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# LCD TV

# SERVICE MANUAL

**CHASSIS : ML-041A**

**MODEL : RZ-32LZ50**

## **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 X-RADIATION, 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.

### X-RAY Radiation

#### Warning:

The source of X-RAY RADIATION in this TV receiver is the High Voltage Section and the LCD PANEL.

For continued X-RAY RADIATION protection, the replacement panel must be the same type panel as specified in the Replacement Parts List.

To determine the presence of high voltage, use an accurate high impedance HV meter.

Adjust brightness, color, contrast controls to minimum.

Measure the high voltage.

The meter reading should indicate

23.5 ; 1.5KV: 14-19 inch, 26 ; 1.5KV: 19-21 inch,

29.0 ; 1.5KV: 25-29 inch, 30.0 ; 1.5KV: 32 inch

If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

### 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.**

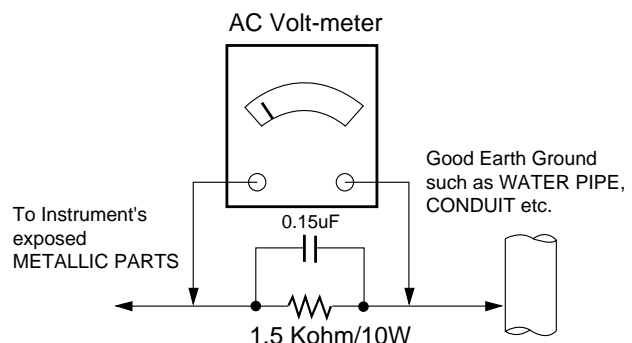
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

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 ML-041A chassis.

## 2. Requirement for Test

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

- (1) Temperature: 25°C ± 2°C
- (2) Humidity: 65% ± 10%
- (3) Power: Standard input voltage (AC 100-240V, 50/60Hz)
- (4) Measurement must be performed after heat-run more than 30min.
- (5) Adjusting standard for this chassis is followed a special standard.

## 3.General Specification(TV)

| No. | Item                           | Specification   | Remark                           |
|-----|--------------------------------|---|----------------------------------|
| 1   | Video input applicable system  | 1)PAL-D/K,B/G,I<br>2)NTSC-M<br>3)SECAM NTSC 4.43'                         |                                  |
| 2   | Receivable broadcasting system | 1)PAL/SECAM BG<br>2)PAL/SECAM DK<br>3)PAL I/I<br>4)SECAM L/L'<br>5)NTSC M | EU/Non-EU(RZ/RT)<br>(PAL Market) |
|     |                                | 6)PAL-N/M<br>7)NTSC M   | 7)NTSC Area(RM)                  |
| 3   | RF input channel               | VHF : E2 ~ E12<br>UHF : E21 ~ E69<br>CATV : S1 ~ S20<br>HYPER : S21 ~ S41 | PAL                              |
|     |                                | L/L' : B,C,D  | FRANCE                           |
|     |                                | VHF : 2 ~ 13<br>UHF : 14 ~ 69<br>CATV : 1 ~ 125                           | NTSC                             |
|     |                                | VHF Low : 1~M10<br>VHF High : 4~S22<br>UHF : S23~62                       | JAPAN                            |
| 4   | Input voltage                  | AC 100 - 240V/ 50Hz,60HZ  |                                  |
| 5   | Picture size                   | 800.4 mm  | 31.51"                           |
| 6   | Tuning system                  | FVS 100 program<br>FS   | PAL, 200PR.(Option)<br>NTSC      |
| 7   | Operting environment           | 1)Temp : 0 ~ 40 deg<br>2)Humidity : 85%                                   |                                  |
| 8   | Storage environment            | 3)Temp : -20 ~ 60 deg<br>4)Humidity : 85%                                 |                                  |
| 9   | Display                        | LCD Module  | LPL                              |

## 5.General Specification(Monitor)

| No. | Item                              | Specification   |  |                       | Unit | Remark                    |
|-----|-----------------------------------|---|--|-----------------------|------|---------------------------|
| 1   | Panel                             | 32" TFT WXGA LCD  |  |                       |      |                           |
| 2   | Frequency range                   | H:31 ~ 61KHz, V: 56 ~ 75Hz  |  |                       |      | DVI-I input               |
| 3   | Control function                  | 1) Contrast/ Brightness<br>2) H- Position/ V-Position<br>3) Tracking : Clock/Phase<br>4) Auto Configure<br>5) Reset |  |                       |      |                           |
| 4   | Component Jack                    | 1: Y<br>3: Pb<br>5: Pr<br>7: Line1 Ready<br>9: LINE2<br>11: LINE3<br>13: Line3 Ready                                |  |                       |      | Middle east<br>/NTSC Only |
|     | D4 Jack<br>(525i,525p,750p,1125i) | 2: Y GND<br>4: Pb GND<br>6: Pr GND<br>8: LINE1<br>10: Line2 Ready<br>12: SWITCH GND<br>14: SWITCH                   |  |                       |      | Japan only                |
| 5   |                                   | H/V-Sync  | Video  | Power consumption     |      | LED                       |
|     | Power ON                          | ON/ON   | Active   | ≤ Max 170             | W    | Green                     |
|     | Stand by                          | OFF/ON  | OFF  | ≤ 3.0                 | W    | Red                       |
|     | DPMS Mode                         | ON/OFF  | OFF  | ≤typ.30               | W    | Green                     |
|     | Power off                         | -   | -  | -                     | W    | *                         |
| 6   | LCD Module                        | Type<br>Size  | LPL  | 760.0 x 450.0 x 48.0  | mm   | (H) x (V) x (D)           |
|     |                                   |   |  |                       |      |                           |
|     |                                   |   |  |                       |      |                           |
|     |                                   | Pixel Pitch   | LPL  | 0.1702 x 0.5107 x RGB | mm   |                           |
|     |                                   |   |  |                       |      |                           |
|     |                                   |   |  |                       |      |                           |
|     |                                   | Pixel Format  | 1366 horiz. By 768 vert. pixels<br>RGB strip arrangement         |                       |      |                           |
|     |                                   | Coating   | Hard coating(3H), Anti-glare<br>treatment of the front polarizer |                       |      |                           |
|     |                                   | Back Light  | LPL  | 20EEFL                |      |                           |
|     |                                   |   |  |                       |      |                           |
|     |                                   |   |  |                       |      |                           |

## 6.Optical Feature(LCD Module)

| No. | Item                       | Specification                  |                |         |       |  | Remark             |
|-----|----------------------------|--------------------------------|----------------|---------|-------|--|--------------------|
|     |                            |                                |                | LPL     |       |  |                    |
| 1   | Viewing Angle<br><CR ≥ 10> | R/L, U/D                       |                | 176,176 |       |  |                    |
| 2   | Luminance                  | Luminance(cd/ m <sup>2</sup> ) |                | 500     |       |  | Typical            |
|     |                            | Variation                      |                | 1.3     |       |  | MAX/MIN            |
| 3   | Contrast Ratio             |                                |                | 350     |       |  | ALL white/All back |
| 4   | CIE Color Coordinates      | WHITE                          | W <sub>X</sub> | Typ.    | 0.285 |  | LPL                |
|     |                            |                                | W <sub>Y</sub> | Typ.    | 0.293 |  |                    |
|     |                            | RED                            | X <sub>r</sub> | Typ.    | 0.640 |  |                    |
|     |                            |                                | Y <sub>r</sub> | Typ.    | 0.341 |  |                    |
|     |                            | Green                          | X <sub>g</sub> | Typ.    | 0.287 |  |                    |
|     |                            |                                | Y <sub>g</sub> | Typ.    | 0.610 |  |                    |
|     |                            | Blue                           | X <sub>b</sub> | Typ.    | 0.146 |  |                    |
|     |                            |                                | Y <sub>b</sub> | Typ.    | 0.069 |  |                    |

## 7.Feature and Function

| No. | Item                   | Specification                         | Remark            |
|-----|------------------------|---------------------------------------|-------------------|
| 1   | Teletext               | TOP, FLOF, LIST 10 page               | Top(option)       |
| 2   | REMOCON                | NEC code                              | PAL/NTSC          |
| 3   | AV input               | 1                                     | Rear(RT/RM)       |
| 4   | S-AV input             | 1                                     | Side              |
| 5   | Component input        | 2                                     | Side, Rear(RT/RM) |
| 6   | PERI TV connector      | Half SCART: 1                         | Rear(RZ)          |
| 7   | PERI TV connector      | Full SCART: 1                         | Rear(RZ)          |
| 8   | RGB input              | 1                                     | DVI               |
| 9   | RS-232                 | 1                                     | D-Sub 9 pin(RM)   |
| 10  | Discrete IR            | 1                                     | (RM)              |
| 11  | D-sub audio input      | 1                                     | Stereo            |
| 12  | 2 Carrier stereo       | BG,DK                                 |                   |
| 13  | NICAM stereo           | BG,I,LL'                              |                   |
| 14  | 2 Carrier dual         | BG,DK                                 |                   |
| 15  | NICAM dual             | BG,I,LL'                              |                   |
| 16  | DW(Double Window) mode | X                                     |                   |
| 17  | MW(Multi Window) mode  | X                                     |                   |
| 18  | Film mode              | O                                     |                   |
| 19  | Noise reduction        | X                                     |                   |
| 20  | Progressive scan       | O                                     |                   |
| 21  | Motion detection       | O                                     |                   |
| 22  | SRS WOW                | X                                     |                   |
| 23  | Swivel Speaker         | X                                     |                   |
| 24  | EZ-pip                 | X                                     |                   |
| 25  | Local Key              | Pr+/-, vol+/-, ok, menu, tv/av, power |                   |



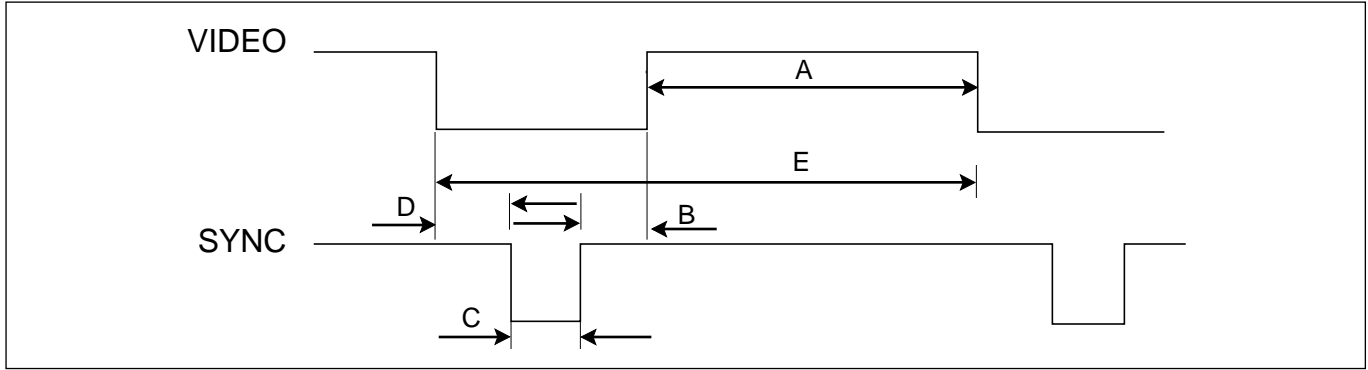
## 8.Component Video Input(Y, P<sub>B</sub>, P<sub>R</sub>)

| NO | Resoluton   | H-freq(kHz) | V-freq(Hz) | Pixel clock                    | Proposed   |
|----|-------------|-------------|------------|--------------------------------|------------|
| 1  | 640 x 480   | 15.73       | 60.00      | SDTV. DVD 480i                 | RZ, RT, RM |
| 2  | 640 x 480   | 15.63       | 59.94      | SDTV. DVD 480i                 | RZ, RT, RM |
| 3  | 704 x 480   | 31.47       | 59.94      | EDTV 480p                      | RT, RM     |
| 4  | 720 x 576   | 15.625      | 50.00      | SDTV. DVD 625 Line             | RZ, RT, RM |
| 5  | 720 x 576   | 31.25       | 50.00      | HDTV 576p                      | RT, RM     |
| 6  | 1280 x 720  | 45.00       | 60.00      | HDTV 720p                      | RT, RM     |
| 7  | 1280 x 720  | 44.96       | 59.94      | HDTV 720p                      | RT, RM     |
| 8  | 1920 x 1080 | 31.25       | 50.00      | HDTV 1080i 50Hz(For Australia) | RT, RM     |
| 9  | 1920 x 1080 | 33.75       | 60.00      | HDTV 1080i 60Hz(ATSC)          | RT, RM     |
| 10 | 1920 x 1080 | 33.72       | 59.94      | HDTV 1080i 59.94Hz             | RT, RM     |

## 9.PC Input Mode

| NO                 | Resoluton  | H-freq(kHz) | V-freq(Hz) | Pixel clock(MHz) | Proposed   |
|--------------------|------------|-------------|------------|------------------|------------|
| DVI-PC, Analog RGB |            |             |            |                  |            |
| 1                  | 640 x 480  | 31.469      | 59.94      | 25.17            | VESA(VGA)  |
| 2                  | 800 x 600  | 37.879      | 60.31      | 40.00            | VESA(SVGA) |
| 3                  | 1024 x 768 | 48.363      | 60.00      | 65.00            | VESA(XGA)  |
| 4                  | 1280 x 768 | 47.693      | 60.00      | 80.125           | VESA(WXGA) |
| 5                  | 1360 x 768 | 47.649      | 59.936     | 84.625           | VESA(WXGA) |

# TIMING CHART



<< Dot Clock (**MHz**), Horizontal Frequency (**kHz**), Vertical Frequency (**Hz**), Horizontal etc... (**μs**), Vertical etc... (**ms**) >>

| Mode     | H/V Sort | Sync Polarity | Dot Clock | Frequency | Total Period (E) | Video Active Time (A) | Front Porch (B) | Sync Duration (D) | Back Porch (F) | Resolution      |
|----------|----------|---------------|-----------|-----------|------------------|-----------------------|-----------------|-------------------|----------------|-----------------|
| <b>1</b> | H        | +             | 25.175    | 31.469    | 800              | 640                   | 16              | 96                | 48             | <b>640x480</b>  |
|          | V        | -             |           | 59.94     | 525              | 480                   | 10              | 2                 | 33             |                 |
| <b>2</b> | H        | -             | 40.0      | 37.879    | 1056             | 800                   | 40              | 128               | 88             | <b>800x600</b>  |
|          | V        | +             |           | 60.317    | 628              | 600                   | 1               | 4                 | 23             |                 |
| <b>3</b> | H        | -             | 65.0      | 48.363    | 1344             | 1024                  | 24              | 136               | 160            | <b>1024x768</b> |
|          | V        | -             |           | 60.004    | 806              | 768                   | 3               | 6                 | 29             |                 |
| <b>4</b> | H        | -             | 79.50     | 47.776    | 1664             | 1280                  | 64              | 128               | 192            | <b>1280x768</b> |
|          | V        | -             |           | 59.870    | 798              | 768                   | 3               | 7                 | 20             |                 |

# ADJUSTMENT INSTRUCTION

## 1. Application Object

This instruction is for the application to the LCD TV.

## 2. Adjustment

### 2.1 PC Auto Gain/Offset adjustment

#### 2.1.1 Adjustment preparation

- 1) Heat Run after 30 minutes execution of white pattern
- 2) Pattern generator is connected to the DVI Jack of LCD TV.
- 3) To use Pattern Generator(801GF, VG819) the resolution is XGA(1024 X 768), this pattern gives 16gradation grey scale or 16 gradation which follows in the VG819.
- 4) For (SVC) Adjustment first convert into adjustment mode and after converting press IN-START Key and VOL+ Key consecutively from Auto gain menu.
- 5) fter adjustment is complete pressing enter key stores and completes the process

#### 2.1.2 Video Auto Gain/Offset Adjustment

- 1) Heat Run after 30 minutes execution of white pattern
- 2) In RF mode using adjustment remote controller Push IN-START Key. And again push IN-Start Key.
- 3) Gray Scale Pattern appears and then press vol+ key, to adjust Auto-again.
- 4) After adjusting press enter to save the values of auto-gain.

### 2.2 EDID (The Extended Display Identification Data) setting

- 1) Connect D-Sub to DVI-I Cable to DVI-I Jack.
- 2) Input analog signal and check pc video in the screen.
- 3) After appearing the pc video, write Analog EDID data.
- 4) Connect DVI D Cable to DVI Jack..
- 5) Input digital signal and check pc video in the screen.
- 6) After appearing the pc video, write digital EDID data.

