

TRAINING MANUAL

PLASMA DISPLAY PANEL 2006 v2

<http://www.Plasma-Television-Repair.com>



Digital Display

IMPORTANT SAFETY NOTICE

The information in this training manual is intended for use by individuals possessing an adequate background in electrical equipment, electronic devices, and mechanical systems. In any attempt to repair a television or monitor, personal injury and property damage can result. The manufacturer or seller maintains no responsibility for the interpretation of this information, nor can it assume any liability in connection with its use. When servicing this product, under no circumstances should the original design be modified or altered without permission from LG Electronics. Unauthorized modifications will not only void the warranty, but may lead to property damage or user injury. If wires, screws, straps, clips, nuts, or washers used to complete a ground path are removed for service, they must be returned to their original position and properly fastened.

CAUTION

To avoid personal injury, disconnect power before servicing this product. If electrical power is required for diagnosis or test purposes, disconnect the power immediately after performing the necessary checks. Also be warned that many household appliances present a weight hazard. At least two people should be involved in the installation or servicing of such devices. Failure to consider the weight of an appliance could lead to physical injury.

ESD NOTICE

Some of the electronics in appliances are electrostatic discharge (ESD) sensitive. ESD can weaken or damage the electronics in these appliances in a manner that renders them inoperative or reduces the time until their next failure. Connect a wrist strap to a green ground connection point or unpainted metal in the appliance. Alternatively, you may touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance. Before removing a replacement part from its package, touch the anti-static bag to a green connection point or unpainted metal in the appliance. Avoid unnecessary contact with electronic parts or terminal contacts. Handle the electronic control assembly by its edges only. When repackaging a failed electronic control assembly in an anti-static bag, observe the above instructions.

REGULATORY INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna; Increase the separation between the equipment and receiver; Connect the equipment into an outlet on a circuit different from that to which the receiver is connected; Consult the dealer or an experienced radio/TV technician for help.

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SAFETY INSTRUCTIONS

OVERVIEW

1. Read these instructions and the instructions in owners and service manuals.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has exposed to rain or moisture, does not operate normally, or has been dropped.
16. **WARNING - To Reduce The Risk Of Fire Or Electric Shock, Do Not Expose This Appliance To Rain Or Moisture.**
17. **Wet Location Marking :** Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

POWER CAUTION

Most appliances recommend they be placed upon a dedicated circuit; that is, a single outlet circuit which powers only that appliance and has no additional outlets or branch circuits. Check the specification page of this owner's manual to be certain. Do not overload wall outlets. Overloaded wall outlets, loose or damaged wall outlets, extension cords, frayed power cords, or damaged or cracked wire insulation are dangerous. Any of these conditions could result in electric shock or fire. Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized servicer.

SAFETY

Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.

ELECTRICAL SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified 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.

ELECTRICAL SHOCK WARNING

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 circuit that may be inadvertently introduced during the service operation. If any fuse (or Fusible Resistor) in this monitor is blown, replace it with the same specified type. 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.

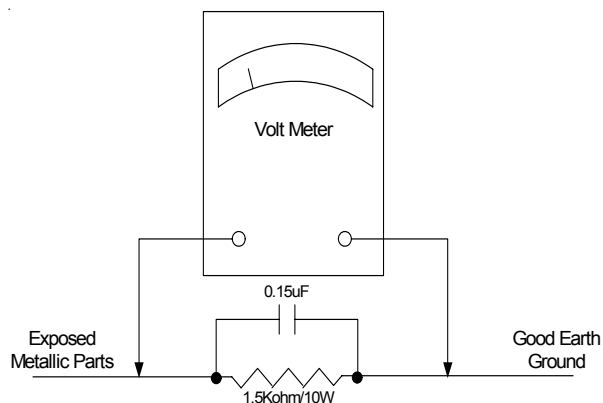
LEAKAGE CURRENT COLD CHECK (ANTENNA COLD CHECK)

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 ohm and 5.2M ohm. 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.

