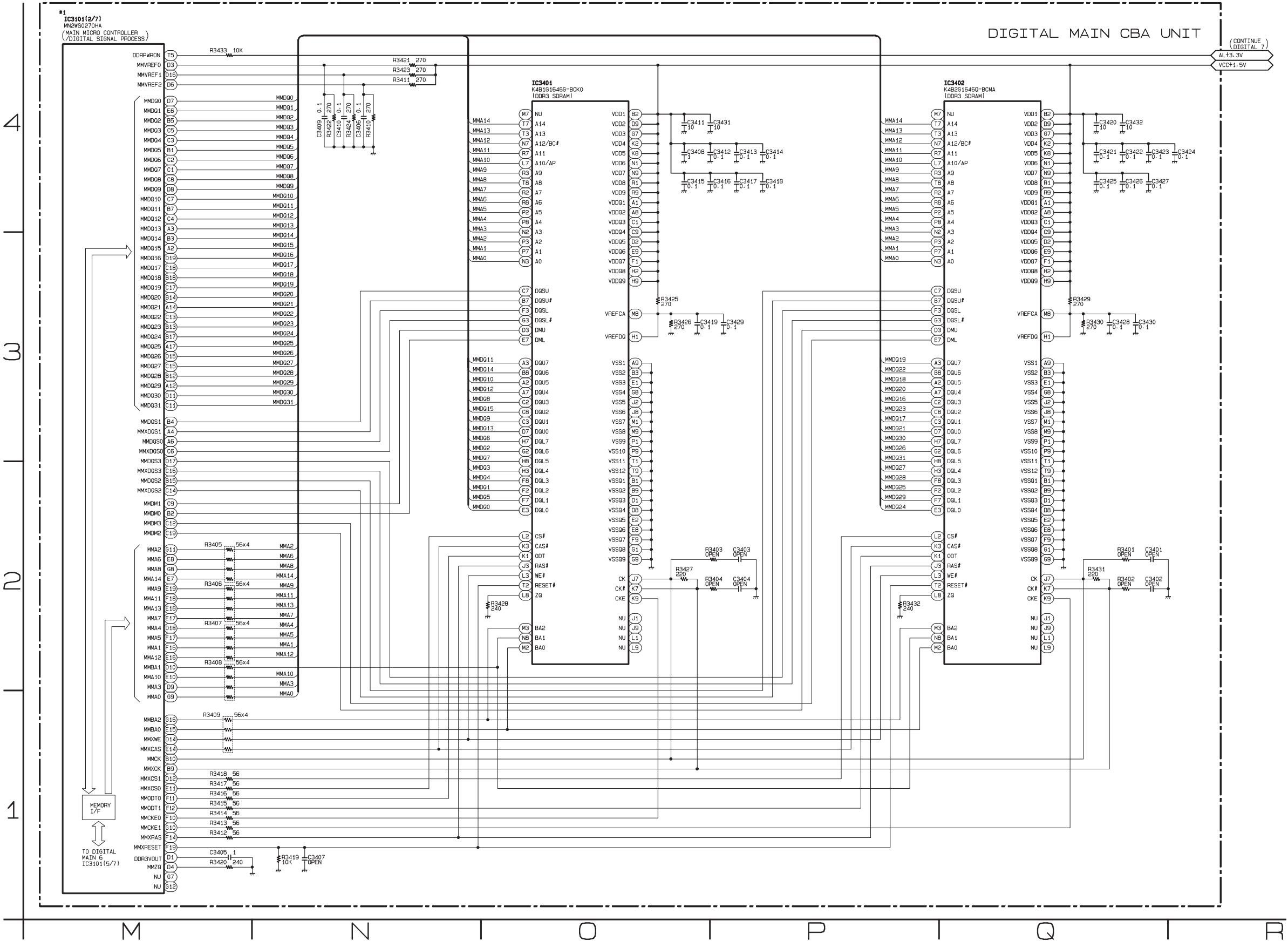


Digital Main 2 Schematic Diagram [TYPE A]



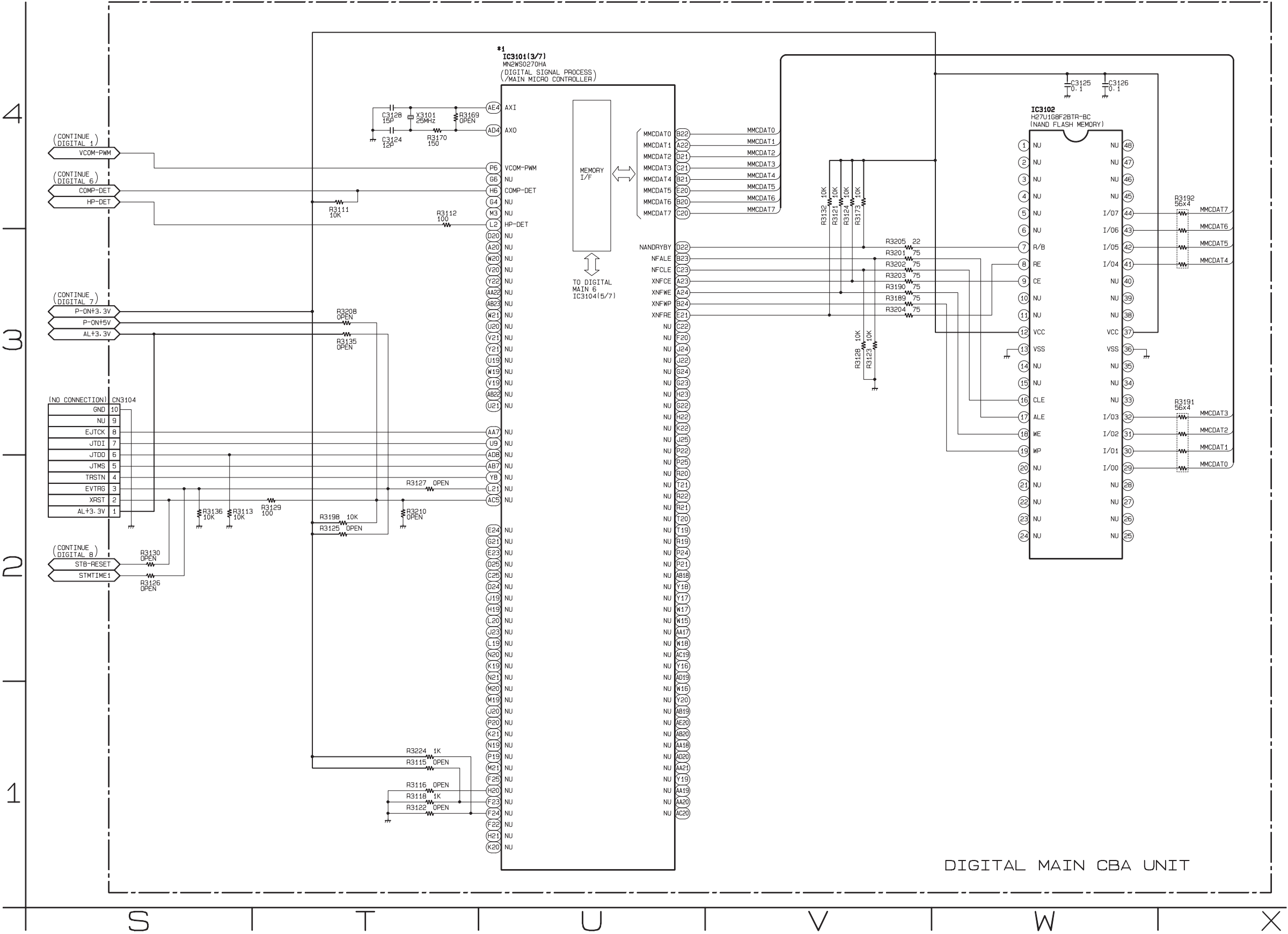
Digital Main 3 Schematic Diagram [TYPE A]

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



Digital Main 4 Schematic Diagram [TYPE A]

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

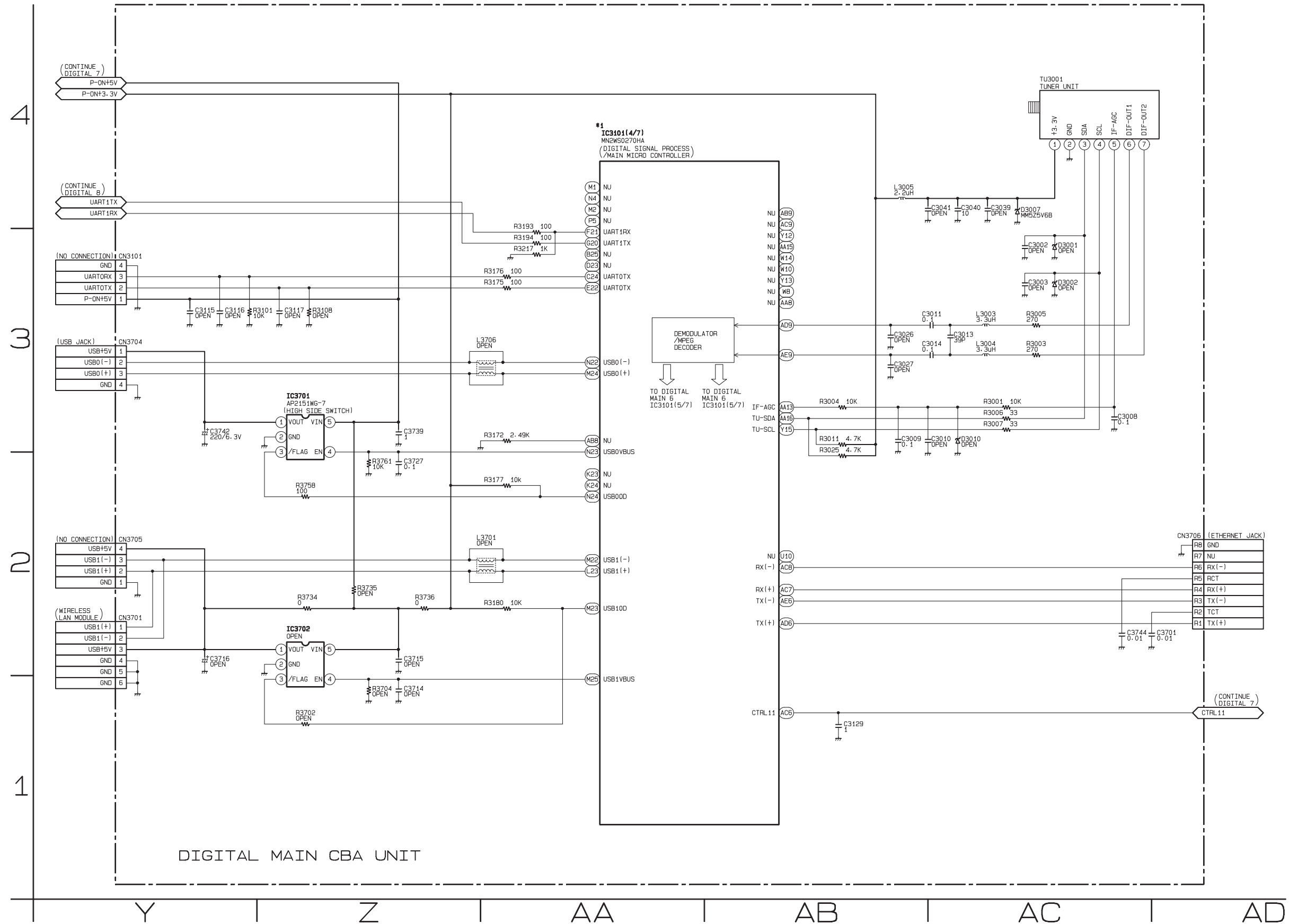


Digital Main 5 Schematic Diagram [TYPE A]