#### 2.2.1 EDID DATA

##### [DDC DATA Analog]

|    | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A | 0B | 0C | 0D | 0E | 0F |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 00 | 00 | FF | FF | FF | FF | FF | FF | 00 | 1E | 6D | 45 | 75 | 01 | 01 | 01 | 01 |
| 10 | 00 | 0E | 01 | 03 | 01 | 40 | 26 | 78 | 08 | B1 | DA | A1 | 56 | 48 | 98 | 24 |
| 20 | 13 | 48 | 4B | A1 | 08 | 00 | 31 | 40 | 01 | 01 | 01 | 01 | 45 | 40 | 01 | 01 |
| 30 | 61 | 40 | 81 | 80 | 01 | 01 | 4E | 1F | 00 | 90 | 51 | 00 | 1B | 30 | 40 | 88 |
| 40 | 13 | 00 | A2 | 0B | 32 | 00 | 00 | 18 | 1B | 21 | 50 | A0 | 51 | 00 | 1E | 30 |
| 50 | 48 | 88 | 35 | 00 | A2 | 0B | 32 | 00 | 00 | 1C | 00 | 00 | 00 | FD | 00 | 3B |
| 60 | 3D | 1F | 30 | 09 | 00 | 0A | 20 | 20 | 20 | 20 | 20 | 20 | 00 | 00 | 00 | FC |
| 70 | 00 | 52 | 52 | 33 | 32 | 4C | 5A | 35 | 30 | 0A | 20 | 20 | 20 | 20 | 00 | E6 |

##### [DDC DATA Digital]

|    | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A | 0B | 0C | 0D | 0E | 0F |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 00 | 00 | FF | FF | FF | FF | FF | FF | 00 | 1E | 6D | 46 | 75 | 01 | 01 | 01 | 01 |
| 10 | 00 | 0E | 01 | 03 | 81 | 40 | 26 | 78 | 08 | B1 | DA | A1 | 56 | 48 | 98 | 24 |
| 20 | 13 | 48 | 4B | A1 | 08 | 00 | 31 | 40 | 01 | 01 | 01 | 01 | 45 | 40 | 01 | 01 |
| 30 | 61 | 40 | 81 | 80 | 01 | 01 | 4E | 1F | 00 | 90 | 51 | 00 | 1B | 30 | 40 | 88 |
| 40 | 13 | 00 | A2 | 0B | 32 | 00 | 00 | 18 | 1B | 21 | 50 | A0 | 51 | 00 | 1E | 30 |
| 50 | 48 | 88 | 35 | 00 | A2 | 0B | 32 | 00 | 00 | 1C | 00 | 00 | 00 | FD | 00 | 38 |
| 60 | 3D | 1F | 30 | 09 | 00 | 0A | 20 | 20 | 20 | 20 | 20 | 20 | 00 | 00 | 00 | FC |
| 70 | 00 | 52 | 52 | 33 | 32 | 4C | 5A | 35 | 30 | 0A | 20 | 20 | 20 | 20 | 00 | 65 |

### 3. Shipping Conditions

| NO | ITEM              |                  | CONDITION                | REMARK      |
|----|-------------------|------------------|--------------------------|-------------|
| 1  | Power             |                  | Off                      |             |
| 2  | Volume Level      |                  | 30                       |             |
| 3  | Main Pcture Input |                  | TV                       |             |
| 5  | Main Last Channel |                  | Pr 01                    |             |
| 8  | Mute              |                  | Off                      |             |
| 9  | ARC               |                  | 16:9                     |             |
| 10 | Station           | Auto Program     |                          |             |
|    |                   | Manual Program   |                          |             |
|    |                   | Program Edit     |                          |             |
|    |                   | Favorite Program | None                     |             |
| 11 | Picture           | PSM              | Dynamic                  |             |
|    |                   | Dynamic          | Contrast                 | 80          |
|    |                   |                  | Brightness               | 40          |
|    |                   |                  | Colour                   | 70          |
|    |                   |                  | Sharpness                | 70          |
|    |                   |                  | Tint                     | 0           |
| 14 | Sound             | SSM              | Flat                     | NTSC OPTION |
|    |                   | AVL              | Off                      |             |
|    |                   | Balance          | 0                        |             |
| 15 | Special           | Input            | TV                       |             |
|    |                   | Child Lock       | Off                      |             |
|    |                   | Auto sleep       | Off                      |             |
|    |                   | Language         | English(Area Management) |             |
| 16 | PC                | H-Position       | Variable by each mode    |             |
|    |                   | V-Position       |                          |             |
|    |                   | Clock            |                          |             |
|    |                   | Phase            |                          |             |
|    |                   | Auto Configure   |                          |             |

## \*Option(PAL)

| NO       | ITEM      | CONDITION | REMARK  |
|----------|-----------|-----------|---|
| Option 1 |           |           |   |
| 1        | Side AV   | 1         | 0: Side AV Off<br>1: Side AV On                         |
| 2        | SCART     | 1         | 0: SCART Off<br>1: SCART On                             |
| 3        | PC        | 1         | 0: PC Off<br>1: PC On                                   |
| 4        | SideComp  | 1         | 0: SideComp Off<br>1: SideComp On                       |
| 5        | 16:9      | 1         | 0: Wide Off<br>1: Wide On                               |
| 6        | 200PR     | 0         | 0: 100 Program<br>1: 200 Program                        |
| 7        | Text      | 1         | 0: Text Off<br>1: Text On                               |
| 8        | ACMS      | 1         | 0: ACMS On<br>1: ACMS Off                               |
| Option 2 |           |           |   |
| 1        | HiDev     | 0         | 0: HiDev Off<br>1: HiDev On                             |
| 2        | Hotel     | 0         | 0: Hotel Off<br>1: Hotel On                             |
| 3        | Top       | 1         | 0: Top Off<br>1: Top On                                 |
| 4        | I II SAVE | 1         | 0: Ch. Sound Non Memory<br>1: Ch. Sound Memory          |
| 5        | Turbo Vol | 0         | 0: except below area(Off)<br>1: Middle-east Area Vol On |
| 6        | Ch/Aus    | 0         | 0: except below area(Off)<br>1: China, Australia On     |

| NO       | ITEM     | CONDITION | REMARK  |
|----------|----------|-----------|---|
| Option 3 |          |           |   |
| 1        | Language | 1         | 0: Eng Only<br>1: EU5<br>2: 12 nations(Europe)<br>3: Eng + Chines<br>4: Eng + Arab + Urdu<br>5: Eng + FARSI   |
| 2        | Txt Lang | 0         | 0: WEST EU<br>1: EAST EU 1<br>2: TURKY EU<br>3: EAST EU 2<br>4: CYRILLIC 1<br>5: CYRILLIC 2<br>6: CYRILLIC 3<br>7: TURKY GRE 1<br>8: TURKY GRE 2<br>9: TURKY GRE 3<br>10: ARAB FRAN<br>11: ARAB ENG<br>12: ARAB HEB 1<br>13: ARAB HEB 2<br>14: FARSI ENG<br>15: FARSI FRA<br>16: FARI ALL |
| 3        | Inch opt | 0         | reserved  |
| 4        | Analog   | Analog    | Analog : Analog<br>Digital : Digital  |

# EDID ADJUSTMENT

Windows EDID V1.0 User Manual

## 2. EDID Read & Write

### 1) Run WinEDID.exe

Operating System: MS Windows 98, 2000, XP

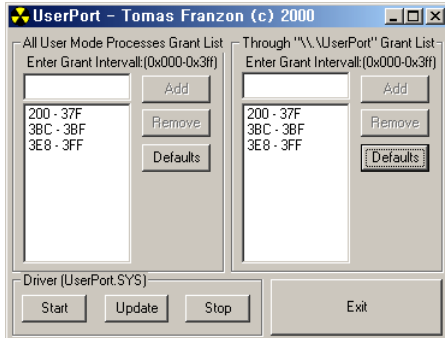
Port Setup: Windows 98 => Don't need setup

Windows 2000, XP => Need to Port Setup.

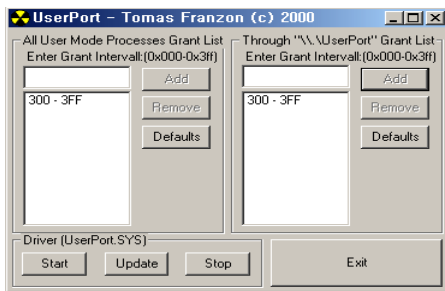
This program is available to LCD Monitor only.

### 1. Port Setup

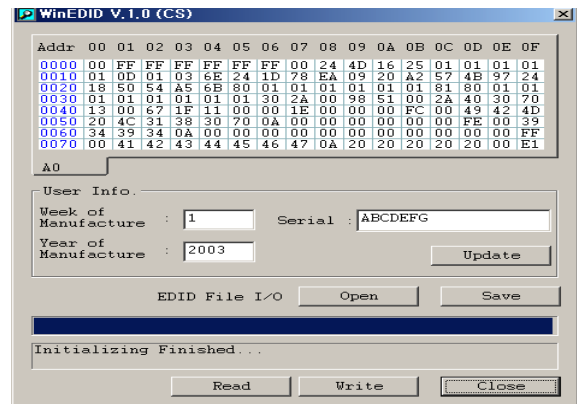
- Copy "UserPort.sys" file to  
"c:\WINNT\system32\drivers" folder
- Run Userport.exe



- Remove all default number
- Add 300-3FF



- Click Start button.
- Click Exit button.



### 2) Edit Week of Manufacture, Year of Manufacture, Serial Number

- Input User Info Data
- Click "Update" button
- Click "Write" button

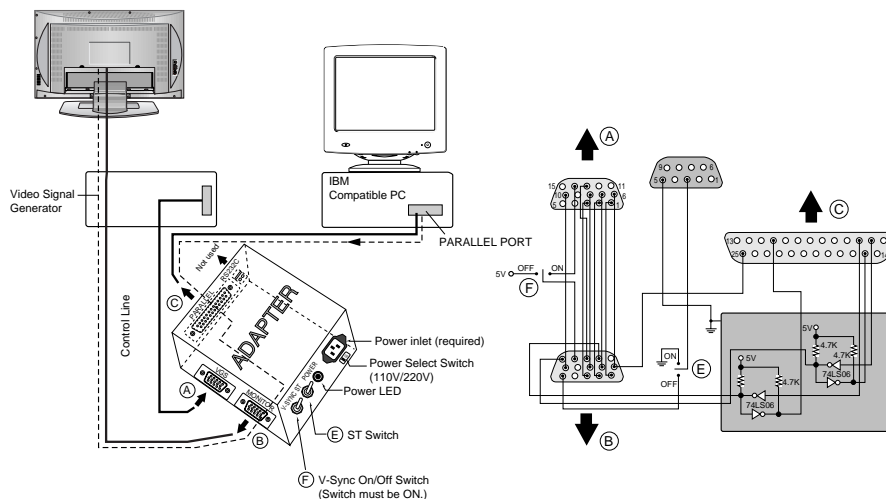
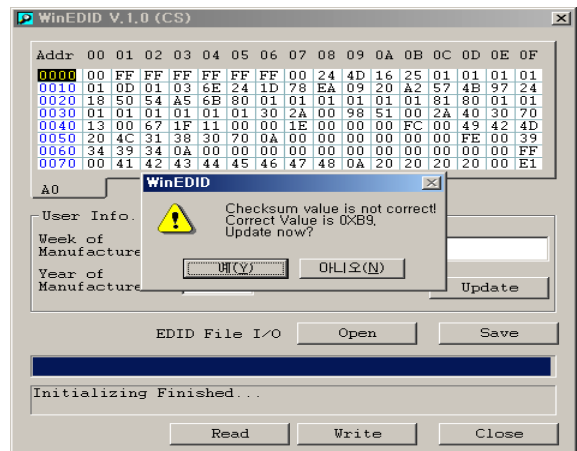
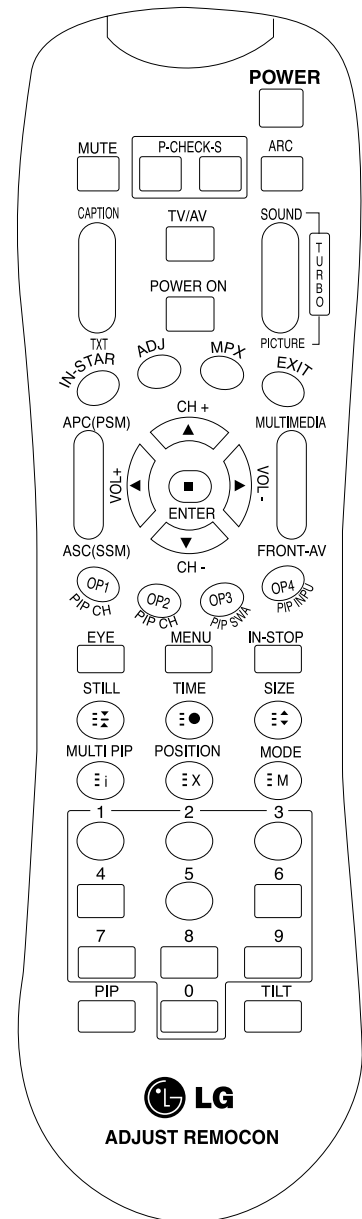


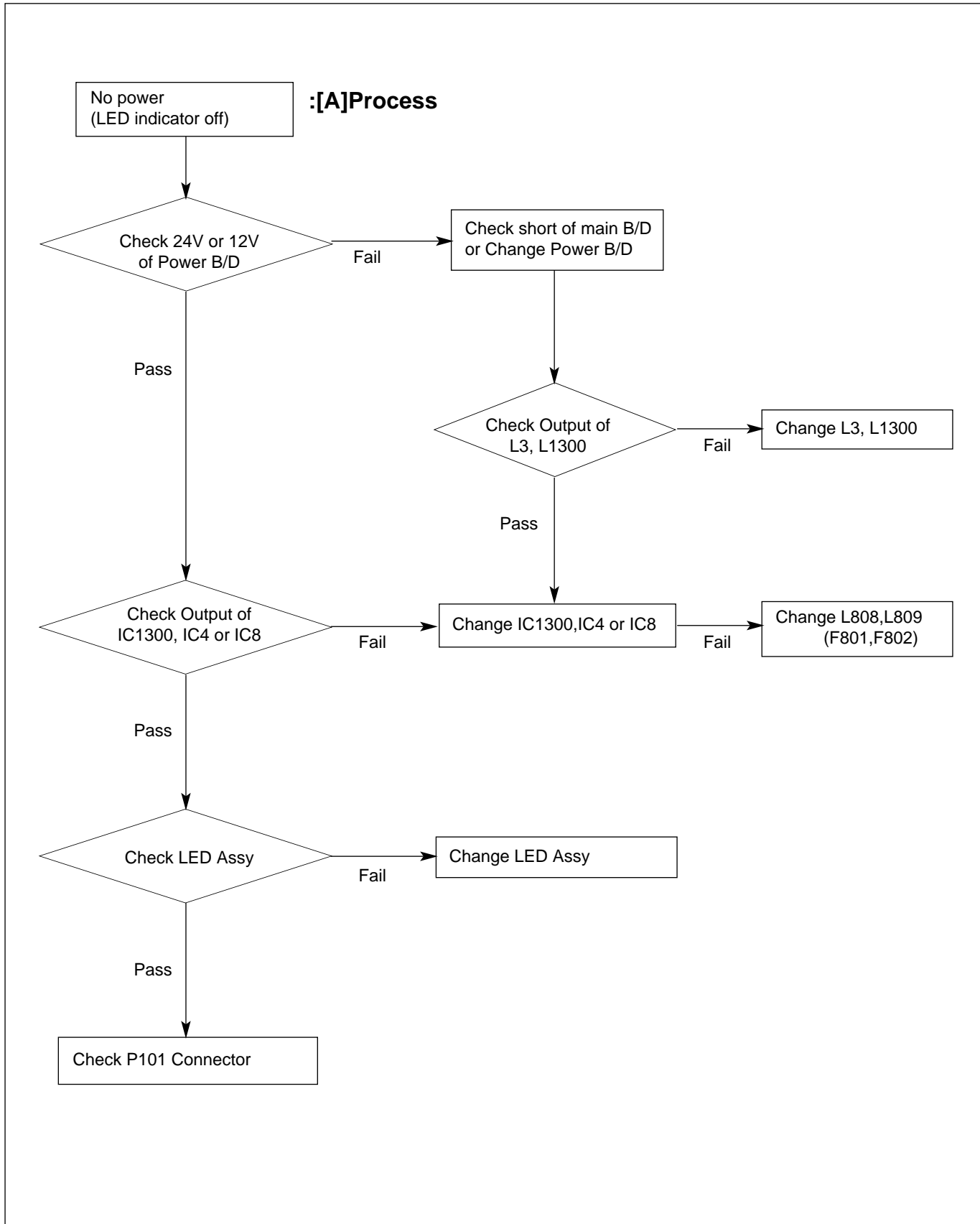
Figure 1. Cable Connection

# SVC REMOCON

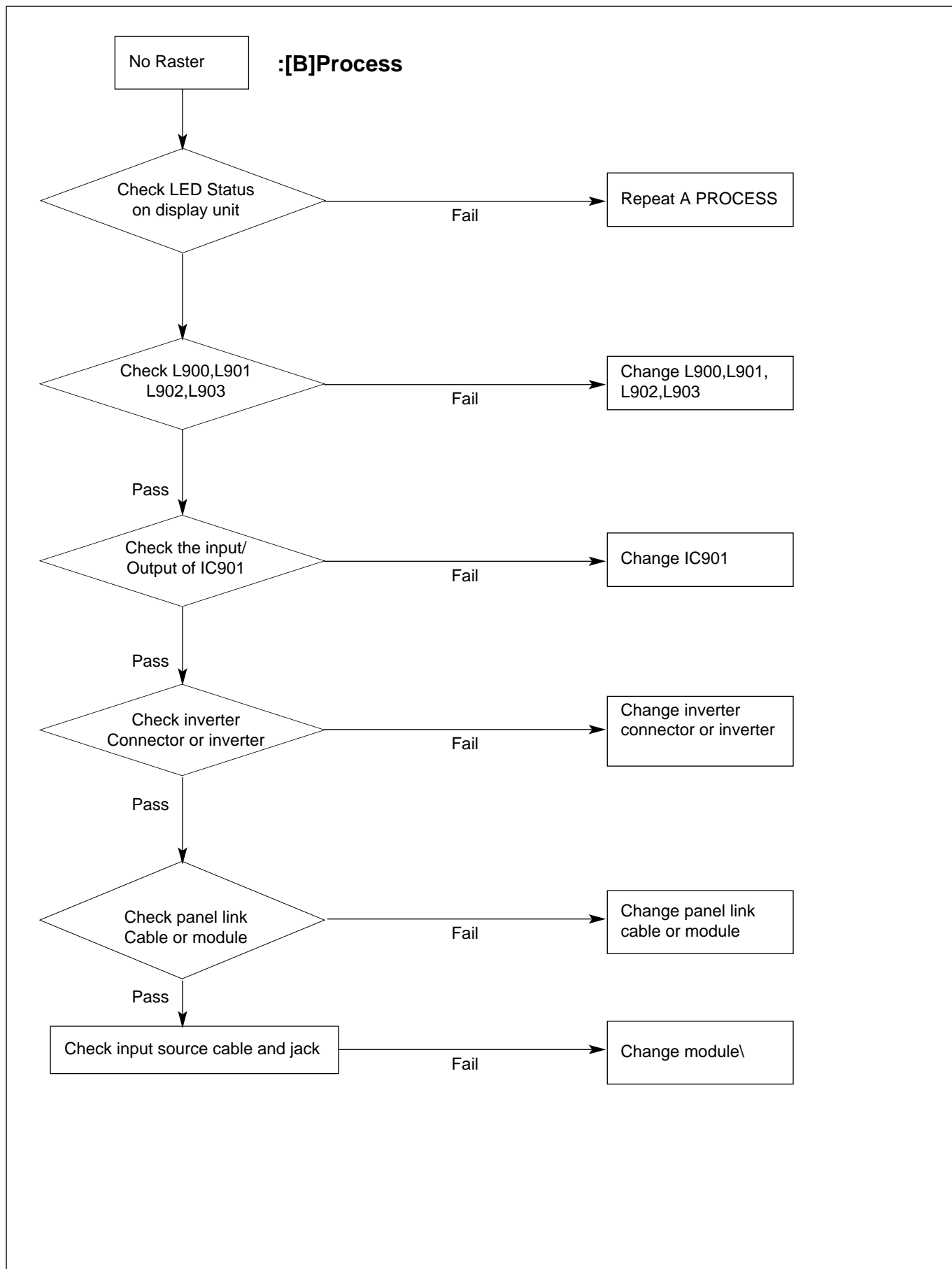
| NO | KEY            | FUNTION   | REAMARK   |
|----|----------------|---|---|
| 1  | POWER          | To turn the TV on or off  |   |
| 2  | POWER ON       | To turn the TV on automatically if the power is supplied to the TV. (Use the POWER key to deactivate): It should be deactivated when delivered.                     |   |
| 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.   |   |

