



# LCD TV

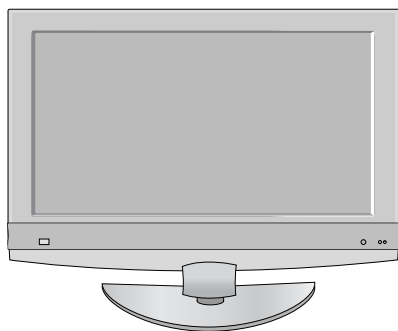
# SERVICE MANUAL

CHASSIS : LP78A

**MODEL : 42LB9R    42LB9R-TD**

## CAUTION

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



# CONTENTS

|                              |    |
|------------------------------|----|
| CONTENTS .....               | 2  |
| SAFETY PRECAUTIONS .....     | 3  |
| SPECIFICATION .....          | 6  |
| ADJUSTMENT INSTRUCTION ..... | 9  |
| TROUBLE SHOOTING .....       | 17 |
| BLOCK DIAGRAM.....           | 25 |
| EXPLODED VIEW .....          | 26 |
| REPLACEMENT PARTS LIST ..... | 28 |
| SVC. SHEET .....             |    |

# SAFETY PRECAUTIONS

## IMPORTANT SAFETY NOTICE

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

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

Do not modify the original design without permission of manufacturer.

### General Guidance

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

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

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

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

Keep wires away from high voltage or high temperature parts.

### Before returning the receiver to the customer,

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

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

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

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

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

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

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

Plug the AC cord directly into the AC outlet.

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

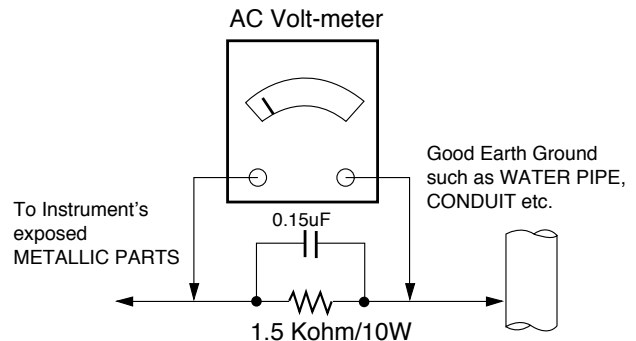
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

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

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

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

### Leakage Current Hot Check circuit



# SERVICING PRECAUTIONS

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

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

## General Servicing Precautions

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

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

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

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

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

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

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

Always remove the test receiver ground lead last.

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

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

## Electrostatically Sensitive (ES) Devices

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

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

unit under test.

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

## General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500°F to 600°F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wire-bristle (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
  - a. Allow the soldering iron tip to reach normal temperature. (500°F to 600°F)
  - b. Heat the component lead until the solder melts.
  - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.  
**CAUTION:** Work quickly to avoid overheating the circuit board 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 LP78A chassis.

## 2. Requirement for Test

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

- (1) Temperature :  $25 \pm 5^{\circ}\text{C}$  ( $77 \pm 9^{\circ}\text{F}$ ), CST :  $40 \pm 5^{\circ}\text{C}$
- (2) Humidity :  $65\% \pm 10\%$
- (3) Power : Standard input voltage (100-240V~, 50/60Hz)  
\*Standard Voltage of each products is marked by models

(4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.

(5) The receiver must be operated for about 20 minutes prior to the adjustment.

## 3. Test method

3.1 Performance : LGE TV test method followed

3.2 Demanded other specification

Safety : CE, IEC Specification

EMC : CE, IEC

## 4. General Specification(LCD Module)

| Item                  | Specification                                                           |                   |                   | Measurement          | Result                | Remark                                       |                                 |
|-----------------------|-------------------------------------------------------------------------|-------------------|-------------------|----------------------|-----------------------|----------------------------------------------|---------------------------------|
| Display Screen Device | 26/27/32/37/42" wide Color Display Module                               |                   |                   |                      |                       | LCD                                          |                                 |
| Aspect Ratio          | 16:9                                                                    |                   |                   |                      |                       |                                              |                                 |
| LCD Module            | 26/27/32/37/42" TFT WXGA LCD                                            |                   |                   |                      |                       | MAKER : AUO/CMO/LPL/CPT                      |                                 |
| Operating Environment | Temp. : 0 ~ 40 deg, Humidity : 0 ~ 85%                                  |                   |                   |                      |                       | LGE SPEC                                     |                                 |
| Storage Environment   | Temp. : -20 ~ 60 deg, Humidity : 0 ~ 85 %                               |                   |                   |                      |                       |                                              |                                 |
| Input Voltage         | 100-240V~, 50/60Hz                                                      |                   |                   |                      |                       |                                              |                                 |
| Power Consumption     | Power on (Green)<br>≤ TBD      (42")<br>≤ max      (26", 27", 32", 37") |                   |                   |                      |                       | Volume: 1/8 volume of sound distortion point |                                 |
|                       | St-By (Red) : 1.0 W                                                     |                   |                   |                      |                       |                                              |                                 |
|                       | LCD Module                                                              | AUO               | Outline Dimension | 26"                  | 626.0 x 373.0 x 47.5  | mm                                           | (H) x (V) x (D) [with inverter] |
| 32"                   |                                                                         |                   |                   | 760.0 x 450.0 x 45   | mm                    |                                              |                                 |
| 37"                   |                                                                         |                   |                   | 877.0 x 514.6 x 54.7 | mm                    |                                              |                                 |
| Pixel Pitch           |                                                                         |                   | 26"               | 0.4215               | mm                    | (H) x (W)                                    |                                 |
|                       |                                                                         |                   | 32"               | 0.51075              |                       |                                              |                                 |
|                       |                                                                         |                   | 37"               | 0.6 x 0.6            |                       |                                              |                                 |
| Back Light            |                                                                         |                   | 26",32"           | 8 U-lamp             |                       |                                              |                                 |
|                       |                                                                         |                   | 37"               | 10 U-lamp            |                       |                                              |                                 |
| CMO                   |                                                                         |                   | Outline Dimension | 27"                  | 637.55 x 379.8 x 40.7 | mm                                           | (H) x (V) x (D) [with inverter] |
|                       |                                                                         |                   |                   | 32"                  | 760 x 450 x 47.53     |                                              |                                 |
|                       |                                                                         |                   | Pixel Pitch       | 27"                  | 0.1455 x 0.4365       | mm                                           | (H) x (V)                       |
|                       |                                                                         |                   |                   | 32"                  | 0.1730 x 0.5190       |                                              |                                 |
|                       |                                                                         |                   | Back Light        | 27"                  | 14 CCFL               |                                              |                                 |
|                       |                                                                         |                   |                   | 32"                  | 16 CCFL               |                                              |                                 |
| LPL                   |                                                                         | Outline Dimension | 26"               | 626 x 373 x 44.1     | mm                    | (H) x (V) x (D) [with inverter]<br>(H) x (V) |                                 |
|                       |                                                                         |                   | 32"               | 760.0 x 450.0 x 48.0 |                       |                                              |                                 |
|                       |                                                                         |                   | 37"               | 877.0 x 516.8 x 55.5 |                       |                                              |                                 |
|                       |                                                                         |                   | 42"               | 1006 x 610 x 56      |                       |                                              |                                 |
|                       |                                                                         | Pixel Pitch       | 26"               | 0.1405 x 0.4215      | mm                    |                                              |                                 |
|                       |                                                                         |                   | 32"               | 0.17025 x 0.51075    |                       |                                              |                                 |
|                       |                                                                         |                   | 37"               | 0.200 x 0.600        |                       |                                              |                                 |
|                       |                                                                         |                   | 42"               | 0.227 x 0.681        |                       |                                              |                                 |
|                       |                                                                         | Back Light        | 26"               | 18 EEFL (17 EEFL)    |                       | (LC260WX2-SLB3)                              |                                 |
|                       |                                                                         |                   | 32"               | 18 EEFL              |                       |                                              |                                 |
|                       |                                                                         |                   | 37"               | 20 EEFL              |                       |                                              |                                 |
|                       |                                                                         |                   | 42"               | 20 CCFL              |                       |                                              |                                 |
|                       |                                                                         | Display Colors    |                   |                      | 16.7M (16,777,216)    |                                              | (LPL 26")                       |
|                       |                                                                         | Coating           |                   |                      | 3H, AG                |                                              |                                 |

## 5. Model Specification(EU)

| Item                    | Specification                      |        | Remark                                                  |                  |
|-------------------------|------------------------------------|--------|---------------------------------------------------------|------------------|
| Market                  | EU                                 |        |                                                         |                  |
| Broadcasting system     | PAL BG/DK, PAL I/II, SECAM L/L'    |        |                                                         |                  |
| Available Channel       | BAND                               | PAL    |                                                         |                  |
|                         | VHF/UHF                            | C1_C69 |                                                         |                  |
|                         | CATV                               | S1_S47 |                                                         |                  |
| Receiving system        | Upper Heterodyne                   |        |                                                         |                  |
| SCART Input(2EA)        | PAL, SECAM, NTSC                   |        | Full Scart 1EA, Harf 1EA                                |                  |
| Video Input (1EA)       | PAL, SECAM, NTSC                   |        | Side AV                                                 |                  |
| S-Video Input (1EA)     | PAL, SECAM, NTSC                   |        | Side AV                                                 | S-Video Priority |
| Component Input (1EA)   | Y/Cb/Cr, Y/ Pb/Pr                  |        |                                                         |                  |
| RGB Input (1EA)         | RGB-PC                             |        |                                                         |                  |
| HDMI Input (2EA)        | HDMI-DTV                           |        |                                                         |                  |
| Audio Input (4EA)       | PC Audio, AV (3A), Component (1EA) |        | L/R Input(PC 1EA,SCART 2EA, SIDE AV 1EA, Component 1EA) |                  |
| Variable Audio out(1EA) |                                    |        |                                                         |                  |

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

| Resolution | H-freq(kHz) | V-freq(kHz) | Pixel clock(MHz) | Proposed                  |
|------------|-------------|-------------|------------------|---------------------------|
| 720*480    | 15.73       | 59.94       | 13.500           | SDTV, DVD 480I(525I)      |
| 720*480    | 15.75       | 60.00       | 13.514           | SDTV, DVD 480I(525I)      |
| 720*576    | 15.625      | 50.00       | 13.500           | SDTV, DVD 576I(625I) 50Hz |
| 720*480    | 31.47       | 59.94       | 27.000           | SDTV 480P                 |
| 720*480    | 31.50       | 60.00       | 27.027           | SDTV 480P                 |
| 720*576    | 31.25       | 50.00       | 27.000           | SDTV 576P 50Hz            |
| 1280*720   | 44.96       | 59.94       | 74.176           | HDTV 720P                 |
| 1280*720   | 45.00       | 60.00       | 74.250           | HDTV 720P                 |
| 1280*720   | 37.50       | 50.00       | 74.25            | HDTV 720P 50Hz            |
| 1920*1080  | 33.72       | 59.94       | 74.176           | HDTV 1080I                |
| 1920*1080  | 33.75       | 60.00       | 74.250           | HDTV 1080I                |
| 1920*1080  | 28.125      | 50.00       | 74.250           | HDTV 1080I 50Hz           |

## 7. RGB Input (Analog PC)

| Resolution | H-freq(kHz) | V-freq(kHz) | Pixel clock(MHz) | Proposed   | Remark   |
|------------|-------------|-------------|------------------|------------|----------|
| 640*350    | 31.468      | 70.80       | 25.17            | EGA        |          |
| 720*400    | 31.469      | 70.80       | 28.321           | DOS        |          |
| 640*480    | 31.469      | 59.94       | 25.17            | VESA(VGA)  |          |
| 800*600    | 37.879      | 60.31       | 40.00            | VESA(SVGA) |          |
| 1024*768   | 48.363      | 60.00       | 65.00            | VESA(XGA)  |          |
| 1280*768   | 47.776      | 59.87       | 79.50            | WXGA       | XGA only |
| 1360*768   | 47.720      | 59.799      | 84.75            | WXGA       | XGA only |
| 1366*768   | 47.720      | 59.799      | 84.75            | WXGA       | XGA only |

## 8. HDMI input (DTV)

| Resolution | H-freq(kHz) | V-freq(kHz) | Pixel clock(MHz) | Proposed                  |
|------------|-------------|-------------|------------------|---------------------------|
| 720*480    | 15.75       | 60.00       | 13.514           | SDTV, DVD 480I(525I)      |
| 720*480    | 15.73       | 59.94       | 13.500           | SDTV, DVD 480I(525I)      |
| 720*576    | 15.625      | 50.00       | 13.500           | SDTV, DVD 576I(625I) 50Hz |
| 720*480    | 31.47       | 59.94       | 27.000           | SDTV 480P                 |
| 720*480    | 31.50       | 60.00       | 27.027           | SDTV 480P                 |
| 720*576    | 31.25       | 50.00       | 27.000           | SDTV 576P 50Hz            |
| 1280*720   | 44.96       | 59.94       | 74.176           | HDTV 720P                 |
| 1280*720   | 45.00       | 60.00       | 74.250           | HDTV 720P                 |
| 1280*720   | 37.50       | 50.00       | 74.25            | HDTV 720P 50Hz            |
| 1920*1080  | 33.72       | 59.94       | 74.176           | HDTV 1080I                |
| 1920*1080  | 33.75       | 60.00       | 74.250           | HDTV 1080I                |
| 1920*1080  | 28.125      | 50.00       | 74.250           | HDTV 1080I 50Hz           |
| 1920*1080  | 67.432      | 59.94       | 148.350          | HDTV 1080P                |
| 1920*1080  | 67.5        | 60          | 148.5            | HDTV 1080P                |
| 1920*1080  | 56.250      | 50          | 148.5            | HDTV 1080P 50Hz           |



# ADJUSTMENT INSTRUCTION

## 1. Application Range

This spec sheet is applied all of the 26/32/37/42" LCD TV(LP78A) by manufacturing LG TV Plant all over the world.

## 2. Specification

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

## 3. Adjustment items

### 3.1. PCB assembly adjustment items

- 1) Download the VCTP main software (IC500,VCT\_Pro)
- 2) Channel memory (IC501,EEPROM)
- 3) Color carrier Adjustment

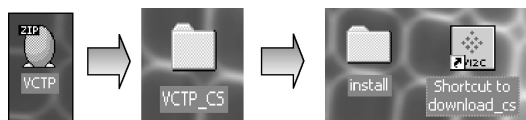
### 3.2. SET assembly adjustment items

- 1) DDC Data input.
- 2) Adjustment of White Balance.
- 3) Factoring Option Data input.

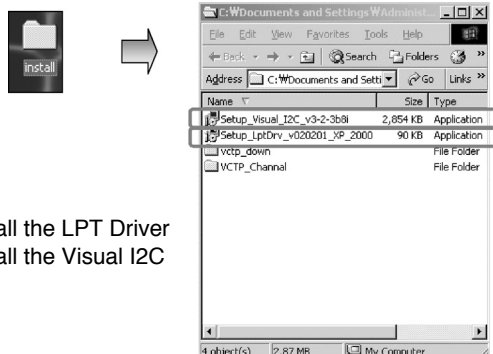
## 4. PCB assembly adjustment method (Using VCTP Download program)

### 4.1. Download program installation

- (1) Extract a Zip file



- (2) Visual I2C & LPT Driver Installation



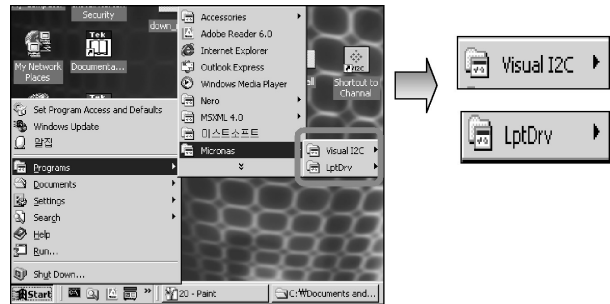
LPT Port Driver (LptDrv) Setups : Program Files > Micronas > Visual I2C > Port\_Driver

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

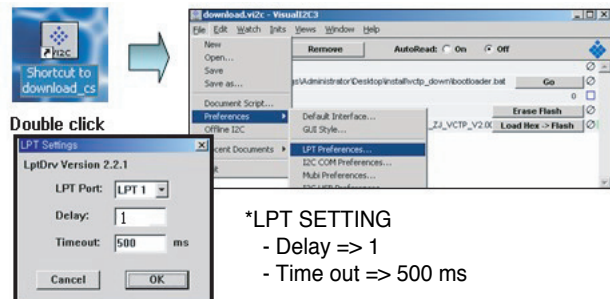
\*Use for Windows 2000/XP : Setup\_LptDrv\_v0202\_XP\_2000.exe

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

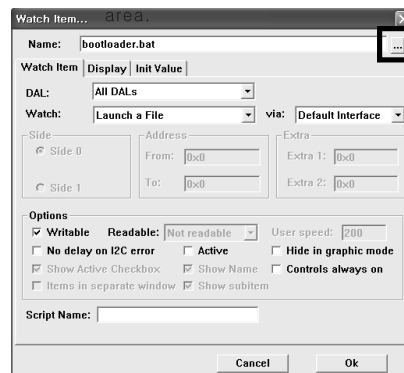
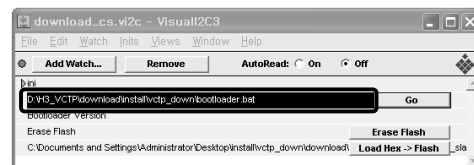
- (3) Verification (Start > Programs > Micronas > Visual I2C or LptDrv)

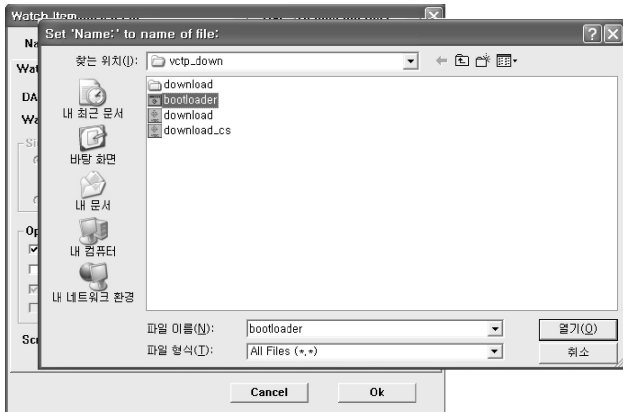


- (4) LPT delay setting(File > Preference > LPT preferences)

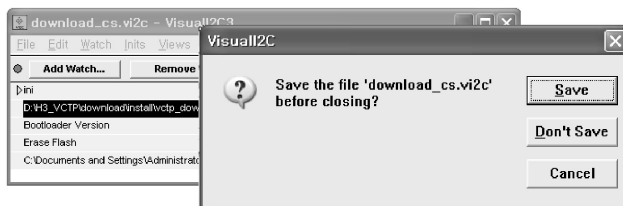


- (5) Exchange the bootloader.bat file.





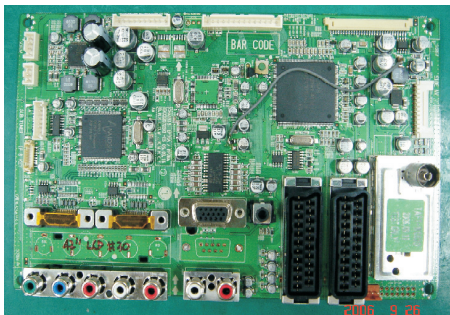
=> Select the "Bootloader.bat" file(install > VCTP\_download > Bootloader)  
=> Push "OK"



=> Finish the program, after saving the file "download\_cs.vi2c"  
(if you click [X], the message appears automatically)

## 4.2. S/W program download

(1) Download method 1 (PCB Ass'y)



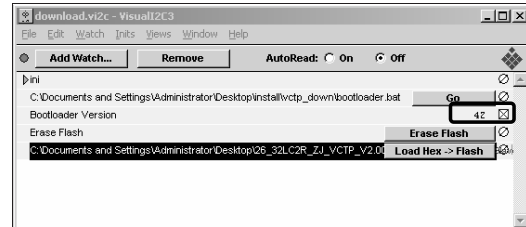
- 1) Connect the download jig to D-sub jack
- 2) Execute 'Download.vi2c' program in PC, then a main window will be opened



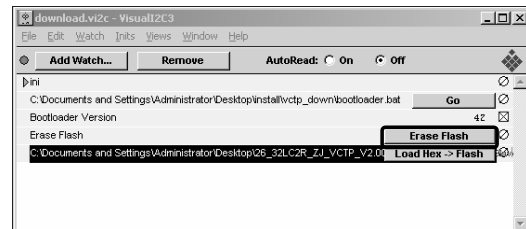
Double click



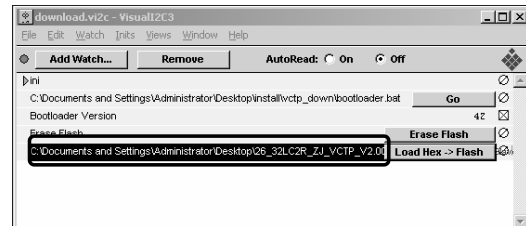
- 3) Double click the blue box and confirm "Bootloader Version" as 42.



