

22" LCD TV

chassis FL11.1

SERVICE MANUAL

Contents

TYPE A

LC220SS2	SYLVANIA	(Serial No.: TH1)
LC220EM2	EMERSON	(Serial No.: TH1)

TYPE B


22ME601B/F7	MAGNAVOX	(Serial No.: DS1)
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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 Funai Equipment. The service procedures recommended by Funai 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. Funai 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, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

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

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SPECIFICATIONS

< TUNER / NTSC >

ANT. Input ----- 75 Ω Unbal., F type

Description	Condition	Unit	Nominal	Limit
1. AFT Pull-In Range	---	MHz	±2.3	±2.1
2. Synchronizing Sens.	TV.ch.4	dBμ	18	20
	CA.ch.31	dBμ	18	20
	CA.ch.87	dBμ	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	1366	---
	Vertical	pixels	768	---
2. Brightness (w / filter)	---	cd/m ²	[LC220EM2, LC220SS2] 280 [22ME601B/F7] 250	---
3. Viewing Angle	Horizontal	°	-85 to 85	---
	Vertical	°	-80 to 80	---

< 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	±2%
	y		0.278	±2%
	<Measurement condition>			
	Input signal: Internal pattern (40/70% raster) Measurement point: Screen center Measuring instrument: Made of KONICA MINOLTA Luminance meter CA-310 Aging time: 60min. (Retail MODE / 100IRE Raster HDMI 1080i@60) MODE setting of TV: Shipment setting / Retail MODE Ambient temperature: 25°C ±5°C			
3. Resolution (composite video)	Horizontal	line	400	---
	Vertical	line	350	---

< AUDIO >

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

Description	Condition	Unit	Nominal	Limit
1. Audio Output (Volume MAX)	Lch/Rch	W	1.5/1.5	---
2. Audio Distortion (NTSC)	500mW: Lch/Rch	%	0.5/0.5	2.0/2.0
3. Audio Freq. Response (NTSC)	-6dB: Lch	Hz	70 to 10 k	---
	-6dB: Rch	Hz	70 to 10 k	---

IMPORTANT SAFETY PRECAUTIONS

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

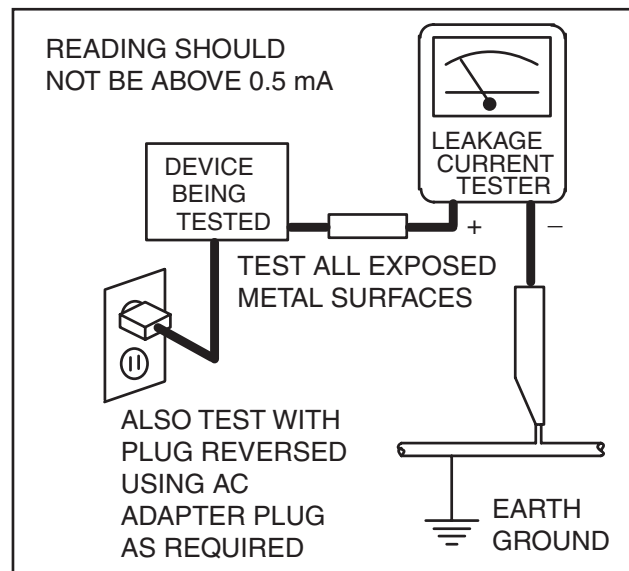
Safety Precautions for LCD TV Circuit

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

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


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

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



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

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

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

Precautions during Servicing

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

Safety Check after Servicing

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

1. Clearance Distance

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

Table 1: Ratings for selected area

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

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

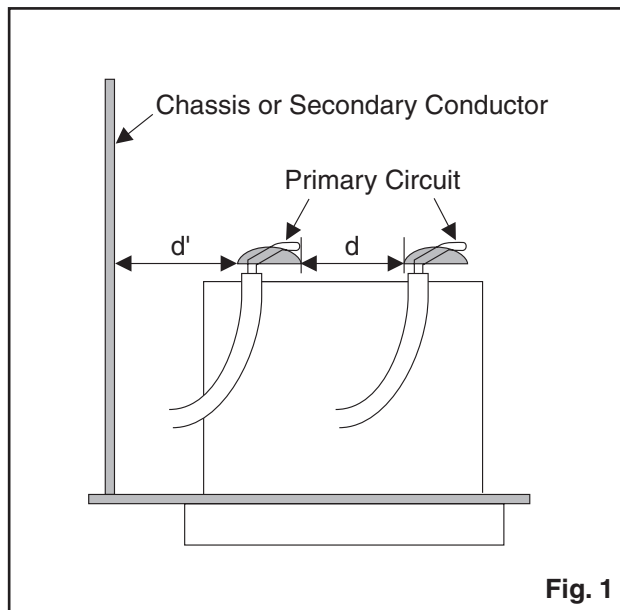


Fig. 1

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.

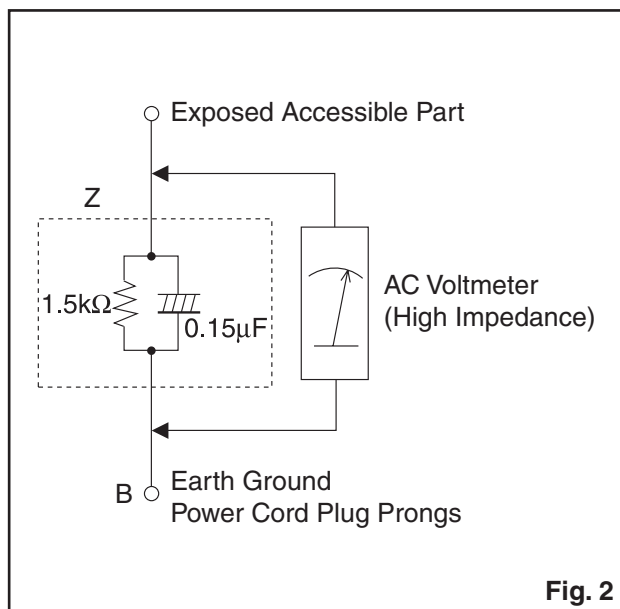


Fig. 2

Table 2: Leakage current ratings for selected areas

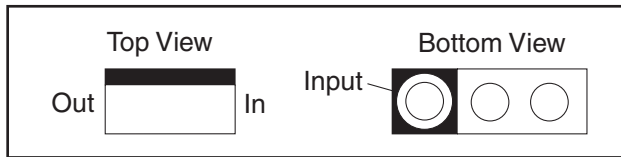
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	$0.15 \mu F$ CAP. & $1.5 k\Omega$ RES. Connected in parallel	$i \leq 0.5$ mA rms	Exposed accessible parts

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

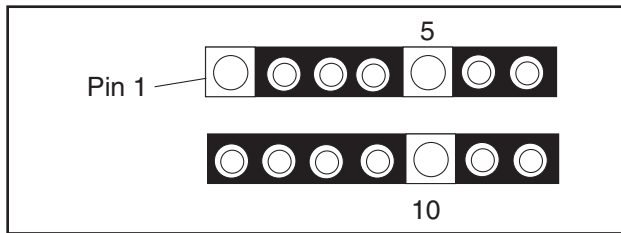
STANDARD NOTES FOR SERVICING

Circuit Board Indications

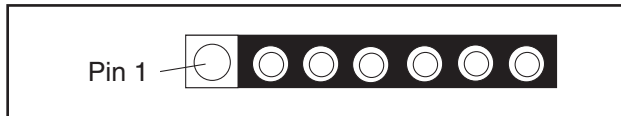
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

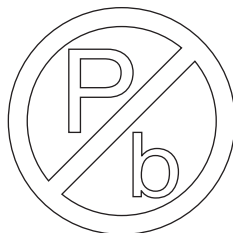


3. The 1st pin of every male connector is indicated as shown.



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)

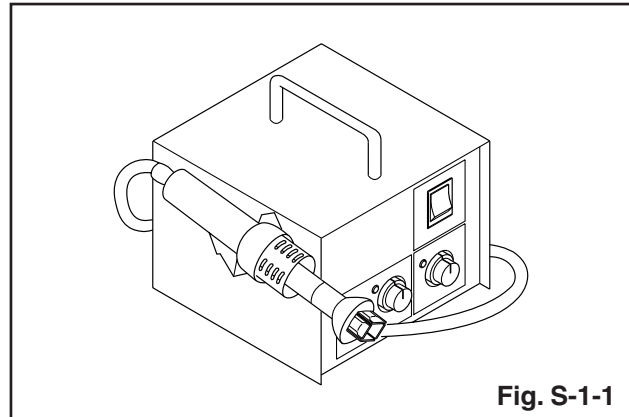


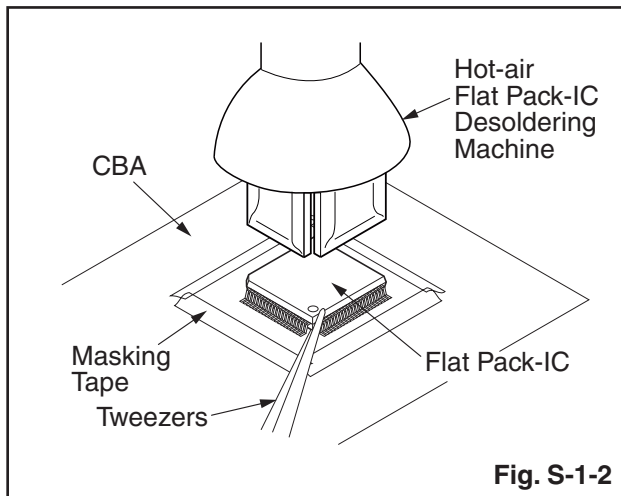
Fig. S-1-1

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:

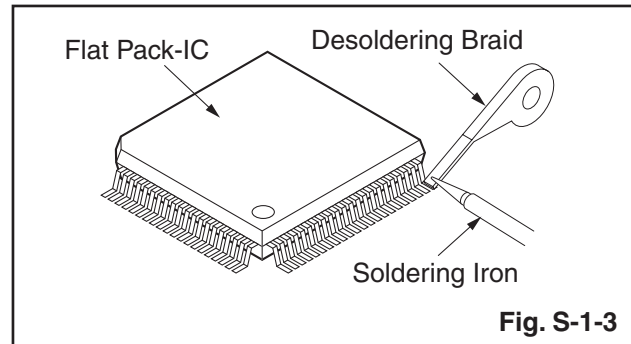
1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape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

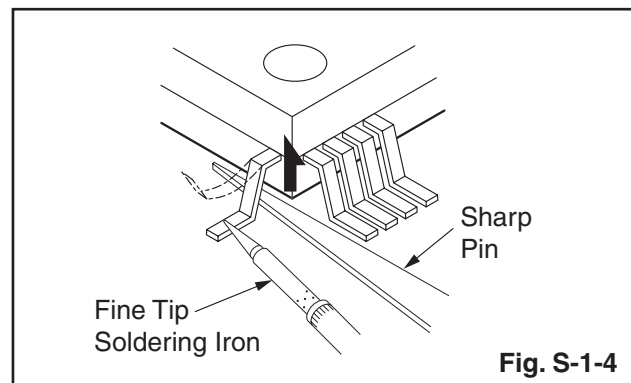


With Soldering Iron:

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)

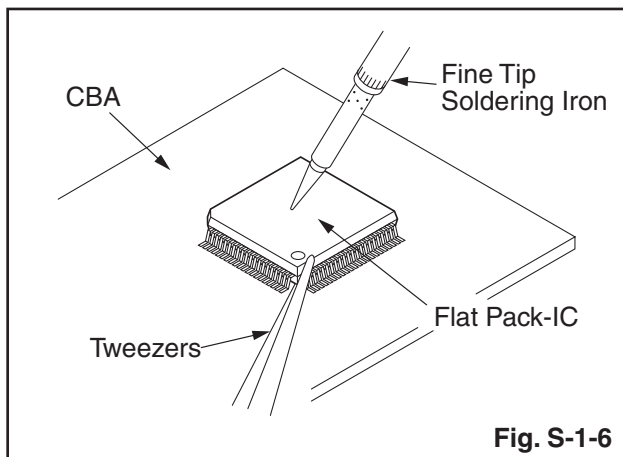
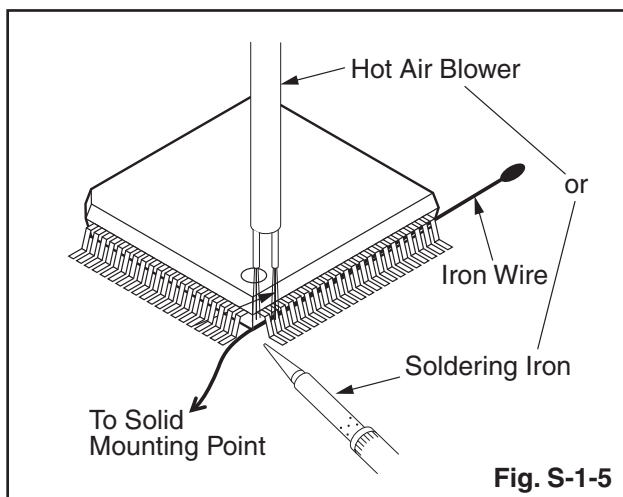


3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

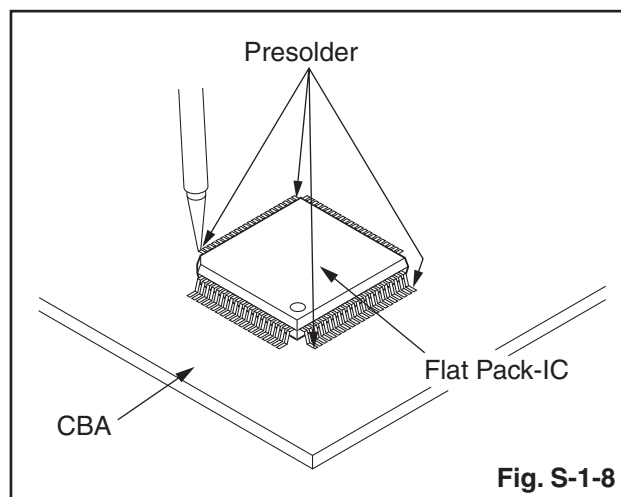
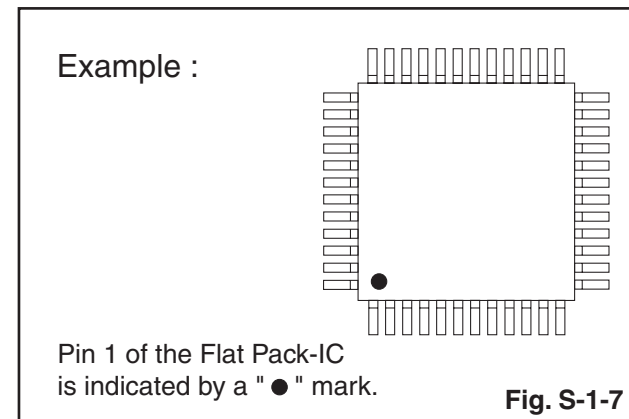
1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins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

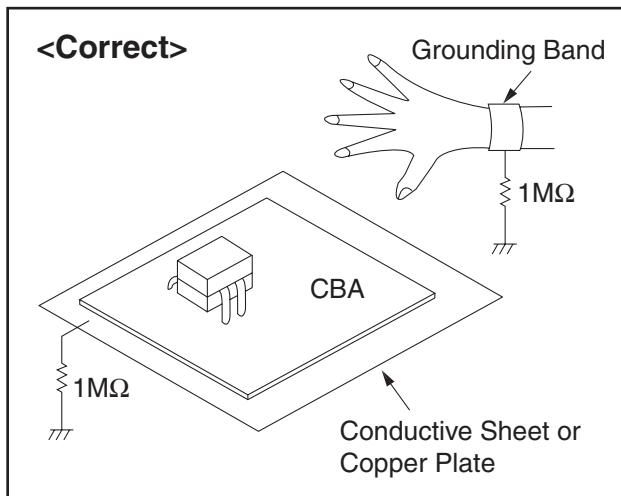
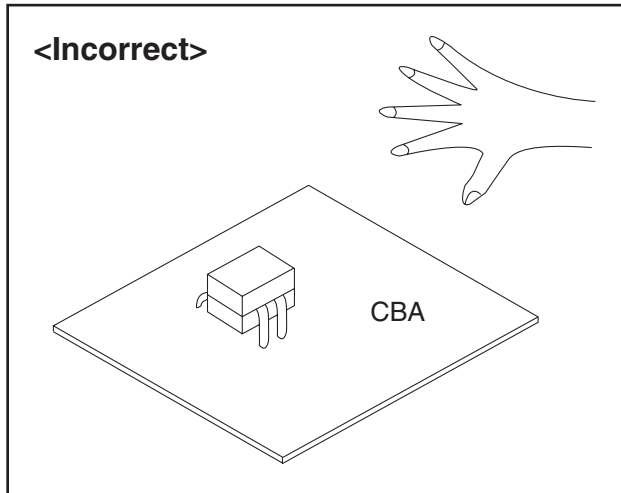
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

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.

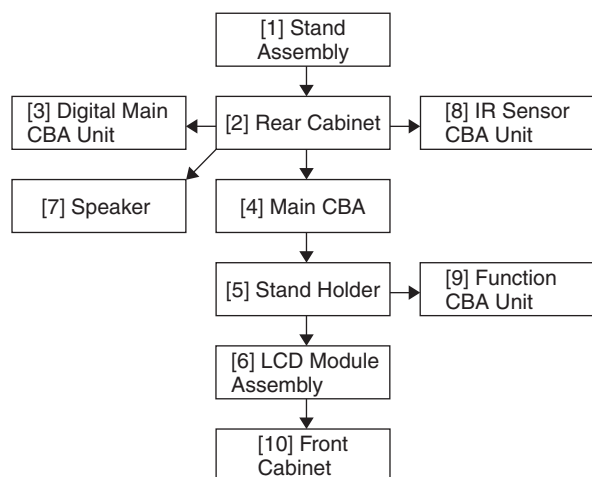


CABINET DISASSEMBLY INSTRUCTIONS

[TYPE A]

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	6(S-2), (S-3), 2(S-4), (S-5), 9(L-1)	---
[3]	Digital Main CBA Unit	D2 D3	4(S-6), CN3005, CN3101, CN3102, CN3701, CN3801, CN3802, Jack Holder	---
[4]	Main CBA	D2 D3	7(S-7), CN201, CN601, CN1550, CN1650, Guard Holder	---
[5]	Stand Holder	D2	2(S-8), (S-9)	---
[6]	LCD Module Assembly	D2	2(S-10)	---
[7]	Speaker	D2	4(S-11), Speaker Holder	---
[8]	IR Sensor CBA Unit	D2 D3	Sensor Lens, Sensor Plate	---

Step/ Loc. No.	Part	Fig. No.	Removal	Note
[9]	Function CBA Unit	D2 D3	Function Knob	---
[10]	Front Cabinet	D2	-----	---

↓
(1)

↓
(2)

↓
(3)

↓
(4)

↓
(5)

Note:

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

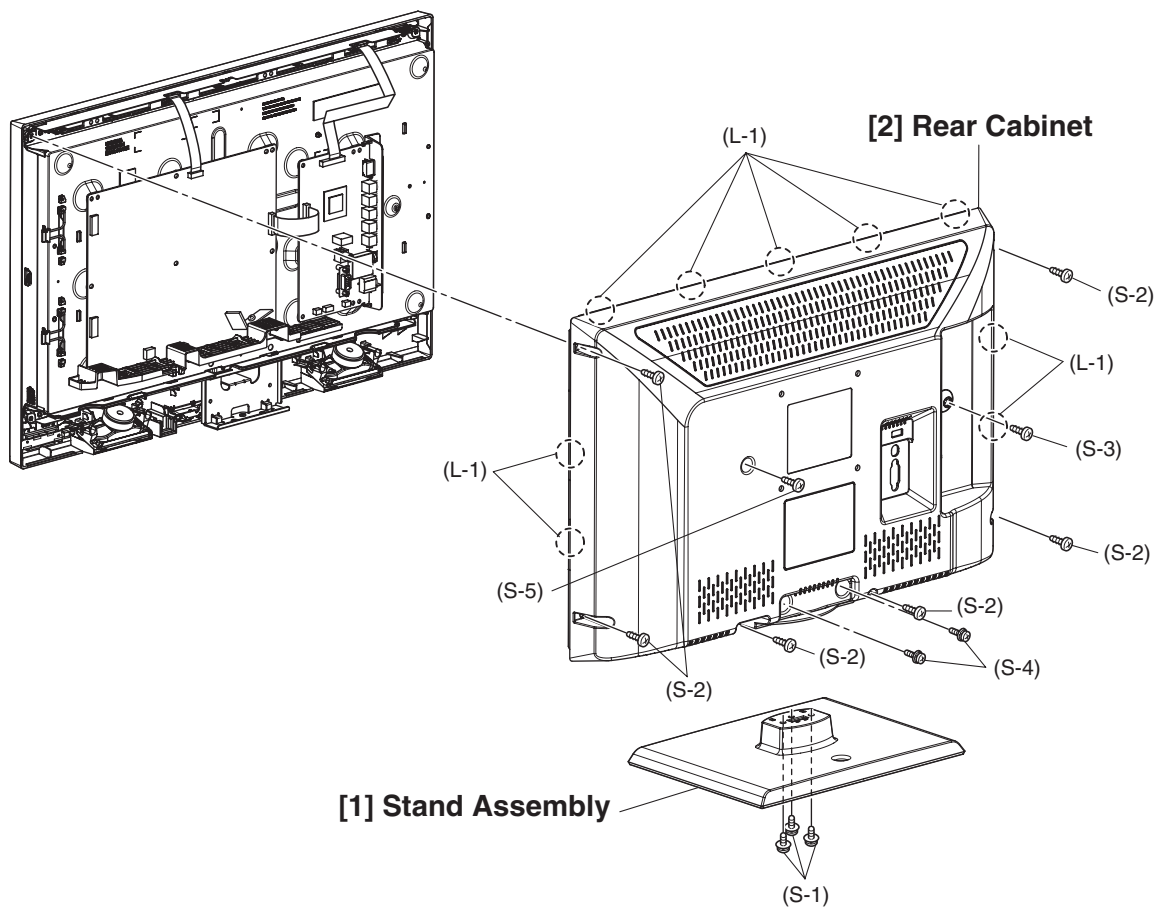


Fig. D1

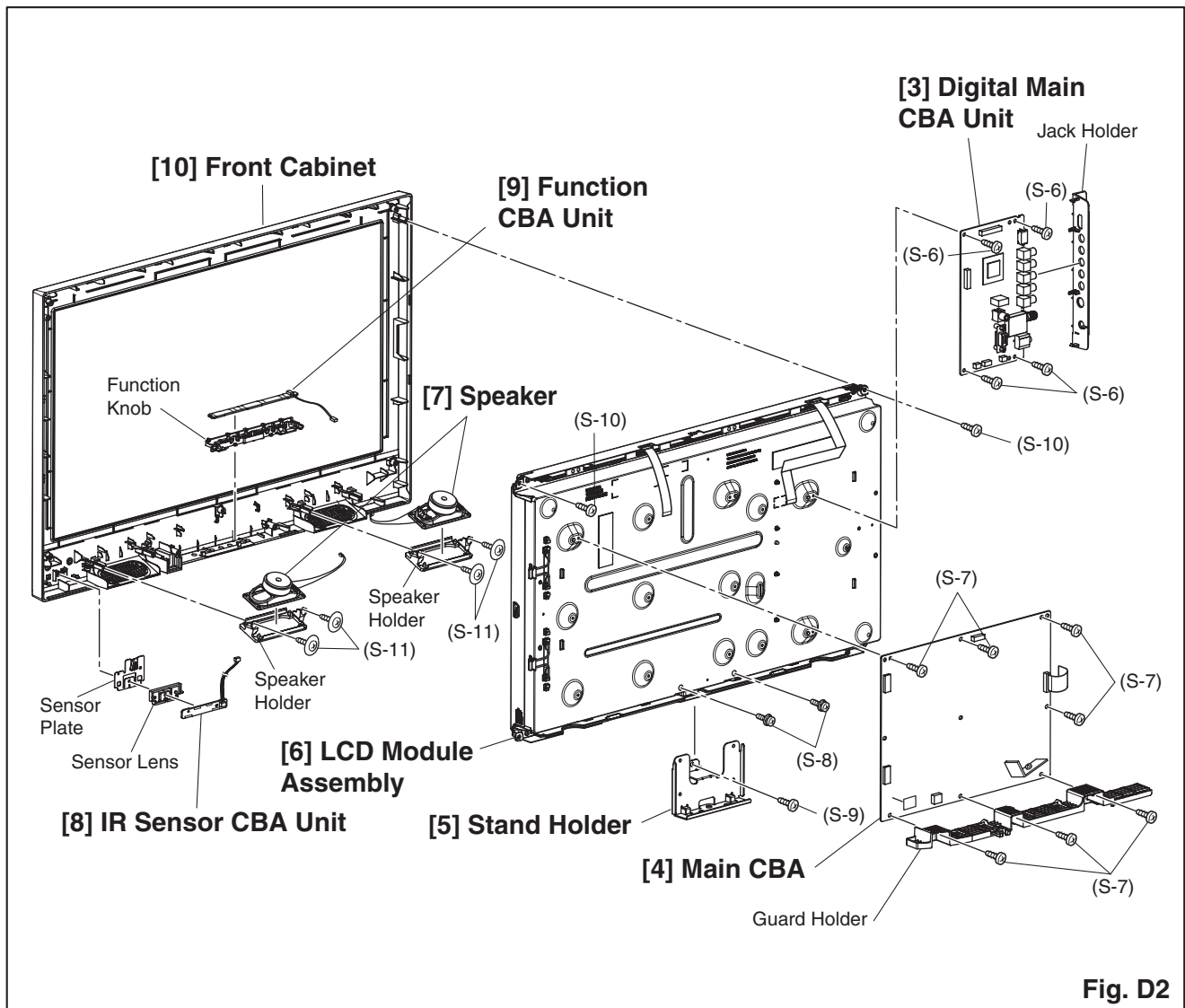
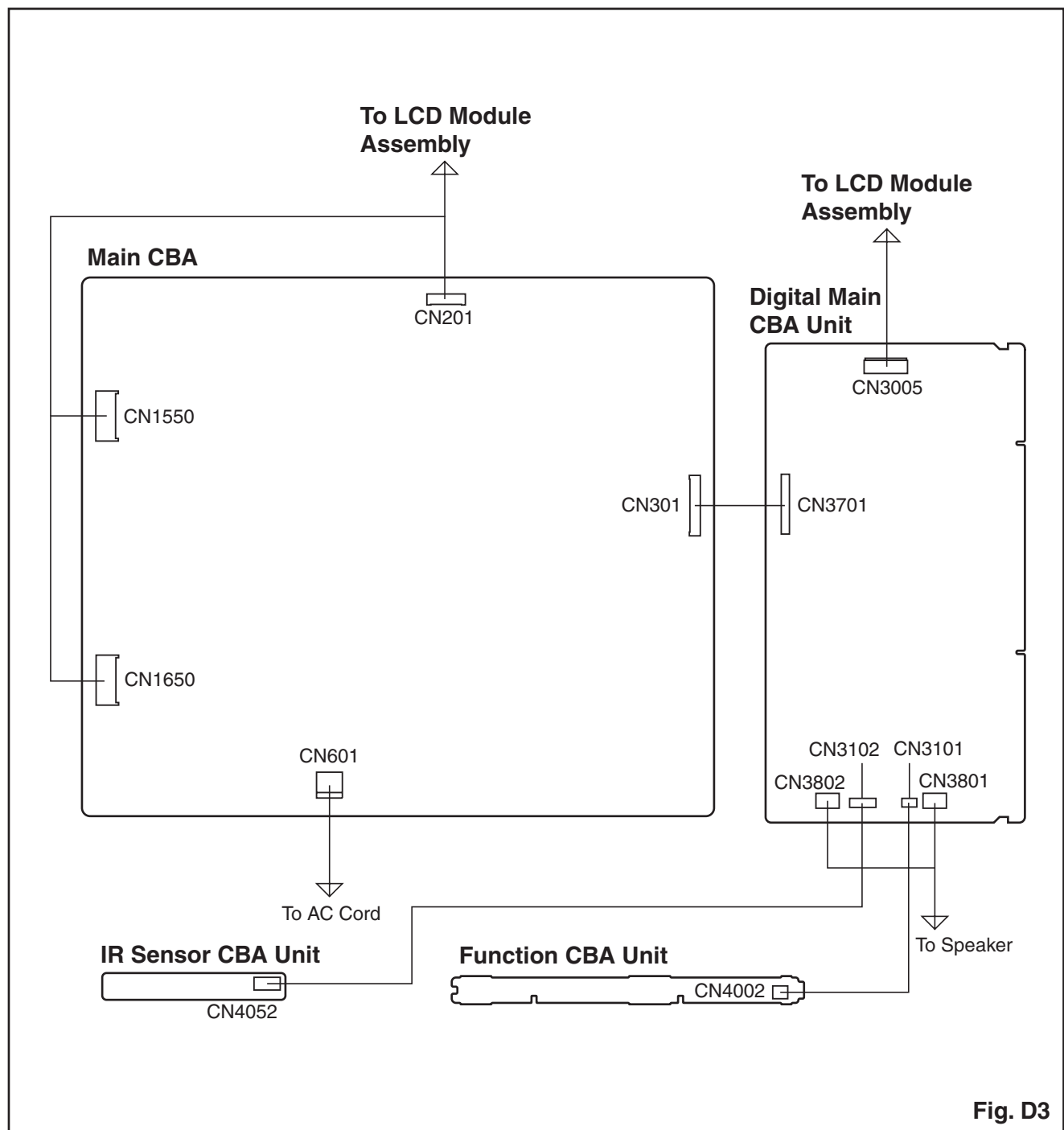


Fig. D2

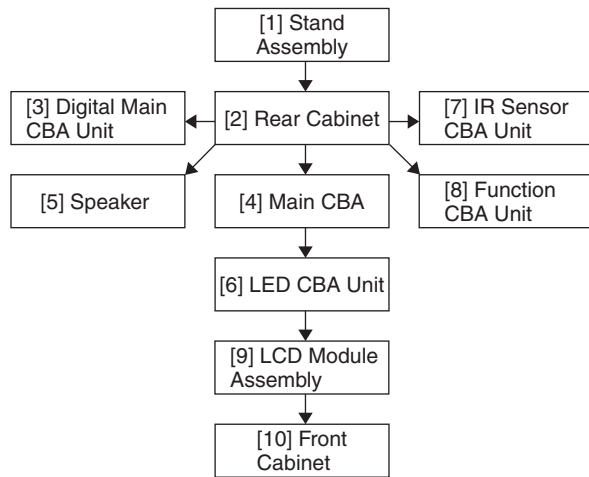
TV Cable Wiring Diagram



[TYPE B]

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	2(S-1)	---
[2]	Rear Cabinet	D1	3(S-2), 2(S-3), 15(L-1)	---
[3]	Digital Main CBA Unit	D2 D3	4(S-4), CN3006, CN3102, CN3103, CN3701, CN3801, CN3802, Jack Holder	---
[4]	Main CBA	D2 D3	7(S-5), CN603, CN1001, Stand Bracket	---
[5]	Speaker	D2	-----	---
[6]	LED CBA Unit	D2 D3	LED Lens	---
[7]	IR Sensor CBA Unit	D2 D3	CN4051, Sensor Lens	---
[8]	Function CBA Unit	D2 D3	-----	---
[9]	LCD Module Assembly	D2	-----	---

Step/ Loc. No.	Part	Fig. No.	Removal	Note
[10]	Front Cabinet	D2	Sensor Shield	---
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

Note:

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

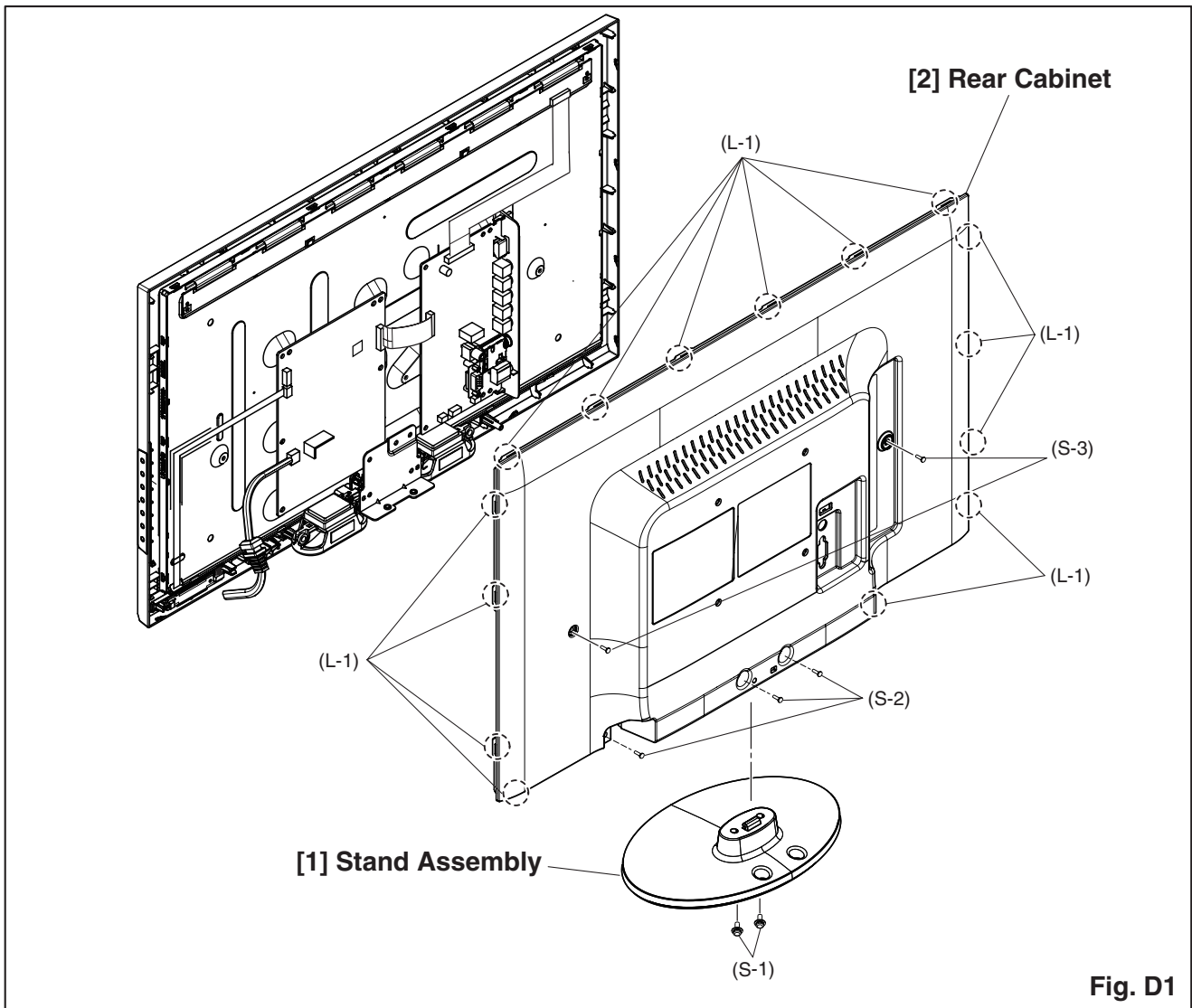


Fig. D1

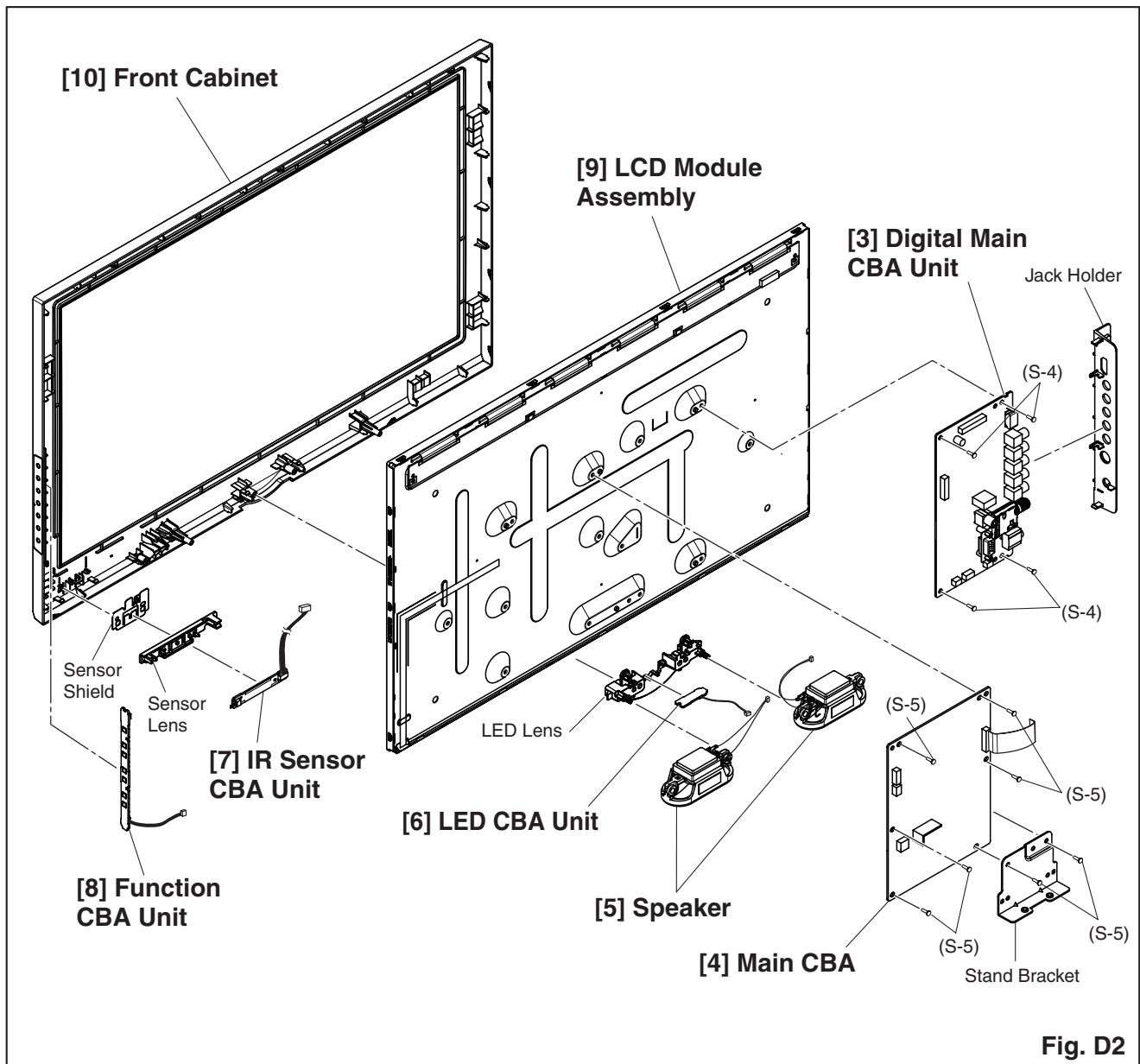


Fig. D2

TV Cable Wiring Diagram

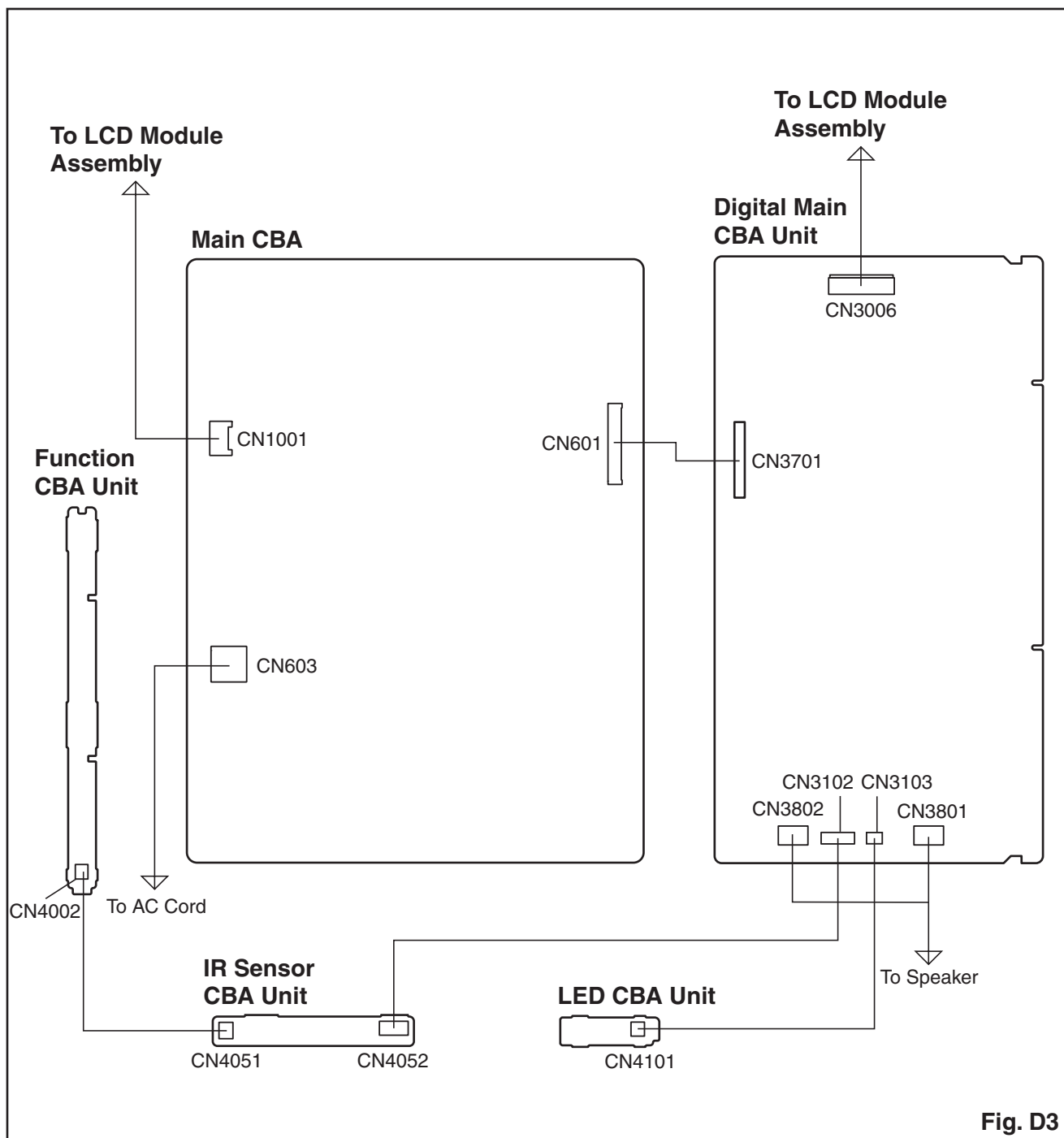


Fig. D3

ELECTRICAL ADJUSTMENT INSTRUCTIONS

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

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

Test Equipment Required

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

How to set up the service mode:

Service mode:

1. Turn the power on.
2. Press [MENU] button to display Setup menu.
3. Select “Features”.
4. Select “Current Software Info”.
5. Press [0], [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 code:	*****_*_*_*_*_*_*_*_*
Panel-Option code:	**_*_*_*_*_*_*_*_*_*_*_*_*
MIPS:	Push 0 key

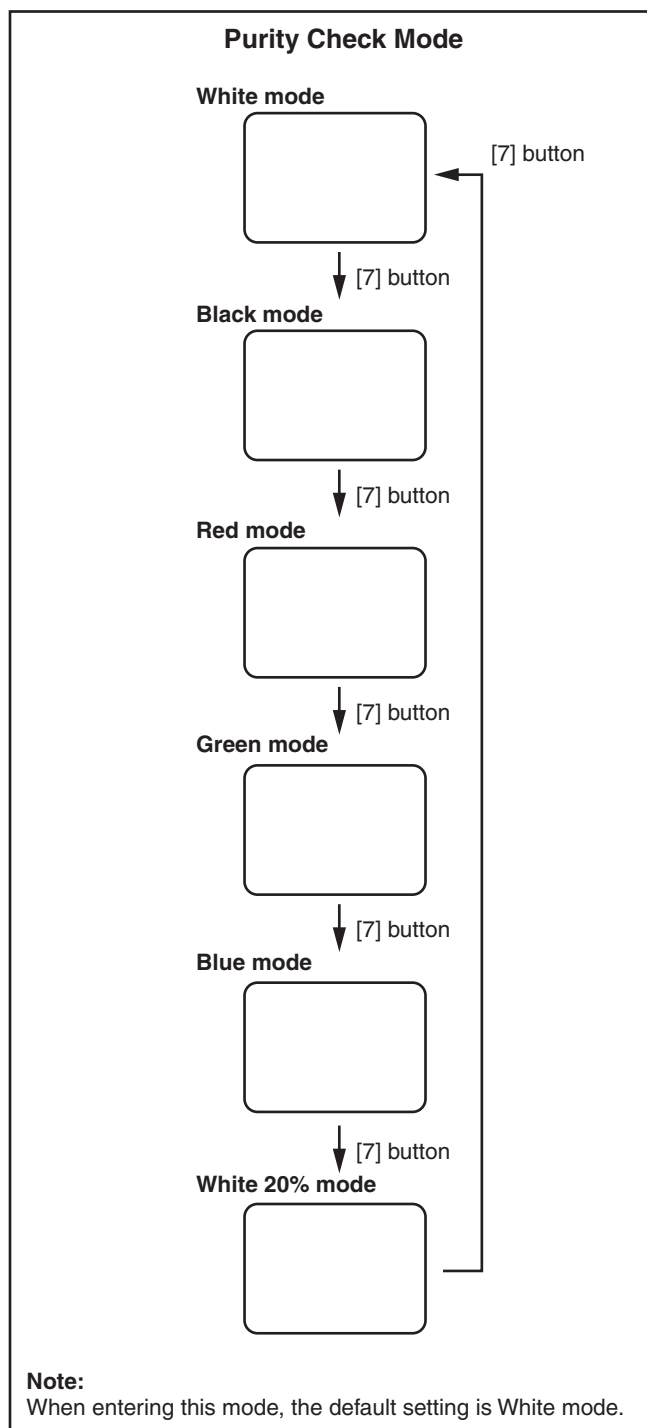
Press "POWER" key to exit.

Tuner:	****_*****_****
Safety:	Safety_Non
HDMI EDID:	**
PC EDID:	**
Total Watch Time:	*****
Lightsensor:	****

1. Purity Check Mode

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

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

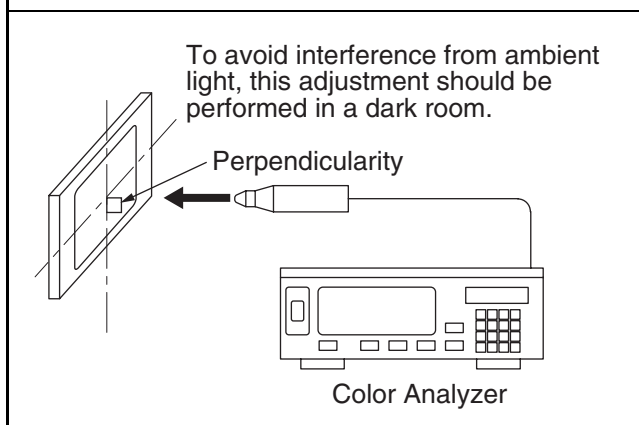


3. To cancel or to exit from the Purity Check Mode, press [CH RETURN] or [PREV CH] button.

2. VCOM Adjustment

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

Figure



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

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

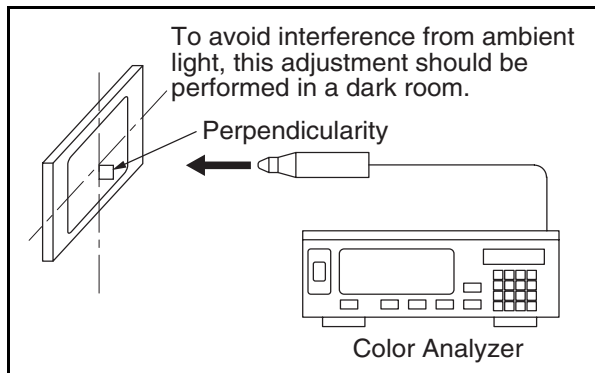
3. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

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

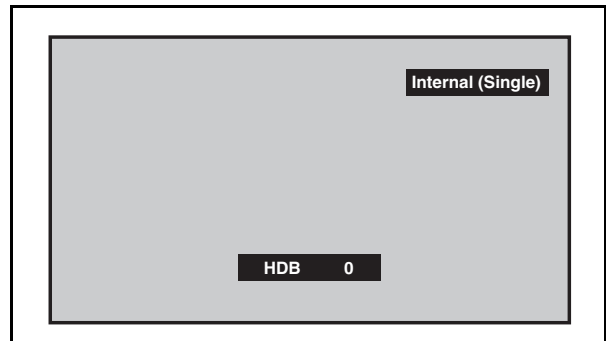
1. Operate the unit for more than 60 minutes.
2. Enter the Service mode.
3. Press [VOLUME DOWN] button three times on the remote control unit to select "Drive setting" mode. "Drive" appears on the screen.
4. Set the color analyzer at the CHROMA mode and zero point calibration. Bring the optical receptor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



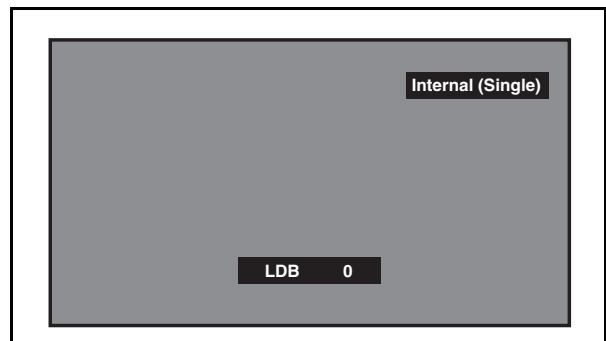
Note: The optical receptor must be set perpendicularly to the LCD Panel surface.

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

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



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



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

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

FIRMWARE RENEWAL MODE

Equipment Required

- USB storage device
- Remote Control Unit

Firmware Update Procedure

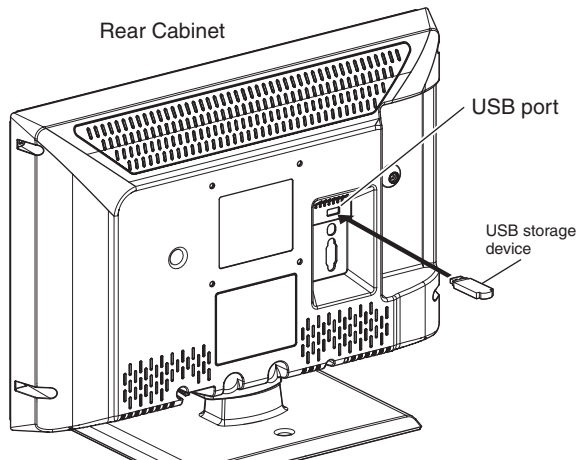
Note: There are two states (the User Upgrade and the Factory Upgrade) in firmware update.

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

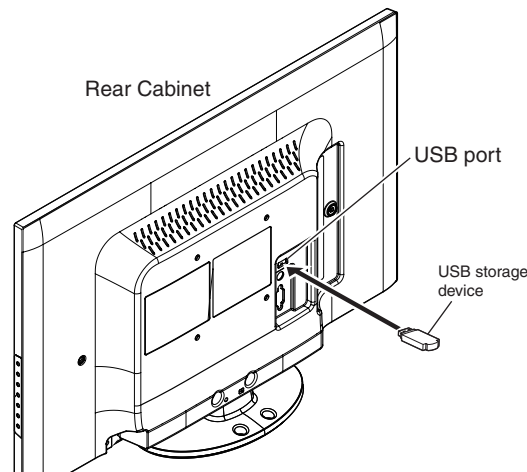
The identification of User Upgrade and Factory Upgrade are done by the filename.

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

TYPE A (Example: LC220SS2)

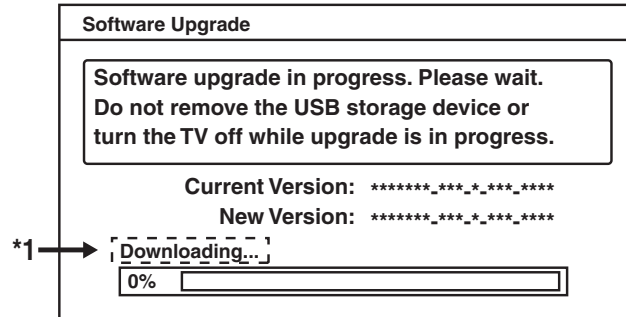


TYPE B (Example: 22ME601B/F7)



- Plug the AC cord in the wall outlet and turn the power on.
- The update will start and the following will appear on the screen.

"*" differs depending on the models.

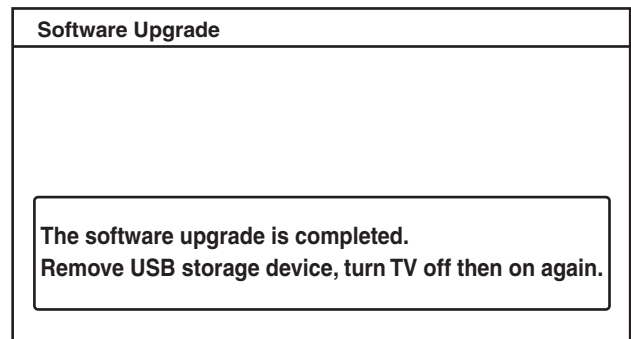


Note: If the above screen isn't displayed, repeat from step 1.

The appearance shown in *1 is described as follows.

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

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



Remove the USB storage device from the USB port.

Turn the power off and turn the power on again.

Note:

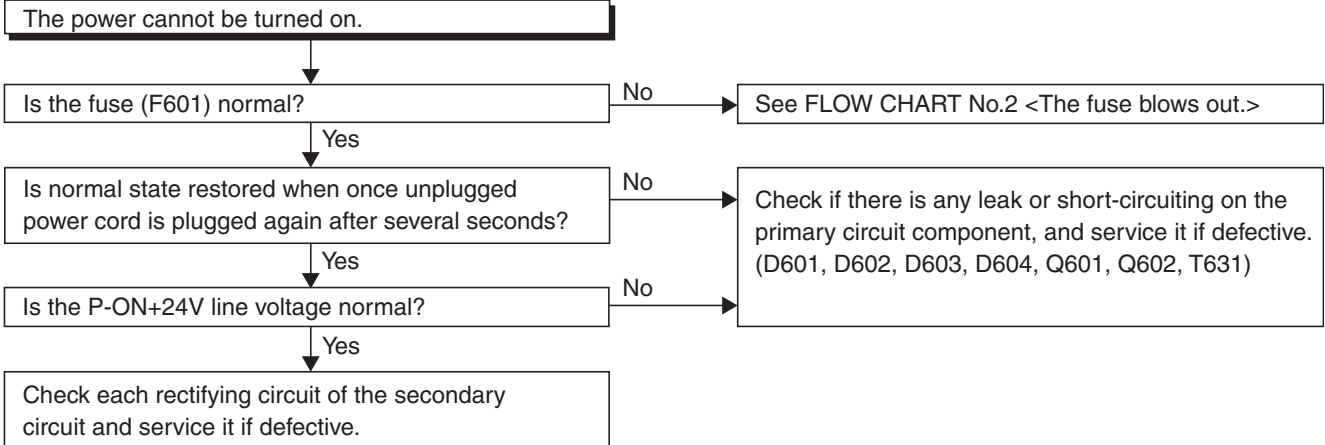
When the Factory Upgrade is used, after restarting TV, shift to initial screen menu in service mode. "INITIALIZED" will appear on the upper right of the screen. "INITIALIZED" color will change to green from red when initializing is completed.

TROUBLESHOOTING

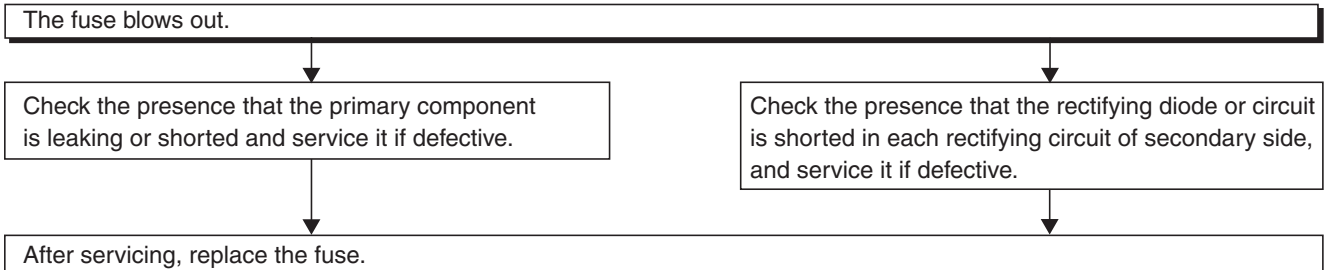
[TYPE A]

[Power Supply Section]

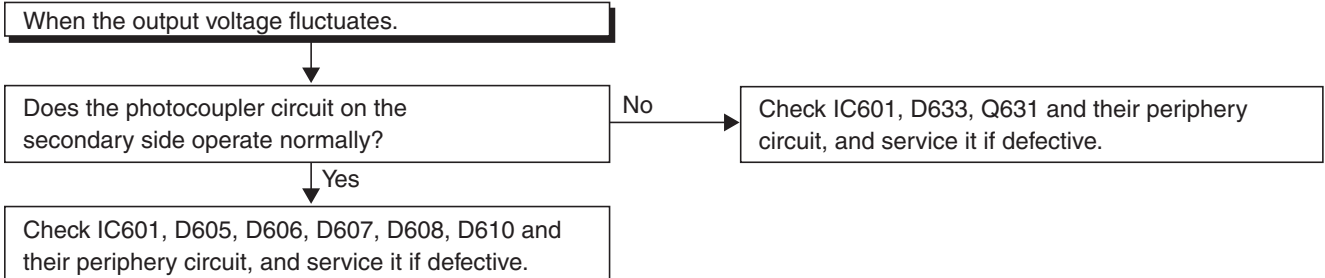
FLOW CHART NO.1



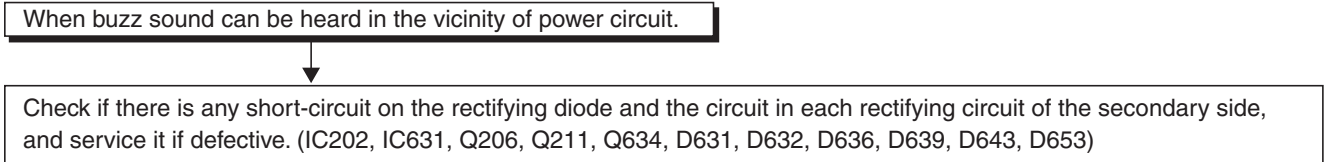
FLOW CHART NO.2



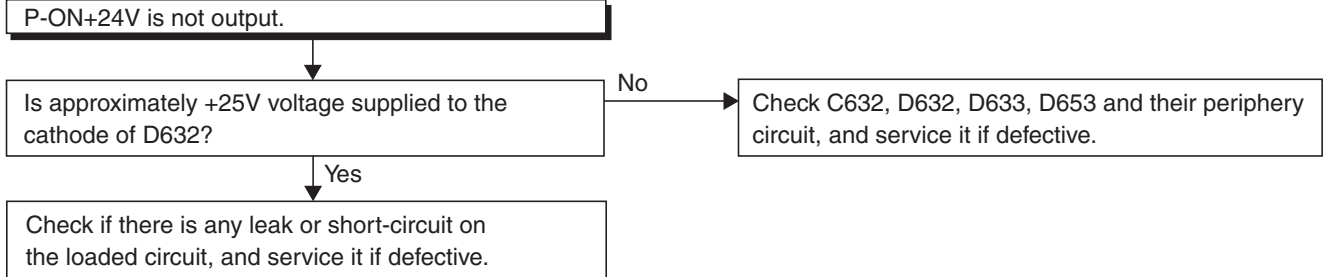
FLOW CHART NO.3



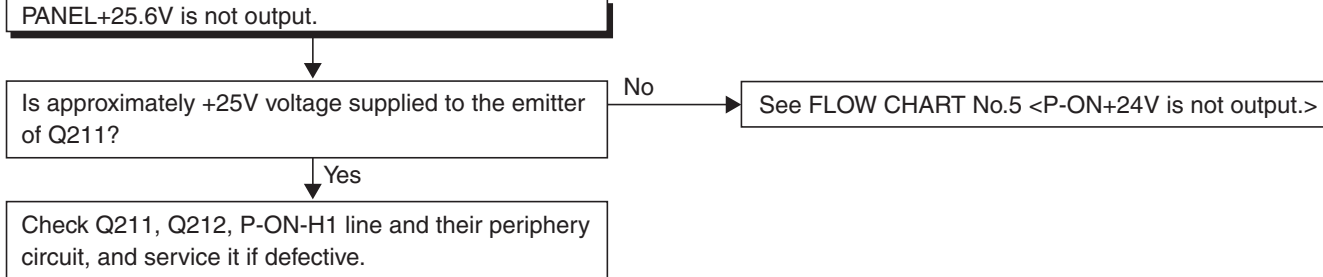
FLOW CHART NO.4



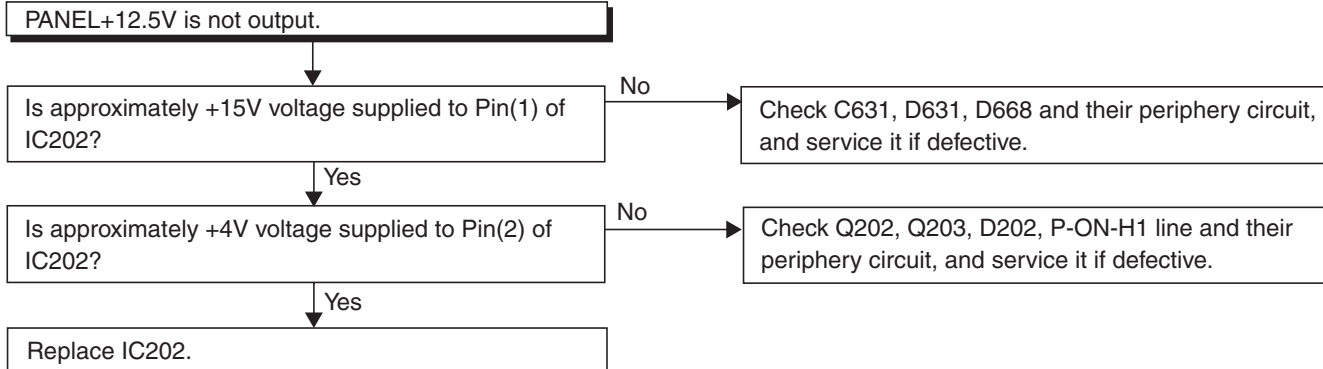
FLOW CHART NO.5



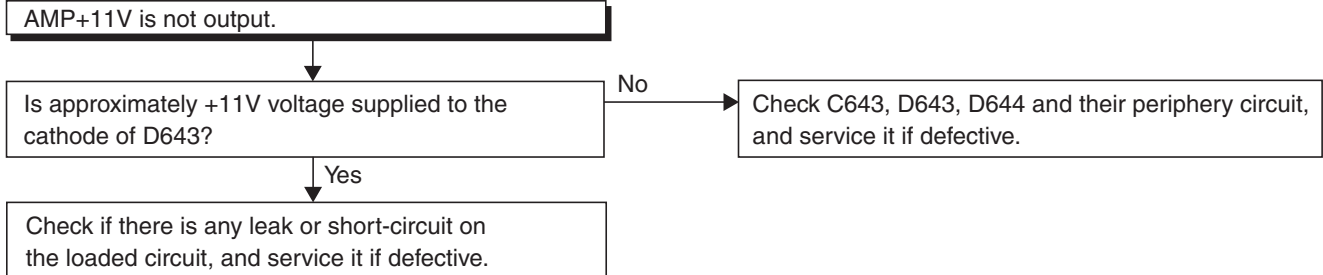
FLOW CHART NO.6



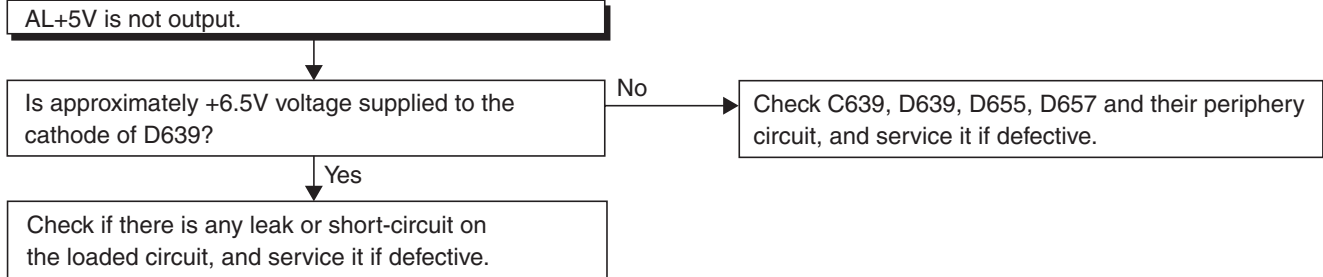
FLOW CHART NO.7



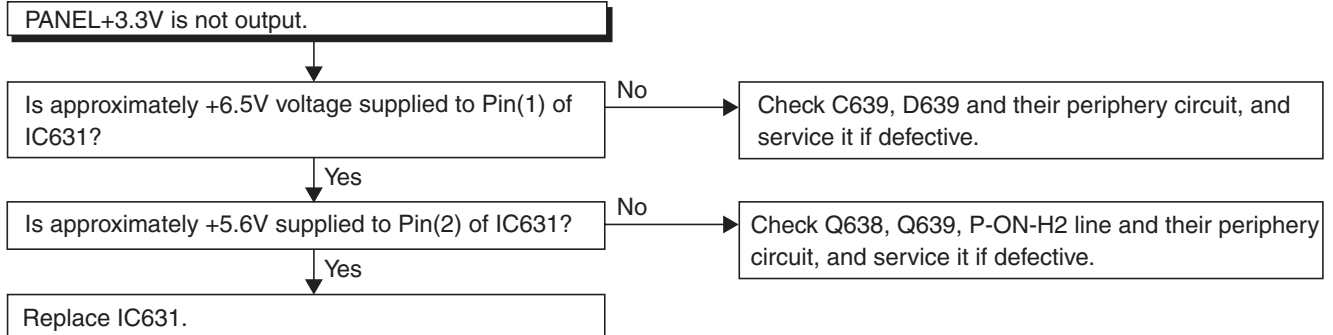
FLOW CHART NO.8



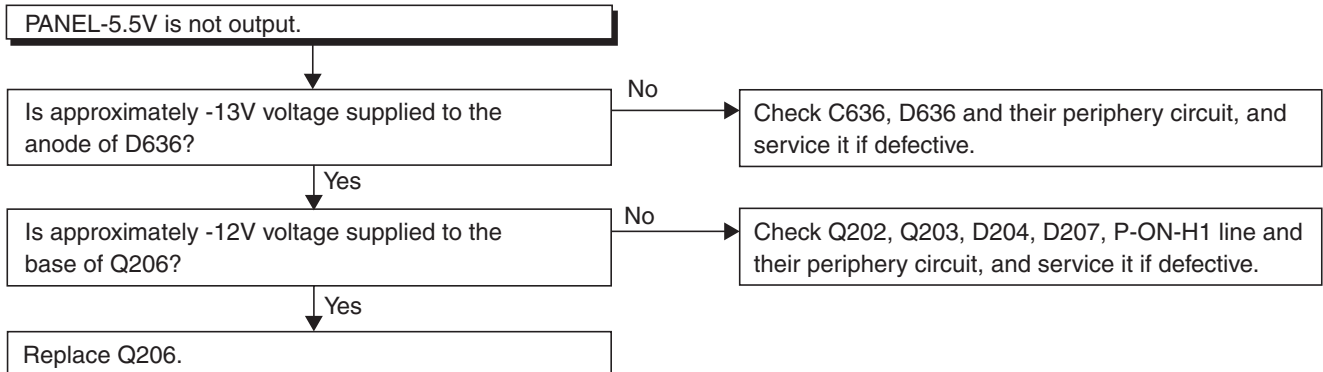
FLOW CHART NO.9



FLOW CHART NO.10

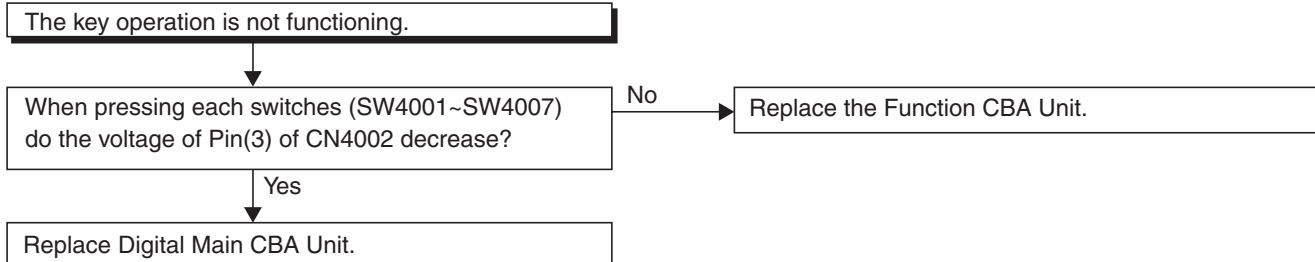


FLOW CHART NO.11

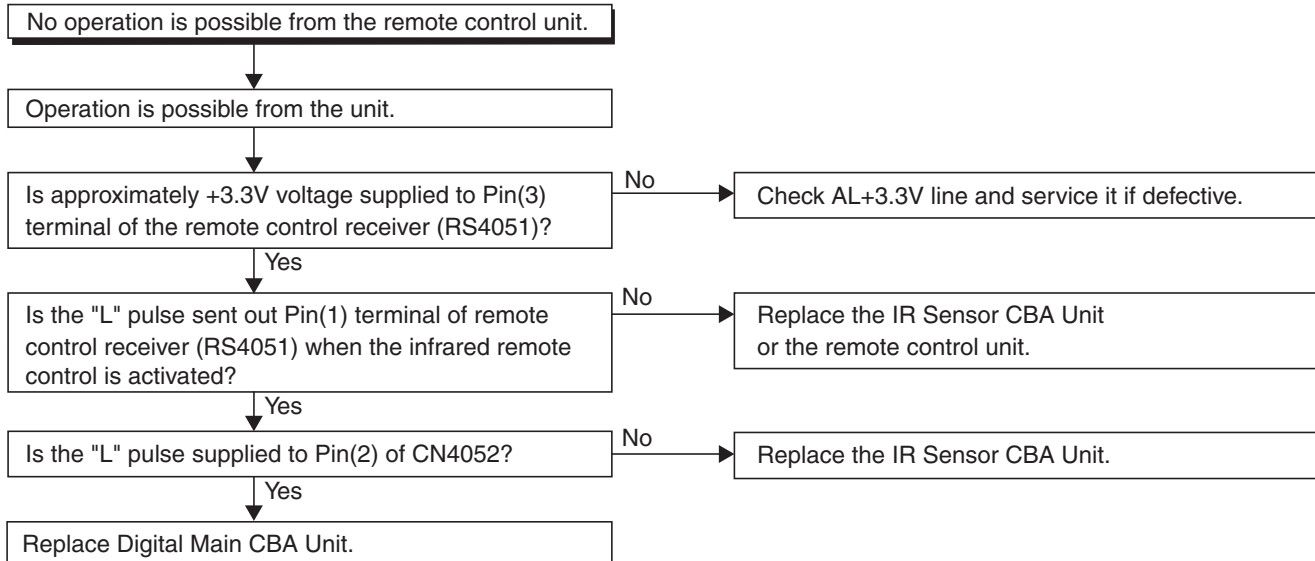


[Video Signal Section]