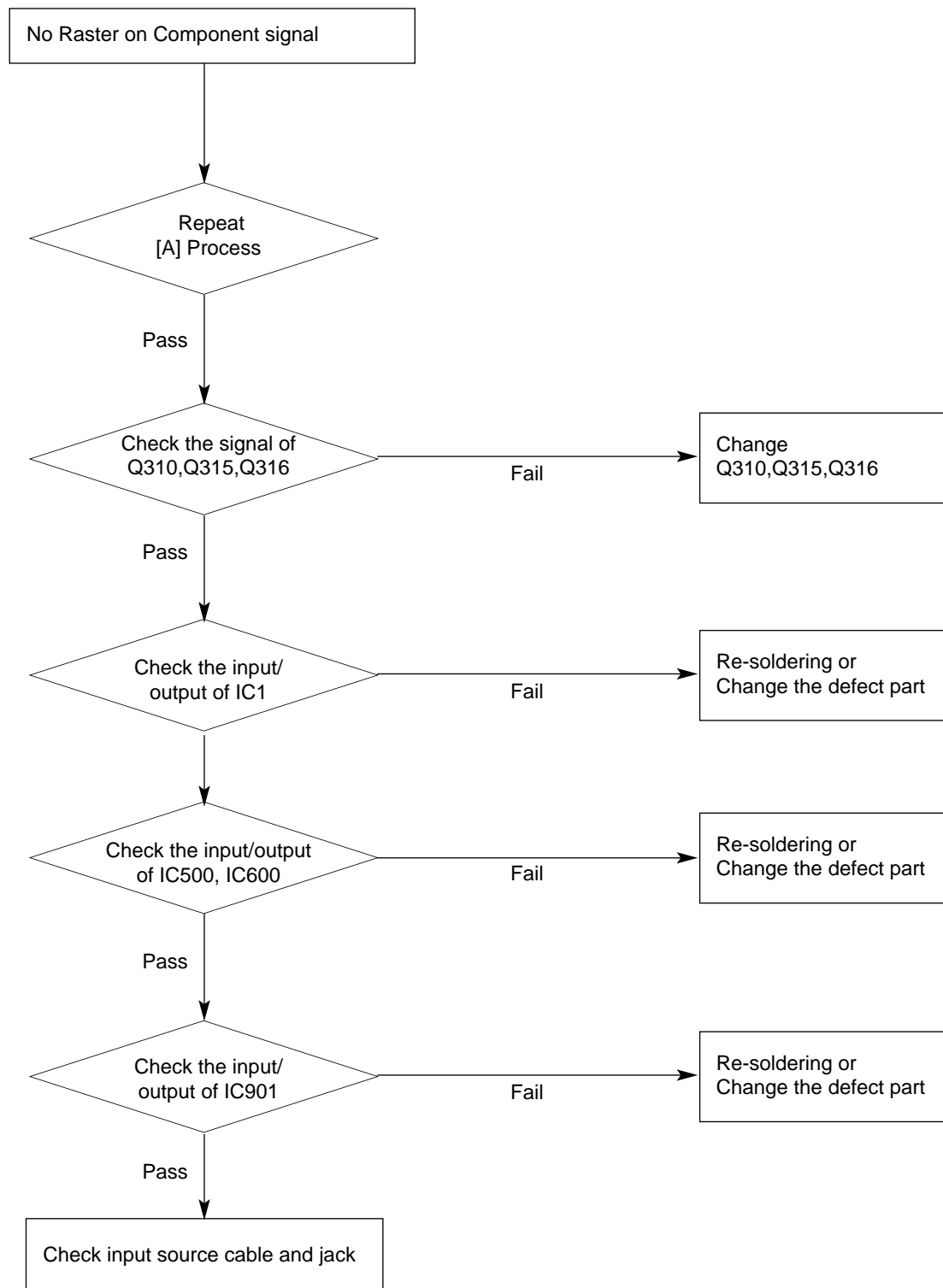


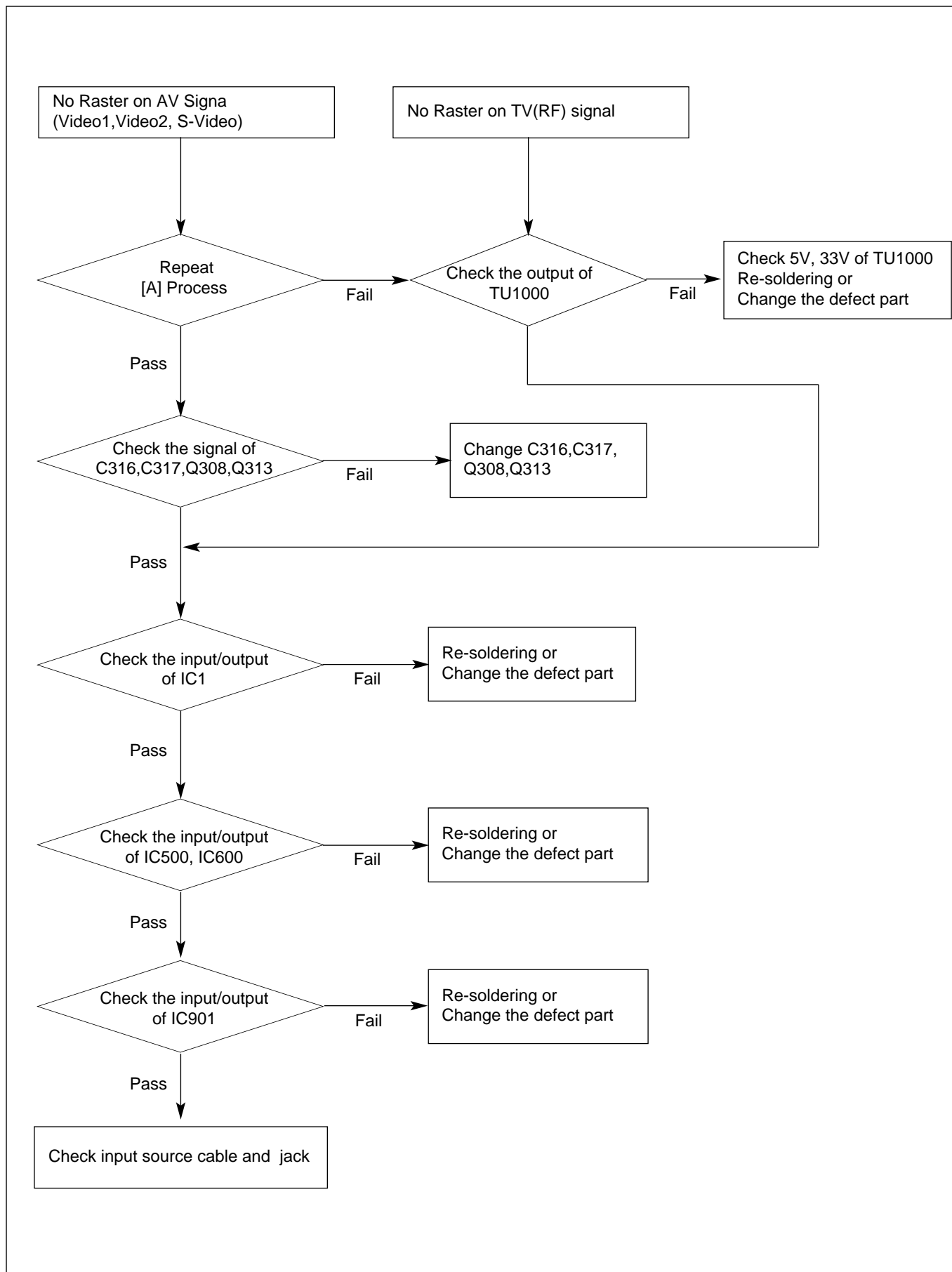
# TROUBLESHOOTING

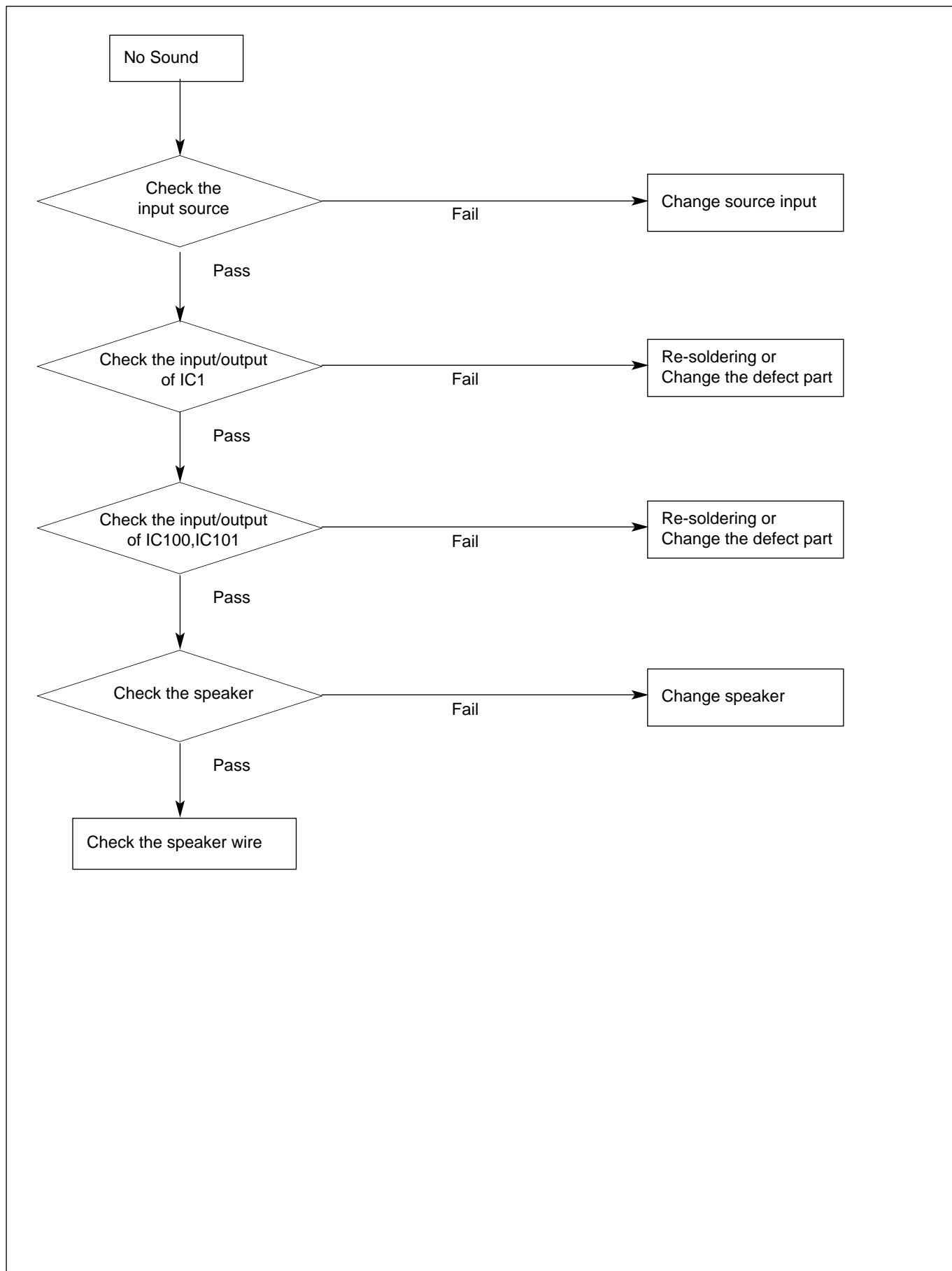




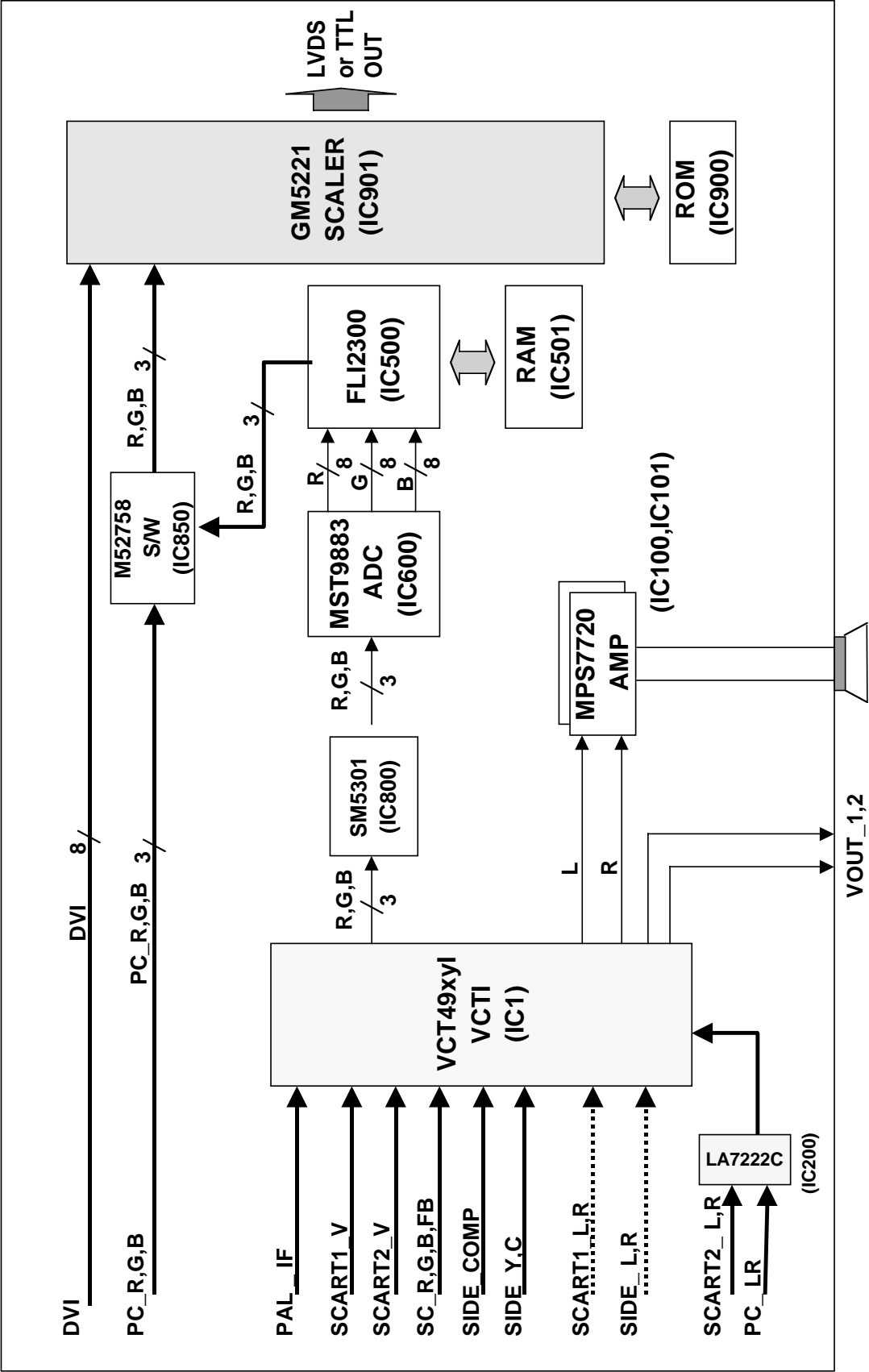








BLOCK DIAGRAM



# BLOCK DIAGRAM DESCRIPTION

## 1. Video controller unit and display data conversion unit

The video controller unit receives the video signal inputted to the tuner, AV port (AV1, AV2, S-Video and component) and converts it to the analog RGB signal through the microcomputer (VCTI) combined with the video decoder that integrates various functions in one chip.

Then, it is inputted to the AD converter (AD9883) and generates the 4:4:4 format digital signal. This digital signal is inputted to the picture enhancer (FLI2300), which processes the video signal and converts the image quality enhanced data to an analog RGB signal again before displaying it.

