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# LCD TV

# SERVICE MANUAL

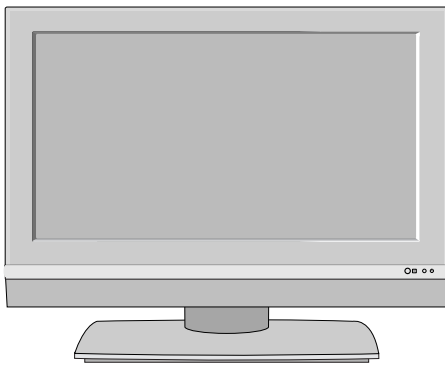
**CHASSIS : LP61A**

**FACTORY MODEL : 26LC2R-ZJ / 32LC2R-ZJ**

**MODEL : 26LC2R / 32LC2R**

## **CAUTION**

BEFORE SERVICING THE CHASSIS,  
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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# SAFETY PRECAUTIONS

## IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by  $\triangle$  in the Schematic Diagram and Replacement Parts List.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

### General Guidance

An **isolation Transformer** should always be used during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

### Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

### Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between  $1M\Omega$  and  $5.2M\Omega$ .

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

### Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

### Do not use a line Isolation Transformer during this check.

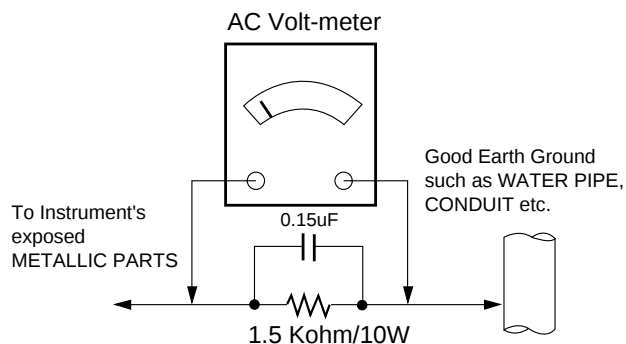
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

### Leakage Current Hot Check circuit



# SERVICING PRECAUTIONS

**CAUTION:** Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the **SAFETY PRECAUTIONS** on page 3 of this publication.

**NOTE:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

## General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
  - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
  - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
  - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.**CAUTION:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".

3. Do not spray chemicals on or near this receiver or any of its assemblies.

4. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)

**CAUTION:** This is a flammable mixture.

Unless specified otherwise in this service manual, lubrication of contacts is not required.

5. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
6. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
7. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.

Always remove the test receiver ground lead last.

8. Use *with this receiver only the test fixtures specified in this service manual.*

**CAUTION:** Do not connect the test fixture ground strap to any heat sink in this receiver.

## Electrostatically Sensitive (ES) Devices

Some semiconductor (solid-state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices*. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the

unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.  
**CAUTION:** Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

## General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500 °F to 600 °F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wire-bristle (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
  - a. Allow the soldering iron tip to reach normal temperature. (500 °F to 600 °F)
  - b. Heat the component lead until the solder melts.
  - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.  
**CAUTION:** Work quickly to avoid overheating the circuitboard printed foil.
6. Use the following soldering technique.
  - a. Allow the soldering iron tip to reach a normal temperature (500 °F to 600 °F)
  - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.
  - c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.  
**CAUTION:** Work quickly to avoid overheating the circuit board printed foil.
  - d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

## IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

### Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

### Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush.  
(It is not necessary to reapply acrylic coating to the areas).

## "Small-Signal" Discrete Transistor

### Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

## Power Output, Transistor Device

### Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heat sink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heat sink.

## Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicular y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

## Fuse and Conventional Resistor

### Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.

**CAUTION:** Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

## Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

### At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

### At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife.  
Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side.  
Carefully crimp and solder the connections.  
**CAUTION:** Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

# SPECIFICATION

NOTE : Specifications and others are subject to change without notice for improvement.

## 1. Application range

This specification is applied to LP61A chassis.

## 2. Requirement for Test

Testing for standard of each part must be followed in below condition.

- (1) Temperature : 25°C±5°C(77±9°F), CST : 40±5
- (2) Humidity : 65%±10%
- (3) Power : Standard input voltage (AC 100-240V, 50/60Hz)  
\*Standard Voltage of each products is marked by models
- (4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.
- (5) The receiver must be operated for about 20 minutes prior to the adjustment.

## 3. Test method

- 3.1 Performance : LGE TV test method followed
- 3.2 Demanded other specification  
Safety : CE, IEC Specification  
EMC : CE, IEC

## 4. General Specification(LCD Module)

| No | Item                  | Specification                                                                               | Remark                                       |
|----|-----------------------|---------------------------------------------------------------------------------------------|----------------------------------------------|
| 1. | Display Screen Device | 26/32" inch wide Color Display Module                                                       | LCD                                          |
| 2. | Aspect Ratio          | 16:9                                                                                        |                                              |
| 3. | LCD Module            | 26/32" TFT WXGA LCD                                                                         | MAKER:AUC/CMO/LPL                            |
| 4. | Operating Environment | 1) Temp. : 0 ~ 40 deg<br>2) Humidity : 0 ~ 85%                                              | LGE SPEC                                     |
| 5. | Storage Environment   | 3) Temp. : -20 ~ 60 deg<br>4) Humidity : 0 ~ 85 %                                           |                                              |
| 6. | Input Voltage         | AC100 ~ 240V, 50/60Hz                                                                       |                                              |
| 7. | Power Consumption     | Power on/off : ≤ max 160W (32")<br>(Green) ≤ max 130W (26")<br>St-By(Red) : 1.0 W (26",32") | Volume: 1/8 volume of sound distortion point |

## 5. Feature and Function

| No | Item            |   | Specification                                              | Remark        |
|----|-----------------|---|------------------------------------------------------------|---------------|
| 1. | RF Input        | 1 | 1 Tuner<br>(PAL BG/II/DK, SECAM-L)                         |               |
|    | SCART           | 1 | FULL(CVBS/L/R,1H-RGB/L/R,TV_OUT)                           | Rear          |
|    | Input/Output    | 1 | HALF(CVBS/L/R,S-VHS,MNT_OUT)                               | Rear          |
|    | AV Input        | 2 | CVBS/L/R, S-VHS(S-VHS Priority)                            | Rear and Side |
|    | Audio Out(R/L)  | 1 | Variable Audio Out                                         | Rear          |
|    | Component Input | 1 | 480i /576i/480p/576p/720p/1080i                            | Rear          |
|    | RGB Input       | 1 | RGB-PC : Up to WXGA 60Hz<br>RGB-DTV : 480p/576p/720p/1080i | Rear          |
|    | HDMI Input      | 1 | HDMI-DTV :<br>480i/576i/480p/576p/720p/1080i               | Rear          |
|    | RS-232C         | 1 | Remote Control                                             | Rear          |
|    | IR Input        | 1 | Wired IR                                                   | Rear          |

## 6. Chroma & Brightness (Optical)

| No | Item                  |       |                | Min           | Typ              | Max           | Unit                 | Maker             | Remark                                          |  |                       |
|----|-----------------------|-------|----------------|---------------|------------------|---------------|----------------------|-------------------|-------------------------------------------------|--|-----------------------|
| 1  | Luminance             |       |                |               | 500              |               | cd/m²                | AUO 26", 32", 37" | - 50cm from the surface<br>- Full White Pattern |  |                       |
|    |                       |       |                |               | 550              |               |                      | LPL 26", 32"      |                                                 |  |                       |
|    |                       |       |                |               |                  |               |                      | CMO 27", 32"      |                                                 |  |                       |
| 2  | View angle (R/L, U/D) |       |                |               | 176/176          |               | degree               | AUO 26"           | - CR >10                                        |  |                       |
|    |                       |       |                |               | 170/170          |               |                      | AUO 32"           |                                                 |  |                       |
|    |                       |       |                |               | 176/176          |               |                      | AUO 37"           |                                                 |  |                       |
|    |                       |       |                |               | 170/170          |               |                      | CMO 27"           |                                                 |  |                       |
|    |                       |       |                |               | 176/176          |               |                      | CMO 32"           | - CR > 20                                       |  |                       |
|    |                       |       |                |               | 178/178          |               |                      | LPL 26", 32"      | - CR > 10                                       |  |                       |
|    |                       |       |                |               |                  |               |                      |                   |                                                 |  |                       |
| 3  | Color Coordinate      | White | X              | Typ.<br>-0.03 | 0.280            | Typ.<br>+0.03 |                      |                   | - CIE 1393<br>AUO 26, 37" (32")                 |  |                       |
|    |                       |       | Y              |               | 0.290            |               |                      |                   |                                                 |  |                       |
|    |                       | Red   | X              |               | 0.640            |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.330            |               |                      |                   |                                                 |  |                       |
|    |                       | Green | X              |               | 0.290<br>(0.270) |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.600            |               |                      |                   |                                                 |  |                       |
|    |                       | Blue  | X              |               | 0.150            |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.060            |               |                      |                   |                                                 |  |                       |
|    |                       | White | X              | Typ.<br>-0.03 | 0.285            | Typ.<br>+0.03 |                      |                   | CMO 27" (32")                                   |  |                       |
|    |                       |       | Y              |               | 0.293            |               |                      |                   |                                                 |  |                       |
|    |                       | Red   | X              |               | 0.646<br>(0.652) |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.332            |               |                      |                   |                                                 |  |                       |
|    |                       | Green | X              |               | 0.269<br>(0.270) |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.600<br>(0.589) |               |                      |                   |                                                 |  |                       |
|    |                       | Blue  | X              |               | 0.142<br>(0.141) |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.072<br>(0.068) |               |                      |                   |                                                 |  |                       |
|    |                       | White | X              | Typ.<br>-0.03 | 0.275<br>(0.285) | Typ.<br>+0.03 |                      |                   | LPL 26" (32")                                   |  |                       |
|    |                       |       | Y              |               | 0.279<br>(0.293) |               |                      |                   |                                                 |  |                       |
|    |                       | Red   | X              |               | 0.630<br>(0.640) |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.338<br>(0.343) |               |                      |                   |                                                 |  |                       |
|    |                       | Green | X              |               | 0.283<br>(0.280) |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.607<br>(0.605) |               |                      |                   |                                                 |  |                       |
|    |                       | Blue  | X              |               | 0.147<br>(0.145) |               |                      |                   |                                                 |  |                       |
|    |                       |       | Y              |               | 0.064<br>(0.065) |               |                      |                   |                                                 |  |                       |
|    |                       | 4     | Contrast ratio |               |                  |               | 800 / 1200<br>/ 1000 |                   |                                                 |  | AUO 26"/ 32" / 37"    |
|    |                       |       |                |               |                  |               | 600 / 1000           |                   |                                                 |  | CMO 27" / 32"         |
|    |                       |       |                |               |                  |               | 800 (1600)           |                   |                                                 |  | LPL 26, 32" (with AI) |

## 7. Component Video Input (Y, PB, PR)

| No  | Resolution | H-freq(kHz) | V-freq.(kHz) | Pixel clock(MHz) | Proposed                  |
|-----|------------|-------------|--------------|------------------|---------------------------|
| 1.  | 720x480    | 15.73       | 59.94        | 13.500           | SDTV, DVD 480I(525I)      |
| 2.  | 720x480    | 15.75       | 60.00        | 13.514           | SDTV, DVD 480I(525I)      |
| 3.  | 720x576    | 15.625      | 50.00        | 13.500           | SDTV, DVD 576I(625I) 50Hz |
| 4.  | 720x480    | 31.47       | 59.94        | 27.000           | SDTV 480P                 |
| 5.  | 720x480    | 31.50       | 60.00        | 27.027           | SDTV 480P                 |
| 6.  | 720x576    | 31.25       | 50.00        | 27.000           | SDTV 576P 50Hz            |
| 7.  | 1280x720   | 44.96       | 59.94        | 74.176           | HDTV 720P                 |
| 8.  | 1280x720   | 45.00       | 60.00        | 74.250           | HDTV 720P                 |
| 9.  | 1280x720   | 37.50       | 50.00        | 74.25            | HDTV 720P 50Hz            |
| 10. | 1920x1080  | 33.72       | 59.94        | 74.176           | HDTV 1080I                |
| 11. | 1920x1080  | 33.75       | 60.00        | 74.250           | HDTV 1080I                |
| 12. | 1920x1080  | 28.125      | 50.00        | 74.250           | HDTV 1080I 50Hz           |

## 8. RGB Input (PC)

| No | Resolution | H-freq(kHz) | V-freq.(kHz) | Pixel clock(MHz) | Proposed   | Remark   |
|----|------------|-------------|--------------|------------------|------------|----------|
| 1. | 640x350    | 31.468      | 70.09        | 25.17            | EGA        |          |
| 2. | 720x400    | 31.469      | 70.08        | 28.321           | DOS        |          |
| 3. | 640x480    | 31.469      | 59.94        | 25.17            | VESA(VGA)  |          |
| 4. | 800x600    | 37.879      | 60.31        | 40.00            | VESA(SVGA) |          |
| 5. | 1024x768   | 48.363      | 60.00        | 65.00            | VESA(XGA)  |          |
| 6. | 1280x768   | 47.776      | 59.87        | 79.50            | WXGA       | XGA only |
| 7. | 1360x768   | 47.720      | 59.799       | 84.75            | WXGA       | XGA only |
| 8. | 1366x768   | 47.720      | 59.799       | 84.75            | WXGA       | XGA only |

## 9. RGB input ( DTV )

| No | Resolution | H-freq(kHz) | V-freq.(kHz) | Pixel clock(MHz) | Proposed        |
|----|------------|-------------|--------------|------------------|-----------------|
| 1. | 720x480    | 31.47       | 59.94        | 27.000           | SDTV 480P       |
| 2. | 720x480    | 31.50       | 60.00        | 27.027           | SDTV 480P       |
| 3. | 720x576    | 31.25       | 50.00        | 27.000           | SDTV 576P 50Hz  |
| 4. | 1280x720   | 44.96       | 59.94        | 74.176           | HDTV 720P       |
| 5. | 1280x720   | 45.00       | 60.00        | 74.250           | HDTV 720P       |
| 6. | 1280x720   | 37.50       | 50.00        | 74.25            | HDTV 720P 50Hz  |
| 7. | 1920x1080  | 33.72       | 59.94        | 74.176           | HDTV 1080I      |
| 8. | 1920x1080  | 33.75       | 60.00        | 74.250           | HDTV 1080I      |
| 9. | 1920x1080  | 28.125      | 50.00        | 74.250           | HDTV 1080I 50Hz |

## 10. HDMI input (DTV)

| No  | Resolution | H-freq(kHz) | V-freq.(kHz) | Pixel clock(MHz) | Proposed                  |
|-----|------------|-------------|--------------|------------------|---------------------------|
| 1.  | 720x480    | 15.73       | 59.94        | 13.500           | SDTV, DVD 480I(525I)      |
| 2.  | 720x480    | 15.75       | 60.00        | 13.514           | SDTV, DVD 480I(525I)      |
| 3.  | 720x576    | 15.625      | 50.00        | 13.500           | SDTV, DVD 576I(625I) 50Hz |
| 4.  | 720x480    | 31.47       | 59.94        | 27.000           | SDTV 480P                 |
| 5.  | 720x480    | 31.50       | 60.00        | 27.027           | SDTV 480P                 |
| 6.  | 720x576    | 31.25       | 50.00        | 27.000           | SDTV 576P 50Hz            |
| 7.  | 1280x720   | 44.96       | 59.94        | 74.176           | HDTV 720P                 |
| 8.  | 1280x720   | 45.00       | 60.00        | 74.250           | HDTV 720P                 |
| 9.  | 1280x720   | 37.50       | 50.00        | 74.25            | HDTV 720P 50Hz            |
| 10. | 1920x1080  | 33.72       | 59.94        | 74.176           | HDTV 1080I                |
| 11. | 1920x1080  | 33.75       | 60.00        | 74.250           | HDTV 1080I                |
| 12. | 1920x1080  | 28.125      | 50.00        | 74.250           | HDTV 1080I 50Hz           |

# ADJUSTMENT INSTRUCTION

## 1. Application Range

This spec sheet is applied all of the 26/32" LCD TV, LP61A/C, LN61A chassis (HURRICANE 3 MIDDLE) by manufacturing LG TV Plant all over the world.

## 2. Specification

- 2.1 Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
- 2.2 Adjustment must be done in the correct order.
- 2.3 The adjustment must be performed in the circumstance of  $25 \pm 5^\circ\text{C}$  of temperature and  $65 \pm 10\%$  of relative humidity if there is no specific designation.
- 2.4 The input voltage of the receiver must keep 100~220V, 50/60Hz.
- 2.5 Before adjustment, execute Heat-Run for 30 minutes at RF no signal.

## 3. Adjustment items

### 3.1 PCB assembly adjustment items

- Download the VCTP main software (IC601, VCPT)
- Channel memory (IC603, EEPROM)
- Colorcarrier Adjustment

### 3.2 SET assembly adjustment items

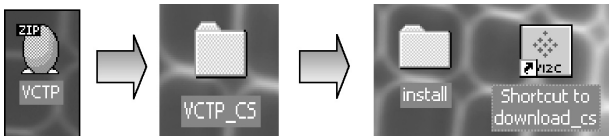
- DDC Data input.
- Adjustment of White Balance.
- Factoring Option Data input.

## 4. PCB assembly adjustment

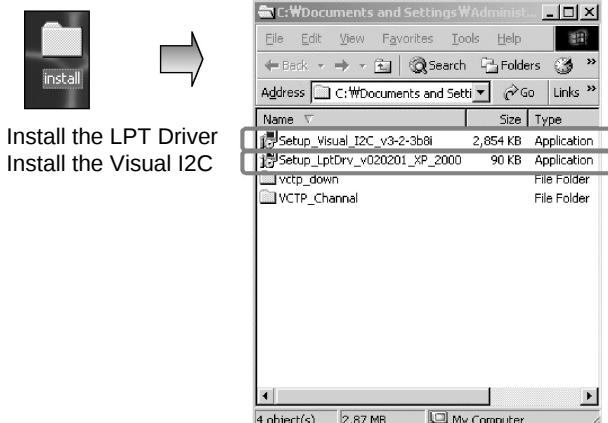
### 4.1 PCB assembly adjustment method (Using VCTP Download program)

#### 4.1.1. Download program installation

##### (1) Extract a Zip file



##### (2) Visual I2C & LPT Driver Installation



Install the LPT Driver  
Install the Visual I2C

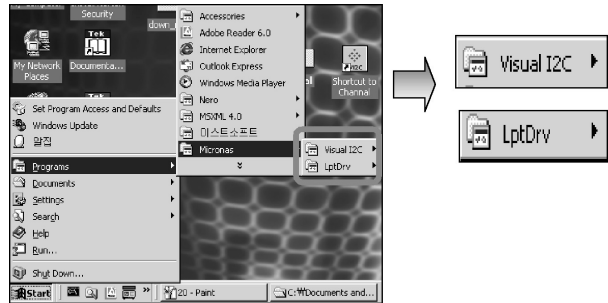
LPT Port Driver (LptDrv) Setups : Program Files > Micronas > Visual I2C > Port\_Driver

\*Use for Windows 95/98 : Setup\_LptDrv\_v0104\_9x.exe

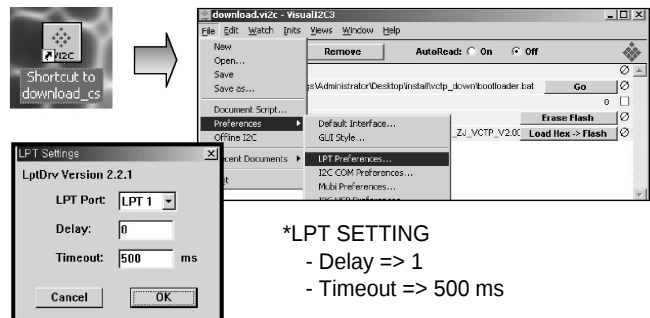
\*Use for Windows 2000/XP : Setup\_LptDrv\_v0202\_XP\_2000.exe

\*Use for Windows NT : Setup\_LptDrv\_v0104\_NT.exe

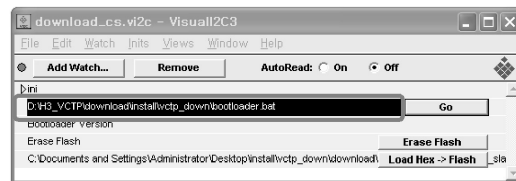
##### (3) Verification (Start > Programs > Micronas > Visual I2C or LptDrv)



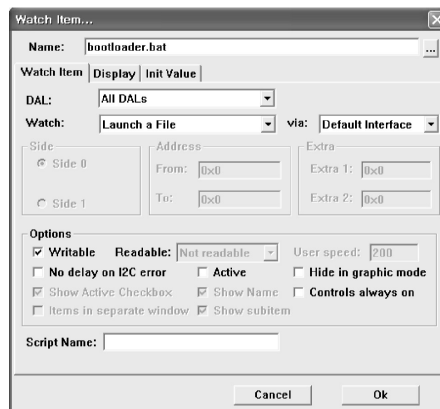
##### (4) LPT delay setting (File > Preference > LPT preferences)



##### (5) Exchange the bootloader.bat file



=> Double click the Box area.

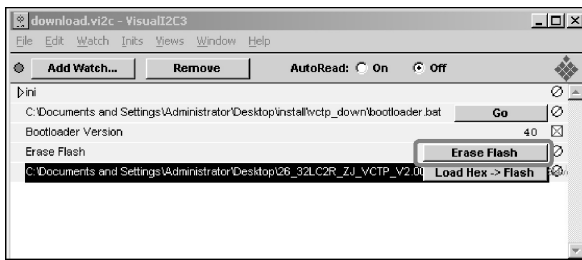


=> Double click the Box area.