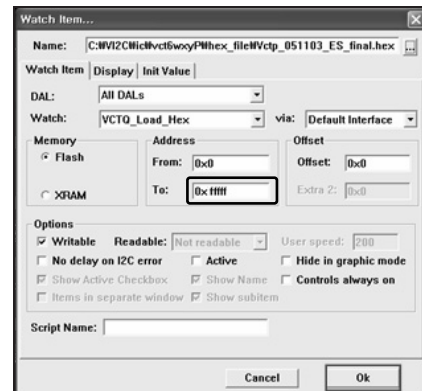
- 4) Click the "Erase Flash" button



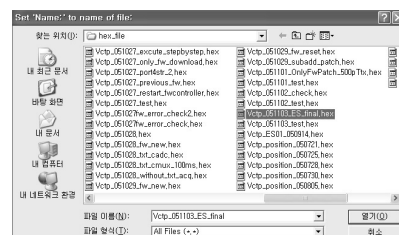
- 5) Double click the download file low, then "edit" window will be opened



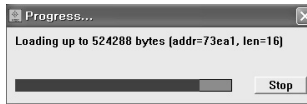
- 6) Click the choice button in the "edit window", then "file choice window" will be opened.



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

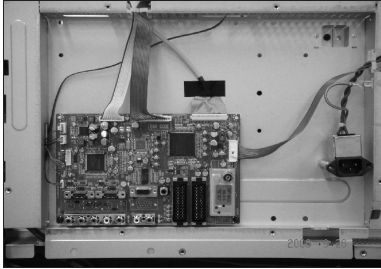


- 8) Click OK button at the "edit window".
- 9) Under Downloading process

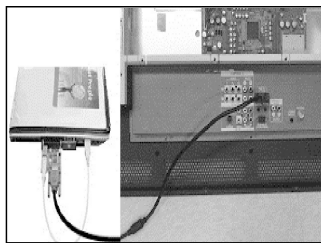
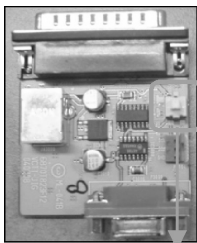


- 10) If download is failed, for example "No acknowledge from slave". Execute download again from(1).

## (2) Download method 2 (AV Plate Ass'y)

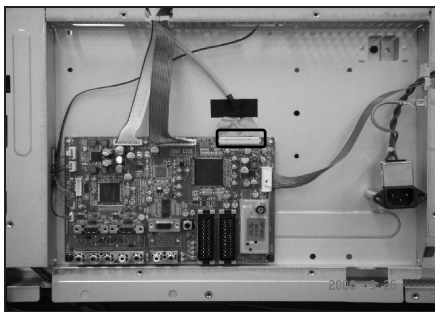


- 1) Push S/W 'ON' (connect SCL to GND using switch at Jig) and connect the download jig to D-sub jack.

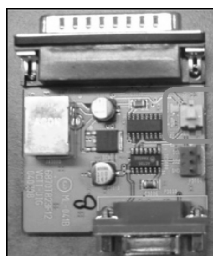


Push S/W

- 2) Supply the power (Stand-by 5V) and wait for 3 seconds.



- 3) Push the S/W off (Disconnect SCL to GND using switch at jig).

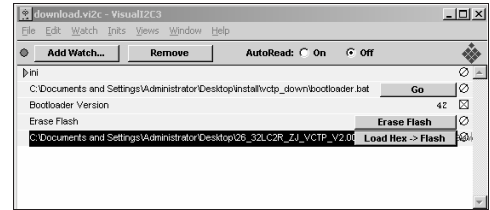


Push S/W

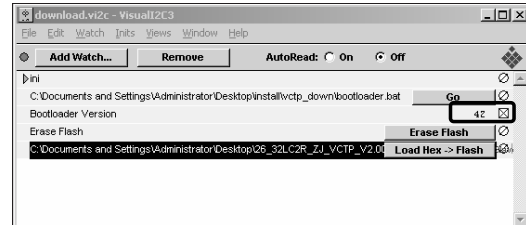
- 4) Execute 'Download.vi2c' program in PC, then a main widow will be opened.



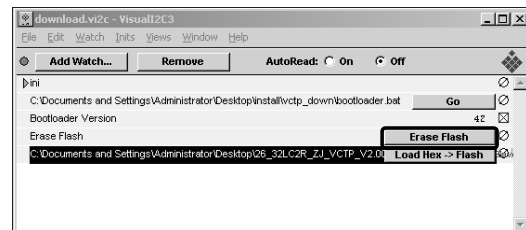
Double click



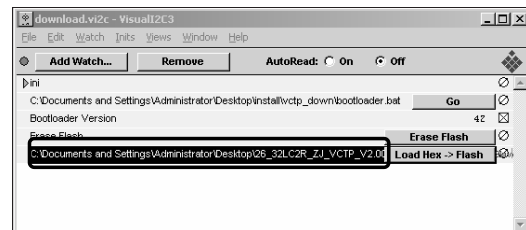
- 5) Double click the blue box and confirm "Bootloader Version" as 42.



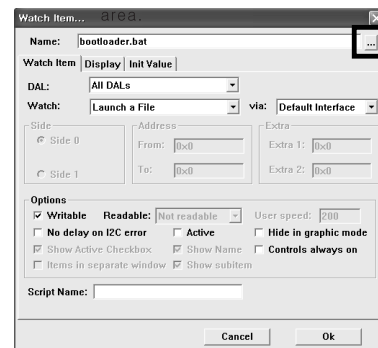
- 6) Click the "Erase Flash" button.



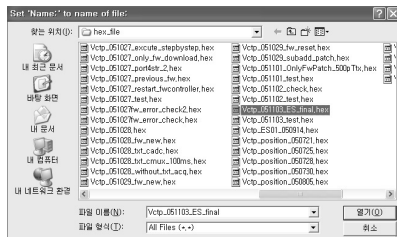
- 7) Double click the download file low then, "edit" window will be opened.



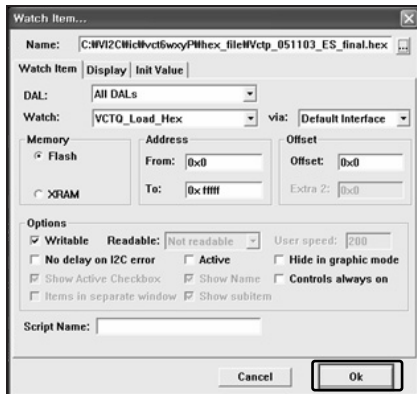
- 8) Chck the choice button I n the "edit window", then "file choice window' will be opened.



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



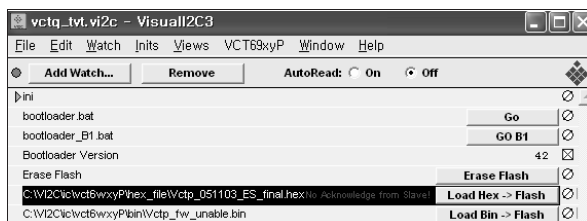
- 10) Click OK button at the "edit window"



- 11) Under Downloading progress.

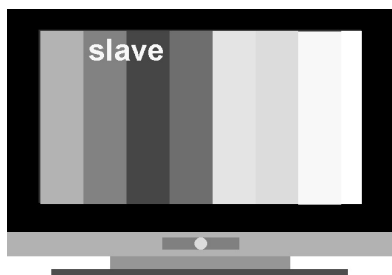


- 12) If download is failed, for example "No acknowledge from slave", execute download again from (1).

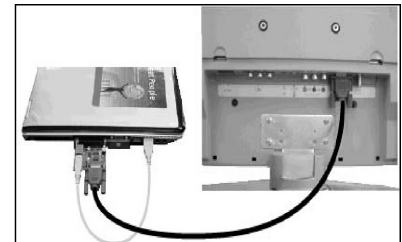
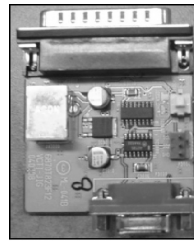


- (3) Download method 3 (SET)

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



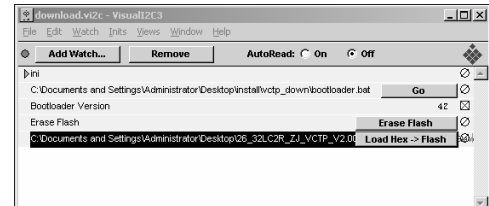
- 2) Connect Zig to TV using a D-sub cable.



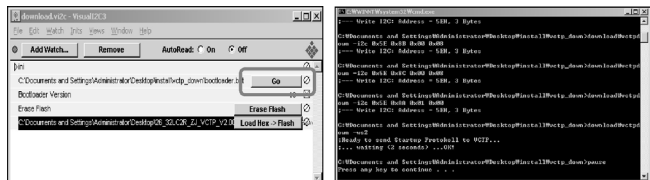
- 3) Execute 'Download\_CS.vi2c' program in PC, then a main widow will be opened.



Double click



- 4) Click "GO" button.

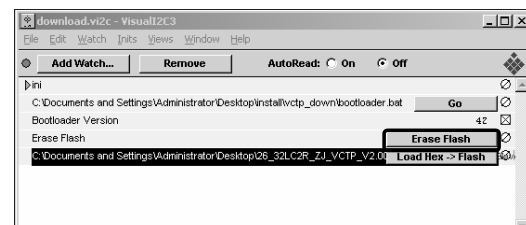


If you don't push the "go", the Hex file would not be downloaded although the download proceeds normally at first glance.

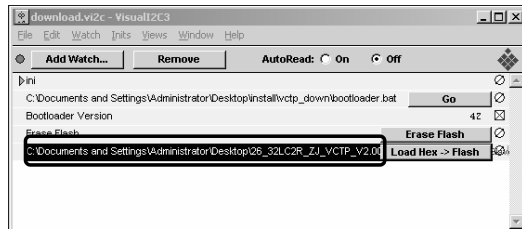
- 5) Double click the blue box and confirm "Bootloader Version" as 42.



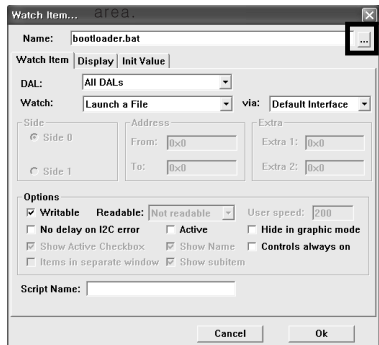
- 6) Click the "Erase Flash" button



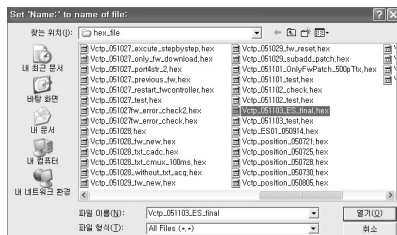
7) Double click the download file low then, "edit" window will be opened.



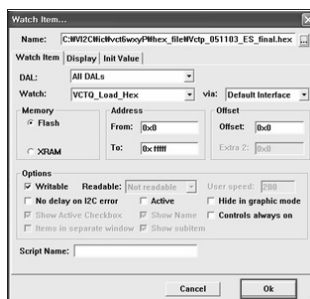
8) Click the choice button in the "edit window", then "file choice window" will be opened



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



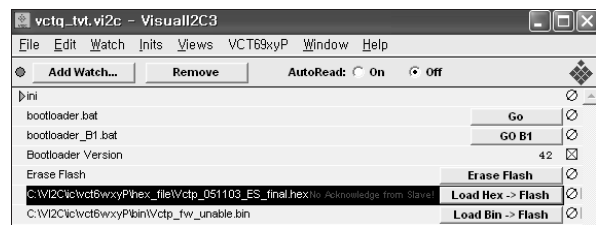
10) Click OK button at the "edit window"



## 11) Downloading



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



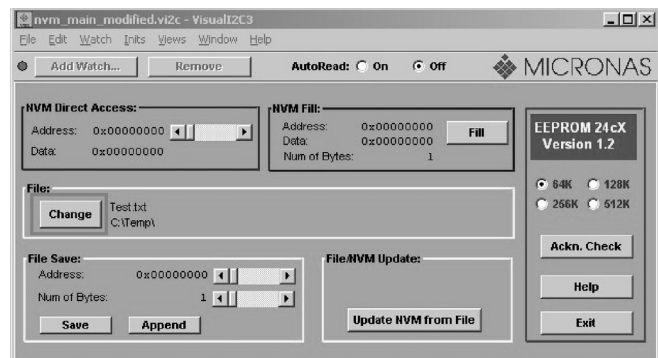
### 4.3. Channel memory download

(1) Connect the download jig to D-sub jack.

(2) Execute 'Channel.vi2c' program in PC, then a main window will be opened.

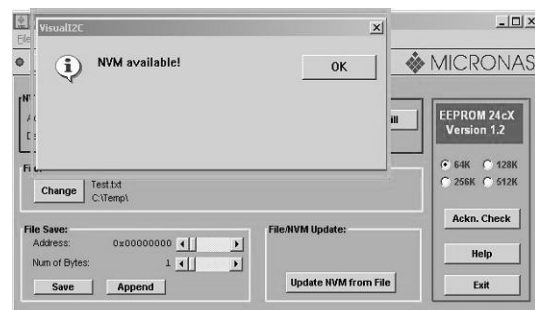


(3) Push the button change and select the Channel memory data.



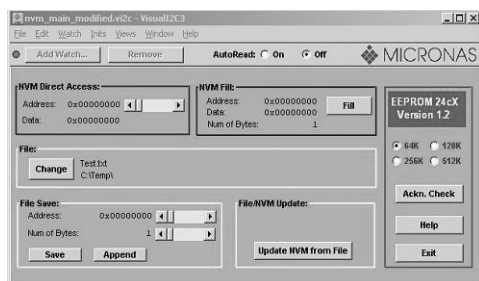
(4) Check the communication is OK or not.

=> Push the Read area (Ackn. Check) and check Cyan area is OK message.





(5) Push the Update NVM from File



#### 4.4. Tool Option Area Option Change

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

Option values are below

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

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

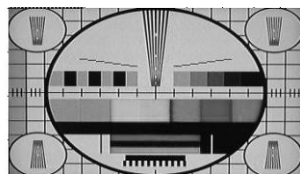
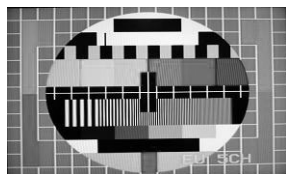
| Tool Option |              |       |
|-------------|--------------|-------|
| Inch        | ZA           | TA    |
| 26          | 02240        | 04288 |
| 32          | 02256        | 04304 |
| 37          | 02264        | 04312 |
| 42          | 02272        | 04320 |
| Area Option | Depend on PR |       |

#### 4.5. Color carrier Adjustment (Inspection process)

(1) Tuning the RF signal

ZA, TA : PAL Philips Pattern(with color Bar)

MA : NTSC Digital Pattern(with color Bar)

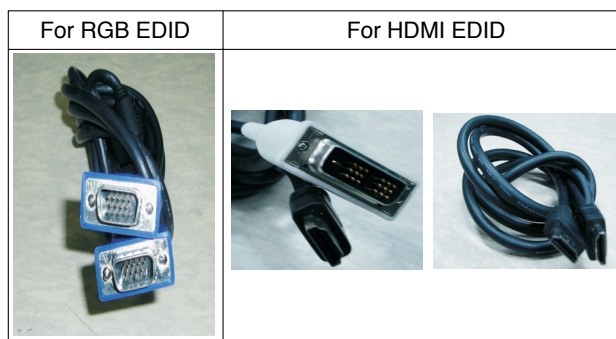


(2) push the "adj" key in the adjustment remocon.

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

\* Caution

- Use the proper signal cable for EDID Download.
- Never connect HDMI & D-SUB Cable at the same time.
- Use the proper cables below for EDID Writing.



\* EDID Data

| Item            | Condition   | Data |
|-----------------|-------------|------|
| Manufacturer ID | GSM         | 1E6D |
| Version         | Digital : 1 | 01   |
| Revision        | Digital :3  | 03   |

<EDID DATA Analog Set : 128bytes>

| Addr | 00 | 01  | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A  | 0B | 0C  | 0D  | 0E | 0F  |
|------|----|-----|----|----|----|----|----|----|----|----|-----|----|-----|-----|----|-----|
| 0000 | 00 | FF  | FF | FF | FF | FF | FF | 00 | 1E | 6D | (a) |    |     | (b) |    |     |
| 0010 |    | (c) | 01 | 03 | 08 | 46 | 27 | 78 | 0A | D9 | B0  | A3 | 57  | 49  | 9C | 25  |
| 0020 | 11 | 49  | 4B | A1 | 08 | 00 | 31 | 40 | 01 | 01 | 01  | 01 | 45  | 40  | 01 | 01  |
| 0030 | 61 | 40  | 01 | 01 | 01 | 01 | 1B | 21 | 50 | A0 | 51  | 00 | 1E  | 30  | 48 | 88  |
| 0040 | 35 | 00  | BC | 88 | 21 | 00 | 00 | 1C | 4E | 1F | 00  | 80 | 51  | 00  | 1E | 30  |
| 0050 | 40 | 80  | 37 | 0  | BC | 88 | 21 | 00 | 00 | 18 | 00  | 00 | 00  | FD  | 00 | 3A  |
| 0060 | 3F | 1F  | 32 | 09 | 00 | 0A | 20 | 20 | 20 | 20 | 20  |    | (d) |     |    |     |
| 0070 |    |     |    |    |    |    |    |    |    |    |     |    |     |     | 00 | (e) |

< EDID DATA HDMI Set : 256bytes>

| Addr | 00 | 01  | 02 | 03 | 04 | 05  | 06 | 07 | 08 | 09 | 0A  | 0B | 0C | 0D  | 0E | 0F  |
|------|----|-----|----|----|----|-----|----|----|----|----|-----|----|----|-----|----|-----|
| 0000 | 00 | FF  | FF | FF | FF | FF  | FF | 00 | 1E | 6D | (a) |    |    | (b) |    |     |
| 0010 |    | (c) | 01 | 3  | 80 | 5C  | 34 | 96 | 0A | F3 | 30  | A7 | 54 | 42  | AA | 26  |
| 0020 | 0F | 48  | 4C | 00 | 00 | 00  | 01 | 01 | 01 | 01 | 01  | 01 | 01 | 01  | 01 | 01  |
| 0030 | 01 | 01  | 01 | 01 | 01 | 01  | 8C | 0A | D0 | 8A | 20  | E0 | 2D | 10  | 10 | 3E  |
| 0040 | 96 | 00  | C4 | 8E | 21 | 00  | 00 | 18 |    |    | (d) |    |    |     |    |     |
| 0050 |    |     |    |    |    | (d) |    |    |    |    | 00  | 00 | 00 | FD  | 00 | 2D  |
| 0060 | 41 | 19  | 32 | 8  | 00 | 0A  | 20 | 20 | 20 | 20 | 20  | 20 | 00 | 00  | 00 | 00  |
| 0070 | 00 | 00  | 00 | 00 | 00 | 00  | 00 | 00 | 00 | 00 | 00  | 00 | 00 | 00  | 01 | (e) |
| 0080 | 02 | 03  | 1E | 72 | 23 | 09  | 07 | 02 | 4B | 10 | 1F  | 07 | 16 | 81  | 03 | 05  |
| 0090 | 14 | 13  | 12 | 04 | 83 | 01  | 00 | 00 | 65 | 03 | 0C  | 00 | 10 | 00  | 01 | 1D  |
| 00A0 | 80 | 18  | 71 | 1C | 16 | 20  | 58 | 2C | 25 | 00 | C4  | 8E | 21 | 00  | 00 | 9E  |
| 00B0 | 01 | 1D  | 80 | D0 | 72 | 1C  | 16 | 20 | 10 | 2C | 25  | 80 | C4 | 8E  | 21 | 00  |
| 00C0 | 00 | 9E  | 01 | 1D | 00 | BC  | 52 | D0 | 1E | 20 | B8  | 28 | 55 | 40  | C4 | 8E  |
| 00D0 | 21 | 00  | 00 | 1E | 8C | 0A  | D0 | 90 | 20 | 40 | 31  | 20 | 0C | 40  | 55 | 00  |
| 00E0 | C4 | 8E  | 21 | 00 | 00 | 18  | 01 | 1D | 00 | 72 | 51  | D0 | 1E | 20  | 6E | 28  |
| 00F0 | 55 | 00  | C4 | 8E | 21 | 00  | 00 | 1E | 00 | 00 | 00  | 00 | 00 | 00  | 00 | (e) |