The image quality enhanced de-interlace signal is inputted to the scaler (GM5221) and converted to the LVDS signal by the integrated LVDS IC before being sent to the LCD module.

VCTI is the main microcomputer that processes both video signals and sound signals. It also processes the RF signal received from the tuner.

The scaler enables to adjust timing on the LCD panel, as well as an adjustment of the size and position of the input signal.

The graphic controller unit receives the PC (analog RGB) input and the DVI-D (digital signal), and sends the PC input to the scaler analog port and DVI-D input to the digital port.

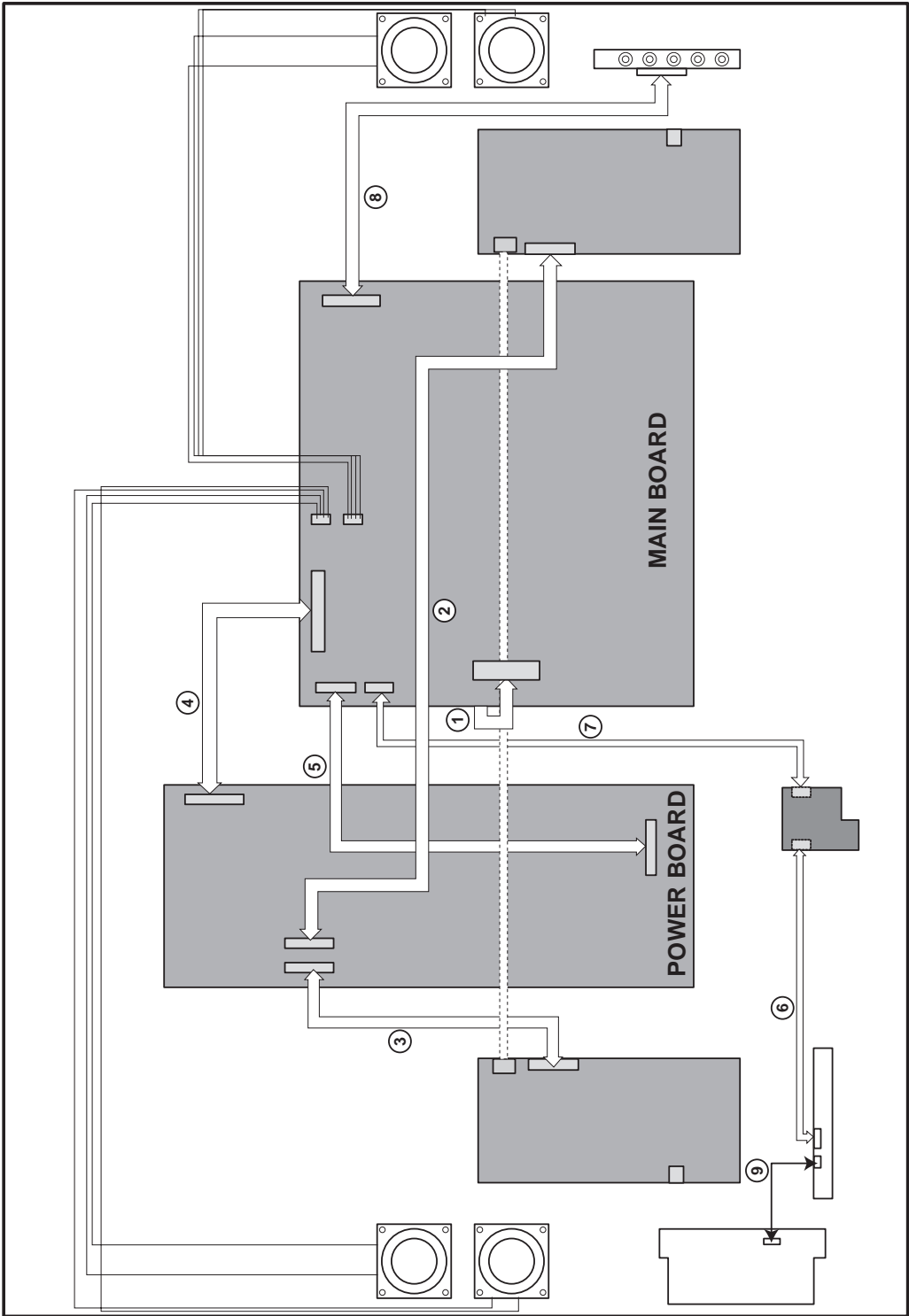
The scaler receives two inputs and converts them to the LVDS signal before sending to the module.

## 2. Power unit

The power unit supplies 33V, 24V and 12V DC power to the main board. 33V DC power is used for the tuner, whereas 24V DC power is directly used by the inverter and the sound amplifier IC. 24V DC power is also used to generate 5V through the regulator. 12V DC power is used for the LCD panel.

5V DC is converted to 3.3V and 1.8V through the regulator, which supplies the necessary power to various ICs, such as VCTI, scaler, FLI2300 and AD9883.

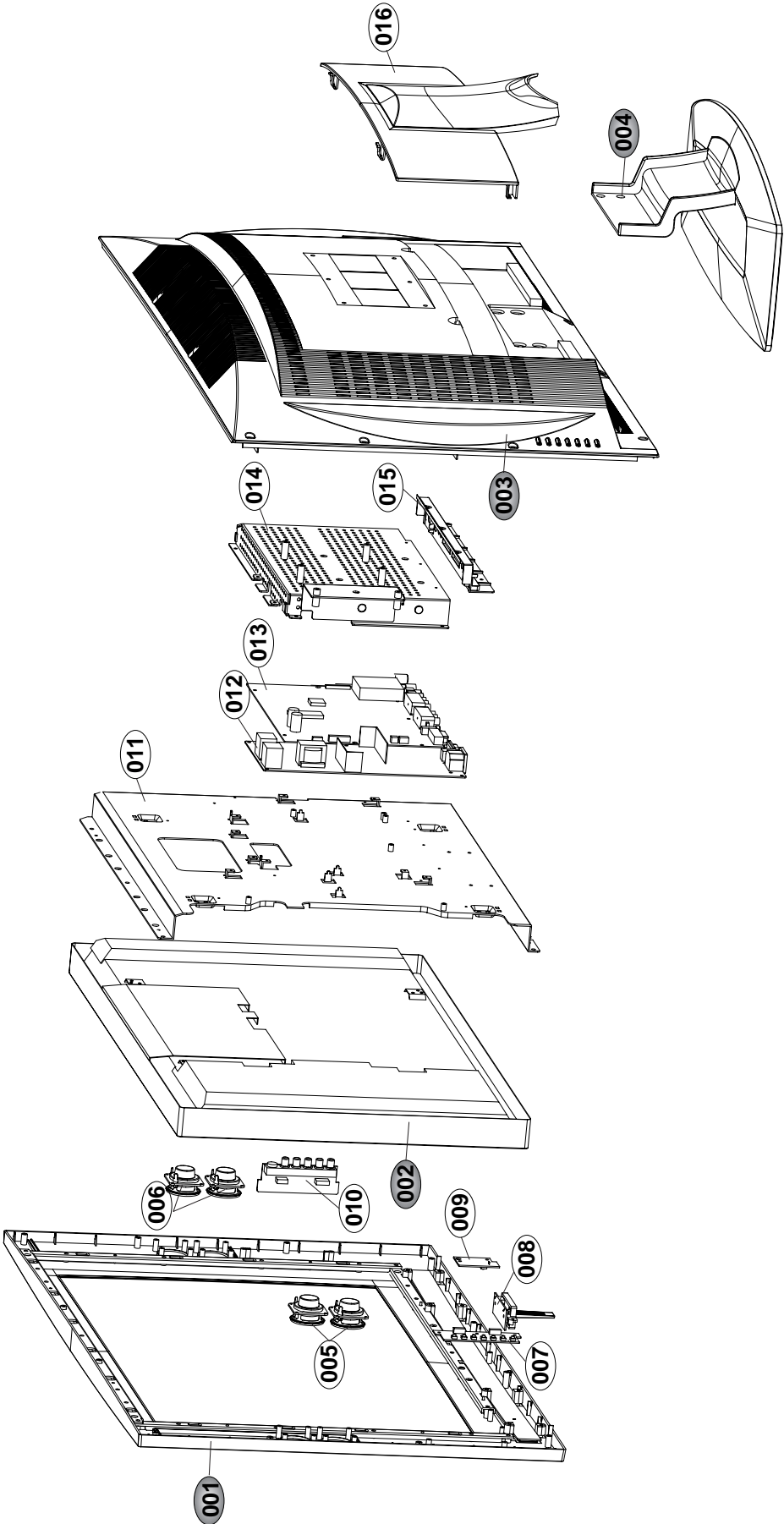
WIRING DIAGRAM



Wiring Part List

| No. | Part No.    |
|-----|-------------|
| 1   | 6631T11020N |
| 2   | 6631T20032S |
| 3   | 6631T20032T |
| 4   | 6631T25019K |
| 5   | 6631T20033F |
| 6   | 6631T20033T |
| 7   | 6631T20033A |
| 8   | 6631T20033E |
| 9   | 6631T20033D |

EXPLODED VIEW





## EXPLODED VIEW PARTS LIST

| No. | PART NO.    | DESCRIPTION   |
|-----|-------------|---|
| 001 | 3091TKE019B | CABINET ASSEMBLY, RT-32LZ50 BRAND 3090TKE014 .  |
|     | 3091TKE019C | CABINET ASSEMBLY, RZ-32LZ50 BRAND 3090TKE014 SKD  |
| 002 | 6304FLP163A | LCD(LIQUID CRYSTAL DISPLAY), LC320W01-A6 LG PHILIPS TFT COLOR WXGA, 16:9, 500NITS, 16MS, 8BIT, LVDS |
| 003 | 3809TKE018C | BACK COVER ASSEMBLY, RZ-32LZ50 .  |
|     | 3809TKE018M | BACK COVER ASSEMBLY, RZ-32LZ50.ALPLRA 3808TKE014 SET RUSSIA   |
|     | 3809TKE018D | BACK COVER ASSEMBLY, RZ-32LZ50 3808TKE014 SKD   |
| 004 | 3043TKK172A | TILT SWIVEL ASSEMBLY, RZ-30LZ50 NONE NONE   |
|     | 3043TKK172B | TILT SWIVEL ASSEMBLY, RZ-30LZ50 LGewa C/SKD   |
| 005 | 6401TZZ042C | SPEAKER ASSEMBLY, RZ-30LZ50 5WX2EA,8OHM,ESTEC(L),5P,UL1185#24,                                      |
| 006 | 6401TZZ042D | SPEAKER ASSEMBLY, RZ-30LZ50 5WX2EA,8OHM,ESTEC(R),4P,UL1185#24                                       |
| 007 | 6871TST589A | PWB(PCB) ASSEMBLY,SUB, 26LZ50 KEY SUB TOTAL BRAND KEY BOARD   |
| 008 | 6871TST642B | PWB(PCB) ASSEMBLY,SUB, RM-32LZ50 LED & P/SW TOTAL BRAND .   |
| 009 | 6871TST588A | PWB(PCB) ASSEMBLY,SUB, 30LZ50 IR SUB TOTAL BRAND IR BOARD   |
| 010 | 6871TVT370A | PWB(PCB) ASSEMBLY,VIDEO, RZ-30LZ50 SIDE A/V SUB TOTAL BRAND .                                       |
| 011 | 4951TKS170C | METAL ASSEMBLY, FRAME 32LZ50  |
|     | 4951TKS170D | METAL ASSEMBLY, FRAME 32LZ50 SKD  |
| 012 | 6871TPT275A | PWB(PCB) ASSEMBLY,POWER, RZ-30LZ50 POWER TOTAL BRAND ML-041A, 23",26",27",30",32" AUTOBAN           |
| 013 | 3313TP3009A | MAIN TOTAL ASSEMBLY, RZ-32LZ50 BRAND ML-041A  |
| 014 | 4951TKK169C | METAL ASSEMBLY, REAR RZ-32LZ50  |
|     | 4951TKK169F | METAL ASSEMBLY, REAR RZ-32LZ50  |
| 015 | 3551TKK516A | COVER ASSEMBLY, RZ-30LZ50 REAR NON AV   |
|     | 3551TKK516B | COVER ASSEMBLY, RZ-30LZ50 REAR NON AV C/SKD   |
| 016 | 3550TKK581A | COVER, RZ-32LZ50 REAR AV  |
|     | 3550TKK581B | COVER, RZ-32LZ50 REAR SKD   |

# 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: 2004. 10. 28. |     |          |             |                               |
|---------------------|-----|----------|-------------|-------------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION   |
| <b>MAIN BOARD</b>   |     |          |             |                               |
| <b>CAPACITOR</b>    |     |          |             |                               |
|                     |     |          |             |                               |
|                     |     | C108     | 0CE476EK638 | 47UF KMG 50V M FM5 TP 5       |
|                     |     | C1100    | 0CE106BF618 | 10UF KME 16V M FL TP5         |
|                     |     | C1102    | 0CE107CK638 | "100UF SHL,SD 50V M FM5 TP 5" |
|                     |     | C1112    | 0CE108EF618 | 1000UF KMG 16V M FL TP 5      |
|                     |     | C1113    | 0CE108EF618 | 1000UF KMG 16V M FL TP 5      |
|                     |     | C1114    | 0CE108EF618 | 1000UF KMG 16V M FL TP 5      |
|                     |     | C1115    | 0CE108EF618 | 1000UF KMG 16V M FL TP 5      |
|                     |     | C119     | 0CE106BF618 | 10UF KME 16V M FL TP5         |
|                     |     | C120     | 0CE106BF618 | 10UF KME 16V M FL TP5         |
|                     |     | C404     | 0CE227EJ638 | 220UF KMG 35V M FM5 TP 5      |
|                     |     | C1015    | 0CH6680K416 | 68PF 50V J NP0 2012 R/TP      |
|                     |     | C1016    | 0CH6680K416 | 68PF 50V J NP0 2012 R/TP      |
|                     |     | C13      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C1303    | 0CH6101K416 | 100PF 50V J NP0 2012 R/TP     |
|                     |     | C1308    | 0CH6101K416 | 100PF 50V J NP0 2012 R/TP     |
|                     |     | C14      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C2       | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C20      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C200     | 0CH6221K416 | 220PF 50V J NP0 2012 R/TP     |
|                     |     | C237     | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C238     | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C319     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C321     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C324     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C326     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C327     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C328     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C329     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C331     | 0CH6150K416 | 15PF 50V J NP0 2012 R/TP      |
|                     |     | C333     | 0CH6150K416 | 15PF 50V J NP0 2012 R/TP      |
|                     |     | C336     | 0CH6150K416 | 15PF 50V J NP0 2012 R/TP      |
|                     |     | C338     | 0CH6150K416 | 15PF 50V J NP0 2012 R/TP      |
|                     |     | C339     | 0CH6150K416 | 15PF 50V J NP0 2012 R/TP      |
|                     |     | C340     | 0CH6150K416 | 15PF 50V J NP0 2012 R/TP      |
|                     |     | C341     | 0CH6150K416 | 15PF 50V J NP0 2012 R/TP      |
|                     |     | C354     | 0CH6471K416 | 470F 50V J NP0 2012 R/TP      |
|                     |     | C355     | 0CH6471K416 | 470F 50V J NP0 2012 R/TP      |
|                     |     | C43      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C46      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C50      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C515     | 0CH6330K416 | 33PF 50V J NP0 2012 R/TP      |
|                     |     | C516     | 0CH6330K416 | 33PF 50V J NP0 2012 R/TP      |
|                     |     | C53      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C59      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C701     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C702     | 0CH6120K416 | 12PF 50V J NP0 2012 R/TP      |
|                     |     | C74      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |
|                     |     | C755     | 0CH6471K416 | 470F 50V J NP0 2012 R/TP      |
|                     |     | C756     | 0CH6471K416 | 470F 50V J NP0 2012 R/TP      |
|                     |     | C757     | 0CH6471K416 | 470F 50V J NP0 2012 R/TP      |
|                     |     | C758     | 0CH6101K416 | 100PF 50V J NP0 2012 R/TP     |
|                     |     | C83      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP     |

| DATE: 2004. 10. 28. |     |          |             |                                |
|---------------------|-----|----------|-------------|--------------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION    |
|                     |     |          |             |                                |
|                     |     | C86      | 0CH6102K406 | 1000PF 50V J SL 2012 R/TP      |
|                     |     | C924     | 0CH6080K116 | 8PF 50V D NP0 2012 R/TP        |
|                     |     | C925     | 0CH6080K116 | 8PF 50V D NP0 2012 R/TP        |
|                     |     | C129     | 181-007F    | "MPE ECQ-V1H224JL3(TR), 50V 0" |
|                     |     | C130     | 181-007F    | "MPE ECQ-V1H224JL3(TR), 50V 0" |
|                     |     | C1001    | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C1002    | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C1003    | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C1004    | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C1007    | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C1010    | 0CK273DK51A | 27000PF 2012 50V 10% B(Y5P)    |
|                     |     | C107     | 0CK225DFK4A | "2.2UF 2012 16V 20%,-20% F(Y5" |
|                     |     | C109     | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C11      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C110     | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C113     | 0CK225DFK4A | "2.2UF 2012 16V 20%,-20% F(Y5" |
|                     |     | C114     | 0CK225DFK4A | "2.2UF 2012 16V 20%,-20% F(Y5" |
|                     |     | C12      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C127     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C128     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C1300    | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C1302    | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C1305    | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C1307    | 0CH3103K516 | 10000PF 50V 10% B(Y5P) 2012    |
|                     |     | C135     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C136     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C15      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C16      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C18      | 0CK106EF56A | 10UF 3216 16V 10% X7R R/TP     |
|                     |     | C19      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C23      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C3       | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C306     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C318     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C4       | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C42      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C44      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C45      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C49      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C500     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C505     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C506     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C507     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C508     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C509     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C51      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C510     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C511     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C512     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C513     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C514     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C517     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C518     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C519     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |



