



SERVICE MANUAL

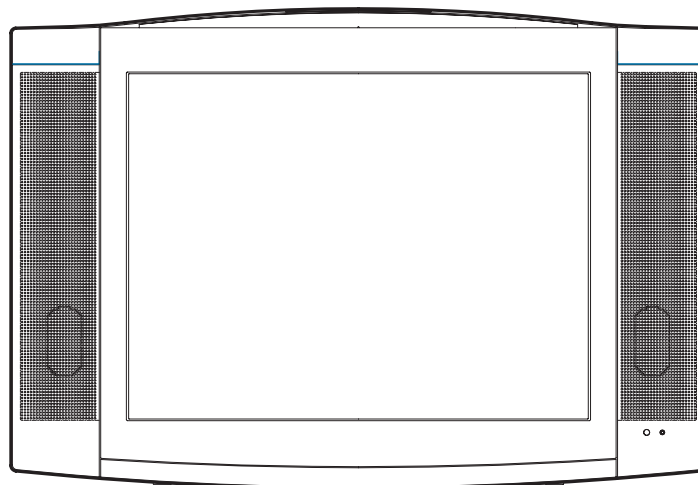
This service manual is for the EWL20S5 version B model, which is different from the original EWL20S5 and the EWL20S5 version A model. For EWL20S5 version B model, a suffix “B” is printed on the rating label on the back of the unit. Refer to the rating label illustration at right.

Rating Label



Suffix "B"

20" COLOR LCD TELEVISION EWL20S5



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.

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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	45.75	---
		MHz	41.25	---
2. Color Killer Sens.	CH-2	dB μ V	15	20
	CH-10	dB μ V	15	20
	CH-55	dB μ V	15	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	pixels	640 \times 3	---
	Vertical	pixels	480	---
2. Brightness		cd/m ²	500	---
3. Response Time	---	msec	16	---
4. Support Color	---	-	26 mil. (6 bit)	---
5. Viewing Angle	Horizontal	°	-80 to 80	---
	Vertical	°	-65 to 70	---

< VIDEO >

Description	Condition	Unit	Nominal	Limit
1. Over Scan	Horizontal	%	7	---
	Vertical	%	7	---
2. Color Temperature	---	°K	11000	---
	x		0.276	± 0.005
	y		0.282	± 0.005
3. Resolution	Horizontal	line	400	---
	Vertical	line	350	---

< AUDIO >

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

Description	Condition	Unit	Nominal	Limit
1. Audio Output 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	Hz	50 to 12 k	---
	-3dB: Rch	Hz	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.

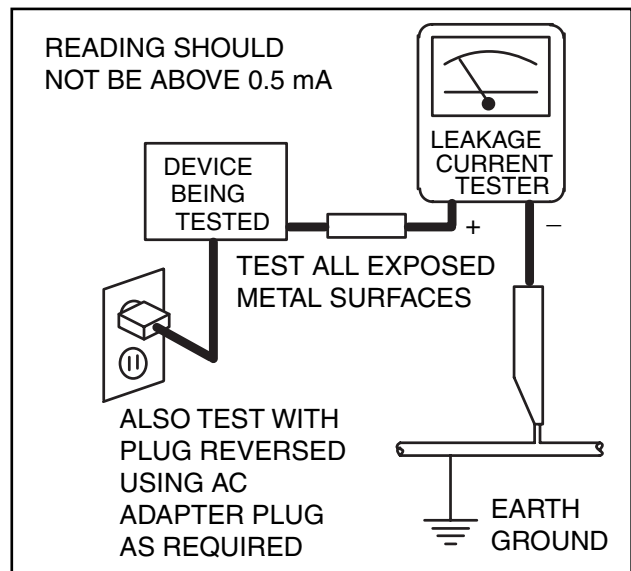
Safety Precautions for LCD TV Circuit

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.

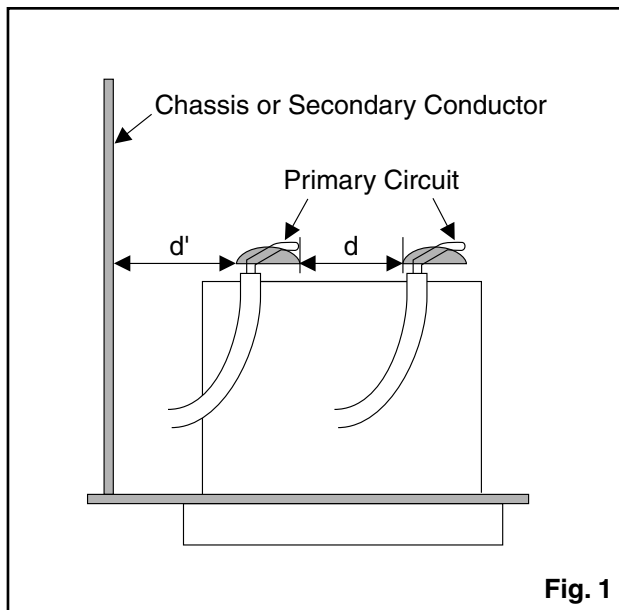


Fig. 1

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.

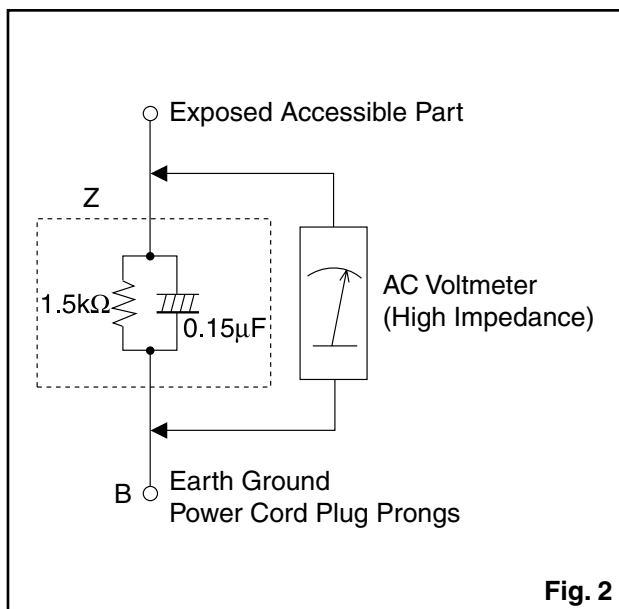


Fig. 2

Table 2: Leakage current ratings for selected areas

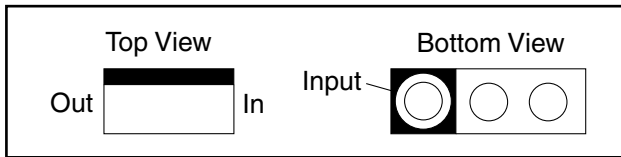
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	0.15 μ F CAP. & 1.5 k Ω RES. Connected in parallel	$i \leq 0.5$ mA rms	Exposed accessible parts

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

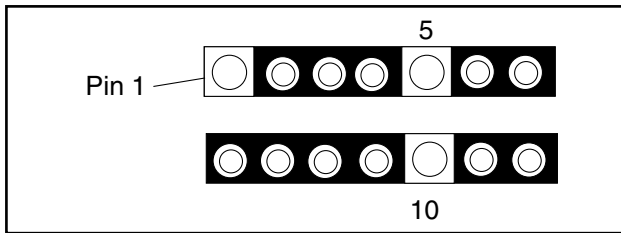
STANDARD NOTES FOR SERVICING

Circuit Board Indications

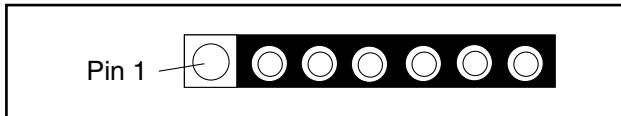
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

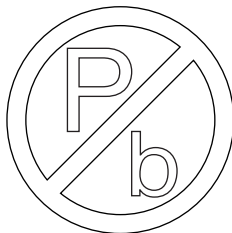


3. The 1st pin of every male connector is indicated as shown.



Pb (Lead) Free Solder

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



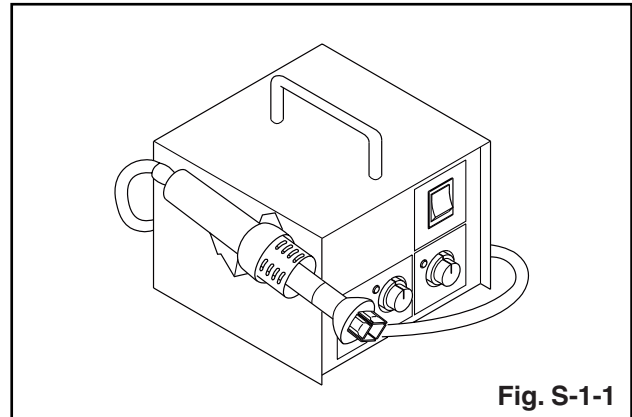
Pb free mark

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

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

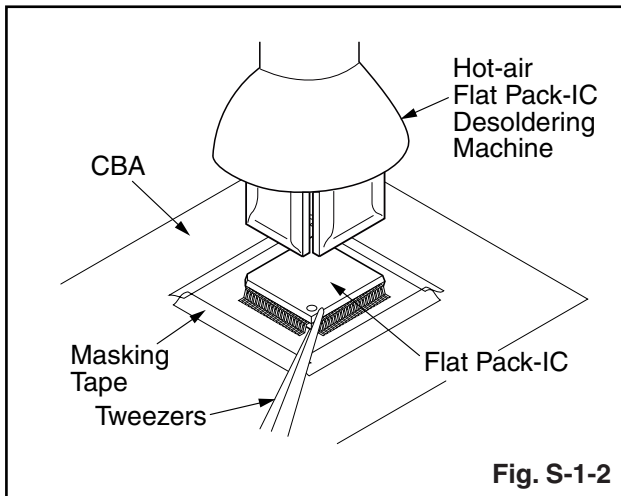


2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat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

CAUTION:

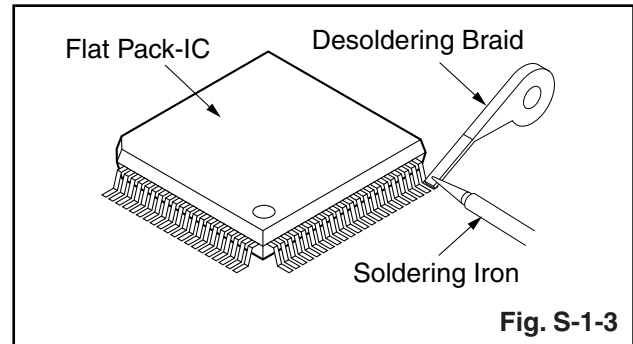
1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape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

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

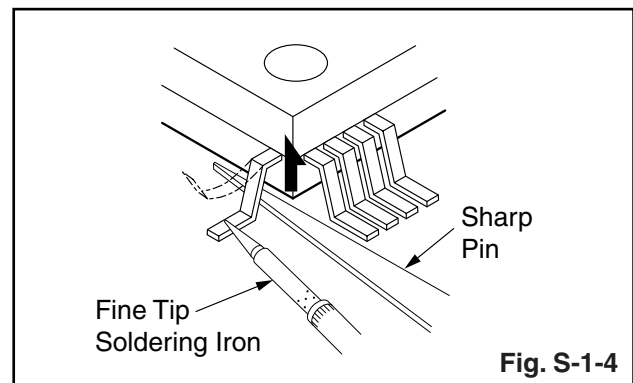


With Soldering Iron:

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



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

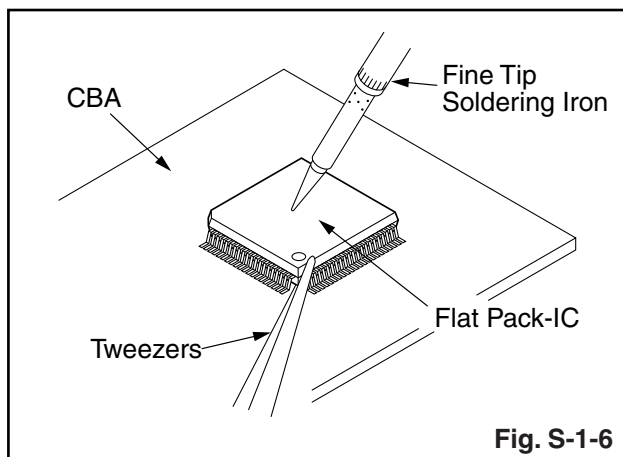
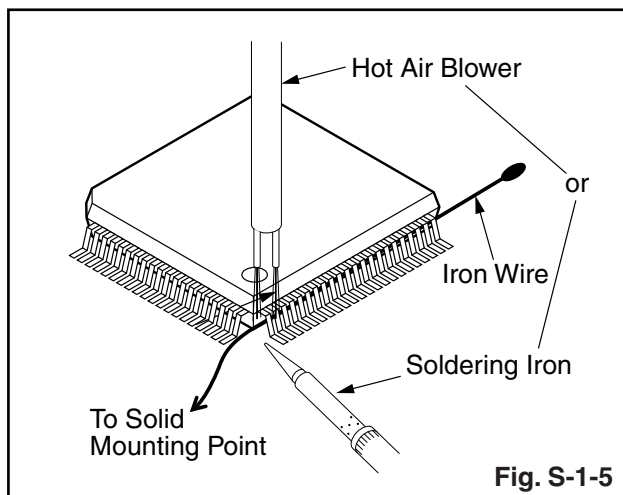


3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

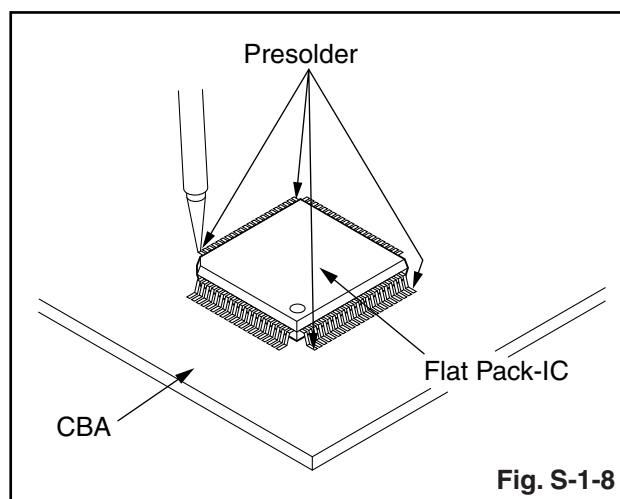
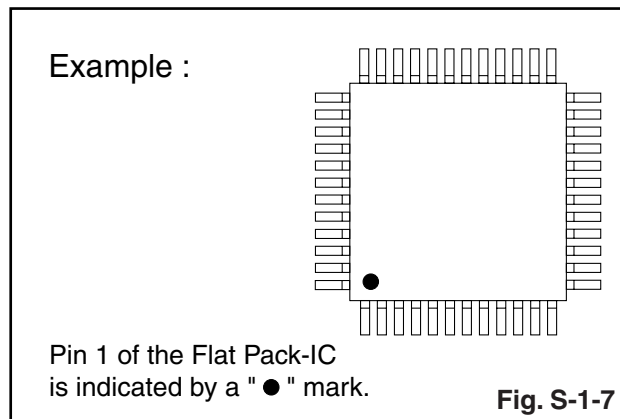
1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins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

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



2. Installation

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



Instructions for Handling Semi-conductors

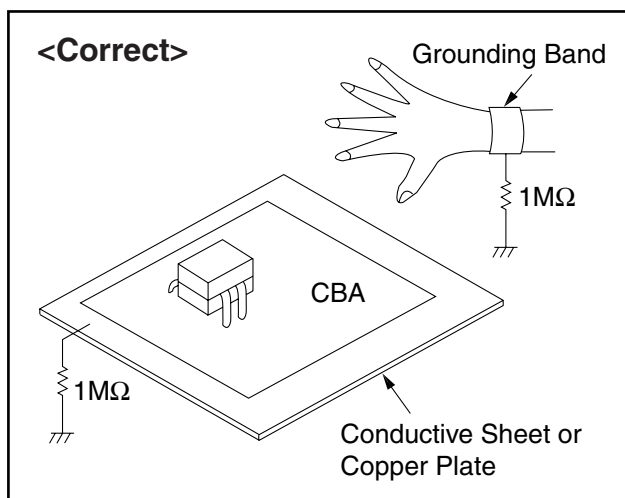
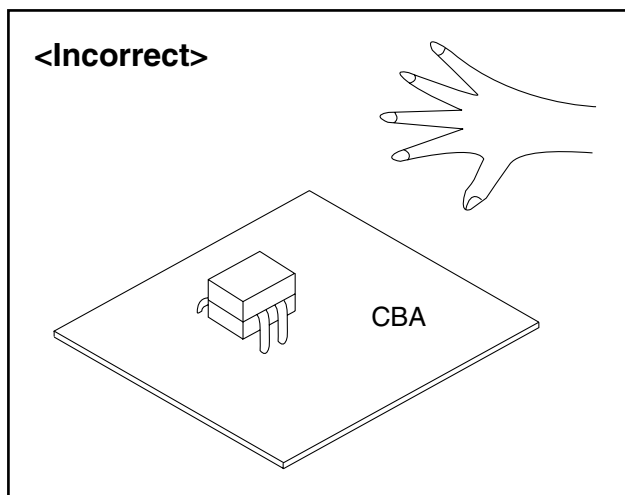
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

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

2. Ground for Workbench

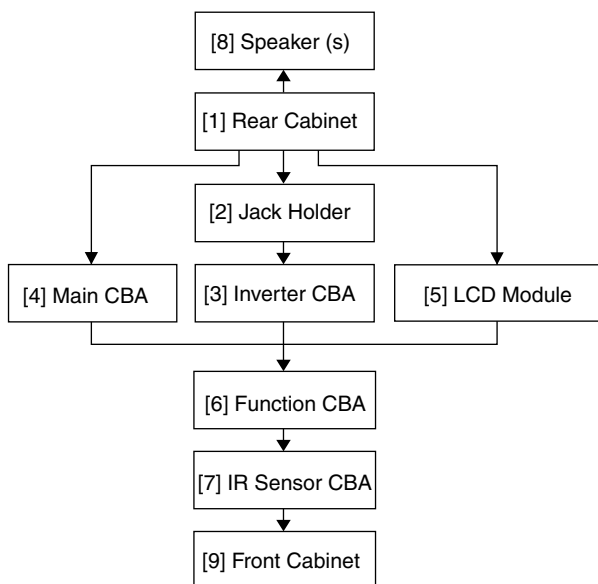
Be sure to place a conductive sheet or copper plate with proper grounding ($1\text{ M}\Omega$) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting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



CABINET DISASSEMBLY INSTRUCTIONS

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	12(S-1), (S-2), 4(S-3)	---
[2]	Jack Holder	D2	3(S-4), (S-5)	---
[3]	Inverter CBA	D2 D3	4(S-6), *CN301, *CN302, *CN303, *CN304, *CN310	---
[4]	Main CBA	D2 D3	6(S-7), *CN1201, *CN1202, *CN1205, *CN1206, *CN1207, *CN801	---
[5]	LCD Module	D2	13(S-8)	---
[6]	Function CBA	D2	3(S-9)	---
[7]	IR Sensor CBA	D2	2(S-10)	---
[8]	Speaker (s)	D2	4(S-11), Speaker Holder(s)	---

Step/ Loc. No.	Part	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Unclamp/ Desolder	Note
[9]	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."

