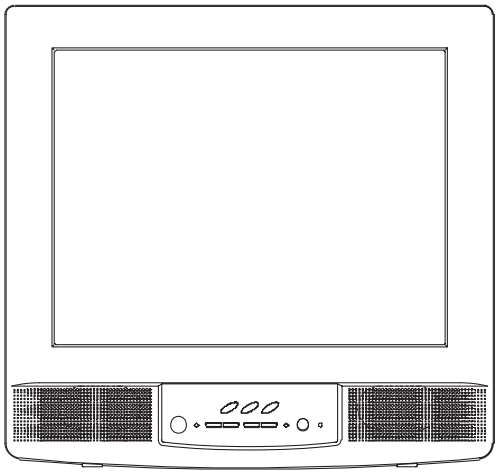
SYLVANIA Symphonic

SERVICE MANUAL

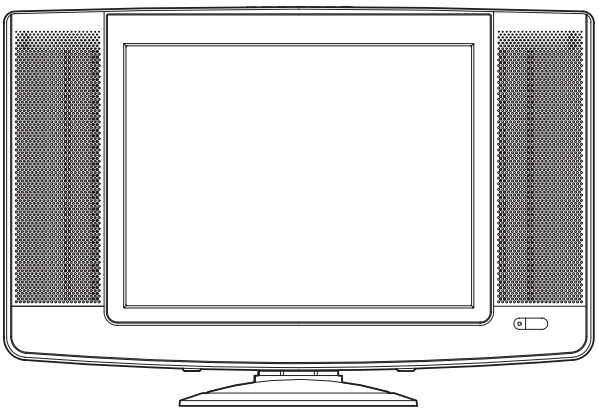
15″ COLOR LCD TELEVISION

6615LF4/ STL1505



15″ COLOR LCD TELEVISION

6615LF



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.

TABLE OF CONTENTS

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.

SPECIFICATIONS

< TUNER >

ANT. Input ---------- 75 ohm Unbal., F type
Reference Level---------- 20 Vp-p (LCD Green Cathode)
Test Input Signal ---------- 400 Hz 30% modulation

Description	Condition	Unit	Nominal	Limit
1. Intermediate Freq.	Picture Sound	MHz MHz	45.75 41.25	--- ---
2. Color Killer Sens.	CH-2 CH-10 CH-55	dBμV dBμV dBμV	15 15 15	20 20 20
3. AFT Pull In Range (10 mV input)	---	MHz	±2.1	±0.7

< LCD PANEL >

Description	Condition	Unit	Nominal	Limit
1. Number of Pixels	Horizontal Vertical	pixels pixels	640 × 3 480	--- ---
2. Brightness		cd/m^2	500	---
3. Response Time	---	msec	16	---
4. Support Color	---	-	26 mil. (6 bit)	---
5. Viewing Angle	Horizontal Vertical	° °	-80 to 80 -65 to 70	--- ---

< VIDEO >

Description	Condition	Unit	Nominal	Limit
1. Over Scan	Horizontal Vertical	% %	7 7	--- ---
2. Color Temperature	--- x y	°K	9200 0.286 0.294	--- ±0.3 ±0.3
3. Resolution	Horizontal Vertical	line line	400 350	--- ---

< AUDIO >

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

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power	10% THD: Lch/Rch	W	1.0/1.0	0.8/0.8
2. Audio Distortion	500mW: Lch/Rch	%	1.0/1.0	4.0/4.0
3. Audio Freq. Response	–3dB: Lch –3dB: Rch	Hz Hz	50 to 12 k 50 to 12 k	--- ---

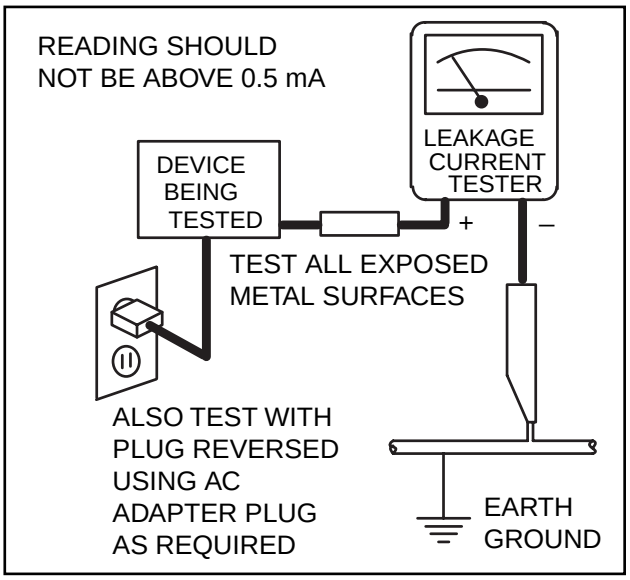
Note: Nominal specifications represent the design specifications. All units should be able to approximate these. Some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable. In no case should a unit fail to meet limit specifications.

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 1.0V 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 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. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure

1) Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector (discard it).
2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC supply outlet.

M. When installing parts or assembling the cabinet parts, be sure to use the proper screws and tighten certainly.

Safety Check after Servicing

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

1. Clearance Distance

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

Table 1: Ratings for selected area

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

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

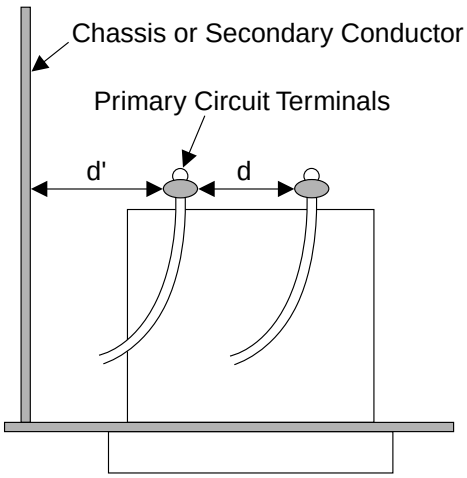


Fig. 1

2. Leakage Current Test

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

Measuring Method: (Power ON)

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

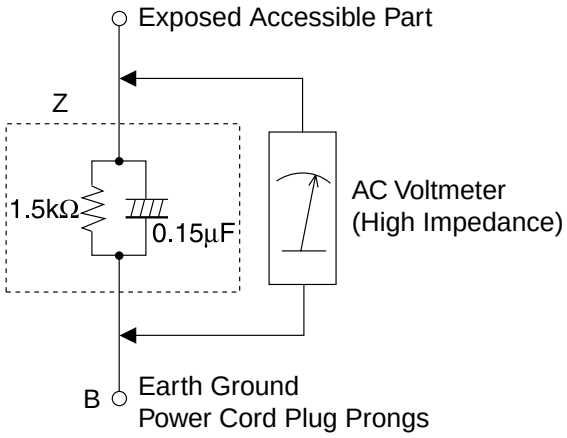


Fig. 2

Table 2: Leakage current ratings for selected areas

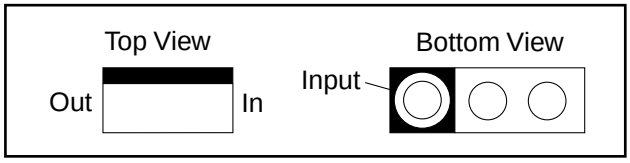
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA rms	Exposed accessible parts

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

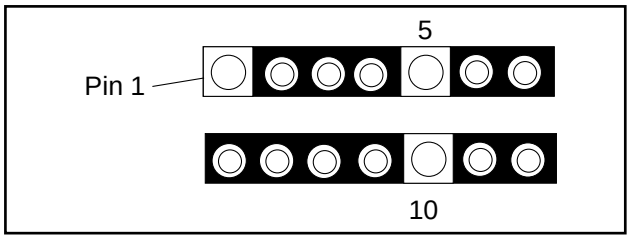
STANDARD NOTES FOR SERVICING

Circuit Board Indications

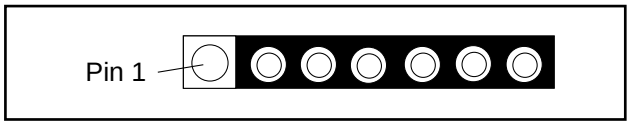
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

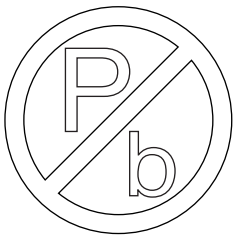


3. The 1st pin of every male connector is indicated as shown.



Pb (Lead) Free Solder

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



Pb free mark

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

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

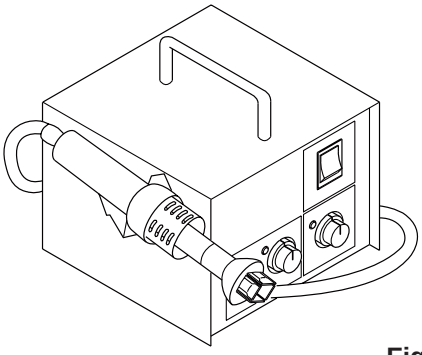


Fig. S-1-1

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

CAUTION:

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

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

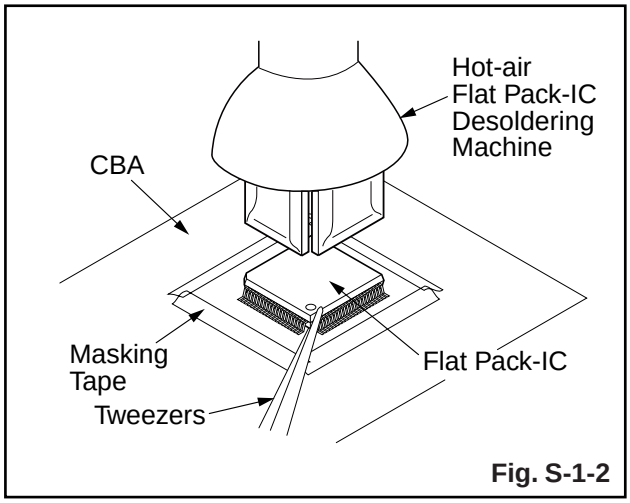


Fig. S-1-2

With Soldering Iron:

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

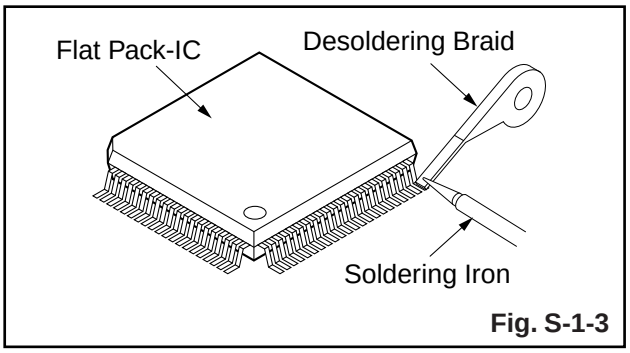


Fig. S-1-3

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

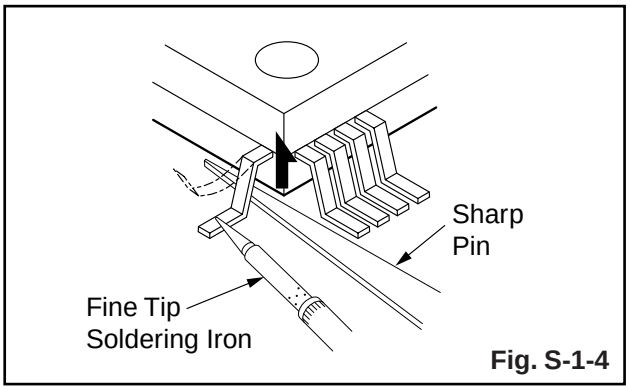


Fig. S-1-4

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

With Iron Wire:

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

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

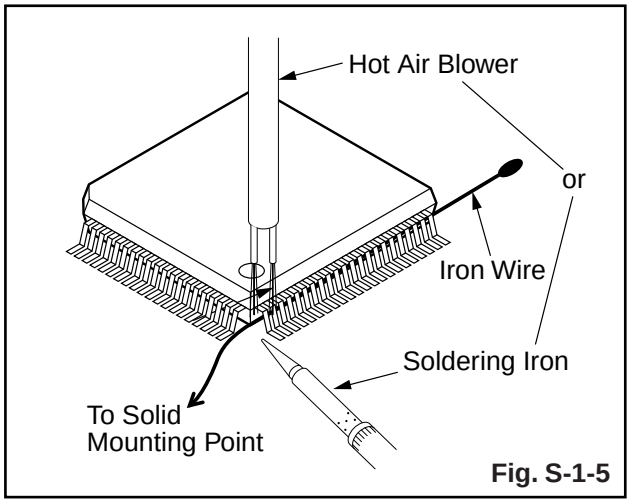


Fig. S-1-5

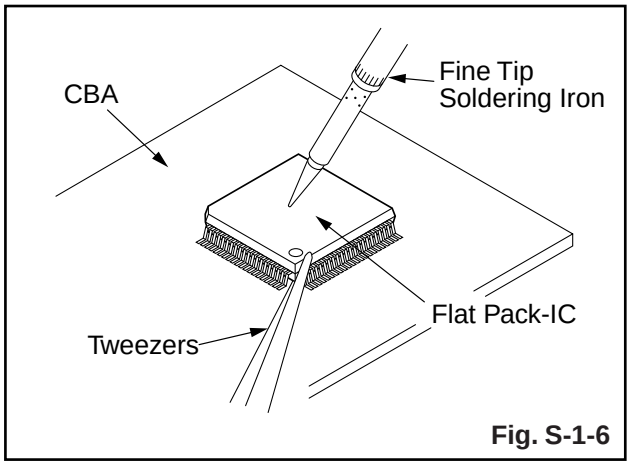


Fig. S-1-6

2. Installation

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

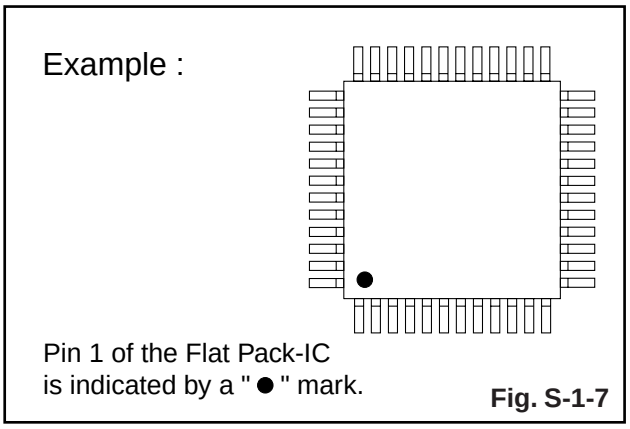


Fig. S-1-7

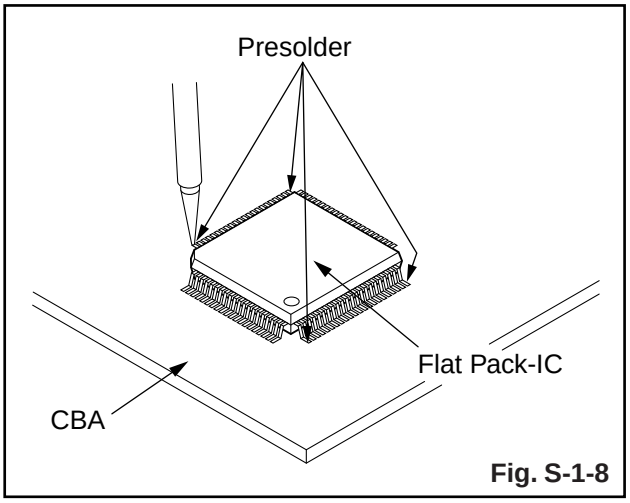


Fig. S-1-8

Instructions for Handling Semi-conductors

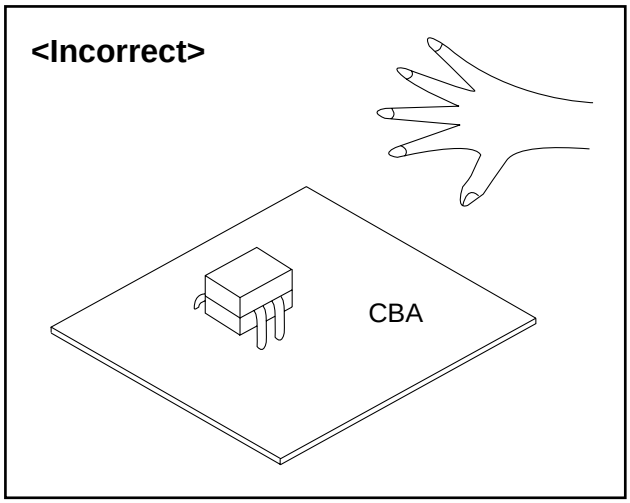
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

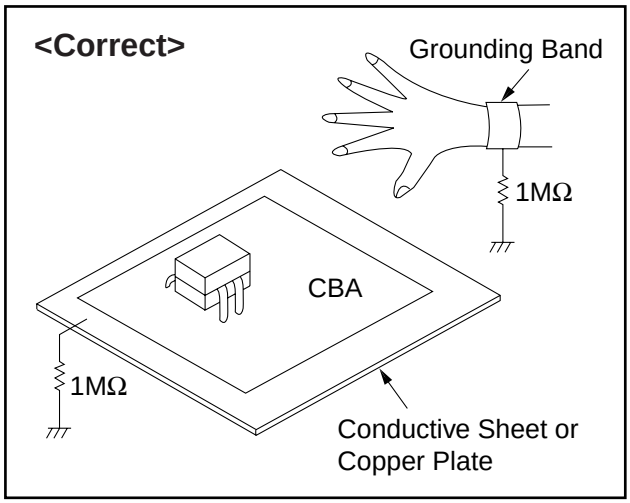
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

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



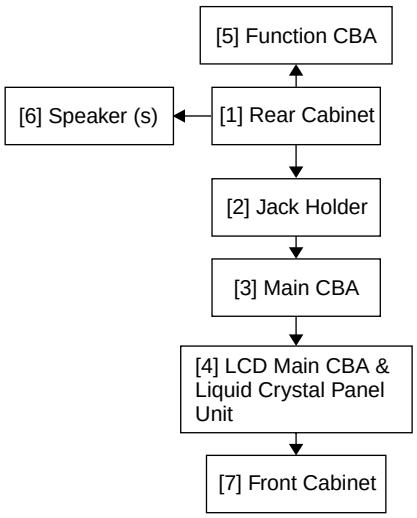


CABINET DISASSEMBLY INSTRUCTIONS

[6615LF4/STL1505]

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts, and the CBA in order to gain access to item(s) 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	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Unclamp/ Desolder	Note
[1]	Rear Cabinet	D1	6(S-1), (S-2)	---
[2]	Jack Holder	D2	3(S-3), (S-4)	---
[3]	Main CBA	D2 D3	10(S-5), *CN101A, *CN102A, *CN103A, *CN402, *CN403, *CN801, *CN802	---
[4]	LCD Main CBA & Liquid Crystal Panel Unit	D2 D3	11(S-6), *CLN104	---
[5]	Function CBA	D2 D3	4(S-7)	---
[6]	Speaker (s)	D2 D3	4(S-8)	---
[7]	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,
CN = Connector
* = Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)

(5) Refer to the following "Reference Notes in the Table."

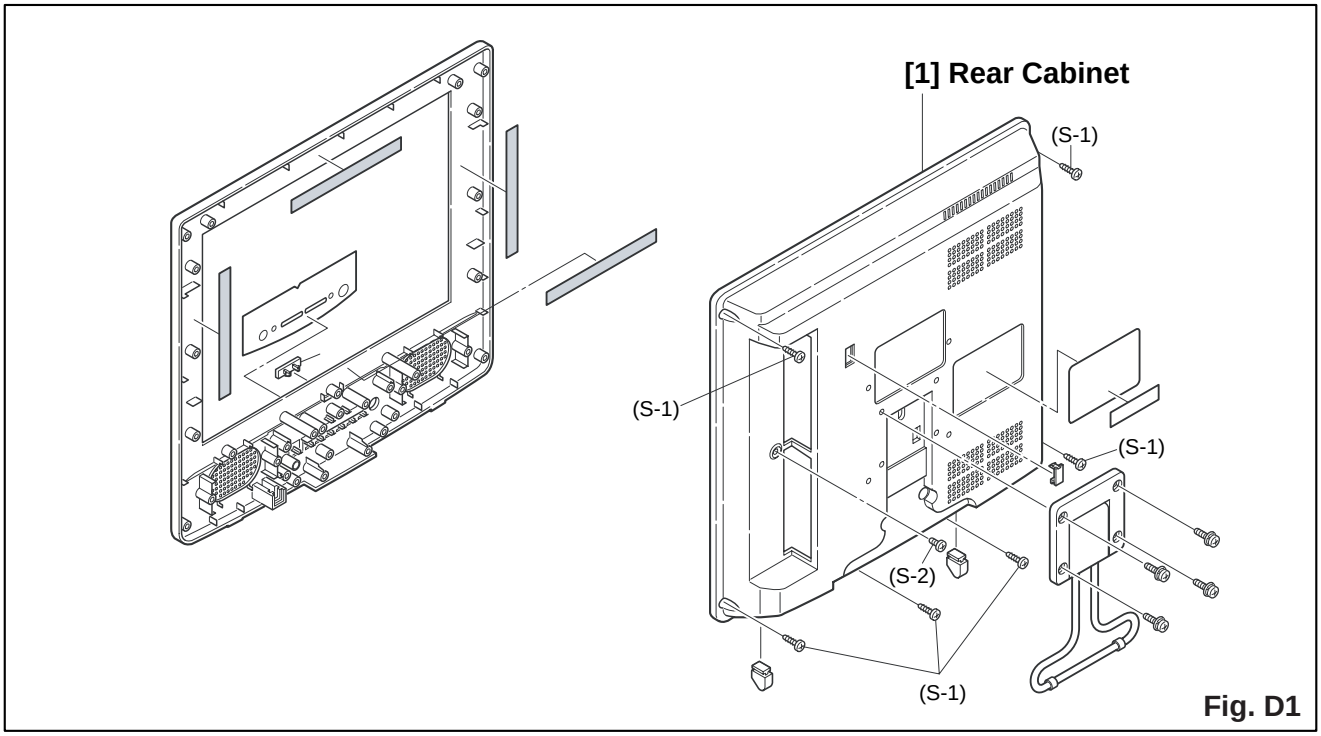

[1] Rear Cabinet
(S-1)
(S-1)
(S-1)
(S-2)
(S-1)

Fig. D1

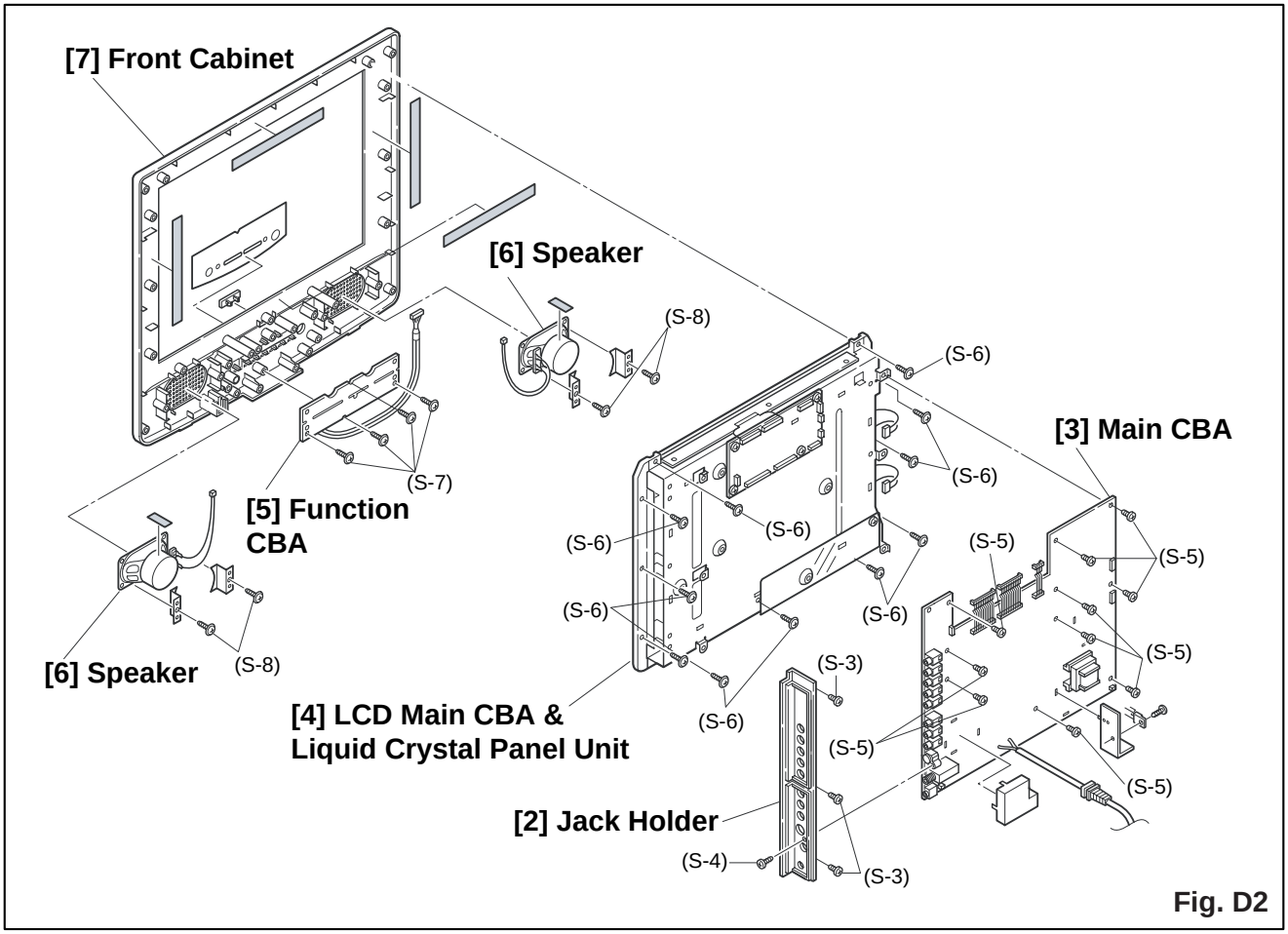

[7] Front Cabinet
[6] Speaker
(S-8)
(S-6)
(S-6)
(S-7)
[3] Main CBA
[5] Function CBA
(S-6)
(S-6)
(S-5)
(S-5)
(S-6)
(S-6)
(S-5)
[6] Speaker
(S-8)
(S-3)
[4] LCD Main CBA & Liquid Crystal Panel Unit
(S-6)
(S-5)
(S-5)
[2] Jack Holder
(S-4)
(S-3)

Fig. D2

TV Cable Wiring Diagram

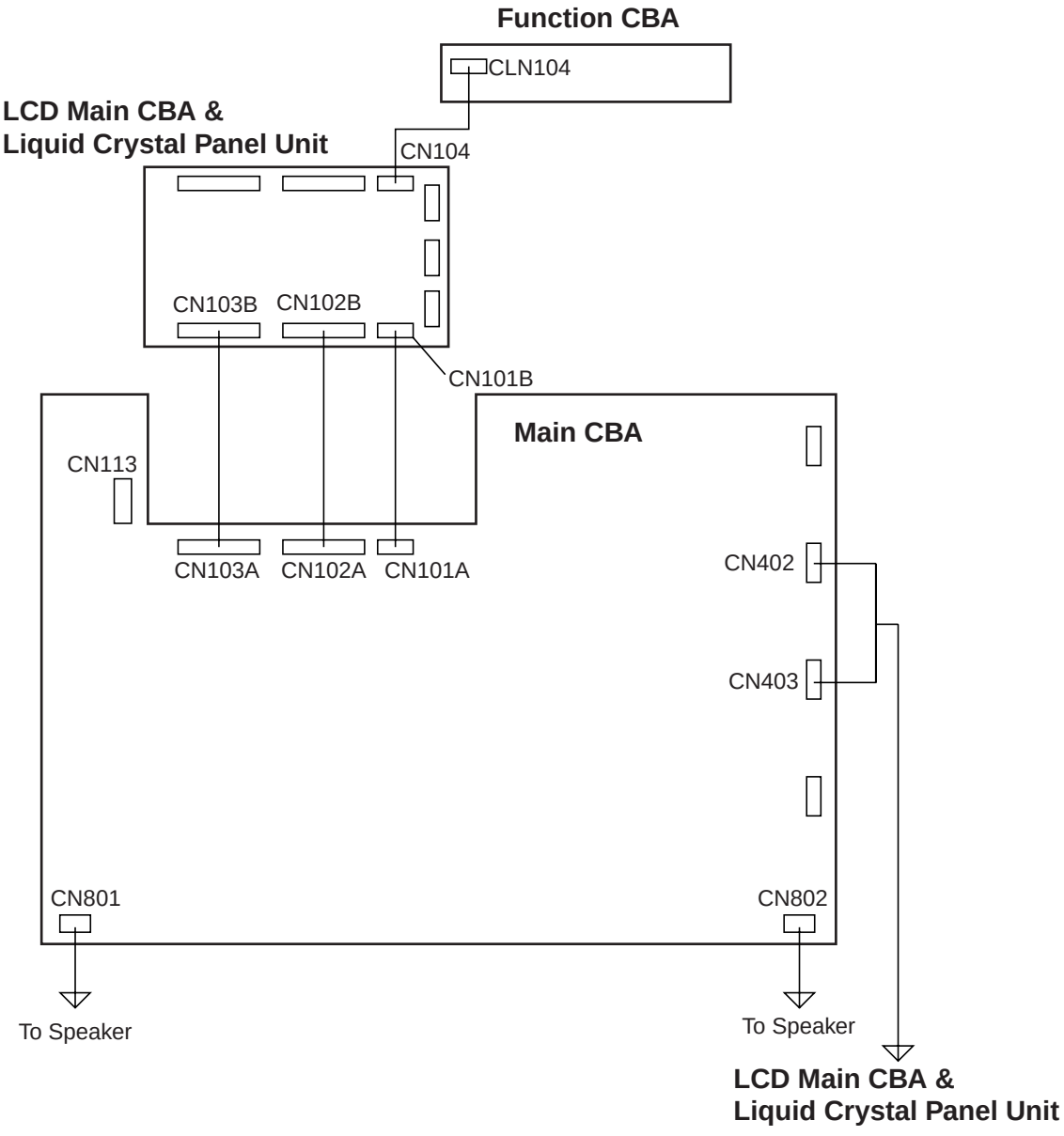
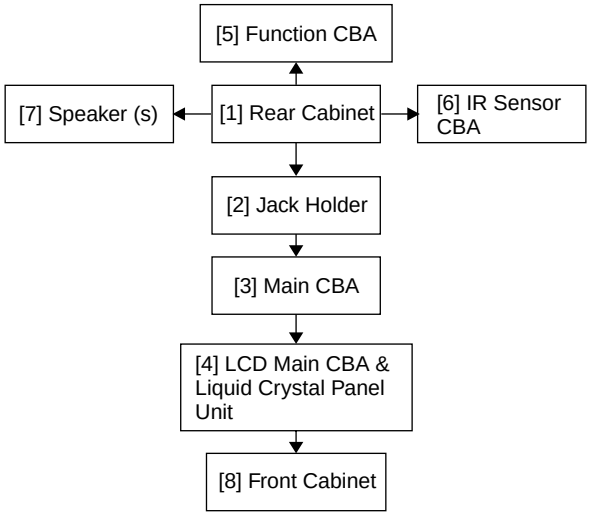


Fig. D3

[6615LF]

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts, and the CBA in order to gain access to item(s) 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	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Unclamp/ Desolder	Note
[1]	Rear Cabinet	D1	10(S-1), 3(S-2)	---
[2]	Jack Holder	D2	3(S-3), (S-4)	---
[3]	Main CBA	D2 D3	8(S-5), *CN101A, *CN102A, *CN103A, *CN402, *CN403, *CN801, *CN802	---
[4]	LCD Main CBA & Liquid Crystal Panel Unit	D2 D3	11(S-6), *CLN104, *CLN105	---
[5]	Function CBA	D2 D3	4(S-7)	---
[6]	IR Sensor CBA	D2 D3	(S-8)	---
[7]	Speaker (s)	D2 D3	6(S-9)	---
[8]	Front Cabinet	D2	----------	---
		↓ (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,
CN = Connector
* = Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)

(5) Refer to the following "Reference Notes in the Table."