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|                     |     | C930     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C931     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C935     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C936     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C938     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C939     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C940     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C941     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C942     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C943     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C944     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C945     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C946     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C947     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C948     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C949     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C950     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C951     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C952     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C958     | 0CK225DFK4A | "2.2UF 2012 16V 20%,-20% F(Y5" |
|                     |     | C96      | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C960     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C963     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C969     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C970     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C973     | 0CH3104K566 | 0.1UF 50V 10% X7R 2012 R/TP    |
|                     |     | C10      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C115     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C116     | 0CK562CK51A | 5600PF 1608 50V 10% R/TP B(Y   |
|                     |     | C117     | 0CK562CK51A | 5600PF 1608 50V 10% R/TP B(Y   |
|                     |     | C118     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C125     | 0CK105EK56A | 1UF 3216 50V 10% X7R R/TP      |
|                     |     | C126     | 0CK105EK56A | 1UF 3216 50V 10% X7R R/TP      |
|                     |     | C1301    | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C1306    | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C25      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C26      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C27      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C28      | 0CK334CF94A | "0.33UF 1608 16V 80%,-20% F(Y" |
|                     |     | C29      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C30      | 0CK334CF94A | "0.33UF 1608 16V 80%,-20% F(Y" |
|                     |     | C31      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C32      | 0CK334CF94A | "0.33UF 1608 16V 80%,-20% F(Y" |
|                     |     | C33      | 0CK334CF94A | "0.33UF 1608 16V 80%,-20% F(Y" |
|                     |     | C34      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C35      | 0CK334CF94A | "0.33UF 1608 16V 80%,-20% F(Y" |
|                     |     | C36      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C37      | 0CK334CF94A | "0.33UF 1608 16V 80%,-20% F(Y" |
|                     |     | C38      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C39      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C40      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C41      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C5001    | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C504     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C524     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C611     | 0CK473CK56A | 47000PF 1608 50V 10% R/TP X7   |
|                     |     | C612     | 0CK473CK56A | 47000PF 1608 50V 10% R/TP X7   |
|                     |     | C613     | 0CK473CK56A | 47000PF 1608 50V 10% R/TP X7   |
|                     |     | C626     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C7       | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C70      | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C71      | 0CK106EF56A | 10UF 3216 16V 10% X7R R/TP     |

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|                     |     | C72      | 0CK106EF56A | 10UF 3216 16V 10% X7R R/TP     |
|                     |     | C73      | 0CK106EF56A | 10UF 3216 16V 10% X7R R/TP     |
|                     |     | C750     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C752     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C753     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C759     | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C78      | 0CK106EF56A | 10UF 3216 16V 10% X7R R/TP     |
|                     |     | C8       | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C800     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP F" |
|                     |     | C801     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP F" |
|                     |     | C802     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP F" |
|                     |     | C803     | 0CK105CF94A | "1UF 1608 16V 80%,-20% R/TP F" |
|                     |     | C9       | 0CK104CK56A | 0.1UF 1608 50V 10% R/TP X7R    |
|                     |     | C901     | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C902     | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C903     | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C904     | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C905     | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C906     | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C907     | 0CK103CK51A | 0.01UF 1608 50V 10% R/TP B(Y   |
|                     |     | C352     | 0CC270DK41A | 27PF 2012 50V 5% NP0 R/TP      |
|                     |     | C121     | 0CC100CK41A | 10PF 1608 50V 5% R/TP NP0      |
|                     |     | C122     | 0CC100CK41A | 10PF 1608 50V 5% R/TP NP0      |
|                     |     | C202     | 0CC101CK41A | 100PF 1608 50V 5% R/TP NP0     |
|                     |     | C203     | 0CC221CK41A | 220PF 1608 50V 5% R/TP NP0     |
|                     |     | C204     | 0CC471CK41A | 470PF 1608 50V 5% R/TP NP0     |
|                     |     | C205     | 0CC471CK41A | 470PF 1608 50V 5% R/TP NP0     |
|                     |     | C207     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C209     | 0CC101CK41A | 100PF 1608 50V 5% R/TP NP0     |
|                     |     | C21      | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C210     | 0CC101CK41A | 100PF 1608 50V 5% R/TP NP0     |
|                     |     | C211     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C214     | 0CC101CK41A | 100PF 1608 50V 5% R/TP NP0     |
|                     |     | C217     | 0CC471CK41A | 470PF 1608 50V 5% R/TP NP0     |
|                     |     | C218     | 0CC471CK41A | 470PF 1608 50V 5% R/TP NP0     |
|                     |     | C22      | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C220     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C222     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C223     | 0CC101CK41A | 100PF 1608 50V 5% R/TP NP0     |
|                     |     | C224     | 0CC101CK41A | 100PF 1608 50V 5% R/TP NP0     |
|                     |     | C24      | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C343     | 0CC270CK41A | 27PF 1608 50V 5% R/TP NP0      |
|                     |     | C345     | 0CC270CK41A | 27PF 1608 50V 5% R/TP NP0      |
|                     |     | C348     | 0CC270CK41A | 27PF 1608 50V 5% R/TP NP0      |
|                     |     | C350     | 0CC270CK41A | 27PF 1608 50V 5% R/TP NP0      |
|                     |     | C351     | 0CC270CK41A | 27PF 1608 50V 5% R/TP NP0      |
|                     |     | C353     | 0CC270CK41A | 27PF 1608 50V 5% R/TP NP0      |
|                     |     | C47      | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0      |
|                     |     | C48      | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0      |
|                     |     | C501     | 0CC101CK41A | 100PF 1608 50V 5% R/TP NP0     |
|                     |     | C600     | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0      |
|                     |     | C601     | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0      |
|                     |     | C602     | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0      |
|                     |     | C603     | 0CC220CK41A | 22PF 1608 50V 5% R/TP NP0      |
|                     |     | C610     | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C754     | 0CC471CK41A | 470PF 1608 50V 5% R/TP NP0     |
|                     |     | C85      | 0CC102CK41A | 1000PF 1608 50V 5% R/TP NP0    |
|                     |     | C111     | 0CE475EK638 | 4.7UF KMG 50V 20% FM5 TP 5     |
|                     |     | C112     | 0CE475EK638 | 4.7UF KMG 50V 20% FM5 TP 5     |
|                     |     | C1202    | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5      |
|                     |     | C123     | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5      |
|                     |     | C124     | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5      |

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|                     |     | C1299    | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5    |
|                     |     | C1304    | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5    |
|                     |     | C131     | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5    |
|                     |     | C132     | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5    |
|                     |     | C133     | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5    |
|                     |     | C134     | 0CE477EJ618 | 470UF KMG 35V 20% FL TP 5    |
|                     |     | C100     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C1006    | 0CH8106J691 | 10UF 35V 20% 105STD (CYL) R/ |
|                     |     | C1008    | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C17      | 0CH8106J691 | 10UF 35V 20% 105STD (CYL) R/ |
|                     |     | C206     | 0CH8226F691 | 22UF 16V 20% 105STD (CYL) R/ |
|                     |     | C208     | 0CH8226F691 | 22UF 16V 20% 105STD (CYL) R/ |
|                     |     | C219     | 0CH8226F691 | 22UF 16V 20% 105STD (CYL) R/ |
|                     |     | C221     | 0CH8226F691 | 22UF 16V 20% 105STD (CYL) R/ |
|                     |     | C225     | 0CH8106J691 | 10UF 35V 20% 105STD (CYL) R/ |
|                     |     | C226     | 0CH8106J691 | 10UF 35V 20% 105STD (CYL) R/ |
|                     |     | C227     | 0CH8106J691 | 10UF 35V 20% 105STD (CYL) R/ |
|                     |     | C228     | 0CH8106J691 | 10UF 35V 20% 105STD (CYL) R/ |
|                     |     | C231     | 0CH8106J691 | 10UF 35V 20% 105STD (CYL) R/ |
|                     |     | C232     | 0CH8106J691 | 10UF 35V 20% 105STD (CYL) R/ |
|                     |     | C235     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C236     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C300     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C301     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C302     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C303     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C304     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C307     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C308     | 0CH8476H691 | 47UF 25V 20% 105STD (CYL) R/ |
|                     |     | C309     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C312     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C313     | 0CH8476H691 | 47UF 25V 20% 105STD (CYL) R/ |
|                     |     | C314     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C315     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C316     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C317     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C5       | 0CE475WJ6DC | 4.7UF MVK 35V 20% R/TP(SMD)  |
|                     |     | C502     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C503     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C52      | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C520     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C525     | 0CH8106F691 | 10UF 16V 20% 105STD (CYL) R/ |
|                     |     | C54      | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C543     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C55      | 0CH8476H691 | 47UF 25V 20% 105STD (CYL) R/ |
|                     |     | C560     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C566     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C604     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C605     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C607     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C62      | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C63      | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C703     | 0CE107WF6DC | 100UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C805     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C806     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C807     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C814     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C815     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C857     | 0CE227WF6DC | 220UF MVK 16V 20% R/TP(SMD)  |
|                     |     | C858     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C859     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C860     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION  |
|                     |     | C861     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C862     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C863     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C87      | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C88      | 0CH8476H691 | 47UF 25V 20% 105STD (CYL) R/ |
|                     |     | C900     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C953     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C956     | 0CH8476H691 | 47UF 25V 20% 105STD (CYL) R/ |
|                     |     | C957     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C959     | 0CH8476F691 | 47UF 16V 20% 105STD (CYL) R/ |
|                     |     | C97      | 0CH8476H691 | 47UF 25V 20% 105STD (CYL) R/ |
|                     |     | C972     | 0CH8476H691 | 47UF 25V 20% 105STD (CYL) R/ |
| <b>DIODEs</b>       |     |          |             |                              |
|                     |     | D100     | 0DRFC00288A | SS14 FAIR CHILDR/TP SMA 20-  |
|                     |     | D101     | 0DRFC00288A | SS14 FAIR CHILDR/TP SMA 20-  |
|                     |     | IC751    | 0DRSE00018A | SRV05-4.TC SEMTECH R/TP SOT2 |
|                     |     | IC754    | 0DRSE00018A | SRV05-4.TC SEMTECH R/TP SOT2 |
|                     |     | ZD1300   | 0DR340009AA | MBRS340 TP FAIRCHILD NON 40V |
|                     |     | ZD1301   | 0DR340009AA | MBRS340 TP FAIRCHILD NON 40V |
|                     |     | D107     | 0DS226009AA | KDS226 TP KEC SOT-23 80V 30  |
|                     |     | D711     | 0DD184009AA | KDS184 TP KEC - 85V - - - 30 |
|                     |     | D102     | 0DS181009AA | KDS181 TP KEC SOT-23 80V 3   |
|                     |     | D103     | 0DS181009AA | KDS181 TP KEC SOT-23 80V 3   |
|                     |     | D104     | 0DZ620009HB | UDZ S 6.2B TP ROHM SOD323 20 |
|                     |     | D105     | 0DZ620009HB | UDZ S 6.2B TP ROHM SOD323 20 |
|                     |     | D703     | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | D704     | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD101    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD215    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD216    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD217    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD218    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD219    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD220    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD222    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | D700     | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | D701     | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | D702     | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | D705     | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | D706     | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD203    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD204    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD205    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD206    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD207    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD208    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD210    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD213    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD214    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD221    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD5001   | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD5002   | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD5003   | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD851    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD852    | 0DZ510009EE | UDZ S 5.1B TP ROHM-K SOD323  |
|                     |     | ZD1000   | 0DZ330009DF | MTZJ33B TP ROHM-K DO34 0.5W  |
|                     |     | ZD10     | 0DZ910009FE | UDZS 9.1B TP ROHM - - 9.1V - |

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| *S                                    | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION    |
| <b>IC</b>                             |     |          |             |                                |
|                                       |     | IC3      | OIKE702700D | "KIA7027AF 3, SOT-89 TP RESET" |
|                                       |     | IC200    | OISA722200A | LA7222 (1280 AUDIO) - - -      |
|                                       |     | IC501    | OIMMREB010A | "M12L64322A-6T ESMT 86P,TSOP"  |
|                                       |     | IC749    | OIMMRSG036A | "M24C02-WMN6T SGS-THOMSON 8P," |
|                                       |     | IC753    | OIMMRSG036A | "M24C02-WMN6T SGS-THOMSON 8P," |
|                                       |     | IC907    | OIMCRAL006A | AT24C16AN-10SI-2.7 ATMEL 8P    |
|                                       |     | IC918    | OIMCRAL006A | AT24C16AN-10SI-2.7 ATMEL 8P    |
|                                       |     | IC100    | OIMCRMZ002A | MP7720 MONOLITHIC POWER SYST   |
|                                       |     | IC101    | OIMCRMZ002A | MP7720 MONOLITHIC POWER SYST   |
|                                       |     | IC1300   | OIMCRMZ001A | MP1583DN MONOLITHIC POWER SY   |
|                                       |     | IC1301   | OIMCRMZ001A | MP1583DN MONOLITHIC POWER SY   |
|                                       |     | IC500    | OIMCRGN002C | FLI2300BD GENESIS 208P PQFP    |
|                                       |     | IC750    | OIMCRSG010A | ST3232CDR SGS-THOMSON SOP16    |
|                                       |     | IC850    | OIMCRM006A  | "M52758FP MITSUBISHI 36PIN, R" |
|                                       |     | IC2000   | OIMO140662A | "MC14066BDR2 14P,SOIC TP BILA" |
|                                       |     | IC702    | OIMO140662A | "MC14066BDR2 14P,SOIC TP BILA" |
|                                       |     | IC1      | OIPRPMN003C | VCT49XYF C7(NTSC+PAL) MICRON   |
|                                       |     | IC600    | OIPRPM3002B | "MS79883C-110 MSTAR 80P,LQFP"  |
|                                       |     | IC800    | OIPRPNP001A | "SM5301BS(ATSC DTV) NPC 28P,H" |
|                                       |     | IC901    | OIPRPGN014A | GM5221H(HDCP) GENESIS 208P Q   |
|                                       |     | IC2      | OIPMGNS001E | LM1117MPX-3.3 NATIONAL SEMIC   |
|                                       |     | IC300    | OIPMGKE039A | "KIA78D09F KEC 3P,DPAK R/TP 9" |
|                                       |     | IC4      | OIPMGNS001E | LM1117MPX-3.3 NATIONAL SEMIC   |
|                                       |     | IC505    | OIPMGSG018D | "LD1086DT18TR SGS-THOMSON 3P," |
|                                       |     | IC6      | OIPMGSG018D | "LD1086DT18TR SGS-THOMSON 3P," |
|                                       |     | IC601    | OIPMGNS001E | LM1117MPX-3.3 NATIONAL SEMIC   |
|                                       |     | IC604    | OIPMGFA061A | "FAN1587AD33X FAIRCHILD 3P,DP" |
|                                       |     | IC8      | OIMCRFA015A | KA7805R FAIRCHILD 2P D-PAK R   |
|                                       |     | IC905    | OIPMGFA061A | "FAN1587AD33X FAIRCHILD 3P,DP" |
|                                       |     | IC906    | OIPMGSG018D | "LD1086DT18TR SGS-THOMSON 3P," |
|                                       |     | IC103    | OISS780800J | "KA78M08R 3P,D-PAK TP VOL. RE" |
|                                       |     | IC752    | OIMCRT1001A | SN74HCT157D TEXAS INSTRUMENT   |
| <b>COIL &amp; CORE &amp; INDUCTOR</b> |     |          |             |                                |
|                                       |     | L104     | 6140TBZ045A | "38.5UH(DIP), 6A, P7.5, DR8.3" |
|                                       |     | L105     | 6140TBZ045A | "38.5UH(DIP), 6A, P7.5, DR8.3" |
|                                       |     | L1300    | 6140VR0008B | SLF12575T-150M3R2 15UH SMD     |
|                                       |     | L1301    | 6140VR0008B | SLF12575T-150M3R2 15UH SMD     |
|                                       |     | L100     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L1002    | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L3       | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L301     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012   |
|                                       |     | L302     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012   |
|                                       |     | L304     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L311     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L4       | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L401     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L500     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L501     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L502     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L503     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L504     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L505     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L600     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L601     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L602     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L701     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L800     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L850     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |
|                                       |     | L900     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM   |