## 5.1. Sequence of Adjustment

### (1) DDC data of Analog-RGB

#### 1) Init the data

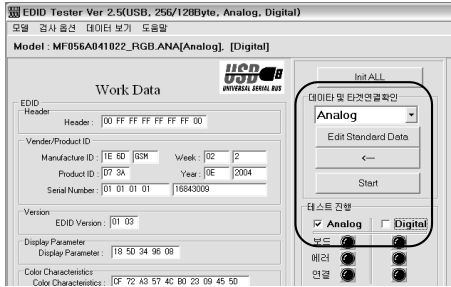


#### 2) Load the EDID data. (Open file)

[Analog - RGB : LP78A\_RGB.ANA]

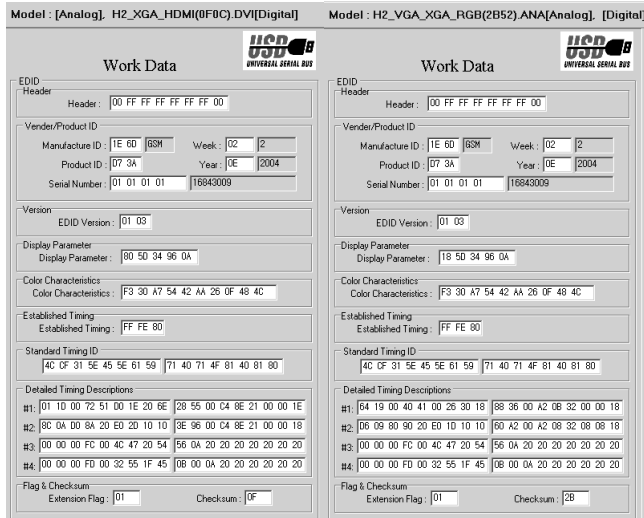
[Digital - HDMI : LP78A\_HDMI.DVI]

#### 3) Set the S/W as below



#### 4) Push the “Write Data & Verify” button. And confirm “Yes”.

#### 5) If the writing is finished, you will see the “OK” message.



<EDID DATA>

## 6. Adjustment of White Balance

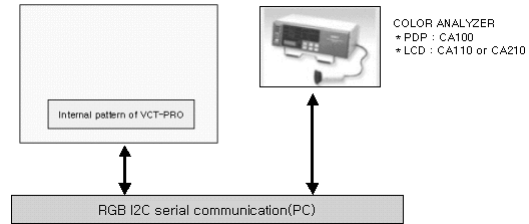
### 6.1 Required Equipment

#### (1) Remote control for adjustment

#### (2) Color Analyzer (CA-110 or CA-210 or same product)

#### (3) Auto W/B adjustment instrument(only for Auto adjustment)

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



#### (1) Enter the DDC adjust mode

- Enter the DDC adjust mode at the same time heat-run mode when pushing the power on by power only key
- Enter the adjust mode and change the input mode to AV (ZA : AV3, TA,MA : AV2)when pushing the Front av key
- Maintain the DDC adjust mode with same condition of Heat-run -> Maintain after AC off/on in status of Heat-run pattern display

#### (2) Release the DDC adjust mode

- Release the adjust mode after AC off/on or std-by off/on in status of finishing the Hear-run mode
- Release the Adjust mode when receiving the aging off command(F3 00 00) from adjustment equipment
- Need to transmit the aging off command to TV set after finishing the adjustment.)

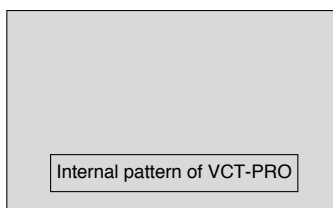
#### (3) DDC adjustment support command set

| Adjustment   | CMD(HEX) | ADR |                     |
|--------------|----------|-----|---------------------|
| Aging On/Off | F3       | 00  | FF : ON / 00 : OFF  |
| Input select | F4       | 00  | 0x10 : TV           |
|              |          |     | 0x20 : AV1(SCART1)  |
|              |          |     | 0x21 : AV2(SCART2)  |
|              |          |     | 0x23 : AV3(Side AV) |
|              |          |     | 0x40 : Component1   |
|              |          |     | 0x50 : RGB DTV      |
|              |          |     | 0x60 : RGB PC       |
|              |          |     | 0x90 : HDMI1 DTV    |
| R GAIN       | 16       | 00  | GAIN adjustment     |
| G GAIN       | 18       | 00  |                     |
| B GAI        | 1A       | 00  |                     |

### 6.3. Adjustment of White Balance

#### (For Manual adjustment)

- Operate the zero-calibration of the CA-110 or CA-210, then stick sensor to LCD module when you adjust.
- For manual adjustment, it is also possible by the following sequence
  - 1) Select RF no signal by pressing "POWER ON" key on remote control for adjustment then operate heat run more than 15 minutes.  
(If not executed this step, the condition for W/B will be differ. The W/B condition is Picture Mode : Standard (MA : Optimum), Color Temp : Normal. )
  - 2) Changing to the av mode by pushing the input or front av key.
  - 3) Display the internal pattern of the VCT-Pro IC by pushing the IN-START.
  - 4) Stick sensor to center of the screen and select each items (Red/Green/Blue Gain and Offset) using ▲/▼ (CH+/-) key on R/C.
  - 5) Adjust R Gain / B Gain using ◀/▶ (VOL+/-) key on R/C.
  - 6) Adjust it until color coordination becomes as below.  
(Initially, R/G/B gain and R/G/B offset values are fixed as below)  
Red Gain : 80 , Green Gain : 80 , Blue Gain : 80  
Red Offset : 80, Green Offset : 80 , Blue Offset : 80
- \* Target Value [Picture Mode : Standard (ZA, TA), Optimum(MA), Color Temp: Normal]
  - Normal (9300K) x ; 0.283±0.003 y ; 0.298±0.003
  - Luminance(Y) AV : upper 150 cd/m<sup>2</sup> (Typ : 350 cd/m<sup>2</sup>≥)
- => Reference Value(Automatically fixed)
  - Cool(11000K): x:0.274±0.003, y: 0.286±0.003
  - Warm(7200K) : x:0.303±0.003, y: 0.319±0.003



<Pattern for Adjustment of White Balance>

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

### 6.4 Input the Shipping Option Data

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

## 7. Default Value in Adjustment mode

(Default values maybe modified the module condition)

### 7.1. White Balance

| White Bdance |        |    |
|--------------|--------|----|
| RED          | Gain   | 80 |
| Green        | Gain   | 80 |
| Blue         | Gain   | 80 |
| Red          | Offset | 80 |
| Green        | Offset | 80 |
| Blue         | Offset | 80 |

<Default Value on OSD>

## 8. Internal press test

| Item                            | Value | Unit | Remark                   |
|---------------------------------|-------|------|--------------------------|
| Dielectric Voltage (AC <-> FG)  | 1.5   | kV   | At 100mA for 1sec (Line) |
|                                 |       |      | At 100mA for 1min (OQC)  |
| Dielectric Voltage (Without FG) | 3     | kV   | At 100mA for 1sec (Line) |
|                                 |       |      | At 100mA for 1min (OQC)  |

## 9. Sound spec.

| Item                                  | Min | Typ | Max | Unit | Remark |
|---------------------------------------|-----|-----|-----|------|--------|
| Audio Practical Max Output, L(Mono)/R | 6   | 7   | 9   | W    | LCD    |



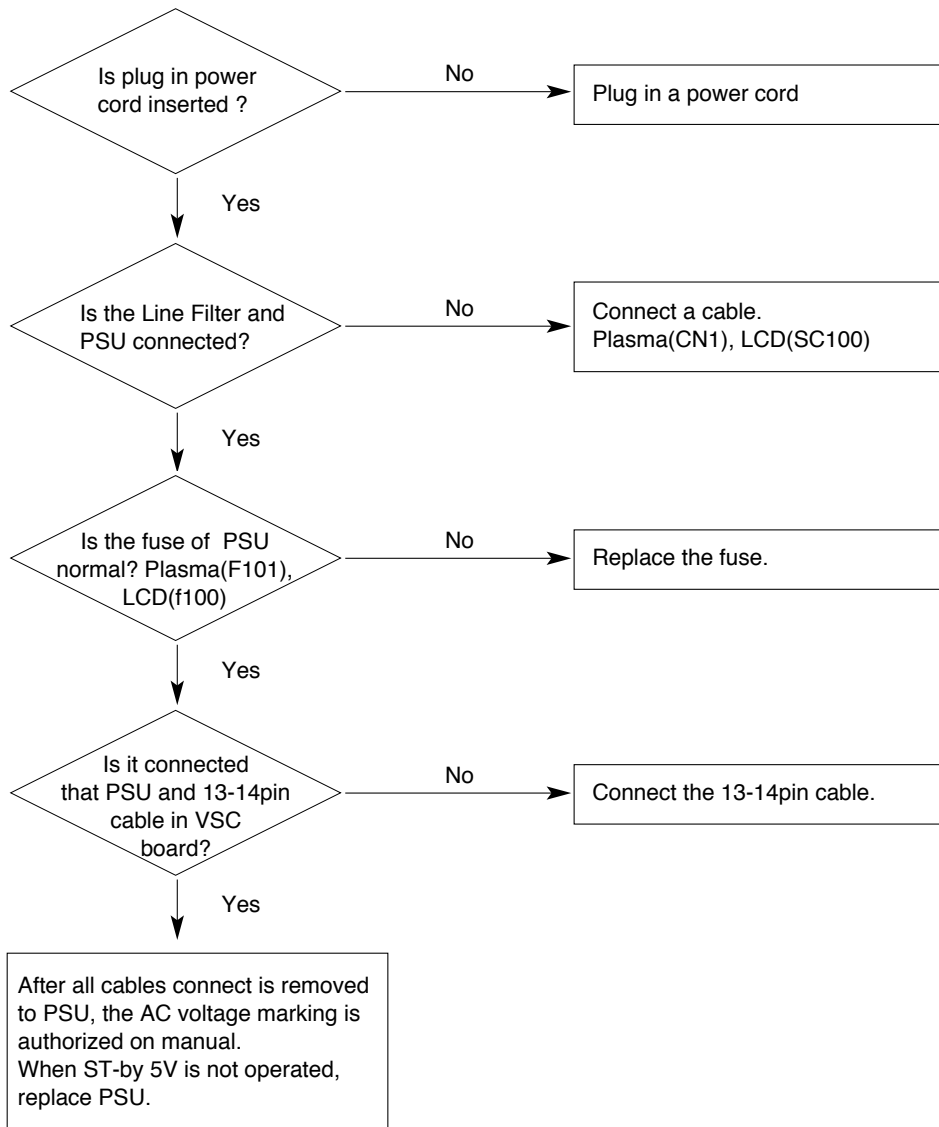
# TROUBLESHOOTING

## 1. No power

### (1) Symptom

- 1) It is not discharged minutely from the module.
- 2) Light does not come into the front LED.

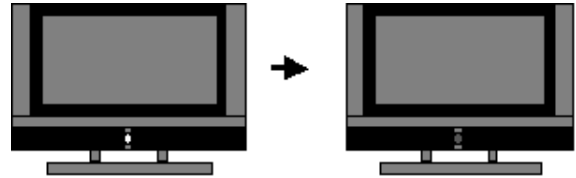
### (2) Check process



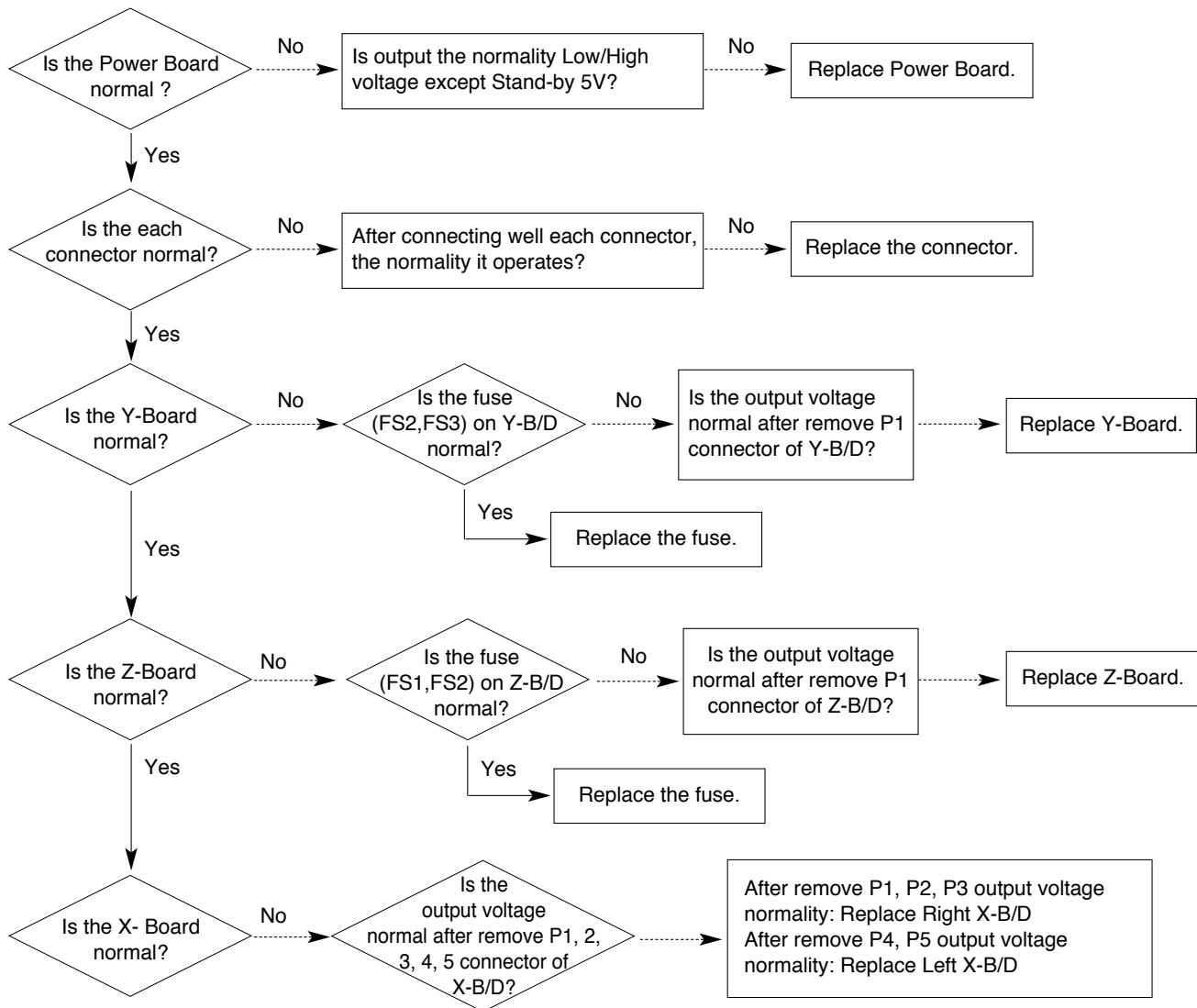
## 2. Protect mode

### (1) Symptom

- 1) After once shining, it does not discharge minutely from module.
- 2) The relay falls.(The sound is audible "Click".)
- 3) It is converted with the color where the front LED is red from green.



### (2) Check following

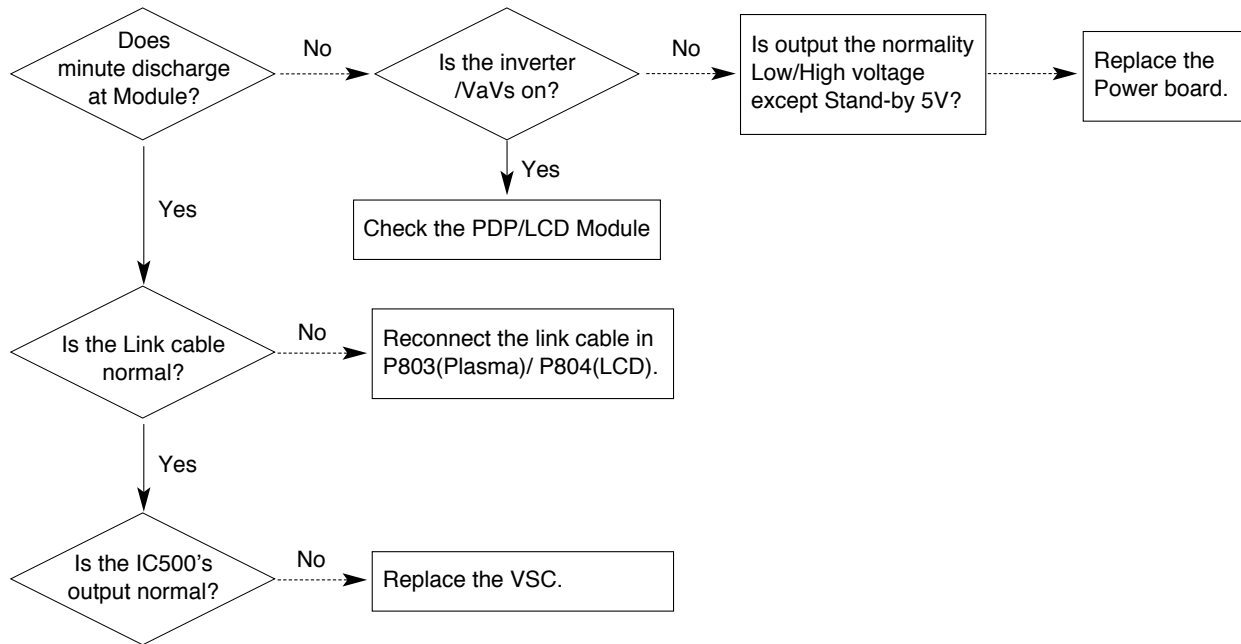


### 3. No Raster

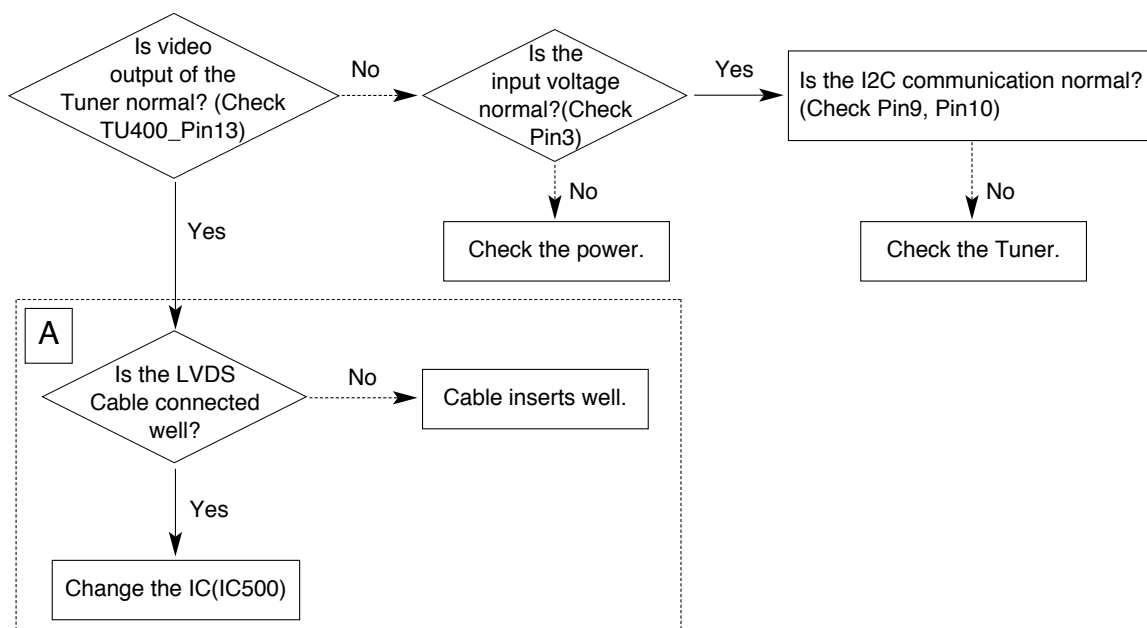
#### (1) Symptom

- 1) No OSD and image occur at screen.
- 2) It maintains the condition where the front LED is green.