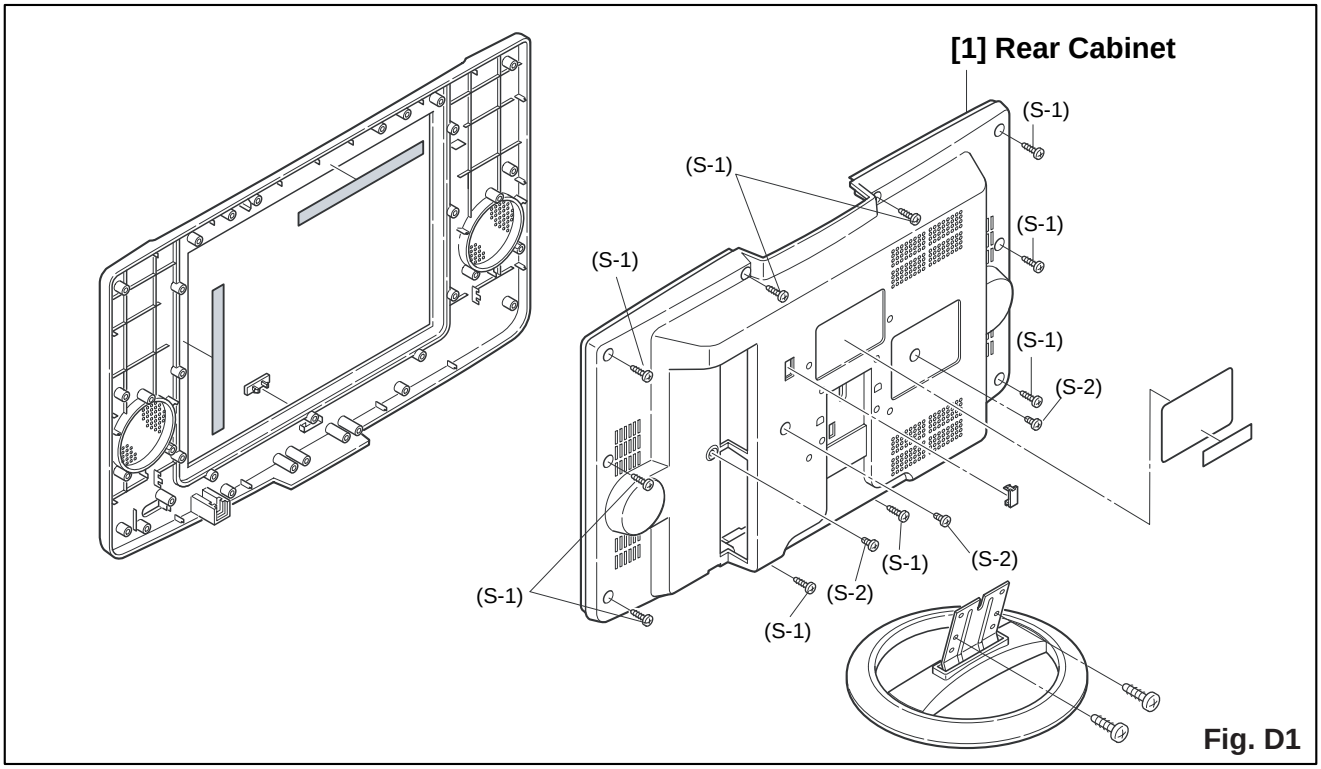

[1] Rear Cabinet
(S-1)
(S-1)
(S-1)
(S-1)
(S-1)
(S-2)
(S-1)
(S-2)
(S-1)
(S-2)
(S-1)

Fig. D1

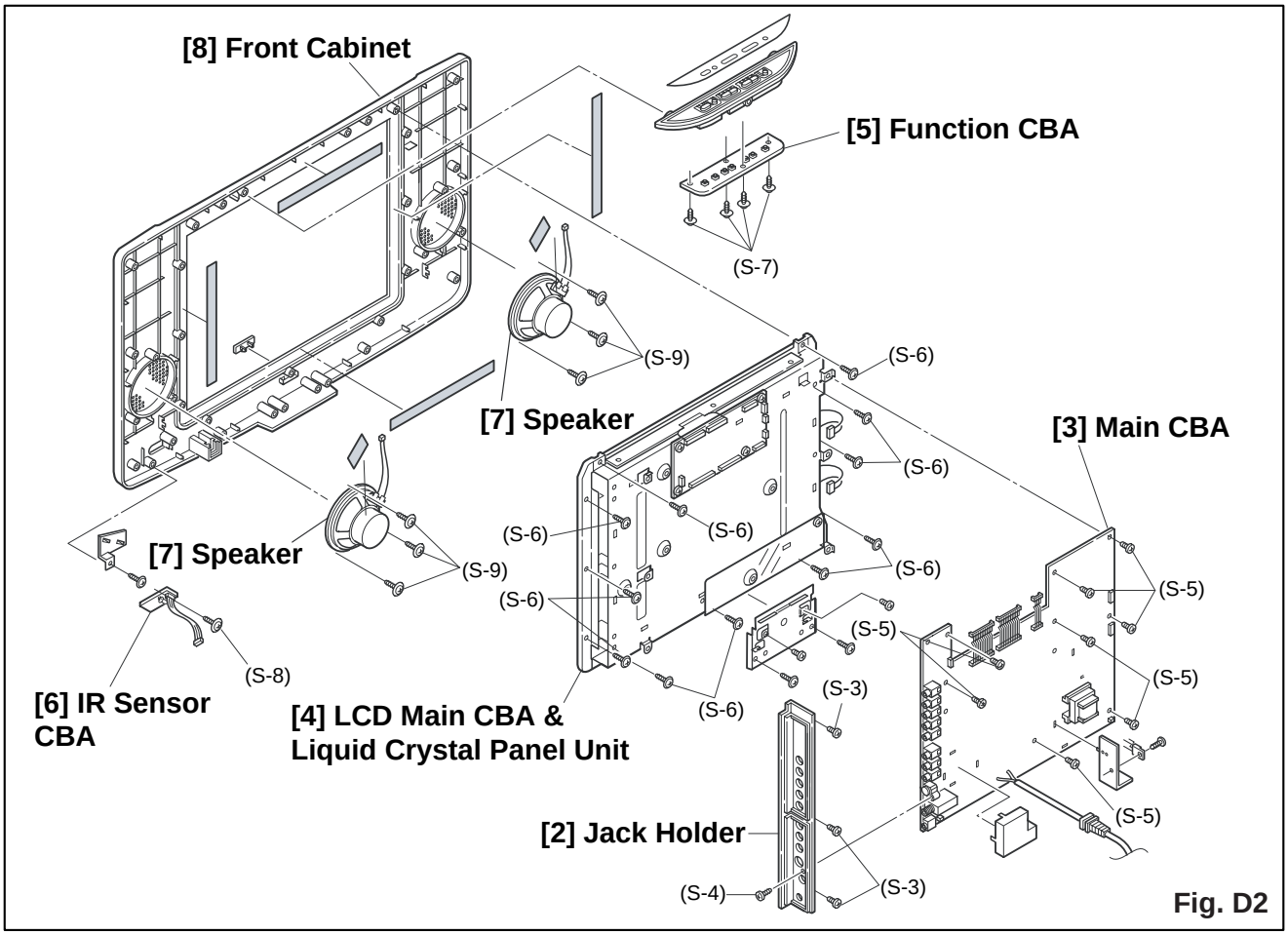

[8] Front Cabinet
[5] Function CBA
(S-7)
(S-9)
[7] Speaker
(S-6)
[3] Main CBA
(S-6)
(S-6)
(S-6)
[7] Speaker
(S-9)
(S-6)
(S-6)
(S-5)
(S-5)
(S-5)
(S-8)
(S-3)
[6] IR Sensor CBA
[4] LCD Main CBA & Liquid Crystal Panel Unit
(S-6)
[2] Jack Holder
(S-5)
(S-4)
(S-3)

Fig. D2

TV Cable Wiring Diagram

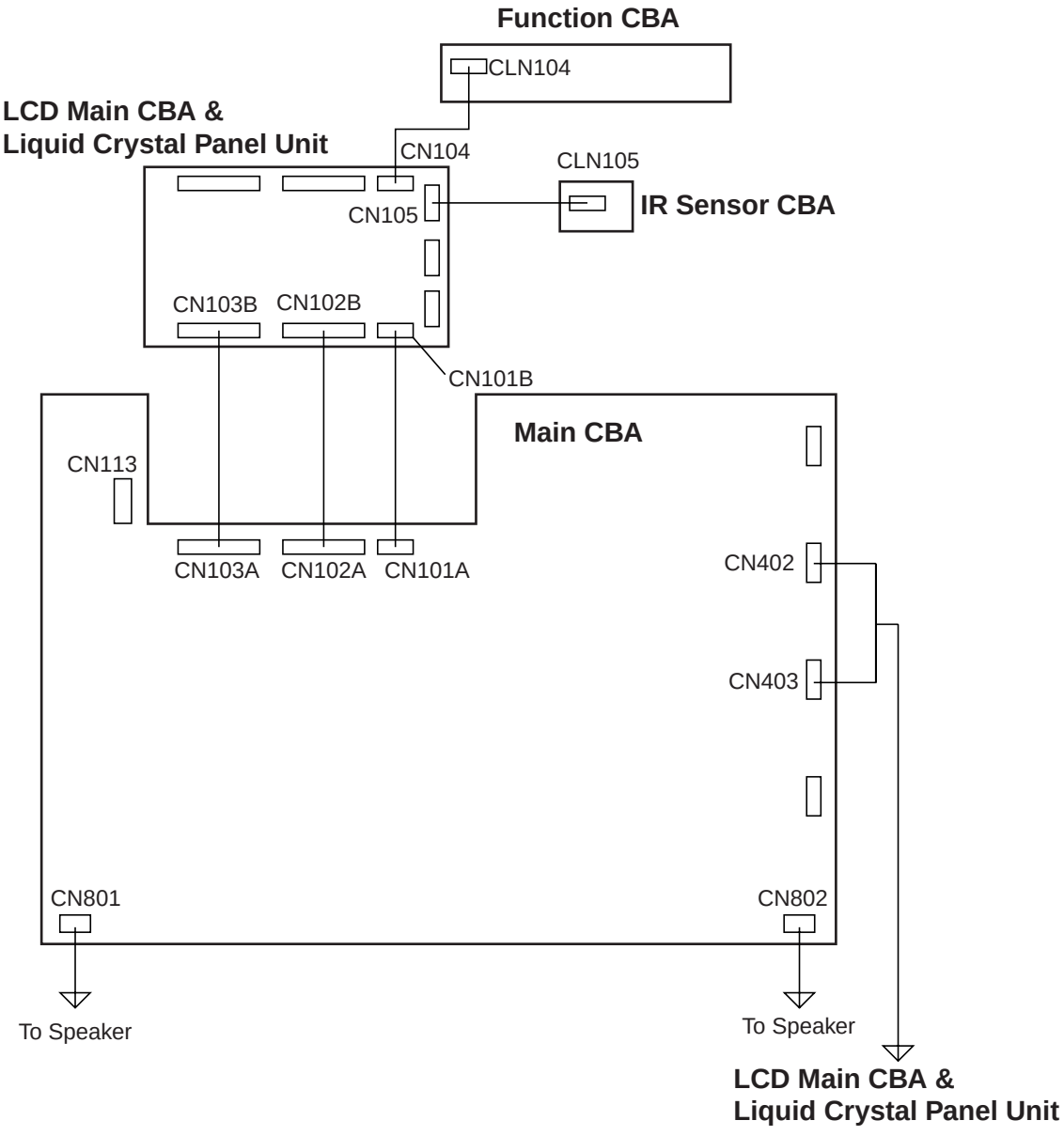


Fig. D3

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. DC Voltmeter
2. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
3. Remote control unit: Part No. N0105UD or N0127UD
4. Color Analyzer

How to make Service remote control unit:

1. Prepare normal remote control unit.
(Part No. N0105UD or N0127UD)
Remove 3 Screws from the back lid. (Fig. 1-1)

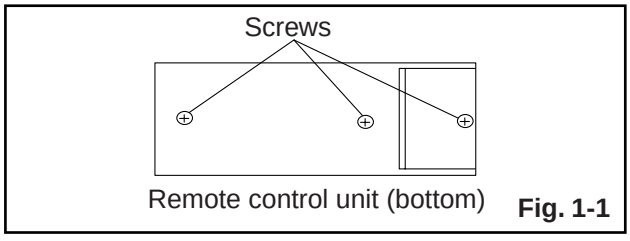


Fig. 1-1

2. Added J1 (Jumper Wire) to the remote control CBA. (Fig. 1-2)

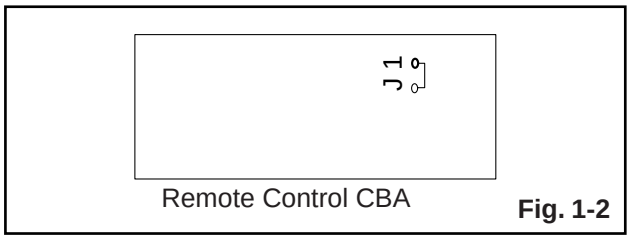


Fig. 1-2

How to set up the service mode:

Service mode:

1. Use the service remote control unit.
2. Turn the power on. (Use main power on the TV unit.)
3. Press [SLEEP] button on the service remote control unit. Version of micro computer will be displayed on the LCD or display. (Ex: 0004FP-0.47)

1. Initial Setting

General: Enter the Service mode. (See page 5-1.)

Set the each initial data as shown on table 1 below.

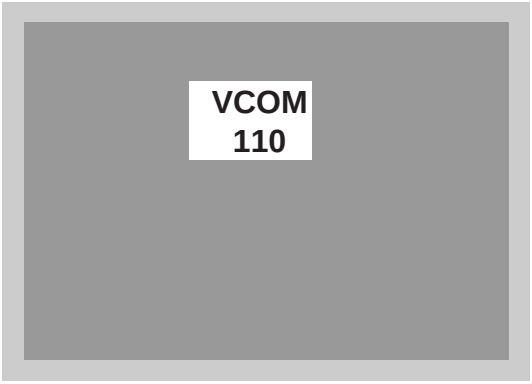
Table 1: Initial Data

Item	Button (on the service remote control)	Data Value
BRT	[MENU] → [1]	140
CNT		195
CLR-R		64
CLR-B		64
TNT		60
V-TNT		60
SHR		35
S-BRT	[MENU] → [2]	143
S-CNT		195
S-CLR-R		64
S-CLR-B		64
S-TNT		64
S-SHR		35
C-BRT	[MENU] → [3]	140
C-CNT		164
C-CLR-R		64
C-CLR-B		64
C-TNT		64
C-SHR		35

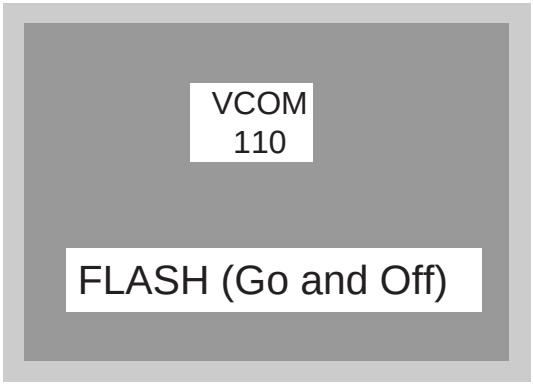
Item	Button (on the service remote control)	Data Value
D2-BRT	[MENU] → [5]	146
D2-CNT		153
D2-CLR-R		63
D2-CLR-B		63
D2-TNT		64
D2-SHR		35
D3-BRT	[MENU] → [6]	143
D3-CNT		160
D3-CLR-R		66
D3-CLR-B		66
D3-TNT		64
D3-SHR		35
DR(C/D1)	[VOL ▼] → [4]	126
D-DR(C/D2)		147
DB(C/D1)	[VOL ▼] → [6]	119
D-DB(C/D2)		142

2. Flicker Adjustment

1. Enter the Service mode. (See page 5-1.)
2. Press [2] button on the remote control unit. The following screen appears.



3. If Flicker Adjustment is not fit, the screen become the following.



4. Press [CH ▲ / ▼] buttons on the remote control unit so that flash stops.

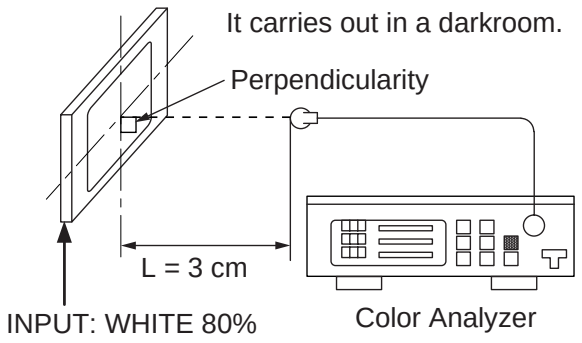
The following adjustment normally are not attempted in the field. Only when replacing the LCD Panel then adjust as a preparation.

3. White Balance Adjustment

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

Symptom of Misadjustment: White becomes bluish or reddish.

Test Point	Adj. Point	Mode	Input
Screen	VOL. ▼ buttons	**[RF/VIDEO1]** C/D1 **[VIDEO2]** C/D2	White Purity (APL 80%) or (APL 20%)
M. EQ.		Spec.	
Pattern Generator, Color analyzer		x: 0.256 to 0.316, y: 0.264 to 0.324	
Figure			



Note: Use service remote control unit

1. Operate the unit for more than 20 minutes.
2. Input the White Purity (APL 80% or APL 20%).
3. Set the color analyzer to the CHROMA mode and bring the optical receptor to the center on the LCD-Panel surface after zero point calibration as shown above.
   Note: The optical receptor must be set perpendicularly to the LCD Panel surface.
4. **[RF/VIDEO1]**
   Enter the Service mode. Press "VOL ▼" button on the remote control unit and select "C/D/S-1" mode.
   [VIDEO2]
   Enter the Service mode. Press "VOL ▼" button on the remote control unit and select "C/D/S-2" mode.
5. **[RF/VIDEO1]**
   When "x" value and "y" value are not within specification, adjust "DB (C/D1)" or "DR (C/D1)". Refer to "1. Initial Setting."
   Note: "DB(C/D1)" or "DR(C/D1)" must be adjusted within ±0.01.
   [VIDEO2]
   When "x" value and "y" value are not within specification, adjust "DB(C/D2)" or "DR(C/D2)". Refer to "1. Initial Setting."
   Note: "DB(C/D2)" or "DR(C/D2)" must be adjusted within ±0.01.
6. Turn the power off and on again. (Main power button on the TV unit.)

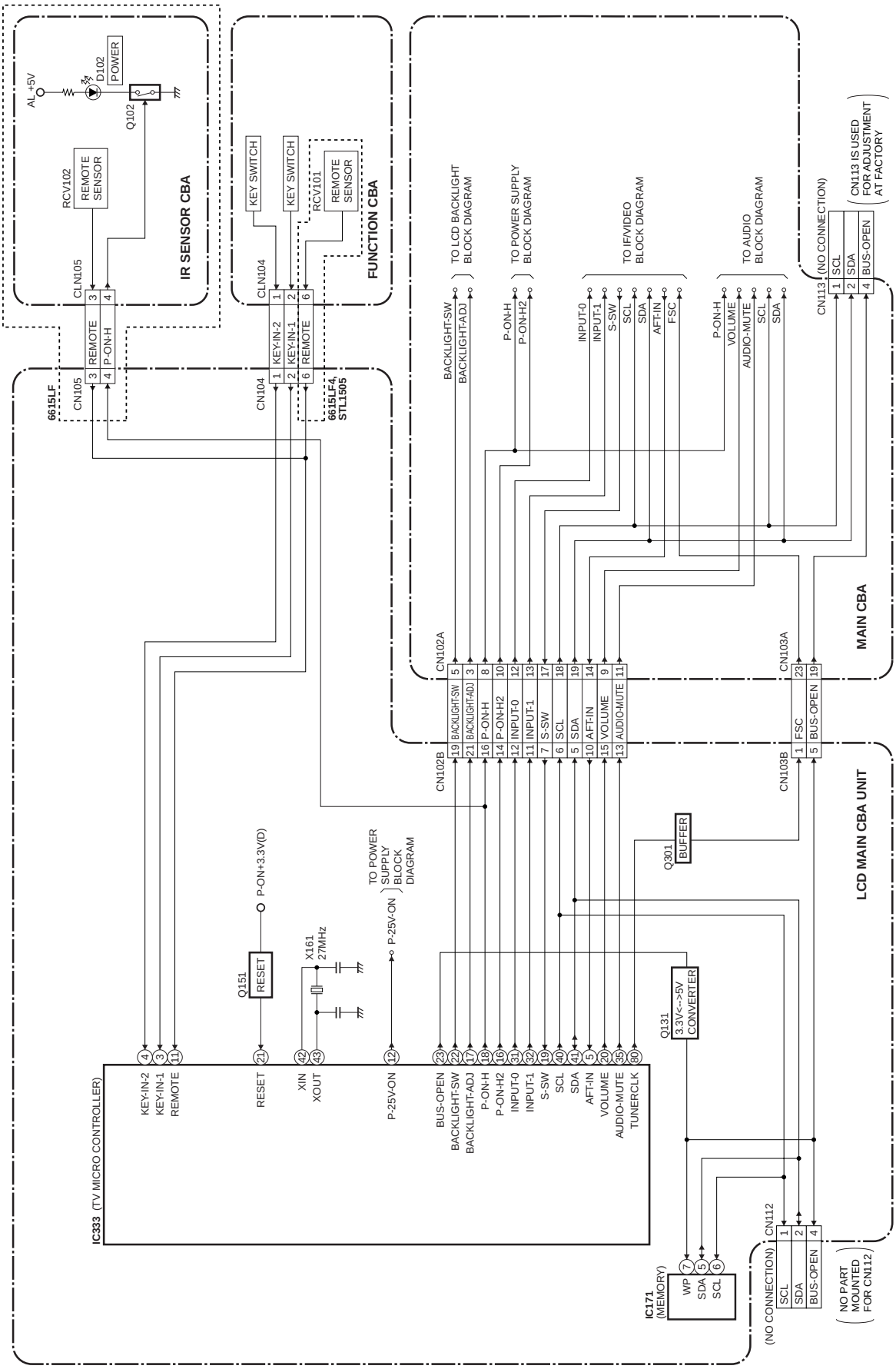
HOW TO INITIALIZE THE LCD TELEVISION

How to initialize the LCD television:

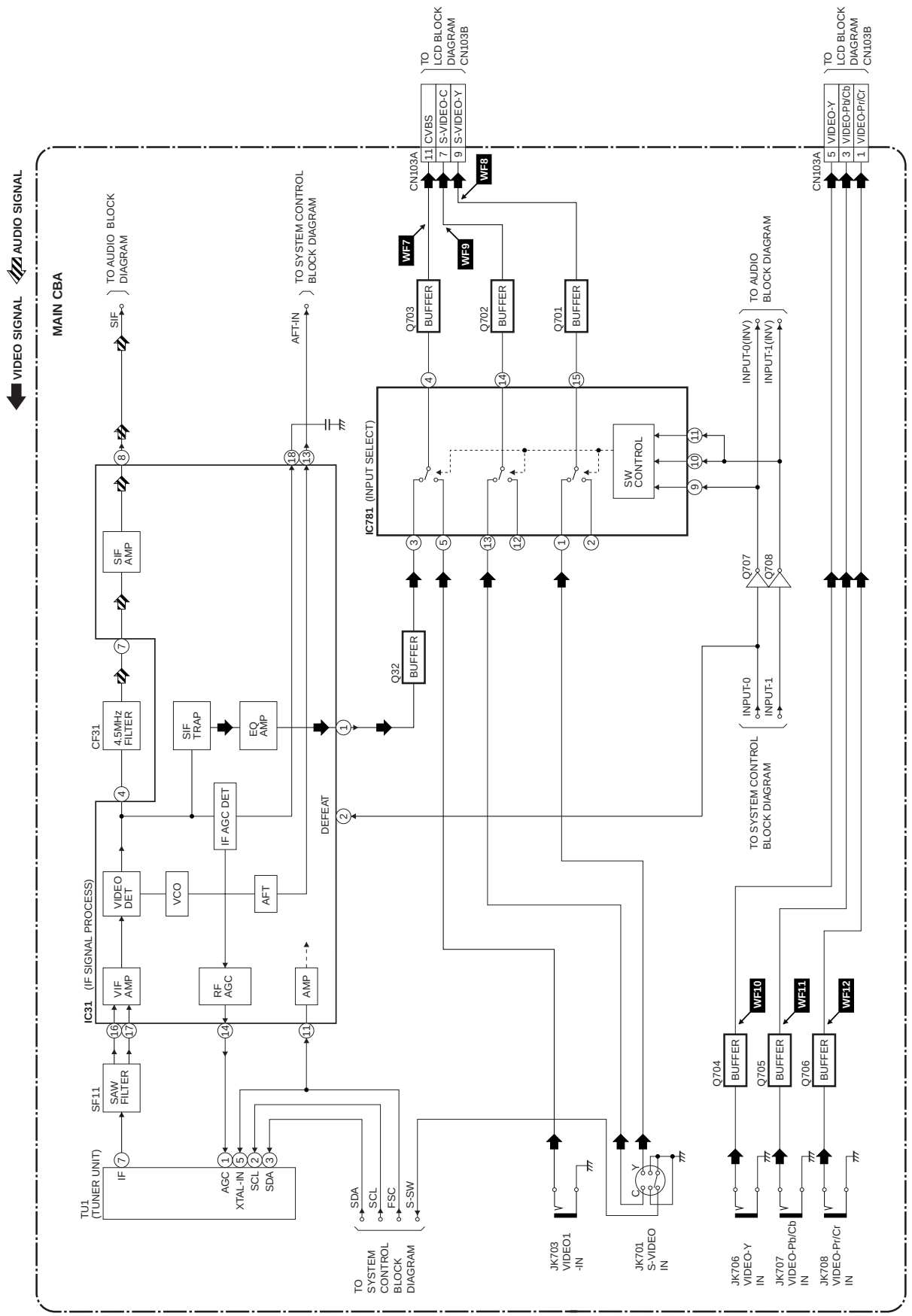
1. Turn the power on. (Use main power on the TV unit.)
2. To enter the service mode, press [POWER], [2], [7], [1], and [MUTE] buttons on the remote control unit in that order within 5 seconds.
   - To cancel the service mode, press [POWER] button on the remote control.
3. To initialize the LCD television, press “DISPLAY” button on the remote control unit.
4. Confirm "FF" indication on the upper right of the screen.