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|                             |     | L901     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM |
|                             |     | L902     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM |
|                             |     | L903     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM |
|                             |     | L907     | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM |
|                             |     | L202     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L203     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L204     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L205     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L207     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L208     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L209     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L210     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L5000    | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM |
|                             |     | L603     | 6210TCE001A | HB-1S2012-080JT CERATEC 2012 |
|                             |     | L1       | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L1001    | 0LC1020101A | 1UH 10% 2012 R/TC FI-B2012-1 |
|                             |     | L11      | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L13      | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L14      | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L15      | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L17      | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L2       | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L402     | 0LC1532101A | 15UH 10% 3216 R/TC FI-C3216- |
|                             |     | L403     | 0LC1532101A | 15UH 10% 3216 R/TC FI-C3216- |
|                             |     | L7       | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L10      | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L12      | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L16      | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L200     | 0LC1020101A | 1UH 10% 2012 R/TC FI-B2012-1 |
|                             |     | L201     | 0LC1020101A | 1UH 10% 2012 R/TC FI-B2012-1 |
|                             |     | L306     | 0LC1532101A | 15UH 10% 3216 R/TC FI-C3216- |
|                             |     | L307     | 0LC1532101A | 15UH 10% 3216 R/TC FI-C3216- |
|                             |     | L308     | 0LC1532101A | 15UH 10% 3216 R/TC FI-C3216- |
|                             |     | L309     | 0LC1532101A | 15UH 10% 3216 R/TC FI-C3216- |
|                             |     | L310     | 0LC1532101A | 15UH 10% 3216 R/TC FI-C3216- |
|                             |     | L8       | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
|                             |     | L9       | 0LC1032101A | 10UH 10% 3216 R/TC FI-C3216- |
| <b>FET &amp; TRANSISTOR</b> |     |          |             |                              |
|                             |     | IC1101   | 0TF492509AA | SI4925DY TP TEMIC 30V 6.1A   |
|                             |     | IC902    | 0TF492509AA | SI4925DY TP TEMIC 30V 6.1A   |
|                             |     | Q1000    | 0TR388109AA | KTC3881 CHIP TP KEC - -      |
|                             |     | Q1101    | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q212     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q300     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q302     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q303     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q304     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q318     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q701     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q100     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q101     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC -  |
|                             |     | Q12      | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC -  |
|                             |     | Q13      | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC -  |
|                             |     | Q14      | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC -  |
|                             |     | Q15      | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q16      | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q17      | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q301     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC -  |
|                             |     | Q305     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC -  |
|                             |     | Q306     | 0TR150400BA | CHIP 2SA1504S(ASY) BK KEC -  |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION |
|                     |     | Q308     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q310     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q313     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q315     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q316     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q317     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q500     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
|                     |     | Q901     | 0TR387500AA | CHIP 2SC3875S(ALY) BK KEC - |
| <b>RESISTORS</b>    |     |          |             |                             |
|                     |     | R10      | 0RH3301D622 | 3.3K 1/10W 5 D.R/TP         |
|                     |     | R1001    | 0RH0562D622 | 56 1/10W 5 D.R/TP           |
|                     |     | R1003    | 0RH8200D622 | 820 1/10W 5 D.R/TP          |
|                     |     | R1004    | 0RH3000D622 | 300 1/10W 5 D.R/TP          |
|                     |     | R1005    | 0RH0682D622 | 68 1/10W 5 D.R/TP           |
|                     |     | R1010    | 0RH7501D622 | 7.5K 1/10W 5 D.R/TP         |
|                     |     | R1012    | 0RH7502D622 | 75K 1/10W 5 D.R/TP          |
|                     |     | R1014    | 0RH1000D622 | 100 1/10W 5 D.R/TP          |
|                     |     | R104     | 0RH1000D622 | 100 1/10W 5 D.R/TP          |
|                     |     | R106     | 0RH1500D622 | 150 1/10W 5 D.R/TP          |
|                     |     | R107     | 0RH1503D622 | 150K 1/10W 5 D.R/TP         |
|                     |     | R11      | 0RH3301D622 | 3.3K 1/10W 5 D.R/TP         |
|                     |     | R1100    | 0RH1000D622 | 100 1/10W 5 D.R/TP          |
|                     |     | R1102    | 0RH1000D622 | 100 1/10W 5 D.R/TP          |
|                     |     | R1106    | 0RH1202D622 | 12K 1/10W 5 D.R/TP          |
|                     |     | R1107    | 0RH1502D622 | 15K 1/10W 5 D.R/TP          |
|                     |     | R118     | 0RH1000D622 | 100 1/10W 5 D.R/TP          |
|                     |     | R126     | 0RH1502D622 | 15K 1/10W 5 D.R/TP          |
|                     |     | R132     | 0RH1003D622 | 100K 1/10W 5 D.R/TP         |
|                     |     | R133     | 0RH1003D622 | 100K 1/10W 5 D.R/TP         |
|                     |     | R134     | 0RH1003D622 | 100K 1/10W 5 D.R/TP         |
|                     |     | R135     | 0RH1003D622 | 100K 1/10W 5 D.R/TP         |
|                     |     | R140     | 0RH0392D622 | 39 1/10W 5 D.R/TP           |
|                     |     | R141     | 0RH0392D622 | 39 1/10W 5 D.R/TP           |
|                     |     | R142     | 0RH0392D622 | 39 1/10W 5 D.R/TP           |
|                     |     | R143     | 0RH0392D622 | 39 1/10W 5 D.R/TP           |
|                     |     | R144     | 0RH0392D622 | 39 1/10W 5 D.R/TP           |
|                     |     | R145     | 0RH0392D622 | 39 1/10W 5 D.R/TP           |
|                     |     | R146     | 0RH0392D622 | 39 1/10W 5 D.R/TP           |
|                     |     | R147     | 0RH0392D622 | 39 1/10W 5 D.R/TP           |
|                     |     | R154     | 0RH0822D622 | 82 1/10W 5 D.R/TP           |
|                     |     | R156     | 0RH0822D622 | 82 1/10W 5 D.R/TP           |
|                     |     | R158     | 0RH0822D622 | 82 1/10W 5 D.R/TP           |
|                     |     | R162     | 0RH2701D622 | 2.7K 1/10W 5 D.R/TP         |
|                     |     | R201     | 0RH4703D622 | 470K 1/10W 5 D.R/TP         |
|                     |     | R202     | 0RH5601D622 | 5.6K 1/10W 5 D.R/TP         |
|                     |     | R203     | 0RH5601D622 | 5.6K 1/10W 5 D.R/TP         |
|                     |     | R204     | 0RH4703D622 | 470K 1/10W 5 D.R/TP         |
|                     |     | R24      | 0RH1000D622 | 100 1/10W 5 D.R/TP          |
|                     |     | R25      | 0RH1000D622 | 100 1/10W 5 D.R/TP          |
|                     |     | R266     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP         |
|                     |     | R267     | 0RH4702D622 | 47K 1/10W 5 D.R/TP          |
|                     |     | R268     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP         |
|                     |     | R312     | 0RH4700D622 | 470 1/10W 5 D.R/TP          |
|                     |     | R313     | 0RH1500D622 | 150 1/10W 5 D.R/TP          |
|                     |     | R314     | 0RH4700D622 | 470 1/10W 5 D.R/TP          |
|                     |     | R315     | 0RH1500D622 | 150 1/10W 5 D.R/TP          |
|                     |     | R320     | 0RH4703D622 | 470K 1/10W 5 D.R/TP         |
|                     |     | R322     | 0RH1500D622 | 150 1/10W 5 D.R/TP          |
|                     |     | R324     | 0RH4703D622 | 470K 1/10W 5 D.R/TP         |
|                     |     | R394     | 0RH6800D622 | 680 OHM 1 / 10 W 5% D R/TP  |

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|---------------------|-----|----------|-------------|------------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION  |
|                     |     | R395     | 0RH6800D622 | 680 OHM 1 / 10 W 5% D R/TP   |
|                     |     | R44      | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R45      | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R502     | 0RH3301D622 | 3.3K 1/10W 5 D.R/TP          |
|                     |     | R520     | 0RH1800D622 | 180 1/10W 5 D.R/TP           |
|                     |     | R527     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R607     | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R610     | 0RH2701D622 | 2.7K 1/10W 5 D.R/TP          |
|                     |     | R703     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R705     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R712     | 0RH0752D622 | 75 1/10W 5 D.R/TP            |
|                     |     | R713     | 0RH0752D622 | 75 1/10W 5 D.R/TP            |
|                     |     | R715     | 0RH1202D622 | 12K 1/10W 5 D.R/TP           |
|                     |     | R716     | 0RH0752D622 | 75 1/10W 5 D.R/TP            |
|                     |     | R719     | 0RH1502D622 | 15K 1/10W 5 D.R/TP           |
|                     |     | R725     | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R729     | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R730     | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R737     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R738     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R755     | 0RH0102D622 | 10 1/10W 5 D.R/TP            |
|                     |     | R756     | 0RH0102D622 | 10 1/10W 5 D.R/TP            |
|                     |     | R802     | 0RH8200D622 | 820 1/10W 5 D.R/TP           |
|                     |     | R805     | 0RH0752D622 | 75 1/10W 5 D.R/TP            |
|                     |     | R806     | 0RH4700D622 | 470 1/10W 5 D.R/TP           |
|                     |     | R809     | 0RH0102D622 | 10 1/10W 5 D.R/TP            |
|                     |     | R83      | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R85      | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R850     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R851     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R87      | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R89      | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R930     | 0RH3301D622 | 3.3K 1/10W 5 D.R/TP          |
|                     |     | R931     | 0RH3301D622 | 3.3K 1/10W 5 D.R/TP          |
|                     |     | R941     | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R960     | 0RH1000D622 | 100 1/10W 5 D.R/TP           |
|                     |     | R969     | 0RH1202D622 | 12K 1/10W 5 D.R/TP           |
|                     |     | R971     | 0RH1502D622 | 15K 1/10W 5 D.R/TP           |
|                     |     | R974     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R976     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | R977     | 0RH4701D622 | 4.7K 1/10W 5 D.R/TP          |
|                     |     | RA600    | 0RRZVTA001A | MNR-14-E0A-J-101 R OHM 100   |
|                     |     | RA601    | 0RRZVTA001A | MNR-14-E0A-J-101 R OHM 100   |
|                     |     | RA602    | 0RRZVTA001A | MNR-14-E0A-J-101 R OHM 100   |
|                     |     | RA603    | 0RRZVTA001A | MNR-14-E0A-J-101 R OHM 100   |
|                     |     | RA604    | 0RRZVTA001A | MNR-14-E0A-J-101 R OHM 100   |
|                     |     | RA605    | 0RRZVTA001A | MNR-14-E0A-J-101 R OHM 100   |
|                     |     | L303     | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R1002    | 0RH1501D622 | 1.5K OHM 1 / 10 W 2012 5.00% |
|                     |     | R1011    | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R1013    | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R1015    | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R1026    | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R1105    | 0RH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R128     | 0RH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R129     | 0RH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R1290    | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R1301    | 0RH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R1304    | 0RH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R1350    | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R22      | 0RH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R264     | 0RH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION  |
|                     |     | R265     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R271     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R273     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R300     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R301     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R302     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R304     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R305     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R306     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R307     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R308     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R309     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R338     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R339     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R342     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R343     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R348     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R349     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R352     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R353     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R354     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R355     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R363     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R367     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R373     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R377     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R379     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R381     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R383     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R46      | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R5006    | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R5007    | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R5008    | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R5009    | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R5019    | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R505     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R506     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R516     | ORH0222D622 | 22 OHM 1 / 10 W 2012 5.00% D |
|                     |     | R517     | ORH0222D622 | 22 OHM 1 / 10 W 2012 5.00% D |
|                     |     | R519     | ORH0222D622 | 22 OHM 1 / 10 W 2012 5.00% D |
|                     |     | R530     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R532     | ORH0222D622 | 22 OHM 1 / 10 W 2012 5.00% D |
|                     |     | R700     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R726     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R732     | ORH1001D622 | 1K OHM 1 / 10 W 2012 5.00% D |
|                     |     | R752     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R753     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R760     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R761     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R803     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R854     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R963     | ORH1002D622 | 10K OHM 1 / 10 W 2012 5.00%  |
|                     |     | R964     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R999     | ORH0000D622 | 0 OHM 1 / 10 W 2012 5.00% D  |
|                     |     | R100     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R101     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R102     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R1027    | ORJ1202D677 | 12K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R1028    | ORJ2200D677 | 220 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R103     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R105     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R108     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |

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| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION  |
|                     |     | R109     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R110     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R111     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R1110    | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R112     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R113     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R114     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R115     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R116     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R117     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R120     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R121     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R122     | ORJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R123     | ORJ2202D677 | 22K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R124     | ORJ1500D677 | 150 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R125     | ORJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R127     | ORJ3301D677 | 3.3K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R130     | ORJ5601D477 | 5.6K OHM 1/10 W 1% 1608 R/TP |
|                     |     | R1300    | ORJ6801D477 | 6.8K OHM 1/10 W 1% 1608 R/TP |
|                     |     | R1302    | ORJ2202D477 | 22K OHM 1/10 W 1% 1608 R/TP  |
|                     |     | R1303    | ORJ6801D477 | 6.8K OHM 1/10 W 1% 1608 R/TP |
|                     |     | R1305    | ORJ2202D477 | 22K OHM 1/10 W 1% 1608 R/TP  |
|                     |     | R131     | ORJ5601D477 | 5.6K OHM 1/10 W 1% 1608 R/TP |
|                     |     | R136     | ORJ8202D677 | 82K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R137     | ORJ8202D677 | 82K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R138     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R139     | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R15      | ORJ4700D677 | 470 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R152     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R153     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R155     | ORJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R157     | ORJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R159     | ORJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R16      | ORJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R160     | ORJ1500D677 | 150 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R161     | ORJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R163     | ORJ1500D677 | 150 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R164     | ORJ1500D677 | 150 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R17      | ORJ2202D677 | 22K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R173     | ORJ3301D677 | 3.3K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R175     | ORJ3301D677 | 3.3K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R18      | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R205     | ORJ0682D677 | 68 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R207     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R209     | ORJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R210     | ORJ3902D677 | 39K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R211     | ORJ5102D677 | 51K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R213     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R214     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R218     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R220     | ORJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R237     | ORJ0682D677 | 68 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R238     | ORJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R239     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R240     | ORJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R241     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R244     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R245     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R246     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R247     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R248     | ORJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R249     | ORJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |

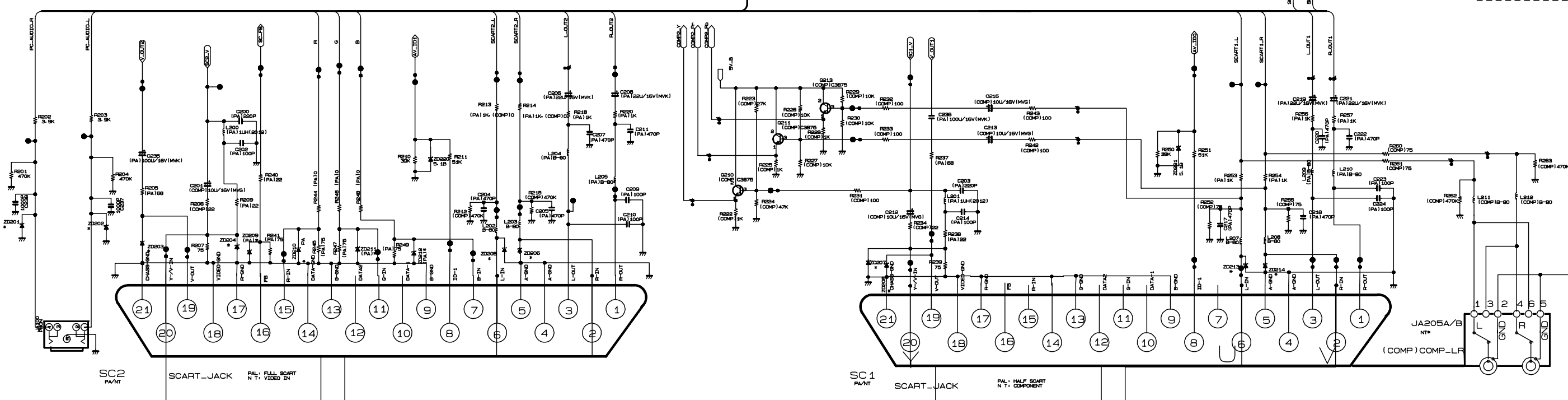
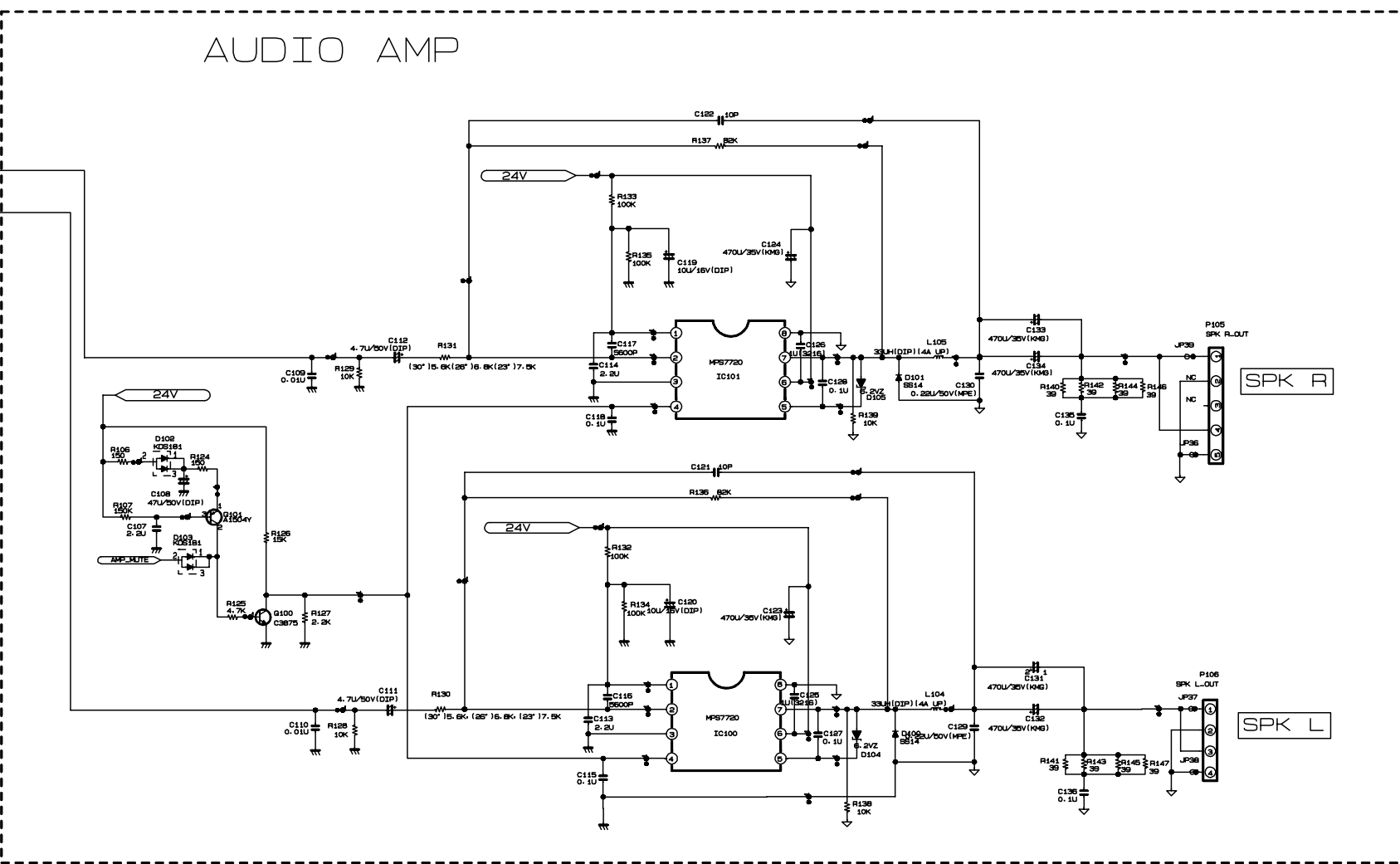
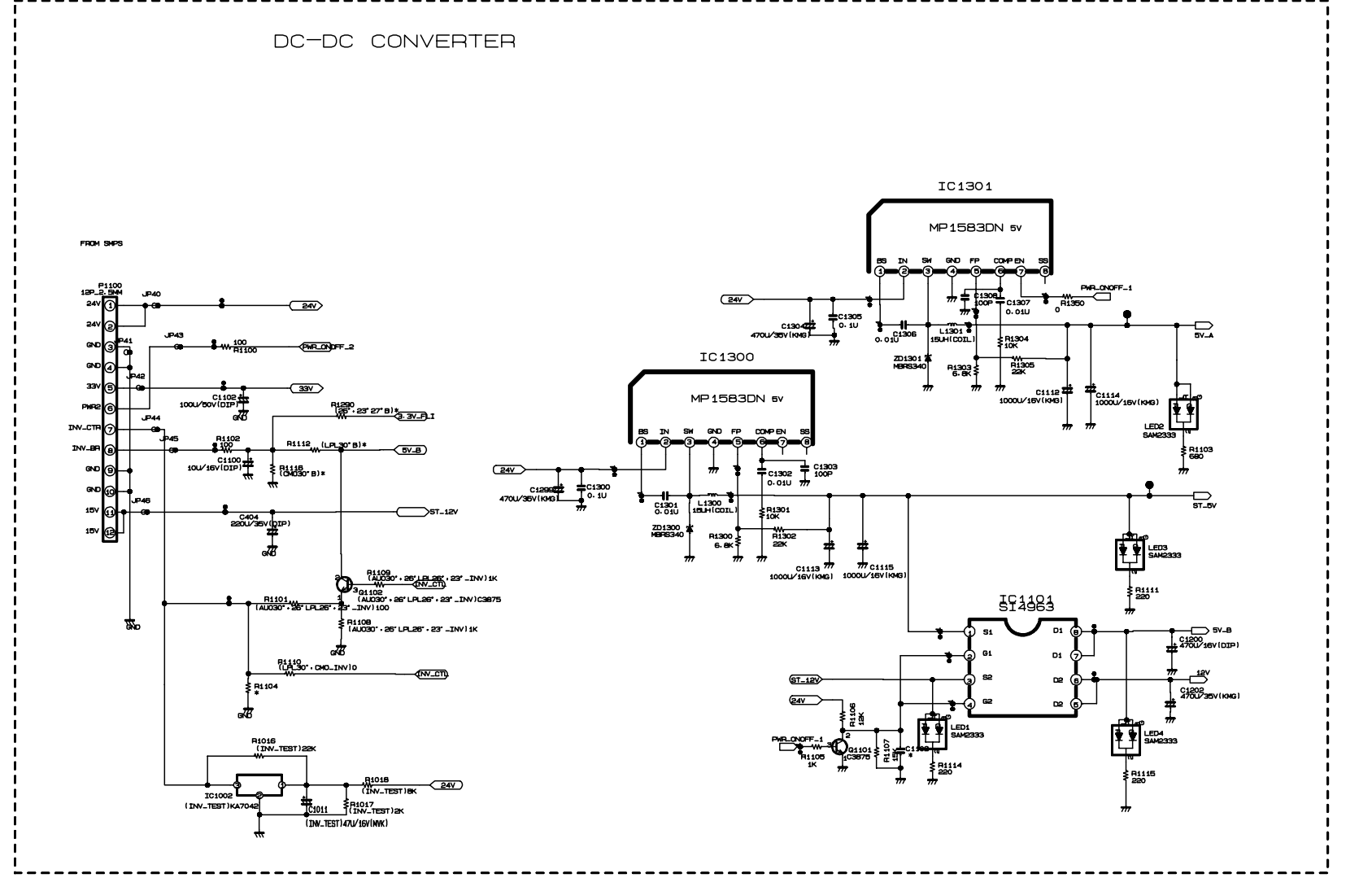
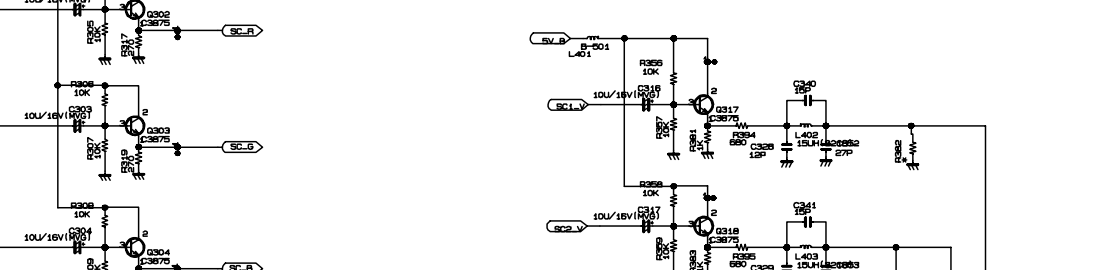
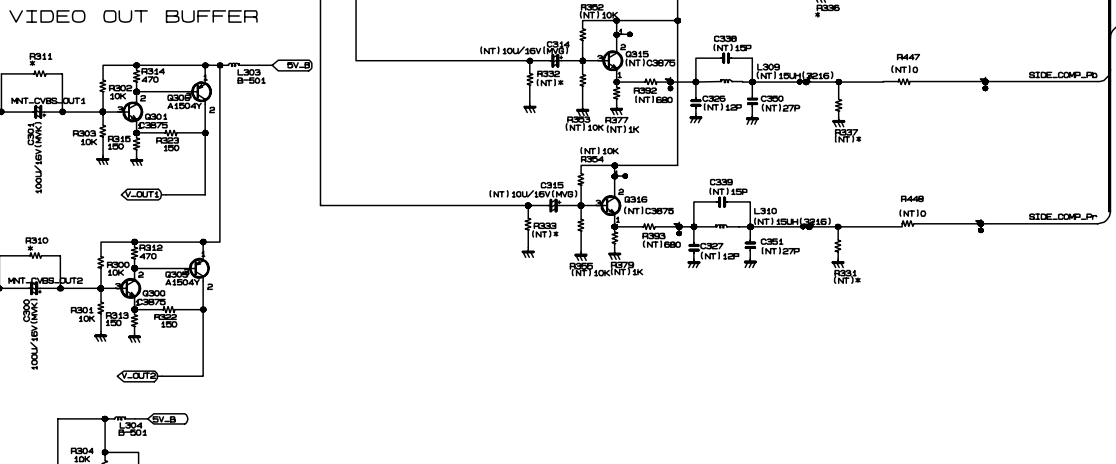
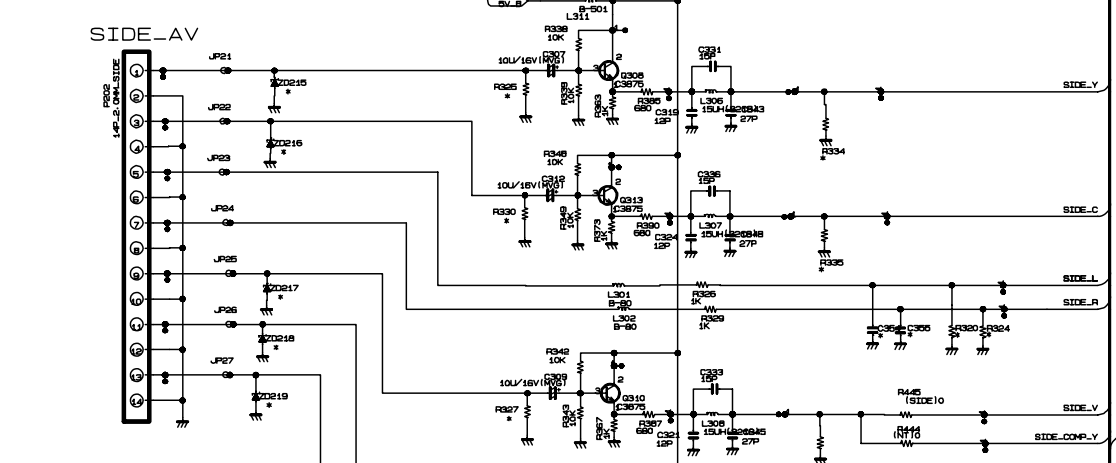
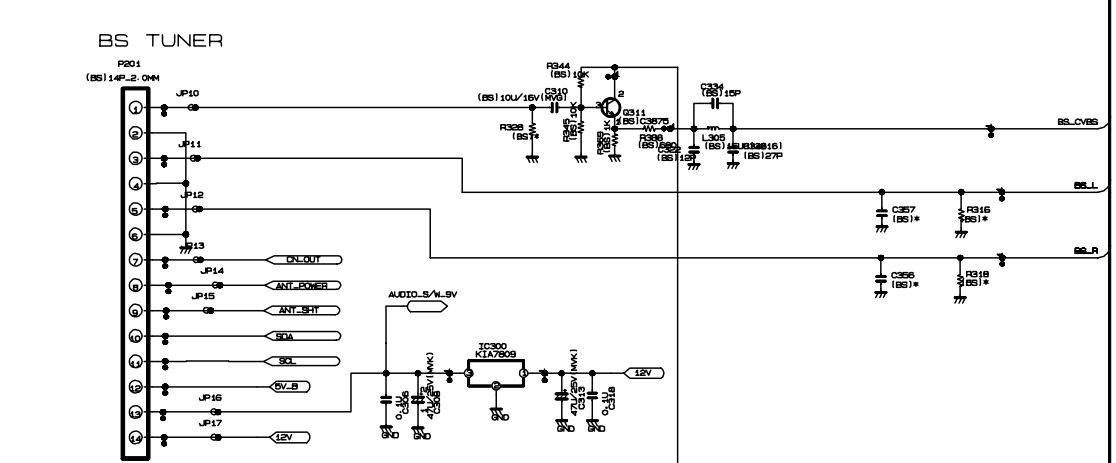
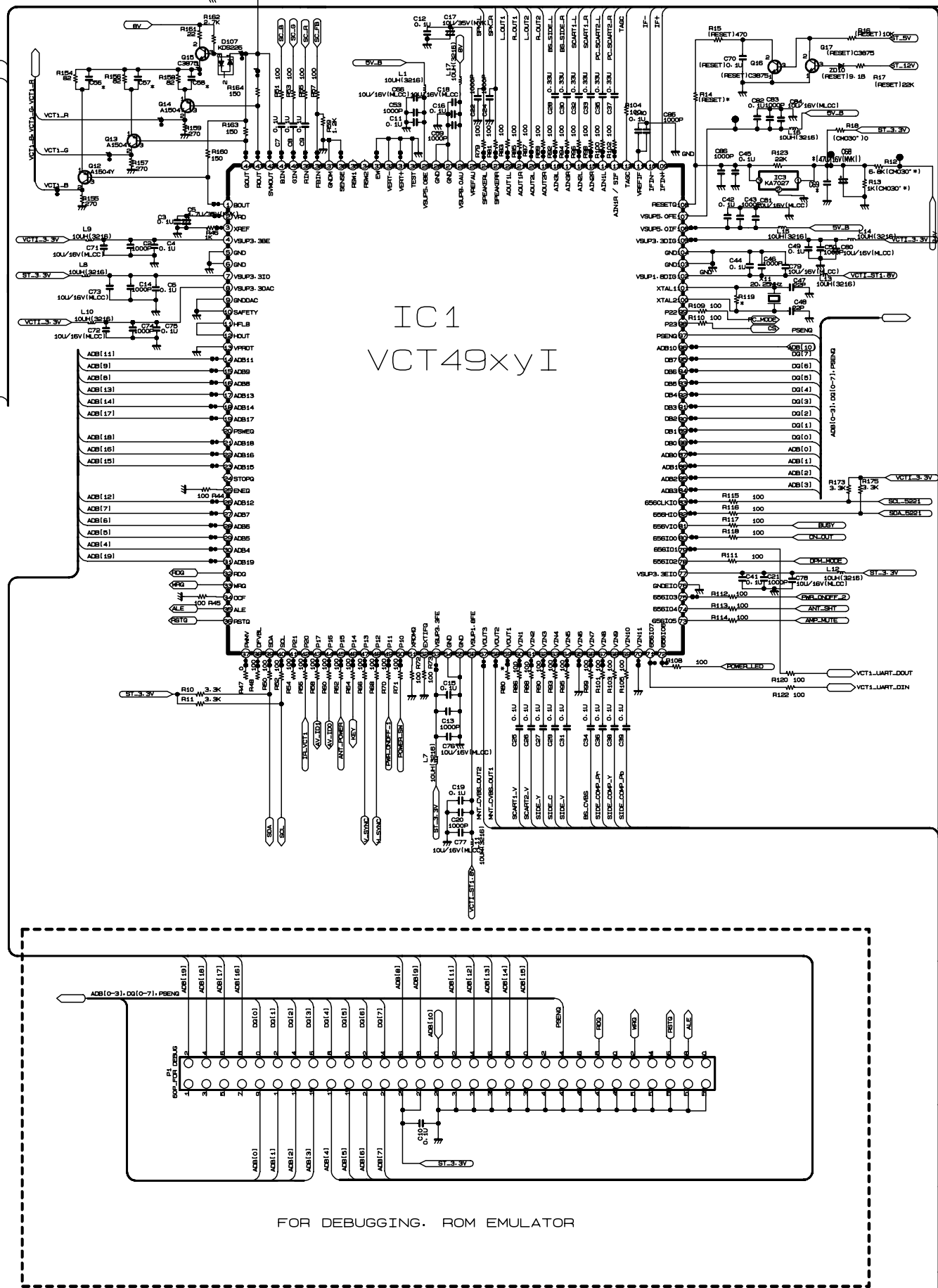
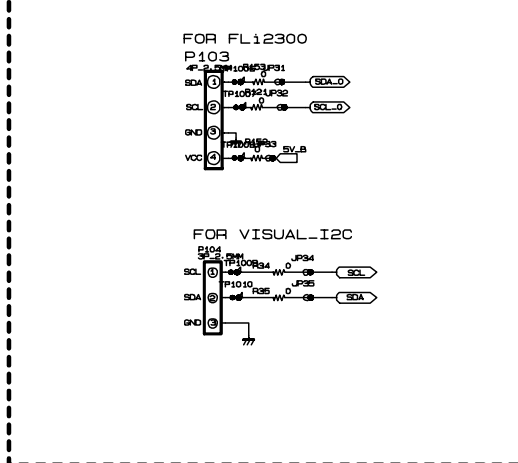
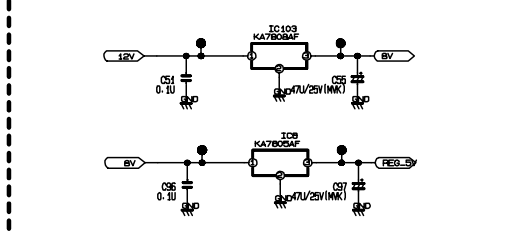
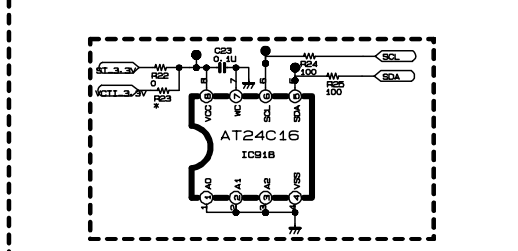
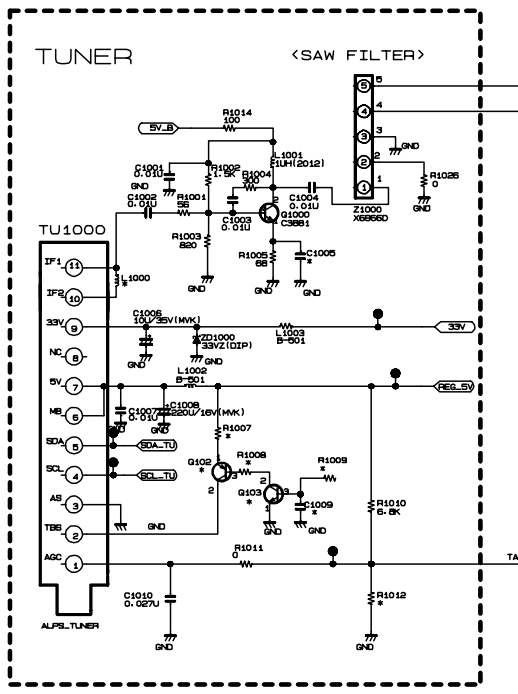
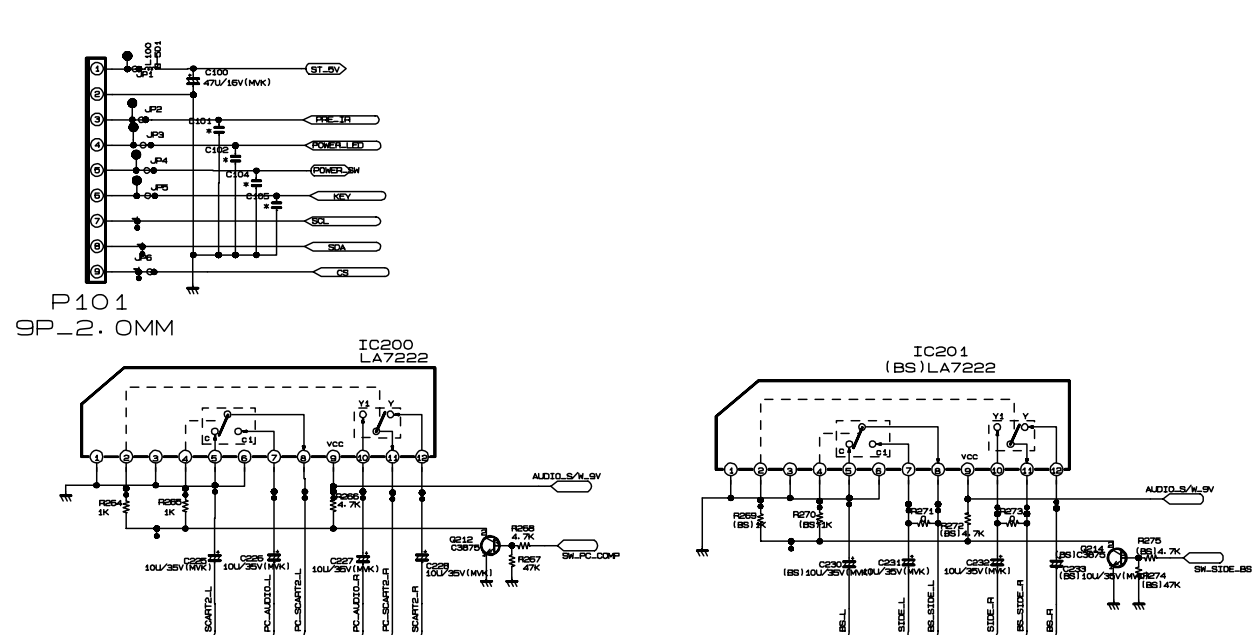
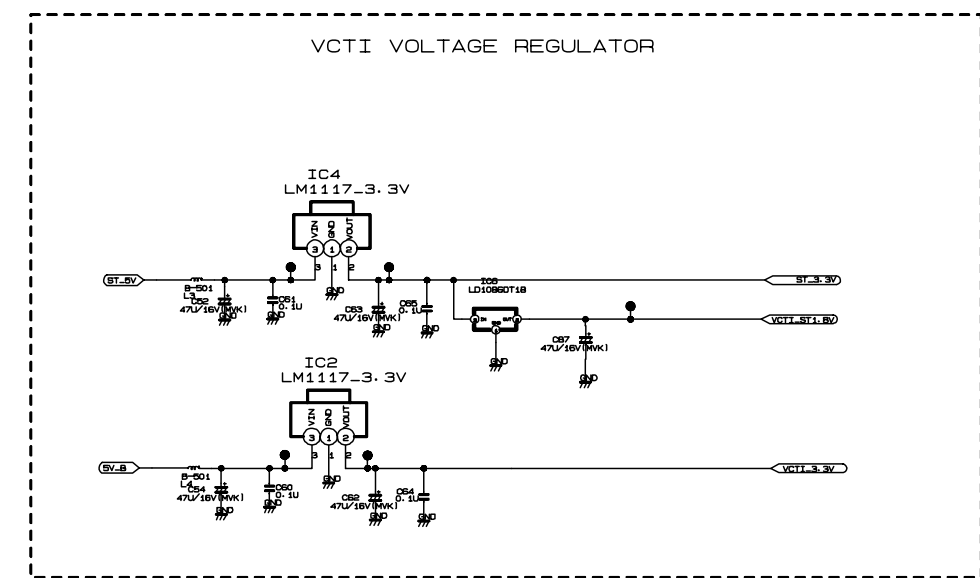
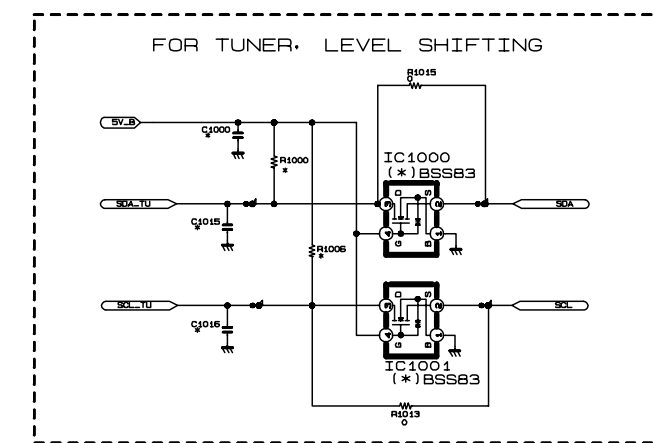