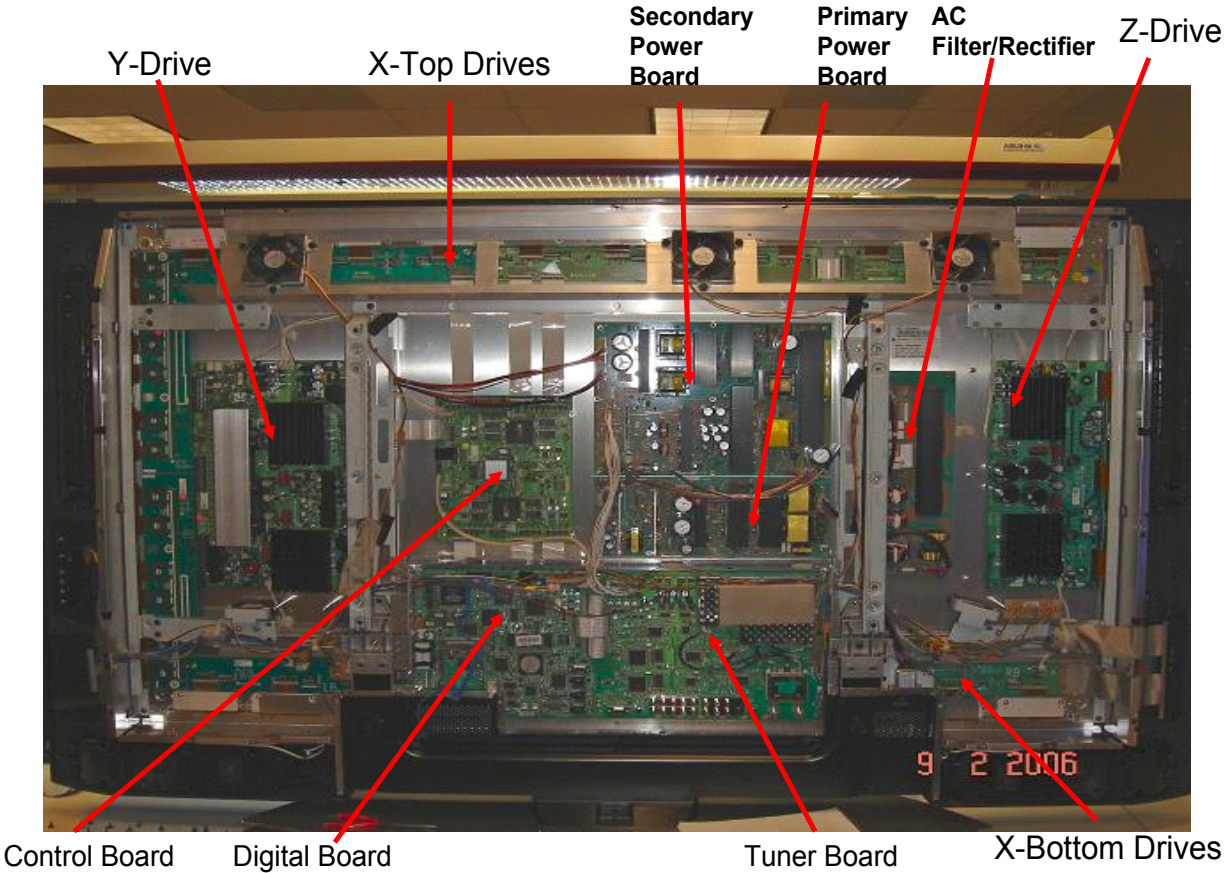
LEAKAGE CURRENT HOT CHECK

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 sepcified, 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