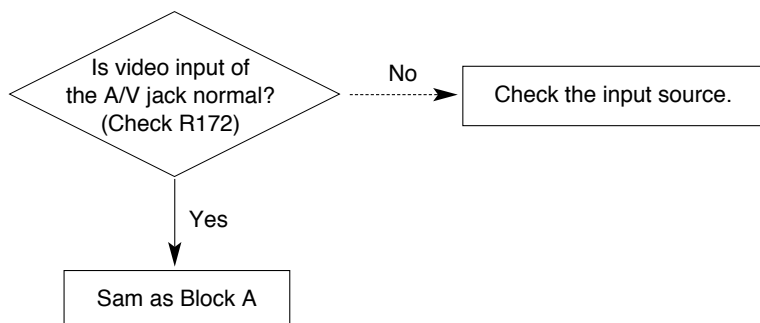
#### (2) Check following



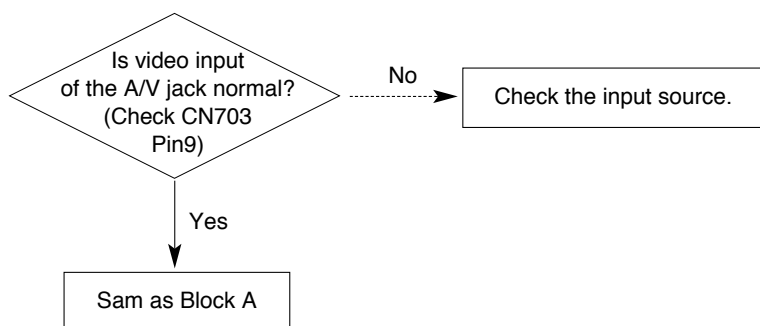
### 4. In case of becomes unusual display from RF mode.



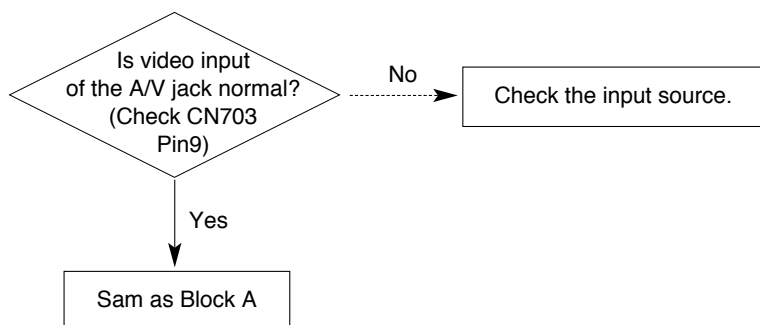
## 5. In case of becomes unusual display from rear AV mode.



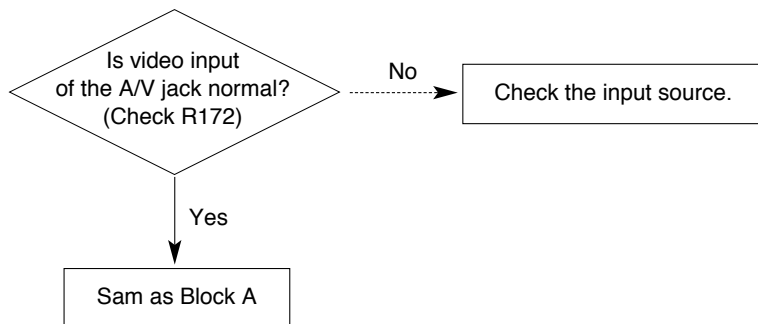
## 6. In case of becomes unusual display from Side AV mode.



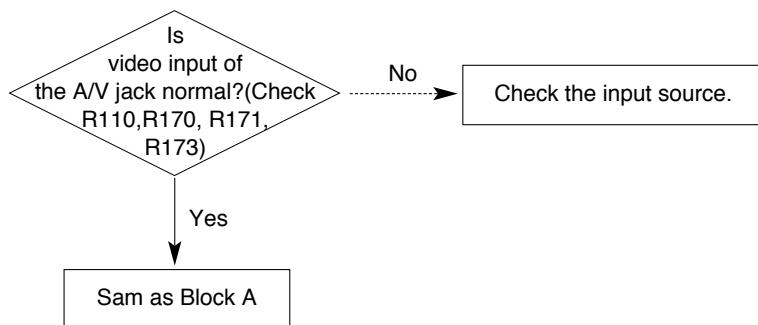
## 7. In case of becomes unusual display from Side S-Video mode.



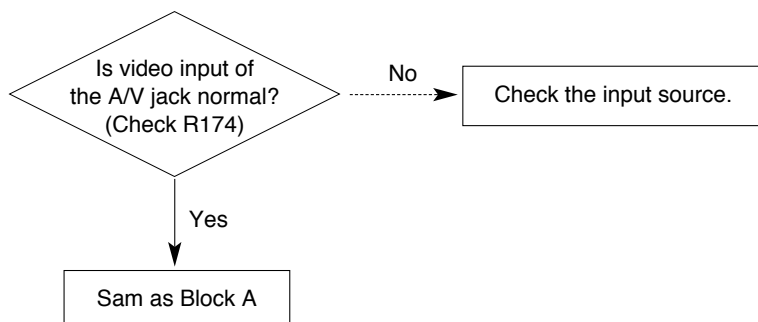
## 8. In case of becomes unusual display from SCART 1 mode.



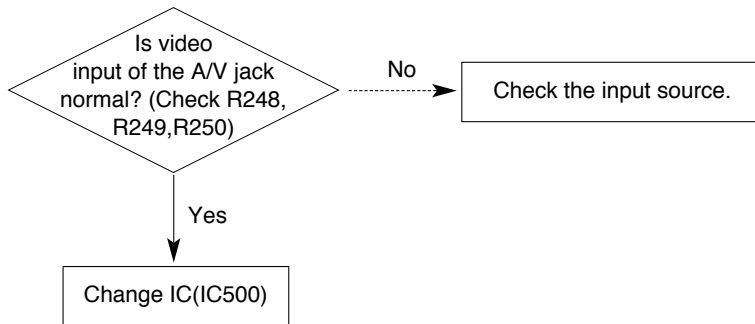
## 9. In case of becomes unusual display from SCART 1\_RGB mode.



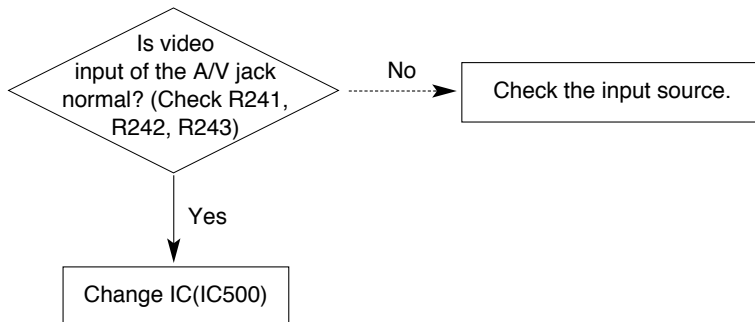
## 10. In case of becomes unusual display from SCART 2 mode.



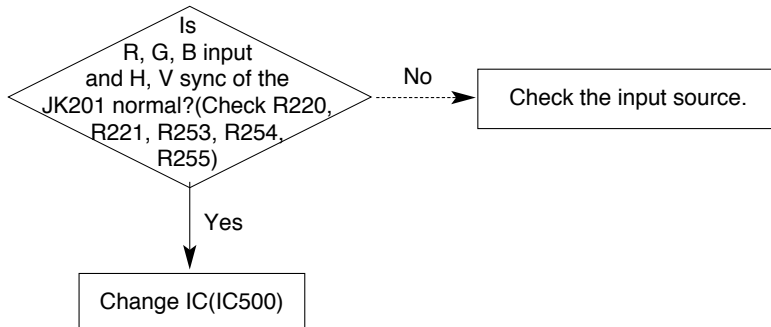
### 11. In case of becomes unusual display from component 1 mode.



### 12. In case of becomes unusual display from component 2 mode.



### 13. In case of becomes unusual display from RGB mode.

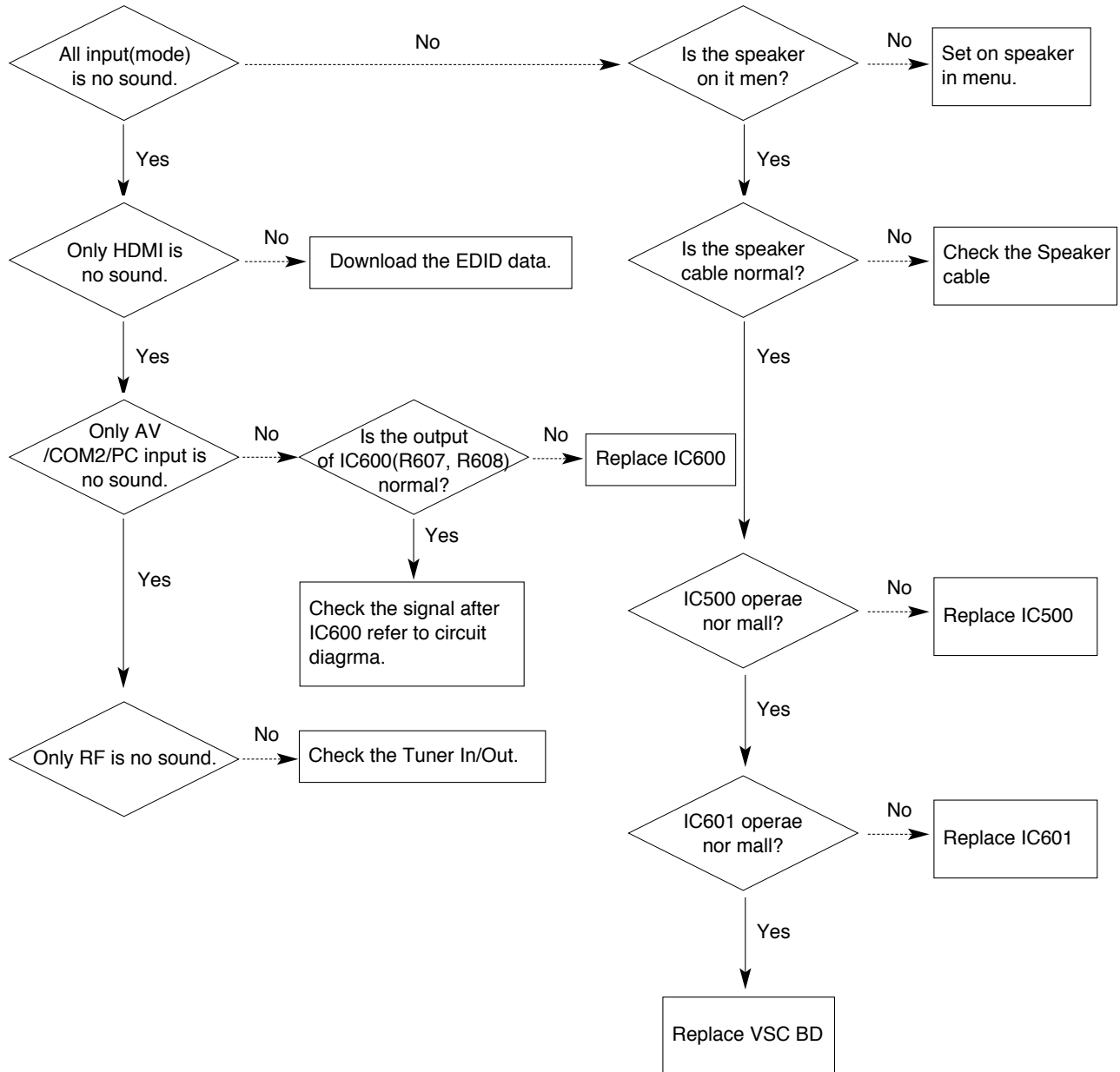


## 14. No Sound

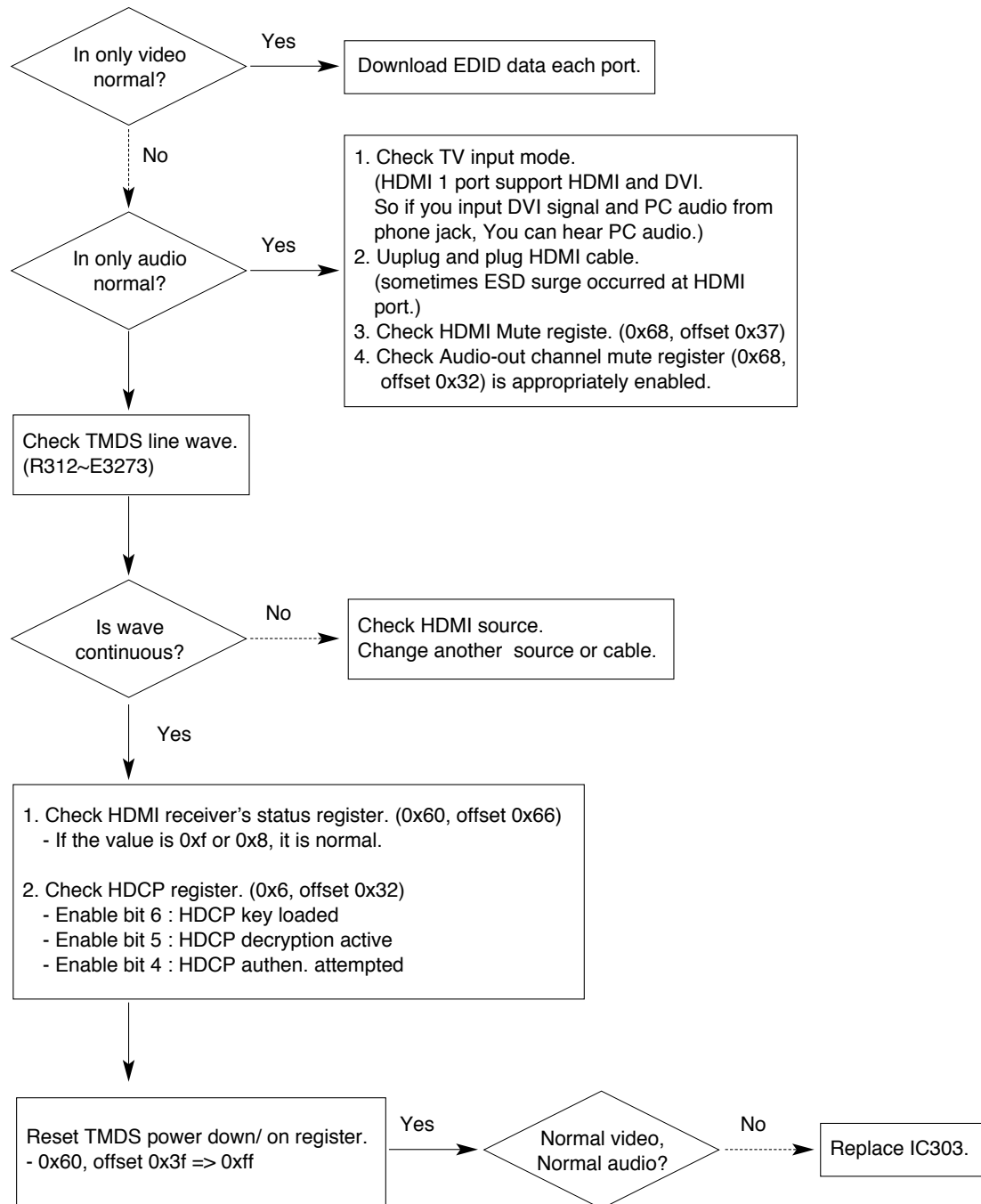
### (1) Symptom

- 1) LED is green.
- 2) Screen display but sound is not output.