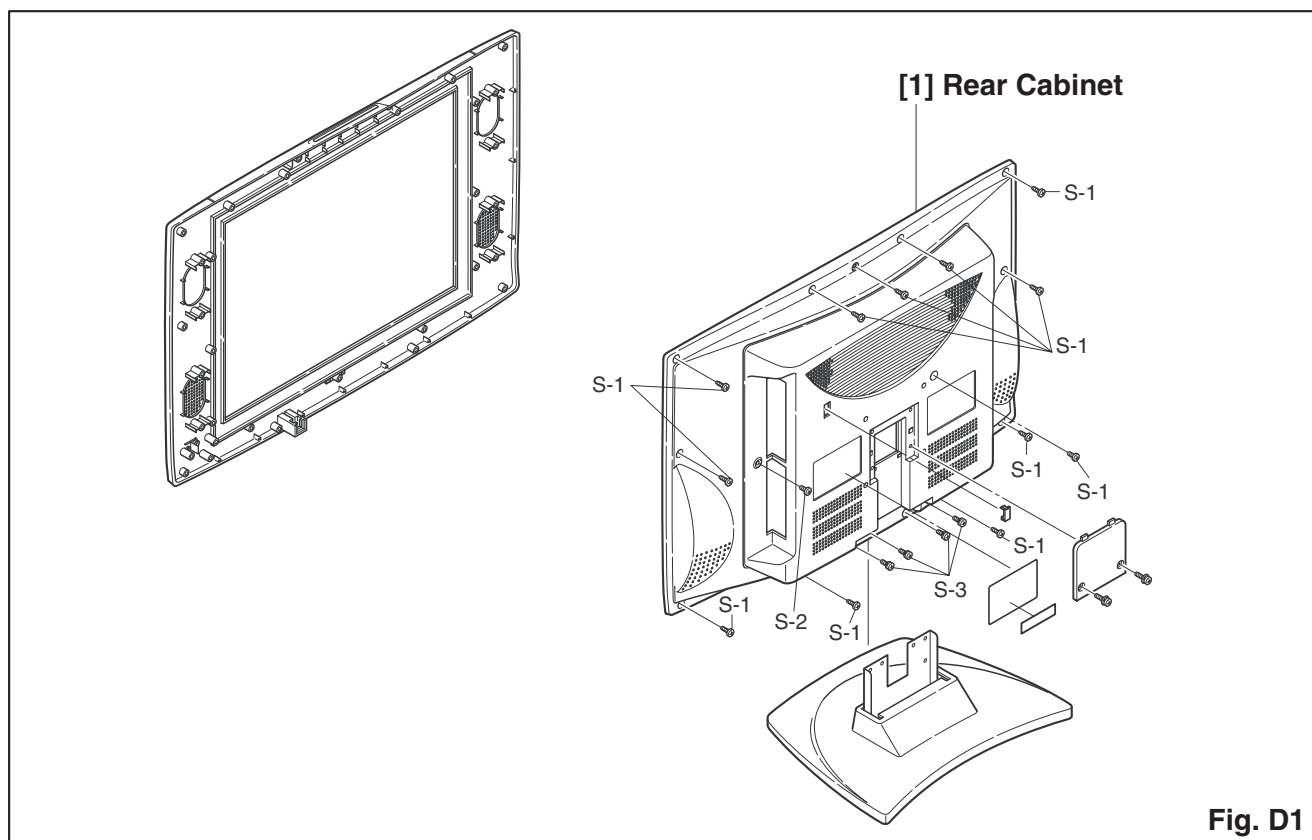


Fig. D1

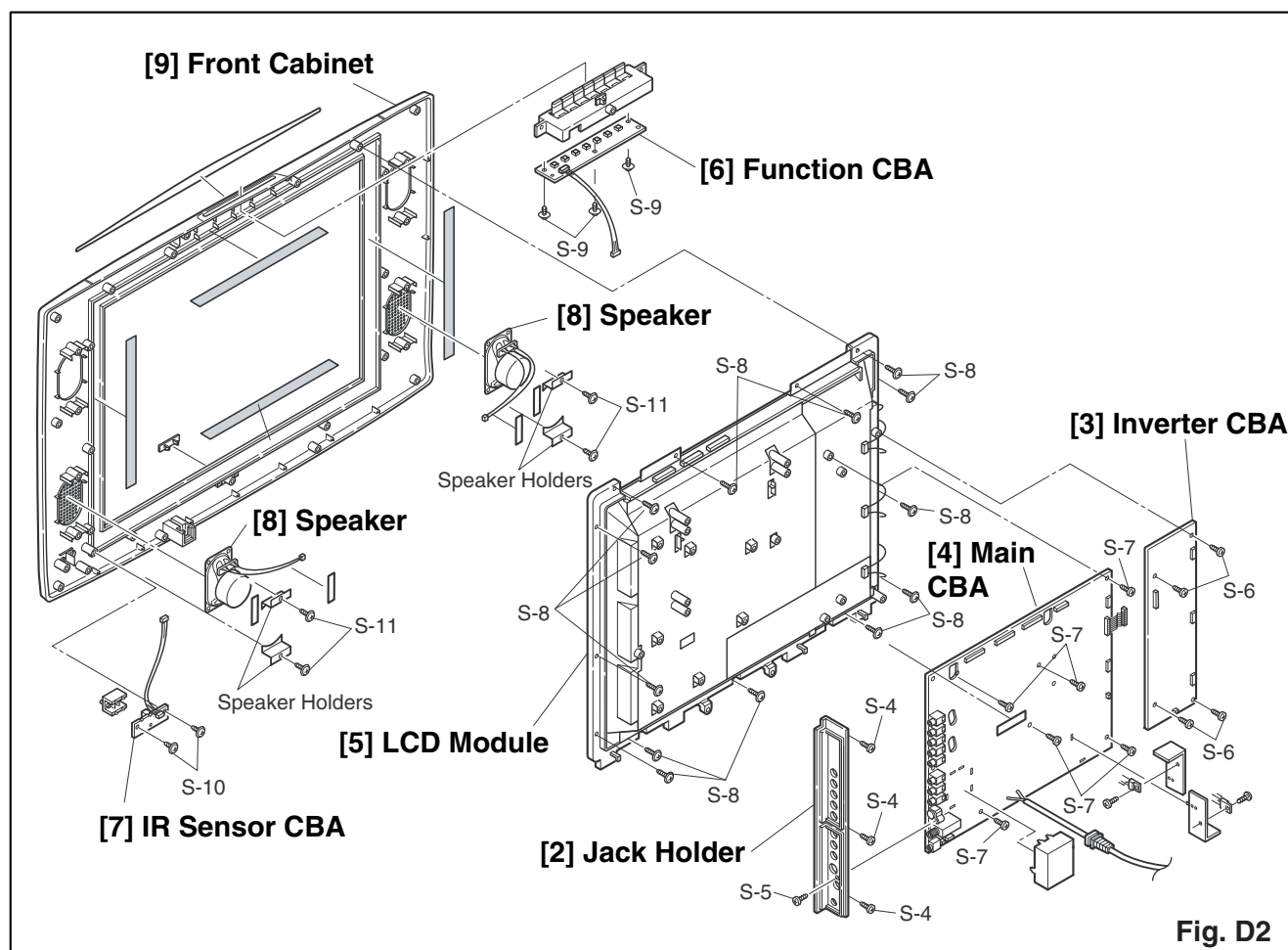
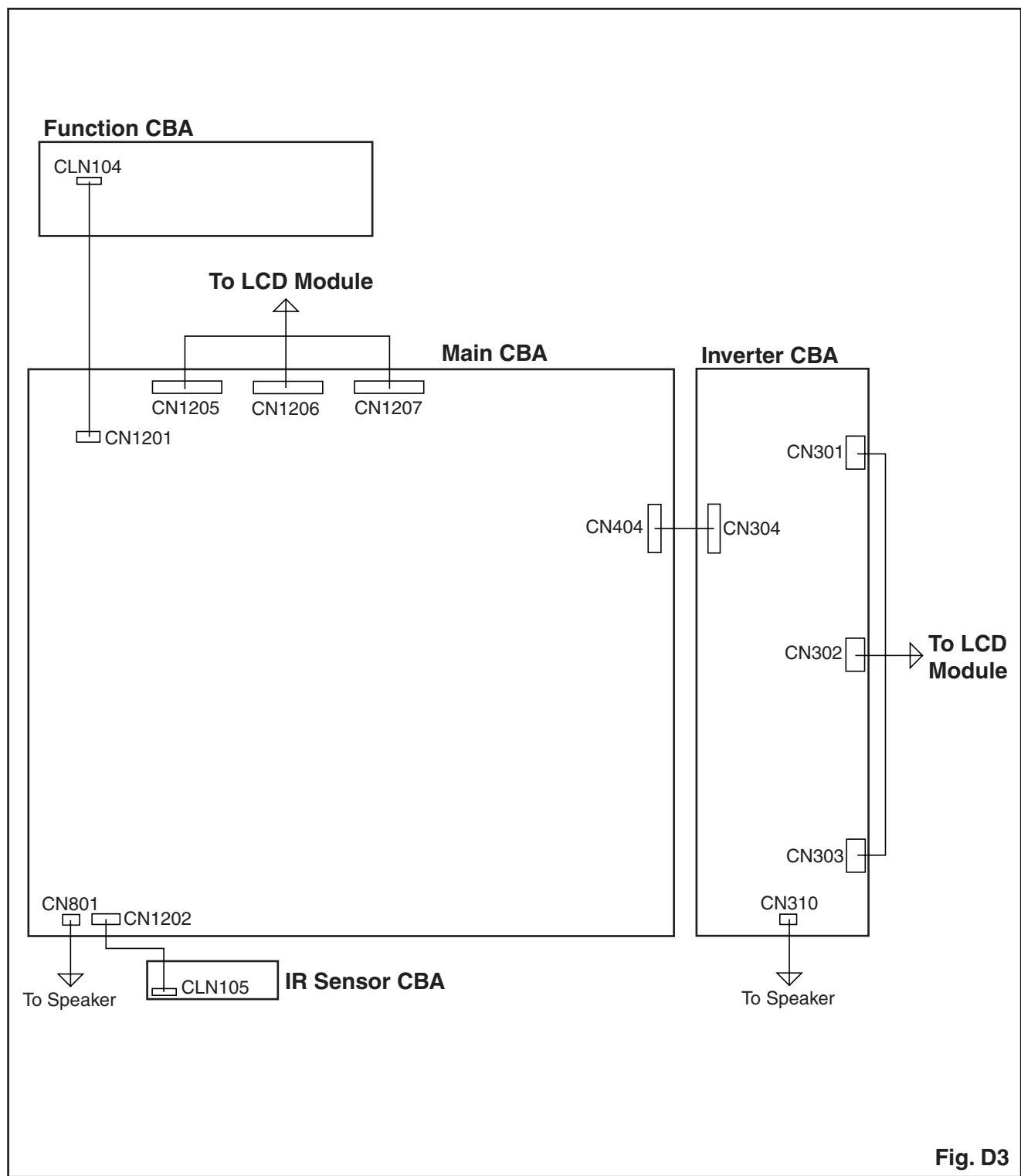


Fig. D2

TV Cable Wiring Diagram



ELECTRICAL ADJUSTMENT INSTRUCTIONS

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

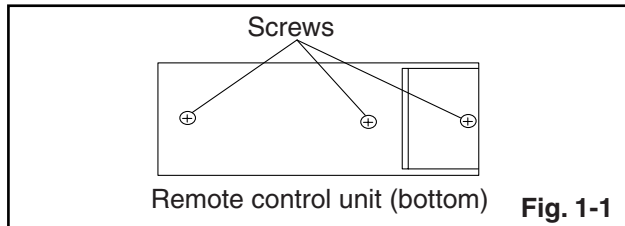
Note: Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

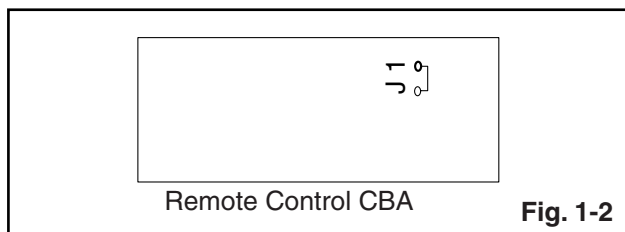
1. DC Voltmeter
2. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
3. Remote control unit: Part No. N0105UD or N0127UD
4. Color Analyzer

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)



2. Added J1 (Jumper Wire) to the remote control CBA. (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: 0008GP-0.08)

1. Initial Setting

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

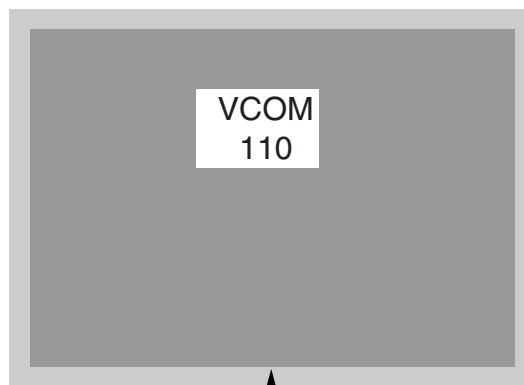
Set the each initial data as shown on table 1 below.

Table 1: Initial Data

Item	Button (on the service remote control)	Data Value
BRT	[MENU] → [1]	128
CNT		124
CLR-R		64
CLR-B		64
TNT		128
V-TNT		128
SHR		112
S-BRT	[MENU] → [2]	128
S-CNT		128
S-CLR-R		64
S-CLR-B		64
S-TNT		128
S-SHR		112
C-BRT	[MENU] → [3]	128
C-CNT		128
C-CLR-R		64
C-CLR-B		64
C-TNT		128
C-SHR		112

Item	Button (on the service remote control)	Data Value
D2-BRT	[MENU] → [5]	133
D2-CNT		140
D2-CLR-R		74
D2-CLR-B		74
D2-TNT		128
D2-SHR		112
D3-BRT	[MENU] → [6]	126
D3-CNT		138
D3-CLR-R		64
D3-CLR-B		64
D3-TNT		128
D3-SHR		112
DR(C/D1)	[VOL ▼] → [4]	176
C-DR(C/D2)		157
DB(C/D1)	[VOL ▼] → [6]	175
C-DB(C/D2)		152

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

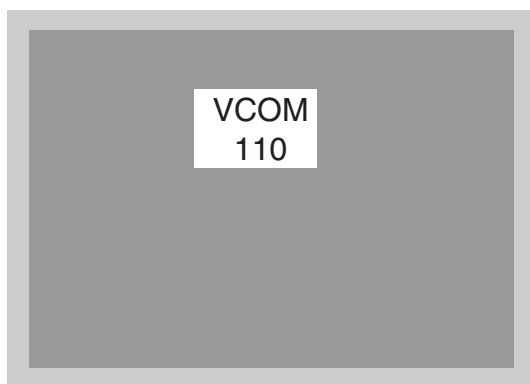


FLASH (Go and Off)

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

2. Flicker Adjustment

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



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.

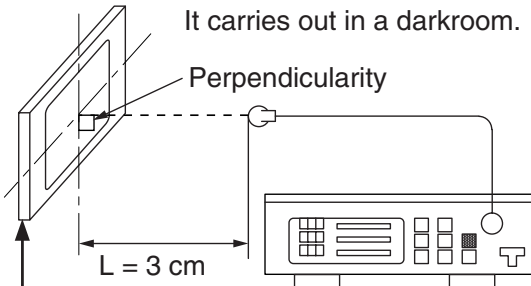
Symptom of Misadjustment: White becomes bluish or reddish.

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: 0.271 to 0.281, y: 0.277 to 0.287	

Figure

It carries out in a darkroom.

Perpendicularity



L = 3 cm

INPUT: WHITE 80%

Color Analyzer

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-1" mode.
[VIDEO2]
Enter the Service mode. Press "VOL ▼" button on the remote control unit and select "C/D-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.)

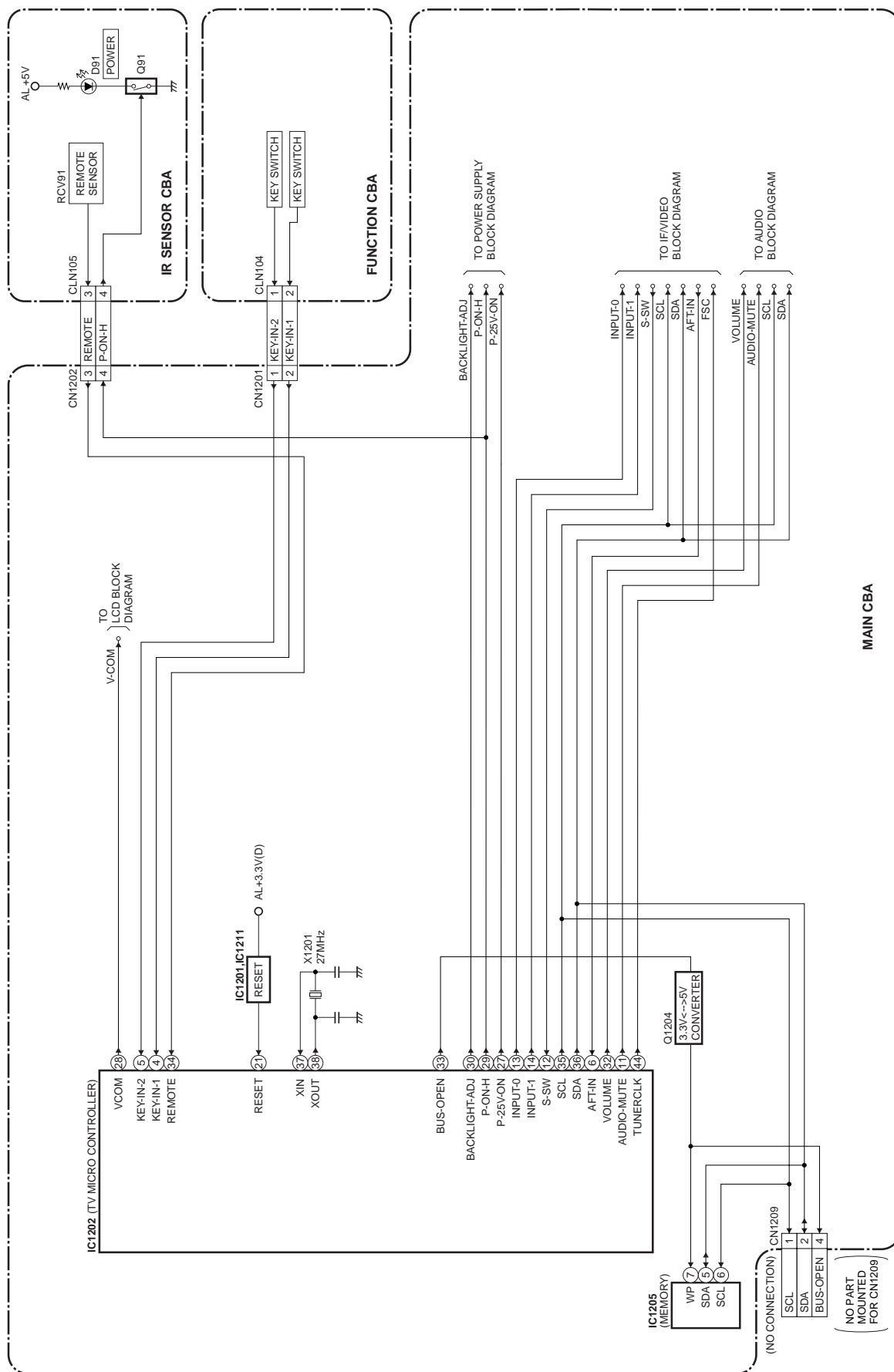
HOW TO INITIALIZE THE LCD TELEVISION

How to initialize the LCD television:

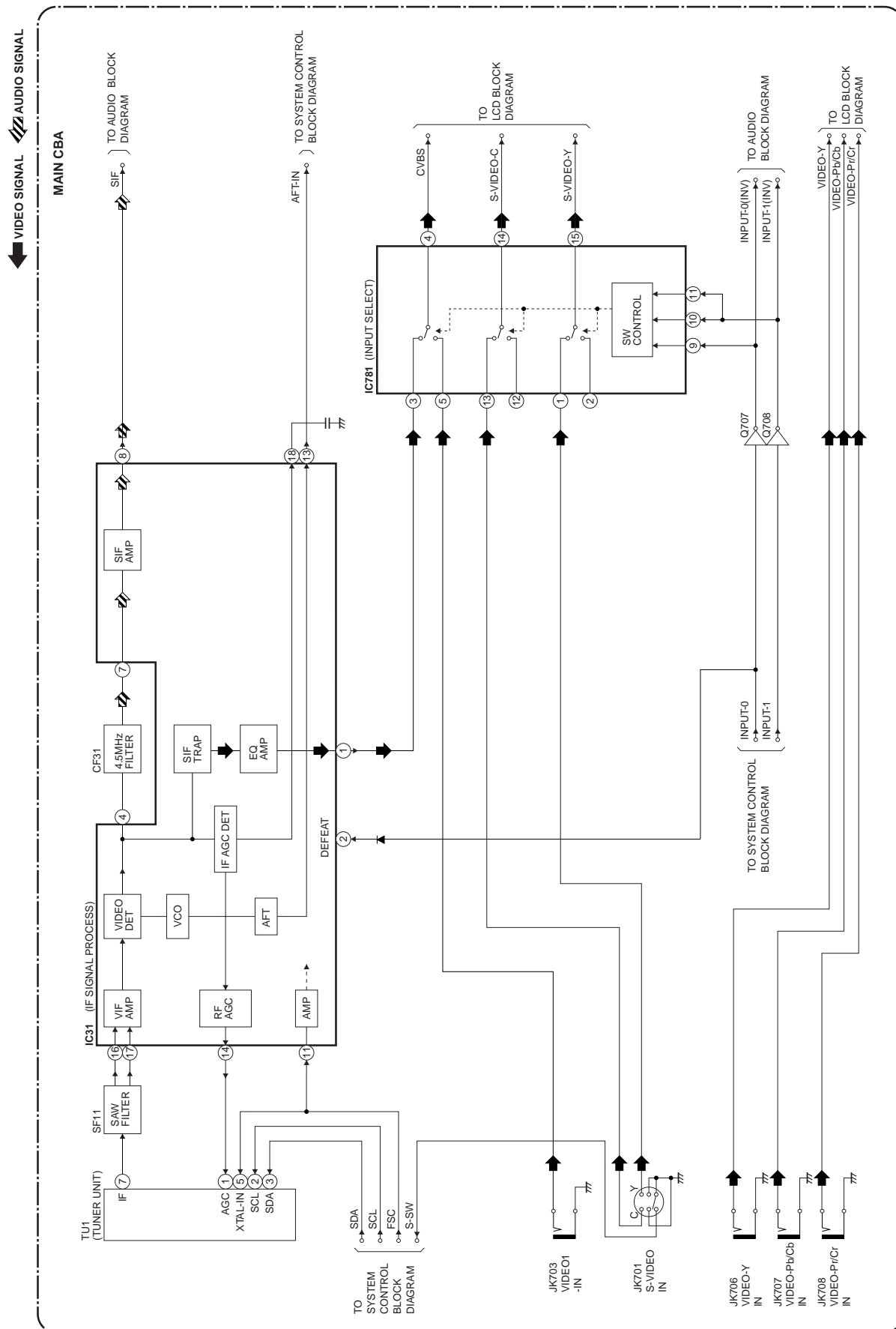
1. Turn the power on. (Use main power on the TV unit.)
2. To enter the service mode, press [SLEEP] button on the service remote control unit.
 - To cancel the service mode, press [POWER] button on the remote control.
3. To initialize the LCD television, press [DISPLAY] button on the remote control unit.
4. Confirm "FF" indication on the upper right of the screen.