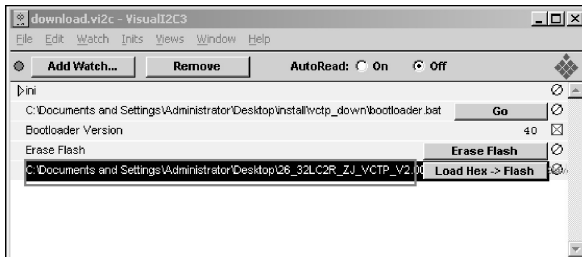




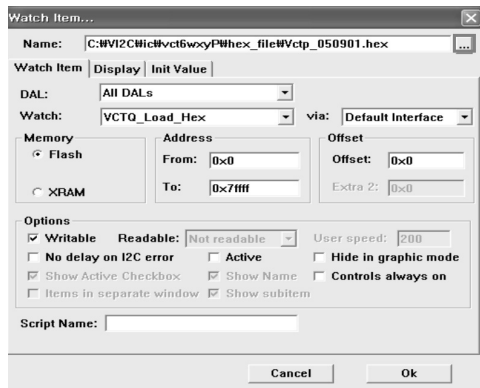
(6) Click the "Erase Flash" button



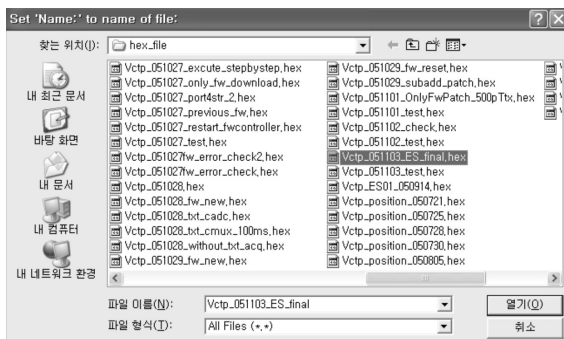
(7) Double click the download file low then, "edit" window will be opened



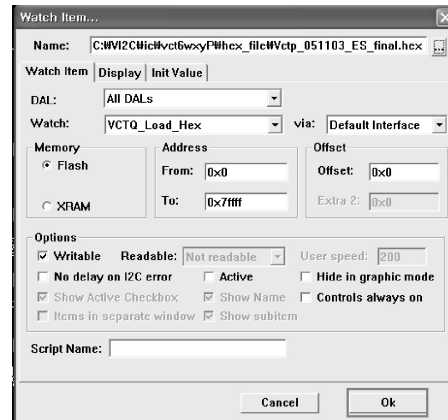
(8) Click the choice button I n the "edit window", then "file choice window" will be opened



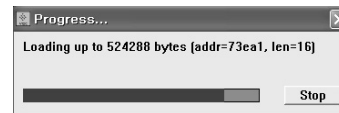
(9) Choose the Hex file in folder and execute downloading with click "open button"



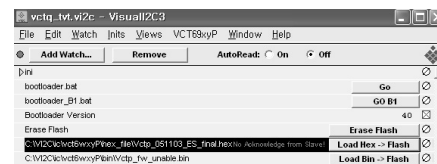
(10) Click OK button at the "edit window"



(11) Under Downloading progress

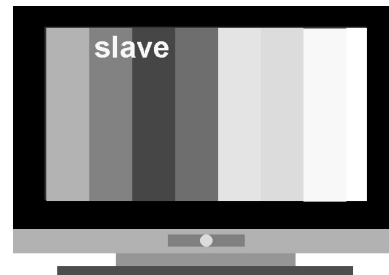


(12) If download is failed, for example "No acknowledge from slave", execute download again from (1)

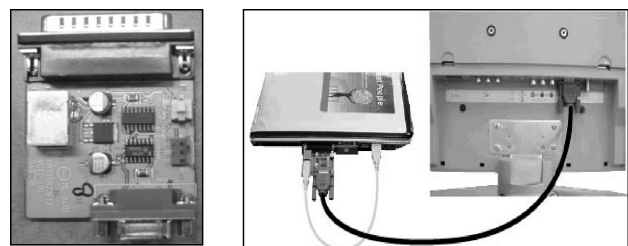


#### 4.1.2.2 Download method 3 (SET)

(1) Push the "Tilt" button in an Adjust Remocon Then the LCD TV will change a "slave mode"



(2) Connect Zig to TV using a D-sub cable



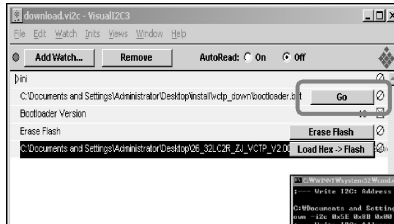
- (3) Execute 'Download\_CS.vi2c' program in PC, then a main window will be opened.



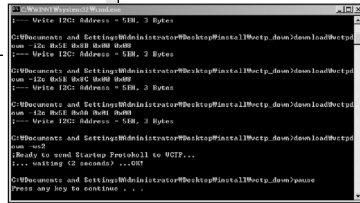
Double click



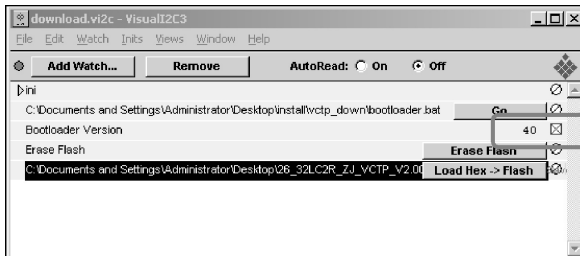
- (4) Click "GO" button



If you don't push the "go", the Hex file would not be downloaded although the download proceeds normally at first glance



- (5) Double click the blue box and confirm "Bootloader Version" as 40.



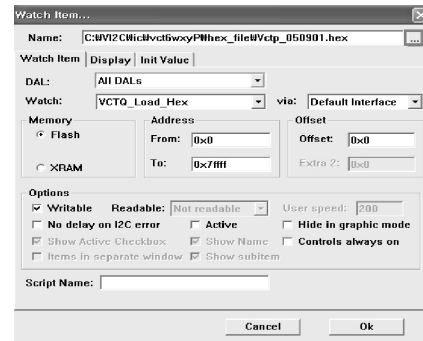
- (6) Click the "Erase Flash" button



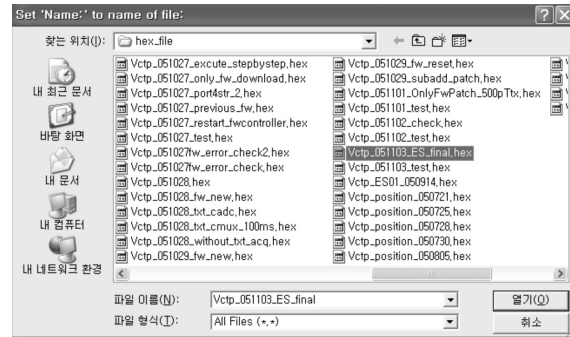
- (7) Double click the download file low then, "edit" window will be opened



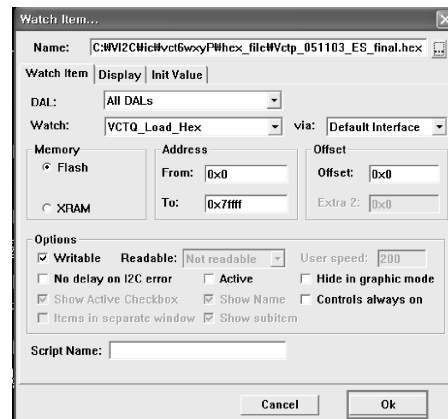
- (8) Click the choice button I n the "edit window", then "file choice window" will be opened



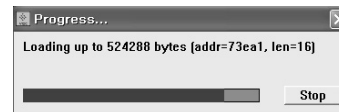
- (9) Choose the Hex file in folder and execute downloading with click "open button"



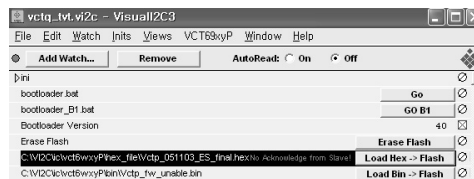
- (10) Click OK button at the "edit window"



- (11) Under Downloading progress



- (12) If download is failed, for example "No acknowledge from slave", execute download again from (1)

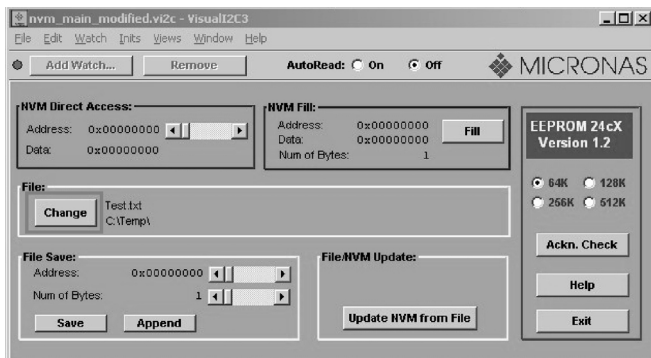


#### 4.1.2. Channel memory download

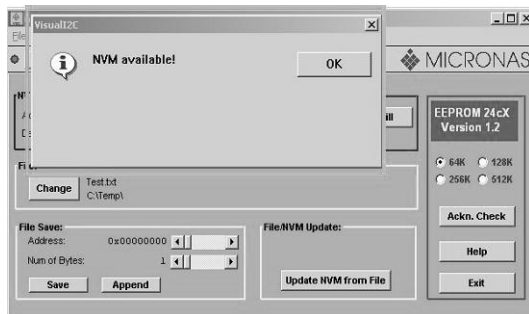
- (1) Connect the download jig to D-sub jack
- (2) Execute 'Channel.vi2c' program in PC, then a main window will be opened.



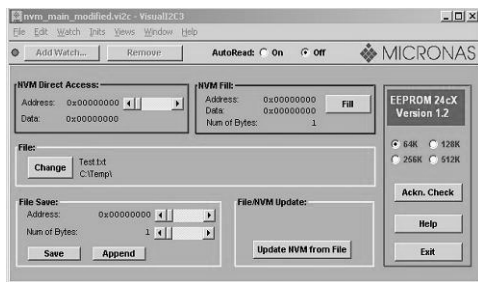
- (3) Push the button change and select the Channel memory data



- (4) Check the communication is OK or not.  
=> Push the Read area (Ackn. Check) and check Cyan area is OK message.



- (5) Push the Update NVM from File



#### 4.1.3. Tool Option Area Option Change

Before PCBA check, have to change the Tool option and Area option

Option values are below

(If on changed the option, the input menu can differ the model spec.)

The input methods are same as other chassises(Use adj Key on the Adjust Remocon)

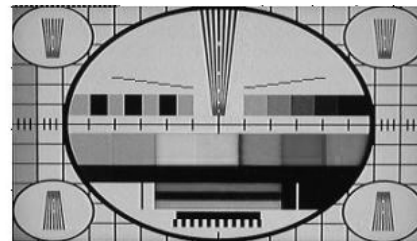
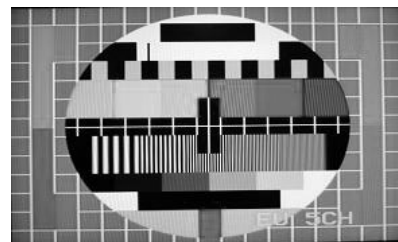
| Tool Option |       |       |       |
|-------------|-------|-------|-------|
| Inch        | ZJ    | TJ    | CJ    |
| 26          | 30228 | 25620 | 25620 |
| 32          | 30229 | 25621 | 25621 |
| 37          | -     | -     | 25622 |
| Area Option | 17    | 20    | 23    |

#### 4.1.4. Colorcarrier Adjustment(Inspection process)

##### a. Tuning the RF signal

ZJ, TJ, CJ : PAL Philips Pattern(with color Bar)

MJ : NTSC Digital Pattern(with color Bar)



- push the "adj" key in the adjustment remocon.

#### 4.2 SET assembly adjustment method

**\*Caution :** Each PCB assembly must be checked by check JIG set.(Because power PCB Assembly damages to LCD Module, especially be careful)

##### 4.2.1 EDID(The Extended Display Identification Data ) / DDC(Display Data Channel) download

**\* Caution**

- Use the proper signal cable for EDID Download

**\* Caution:** - Never connect HDMI & D-SUB Cable at the same time.

- Use the proper cables below for EDID Writing

<EDID DATA Analog Set : 128bytes>

|                | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | A  | B  | C  | D  | E  | F  |
|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|                | 00 | 00 | FF | FF | FF | FF | FF | 00 | 1E | 6D | Ⓐ  |    |    |    | Ⓑ  |    |
|                | 10 | Ⓒ  | 01 | 03 | 08 | 46 | 27 | 78 | 0A | D9 | B0 | A3 | 57 | 49 | 9C | 25 |
|                | 20 | 11 | 49 | 4B | A1 | 08 | 00 | 31 | 40 | 01 | 01 | 01 | 01 | 45 | 40 | 01 |
|                | 30 | 61 | 40 | 01 | 01 | 01 | 01 | 1B | 21 | 50 | A0 | 51 | 00 | 1E | 30 | 48 |
|                | 40 | 35 | 00 | BC | 88 | 21 | 00 | 00 | 1C | 4E | 1F | 00 | 80 | 51 | 00 | 1E |
|                | 50 | 40 | 80 | 37 | 00 | BC | 88 | 21 | 00 | 00 | 18 | 00 | 00 | 00 | FD | 00 |
|                | 60 | 3F | 1F | 32 | 09 | 00 | 0A | 20 | 20 | 20 | 20 | 20 | 20 | 00 | 00 | FC |
| 2R series      | 70 | 00 |    |    |    |    | Ⓓ  |    |    |    | 0A | 20 | 20 | 20 | 00 | Ⓔ  |
| 2RA/2RB series | 70 | 00 |    |    |    |    | Ⓓ  |    |    |    | 0A | 20 | 20 | 20 | 00 | Ⓔ  |

[LC2R SERIES & LC2RA/LC2RB SEIRIES ONLY different 70 Line because of Model name]

< EDID DATA HDMI Set : 256bytes>

|                |    |     |     |    |    |    |    |    |    |    |     |    |    |     |    |     |
|----------------|----|-----|-----|----|----|----|----|----|----|----|-----|----|----|-----|----|-----|
|                | 0  | 1   | 2   | 3  | 4  | 5  | 6  | 7  | 8  | 9  | A   | B  | C  | D   | E  | F   |
|                | 00 | 00  | FF  | FF | FF | FF | FF | 00 | 1E | 6D | (a) |    |    | (b) |    |     |
|                | 10 | (c) | 01  | 03 | 80 | 5C | 34 | 96 | 0A | F3 | 30  | A7 | 54 | 42  | AA | 26  |
|                | 20 | 0F  | 48  | 4C | 00 | 00 | 01 | 01 | 01 | 01 | 01  | 01 | 01 | 01  | 01 | 01  |
|                | 30 | 01  | 01  | 01 | 01 | 01 | 8C | 0A | D0 | 8A | 20  | E0 | 2D | 10  | 10 | 3E  |
|                | 40 | 96  | 00  | C4 | 8E | 21 | 00 | 00 | 18 | 00 | 00  | 00 | FC | 00  |    |     |
| 2R series      | 50 |     | (d) |    |    |    |    | 0A | 20 | 20 | 20  | 00 | 00 | 00  | FD | 00  |
| 2RA/2RB series | 50 |     | (d) |    |    |    |    | 0A | 20 | 20 | 20  | 00 | 00 | 00  | FD | 00  |
|                | 60 | 41  | 19  | 32 | 08 | 00 | 0A | 20 | 20 | 20 | 20  | 20 | 00 | 00  | 00 | 00  |
|                | 70 | 00  | 00  | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00  | 00 | 00 | 00  | 01 | (e) |
|                |    | 0   | 1   | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9   | A  | B  | C   | D  | E   |
|                | 00 | 02  | 03  | 1C | 72 | 23 | 09 | 07 | 02 | 49 | 07  | 16 | 81 | 03  | 05 | 14  |
|                | 10 | 12  | 04  | 83 | 01 | 00 | 00 | 65 | 03 | 0C | 00  | 10 | 00 | 01  | 1D | 80  |
|                | 20 | 71  | 1C  | 16 | 20 | 58 | 2C | 25 | 00 | C4 | 8E  | 21 | 00 | 00  | 9E | 01  |
|                | 30 | 80  | D0  | 72 | 1C | 16 | 20 | 10 | 2C | 25 | 80  | C4 | 8E | 21  | 00 | 00  |
|                | 40 | 01  | 1D  | 00 | BC | 52 | D0 | 1E | 20 | B8 | 28  | 55 | 40 | C4  | 8E | 21  |
|                | 50 | 00  | 1E  | 8C | 0A | D0 | 90 | 20 | 40 | 31 | 20  | 0C | 40 | 55  | 00 | C4  |
|                | 60 | 21  | 00  | 00 | 18 | 01 | 1D | 00 | 72 | 51 | D0  | 1E | 20 | 6E  | 28 | 55  |
|                | 70 | C4  | 8E  | 21 | 00 | 00 | 1E | 00 | 00 | 00 | 00  | 00 | 00 | 00  | 00 | 2F  |

[LC2R SERIES & LC2RA/LC2RB SEIRIES ONLY different 70 Line because of Model name]

=> Detail EDID Options are below(a, b, c, d, e)

a. Product ID

| Model Name | Product ID |      |            |
|------------|------------|------|------------|
|            | DEC        | HEX  | EDID table |
| 26LC2R     | 22045(A)   | 561D | 1D56       |
|            | 22046(D)   | 561E | 1E56       |
| 26LC2RA    | 22047(A)   | 561F | 1F56       |
|            | 22048(D)   | 5620 | 2056       |
| 26LC2RB    | 22049(A)   | 5621 | 2156       |
|            | 22050(D)   | 5622 | 2256       |
| 32LC2R     | 30057(A)   | 7569 | 6975       |
|            | 30058(D)   | 756A | 6A75       |
| 32LC2RA    | 30079(A)   | 757F | 7F75       |
|            | 30080(D)   | 7580 | 8075       |
| 32LC2RB    | 30081(A)   | 7581 | 8175       |
|            | 30082(D)   | 7582 | 8275       |
| 37LC2R     | 30059(A)   | 756B | 6B75       |
|            | 30060(D)   | 756C | 6C75       |

b. Serial No : Controlled on production line

c. Month, Year : Controlled on production line

ex) Montly: '03' => '03'

Year: '2005' => '0F'

d. Model Name(Hex):

| Model Name | Model Name(HEX) |    |    |    |    |    |    |       |
|------------|-----------------|----|----|----|----|----|----|-------|
| 26LC2R-ZJ  | 32              | 36 | 4C | 43 | 32 | 52 | 2D | 5A 4A |
| 32LC2R-ZJ  | 33              | 32 | 4C | 43 | 32 | 52 | 2D | 5A 4A |

e. Checksum: Changeable by total EDID data

## 6. Adjustment of White Balance

\* In case of White Balance rework, you have to RESET the previous White Balance data.

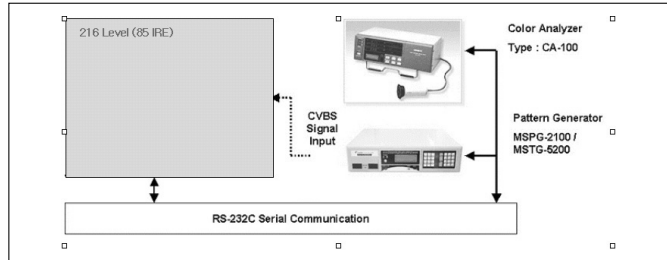
(You can do that by pushing the "IN-START" key in adjust remocoon and reset)

### 6.1 Required Equipment

- Remote controller for adjustment
- I Color Analyzer (CA-110 or CA-210 or same product; ch : 9)
- Auto W/B adjustment instrument(only for Auto adjustment)
- AV Pattern Generator
  - ZJ, TJ, CJ – model : 202(PAL-BDGH), pattern:78(216 Gray)
  - MJ – model : 207 (NTSC-J), pattern : 78 (216 Gray)

### 6.2 Connecting diagram of equipment for measuring (For Automatic Adjustment)

[Push the "POWER ON" key at the Adjust Remocoon before Adjustment of W/B, the Baud rate & PSM, CSM will change 115200bps, Standard (MJ: Optimum), Normal]



# Auto adjustment Map(RS-232C)

| Communication    | Type         | LP61A/C, LN61A |       |          |           |           |  |
|------------------|--------------|----------------|-------|----------|-----------|-----------|--|
|                  | Baud Rate    | Data bit       |       | Stop bit |           | Parity    |  |
|                  | 115200       | 8              |       | 1        |           | None      |  |
| Protocol Setting | Index        | Cmd 1          | Cmd 2 | Data     | Min Value | Max Value |  |
|                  | Input Select | xb             | b     |          |           |           |  |
|                  | R Gain       | j              | a     |          | 00(00)    | 255(FF)   |  |
|                  | G Gain       | j              | b     |          | 00(00)    | 255(FF)   |  |
|                  | B Gain       | j              | c     |          | 00(00)    | 255(FF)   |  |
|                  | R Offset     | j              | d     |          | 00(00)    | 255(FF)   |  |
|                  | G Offset     | j              | e     |          | 00(00)    | 255(FF)   |  |
|                  | B Offset     | j              | f     |          | 00(00)    | 255(FF)   |  |

### 6.3 Adjustment of White Balance (For Manual adjustment)

- Operate the zero-calibration of the CA-110, then stick sensor to LCD module when you adjust.
- For manual adjustment, it is also possible by the following sequence

1) Select RF no signal by pressing **POWER ON** key on remote control for adjustment then operate heat run more than 15 minutes.

(If not executed this step, the condition for W/B will be differ. The W/B condition is PSM : Standard (MJ : Optimum), CSM : Normal.)

2) As below Fig. 7, Supply 216Level (85 IRE) full screen pattern to Video input.

26/32LC2R/2RA/2RB-ZJ : AV3 or AV4(Input 50Hz)

26/32LC2R-TJ : AV1or AV2(Input 50Hz),

26/32/37LC2R-CJ : AV1 or AV2 (Input 50Hz)

26,32LC2R-MJ : VIDEO1 or VIDEO2 (Input 60Hz)

3) Press the POWER ON KEY on R/C for converting input mode.

4) Enter the White Balance adjustment mode by pressing the IN-START key (White Balance) on R/C.

5) Stick sensor to center of the screen and select each items (Red/Green/Blue Gain and Offset) using ▲/▼ (CH +/-) key on R/C..

6) Adjust Only High Light with R Gain / B Gain using ◀/▶ (VOL +/-) key on R/C.