### (2) Check following

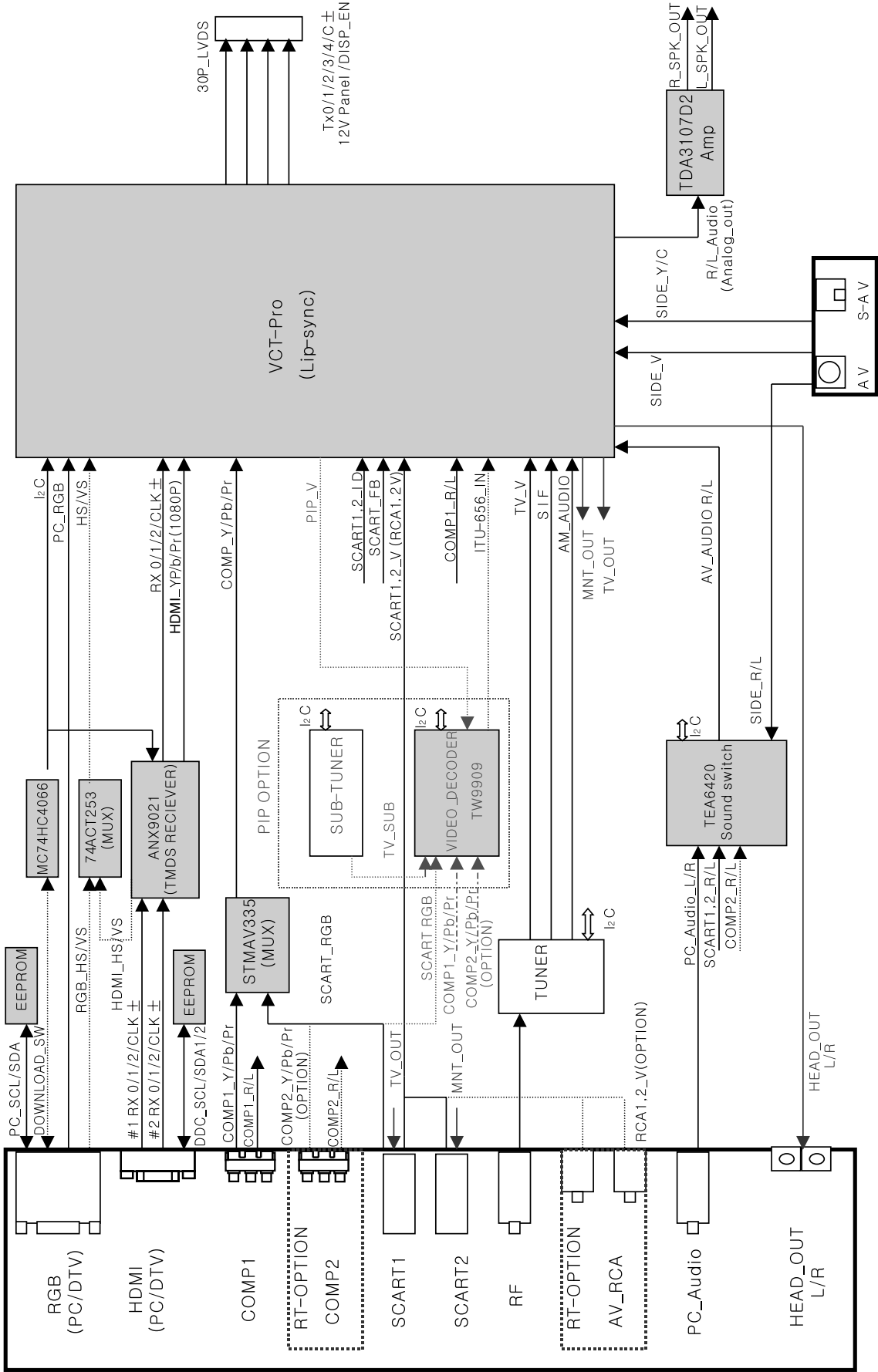


## 15. HDMI mode

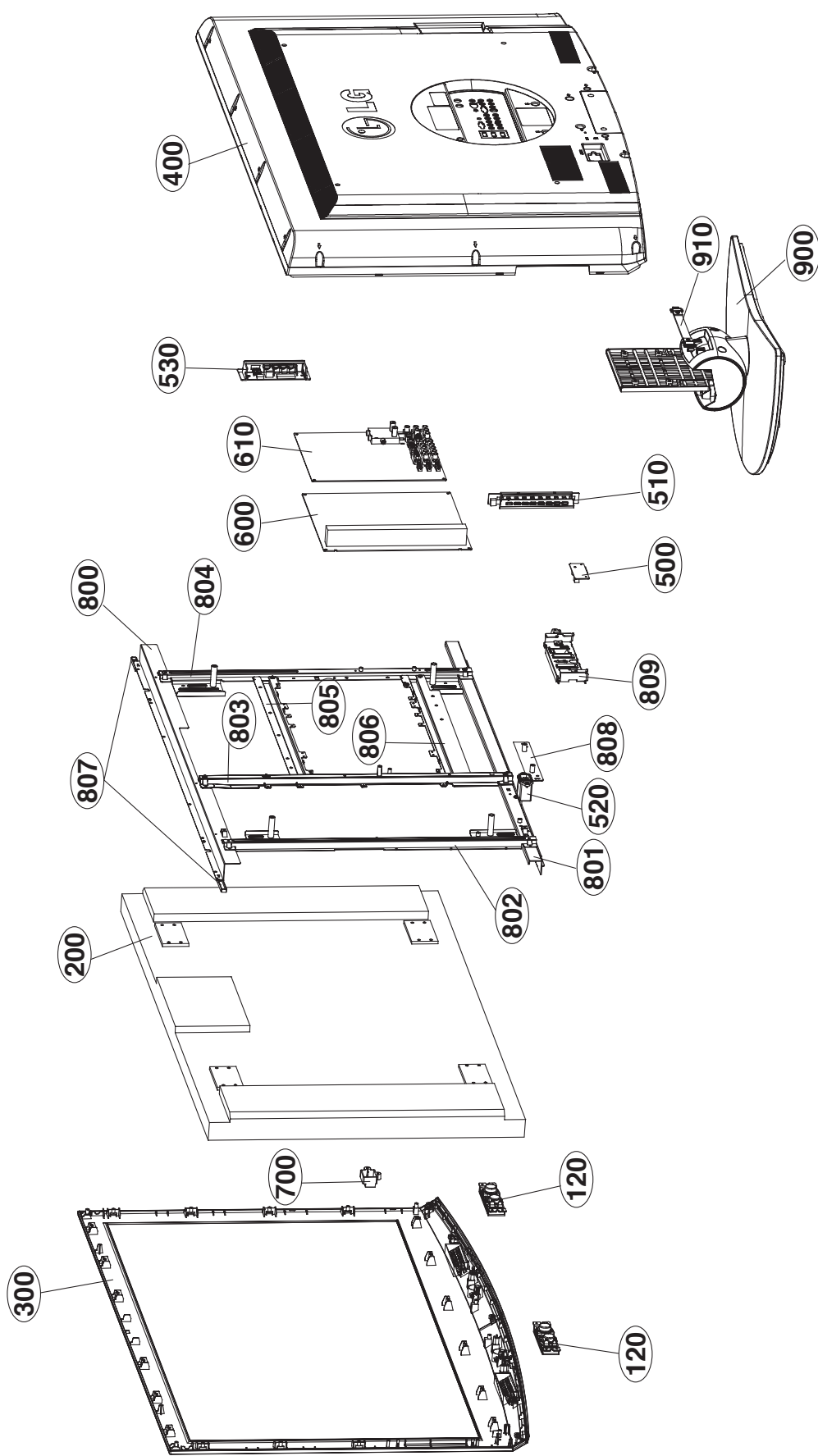




BLOCK DIAGRAM



EXPLODED VIEW



# EXPLODED VIEW PARTS LIST

| No. | PART NO. | DESCRIPTION                                                                                                                                        |
|-----|----------|----------------------------------------------------------------------------------------------------------------------------------------------------|
|     | 120      | EAB37526301 Speaker,Full Range, C103A02K1400 ND 7W 8OHM 81DB 160HZ 122                                                                             |
| ⚠   | 200      | EAJ36547901 LCD,Module-TFT, LC420WX6-SLA2 WXGA 42INCH 1366X768 500CD COLOR 72% 16/9 1000:1(DCR 5000:1) 5ms(GTG),Zero RT Pol. 10000K LG PHILIPS LCD |
| ⚠   | 300      | ABJ32993203 Cabinet Assembly, 42LB9 LA73A 42" EVE_AUS CABINET ASSEMBLY                                                                             |
| ⚠   | 400      | ACQ33924403 Cover Assembly,Rear, 42LB9R-TD IP78A 42" 42" H4_BACK COVER ASSEMBLY FOR CENTRAL ASIA                                                   |
|     | 500      | EBR38690201 PCB Assembly,Sub, SUB T.T LP78B 42LB9R - Pre amp ( 600mm)                                                                              |
|     | 510      | EBR38131401 PCB Assembly,Sub, SUB T.T LP78A H4 LB9R Control . total                                                                                |
|     | 520      | EAM35501401 Filter,AC Line, IF3-N06CEWL1 5.3mH 250VAC 6A 0.22uF 1000pF UL/CSA/VDE/K HOUSING/RING BK DONG IL TECHNOLOGY LTD.                        |
|     | 530      | EBR38686401 PCB Assembly,Sub, SUB T.T LP78B 42LB9R - NON-EU SIDE AV Total                                                                          |
| ⚠   | 600      | EAY38639601 Power Supply Assembly, LGLP42SLP 42INCH Tornado_42_10000:1 LCD Yuyang, H&E Tornado 42inch LIPS Multi 10000:1 YUYANG TELECOM CO.,LTD    |
|     | 610      | EBR38690501 PCB Assembly,Main, MAIN T.T LP78A 42LB9R - NON-EU MAIN Total                                                                           |
|     | 700      | 6500VR0003E Sensor,Ambient Light, YGCA-T071C 12 HOUSING BK 26.4X20X26.4mm VOUT 5V(AT 80LUX) LG INNOTEK CO., LTD                                    |
|     | 800      | MJH37063701 Supporter, PRESS EGI 1t Supporter EGI , TOP BAR                                                                                        |
|     | 801      | MGJ32902409 Plate, PRESS EGI 1.6 FRAME SBHG-A 42LB9                                                                                                |
|     | 802      | MJH34248201 Supporter, PRESS EGI 1.2 GUIDE EGI METAL BAR LEFT FOR V668 MODULE                                                                      |
|     | 803      | MGJ32902714 Plate, PRESS EGI 1.2 FRAME SBHG-A 42LB9D-DA METAL BAR CENTER FOR TAIWAN                                                                |
|     | 804      | MGJ32902502 Plate, PRESS EGI 1.2 FRAME SBHG-A 42LC4 METAL BAR RIGHT                                                                                |
|     | 805      | MGJ32902802 Plate, PRESS EGI 1.2 FRAME SBHG-A 42LC4(D2A) METAL BAR SIDE TOP                                                                        |
|     | 806      | MGJ32902902 Plate, PRESS EGI 1.2 FRAME SBHG-A 42LC4(D2A) METAL BAR SIDE BOTTOM                                                                     |
|     | 807      | MGJ38974302 Plate,Metal, PRESS SBHG 1.2T SUPPORTER EGI 42LB9 SUB TOP PIECE PRESS                                                                   |
|     | 808      | MJH34000503 Supporter, PRESS EGI 2 GUIDE EGI 42LB9 METAL STAND SUPPORTER                                                                           |
|     | 809      | MGJ38733402 Plate,Metal, PRESS EGI 1.0 SUPPORTER SECC 47LB9 STAND GUIDE PRESS                                                                      |
| ⚠   | 900      | AAN32993602 Base Assembly, STAND 42LF75-ZD LA73A STAND BASE ASSY FOR NOBLR BLACK DECO RING                                                         |
|     | 910      | ABA32985001 Bracket Assembly, STAND 32LB9D-UA LA73A 32LB9                                                                                          |

# REPLACEMENT PARTS LIST

DATE: 2007. 07. 12.

| LOC. NO.          | PART NO.    | DESCRIPTION / SPECIFICATION                | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION                     |
|-------------------|-------------|--------------------------------------------|----------|-------------|-------------------------------------------------|
| <b>ACCESSORY</b>  |             |                                            |          |             |                                                 |
| A1                | MFL37396704 | "Manual,Owners" PRINTING USER LP78A BR     | C815     | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF      |
| A2                | MKJ39170806 | Remote Controller COMPLEX PA71A 50PBRT W   | C816     | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF      |
| A21               | 3550V00590A | Cover MOLD ABS 50PC3DD-UE.AU               | C820     | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF      |
| A3                | 6410TBW004A | Power Cord LP-61L+GFC18N+<B90A+LS          | C821     | 0CE477WF6DC | "Capacitor,AL,Chip" MVK10TP16VC470M 470uF       |
| A4                | MES36332302 | Indicator MOLD ABS LED&PRE AMP 3           | C824     | 0CE476SF6DC | "Capacitor,AL,Chip" VMV476M016S0ANC010 47u      |
| A5                | SAC30653105 | Title LP78A H4 NEU all CD M                | C825     | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF      |
| <b>CAPACITORS</b> |             |                                            | C828     | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF      |
| C1000             | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF | C830     | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF      |
| C1002             | 0CE106WFKDC | "Capacitor,AL,Chip" MVK4.0TP16VC10M 10uF 2 | C832     | 0CE107SF6DC | "Capacitor,AL,Chip" VMV107M016S0ANE010 100      |
| C1003             | 0CE106WFKDC | "Capacitor,AL,Chip" MVK4.0TP16VC10M 10uF 2 | C640     | 0CE477BJ618 | "Capacitor,AL,Radial" ESM477M035T1G5H20G 470    |
| C1006             | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF | C641     | 0CE477BJ618 | "Capacitor,AL,Radial" ESM477M035T1G5H20G 470    |
| C1008             | 0CE106WFKDC | "Capacitor,AL,Chip" MVK4.0TP16VC10M 10uF 2 | C100     | 0CH5101K416 | "Capacitor,Ceramic,Chip" C2012C0G1H101JT 100pF  |
| C1009             | 0CE106WFKDC | "Capacitor,AL,Chip" MVK4.0TP16VC10M 10uF 2 | C100     | 0CH5101K416 | "Capacitor,Ceramic,Chip" C2012C0G1H101JT 100pF  |
| C101              | 0CE476VF6DC | "Capacitor,AL,Chip" VGV476M016S0ANE010 47u | C1001    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C102              | 0CE476VF6DC | "Capacitor,AL,Chip" VGV476M016S0ANE010 47u | C1004    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C103              | 0CE476VF6DC | "Capacitor,AL,Chip" VGV476M016S0ANE010 47u | C1005    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C116              | 0CE227SF6DC | "Capacitor,AL,Chip" MVG6.3TP16VC220M 220uF | C1007    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C117              | 0CE106SF6DC | "Capacitor,AL,Chip" VMV106M016S0ANB010 10u | C101     | 0CH5101K416 | "Capacitor,Ceramic,Chip" C2012C0G1H101JT 100pF  |
| C120              | 0CE106SF6DC | "Capacitor,AL,Chip" VMV106M016S0ANB010 10u | C1010    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C206              | 0CE106WFKDC | "Capacitor,AL,Chip" MVK4.0TP16VC10M 10uF 2 | C1011    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C311              | 0CE106SH6DC | "Capacitor,AL,Chip" VMV106M025S0ANB010 10u | C1014    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C316              | 0CE106WFKDC | "Capacitor,AL,Chip" MVK4.0TP16VC10M 10uF 2 | C1015    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C318              | 0CE106SH6DC | "Capacitor,AL,Chip" VMV106M025S0ANB010 10u | C1016    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C403              | 0CE107SF6DC | "Capacitor,AL,Chip" VMV107M016S0ANE010 100 | C1017    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C516              | 0CE106WFKDC | "Capacitor,AL,Chip" MVK4.0TP16VC10M 10uF 2 | C1018    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C527              | 0CE335WK6D8 | "Capacitor,AL,Chip" MVK4.0TP50VC3.3M 3.3uF | C1019    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C533              | 0CE106WH6DC | "Capacitor,AL,Chip" MVK5.0TP25VC10M 10uF 2 | C1020    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C539              | 0CE226WF6DC | "Capacitor,AL,Chip" MVK5.0TP16VC22M 22uF 2 | C1021    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C540              | 0CE226WF6DC | "Capacitor,AL,Chip" MVK5.0TP16VC22M 22uF 2 | C1022    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C541              | 0CE226WF6DC | "Capacitor,AL,Chip" MVK5.0TP16VC22M 22uF 2 | C1023    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C542              | 0CE226WF6DC | "Capacitor,AL,Chip" MVK5.0TP16VC22M 22uF 2 | C1024    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C543              | 0CE226WF6DC | "Capacitor,AL,Chip" MVK5.0TP16VC22M 22uF 2 | C1026    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C544              | 0CE226WF6DC | "Capacitor,AL,Chip" MVK5.0TP16VC22M 22uF 2 | C1027    | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C545              | 0CE226WF6DC | "Capacitor,AL,Chip" MVK5.0TP16VC22M 22uF 2 | C1032    | 0CC220CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H220JT 22pF 5 |
| C574              | 0CE475WJ6DC | "Capacitor,AL,Chip" MVK4.0TP35VC4.7M 4.7uF | C1033    | 0CC220CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H220JT 22pF 5 |
| C601              | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF | C104     | 0CH4471K416 | "Capacitor,Ceramic,Chip" C2012C0G1H471JT 470pF  |
| C609              | 0CE226WF6DC | "Capacitor,AL,Chip" MVK5.0TP16VC22M 22uF 2 | C105     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
| C610              | 0CE475WJ6DC | "Capacitor,AL,Chip" MVK4.0TP35VC4.7M 4.7uF | C106     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
| C611              | 0CE475WJ6DC | "Capacitor,AL,Chip" MVK4.0TP35VC4.7M 4.7uF | C111     | 0CK682CK51A | "Capacitor,Ceramic,Chip" C1608Y5P1H682KT 6.8nF  |
| C628              | JCE8106J691 | "Capacitor,AL,Chip" MVK5.0TP35VC10M 10uF 2 | C113     | 0CK682CK51A | "Capacitor,Ceramic,Chip" C1608Y5P1H682KT 6.8nF  |
| C647              | 0CE107WJ6DC | "Capacitor,AL,Chip" MVK10TP35VC100M 100uF  | C114     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
| C701              | 0CE477WF6DC | "Capacitor,AL,Chip" MVK10TP16VC470M 470uF  | C115     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
| C708              | 0CE226SF6DC | "Capacitor,AL,Chip" VMV226M016S0ANB010 22u | C200     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
| C801              | 0CE227WF6DC | "Capacitor,AL,Chip" MVK8.0TP16VC220M 220uF | C201     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
| C807              | 0CE107WH6DC | "Capacitor,AL,Chip" MVK8.0TP25VC100M 100uF | C204     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C808              | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF | C205     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C813              | 0CE107WF6DC | "Capacitor,AL,Chip" MVK6.3TP16VC100M 100uF | C211     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
|                   |             |                                            | C212     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
|                   |             |                                            | C213     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
|                   |             |                                            | C214     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |





| LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION                     |
|----------|-------------|-------------------------------------------------|
| C625     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C626     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C627     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C629     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C630     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C631     | 0CK105CF94A | "Capacitor,Ceramic,Chip" 0603F105Z160CT 1uF -20 |
| C632     | 0CK224DK46A | "Capacitor,Ceramic,Chip" 0805B224J500CT 220nF 5 |
| C633     | 0CK224DK46A | "Capacitor,Ceramic,Chip" 0805B224J500CT 220nF 5 |
| C634     | 0CK224DK46A | "Capacitor,Ceramic,Chip" 0805B224J500CT 220nF 5 |
| C635     | 0CK224DK46A | "Capacitor,Ceramic,Chip" 0805B224J500CT 220nF 5 |
| C636     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C637     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C638     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C639     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C642     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C643     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C644     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C645     | 0CK105DK94A | "Capacitor,Ceramic,Chip" 0805F105Z500CT 1uF -20 |
| C646     | 0CK474CH94A | "Capacitor,Ceramic,Chip" 0603F474Z250CT 470nF - |
| C648     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C649     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C650     | 0CK474CH94A | "Capacitor,Ceramic,Chip" 0603F474Z250CT 470nF - |
| C651     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C652     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C653     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C700     | 0CC102CK41A | "Capacitor,Ceramic,Chip" C1608C0G1H102JT 1nF 5% |
| C702     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C703     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C704     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C709     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C710     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C711     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C712     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C713     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C714     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C715     | 0CK225DH94A | "Capacitor,Ceramic,Chip" C2012Y5V225ZFT 2.2uF - |
| C804     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C805     | 0CK474CH94A | "Capacitor,Ceramic,Chip" 0603F474Z250CT 470nF - |
| C809     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C810     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C811     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C812     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C814     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C818     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C819     | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C822     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C823     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C826     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C827     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C829     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C831     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C833     | 0CK104CK56A | "Capacitor,Ceramic,Chip" 0603B104K500CT 100nF 1 |
| C834     | 0CK475EF67A | "Capacitor,Ceramic,Chip" C3216X5R1C475MT 4.7uF  |
| C835     | 0CK475EF67A | "Capacitor,Ceramic,Chip" C3216X5R1C475MT 4.7uF  |
| C836     | 0CK226FF67A | "Capacitor,Ceramic,Chip" EMK325BJ226MM-T 22uF 2 |

| LOC. NO.      | PART NO.    | DESCRIPTION / SPECIFICATION                     |
|---------------|-------------|-------------------------------------------------|
| C837          | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C838          | 0CK106EF56A | "Capacitor,Ceramic,Chip" C3216X7R1C106KT 10uF 1 |
| C839          | 0CK103CK56A | "Capacitor,Ceramic,Chip" 0603B103K500CT 10nF 10 |
| C840          | 0CK272CK46A | "Capacitor,Ceramic,Chip" 0603B272J500CT 2.7nF 1 |
| <b>DIODES</b> |             |                                                 |
| D803          | 0DR340009AA | "Diode,Schottky" MBRS340 525MV 40V 4A 0         |
| D224          | 0DSIH00028A | "Diode,Switching" MC2838-T112-1 1.2V 75V        |
| D300          | 0DSIH00028A | "Diode,Switching" MC2838-T112-1 1.2V 75V        |
| D301          | 0DSIH00028A | "Diode,Switching" MC2838-T112-1 1.2V 75V        |
| D302          | 0DSIH00028A | "Diode,Switching" MC2838-T112-1 1.2V 75V        |
| D600          | 0DSIH00028A | "Diode,Switching" MC2838-T112-1 1.2V 75V        |
| D100          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D101          | 0DR050008AA | "Diode,TVS" SD05.TC - 6V 14.5V 24A              |
| D101          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D102          | 0DR050008AA | "Diode,TVS" SD05.TC - 6V 14.5V 24A              |
| D102          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D102          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D103          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D103          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D104          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D104          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D106          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D108          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D112          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D200          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D201          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D202          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D203          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D204          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D205          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D206          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D207          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D208          | 0DR050008AA | "Diode,TVS" SD05.TC - 6V 14.5V 24A              |
| D209          | 0DR050008AA | "Diode,TVS" SD05.TC - 6V 14.5V 24A              |
| D210          | 0DR050008AA | "Diode,TVS" SD05.TC - 6V 14.5V 24A              |
| D211          | 0DR050008AA | "Diode,TVS" SD05.TC - 6V 14.5V 24A              |
| D212          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D213          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D214          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D215          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D216          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D217          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D218          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D219          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D220          | EAH33946001 | "Diode,TVS" CDS3C05GTA 5.6V 6.4V 1              |
| D221          | 0DR050008AA | "Diode,TVS" SD05.TC - 6V 14.5V 24A              |
| D700          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D701          | EAH33945901 | "Diode,TVS" CDS3C30GTH 30V 50V 120              |
| D801          | 0DZKE00048A | "Diode,Zener" KDZ8.2V 8.2V 7.7TO8.7V            |
| <b>ICs</b>    |             |                                                 |
| IC202         | 01STL00031A | IC Assembly MC74HC4066ADR2G MC74HC              |
| IC807         | EAN32724702 | "IC,Analog Switch" STMAV340 4.0TO5.5V 5NS       |

| LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION                         |
|----------|-------------|-----------------------------------------------------|
| IC601    | EAN35502001 | "IC,Audio Amplifier" TPA3107D2 10TO26V 50mV         |
| IC600    | 0IPRP00665A | "IC,Bus Controller" TEA6420D 8TO10.2V 8mA           |
| IC203    | 0IFA742530B | "IC,CMOS" 74ACT253SC 4.5TO5.5V 0                    |
| IC801    | EAN35520901 | "IC,DC,DC Converter" MP2355DN-LF-Z 4.75V ~          |
| IC200    | 0IMMRAL014D | "IC,EEPROM" AT24C02BN-SH-T 2KBIT 2                  |
| IC302    | 0IMMRAL014D | "IC,EEPROM" AT24C02BN-SH-T 2KBIT 2                  |
| IC304    | 0IMMRAL014D | "IC,EEPROM" AT24C02BN-SH-T 2KBIT 2                  |
| IC501    | 0IMMRAL025A | "IC,EEPROM" AT24C32AN-10SU-2.7 32K                  |
| IC303    | 0IPRP00735A | "IC,I/O Support Chip" ANX9021 3.3V 60u 17MHZ        |
| IC802    | 0IPMG78341A | "IC,LDO Voltage Regulator" "AZ1085S-3.3TR/E1,LF 12" |
| IC803    | 0IPMG78341A | "IC,LDO Voltage Regulator" "AZ1085S-3.3TR/E1,LF 12" |
| IC805    | EAN34140401 | "IC,LDO Voltage Regulator" AZ1085S-1.8TRE1 1.238V   |
| IC809    | 0IPMG00049A | "IC,LDO Voltage Regulator" AZ1117H-1.8TR/E1[H13A]   |
| IC500    | EAN35336801 | "IC,Video Processors" VCT7993P- FA-A1-H-000         |
| IC502    | 0IFA752700A | "IC,Voltage Detector" KA75270Z 2.55TO2.85V 0        |
| IC800    | EAN32662801 | "IC,Voltage Regulator" KA7809ERTM 35V to 40V        |