BLOCK DIAGRAMS

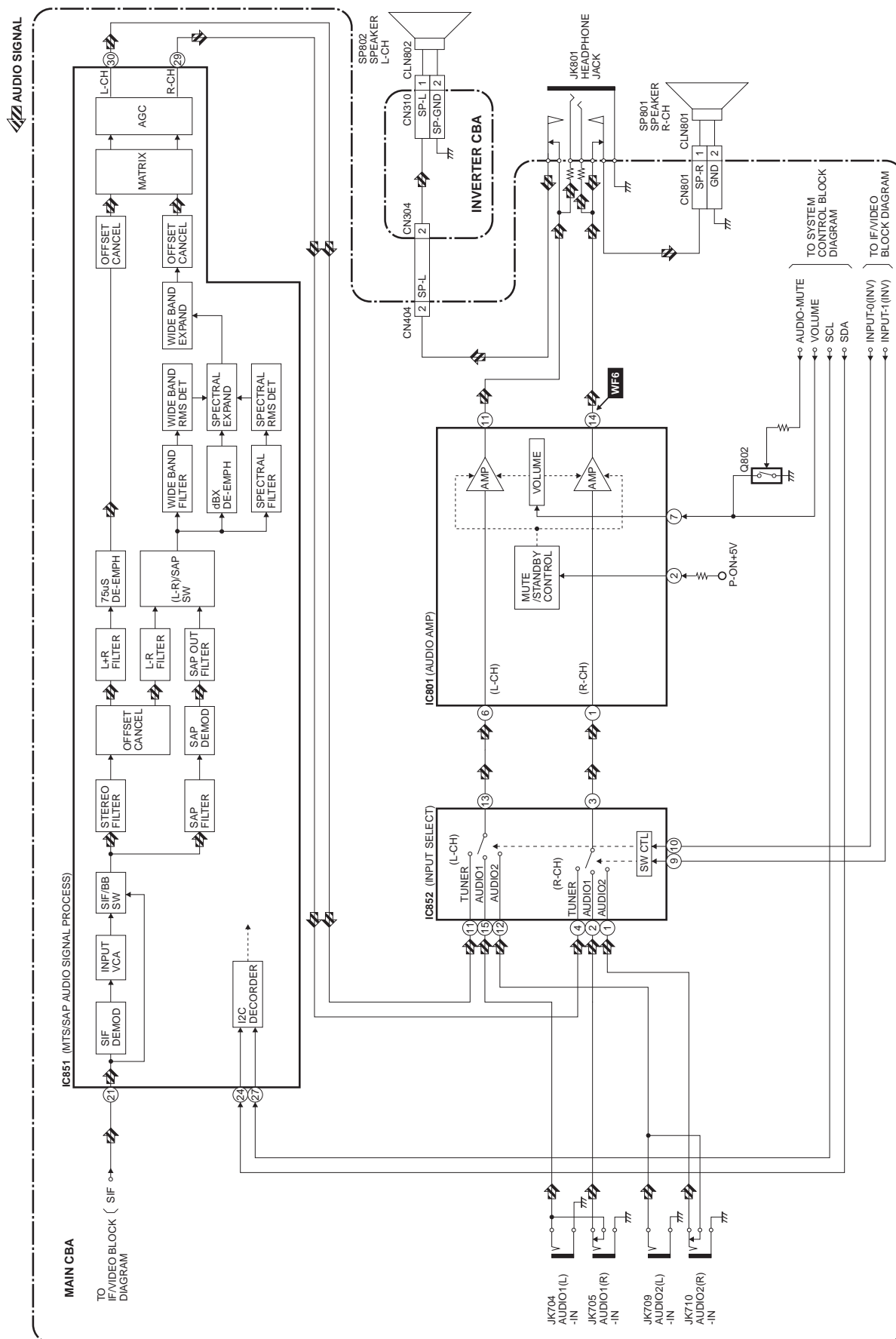
System Control Block Diagram



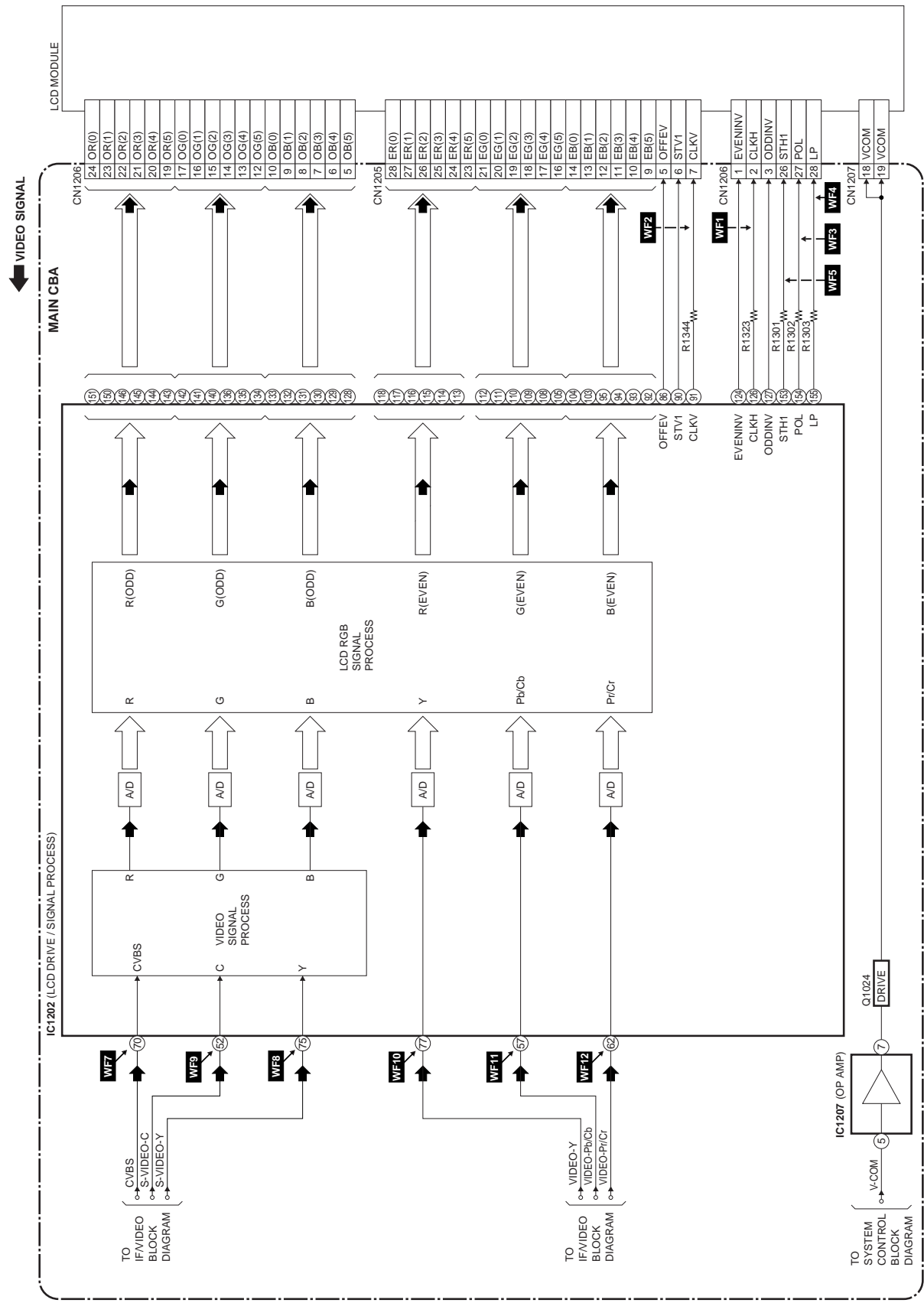
IF/Video Block Diagram



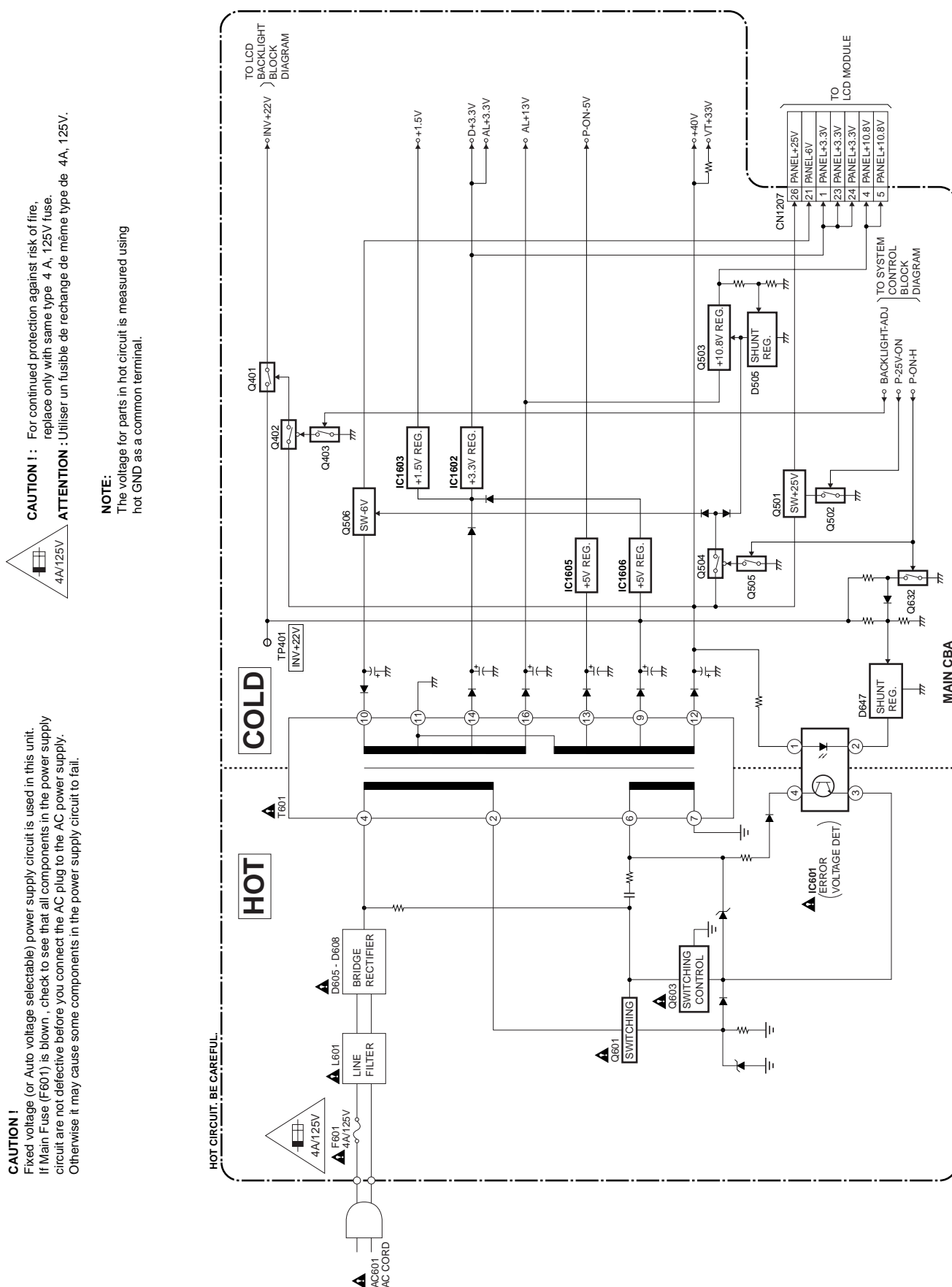
Audio Block Diagram



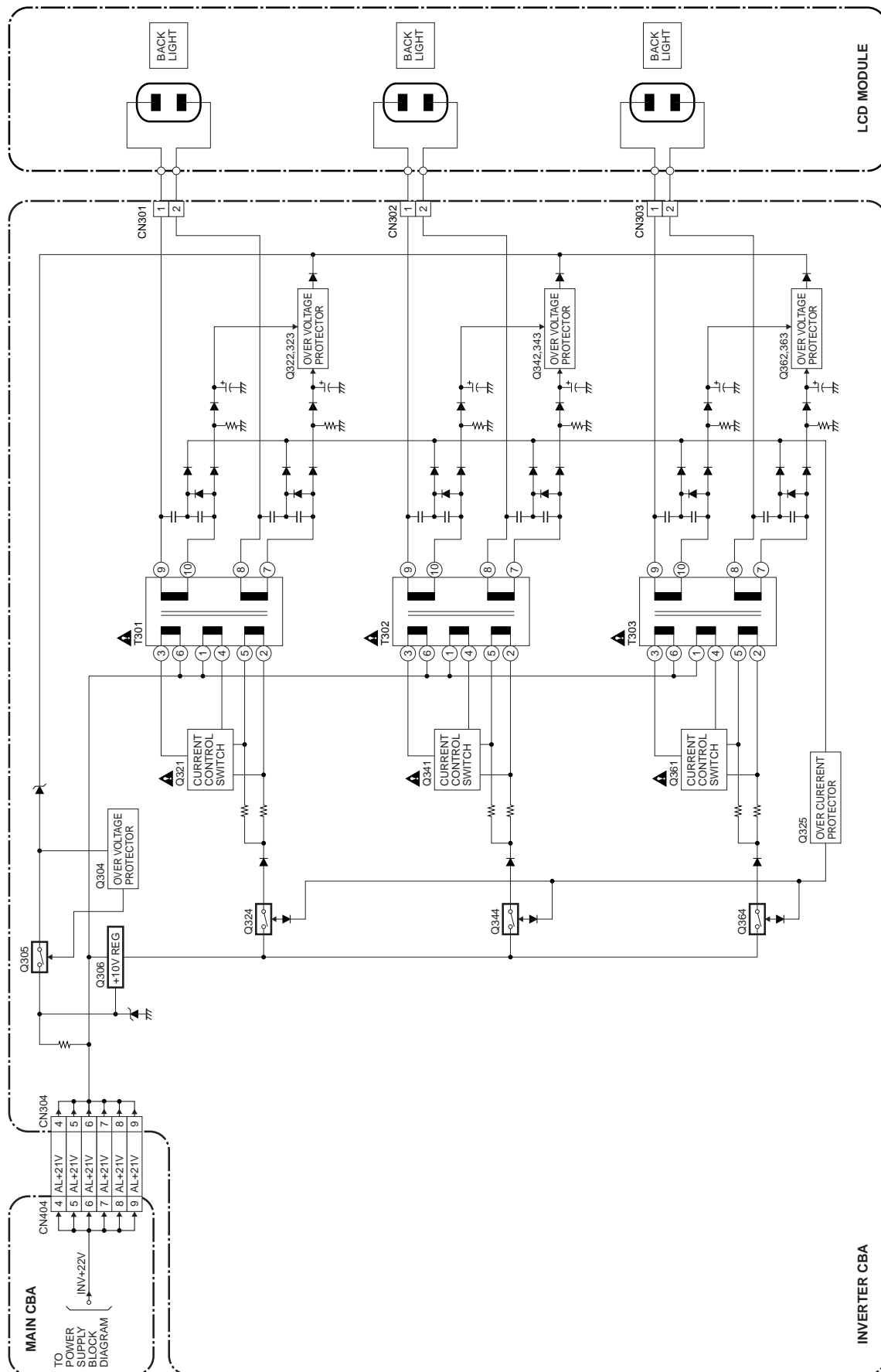
LCD Block Diagram



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 ($P = 10^{-6} \mu F$).
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 --- $\pm 10\%$ CH --- $0 \pm 60 \text{ ppm}/^\circ\text{C}$ CSL --- $+350 \sim -1000 \text{ ppm}/^\circ\text{C}$

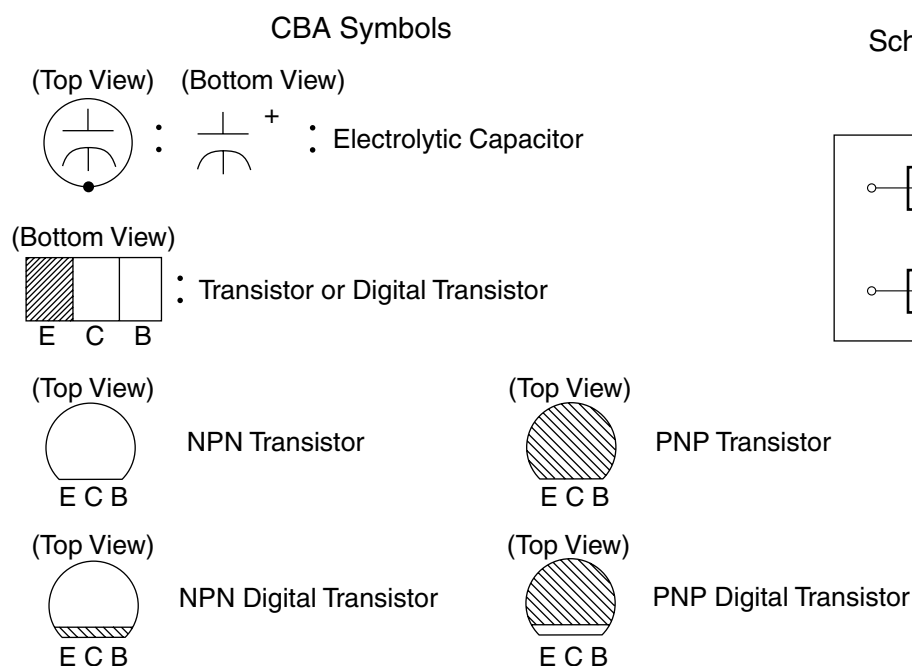
Tolerance of Capacitors are noted with the following:

Z --- $+80 \sim -20\%$

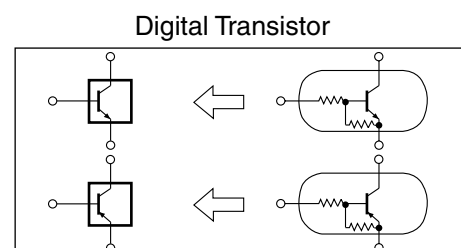
Note of Resistors:

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

Capacitors and transistors are represented by the following symbols.



Schematic Diagram Symbols



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.