BLOCK DIAGRAMS

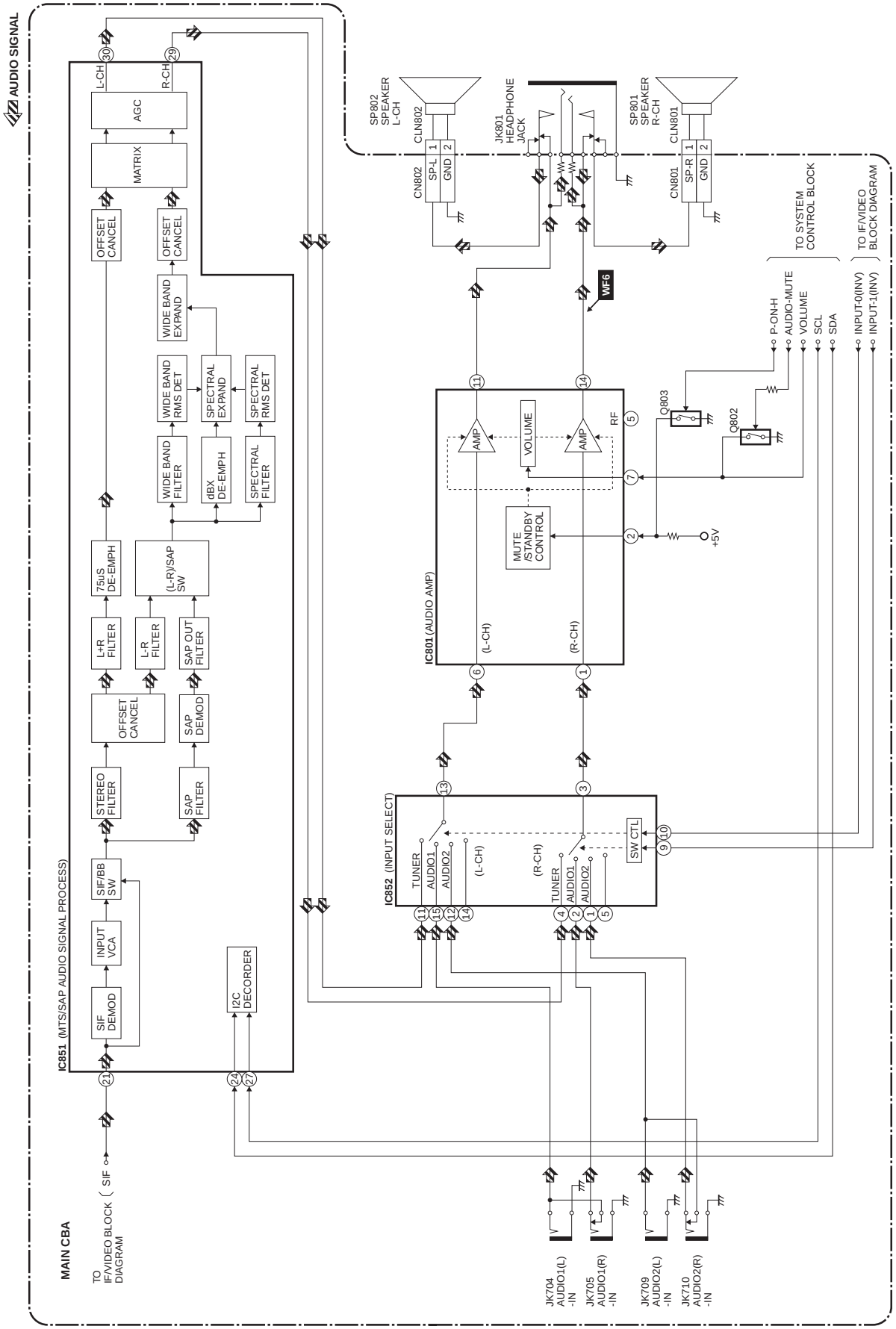
System Control Block Diagram



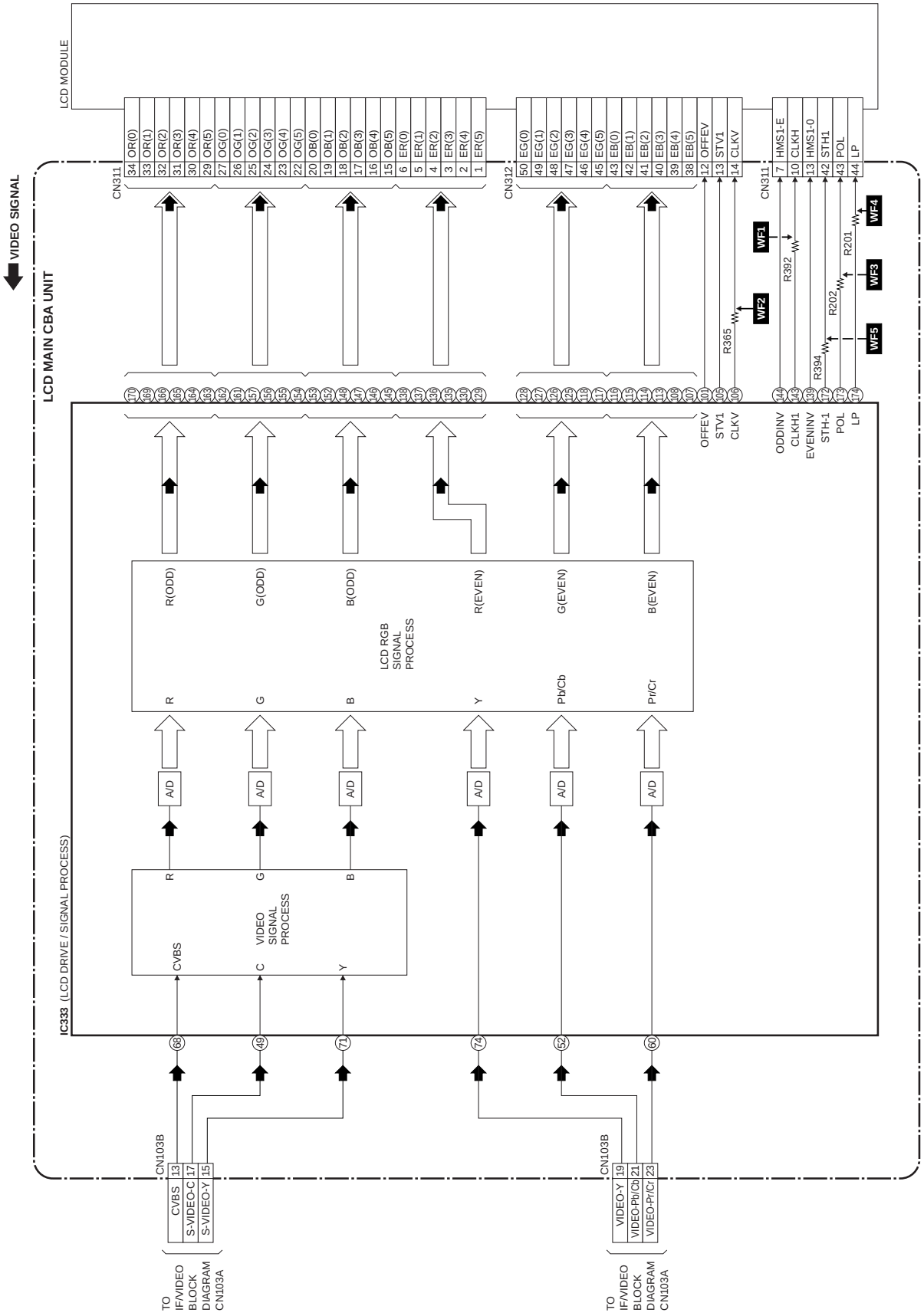
IF/Video Block Diagram



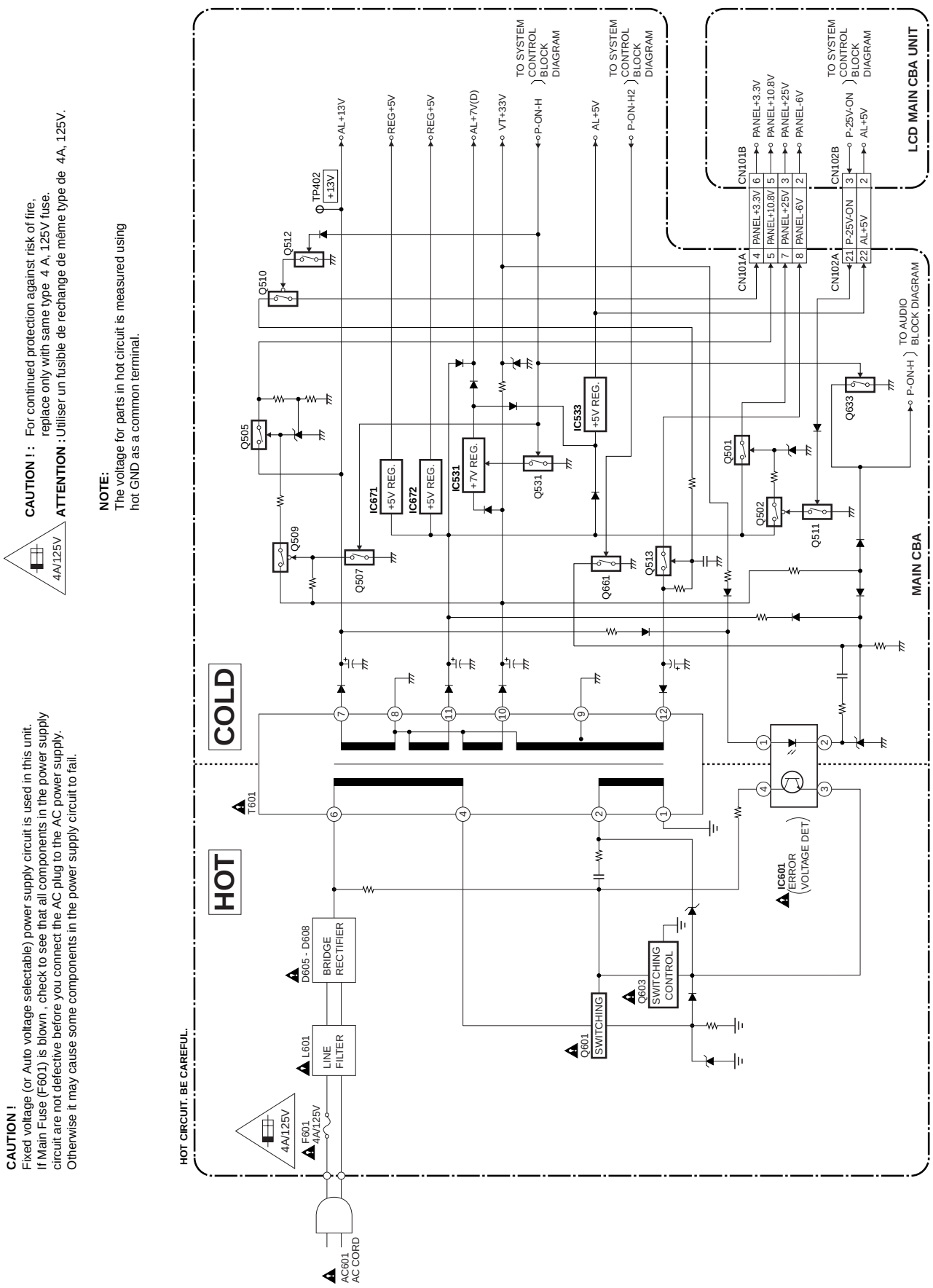
Audio Block Diagram



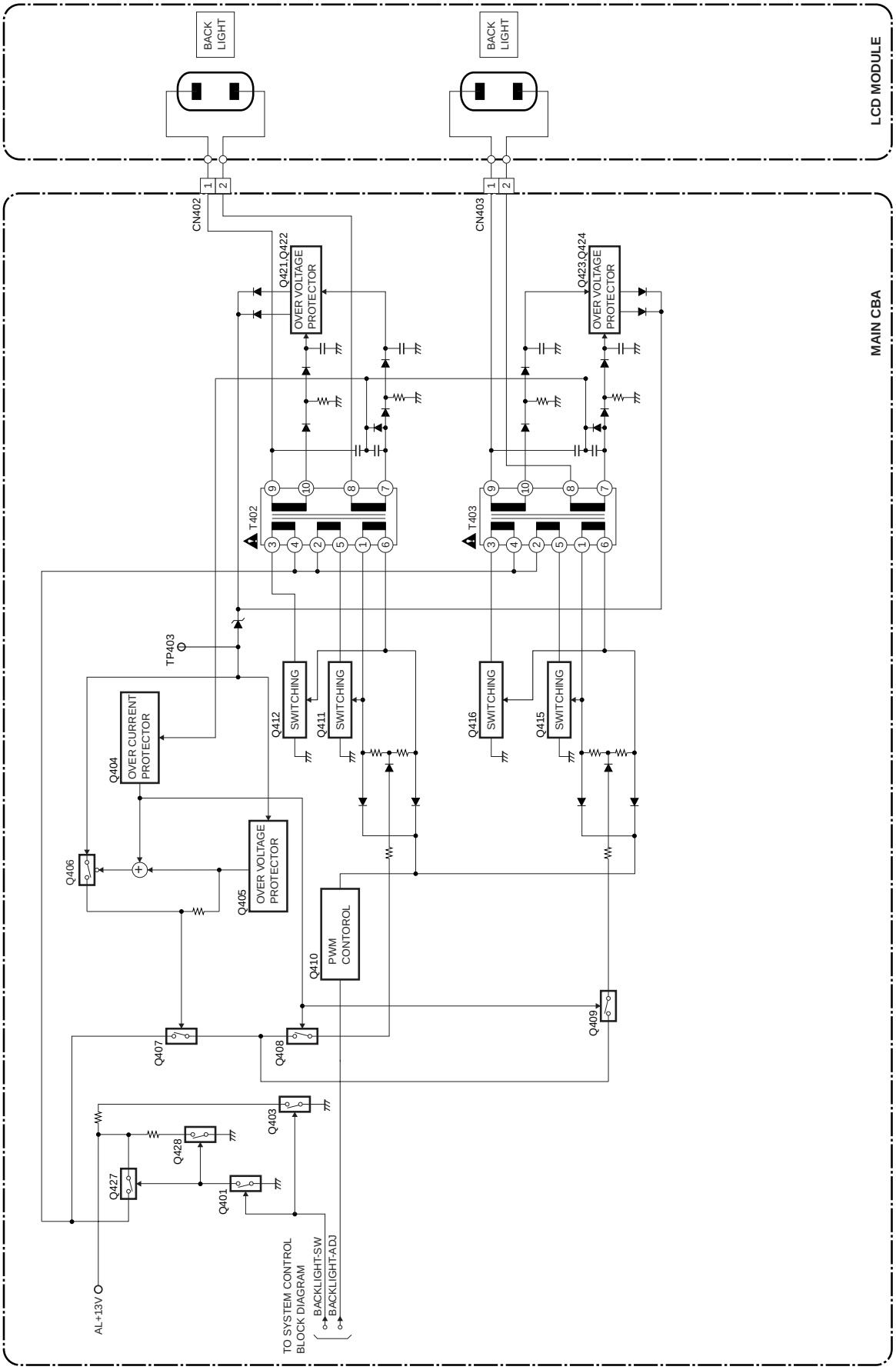
LCD Block Diagram



Power Supply Block Diagram



LCD Backlight Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms (K = 10^3, M = 10^6).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF (P = 10^{-6} μF).
5. All voltages are DC voltages unless otherwise specified.

Note of Capacitors:

ML --- Mylar Cap. PP --- Metallized Film Cap. SC --- Semiconductor Cap. L --- Low Leakage type

Temperature Characteristics of Capacitors are noted with the following:

B --- ±10% CH --- 0±60 ppm/°C CSL --- +350~-1000 ppm/°C

Tolerance of Capacitors are noted with the following:

Z --- +80~-20%

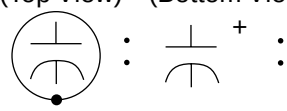
Note of Resistors:

CEM --- Cement Res. MTL --- Metal Res. F --- Fuse Res.

Capacitors and transistors are represented by the following symbols.

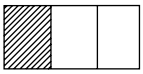
CBA Symbols

(Top View) (Bottom View)



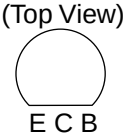
Electrolytic Capacitor

(Bottom View)



Transistor or Digital Transistor

(Top View)



NPN Transistor

(Top View)

PNP Transistor

(Top View)

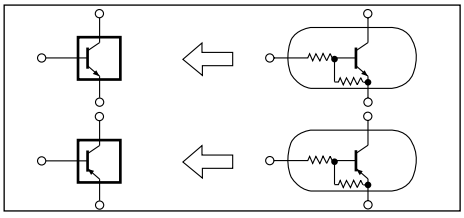
NPN Digital Transistor

(Top View)

PNP Digital Transistor

Schematic Diagram Symbols

Digital Transistor



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

1. CAUTION:

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

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

2. CAUTION:

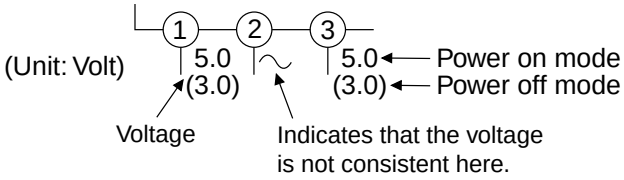
Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the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

3. Note:

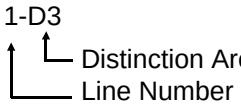
1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which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

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

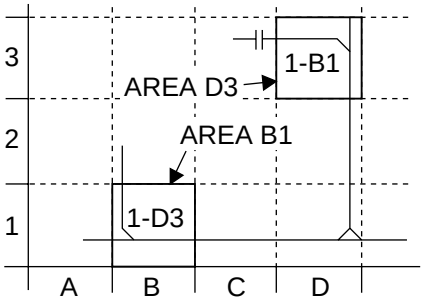
Plug the TV power cord into a standard AC outlet.:



5. How to read converged lines



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



6. Test Point Information

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

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

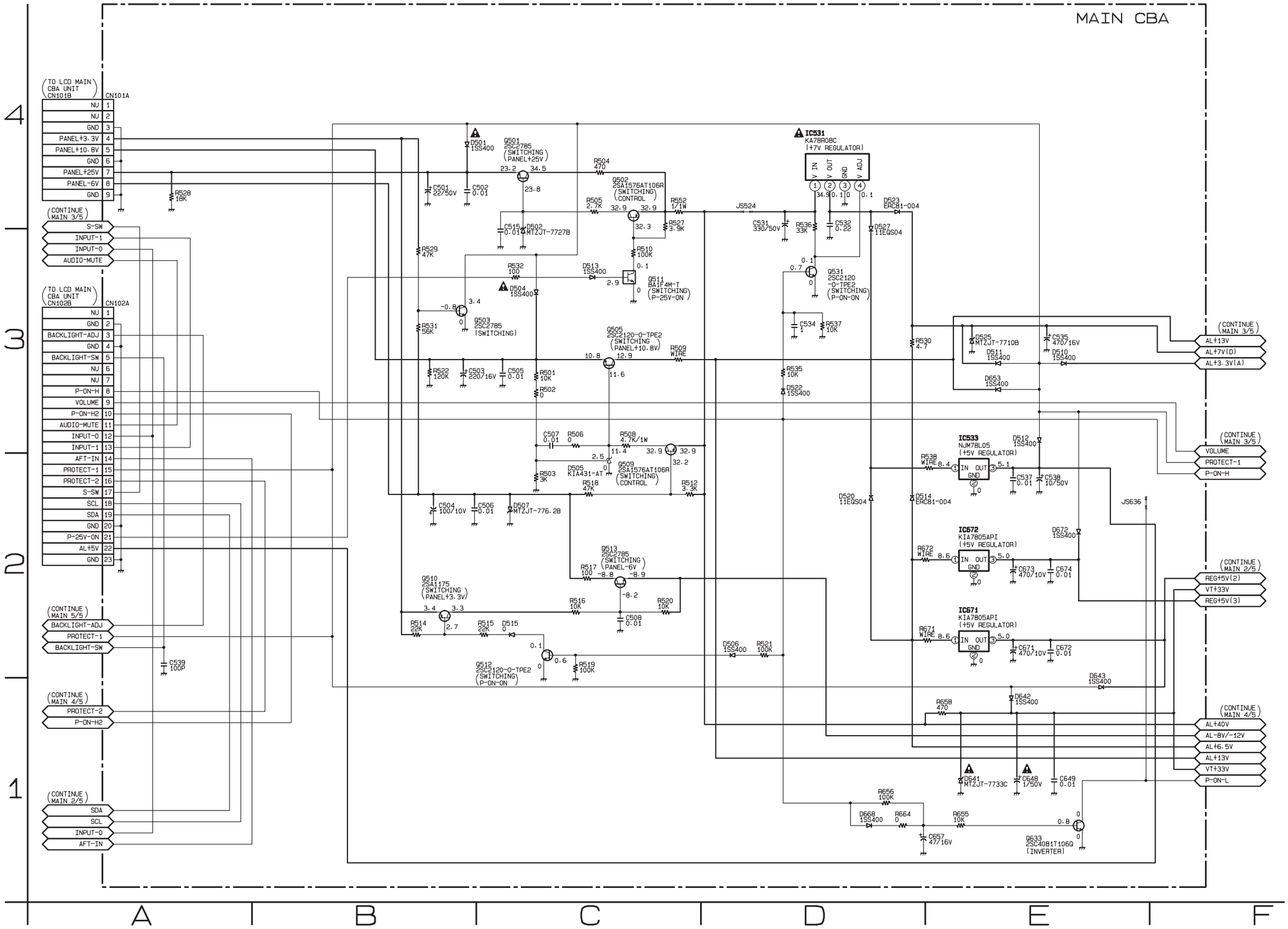
: Used to indicate a test point with no test pin.

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

Main 1/5 Schematic Diagram

MAIN 1/5

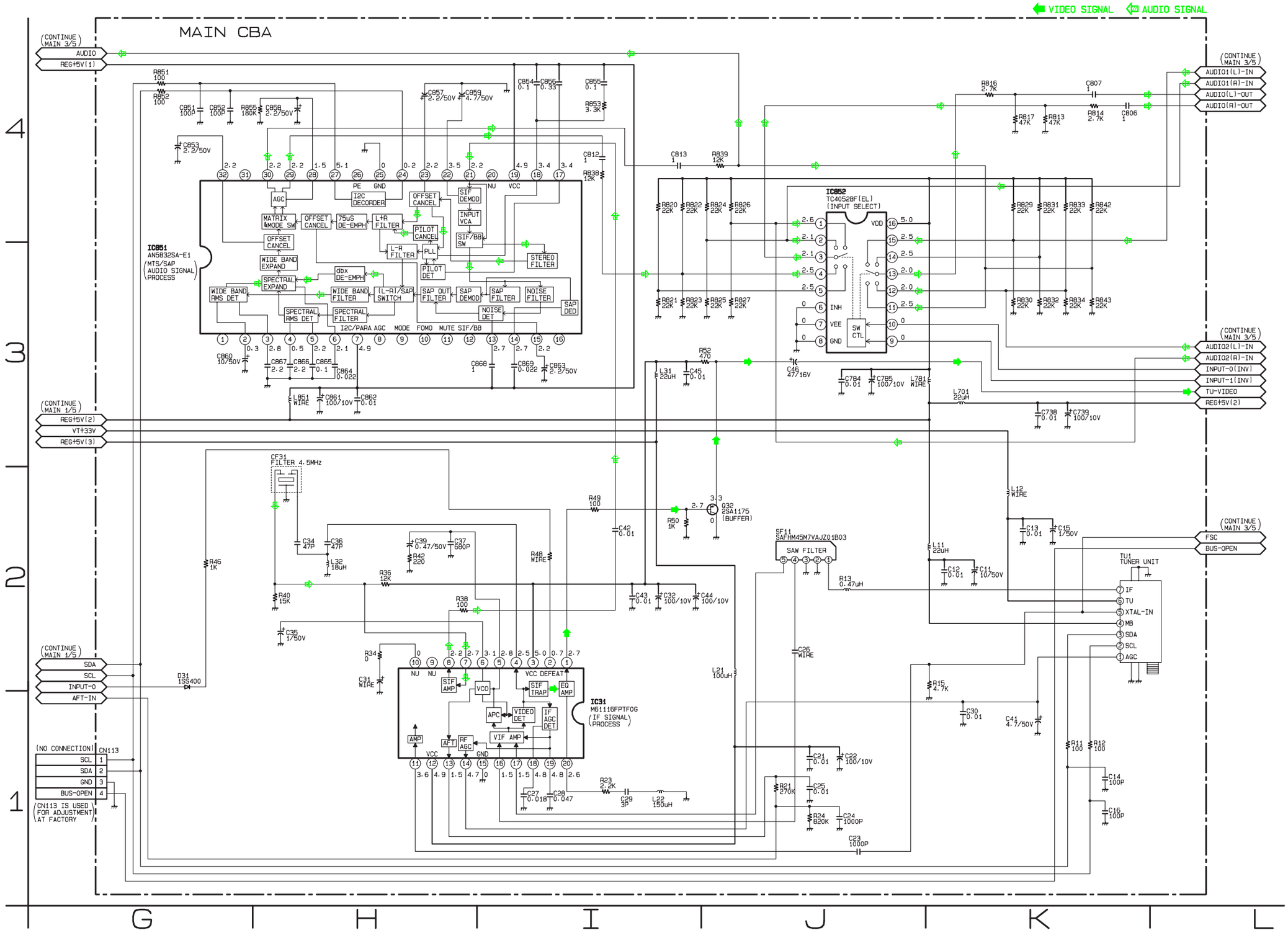
Ref No.	Position
ICS	
IC531	D-4
IC533	E-3
IC671	E-2
IC672	E-2
TRANSISTORS	
Q501	C-4
Q502	C-4
Q503	B-3
Q505	C-3
Q509	C-3
Q510	B-2
Q511	C-3
Q512	C-2
Q513	C-2
Q531	D-3
Q633	E-1
CONNECTORS	
CN101A	A-4
CN102A	A-3



Main 2/5 Schematic Diagram

MAIN 2/5

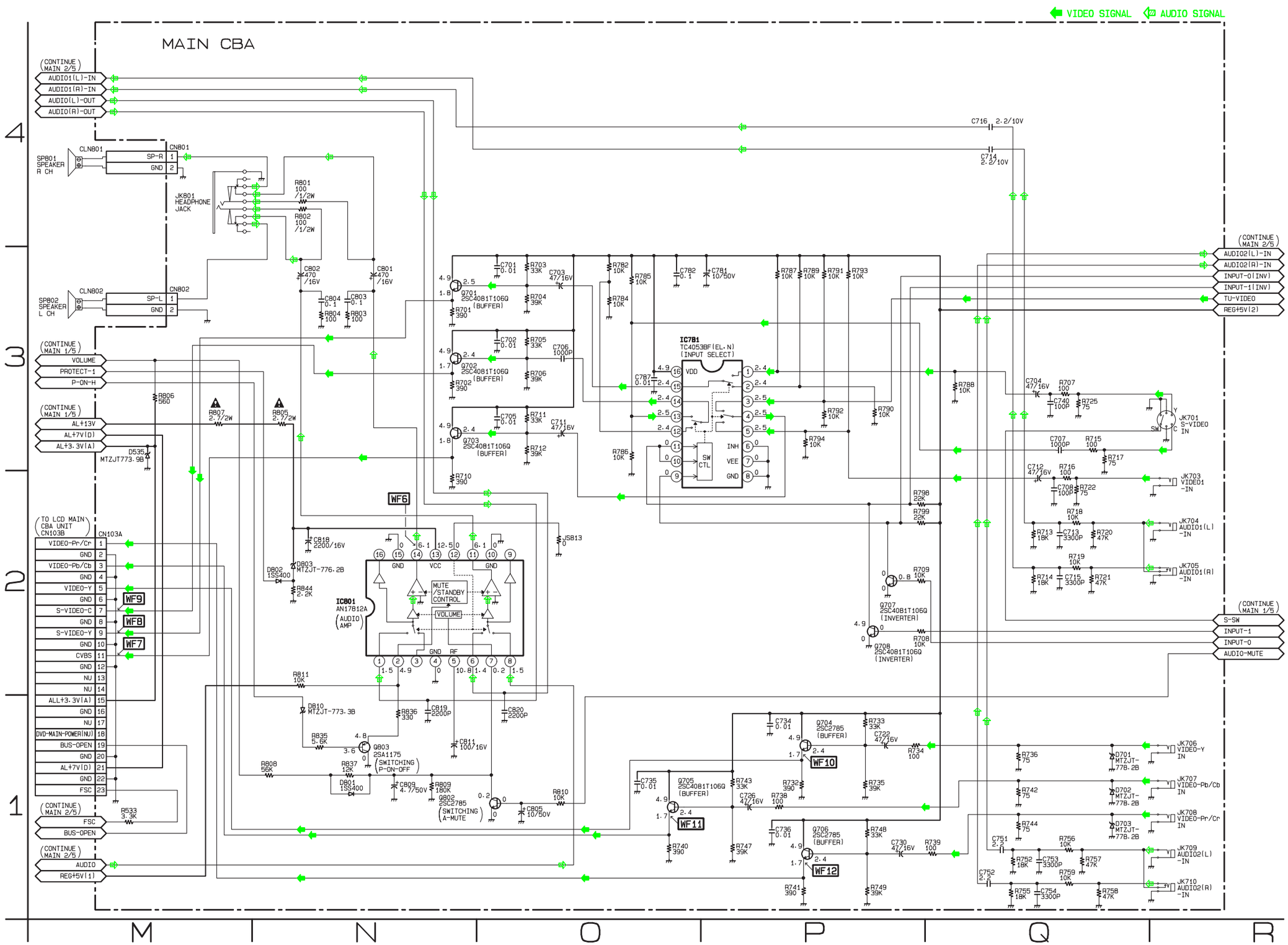
Ref No.	Position
ICS	
IC31	I-1
IC851	H-3
IC852	J-4
TRANSISTOR	
Q32	J-2
CONNECTOR	
CN113	G-1



Main 3/5 Schematic Diagram

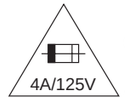
MAIN 3/5

Ref No.	Position
ICS	
IC781	P-3
IC801	N-2
TRANSISTORS	
Q701	N-3
Q702	N-3
Q703	N-3
Q704	P-1
Q705	O-1
Q706	P-1
Q707	P-2
Q708	P-2
Q802	O-1
Q803	N-1
CONNECTORS	
CN801	M-4
CN802	M-3
CN103A	M-2



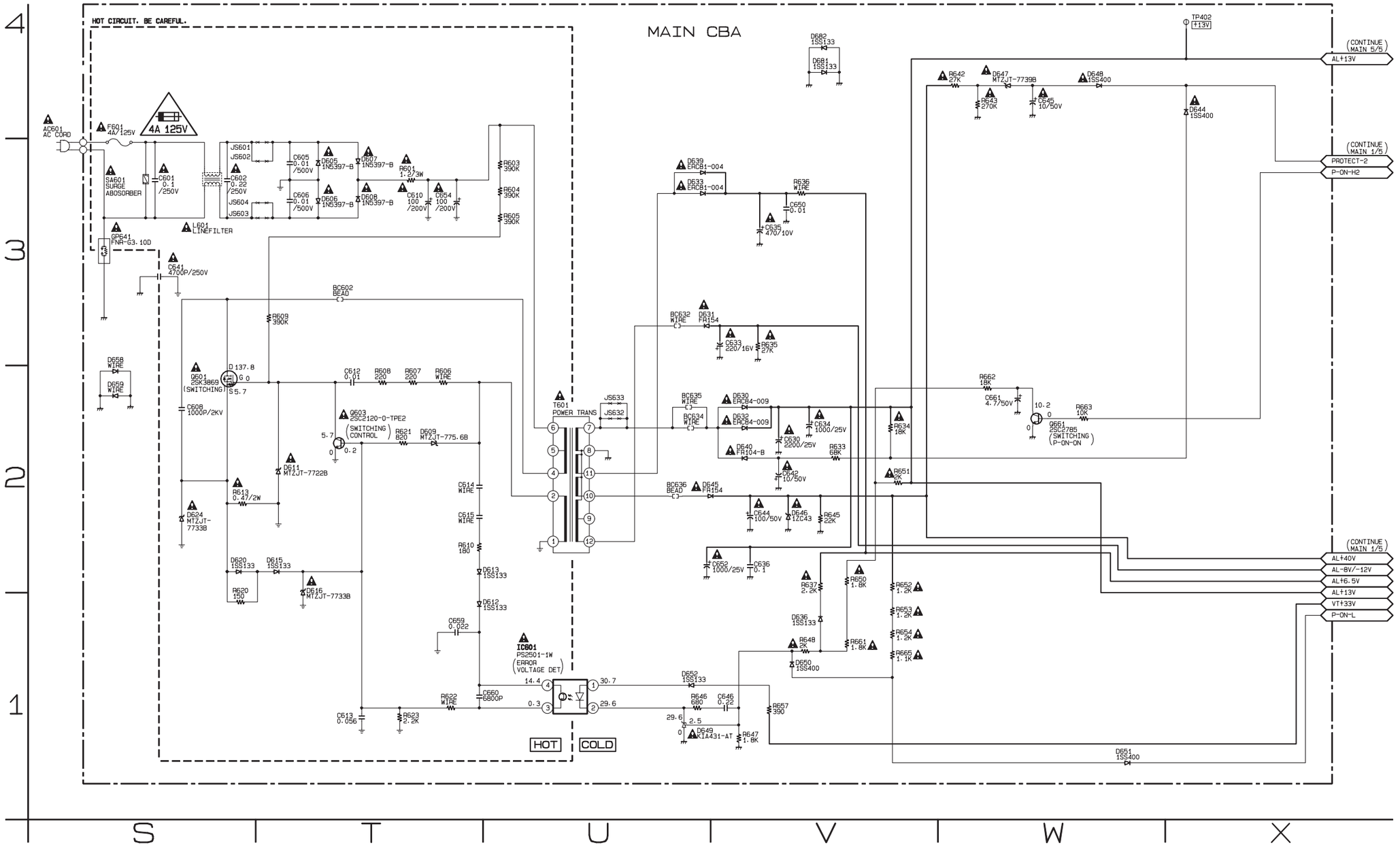
Main 4/5 Schematic Diagram

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



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.