#### FILTERs & INDUCTORs

|       |             |                                                   |
|-------|-------------|---------------------------------------------------|
| L100  | 0LC1032101A | "Inductor,Multilayer,Chip" FI-C3216-103KJT 10UH 1 |
| L600  | 0LCML00020C | "Inductor,Multilayer,Chip" MLI-201212-100K 10UH 1 |
| L601  | 0LCML00020C | "Inductor,Multilayer,Chip" MLI-201212-100K 10UH 1 |
| L605  | EAP32842807 | "Inductor,Wire Wound,Chip" NR8040T330M 33UH 20% 2 |
| L606  | EAP32842807 | "Inductor,Wire Wound,Chip" NR8040T330M 33UH 20% 2 |
| L613  | EAP32842807 | "Inductor,Wire Wound,Chip" NR8040T330M 33UH 20% 2 |
| L614  | EAP32842807 | "Inductor,Wire Wound,Chip" NR8040T330M 33UH 20% 2 |
| L810  | 0LCTO00019A | "Inductor,Wire Wound,Chip" D75C-646CY-220M=P3 22U |
| AL308 | 6210TCE002B | "Filter,Bead" HB-4M3216-121JT 120OHM              |
| AL309 | 6210TCE002B | "Filter,Bead" HB-4M3216-121JT 120OHM              |
| AL310 | 6210TCE002B | "Filter,Bead" HB-4M3216-121JT 120OHM              |
| AL311 | 6210TCE002B | "Filter,Bead" HB-4M3216-121JT 120OHM              |
| AL312 | 6210TCE002B | "Filter,Bead" HB-4M3216-121JT 120OHM              |
| AL313 | 6210TCE002B | "Filter,Bead" HB-4M3216-121JT 120OHM              |
| L100  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L1000 | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L1001 | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L1002 | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L1003 | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L101  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L102  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L103  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L107  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L108  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L200  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L201  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L202  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L203  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L204  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L205  | 6210TCE001A | "Filter,Bead" HB-1S2012-080JT 8OHM 2              |
| L314  | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L315  | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L400  | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L401  | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L501  | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L503  | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM              |
| L508  | 6210TCE001B | "Filter,Bead" HH-1H3216-500JT 50OHM               |

| LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION                  |
|----------|-------------|----------------------------------------------|
| L509     | 6210TCE001B | "Filter,Bead" HH-1H3216-500JT 50OHM          |
| L510     | 6210TCE001B | "Filter,Bead" HH-1H3216-500JT 50OHM          |
| L511     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L512     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L602     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L603     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L608     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L609     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L610     | 6210TCE001P | "Filter,Bead" HB-1S2012-121JT(H:1mm)         |
| L612     | 6210TCE001P | "Filter,Bead" HB-1S2012-121JT(H:1mm)         |
| L615     | 6210TCE001P | "Filter,Bead" HB-1S2012-121JT(H:1mm)         |
| L617     | 6210TCE001P | "Filter,Bead" HB-1S2012-121JT(H:1mm)         |
| L618     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L701     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L703     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L704     | 6200J00005N | "Filter,Bead" HH-1M2012-121JT(H:1mm)         |
| L705     | 6200J00005N | "Filter,Bead" HH-1M2012-121JT(H:1mm)         |
| L706     | 6200J00005N | "Filter,Bead" HH-1M2012-121JT(H:1mm)         |
| L800     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L801     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L802     | 6210TCE001B | "Filter,Bead" HH-1H3216-500JT 50OHM          |
| L803     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L806     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L807     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| L808     | 6210TCE001G | "Filter,Bead" HH-1M3216-501JT 500OHM         |
| F1       | 6210VH0001A | "Filter,Ferrite Core" 6210VH0001A 50OHM 25MM |

#### TRANSISTORs & FETs

|       |             |                                     |
|-------|-------------|-------------------------------------|
| IC301 | 0TFTH80001A | FET SSM6N15FU N-CHANNEL MO          |
| IC305 | 0TFTH80001A | FET SSM6N15FU N-CHANNEL MO          |
| IC306 | 0TFTH80001A | FET SSM6N15FU N-CHANNEL MO          |
| IC400 | 0TFTH80001A | FET SSM6N15FU N-CHANNEL MO          |
| Q700  | EBK32753101 | FET SI4925BDY P-CHANNEL MO          |
| Q100  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q101  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q104  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q106  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q109  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q110  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q200  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q201  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q202  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q203  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q204  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q205  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q206  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q401  | 0TRIH80002A | "TR,Bipolar" 2SA1530A-T112-1R PNP - |
| Q404  | 0TRIH80002A | "TR,Bipolar" 2SA1530A-T112-1R PNP - |
| Q500  | 0TR102009AM | "TR,Bipolar" KRA102S PNP -30V 0V -5 |
| Q501  | 0TRIH80002A | "TR,Bipolar" 2SA1530A-T112-1R PNP - |
| Q502  | 0TRIH80002A | "TR,Bipolar" 2SA1530A-T112-1R PNP - |
| Q503  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q504  | 0TRIH80002A | "TR,Bipolar" 2SA1530A-T112-1R PNP - |
| Q600  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q601  | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |

| LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION         |
|----------|-------------|-------------------------------------|
| Q602     | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q603     | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q701     | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q800     | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q801     | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q803     | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |
| Q804     | 0TRIY80001A | "TR,Bipolar" 2SC3052 NPN 6V 50V 50V |

### RESISTORS

|       |             |                                         |
|-------|-------------|-----------------------------------------|
| L710  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R1    | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R100  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R100  | 0RH0332D622 | "Resistor,Chip" MCR10EZHJ330 33OHM 5%   |
| R1000 | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R1001 | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R1003 | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R1005 | 0RJ2200D677 | "Resistor,Chip" MCR03EZIPJ221 220OHM 5% |
| R1006 | 0RJ2200D677 | "Resistor,Chip" MCR03EZIPJ221 220OHM 5% |
| R1007 | 0RJ1004D677 | "Resistor,Chip" MCR03EZIPJ105 1MOHM 5%  |
| R101  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R101  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R101  | 0RH0752D622 | "Resistor,Chip" MCR10EZHJ750 75OHM 5%   |
| R1010 | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R1011 | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R1012 | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R102  | 0RH1002D622 | "Resistor,Chip" MCR10EZHJ103 10KOHM 5%  |
| R102  | 0RH1101D622 | "Resistor,Chip" MCR10EZHJ112 1.1KOHM 5  |
| R102  | 0RH4700D622 | "Resistor,Chip" MCR10EZHJ471 470OHM 5%  |
| R102  | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R103  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R103  | 0RH2203D622 | "Resistor,Chip" MCR10EZHJ224 220KOHM 5  |
| R103  | 0RH3301D622 | "Resistor,Chip" MCR10EZHJ332 3.3KOHM 5  |
| R103  | 0RH5100D622 | "Resistor,Chip" MCR10EZHJ511 510OHM 5%  |
| R103  | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R104  | 0RH1002D622 | "Resistor,Chip" MCR10EZHJ103 10KOHM 5%  |
| R104  | 0RH4700D622 | "Resistor,Chip" MCR10EZHJ471 470OHM 5%  |
| R104  | 0RH9101D622 | "Resistor,Chip" MCR10EZHJ912 9.1KOHM 5  |
| R104  | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R105  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R105  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R105  | 0RH1001D622 | "Resistor,Chip" MCR10EZHJ102 1KOHM 5%   |
| R105  | 0RH2203D622 | "Resistor,Chip" MCR10EZHJ224 220KOHM 5  |
| R106  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R106  | 0RH0332D622 | "Resistor,Chip" MCR10EZHJ330 33OHM 5%   |
| R106  | 0RH1101D622 | "Resistor,Chip" MCR10EZHJ112 1.1KOHM 5  |
| R106  | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R107  | 0RH0752D622 | "Resistor,Chip" MCR10EZHJ750 75OHM 5%   |
| R107  | 0RH3301D622 | "Resistor,Chip" MCR10EZHJ332 3.3KOHM 5  |
| R107  | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R108  | 0RH0332D622 | "Resistor,Chip" MCR10EZHJ330 33OHM 5%   |
| R108  | 0RH9101D622 | "Resistor,Chip" MCR10EZHJ912 9.1KOHM 5  |
| R108  | 0RJ2203D677 | "Resistor,Chip" MCR03EZIPJ224 220KOHM 5 |
| R109  | 0RH0752D622 | "Resistor,Chip" MCR10EZHJ750 75OHM 5%   |
| R109  | 0RJ2203D677 | "Resistor,Chip" MCR03EZIPJ224 220KOHM 5 |
| R110  | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |

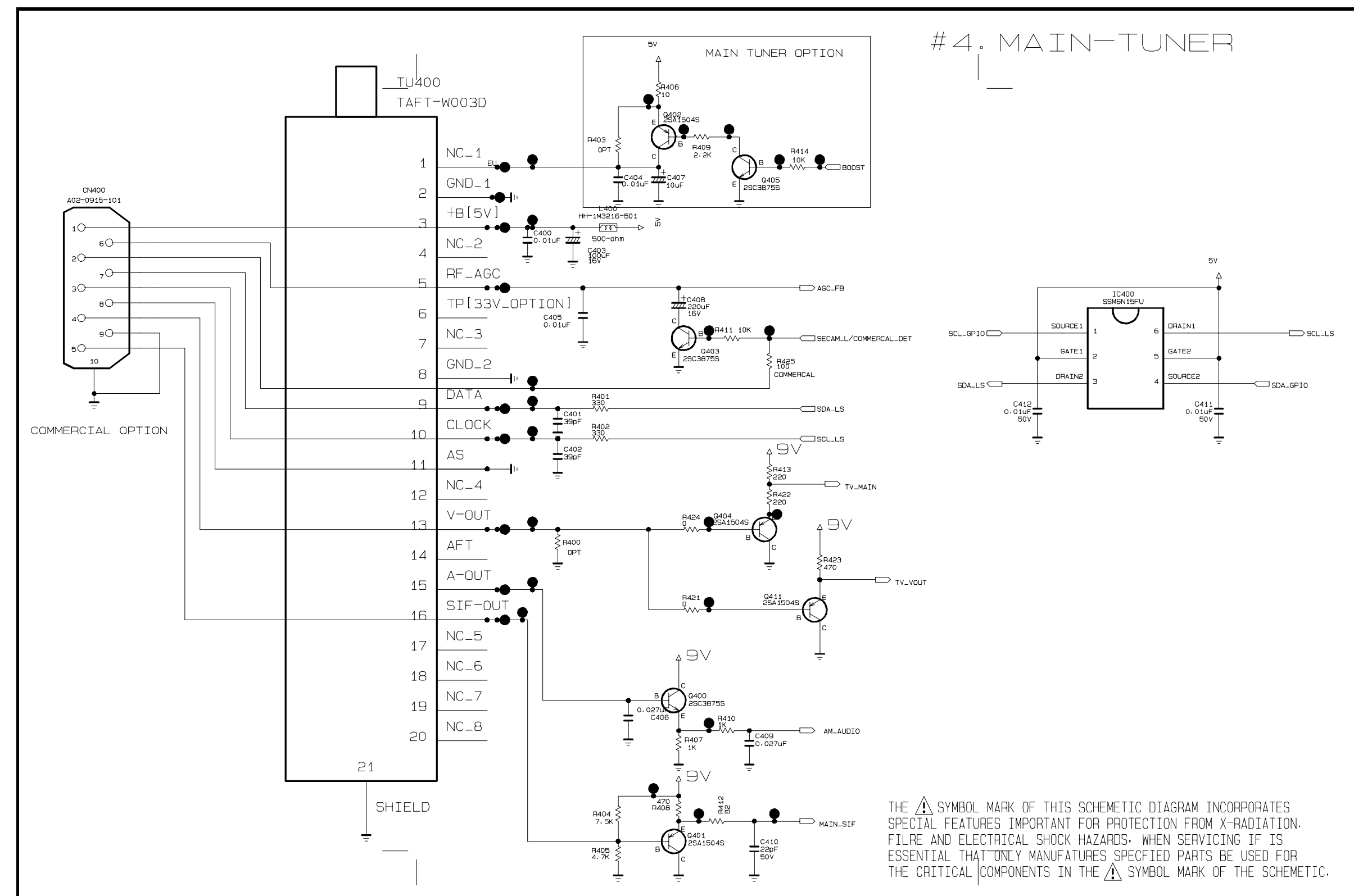
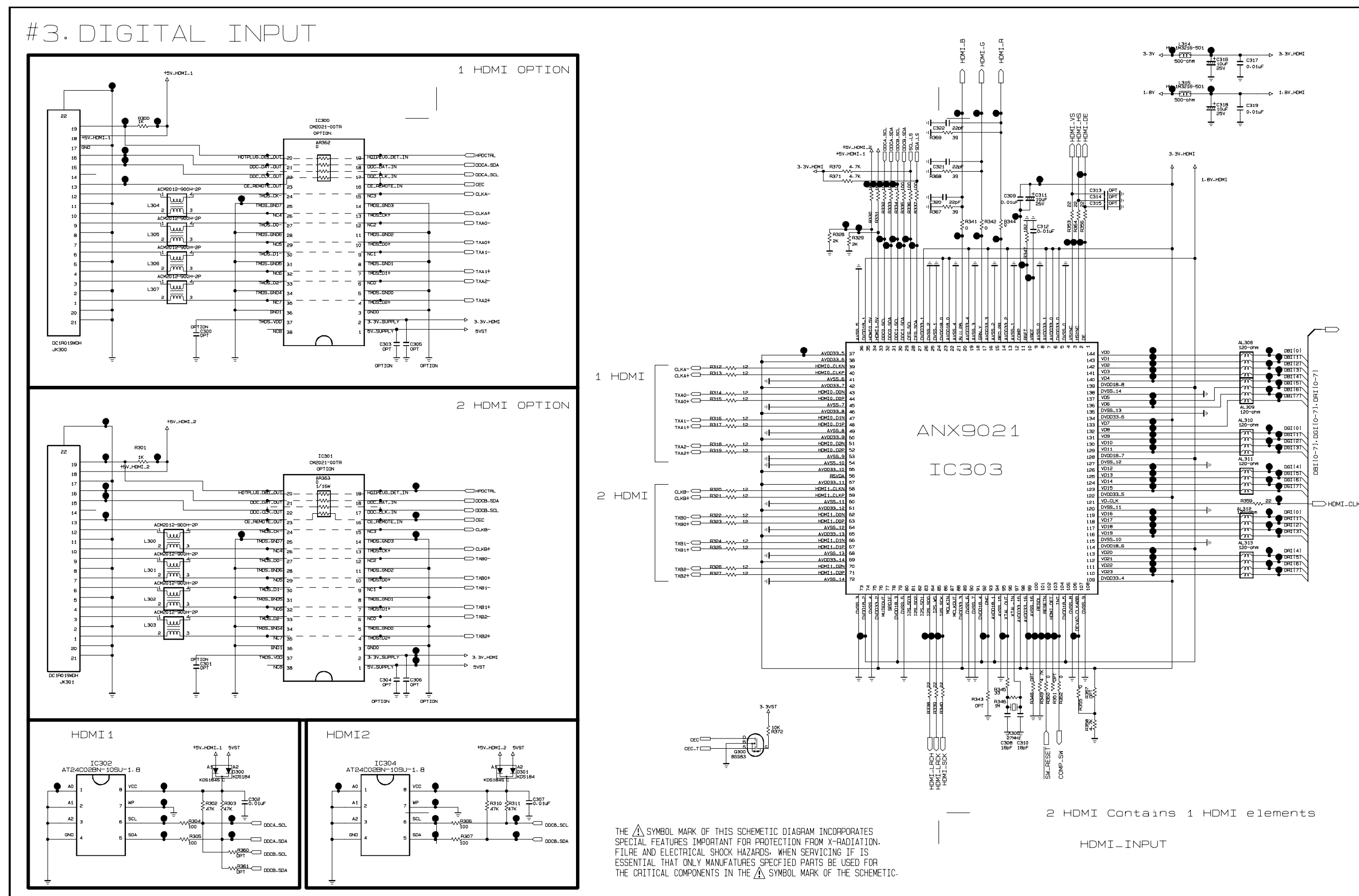
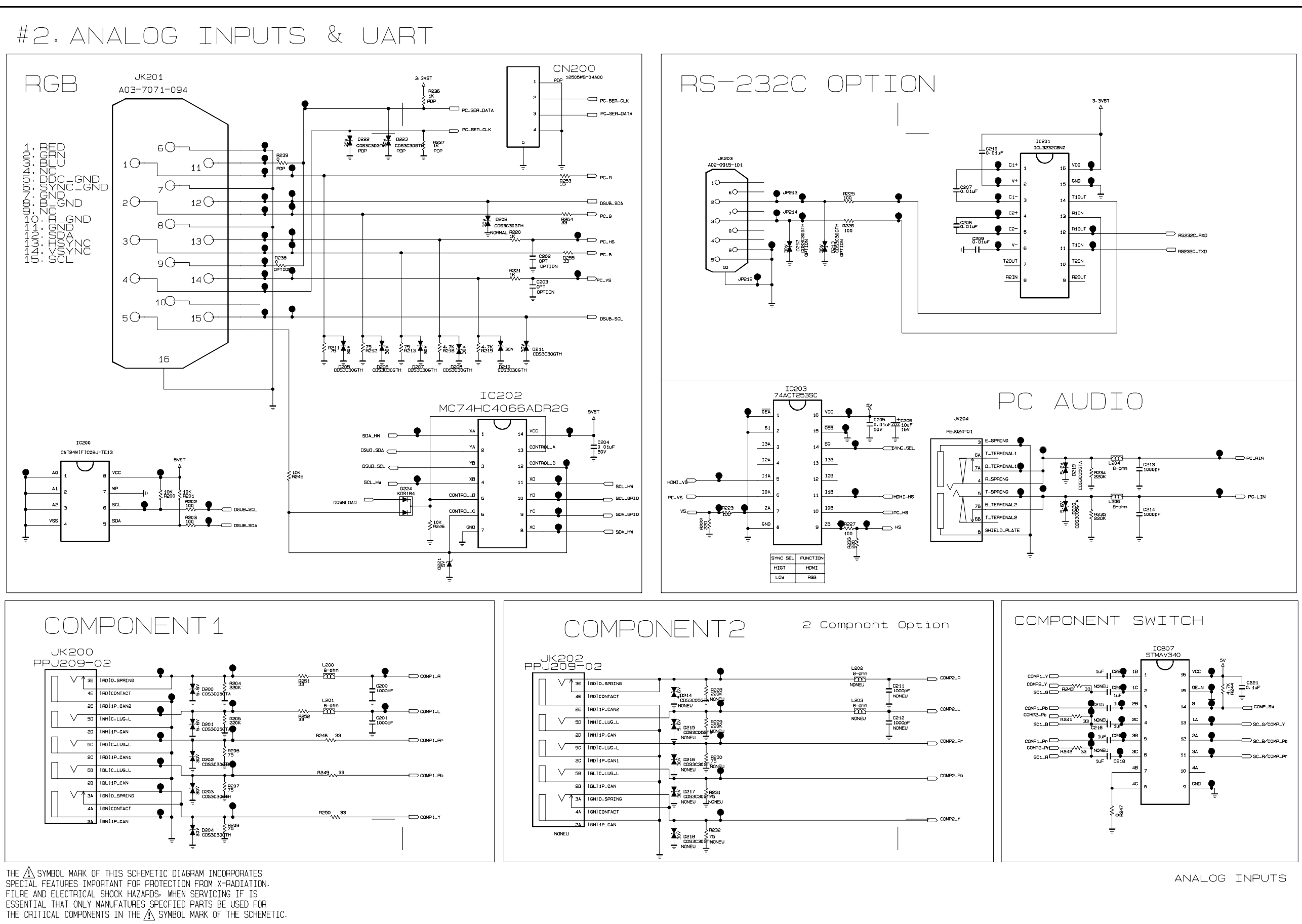
| LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION             |
|----------|-------------|-----------------------------------------|
| R110     | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R113     | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R120     | 0RJ1001D677 | "Resistor,Chip" MCR03EZIPJ102 1KOHM 5%  |
| R122     | 0RJ1001D677 | "Resistor,Chip" MCR03EZIPJ102 1KOHM 5%  |
| R133     | 0RJ4701D677 | "Resistor,Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R141     | 0RJ4701D677 | "Resistor,Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R148     | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R149     | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R150     | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R151     | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R152     | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R154     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R161     | 0RJ0000D677 | "Resistor,Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R162     | 0RJ1001D677 | "Resistor,Chip" MCR03EZIPJ102 1KOHM 5%  |
| R165     | 0RJ1001D677 | "Resistor,Chip" MCR03EZIPJ102 1KOHM 5%  |
| R168     | 0RJ2001D677 | "Resistor,Chip" MCR03EZIPJ202 2KOHM 5%  |
| R169     | 0RJ2001D677 | "Resistor,Chip" MCR03EZIPJ202 2KOHM 5%  |
| R172     | 0RJ0332D677 | "Resistor,Chip" MCR03EZIPJ330 33OHM 5%  |
| R2       | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1  |
| R200     | 0RJ1002D677 | "Resistor,Chip" MCR03EZIPJ103 10KOHM 5% |
| R201     | 0RJ1002D677 | "Resistor,Chip" MCR03EZIPJ103 10KOHM 5% |
| R202     | 0RJ1000D677 | "Resistor,Chip" MCR03EZIPJ101 100OHM 5% |
| R203     | 0RJ1000D677 | "Resistor,Chip" MCR03EZIPJ101 100OHM 5% |
| R204     | 0RJ2203D677 | "Resistor,Chip" MCR03EZIPJ224 220KOHM 5 |
| R205     | 0RJ2203D677 | "Resistor,Chip" MCR03EZIPJ224 220KOHM 5 |
| R206     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R207     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R208     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R209     | 0RJ1002D677 | "Resistor,Chip" MCR03EZIPJ103 10KOHM 5% |
| R211     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R212     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R213     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R216     | 0RJ4701D677 | "Resistor,Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R219     | 0RJ4701D677 | "Resistor,Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R220     | 0RJ1001D677 | "Resistor,Chip" MCR03EZIPJ102 1KOHM 5%  |
| R221     | 0RJ1001D677 | "Resistor,Chip" MCR03EZIPJ102 1KOHM 5%  |
| R222     | 0RJ2200D677 | "Resistor,Chip" MCR03EZIPJ221 220OHM 5% |
| R223     | 0RJ1000D677 | "Resistor,Chip" MCR03EZIPJ101 100OHM 5% |
| R225     | 0RJ1000D677 | "Resistor,Chip" MCR03EZIPJ101 100OHM 5% |
| R226     | 0RJ1000D677 | "Resistor,Chip" MCR03EZIPJ101 100OHM 5% |
| R227     | 0RJ1000D677 | "Resistor,Chip" MCR03EZIPJ101 100OHM 5% |
| R228     | 0RJ2203D677 | "Resistor,Chip" MCR03EZIPJ224 220KOHM 5 |
| R229     | 0RJ2203D677 | "Resistor,Chip" MCR03EZIPJ224 220KOHM 5 |
| R230     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R231     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R232     | 0RJ0752D677 | "Resistor,Chip" MCR03EZIPJ750 75OHM 5%  |
| R233     | 0RJ2200D677 | "Resistor,Chip" MCR03EZIPJ221 220OHM 5% |
| R234     | 0RJ2203D677 | "Resistor,Chip" MCR03EZIPJ224 220KOHM 5 |
| R235     | 0RJ2203D677 | "Resistor,Chip" MCR03EZIPJ224 220KOHM 5 |
| R241     | 0RJ0332D677 | "Resistor,Chip" MCR03EZIPJ330 33OHM 5%  |
| R242     | 0RJ0332D677 | "Resistor,Chip" MCR03EZIPJ330 33OHM 5%  |
| R243     | 0RJ0332D677 | "Resistor,Chip" MCR03EZIPJ330 33OHM 5%  |
| R244     | 0RJ4701D677 | "Resistor,Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R245     | 0RJ1000D677 | "Resistor,Chip" MCR03EZIPJ101 100OHM 5% |
| R246     | 0RJ1002D677 | "Resistor,Chip" MCR03EZIPJ103 10KOHM 5% |



| LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION              | LOC. NO. | PART NO.    | DESCRIPTION / SPECIFICATION              |
|----------|-------------|------------------------------------------|----------|-------------|------------------------------------------|
| R247     | 0RJ0000D677 | "Resistor, Chip" MCR03EZIPJ000 0OHM 5% 1 | R328     | 0RJ2001D677 | "Resistor, Chip" MCR03EZIPJ202 2KOHM 5%  |
| R248     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  | R329     | 0RJ2001D677 | "Resistor, Chip" MCR03EZIPJ202 2KOHM 5%  |
| R249     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  | R330     | 0RJ1001D677 | "Resistor, Chip" MCR03EZIPJ102 1KOHM 5%  |
| R250     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  | R331     | 0RJ1001D677 | "Resistor, Chip" MCR03EZIPJ102 1KOHM 5%  |
| R251     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  | R332     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% |
| R252     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  | R333     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% |
| R253     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  | R334     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% |
| R254     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  | R335     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% |
| R255     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  | R336     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% |
| R256     | 0RJ1502D677 | "Resistor, Chip" MCR03EZIPJ153 15KOHM 5% | R337     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% |
| R257     | 0RJ6801D677 | "Resistor, Chip" MCR03EZIPJ682 6.8KOHM 5 | R338     | 0RJ0682D677 | "Resistor, Chip" MCR03EZIPJ680 68OHM 5%  |
| R258     | 0RJ2201D677 | "Resistor, Chip" MCR03EZIPJ222 2.2KOHM 5 | R339     | 0RJ0682D677 | "Resistor, Chip" MCR03EZIPJ680 68OHM 5%  |
| R259     | 0RJ1502D677 | "Resistor, Chip" MCR03EZIPJ153 15KOHM 5% | R340     | 0RJ0682D677 | "Resistor, Chip" MCR03EZIPJ680 68OHM 5%  |
| R260     | 0RJ6801D677 | "Resistor, Chip" MCR03EZIPJ682 6.8KOHM 5 | R341     | 0RJ0000D677 | "Resistor, Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R261     | 0RJ2201D677 | "Resistor, Chip" MCR03EZIPJ222 2.2KOHM 5 | R342     | 0RJ0000D677 | "Resistor, Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R262     | 0RJ1502D677 | "Resistor, Chip" MCR03EZIPJ153 15KOHM 5% | R344     | 0RJ0000D677 | "Resistor, Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R263     | 0RJ6801D677 | "Resistor, Chip" MCR03EZIPJ682 6.8KOHM 5 | R345     | 0RJ0332D677 | "Resistor, Chip" MCR03EZIPJ330 33OHM 5%  |
| R264     | 0RJ2201D677 | "Resistor, Chip" MCR03EZIPJ222 2.2KOHM 5 | R346     | 0RJ1004D677 | "Resistor, Chip" MCR03EZIPJ105 1MOHM 5%  |
| R265     | 0RJ1502D677 | "Resistor, Chip" MCR03EZIPJ153 15KOHM 5% | R347     | 0RJ3300D677 | "Resistor, Chip" MCR03EZIPJ331 330OHM 5% |
| R266     | 0RJ6801D677 | "Resistor, Chip" MCR03EZIPJ682 6.8KOHM 5 | R349     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R267     | 0RJ2201D677 | "Resistor, Chip" MCR03EZIPJ222 2.2KOHM 5 | R350     | 0RJ0000D677 | "Resistor, Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R268     | 0RJ1502D677 | "Resistor, Chip" MCR03EZIPJ153 15KOHM 5% | R352     | 0RJ0000D677 | "Resistor, Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R269     | 0RJ6801D677 | "Resistor, Chip" MCR03EZIPJ682 6.8KOHM 5 | R353     | 0RJ0222D677 | "Resistor, Chip" MCR03EZIPJ220 22OHM 5%  |
| R270     | 0RJ2201D677 | "Resistor, Chip" MCR03EZIPJ222 2.2KOHM 5 | R354     | 0RJ0222D677 | "Resistor, Chip" MCR03EZIPJ220 22OHM 5%  |
| R271     | 0RJ1502D677 | "Resistor, Chip" MCR03EZIPJ153 15KOHM 5% | R355     | 0RJ0000D677 | "Resistor, Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R272     | 0RJ6801D677 | "Resistor, Chip" MCR03EZIPJ682 6.8KOHM 5 | R356     | 0RJ0222D677 | "Resistor, Chip" MCR03EZIPJ220 22OHM 5%  |
| R273     | 0RJ2201D677 | "Resistor, Chip" MCR03EZIPJ222 2.2KOHM 5 | R358     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R3       | 0RH0000D622 | "Resistor, Chip" MCR10EZHJ000 0OHM 5% 1  | R359     | 0RJ0222D677 | "Resistor, Chip" MCR03EZIPJ220 22OHM 5%  |
| R300     | 0RJ1001D677 | "Resistor, Chip" MCR03EZIPJ102 1KOHM 5%  | R361     | 0RJ1002D677 | "Resistor, Chip" MCR03EZIPJ103 10KOHM 5% |
| R301     | 0RJ1001D677 | "Resistor, Chip" MCR03EZIPJ102 1KOHM 5%  | R362     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R302     | 0RJ4702D677 | "Resistor, Chip" MCR03EZIPJ473 47KOHM 5% | R363     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R303     | 0RJ4702D677 | "Resistor, Chip" MCR03EZIPJ473 47KOHM 5% | R364     | 0RJ1002D677 | "Resistor, Chip" MCR03EZIPJ103 10KOHM 5% |
| R304     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% | R365     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R305     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% | R366     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R306     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% | R367     | 0RJ0392D677 | "Resistor, Chip" MCR03EZIPJ390 39OHM 5%  |
| R307     | 0RJ1000D677 | "Resistor, Chip" MCR03EZIPJ101 100OHM 5% | R368     | 0RJ0392D677 | "Resistor, Chip" MCR03EZIPJ390 39OHM 5%  |
| R308     | 0RJ1002D677 | "Resistor, Chip" MCR03EZIPJ103 10KOHM 5% | R369     | 0RJ0392D677 | "Resistor, Chip" MCR03EZIPJ390 39OHM 5%  |
| R310     | 0RJ4702D677 | "Resistor, Chip" MCR03EZIPJ473 47KOHM 5% | R370     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R311     | 0RJ4702D677 | "Resistor, Chip" MCR03EZIPJ473 47KOHM 5% | R371     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R312     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R4       | 0RH0000D622 | "Resistor, Chip" MCR10EZHJ000 0OHM 5% 1  |
| R313     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R401     | 0RJ3300D677 | "Resistor, Chip" MCR03EZIPJ331 330OHM 5% |
| R314     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R402     | 0RJ3300D677 | "Resistor, Chip" MCR03EZIPJ331 330OHM 5% |
| R315     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R403     | 0RJ0000G676 | "Resistor, Chip" MCR18EZHJ00 0OHM 5% 1/  |
| R316     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R404     | 0RJ7501D677 | "Resistor, Chip" MCR03EZIPJ752 7.5KOHM 5 |
| R317     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R405     | 0RJ4701D677 | "Resistor, Chip" MCR03EZIPJ472 4.7KOHM 5 |
| R318     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R408     | 0RJ4700D677 | "Resistor, Chip" MCR03EZIPJ471 470OHM 5% |
| R319     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R412     | 0RJ0822D677 | "Resistor, Chip" MCR03EZIPJ820 82OHM 5%  |
| R320     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R413     | 0RJ2200D677 | "Resistor, Chip" MCR03EZIPJ221 220OHM 5% |
| R321     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R422     | 0RJ2200D677 | "Resistor, Chip" MCR03EZIPJ221 220OHM 5% |
| R322     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R424     | 0RJ0000D677 | "Resistor, Chip" MCR03EZIPJ000 0OHM 5% 1 |
| R323     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R5       | 0RH0000D622 | "Resistor, Chip" MCR10EZHJ000 0OHM 5% 1  |
| R324     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R503     | 0RJ2000D477 | "Resistor, Chip" MCR03EZIPF201 200OHM 1% |
| R325     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R504     | 0RJ1500D677 | "Resistor, Chip" MCR03EZIPJ151 150OHM 5% |
| R326     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R505     | 0RJ4700D677 | "Resistor, Chip" MCR03EZIPJ471 470OHM 5% |
| R327     | 0RJ0122D677 | "Resistor, Chip" MCR03EZIPJ120 12OHM 5%  | R506     | 0RJ1500D677 | "Resistor, Chip" MCR03EZIPJ151 150OHM 5% |

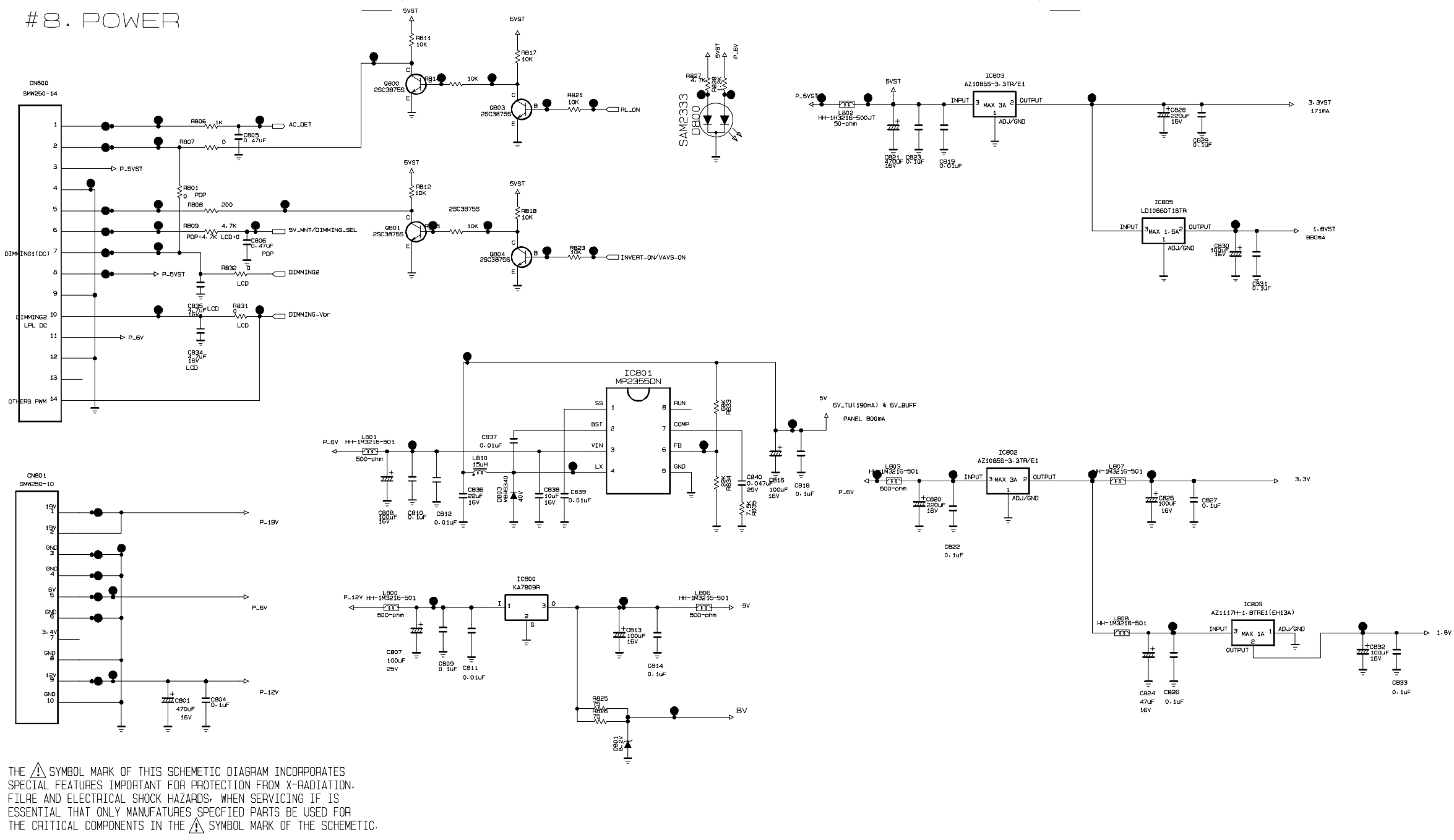


| LOC. NO.      | PART NO.    | DESCRIPTION / SPECIFICATION                    | LOC. NO.         | PART NO.    | DESCRIPTION / SPECIFICATION              |
|---------------|-------------|------------------------------------------------|------------------|-------------|------------------------------------------|
| R723          | 0RJ2002D677 | "Resistor,Chip" MCR03EZPJ203. 20KOHM 5         | <b>CONNECTOR</b> |             |                                          |
| R725          | 0RJ1000D677 | "Resistor,Chip" MCR03EZPJ101 100OHM 5%         | JK201            | 6630TGA004K | "Connector,DSUB" KCN-DS-1-0089 D-SUB 15  |
| R726          | 0RJ1000D677 | "Resistor,Chip" MCR03EZPJ101 100OHM 5%         | CN501            | 6602T25009B | "Connector,Wafer" SMAW250-03P 3P 2.50MM  |
| R8            | 0RH0000D622 | "Resistor,Chip" MCR10EZHJ000 0OHM 5% 1         | CN600            | 6602T25008B | "Connector,Wafer" SMW250-03P 3P 2.50MM 1 |
| R802          | 0RJ3302D677 | "Resistor,Chip" MCR03EZPJ333 33KOHM 5%         | CN601            | 6602T25008C | "Connector,Wafer" SMW250-04P 4P 2.50MM 1 |
| R806          | 0RJ1001D677 | "Resistor,Chip" MCR03EZPJ102 1KOHM 5%          | CN700            | 6630VF00530 | "Connector,Wafer" 12507WR-30A00 30P 1.25 |
| R807          | 0RJ0000D677 | "Resistor,Chip" MCR03EZPJ000 0OHM 5% 1         | CN702            | 6602T12004G | "Connector,Wafer" 12505WS-08A00 8P 1.25M |
| R808          | 0RJ2000D677 | "Resistor,Chip" MCR03EZPJ201 200OHM 5%         | CN703            | 6602T20009L | "Connector,Wafer" SMAW200-12P 12P 2.00MM |
| R809          | 0RJ0000D677 | "Resistor,Chip" MCR03EZPJ000 0OHM 5% 1         | CN800            | 6602T25008N | "Connector,Wafer" SMW250-14P 14P 2.50MM  |
| R811          | 0RJ2001D677 | "Resistor,Chip" MCR03EZPJ202 2KOHM 5%          | CN801            | 6602T25008J | "Connector,Wafer" SMW250-10P 10P 2.50MM  |
| R812          | 0RJ1002D677 | "Resistor,Chip" MCR03EZPJ103 10KOHM 5%         | P100             | 6602T12005G | "Connector,Wafer" 12505WR-08A00 8P 1.25M |
| R814          | 0RJ1002D677 | "Resistor,Chip" MCR03EZPJ103 10KOHM 5%         | P100             | 6602T20009C | "Connector,Wafer" SMAW200-04P 4P 2.00MM  |
| R815          | 0RJ1002D677 | "Resistor,Chip" MCR03EZPJ103 10KOHM 5%         | P101             | 6602T20009C | "Connector,Wafer" SMAW200-04P 4P 2.00MM  |
| R817          | 0RJ1002D677 | "Resistor,Chip" MCR03EZPJ103 10KOHM 5%         | P101             | 6602T20009L | "Connector,Wafer" SMAW200-12P 12P 2.00MM |
| R818          | 0RJ1002D677 | "Resistor,Chip" MCR03EZPJ103 10KOHM 5%         | C1               | 6631900012E | "Harness,Single" SMH250 SMH250 300mm 2.  |
| R821          | 0RJ1002D677 | "Resistor,Chip" MCR03EZPJ103 10KOHM 5%         | C2               | 6631900013N | "Harness,Single" 6631900013N SMH200 SMH  |
| R823          | 0RJ1002D677 | "Resistor,Chip" MCR03EZPJ103 10KOHM 5%         | C3               | 6631T20033J | "Harness,Single" SMH200-4P SMH200-4P 30  |
| R825          | 0RJ0752D677 | "Resistor,Chip" MCR03EZPJ750 75OHM 5%          | C4               | 6631T25023X | "Harness,Single" SMH250 35097_35098 600  |
| R826          | 0RJ0752D677 | "Resistor,Chip" MCR03EZPJ750 75OHM 5%          | C5               | 6631T25026B | "Harness,Single" 6631T25026B SMH250 350  |
| R827          | 0RJ1002D677 | "Resistor,Chip" MCR03EZPJ103 10KOHM 5%         | C6               | EAD35683003 | "Harness,Single" LVDS LPL STD_300MM FI-  |
| R828          | 0RJ1201D677 | "Resistor,Chip" MCR03EZPJ122 1.2KOHM 5         | C7               | EAD35908101 | "Harness,Single" 35001HS-02L 65002HS-03  |
| R831          | 0RJ0000D677 | "Resistor,Chip" MCR03EZPJ000 0OHM 5% 1         | C8               | EAD35908402 | "Harness,Single" High Power cable(UL PV  |
| R832          | 0RJ0000D677 | "Resistor,Chip" MCR03EZPJ000 0OHM 5% 1         | C9               | EAD35983001 | "Harness,Single" 12507HS-04L SMH200 500  |
| R833          | 0RJ6802D677 | "Resistor,Chip" MCR03EZPJ683 68KOHM 5%         | C10              | EAD35983201 | "Harness,Single" 12505HS 12505HS 600MM   |
| R834          | 0RJ2202D677 | "Resistor,Chip" MCR03EZPJ223 22KOHM 5%         | C11              | EAD36105801 | "Harness,Single" SMH250-13 SMH250-14 40  |
| R835          | 0RJ7501D677 | "Resistor,Chip" MCR03EZPJ752 7.5KOHM 5         | C12              | EAD36184801 | "Harness,Single" SMH250 SMH250 400MM 2.  |
| <b>OTHERs</b> |             |                                                |                  |             |                                          |
| X1100         | 6202TST001H | Crystal SX-1 27MHZ 30PPM 27MHZ                 |                  |             |                                          |
| X300          | 6202TST001H | Crystal SX-1 27MHZ 30PPM 27MHZ                 |                  |             |                                          |
| X500          | 6202VDT002P | Crystal HC-49/SM 20.25000MHZ 2                 |                  |             |                                          |
| J100          | 6612J10033A | "Jack,Complex" PMJ016-13 13P DIN/RCA           |                  |             |                                          |
| JK300         | 6612B00015B | "Jack,DIN" DC1R019WDH SOCKET 21P               |                  |             |                                          |
| JK301         | 6612B00015B | "Jack,DIN" DC1R019WDH SOCKET 21P               |                  |             |                                          |
| JK204         | 6612F00099A | "Jack,Phone" PEJ024-01 1P 4P STRAIG            |                  |             |                                          |
| JK102         | 6612J10003Y | "Jack,RCA" PPJ216-01 14.0MM 1RX3C              |                  |             |                                          |
| JK103         | 6612J10003M | "Jack,RCA" PPJ206-01 14.0MM 1RX3C              |                  |             |                                          |
| JK200         | 6612J10031A | "Jack,RCA" PPJ209-02 14.0MM 1RX5C              |                  |             |                                          |
| JK202         | 6612J10031A | "Jack,RCA" PPJ209-02 14.0MM 1RX5C              |                  |             |                                          |
| JK600         | 6612J10043A | "Jack,RCA" PPJ200-07 15MM 1RX4C A              |                  |             |                                          |
| D800          | 0DL233309AC | "LED,Chip" SAM2333 RED/Y-GREEN 2.              |                  |             |                                          |
| D100          | 0DLBE0138AA | "LED,DIP" BL-BUBGE301 ROUND 3MM                |                  |             |                                          |
| IC100         | 6712000013A | Receiver Module TSOP4438SO1 4.5TO5.5V          |                  |             |                                          |
| SW1           | SAA30955104 | "S/W,Firmware" 3.17 7773 WORLD WIDE F          |                  |             |                                          |
| SW101         | 140-313B    | "Switch,Tact" KPT-1115AM 1C1P 12VDC            |                  |             |                                          |
| SW102         | 140-313B    | "Switch,Tact" KPT-1115AM 1C1P 12VDC            |                  |             |                                          |
| SW103         | 140-313B    | "Switch,Tact" KPT-1115AM 1C1P 12VDC            |                  |             |                                          |
| SW104         | 140-313B    | "Switch,Tact" KPT-1115AM 1C1P 12VDC            |                  |             |                                          |
| SW105         | 140-313B    | "Switch,Tact" KPT-1115AM 1C1P 12VDC            |                  |             |                                          |
| SW106         | 140-313B    | "Switch,Tact" KPT-1115AM 1C1P 12VDC            |                  |             |                                          |
| SW107         | 140-313B    | "Switch,Tact" KPT-1115AM 1C1P 12VDC            |                  |             |                                          |
| SW108         | 140-313B    | "Switch,Tact" KPT-1115AM 1C1P 12VDC            |                  |             |                                          |
| TU400         | EBL35311203 | "Tuner,Tuner/Modulator" TAFT-Z003D PAL-G+I+K/N |                  |             |                                          |