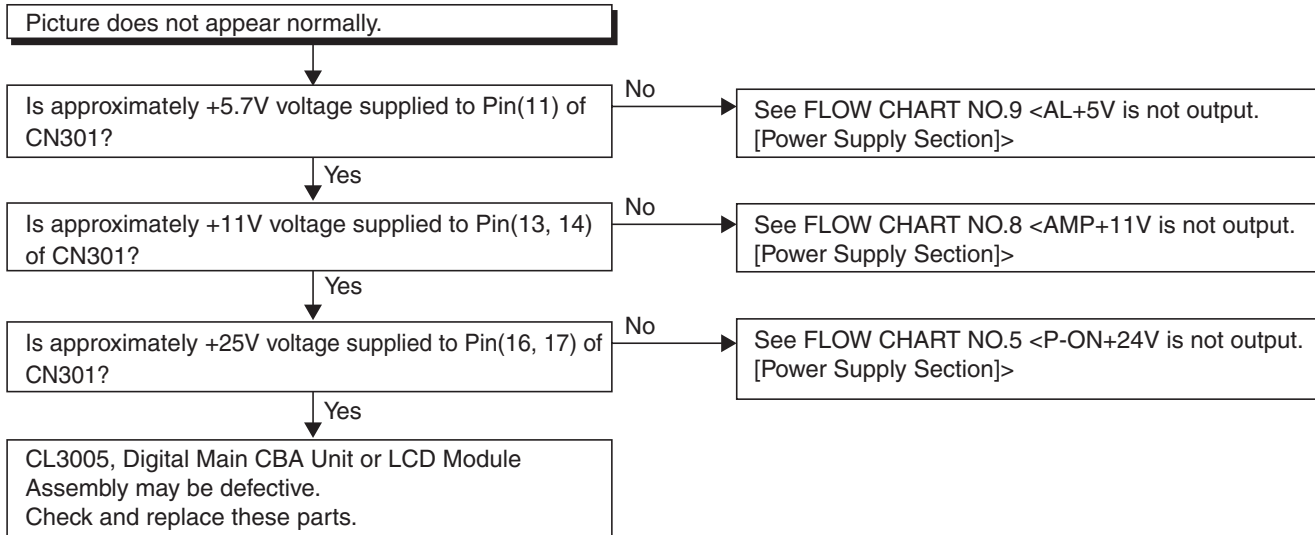
FLOW CHART NO.1



FLOW CHART NO.2

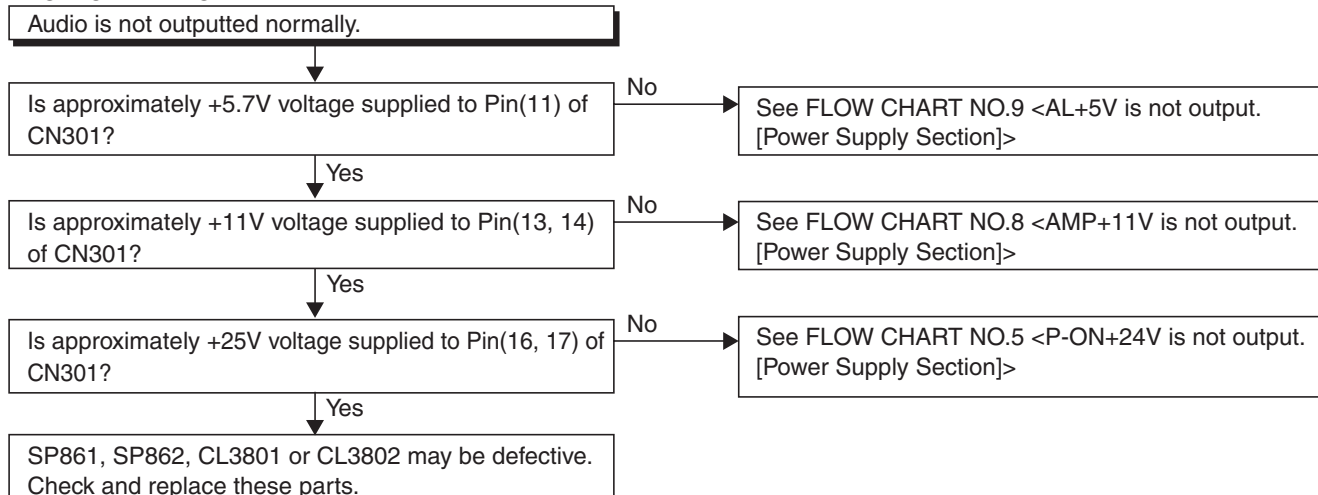


FLOW CHART NO.3



[Audio Signal Section]

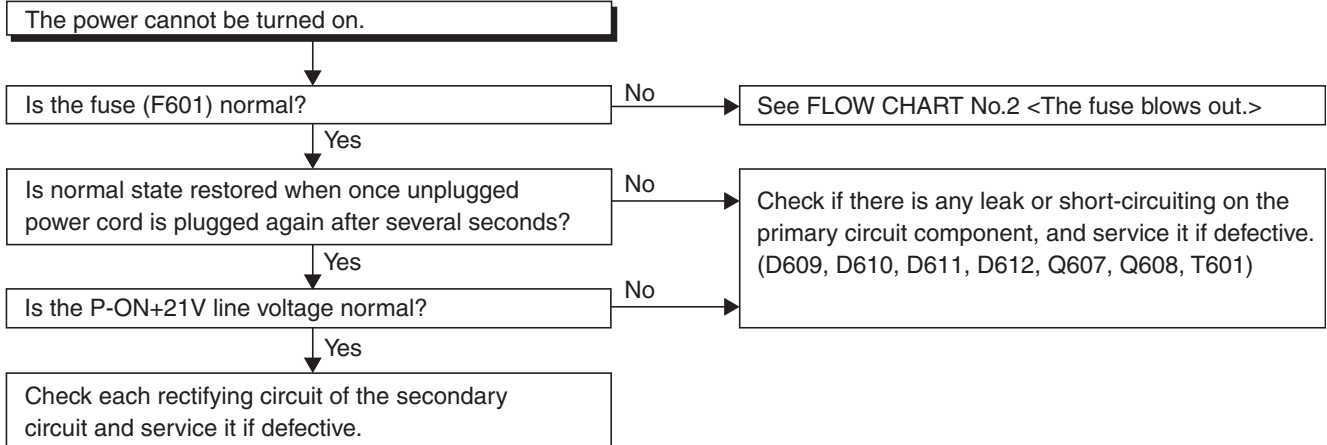
FLOW CHART NO.1



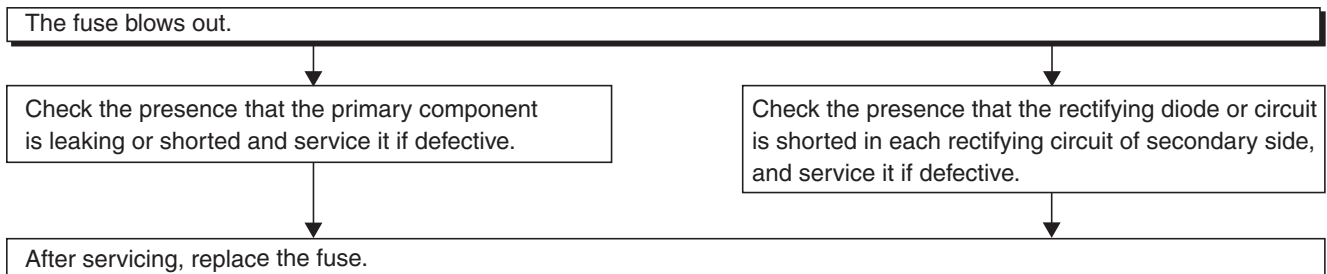
[TYPE B]

[Power Supply Section]

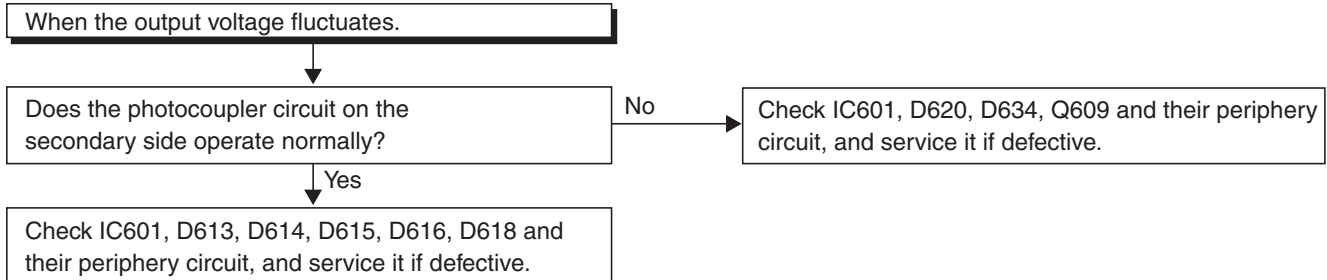
FLOW CHART NO.1



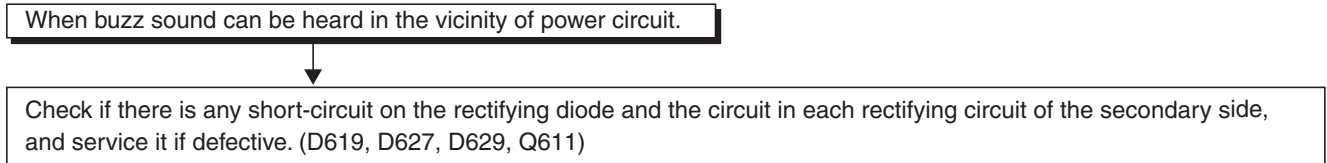
FLOW CHART NO.2



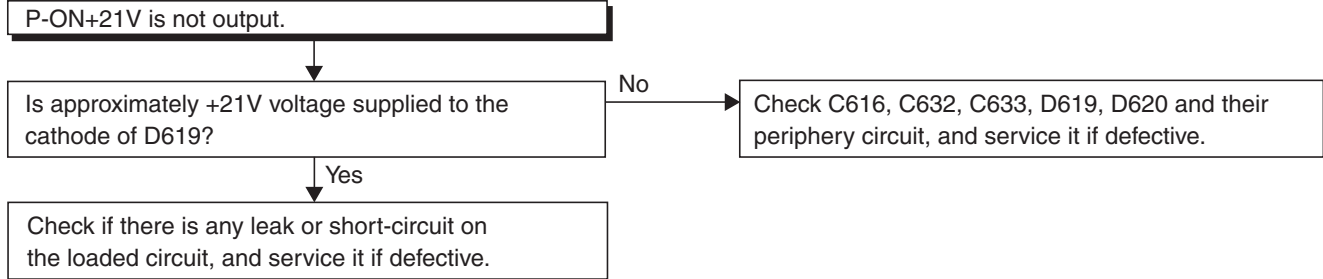
FLOW CHART NO.3



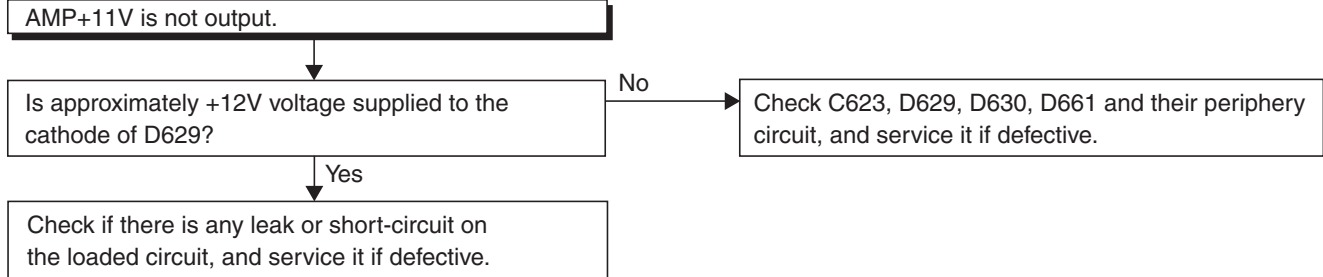
FLOW CHART NO.4



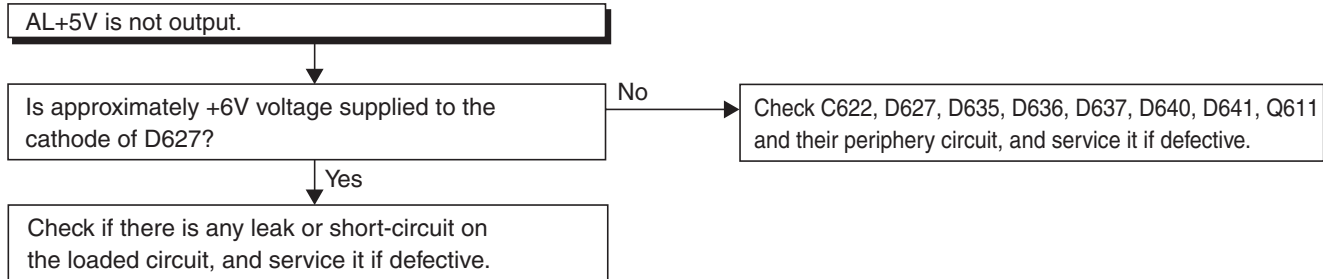
FLOW CHART NO.5



FLOW CHART NO.6

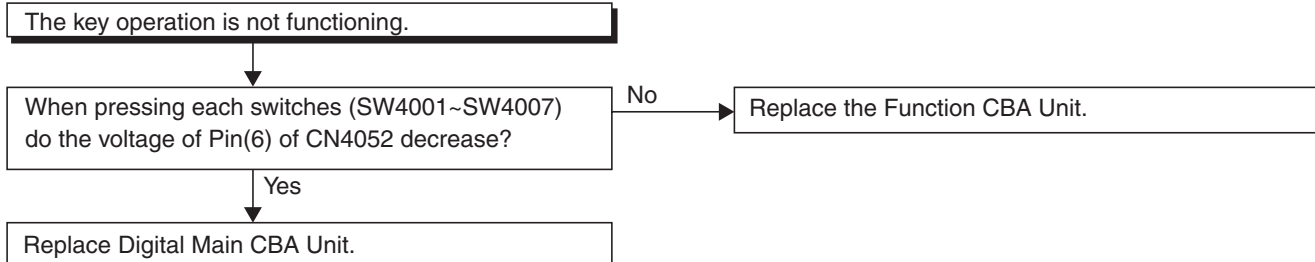


FLOW CHART NO.7

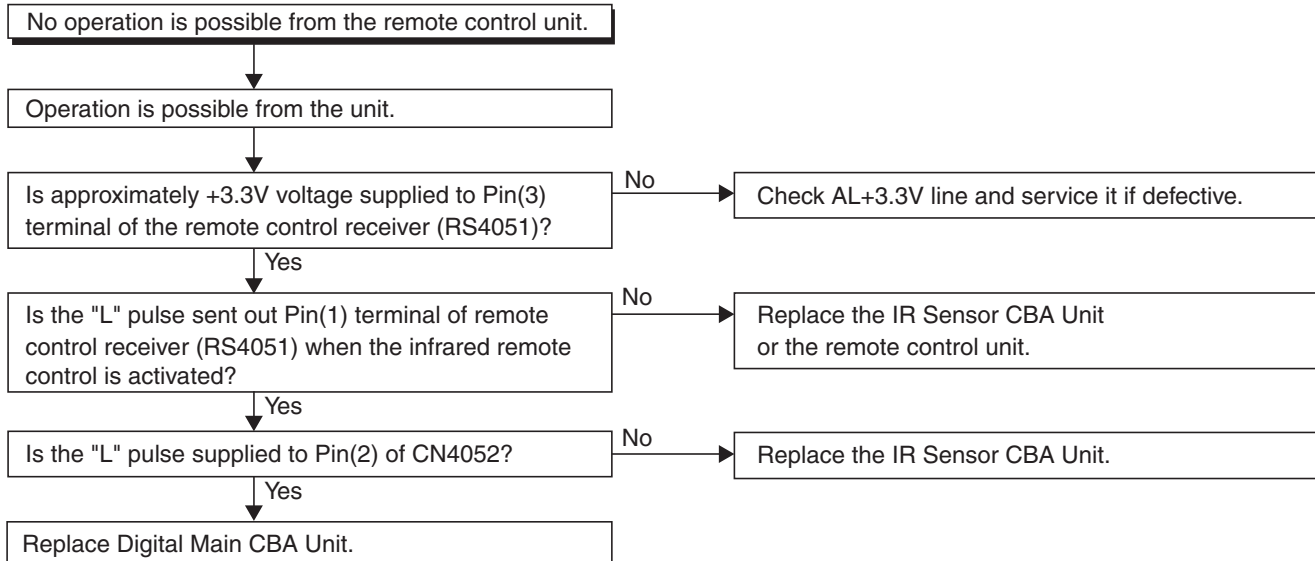


[Video Signal Section]

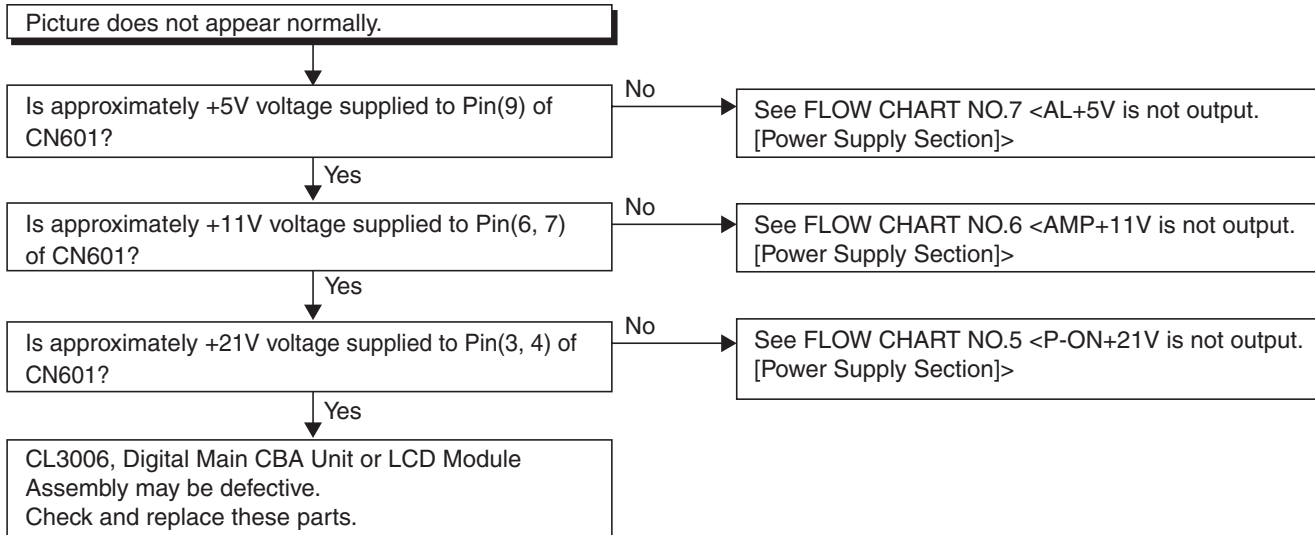
FLOW CHART NO.1



FLOW CHART NO.2

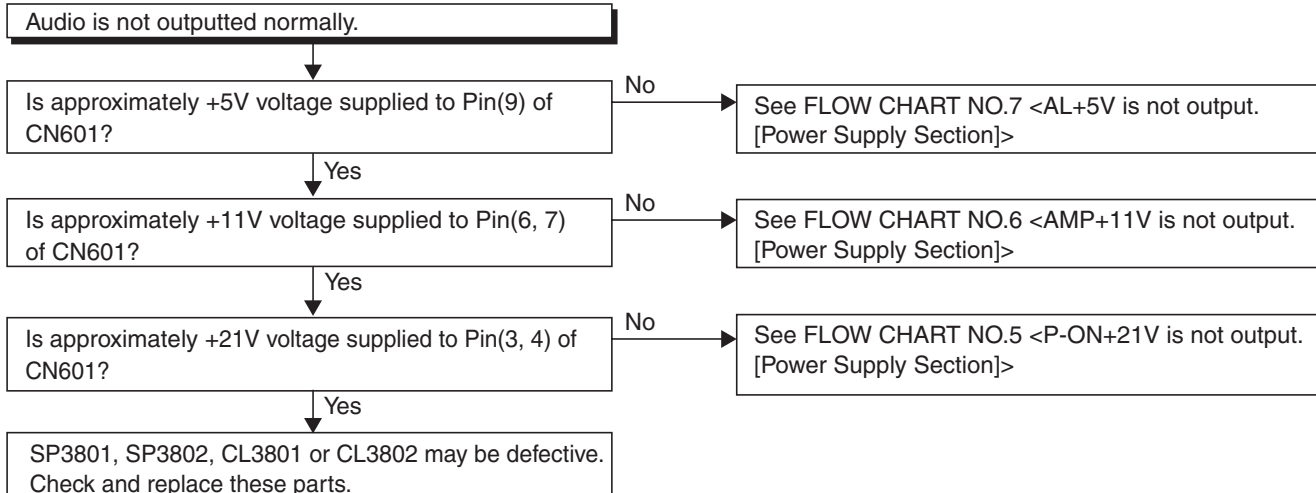


FLOW CHART NO.3



[Audio Signal Section]

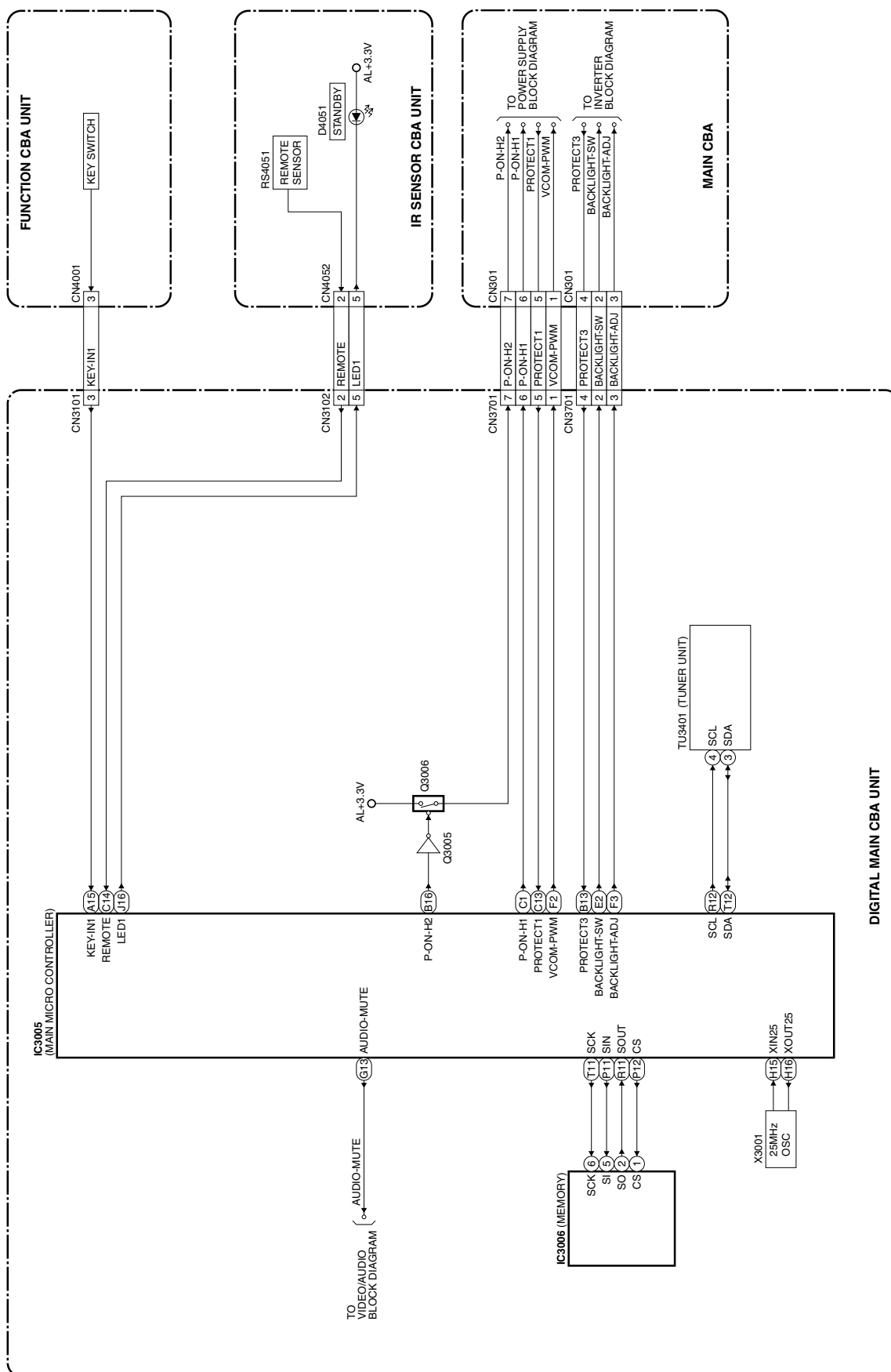
FLOW CHART NO.1



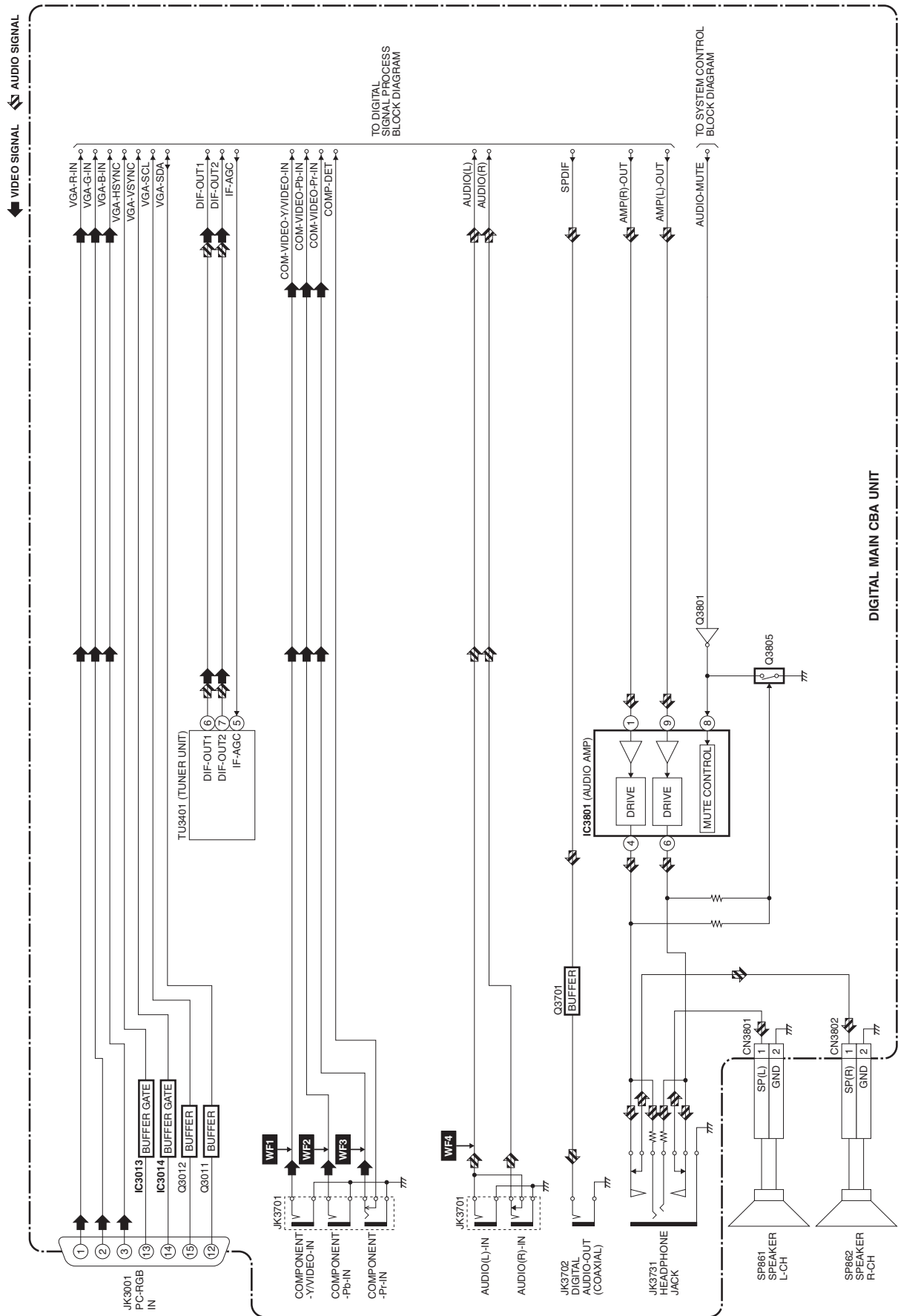
BLOCK DIAGRAMS

[TYPE A]