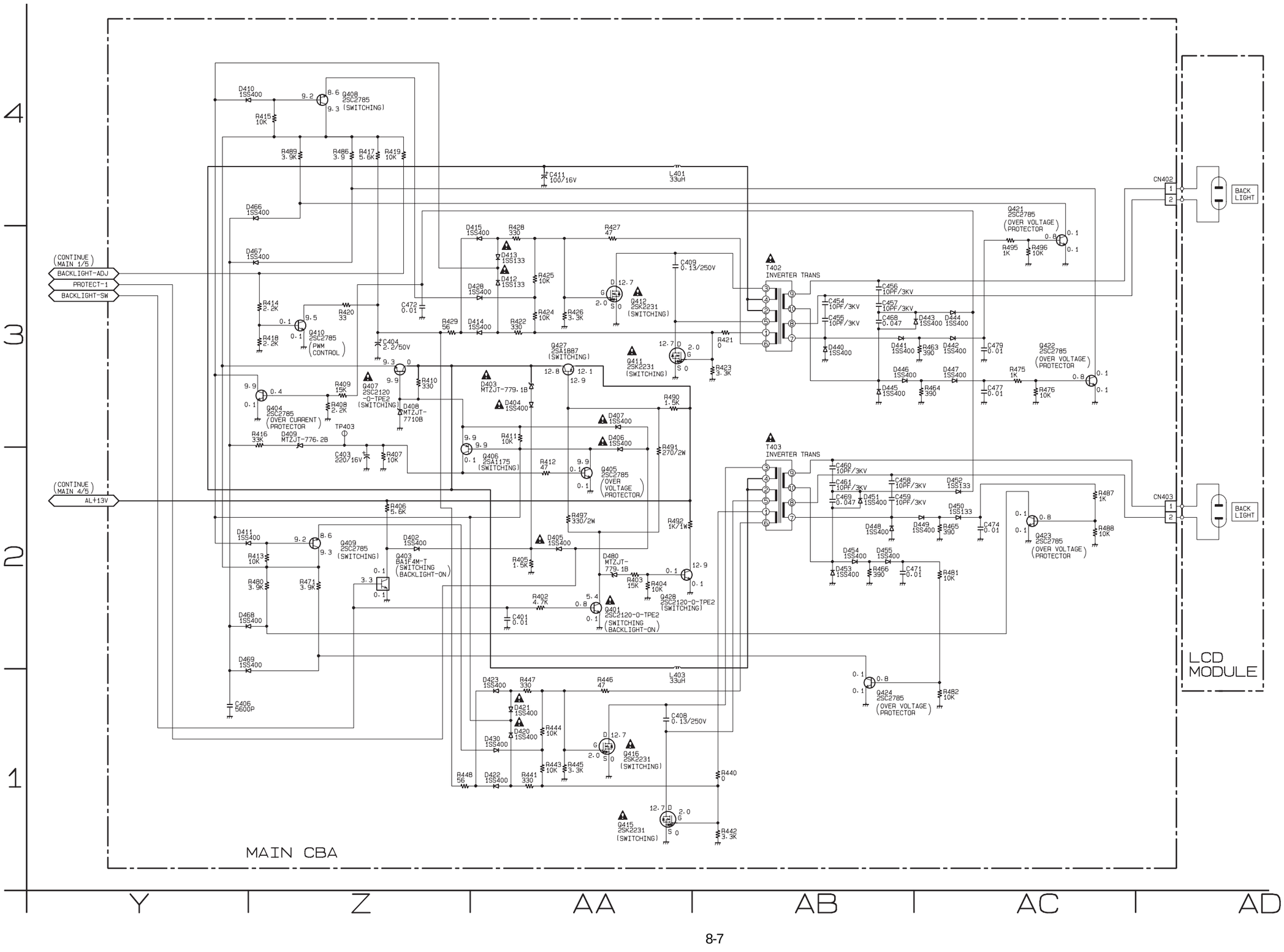
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



MAIN 4/5

Ref No.	Position
IC	
IC601	U-1
TRANSISTORS	
Q601	S-2
Q603	T-2
Q661	W-2
TESTPOINT	
TP402	X-4

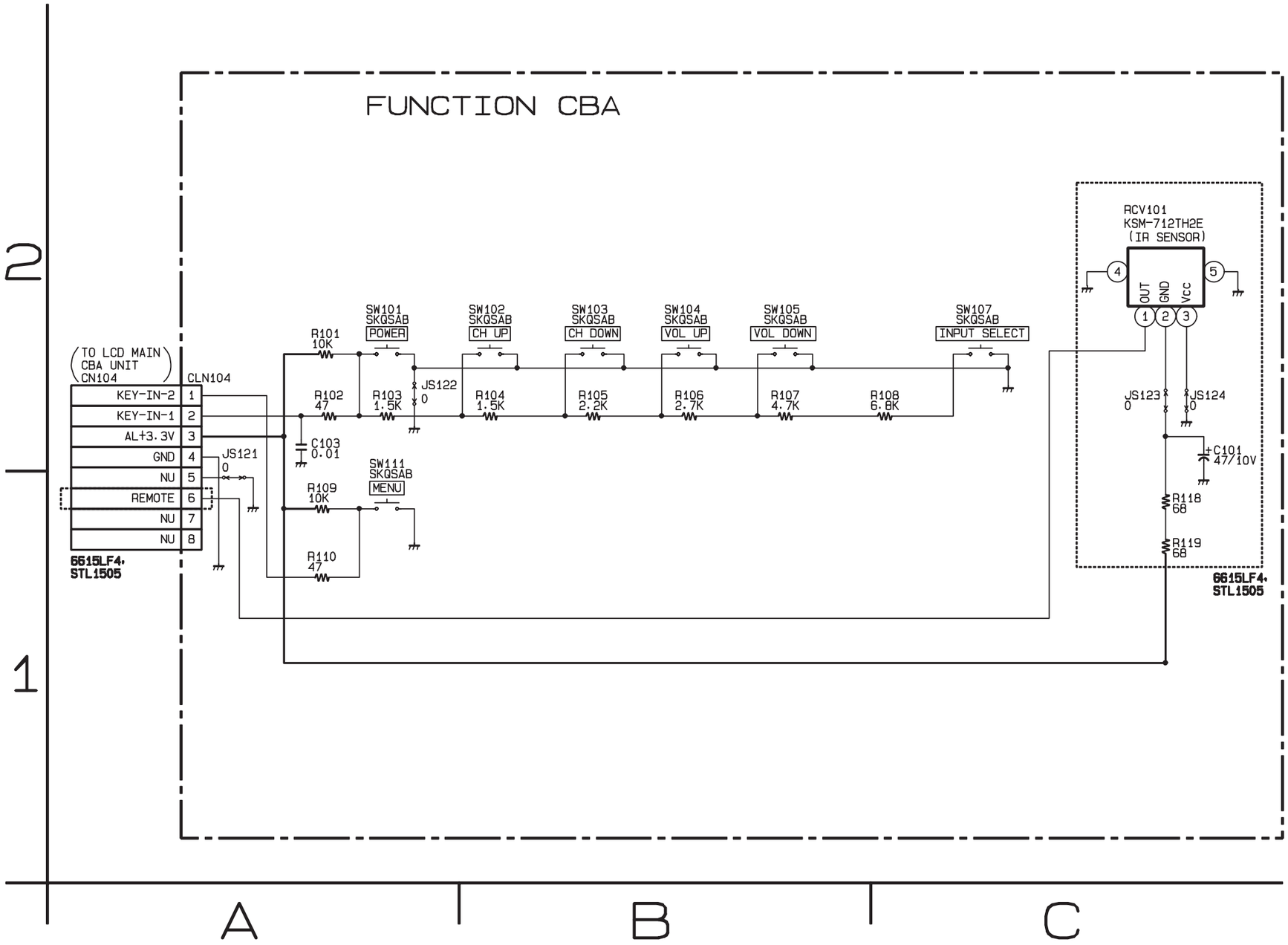
Main 5/5 Schematic Diagram



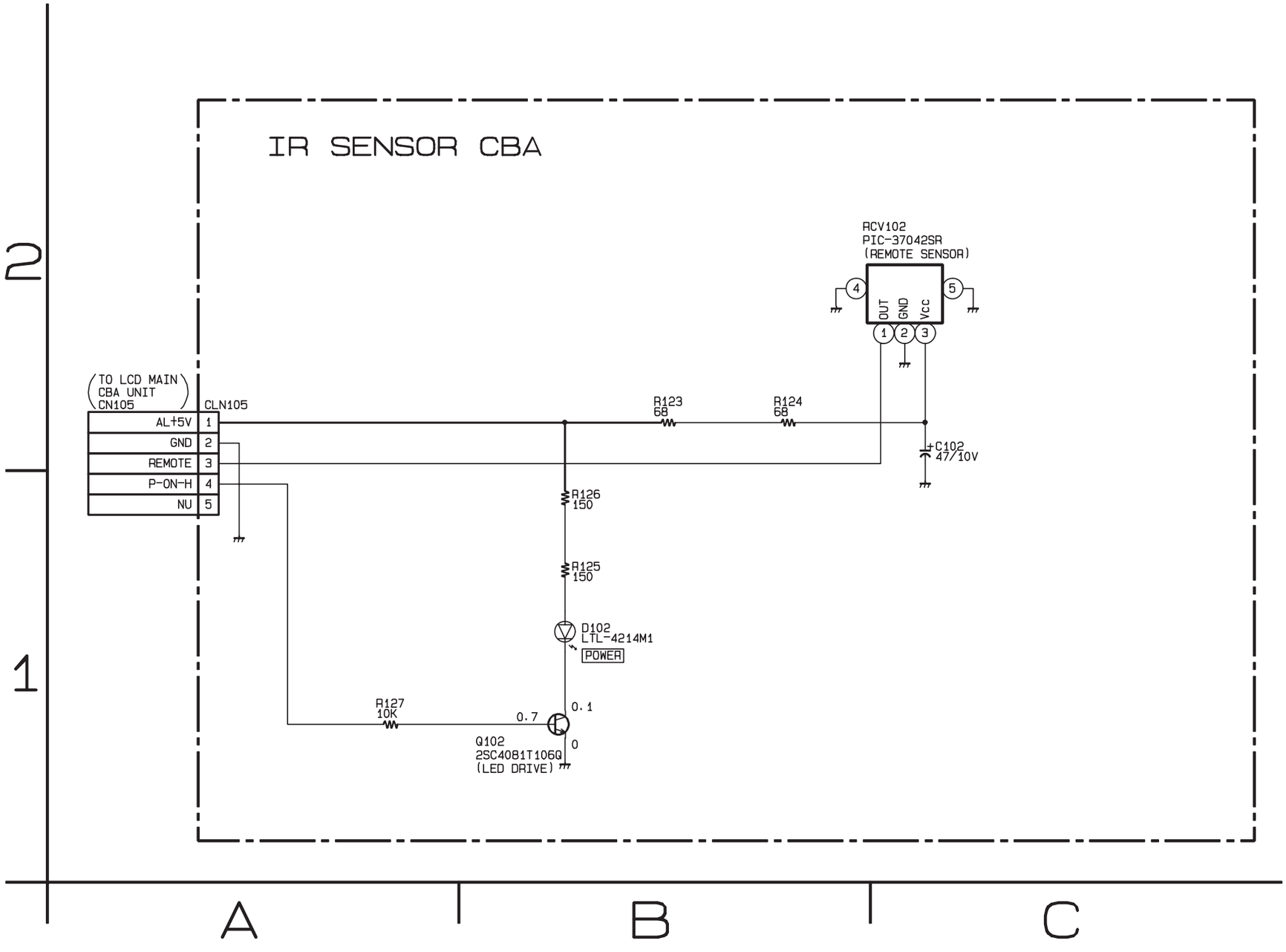
MAIN5/5

Ref No.	Position
TRANSISTORS	
Q401	AA-2
Q403	Z-2
Q404	Z-3
Q405	AA-2
Q406	AA-2
Q407	Z-3
Q408	Z-4
Q409	Z-2
Q410	Z-3
Q411	AA-3
Q412	AA-3
Q415	AA-1
Q416	AA-1
Q421	AC-4
Q422	AC-3
Q423	AC-2
Q424	AB-1
Q427	AA-3
Q428	AA-2
CONNECTORS	
CN402	AD-4
CN403	AD-2
TESTPOINT	
TP403	Z-3

Function Schematic Diagram



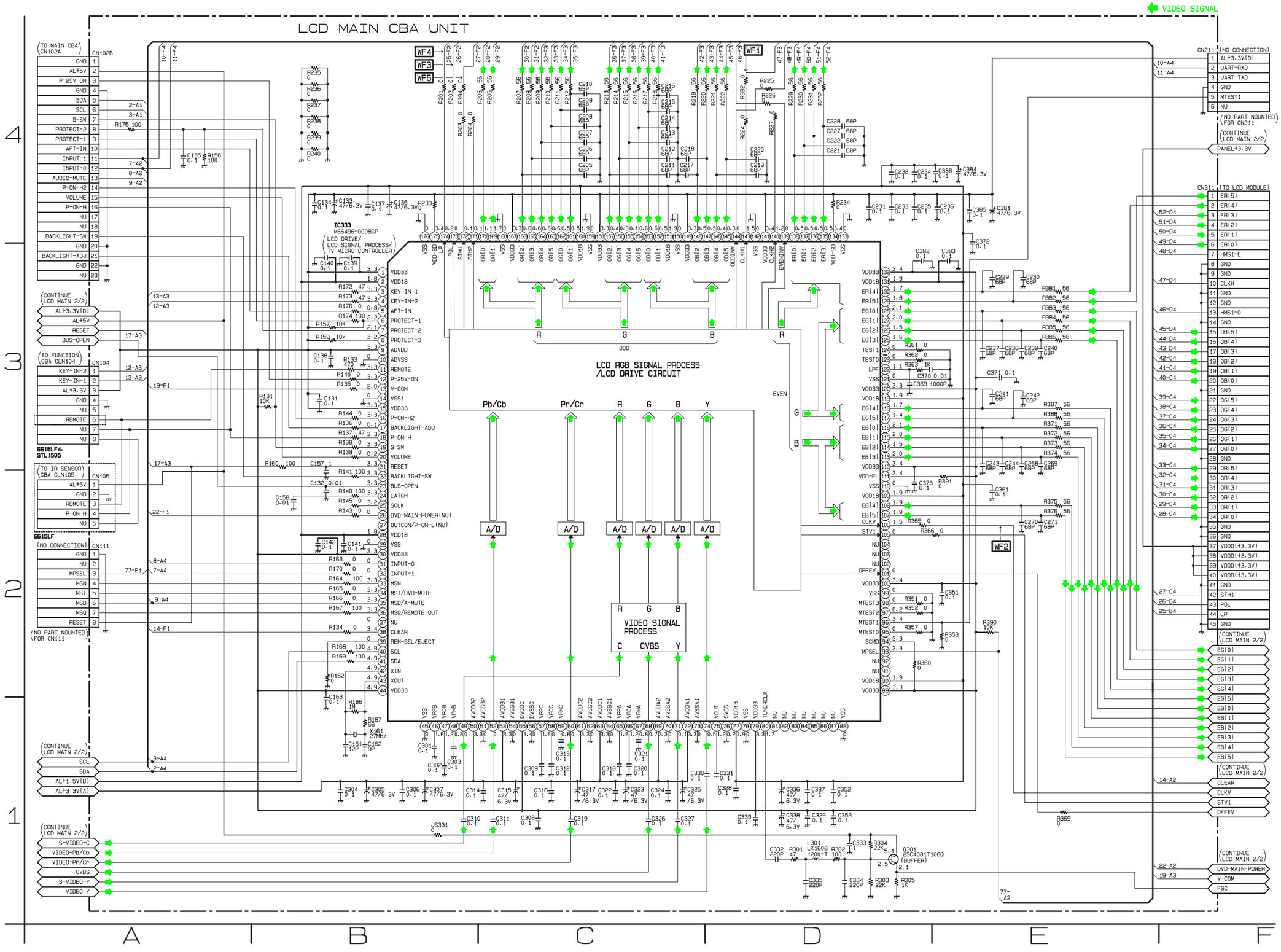
IR Sensor Schematic Diagram (6615LF)



LCD Main 1/2 Schematic Diagram

LCD MAIN 1/2

Ref No.	Position
IC	
IC333	B-3
TRANSISTOR	
Q301	D-1
CONNECTORS	
CN104	A-3
CN105	A-2
CN111	A-2
CN211	F-4
CN311	F-4
CN102B	A-4

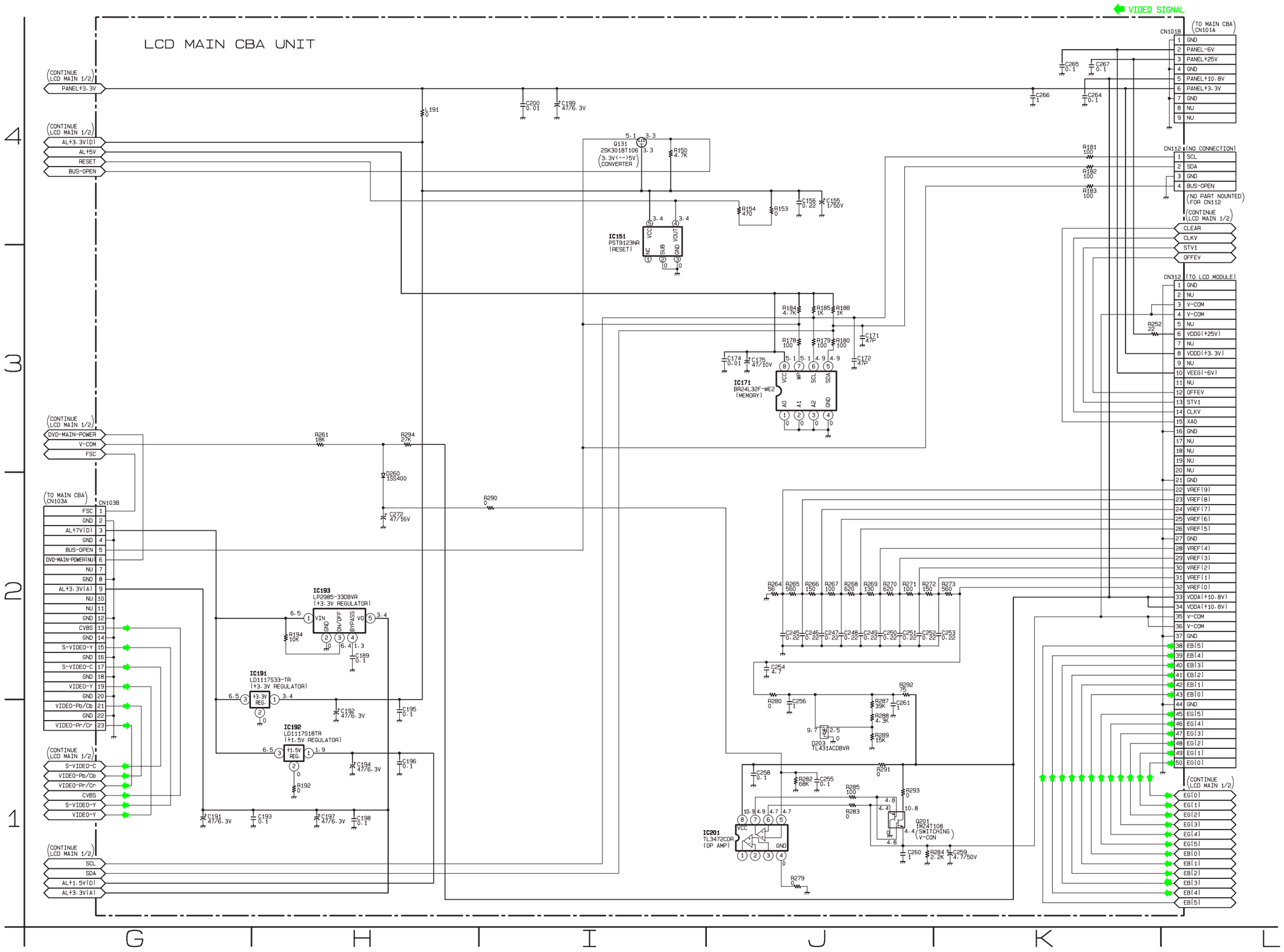


L3100SCL1

LCD Main 2/2 Schematic Diagram

LCD MAIN 2/2

Ref No.	Position
ICS	
IC151	I-3
IC171	J-3
IC191	H-2
IC192	H-1
IC193	H-2
IC201	J-1
TRANSISTORS	
Q131	I-4
Q201	J-1
CONNECTORS	
CN112	L-4
CN312	L-3
CN101B	L-4
CN103B	G-2



Main CBA Top View

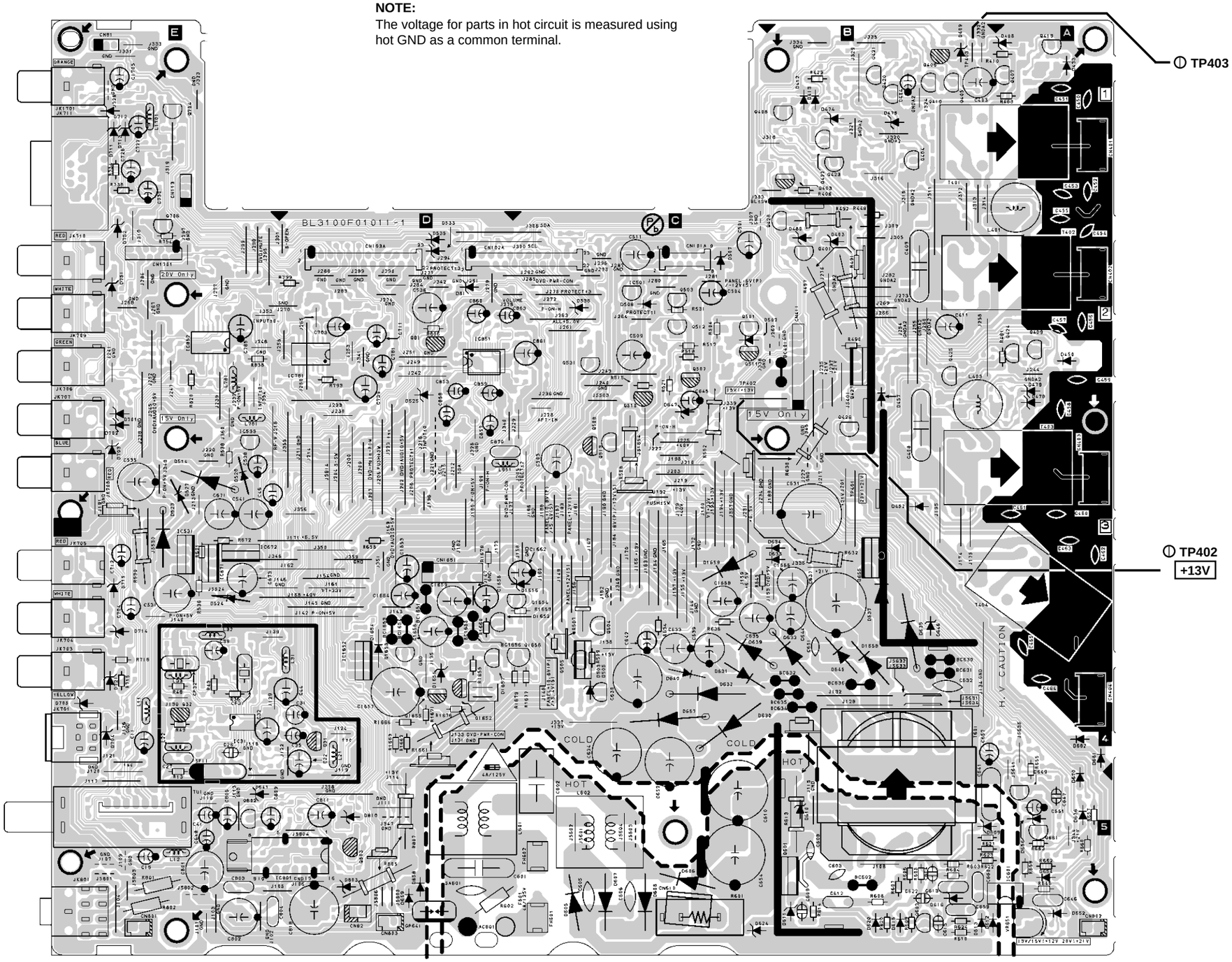
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

4A/125V

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. Also, in order to have the ability to increase the input slowly,when troubleshooting this type 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

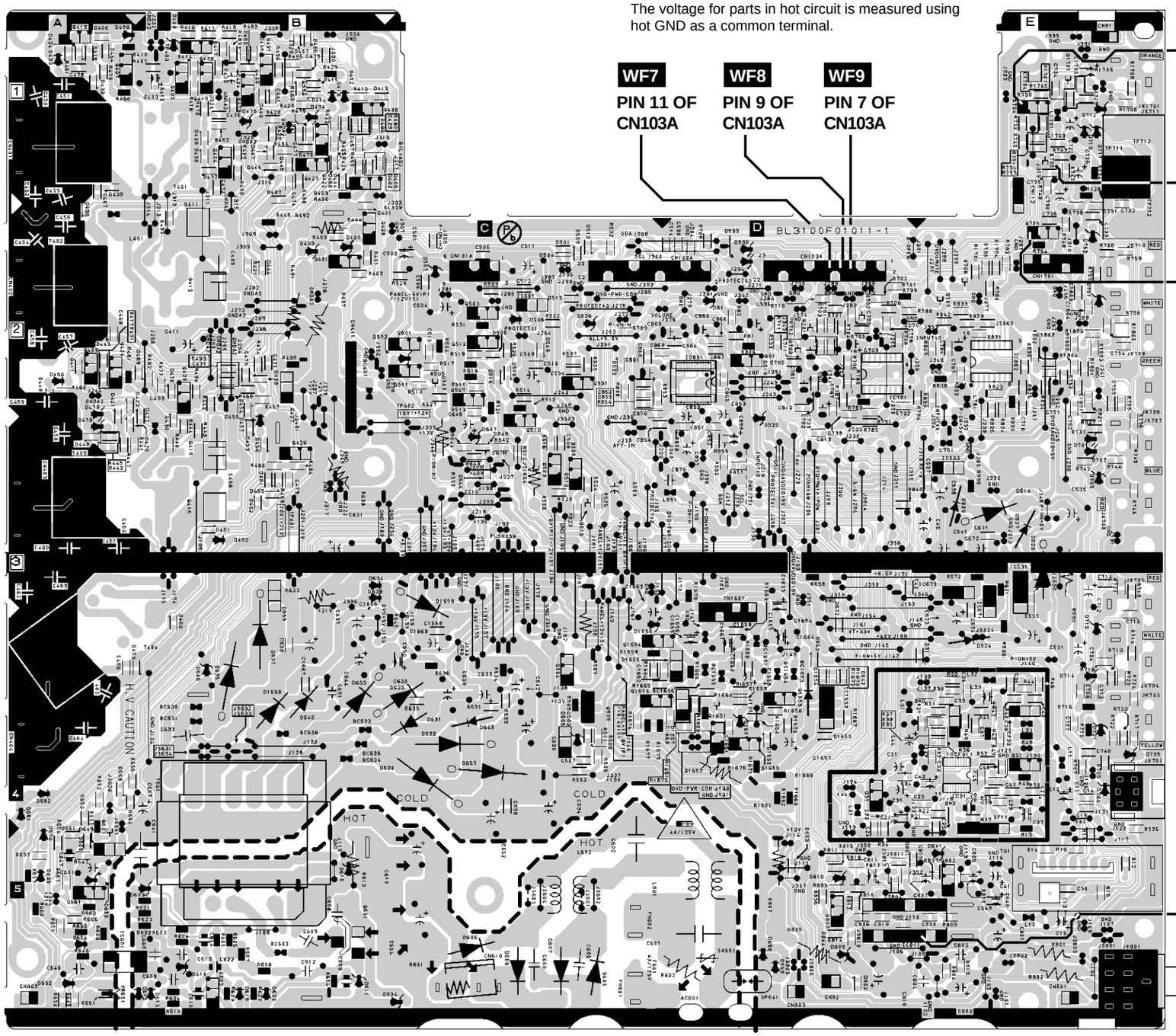
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

4A/125V

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. Also, in order to have the ability to increase the input slowly,when troubleshooting this type power supply circuit, a variable isolation transformer is required.