***1 NOTE:**

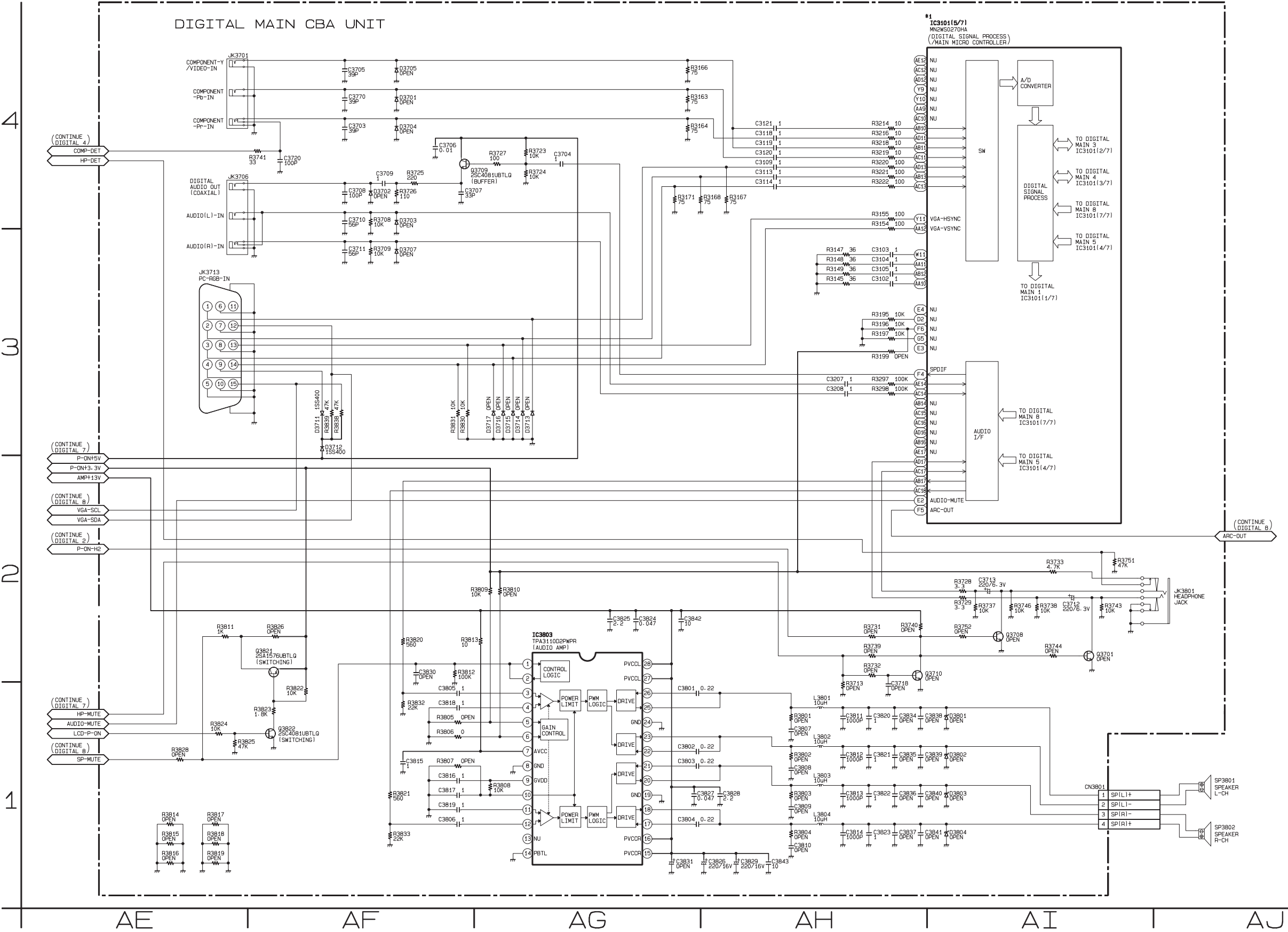
The order of pins shown in this diagram is different from that of actual IC3101.

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



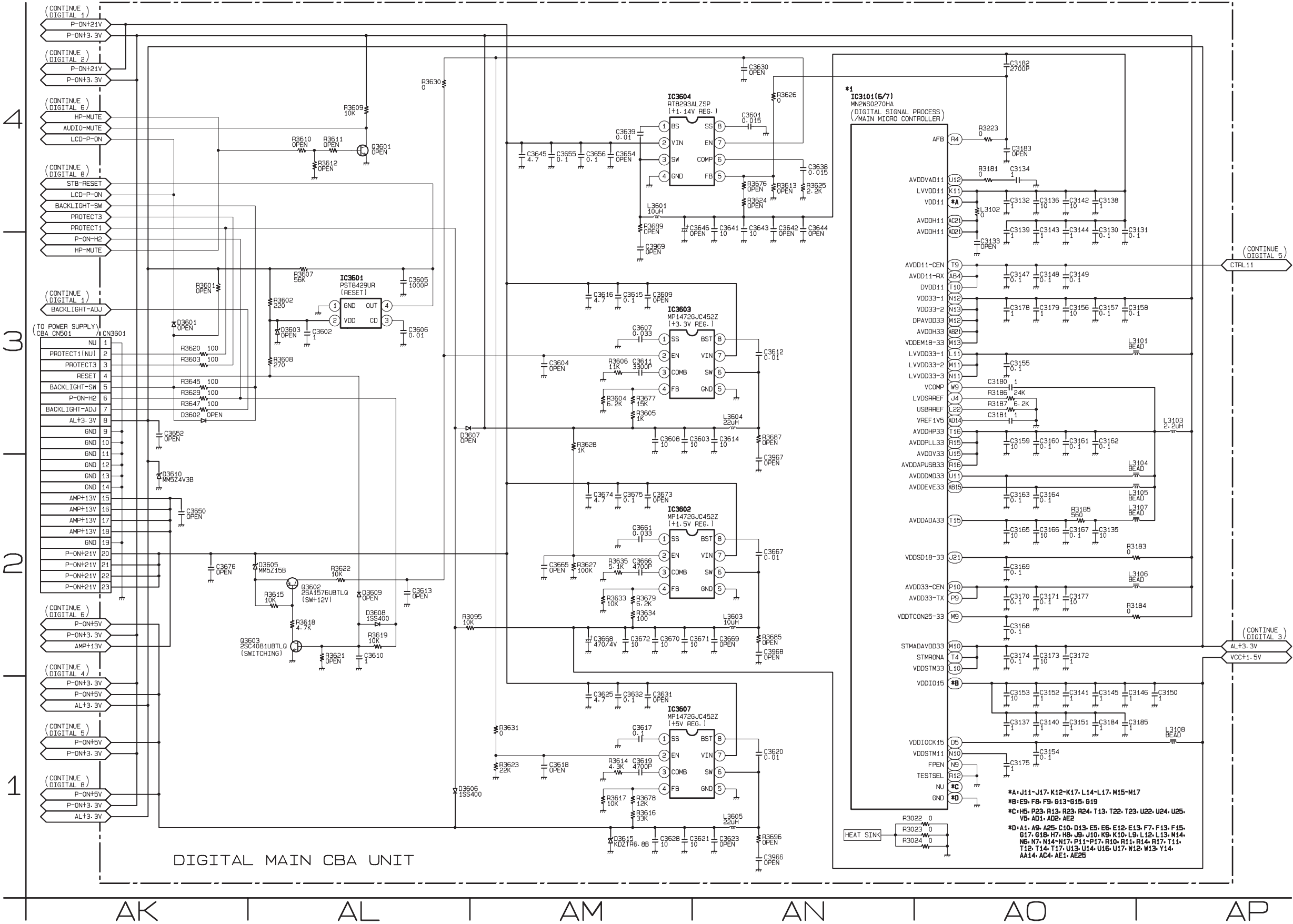
Digital Main 6 Schematic Diagram [TYPE A]

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



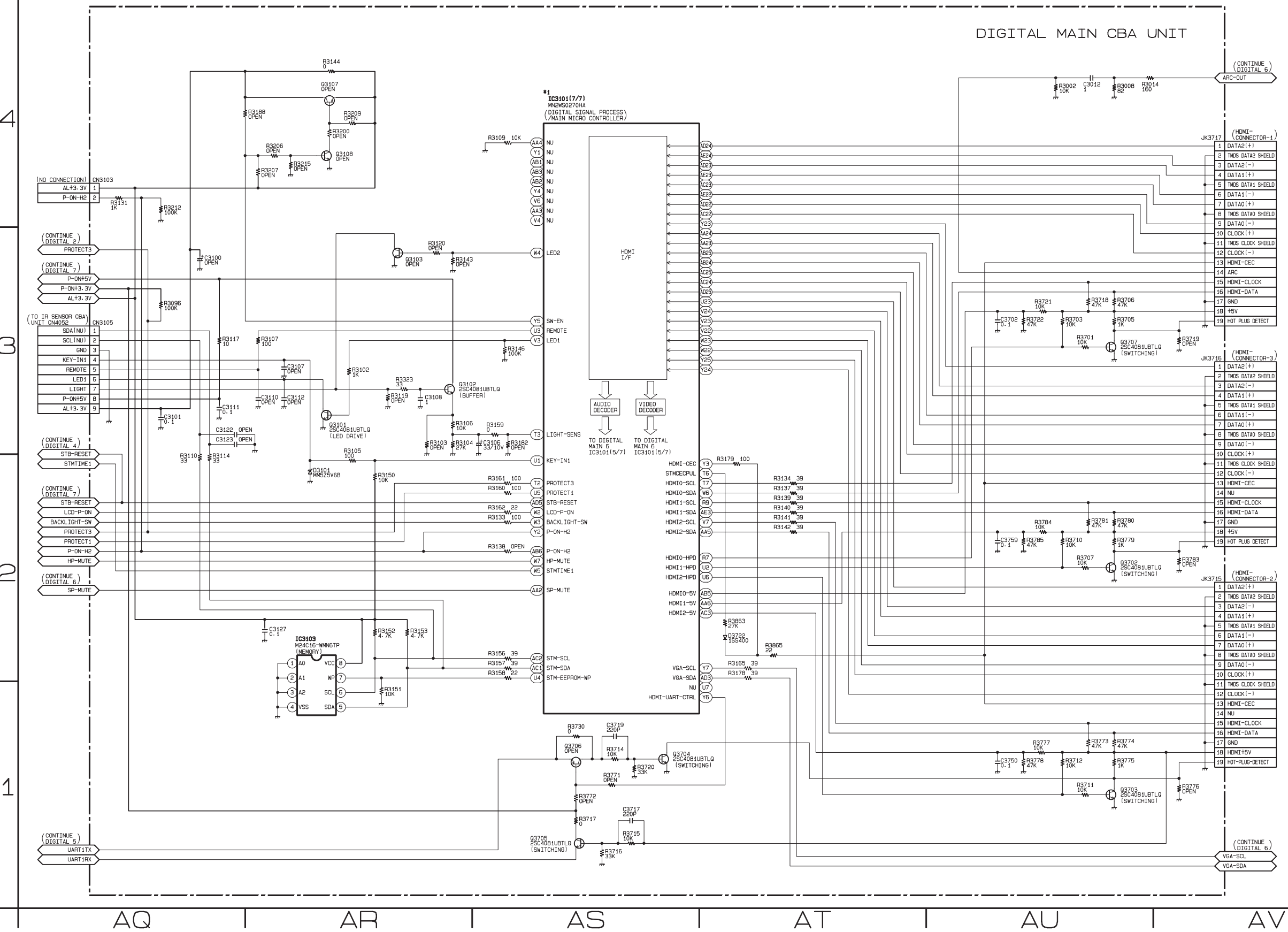
Digital Main 7 Schematic Diagram [TYPE A]

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



Digital Main 8 Schematic Diagram [TYPE A]