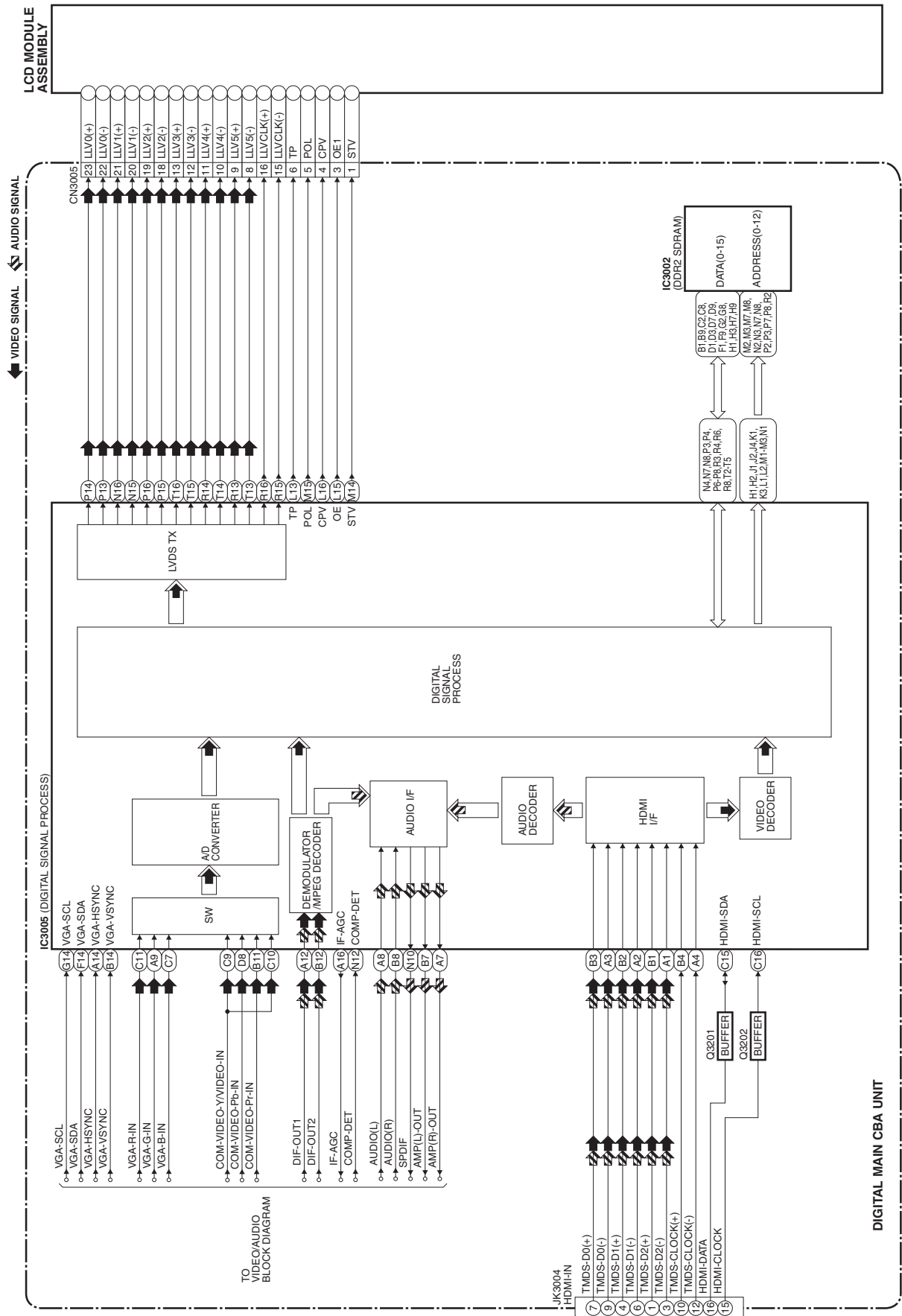
1. System Control Block Diagram



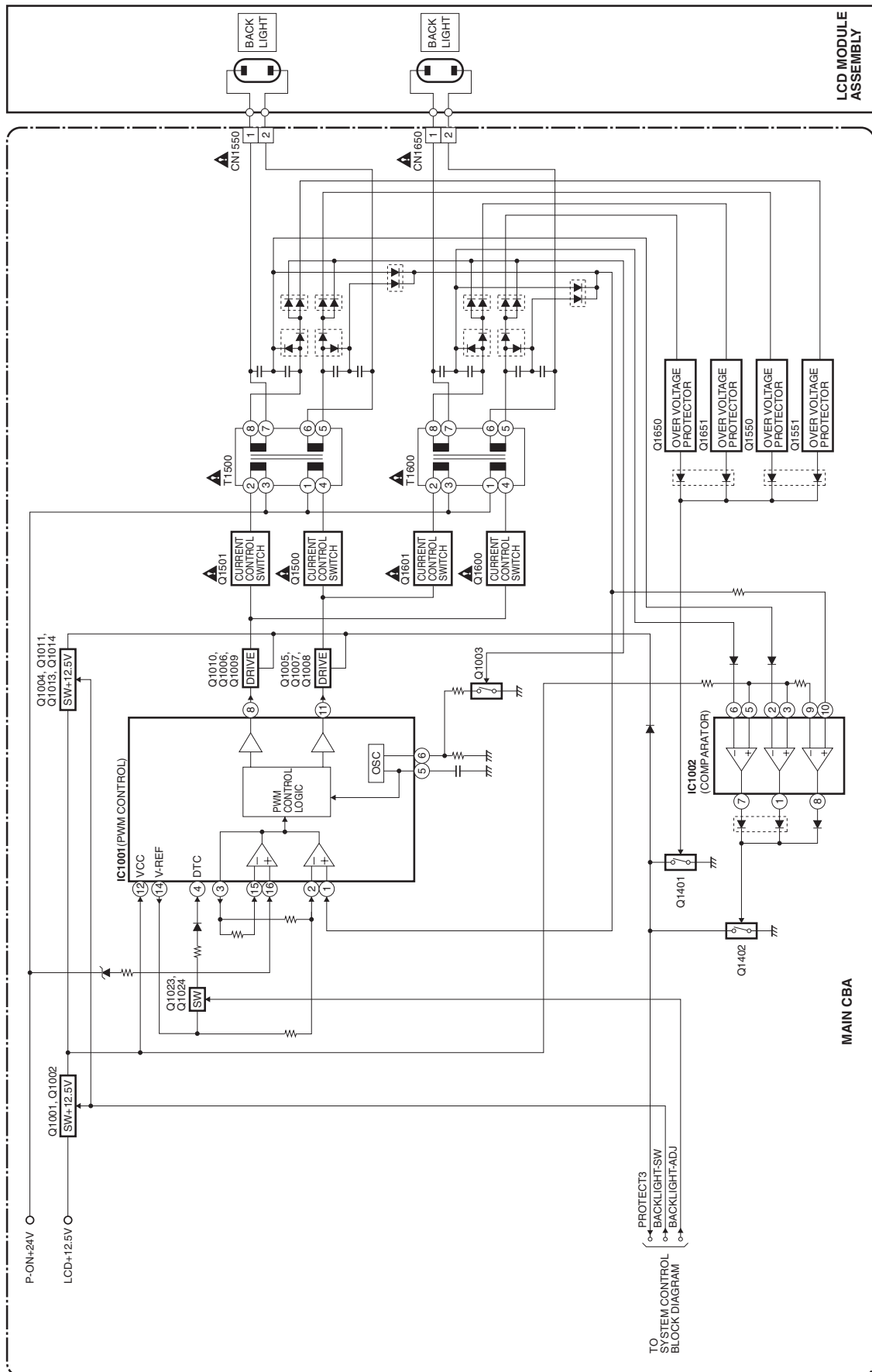
2. Video/Audio Block Diagram



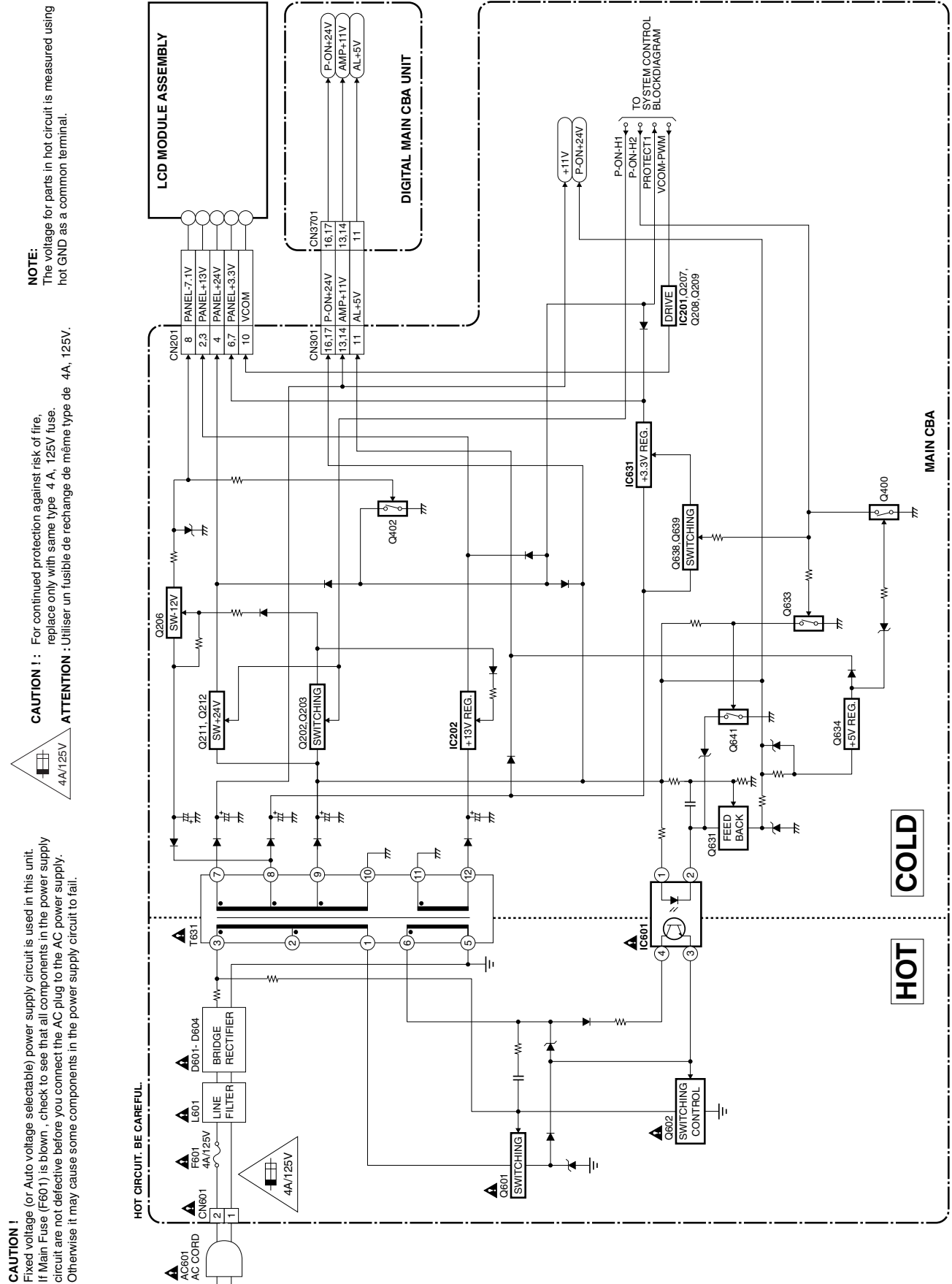
3. Digital Signal Process Block Diagram



4. Inverter Block Diagram

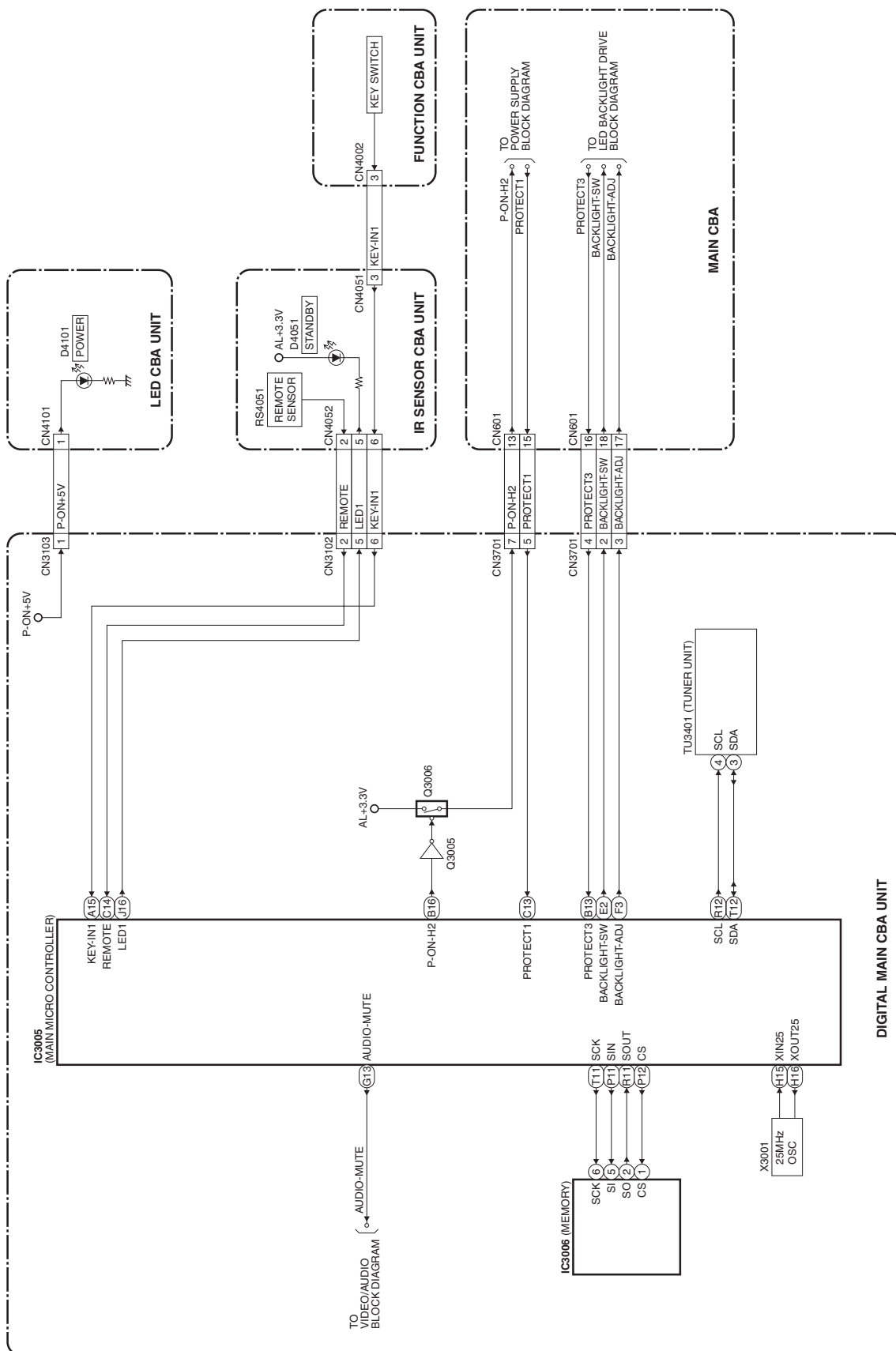


5. Power Supply Block Diagram

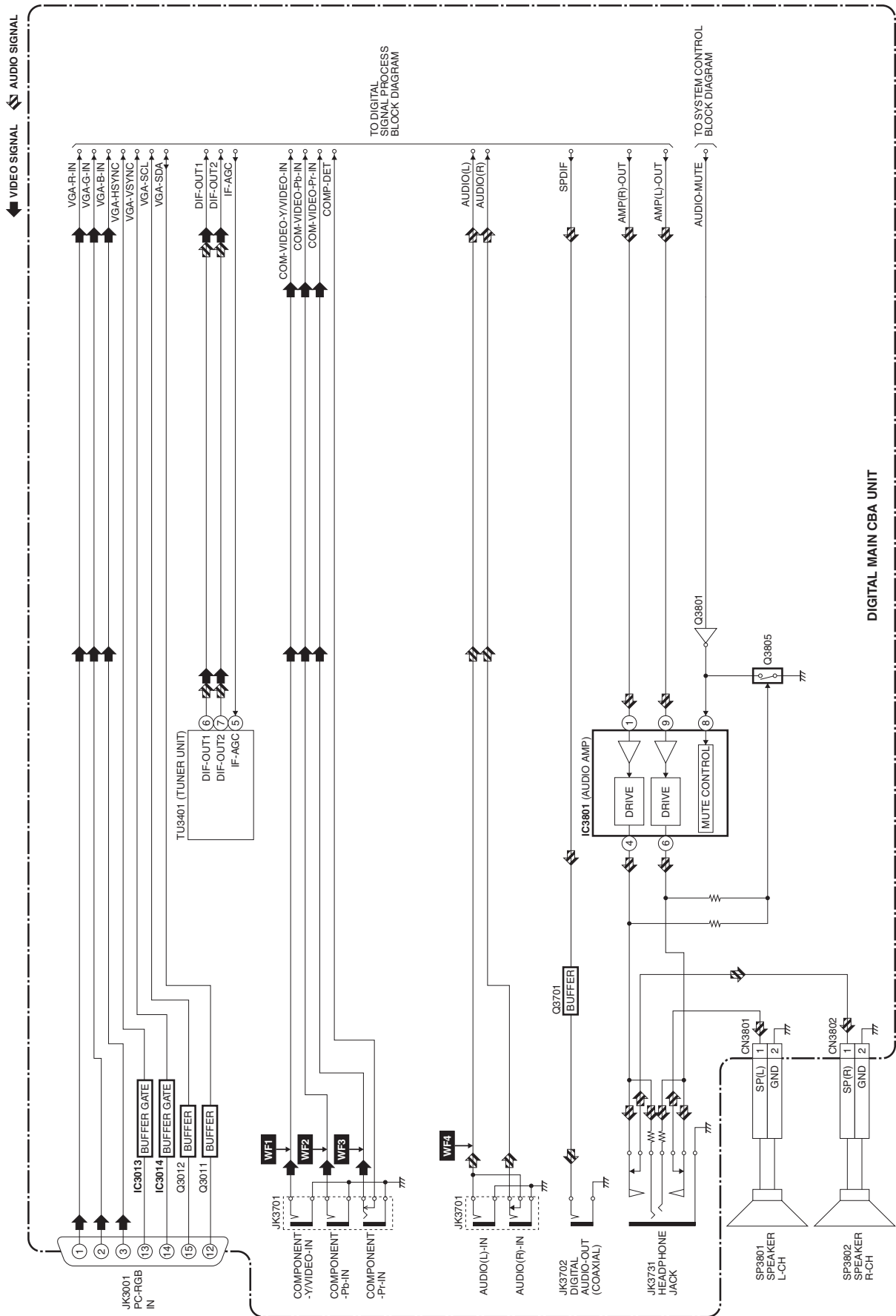


[TYPE B]

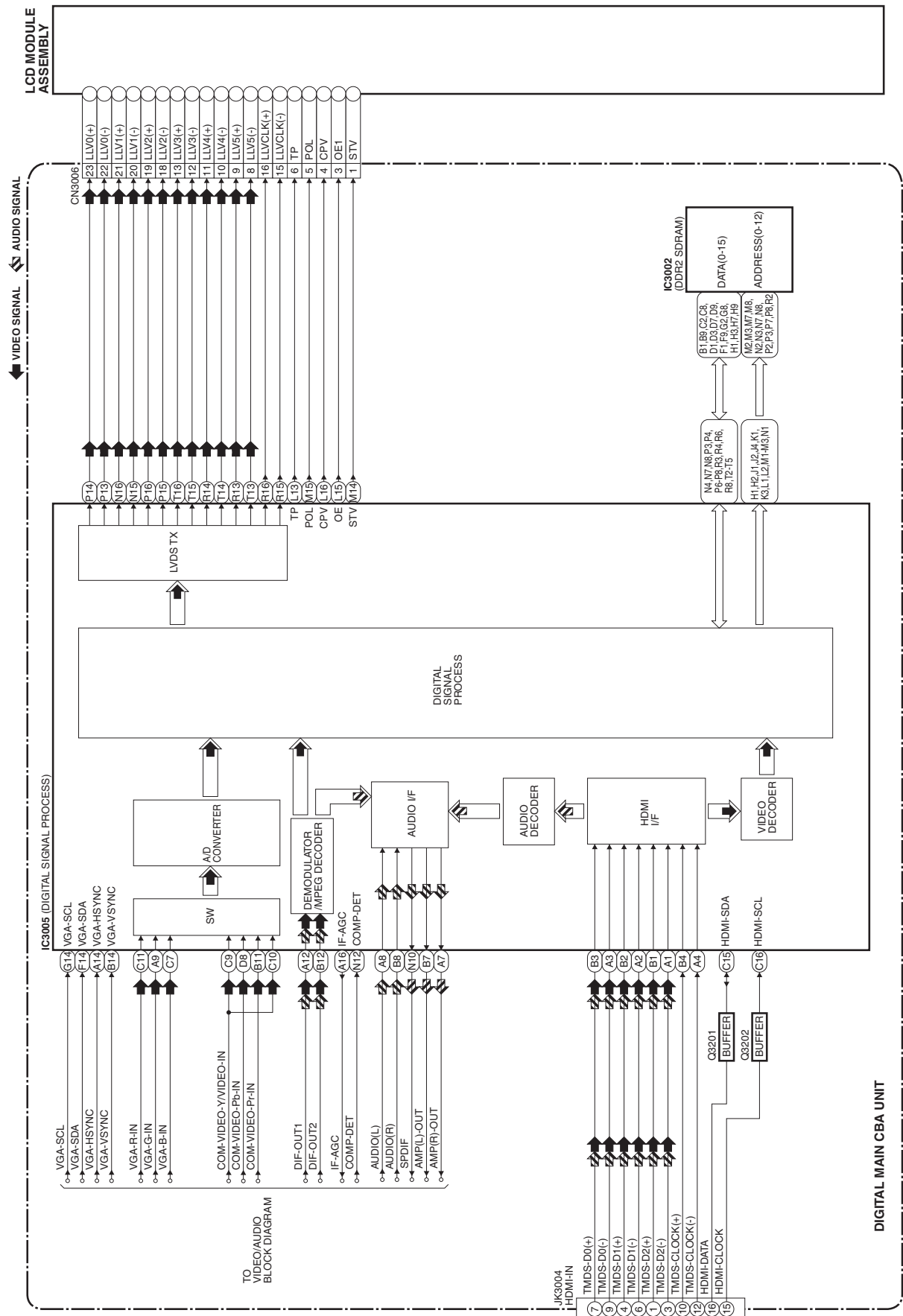
1. System Control Block Diagram



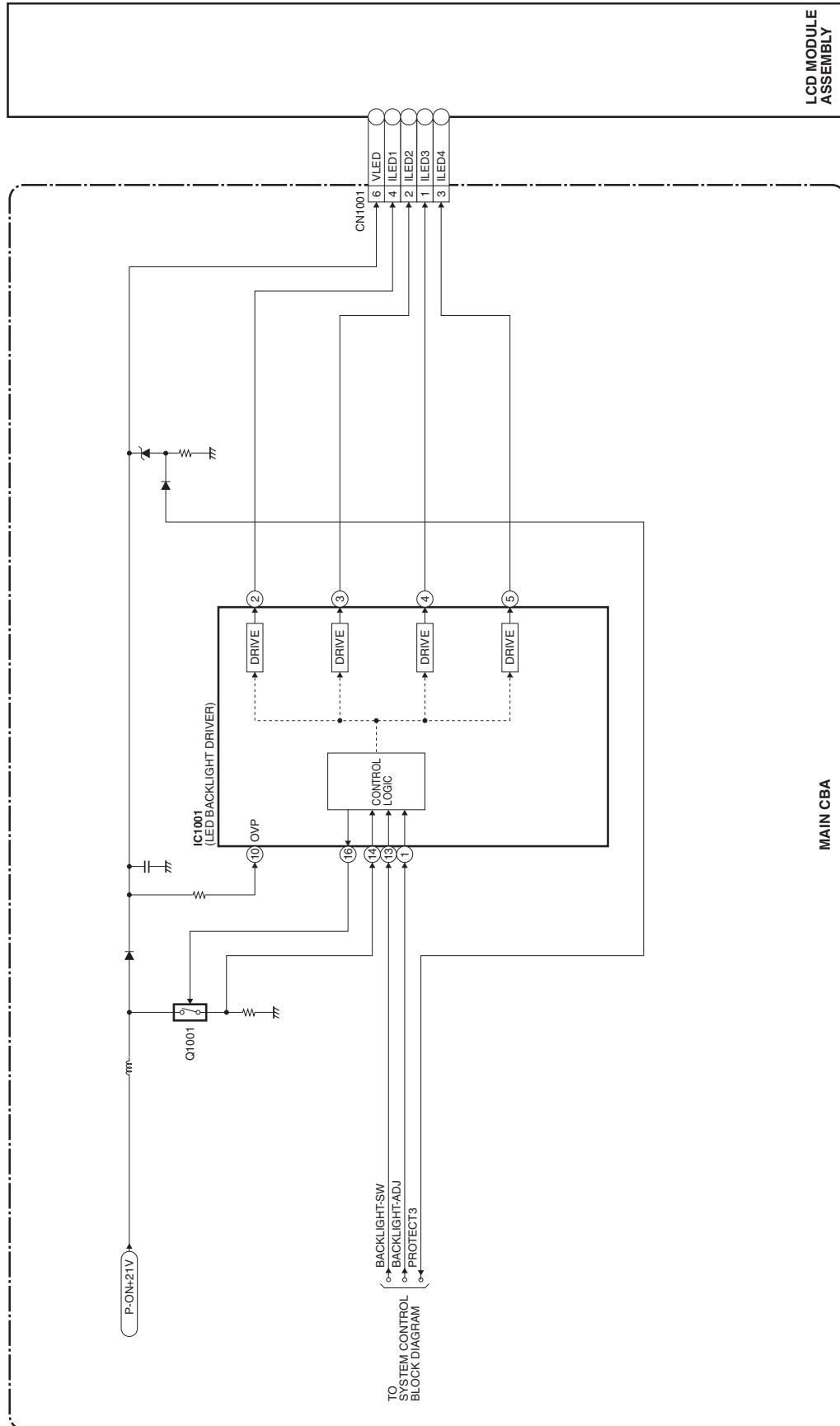
2. Video/Audio Block Diagram



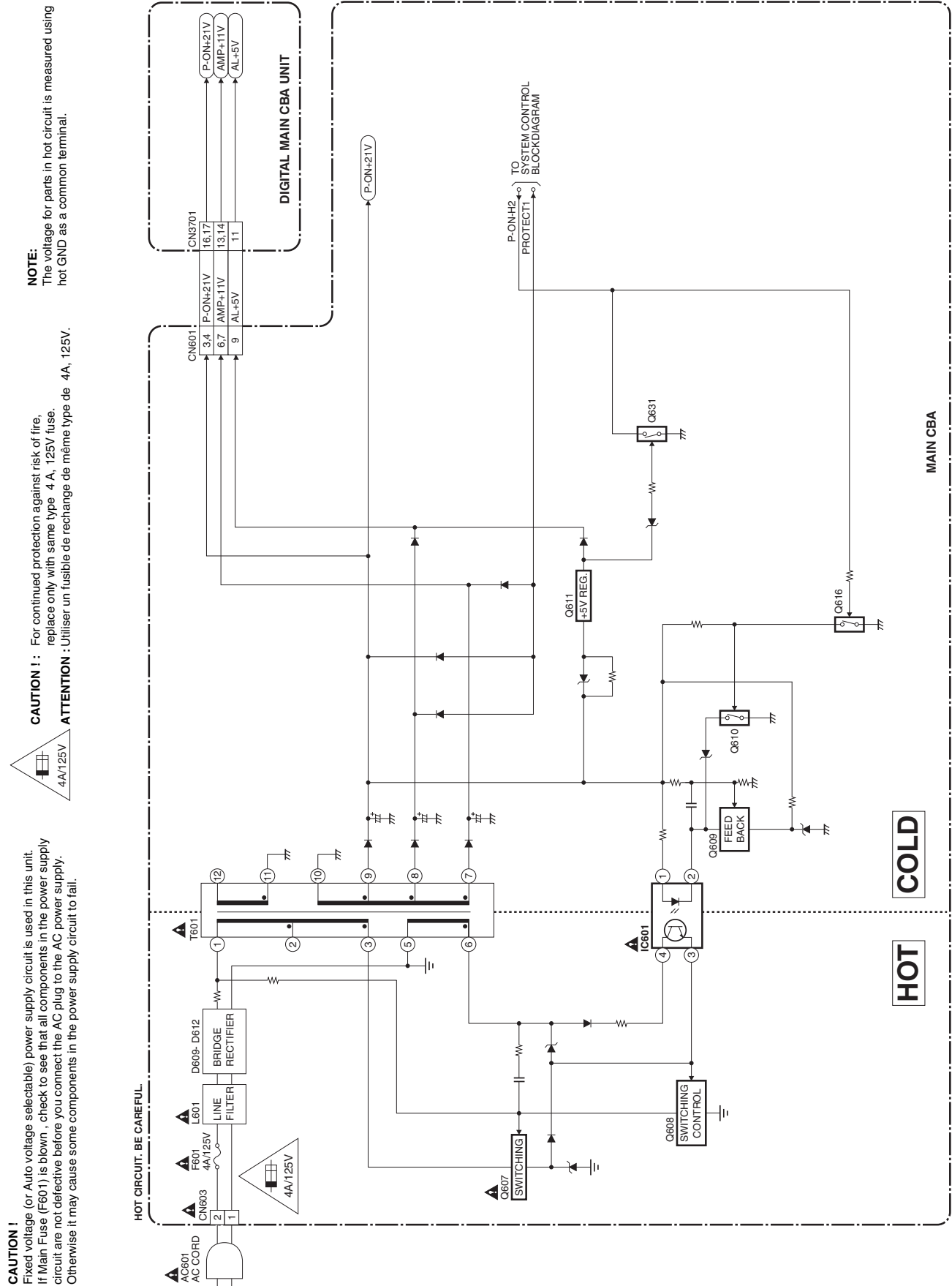
3. Digital Signal Process Block Diagram



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 FL11.1 chassis models. Thus some parts in detail illustrated on this schematic diagrams may vary depend on the model within the FL11.1 chassis. Please refer to the parts lists for each models.
7. The Circuit Board layout illustrated on this service manual is the latest version for this chassis at the moment of making this service manual. Depend on the mass production date of each model, the actual layout of each Board may differ slightly from this version.

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

1. CAUTION:

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

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

2. CAUTION:

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

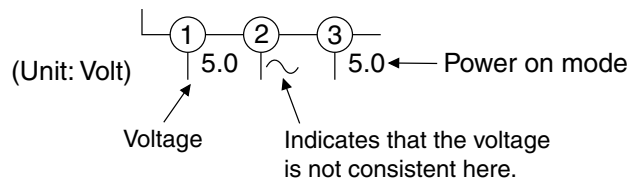
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

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

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

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

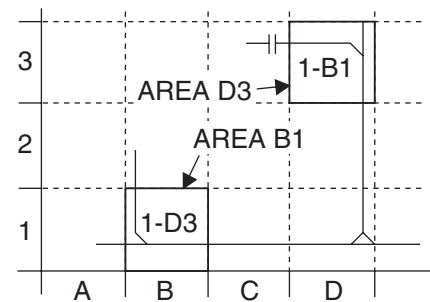


5. How to read converged lines

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

Examples:

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



6. Test Point Information

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

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

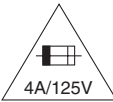
⊗ : Used to indicate a test point with no test pin.

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

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

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 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

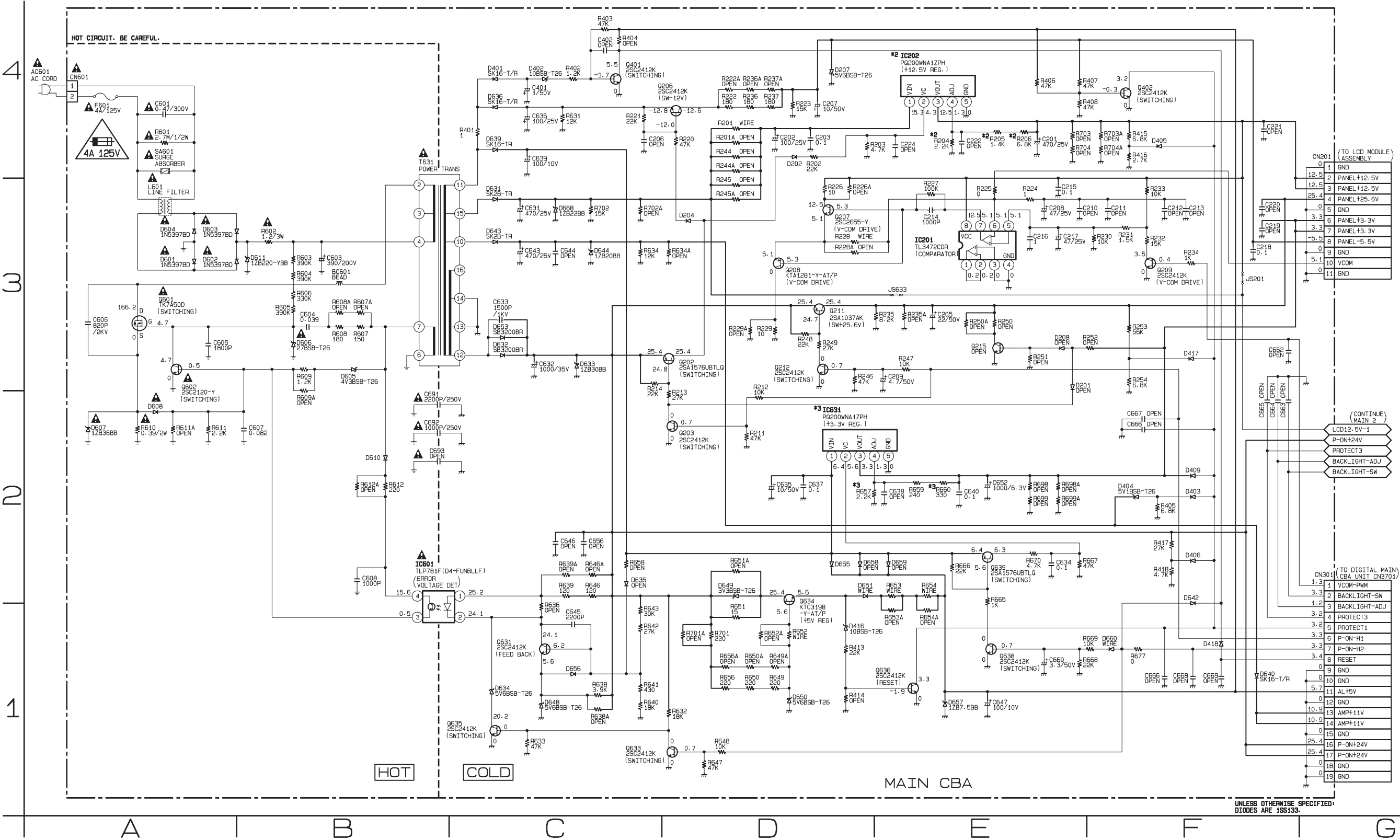
NOTE:
The voltage for parts in hot circuit is measured using
hot GND as a common terminal.

***2 NOTE**
You cannot mix components under Type 1 with
the ones under Type 2.
Refer to Parts List of LC220EM2(Serial No.: TH1).