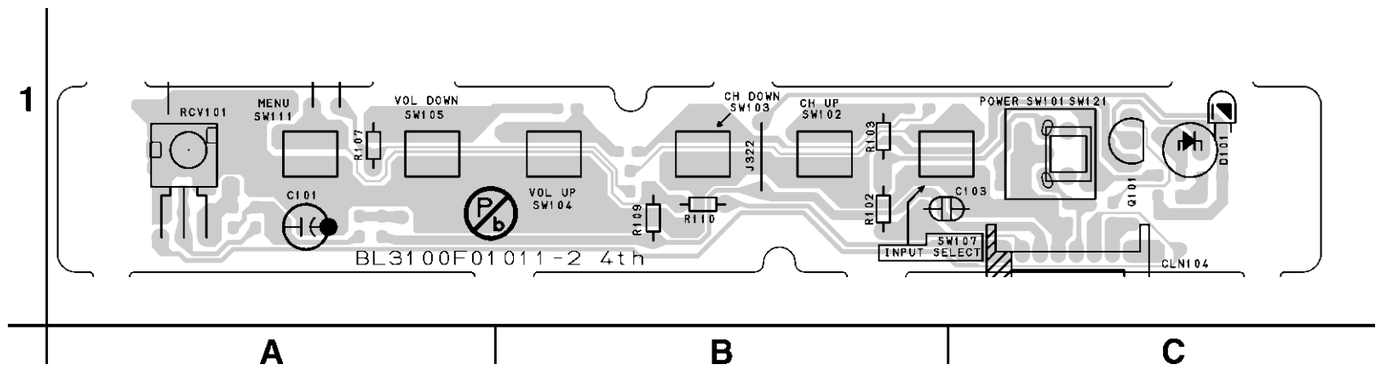
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



MAIN CBA

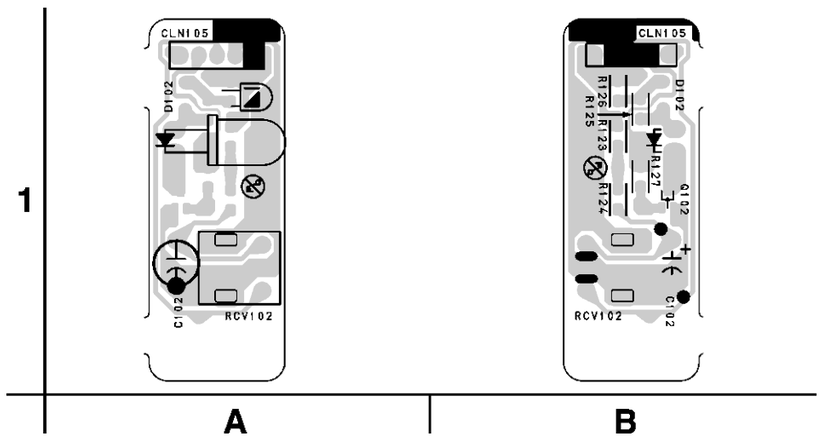
Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS	
IC31	E-4	Q505	C-4
IC531	E-3	Q509	C-3
IC533	E-3	Q510	C-3
IC601	A-5	Q511	C-2
IC671	E-4	Q512	C-2
IC672	E-3	Q513	C-3
IC781	D-2	Q531	C-2
IC801	D-5	Q601	B-5
IC851	D-2	Q603	B-5
IC852	E-2	Q633	A-5
TRANSISTORS		Q661	A-5
Q32	E-4	Q701	D-2
Q401	B-2	Q702	D-2
Q403	B-1	Q703	D-2
Q404	B-1	Q704	E-1
Q405	B-1	Q705	E-1
Q406	B-1	Q706	E-2
Q407	A-1	Q707	E-2
Q408	B-1	Q708	E-2
Q409	A-2	Q802	E-5
Q410	B-1	Q803	D-5
Q411	B-2	CONNECTORS	
Q412	B-2	CN113	E-1
Q415	B-3	CN402	A-2
Q416	B-3	CN403	A-3
Q421	B-1	CN801	E-5
Q422	B-1	CN802	A-5
Q423	B-1	CN101A	C-2
Q424	A-2	CN102A	D-2
Q427	B-2	CN103A	D-2
Q428	B-2	TEST POINTS	
Q501	C-2	TP402	C-2
Q502	C-2	TP403	B-1
Q503	C-2		

Function CBA Top View



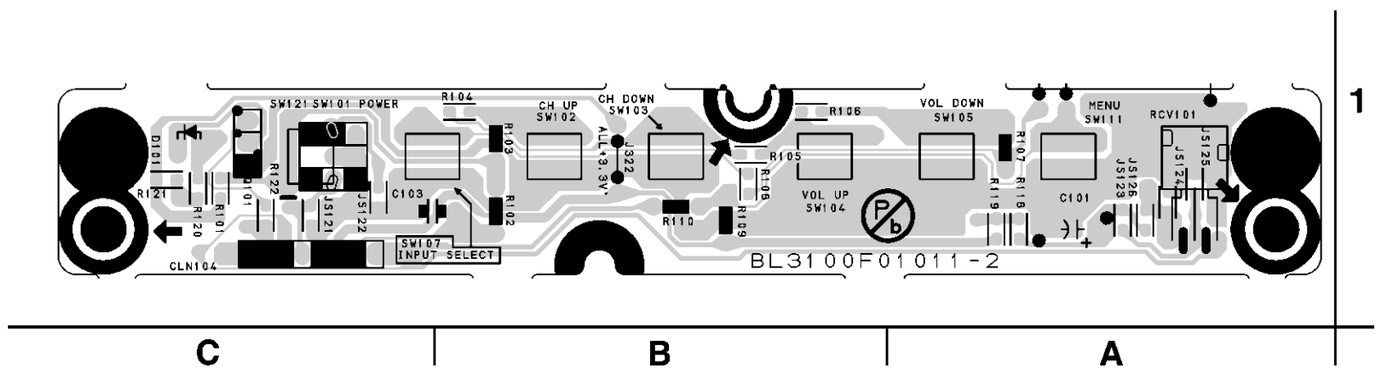
BL3100F01011-2

IR Sensor CBA Top & Bottom View (6615LF)



BL3100F01011-3

Function CBA Bottom View

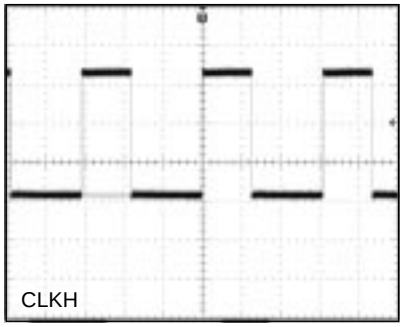


BL3100F01011-2

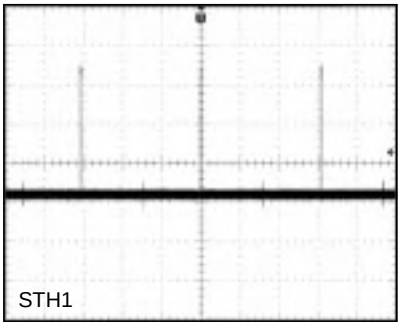
WAVEFORMS

WF1 ~ WF12 = Waveforms to be observed at
Waveform check points.
(Shown in Schematic Diagram.)

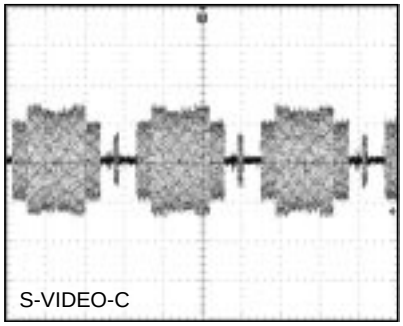
Input: NTSC Color Bar Signal (with 1kHz Audio Signal)



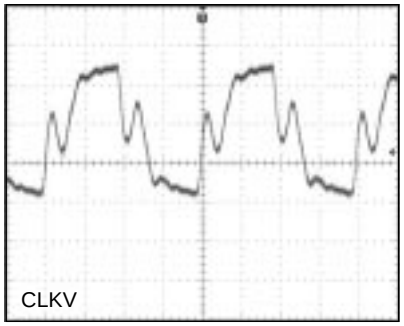
WF1 1DIV: 1.0V 10µs
R392



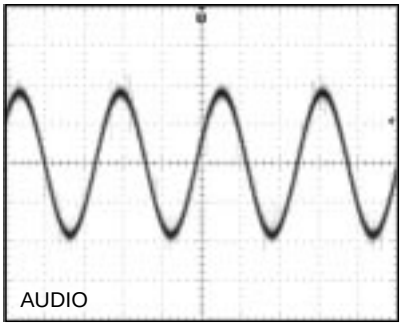
WF5 1DIV: 1.0V 10µs
R394



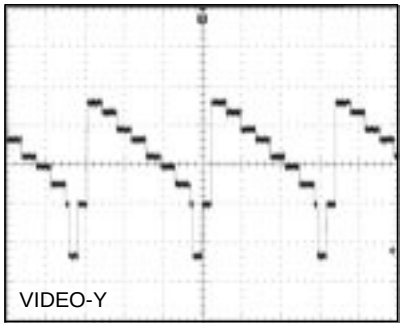
WF9 1DIV: 200mV 20µs
Pin 7 of CN103A



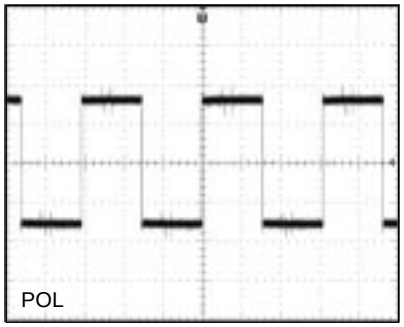
WF2 1DIV: 1.0V 20ns
R365



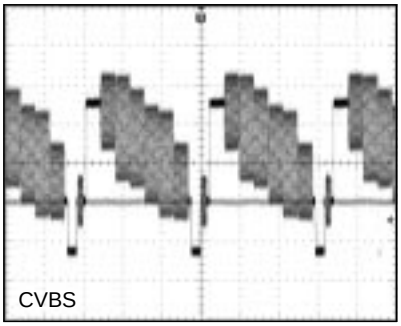
WF6 1DIV: 100mV 400 µs
Pin 14 of IC801



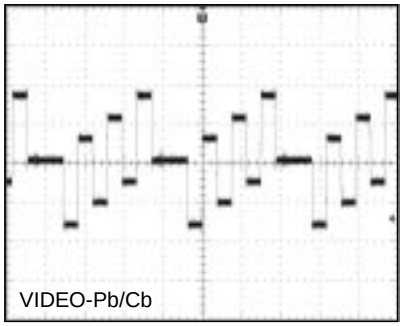
WF10 1DIV: 200mV 20µs
Q704 Emitter



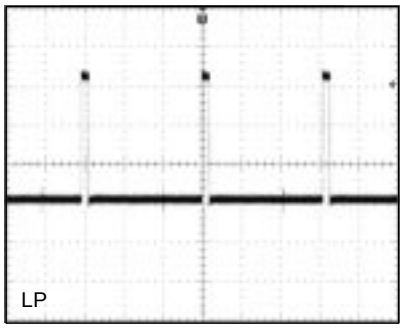
WF3 1DIV: 1.0V 20µs
R202



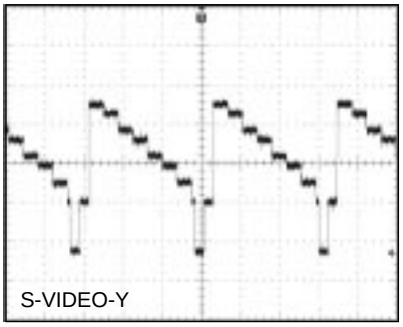
WF7 1DIV: 200mV 20µs
Pin 11 of CN103A



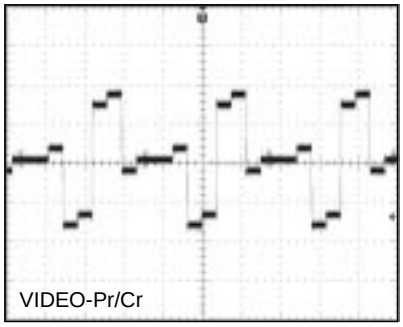
WF11 1DIV: 200mV 20µs
Q705 Emitter



WF4 1DIV: 1.0V 10µs
R201

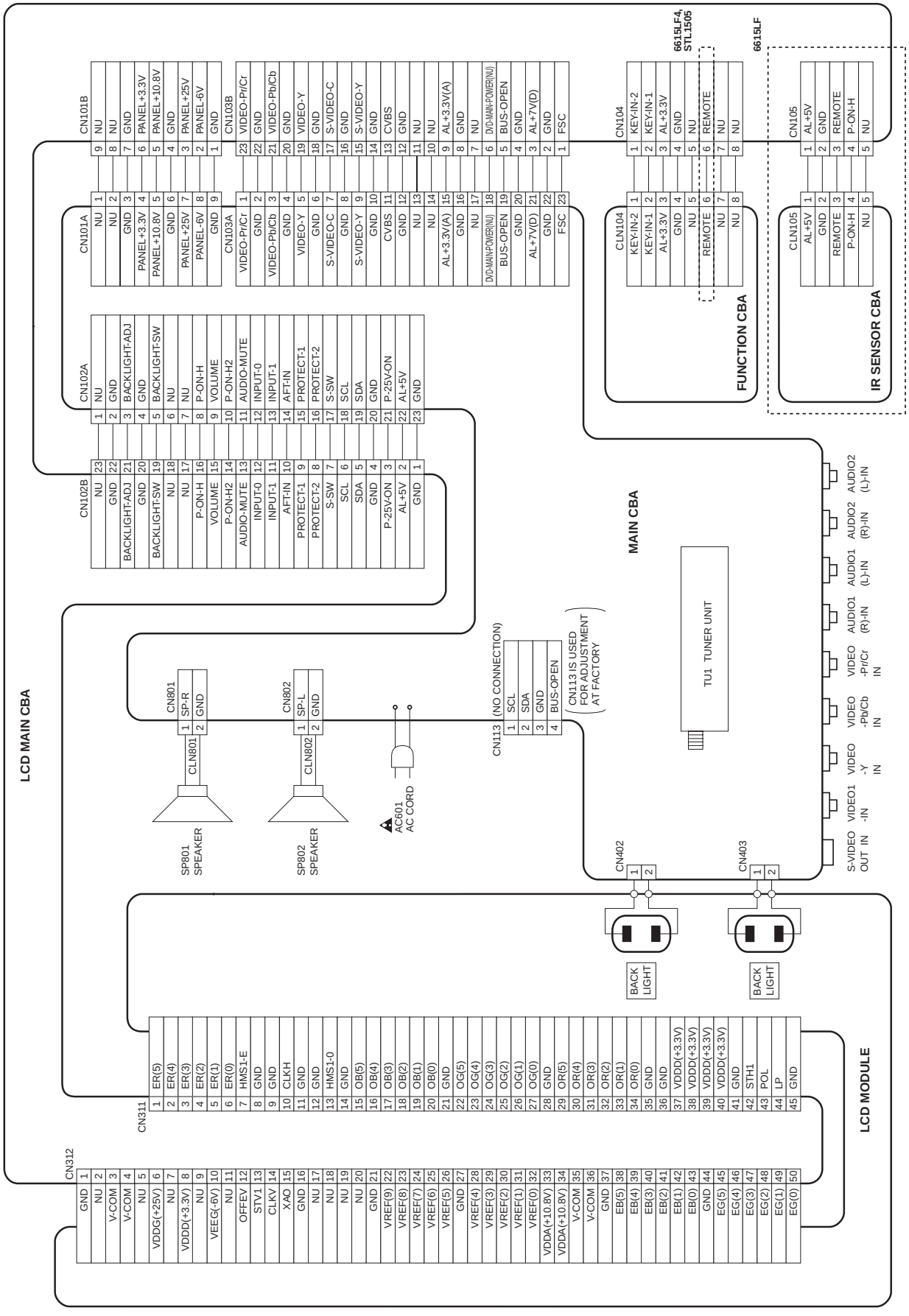


WF8 1DIV: 200mV 20µs
Pin 9 of CN103A



WF12 1DIV: 200mV 20µs
Q706 Emitter

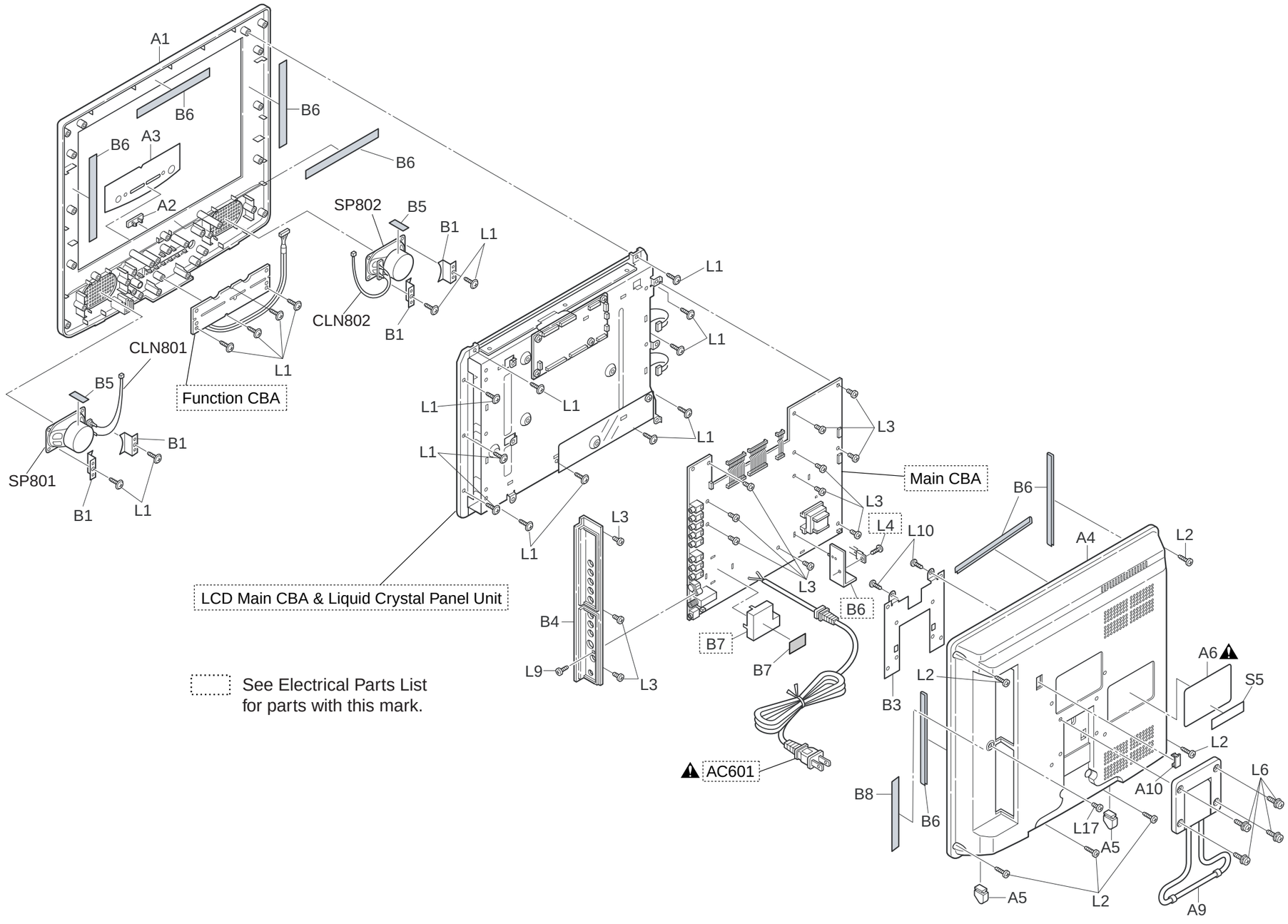
WIRING DIAGRAM



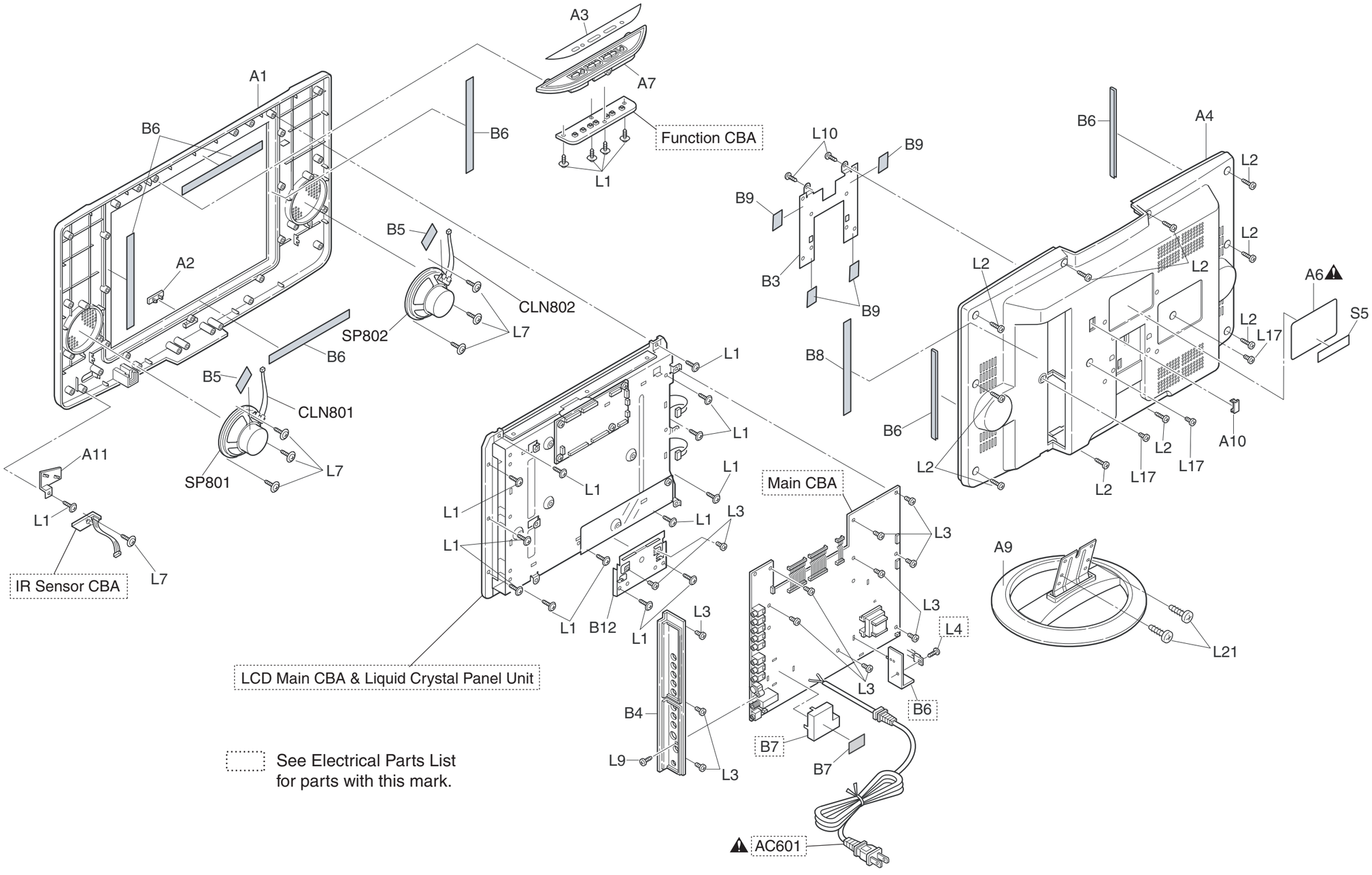
EXPLODED VIEWS

Cabinet

[6615LF4/STL1505]



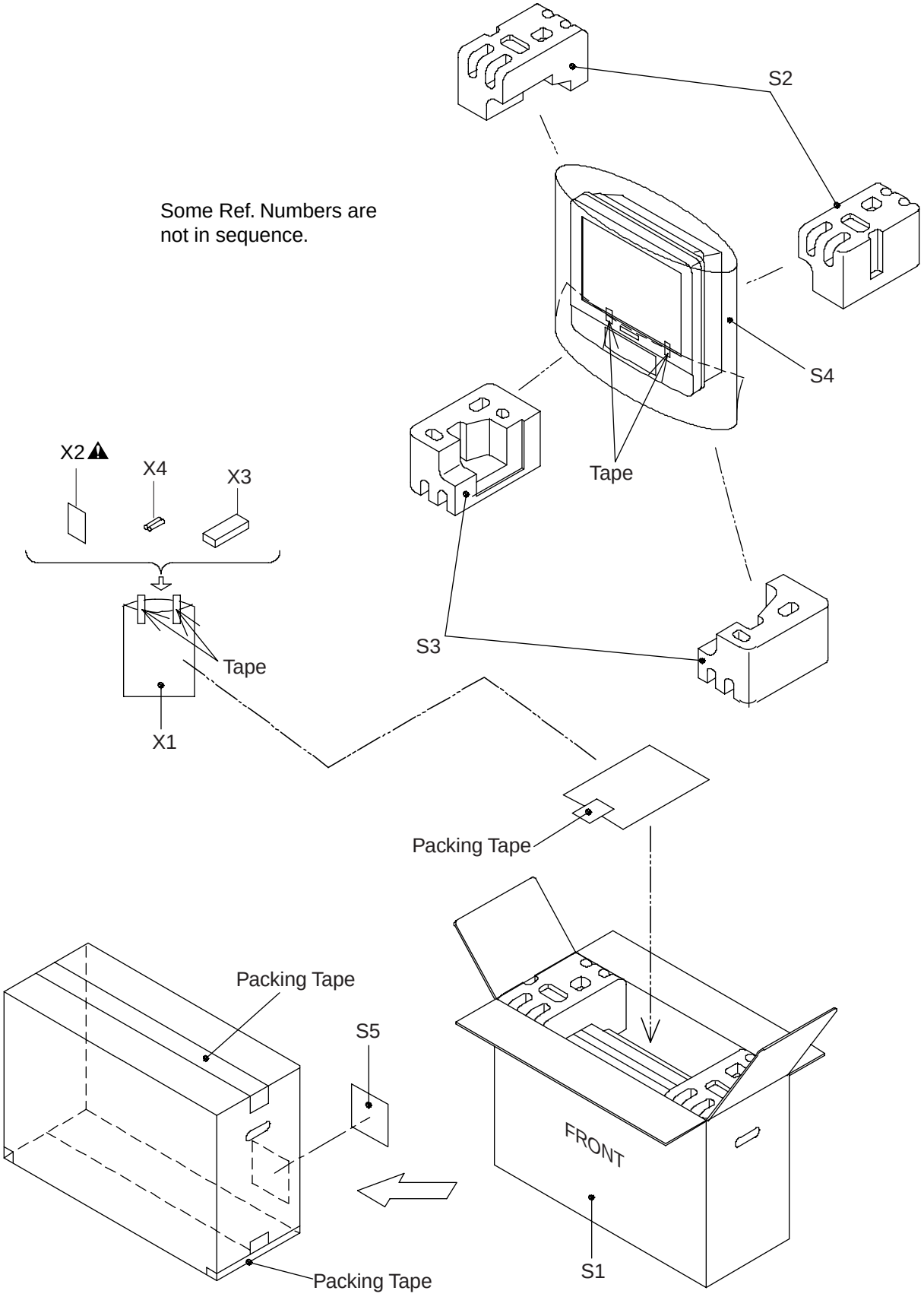
[6615LF]



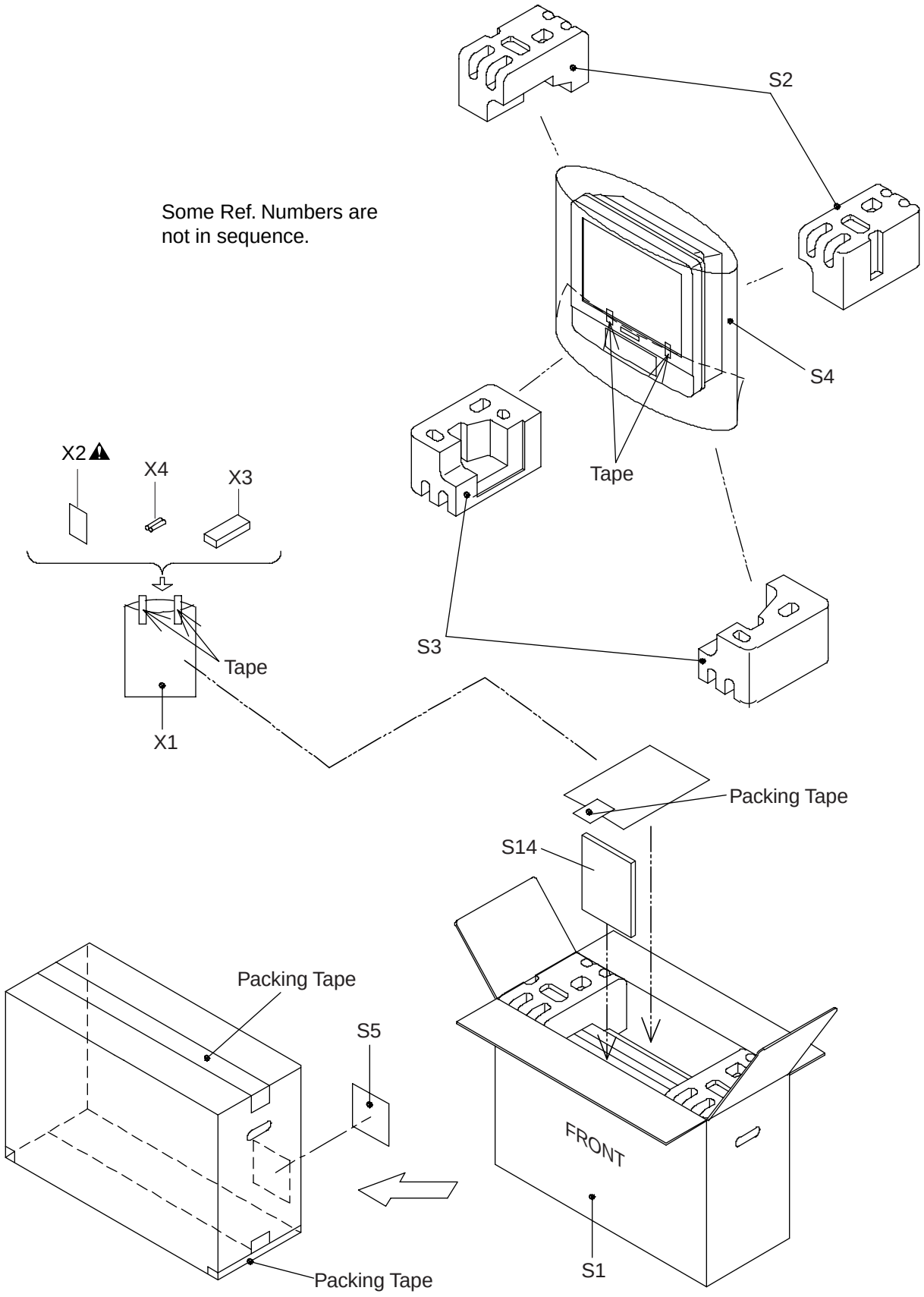
See Electrical Parts List
for parts with this mark.

Packing

[6615LF4/STL1505]



[6615LF]


Some Ref. Numbers are
not in sequence.
S2
S4
Tape
S3
X2 ⚠
X4
X3
Tape
X1
Packing Tape
S14
Packing Tape
S5
FRONT
S1
Packing Tape

MECHANICAL PARTS LIST

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.