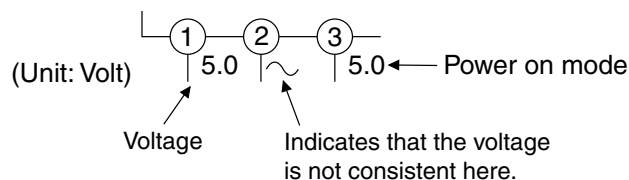
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

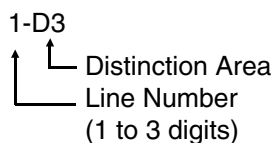
1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which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

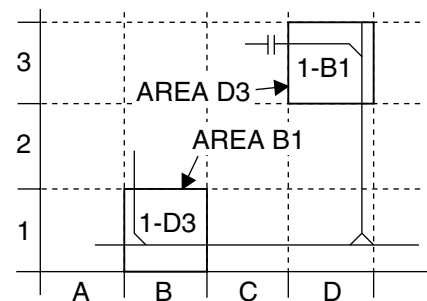


5. How to read converged lines



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

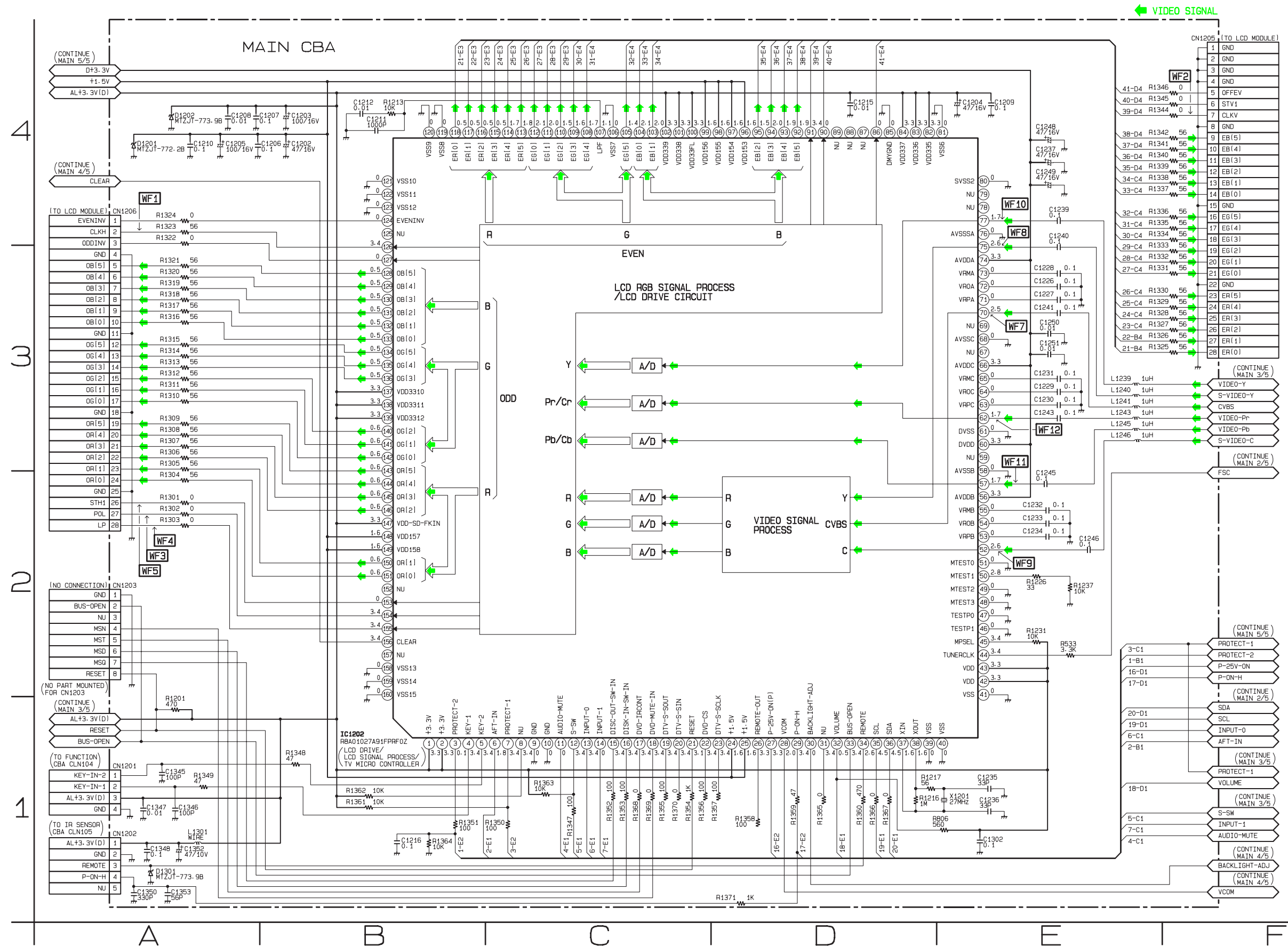
⊕ : Indicates a test point with a jumper wire across a hole in the PCB.

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

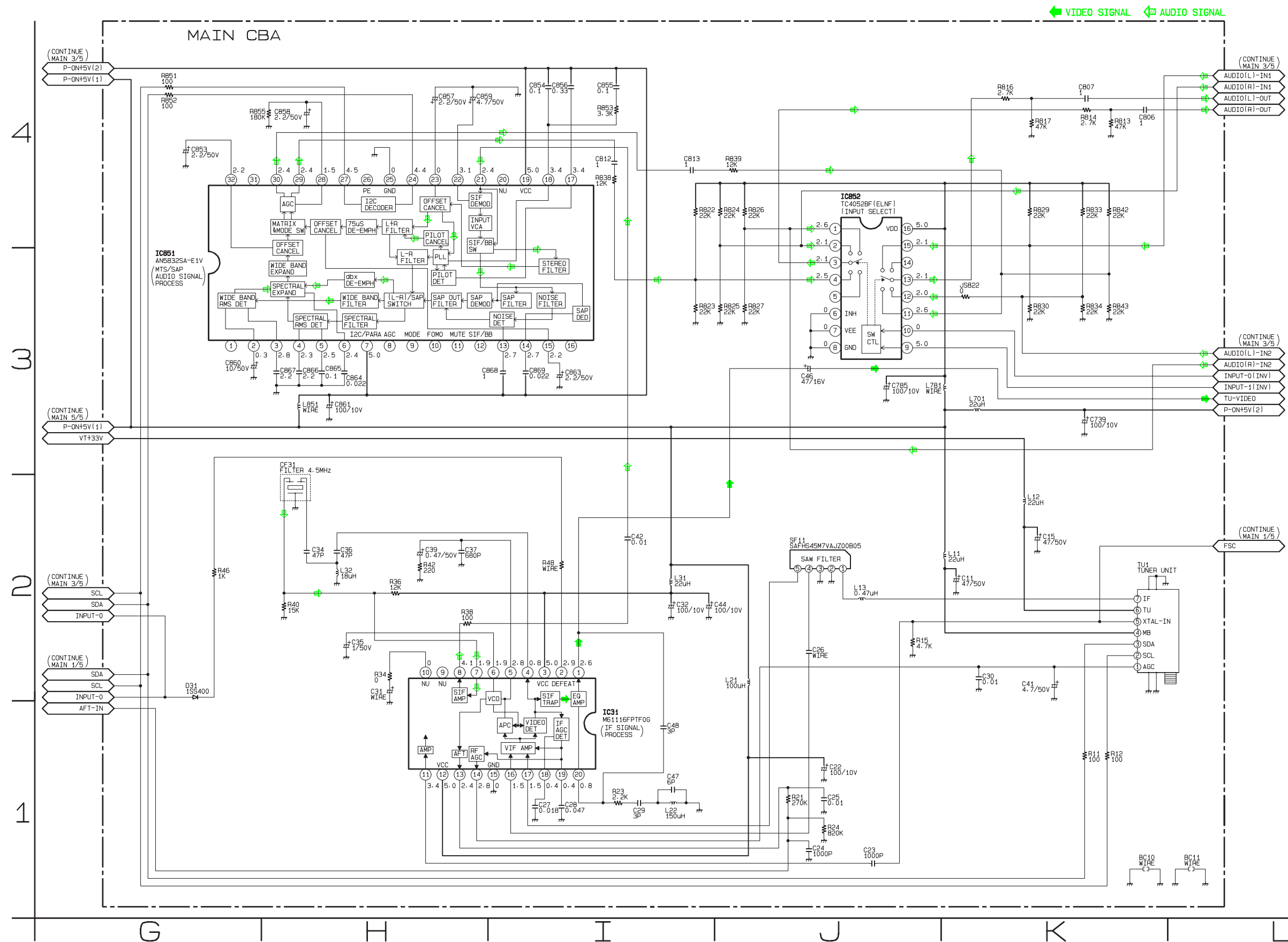
⊗ : Used to indicate a test point with no test pin.

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

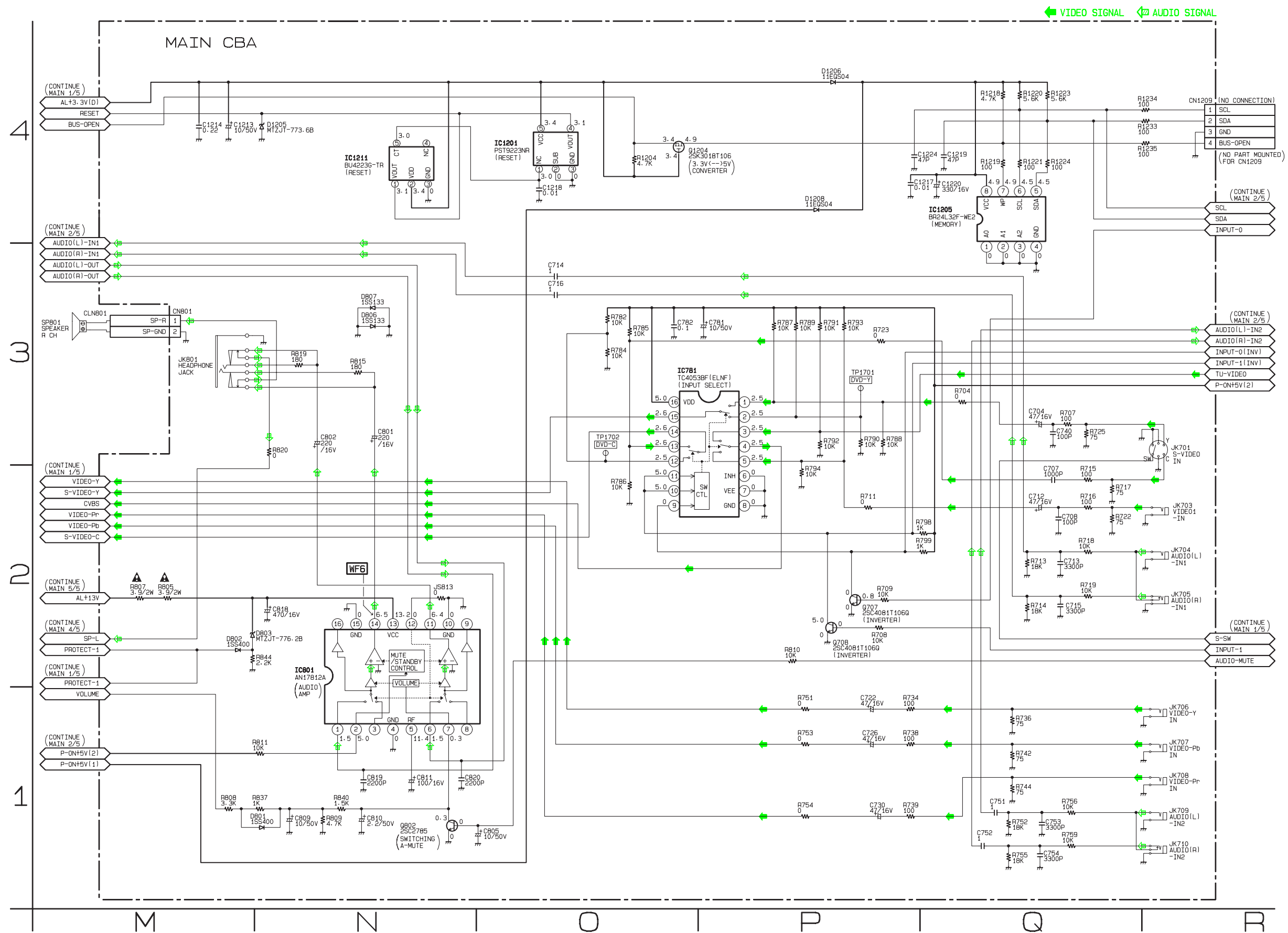
Main 1/5 Schematic Diagram



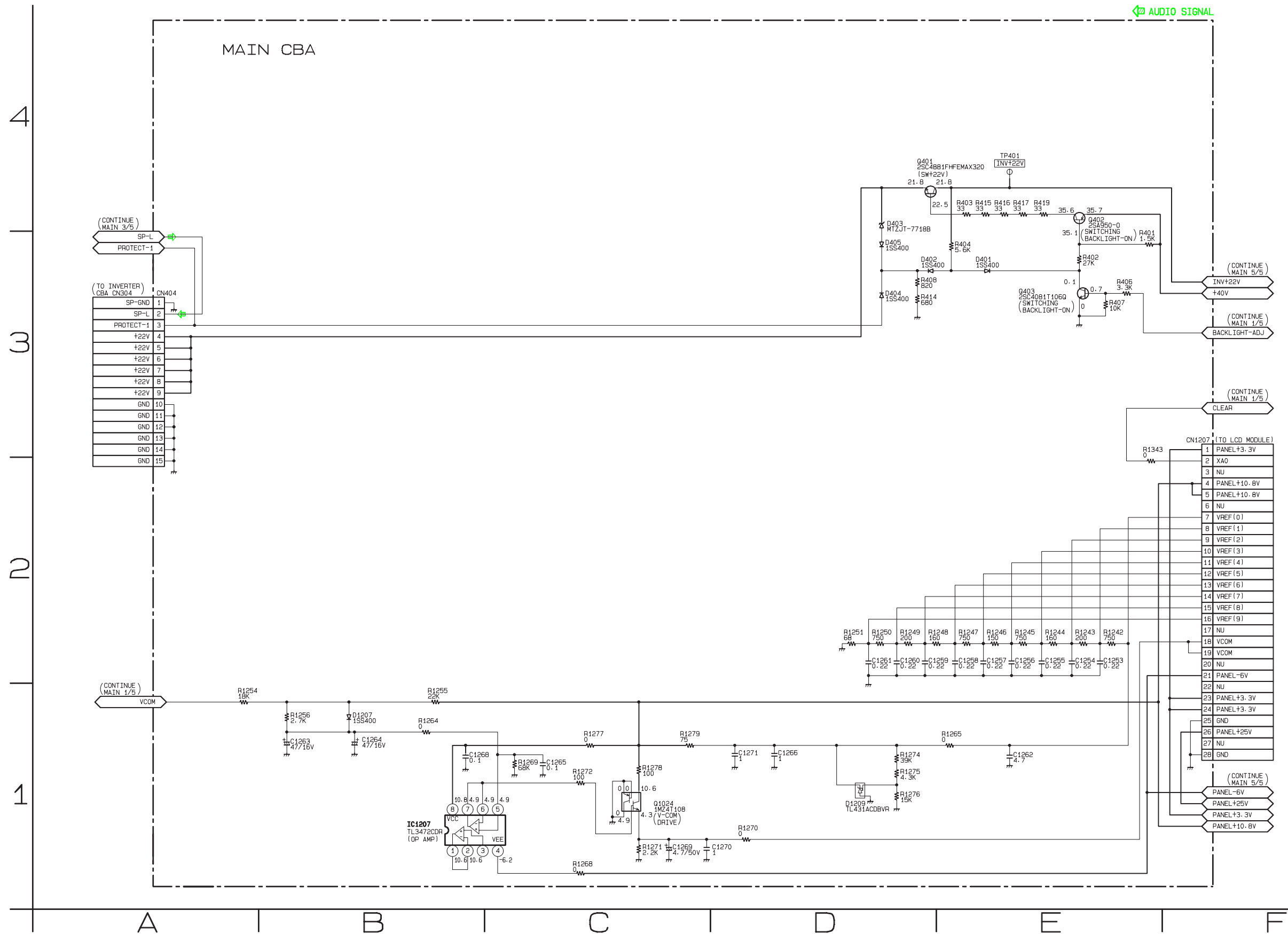
Main 2/5 Schematic Diagram



Main 3/5 Schematic Diagram

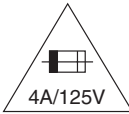


Main 4/5 Schematic Diagram



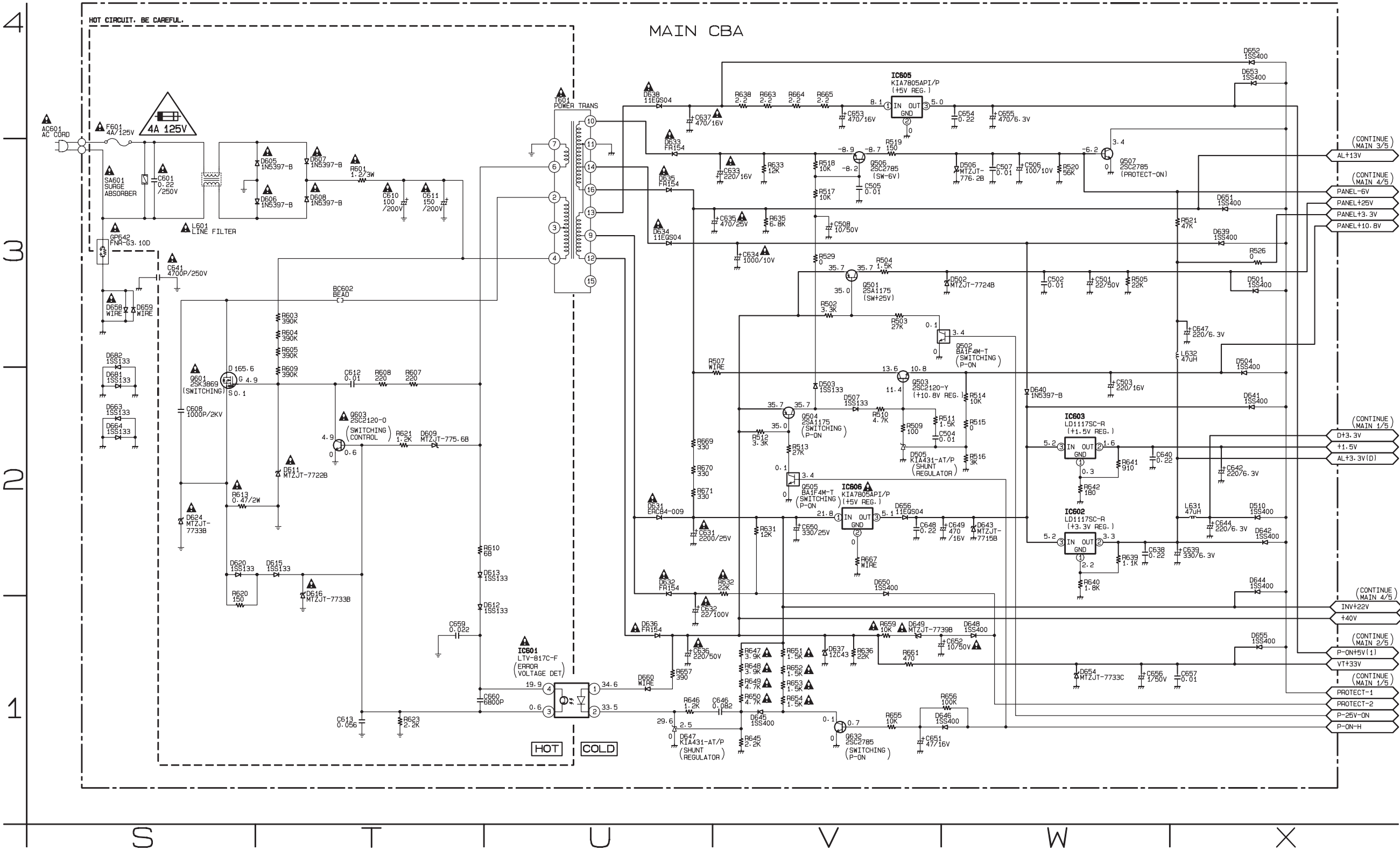
Main 5/5 Schematic Diagram

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.

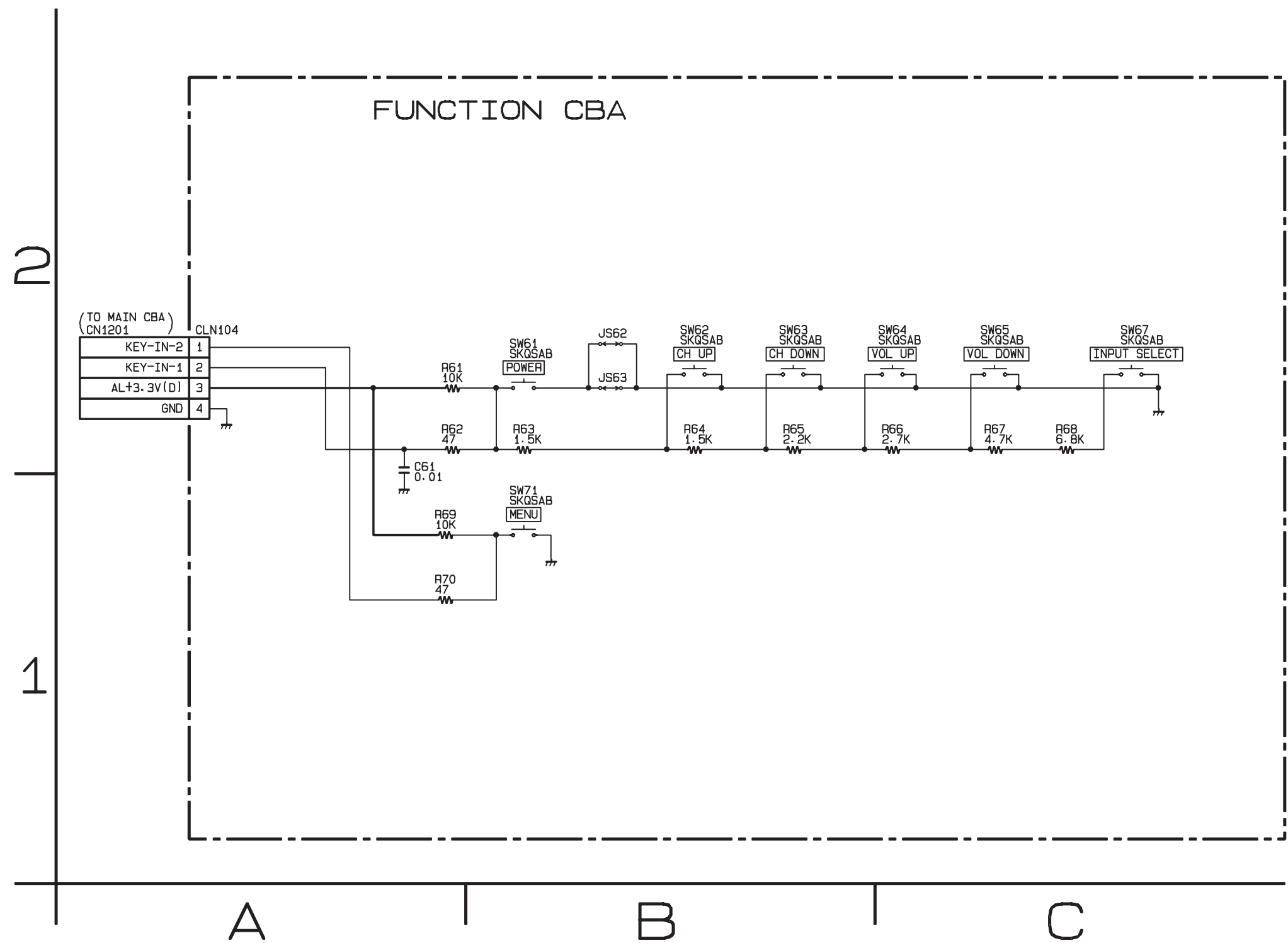


CAUTION ! : For continued protection against risk of fire,
replace only with same type 4 A, 125V fuse.
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.