| DATE: 2004. 10. 28. |     |          |             |                              |
|---------------------|-----|----------|-------------|------------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION  |
|                     |     | R250     | 0RJ3902D677 | 39K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R251     | 0RJ5102D677 | 51K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R253     | 0RJ1501D677 | 1.5K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R254     | 0RJ1501D677 | 1.5K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R256     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R257     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R303     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R317     | 0RJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R319     | 0RJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R321     | 0RJ2700D677 | 270 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R323     | 0RJ1500D677 | 150 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R326     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R329     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R34      | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R35      | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R356     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R357     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R358     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R359     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R385     | 0RJ6800D677 | 680 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R387     | 0RJ6800D677 | 680 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R390     | 0RJ6800D677 | 680 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R392     | 0RJ6800D677 | 680 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R393     | 0RJ6800D677 | 680 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R444     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R445     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R447     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R448     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R47      | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R48      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R50      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R500     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R5002    | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R501     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R5013    | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R5014    | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R5015    | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R5016    | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R5017    | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R5020    | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R5021    | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R504     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R51      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R514     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R515     | 0RJ4703D677 | 470K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R518     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R52      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R521     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R522     | 0RJ0332D677 | 33 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R523     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R524     | 0RJ0332D677 | 33 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R525     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R526     | 0RJ0332D677 | 33 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R528     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R529     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R53      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R533     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R534     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R54      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R55      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R56      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R57      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |

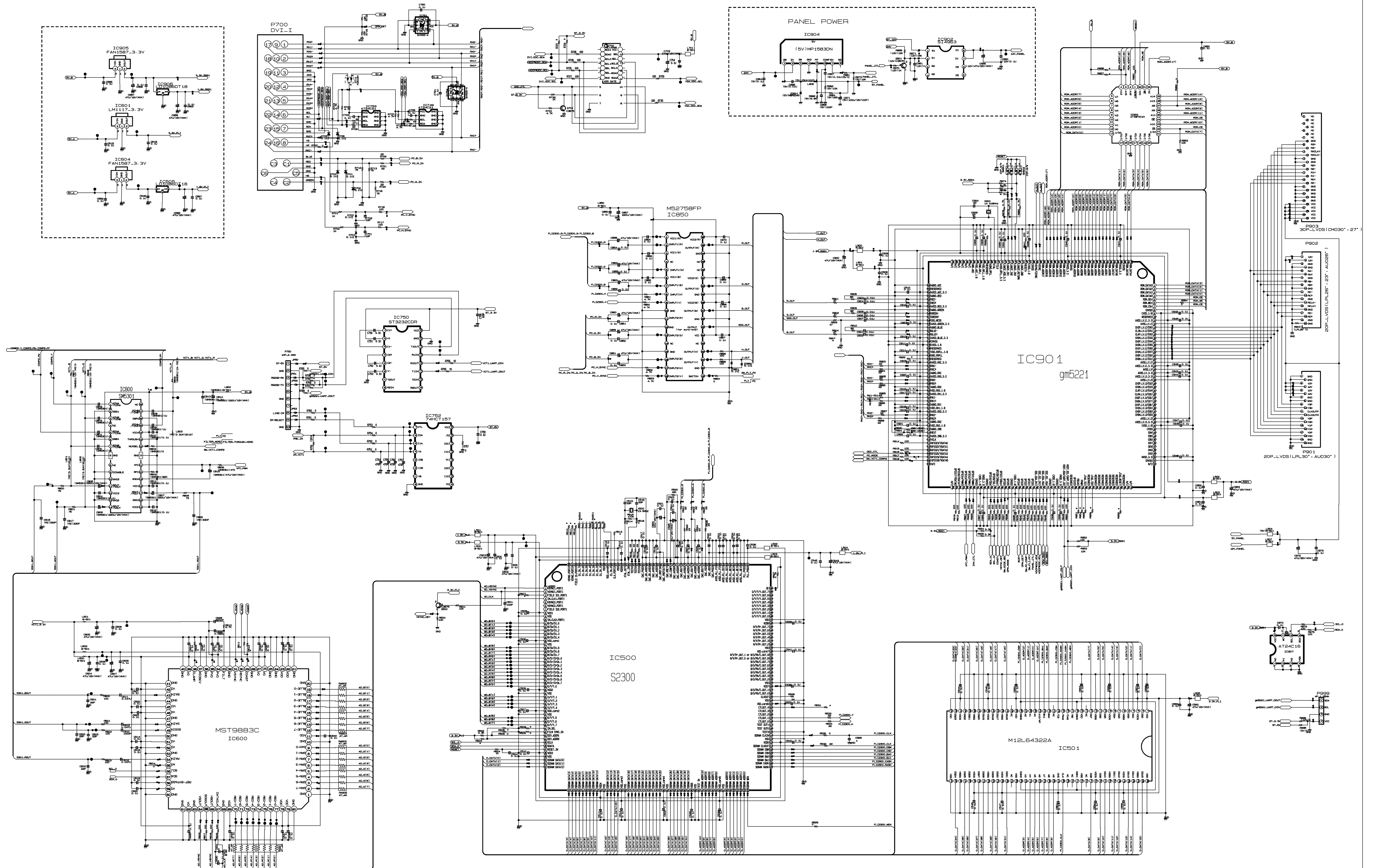
| DATE: 2004. 10. 28. |     |          |             |                              |
|---------------------|-----|----------|-------------|------------------------------|
| *S                  | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION  |
|                     |     | R58      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R59      | 0RJ1211D477 | 1.21K OHM 1/10 W 1% 1608 R/T |
|                     |     | R60      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R600     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R601     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R602     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R603     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R604     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R606     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R608     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R609     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R62      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R64      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R66      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R68      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R70      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R701     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R702     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R706     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R71      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R711     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R717     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R718     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R72      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R720     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R721     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R722     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R727     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R728     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R73      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R731     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R739     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R740     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R751     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R754     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R757     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R758     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R759     | 0RJ0000D677 | 0 OHM 1/10 W 5% 1608 R/TP    |
|                     |     | R79      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R800     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R801     | 0RJ0752D677 | 75 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R807     | 0RJ0102D677 | 10 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R808     | 0RJ0102D677 | 10 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R81      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R852     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R853     | 0RJ4701D677 | 4.7K OHM 1/10 W 5% 1608 R/TP |
|                     |     | R855     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R856     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R86      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R88      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R90      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R901     | 0RJ0472D677 | 47 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R902     | 0RJ0472D677 | 47 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R904     | 0RJ0472D677 | 47 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R906     | 0RJ0472D677 | 47 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R908     | 0RJ0822D677 | 82 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R909     | 0RJ0822D677 | 82 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R910     | 0RJ0822D677 | 82 OHM 1/10 W 5% 1608 R/TP   |
|                     |     | R913     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R914     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R915     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |
|                     |     | R916     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP  |

| DATE: 2004. 10. 28.  |     |          |             |                               |
|----------------------|-----|----------|-------------|-------------------------------|
| *S                   | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION   |
|                      |     | R917     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R918     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R919     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R92      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R920     | 0RJ4990D477 | 499 OHM 1/10 W 1% 1608 R/TP   |
|                      |     | R921     | 0RJ4990D477 | 499 OHM 1/10 W 1% 1608 R/TP   |
|                      |     | R923     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R924     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R925     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R926     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R927     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R928     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R929     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R93      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R933     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R934     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R935     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R936     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R937     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R938     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R939     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R94      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R940     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R942     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R943     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R944     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R945     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R946     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R947     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R948     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R949     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R95      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R950     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R952     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R953     | 0RJ1002D677 | 10K OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R96      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R965     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R966     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R967     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R968     | 0RJ0222D677 | 22 OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R970     | 0RJ1001D677 | 1K OHM 1/10 W 5% 1608 R/TP    |
|                      |     | R972     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R975     | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R98      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
|                      |     | R99      | 0RJ1000D677 | 100 OHM 1/10 W 5% 1608 R/TP   |
| <b>OTHERs</b>        |     |          |             |                               |
|                      |     | Z1000    | 6200QL3001Z | B39361-X6966-D100 EPCOS ST    |
|                      |     | C500     | 4920V00042B | NON 22*6MM NON IC401          |
|                      |     | X11      | 6202VDT002E | SX-1SMD SUNNY RADIAL 2025000  |
|                      |     | X500     | 6202VDT002J | SX-1 SUNNY 13.500000MHZ +/-   |
|                      |     | X900     | 6202VDT002B | SX-1 SUNNY SC14.3MHZ +/- 30   |
|                      |     | IC900    | 6620F00017A | CCSD-32T-SM WOORYOUNG 32P PLC |
|                      |     | SC1      | 381-091C    | UPJ-R1-019 UGCOM 21PIN W/SHI  |
|                      |     | SC2      | 381-091C    | UPJ-R1-019 UGCOM 21PIN W/SHI  |
|                      |     | TU1000   | 6700VS0003A | TAEW-G051D LG INOTEK MULTI V  |
| <b>CONTROL BOARD</b> |     |          |             |                               |
|                      |     | L1700    | 0LA0102K119 | 10UH K 2.3*3.4 TP             |
|                      |     | R1700    | 0RN8200F409 | 820 1/6W 1% TA52              |

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|-----------------------------|-----|----------|-------------|------------------------------|
| *S                          | *AL | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION  |
|                             |     | R1701    | 0RN6200F409 | 620 1/6W 1% TA52             |
|                             |     | R1702    | 0RN5100F409 | 510 1/6W 1 TA52              |
|                             |     | R1703    | 0RN4300F409 | 430 OHM 1/6 W 1.00% TA52     |
|                             |     | R1704    | 0RN3300F409 | 330 1/6W 1% TA52             |
|                             |     | R1705    | 0RN2700F409 | 270 1/6W 1% TA52             |
|                             |     | R1706    | 0RN2701F409 | 2.7K OHM 1/6 W 1.00% TA52    |
|                             |     | SW1700   | 140-313A    | TACT 2LEAD 100G(TA) LG C&D N |
|                             |     | SW1701   | 140-313A    | TACT 2LEAD 100G(TA) LG C&D N |
|                             |     | SW1702   | 140-313A    | TACT 2LEAD 100G(TA) LG C&D N |
|                             |     | SW1703   | 140-313A    | TACT 2LEAD 100G(TA) LG C&D N |
|                             |     | SW1704   | 140-313A    | TACT 2LEAD 100G(TA) LG C&D N |
|                             |     | SW1705   | 140-313A    | TACT 2LEAD 100G(TA) LG C&D N |
|                             |     | SW1706   | 140-313A    | TACT 2LEAD 100G(TA) LG C&D N |
| <b>IR BOARD</b>             |     |          |             |                              |
|                             |     | C1500    | 0CN1040K949 | 0.1M 50V Z F TA52            |
|                             |     | L1500    | 0LA0102K119 | 10UH K 2.3*3.4 TP            |
|                             |     | IR1500   | 6726TV0001A | TSOP4838SO1 VISHAY 38.0KHZ H |
| <b>LED &amp; P/SW BOARD</b> |     |          |             |                              |
|                             |     | C1600    | 0CN1040K949 | 0.1M 50V Z F TA52            |
|                             |     | L1600    | 0LA0102K119 | 10UH K 2.3*3.4 TP            |
|                             |     | Q1601    | 0TR319809AA | KTC3198-Y(KTC1815) TP KEC TO |
|                             |     | Q1602    | 0TR319809AA | KTC3198-Y(KTC1815) TP KEC TO |
|                             |     | Q1603    | 0TR319809AA | KTC3198-Y(KTC1815) TP KEC TO |
|                             |     | R1600    | 0RD3301Q609 | 3.30K 1/4W(3 5% TA52         |
|                             |     | R1601    | 0RD2701Q609 | 2.70K 1/4W(3 5% TA52         |
|                             |     | R1602    | 0RD2700Q609 | 270 1/4W(3 5% TA52           |
|                             |     | R1603    | 0RD1001Q609 | 1K 1/4W(3 5% TA52            |
|                             |     | R1604    | 0RD1001Q609 | 1K 1/4W(3 5% TA52            |
|                             |     | R1605    | 0RD1001Q609 | 1K 1/4W(3 5% TA52            |
|                             |     | R1606    | 0RD1500Q609 | 150 1/4W(3 5% TA52           |
|                             |     | SW1600   | 140-313A    | TACT 2LEAD 100G(TA) LG C&D N |
|                             |     | LED1600  | 0DLBE0128AA | BRIGHT LED ELECTRONICS BL-BU |
| <b>VIDEO BOARD</b>          |     |          |             |                              |
|                             |     | C2006    | 0CN4710K519 | 470P 50V K B TA52            |
|                             |     | C2007    | 0CN4710K519 | 470P 50V K B TA52            |
|                             |     | R2001    | 0RD0752Q609 | 75 1/4W(3 5% TA52            |
|                             |     | R2002    | 0RD0752Q609 | 75 1/4W(3 5% TA52            |
|                             |     | R2003    | 0RD0752Q609 | 75 1/4W(3 5% TA52            |
|                             |     | R2004    | 0RD0752Q609 | 75 1/4W(3 5% TA52            |
|                             |     | R2005    | 0RD0752Q609 | 75 1/4W(3 5% TA52            |
|                             |     | R2006    | 0RD4703Q609 | 470K 1/4W(3 5% TA52          |
|                             |     | R2007    | 0RD4703Q609 | 470K 1/4W(3 5% TA52          |



CAUTION!!  
CROSS LAYOUT





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