7) Adjust it until color coordination becomes as below.  
(Initially, R/G/B gain and R/G/B offset values are fixed as below)

Red Gain : 80 , Green Gain : 80 , Blue Gain : 80

Red Offset : 80 , Green Offset : 80 , Blue Offset : 80

# Target Value [PSM: Standard(ZJ, TJ, CJ), Optimum(MJ), CSM: Normal]

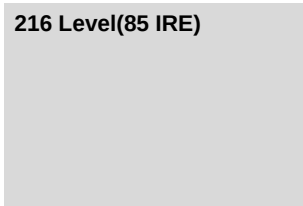
-Normal (9300K) x ; 0.283±0.003 y ; 0.298±0.003

=> Reference Value(Automatically fixed)

- Cool(11000K): x:0.274±0.003, y: 0.286±0.003

- Warm(7200K) : x:0.303±0.003, y: 0.319±0.003

216 Level(85 IRE)



Pattern for Adjustment of White Balance

8) When adjustment is completed, Exit adjustment mode using EXIT key on R/C

### 6.4 Input the Shipping Option Data

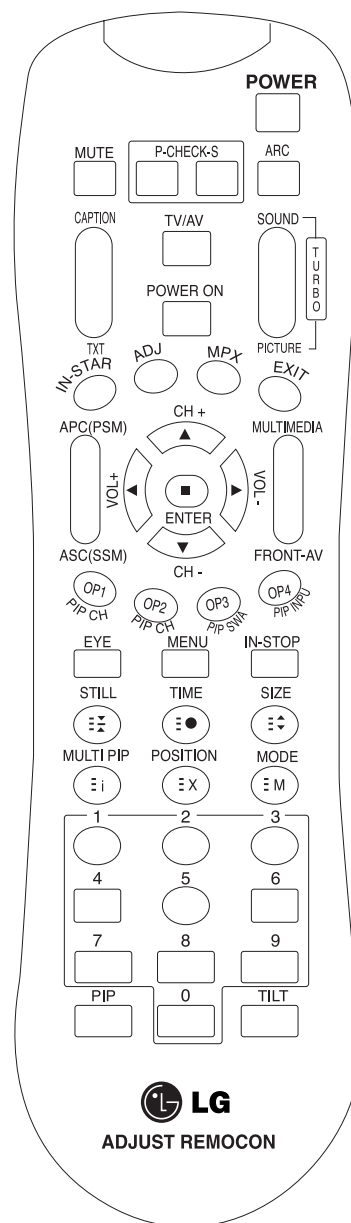
- 1) Push the ADJ key in a Adjust Remocon.
- 2) Input the Option Number that was specified in the BOM, into the Shipping area.
- 3) The work is finished, Push ■ Key

## 7. Shipping Conditions

| No | Item    |                    | Setting           |            | Remarks                       |
|----|---------|--------------------|-------------------|------------|-------------------------------|
| 1. | Station | Auto Programme     | System            | BG         |                               |
|    |         |                    | Storage from      | 1          |                               |
|    |         |                    | Search            | To start   |                               |
|    |         | Manual Programme   | Storage           | 1          |                               |
|    |         |                    | System            | BG         |                               |
|    |         |                    | Band              | V/UHF      |                               |
|    |         |                    | Channel           | 69         |                               |
|    |         |                    | Fine              | ◀ / ▶      |                               |
|    |         |                    | Search            | ◀ / ▶      |                               |
|    |         |                    | Name              | -----      |                               |
|    |         | Programme Edit     | To set            |            |                               |
|    |         | Favorite programme | -- -----          |            |                               |
|    |         | Ch memory          | TBD               |            | TBD                           |
| 2. | Picture | PSM                | Dynamic           |            |                               |
|    |         | CSM                | Normal            | For ZJ     |                               |
|    |         |                    | Cool              | For TJ, CJ |                               |
|    |         |                    |                   | For MJ     |                               |
|    |         | XD                 | Auto              |            |                               |
|    |         | Advanced           | Cinema : Off      |            |                               |
|    |         |                    | Black Level : Low |            | Available For HDMI            |
| 3. | Sound   | Reset              | To Set            |            |                               |
|    |         | SSM                | Flat              |            |                               |
|    |         | AVL                | Off               |            |                               |
| 4. | Time    | TV Speaker         | On                |            |                               |
|    |         | Clock              | --: --            |            |                               |
|    |         |                    | Off Time          | --: --     |                               |
|    |         |                    | Off               |            |                               |
|    |         | On Time            | --: --            |            |                               |
|    |         |                    | PR 1              |            |                               |
|    |         |                    | Vol. 30           |            |                               |
|    |         |                    | Off               |            |                               |
| 5. | Special | Auto Sleep         | Off               |            |                               |
|    |         | Language           | English           |            | Following Buyer's demand, PR  |
|    |         | Child Lock         | Off               |            |                               |
|    |         | Set ID             | 1                 |            |                               |
| 6. | Screen  | XD Demo            | To Start          |            |                               |
|    |         | Auto Config.       | To Set            |            | Available For RGB-PC mode     |
|    |         | Manual Config.     | Phase             | 0          | Available For RGB-PC mode     |
|    |         |                    | Clock             | 0          |                               |
|    |         |                    | H-Position        | 0          | Available For RGB mode        |
|    |         |                    | V-Position        | 0          |                               |
|    |         | XGA Mode           | 1024x768          |            | Available for RGB-PC XGA 60Hz |
|    |         | ARC                | 16:9              |            |                               |
|    |         | Reset              | To set            |            |                               |

# SVC REMOCON

| NO | KEY            | FUNTION                                                                                                                                                             | REMARK                                                  |
|----|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1  | POWER          | To turn the TV on or off                                                                                                                                            |                                                         |
| 2  | POWER ON       | To turn the TV on automatically if the power is supplied to the TV. (Use the POWER key to deactivate): It should be deactivated when delivered.                     |                                                         |
| 3  | MUTE           | To activate the mute function.                                                                                                                                      |                                                         |
| 4  | P-CHECK        | To check TV screen image easily.                                                                                                                                    | Shortcut keys                                           |
| 5  | S-CHECK        | To check TV screen sound easily                                                                                                                                     | Shortcut keys                                           |
| 6  | ARC            | To select size of the main screen (Normal, Spectacle, Wide or Zoom)                                                                                                 | Shortcut keys                                           |
| 7  | CAPTION        | Switch to closed caption broadcasting                                                                                                                               |                                                         |
| 8  | TXT            | To toggle on/off the teletext mode                                                                                                                                  |                                                         |
| 9  | TV/AV          | To select an external input for the TV screen                                                                                                                       |                                                         |
| 10 | TURBO SOUND    | To start turbo sound                                                                                                                                                |                                                         |
| 11 | TURBO PICTURE  | To start turbo picture                                                                                                                                              |                                                         |
| 12 | IN-START       | To enter adjustment mode when manufacturing the TV sets.                                                                                                            | Use the AV key to enter the screen W/B adjustment mode. |
|    |                | To adjust the screen voltage (automatic):<br>In-start → mute → Adjust → AV(Enter into W/B adjustment mode)                                                          |                                                         |
|    |                | W/B adjustment (automatic):<br>After adjusting the screen → W/B adjustment → Exit two times (Adjustment completed)                                                  |                                                         |
|    |                |                                                                                                                                                                     |                                                         |
| 13 | ADJ            | To enter into the adjustment mode. To adjust horizontal line and sub-brightness.                                                                                    |                                                         |
| 14 | MPX            | To select the multiple sound mode (Mono, Stereo or Foreign language)                                                                                                |                                                         |
| 15 | EXIT           | To release the adjustment mode                                                                                                                                      |                                                         |
| 16 | APC(PSM)       | To easily adjust the screen according to surrounding brightness                                                                                                     |                                                         |
| 17 | ASC(SSM)       | To easily adjust sound according to the program type                                                                                                                |                                                         |
| 18 | MULTIMEDIA     | To check component input                                                                                                                                            | Shortcut keys                                           |
| 19 | FRONT-AV       | To check the front AV                                                                                                                                               | Shortcut keys                                           |
| 20 | CH ±           | To move channel up/down or to select a function displayed on the screen.                                                                                            |                                                         |
| 21 | VOL ±          | To adjust the volume or accurately control a specific function.                                                                                                     |                                                         |
| 22 | ENTER          | To set a specific function or complete setting.                                                                                                                     |                                                         |
| 23 | PIP CH-(OP1)   | To move the channel down in the PIP screen.<br>To use as a red key in the teletext mode                                                                             |                                                         |
| 24 | PIP CH+(OP2)   | To move the channel in the PIP screen<br>To use as a green key in the teletext mode                                                                                 |                                                         |
| 25 | PIP SWAP(OP3)  | To switch between the main and sub screens<br>To use as a yellow key in the teletext mode                                                                           |                                                         |
| 26 | PIP INPUT(OP4) | To select the input status in the PIP screen<br>To use as a blue key in the teletext mode                                                                           |                                                         |
| 27 | EYE            | To set a function that will automatically adjust screen status to match the surrounding brightness so natural color can be displayed.                               |                                                         |
| 28 | MENU           | To select the functions such as video, voice, function or channel.                                                                                                  |                                                         |
| 29 | IN-STOP        | To set the delivery condition status after manufacturing the TV set.                                                                                                |                                                         |
| 30 | STILL          | To halt the main screen in the normal mode, or the sub screen at the PIP screen.<br>Used as a hold key in the teletext mode (Page updating is stopped.)             |                                                         |
| 31 | TIME           | Displays the teletext time in the normal mode<br>Enables to select the sub code in the teletext mode                                                                |                                                         |
| 32 | SIZE           | Used as the size key in the PIP screen in the normal mode<br>Used as the size key in the teletext mode                                                              |                                                         |
| 33 | MULTI PIP      | Used as the index key in the teletext mode (Top index will be displayed if it is the top text.)                                                                     |                                                         |
| 34 | POSITION       | To select the position of the PIP screen in the normal mode<br>Used as the update key in the teletext mode (Text will be displayed if the current page is updated.) |                                                         |
| 35 | MODE           | Used as Mode in the teletext mode                                                                                                                                   |                                                         |
| 36 | PIP            | To select the simultaneous screen                                                                                                                                   |                                                         |
| 37 | TILT           | To adjust screen tilt                                                                                                                                               | Shortcut keys                                           |
| 38 | 0~9            | To manually select the channel.                                                                                                                                     |                                                         |



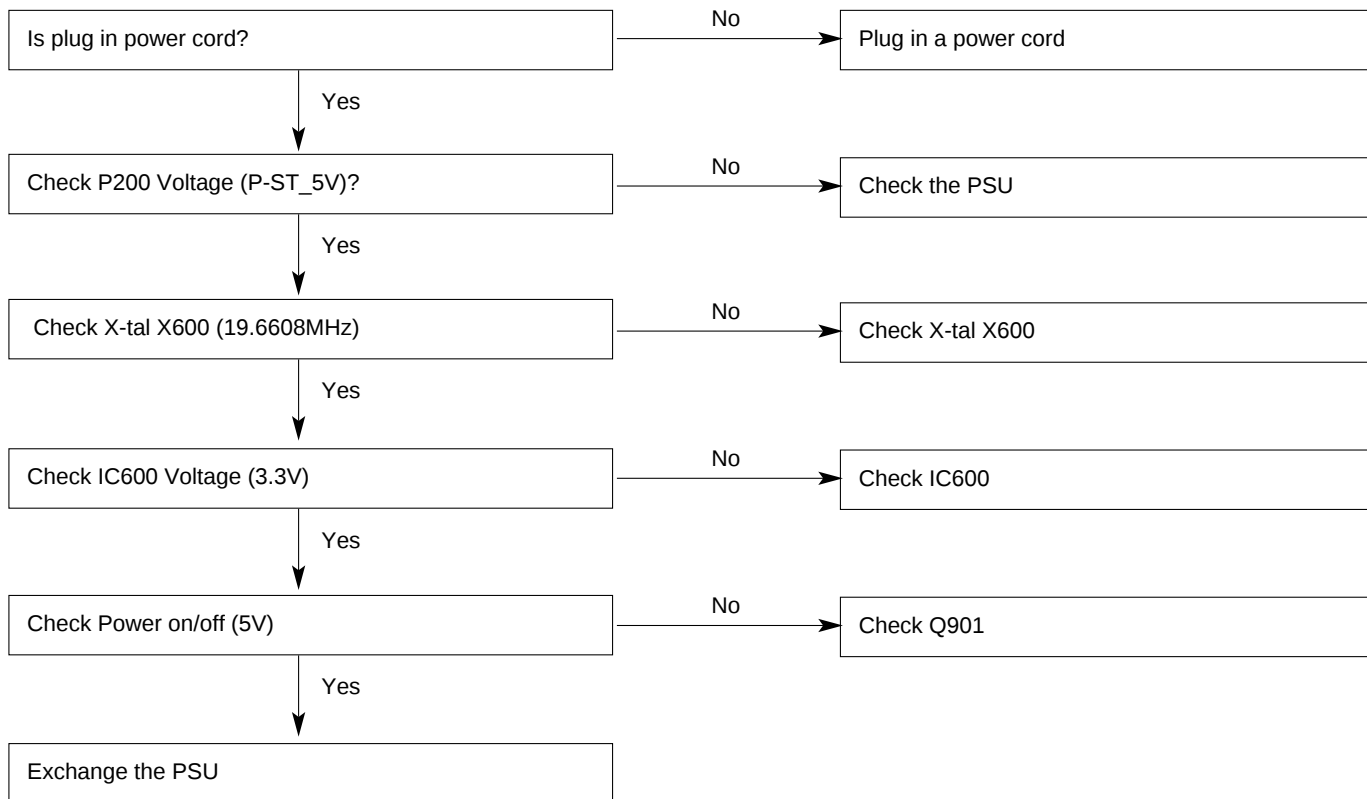
# TROUBLESHOOTING

## 1. No power

### (1) Symptom

- 1) Front LED is No light
- 2) The Set doesnt discharge little

### (2) Check process



## 2. No picture

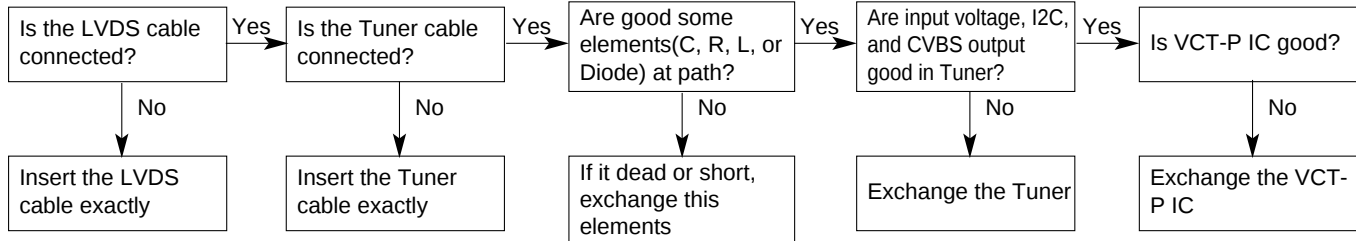
### (1) Symptom

- 1) Some mode doesn't display.
- 2) Front LED is green
- 3) The set still discharges a little

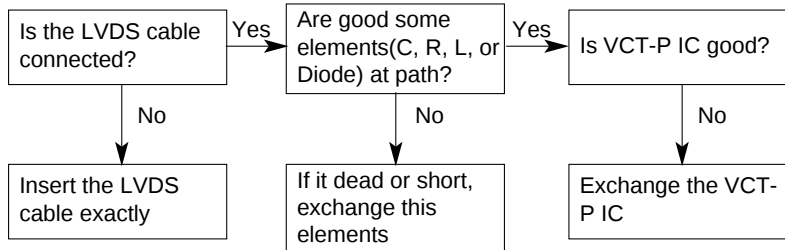


### (2) Check follow

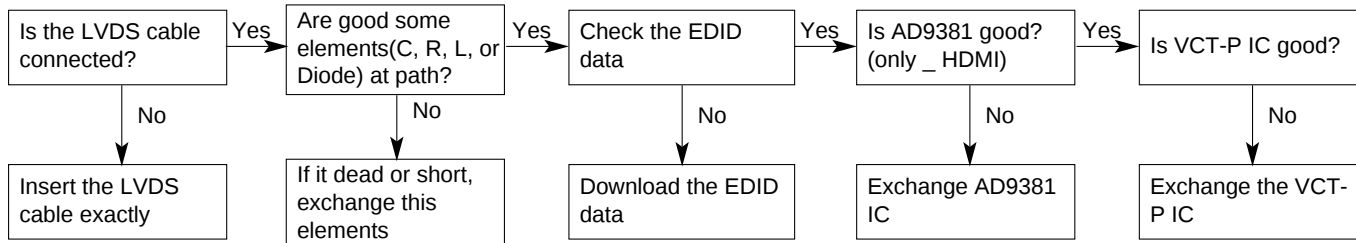
- 1) RF-mode doesn't display



- 2) AV/Component-mode doesn't display



- 3) RGB/HDMI-mode doesn't display



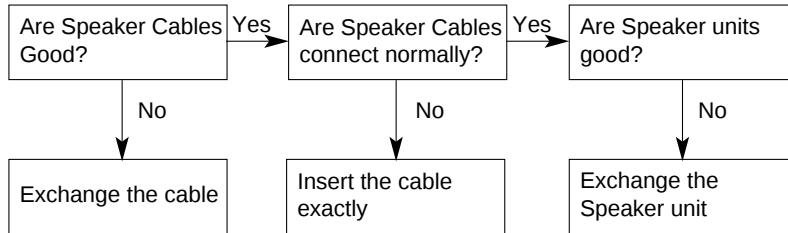
### 3. No Sound

#### (1) Symptom

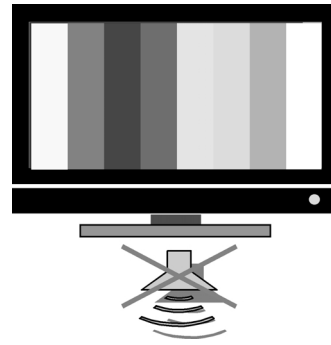
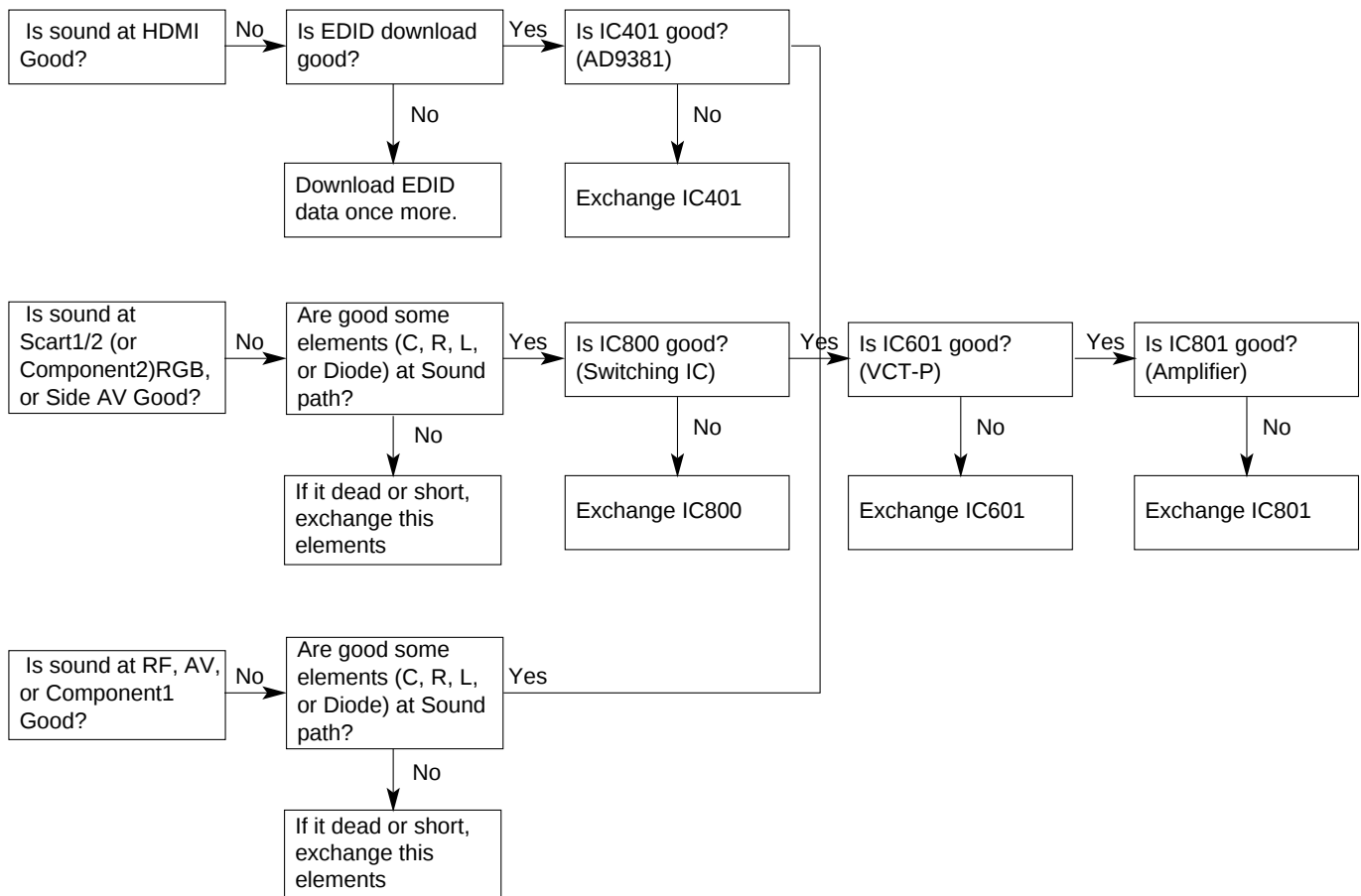
- 1) Front LED is Green
- 2) The Set display a screen, but a sound doesn't output