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

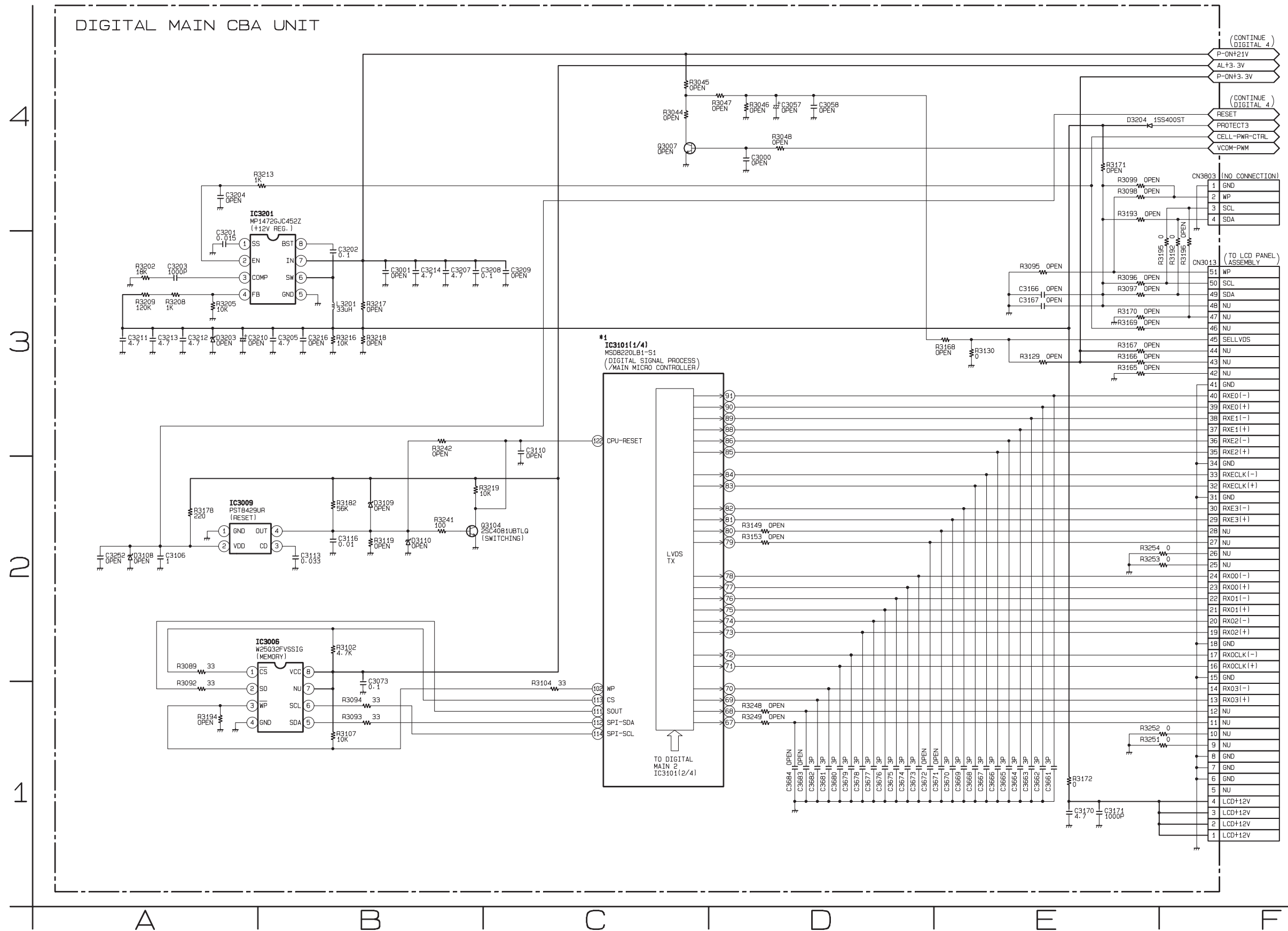


Digital Main 1 Schematic Diagram [TYPE B]

***1 NOTE:**

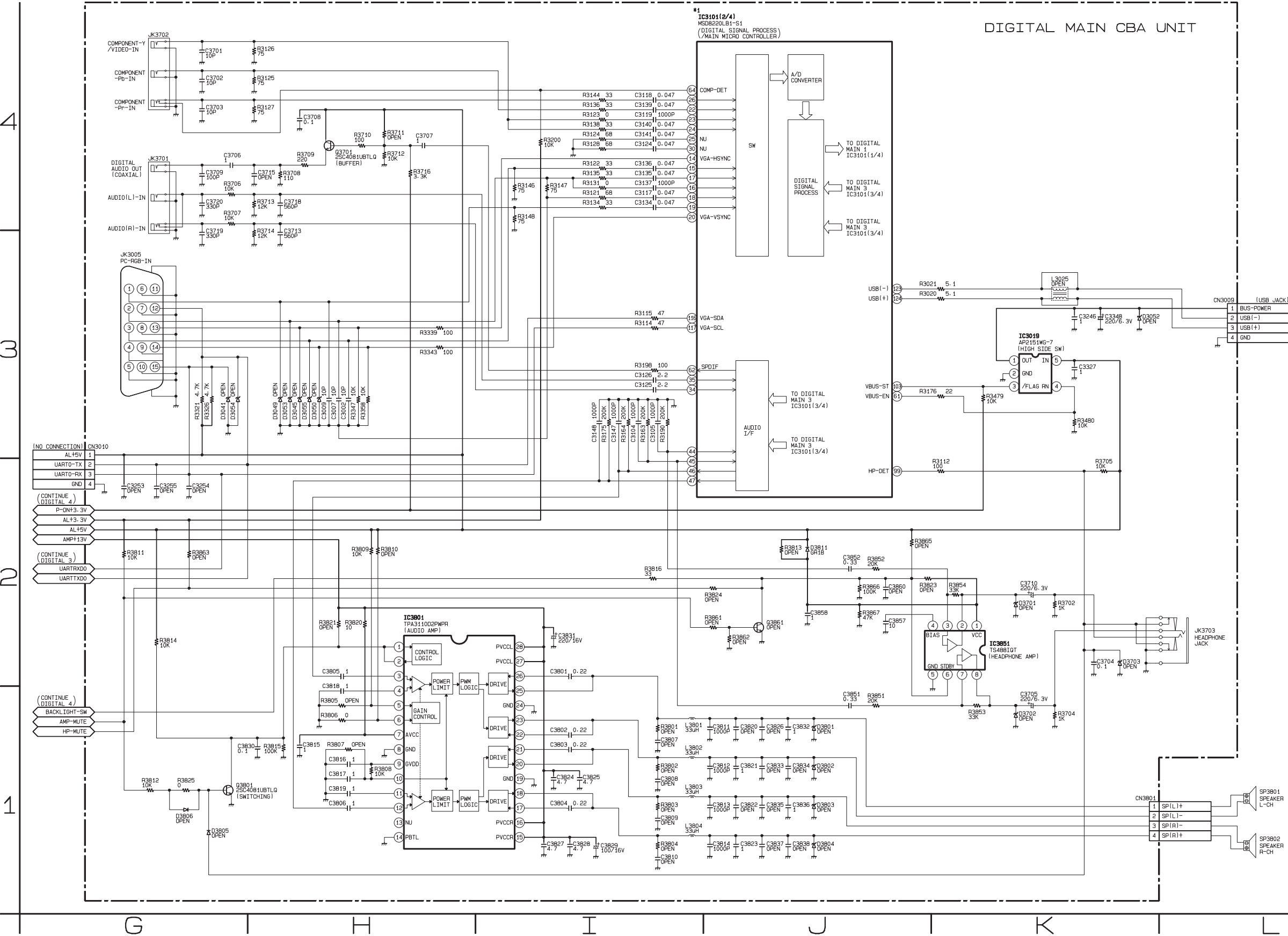
The order of pins shown in this diagram is different from that of actual IC3101.

IC3101 is divided into four and shown as IC3101 (1/4) ~ IC3101 (4/4) in this Digital Main Schematic Diagram Section.



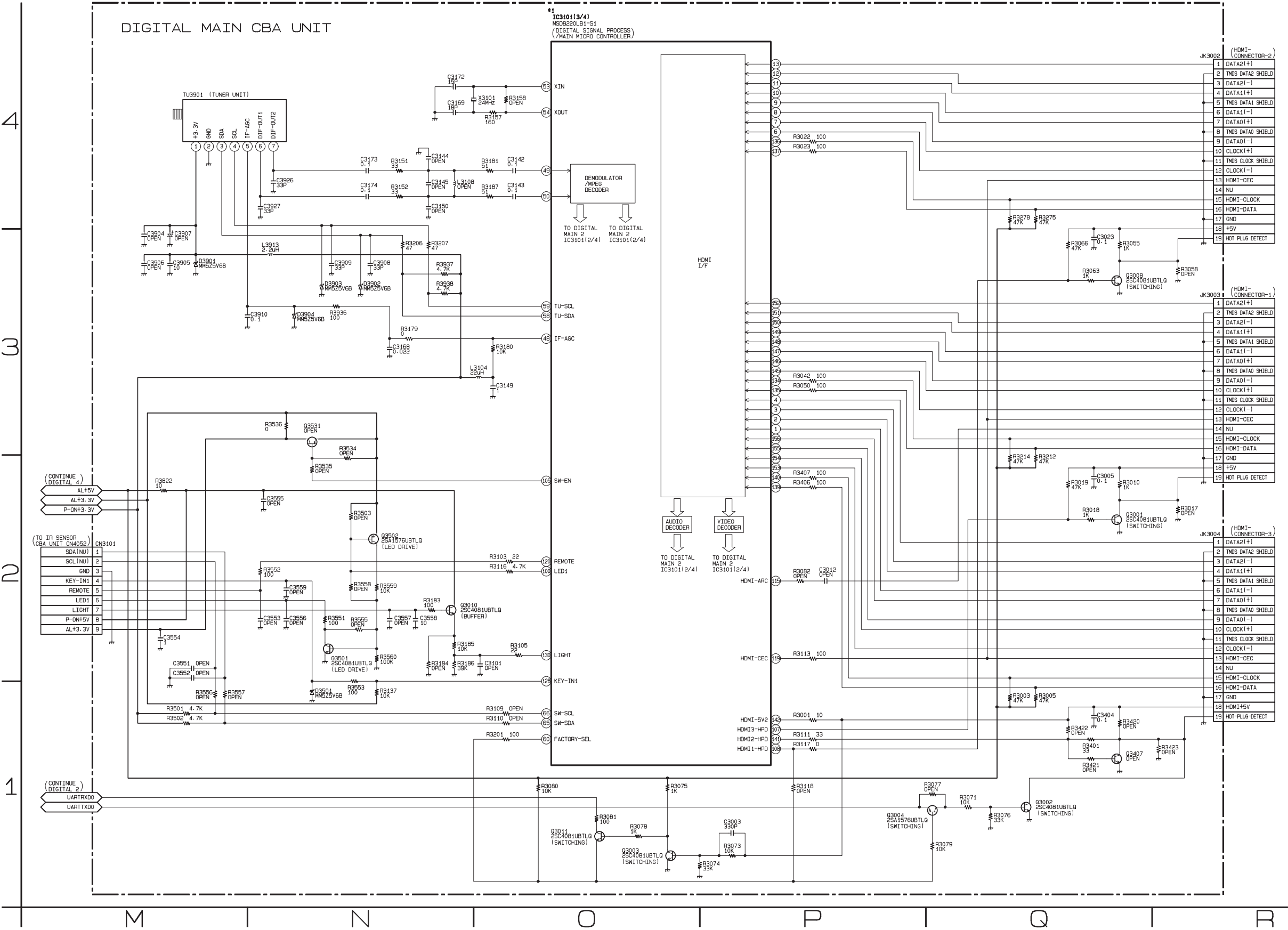
Digital Main 2 Schematic Diagram [TYPE B]

*1 NOTE:
The order of pins shown in this diagram is different from that of actual IC3101.
IC3101 is divided into four and shown as IC3101 (1/4) ~ IC3101 (4/4) in this Digital Main Schematic Diagram Section.



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 four and shown as IC3101 (1/4) ~ IC3101 (4/4) in this Digital Main Schematic Diagram Section.

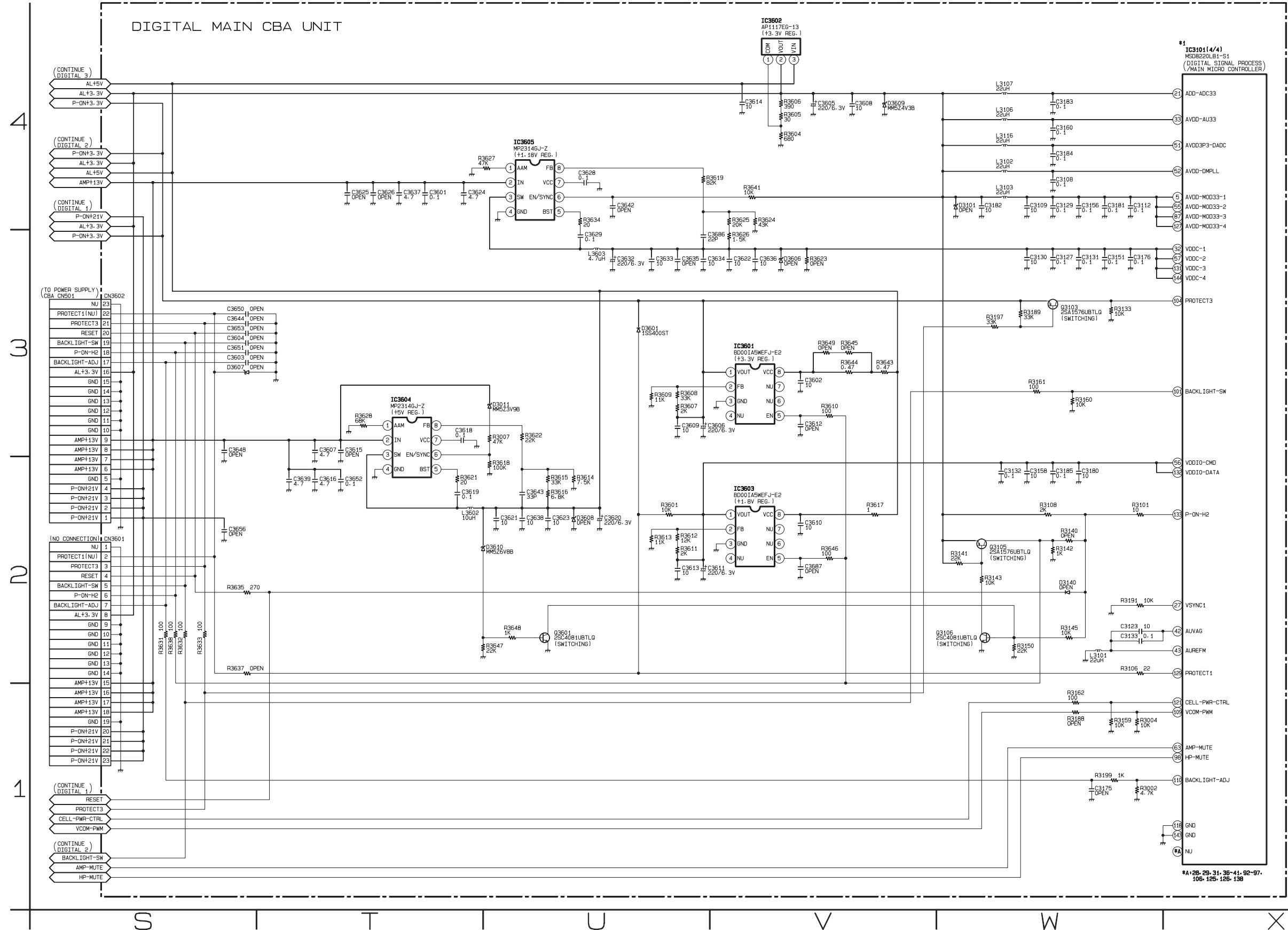


Digital Main 4 Schematic Diagram [TYPE B]