	Type 1	Type 2
IC202	KIA78R000ZF-RTF/P	PQ200WNA1ZPH
R204	1k Ω	2.2k Ω
R205	820 Ω	1.4k Ω
R206	8.2k Ω	6.8k Ω

***3 NOTE**
You cannot mix components under Type 1 with
the ones under Type 2.
Refer to Parts List of LC220EM2(Serial No.: TH1).

	Type 1	Type 2
IC631	KIA78R000ZF-RTF/P	PQ200WNA1ZPH
R657	1k Ω	2.2k Ω
R660	1.4k Ω	330 Ω

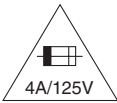


A vertical axis with tick marks and labels 1, 2, 3, and 4.



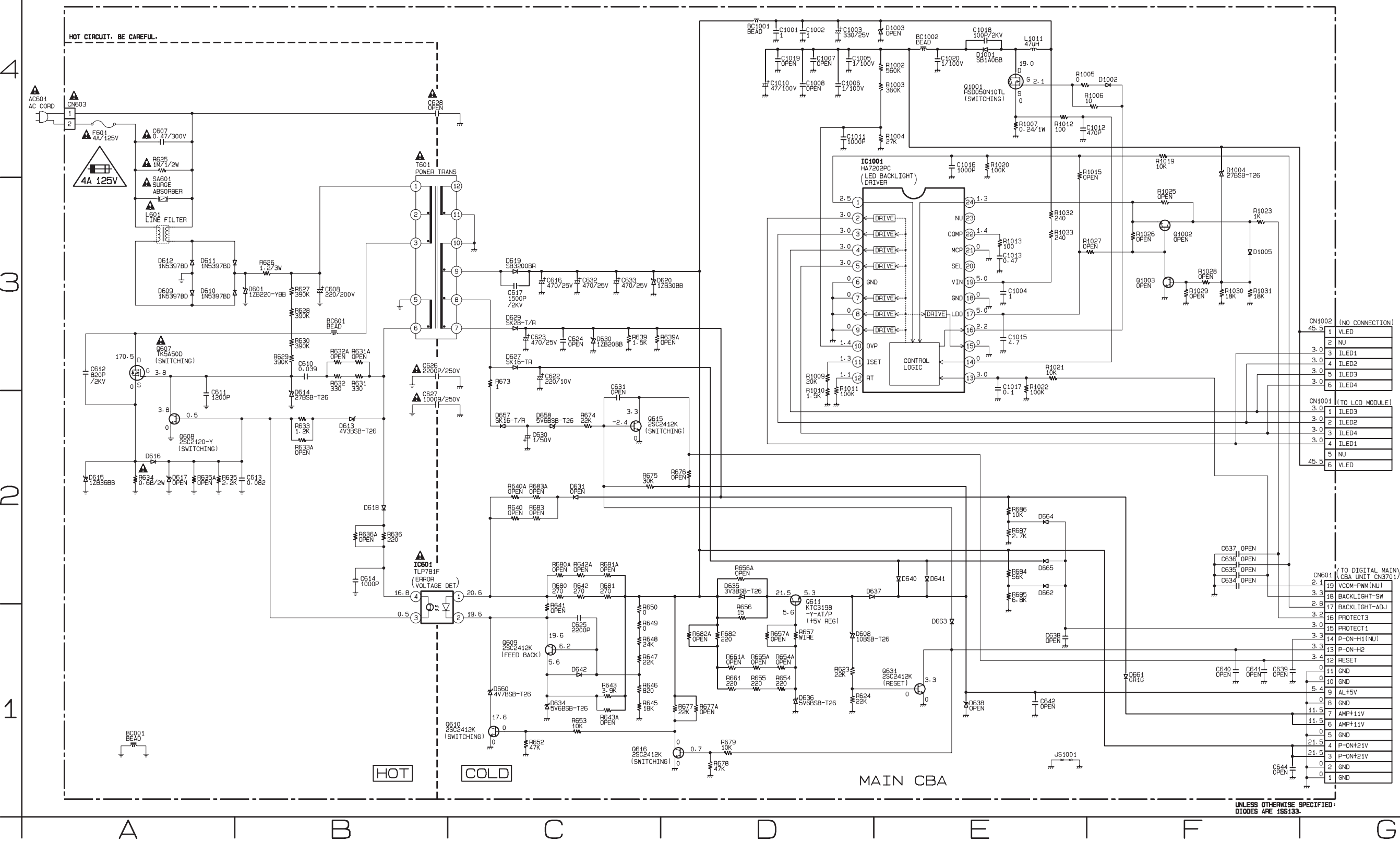
Main Schematic Diagram [TYPE B]

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.

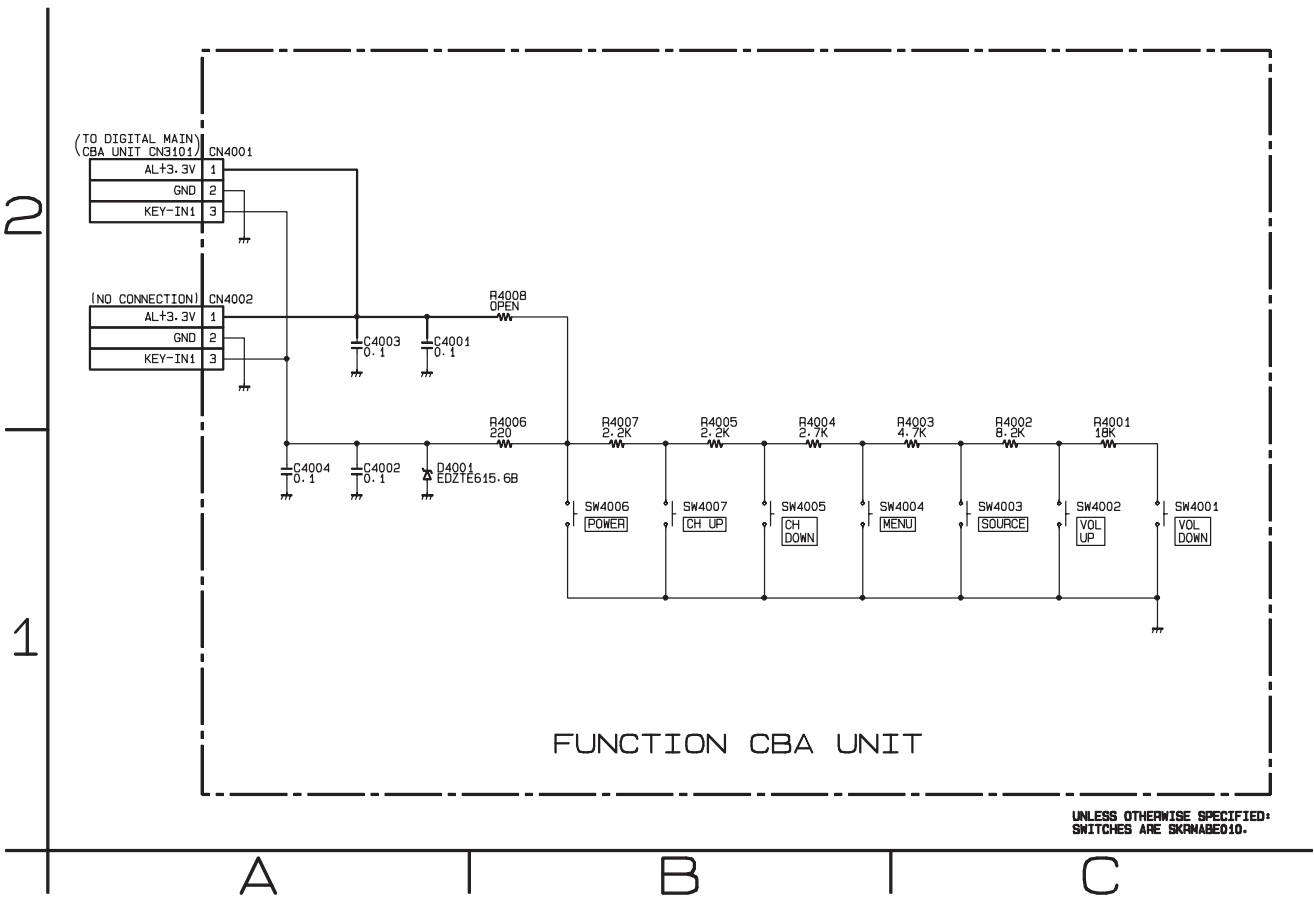


CAUTION ! : For continued protection against risk of fire,
replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

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

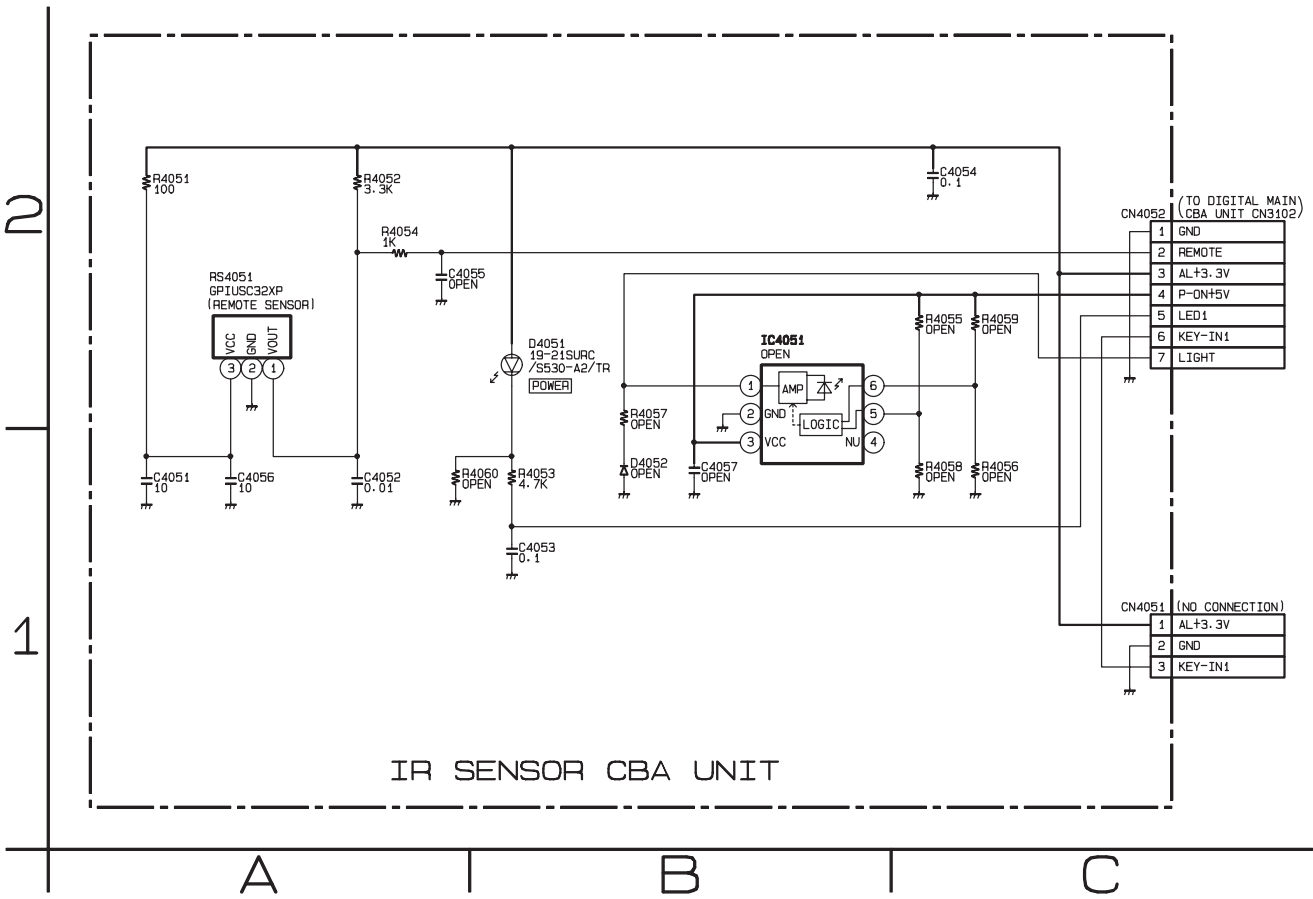


Function Schematic Diagram [TYPE A]



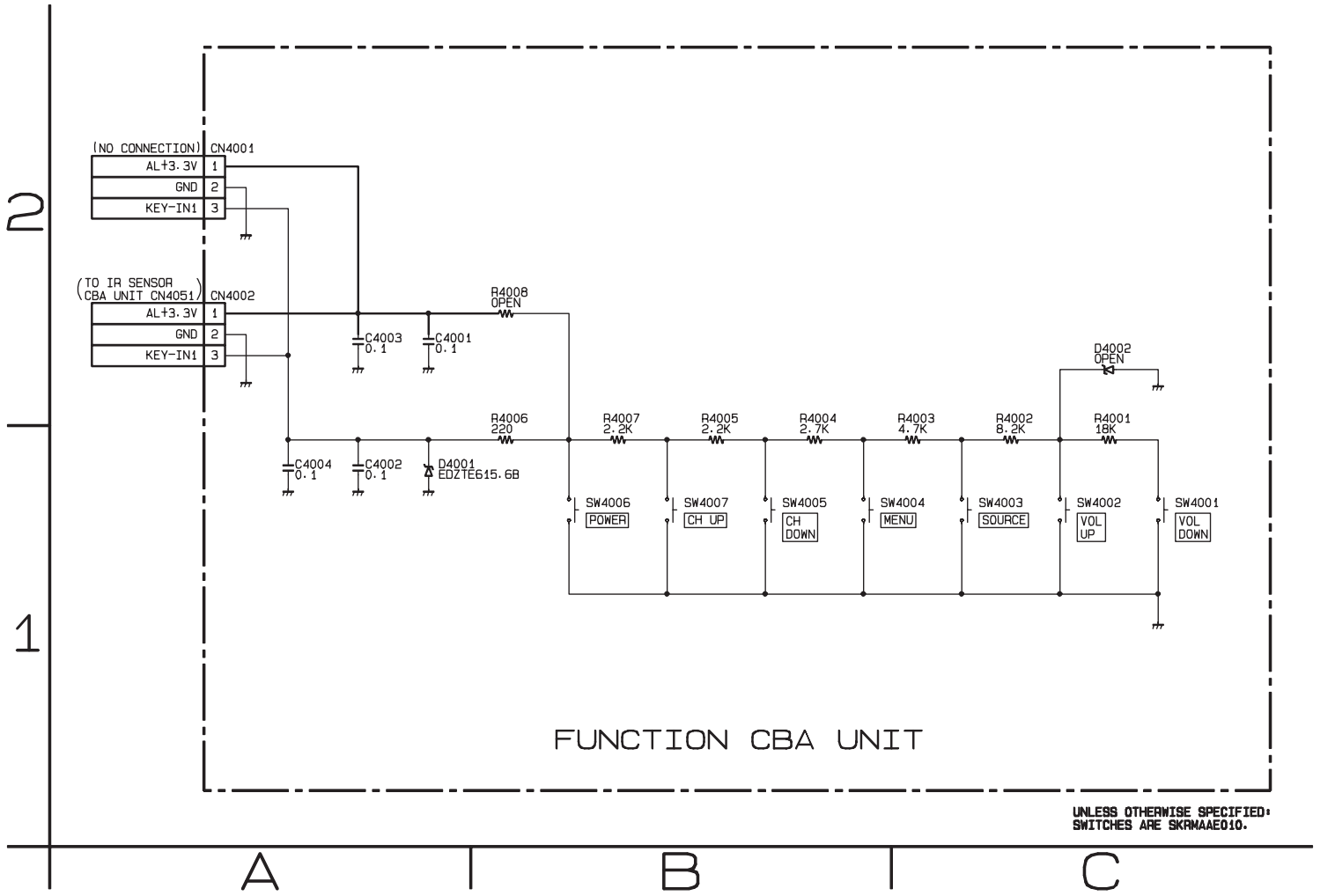
FL11.1SCFA

IR Sensor Schematic Diagram [TYPE A]



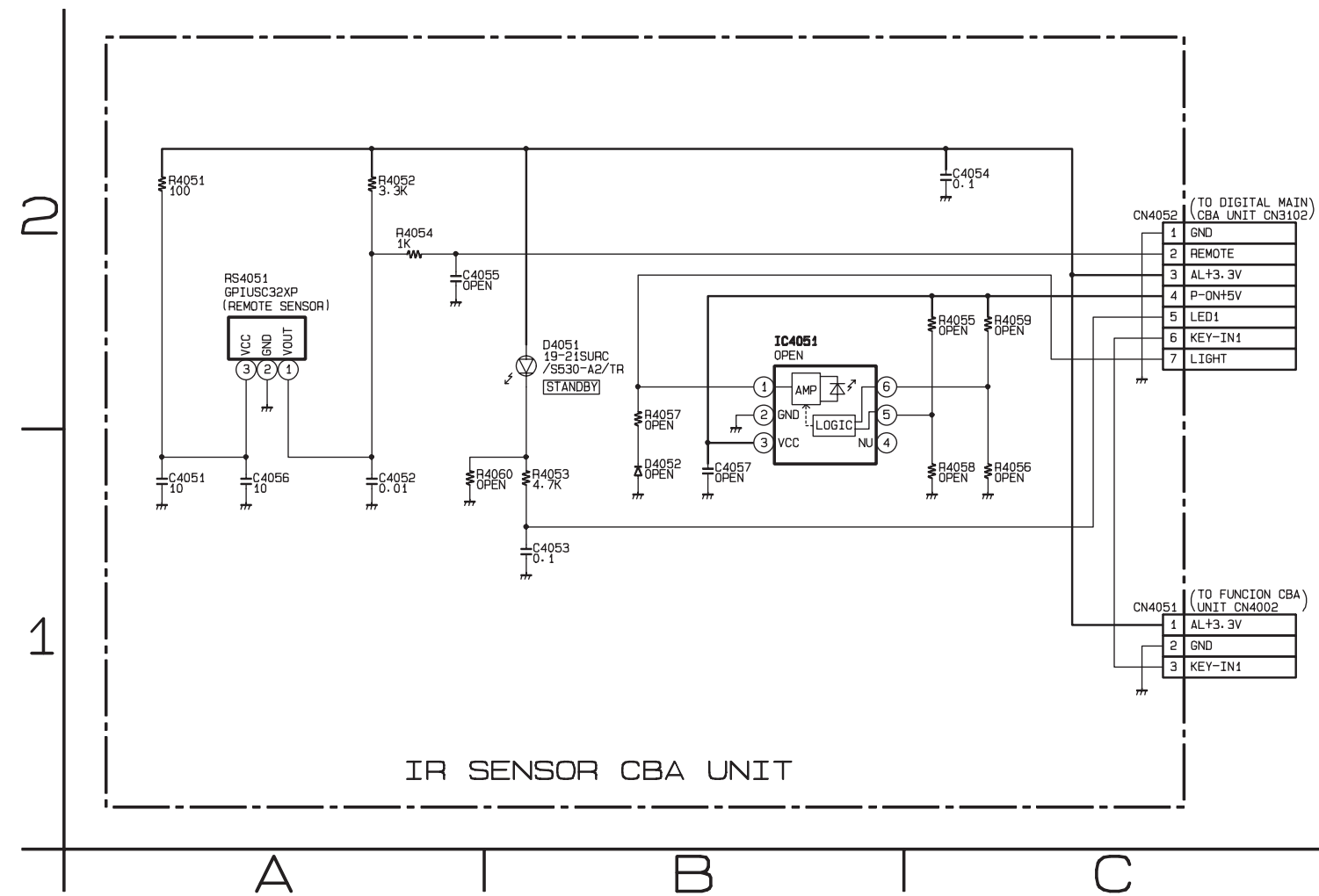
FL11.1SCIRA

Function Schematic Diagram [TYPE B]



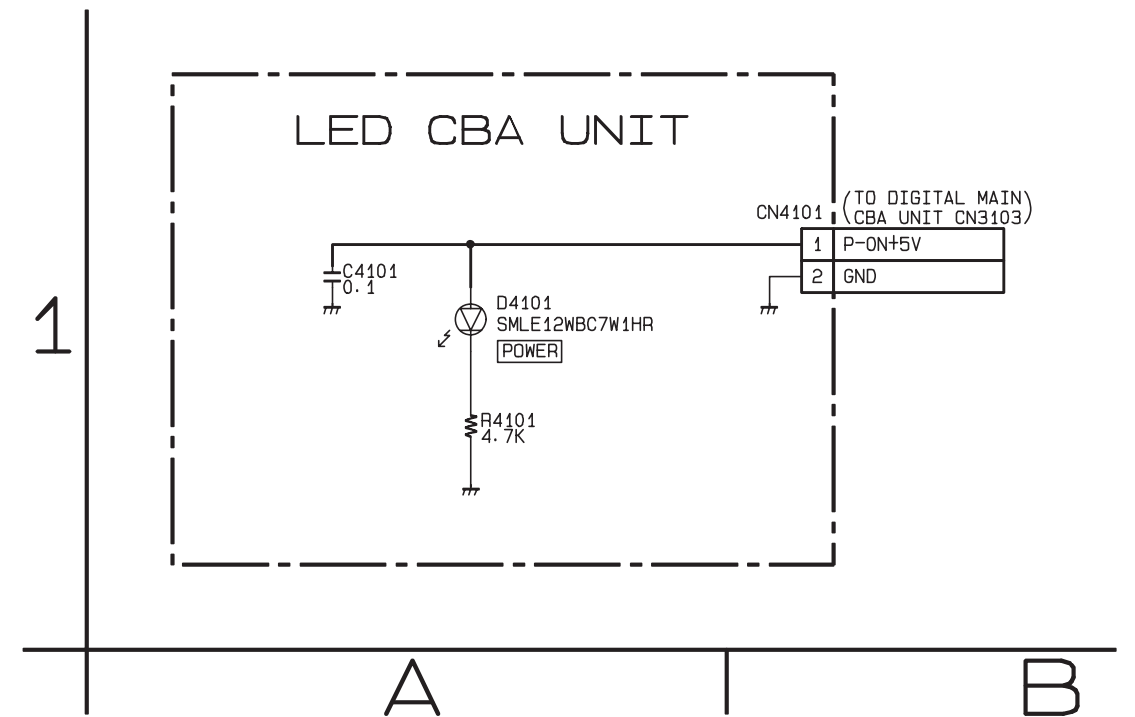
FL11.1SCFB

IR Sensor Schematic Diagram [TYPE B]



FL11.1SCIRB

LED Schematic Diagram [TYPE B]



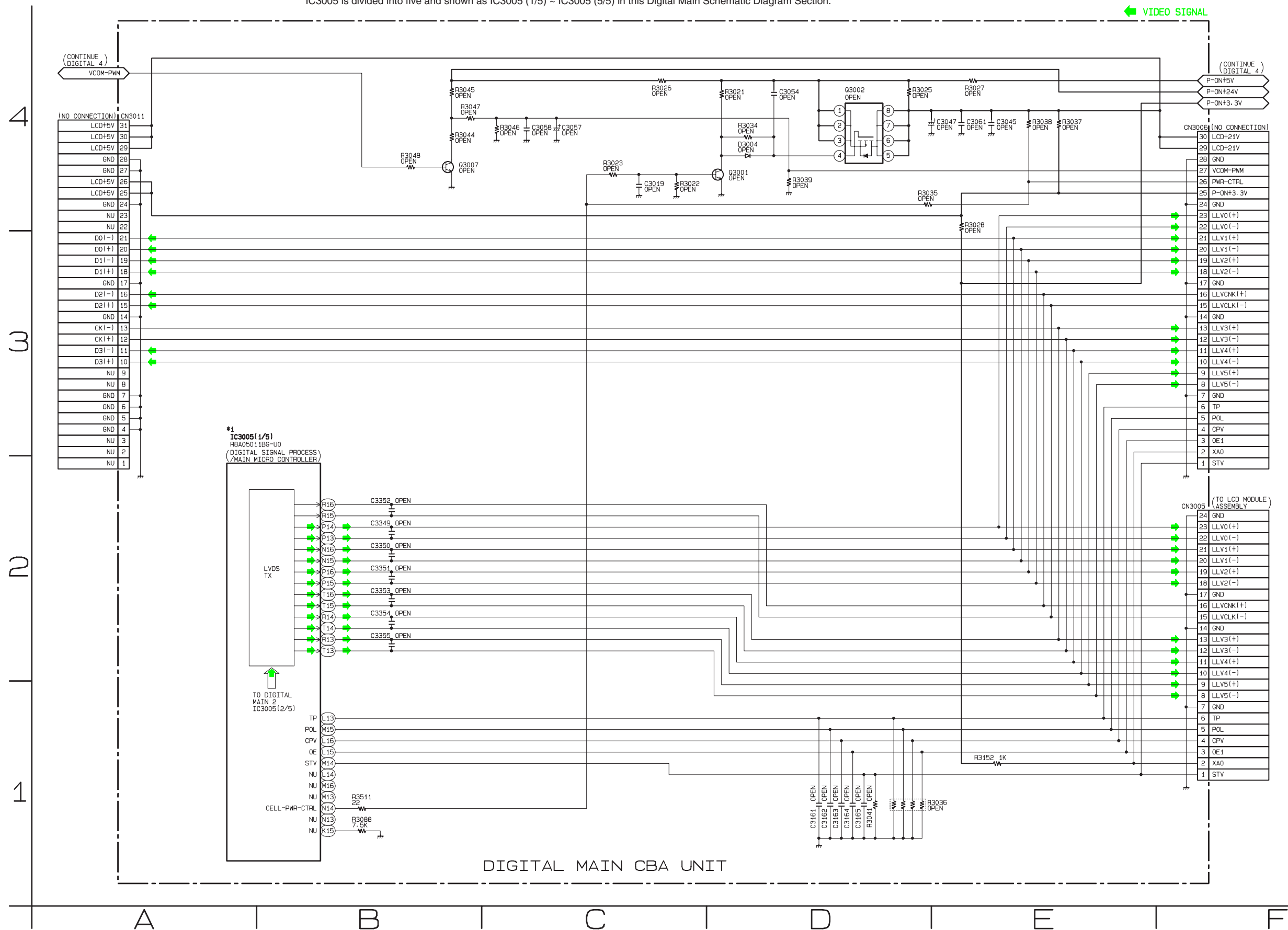
FL11.1SCLB

Digital Main 1 Schematic Diagram [TYPE A]

***1 NOTE:**

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

IC3005 is divided into five and shown as IC3005 (1/5) ~ IC3005 (5/5) in this Digital Main Schematic Diagram Section.

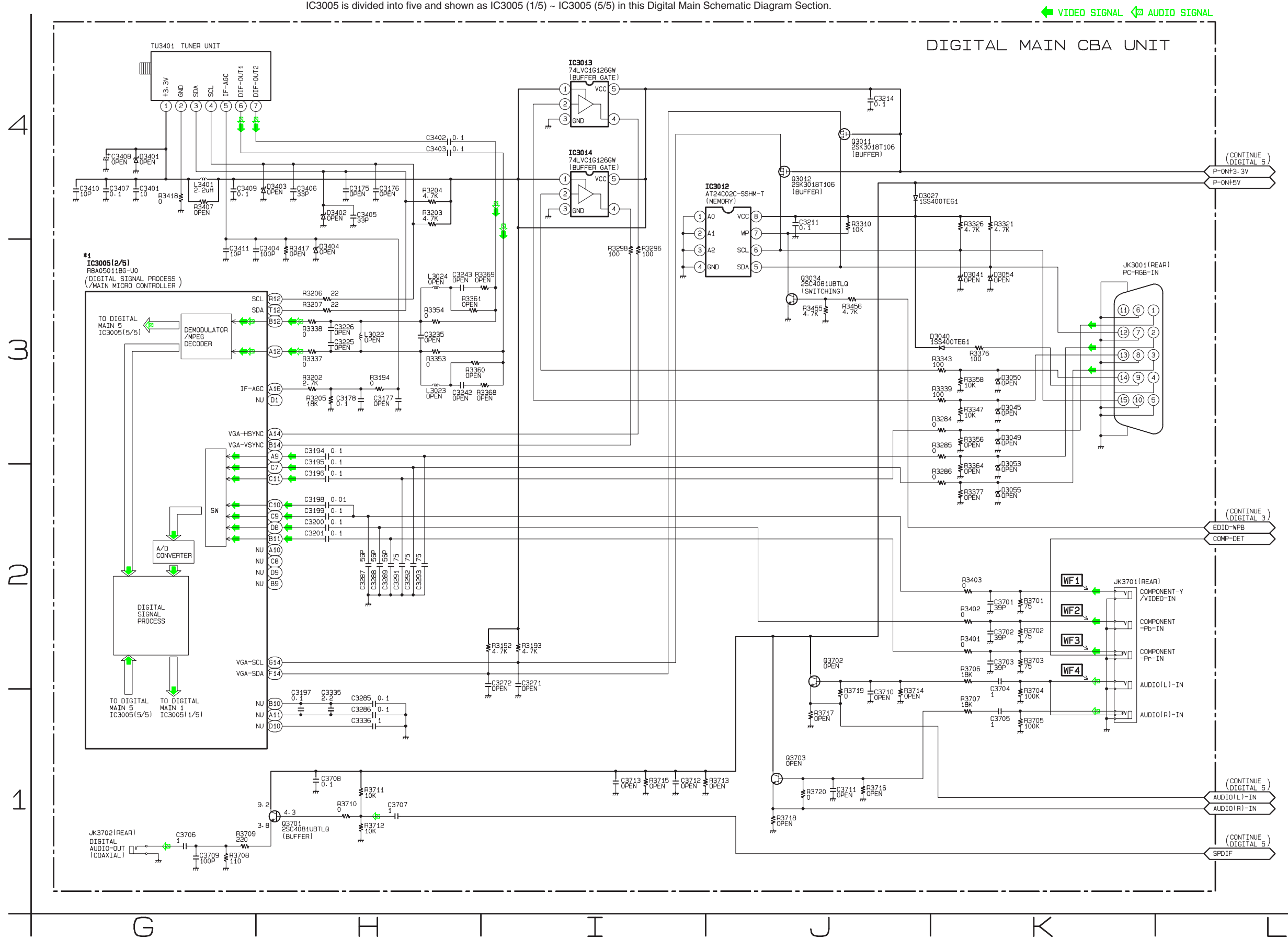


Digital Main 2 Schematic Diagram [TYPE A]

***1 NOTE:**

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

IC3005 is divided into five and shown as IC3005 (1/5) ~ IC3005 (5/5) in this Digital Main Schematic Diagram Section.



4

3

2



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

IC3005 is divided into five and shown as IC3005 (1/5) ~ IC3005 (5/5) in this Digital Main Schematic Diagram Section.

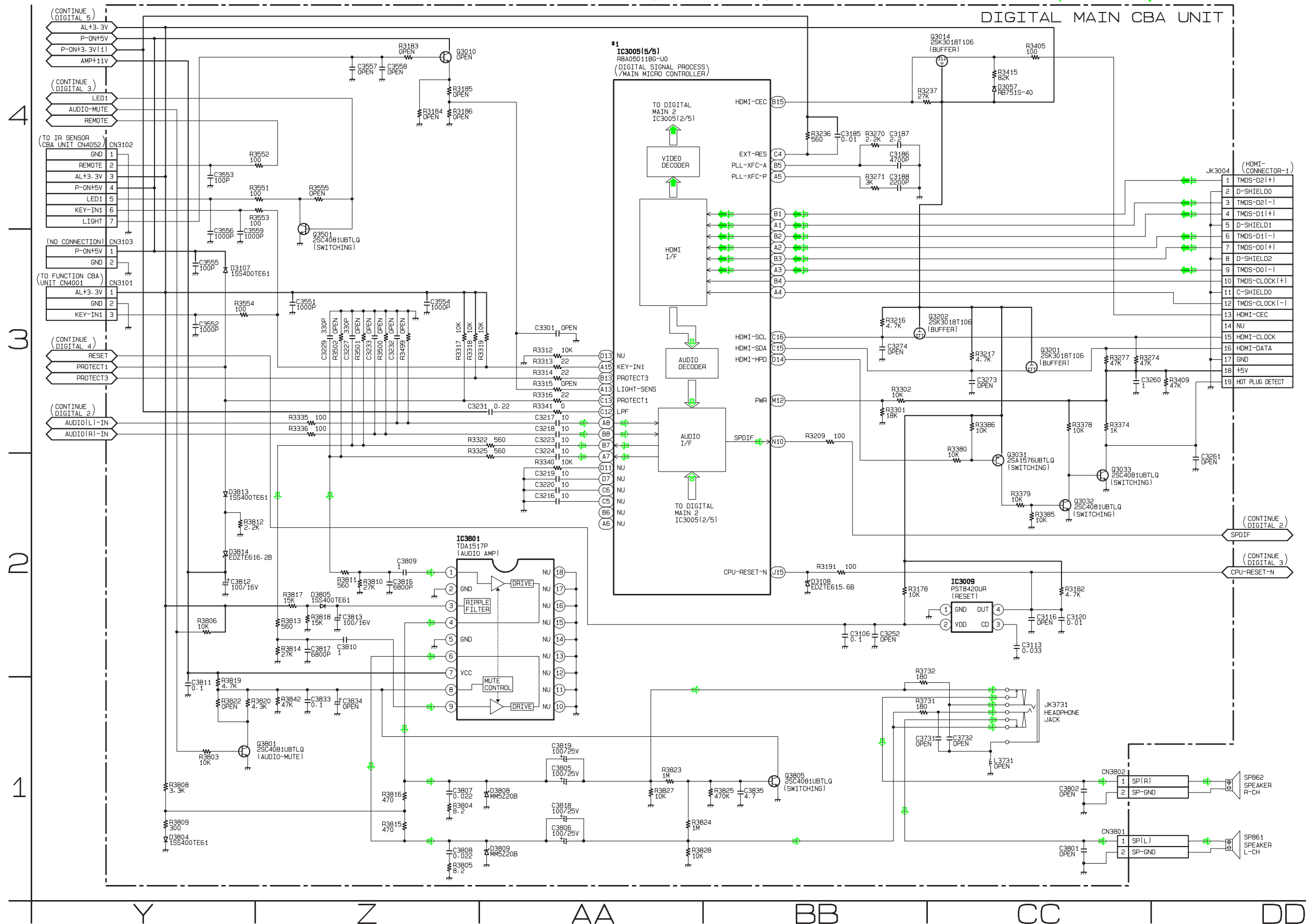


Digital Main 5 Schematic Diagram [TYPE A]

***1 NOTE:**

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

IC3005 is divided into five and shown as IC3005 (1/5) ~ IC3005 (5/5) in this Digital Main Schematic Diagram Section.