#### (2) Check follow

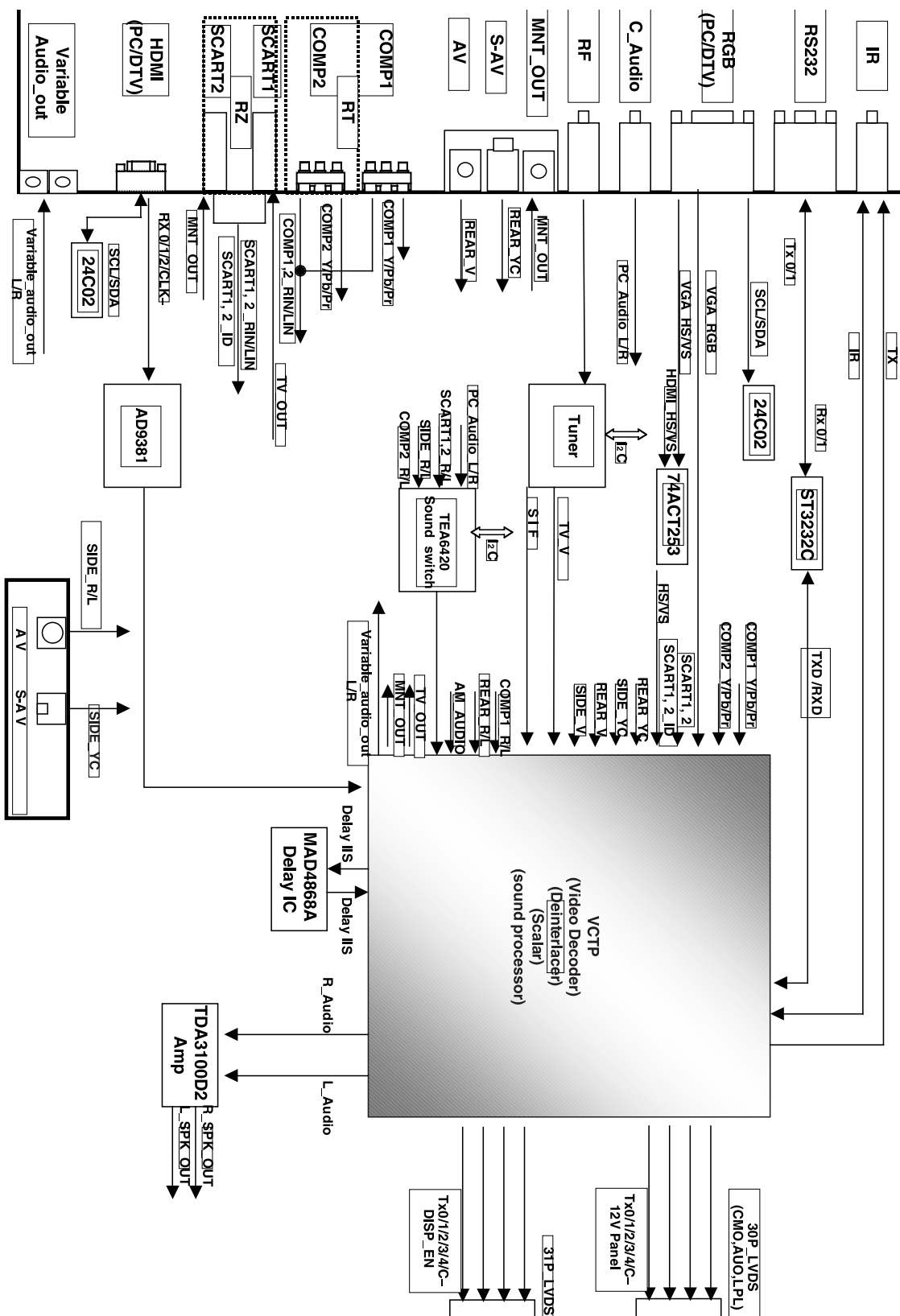
##### 1) Speaker part



##### 2) Main board part



## BLOCK DIAGRAM



# BLOCK DIAGRAM DESCRIPTION

## 1. Video control and display data

Video signal is received from TUNER, AV port(AV1,AV2,S-Video) and goes to the one-chip video decoder (VCTi) which separate the R,G,B signal and passes on the signal to AD converter(AD9883) through the video switch(SM5301). Component signal(YPbPr) from side-jack is also passed to video switch(SM5301) and Micom will select the desired signal(RGB from VCTi or Component from side jack).

The AD9883 converts 4:4:4 video format into digital and gives output to the Picture Enhancer (FLI2300). This picture enhancer improves the quality of the picture by changing the level of RGB/YPbPr signals. The output of this enhancer chip is fed to the deinterlacer, which in turn goes to the Scalar (GM5221). The scalar gives the output on the LVDS cable which is connected to LCD module.

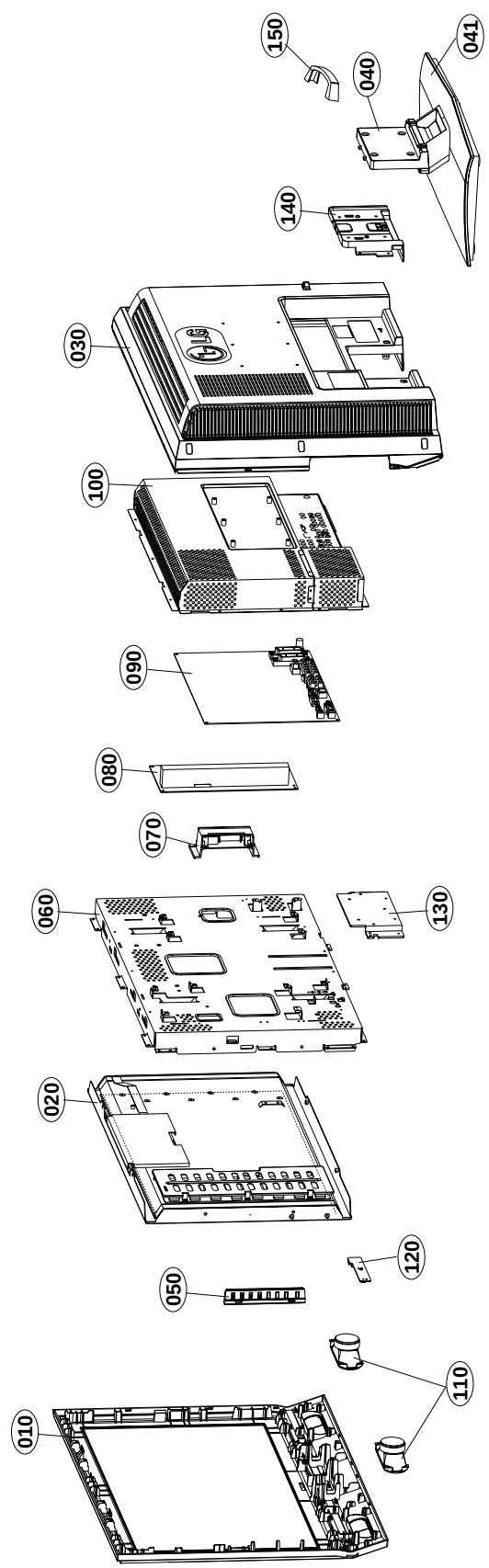
VCTi acts as a micom and is responsible for video processing and audio signal processing. It accepts the RF preprocessed signal(IF signal) from tuner/SAW-Filter and separates sound and picture from it.

Scaler is responsible for regulating the timing of signal to LCD panel and size and location of the signal. Graphic control accepts the PC(Analog RGB) and DVI-D (Digital) signal. The signal of PC input is connected to analog port in Scaler and the signal of DVI-D input is connected to digital port. Thus it receives two input and switch between them to give output at the LVDS which in turn gives output at the LCD module.

## 2. Power

The power board supplies a DC voltage of 33V(main power), 24V(Stand\_by power), 12V(Stand\_by power) to the main board. Main power is only available after power-on and Stand\_by is always available. 33V is used by the tuner and 24V is used directly by the inverter and the sound amplifier IC. 24V also is converted into 5V-Main Power and 5V-Stand\_by by a DC/DC Converter(MP1593). The 5V is changed into 3.3V and 1.8V by a regulator. Both voltages(3.3V, 1.8V ) is used by VCTi, Scaler, FLI2300 and AD9883. The voltage of LCD Panel is 12V

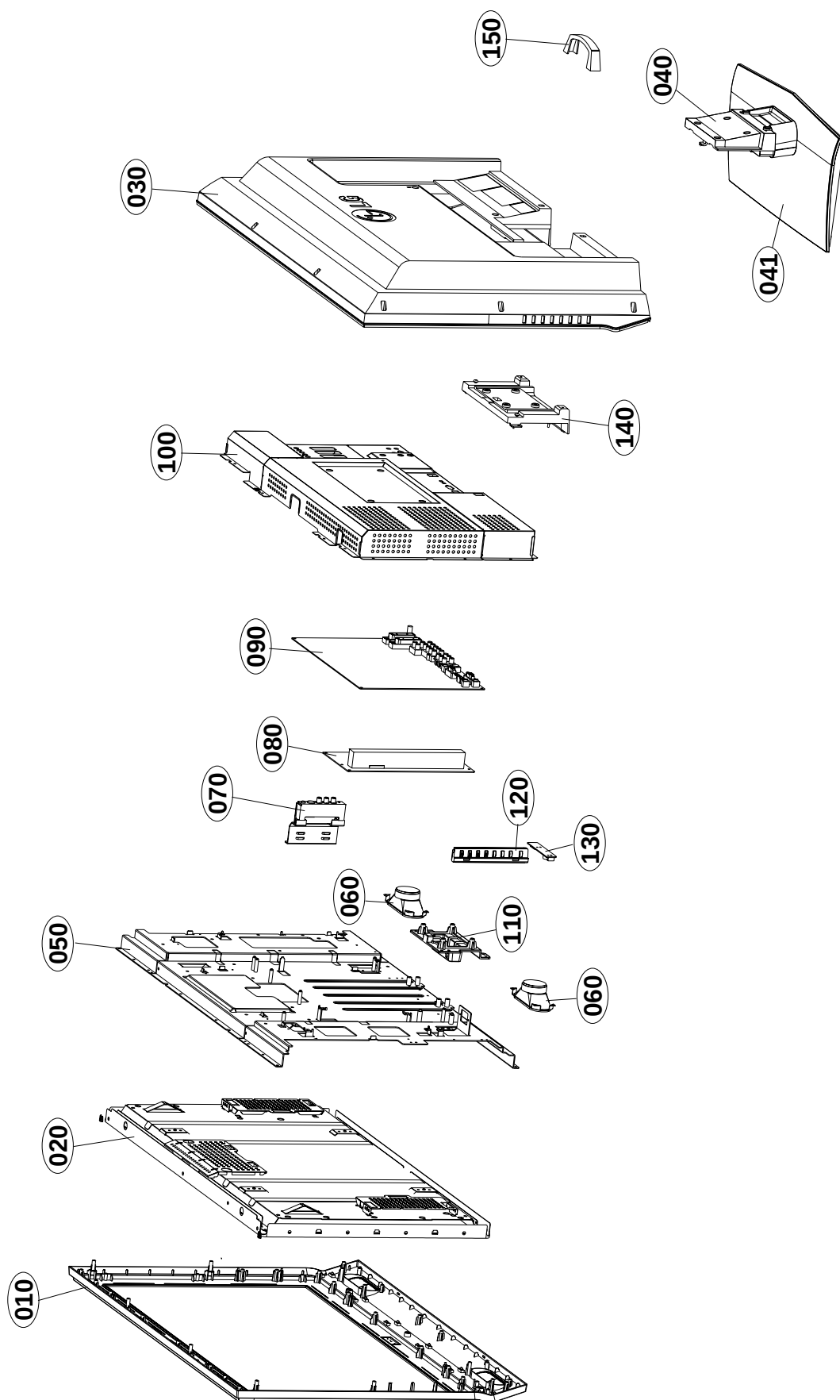
EXPLODED VIEW (26LC2R)



## EXPLODED VIEW PARTS LIST(26LC2R)

| No. | PART NO.    | DESCRIPTION                                                                          |
|-----|-------------|--------------------------------------------------------------------------------------|
| 010 | 30919E0027B | CABINET ASSEMBLY, 26LC2 BRAND 30909E0021 26LC2R -ZJ CSKD                             |
| 020 | 6304FAU020B | LCD(LIQUID CRYSTAL DISPLAY), T260XW02-V5 AU TFT COLOR 16VS9 WXGA 500NITS 8MS 14LAMPS |
| 030 | 3809900134B | BACK COVER ASSEMBLY, 26LC2 NON LG BRAND CSKD                                         |
| 040 | 3043900029B | TILT SWIVEL ASSEMBLY, 26LC2R 3043900029A STAND BODY ASSY                             |
| 041 | 3043900026E | TILT SWIVEL ASSEMBLY, 32LC2R NONE STAND BOTTOM C/SKD WITH PRINTING                   |
| 050 | 68719ST934A | PWB(PCB) ASSEMBLY,SUB, SUB T.T LP61A 26LC2R ZJ LOCAL                                 |
| 060 | 49519S0021D | METAL ASSEMBLY, FRAME 26LC2 BRAND(AUO MODULE) CSKD                                   |
| 070 | 68719ST907A | PWB(PCB) ASSEMBLY,SUB, SUB T.T LP61A 26LC2R Z SIDEAV                                 |
| 080 | 6709900016A | POWER SUPPLY ASSEMBLY, FREE H3/E2 LCD MODEL LCD LG ELECTRONICS LB LC                 |
| 090 | 33139L2011A | MAIN TOTAL ASSEMBLY, 26LC2R BRAND LP61A AUO                                          |
| 100 | 49519S0030C | METAL ASSEMBLY, REAR SHIELD MAIN A (26LC2R-ZJ) CSKD                                  |
| 110 | 6400GESF01A | SPEAKER,FULLRANGE, C112A02K1450 ESTEC FULL-RANGE(GENERAL) 8OHM 10/15W .DB 110 32LG10 |
| 120 | 68719ST940A | PWB(PCB) ASSEMBLY,SUB, SUB T.T LP61A 32LC2R ZJ PREAMP+LED                            |
| 130 | 4950TKA041B | METAL, FIX POWER SOCKET(BRAND 26LC2)                                                 |
| 140 | 4811900063A | BRACKET ASSEMBLY, COVER 26LC2R LP61A BRACKET ASSY                                    |
| 150 | 35509K0197A | COVER, 32LC2 CABLE MANAGEMENT                                                        |

# EXPLODED VIEW(32LC2R)



## EXPLODED VIEW PARTS LIST(32LC2R)

| No. | PART NO.    | DESCRIPTION                                                                          |
|-----|-------------|--------------------------------------------------------------------------------------|
| 010 | 30919E0041F | CABINET ASSEMBLY, 32LC2R-ZJ BRAND 30909E0019A HURRICANE3 C/SKD                       |
| 020 | 6304FAU022A | LCD(LIQUID CRYSTAL DISPLAY), T315XW01-V5 AU TFT COLOR WXGA 600NITS MVA 8MS 16LAMPS   |
| 030 | 3809900159F | BACK COVER ASSEMBLY, 32LC2R NON HURRICANE3 C/SKD                                     |
| 040 | 3043900026C | TILT SWIVEL ASSEMBLY, 32LC2D NONE STAND NECK C/SKD                                   |
| 041 | 3043900026E | TILT SWIVEL ASSEMBLY, 32LC2R NONE STAND BOTTOM C/SKD WITH PRINTING                   |
| 050 | 49519S0031J | METAL ASSEMBLY, FRAME H3 32LC2R-ZJ C/SKD                                             |
| 060 | 6400GESF01A | SPEAKER,FULLRANGE, C112A02K1450 ESTEC FULL-RANGE(GENERAL) 8OHM 10/15W .DB 110 32LG10 |
| 070 | 68719ST892A | PWB(PCB) ASSEMBLY,SUB, SUB T.T LP61A 32LC2R Z SIDE AV                                |
| 080 | 6709900016A | POWER SUPPLY ASSEMBLY, FREE H3/E2 LCD MODEL LCD LG ELECTRONICS LB LC                 |
| 090 | 33139L3011A | MAIN TOTAL ASSEMBLY, 32LC2R(LPL) BRAND LP61A                                         |
| 100 | 49509K0157G | METAL, SHIELD 32LC2R-ZJ H3-M C/SKD                                                   |
| 110 | 49509K0195B | METAL, FRAME SUPPORT 32LC2 C/SKD                                                     |
| 120 | 68719ST934A | PWB(PCB) ASSEMBLY,SUB, SUB T.T LP61A 26LC2R ZJ LOCAL                                 |
| 130 | 68719ST940A | PWB(PCB) ASSEMBLY,SUB, SUB T.T LP61A 32LC2R ZJ PREAMP+LED                            |
| 140 | 35509K0199A | COVER, 32LC2 REAR STAND SUPPORTER                                                    |
| 150 | 35509K0197A | COVER, 32LC2 CABLE MANAGEMENT                                                        |

## REPLACEMENT PARTS LIST

For Capacitor & Resistors, the characters at 2nd and 3rd digit in the P/No. means as follows;

CC, CX, CK, CN, CH : Ceramic  
CQ : Polyester  
CE : Electrolytic  
CF : Fixed Film

RD : Carbon Film  
RS : Metal Oxide Film  
RN : Metal Film  
RH : CHIP, Metal Glazed(Chip)  
RR : Drawing

| DATE: 2006. 03. 15. |     |          |             |                             |
|---------------------|-----|----------|-------------|-----------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
| <b>MAIN BOARD</b>   |     |          |             |                             |
| <b>CAPACITOR</b>    |     |          |             |                             |
|                     |     | C1000    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1002    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1004    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1005    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1006    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1008    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1011    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1012    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1013    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1014    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1015    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1022    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1023    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1024    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1025    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1026    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1027    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1029    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1036    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1037    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1039    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1043    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1045    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1050    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1051    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1052    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1054    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1056    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1057    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1058    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1061    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C1069    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1072    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C1073    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C111     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C113     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C115     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C117     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C137     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C138     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C141     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C163     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C164     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C309     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C310     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C312     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C337     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C338     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C339     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C350     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7 |
|                     |     | C351     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |
|                     |     | C352     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R |

| DATE: 2006. 03. 15. |     |          |             |                               |
|---------------------|-----|----------|-------------|-------------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION   |
|                     |     | C400     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C406     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C407     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C408     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C409     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C410     | OCK102CK56A | 1000PF 1608 50V 0.1 R/TP X7   |
|                     |     | C411     | OCK102CK56A | 1000PF 1608 50V 0.1 R/TP X7   |
|                     |     | C412     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C413     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C414     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C415     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C416     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C417     | OCK102CK56A | 1000PF 1608 50V 0.1 R/TP X7   |
|                     |     | C419     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C420     | OCK102CK56A | 1000PF 1608 50V 0.1 R/TP X7   |
|                     |     | C421     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C424     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C425     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C426     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C506     | OCK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C507     | OCK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C511     | OCK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C514     | OCK273CK56A | 27000PF 1608 50V 10% X7R R/   |
|                     |     | C515     | OCK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C516     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C517     | OCK273CK56A | 27000PF 1608 50V 10% X7R R/   |
|                     |     | C518     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C520     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C524     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C605     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C606     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C607     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C608     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C638     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C643     | OCK332CK56A | 3.3NF 1608 50V 10% R/TP X7R   |
|                     |     | C645     | OCK332CK56A | 3.3NF 1608 50V 10% R/TP X7R   |
|                     |     | C649     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C662     | OCK225DK94A | "2.2UF 2012 50V 80%,-20% F(Y" |
|                     |     | C663     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C664     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C665     | OCK225DK94A | "2.2UF 2012 50V 80%,-20% F(Y" |
|                     |     | C666     | OCK225DD66A | 2.2UF 2012 10V 20% X7R R/TP   |
|                     |     | C687     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C688     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C693     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C694     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C695     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C696     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C697     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C704     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C705     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C713     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C721     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C726     | OCK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION   |
|                     |     | C729     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C735     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C739     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C749     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C750     | 0CK225DK94A | "2.2UF 2012 50V 80%,-20% F(Y" |
|                     |     | C753     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C764     | 0CK106EF56A | 10UF 3216 16V 10% X7R R/TP    |
|                     |     | C765     | 0CK106EF56A | 10UF 3216 16V 10% X7R R/TP    |
|                     |     | C766     | 0CK106EF56A | 10UF 3216 16V 10% X7R R/TP    |
|                     |     | C801     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C816     | 0CK225DK94A | "2.2UF 2012 50V 80%,-20% F(Y" |
|                     |     | C820     | 0CK225DK94A | "2.2UF 2012 50V 80%,-20% F(Y" |
|                     |     | C830     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C836     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C838     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C839     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C840     | 0CK102CK56A | 1000PF 1608 50V 0.1 R/TP X7   |
|                     |     | C842     | 0CK102CK56A | 1000PF 1608 50V 0.1 R/TP X7   |
|                     |     | C845     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C848     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C849     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C850     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C851     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C853     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C856     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C859     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C862     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C866     | 0CK682CK51A | 6800PF 1608 50V 10% R/TP B(   |
|                     |     | C867     | 0CK682CK51A | 6800PF 1608 50V 10% R/TP B(   |
|                     |     | C906     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C908     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C916     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C919     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C921     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C930     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C934     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C936     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C937     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C938     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C941     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C942     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C943     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C945     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C949     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C950     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C957     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C958     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C959     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C960     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C961     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C962     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C963     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C964     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C965     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C967     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C968     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C969     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C970     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C972     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C973     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C974     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C975     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |

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|                     |     | C976     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C1059    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C1063    | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C172     | 0CK682CK51A | 6800PF 1608 50V 10% R/TP B(   |
|                     |     | C173     | 0CK682CK51A | 6800PF 1608 50V 10% R/TP B(   |
|                     |     | C174     | 0CK682CK51A | 6800PF 1608 50V 10% R/TP B(   |
|                     |     | C175     | 0CK682CK51A | 6800PF 1608 50V 10% R/TP B(   |
|                     |     | C332     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C333     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C334     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C335     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C336     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C347     | 0CK104CF56A | 0.1UF 1608 16V 10% R/TP X7R   |
|                     |     | C429     | 0CK822CK46A | 8.2NF 1608 50V 5% X7R R/TP    |
|                     |     | C430     | 0CK823CF56A | 82NF 1608 16V 10% X7R R/TP    |
|                     |     | C609     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C610     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C611     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C612     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C613     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C614     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C615     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C616     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C617     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C618     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C619     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C620     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C621     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C622     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C623     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C624     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C625     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C626     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C627     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C628     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C630     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C631     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C632     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C633     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C634     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C635     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C636     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C647     | 0CK332CK56A | 3.3NF 1608 50V 10% R/TP X7R   |
|                     |     | C648     | 0CK332CK56A | 3.3NF 1608 50V 10% R/TP X7R   |
|                     |     | C650     | 0CK682CK51A | 6800PF 1608 50V 10% R/TP B(   |
|                     |     | C653     | 0CK682CK51A | 6800PF 1608 50V 10% R/TP B(   |
|                     |     | C654     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C661     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C803     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C804     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C806     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C807     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C821     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C822     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C823     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C824     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C825     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C831     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C832     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C833     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C834     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |
|                     |     | C835     | 0CK475EF67A | 4.7UF 3216 16V 20% X5R R/TP   |

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|                     |     | C854     | 0CK224CF56A | 0.22UF 1608 16V 10% R/TP X7   |
|                     |     | C855     | 0CK224CF56A | 0.22UF 1608 16V 10% R/TP X7   |
|                     |     | C857     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C858     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP"  |
|                     |     | C864     | 0CK224CF56A | 0.22UF 1608 16V 10% R/TP X7   |
|                     |     | C865     | 0CK224CF56A | 0.22UF 1608 16V 10% R/TP X7   |
|                     |     | C915     | 0CK474CH94A | "0.47UF 1608 25V 80%,-20% R/" |
|                     |     | C926     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C927     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R   |
|                     |     | C928     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C929     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C989     | 0CK103CK56A | 0.01UF 1608 50V 10% R/TP X7   |
|                     |     | C112     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0   |
|                     |     | C114     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0   |
|                     |     | C116     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0   |
|                     |     | C120     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0   |
|                     |     | C311     | 0CC470CK41A | 47PF 1608 50V 5% R/TP NP0     |
|                     |     | C316     | 0CC120CK41A | 12PF 1608 50V 5% R/TP NP0     |
|                     |     | C317     | 0CC120CK41A | 12PF 1608 50V 5% R/TP NP0     |
|                     |     | C508     | 0CC270CK41A | 27PF 1608 50V 5% R/TP NP0     |
|                     |     | C509     | 0CC270CK41A | 27PF 1608 50V 5% R/TP NP0     |
|                     |     | C512     | 0CC101CK41A | 100PF 1608 50V 5% R/TP NP0    |
|                     |     | C521     | 0CC271CK41A | 270PF 1608 50V 5% R/TP NP0    |
|                     |     | C652     | 0CC560CK41A | 56PF 1608 50V 5% R/TP NP0     |
|                     |     | C827     | 0CC471CK41A | 470PF 1608 50V 5% R/TP NP0    |
|                     |     | C829     | 0CC471CK41A | 470PF 1608 50V 5% R/TP NP0    |
|                     |     | C522     | 0CC271CK41A | 270PF 1608 50V 5% R/TP NP0    |
|                     |     | C651     | 0CC560CK41A | 56PF 1608 50V 5% R/TP NP0     |
|                     |     | C655     | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0     |
|                     |     | C673     | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0     |
|                     |     | C674     | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0     |
|                     |     | C1016    | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5     |
|                     |     | C1020    | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5     |
|                     |     | C1001    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1003    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1007    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1009    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1010    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1017    | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C1018    | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1019    | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C1021    | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1031    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1038    | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C1040    | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C1046    | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C1047    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1048    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1064    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1065    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1066    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1068    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1070    | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C1071    | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C1074    | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C118     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C119     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C124     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C125     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C126     | 0CE106WH6DC | 10UF MVK 25V 20% R/TP(SMD)    |
|                     |     | C128     | 0CE106WH6DC | 10UF MVK 25V 20% R/TP(SMD)    |
|                     |     | C131     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |

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|                     |     | C134     | 0CE106WH6DC | 10UF MVK 25V 20% R/TP(SMD)    |
|                     |     | C135     | 0CE106WH6DC | 10UF MVK 25V 20% R/TP(SMD)    |
|                     |     | C142     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C313     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C340     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C343     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C345     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C346     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C401     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C500     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C502     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C503     | 0CE475SK6DC | 4.7UF MVG 50V 20% SMD R/TP    |
|                     |     | C513     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C519     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C523     | 0CE476WK6DC | 47UF MVK 50V 20% R/TP(SMD)    |
|                     |     | C525     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C604     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C629     | 0CE475WJ6DC | 4.7UF MVK 35V 20% R/TP(SMD)   |
|                     |     | C637     | 0CE335WK6D8 | "3.3UF MVK,RC 50V 20% SMD TA" |
|                     |     | C657     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C658     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C659     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C660     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C676     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C677     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C682     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C683     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C684     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C685     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C686     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C719     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C727     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C733     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C743     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C744     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C756     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C757     | 0CE106WH6DC | 10UF MVK 25V 20% R/TP(SMD)    |
|                     |     | C758     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C759     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C760     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C761     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C762     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C763     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C800     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C802     | 0CE226WF6DC | 22UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C828     | 0CE107WK6DC | 100UF MVK 50V 20% R/TP(SMD)   |
|                     |     | C860     | 0CE227WJ6DC | 220UF MVK/RC 35V 20% SMD TA   |
|                     |     | C861     | 0CE227WJ6DC | 220UF MVK/RC 35V 20% SMD TA   |
|                     |     | C863     | 0CE106WH6DC | 10UF MVK 25V 20% R/TP(SMD)    |
|                     |     | C868     | 0CE475WJ6DC | 4.7UF MVK 35V 20% R/TP(SMD)   |
|                     |     | C869     | 0CE475WJ6DC | 4.7UF MVK 35V 20% R/TP(SMD)   |
|                     |     | C912     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C917     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C922     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C931     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C932     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C933     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C935     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C939     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C946     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C947     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C948     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION   |
|                     |     | C951     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C953     | 0CE477WF6DC | 470UF MVK 16V 20% SMD R/TP(   |
|                     |     | C955     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)   |
|                     |     | C978     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C979     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C980     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C981     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C982     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C983     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C984     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C985     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C986     | 0CE476WF6DC | 47UF MVK 16V 20% R/TP(SMD)    |
|                     |     | C988     | 0CE106WH6DC | 10UF MVK 25V 20% R/TP(SMD)    |
| DIODES              |     |          |             |                               |
|                     |     | D905     | ODD200009AF | RU2M V(1) TP SANKEN R-TMD     |
|                     |     | D906     | ODD200009AF | RU2M V(1) TP SANKEN R-TMD     |
|                     |     | D907     | ODD200009AF | RU2M V(1) TP SANKEN R-TMD     |
|                     |     | ZD301    | ODR050008AA | SD05.TC R/TP SEMTECH SOD323   |
|                     |     | ZD303    | ODR050008AA | SD05.TC R/TP SEMTECH SOD323   |
|                     |     | ZD304    | ODR050008AA | SD05.TC R/TP SEMTECH SOD323   |
|                     |     | ZD305    | ODR050008AA | SD05.TC R/TP SEMTECH SOD323   |
|                     |     | ZD308    | ODR050008AA | SD05.TC R/TP SEMTECH SOD323   |
|                     |     | D1001    | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D1002    | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D1003    | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D108     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D109     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D110     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D111     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D127     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D800     | ODD184009AA | KDS184 TP KEC - 85V - - 3     |
|                     |     | D801     | ODD184009AA | KDS184 TP KEC - 85V - - 3     |
|                     |     | D900     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D902     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D903     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D500     | ODS113379BA | 1SS133 T-72 TP ROHM KOREA D   |
|                     |     | D300     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D301     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D302     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D303     | ODS226009AA | KDS226 TP KEC - 80V - - 4NS   |
|                     |     | D400     | ODD184009AA | KDS184 TP KEC - 85V - - 3     |
|                     |     | ZD1000   | ODZKE00048A | KDZ8.2V USC KEC R/TP NON      |
| IC                  |     |          |             |                               |
|                     |     | IC300    | OICS240213A | CAT24W(F)C02J-TE13 8P SOP     |
|                     |     | IC400    | OIMMRAL014B | AT24C02N-10SI-2.7 ATMEL 8P    |
|                     |     | IC603    | OIMMRAL025A | AT24C32AN-10SI-2.7 ATMEL 8P   |
|                     |     | IC302    | OIPRP00009A | ICL3232CBNZ INTERSIL 16P/SO   |
|                     |     | IC401    | OIPRP00701A | AD9381KSTZ ANALOG DEVICE 10   |
|                     |     | IC601    | OIPRP00689A | VCT6973G-FA-B2-000 MICRONAS   |
|                     |     | IC800    | OIPRP00665A | TEA6420D STM 28PIN SO28 REE   |
|                     |     | IC801    | OIPRP00700A | TPA3100D2PHPR TEXAS INSTRUM   |
|                     |     | IC802    | OIPRP00743A | "MAD4868A MICRONAS 44P,PMQFP" |
|                     |     | IC600    | OIFA752700A | KA75270Z 3 TP RE-SET IC MC-   |
|                     |     | IC1001   | OIPMGKE030A | KIA78R05F KEC 5PIN DPAK R/T   |
|                     |     | IC1002   | OIPMG00027A | SC156515M-1.8TR SEMTECH 5P/   |
|                     |     | IC1003   | OIMCRFA010A | "KA7809R, FAIRCHILD 2P D-PAK" |
|                     |     | IC500    | OIPMGON013B | MC34063ADR2G ON SEMI SO-8P    |
|                     |     | IC900    | OIMCRRH001A | "BA033FP-E2 ROHM 3P-SOP,TO25" |

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| *S                     | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION   |
|                        |     | IC902    | OIPMG00027A | SC156515M-1.8TR SEMTECH 5P/   |
|                        |     | IC903    | OIMCRRH001A | "BA033FP-E2 ROHM 3P-SOP,TO25" |
|                        |     | IC301    | OIPH741400E | 74HC14D 14SOP TP SHITTER TR   |
|                        |     | IC303    | OISTL00031A | "MC74HC4066ADR2G,LF ON SEMI"  |
|                        |     | IC602    | OIFA742530B | 74ACT253SC FAIRCHILD 16P SO   |
| COIL & CORE & INDUCTOR |     |          |             |                               |
|                        |     | L1004    | 6140VB0004B | 26UH 1UEWPHY 22.5TURN YL-9N   |
|                        |     | L910     | 6140VB0004B | 26UH 1UEWPHY 22.5TURN YL-9N   |
|                        |     | L801     | 6140VR0008A | SLF12575T-330M4R7 33UH SMD    |
|                        |     | L802     | 6140VR0008A | SLF12575T-330M4R7 33UH SMD    |
|                        |     | L808     | 6140VR0008A | SLF12575T-330M4R7 33UH SMD    |
|                        |     | L809     | 6140VR0008A | SLF12575T-330M4R7 33UH SMD    |
|                        |     | L923     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | AR400    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | AR401    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | AR402    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | AR403    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | AR404    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | AR405    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | AR600    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | AR601    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | AR602    | 6210TCE002B | HB-4M3216-121JT CERATECH 32   |
|                        |     | L306     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L307     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L308     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L309     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L310     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L815     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L816     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L817     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L818     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L922     | 6210TCE001P | HB-1S2012-121JT CERATECH 20   |
|                        |     | L100     | 6200J00005R | HB-1M1608-501JT CERATECH R/   |
|                        |     | L1000    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1001    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1002    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1007    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1008    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L101     | 6200J00005R | HB-1M1608-501JT CERATECH R/   |
|                        |     | L1010    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1011    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1012    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1015    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1017    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L1018    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L110     | 6200J00005R | HB-1M1608-501JT CERATECH R/   |
|                        |     | L111     | 6200J00005R | HB-1M1608-501JT CERATECH R/   |
|                        |     | L112     | 6200J00005F | HB-1M1608-102JT CERATECH R/T  |
|                        |     | L113     | 6200J00005F | HB-1M1608-102JT CERATECH R/T  |
|                        |     | L300     | 6200JB8010L | MLB-201209-1000L-N2 MAG LAY   |
|                        |     | L301     | 6200JB8010L | MLB-201209-1000L-N2 MAG LAY   |
|                        |     | L303     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L305     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L401     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L402     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L500     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L501     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L502     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L806     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |
|                        |     | L904     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY   |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
|                     |     | L913     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L914     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L915     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L916     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L917     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L918     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L919     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L920     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L921     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L1016    | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L302     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L304     | 6210TCE001E | HB-1M2012-800JT CERATEC 201 |
|                     |     | L400     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L600     | 6200J00005R | HB-1M1608-501JT CERATECH R/ |
|                     |     | L601     | 6200J00005R | HB-1M1608-501JT CERATECH R/ |
|                     |     | L813     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L814     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L819     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L820     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L905     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L906     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L924     | 6200J000013 | MLB-321611-0500P-N2 MAG LAY |
|                     |     | L102     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L103     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L104     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L105     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L106     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L107     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L108     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L109     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L119     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L120     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L804     | 0LCML00020C | MLI-201212-100K 10UH MAG LA |
|                     |     | L805     | 0LCML00020C | MLI-201212-100K 10UH MAG LA |
|                     |     | L503     | 0LCML00020G | MLI-201209-3R3K MAG LAYERS  |
|                     |     | L504     | 0LC6461201A | 646CY-121M=P3 TOKO R/TP     |
| FET & TRANSISTOR    |     |          |             |                             |
|                     |     | Q100     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q101     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q102     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q103     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q105     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q106     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q110     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q300     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q400     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q502     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q503     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC - |
|                     |     | Q504     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q505     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC - |
|                     |     | Q506     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC - |
|                     |     | Q507     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q510     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC - |
|                     |     | Q511     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC - |
|                     |     | Q605     | 0TR102009AM | KRA102S KEC REEL TAPING SOT |
|                     |     | Q606     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC - |
|                     |     | Q607     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q608     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC - |
|                     |     | Q801     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q802     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
|                     |     | Q111     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q112     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q113     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q401     | 0TR830009BA | BSS83 TP PHILIPS NON N-CHAN |
|                     |     | Q402     | 0TR830009BA | BSS83 TP PHILIPS NON N-CHAN |
|                     |     | Q508     | 0TR830009BA | BSS83 TP PHILIPS NON N-CHAN |
|                     |     | Q509     | 0TR830009BA | BSS83 TP PHILIPS NON N-CHAN |
|                     |     | Q512     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q513     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q600     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q611     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q613     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC - |
|                     |     | Q901     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q902     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q903     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q904     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q905     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q906     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q907     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q908     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | IC604    | 0TF492509AA | SI4925DY TP TEMIC 30V 6.1A  |
| RESISTORS           |     |          |             |                             |
|                     |     | R525     | 0RD0331H609 | 3.3 OHM 1/2 W 5.00% TA52    |
|                     |     | R100     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R1001    | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R1002    | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R1007    | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R101     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R1011    | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R102     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R103     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R104     | 0RJ9101D677 | 9.1K OHM 1/10 W 5% 1608 R/T |
|                     |     | R105     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R106     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R107     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R108     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R109     | 0RJ3601D677 | 3.6K OHM 1/10 W 5% 1608 R/T |
|                     |     | R110     | 0RJ9101D677 | 9.1K OHM 1/10 W 5% 1608 R/T |
|                     |     | R111     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R112     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R113     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R114     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R115     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R116     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R117     | 0RJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R119     | 0RJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R121     | 0RJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R123     | 0RJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R125     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R126     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R127     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R128     | 0RJ3601D677 | 3.6K OHM 1/10 W 5% 1608 R/T |
|                     |     | R129     | 0RJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R130     | 0RJ4703D677 | 470K OHM 1/10 W 5% 1608 R/T |
|                     |     | R131     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R132     | 0RJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R133     | 0RJ4703D677 | 470K OHM 1/10 W 5% 1608 R/T |
|                     |     | R134     | 0RJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R135     | 0RJ4703D677 | 470K OHM 1/10 W 5% 1608 R/T |
|                     |     | R136     | 0RJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
|                     |     | R137     | ORJ4703D677 | 470K OHM 1/10 W 5% 1608 R/T |
|                     |     | R138     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R139     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R140     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R141     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R142     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R143     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R144     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R145     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R146     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R147     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R148     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R149     | ORJ2000D677 | 200 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R150     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R151     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R152     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R154     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R159     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R160     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R161     | ORJ6801D677 | 6800 OHM 1/10 W 5% 1608 R/T |
|                     |     | R162     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R163     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R164     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R165     | ORJ0822D677 | 82 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R166     | ORJ0822D677 | 82 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R167     | ORJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R168     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R169     | ORJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R171     | ORJ0822D677 | 82 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R172     | ORJ0822D677 | 82 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R179     | ORJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R180     | ORJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R181     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R182     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R183     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R185     | ORJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R186     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R187     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R188     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R189     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R190     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R191     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R197     | ORJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R199     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R200     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R201     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R206     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R208     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R209     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R212     | ORJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R213     | ORJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R217     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R218     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R303     | ORJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R304     | ORJ2203D677 | 220K OHM 1/10 W 5% 1608 R/T |
|                     |     | R307     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R308     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R310     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R311     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R313     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R314     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R315     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION  |
|                     |     | R316     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R317     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R320     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R321     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T  |
|                     |     | R322     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T  |
|                     |     | R324     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R325     | ORJ3301D677 | 3.3K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R326     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R327     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R328     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R329     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R330     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R331     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R332     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R333     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R334     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R336     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R337     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R338     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R339     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R344     | ORJ2002D677 | 20000 OHM 1/10 W 5% 1608 R/  |
|                     |     | R349     | ORJ2202D677 | 22K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R350     | ORJ2202D677 | 22K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R351     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R352     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R353     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R354     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R355     | ORJ4700D677 | 470 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R358     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R370     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R372     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R373     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R402     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R404     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R405     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R417     | ORJ4702D677 | 47000 OHM 1/10 W 5% 1608 R/  |
|                     |     | R418     | ORJ4702D677 | 47000 OHM 1/10 W 5% 1608 R/  |
|                     |     | R423     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R424     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R502     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R503     | ORJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R506     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R507     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R508     | ORJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R509     | ORJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R510     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T  |
|                     |     | R511     | ORJ4700D677 | 470 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R512     | ORJ0822D677 | 82 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R513     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R514     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R515     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R516     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R517     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T  |
|                     |     | R518     | ORJ2000D677 | 200 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R521     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R522     | ORJ1500D677 | 150 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R524     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R527     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R529     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R530     | ORJ0472D677 | 47 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R531     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R532     | ORJ3002D677 | 30000 OHM 1/10 W 5% 1608 R/  |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
|                     |     | R533     | ORJ2201D677 | 2200 OHM 1/10 W 5% 1608 R/T |
|                     |     | R539     | ORJ2702D677 | 27K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R540     | ORJ7501D677 | 7.5K OHM 1/10 W 5% 1608 R/T |
|                     |     | R603     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R646     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R656     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R664     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R665     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R673     | ORJ6201D677 | 6.2K OHM 1/10 W 5% 1608 R/T |
|                     |     | R736     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R747     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R748     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R749     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R762     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R763     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R764     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R765     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R766     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R767     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R768     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R769     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R771     | ORJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R776     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R781     | ORJ3001D677 | 3K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R782     | ORJ3001D677 | 3K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R783     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R784     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R800     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R801     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R802     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R803     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R804     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R805     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R806     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R807     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R808     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R809     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R810     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R811     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R812     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R813     | ORJ1000D477 | 100 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R816     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R822     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R823     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R828     | ORJ4703D677 | 470K OHM 1/10 W 5% 1608 R/T |
|                     |     | R829     | ORJ4703D677 | 470K OHM 1/10 W 5% 1608 R/T |
|                     |     | R833     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R834     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R838     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R839     | ORJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R843     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R844     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R847     | ORJ1003D677 | 100K OHM 1/10 W 5% 1608 R/T |
|                     |     | R848     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R849     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R850     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R851     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R852     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R856     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R857     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R861     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R865     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |

| DATE: 2006. 03. 15. |     |          |             |                             |
|---------------------|-----|----------|-------------|-----------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
|                     |     | R866     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R867     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R868     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R872     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R876     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R900     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R902     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R909     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R910     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R916     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R918     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R919     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R922     | ORJ1102D677 | 11K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R923     | ORJ2002D677 | 20000 OHM 1/10 W 5% 1608 R/ |
|                     |     | R926     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R927     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R930     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R933     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D |
|                     |     | R934     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D |
|                     |     | R935     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D |
|                     |     | R937     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R938     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | C644     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | C646     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R1000    | ORJ1201D677 | 1200 OHM 1/10 W 5% 1608 R/T |
|                     |     | R1003    | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R1004    | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R1005    | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R1006    | ORJ2002D677 | 20000 OHM 1/10 W 5% 1608 R/ |
|                     |     | R1009    | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R222     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R223     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R224     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R225     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R226     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R227     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R228     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R229     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R300     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R301     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R302     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R306     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R318     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R319     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R343     | ORJ2002D677 | 20000 OHM 1/10 W 5% 1608 R/ |
|                     |     | R345     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R346     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R347     | ORJ3001D677 | 3K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R348     | ORJ3001D677 | 3K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R361     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R362     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R366     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R367     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R380     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R381     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R382     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R383     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R384     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R385     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R386     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R387     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R388     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |

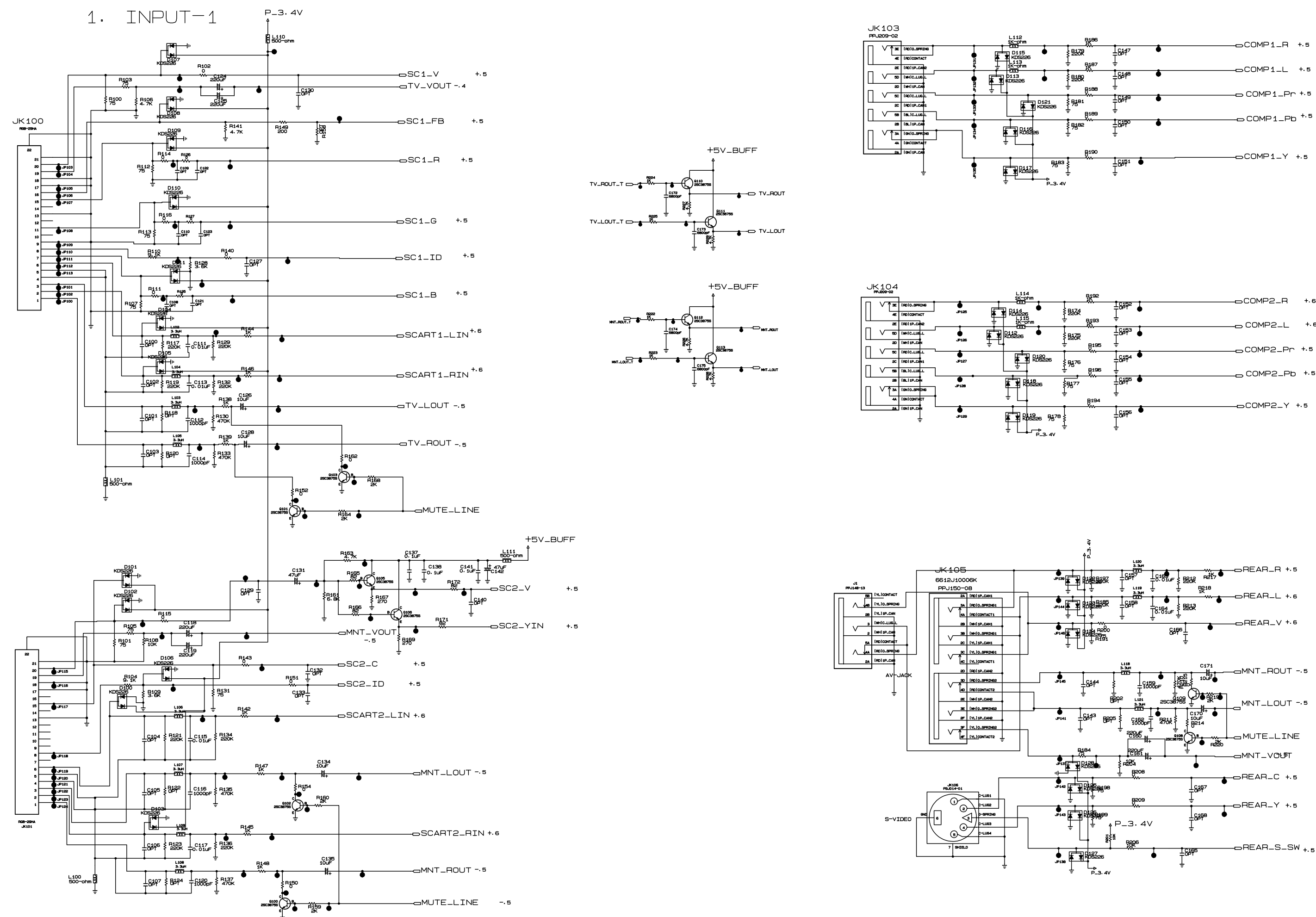
| DATE: 2006. 03. 15. |     |          |             |                             |
|---------------------|-----|----------|-------------|-----------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
|                     |     | R401     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R406     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R407     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R421     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R422     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R425     | 0RJ4990D477 | 499 OHM 1/10 W 1% 1608 R/TP |
|                     |     | R426     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R427     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R428     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R433     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R434     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R435     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R436     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R437     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R438     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R441     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R442     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R451     | 0RJ1501D677 | 1.5K OHM 1/10 W 5% 1608 R/T |
|                     |     | R519     | 0RJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R520     | 0RJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R523     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R526     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R528     | 0RJ1800D677 | 180 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R534     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R535     | 0RJ4702D677 | 47000 OHM 1/10 W 5% 1608 R/ |
|                     |     | R536     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R600     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R601     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R604     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R607     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R620     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R621     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R622     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R623     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R624     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R627     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R628     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R629     | 0RJ1500D677 | 150 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R630     | 0RJ4700D677 | 470 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R631     | 0RJ1500D677 | 150 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R632     | 0RJ1802D677 | 18K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R633     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R634     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R635     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R636     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R637     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R638     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R640     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R645     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R647     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R648     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R649     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R650     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R651     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R652     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R653     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R654     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R660     | 0RJ8201D677 | 8.2K OHM 1/10 W 5% 1608 R/T |
|                     |     | R662     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R663     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R666     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R667     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |

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|---------------------|-----|----------|-------------|-----------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
|                     |     | R668     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R670     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R671     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R672     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R675     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R676     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R677     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R678     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R679     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R680     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R681     | 0RJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R686     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R687     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R689     | 0RJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R690     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R691     | 0RJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R692     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R693     | 0RJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R694     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R695     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R697     | 0RJ2001D677 | 2K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R699     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R700     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R702     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R703     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R704     | 0RJ6202D677 | 62K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R705     | 0RJ2402D677 | 24K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R708     | 0RJ1501D677 | 1.5K OHM 1/10 W 5% 1608 R/T |
|                     |     | R709     | 0RJ4700D677 | 470 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R711     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R712     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R713     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R714     | 0RJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R715     | 0RJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R718     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R721     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T |
|                     |     | R728     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R729     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R730     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R732     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R733     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R734     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R735     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R737     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R738     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R742     | 0RJ6201D677 | 6.2K OHM 1/10 W 5% 1608 R/T |
|                     |     | R744     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R750     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R751     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R752     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R753     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R756     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R757     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R758     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R759     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R760     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R761     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R772     | 0RJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP |
|                     |     | R778     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R780     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R855     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R858     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP   |

| DATE: 2006. 03. 15.         |     |          |             |                                    |
|-----------------------------|-----|----------|-------------|------------------------------------|
| *S                          | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION        |
|                             |     | R862     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R863     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R864     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R869     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R870     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R871     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R873     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP        |
|                             |     | R874     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R875     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R905     | 0RJ2000D677 | 200 OHM 1/10 W 5% 1608 R/TP        |
|                             |     | R906     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R912     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP        |
|                             |     | R913     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP        |
|                             |     | R921     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP        |
|                             |     | R924     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/T        |
|                             |     | R925     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
|                             |     | R928     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP        |
|                             |     | R929     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP        |
|                             |     | R932     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP          |
| <b>OTHERs</b>               |     |          |             |                                    |
|                             |     | D1004    | 0DL233309AC | SAM2333 TP KWANG GREEN/RED         |
|                             |     | D750     | 0DL233309AC | SAM2333 TP KWANG GREEN/RED         |
|                             |     | X600     | 6202VDT002P | HC-49/SM BUBANG 20.25000MHZ-26LC2R |
|                             |     | X600     | 6202VDT002E | SX-1SMD SUNNY RADIAL 202500-32LC2R |
|                             |     | SW501    | 6600VR1004A | SKHMPW 5P CHIP TACT J-ALPS         |
|                             |     | TU1      | 6700MF0017C | TAFV-W303P LGIT MULTI FS PH        |
| <b>CONTROL BOARD</b>        |     |          |             |                                    |
|                             |     | SW101    | 140-313B    | TACT 2LEAD 160G(TA) LG C&D         |
|                             |     | SW102    | 140-313B    | TACT 2LEAD 160G(TA) LG C&D         |
|                             |     | SW103    | 140-313B    | TACT 2LEAD 160G(TA) LG C&D         |
|                             |     | SW104    | 140-313B    | TACT 2LEAD 160G(TA) LG C&D         |
|                             |     | SW105    | 140-313B    | TACT 2LEAD 160G(TA) LG C&D         |
|                             |     | SW106    | 140-313B    | TACT 2LEAD 160G(TA) LG C&D         |
|                             |     | SW107    | 140-313B    | TACT 2LEAD 160G(TA) LG C&D         |
|                             |     | SW108    | 140-313B    | TACT 2LEAD 160G(TA) LG C&D         |
|                             |     | R101     | 0RH9101D622 | 9.1K OHM 1 / 10 W 2012 5.00        |
|                             |     | R102     | 0RH3301D622 | 3.3K OHM 1 / 10 W 2012 5.00        |
|                             |     | R103     | 0RH1101D622 | 1.1K OHM 1 / 10 W 2012 5.00        |
|                             |     | R104     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D        |
|                             |     | R105     | 0RH9101D622 | 9.1K OHM 1 / 10 W 2012 5.00        |
|                             |     | R106     | 0RH3301D622 | 3.3K OHM 1 / 10 W 2012 5.00        |
|                             |     | R107     | 0RH1101D622 | 1.1K OHM 1 / 10 W 2012 5.00        |
|                             |     | R108     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D        |
| <b>SIDE A/V BOARD</b>       |     |          |             |                                    |
|                             |     | C300     | 0CH5101K416 | 100PF 50V 5% NP0 2012 R/TP         |
|                             |     | C301     | 0CH5101K416 | 100PF 50V 5% NP0 2012 R/TP         |
|                             |     | R300     | 0RH2203D622 | 220K OHM 1 / 10 W 2012 5.00        |
|                             |     | R301     | 0RH2203D622 | 220K OHM 1 / 10 W 2012 5.00        |
|                             |     | R302     | 0RH0752D622 | 75 OHM 1 / 10 W 2012 5.00%         |
|                             |     | R303     | 0RH4700D622 | 470 OHM 1 / 10 W 2012 5.00%        |
|                             |     | R304     | 0RH4700D622 | 470 OHM 1 / 10 W 2012 5.00%        |
|                             |     | R305     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D        |
| <b>PREAMP&amp;LED BOARD</b> |     |          |             |                                    |
|                             |     | C200     | 0CH5101K416 | 100PF 50V 5% NP0 2012 R/TP         |

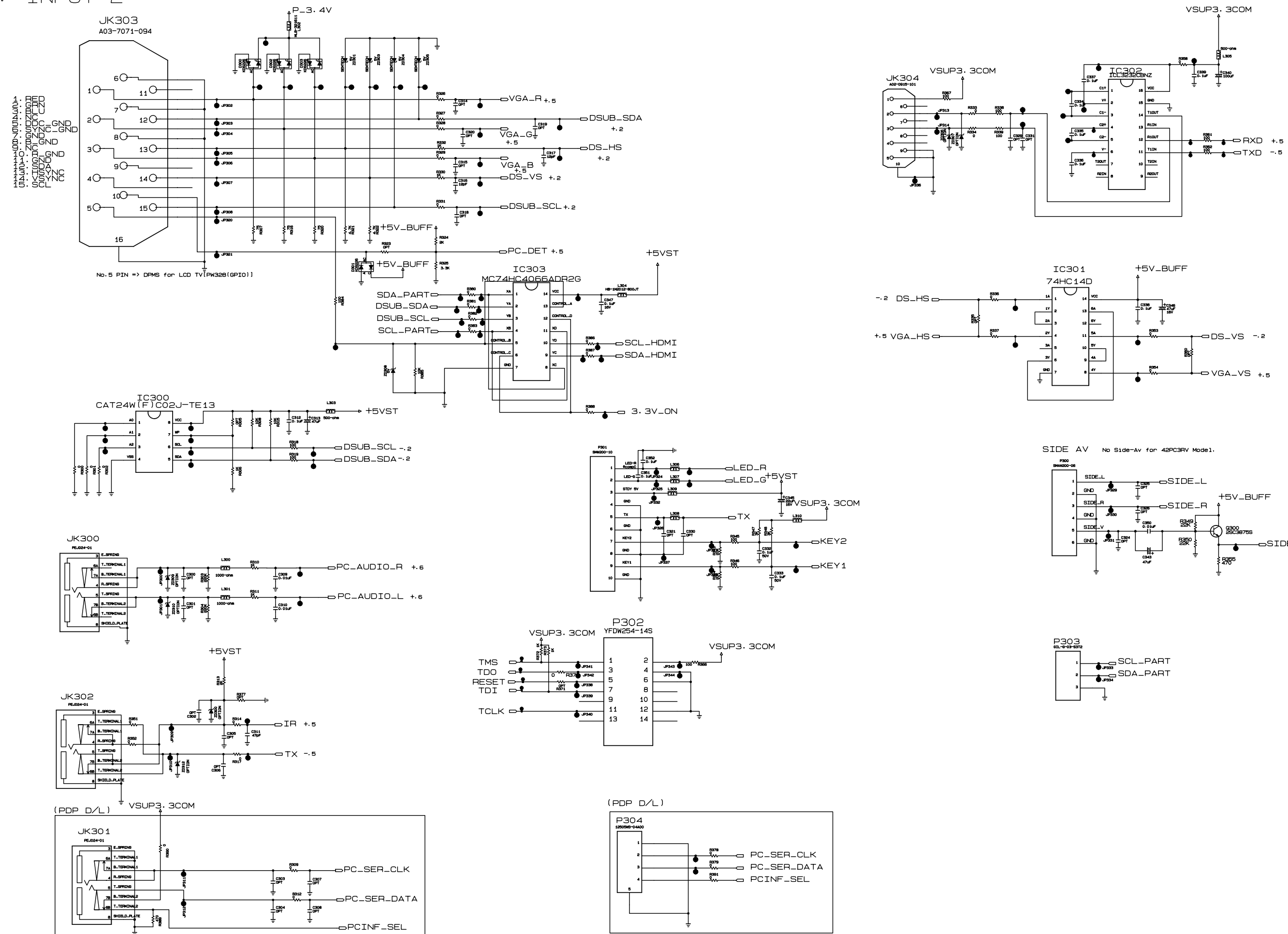
| DATE: 2006. 03. 15. |     |          |             |                               |
|---------------------|-----|----------|-------------|-------------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION   |
|                     |     | C201     | 0CH5330K416 | 33PF 50V 5% NP0 2012 R/TP     |
|                     |     | L200     | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216   |
|                     |     | Q200     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -   |
|                     |     | Q201     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -   |
|                     |     | Q202     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -   |
|                     |     | R200     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D   |
|                     |     | R201     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D   |
|                     |     | R202     | 0RH3300D622 | 330 OHM 1 / 10 W 2012 5.00%   |
|                     |     | R203     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D   |
|                     |     | R204     | 0RH6801D622 | 6.8K OHM 1 / 10 W 2012 5.00   |
|                     |     | R205     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D   |
|                     |     | R206     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D   |
|                     |     | R207     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D   |
|                     |     | R208     | 0RH3901D622 | 3.9K OHM 1 / 10 W 2012 5.00   |
|                     |     | C202     | 0CE4763F618 | "47UF SRE,SE 16V 20% FL TP 5" |
|                     |     | C203     | 0CE4763F618 | "47UF SRE,SE 16V 20% FL TP 5" |
|                     |     | D200     | 0DLAU0410AA | AUK SAW5670 BULK AMBER/WHIT   |
|                     |     | IC201    | 6712000013A | TSOP4438SO1 VISHAY 38KHZ AN   |
|                     |     | P200     | 6602T20009J | SMAW200-10 YEONHO 10P 2.0MM   |
|                     |     | P201     | 6602T20009C | SMAW200-04 YEONHO 4P 2.0MM    |

1. INPUT-1



THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC.

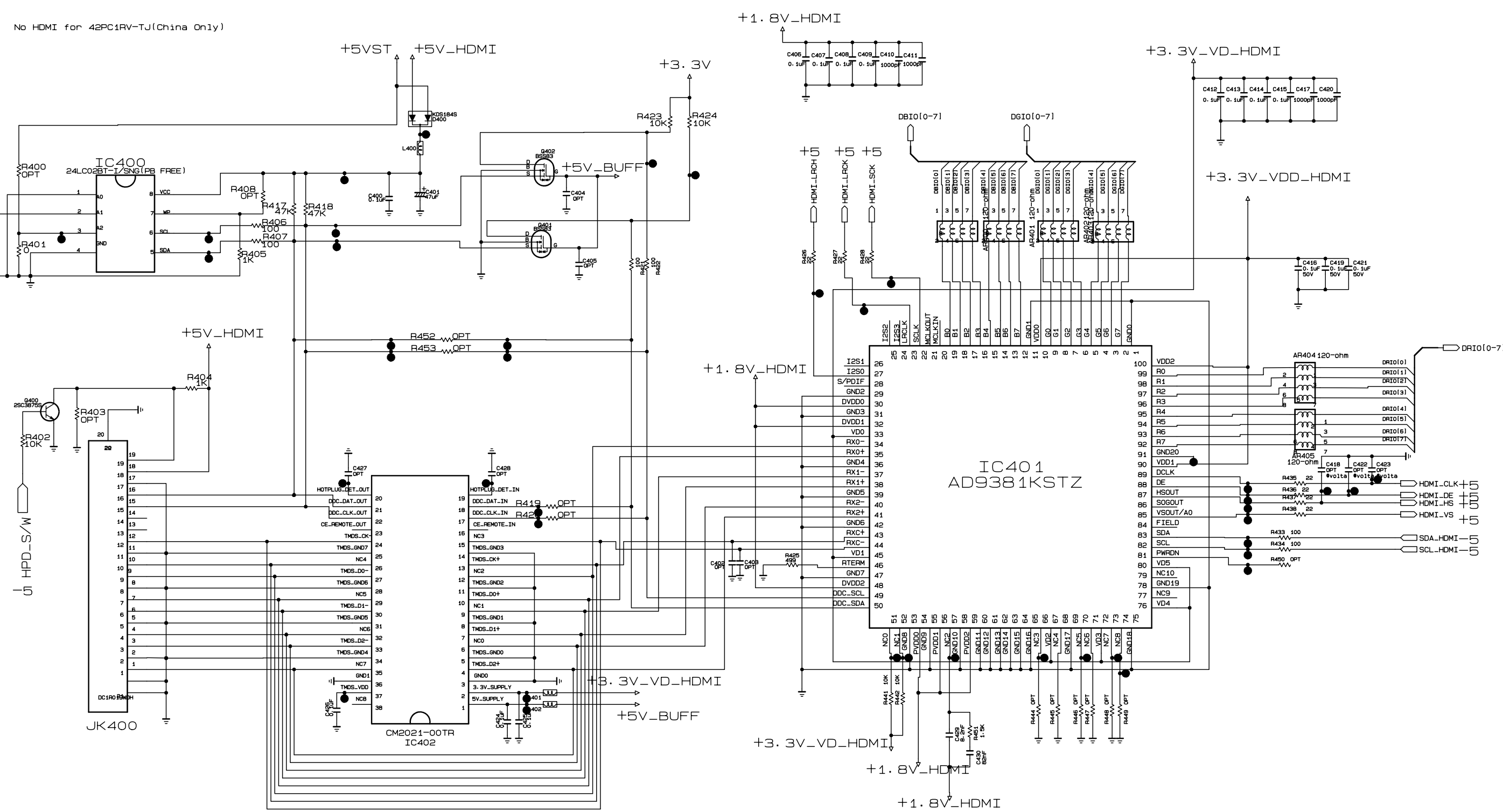
2. INPUT-2



THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC.

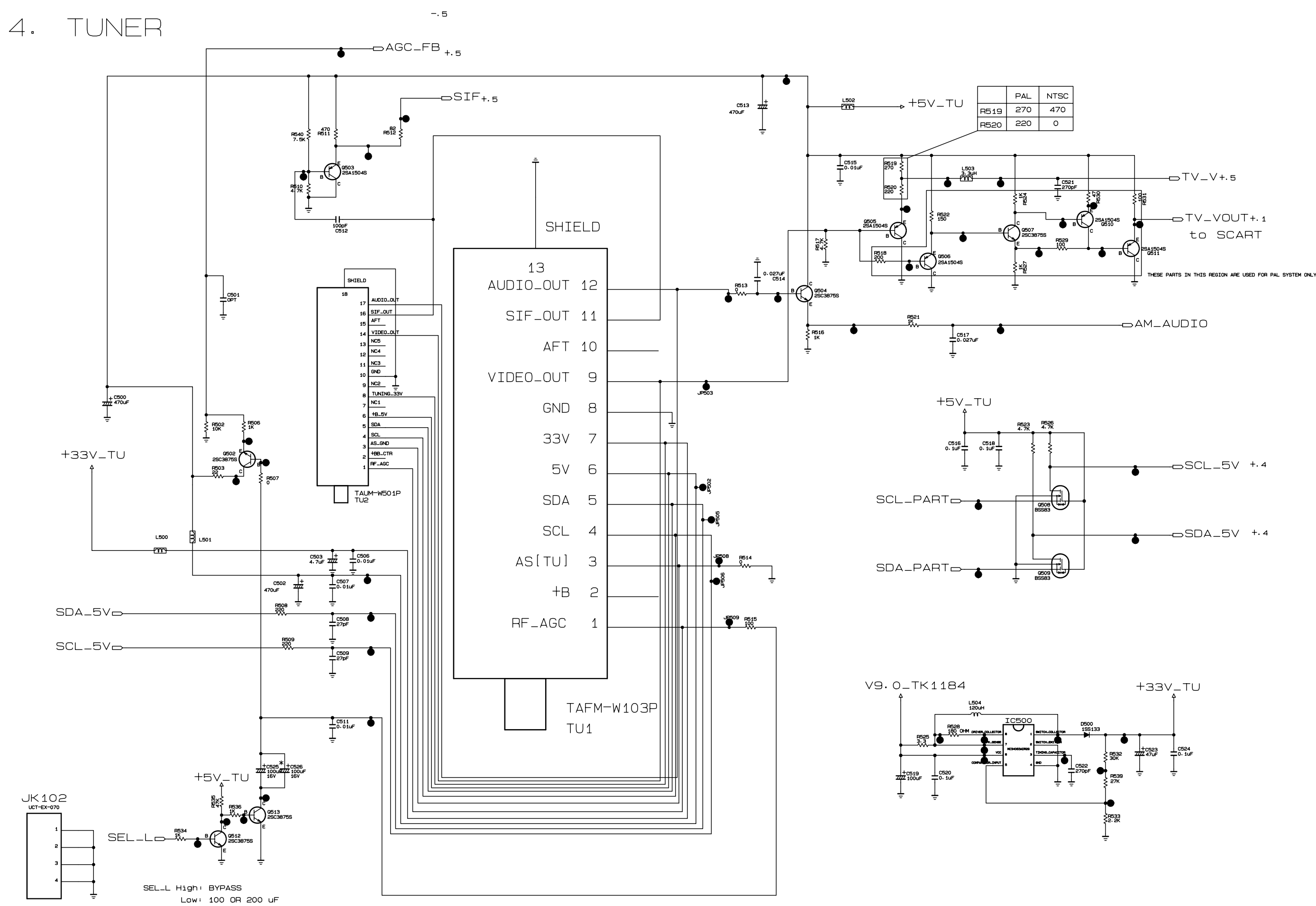
3. HDMI

NO HDMI (FOR ASPC3RV-TJ(CHINA ONLY))