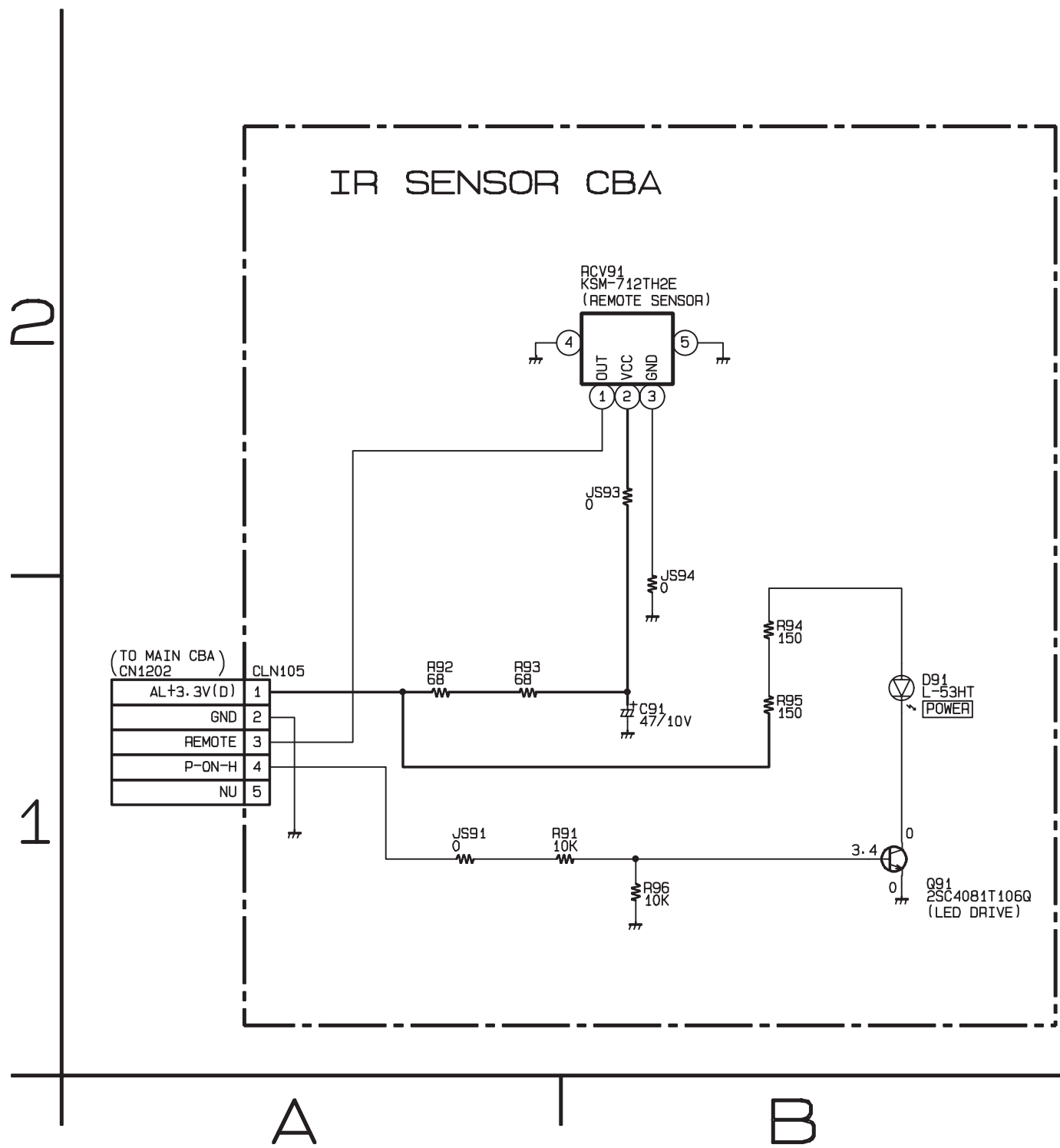
NOTE:
The voltage for parts in hot circuit is measured using
hot GND as a common terminal.



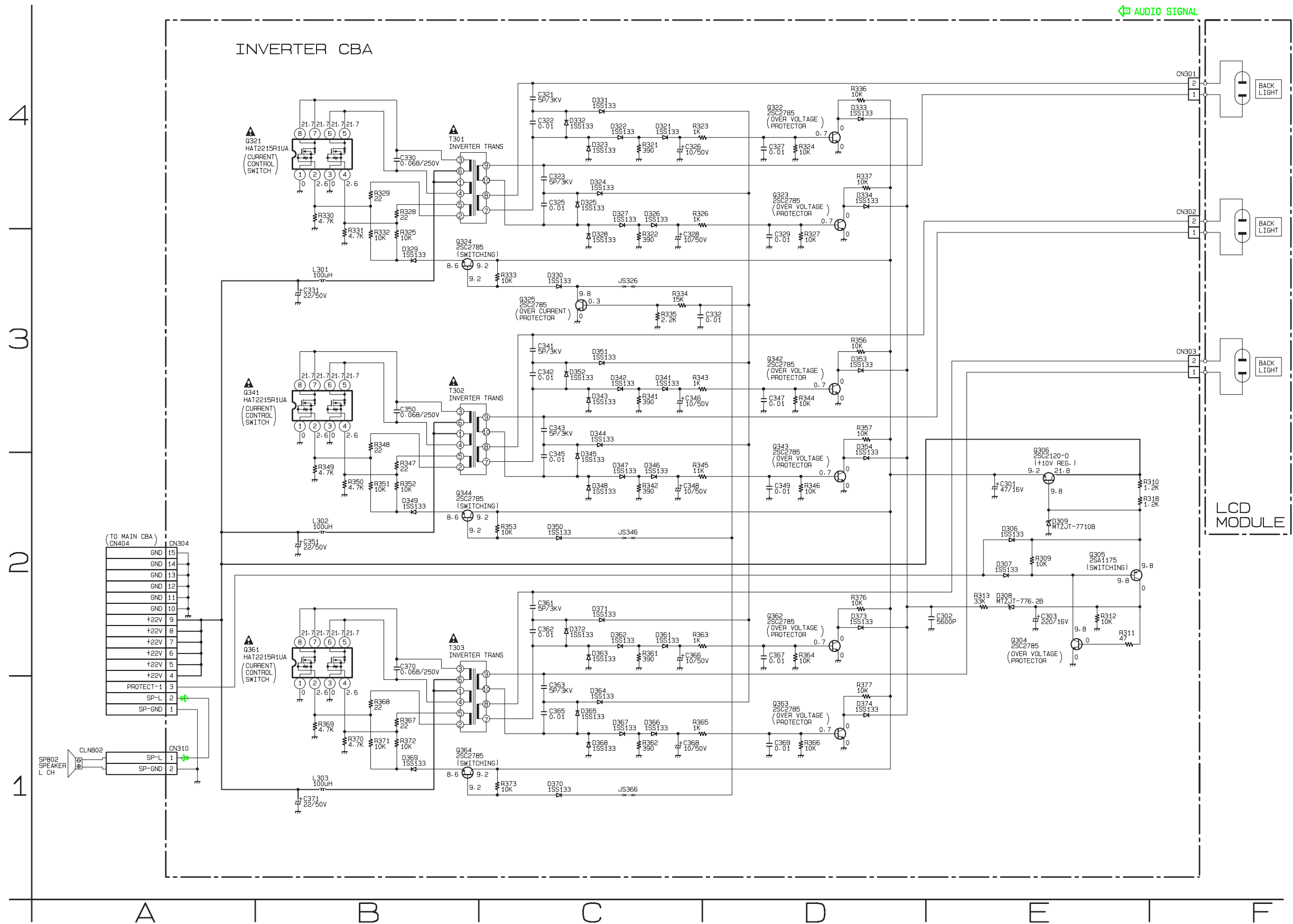
Function Schematic Diagram



IR Sensor Schematic Diagram



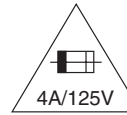
Inverter Schematic Diagram



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.



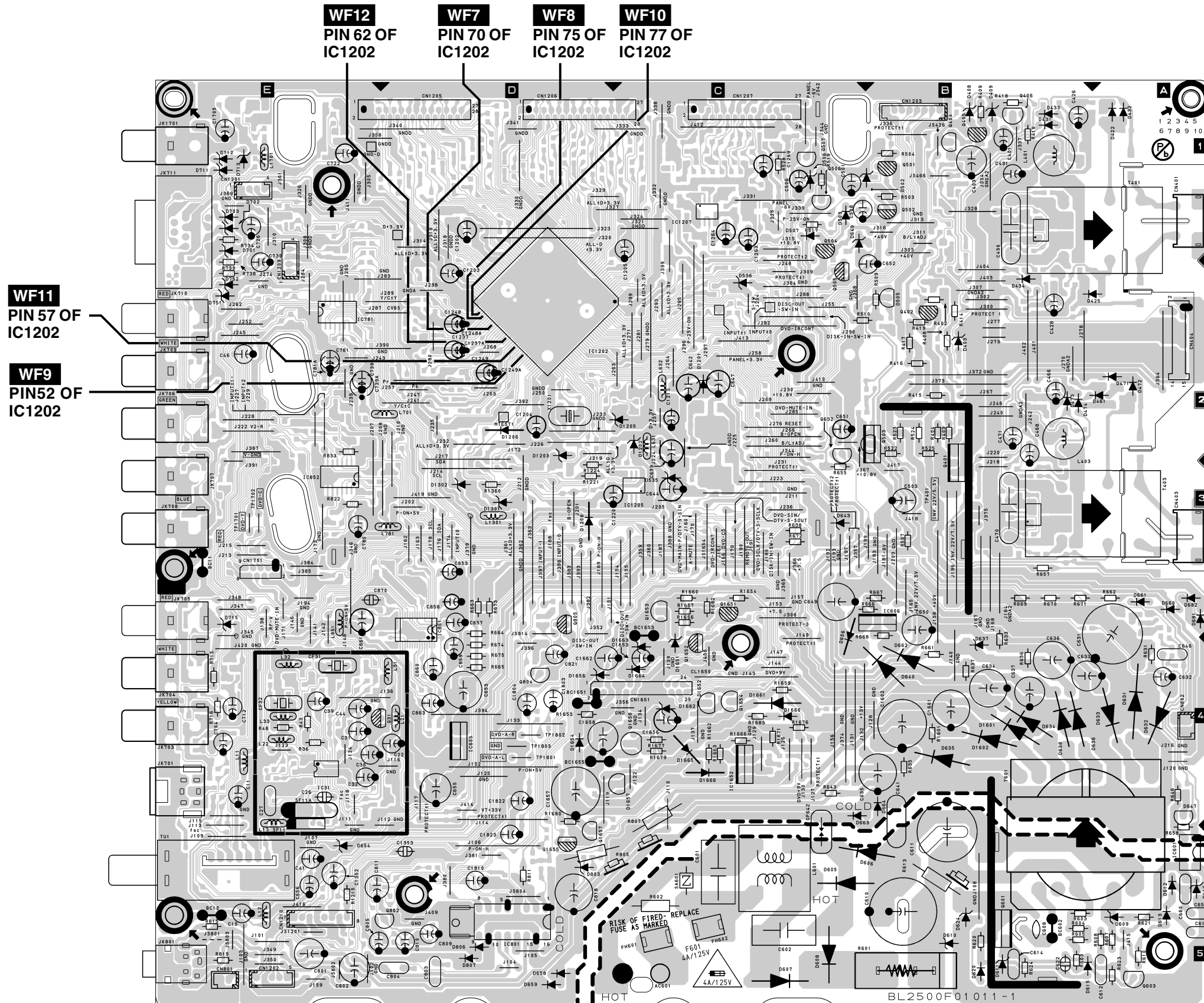
CAUTION ! : For continued protection against risk of fire,
replace only with same type 4 A, 125V fuse.

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.

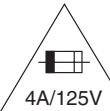
WF4
PIN 28 OF
CN1206

WF3
PIN 27 OF
CN1206

WF5
PIN 26 OF
CN1206

WF1
PIN 2 OF
CN1206

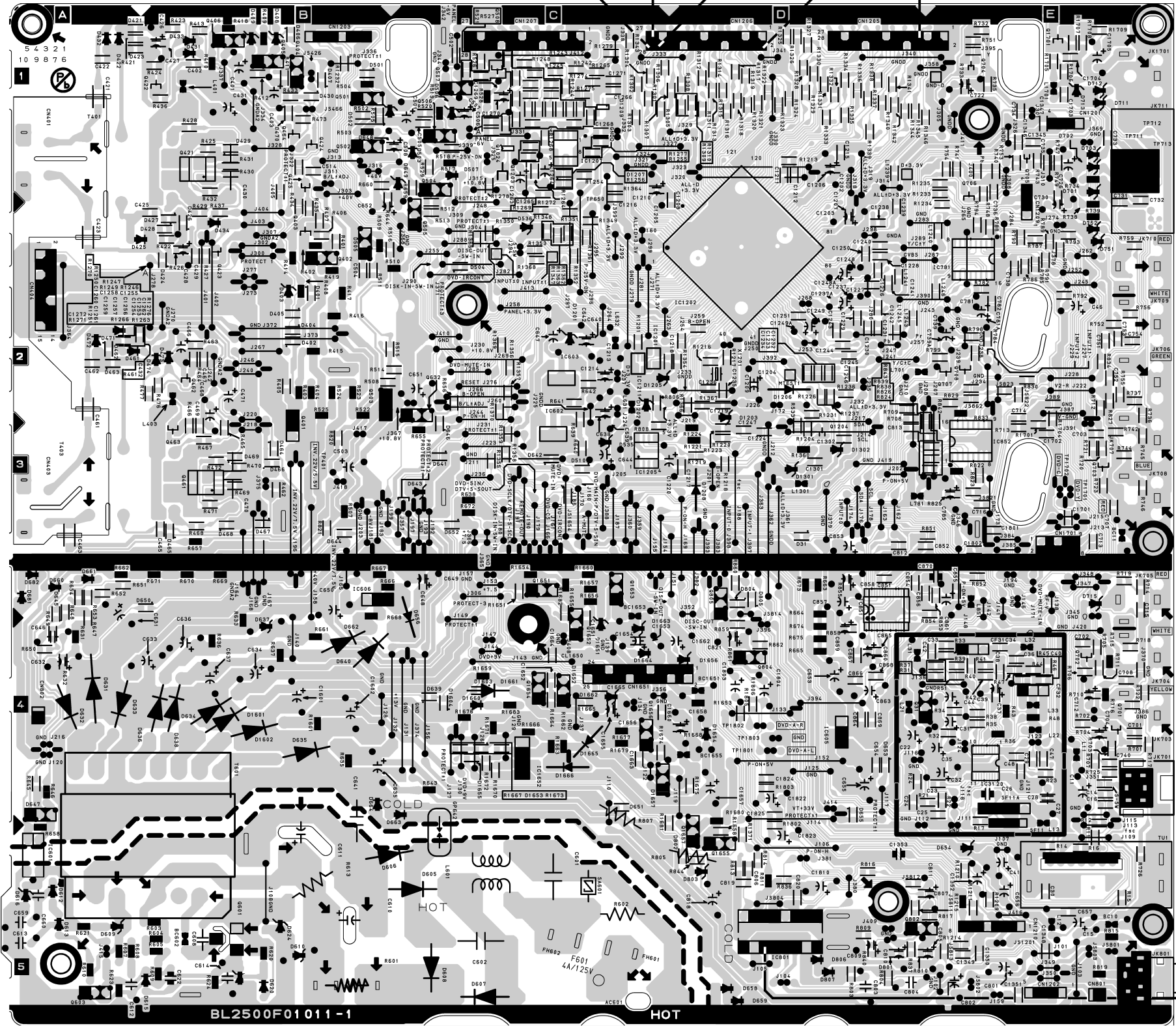
WF2
PIN 7 OF
CN1205



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.

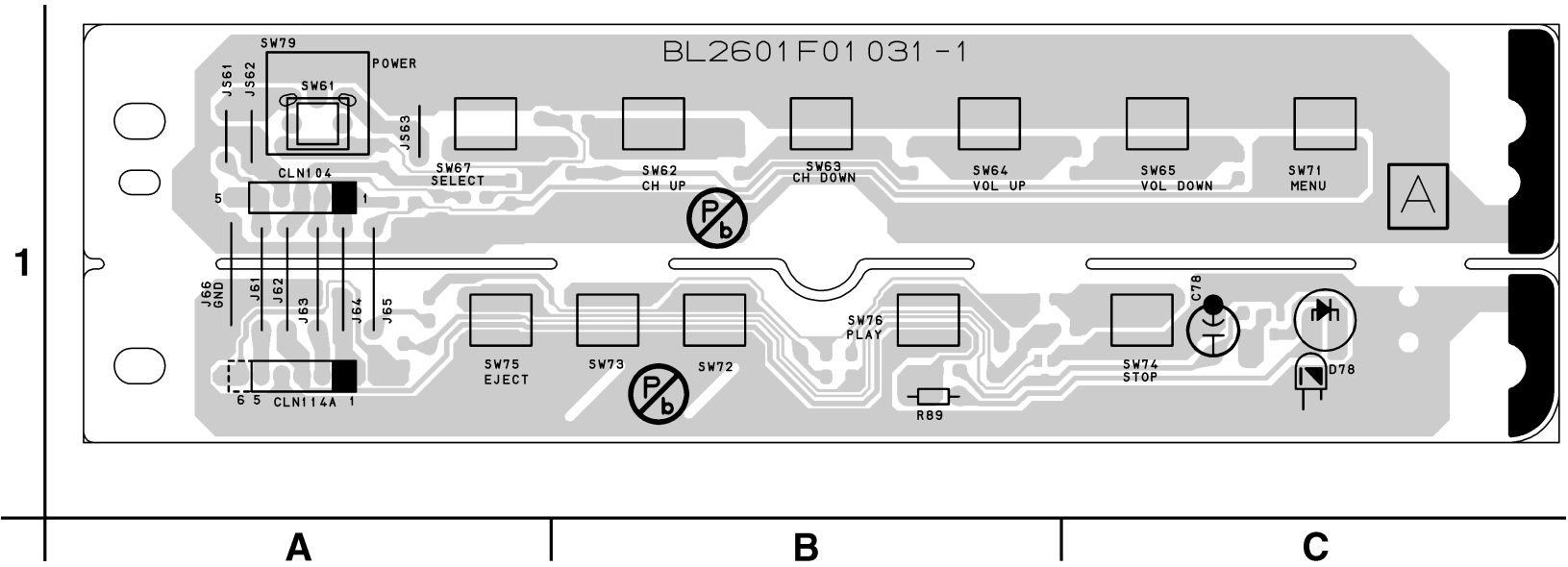
NOTE:
The voltage for parts in hot circuit is measured using
hot GND as a common terminal.

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.