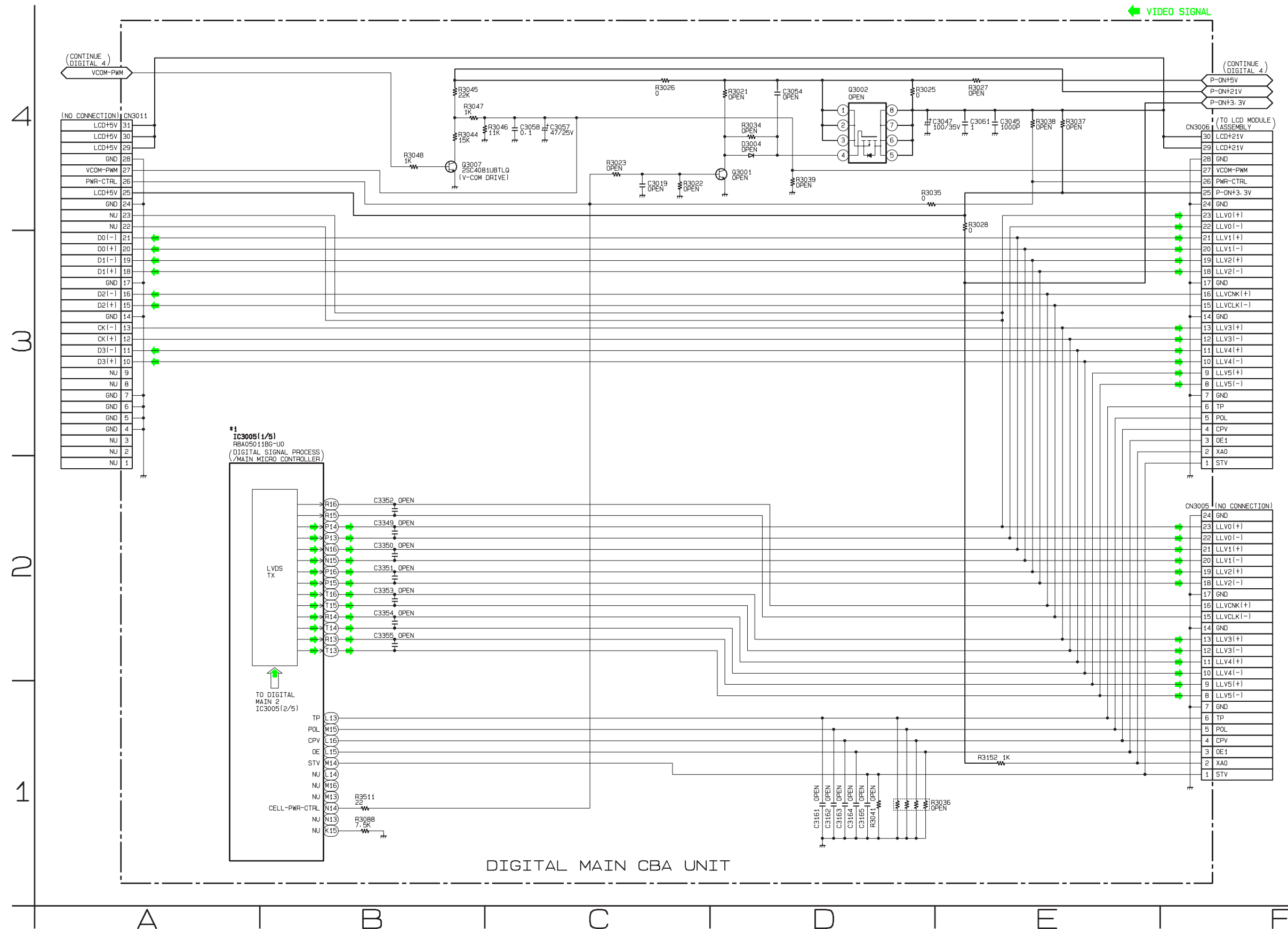


Digital Main 1 Schematic Diagram [TYPE B]

***1 NOTE:**

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

IC3005 is divided into five and shown as IC3005 (1/5) ~ IC3005 (5/5) in this Digital Main Schematic Diagram Section.

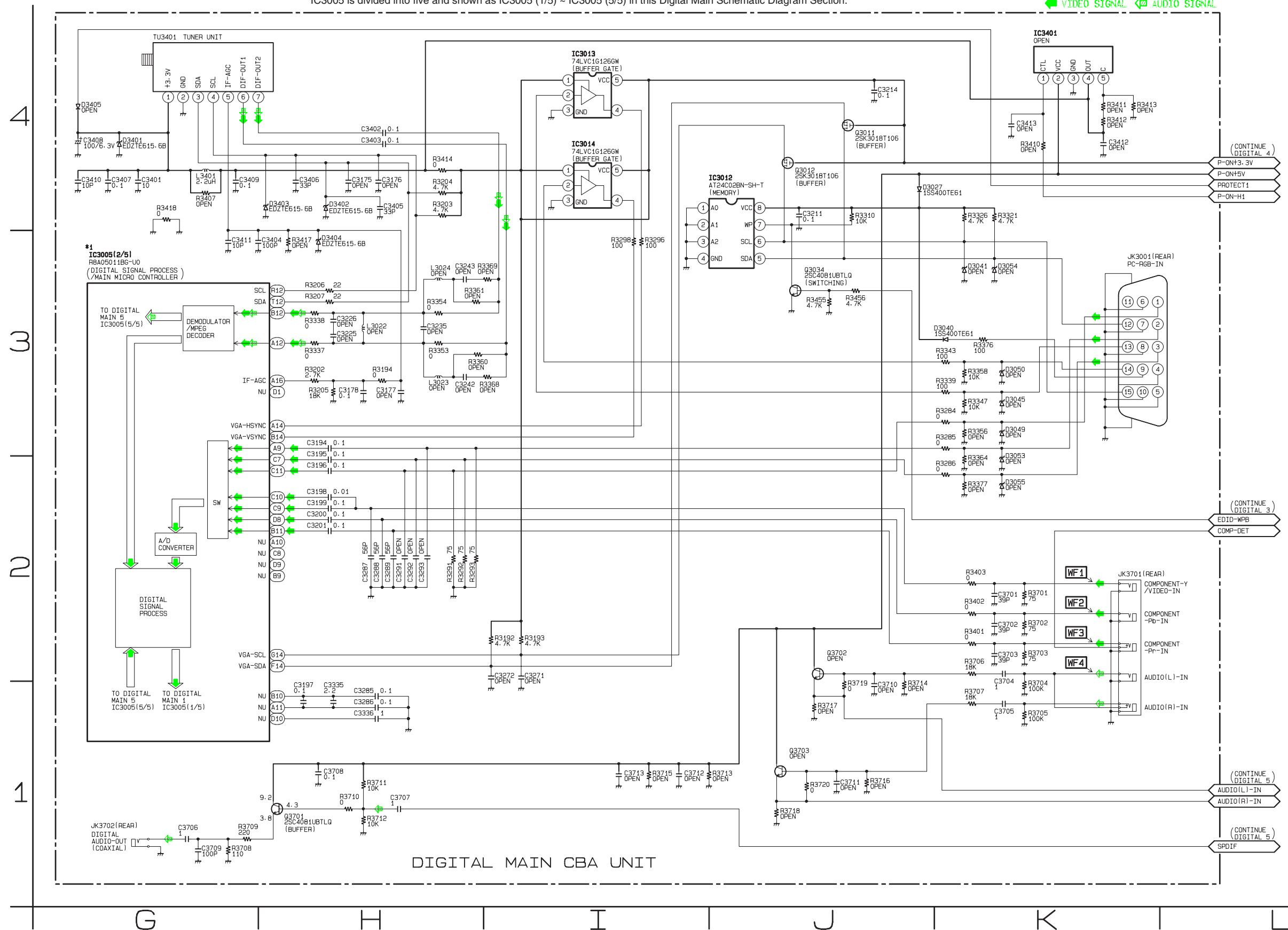


Digital Main 2 Schematic Diagram [TYPE B]

***1 NOTE:**

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

IC3005 is divided into five and shown as IC3005 (1/5) ~ IC3005 (5/5) in this Digital Main Schematic Diagram Section.



4

3

—

2

1

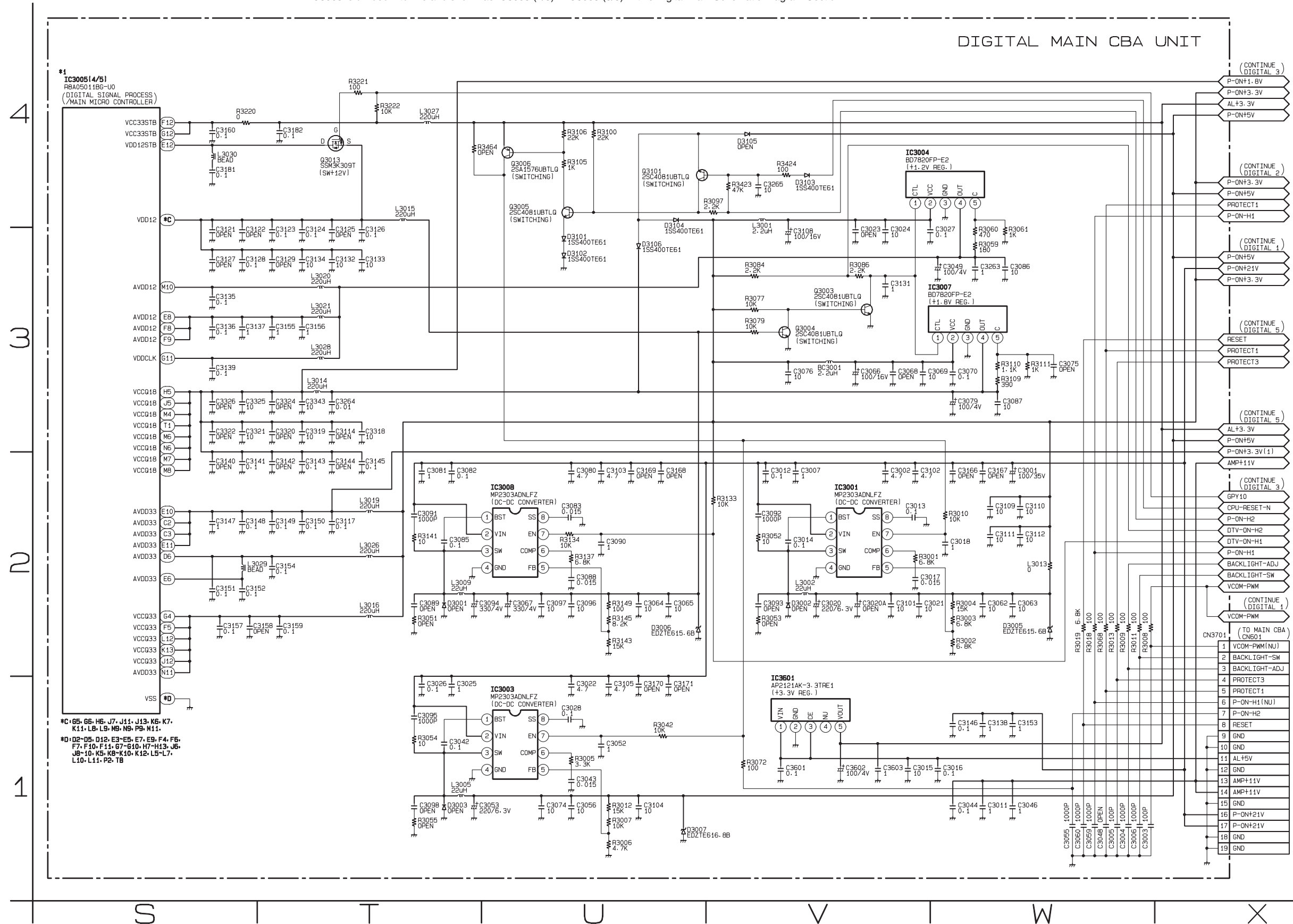


Digital Main 4 Schematic Diagram [TYPE B]

***1 NOTE:**

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

IC3005 is divided into five and shown as IC3005 (1/5) ~ IC3005 (5/5) in this Digital Main Schematic Diagram Section.

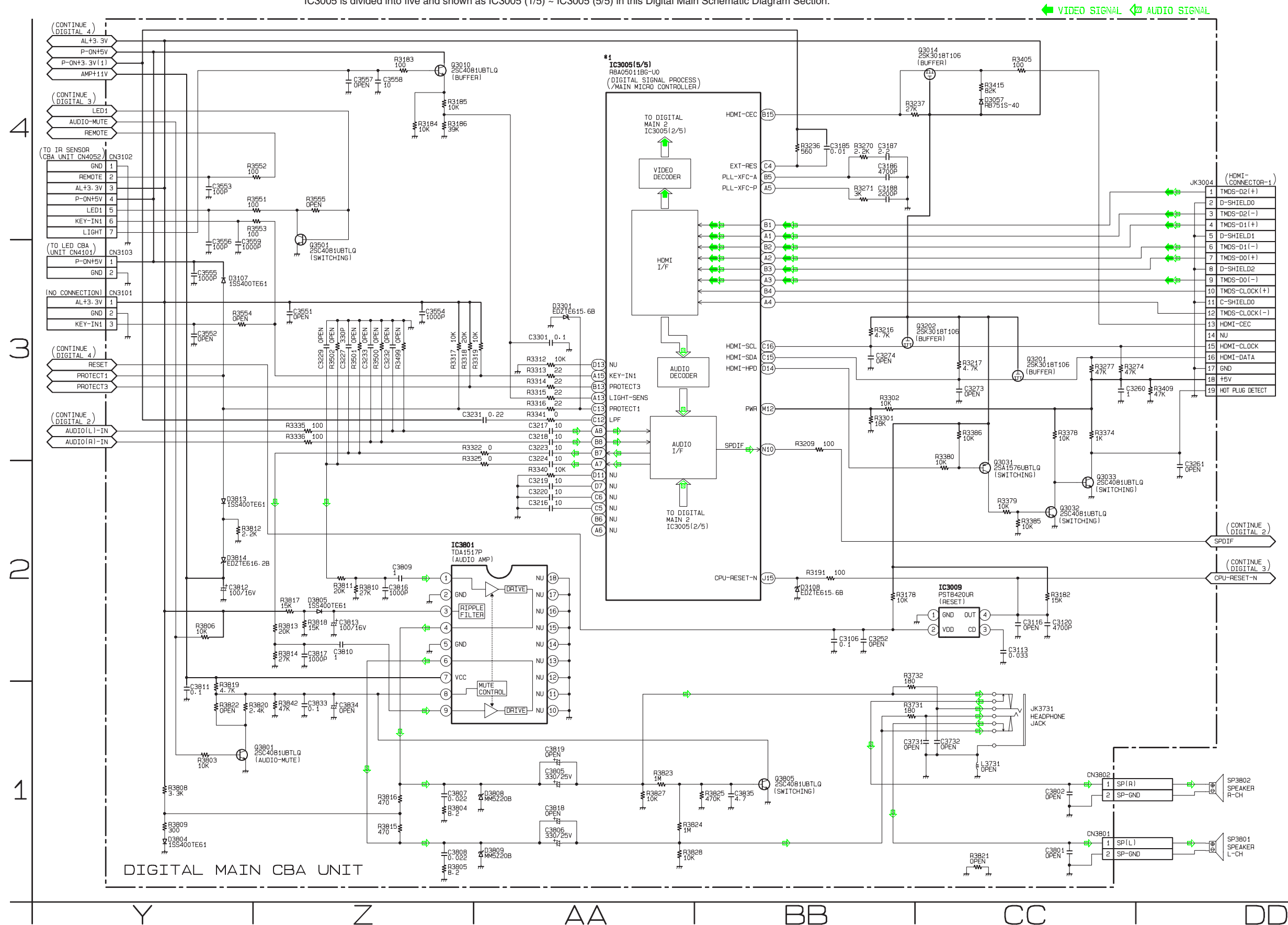


Digital Main 5 Schematic Diagram [TYPE B]

***1 NOTE:**

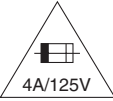
The order of pins shown in this diagram is different from that of actual IC3005.

IC3005 is divided into five and shown as IC3005 (1/5) ~ IC3005 (5/5) in this Digital Main Schematic Diagram Section.



Main CBA Top View [TYPE A]

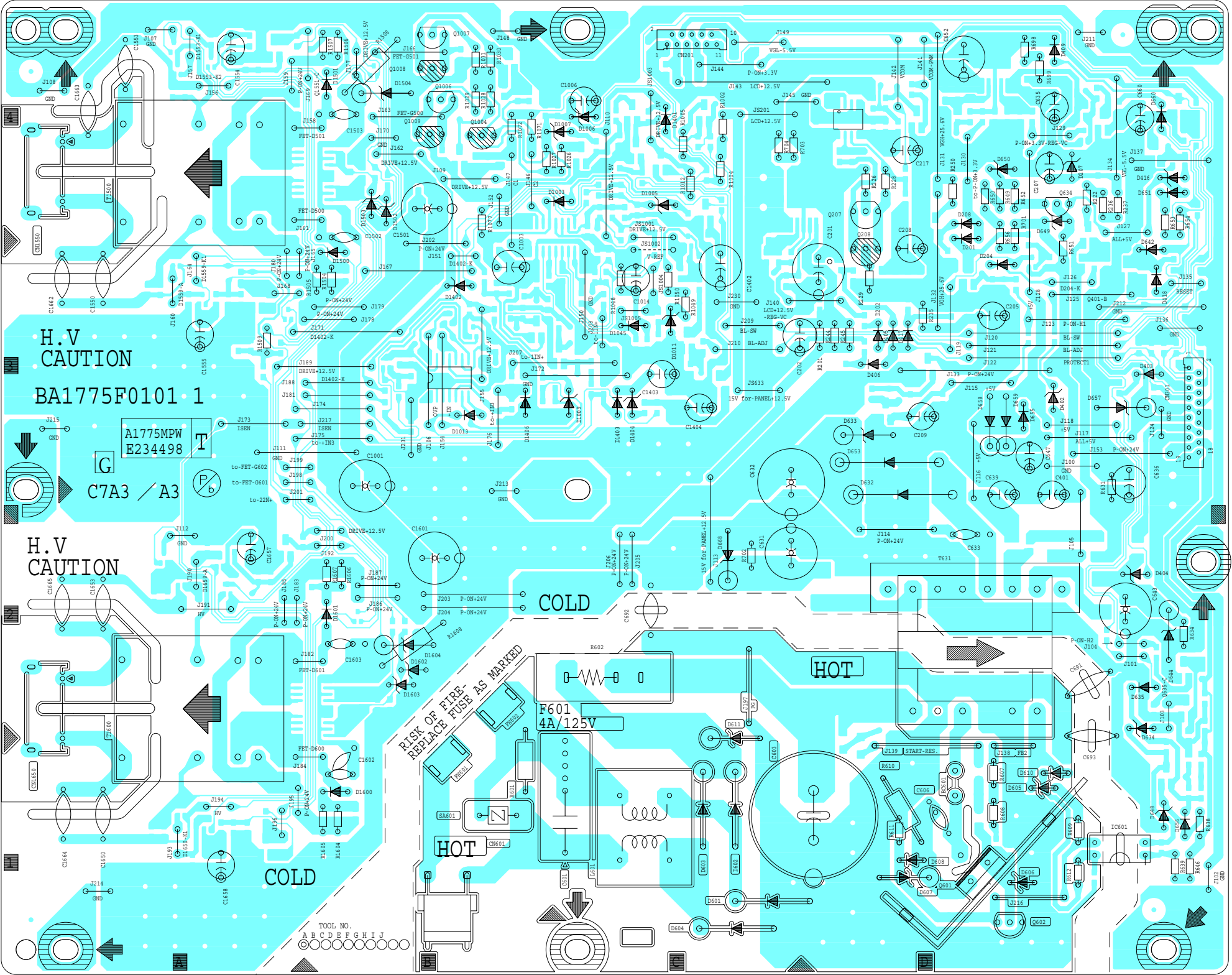
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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



CAUTION ! : For continued protection against risk of fire,
replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

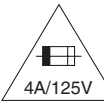
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used when repairing.
Also, in order to have the ability to increase the input slowly, when troubleshooting this type of power supply circuit, a variable isolation transformer is required.

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



Main CBA Bottom View [TYPE A]

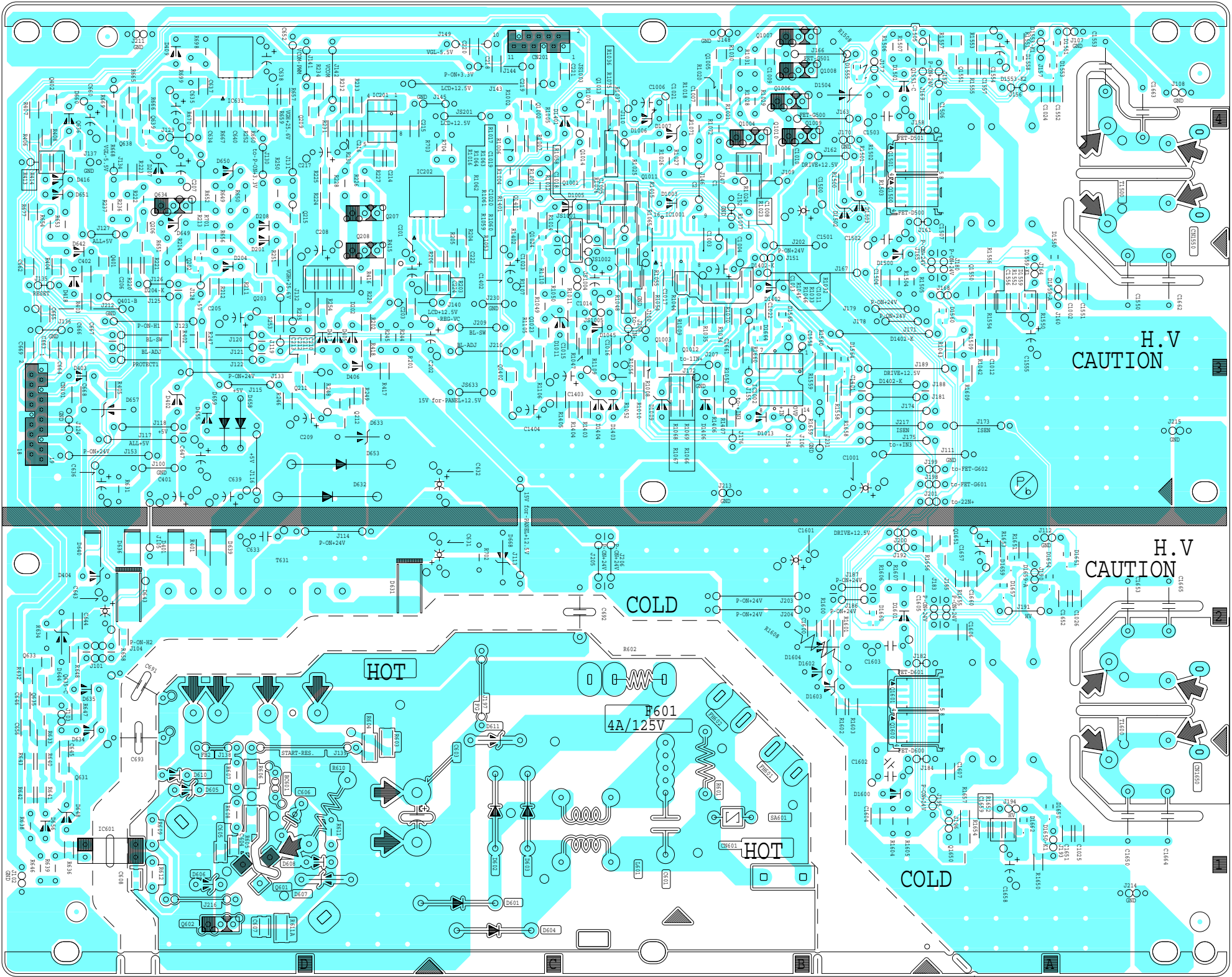
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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



CAUTION ! : For continued protection against risk of fire,
replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

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.

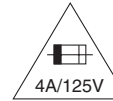
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



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.



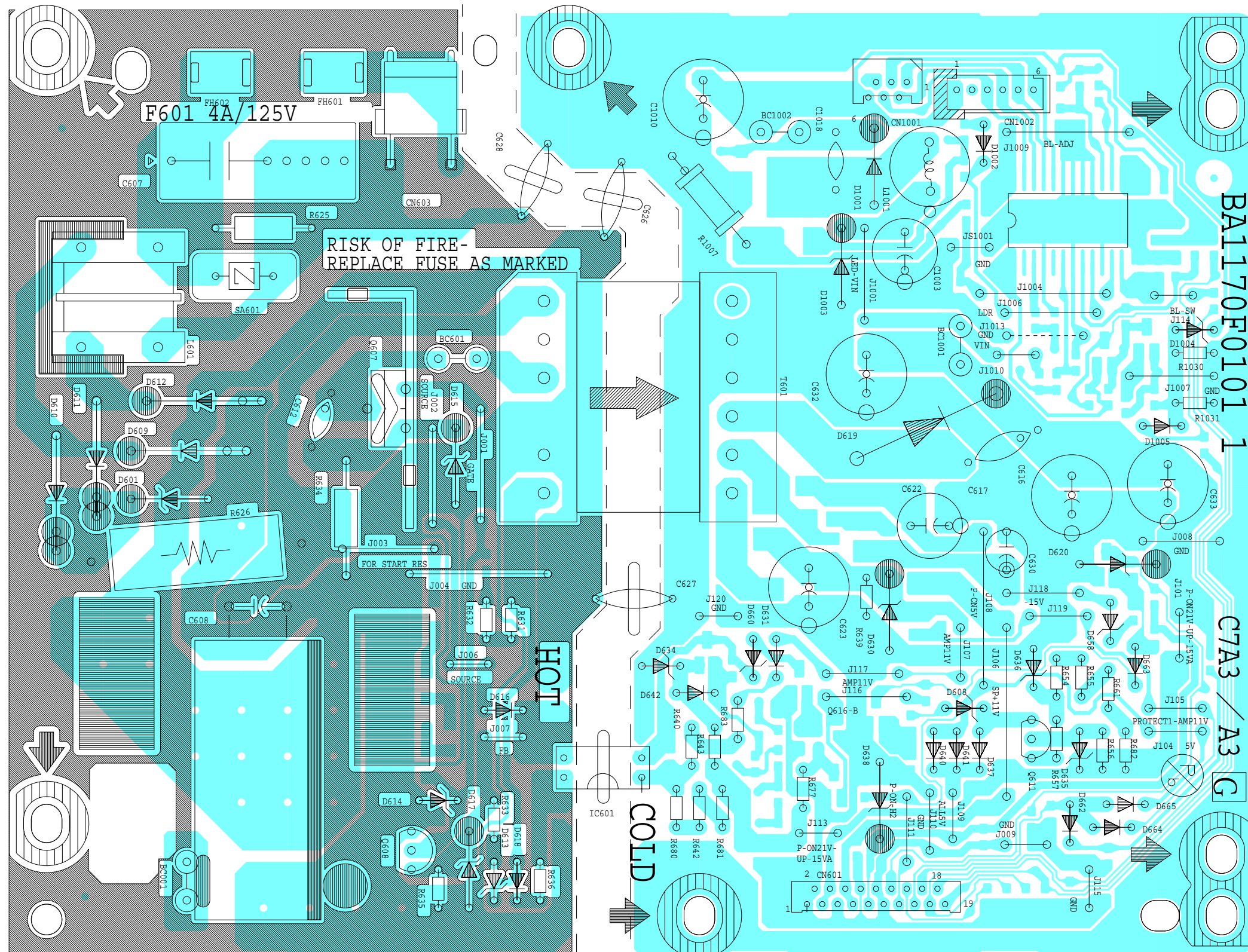
CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse.

ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

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.

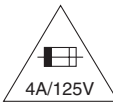
NOTE:

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



Main CBA Bottom View [TYPE B]

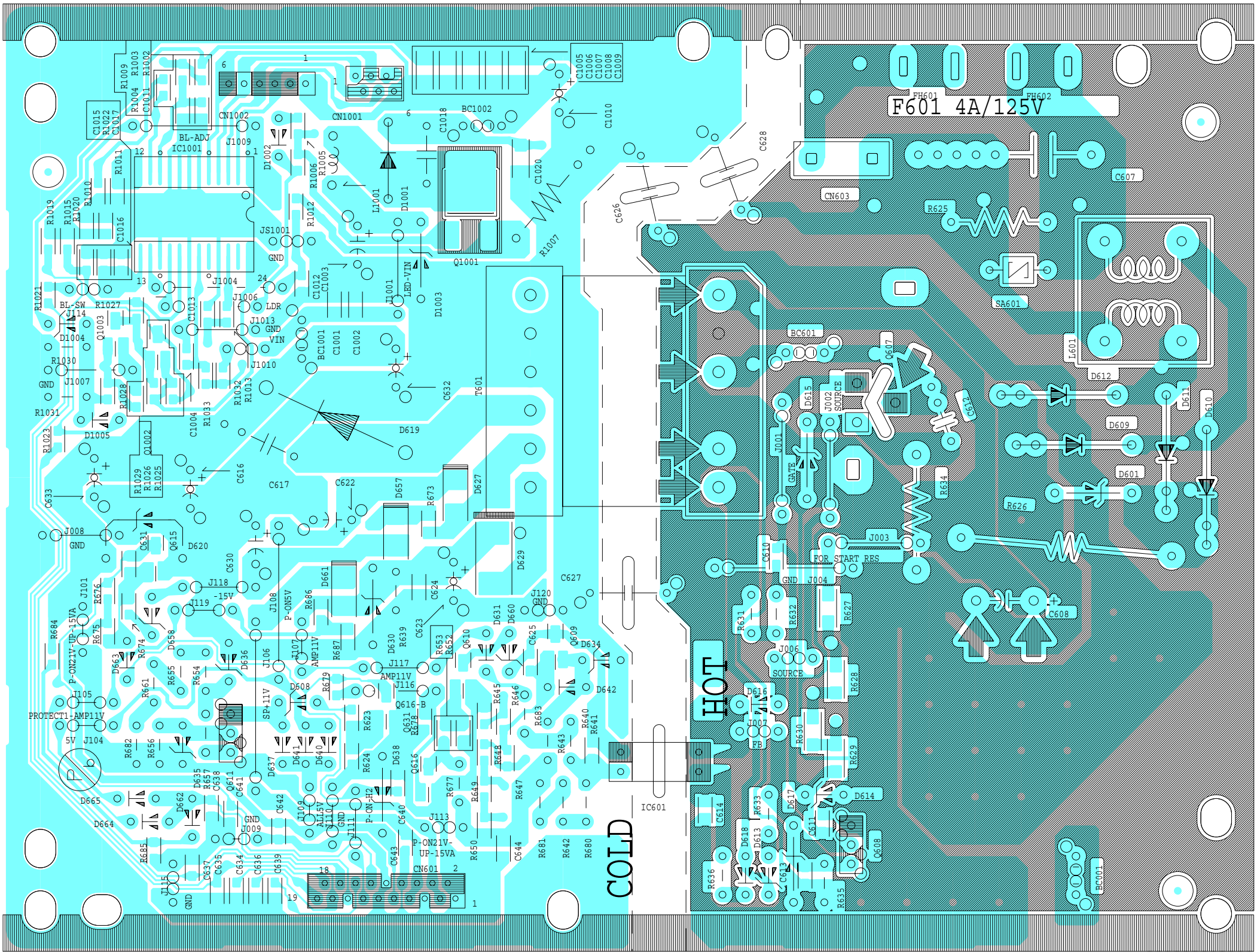
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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



CAUTION ! : For continued protection against risk of fire,
replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

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.

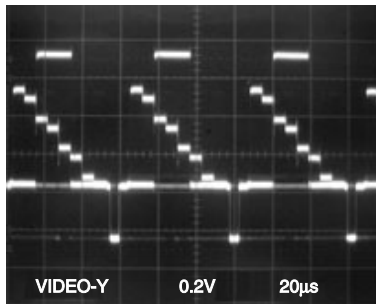


WAVEFORMS

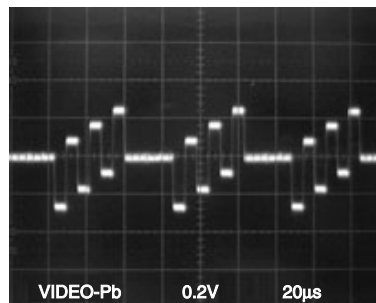
WF1 ~ WF4 = Waveforms to be observed at
Waveform check points.
(Shown in Schematic Diagram.)