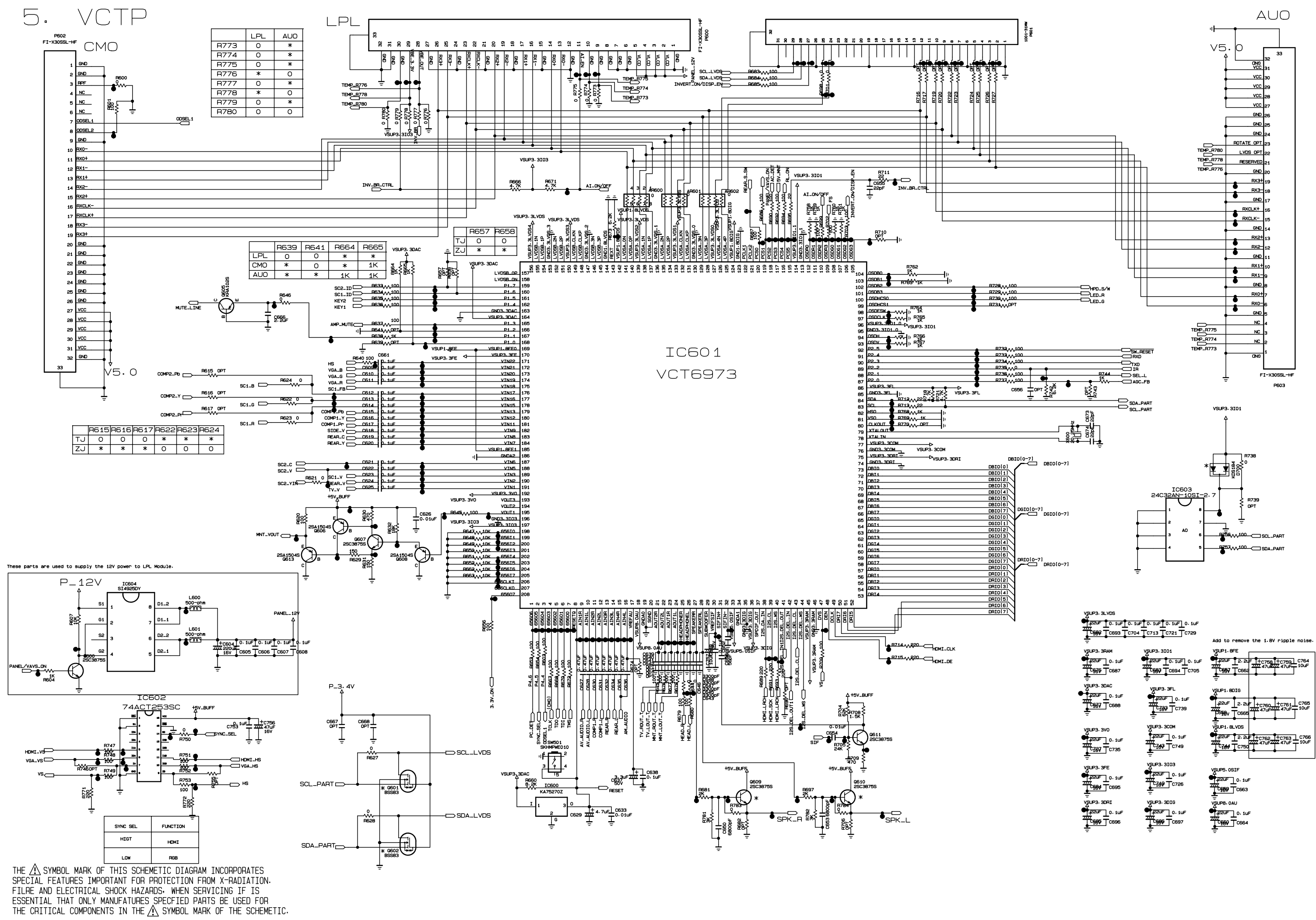
THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC.

4. TUNER



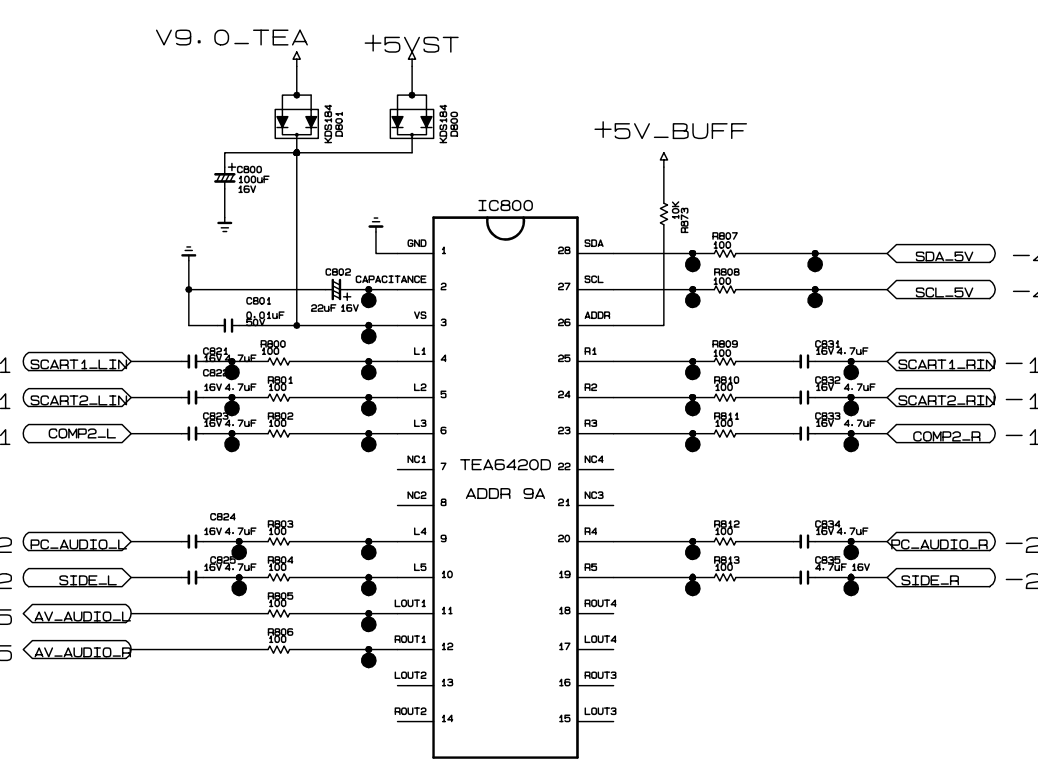
THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC.

## 5. VCTP

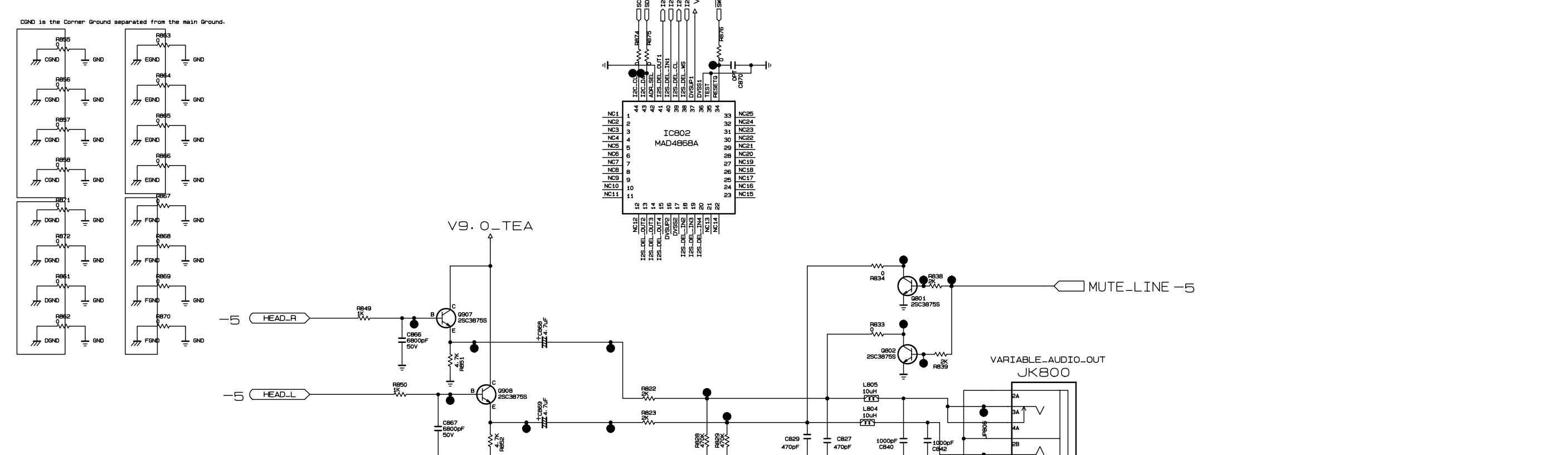
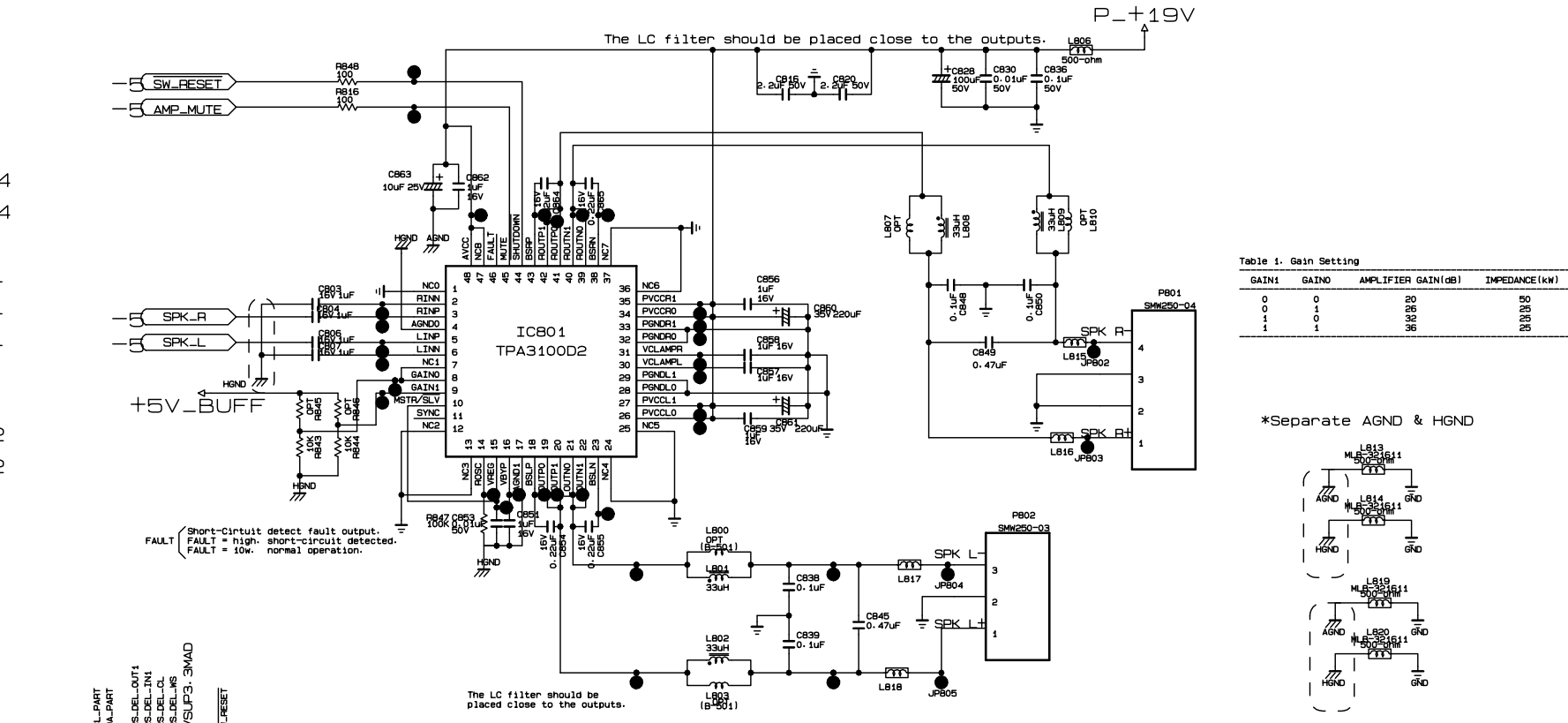


## 6. AUDIO

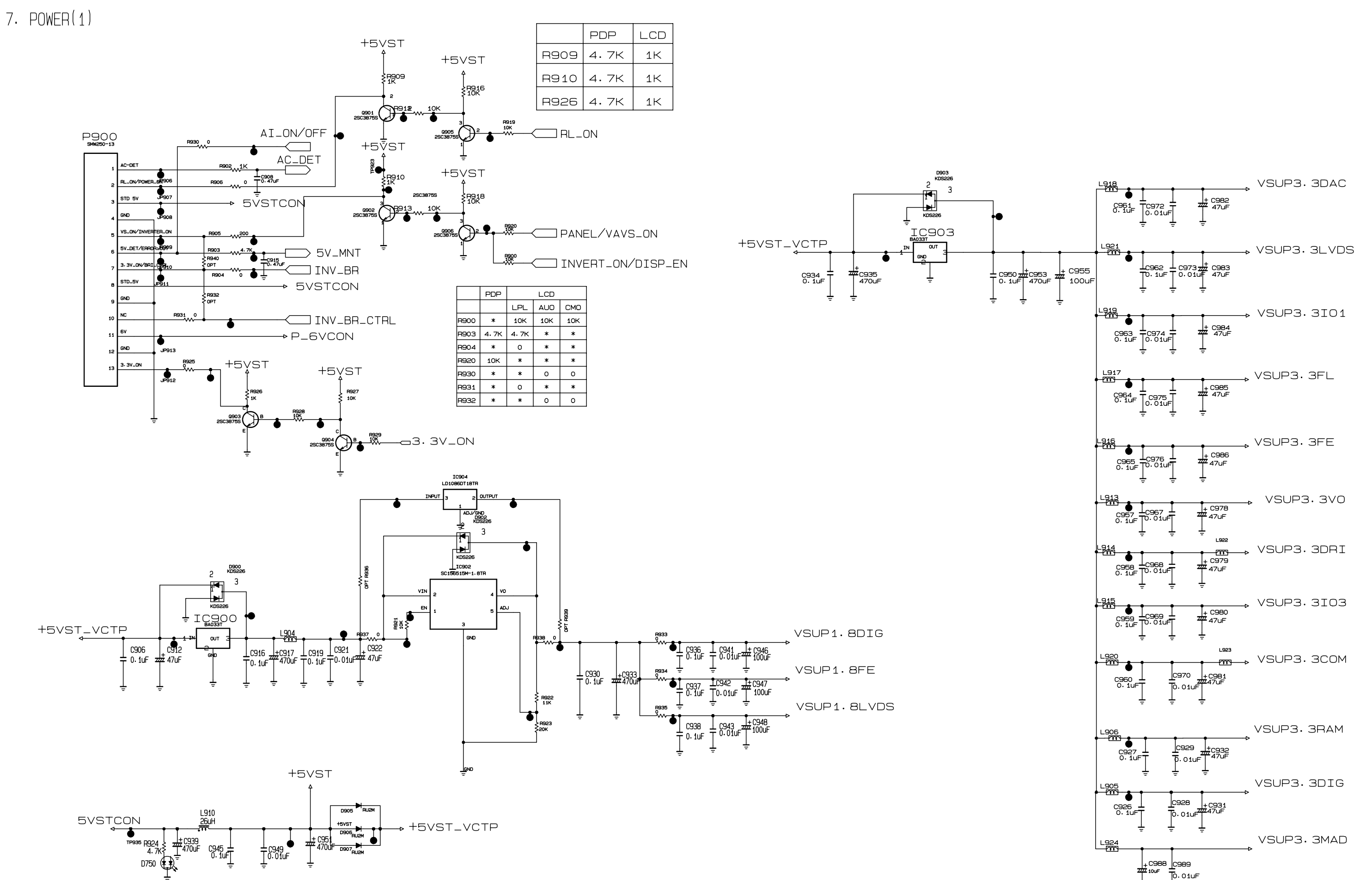
### AUDIO SWITCH



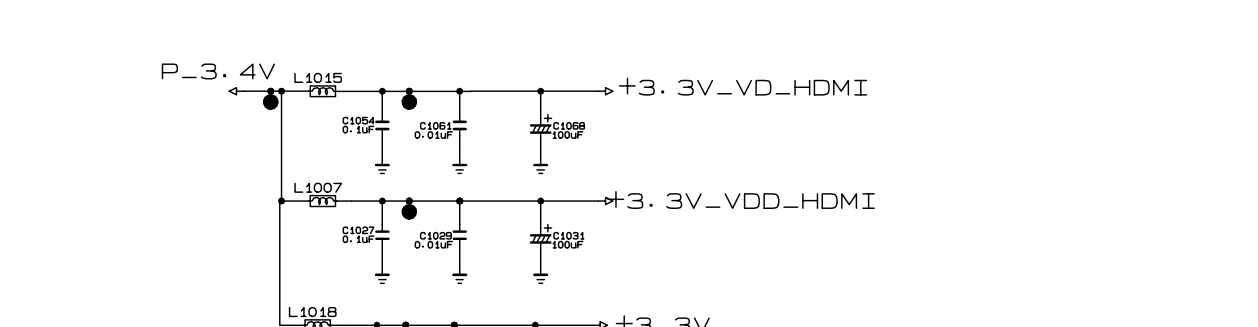
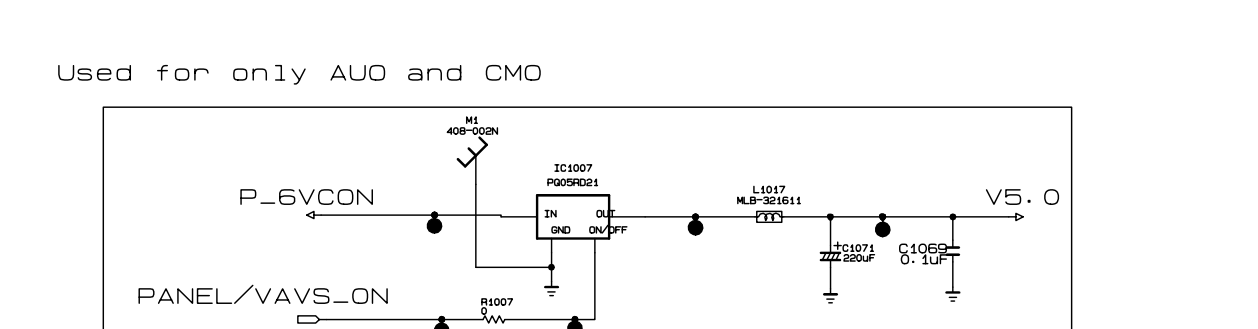
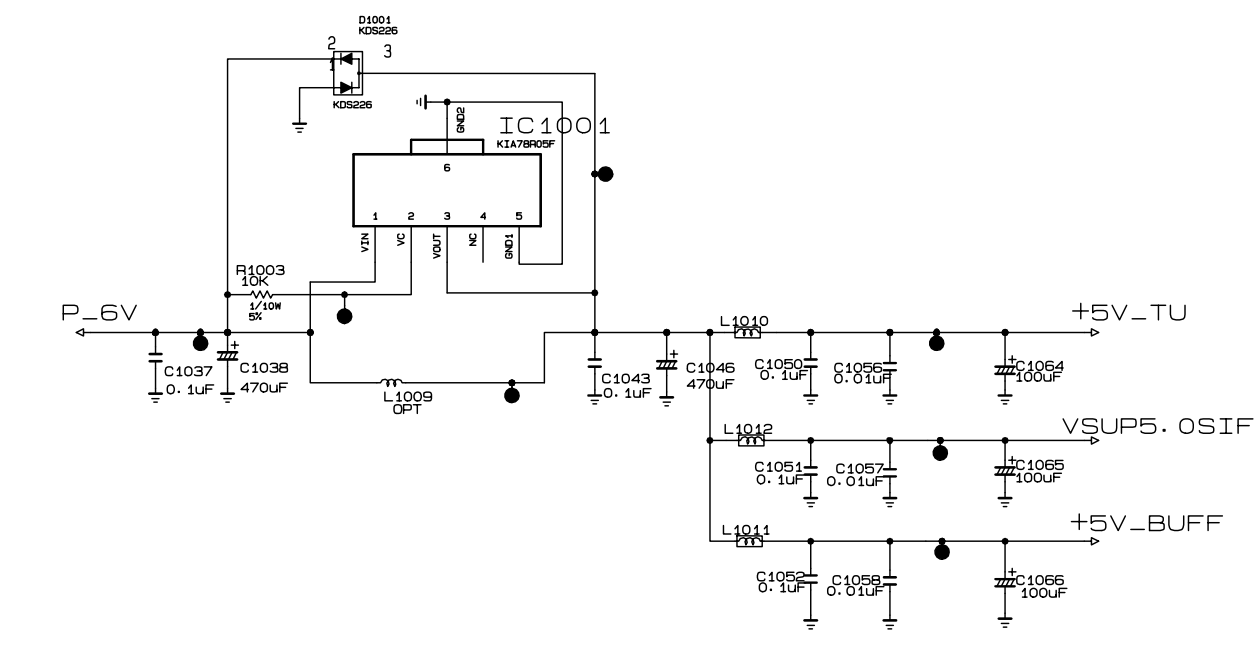
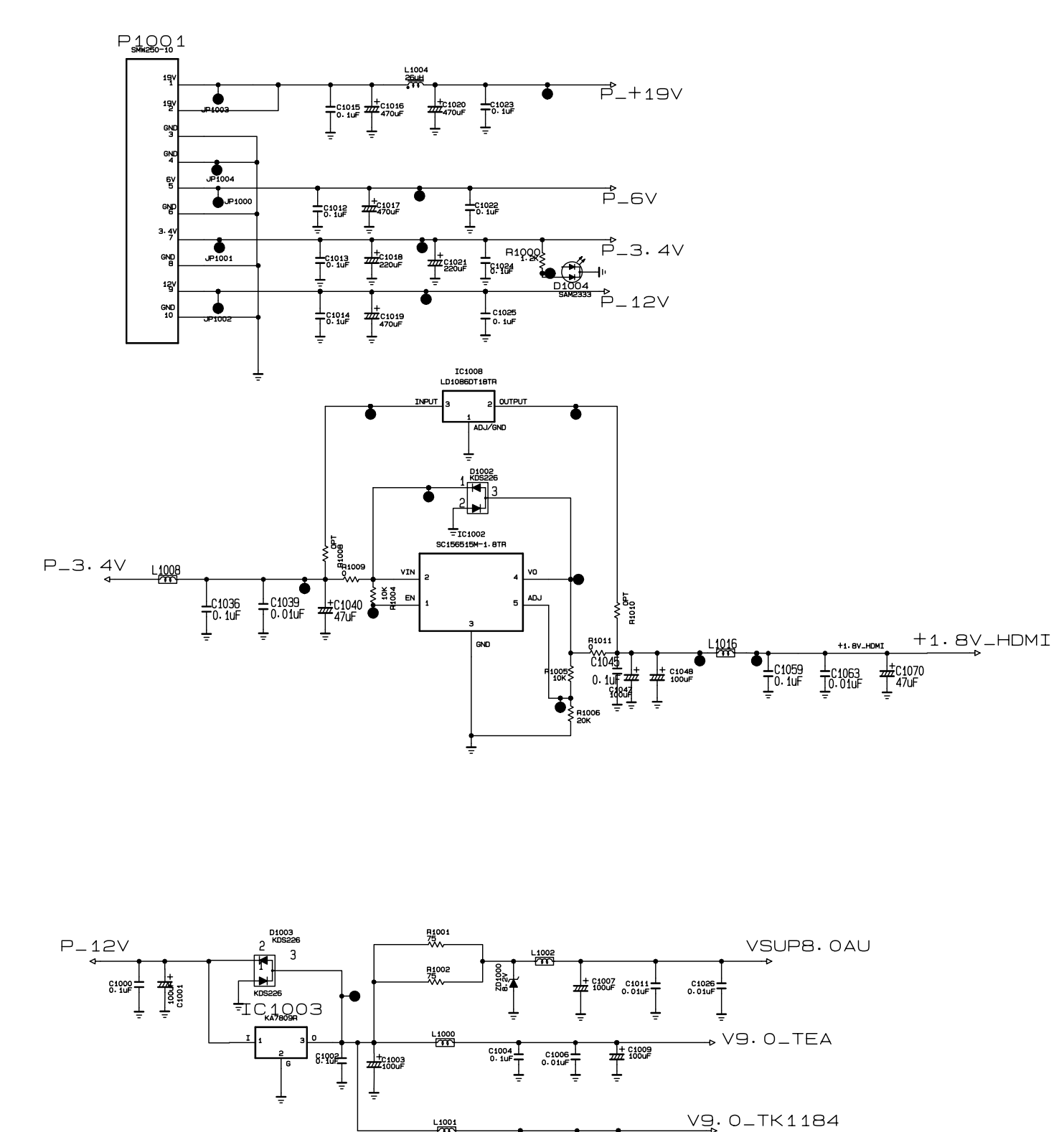
### AUDIO Amplifier