Comparison Chart of Models and Marks

Model	Mark
6615LF4	A
STL1505	B
6615LF	C

Ref. No.	Mark	Description	Part No.
A1	A,B	FRONT CABINET L0201UB	0EM201816A
A1	C	FRONT CABINET L3108UJ	1EM220182
A2	A,C	BRAND BADGE L0200UA~SYLVANIA~	0EM409019
A2	B	BRAND BADGE L6509UK	0EM408355
A3	A,B	CONTROL PLATE L0201UB	0EM302073A
A3	C	CONTROL PLATE L3107UH	1EM320177
A4	A,B	REAR CABINET L3100UA	1EM020145
A4	C	REAR CABINET L3107UH	1EM020161
A5	A,B	RUUBBER FOOT L3201UB	1EM320183
A6⚠	A	RATING LABEL L3100UA	----------
A6⚠	B	RATING LABEL L3105UF	----------
A6⚠	C	RATING LABEL L3108UJ	----------
A7	C	FUNCTION KNOB L3107UH	1EM220101
A9	A,B	PHOTO STAND ASSEMBLY L3100UA	1EMN20241
A9	C	TILT STAND ASSEMBLY L0110UA	0EMN02169
A10	A,B	CONNECTOR CAP L3100UA	1EM420655
A10	C	CONNECTOR CAP L3107UH	1EM420711
A11	C	LED LENS L3107UH	1EM320175
B1	A,B	SPEAKER HOLDER L0110UA	0EM407855C
B3		STAND HOLDER L3201UB	1EM320164
B4		JACK HOLDER L3201UB	1EM120107
B5		CLOTH(10X30XT0.5) B5900UA	0EM404486
B6		CLOTH(10X190XT0.3) L0200UA	1EM420019
B7		CLOTH(20X65XT0.5) L0100JA	0EM407914
B8		CLOTH 10X150XT1.0	1EM421092
B9	C	CLOTH(15X30XT1.0) B7507UH	0EM402452
B12	C	TILT STAND HOLDER L3107UH	1EM320176
CLN801	A,B	SPEAKER WIRE ASSEMBLY WX1L3100-001	WX1L3100-001
CLN801	C	SPEAKER WIRE ASSEMBLY WX1L3101-001	WX1L3101-001
CLN802	A,B	SPEAKER WIRE ASSEMBLY WX1L3100-001	WX1L3100-001
CLN802	C	SPEAKER WIRE ASSEMBLY WX1L3101-001	WX1L3101-001
L1		SCREW P-TIGHT 3X12 WASHER HEAD+	GCMP3120
L2		SCREW P-TIGHT 3X12 BIND HEAD+	GBMP3120
L3		SCREW S-TIGHT M3X8 BIND HEAD+	GBMS3080
L6	A,B	DOUBLE SEMS SCREW M4X9 L0130UA	0EM408146
L7	C	ASSEMBLED SCREW M3X10	1EM420633
L9		SCREW P-TIGHT 3X10 BIND HEAD+	GBKP3100
L10		P-TIGHT SCREW 3X8 BIND +	GBMP3080
L17		SCREW S-TIGHT M3X8 BIND HEAD + BLK	GBKS3080
L21	C	SCREW P-TIGHT 4X16 BIND HEAD +	GBMP4160
SP801		SPEAKER S0407F10	DSD0807XQ002
SP802		SPEAKER S0407F10	DSD0807XQ002
PACKING			
S1	A	CARTON L3100UA	1EM420654
S1	B	CARTON L3105UF	1EM420828
S1	C	CARTON L3108UJ	1EM420892
S2	A,B	STYROFOAM TOP L3100UA	1EM020146
S2	C	STYROFOAM TOP L3108UJ	1EM020188
S3	A,B	STYROFOAM BOTTOM L3100UA	1EM020147
S3	C	STYROFOAM BOTTOM L3108UJ	1EM020189
S4		SET BAG L3100UA	1EM320214
S5		SERIAL NO. LABEL L9750UA	----------
S14	C	STAND HOLD PAD L3108UJ	1EM421191
ACCESSORIES			
X1		BAG POLYETHYLENE 235X365XT0.03	0EM408420
X2⚠	A	OWNERS MANUAL L3100UA	1EMN20242
X2⚠	B	OWNERS MANUAL L3105UF	1EMN20255
X2⚠	C	OWNERS MANUAL L3108UJ	1EMN20275
X3		REMOTE CONTROL 170/ECNLC301/ NE900UD	NE900UD
X4		DRY BATTERY R03/2S	XB0M451T0006

ELECTRICAL PARTS LIST

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

NOTES:

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

C.....±0.25% D.....±0.5% F.....±1%

G.....±2% J.....±5% K.....±10%

M.....±20% N.....±30% Z.....+80/-20%

Comparison Chart of Models and Marks

Model	Mark
6615LF4	A
STL1505	B
6615LF	C

LCD MAIN CBA & LIQUID CRYSTAL PANEL UNIT

Ref. No.	Description	Part No.
	LCD MAIN CBA & LIQUID CRYSTAL PANEL UNIT	1FSA10032

ANALOG MAIN CBA ASSEMBLY

Ref. No.	Mark	Description	Part No.
	A,B C	ANALOG MAIN CBA ASSEMBLY ANALOG MAIN CBA ASSEMBLY Consists of the following:	1ESA10645 1ESA10729
	  C	MAIN CBA FUNCTION CBA IR SENSOR CBA	---------- ---------- ----------

MAIN CBA

Ref. No.	Mark	Description	Part No.
		MAIN CBA Consists of the following:	----------
		CAPACITORS	
C11		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C12		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C13		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C14		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C15		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL010
C16		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C21		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C22		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMASSL101
C23		CHIP CERAMIC CAP.(1608) CH J 1000pF/ 50V	CHD1JJ3CH102
C24		CHIP CERAMIC CAP.(1608) CH J 1000pF/ 50V	CHD1JJ3CH102
C25		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C26		PCB JUMPER D0.6-P5.0	JW5.0T
C27		FILM CAP.(P) 0.018µF/50V J	CMA1JJS00183
C28		CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V	CHD1JK30B473
C29		CHIP CERAMIC CAP. CH D 3pF/ 50V	CHD1JD3CH3R0
C30		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C31		PCB JUMPER D0.6-P5.0	JW5.0T
C32		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMASSL101
C34		CHIP CERAMIC CAP.(1608) CH J 47pF/ 50V	CHD1JJ3CH470
C35		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL010
C36		CHIP CERAMIC CAP.(1608) CH J 47pF/ 50V	CHD1JJ3CH470
C37	A,B	CHIP CERAMIC CAP. B K 680pF/ 50V	CHD1JK30B681
C37	C	CHIP CERAMIC CAP. CH J 680pF/ 50V	CHD1JJ3CH681
C39		ELECTROLYTIC CAP. 0.47µF/50V M H7	CE1JMASSLR47
C41		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C42		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C43		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C44		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMASSL101
C45		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C46		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C401		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C403		ELECTROLYTIC CAP. 220µF/16V M H7	CE1CMASSL221
C404		ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMASSL2R2
C406		CHIP CERAMIC CAP.(1608) B K 5600pF/ 50V	CHD1JK30B562
C408		PP CAP. 0.13µF/250V J	CT2E134MS041
C409		PP CAP. 0.13µF/250V J	CT2E134MS041
C411		ELECTROLYTIC CAP. 100µF/16V M H7	CE1CMASSL101
C454		CERAMIC CAP. SL D 10pF/ 3KV	CCD3FDASL100
C455		CERAMIC CAP. SL D 10pF/ 3KV	CCD3FDASL100
C456		CERAMIC CAP. SL D 10pF/ 3KV	CCD3FDASL100
C457		CERAMIC CAP. SL D 10pF/ 3KV	CCD3FDASL100
C458		CERAMIC CAP. SL D 10pF/ 3KV	CCD3FDASL100
C459		CERAMIC CAP. SL D 10pF/ 3KV	CCD3FDASL100
C460		CERAMIC CAP. SL D 10pF/ 3KV	CCD3FDASL100
C461		CERAMIC CAP. SL D 10pF/ 3KV	CCD3FDASL100
C468		CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V	CHD1JK30B473
C469		CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V	CHD1JK30B473
C471		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C472		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C474		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C477		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C479		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C501		ELECTROLYTIC CAP. 22µF/50V M H7	CE1JMASSL220
C502		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C503		ELECTROLYTIC CAP. 220µF/16V M H7	CE1CMASSL221
C504		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMASSL101

Ref. No.	Mark	Description	Part No.
C505		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C506		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C507		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C508		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C515		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C531		ELECTROLYTIC CAP. 330µF/50V M	CE1JMASDL331
C532		CHIP CERAMIC CAP.(1608) B K 0.22µF/ 25V	CHD1EK30B224
C534		CHIP CERAMIC CAP. B K 1µF/16V	CHD1CK30B105
C535		ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C537		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C538		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C539		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C601⚠		METALLIZED FILM CAP. 0.1µF/250V	CT2E104MS037
C602⚠		METALLIZED FILM CAP. 0.22µF/250V	CT2E224MS037
C605	A,B	CERAMIC CAP. B K 0.01µF/500V	CCD2JKP0B103
C605	C	CERAMIC CAP. F Z 0.01µF/500V	CCD2JZP0F103
C606	A,B	CERAMIC CAP. B K 0.01µF/500V	CCD2JKP0B103
C606	C	CERAMIC CAP. F Z 0.01µF/500V	CCD2JZP0F103
C608		CERAMIC CAP. B K 1000pF/ 2KV	CCD3DKP0B102
C610⚠		ELECTROLYTIC CAP. 100µF/200V M	CE2DMZPDL101
C612		FILM CAP.(P) 0.01µF/50V J	CMA1JJS00103
C613		FILM CAP.(P) 0.056µF/50V J	CMA1JJS00563
C614		PCB JUMPER D0.6-P5.0	JW5.0T
C615		PCB JUMPER D0.6-P5.0	JW5.0T
C630⚠		ELECTROLYTIC CAP. 2200µF/25V M	CE1EMZPDL222
C633⚠		ELECTROLYTIC CAP. 220µF/16V M H7	CE1CMASSL221
C634⚠		ELECTROLYTIC CAP. 1000µF/25V M	CE1EMZNTL102
C635⚠		ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C636		CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C641⚠		SAFETY CAP. 4700pF/ 250V KX	CA2E472MR050
C642⚠		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C644⚠		ELECTROLYTIC CAP. 100µF/50V M	CE1JMASTL101
C645⚠		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C646		MYLAR CAP. 0.22µF/50V J	CMA1JJS00224
C648		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL010
C649		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C650		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C652⚠		ELECTROLYTIC CAP. 1000µF/25V M	CE1EMZNTL102
C654⚠		ELECTROLYTIC CAP. 100µF/200V M	CE2DMZPDL101
C657		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C659		FILM CAP.(P) 0.022µF/50V J	CMA1JJS00223
C660		FILM CAP.(P) 0.0068µF/50V J	CMA1JJS00682
C661		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C671		ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C672		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C673		ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C674		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C701		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C702		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C703		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C704		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C705		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103

Ref. No.	Mark	Description	Part No.
C706		CHIP CERAMIC CAP.(1608) CH J 1000pF/ 50V	CHD1JJ3CH102
C707		CHIP CERAMIC CAP.(1608) CH J 1000pF/ 50V	CHD1JJ3CH102
C708		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C711		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C712		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C713		CHIP CERAMIC CAP.(1608) B K 3300pF/ 50V	CHD1JK30B332
C714		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZ30F225
C715		CHIP CERAMIC CAP.(1608) B K 3300pF/ 50V	CHD1JK30B332
C716		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZ30F225
C722		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C726		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C730		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASSL470
C734		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C735		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C736		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C738		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C739		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMASSL101
C740		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C751		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZ30F225
C752		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZ30F225
C753		CHIP CERAMIC CAP.(1608) B K 3300pF/ 50V	CHD1JK30B332
C754		CHIP CERAMIC CAP.(1608) B K 3300pF/ 50V	CHD1JK30B332
C781		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C782		CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C784		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C785		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMASSL101
C787		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C801		ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C802		ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C803		FILM CAP.(P) 0.1µF/50V J	CMA1JJS00104
C804		FILM CAP.(P) 0.1µF/50V J	CMA1JJS00104
C805		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C806		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C807		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C809		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C811		ELECTROLYTIC CAP. 100µF/16V M H7	CE1CMASSL101
C812		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C813		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C818		ELECTROLYTIC CAP. 2200µF/16V M	CE1CMZPDL222
C819		CHIP CERAMIC CAP. B K 2200pF/ 50V	CHD1JK30B222
C820		CHIP CERAMIC CAP. B K 2200pF/ 50V	CHD1JK30B222
C851		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C852		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C853		ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMASSL2R2
C854		CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C855		CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C856		CHIP CERAMIC CAP.(1608) B K 0.33µF/ 10V	CHD1AK30B334
C857		ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMASSL2R2
C858		ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMASSL2R2
C859		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7

Ref. No.	Mark	Description	Part No.
C860		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C861		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMASSL101
C862		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C863		ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMASSL2R2
C864		CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V	CHD1JK30B223
C865		CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C866		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZ30F225
C867		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZ30F225
C868		CHIP CERAMIC CAP. B K 1µF/16V	CHD1CK30B105
C869		CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V	CHD1JK30B223
CONNECTORS			
CN113		PH CONNECTOR (WHITE) TOP 4P B4B-PH-K-S(LF)	J3PHC04JG017
CN402		BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
CN403		BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
CN801		STRAIGHT CONNECTOR BASE 00 8283 0212 00 000	J383C02UG002
CN802		STRAIGHT CONNECTOR BASE 00 8283 0212 00 000	J383C02UG002
CN101A		TWG CONNECTOR 09P TWG-P09P-A1	J3TWA09TG001
CN102A		TWG CONNECTOR 23P TWG-P23P-A1	J3TWA23TG001
CN103A		TWG CONNECTOR 23P TWG-P23P-A1	J3TWA23TG001
DIODES			
D31		SWITCHING DIODE 1SS400	QD1Z001SS400
D402		SWITCHING DIODE 1SS400	QD1Z001SS400
D403⚠		ZENER DIODE MTZJT-779.1B	QDTB0MTZJ9R1
D404⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D405⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D406⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D407⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D408		ZENER DIODE MTZJT-7710B	QDTB00MTZJ10
D409		ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D410		SWITCHING DIODE 1SS400	QD1Z001SS400
D411		SWITCHING DIODE 1SS400	QD1Z001SS400
D412⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D413⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D414		SWITCHING DIODE 1SS400	QD1Z001SS400
D415		SWITCHING DIODE 1SS400	QD1Z001SS400
D420⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D421⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D422		SWITCHING DIODE 1SS400	QD1Z001SS400
D423		SWITCHING DIODE 1SS400	QD1Z001SS400
D428		SWITCHING DIODE 1SS400	QD1Z001SS400
D430		SWITCHING DIODE 1SS400	QD1Z001SS400
D440		SWITCHING DIODE 1SS400	QD1Z001SS400
D441		SWITCHING DIODE 1SS400	QD1Z001SS400
D442		SWITCHING DIODE 1SS400	QD1Z001SS400
D443		SWITCHING DIODE 1SS400	QD1Z001SS400
D444		SWITCHING DIODE 1SS400	QD1Z001SS400
D445		SWITCHING DIODE 1SS400	QD1Z001SS400
D446		SWITCHING DIODE 1SS400	QD1Z001SS400
D447		SWITCHING DIODE 1SS400	QD1Z001SS400
D448		SWITCHING DIODE 1SS400	QD1Z001SS400
D449		SWITCHING DIODE 1SS400	QD1Z001SS400
D450		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D451		SWITCHING DIODE 1SS400	QD1Z001SS400
D452		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D453		SWITCHING DIODE 1SS400	QD1Z001SS400
D454		SWITCHING DIODE 1SS400	QD1Z001SS400
D455		SWITCHING DIODE 1SS400	QD1Z001SS400
D466		SWITCHING DIODE 1SS400	QD1Z001SS400

Ref. No.	Mark	Description	Part No.
D467		SWITCHING DIODE 1SS400	QD1Z001SS400
D468		SWITCHING DIODE 1SS400	QD1Z001SS400
D469		SWITCHING DIODE 1SS400	QD1Z001SS400
D480		ZENER DIODE MTZJT-779.1B	QDTB0MTZJ9R1
D501⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D502		ZENER DIODE MTZJT-7727B	QDTB00MTZJ27
D504		SWITCHING DIODE 1SS400	QD1Z001SS400
D505		IC SHUNT REGULATOR KIA431-AT	NSZLA0TJY001
D506		SWITCHING DIODE 1SS400	QD1Z001SS400
D507		ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D510		SWITCHING DIODE 1SS400	QD1Z001SS400
D511		SWITCHING DIODE 1SS400	QD1Z001SS400
D512		SWITCHING DIODE 1SS400	QD1Z001SS400
D513		SWITCHING DIODE 1SS400	QD1Z001SS400
D514		SCHOTTKY BARRIER DIODE ERC81-004	QDPZERC81004
D515		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
D520		SCHOTTKY BARRIER DIODE 11EQS04	QD4Z011EQS04
D522		SWITCHING DIODE 1SS400	QD1Z001SS400
D523		SCHOTTKY BARRIER DIODE ERC81-004	QDPZERC81004
D525		ZENER DIODE MTZJT-7710B	QDTB00MTZJ10
D527		SCHOTTKY BARRIER DIODE 11EQS04	QD4Z011EQS04
D535		ZENER DIODE MTZJT-773.9B	QDTB0MTZJ3R9
D605⚠		DIODE 1N5397-B	NDLZ001N5397
D606⚠		DIODE 1N5397-B	NDLZ001N5397
D607⚠		DIODE 1N5397-B	NDLZ001N5397
D608⚠		DIODE 1N5397-B	NDLZ001N5397
D609		ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D611⚠		ZENER DIODE MTZJT-7722B	QDTB00MTZJ22
D612		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D613		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D615		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D616⚠		ZENER DIODE MTZJT-7733B	QDTB00MTZJ33
D620		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D624⚠		ZENER DIODE MTZJT-7733B	QDTB00MTZJ33
D630⚠		SCHOTTKY BARRIER DIODE ERC84-009	QDLZERC84009
D631⚠		DIODE FR154	NDLZ000FR154
D632		SCHOTTKY BARRIER DIODE ERC84-009	QDLZERC84009
D633⚠		SCHOTTKY BARRIER DIODE ERC81-004	QDPZERC81004
D636		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D639⚠		SCHOTTKY BARRIER DIODE ERC81-004	QDPZERC81004
D640⚠		DIODE FR104-B	NDLZ000FR104
D641		ZENER DIODE MTZJT-7733C	QDTC00MTZJ33
D642		SWITCHING DIODE 1SS400	QD1Z001SS400
D643		SWITCHING DIODE 1SS400	QD1Z001SS400
D644⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D645⚠		DIODE FR154	NDLZ000FR154
D646⚠		DIODE 1ZC43	QDQZ0001ZC43
D647		ZENER DIODE MTZJT-7739B	QDTB00MTZJ39
D648⚠		SWITCHING DIODE 1SS400	QD1Z001SS400
D649⚠		IC SHUNT REGULATOR KIA431-AT	NSZLA0TJY001
D650		SWITCHING DIODE 1SS400	QD1Z001SS400
D651		SWITCHING DIODE 1SS400	QD1Z001SS400
D652		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D653		SWITCHING DIODE 1SS400	QD1Z001SS400
D658		PCB JUMPER D0.6-P5.0	JW5.0T
D659		PCB JUMPER D0.6-P5.0	JW5.0T
D668		SWITCHING DIODE 1SS400	QD1Z001SS400
D672		SWITCHING DIODE 1SS400	QD1Z001SS400
D681		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133

Ref. No.	Mark	Description	Part No.
D682		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D701		ZENER DIODE MTZJT-778.2B	QDTB0MTZJ8R2
D702		ZENER DIODE MTZJT-778.2B	QDTB0MTZJ8R2
D703		ZENER DIODE MTZJT-778.2B	QDTB0MTZJ8R2
D801		SWITCHING DIODE 1SS400	QD1Z001SS400
D802		SWITCHING DIODE 1SS400	QD1Z001SS400
D803		ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D810		ZENER DIODE MTZJT-773.3B	QDTB0MTZJ3R3
ICS			
IC31		IC VIF/SIF M61116FP TF0G	QSZBA0SHT034
IC531⚠		IC REGULATOR KA78R08C	NSZBA0SF3119
IC533		IC NJM78L05	QSBLA0ZJR034
IC601⚠		PHOTOCOUPLER PS2501-1W	QPEW0PS25011
IC671		VOLTAGE REGULATOR KIA7805API	NSBBA0SJY011
IC672		VOLTAGE REGULATOR KIA7805API	NSBBA0SJY011
IC781		IC TC4053BF(EL.N)	QSZBA0TTS131
IC801		IC AN17812A	QSZBA0SMS017
IC851		IC MTS DECORDER AN5832SA-E1	QSZBA0TMS003
IC852		IC SWITCHING TC4052BF(EL)	QSZBA0TTS096
COILS			
L11		INDUCTOR 22µH-K-5FT	LLARKBSTU220
L12		PCB JUMPER D0.6-P5.0	JW5.0T
L21		INDUCTOR 100µH-K-5FT	LLARKBSTU101
L22		INDUCTOR 150µH-J-26T	LLAXJATTU151
L31		INDUCTOR 22µH-K-5FT	LLARKBSTU220
L32		INDUCTOR 18µH-J-26T	LLAXJATTU180
L401		CHOKE COIL ELC10D330E	LLC330KMS003
L403		CHOKE COIL ELC10D330E	LLC330KMS003
L601⚠		LINE FILTER TLF14CB3321R0	LLBG00ZTU012
L701		INDUCTOR 22µH-K-5FT	LLARKBSTU220
L781		PCB JUMPER D0.6-P5.0	JW5.0T
L851		PCB JUMPER D0.6-P5.0	JW5.0T
TRANSISTORS			
Q32		TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q401⚠		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q403		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q404		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q405		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q406		TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q407		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q408		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q409		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q410		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q411⚠		MOS FET 2SK2231	QF1Z2SK2231Q
Q412⚠		MOS FET 2SK2231	QF1Z2SK2231Q
Q415⚠		MOS FET 2SK2231	QF1Z2SK2231Q
Q416⚠		MOS FET 2SK2231	QF1Z2SK2231Q
Q421		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q422		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q423		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q424		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q427		TRANSISTOR 2SA1887	QQWZ02SA1887
Q428		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q501		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q502		TRANSISTOR 2SA1576A T106R	QQ1R2SA1576A
Q503		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q505		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q509		TRANSISTOR 2SA1576A T106R	QQ1R2SA1576A
Q510		TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q511		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q512		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q513		TRANSISTOR 2SC2785(F)	QQSF02SC2785

Ref. No.	Mark	Description	Part No.
Q531		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q601⚠		FET 2SK3869(Q)	QFWZ2SK3869Q
Q603⚠		TRANSISTOR 2SC2120-O-TPE2	QQS002SC2120
Q633		TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q661		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q701		TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q702		TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q703		TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q704		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q705		TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q706		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q707		TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q708		TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q802		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q803		TRANSISTOR 2SA1175(F)	QQSF02SA1175
RESISTORS			
R11		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R12		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R13		INDUCTOR 0.47µH-J-26T	LLAXJATTUR47
R15		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R21		CHIP RES.(1608) 1/10W J 270k Ω	RRXAJR5Z0274
R23		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R24		CHIP RES.(1608) 1/10W J 820k Ω	RRXAJR5Z0824
R34		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R36		CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R38		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R40		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R42		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R46		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R48		PCB JUMPER D0.6-P5.0	JW5.0T
R49		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R50		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R52		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R402		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R403		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R404		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R405		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R406		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R407		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R408		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R409		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R410		CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R411		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R412		CHIP RES.(1608) 1/10W J 47 Ω	RRXAJR5Z0470
R413		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R414		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R415		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R416		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R417		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R418		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R419		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R420		CHIP RES.(1608) 1/10W J 33 Ω	RRXAJR5Z0330
R421		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R422		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R423		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R424		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R425		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R426		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R427		CHIP RES.(1608) 1/10W J 47 Ω	RRXAJR5Z0470
R428		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R429		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R440		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000

Ref. No.	Mark	Description	Part No.
R441		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R442		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R443		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R444		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R445		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R446		CHIP RES.(1608) 1/10W J 47 Ω	RRXAJR5Z0470
R447		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R448		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R463		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R464		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R465		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R466		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R471		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R475		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R476		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R480		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R481		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R482		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R486		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R487		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R488		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R489		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R490		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R491		METAL OXIDE FILM RES 2W J 330 Ω	RN02331KE010
R492		METAL OXIDE FILM RES. 1W J 1k Ω	RN01102KE010
R495		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R496		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R497		METAL OXIDE FILM RES 2W J 330 Ω	RN02331KE010
R501		CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H1002
R502		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R503		CHIP RES.(100PPM) 1/10W F 3k Ω	RRXAFR5H3001
R504		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R505		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJR5Z0272
R506		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R508		MRTAL OXIDE FILM RES. 1W J 4.7k Ω	RN01472KE010
R509		PCB JUMPER D0.6-P5.0	JW5.0T
R510		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R512		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R514		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R515		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R516		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R517		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R518		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R519		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R520		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R521		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R522		CHIP RES.(1608) 1/10W J 120k Ω	RRXAJR5Z0124
R527		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R528		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R529		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R530		METAL OXIDE FILM RES. 2W J 4.7 Ω	RN024R7KE010
R531		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R532		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R533		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R535		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R536		CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R537		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R538		PCB JUMPER D0.6-P5.0	JW5.0T
R552		FIXED METAL OXIDE FILM RE S. 1W J 1 Ω	RN011R0KE010
R601⚠		CEMENT RES. 3W K 1.2 Ω	RW031R2PG007
R603⚠		CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R604		CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394

Ref. No.	Mark	Description	Part No.
R605		CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R606		PCB JUMPER D0.6-P5.0	JW5.0T
R607		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R608		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R609		CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R610		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R613⚠		METAL OXIDE FILM RES. 2W J 0.47 Ω	RN02R47KE010
R620		CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R621		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R622		PCB JUMPER D0.6-P5.0	JW5.0T
R623		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R633		CHIP RES.(1608) 1/10W J 68k Ω	RRXAJR5Z0683
R634⚠		CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R635⚠		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R636		PCB JUMPER D0.6-P5.0	JW5.0T
R637		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R642⚠		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R643⚠		CHIP RES.(1608) 1/10W J 270k Ω	RRXAJR5Z0274
R645		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R646		CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R647		CHIP RES.(1608) 1/10W F 1.8k Ω	RRXAFR5H1801
R648⚠		CHIP RES.(1608) 1/10W F 2k Ω	RRXAFR5H2001
R650⚠		CHIP RES.(1608) 1/10W F 1.8k Ω	RRXAFR5H1801
R651		CHIP RES.(1608) 1/10W F 2k Ω	RRXAFR5H2001
R652⚠		CHIP RES. 1/10W F 1.2k Ω	RRXAFR5H1201
R653⚠		CHIP RES. 1/10W F 1.2k Ω	RRXAFR5H1201
R654⚠		CHIP RES. 1/10W F 1.2k Ω	RRXAFR5H1201
R655		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R656		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R657		CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R658		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R661⚠		CHIP RES.(1608) 1/10W F 1.8k Ω	RRXAFR5H1801
R662		CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R663		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R664		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R665⚠		CHIP RES. 1/10W F 1.1k Ω	RRXAFR5H1101
R671		PCB JUMPER D0.6-P5.0	JW5.0T
R672		PCB JUMPER D0.6-P5.0	JW5.0T
R701		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R702		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R703		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R704		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R705		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R706		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R707		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R708		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R709		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R710		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R711		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R712		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R713		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R714		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R715		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R716		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R717		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R718		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R719		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R720		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R721		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R722		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R725		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R732		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R733		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333

Ref. No.	Mark	Description	Part No.
R734		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R735		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R736		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R738		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R739		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R740		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R741		CHIP RES.(1608) 1/10W J 390 Ω	RRXAJR5Z0391
R742		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R743		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R744		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R747		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R748		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R749		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R752		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R755		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R756		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R757		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R758		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R759		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R782		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R784		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R785		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R786		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R787		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R788		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R789		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R790		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R791		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R792		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R793		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R794		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R798		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R799		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R801		CARBON RES. 1/2W J 100 Ω	RCX2JZQZ0101
R802		CARBON RES. 1/2W J 100 Ω	RCX2JZQZ0101
R803		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R804		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R805⚠		METAL OXIDE FILM RES. 2W J 2.7 Ω	RN022R7KE010
R806		CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R807⚠		METAL OXIDE FILM RES. 2W J 2.7 Ω	RN022R7KE010
R808		CHIP RES.(1608) 1/10W J 56k Ω	RRXAJR5Z0563
R809		CHIP RES.(1608) 1/10W J 180k Ω	RRXAJR5Z0184
R810		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R811		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R813		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R814		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJR5Z0272
R816		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJR5Z0272
R817		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R820		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R821		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R822		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R823		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R824		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R825		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R826		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R827		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R829		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R830		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R831		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R832		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R833		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R834		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R835		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R836		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R837		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R838		CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R839		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R842		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R843		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R844		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R851		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R852		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R853		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R855		CHIP RES.(1608) 1/10W J 180k Ω	RRXAJR5Z0184
MISCELLANEOUS			
AC601⚠		AC CORD PB8K9F4110AB057	WAC0172LW020
B6		POW HEAT SINK PKG ASSEMBLY L3201UB	1EM420650
B7		SHIELD BOX TOP L3201UB	1EM320159
BC602		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC632		PCB JUMPER D0.6-P5.0	JW5.0T
BC634		PCB JUMPER D0.6-P5.0	JW5.0T
BC635		PCB JUMPER D0.6-P5.0	JW5.0T
BC636		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
CF31		CERAMIC FILTER SFSRA4M50CF00-B0	FBB455PMR004
F601⚠		FUSE 4.00A/125V	PAGU20CAG402
FH601		FUSE HOLDER MSF-015	XH01Z00LY001
FH602		FUSE HOLDER MSF-015	XH01Z00LY001
GP641 ⚠		GAP. FNR-G3.10D	FAZ000LD6005
JK701		Y/C JACK 1P(SW) MDC-070V1-A	JYEL040LY002
JK703		RCA JACK(YELLOW) MTJ-032-06B-20	JXRL010LY050
JK704		RCA JACK(WHITE) MTJ-032-06B-22	JXRL010LY052
JK705		RCA JACK(RED) MTJ-032-06A-21	JYRL010LY014
JK706		RCA JACK(GREEN) MTJ-032-06B-25	JXRL010LY054
JK707		RCA JACK(BLUE) MTJ-032-06B-28	JXRL010LY057
JK708		RCA JACK(RED) MTJ-032-06B-21	JXRL010LY051
JK709		RCA JACK(WHITE) MTJ-032-06B-22	JXRL010LY052
JK710		RCA JACK(RED) MTJ-032-06A-21	JYRL010LY014
JK801		HEADPHONE JACK MSJ-035-10A B	JYSL020LY002
JS524		PCB JUMPER D0.6-P5.0	JW5.0T
JS601		PCB JUMPER D0.6-P7.5	JW7.5T
JS602		PCB JUMPER D0.6-P10.0	JW10.0T
JS603		PCB JUMPER D0.6-P7.5	JW7.5T
JS604		PCB JUMPER D0.6-P10.0	JW10.0T
JS632		PCB JUMPER D0.6-P10.0	JW10.0T
JS633		PCB JUMPER D0.6-P10.0	JW10.0T
JS636		PCB JUMPER D0.6-P5.0	JW5.0T
JS805		PCB JUMPER D0.6-P5.0	JW5.0T
JS806		PCB JUMPER D0.6-P5.0	JW5.0T
JS813		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L4		SCREW B-TIGHT D3X8 BIND HEAD+	GBMB3080
SA601⚠		SURGE ABSORBER 470V+-10PER	NVQZ10D471KB
SF11		SAW FILTER SAFHM45M7VAJZ01B03	FBB456PMR012
T402⚠		INVERTER TRANS ETJV25ZB13AC	LTZ00EPMS006
T403⚠		INVERTER TRANS ETJV25ZB13AC	LTZ00EPMS006
T601⚠		SWITCHING TRANS 5725	LTT00CPKT185
TP402		PCB JUMPER D0.6-P12.5	JW12.5T
TP403		PCB JUMPER D0.6-P5.0	JW5.0T
TU1		TUNER UNIT TEFH9-002A	UTUNNTUAL045

FUNCTION CBA

Ref. No.	Mark	Description	Part No.
		FUNCTION CBA Consists of the following:	----------
CAPACITORS			
C101	A,B	ELECTROLYTIC CAP. 47μF/10V M H7	CE1AMASSL470
C103		CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
RESISTORS			
R101		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R102		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R103		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R104		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R105		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R106		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJR5Z0272
R107		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R108		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R109		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R110		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R118	A,B	CHIP RES.(1608) 1/10W J 68 Ω	RRXAJR5Z0680
R119	A,B	CHIP RES.(1608) 1/10W J 68 Ω	RRXAJR5Z0680
SWITCHES			
SW101		TACT SWITCH SKQSAB	SST0101AL038
SW102		TACT SWITCH SKQSAB	SST0101AL038
SW103		TACT SWITCH SKQSAB	SST0101AL038
SW104		TACT SWITCH SKQSAB	SST0101AL038
SW105		TACT SWITCH SKQSAB	SST0101AL038
SW107		TACT SWITCH SKQSAB	SST0101AL038
SW111		TACT SWITCH SKQSAB	SST0101AL038
MISCELLANEOUS			
CLN104	A,B	8P WIRE ASSEMBLY WX1L3100-003	WX1L3100-003
CLN104	C	8P WIRE ASSEMBLY WX1L3101-003	WX1L3101-003
JS121		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JS122		CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JS123	A,B	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JS124	A,B	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
RCV101	A,B	PHOTO LINK MODULE KSM-712TH2E	USESJRSKK044

IR SENSOR CBA

Ref. No.	Mark	Description	Part No.
	C	IR SENSOR CBA Consists of the following:	----------
CAPACITOR			
C102	C	ELECTROLYTIC CAP. 47μF/10V M H7	CE1AMASSL470
DIODE			
D102	C	LED LTL-4214M1	NPQZLTL4214M
TRANSISTOR			
Q102	C	TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
RESISTORS			
R123	C	CHIP RES.(1608) 1/10W J 68 Ω	RRXAJR5Z0680
R124	C	CHIP RES.(1608) 1/10W J 68 Ω	RRXAJR5Z0680
R125	C	CHIP RES.(1608) 1/10W J 150 Ω	RRXAJR5Z0151
R126	C	CHIP RES.(1608) 1/10W J 150 Ω	RRXAJR5Z0151
R127	C	CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
	C	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
MISCELLANEOUS			
CLN105	C	5P WIRE ASSEMBLY WX1L3101-004	WX1L3101-004
RCV102	C	REMOCON RECEIVE UNIT PIC-37042SR	USESJRSKK034

SUPPLEMENT

SYLVANIA

SERVICE MANUAL

This service manual is for the 6615LF4 different LCD Module Assembly model, which is different from the previous 6615LF4 model.
For 6615LF4 different LCD Module Assembly model, the letter (L3110UA) is printed on rating label on the back of the unit. Refer to the rating label illustration at right.