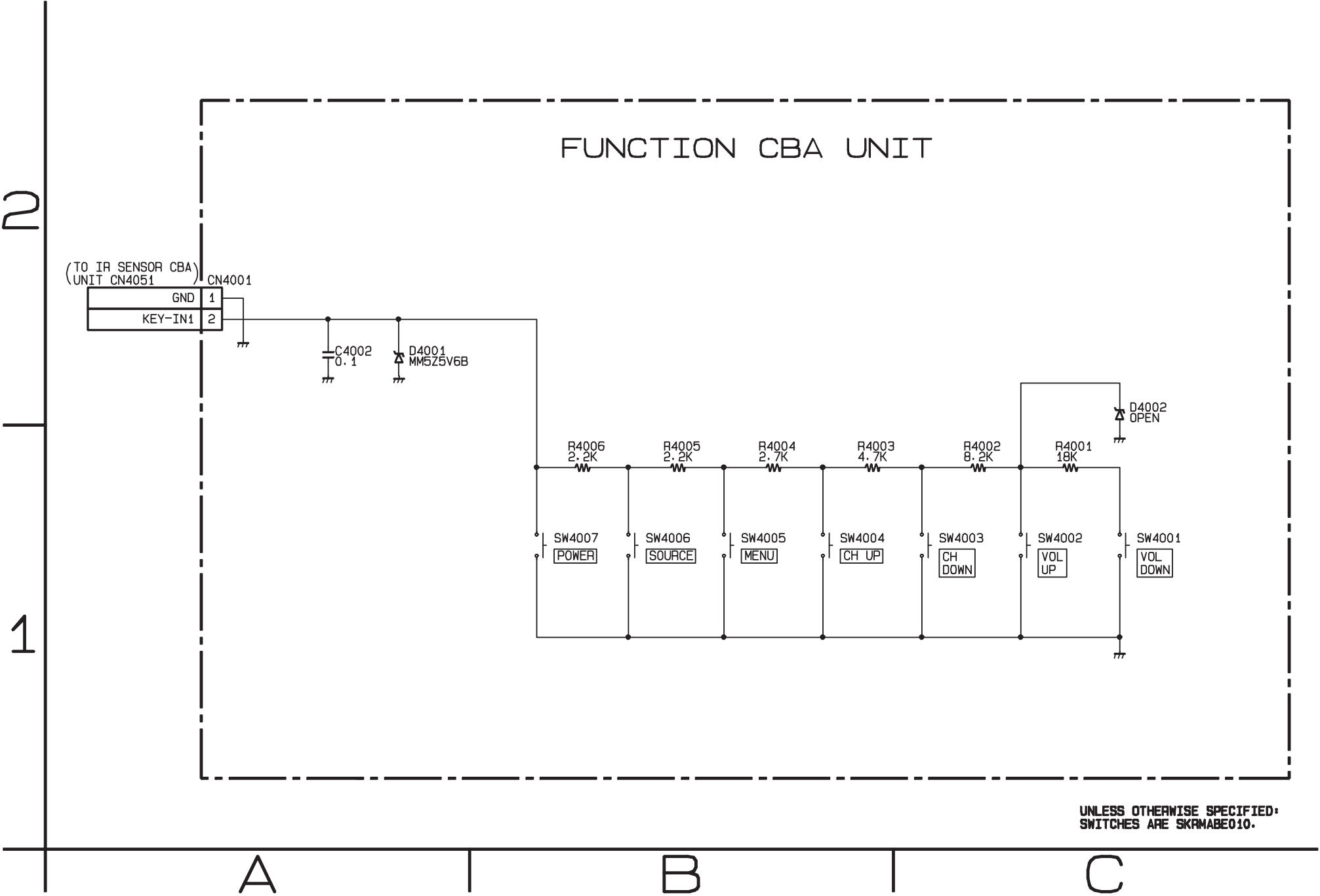
***1 NOTE:**

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

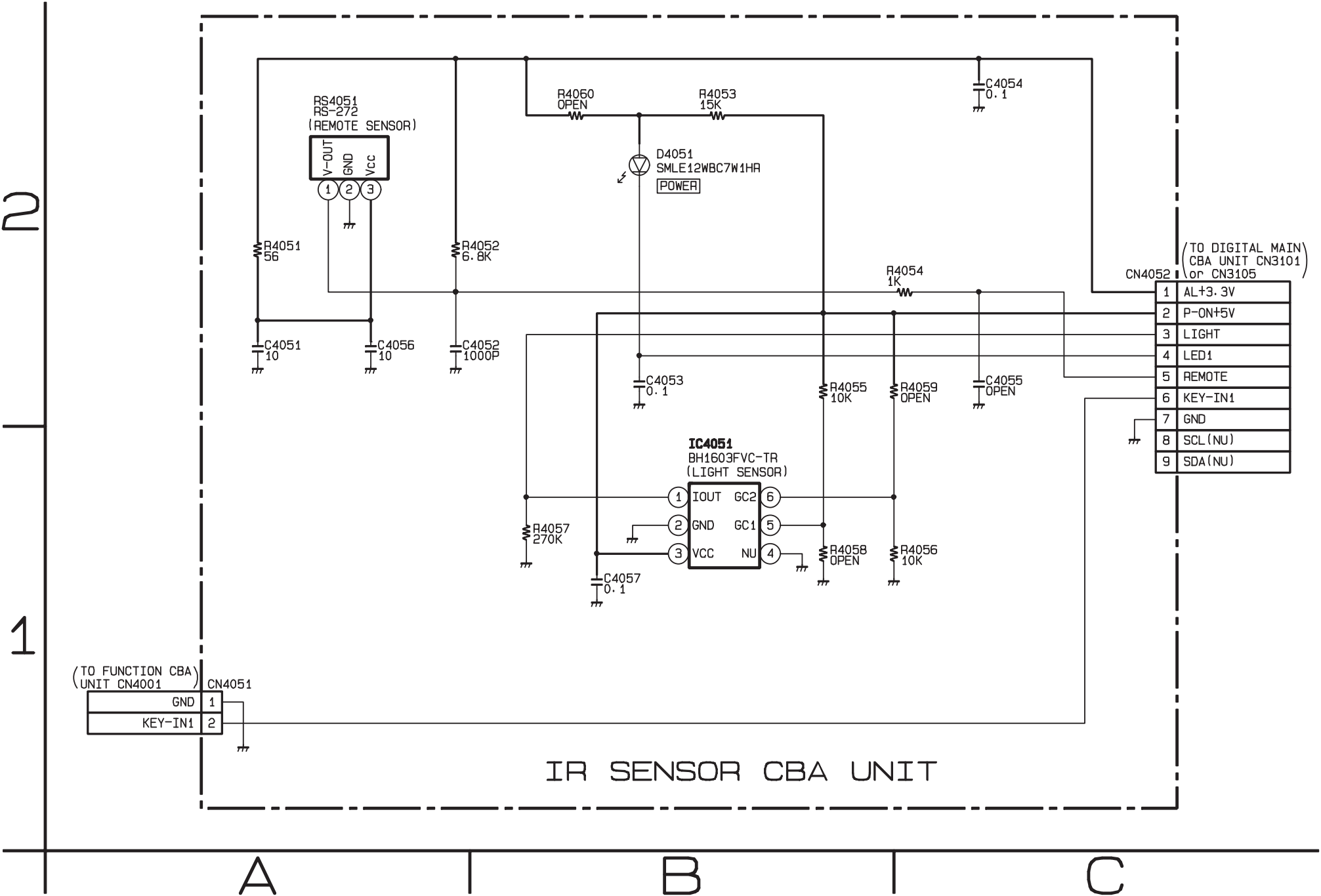
IC3101 is divided into four and shown as IC3101 (1/4) ~ IC3101 (4/4) in this Digital Main Schematic Diagram Section.



Function Schematic Diagram

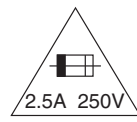


IR Sensor Schematic Diagram



Power Supply CBA Top View

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



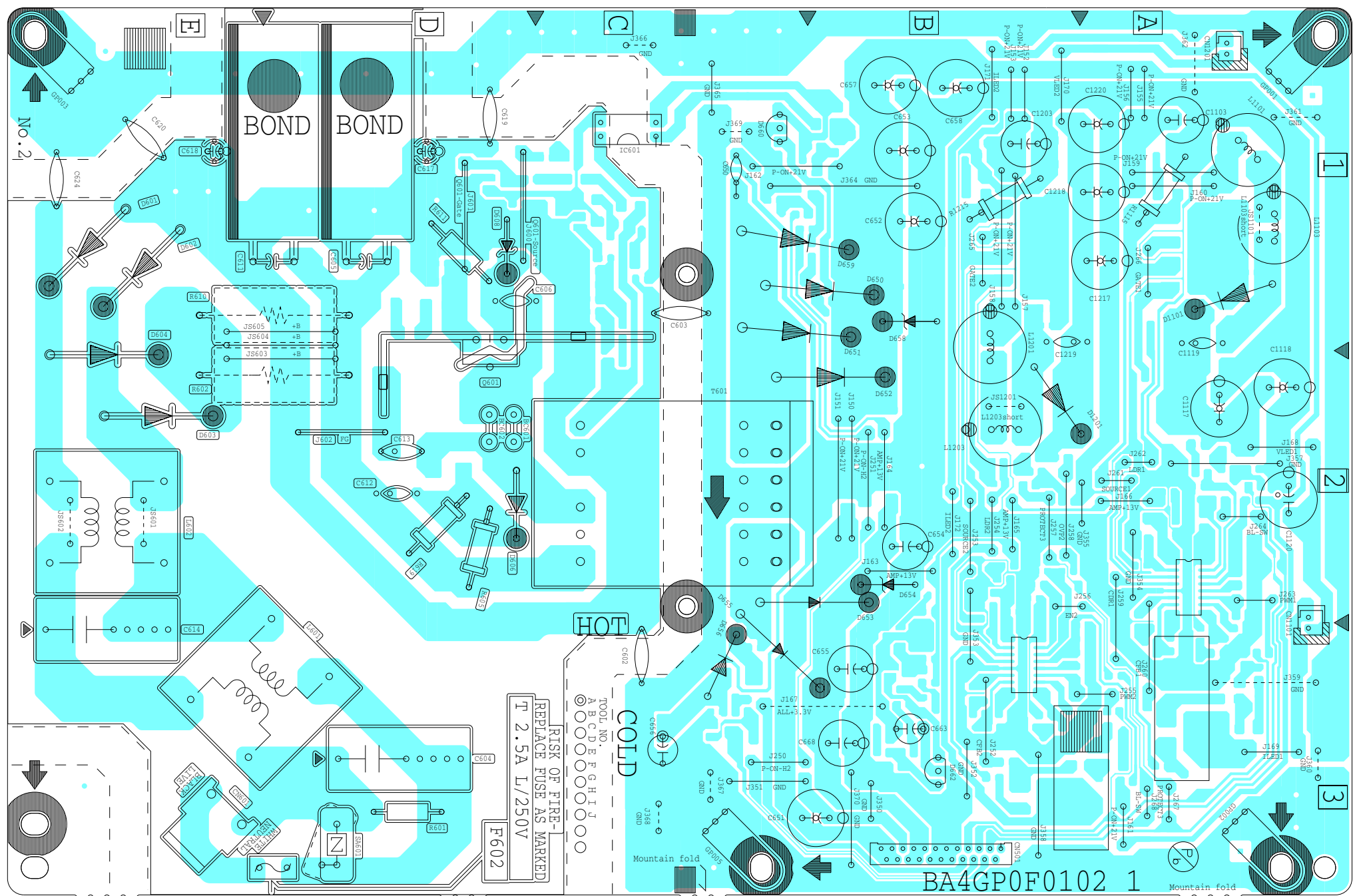
2.5A 250V

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.