Input: Component Color Bar Signal (480i, 480p, 720p or 1080i)
(with 1kHz Audio Signal)

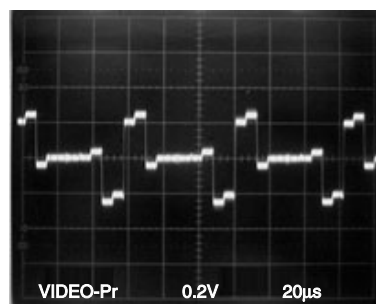
WF1 JK3701(Y-IN)



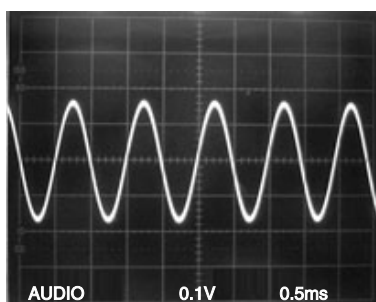
WF2 JK3701(Pb-IN)



WF3 JK3701(Pr-IN)

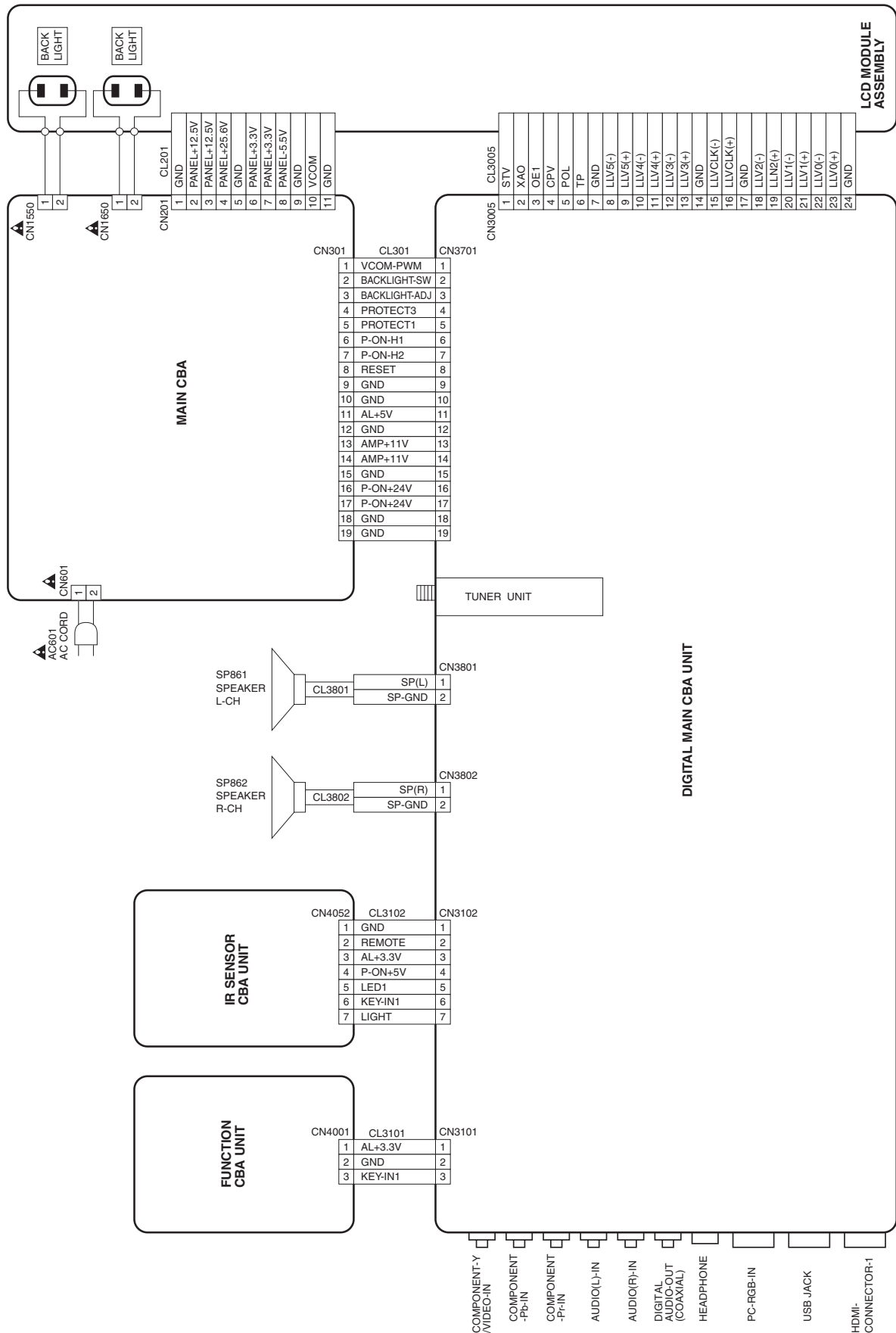


WF4 JK3701(AUDIO(L)-IN)

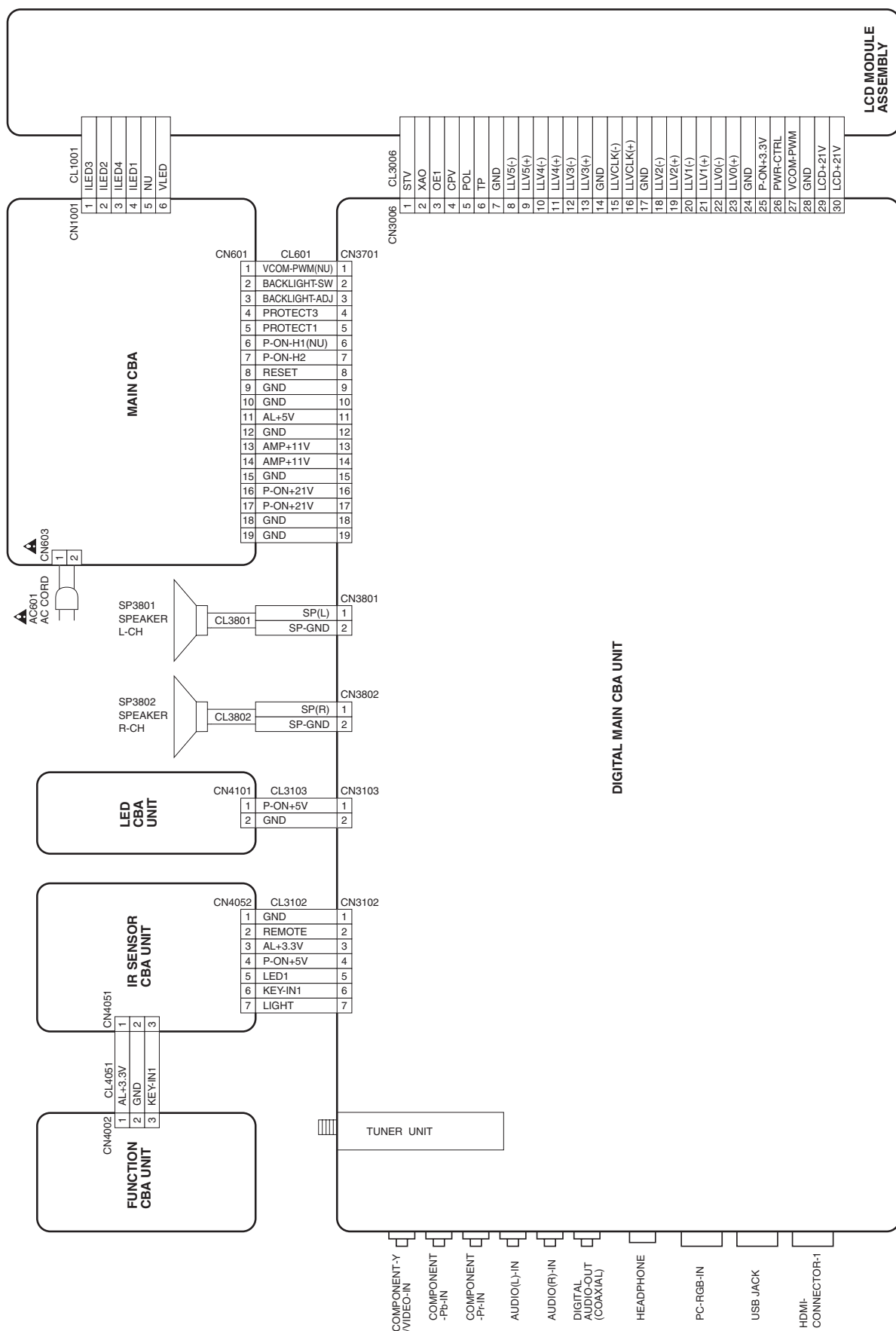


WIRING DIAGRAM

[TYPE A]

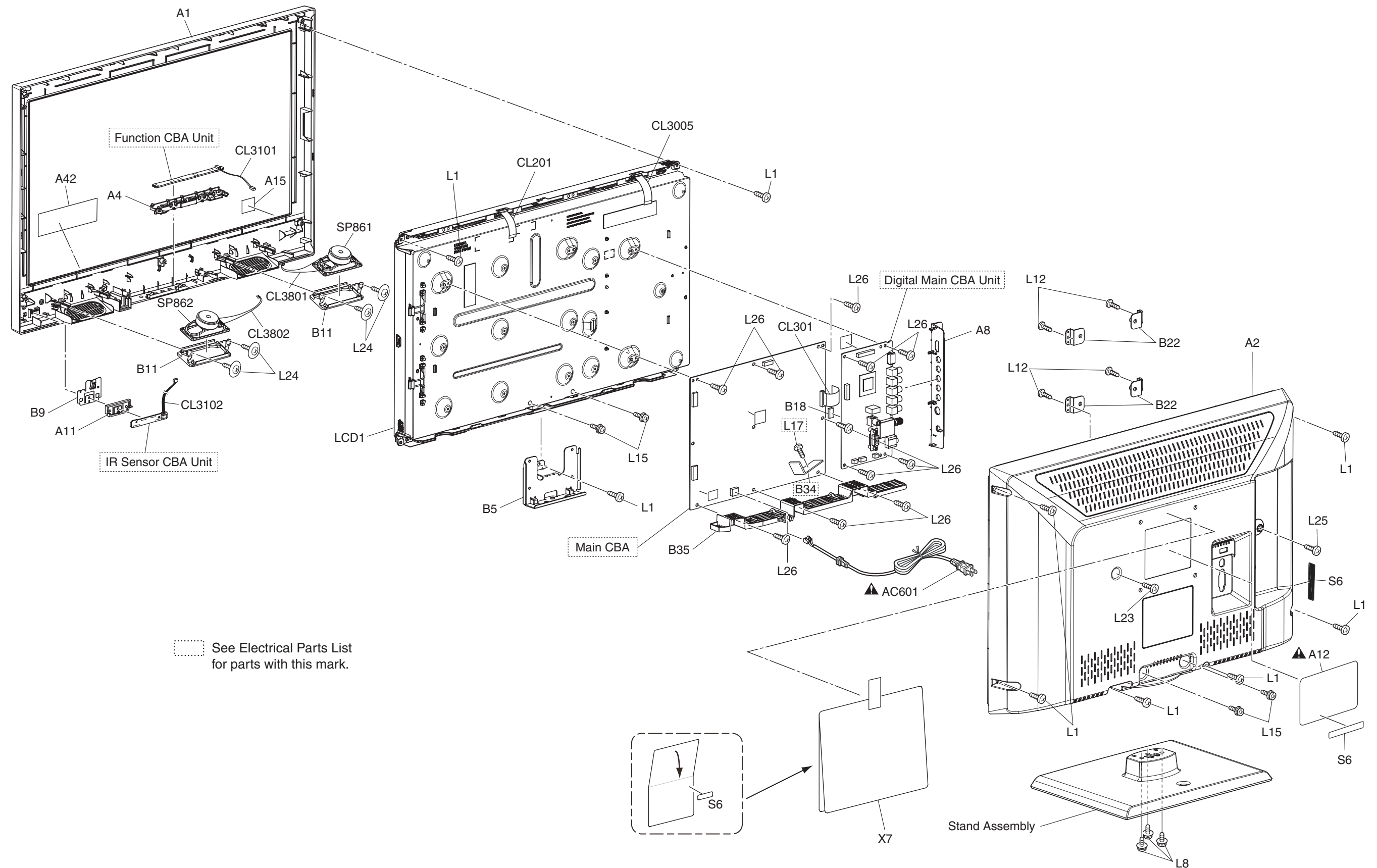


[TYPE B]

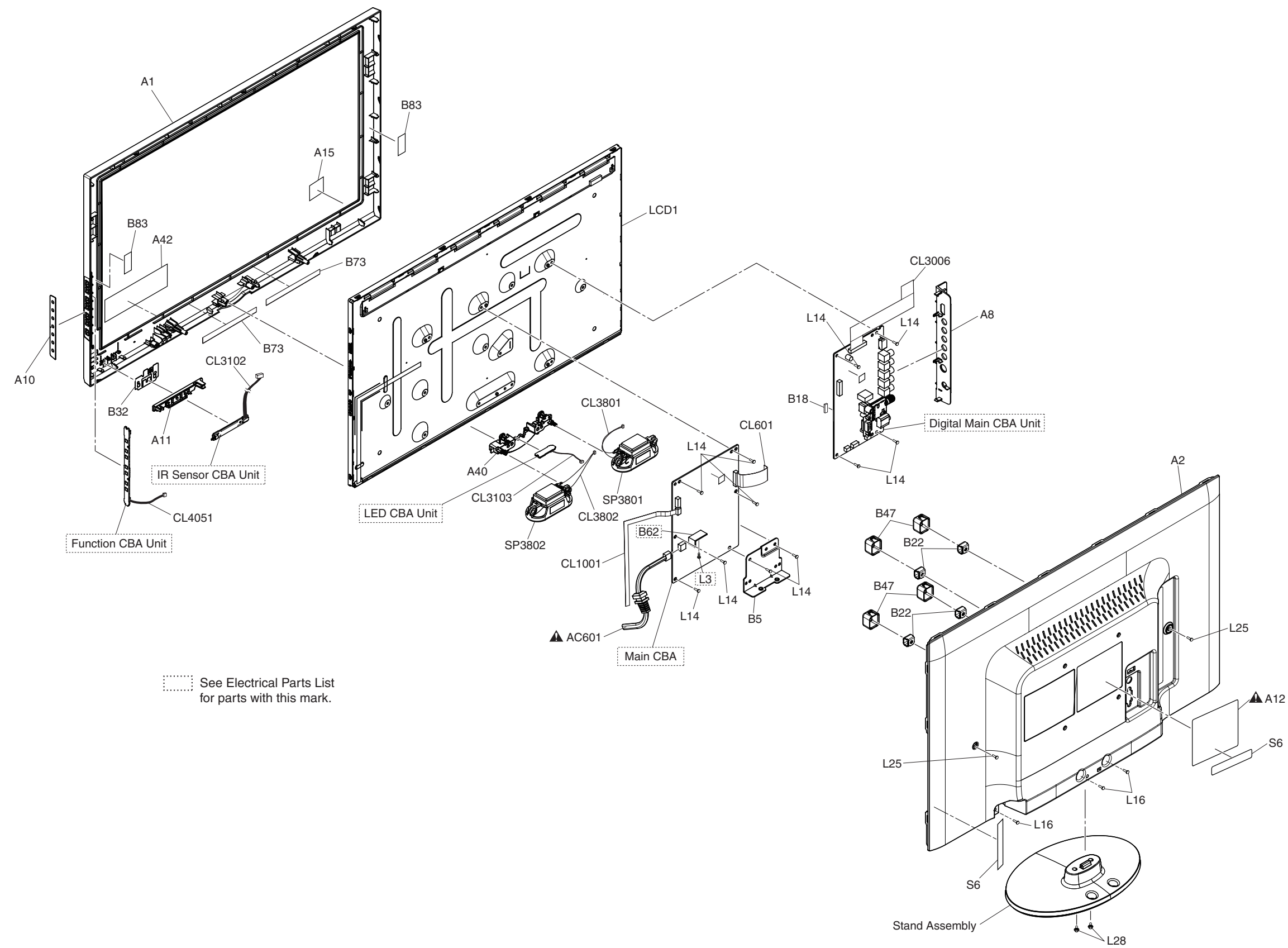


EXPLODED VIEWS

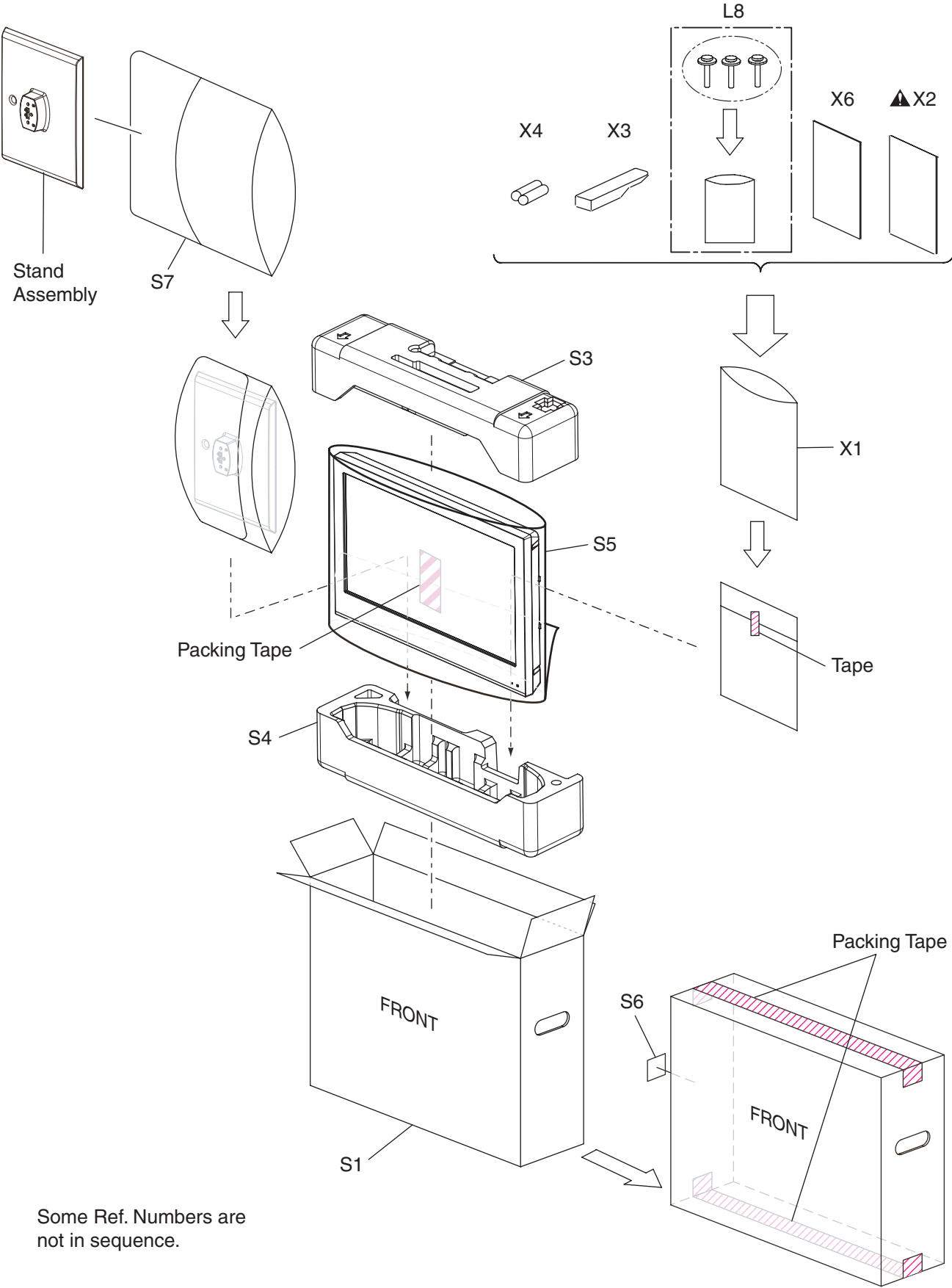
Cabinet [TYPE A]



Cabinet [TYPE B]

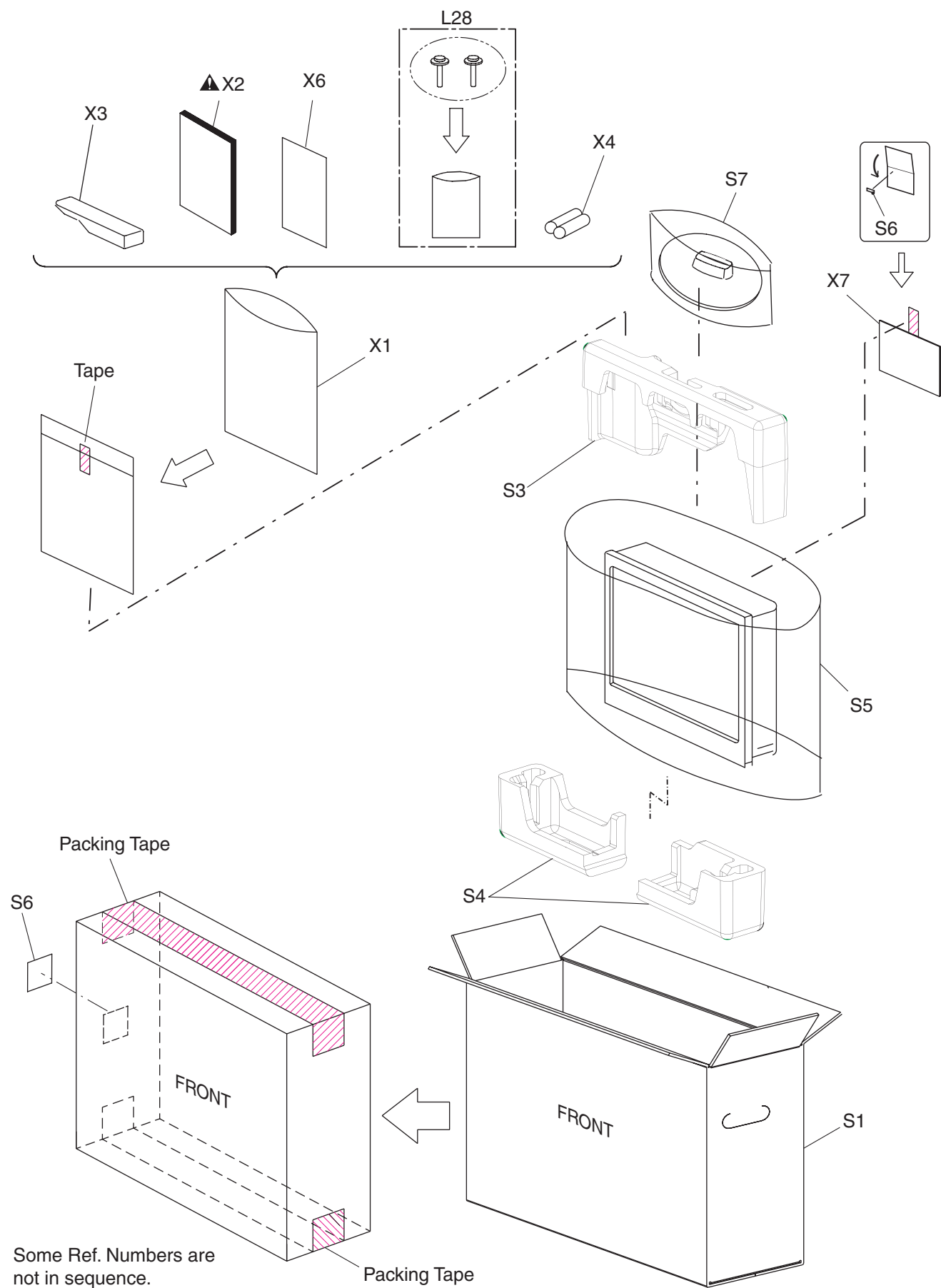


Packing [TYPE A]



Some Ref. Numbers are not in sequence.


Packing [TYPE B]



TYPE A


PARTS LIST [LC220SS2 (Serial No.: TH1)]

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.
	STAND ASSEMBLY A17N5UT	1ESA28285
A1	FRONT CABINET A1772UH	1EM126233
A2	REAR CABINET A1771UH	1EM026974
A4	FUNCTION KNOB A17N1UH	1EM225364
A8	JACK HOLDER A17N1UH	1EM225424
A11	SENSOR LENS A17N1UH	1EM329957
A12 	RATING LABEL A1776UT	-----
A15	ENERGY STAR LABEL A91F2UH	-----
A42	ENERGY GUIDE LABEL A1776UT	-----
AC601 	AC CORD W/O A GND WIRE UL/CSA/1700/NO/BLACK	WAC1720LW005
B5	STAND HOLDER A1771UH	1EM225365
B9	SENSOR PLATE A17N1UH	1EM329958
B11	SPEAKER HOLDER A94N0UH	1EM325677
B18	GASKET A8AF0UH	1EM425861
B22	WALL MOUNT BRACKET A84N0UH	1EM323797
B35	GUARD HOLDER A17N1UH	1EM225524
CL201	WIRE ASSEMBLY 11PIN FFC 11PIN 110MM	WX1A1771-101
CL301	WIRE ASSEMBLY 19PIN FFC 19PIN 75MM	WX1A1771-102
CL3005	WIRE ASSEMBLY 24PIN FFC 24PIN 185MM	WX1A1771-103
CL3101	WIRE ASSEMBLY 3PIN 3PIN/150MM/RED BLACK	WX1A17N1-212
CL3102	WIRE ASSEMBLY 7PIN 7PIN/400MM/RED BLACK	WX1A1771-201
CL3801	WIRE ASSEMBLY 2PIN 2PIN/120MM/RED BLACK	WX1A17N1-321
CL3802	WIRE ASSEMBLY 2PIN 2PIN/370MM/RED BLACK	WX1A1771-312
L1	SCREW P-TIGHT 3X10 BIND HEAD+	GBHP3100
L8	STAND SCREW KIT A17N5UT	1ESA28286
L12	SCREW P-TIGHT M3X8 BIND HEAD+	GBJP3080
L15	DOUBLE SEMS SCREW M4X10 + BLK	FPH34100
L23	SCREW TAP TIGHT M3X10 BIND HEAD+BLK NI	GBHS3100
L24	ASSEMBLED SCREW M3X10	1EM420633A
L25	S-TIGHT SCREW M3X6 BIND HEAD+BLACK	GBHS3060
L26	SCREW S-TIGHT M3X8 BIND HEAD+	GBJS3080
LCD1	LCD MODULE 21.6INCH 21.6INCH	UK22MXA
SP861	SPEAKER S0307F03	DS08070XQ001
SP862	SPEAKER S0307F03	DS08070XQ001
PACKING		
S1	CARTON A1776UT	1EM435123
S3	STYROFOAM TOP A1775UT	1EM027909
S4	STYROFOAM BOTTOM A1775UT	1EM027910

Ref. No.	Description	Part No.
S5	SET BAG A81N0UH	1EM323958A
S6	SERIAL NO. LABEL A01PBUH	-----
S7	STAND BAG A81N0UH	1EM425888
ACCESSORIES		
X1	BAG POLYETHYLENE 235X365XT0.03	0EM408420A
X2 	OWNERS MANUAL A1776UT	1EMN27979
X3	REMOTE CONTROL NH210UD	NH210UD
X4	DRY BATTERY R03/2S	XB0M451T0006
X6	QUICK START GUIDE A1776UT	1EMN27980
X7	REGISTRATION CARD (SYLVANIA) A17N2UT	1EMN27762

Electrical Parts

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

NOTES:

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

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

DIGITAL ASSEMBLY

Ref. No.	Description	Part No.
	DIGITAL ASSEMBLY Consists of the following:	A1776MMA-001
	DIGITAL MAIN CBA UNIT	A1776MMA-001-DM
	FUNCTION CBA UNIT	A1776MMA-001-FN
	IR SENSOR CBA UNIT	A1776MMA-001-IR

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA Consists of the following:	A1775MPW-001
CAPACITORS		
C201	ELECTROLYTIC CAP. 470µF/25V M	CE1EMASDL471
C202	ELECTROLYTIC CAP. 100µF/25V M	CE1EMASDL101
C203	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104
C205	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASDL220
C207	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C208	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASDL470
C209	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C214	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C215	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C216	CHIP CERAMIC CAP. (1608) B K 1µF/16V	CHD1CK30B105
C217	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASDL470
C218	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C401	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0
C601▲	CAP METALIZED FILM 0.47µF/300V K 3.5MM	CT2F474DC004
C603	CAP ELECTROLYTIC 390µF/200V	CEB391DYG006
C604	CHIP CERAMIC CAP. B K 0.039µF/50V	CHD1JK30B393
C605	CHIP CERAMIC CAP. B K 1800pF/50V	CHD1JK30B182
C606	CERAMIC CAP. 820pF/2KV	CA3D821PAN04
C607	CHIP CER. BK 0.082µF/50V	CHD1JK30B823
C608	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C631	ELECTROLYTIC CAP. 470µF/25V M	CE1EMASDL471
C632	ELECTROLYTIC CAP. 1000µF/35V M	CE1GMZNDL102
C633	CAP CERAMIC HV 1500pF 1KV B K	CA3A152TE006
C634	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104
C635	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C636	ELECTROLYTIC CAP. 100µF/25V M	CE1EMASDL101
C637	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104

Ref. No.	Description	Part No.
C639	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C640	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C643	ELECTROLYTIC CAP. 470µF/25V M	CE1EMASDL471
C645	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C647	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C652	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASDL102
C660	ELECTROLYTIC CAP. 3.3µF/50V M	CE1JMASDL3R3
C691▲	SAFTY CAP. 2200pF/250V KX	CA2E222MR101
C692▲	SAFTY CAP. 1000pF/250V KX	CA2E102MR101
C1002	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JK30B561
C1003	ELECTROLYTIC CAP. 100µF/25V M	CE1EMASDL101
C1004	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1005	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1006	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C1007	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1008	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1009	CHIP CERAMIC CAP. B K 470pF/50V	CHD1JK30B471
C1010	CHIP CERAMIC CAP. B K 470pF/50V	CHD1JK30B471
C1012	CHIP CERAMIC CAP.(1608) B K 0.47µF/16V	CHD1CK30B474
C1013	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C1014	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASDL470
C1015	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1016	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1017	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1018	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1019	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1020	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1021	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1024	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JK30B561
C1025	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JK30B561
C1026	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JK30B561
C1401	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1403	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C1404	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C1500	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1501	ELECTROLYTIC CAP. 470µF/35V M	CE1GMZNDL471
C1502	CAP CERAMIC HV 2200pF/1KV B K	CA3A222TE006
C1503	CAP CERAMIC HV 2200pF/1KV B K	CA3A222TE006
C1550	CAP CERAMIC HV 15pF/6KV/SL/J	CKK1500TE009
C1551	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1552	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1553	CAP CERAMIC HV 15pF/6KV/SL/J	CKK1500TE009
C1554	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C1555	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C1556	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1557	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1558	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C1600	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V	CHD1JZ30F104
C1601	ELECTROLYTIC CAP. 470µF/35V M	CE1GMZNDL471
C1602	CAP CERAMIC HV 2200pF/1KV B K	CA3A222TE006
C1603	CAP CERAMIC HV 2200pF/1KV B K	CA3A222TE006
C1650	CAP CERAMIC HV 15pF/6KV/SL/J	CKK1500TE009
C1651	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1652	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1653	CAP CERAMIC HV 15pF/6KV/SL/J	CKK1500TE009
C1657	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C1658	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C1659	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1660	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103

Ref. No.	Description	Part No.
C1661	CHIP CERAMIC CAP(1608) B K 0.1μF/50V	CHD1JK30B104
CONNECTORS		
CN201	FFC CONNECTOR IMSA-9615S-11A-PP-A	JC96J11ER007
CN301	FMN CONNECTOR TOP 19P IMSA-9615S-19A-PP-A	JC96J19ER007
CN601▲	CONNECTOR S2P3-VH (LF)(SN)	JCVHC02JG002
CN1550▲	CONNECTOR PRINT OSU KW05-120-02-00	J30502KET001
CN1650▲	CONNECTOR PRINT OSU KW05-120-02-00	J30502KET001
DIODES		
D202	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D204	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D207	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D401	DIODE SK16-T/R	ND1Z0000SK16
D402	DIODE ZENER 10BSB-T26	NDTB010BST26
D403	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D404	DIODE ZENER 5V1BSB-T26	NDTB5R1BST26
D405	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D406	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D409	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D416	DIODE ZENER 10BSB-T26	NDTB010BST26
D417	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D418	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D601▲	DIODE 1N5397BD	NDL1001N5397
D602▲	DIODE 1N5397BD	NDL1001N5397
D603▲	DIODE 1N5397BD	NDL1001N5397
D604▲	DIODE 1N5397BD	NDL1001N5397
D605	DIODE ZENER 4V3BSB-T26	NDTB4R3BST26
D606▲	DIODE ZENER 27BSB-T26	NDTB027BST26
D607▲	DIODE ZENER 1ZB36BB	NDWZ0001ZB36
D608▲	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D610	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D611	DIODE ZENER 1ZB220-YBB	NDWZ01ZB220Y
D631	DIODE SCHOTTKY SMD SK2B-TR	ND1Z00SK2BTR
D632	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D633	DIODE ZENER 1ZB30BB	NDWZ0001ZB30
D634	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D636	DIODE SK16-T/R	ND1Z0000SK16
D639	DIODE SK16-T/R	ND1Z0000SK16
D640	DIODE SK16-T/R	ND1Z0000SK16
D642	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D643	DIODE SCHOTTKY SMD SK2B-TR	ND1Z00SK2BTR
D644	DIODE ZENER 1ZB20BB	NDWZ0001ZB20
D648	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D649	DIODE ZENER 3V3BSB-T26	NDTB3R3BST26
D650	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D651	WIRE CP STP-S-0.50	XZ40FOREN001
D653	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D655	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D656	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D657	DIODE ZENER 1ZB7.5BB	NDWZ001ZB7R5
D660	WIRE CP STP-S-0.50	XZ40FOREN001
D668	DIODE ZENER 1ZB22BB	NDWZ0001ZB22
D1005	DIODE ZENER 15BSB-T26	NDTB015BST26
D1007	DIODE ZENER 10BSB-T26	NDTB010BST26
D1009	DIODE ZENER 12BSB-T26	NDTB012BST26
D1013	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1045	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1401	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1402	DIODE ZENER 7V5BSB-T26	NDTB7R5BST26
D1403	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1404	DIODE ZENER 4V7BSB-T26	NDTB4R7BST26
D1406	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1504▲	DIODE ZENER 1ZB43BB	NDWZ0001ZB43