Rating Label

"L3110UA"

15″ COLOR LCD TELEVISION

6615LF4

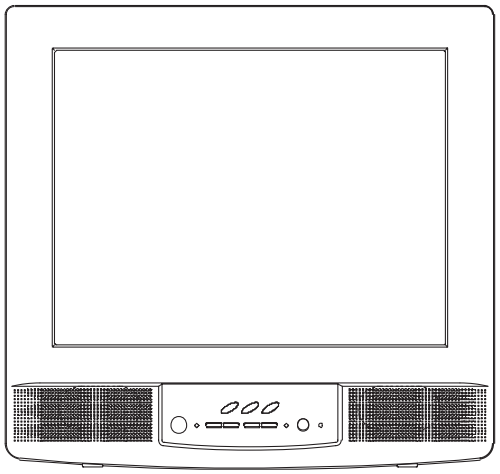


TABLE OF CONTENTS

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms (K = 10^3, M = 10^6).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF (P = 10^{-6} μF).
5. All voltages are DC voltages unless otherwise specified.

Note of Capacitors:

ML --- Mylar Cap. PP --- Metallized Film Cap. SC --- Semiconductor Cap. L --- Low Leakage type

Temperature Characteristics of Capacitors are noted with the following:

B --- ±10% CH --- 0±60 ppm/°C CSL --- +350~-1000 ppm/°C

Tolerance of Capacitors are noted with the following:

Z --- +80~-20%

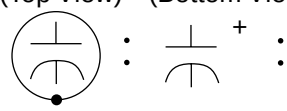
Note of Resistors:

CEM --- Cement Res. MTL --- Metal Res. F --- Fuse Res.

Capacitors and transistors are represented by the following symbols.

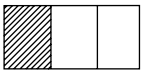
CBA Symbols

(Top View) (Bottom View)



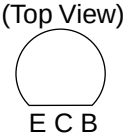
Electrolytic Capacitor

(Bottom View)



Transistor or Digital Transistor

(Top View)



NPN Transistor

(Top View)

PNP Transistor

(Top View)

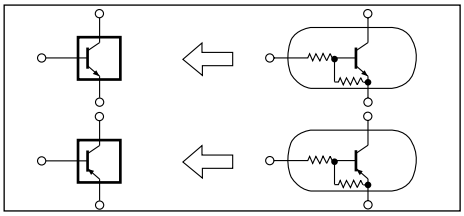
NPN Digital Transistor

(Top View)

PNP Digital Transistor

Schematic Diagram Symbols

Digital Transistor



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

1. CAUTION:

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

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

2. CAUTION:

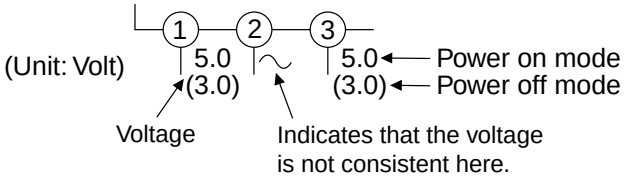
Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the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

3. Note:

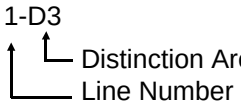
1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which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

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

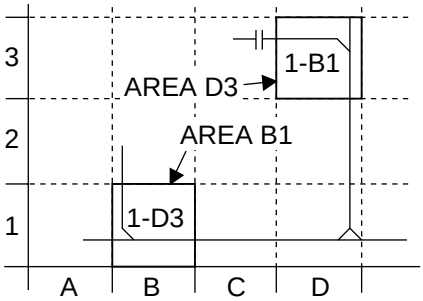
Plug the TV power cord into a standard AC outlet.:



5. How to read converged lines



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



6. Test Point Information

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

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

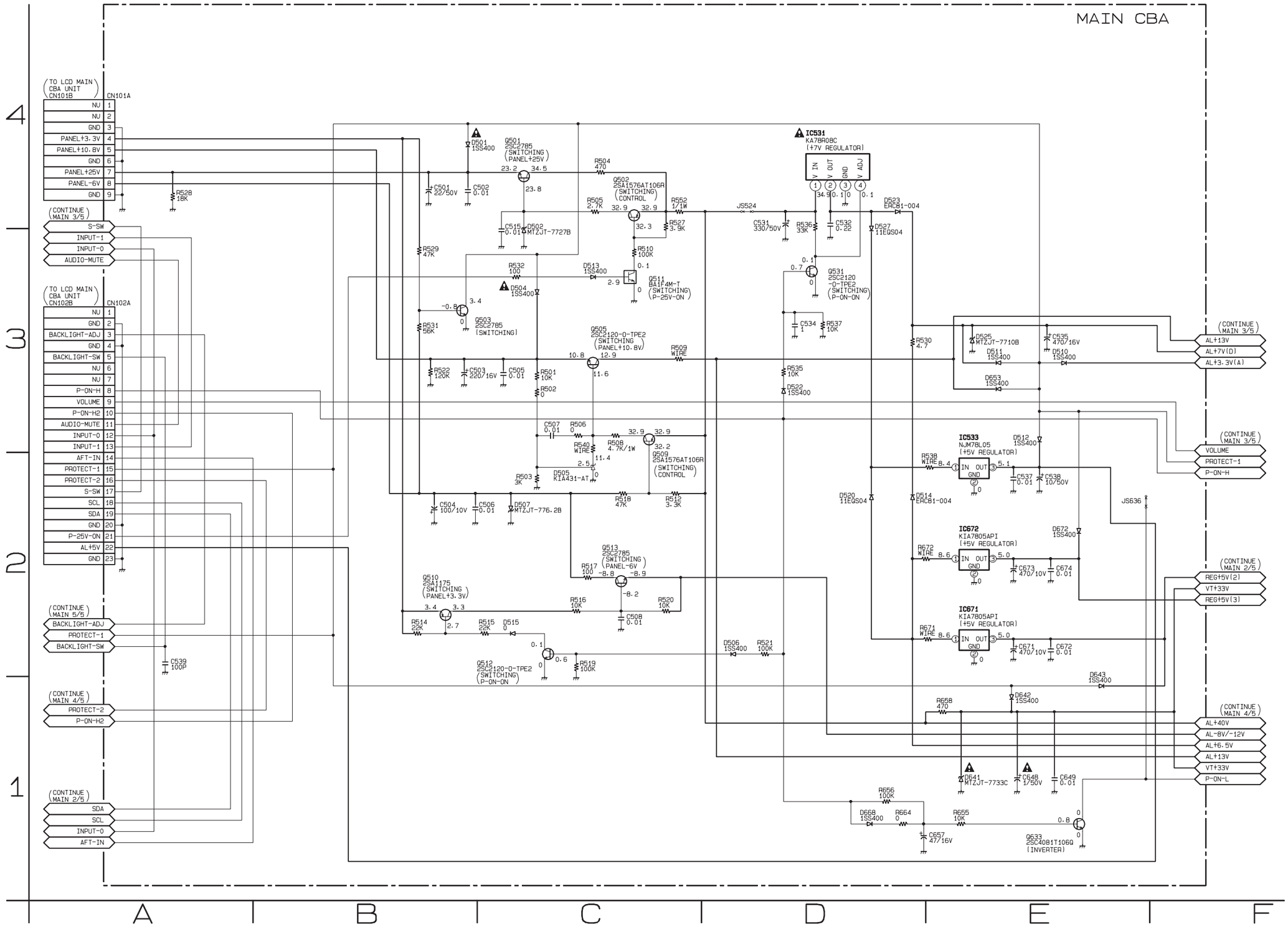
: Used to indicate a test point with no test pin.

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

Main 1/5 Schematic Diagram (6615LF4)

MAIN 1/5

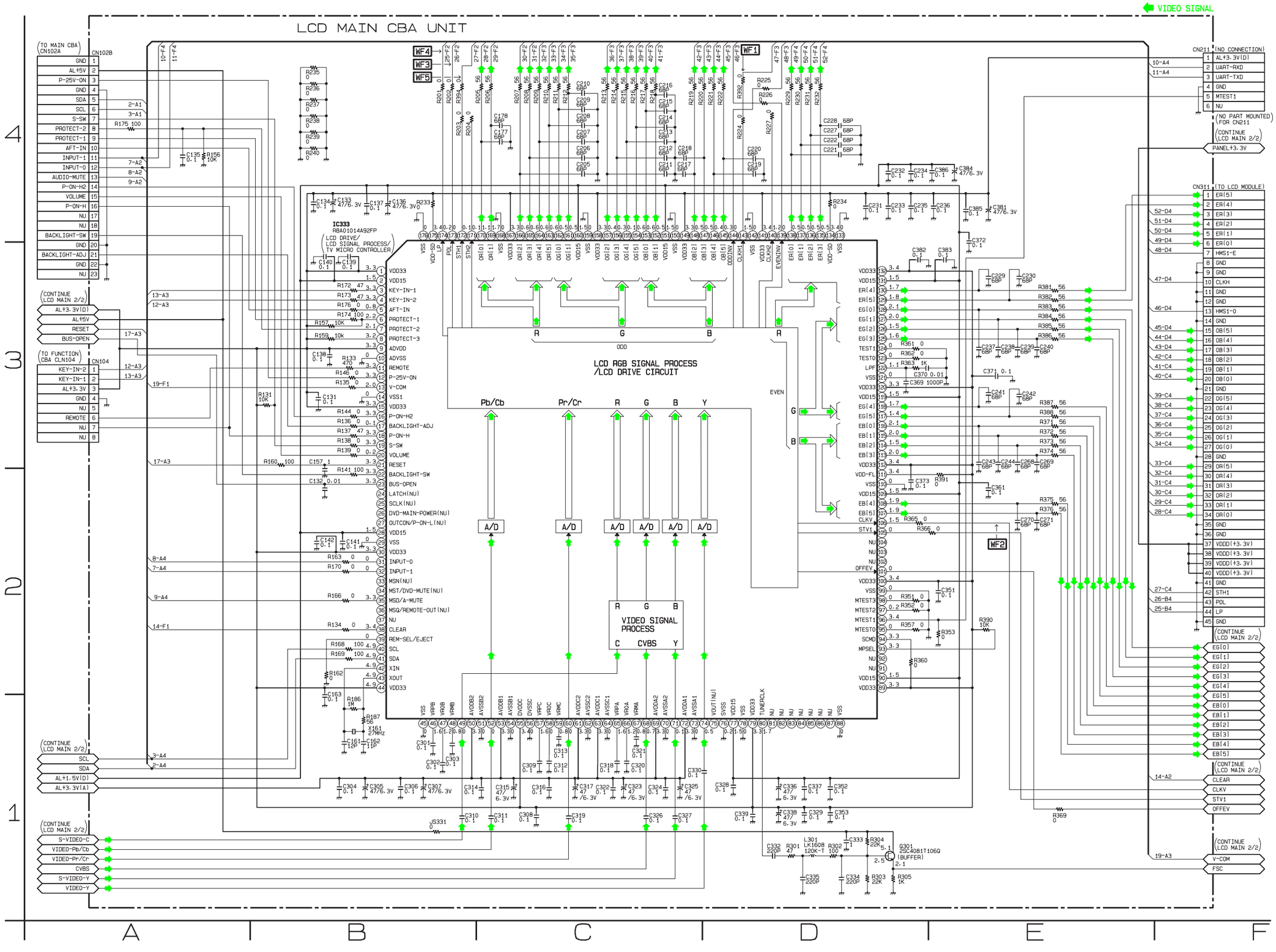
Ref No.	Position
ICS	
IC531	D-4
IC533	E-3
IC671	E-2
IC672	E-2
TRANSISTORS	
Q501	C-4
Q502	C-4
Q503	B-3
Q505	C-3
Q509	C-3
Q510	B-2
Q511	C-3
Q512	C-2
Q513	C-2
Q531	D-3
Q633	E-1
CONNECTORS	
CN101A	A-4
CN102A	A-3



LCD Main 1/2 Schematic Diagram

LCD MAIN 1/2

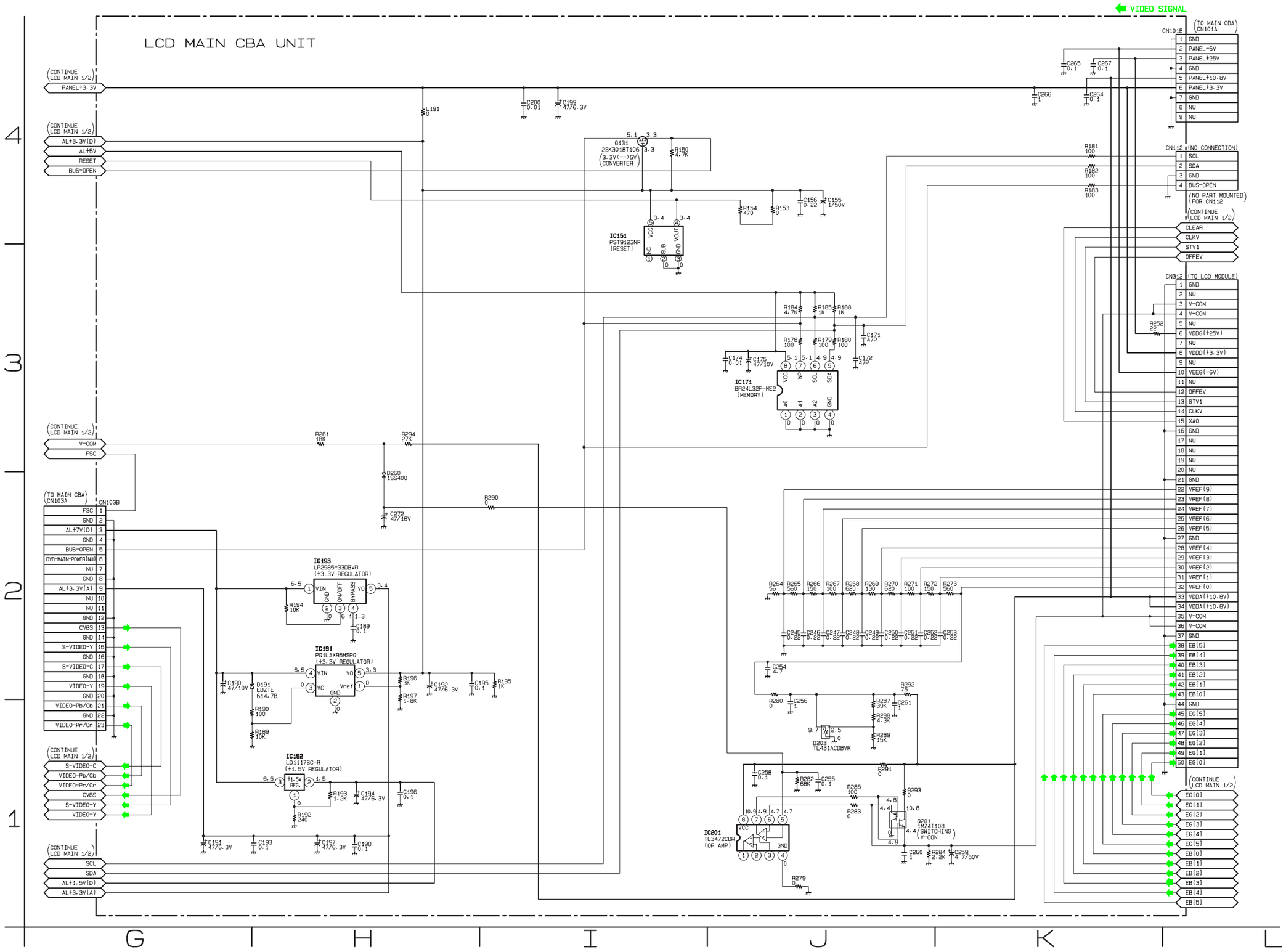
Ref No.	Position
IC	
IC333	B-3
TRANSISTOR	
Q301	D-1
CONNECTORS	
CN104	A-3
CN105	A-2
CN111	A-2
CN211	F-4
CN311	F-4
CN102B	A-4



LCD Main 2/2 Schematic Diagram

LCD MAIN 2/2

Ref No.	Position
ICS	
IC151	I-3
IC171	J-3
IC191	H-2
IC192	H-1
IC193	H-2
IC201	J-1
TRANSISTORS	
Q131	I-4
Q201	J-1
CONNECTORS	
CN112	L-4
CN312	L-3
CN101B	L-4
CN103B	G-2



Main CBA Top View

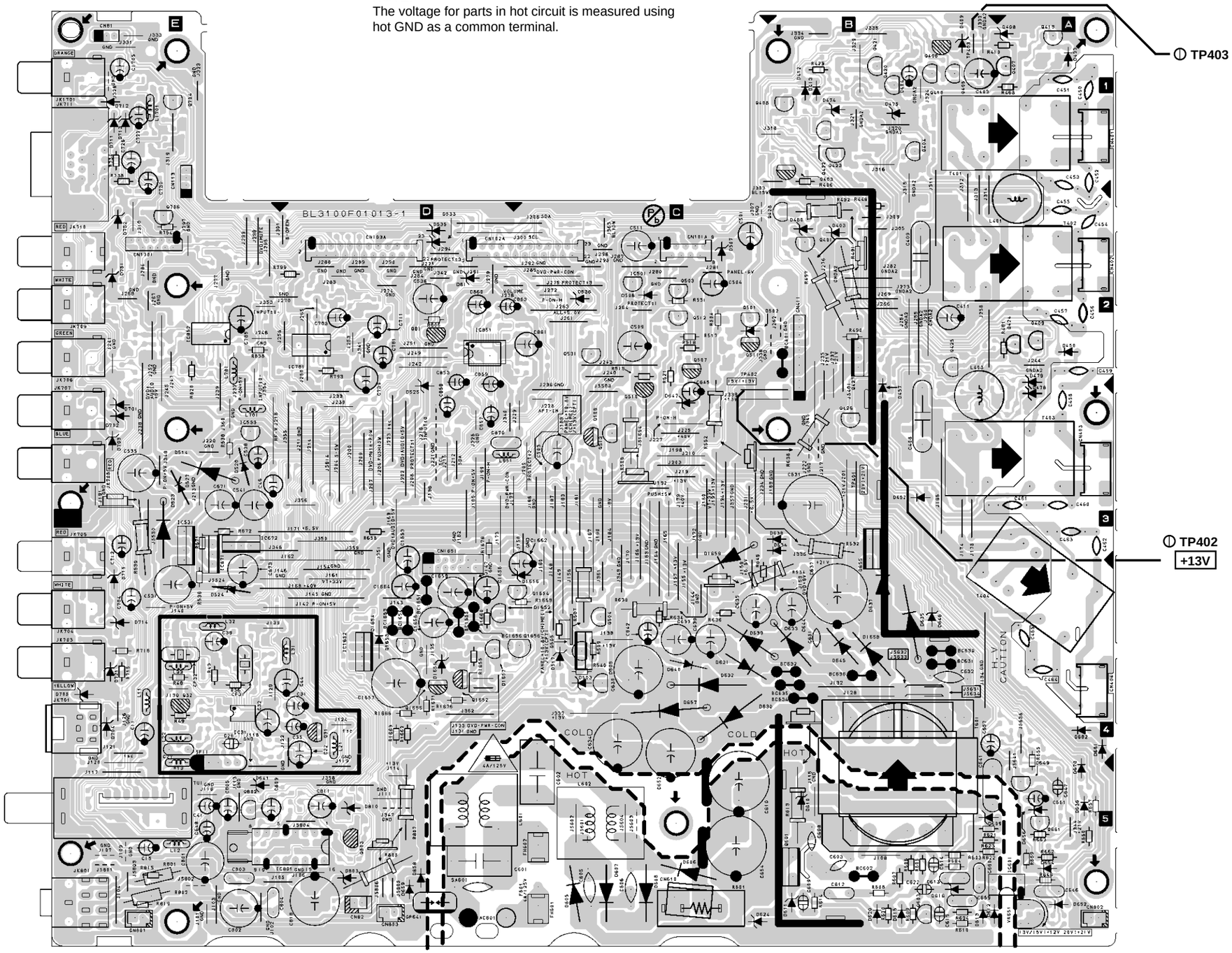
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

4A/125V

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. Also, in order to have the ability to increase the input slowly,when troubleshooting this type 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

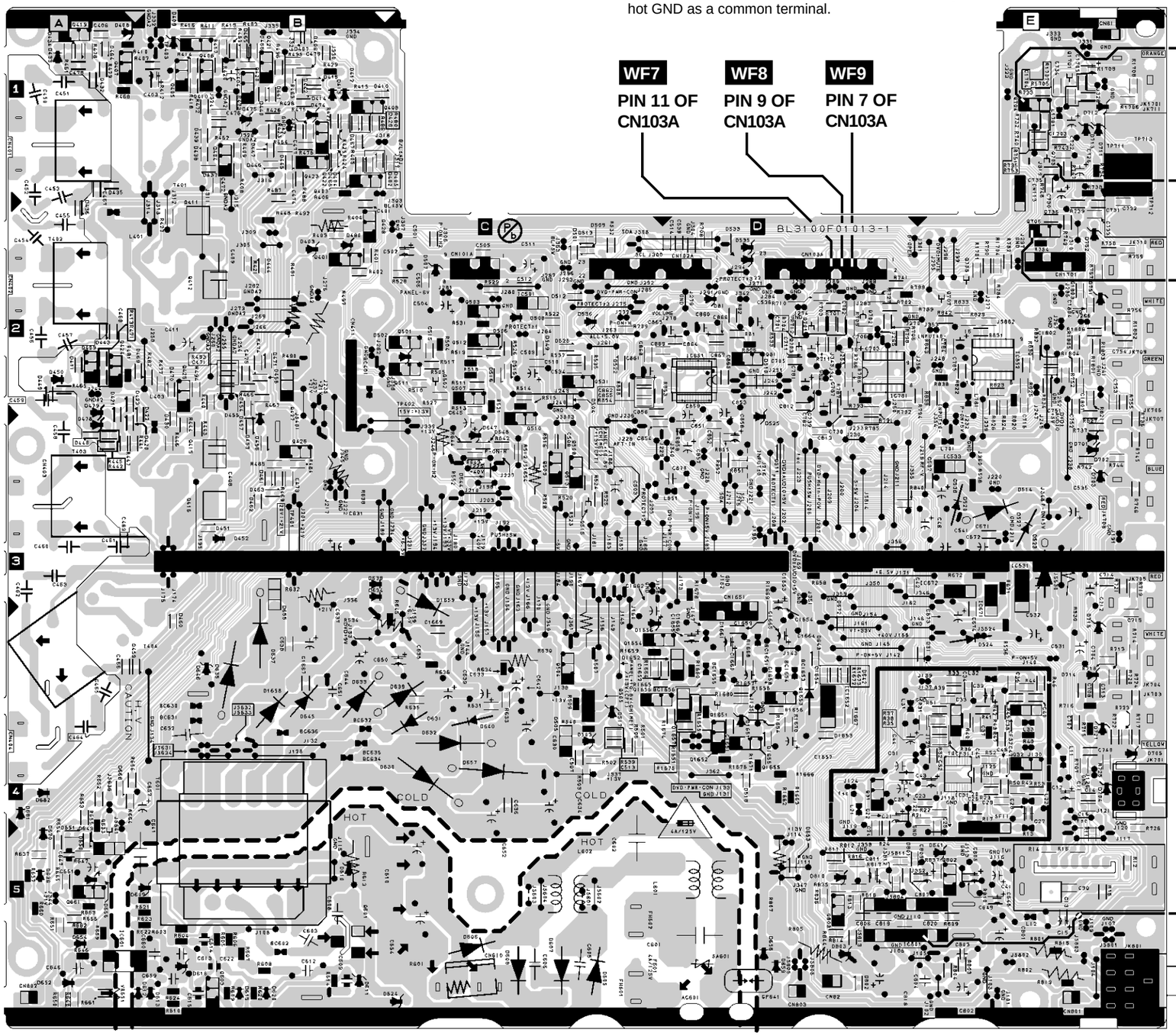
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

4A/125V

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. Also, in order to have the ability to increase the input slowly,when troubleshooting this type power supply circuit, a variable isolation transformer is required.

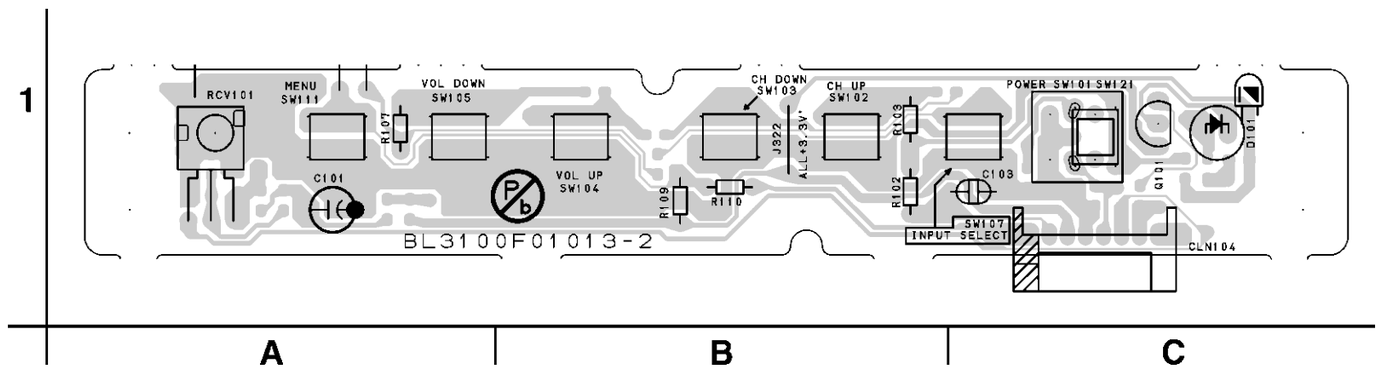
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



MAIN CBA

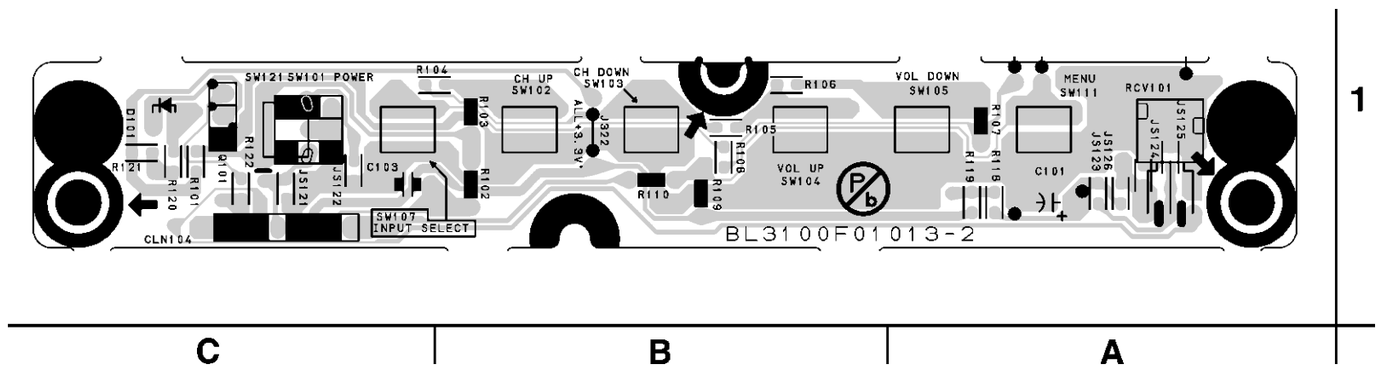
Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS	
IC31	E-4	Q505	C-4
IC531	E-3	Q509	C-3
IC533	E-3	Q510	C-3
IC601	A-5	Q511	C-2
IC671	E-4	Q512	C-2
IC672	E-3	Q513	C-3
IC781	D-2	Q531	C-2
IC801	D-5	Q601	B-5
IC851	D-2	Q603	B-5
IC852	E-2	Q633	A-5
TRANSISTORS		Q661	A-5
Q32	E-4	Q701	D-2
Q401	B-2	Q702	D-2
Q403	B-1	Q703	D-2
Q404	B-1	Q704	E-1
Q405	B-1	Q705	E-1
Q406	B-1	Q706	E-2
Q407	A-1	Q707	E-2
Q408	B-1	Q708	E-2
Q409	A-2	Q802	E-5
Q410	B-1	Q803	D-5
Q411	B-2	CONNECTORS	
Q412	B-2	CN113	E-1
Q415	B-3	CN402	A-2
Q416	B-3	CN403	A-3
Q421	B-1	CN801	E-5
Q422	B-1	CN802	A-5
Q423	B-1	CN101A	C-2
Q424	A-2	CN102A	D-2
Q427	B-2	CN103A	D-2
Q428	B-2	TEST POINTS	
Q501	C-2	TP402	C-2
Q502	C-2	TP403	B-1
Q503	C-2		

Function CBA Top View



BL3100F01013-2

Function CBA Bottom View



BL3100F01013-2

Different parts from the previous model

Ref. No.	Description	Part No.
MECHANICAL PARTS		
A6⚠	RATING LABEL L3110UA	----------
ELECTRICAL PARTS		
	LCD MAIN CBA & LIQUID CRYSTAL PANEL UNIT	1FSA10049

SUPPLEMENT

SYLVANIA

SERVICE MANUAL

This service manual is for the 6615LF different LCD Module Assembly model, which is different from the previous 6615LF model.
For 6615LF different LCD Module Assembly model, the letter (L3118UJ) is printed on rating label on the back of the unit. Refer to the rating label illustration at right.