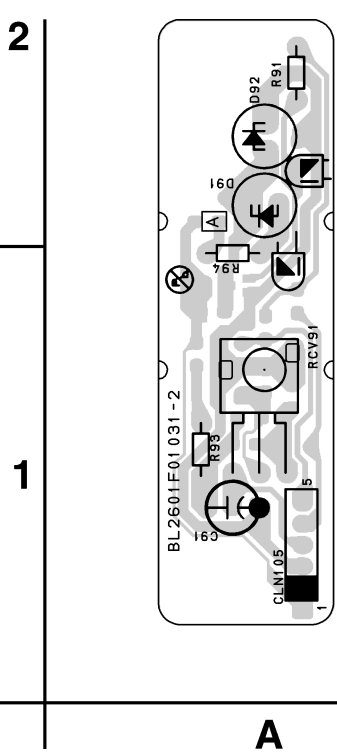


WF6
PIN 14 OF
IC801

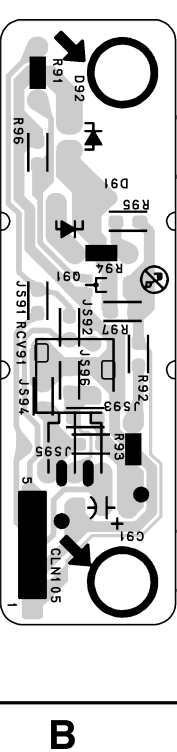
Function CBA Top View



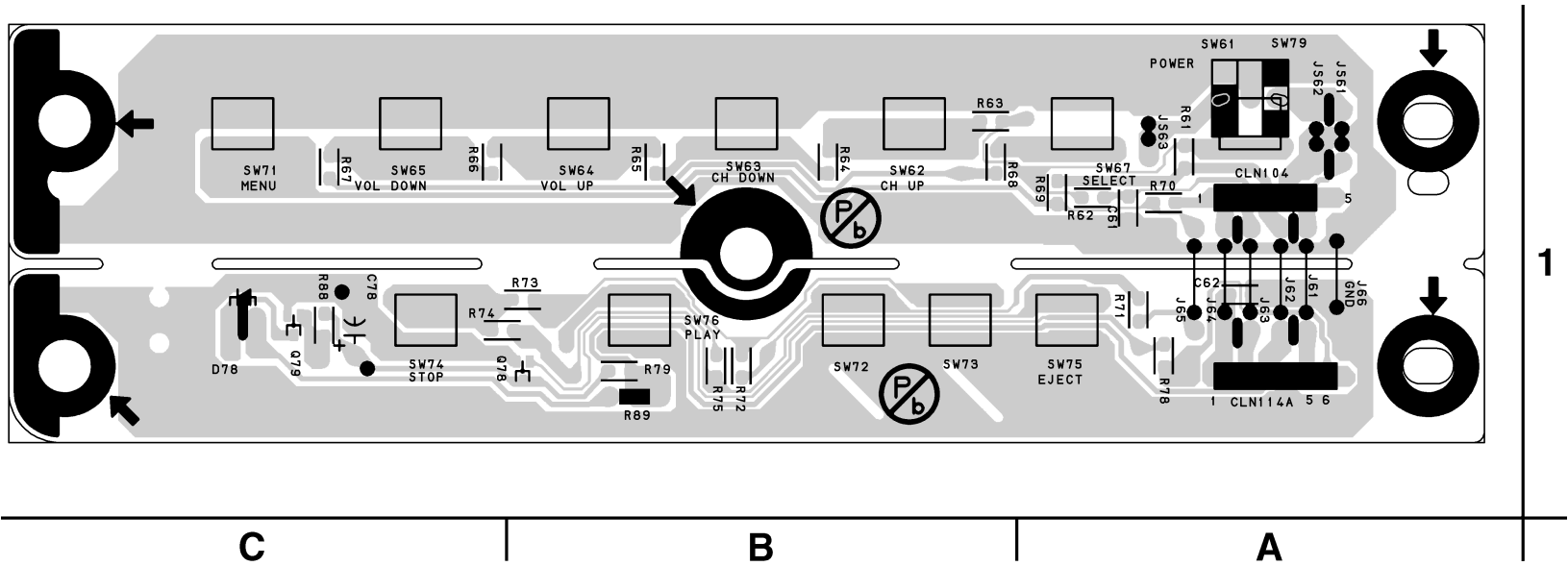
IR Sensor CBA
Top View



IR Sensor CBA
Bottom View



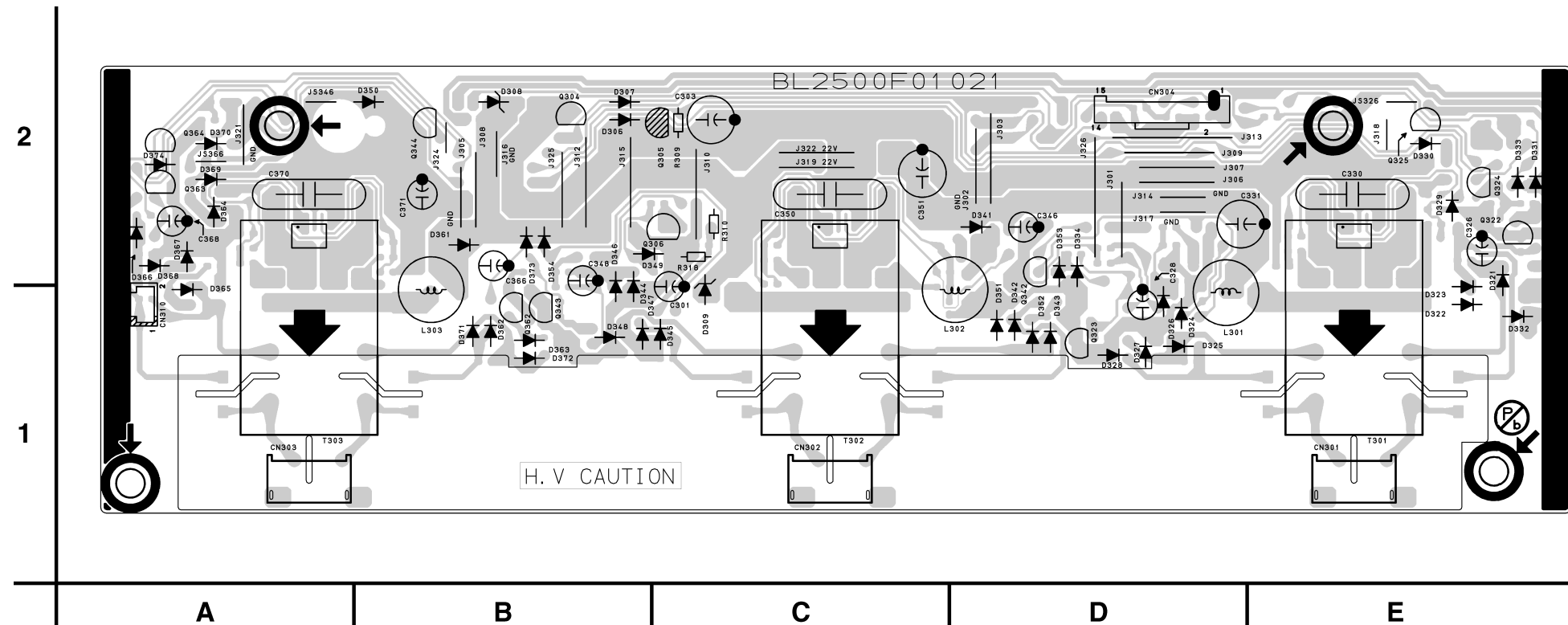
Function CBA Bottom View



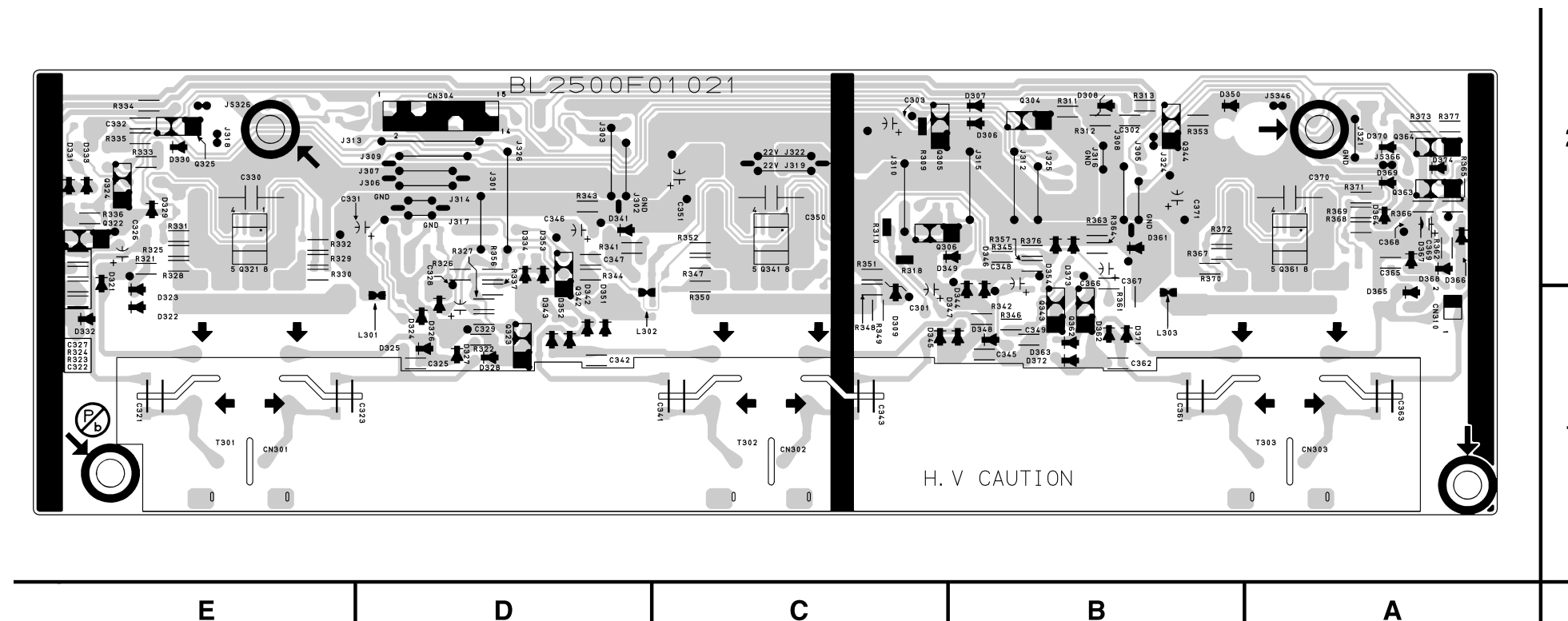
BL2601F01031-2

BL2601F01031-1

Inverter CBA Top View



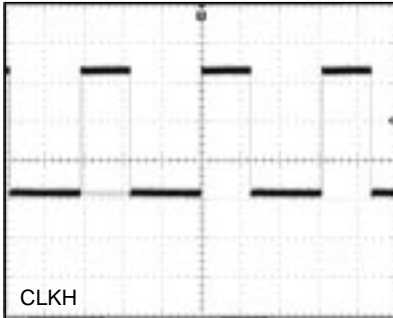
Inverter CBA Bottom View



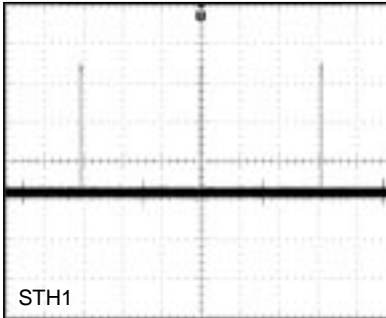
WAVEFORMS

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

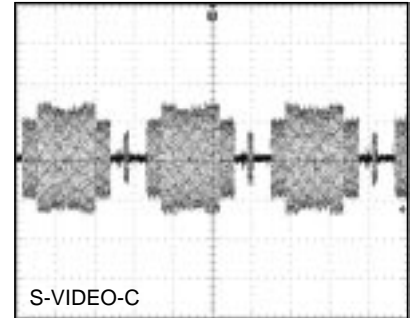
Input: NTSC Color Bar Signal (with 1kHz Audio Signal)



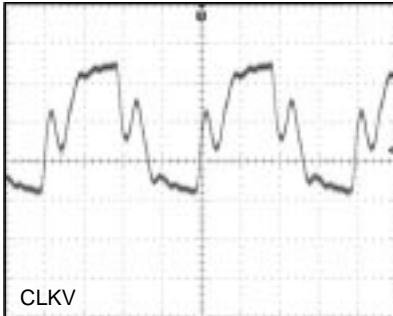
WF1 1DIV: 1.0V 10 μ s
Pin 2 of CN1206



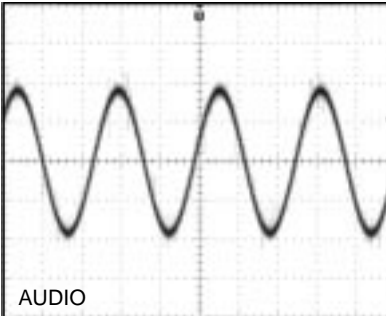
WF5 1DIV: 1.0V 10 μ s
Pin 26 of CN1206



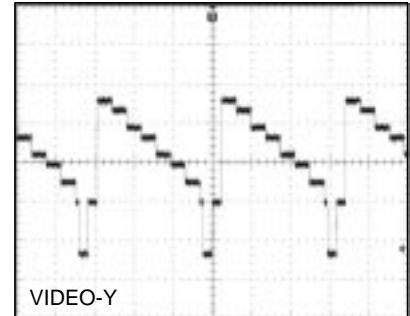
WF9 1DIV: 200mV 20 μ s
Pin 52 of IC1202



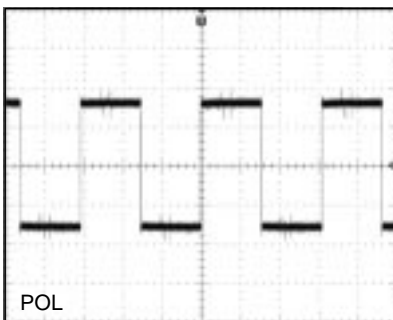
WF2 1DIV: 1.0V 20ns
Pin 7 of CN1205



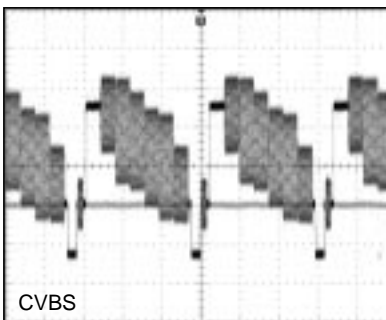
WF6 1DIV: 100mV 400 μ s
Pin 14 of IC801



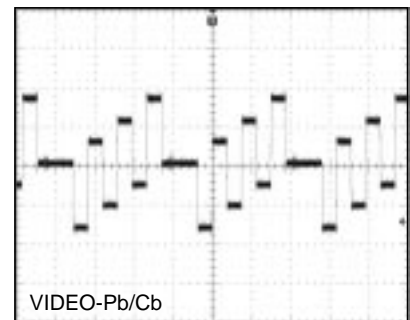
WF10 1DIV: 200mV 20 μ s
Pin 77 of IC1202



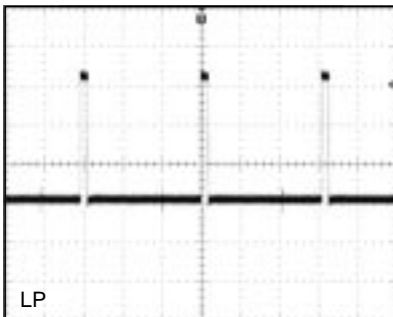
WF3 1DIV: 1.0V 20 μ s
Pin 27 of CN1206



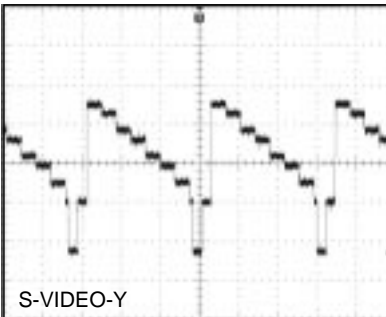
WF7 1DIV: 200mV 20 μ s
Pin 70 of IC1202



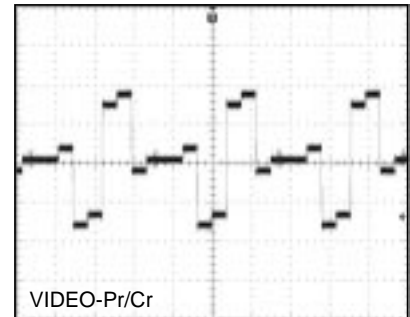
WF11 1DIV: 200mV 20 μ s
Pin 57 of IC1202



WF4 1DIV: 1.0V 10 μ s
Pin 28 of CN1206



WF8 1DIV: 200mV 20 μ s
Pin 75 of IC1202

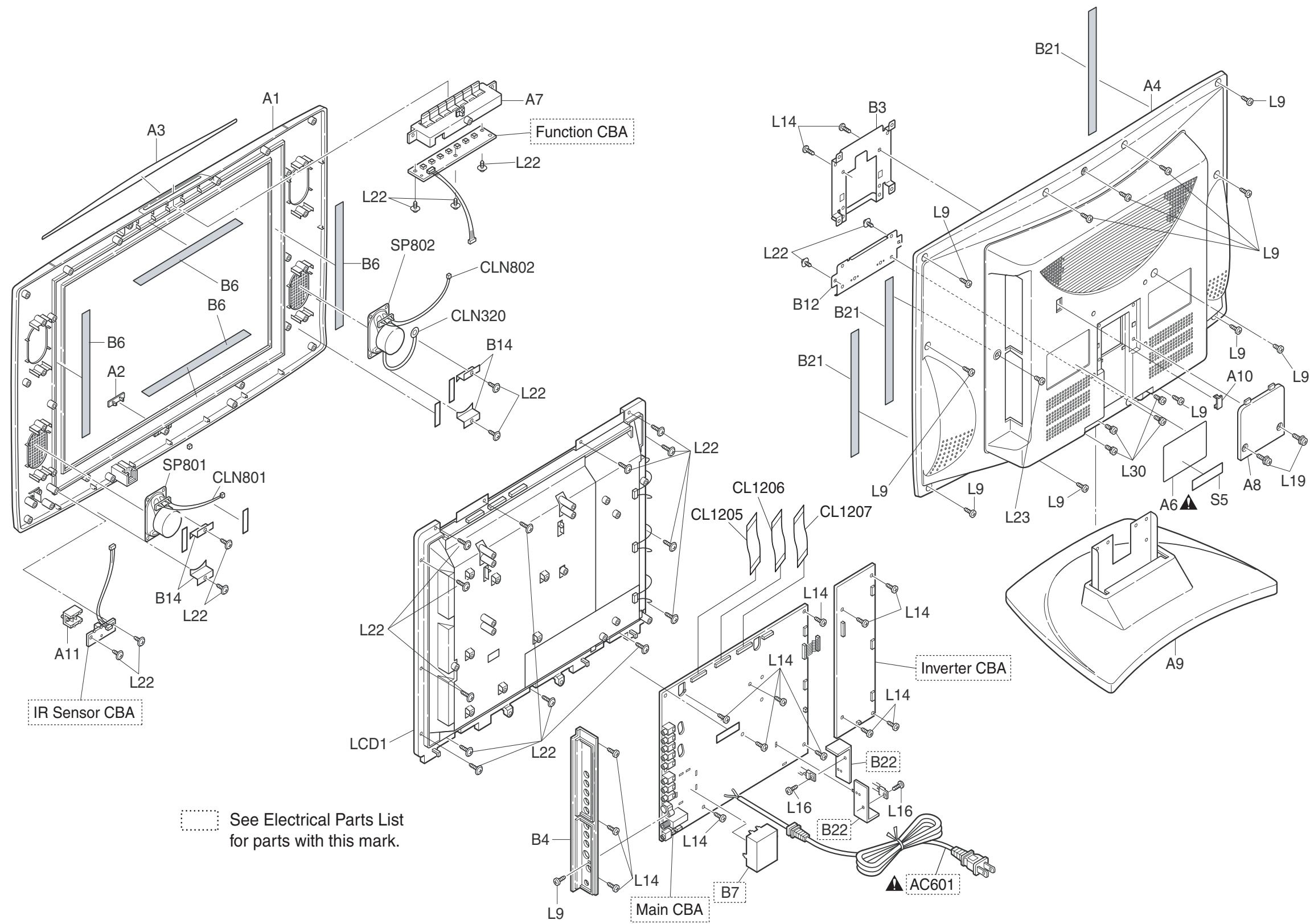


WF12 1DIV: 200mV 20 μ s
Pin 62 of IC1202

[illegible]