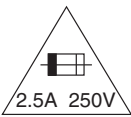
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing.
Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.

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



Power Supply CBA Bottom View

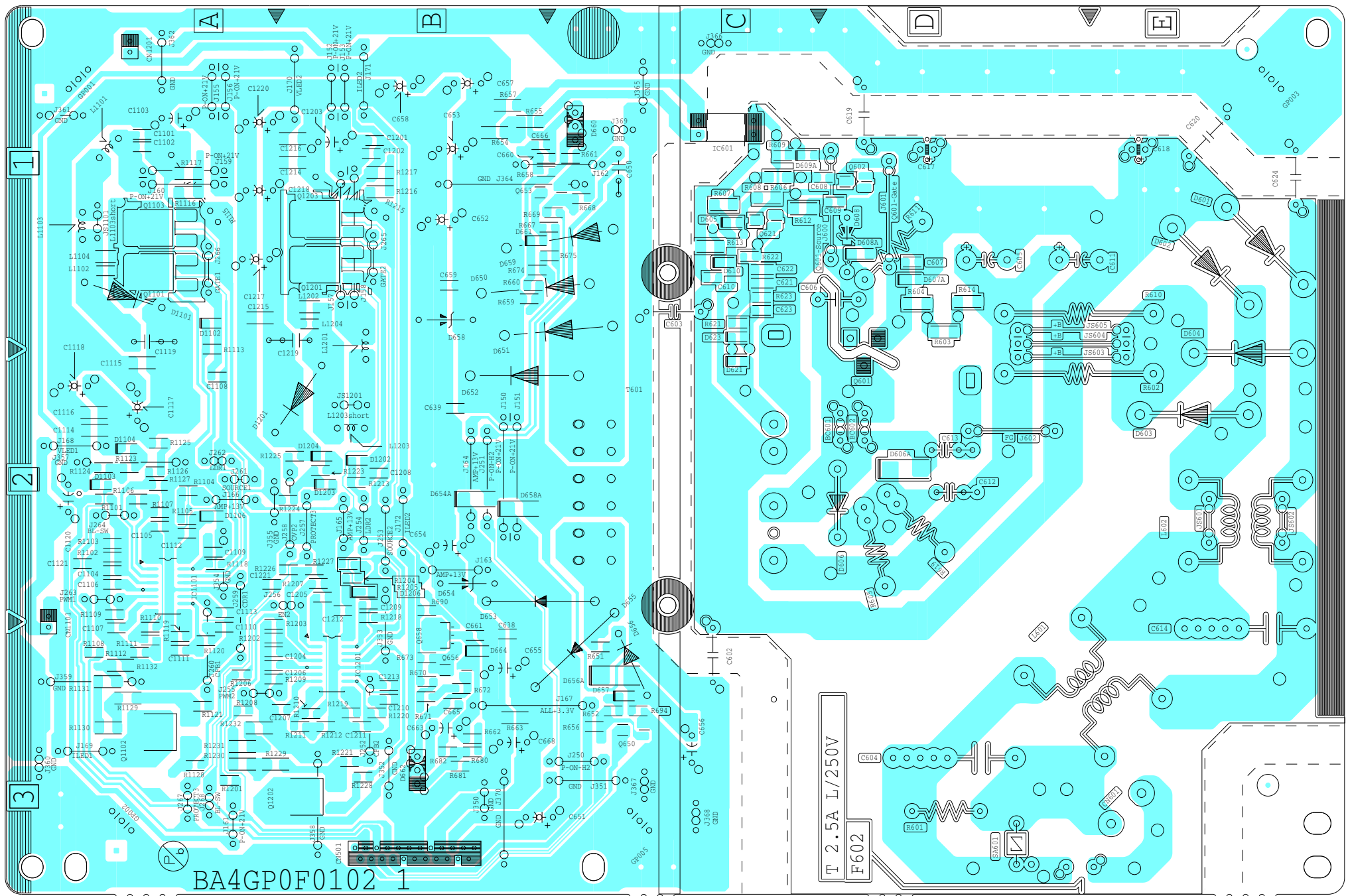
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F602) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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



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

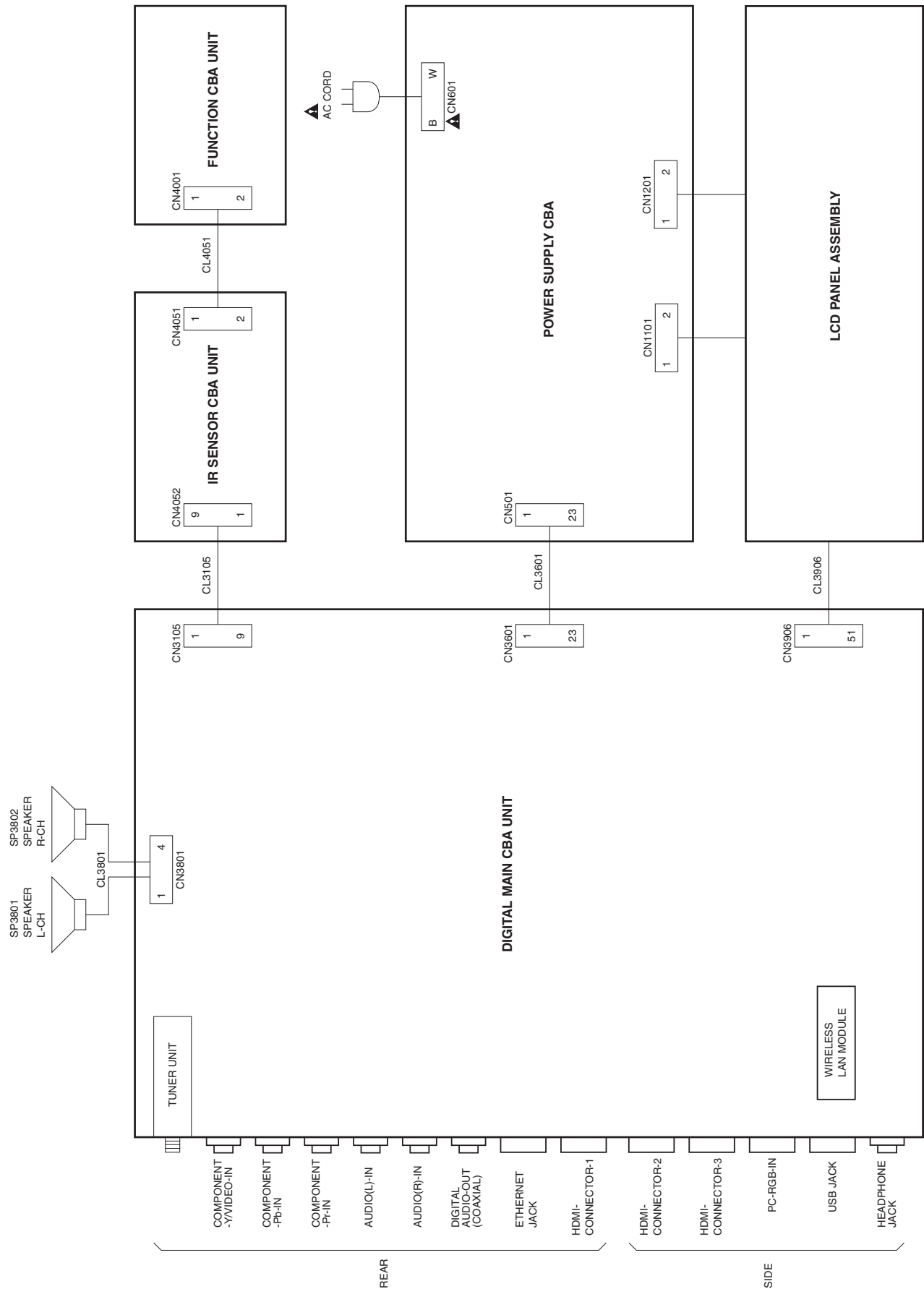
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing.
Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.

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

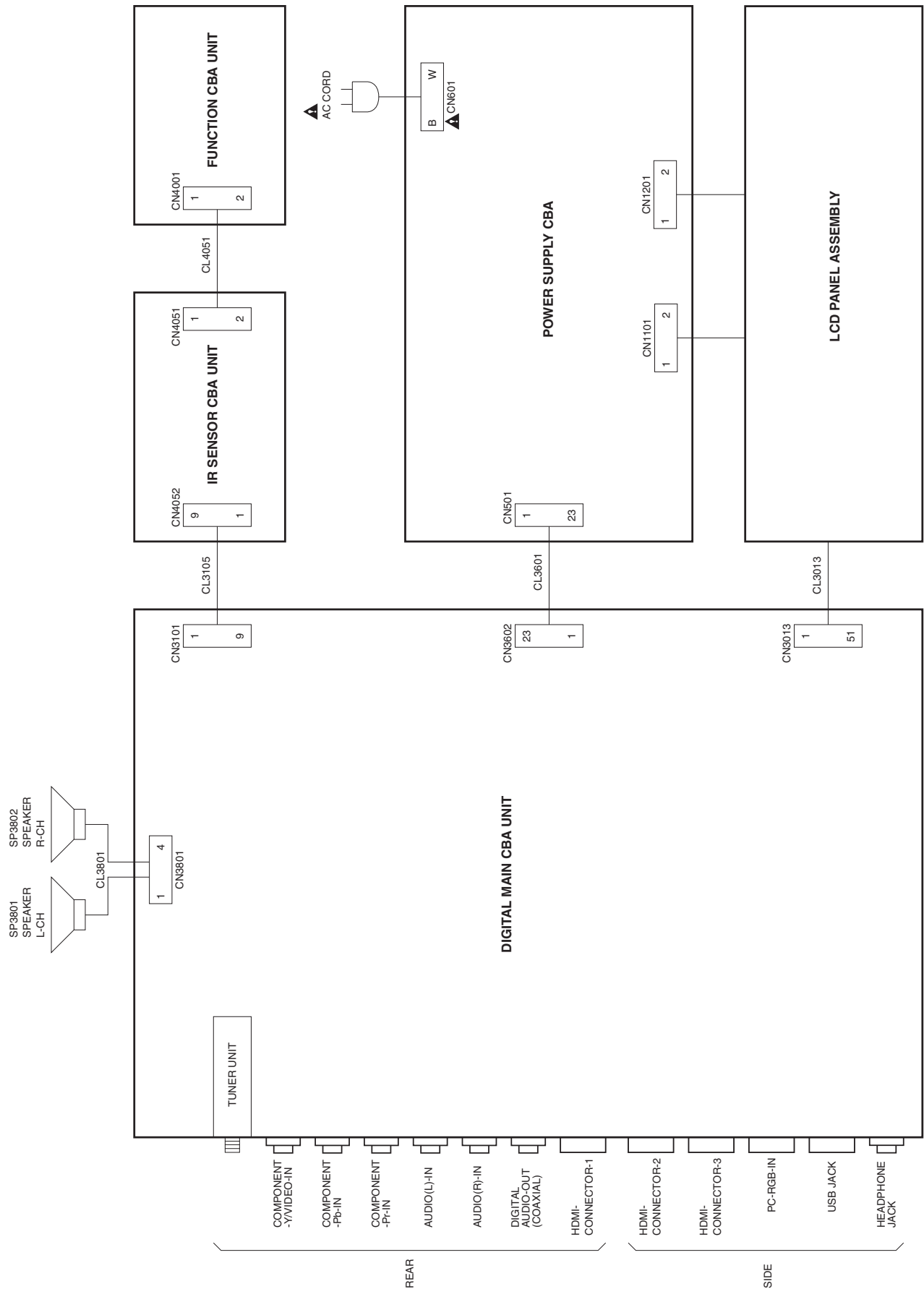


WIRING DIAGRAMS

[TYPE A]