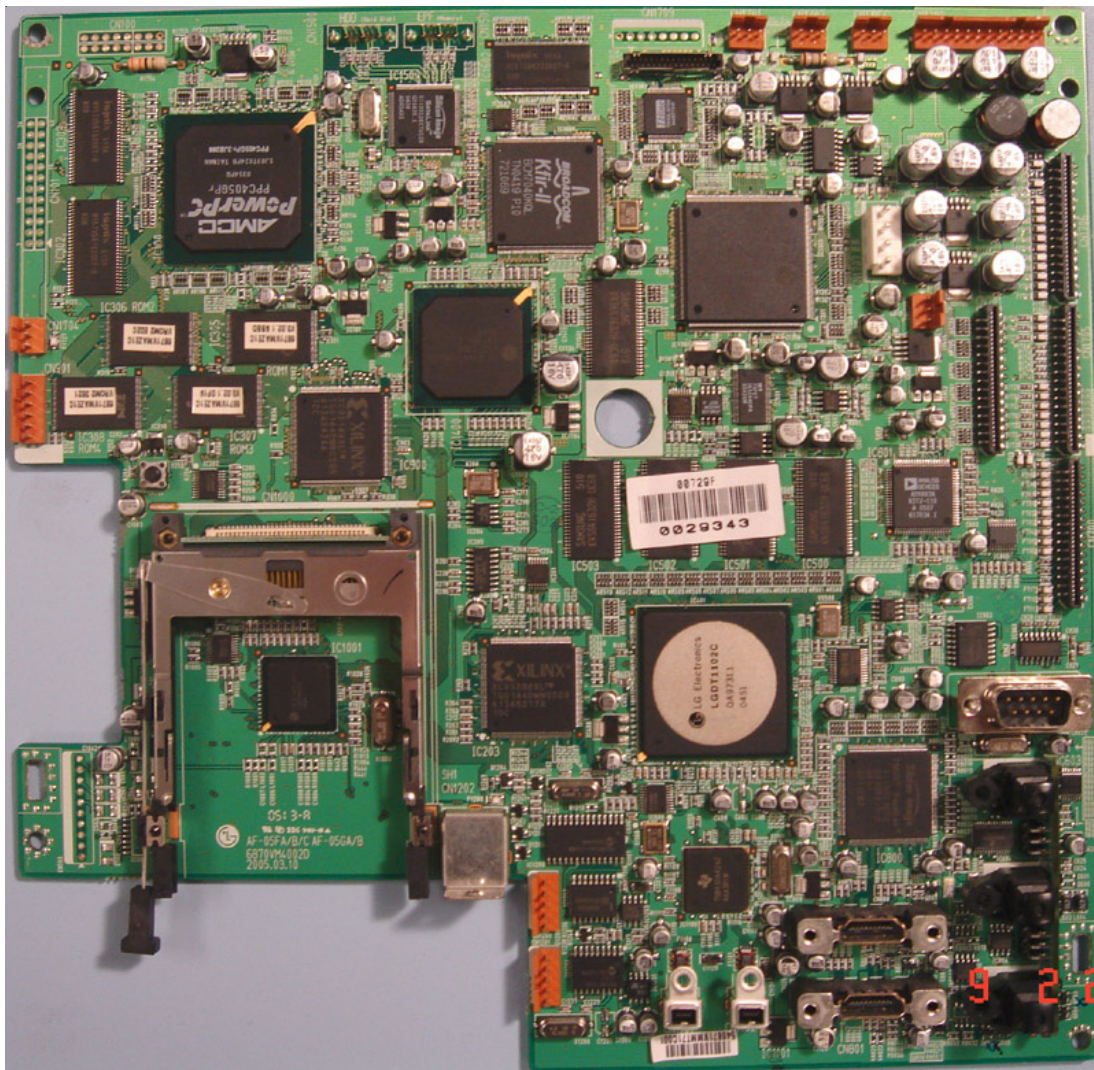


PCB LAYOUT
60PY2DR LAYOUT



DIGITAL PCB

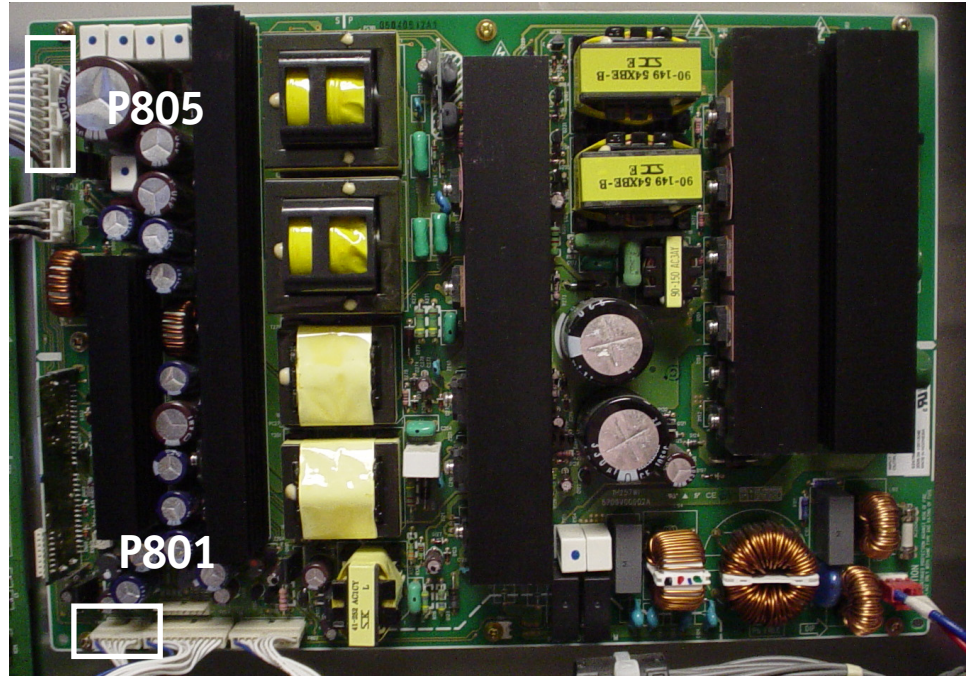
The digital board below is from the 60PY2DR, other models may differ slightly.



The digital PCB provides Digital Signal Processing (dsp) and controls the state of each FET on each DRIVER B/D with R, G, B, each with 8bit input. This board contains the Cablecard slot and supporting buffers which are shared with the Cablecard while it is in operation due to the data flow from the cable headend to the card. This data flow constantly updates the channel list and the CP (Copy Protect) data and the channel authorization list and the encryption and descramble data. This is done every ten to twenty seconds. This PCB also is host to the HDD (Hard Disk Drive) control circuit. This circuit will recognize the HDD if it is programmed and formatted correctly. These drives are setup especially for this function, thus a drive from another vendor will not function in this unit. This is done for CP (Copy Protect) reasons. If the HDD is suspect of errors or video issues, power down the unit and remove A/C and disconnect the IDE cable and power the unit back on. If the problem still exists, the problem is not on the HDD. The unit can be used without the HDD connected. In this situation the unit will function normally except any function related to the HDD or demo mode which is stored on the HDD. This PCB also contains all of the Digital inputs. The analog to digital conversion is done on this PCB as well.