## 7. POWER



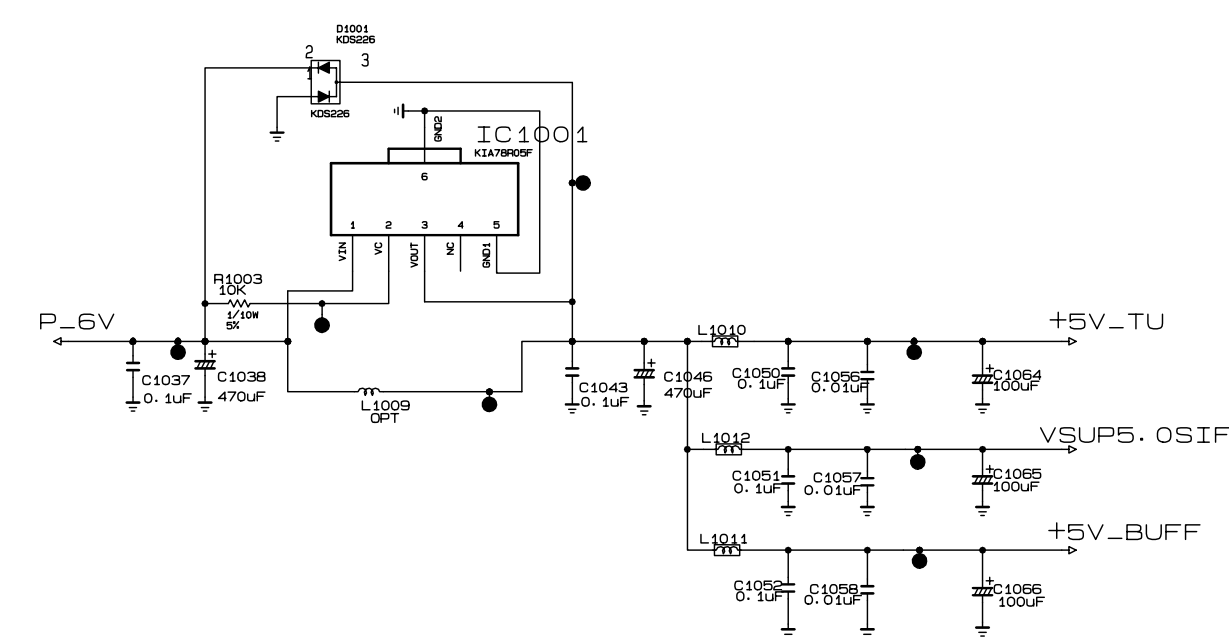
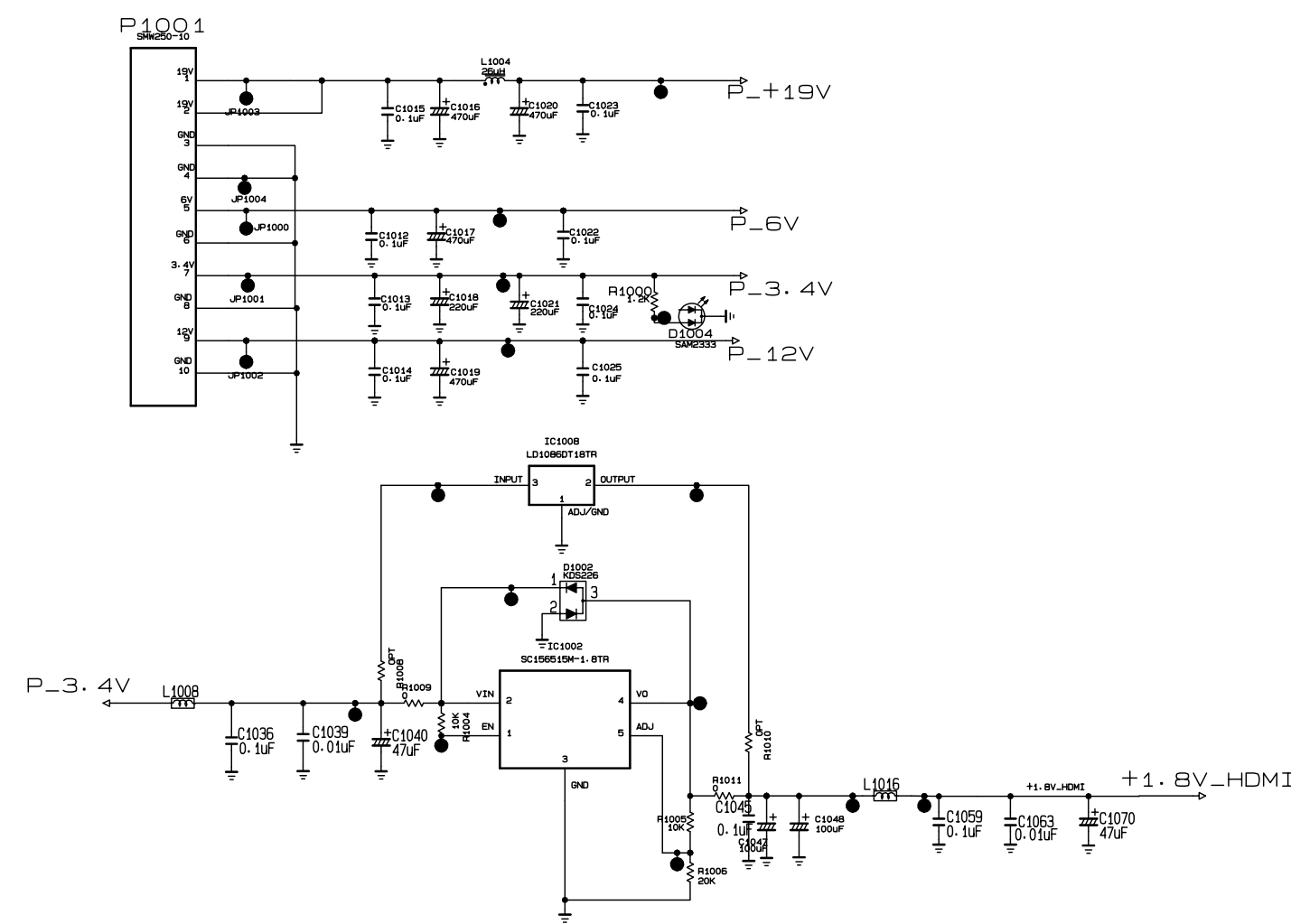
## 8. POWER



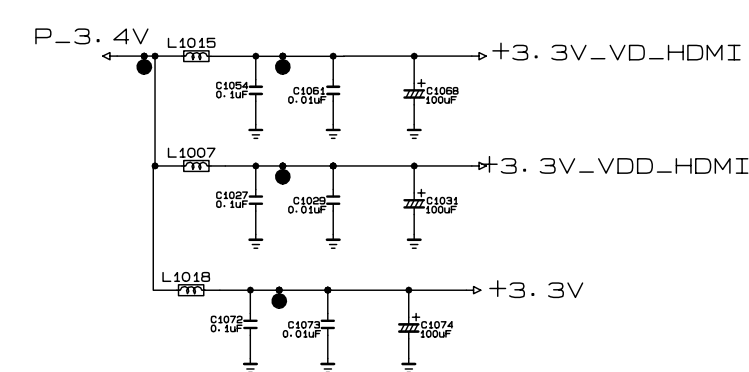
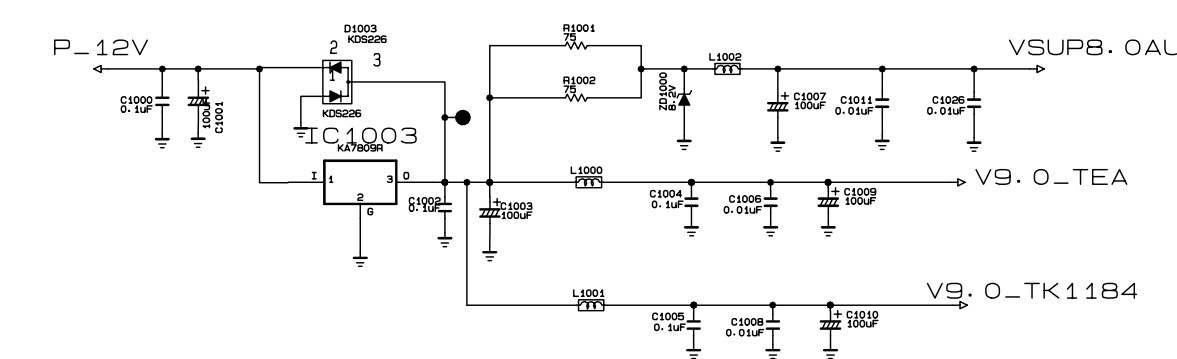
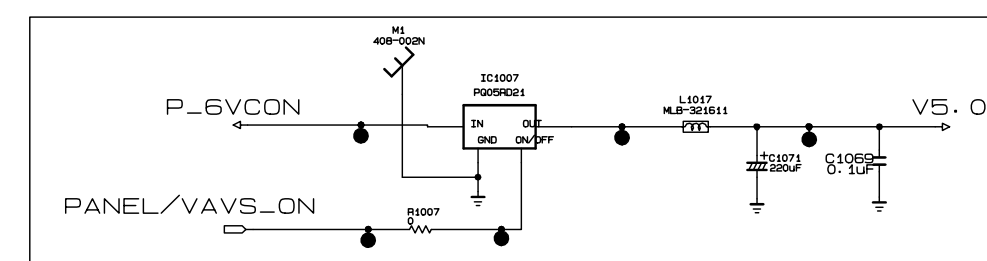
THE Δ SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FLUORESCENT AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE Δ SYMBOL MARK OF THE SCHEMATIC.

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## 8. POWER

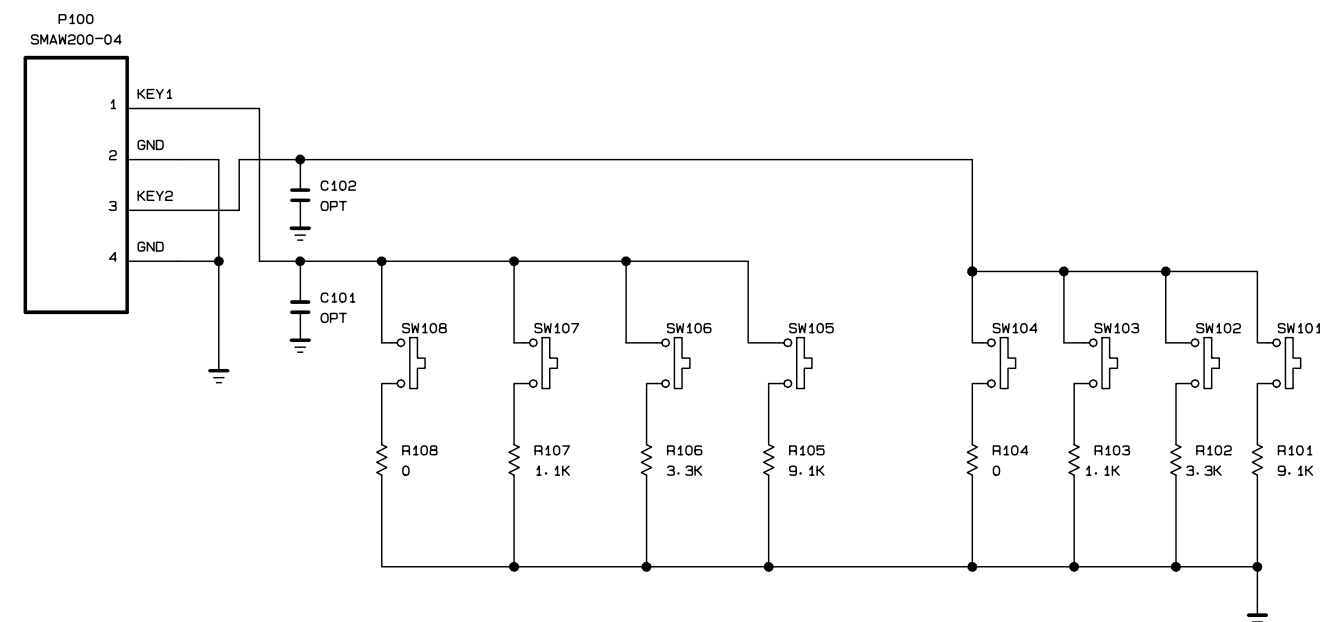


Used for only AUD and CMO

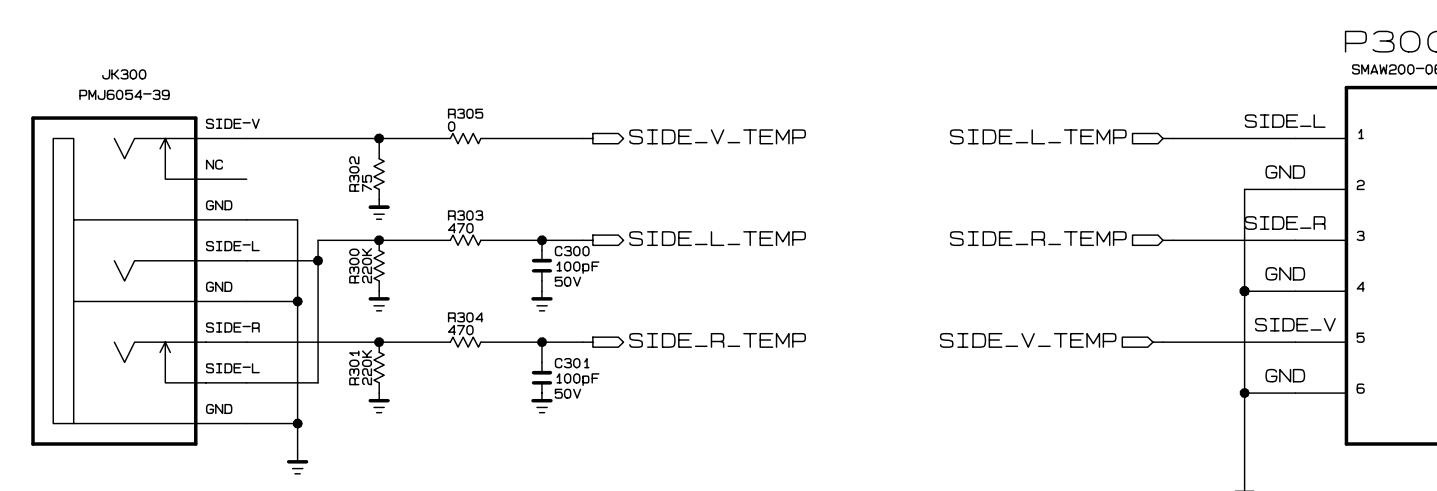


THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC

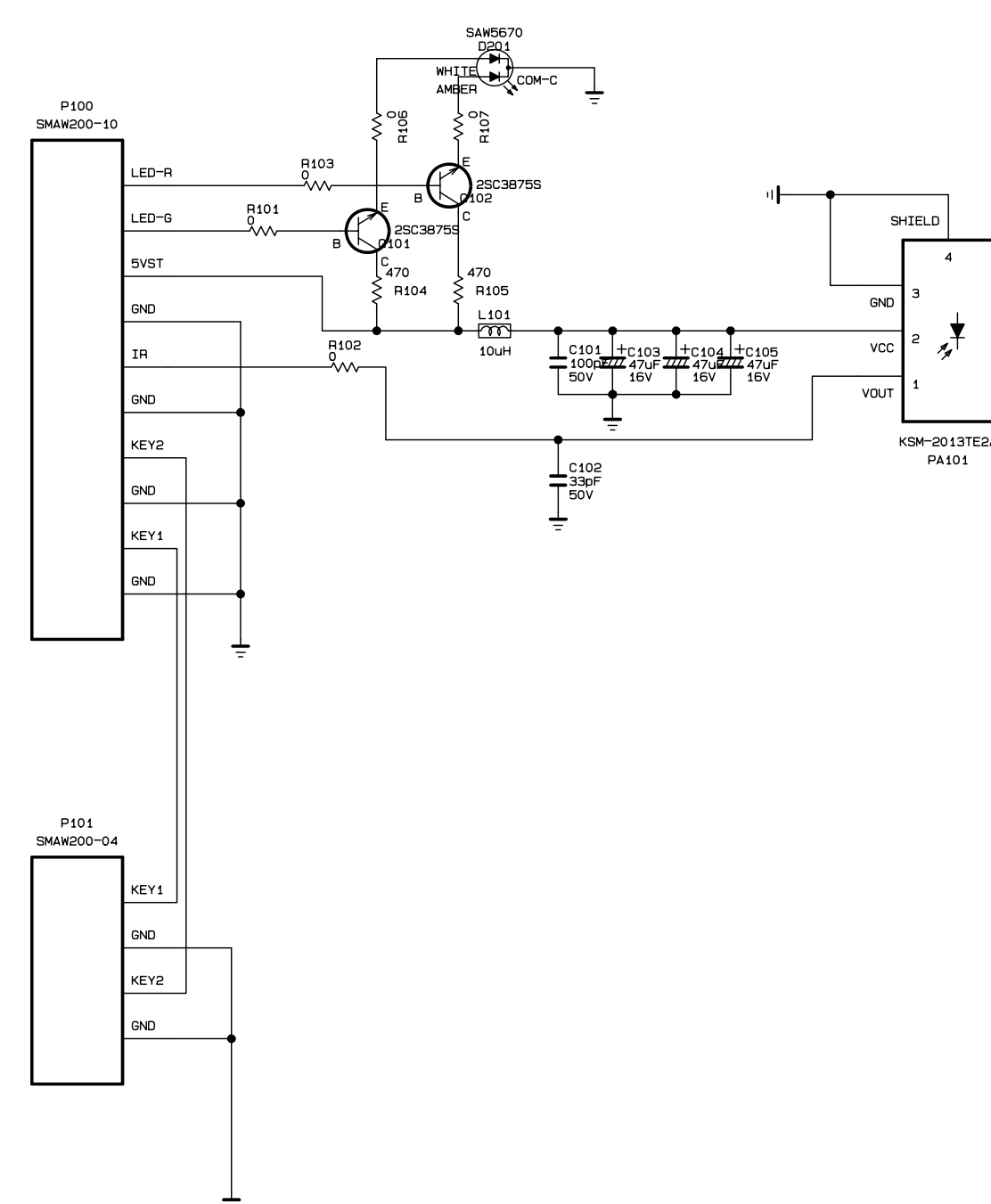
## LOCAL KEY ( 68709S0138A )



## SIDE-AV(68709S0927A)



PREAMP+LED ( 68709SO 178A )



THE  SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FILTRE AND ELECTRICAL SHOCK HAZARDS: WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC.



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