Ref. No.	Description	Part No.
D1550	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1551	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1553	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1555	SWITCHING DIODE DAN202U T106	QD1Z0DAN202U
D1558	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1559	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1560	SWITCHING DIODE DAN202U T106	QD1Z0DAN202U
D1564	SWITCHING DIODE DAN202U T106	QD1Z0DAN202U
D1565	SWITCHING DIODE DAN202U T106	QD1Z0DAN202U
D1604▲	DIODE ZENER 1ZB43BB	NDWZ0001ZB43
D1650	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1651	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1654	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1657	SWITCHING DIODE DAN202U T106	QD1Z0DAN202U
D1659	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1660	SWITCHING DIODE DAN202U T106	QD1Z0DAN202U
D1662	SWITCHING DIODE DAP202UT106	QD1Z0DAP202U
D1664	SWITCHING DIODE DAN202U T106	QD1Z0DAN202U
ICS		
IC201	IC TL3472CDR	NSZBA0TTY115
IC202	IC(REGULATOR) PQ200WNA1ZPH	QSZBA0TSH072
IC601▲	IC PHOTOCOUPLER TLP781F(D4-FUNBL F)	QPFL781FBLLF
IC631	IC(REGULATOR) PQ200WNA1ZPH	QSZBA0TSH072
IC1001	IC PULSE-WIDTH-MODULATION CONT TL494CDR	NSCA0T0TY006
IC1002	IC BA10324AF-E2	QSZBA0TRM032
COIL		
L601▲	LINE FILTER 5.0MH 96005	LLBG00ZKT004
TRANSISTORS		
Q202	PNP TRANSISTOR SMD 2SA1576UBTLQ	QQ1Q2SA1576U
Q203	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q206	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q207	TRANSISTOR 2SC2655-Y(Te6 F M)	QQSY2SC2655F
Q208	TRANSISTOR KTA1281-Y-AT/P	NQVYKTA1281P
Q209	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q211	CHIP TRANSISTOR 2SA1037AK T146R	QQ1R2SA1037A
Q212	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q401	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q402	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q601▲	MOS FET TK7A50D(FUNAI)	QEWZTK7A50DQ
Q602▲	TRANSISTOR 2SC2120-Y(Te2 F T)	QQSY2SC2120F
Q631	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q633	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q634	TRANSISTOR KTC3198-Y-AT/P	NQSYKTC3198P
Q635	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q636	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q638	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q639	PNP TRANSISTOR SMD 2SA1576UBTLQ	QQ1Q2SA1576U
Q1001	CHIP TRANSISTOR 2SA1037AK T146R	QQ1R2SA1037A
Q1002	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1003	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1004	TRANSISTOR 2SA950-Y(Te2 F T)	QQSY02SA950F
Q1005	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1006	TRANSISTOR 2SC2120-Y(Te2 F T)	QQSY2SC2120F
Q1007	TRANSISTOR 2SC2120-Y(Te2 F T)	QQSY2SC2120F
Q1008	TRANSISTOR 2SA950-Y(Te2 F T)	QQSY02SA950F
Q1009	TRANSISTOR 2SA950-Y(Te2 F T)	QQSY02SA950F
Q1010	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1011	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1013	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1014	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1023	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1024	PNP TRANSISTOR SMD 2SA1576UBTLQ	QQ1Q2SA1576U

Ref. No.	Description	Part No.
Q1401	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1402	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1500▲	FET MOS SMD TPC8214-H	QF2ZTPC8214H
Q1501▲	FET MOS SMD TPC8214-H	QF2ZTPC8214H
Q1550	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1551	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1600▲	FET MOS SMD TPC8214-H	QF2ZTPC8214H
Q1601▲	FET MOS SMD TPC8214-H	QF2ZTPC8214H
Q1650	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
Q1651	CHIP TRANSISTOR 2SC2412K T146S	QQ1S2SC2412K
RESISTORS		
R201	WIRE CP STP-S-0.50	XZ40F0REN001
R202	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R203	RES CHIP 1608 1/10W J 4.7k Ω	RRXA472HH013
R204	RES CHIP 1608 1/10W F 2.20k Ω	RTW2201HH008
R205	RES CHIP 1608 1/10W F 1.40k Ω	RTW1401HH008
R206	RES CHIP 1608 1/10W F 6.80k Ω	RTW6801HH008
R211	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R212	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R213	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R214	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R220	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R221	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R222	RES CARBON FILM T 1/4W J 180 Ω	RCX4181T1001
R223	RES CHIP 1608 1/10W J 15k Ω	RRXA153HH013
R224	RES CHIP 1608 1/10W J 1.0 Ω	RRXA1R0HH013
R225	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R226	RES CARBON FILM T 1/4W J 10 Ω	RCX4100T1001
R227	RES CHIP 1608 1/10W J 100k Ω	RRXA104HH013
R228	WIRE CP STP-S-0.50	XZ40F0REN001
R229	RES CARBON FILM T 1/4W J 10 Ω	RCX4100T1001
R230	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R231	RES CHIP 1608 1/10W J 1.5k Ω	RRXA152HH013
R232	RES CHIP 1608 1/10W J 15k Ω	RRXA153HH013
R233	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R234	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R235	RES CARBON FILM T 1/4W J 8.2k Ω	RCX4822T1001
R236	RES CARBON FILM T 1/4W J 180 Ω	RCX4181T1001
R237	RES CARBON FILM T 1/4W J 180 Ω	RCX4181T1001
R246	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R247	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R248	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R249	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R253	RES CHIP 1608 1/10W J 56k Ω	RRXA563HH013
R254	RES CHIP 1608 1/10W J 6.8k Ω	RRXA682HH013
R401	RES CHIP 1608 1/10W J 1.0 Ω	RRXA1R0HH013
R402	RES CHIP 1608 1/10W F 1.20k Ω	RTW1201HH008
R403	RES CHIP 1608 1/10W F 47.0k Ω	RTW4702HH008
R405	RES CHIP 1608 1/10W J 6.8k Ω	RRXA682HH013
R406	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R407	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R408	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R413	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R415	RES CHIP 1608 1/10W J 6.8k Ω	RRXA682HH013
R416	RES CHIP 1608 1/10W J 2.7k Ω	RRXA272HH013
R417	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R418	RES CHIP 1608 1/10W J 4.7k Ω	RRXA472HH013
R601▲	GLASS GLAZE RES. 1/2W J 2.7M Ω	RXX2JZLZ0275
R602▲	CEMENT RES. 3W K 1.2 Ω	RW031R2PG007
R603	RES CHIP 3216 1/4W J 390k Ω	RRX4394HH034
R604	RES CHIP 3216 1/4W J 390k Ω	RRX4394HH034
R605	RES CHIP 3216 1/4W J 390k Ω	RRX4394HH034

Ref. No.	Description	Part No.
R606	RES CHIP 3216 1/4W J 330k Ω	RRX4334HH034
R607	RES CARBON FILM T 1/4W J 150 Ω	RCX4151T1001
R608	RES CARBON FILM T 1/4W J 180 Ω	RCX4181T1001
R609	RES CARBON FILM T 1/4W J 1.2k Ω	RCX4122T1001
R610▲	METAL OXIDE FILM RES. 2W J 0.39 Ω	RN02R39ZU001
R611	RES CARBON FILM T 1/4W J 2.2k Ω	RCX4222T1001
R612	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R631	RES CARBON FILM T 1/4W J 12k Ω	RCX4123T1001
R632	RES CHIP 1608 1/10W J 18k Ω	RRXA183HH013
R633	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R634	RES CARBON FILM T 1/4W J 12k Ω	RCX4123T1001
R638	RES CARBON FILM T 1/4W J 3.9k Ω	RCX4392T1001
R639	RES CARBON FILM T 1/4W J 120 Ω	RCX4121T1001
R640	RES CHIP 1608 1/10W F 18.0k Ω	RTW1802HH008
R641	RES CHIP 1608 1/10W F 430 Ω	RTW4300HH008
R642	RES CHIP 1608 1/10W F 27.0k Ω	RTW2702HH008
R643	RES CHIP 1608 1/10W F 30.0k Ω	RTW3002HH008
R646	RES CARBON FILM T 1/4W J 120 Ω	RCX4121T1001
R647	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R648	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R649	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R650	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R651	RES CARBON FILM T 1/4W J 15 Ω	RCX4150T1001
R652	WIRE CP STP-S-0.50	XZ40F0REN001
R653	WIRE CP STP-S-0.50	XZ40F0REN001
R654	WIRE CP STP-S-0.50	XZ40F0REN001
R656	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R657	RES CHIP 1608 1/10W F 2.20k Ω	RTW2201HH008
R659	RES CHIP 1608 1/10W F 240 Ω	RTW2400HH008
R660	RES CHIP 1608 1/10W F 330 Ω	RTW3300HH008
R665	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R666	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R667	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R668	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R669	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R670	RES CHIP 1608 1/10W J 4.7k Ω	RRXA472HH013
R677	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R701	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R702	RES CARBON FILM T 1/4W J 15k Ω	RCX4153T1001
R1002	WIRE CP STP-S-0.50	XZ40F0REN001
R1003	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R1004	RES CARBON FILM T 1/4W J 1.2 Ω	RCX41R2T1001
R1005	RES CARBON FILM T 1/4W J 4.7k Ω	RCX4472T1001
R1006	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1007	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R1008	RES CHIP 1608 1/10W F 5.60k Ω	RTW5601HH008
R1009	RES CHIP 1608 1/10W F 75.0k Ω	RTW7502HH008
R1010	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1011	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1012	WIRE CP STP-S-0.50	XZ40F0REN001
R1014	RES CHIP 1608 1/10W J 2.2k Ω	RRXA222HH013
R1015	RES CHIP 1608 1/10W J 82k Ω	RRXA823HH013
R1016	RES CHIP 1608 1/10W J 56k Ω	RRXA563HH013
R1017	RES CHIP 1608 1/10W J 220k Ω	RRXA224HH013
R1020	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R1021	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R1023	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R1024	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R1025	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R1026	RES CARBON FILM T 1/4W J 4.7k Ω	RCX4472T1001
R1027	RES CARBON FILM T 1/4W J 1.5k Ω	RCX4152T1001
R1028	RES CARBON FILM T 1/4W J 2.2k Ω	RCX4222T1001
R1029	RES CARBON FILM T 1/4W J 150 Ω	RCX4151T1001


Ref. No.	Description	Part No.
R1030	RES CARBON FILM T 1/4W J 2.2k Ω	RCX4222T1001
R1031	RES CARBON FILM T 1/4W J 150 Ω	RCX4151T1001
R1036	RES CHIP 1608 1/10W J 5.1k Ω	RRXA512HH013
R1037	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1043	RES CHIP 1608 1/10W J 12k Ω	RRXA123HH013
R1044	RES CHIP 1608 1/10W F 18.0k Ω	RTW1802HH008
R1045	RES CHIP 1608 1/10W F 2.00k Ω	RTW2001HH008
R1048	RES CARBON FILM T 1/4W J 33k Ω	RCX4333T1001
R1049	RES CARBON FILM T 1/4W J 1.2k Ω	RCX4122T1001
R1050	WIRE CP STP-S-0.50	XZ40FOREN001
R1051	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1053	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1054	RES CHIP 1608 1/10W F 120k Ω	RTW1203HH008
R1055	RES CHIP 1608 1/10W F 10.0k Ω	RTW1002HH008
R1056	RES CHIP 1608 1/10W F 18.0k Ω	RTW1802HH008
R1058	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1059	RES CHIP 1608 1/10W J 120k Ω	RRXA124HH013
R1060	RES CHIP 1608 1/10W F 7.50k Ω	RTW7501HH008
R1061	RES CHIP 1608 1/10W F 4.70k Ω	RTW4701HH008
R1062	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1063	RES CHIP 1608 1/10W J 100k Ω	RRXA104HH013
R1064	RES CHIP 1608 1/10W F 1.00k Ω	RTW1001HH008
R1065	RES CHIP 1608 1/10W F 27.0k Ω	RTW2702HH008
R1066	RES CHIP 1608 1/10W J 5.1k Ω	RRXA512HH013
R1067	RES CHIP 1608 1/10W J 6.8k Ω	RRXA682HH013
R1068	RES CHIP 1608 1/10W J 8.2k Ω	RRXA822HH013
R1069	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1070	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1071	RES CARBON FILM T 1/4W J 2.7k Ω	RCX4272T1001
R1072	RES CARBON FILM T 1/4W J 2.7k Ω	RCX4272T1001
R1074	RES CHIP 1608 1/10W J 12k Ω	RRXA123HH013
R1075	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R1076	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R1077	WIRE CP STP-S-0.50	XZ40FOREN001
R1105	RES CHIP 1608 1/10W J 3.3k Ω	RRXA332HH013
R1106	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1107	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1109	RES CHIP 1608 1/10W F 2.20k Ω	RTW2201HH008
R1110	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1401	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R1402	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1403	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1404	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1405	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1406	RES CHIP 1608 1/10W J 120k Ω	RRXA124HH013
R1407	RES CHIP 1608 1/10W J 20k Ω	RRXA203HH013
R1500	RES CHIP 1608 1/10W J 10 Ω	RRXA100HH013
R1501	RES CHIP 1608 1/10W J 10 Ω	RRXA100HH013
R1502	RES CHIP 1608 1/10W J 12k Ω	RRXA123HH013
R1503	RES CHIP 1608 1/10W J 12k Ω	RRXA123HH013
R1508▲	METAL OXIDE FILM RES. 2W J 0.15 Ω	RN02R15HH015
R1509	RES CARBON FILM T 1/4W J 33k Ω	RCX4333T1001
R1550	RES CHIP 1608 1/10W J 180 Ω	RRXA181HH013
R1551	RES CHIP 1608 1/10W J 180 Ω	RRXA181HH013
R1552	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R1553	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R1554	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1555	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1556	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R1557	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R1558	RES CHIP 1608 1/10W J 24k Ω	RRXA243HH013
R1559	RES CHIP 1608 1/10W J 16k Ω	RRXA163HH013
R1560	RES CHIP 1608 1/10W J 220k Ω	RRXA224HH013

Ref. No.	Description	Part No.
R1600	RES CHIP 1608 1/10W J 10 Ω	RRXA100HH013
R1601	RES CHIP 1608 1/10W J 10 Ω	RRXA100HH013
R1602	RES CHIP 1608 1/10W J 12k Ω	RRXA123HH013
R1603	RES CHIP 1608 1/10W J 12k Ω	RRXA123HH013
R1608▲	METAL OXIDE FILM RES. 2W J 0.15 Ω	RN02R15HH015
R1609	RES CHIP 1608 1/10W J 33k Ω	RRXA333HH013
R1650	RES CHIP 1608 1/10W J 180 Ω	RRXA181HH013
R1651	RES CHIP 1608 1/10W J 180 Ω	RRXA181HH013
R1652	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R1653	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R1654	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1655	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1656	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R1657	RES CHIP 1608 1/10W J 27k Ω	RRXA273HH013
R1658	RES CHIP 1608 1/10W J 24k Ω	RRXA243HH013
R1659	RES CHIP 1608 1/10W J 16k Ω	RRXA163HH013
R1660	RES CHIP 1608 1/10W J 220k Ω	RRXA224HH013
MISCELLANEOUS		
B34	POW HEAT SINK A7120UH	1EM423993
BC601	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
F601▲	FUSE STC4A125V U/CT	PAGE20CW3402
FH601	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
FH602	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
JS201	WIRE CP STP-S-0.50	XZ40FOREN001
JS1002	WIRE CP STP-S-0.50	XZ40FOREN001
JS1003	WIRE CP STP-S-0.50	XZ40FOREN001
JS1005	WIRE CP STP-S-0.50	XZ40FOREN001
L17	SCREW B-TIGHT D3X8 BIND HEAD+	GBJB3080
SA601▲	SURGE ABSORBER 470V+-10PER	NVQZ10D471KB
T631▲	TRANS POWER 11712	LTT2PCOKT073
T1500▲	TRANS INV HVT-324	LTZ3PZ0XB017
T1600▲	TRANS INV HVT-324	LTZ3PZ0XB017

TYPE A



PARTS LIST [LC220EM2 (Serial No.: TH1)]

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 LC220SS2 (Serial No. : TH1)

Ref. No.	Description	Part No.
A1	FRONT CABINET A1771UH	1EM026973
A12 	RATING LABEL A1775UT	-----
A42	ENERGY GUIDE LABEL A1775UT	-----
S1	CARTON A1775UT	1EM435044
X2 	OWNERS MANUAL A17N5UT	1EMN27859
X3	REMOTE CONTROL NH001UD	NH001UD
X6	QUICK START GUIDE A17N5UT	1EMN27860
X7	REGISTRATION CARD (EMERSON) A17N5UT	1EMN27764

Electrical Parts

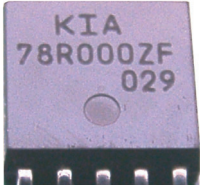
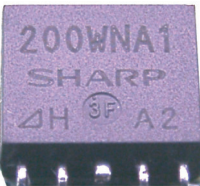
PRODUCT SAFETY NOTE: Products marked with a  have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

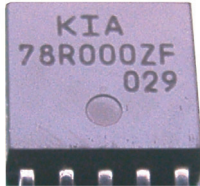
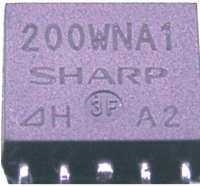
NOTES:

- 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%

Different parts from the original model LC220SS2 (Serial No. : TH1)


Ref. No.	Description	Part No.
	DIGITAL ASSEMBLY Consists of the following	A1775MMA-002
	DIGITAL MAIN CBA UNIT FUNCTION CBA UNIT IR SENSOR CBA UNIT	A1775MMA-002-DM A1775MMA-002-FN A1775MMA-002-IR
	MAIN CBA	
You cannot mix components under Type 1 with the ones under Type 2.		
Type 1: ("78R000ZF" is engraved on Type 1 IC REGULATOR.)		
IC202	IC REGULATOR KIA78R000ZF-RTF/P	NSCA0T0JY016
R204	RES CHIP 1608 1/10W F 1.00k Ω	RTW1001HH008
R205	RES CHIP 1608 1/10W F 820 Ω	RTW8200HH008
R206	RES CHIP 1608 1/10W F 8.20k Ω	RTW8201HH008
 <p>← Make sure to use this IC202 with R204 (1k Ω) and R205 (820 Ω) and R206 (8.2k Ω).</p>		
or		
Type 2: ("200WNA1" is engraved on Type 2 IC REGULATOR.)		
IC202	IC(REGULATOR) PQ200WNA1ZPH	QSZBA0TSH072
R204	RES CHIP 1608 1/10W F 2.20k Ω	RTW2201HH008
R205	RES CHIP 1608 1/10W F 1.40k Ω	RTW1401HH008
R206	RES CHIP 1608 1/10W F 6.80k Ω	RTW6801HH008
 <p>← Make sure to use this IC202 with R204 (2.2k Ω) and R205 (1.4k Ω) and R206 (6.8k Ω).</p>		

Ref. No.	Description	Part No.
You cannot mix components under Type 1 with the ones under Type 2.		
Type 1: ("78R000ZF" is engraved on Type 1 IC REGULATOR.)		
IC631	IC REGULATOR KIA78R000ZF-RTF/P	NSCA0T0JY016
R657	RES CHIP 1608 1/10W F 1.00k Ω	RTW1001HH008
R660	RES CHIP 1608 1/10W F 1.40k Ω	RTW1401HH008
 <p>← Make sure to use this IC631 with R657 (1k Ω) and R660 (1.4k Ω).</p>		
or		
Type 2: ("200WNA1" is engraved on Type 2 IC REGULATOR.)		
IC631	IC(REGULATOR) PQ200WNA1ZPH	QSZBA0TSH072
R657	RES CHIP 1608 1/10W F 2.20k Ω	RTW2201HH008
R660	RES CHIP 1608 1/10W F 330 Ω	RTW3300HH008
 <p>← Make sure to use this IC631 with R657 (2.2k Ω) and R660 (330 Ω).</p>		



TYPE B


PARTS LIST [22ME601B/F7 (Serial No.: DS1)]

Mechanical Parts

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

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

Ref. No.	Description	Part No.
	STAND ASSEMBLY A1170UH	1ESA28505
A1	FRONT CABINET A1170UH	1EM027445
A2	REAR CABINET A1170UH	1EM027446
A8	JACK HOLDER A17N1UH	1EM225424
A10	CONTROL PLATE A11N0UH	1EM330577
A11	SENSOR LENS A11N0UH	1EM226005
A12 	RATING LABEL A1170UH	-----
A15	ENERGY STAR LABEL A91F2UH	-----
A40	LED LENS A11N0UH	1EM226006
A42	ENERGY GUIDE LABEL A1170UH	-----
AC601 	AC CORD W/O A GND WIRE UL/CSA/1700/NO/BLACK	WAC1720LW005
B5	STAND BRACKET A11N0UH	1EM226007
B18	GASKET A8AF0UH	1EM425861
B22	WALL MOUNT BRACKET A11N0UH	1EM434637
B32	SENSOR SHIELD A11N0UH	1EM330637
B47	WALL MOUNT COVER A11N0UH	1EM330718
B73	CLOTH(10X190XT0.3) L0200UA	1EM420019
B83	CLOTH 10X65XT0.3	1EM420328
CL601	FFC WIRE ASSEMBLY 19PIN 19PIN/75MM	WX1A11N5-102
CL1001	FFC WIRE ASSEMBLY 6PIN 6PIN/263MM	WX1A1170-101
CL3006	FFC WIRE ASSEMBLY 30PIN 30PIN/215MM	WX1A1170-103
CL3102	WIRE ASSEMBLY 7PIN 7PIN/305MM/RED/BLACK	WX1A1170-201
CL3103	WIRE ASSEMBLY 2PIN 2PIN/90MM/RED/BLACK	WX1A11N5-205
CL3801	WIRE ASSEMBLY 2PIN 2PIN/75MM/RED/BLACK	WX1A11N5-203
CL3802	WIRE ASSEMBLY 2PIN 2PIN/145MM/RED/BLACK	WX1A11N5-204
CL4051	WIRE ASSEMBLY 3PIN 3PIN/60MM/RED/BLACK	WX1A1170-202
L14	SCREW S-TIGHT M3X6 BIND HEAD+	GBJS3060
L16	SCREW P-TIGHT 3X12 BIND HEAD+ BLK	GBHP3120
L25	S-TIGHT SCREW M3X6 BIND HEAD+BLACK	GBHS3060
L28	STAND SCREW KIT A1170UH	1ESA28511
LCD1	LCD MODULE 21.6INCH 21.6INCH	UK22MXB
SP3801	SPEAKER MAGNETIC 8OHM/3.5W S0307F06A	DS08070XQ003
SP3802	SPEAKER MAGNETIC 8OHM/3.5W S0307F06A	DS08070XQ003
PACKING		
S1	CARTON A1170UH	1EM330799
S3	STYROFOAM TOP A1170UH	1EM027905
S4	STYROFOAM BOTTOM A1170UH	1EM027906

Ref. No.	Description	Part No.
S5	SET BAG A81N0UH	1EM323958A
S6	SERIAL NO. LABEL A01PBUH	-----
S7	POLYETHYLENE BAG HDPE 180X340XT0.03	1EM435579
ACCESSORIES		
X1	POLYETHYLENE BAG HDPE 180X340XT0.03	1EM435579
X2 	OWNERS MANUAL A1170UH	1EMN28066
X3	REMOTE CONTROL NF805UD	NF805UD
X4	DRY BATTERY R03/2S	XB0M451T0006
X6	QUICK START GUIDE A1170UH	1EMN28067
X7	REGISTRATION CARD (MAGNAVOX) A17N0UH	1EMN27759

Electrical Parts

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

NOTES:

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

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

DIGITAL ASSEMBLY

Ref. No.	Description	Part No.
	DIGITAL ASSEMBLY Consists of the following:	A1170MMA-001
	DIGITAL MAIN CBA UNIT	A1170MMA-001-DM
	FUNCTION CBA UNIT	A1170MMA-001-FN
	IR SENSOR CBA UNIT	A1170MMA-001-IR
	LED CBA UNIT	A1170MMA-001-LE

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA Consists of the following:	A1170MPW-001
CAPACITORS		
C607▲	CAP METALIZED FILM 0.47μF/300V K 3.5MM	CT2F474DC004
C608	CAP ELE 220μF/200V/M85	CEB2210S6016
C610	CHIP CERAMIC CAP. B K 0.039μF/50V	CHD1JK30B393
C611	CHIP CERAMIC CAP. B K 1200pF/50V	CHD1JK30B122
C612	CERAMIC CAP. 820pF/2KV	CA3D821PAN04
C613	CHIP CER. BK 0.082μF/50V	CHD1JK30B823
C614	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C616	ELECTROLYTIC CAP. 470μF/25V M	CE1EMASDL471
C617	CERAMIC CAP. 1500pF/2KV	CA3D152PAN04
C622	ELECTROLYTIC CAP. 220μF/10V M	CE1AMASDL221
C623	ELECTROLYTIC CAP. 470μF/25V M	CE1EMASDL471
C625	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C626▲	SAFTY CAP. 2200pF/250V KX	CA2E222MR101
C627▲	SAFTY CAP. 1000pF/250V KX	CA2E102MR101
C630	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C632	ELECTROLYTIC CAP. 470μF/25V M	CE1EMASDL471
C633	ELECTROLYTIC CAP. 470μF/25V M	CE1EMASDL471
C1001	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1002	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1003	ELECTROLYTIC CAP. 330μF/25V M	CE1EMASDL331
C1004	CHIP CERAMIC CAP.(1608) B K 1μF/25V	CHD1EK30B105
C1005	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
C1006	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
C1010	ELECTROLYTIC CAP. 47μF/100V M	CE2AMASDL470
C1011	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1012	CHIP CERAMIC CAP. B K 470pF/50V	CHD1JK30B471

Ref. No.	Description	Part No.
C1013	CHIP CERAMIC CAP.(1608) B K 0.47μF/16V	CHD1CK30B474
C1015	CHIP CERAMIC CAP.(1608) B K 4.7μF/6.3V	CHD0KK30B475
C1016	CHIP CERAMIC CAP.(1608) B K 1000pF/50V	CHD1JK30B102
C1017	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1018	CERAMIC CAP. 100pF/2KV	CA3D101PAN04
C1020	CHIP CERAMIC CAP.(3216) X7R K 1.0μF/100V	CA2A105MR080
CONNECTORS		
CN601	FMN CONNECTOR TOP 19P IMSA-9615S-19A-PP-A	JC96J19ER007
CN603▲	CONNECTOR S2P3-VH (LF)(SN)	JCVHC02JG002
CN1001	FFC CONNECTOR 6P IMSA-9615S-06C-PP-A	JC96J06ER009
DIODES		
D601	DIODE ZENER 1ZB220-YBB	NDWZ01ZB220Y
D608	DIODE ZENER 10BSB-T26	NDTB010BST26
D609▲	DIODE 1N5397BD	NDL1001N5397
D610▲	DIODE 1N5397BD	NDL1001N5397
D611▲	DIODE 1N5397BD	NDL1001N5397
D612▲	DIODE 1N5397BD	NDL1001N5397
D613	DIODE ZENER 4V3BSB-T26	NDTB4R3BST26
D614▲	DIODE ZENER 27BSB-T26	NDTB027BST26
D615▲	DIODE ZENER 1ZB36BB	NDWZ0001ZB36
D616▲	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D618	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D619	DIODE SHOTTKY SB3200BR	NDWZ3200D027
D620	DIODE ZENER 1ZB30BB	NDWZ0001ZB30
D627	DIODE SK16-T/R	ND1Z0000SK16
D629	DIODE SCHOTTKY SMD SK2B-TR	ND1Z00SK2BTR
D630	DIODE ZENER 1ZB20BB	NDWZ0001ZB20
D634	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D635	DIODE ZENER 3V3BSB-T26	NDTB3R3BST26
D636	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D637	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D640	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D641	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D642	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D657	DIODE SK16-T/R	ND1Z0000SK16
D658	DIODE ZENER 5V6BSB-T26	NDTB5R6BST26
D660	DIODE ZENER 4V7BSB-T26	NDTB4R7BST26
D661	DIODE FAST RECOVERY SMD GR1G	ND1Z00GR1GTR
D662	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D663	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D664	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D665	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1001	DIODE SCHOTTKY SB1A0BB	NDWZ000SB1A0
D1002	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1004	DIODE ZENER 27BSB-T26	NDTB027BST26
D1005	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
ICS		
IC601▲	IC PHOTOCOUPLER TLP781F(D4-FUNBL F)	QPEL781FBLLF
IC1001	IC LED BACKLIGHT CONTROLLER HA7202PC /SOP /24PIN	NCSA0T00H001
COILS		
L601▲	LINE FILTER 27H-9014/5MH	LLEG0ZDEL003
L1001	COIL POWER INDUCTORS DIP RCR1010NP-470M/47μH	LLF4700SF012
TRANSISTORS		
Q607▲	MOS FET TK5A50D(LS1FND.Q)/Z	QEEZTK5A50DQ
Q608▲	TRANSISTOR 2SC2120-Y(T2E F T)	QQSY2SC2120F
Q609	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q610	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K

Ref. No.	Description	Part No.
Q611	TRANSISTOR KTC3198-Y-AT/P	NQSYKTC3198P
Q615	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q616	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q631	CHIP TRANSISTOR 2SC2412K(R) T146	QQ8R2SC2412K
Q1001	FET MOS RSD050N10TL	QF1ZSD050N10
RESISTORS		
R623	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R624	RES CHIP 1608 1/10W J 22k Ω	RRXA223HH013
R625▲	GLASS GLAZE RES. 1/2W J 1M Ω	RXX2JZLZ0105
R626	RES CEMENT 3W J 1.2 Ω	RWJ1R2PAK004
R627	CHIP RES. 1/4W J 390k Ω	RRXA4JR7Z0394
R628	CHIP RES. 1/4W J 390k Ω	RRXA4JR7Z0394
R629	CHIP RES. 1/4W J 390k Ω	RRXA4JR7Z0394
R630	CHIP RES. 1/4W J 390k Ω	RRXA4JR7Z0394
R631	RES CARBON FILM T 1/4W J 330 Ω	RCX4331T1001
R632	RES CARBON FILM T 1/4W J 330 Ω	RCX4331T1001
R633	RES CARBON FILM T 1/4W J 1.2k Ω	RCX4122T1001
R634▲	METAL OXIDE FILM RES. 2W J 0.68 Ω	RN02R68ZU001
R635	RES CARBON FILM T 1/4W J 2.2k Ω	RCX4222T1001
R636	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R639	RES CARBON FILM T 1/4W J 1.5k Ω	RCX4152T1001
R642	RES CARBON FILM T 1/4W J 270 Ω	RCX4271T1001
R643	RES CARBON FILM T 1/4W J 3.9k Ω	RCX4392T1001
R645	RES CHIP 1608 1/10W F 18.0k Ω	RTW1802HH008
R646	RES CHIP 1608 1/10W F 820 Ω	RTW8200HH008
R647	RES CHIP 1608 1/10W F 22.0k Ω	RTW2202HH008
R648	RES CHIP 1608 1/10W F 24.0k Ω	RTW2402HH008
R649	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R650	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R652	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R653	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R654	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R655	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R656	RES CARBON FILM T 1/4W J 15 Ω	RCX4150T1001
R657	WIRE CP STP-S-0.50	XZ40F0REN001
R661	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R673	RES CHIP 1608 1/10W J 1.0 Ω	RRXA1R0HH013
R674	RES CHIP 1608 1/10W F 22.0k Ω	RTW2202HH008
R675	RES CHIP 1608 1/10W F 30.0k Ω	RTW3002HH008
R677	RES CARBON FILM T 1/4W J 22k Ω	RCX4223T1001
R678	RES CHIP 1608 1/10W J 47k Ω	RRXA473HH013
R679	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R680	RES CARBON FILM T 1/4W J 270 Ω	RCX4271T1001
R681	RES CARBON FILM T 1/4W J 270 Ω	RCX4271T1001
R682	RES CARBON FILM T 1/4W J 220 Ω	RCX4221T1001
R684	RES CHIP 1608 1/10W J 56k Ω	RRXA563HH013
R685	RES CHIP 1608 1/10W J 6.8k Ω	RRXA682HH013
R686	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R687	RES CHIP 1608 1/10W J 2.7k Ω	RRXA272HH013
R1002	RES CHIP 1608 1/10W F 560k Ω	RTW5603HH008
R1003	RES CHIP 1608 1/10W F 360k Ω	RTW3603HH008
R1004	RES CHIP 1608 1/10W F 27.0k Ω	RTW2702HH008
R1005	RES CHIP 1608 1/10W 0 Ω	RRXA000HH014
R1006	RES CHIP 1608 1/10W J 10 Ω	RRXA100HH013
R1007	METAL OXIDE RES. 1W J 0.24 Ω	RN01R24ZU001
R1009	RES CHIP 1608 1/10W F 20.0k Ω	RTW2002HH008
R1010	RES CHIP 1608 1/10W F 1.50k Ω	RTW1501HH008
R1011	RES CHIP 1608 1/10W F 100k Ω	RTW1003HH008
R1012	RES CHIP 1608 1/10W J 100 Ω	RRXA101HH013
R1013	RES CHIP 1608 1/10W F 100 Ω	RTW1000HH008
R1019	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1020	RES CHIP 1608 1/10W J 100k Ω	RRXA104HH013

Ref. No.	Description	Part No.
R1021	RES CHIP 1608 1/10W J 10k Ω	RRXA103HH013
R1022	RES CHIP 1608 1/10W J 100k Ω	RRXA104HH013
R1023	RES CHIP 1608 1/10W J 1.0k Ω	RRXA102HH013
R1030	RES CARBON FILM T 1/4W J 18k Ω	RCX4183T1001
R1031	RES CARBON FILM T 1/4W J 18k Ω	RCX4183T1001
R1032	RES CHIP 1608 1/10W J 240 Ω	RRXA241HH013
R1033	RES CHIP 1608 1/10W J 240 Ω	RRXA241HH013
MISCELLANEOUS		
B62	HEAT SINK PNI A11N5UH	1EM435557
BC001	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC601	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC1001	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
BC1002	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
F601▲	FUSE STC4A125V U/CT	PAGE20CW3402
FH601	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
FH602	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
JS1001	WIRE CP STP-S-0.50	XZ40F0REN001
L3	SCREW B-TIGHT D3X8 BIND HEAD+	GBJB3080
SA601▲	SURGE ABSORBER 470V+-10PER	NVQZ10D471KB
T601▲	TRANS POWER 11706	LTT2PC0KT070

REVISION HISTORY

Chassis FL11.1

- 2011-02-22 LC220EM2 (Serial No. : TH1) added
- 2011-04-14 LC220SS2 (Serial No. : TH1) added
- 2011-05-19 22ME601B/F7 (Serial No. : DS1) added

COMPARISON LIST OF MODEL NAME

Chassis FL11.1

LC220SS2	(TH1)	A1776UT
LC220EM2	(TH1)	A1775UT
22ME601B/F7	(DS1)	A1170UH