Rating Label

"L3118UJ"

15″ COLOR LCD TELEVISION

6615LF

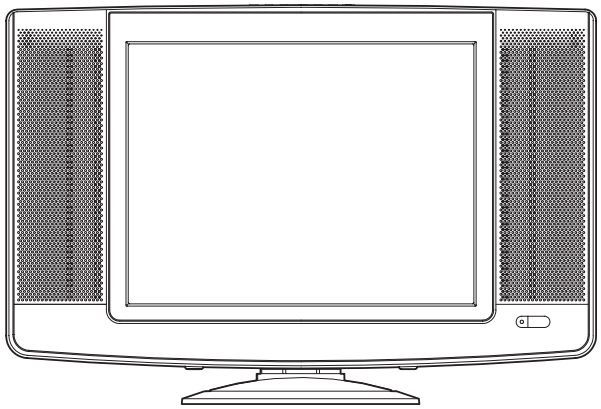


TABLE OF CONTENTS

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms (K = 10^3, M = 10^6).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF (P = 10^{-6} μF).
5. All voltages are DC voltages unless otherwise specified.

Note of Capacitors:

ML --- Mylar Cap. PP --- Metallized Film Cap. SC --- Semiconductor Cap. L --- Low Leakage type

Temperature Characteristics of Capacitors are noted with the following:

B --- ±10% CH --- 0±60 ppm/°C CSL --- +350~-1000 ppm/°C

Tolerance of Capacitors are noted with the following:

Z --- +80~-20%

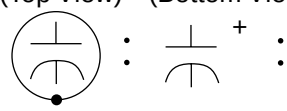
Note of Resistors:

CEM --- Cement Res. MTL --- Metal Res. F --- Fuse Res.

Capacitors and transistors are represented by the following symbols.

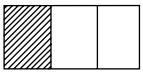
CBA Symbols

(Top View) (Bottom View)



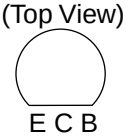
Electrolytic Capacitor

(Bottom View)



Transistor or Digital Transistor

(Top View)



NPN Transistor

(Top View)

PNP Transistor

(Top View)

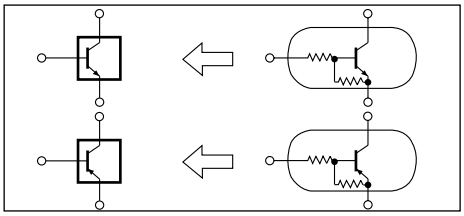
NPN Digital Transistor

(Top View)

PNP Digital Transistor

Schematic Diagram Symbols

Digital Transistor



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

1. CAUTION:

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

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

2. CAUTION:

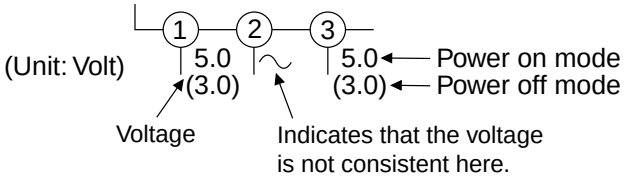
Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the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

3. Note:

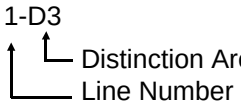
1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which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

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

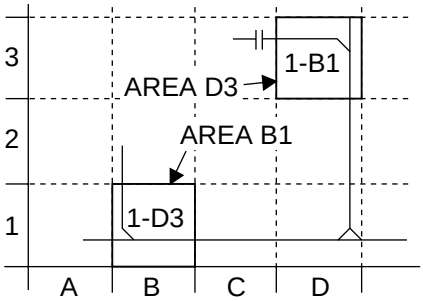
Plug the TV power cord into a standard AC outlet.:



5. How to read converged lines



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



6. Test Point Information

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

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

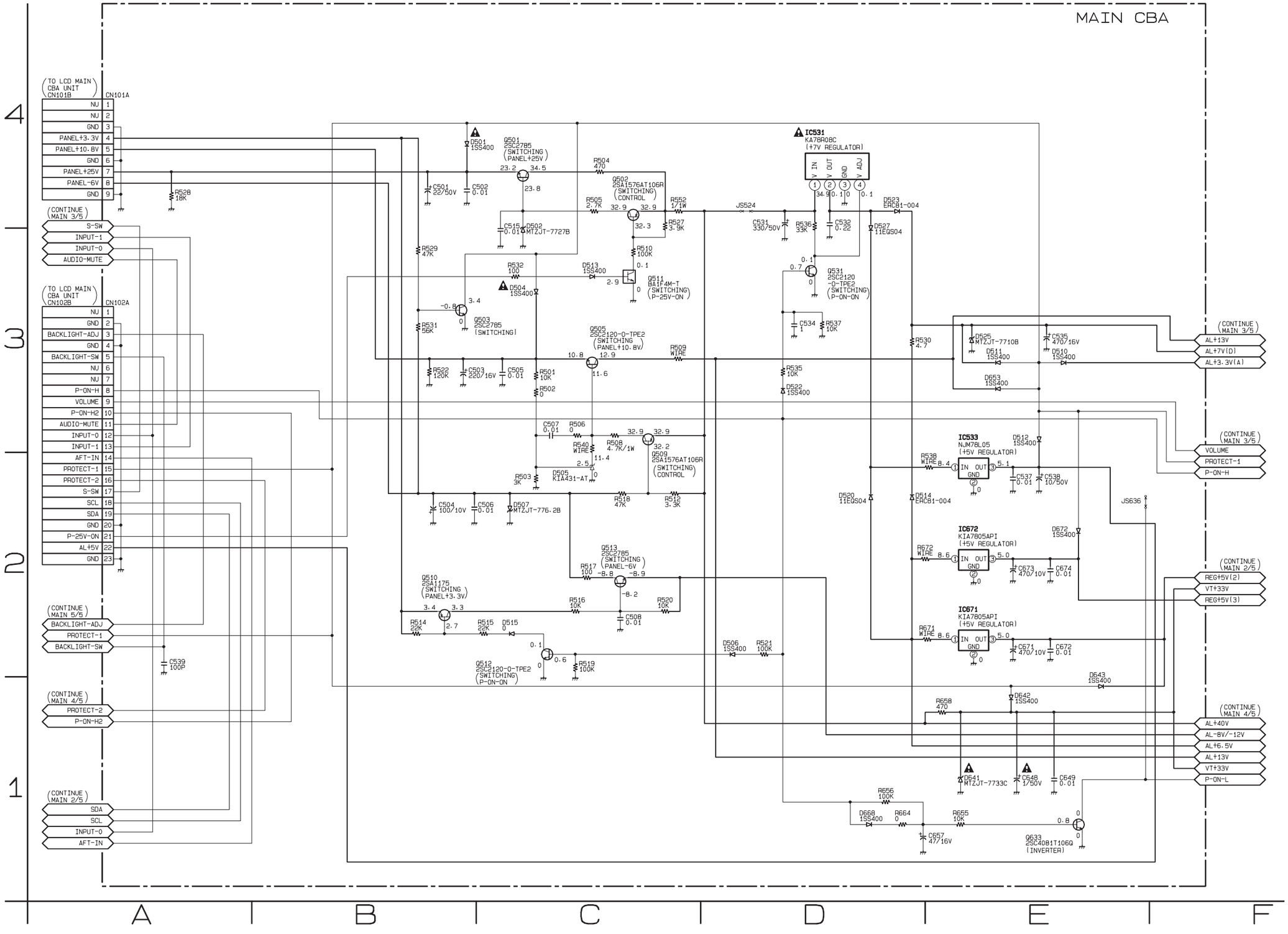
: Used to indicate a test point with no test pin.

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

Main 1/5 Schematic Diagram

MAIN 1/5

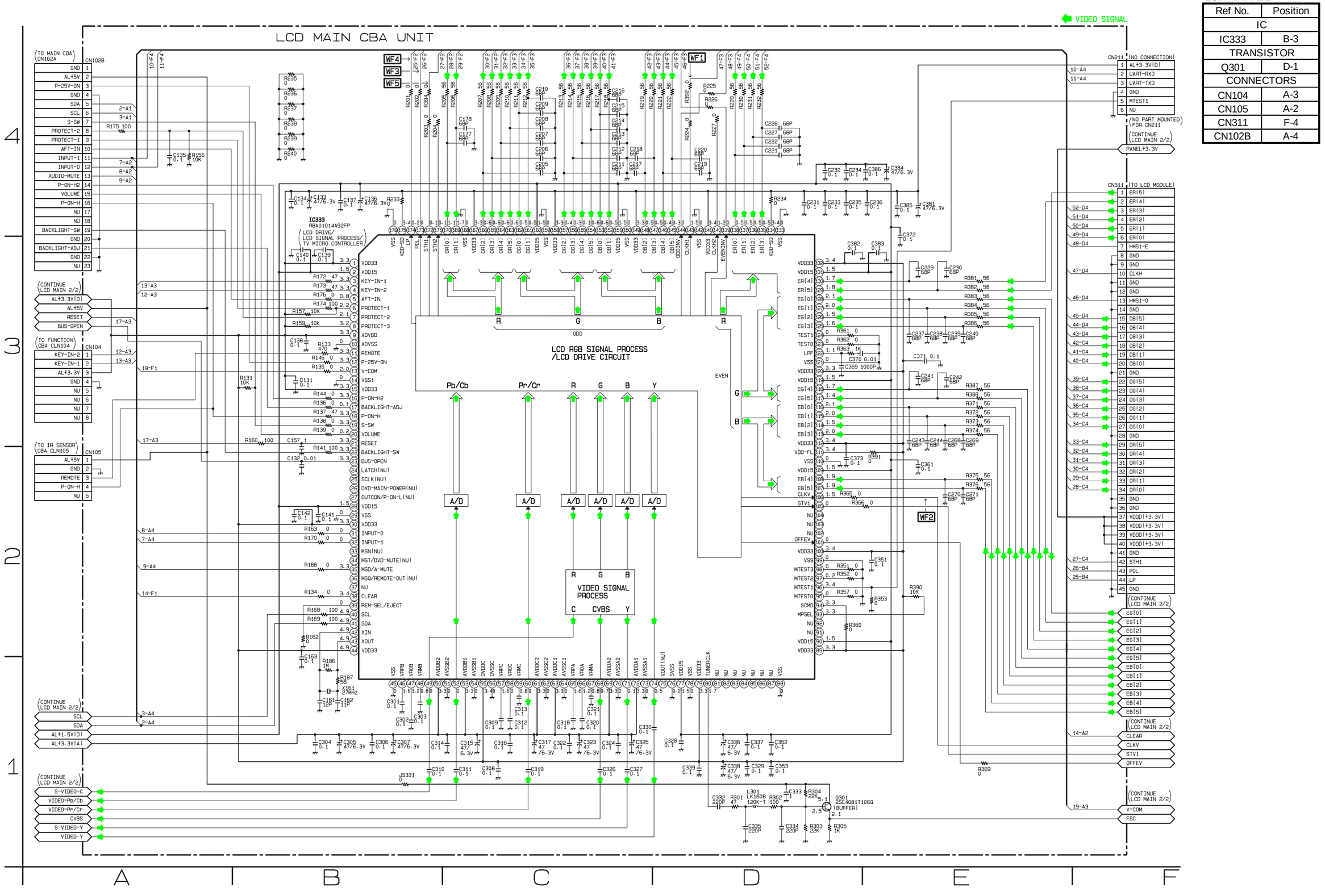
Ref No.	Position
ICS	
IC531	D-4
IC533	E-3
IC671	E-2
IC672	E-2
TRANSISTORS	
Q501	C-4
Q502	C-4
Q503	B-3
Q505	C-3
Q509	C-3
Q510	B-2
Q511	C-3
Q512	C-2
Q513	C-2
Q531	D-3
Q633	E-1
CONNECTORS	
CN101A	A-4
CN102A	A-3



LCD Main 1/2 Schematic Diagram

LCD MAIN 1/2

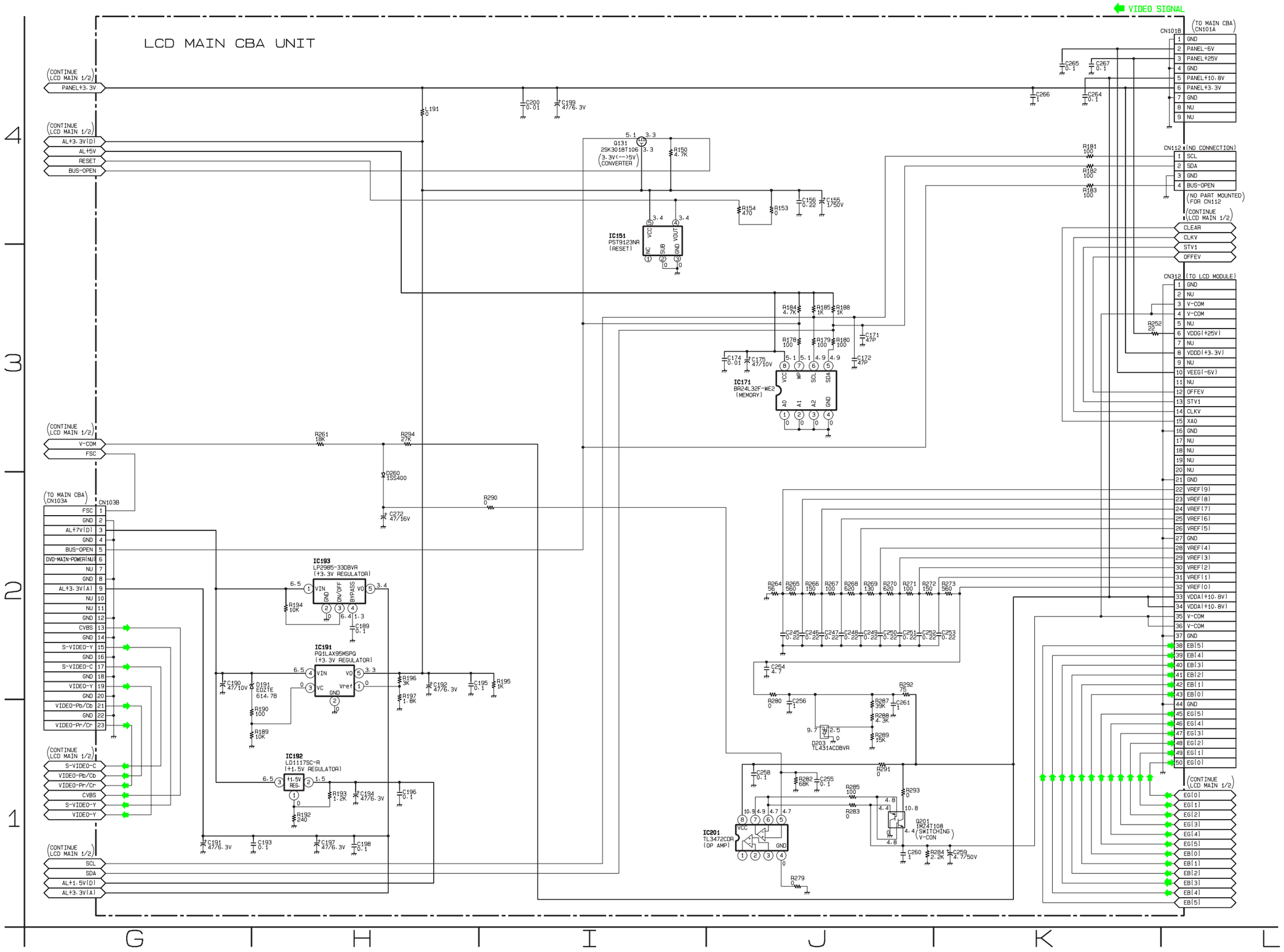
Ref No.	Position
IC	
IC333	B-3
TRANSISTOR	
Q301	D-1
CONNECTORS	
CN104	A-3
CN105	A-2
CN311	F-4
CN102B	A-4



LCD Main 2/2 Schematic Diagram

LCD MAIN 2/2

Ref No.	Position
ICS	
IC151	I-3
IC171	J-3
IC191	H-2
IC192	H-1
IC193	H-2
IC201	J-1
TRANSISTORS	
Q131	I-4
Q201	J-1
CONNECTORS	
CN312	L-3
CN101B	L-4
CN103B	G-2



L3118SCL2

Main CBA Top View

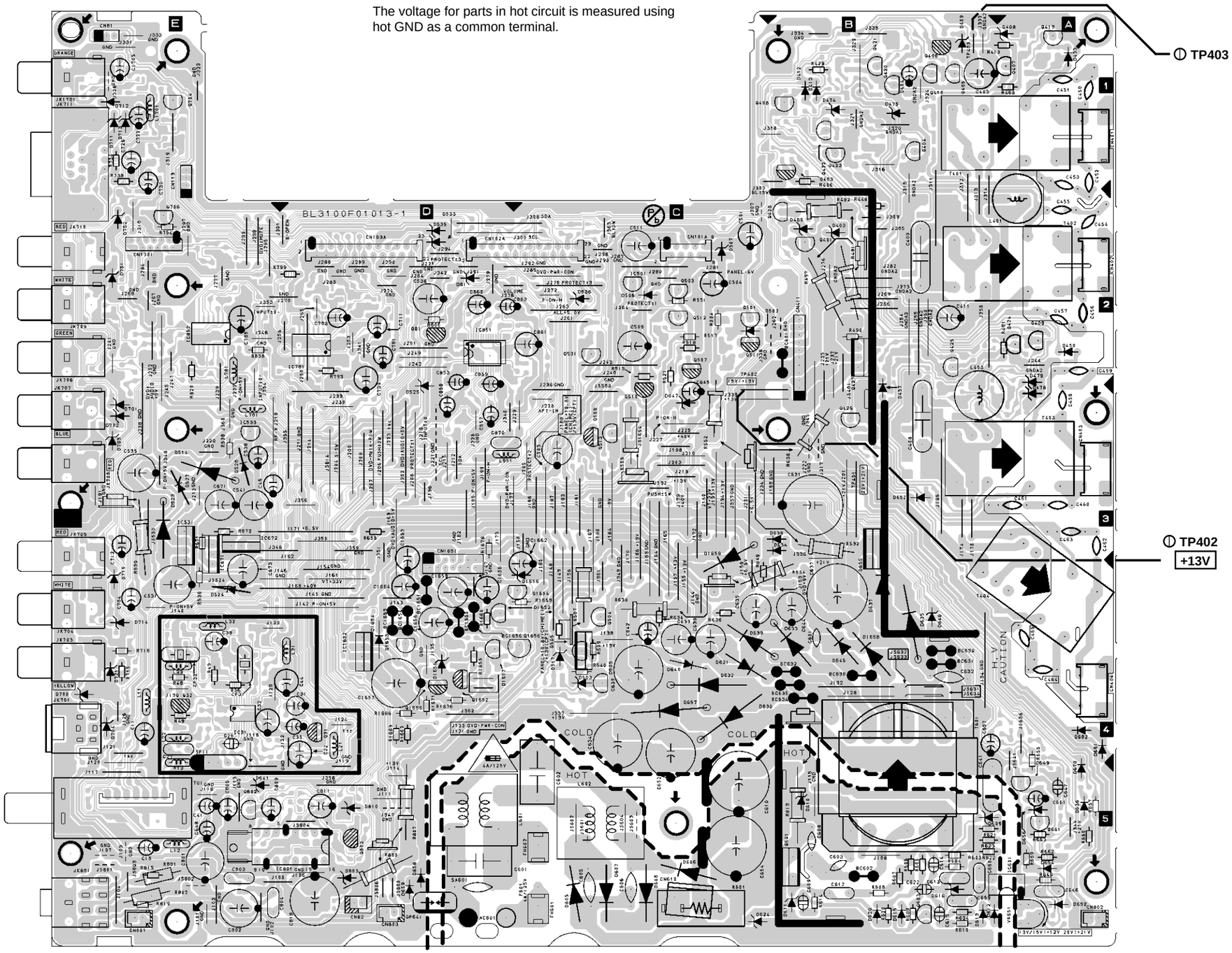
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

4A/125V

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. Also, in order to have the ability to increase the input slowly,when troubleshooting this type 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

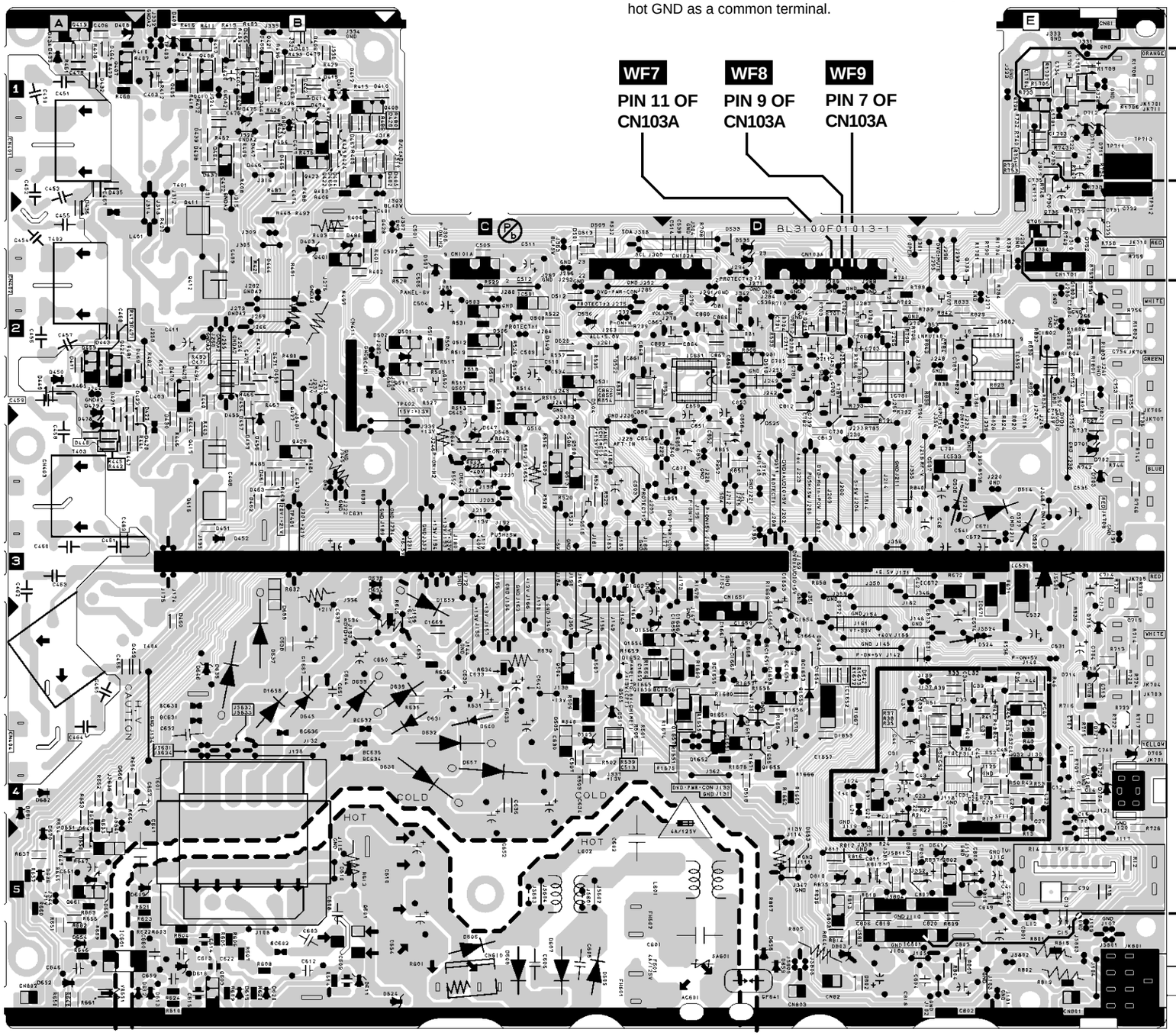
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in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

4A/125V

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. Also, in order to have the ability to increase the input slowly,when troubleshooting this type power supply circuit, a variable isolation transformer is required.

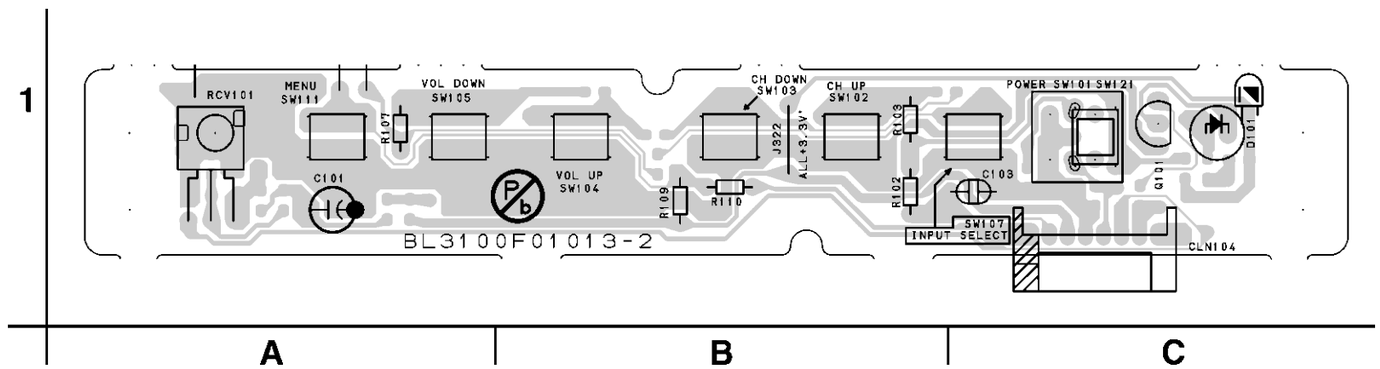
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



MAIN CBA

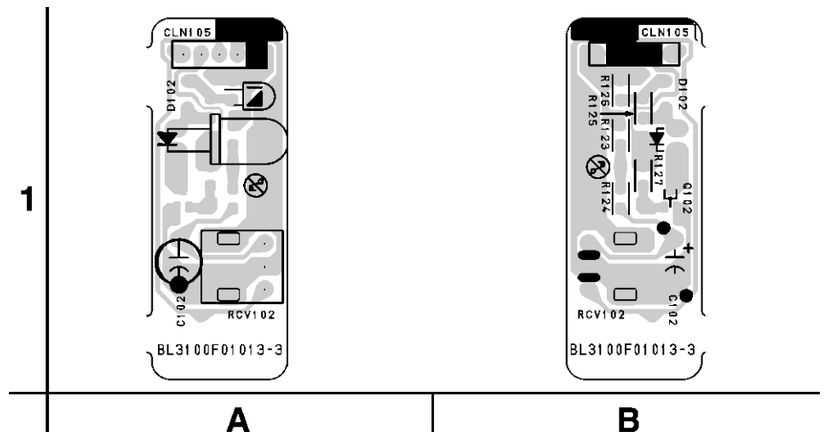
Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS	
IC31	E-4	Q505	C-4
IC531	E-3	Q509	C-3
IC533	E-3	Q510	C-3
IC601	A-5	Q511	C-2
IC671	E-4	Q512	C-2
IC672	E-3	Q513	C-3
IC781	D-2	Q531	C-2
IC801	D-5	Q601	B-5
IC851	D-2	Q603	B-5
IC852	E-2	Q633	A-5
TRANSISTORS		Q661	A-5
Q32	E-4	Q701	D-2
Q401	B-2	Q702	D-2
Q403	B-1	Q703	D-2
Q404	B-1	Q704	E-1
Q405	B-1	Q705	E-1
Q406	B-1	Q706	E-2
Q407	A-1	Q707	E-2
Q408	B-1	Q708	E-2
Q409	A-2	Q802	E-5
Q410	B-1	Q803	D-5
Q411	B-2	CONNECTORS	
Q412	B-2	CN113	E-1
Q415	B-3	CN402	A-2
Q416	B-3	CN403	A-3
Q421	B-1	CN801	E-5
Q422	B-1	CN802	A-5
Q423	B-1	CN101A	C-2
Q424	A-2	CN102A	D-2
Q427	B-2	CN103A	D-2
Q428	B-2	TEST POINT	
Q501	C-2	TP402	C-2
Q502	C-2	TP403	B-1
Q503	C-2		

Function CBA Top View



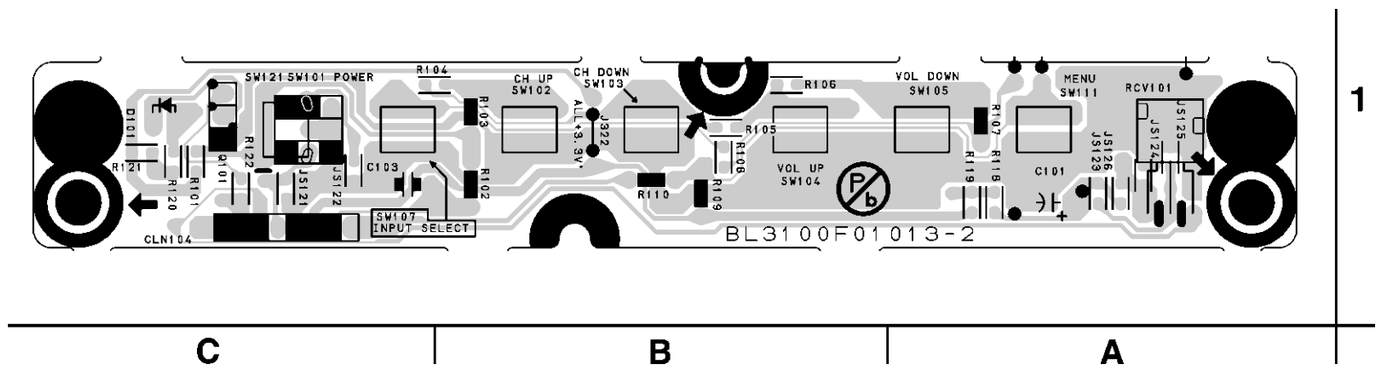
BL3100F01013-2

IR Sensor CBA Top & Bottom View



BL3100F01013-3

Function CBA Bottom View



BL3100F01013-2

Different parts from the previous model

Ref. No.	Description	Part No.
MECHANICAL PARTS		
A6⚠	RATING LABEL L3118UJ	----------
ELECTRICAL PARTS		
	LCD MAIN CBA & LIQUID CRYSTAL PANEL UNIT	1FSA10049