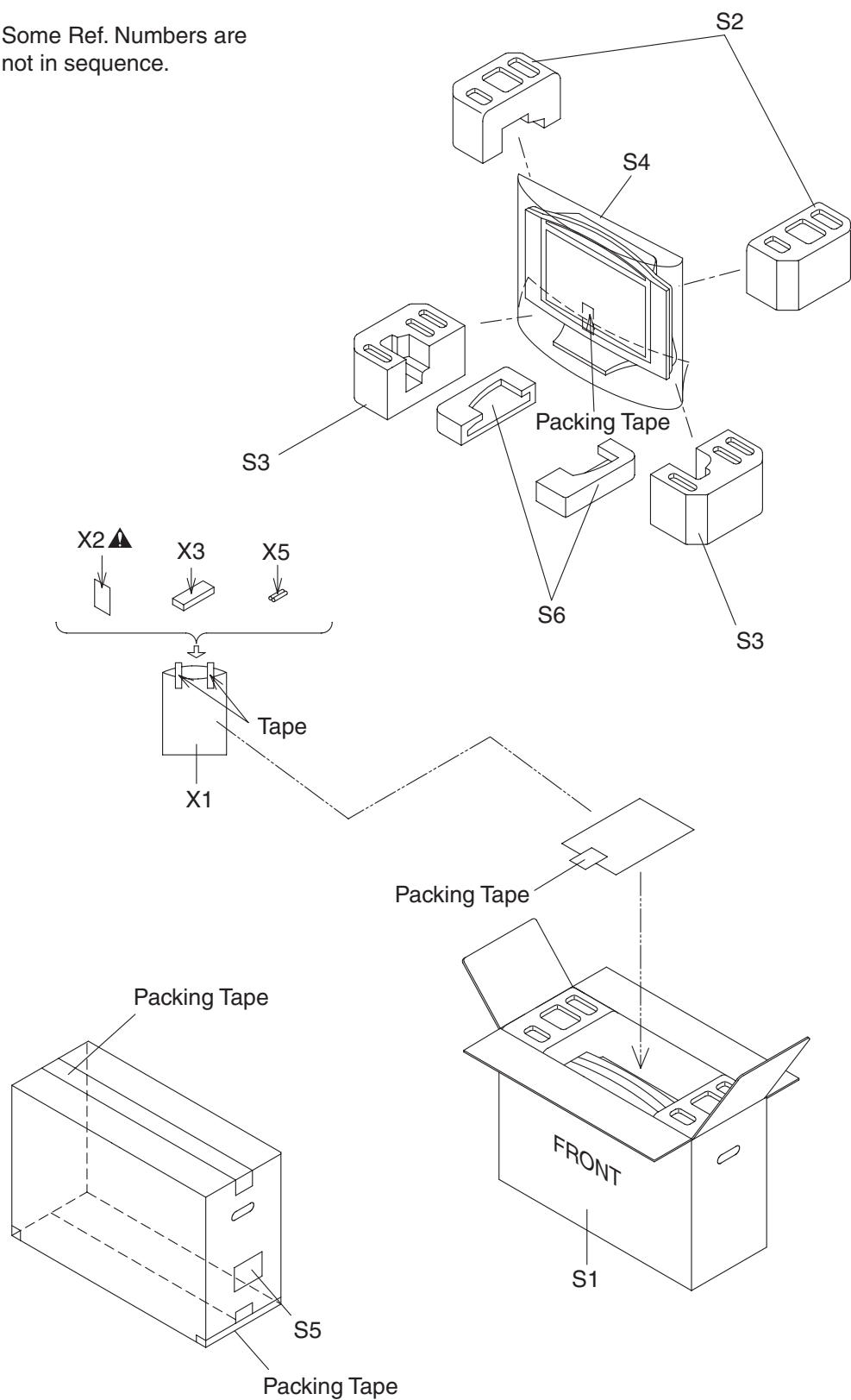
EXPLODED VIEWS

Cabinet




Packing

Some Ref. Numbers are not in sequence.




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.

Ref. No.	Description	Part No.
A1	FRONT CABINET L3200UA	1EM020185
A2	BRAND BADGE L2601UB	1EM423160
A3	CONTROL PLATE L0301UB	1EM220019
A4	REAR CABINET L3200UA	1EM020138
A6 	RATING LABEL L2601UB	-----
A7	FUNCTION KNOB L0301UB	1EM220005A
A8	REAR COVER L3207UH	1EM420953
A9	TILT STAND ASSEMBLY L0301UB	1EMN20039B
A10	CONNECTOR CAP L3200UA	1EM420645
A11	SENSOR/LED LENS L0301UB	1EM220004
B3	STAND HOLDER L0200UA	0EM301999B
B4	JACK HOLDER L3201UB	1EM120107
B6	CLOTH(15X190XT 0.5) L0100JA	0EM407894
B12	20V TILT STAND HOLDER L4200EA	1EM320145
B14	SPEAKER HOLDER L0110UA	0EM407855C
B21	CLOTH(10X180XT0.5) L0336JG	0EM408827
CL1205	WIRE ASSEMBLY 28PIN 28PIN/92MM/WHITE	WX1L2600-001
CL1206	WIRE ASSEMBLY 28PIN 28PIN/92MM/WHITE	WX1L2600-001
CL1207	WIRE ASSEMBLY 28PIN 28PIN/92MM/WHITE	WX1L2600-001
CLN320	WIRE ASSEMBLY 1PIN 80MM BLACK	WX1L2600-015
CLN801	WIRE ASSEMBLY 2PIN SPEAKER 2PIN/325MM	WX1L2600-009
CLN802	WIRE ASSEMBLY 2PIN SPEAKER 2PIN/325MM	WX1L2600-009
L9	SCREW P-TIGHT 3X10 BIND HEAD+	GBHP3100
L14	SCREW P-TIGHT M3X8 BIND HEAD+	GBJP3080
L19	DOUBLE SEMS SCREW M4X9 + BLACK L0130UA	0EM408146A
L22	SCREW P-TIGHT 3X14 WASHER HEAD+	GCJP3140
L23	SCREW P-TIGHT M3X8 BIND HEAD+ BLK	GBHP3080
L30	DOUBLE SEMS SCREW M4X12 + BLAK	FPH34120
LCD1	LCD MODULE ASSEMBLY UE200XA	1FSA10129
SP801	SPEAKER S0407F10	DSD0807XQ002
SP802	SPEAKER S0407F10	DSD0807XQ002
PACKING		
S1	CARTON L2601UB	1EM423468
S2	STYROFOAM TOP L0301UB	1EM020018A
S3	STYROFOAM BOTTOM L0301UB	1EM020019A
S4	SET BAG L3207UH	1EM320295
S5	SERIAL NO. LABEL L9750UA	-----
S6	STYROFOAM STAND BOTTOM L0301UB	1EM020020A
ACCESSORIES		
X1	BAG POLYETHYLENE 235X365XT0.03	0EM408420A
X2 	OWNER S MANUAL L2601UB	1EMN21873
X3	REMOTE CONTROL 170/ECNLC301/NE900UD	NE900UD
X5	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:

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

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

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA Consists of the following:	1ESA13198
CAPACITORS		
C11	ELECTROLYTIC CAP. 47µF/50V M	CE1JMASDL470
C15	ELECTROLYTIC CAP. 47µF/50V M	CE1JMASDL470
C22	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
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	CA1J183MS029
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	CE1AMASDL101
C34	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C35	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0
C36	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C37	CHIP CERAMIC CAP. CH J 680pF/50V	CHD1JJ3CH681
C39	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASDLR47
C41	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASDL4R7
C42	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C44	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C46	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C47	CHIP CERAMIC CAP. CH D 6pF/50V	CHD1JD3CH6R0
C48	CHIP CERAMIC CAP. CH D 3pF/50V	CHD1JD3CH3R0
C501	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASDL220
C502	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C503	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASDL221
C504	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C505	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C506	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C507	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C508	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C601▲	METALIZED FILM CAP. 0.22µF/250V	CT2E224MS037
C608	CERAMIC CAP. B K 1000pF/2KV	CCD3DKP0B102
C610▲	ELECTROLYTIC CAP. 100µF/200V M	CE2DMZPDL101
C611▲	ELECTROLYTIC CAPACITOR 150µF/200V	CA2D151S6012

Ref. No.	Description	Part No.
C612	FILM CAP.(P) 0.01µF/50V J	CMA1JJS00103
C613	FILM CAP.(P) 0.056µF/50V J	CMA1JJS00563
C631▲	ELECTROLYTIC CAP. 2200µF/25V M	CE1EMZPDL222
C632▲	ELECTROLYTIC CAP. 22µF/100V M	CE2AMASDL220
C633▲	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASDL221
C634▲	ELECTROLYTIC CAP. 1000µF/10V M	CE1AMASDL102
C635▲	ELECTROLYTIC CAP. 470µF/25V M	CE1EMASDL471
C636▲	ELECTROLYTIC CAP. 220µF/50V M	CE1JMASDL221
C637▲	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C638	CHIP CERAMIC CAP.(1608) B K 0.22µF/16V	CHD1CK30B224
C639	ELECTROLYTIC CAP. 330µF/6.3V M	CE0KMASDL331
C640	CHIP CERAMIC CAP.(1608) B K 0.22µF/16V	CHD1CK30B224
C641▲	SAFETY CAP. 4700pF/250V KX	CA2E472MR050
C642	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMASSL221
C644	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMASSL221
C646	FILM CAP.(P) 0.082µF/50V J	CMA1JJS00823
C647	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMASSL221
C648	CHIP CERAMIC CAP.(1608) B K 0.22µF/16V	CHD1CK30B224
C649	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C650	ELECTROLYTIC CAP. 330µF/25V M	CE1EMASDL331
C651	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMASDL470
C652▲	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C653	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C654	CHIP CERAMIC CAP.(1608) B K 0.22µF/16V	CHD1CK30B224
C655	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C656	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASDL1R0
C657	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C659	FILM CAP.(P) 0.022µF/50V J	CMA1JJS00223
C660	FILM CAP.(P) 0.0068µF/50V J	CMA1JJS00682
C704	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C707	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C708	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C712	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C713	CHIP CERAMIC CAP.(1608) B K 3300pF/50V	CHD1JK30B332
C714	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C715	CHIP CERAMIC CAP.(1608) B K 3300pF/50V	CHD1JK30B332
C716	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C722	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C726	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C730	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C739	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C740	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C751	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C752	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
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	CE1JMASDL100
C782	CHIP CERAMIC CAP.(1608) B K 0.1µF/50V	CHD1JK30B104
C785	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C801	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASDL221
C802	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASDL221
C805	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C806	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C807	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C809	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASDL100
C810	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASDL2R2
C811	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASDL101
C812	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C813	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZ30F105
C818	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471

Ref. No.	Description	Part No.
C819	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C820	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
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	CE1JMASDL2R2
C858	ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMASSL2R2
C859	ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C860	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C861	ELECTROLYTIC CAP. 100μF/10V M	CE1AMASDL101
C863	ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
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.(1608) B K 1μF/10V	CHD1AK30B105
C869	CHIP CERAMIC CAP.(1608) B K 0.022μF/50V	CHD1JK30B223
C1202	ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMASSL470
C1203	ELECTROLYTIC CAP. 100μF/16V M	CE1CMASDL101
C1204	ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMASSL470
C1205	ELECTROLYTIC CAP. 100μF/16V M	CE1CMASDL101
C1206	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C1207	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C1208	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1209	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C1210	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C1211	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C1212	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1213	ELECTROLYTIC CAP. 10μF/50V M H7	CE1JMASSL100
C1214	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1215	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1216	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C1217	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1218	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1219	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C1220	ELECTROLYTIC CAP. 330μF/16V M	CE1CMASDL331
C1224	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C1226	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1227	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1228	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1229	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1230	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1231	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1232	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1233	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1234	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1235	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C1236	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C1237	ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMASSL470
C1239	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1240	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1241	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1243	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1245	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1246	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1248	ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMASSL470
C1249	ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMASSL470
C1250	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1251	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1253	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1254	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1255	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224

Ref. No.	Description	Part No.
C1256	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1257	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1258	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1259	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1260	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1261	CHIP CERAMIC CAP.(1608) B K 0.22μF/16V	CHD1CK30B224
C1262	CHIP CERAMIC CAP.(2125) B K 4.7μF/16V	CHE1CK30B475
C1263	ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMASSL470
C1264	ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMASSL470
C1265	CHIP CERAMIC CAP.(1608) F Z 0.1μF/25V	CHD1EZ30F104
C1266	CHIP CERAMIC CAP.(1608) B K 1μF/10V	CHD1AK30B105
C1268	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1269	ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C1270	CHIP CERAMIC CAP.(1608) B K 1μF/10V	CHD1AK30B105
C1271	CHIP CERAMIC CAP.(1608) B K 1μF/10V	CHD1AK30B105
C1302	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1345	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C1346	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C1347	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1348	CHIP CERAMIC CAP.(1608) B K 0.1μF/50V	CHD1JK30B104
C1350	CHIP CERAMIC CAP. CH J 330pF/50V	CHD1JJ3CH331
C1352	ELECTROLYTIC CAP. 47μF/10V M	CE1AMASDL470
C1353	CAP CERAMIC AXIAL 56pF 50V CH J	CCK1JJTCH560
CONNECTORS		
CN404	TWG CONNECTOR 15P TWG-P15P-A1	J3TWA15TG001
CN801	CONNECTOR PRINT OSU 008283021200000S+	J383C02UG004
CN1201	PH CONNECTOR TOP 4P B4B-PH-K-S (LF)(SN)	J3PHC04JG029
CN1202	CONNECTOR PRINT OSU B5B-PH-K-S (LF)(SN)	J3PHC05JG029
CN1205	CONNECTOR PRINT MES G/28/R/28FMN-STK-A(L)	JCFNG28JG021
CN1206	CONNECTOR PRINT MES G/28/R/28FMN-STK-A(L)	JCFNG28JG021
CN1207	CONNECTOR PRINT MES G/28/R/28FMN-STK-A(L)	JCFNG28JG021
CN1209	PH CONNECTOR TOP 4P B4B-PH-K-S (LF)(SN)	J3PHC04JG029
DIODES		
D31	SWITCHING DIODE 1SS400	QD1Z001SS400
D401	SWITCHING DIODE 1SS400	QD1Z001SS400
D402	SWITCHING DIODE 1SS400	QD1Z001SS400
D403	ZENER DIODE MTZJT-7718B	QDTB00MTZJ18
D404	SWITCHING DIODE 1SS400	QD1Z001SS400
D405	SWITCHING DIODE 1SS400	QD1Z001SS400
D501	SWITCHING DIODE 1SS400	QD1Z001SS400
D502	ZENER DIODE MTZJT-7724B	QDTB00MTZJ24
D503	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D504	SWITCHING DIODE 1SS400	QD1Z001SS400
D505	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
D506	ZENER DIODE MTZJT-776.2B	QDTB00MTZJ6R2
D507	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D510	SWITCHING DIODE 1SS400	QD1Z001SS400
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	QDTB00MTZJ5R6
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

Ref. No.	Description	Part No.
D624▲	ZENER DIODE MTZJT-7733B	QDTB00MTZJ33
D631▲	SCHOTTKY BARRIER DIODE ERC84-009	QDLZERC84009
D632▲	DIODE FR154	NDLZ000FR154
D633▲	DIODE FR154	NDLZ000FR154
D634▲	SCHOTTKY BARRIEA DIODE 11EQS04	QD4Z011EQS04
D635▲	DIODE FR154	NDLZ000FR154
D636▲	DIODE FR154	NDLZ000FR154
D637	DIODE 1ZC43(Q)	QDLZ001ZC43Q
D638▲	SCHOTTKY BARRIEA DIODE 11EQS04	QD4Z011EQS04
D639	SWITCHING DIODE 1SS400	QD1Z001SS400
D640	DIODE 1N5397-B	NDLZ001N5397
D641	SWITCHING DIODE 1SS400	QD1Z001SS400
D642	SWITCHING DIODE 1SS400	QD1Z001SS400
D643	ZENER DIODE MTZJT-7715B	QDTB00MTZJ15
D644	SWITCHING DIODE 1SS400	QD1Z001SS400
D645	SWITCHING DIODE 1SS400	QD1Z001SS400
D646	SWITCHING DIODE 1SS400	QD1Z001SS400
D647	IC SHUNT REGULATOR KIA431-AT/P	NSZBA0TJY036
D648	SWITCHING DIODE 1SS400	QD1Z001SS400
D649▲	ZENER DIODE MTZJT-7739B	QDTB00MTZJ39
D650	SWITCHING DIODE 1SS400	QD1Z001SS400
D651	SWITCHING DIODE 1SS400	QD1Z001SS400
D652	SWITCHING DIODE 1SS400	QD1Z001SS400
D653	SWITCHING DIODE 1SS400	QD1Z001SS400
D654	ZENER DIODE MTZJT-7733C	QDTC00MTZJ33
D655	SWITCHING DIODE 1SS400	QD1Z001SS400
D656	SCHOTTKY BARRIEA DIODE 11EQS04	QD4Z011EQS04
D658▲	PCB JUMPER D0.6-P5.0	JW5.0T
D659	PCB JUMPER D0.6-P5.0	JW5.0T
D660	PCB JUMPER D0.6-P5.0	JW5.0T
D663	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D664	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D681	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D682	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D801	SWITCHING DIODE 1SS400	QD1Z001SS400
D802	SWITCHING DIODE 1SS400	QD1Z001SS400
D803	ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D806	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D807	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1201	ZENER DIODE MTZJT-772.2B	QDTB0MTZJ2R2
D1202	ZENER DIODE MTZJT-773.9B	QDTB0MTZJ3R9
D1205	ZENER DIODE MTZJT-773.6B	QDTB0MTZJ3R6
D1206	SCHOTTKY BARRIEA DIODE 11EQS04	QD4Z011EQS04
D1207	SWITCHING DIODE 1SS400	QD1Z001SS400
D1208	SCHOTTKY BARRIEA DIODE 11EQS04	QD4Z011EQS04
D1209	IC TL431ACDBVR	NSZBA0TTY116
D1301	ZENER DIODE MTZJT-773.9B	QDTB0MTZJ3R9
ICS		
IC31	IC VIF/SIF M61116FP TF0G	QSZBA0SHT034
IC601▲	PHOTOCOUPLER LTV-817C-F	NPEC0LTV817F
IC602	VOLTAGE REGULATOR LD1117SC-R	NSZBA0TSS229
IC603	VOLTAGE REGULATOR LD1117SC-R	NSZBA0TSS229
IC605	IC VOLTAGE REGULATOR 5V KIA7805AP/P	NSZBA0SJY041
IC606▲	IC VOLTAGE REGULATOR 5V KIA7805AP/P	NSZBA0SJY041
IC781	IC SWITCH TC4053BF(EL N F)	QSZBA0TTS163
IC801	IC AN17812A	QSZBA0SMS017
IC851	IC MTS DECORDER AN5832SA-E1V	QSZBA0TMS003
IC852	IC SWITCHING TC4052BF(ELNF)	QSZBA0TTS162
IC1201	RESET IC IC-PST9223NR	QSZBA0TMM006
IC1202	IC DVP R8A01027A91FP RF0Z	QSZAA0RHT116
IC1205	IC EEPROM(32K) BR24L32F-WE2	QSZBA0TRM067
IC1207	IC TL3472CDR	NSZBA0TTY115

Ref. No.	Description	Part No.
IC1211	IC RESET BU4223G-TR 5PIN	QSZBA0TRM103
COILS		
L11	INDUCTOR 22μH-K-5FT	LLARKBSTU220
L12	INDUCTOR 22μH-K-5FT	LLARKBSTU220
L13	INDUCTOR 0.47μH-J-26T	LLAXJATTUR47
L21	INDUCTOR 100μH-K-5FT	LLARKBSTU101
L22	INDUCTOR 150μH-J-26T	LLAXJATTU151
L31	INDUCTOR 22μH-K-5FT	LLARKBSTU220
L32	INDUCTOR 18μH-J-26T	LLAXJATTU180
L601▲	LINE FILTER 5.0MH 6Y075	LLBG00ZKT004
L631	INDUCTOR 47μH-K-5FT	LLARKBSTU470
L632	INDUCTOR 47μH-K-5FT	LLARKBSTU470
L701	INDUCTOR 22μH-K-5FT	LLARKBSTU220
L781	PCB JUMPER D0.6-P5.0	JW5.0T
L851	PCB JUMPER D0.6-P5.0	JW5.0T
L1239	INDUCTOR CHIP LK16081R0K-T 1.0μH	LLACKB3TU1R0
L1240	INDUCTOR CHIP LK16081R0K-T 1.0μH	LLACKB3TU1R0
L1241	INDUCTOR CHIP LK16081R0K-T 1.0μH	LLACKB3TU1R0
L1243	INDUCTOR CHIP LK16081R0K-T 1.0μH	LLACKB3TU1R0
L1245	INDUCTOR CHIP LK16081R0K-T 1.0μH	LLACKB3TU1R0
L1246	INDUCTOR CHIP LK16081R0K-T 1.0μH	LLACKB3TU1R0
L1301	PCB JUMPER D0.6-P5.0	JW5.0T
TRANSISTORS		
Q401	NPN TRANSISTOR POWER 2SC4881F HFE MAX320	QQWZ2SC4881F
Q402	TRANSISTOR 2SA950-O (TE2 F T)	QQS002SA950F
Q403	TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q501	TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q502	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q503	TRANSISTOR 2SC2120-Y(TE2 F T)	QQSY2SC2120F
Q504	TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q505	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q506	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q507	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q601▲	FET 2SK3869(Q)	QFWZ2SK3869Q
Q603▲	TRANSISTOR 2SC2120-O(TE2 F T)	QQS02SC2120F
Q632	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q707	TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q708	TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
Q802	TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q1024	TRANSISTOR IMZ4T108	QQ1Z00001MZ4
Q1204	FET 2SK3018 T106	QF1Z02SK3018
RESISTORS		
R11	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R12	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R15	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R21	CHIP RES. 1/10W J 270k Ω	RRXAJR5Z0274
R23	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R24	CHIP RES. 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. 1/10W J 100 Ω	RRXAJR5Z0101
R40	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R42	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R46	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R48	PCB JUMPER D0.6-P5.0	JW5.0T
R401	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R402	CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R403	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R404	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R406	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R407	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R408	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821