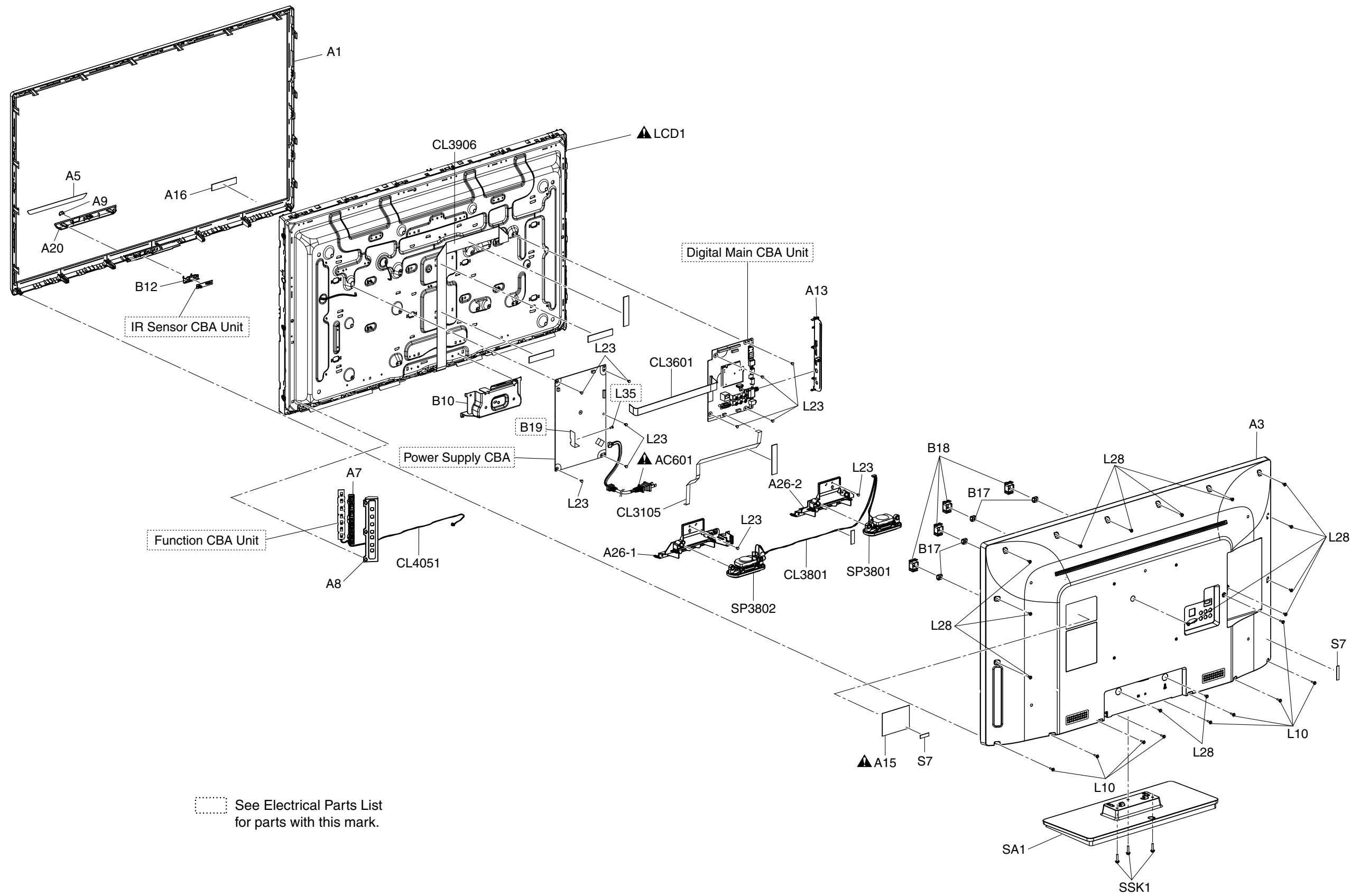


[TYPE B]

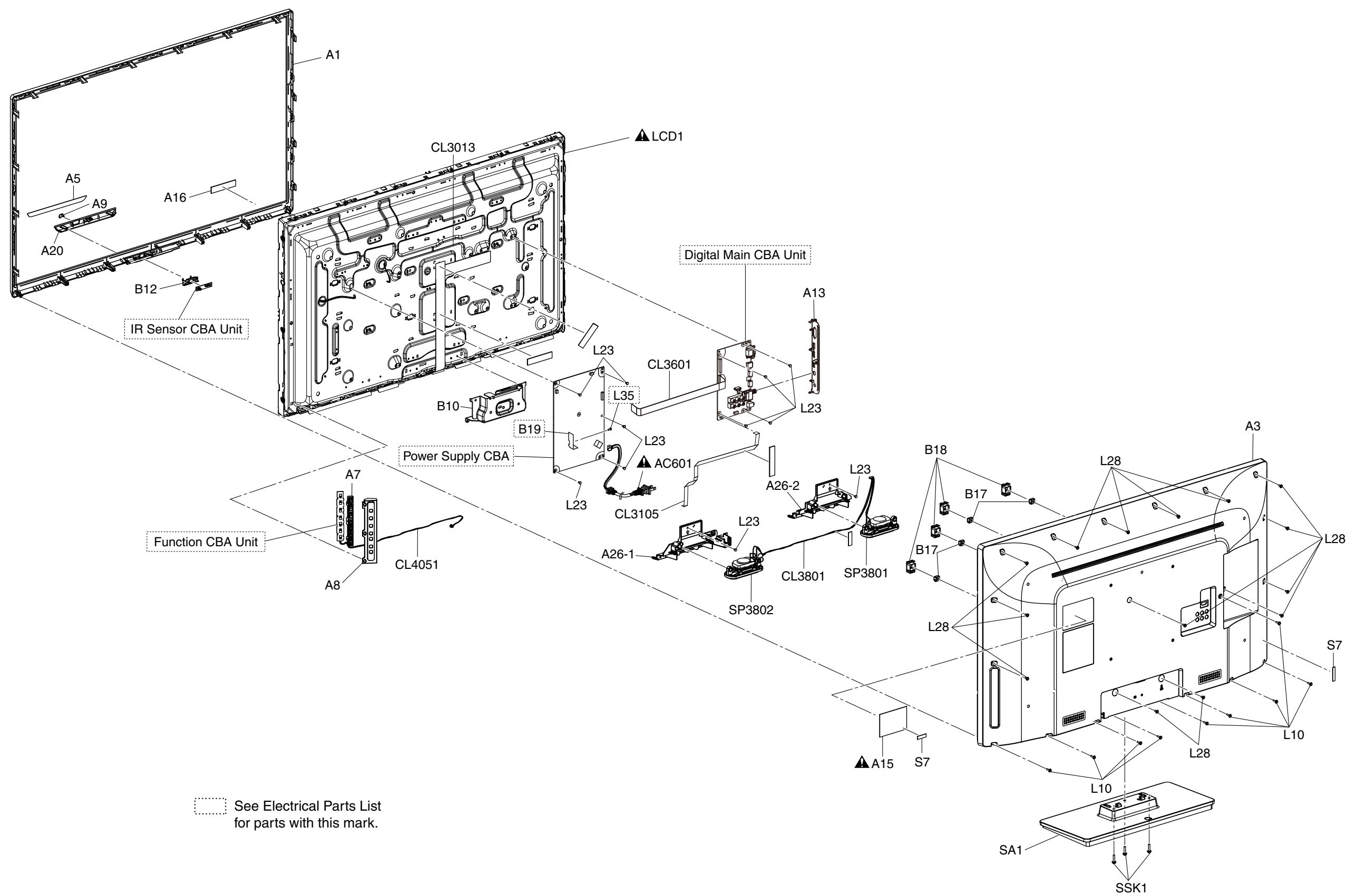


EXPLODED VIEWS

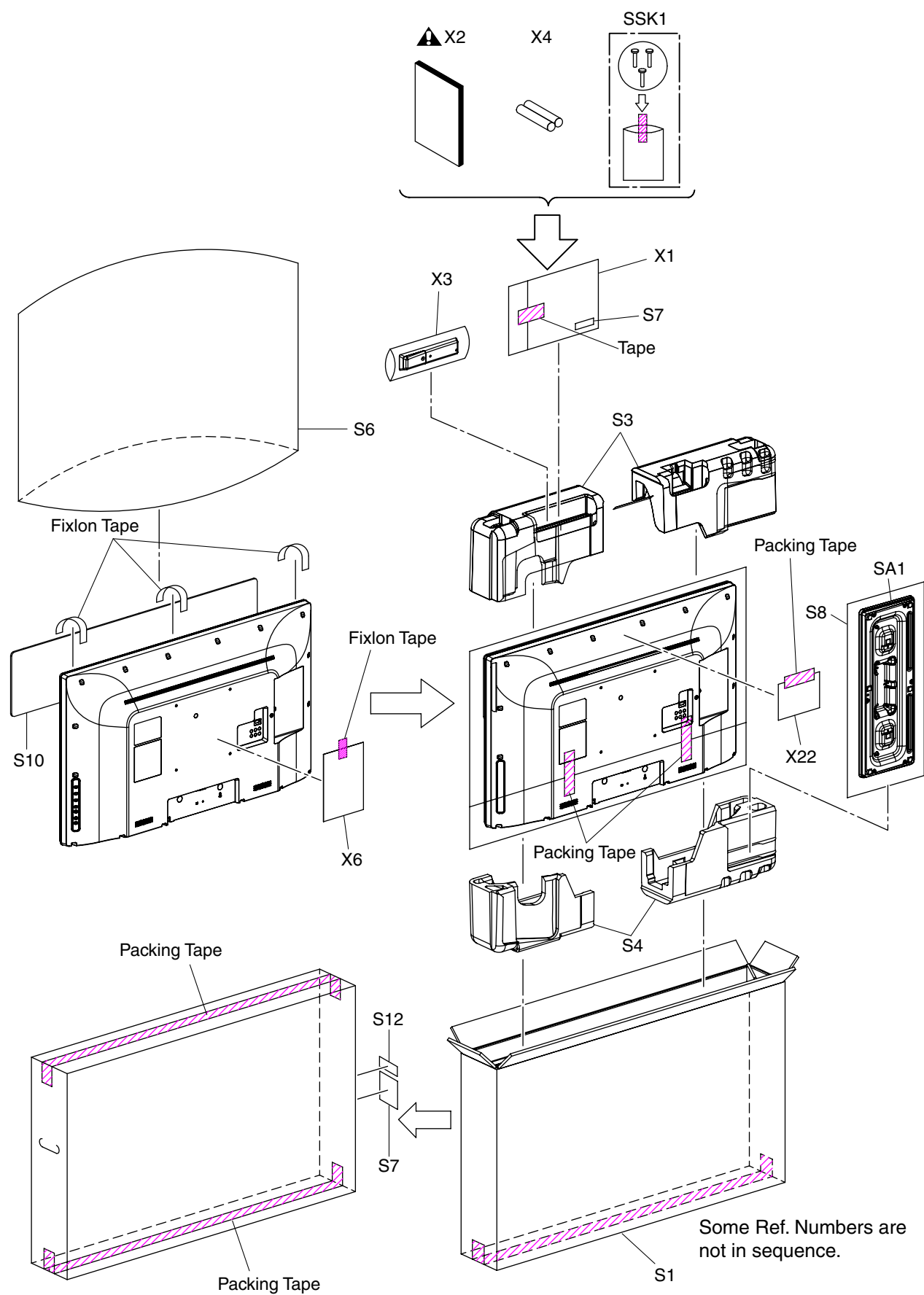
[TYPE A]



[TYPE B]



Packing



TYPE A

PARTS LIST [40PFL4609/F8 (Serial No.: XA1)]