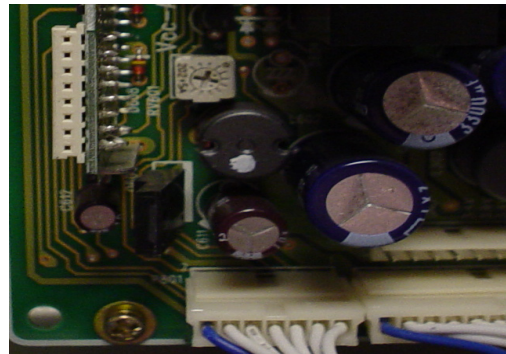
CIRCUIT DESCRIPTIONS

50PX4DR SMPS



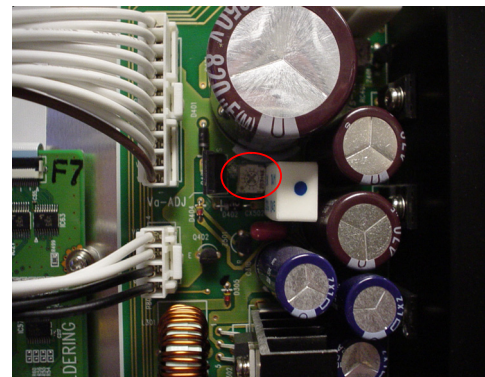
50PX4DR SMPS ADJUSTMENTS

VCC Adjustment to adjust StandBy voltages at P801



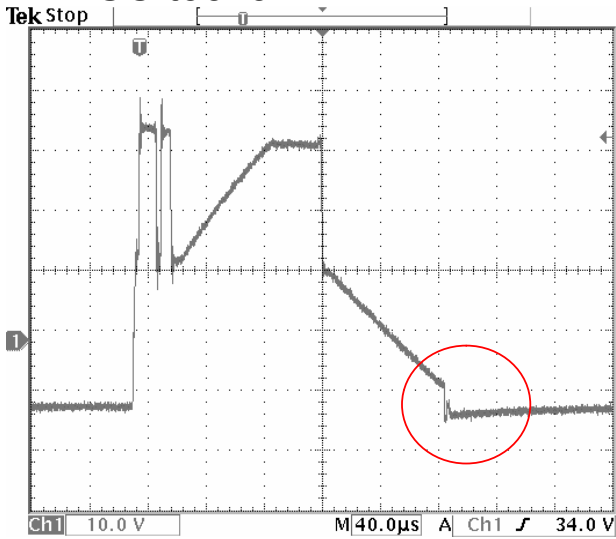
VA ADJUSTMENT 50PX4DR

VA adjustment use P805 pin 9 or 10 and chassis ground to test



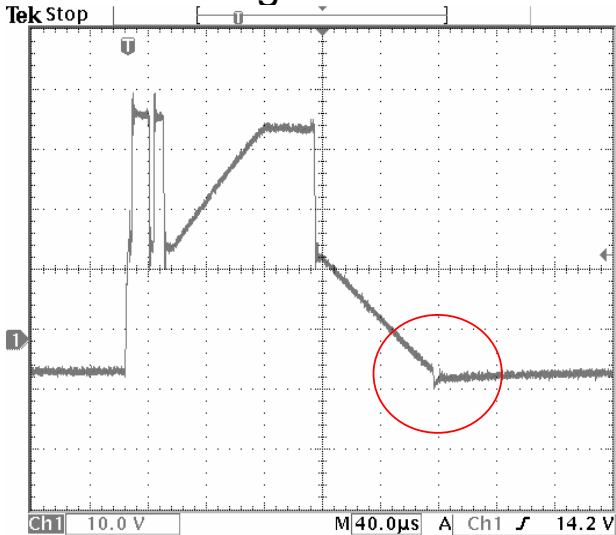
TROUBLESHOOTING

VSC too low

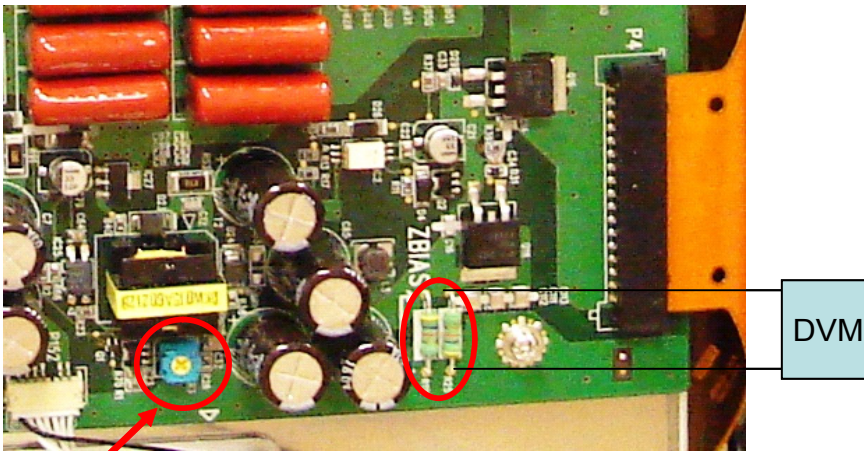


The image will show very little change but there will be some distortion in a quickly changing image.

VSC too high



The image will show very little change but there will be some distortion in a quickly changing image.



ZBIAS adjustment: On the Z-Sustain PCB
With the DVM across R92 adjust the potentiometer till the DVM reads 93 vdc.

Don't waste anymore time on searching the internet for the magic solution. Learn how to repair plasma tv and perform plasma tv repair like a professional right now!

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