Ref. No.	Description	Part No.
R414	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R415	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R416	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R417	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R419	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R502	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R503	CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R504	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R505	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R507	PCB JUMPER D0.6-P5.0	JW5.0T
R509	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R510	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R511	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R512	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R513	CHIP RES. 1/10W J 27k Ω	RRXAJR5Z0273
R514	CHIP RES. 1/10W F 10k Ω	RRXAFR5H1002
R515	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R516	CHIP RES. 1/10W F 3k Ω	RRXAFR5H3001
R517	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R518	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R519	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R520	CHIP RES. 1/10W J 56k Ω	RRXAJR5Z0563
R521	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R526	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R529	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R533	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
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
R605	CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
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 68 Ω	RCX4JATZ0680
R613▲	METAL OXIDE FILM RES. 2W J 0.47 Ω	RN02R47ZU001
R620	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R621	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R623	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R631	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R632▲	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R633	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R635	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R636	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R638	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R639	CHIP RES. 1/10W F 1.1k Ω	RRXAFR5H1101
R640	CHIP RES. 1/10W F 1.8k Ω	RRXAFR5H1801
R641	CHIP RES. 1/10W F 910 Ω	RRXAFR5H9100
R642	CHIP RES. 1/10W F 180 Ω	RRXAFR5H1800
R645	CHIP RES. 1/10W F 2.2k Ω	RRXAFR5H2201
R646	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R647▲	CHIP RES. 1/10W F 3.9k Ω	RRXAFR5H3901
R648▲	CHIP RES. 1/10W F 3.9k Ω	RRXAFR5H3901
R649▲	CHIP RES.(1608) 1/10W F 4.7k Ω	RRXAFR5H0472
R650▲	CHIP RES.(1608) 1/10W F 4.7k Ω	RRXAFR5H0472
R651▲	CHIP RES. 1/10W F 1.5k Ω	RRXAFR5H1501
R652▲	CHIP RES. 1/10W F 1.5k Ω	RRXAFR5H1501
R653▲	CHIP RES. 1/10W F 1.5k Ω	RRXAFR5H1501
R654▲	CHIP RES. 1/10W F 1.5k Ω	RRXAFR5H1501
R655	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R656	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R657	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R659▲	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R661	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471

Ref. No.	Description	Part No.
R663	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R664	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R665▲	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R667	PCB JUMPER D0.6-P5.0	JW5.0T
R669	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R670	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R671	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R704	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R707	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R708	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R709	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R711	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R713	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R714	CHIP RES. 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. 1/10W J 75 Ω	RRXAJR5Z0750
R718	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R719	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R722	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R723	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R725	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R734	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R736	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R738	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R739	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R742	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R744	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R751	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R752	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R753	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R754	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R755	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R756	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R759	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R782	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R784	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R785	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R786	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R787	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R788	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R789	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R790	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R791	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R792	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R793	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R794	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R798	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R799	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R805▲	METAL OXIDE FILM RES. 2W J 3.9 Ω	RN023R9ZU001
R806	CHIP RES. 1/10W J 560 Ω	RRXAJR5Z0561
R807▲	METAL OXIDE FILM RES. 2W J 3.9 Ω	RN023R9ZU001
R808	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R809	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R810	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R811	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R813	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R814	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R815	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R816	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R817	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R819	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R820	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000

Ref. No.	Description	Part No.
R822	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R823	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R824	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R825	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R826	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R827	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R829	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R830	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R833	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R834	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R837	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R838	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R839	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R840	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R842	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R843	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R844	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R851	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R852	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R853	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R855	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R1201	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1204	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1213	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1216	CHIP RES. 1/10W J 1M Ω	RRXAJR5Z0105
R1217	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1218	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1219	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1220	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R1221	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1223	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R1224	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1226	CHIP RES. 1/10W J 33 Ω	RRXAJR5Z0330
R1231	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1233	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1234	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1235	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1237	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1242	CHIP RES. 1/10W F 750 Ω	RRXAFR5H7500
R1243	CHIP RES. 1/10W F 200 Ω	RRXAFR5H2000
R1244	CHIP RES. 1/10W F 160 Ω	RRXAFR5H1600
R1245	CHIP RES. 1/10W F 750 Ω	RRXAFR5H7500
R1246	CHIP RES. 1/10W F 150 Ω	RRXAFR5H1500
R1247	CHIP RES. 1/10W F 750 Ω	RRXAFR5H7500
R1248	CHIP RES. 1/10W F 160 Ω	RRXAFR5H1600
R1249	CHIP RES. 1/10W F 200 Ω	RRXAFR5H2000
R1250	CHIP RES. 1/10W F 750 Ω	RRXAFR5H7500
R1251	CHIP RES.(1608) 1/10W F 68 Ω	RRXAFR5H68R0
R1254	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1255	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R1256	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R1264	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1265	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1268	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1269	CHIP RES. 1/10W J 68k Ω	RRXAJR5Z0683
R1270	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1271	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1272	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1274	CHIP RES. 1/10W J 39k Ω	RRXAJR5Z0393
R1275	CHIP RES. 1/10W J 4.3k Ω	RRXAJR5Z0432
R1276	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R1277	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1278	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101

Ref. No.	Description	Part No.
R1279	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1301	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1302	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1303	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1304	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1305	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1306	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1307	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1308	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1309	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1310	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1311	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1312	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1313	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1314	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1315	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1316	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1317	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1318	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1319	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1320	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1321	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1322	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1323	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1324	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1325	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1326	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1327	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1328	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1329	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1330	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1331	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1332	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1333	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1334	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1335	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1336	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1337	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1338	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1339	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1340	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1341	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1342	CHIP RES. 1/10W J 56 Ω	RRXAJR5Z0560
R1343	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1344	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1345	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1346	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1347	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1348	CHIP RES. 1/10W J 47 Ω	RRXAJR5Z0470
R1349	CHIP RES. 1/10W J 47 Ω	RRXAJR5Z0470
R1350	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1351	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1352	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1353	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1354	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1355	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1356	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1357	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1358	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1359	CHIP RES. 1/10W J 47 Ω	RRXAJR5Z0470
R1360	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R1361	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1362	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103

Ref. No.	Description	Part No.
R1363	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1364	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1365	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1366	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1367	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1368	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1369	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1370	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1371	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
MISCELLANEOUS		
AC601▲	AC CORD LP-11W&PT218P-K90A&S	WAC0172LW020
B7	SHIELD BOX TOP L2500UA	1EM321728
B22	POW HEAT SINK PKG ASSEMBLY L3201UB	1EM420650
BC10	PCB JUMPER D0.6-P5.0	JW5.0T
BC11	PCB JUMPER D0.6-P5.0	JW5.0T
BC602	BEADS INDUCTOR FBR07HA121SB-00	LLBF00STU030
CF31	CERAMIC FILTER SFSRA4M50CF00-B0	FBB455PMR004
CLN806	LEAD WIRE LEAD WIRE 37MM BLACK	WX3001X65503
F601▲	FUSE STC4A125V U/CT	PAGE20CW3402
FH601	FUSE HOLDER MSF-015	XH01Z00LY001
FH602	FUSE HOLDER MSF-015	XH01Z00LY001
GP642▲	GAP. FNR-G3.10D	FAZ000LD6005
JK701	Y/C JACK 1P(SW) DMDC1-01-021	JYEL040RP001
JK703	JACK RCA PCB L RCA-112(2)-04(YL)	JXRL010YUQ10
JK704	JACK RCA PCB L RCA-112(2)-04(WH)	JXRL010YUQ11
JK705	JACK SW RCA PCB L RCA-112-03(RD)	JYRL010YUQ02
JK706	RCA JACK(GREEN) MTJ-032-08B-41 FE(JXRL010LY126
JK707	RCA JACK(BLUE) MTJ-032-08B-44 FE	JXRL010LY130
JK708	JACK RCA PCB L RCA 112(2) 04(RD)	JXRL010YUQ16
JK709	JACK RCA PCB L RCA-112(2)-04(WH)	JXRL010YUQ11
JK710	JACK SW RCA PCB L RCA-112-03(RD)	JYRL010YUQ02
JK801	MINIATURE JACK(PB FREE) CKX-035-318AZ4	JYSL010SNJ01
JS813	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JS822	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L16	SCREW B-TIGHT D3X8 BIND HEAD+	GBJB3080
SA601▲	SURGE ABSORBER 470V+-10PER	NVQZ10D471KB
SF11	FILTER CERAMIC BAND PASS SAFHS45M7VAJZ00B05	FBB456LMR004
T601▲	TRANS POWER 6720	LTT2PC0KT006
TP1701	PCB JUMPER D0.6-P5.0	JW5.0T
TP1702	PCB JUMPER D0.6-P5.0	JW5.0T
TP401	PCB JUMPER D0.6-P30.0	JW30.0T
TU1	TUNER UNIT TEFH9-002A	UTUNNTUAL045
X1201	XTAL OSCILLATOR 27.00MHz 15PPM	FXC276LLN002

INVERTER CBA

Ref. No.	Description	Part No.
	INVERTER CBA Consists of the following:	1ESA12650
CAPACITORS		
C301	ELECTROLYTIC CAP. 47 μ F/16V M	CE1CMASDL470
C302	CHIP CERAMIC CAP.(1608) B K 5600pF/50V	CHD1JK30B562
C303	ELECTROLYTIC CAP. 220 μ F/16V M	CE1CMASDL221
C321	CAP CHIP 5pF 3KV C XC	CA3F5R05M016
C322	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C323	CAP CHIP 5pF 3KV C XC	CA3F5R05M016
C325	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C326	ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C327	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C328	ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C329	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C330	CAP METALIZED FILM 0.068 μ F/250V/J	CT2E683MS041

Ref. No.	Description	Part No.
C331	ELECTROLYTIC CAP. 22 μ F/50V M	CE1JMASDL220
C332	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C341	CAP CHIP 5pF 3KV C XC	CA3F5R05M016
C342	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C343	CAP CHIP 5pF 3KV C XC	CA3F5R05M016
C345	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C346	ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C347	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C348	ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C349	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C350	CAP METALIZED FILM 0.068 μ F/250V/J	CT2E683MS041
C351	ELECTROLYTIC CAP. 22 μ F/50V M	CE1JMASDL220
C361	CAP CHIP 5pF 3KV C XC	CA3F5R05M016
C362	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C363	CAP CHIP 5pF 3KV C XC	CA3F5R05M016
C365	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C366	ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C367	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C368	ELECTROLYTIC CAP. 10 μ F/50V M	CE1JMASDL100
C369	CHIP CERAMIC CAP.(1608) B K 0.01 μ F/50V	CHD1JK30B103
C370	CAP METALIZED FILM 0.068 μ F/250V/J	CT2E683MS041
C371	ELECTROLYTIC CAP. 22 μ F/50V M	CE1JMASDL220
CONNECTORS		
CN301	BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
CN302	BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
CN303	BACK LIGHT CONNECTOR 1717369-1	JB17D02AP001
CN304	CONNECTOR PRINT MES C/15/S/ 127301115K2	JCTWA15TG004
CN310	CONNECTOR PRINT OSU 008283021200000S+	J383C02UG004
DIODES		
D306	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D307	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D308	ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D309	ZENER DIODE MTZJT-7710B	QDTB0MTZJ10
D321	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D322	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D323	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D324	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D325	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D326	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D327	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D328	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D329	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D330	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D331	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D332	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D333	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D334	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D341	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D342	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D343	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D344	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D345	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D346	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D347	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D348	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D349	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D350	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D351	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D352	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D353	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D354	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133

Ref. No.	Description	Part No.
D361	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D362	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D363	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D364	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D365	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D366	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D367	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D368	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D369	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D370	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D371	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D372	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D373	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D374	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
COILS		
L301	COIL CHOKE ELC10D101EL	LLC101KMS003
L302	COIL CHOKE ELC10D101EL	LLC101KMS003
L303	COIL CHOKE ELC10D101EL	LLC101KMS003
TRANSISTORS		
Q304	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q305	TRANSISTOR 2SA1175(F)	QQSFO2SA1175
Q306	TRANSISTOR 2SC2120-Q(T-E2 F T)	QQS02SC2120F
Q321▲	FET MOS SMD HAT2215R 1UA	QF2ZHAT2215R
Q322	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q323	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q324	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q325	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q341▲	FET MOS SMD HAT2215R 1UA	QF2ZHAT2215R
Q342	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q343	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q344	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q361▲	FET MOS SMD HAT2215R 1UA	QF2ZHAT2215R
Q362	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q363	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
Q364	TRANSISTOR 2SC2785(F)	QQSFO2SC2785
RESISTORS		
R309	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R310	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R311	CHIP RES. 1/10W J 47 Ω	RRXAJR5Z0470
R312	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R313	CHIP RES. 1/10W J 33k Ω	RRXAJR5Z0333
R318	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R321	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R322	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R323	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R324	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R325	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R326	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R327	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R328	CHIP RES. 1/10W J 22 Ω	RRXAJR5Z0220
R329	CHIP RES. 1/10W J 22 Ω	RRXAJR5Z0220
R330	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R331	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R332	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R333	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R334	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R335	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R336	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R337	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R341	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R342	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R343	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102

Ref. No.	Description	Part No.
R344	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R345	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R346	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R347	CHIP RES. 1/10W J 22 Ω	RRXAJR5Z0220
R348	CHIP RES. 1/10W J 22 Ω	RRXAJR5Z0220
R349	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R350	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R351	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R352	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R353	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R356	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R357	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R361	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R362	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R363	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R364	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R365	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R366	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R367	CHIP RES. 1/10W J 22 Ω	RRXAJR5Z0220
R368	CHIP RES. 1/10W J 22 Ω	RRXAJR5Z0220
R369	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R370	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R371	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R372	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R373	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R376	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R377	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
MISCELLANEOUS		
JS326	PCB JUMPER D0.6-P5.0	JW5.0T
JS346	PCB JUMPER D0.6-P5.0	JW5.0T
JS366	PCB JUMPER D0.6-P5.0	JW5.0T
T301▲	TRANS INVERTER ETJV27ZJ24AC	LTZ2PCOMS003
T302▲	TRANS INVERTER ETJV27ZJ24AC	LTZ2PCOMS003
T303▲	TRANS INVERTER ETJV27ZJ24AC	LTZ2PCOMS003

ANALOG KEY CBA

Ref. No.	Description	Part No.
	ANALOG KEY CBA Consists of the following:	1ESA13201
	FUNCTION CBA IR SENSOR CBA	----- -----

FUNCTION CBA

Ref. No.	Description	Part No.
	FUNCTION CBA Consists of the following:	-----
CAPACITOR		
C61	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
RESISTORS		
R61	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R62	CHIP RES. 1/10W J 47 Ω	RRXAJR5Z0470
R63	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R64	CHIP RES. 1/10W J 1.5k Ω	RRXAJR5Z0152
R65	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R66	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R67	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R68	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R69	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R70	CHIP RES. 1/10W J 47 Ω	RRXAJR5Z0470
SWITCHES		
SW61	TACT SWITCH SKQSAB	SST0101AL038

Ref. No.	Description	Part No.
SW62	TACT SWITCH SKQSAB	SST0101AL038
SW63	TACT SWITCH SKQSAB	SST0101AL038
SW64	TACT SWITCH SKQSAB	SST0101AL038
SW65	TACT SWITCH SKQSAB	SST0101AL038
SW67	TACT SWITCH SKQSAB	SST0101AL038
SW71	TACT SWITCH SKQSAB	SST0101AL038
MISCELLANEOUS		
CLN104	WIRE ASSEMBLY SW 4PIN 230MM AWG26	WX1L2601-001
JS62	PCB JUMPER D0.6-P5.0	JW5.0T
JS63	PCB JUMPER D0.6-P5.0	JW5.0T

IR SENSOR CBA

Ref. No.	Description	Part No.
	IR SENSOR CBA Consists of the following:	-----
CAPACITOR		
C91	EConsists of the following:LECTROLYTIC CAP. 47 μ F/10V M H7	CE1AMASSL470
DIODE		
D91	LED L-53HT	NP4Z000L53HT
TRANSISTOR		
Q91	TRANSISTOR 2SC4081 T106 Q	QQ1Q02SC4081
RESISTORS		
R91	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R92	CHIP RES. 1/10W J 68 Ω	RRXAJR5Z0680
R93	CARBON RES. 1/4W J 68 Ω	RCX4JATZ0680
R94	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R95	CHIP RES. 1/10W J 150 Ω	RRXAJR5Z0151
R96	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
MISCELLANEOUS		
CLN105	WIRE ASSEMBLY SENSOR 5PIN 200MM AWG26	WX1L2601-002
JS91	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JS93	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JS94	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
RCV91	PHOTO LINK MODULE KSM-712TH2E	USESJR5K044



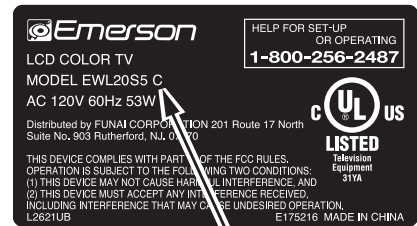
SERVICE MANUAL

Model EWL20S5 has non-A, A, B and C version types. For the C version model, suffix C is printed to the model number as EWL20S5 C on the Rating Label, and for the non-A, A and B version models, suffix C is not printed to the model number.

Refer to the Rating Label on the back of the unit to make sure model types.

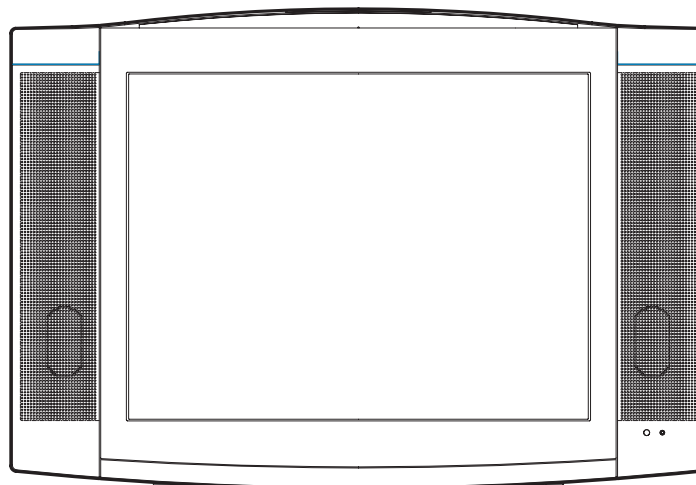
This service manual is for the EWL20S5 C version model, and shows only the differences between the EWL20S5 C version model and EWL20S5 B version model. All other information is described in the service manual of the EWL20S5 B version model.

Rating Label



Suffix "C"

20" COLOR LCD TELEVISION EWL20S5



Different parts from the B version model (EWL20S5)

Ref. No.	Description	Part No.
MECHANICAL PARTS		
A6▲	RATING LABEL L2621UB	-----
LCD1	LCD MODULE ASSEMBLY UE200XB	1FSA10155
S1	CARTON L2601UB	1EM423468A
X2▲	OWNER S MANUAL L2601UB	1EMN21873A
ELECTRICAL PARTS		
	MMA CBA	1ESA13457
	MAIN CBA	-----
Q503	TRANSISTOR KTD2059-O/P	NQE0KTD2059P
R507	Not Used	
R514	CHIP RES. 1/10W F 6.8k Ω	RRXAFR5H6801
R516	CHIP RES. 1/10W F 1.6k Ω	RRXAFR5H1601
R522	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R523	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R524	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R525	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R1245	CHIP RES. 1/10W F 470 Ω	RRXAFR5H0471
R1246	CHIP RES. 1/10W F 330 Ω	RRXAFR5H3300
R1247	CHIP RES. 1/10W F 470 Ω	RRXAFR5H0471
R1251	CHIP RES. 1/10W F 180 Ω	RRXAFR5H1800
R1255	CHIP RES. 1/10W F 18K Ω	RRXAFR5H1802
R1275	CHIP RES. 1/10W F 3.6K Ω	RRXAFR5H3601
R1276	CHIP RES. 1/10W F 11K Ω	RRXAFR5H1102