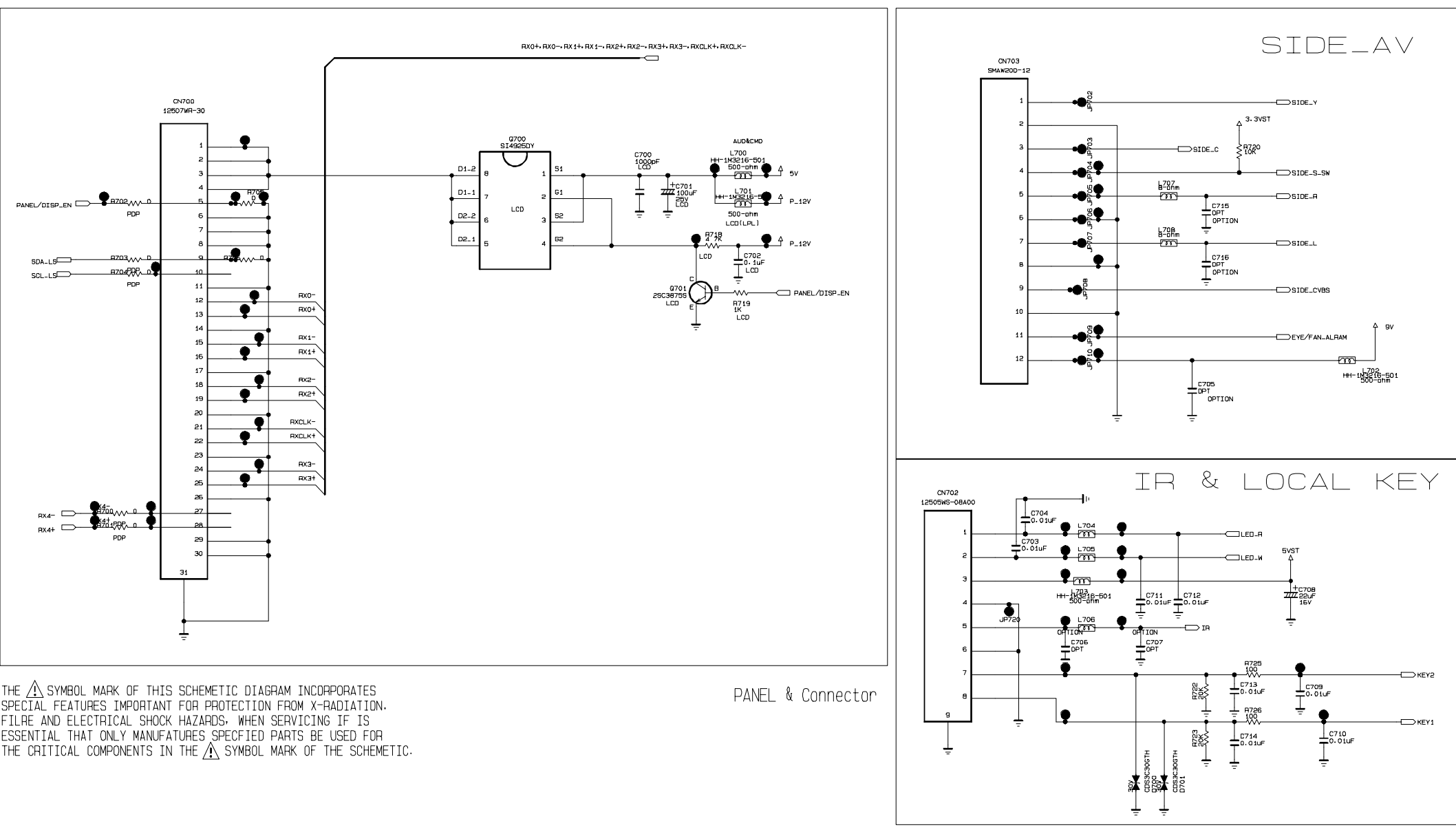




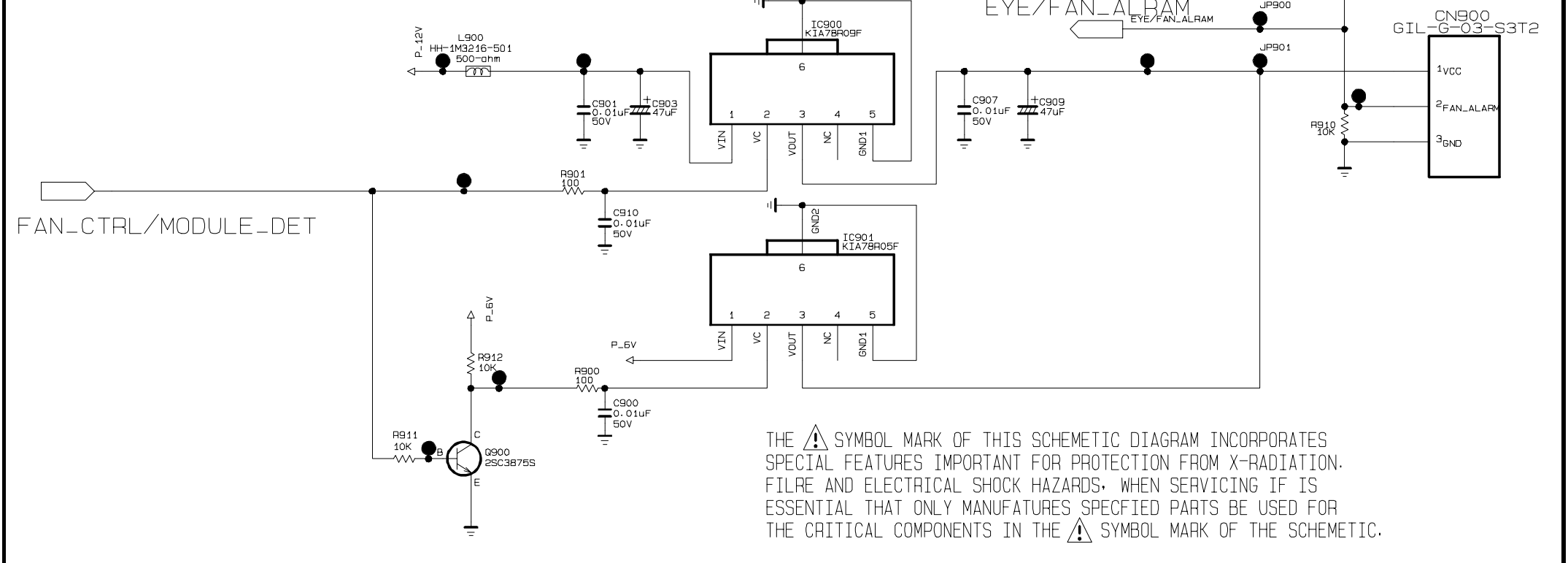
## #8. POWER



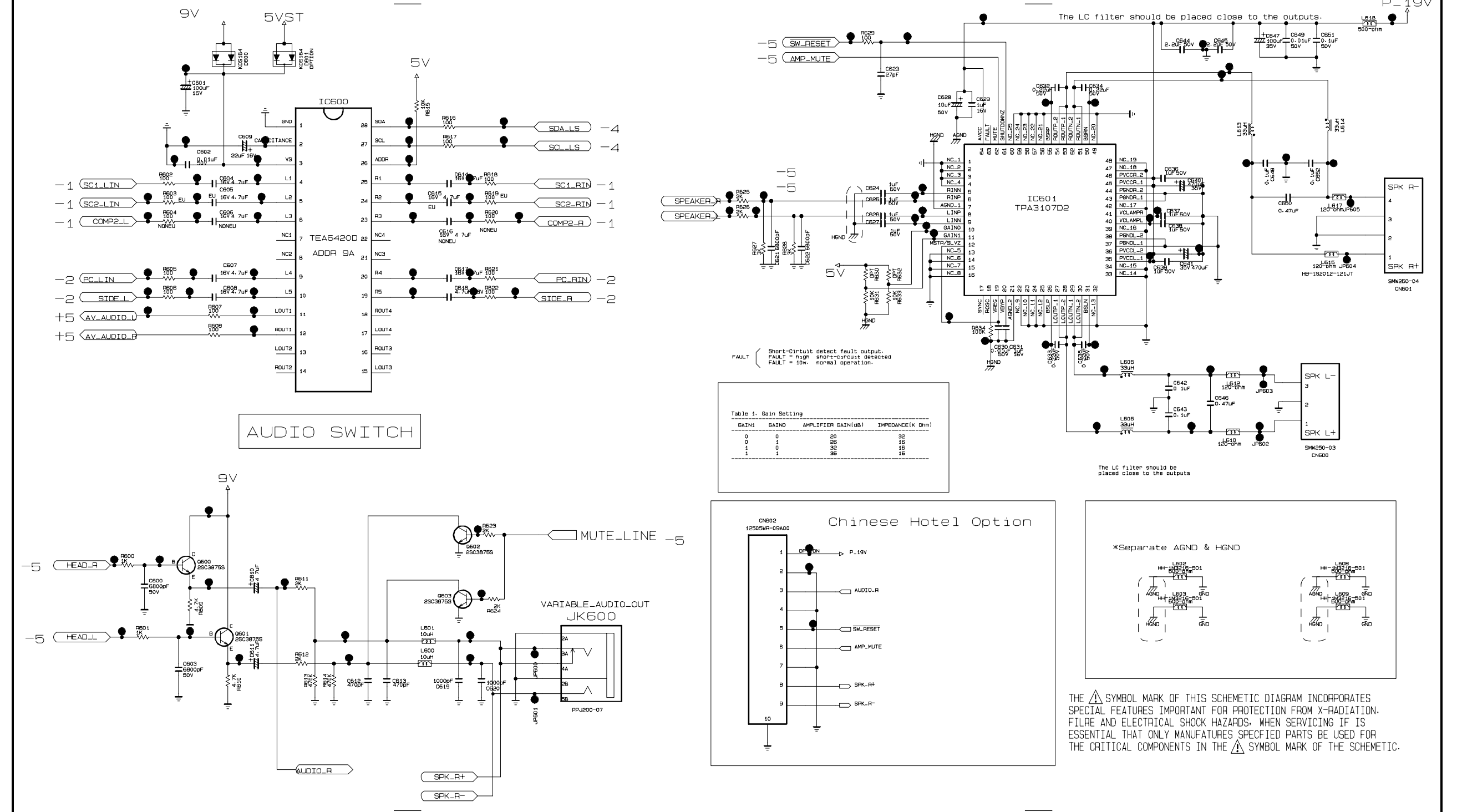
## #7. PANEL LVDS



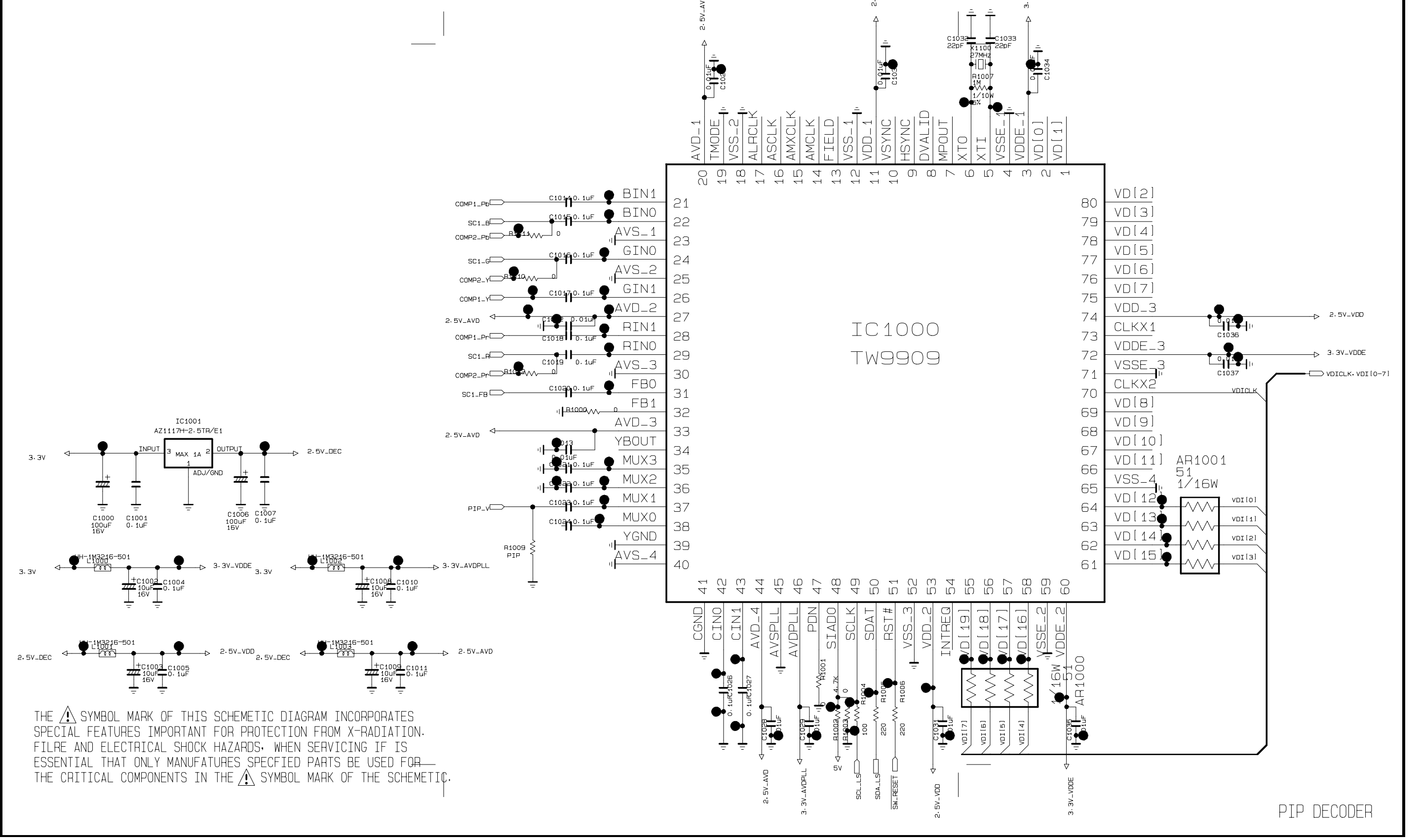
## #9. TEMP&FAN SENSERS



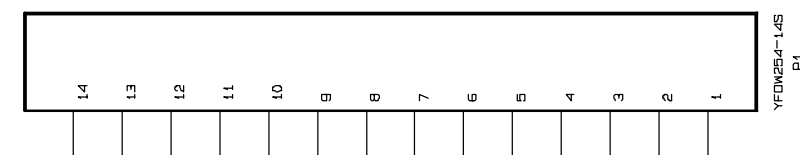
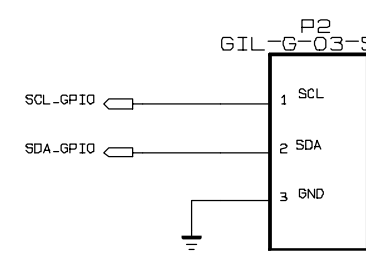
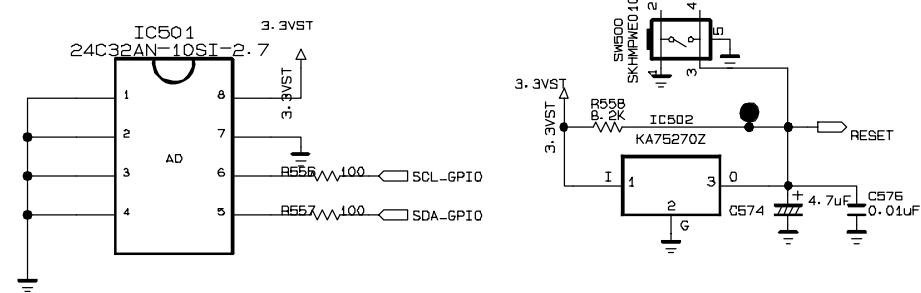
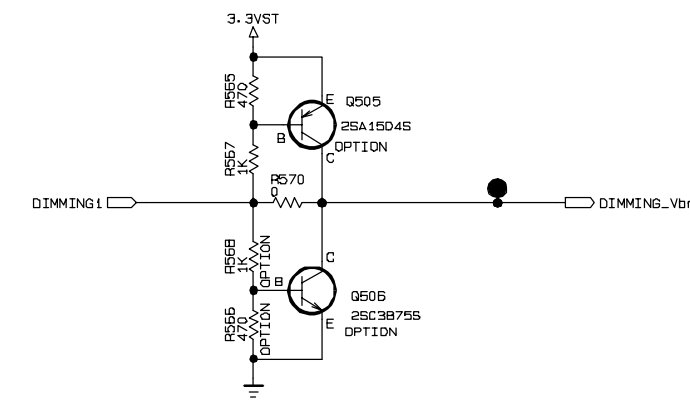
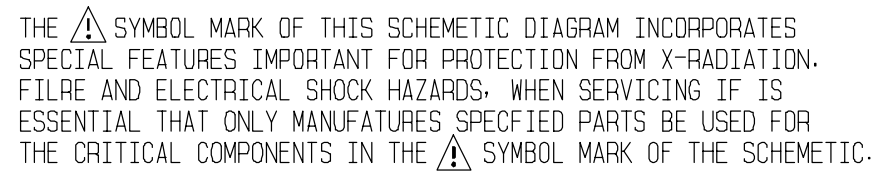
## #6. AUDIO



## #10. VIDEO DECODER



## SCALER







P/NO : MFL36696941

Jul., 2007  
Printed in Korea