Mechanical Parts

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

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

Ref. No.	Description	Part No.
A1	FRONT CABINET A4G2EMA	2EMM00480
A3	REAR CABINET A4D2AMA	2EMM00479
A5	DECORATION PLATE A4DFAUT	2EMH00294
A7	FUNCTION KNOB A4GF1UT	2EMM00237
A8	KNOB FRAME A4DFAUT	2EMM00325
A9	LED LENS A4DFAUT	2EMM00301A
A13	JACK HOLDER A37U0UH	1EM334736
A15 	RATING LABEL A4D2AMA	-----
A16	LOGO LABEL A4DFBMA	-----
A20	LEADING EDGE COVER A4DFAUT	2EMM00288
A26-1	SPEAKER HOLDER R A4DPAUT	2EMM00269A
A26-2	SPEAKER HOLDER L A4DPAUT	2EMM00268A
AC601 	AC CORD W/O A GND WIRE UL/CSA/1715/NO/BLACK	WAC172LTE013
B10	STAND BRACKET A4DPAUT	2EMS00145
B12	SENSOR SHIELD A4GF1UT	2EMS00133
B17	WALL_MOUNT_BRACKET A11N0UH	1EM434637
B18	WALL_MOUNT_COVER A2170UT	1EM332137
CL3105	FFC WIRE ASSEMBLY 9PIN 9PIN/WHITE/400MM	WX1A4G25S102
CL3601	FFC WIRE ASSEMBLY 23PIN 23PIN/WHITE/277MM	WX1A4DP2S111
CL3801	WIRE ASSEMBLY 4PIN 4PIN/140MM&530MM	WX1A4GP0C311
CL3906	FFC WIRE ASSEMBLY 51PIN(W/SHIELD) 51P/FFC/SHIELD/533MM	WX1A4D2AP401
CL4051	WIRE ASSEMBLY 2PIN 2PIN/470MM	WX1A4G25C302
L10	SCREW F-PAN BLACK_NI +P-TITE M3X12.0 3X12 WASHER HEAD+BLK	GCHP3120
L23	SCREW BIND 3CHROM +S-TITE M3X6.0 M3X6 BIND HEAD+	GBJS3060
L28	SCREW F-PAN BLACK_NI +S-TITE M3X8.0 3X8 WASHER HEAD+BLAC	GCHS3080
SA1	STAND ASSEMBLY A3ATHUT	2ESA00519
SP3801	SPEAKER MAGNETIC 8OHM/8W S0310F15	DS08110XQ003
SP3802	SPEAKER MAGNETIC 8OHM/8W S0310F15	DS08110XQ003
SSK1	STAND SCREW KIT A3ATHUT(SEMS-SW PAN BLACK_NI + M4X20.0)	2ESA00484
PACKING		
S1	CARTON A4D2AMA	2EMC00513
S3	STYROFOAM TOP A4G25UH	2EMC00364
S4	STYROFOAM BOTTOM A4G25UH	2EMC00365
S6	SET BAG A3UT1PT	2EMC00109
S7	SERIAL NO. LABEL A4GF1UT	-----
S8	STAND BAG A1AFNUT	1EM440078
S10	PROTECTION CARTON A4DPAUT	2EMC00320A
S12	CARTON LABEL A4D2AMA	-----
ACCESSORIES		

Ref. No.	Description	Part No.
X1	POLYETHYLENE BAG HDPE 180X340XT0.03	1EM435579
X2 	OWNERS MANUAL A4DFBMA	2EMN00168A
X3	REMOTE CONTROL UNIT YKF340-003	URMT41JHG003
X4	BATTERY DRY R03(SIZE AAA)	XB00M0RKT001
X6	QUICK START GUIDE A4DFBMA	2EMN00169A
X22	WARNING MESSAGE FLIER A3ATHUT	2EMN00092

LCD PANEL ASSEMBLY

Ref. No.	Description	Part No.
LCD1 	LCD PANEL ASSEMBLY	U4A21PA
	LCD MODULE	-----

Electrical Parts

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

NOTES:

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

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

DIGITAL MAIN CBA UNIT

Ref. No.	Description	Part No.
	DIGITAL MAIN CBA UNIT	A4D2AMMA-001
CN3701	WIRELESS LAN MODULE WM5504	UWMLDLACM002
IC3101	IC MAIN PH1-SLD8PLUS MN2WS0270HA	QSCA0R0MS065
IC3102	IC NAND FLASH 1GB H27U1G8F2BTR-BC	NSCA0R0HY009
IC3103	16KBIT EEPROM M24C16-WMN6TTP	NSZBA0TSS259
IC3601	IC RESET IC-PST8429UR	QSCA0T0MM075
IC3602	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3603	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3604	IC DCDC CONVERTER RT8293ALZSP	NSCA0T00B017
IC3607	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3701	IC USB HIGH-SIDE SW AP2151WG-7/SOT25/5PI	NSCA0TDES015
IC3803	IC D-CLASS AUDIO POWER AMPLIFI TPA3110D2PWPR	NSCA0T0TY073
IC3901	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
TU3001	TUNER UNIT U9004UT	U9004UT
	When you replace one of the below ICs on this CBA, always replace the IC in accordance with the 4 combinations below. Do not mix ICs of different combination.	
IC3401	IC 1GB DDR3 SDRAM K4B1G1646G-BCK0	NSCA0R0SM055
IC3402	IC 2GB DDR3 SDRAM K4B2G1646Q-BCMA	NSCA0R0SM057
	or	
IC3401	IC 1GB DDR3 SDRAM H5TQ1G63EFR-PBC	NSCA0R0HY039
IC3402	IC 2GB DDR3 SDRAM H5TQ2G63FFR-PBC	NSCA0R0HY041
	or	
IC3401	IC 1GB DDR3 SDRAM NT5CB64M16FP-DH	NSCA0R0J2017
IC3402	IC 2GB DDR3 SDRAM NT5CB128M16FP-DI	NSCA0R0J2016
	or	
IC3401	IC 1GB DDR3 SDRAM H5TQ1G63EFR-PBC	NSCA0R0HY039
IC3402	IC 2GB DDR3 SDRAM H5TQ2G63DFR-PBC/FBGA	NSCA0R0HY034

MSW ASSEMBLY

Ref. No.	Description	Part No.
	MSW ASSEMBLY	A4D2AMSW-001
	Consists of the following	
	FUNCTION CBA UNIT	A4D2AMSW-001-FN
	IR SENSOR CBA UNIT	A4D2AMSW-001-IR

Ref. No.	Description	Part No.
IC4051	O-E DEVICE LIGHT SENSOR BH1603FVC-TR/W50F6	QP2200BH1603

POWER SUPPLY CBA

Ref. No.	Description	Part No.
	POWER SUPPLY CBA Consists of the following	A4D2AMPW-001
CAPACITORS		
C602▲	CAP CERAMIC SAFETY 2200pF/250V E M KX	CJMR222M42E1
C604▲	CAP METALLIZED FILM 0.22μF/310V /K/LE-MX	CTA2240DC001
C605	CAP ELE 220μF/200V/M/85	CEB2210S6016
C606	CERAMIC CAP. 680pF/2KV	CA3D681PAN04
C607	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C608	CHIP CERAMIC CAP.(1608) B K 0.015μF/50V	CHD1JK30B153
C609	CHIP CERAMIC CAP. B K 0.039μF/50V	CHD1JK30B393
C610	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C611	CAP ELE 220μF/200V/M/85	CEB2210S6016
C612	CAP CERAMIC HV 2200pF/1KV B K	CA3A222TE006
C614▲	CAP METALLIZED FILM 0.22μF/310V /K/LE-MX	CTA2240DC001
C618	ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C620▲	CAP CERAMIC SAFETY 1000pF/250V E M KX	CJMR102M42E1
C623	CHIP CERAMIC CAP.(1608) B K 4.7μF/6.3V	CHD0KK30B475
C650	CAP CERAMIC HV 2200pF/1KV B K	CA3A222TE006
C651	CAP ELE 470μF/25V/M/85	CED4710V8006
C652	CAP ELE 470μF/25V/M/85	CED4710V8006
C653	CAP ELE 470μF/25V/M/85	CED4710V8006
C654	CAP ELE 470μF/16V/M/85	CEC4710V8006
C655	CAP ELE 470μF/16V/M/85	CEC4710V8006
C656	CAP ELE 1μF/50V/M/85	CEF1R00V8006
C657	CAP ELE 470μF/25V/M/85	CED4710V8006
C658	CAP ELE 470μF/25V/M/85	CED4710V8006
C660	CHIP CERAMIC CAP.(1608) B K 0.22μF/25V	CHD1EK30B224
C663	CAP ELE 100μF/10V/M/85	CEB1010V8006
C665	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C666	CHIP CERAMIC CAP.(1608) B K 0.22μF/25V	CHD1EK30B224
C668	CAP ELE 470μF/16V/M/85	CEC4710V8006
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.(1608) B K 1000pF/50V	CHD1JK30B102
C1110	CHIP CERAMIC CAP.(1608) B K 0.22μF/25V	CHD1EK30B224
C1112	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1113	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
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
C1201	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1202	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1203	CAP ELE 330μF/25V/M/85	CED3310V8006

Ref. No.	Description	Part No.
C1205	CHIP CERAMIC CAP(1608) B K 1μF/25V	CHD1EK30B105
C1206	CHIP CERAMIC CAP(1608) B K 0.22μF/25V	CHD1EK30B224
C1207	CHIP CERAMIC CAP(1608) B K 0.047μF/50V	CHD1JK30B473
C1208	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JK30B561
C1209	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1210	CHIP CERAMIC CAP.(1608) B K 0.22μF/25V	CHD1EK30B224
C1212	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1213	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C1214	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
C1215	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
C1217	ELECTROLYTIC CAP SK100M470YZZP50R	CE2AMASTH470
C1218	ELECTROLYTIC CAP SK100M470YZZP50R	CE2AMASTH470
C1220	ELECTROLYTIC CAP SK100M470YZZP50R	CE2AMASTH470
CONNECTORS		
CN501	FFC CONNECTOR IMSA-9615S-23A-PP-A	JC96J23ER007
CN601▲	CONNECTOR S2P3-VH (LF)(SN)	JCVHC02JG002
CN1101	PH CONNECTOR TOP 2P B2B-PH-K-S (LF)(SN)	J3PHC02JG029
CN1201	PH CONNECTOR TOP 2P B2B-PH-K-S (LF)(SN)	J3PHC02JG029
DIODES		
D601▲	DIODE 1N5406BH	NDL1001N5406
D602▲	DIODE 1N5406BH	NDL1001N5406
D603▲	DIODE 1N5406BH	NDL1001N5406
D604▲	DIODE 1N5406BH	NDL1001N5406
D605	ZENER DIODE MM5Z6V2B	ND1BMM5Z6V2B
D606A	DIODE FAST RECOVERY RS1JJTD	ND1Z0RS1JJTD
D607A	ZENER DIODE SMD TFZVTR27B	QD1B00TFZV27
D608	DIODE ZENER 1ZB36BB	NDWZ0001ZB36
D609A	DIODE SCHOTTKY SMD RB520SM-30 T2R	QD1ZRB520SM3
D610	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D621	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D623	ZENER DIODE MM5Z30B	ND1B0MM5Z30B
D650	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D651	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D652	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D653	DIODE SCHOTTKY SB3A0BH	NDWZ000SB3A0
D655	DIODE SCHOTTKY SB3A0BH	NDWZ000SB3A0
D656A	DIODE FAST RECOVERY SMD GR1B	ND1Z00GR1BTR
D657	ZENER DIODE MM5Z11B	ND1B0MM5Z11B
D658	DIODE ZENER 1ZB33BB	NDWZ0001ZB33
D659	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D660	IC SHUNT REGULATOR SL431A-AT	NSZBA0TAUK01
D661	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D662	IC SHUNT REGULATOR SL431A-AT	NSZBA0TAUK01
D664	ZENER DIODE SMD TFZVTR4.7B	QD1B0TFZV4R7
D1101	DIODE SCHOTTKY BARRIER SB2150BD	NDWZ00SB2150
D1103	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D1104	ZENER DIODE MM5Z30B	ND1B0MM5Z30B
D1201	DIODE SCHOTTKY BARRIER SB2150BD	NDWZ00SB2150
D1203	DIODE SWITCHING SMD 1SS400ST(SOD-523)	ND1Z1SS400ST
D1204	ZENER DIODE MM5Z30B	ND1B0MM5Z30B
ICS		
IC601▲	O-E DEVICE PHOTO COUPLER TLP785F(D4FNBLF/C)	QPEL0TLP785F
IC1101	IC LED BACKLIGHT CONTROLLER BD9486F-GE2/SOP/16P	QSCA0T0RM425
IC1201	IC LED BACKLIGHT CONTROLLER BD9486F-GE2/SOP/16P	QSCA0T0RM425
COILS		

Ref. No.	Description	Part No.
L601▲	LINE FILTER JLB24138	LLEG0Z0XB034
L602▲	LINE FILTER JLB24138	LLEG0Z0XB034
L1101	COIL POWER INDUCTORS DIP RP1315BNP-470M/47μH	LLF4700SF013
L1103	COIL POWER INDUCTORS DIP RP1315BNP-470M/47μH	LLF4700SF013
L1104	COIL CHIP BEADS PZ2012D121-2R5T(F)	LLF121SSN006
L1201	COIL POWER INDUCTORS DIP RP1315BNP-470M/47μH	LLF4700SF013
L1203	COIL POWER INDUCTORS DIP RP1315BNP-470M/47μH	LLF4700SF013
L1204	COIL CHIP BEADS PZ2012D121-2R5T(F)	LLF121SSN006
TRANSISTORS		
Q601	FET MOS TK7A60W LS1FNDX(M	QEEZTK7A60WL
Q602	NPN TRANSISTOR SMD 2SC5344SY	NQZY2SC5344S
Q621	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q650	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q653	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q656	CHIP TRANSISTOR KTC3875S-Y-RTK/P	NQ1YKTC3875S
Q658	TRANSISTOR 2SA1201-Y	QQ1Y2SA1201C
Q1101	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
Q1102	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
Q1103	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
Q1201	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
Q1202	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
Q1203	FET MOS SMD AP18T10AGH-HF	NF2Z18T10AGH
RESISTORS		
R601▲	RES. CARBON FILM J 1/2W J 1.2MΩ	RCX2125T1003
R603	RES CHIP 3216 1/4W J 560kΩ	RRX4564HH034
R604	RES CHIP 3216 1/4W J 560kΩ	RRX4564HH034
R605	METAL OXIDE RES. 1W J 47kΩ	RN01473ZU001
R606	RES CHIP 3216 1/4W J 82Ω	RRX4820HH034
R607	RES CHIP 3216 1/4W J 82Ω	RRX4820HH034
R608	RES CHIP 3216 1/4W J 1.5kΩ	RRX4152HH034
R609	RES CHIP 1608 1/10W J 100Ω	RRXA101HH013
R611	METAL OXIDE FILM RES. 2W J 0.22Ω	RN02R22ZU001
R612	RES CHIP 3216 1/4W J 3.9kΩ	RRX4392HH034
R613	RES CHIP 3216 1/4W J 270Ω	RRX4271HH034
R614	RES CHIP 3216 1/4W J 560kΩ	RRX4564HH034
R619	METAL OXIDE RES. 1W J 47kΩ	RN01473ZU001
R621	RES CHIP 1608 1/10W J 560Ω	RRXA561HH013
R622	RES CHIP 1608 1/10W 0Ω	RRXA000HH014
R623	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R651	RES CHIP 1608 1/10W J 1.0Ω	RRXA1R0HH013
R652	RES CHIP 1608 1/10W F 33.0kΩ	RTW3302HH008
R654	RES CHIP 3216 1/4W J 180Ω	RRX4181HH034
R655	RES CHIP 3216 1/4W J 180Ω	RRX4181HH034
R656	RES CHIP 1608 1/10W F 9.10kΩ	RTW9101HH008
R657	RES CHIP 3216 1/4W J 3.9kΩ	RRX4392HH034
R658	RES CHIP 1608 1/10W J 2.7kΩ	RRXA272HH013
R659	RES CHIP 1608 1/10W F 27.0kΩ	RTW2702HH008
R660	RES CHIP 1608 1/10W F 3.90kΩ	RTW3901HH008
R661	RES CHIP 1608 1/10W F 3.30kΩ	RTW3301HH008
R662	RES CHIP 1608 1/10W F 3.30kΩ	RTW3301HH008
R667	RES CHIP 1608 1/10W J 8.2kΩ	RRXA822HH013
R668	RES CHIP 1608 1/10W J 47kΩ	RRXA473HH013
R669	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R670	RES CHIP 1608 1/10W J 270Ω	RRXA271HH013
R671	RES CHIP 1608 1/10W J 270Ω	RRXA271HH013
R672	RES CHIP 1608 1/10W J 270Ω	RRXA271HH013
R674	RES CHIP 1608 1/10W 0Ω	RRXA000HH014
R675	RES CHIP 1608 1/10W F 68.0kΩ	RTW6802HH008
R680	RES CHIP 1608 1/10W J 100Ω	RRXA101HH013
R681	RES CHIP 1608 1/10W F 10.0kΩ	RTW1002HH008

Ref. No.	Description	Part No.
R682	RES CHIP 1608 1/10W 0Ω	RRXA000HH014
R690	RES CHIP 1608 1/10W J 1.5Ω	RRXA1R5HH013
R1101	RES CHIP 1608 1/10W F 22.0kΩ	RTW2202HH008
R1102	RES CHIP 1608 1/10W F 9.10kΩ	RTW9101HH008
R1103	RES CHIP 1608 1/10W F 9.10kΩ	RTW9101HH008
R1104	RES CHIP 1608 1/10W J 120Ω	RRXA121HH013
R1105	RES CHIP 1608 1/10W J 120Ω	RRXA121HH013
R1106	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R1107	RES CHIP 1608 1/10W J 100kΩ	RRXA104HH013
R1108	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R1109	RES CHIP 1608 1/10W J 100kΩ	RRXA104HH013
R1110	RES CHIP 1608 1/10W F 36.0kΩ	RTW3602HH008
R1111	RES CHIP 1608 1/10W F 24.0kΩ	RTW2402HH008
R1112	RES CHIP 1608 1/10W F 2.20kΩ	RTW2201HH008
R1113	RES CHIP 1608 1/10W J 18Ω	RRXA180HH013
R1115	METALOXIDE RES 1W J 0.12W	RNJR12PAK001
R1118	RES CHIP 1608 1/10W J 200Ω	RRXA201HH013
R1119	RES CHIP 1608 1/10W F 100kΩ	RTW1003HH008
R1120	RES CHIP 1608 1/10W J 120Ω	RRXA121HH013
R1121	RES CHIP 1608 1/10W J 51Ω	RRXA510HH013
R1123	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R1124	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R1125	RES CHIP 1608 1/10W F 360kΩ	RTW3603HH008
R1126	RES CHIP 1608 1/10W F 240kΩ	RTW2403HH008
R1127	RES CHIP 1608 1/10W F 22.0kΩ	RTW2202HH008
R1128	RES CHIP 1608 1/10W J 1.0kΩ	RRXA102HH013
R1129	RES CHIP 3216 1/4W F 0.51Ω	RTR510RYL007
R1130	RES CHIP 3216 1/4W F 0.62Ω	RTR620RYL007
R1131	RES CHIP 3216 1/4W F 0.62Ω	RTR620RYL007
R1132	RES CHIP 3216 1/4W 0Ω	RRX4000HH036
R1201	RES CHIP 1608 1/10W F 22.0kΩ	RTW2202HH008
R1202	RES CHIP 1608 1/10W F 9.10kΩ	RTW9101HH008
R1203	RES CHIP 1608 1/10W F 9.10kΩ	RTW9101HH008
R1204	RES CHIP 1608 1/10W J 120Ω	RRXA121HH013
R1205	RES CHIP 1608 1/10W J 120Ω	RRXA121HH013
R1206	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R1207	RES CHIP 1608 1/10W J 100kΩ	RRXA104HH013
R1208	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R1209	RES CHIP 1608 1/10W J 100kΩ	RRXA104HH013
R1210	RES CHIP 1608 1/10W F 36.0kΩ	RTW3602HH008
R1211	RES CHIP 1608 1/10W F 24.0kΩ	RTW2402HH008
R1212	RES CHIP 1608 1/10W F 2.20kΩ	RTW2201HH008
R1213	RES CHIP 1608 1/10W J 18Ω	RRXA180HH013
R1215	METALOXIDE RES 1W J 0.12Ω	RNJR12PAK001
R1218	RES CHIP 1608 1/10W J 200Ω	RRXA201HH013
R1219	RES CHIP 1608 1/10W F 100kΩ	RTW1003HH008
R1220	RES CHIP 1608 1/10W J 120Ω	RRXA121HH013
R1221	RES CHIP 1608 1/10W J 51Ω	RRXA510HH013
R1223	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R1224	RES CHIP 1608 1/10W J 10kΩ	RRXA103HH013
R1225	RES CHIP 1608 1/10W F 360kΩ	RTW3603HH008
R1226	RES CHIP 1608 1/10W F 240kΩ	RTW2403HH008
R1227	RES CHIP 1608 1/10W F 22.0kΩ	RTW2202HH008
R1228	RES CHIP 1608 1/10W J 1.0kΩ	RRXA102HH013
R1229	RES CHIP 3216 1/4W F 0.51Ω	RTR510RYL007
R1230	RES CHIP 3216 1/4W F 0.62Ω	RTR620RYL007
R1231	RES CHIP 3216 1/4W F 0.62Ω	RTR620RYL007
R1232	RES CHIP 3216 1/4W 0Ω	RRX4000HH036
MISCELLANEOUS		
B19	HEAT SINK PNL A31TOUH	1EM439707
BC601	BEAD INDUCTORS B29 RID 2.3X7.5X7.5T	LLEF0S0XM002
BC602	BEAD INDUCTORS B29 RID 2.3X7.5X7.5T	LLEF0S0XM002

Ref. No.	Description	Part No.
F602▲	FUSE TIME RAG SLT250V2.5A	PDGSLB0NG252
JS603	WIRE CP STP-S-0.50	XZ40F0REN001
JS604	WIRE CP STP-S-0.50	XZ40F0REN001
JS605	WIRE CP STP-S-0.50	XZ40F0REN001
L35	SCREW BIND 3CHROM +B-TITE M3X8.0 D3X8 BIND HEAD+	GBJB3080
SA601▲	VARISTOR 10D 471K SVR	NVQZVR10D471
T601▲	TRANS POWER BCK-28IL	LTT3PCMEK030

TYPE B

PARTS LIST [40PFL4409/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 40PFL4609/F8 (Serial No. : XA1)

Ref. No.	Description	Part No.
A3	REAR CABINET A4G25UH	2EMM00322A
A13	JACK HOLDER A3AU0UH	1EM334651
A15 	RATING LABEL A4G2EMA	-----
A16	LOGO LABEL A4AFHMA	-----
CL3013	FFC WIRE ASSEMBLY 51PIN(W/SHIELD) 51P/ FFC/SHIELD/463MM	WX1A4G25T401
CL3601	FFC WIRE ASSEMBLY 23PIN 23PIN/WHITE/ 313MM	WX1A4GP0S111
CL3906	Not used	
S1	CARTON A4G2EMA	2EMC00512
S12	CARTON LABEL A4G2EMA	-----
X2 	OWNERS MANUAL A4GFCMA	2EMN00166A
X3	REMOTE CONTROL UNIT YKF335-005	URMT41JHG005
X6	QUICK START GUIDE A4GFCMA	2EMN00167A

Electrical Parts

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

NOTES:

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

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

Ref. No.	Description	Part No.
C665	Not used	
D662	Not used	
D664	Not used	
D609A	DIODE SCHOTTKY SMD CES520.L3F(D	QD1Z00CES520
Q656	Not used	
Q658	Not used	
IC1101	IC LED BACKLIGHT CONTROLLER HA7223PE/SOP/16P	NSCA0T00H007
IC1201	IIC LED BACKLIGHT CONTROLLER HA7223PE/SOP/16P	NSCA0T00H007
R667	RES CHIP 1608 1/10W J 15k Ω	RRXA153HH013
R662	Not used	
R670	Not used	
R671	Not used	
R672	Not used	
R680	Not used	
R681	Not used	
R682	Not used	
R690	Not used	

Different parts from the original model 40PFL4609/F8 (Serial No. : XA1)

Ref. No.	Description	Part No.
	DIGITALMAIN CBA UNIT	A4G2EMMA-001
CN3701	Not used	
IC3006	IC 32M-BIT SERIAL FLASH MEMORY W25Q32FVSSIG	NSCA0R0ZM018
IC3009	IC RESET IC-PST8429UR	QSCA0T0MM075
IC3019	IC USB HIGH-SIDE SW AP2151WG-7/ SOT25/5PI	NSCA0TDES015
IC3101	IC MSD8220LB1-S1 MSD8220LB1-S1 EPLQFP	NSAA0RMST002
IC3102	Not used	
IC3103	Not used	
IC3201	IC DC-DC CONVERTER MP1472GJC452Z	NSCA0T09M021
IC3601	IC REGULATOR BD00IA5WEFJ-E2	QSCA0T0RM233
IC3602	REGULATOR AP1117EG-13	NSCA0TDES012
IC3603	IC REGULATOR BD00IA5WEFJ-E2	QSCA0T0RM233
IC3604	IC DC-DC CONVERTER MP2314GJ-Z TSOT23-8	NSCA0T09M025
IC3605	IC DC-DC CONVERTER MP2314GJ-Z TSOT23-8	NSCA0T09M025
IC3607	Not used	
IC3701	Not used	
IC3801	IC D-CLASS AUDIO POWER AMPLIFI TPA3110D2PWPR	NSCA0T0TY073
IC3803	Not used	
IC3851	IC STEREO HEADPHONE AMPLIFIER TS4881QT DFN8 8PIN	NSCA0T0SS070
IC3901	Not used	
TU3001	Not used	
TU3901	TUNER UNIT U9004UH	U9004UH
IC3401	Not used	
IC3402	Not used	
	MSW ASSEMBLY	A4G2EMSW-001
	Consists of the following	
	FUNCTION CBA UNIT	A4G2EMSW-001-FN
	IR SENSOR CBA UNIT	A4G2EMSW-001-IR
	POWER SUPPLY CBA	A4G2AMPW-001
C651	Not used	

REVISION HISTORY

Chassis PL14.32

- 2014/08/25 40PFL4609/F8 (Serial No.: XA1) added
- 2014/08/04 40PFL4409/F8 (Serial No.: XA1) First draft added

COMPARISON LIST OF MODEL NAMES

Chassis PL14.32

40PFL4609/F8	(XA1)	A4D2AMA	TYPE A
40PFL4409/F8	(XA1)	A4G2EMA	TYPE B