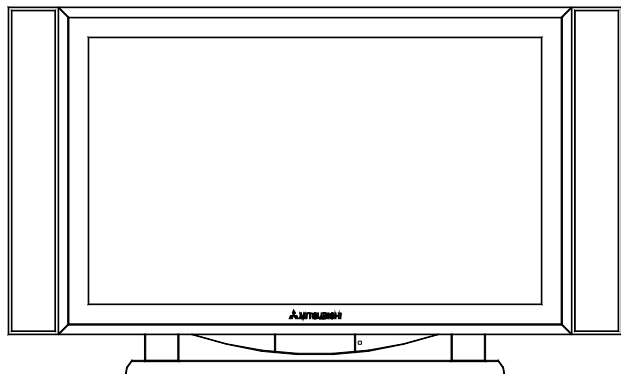




# Service Manual

PLASMA DISPLAY PANEL



**PD-4225S**

## CAUTION:

Before servicing this chassis, it is important that the service person read the "PRODUCT SAFETY GUIDELINES" contained in this manual.

## SPECIFICATIONS

- **Power** : AC 100-240V, 50/60Hz  
350W Typical, 400W Maximum
- **Display**
  - Screen Size : 42" Diagonal, Viewable
  - Aspect Ratio : 16:9
  - Pixel Array : 480 x 852
  - Pixel Pitch : 1.08mm x 1.08mm
  - Horiz Sync Range: 15.5kHz - 68.7kHz
  - Vert Sync Range : 56Hz - 120Hz
- **Inputs**
  - Analog : (2) Composite, (1) S-Video,  
(1) Component & stereo audio
  - PC Monitor : (1) Mini D-Sub 15 & stereo audio
  - MonitorLink™ : DVI, RS-232C, & stereo audio
  - RF : NTSC VHF 2-13, UHF 14-69,  
CATV 1-125
- **Outputs**
  - Analog : (1) Composite & stereo audio
  - PC Monitor : (1) Mini D-Sub 15
  - External Speaker : 2 x 5 Watts into 8 ohms
- **Formats**
  - Video : NTSC, 480i, 480p, 720p, 1080i
  - PC Monitor (4:3) : VGA, SVGA, XGA, SXGA
  - PC Monitor (16:9) : W-XGA
- **Dimensions**
  - w/ speakers & base : (W)49-5/8" (H)27-5/8" (D)10-7/8"
  - wo/ speakers & base : (W)40-3/4" (H)26" (D)4-3/8"
- **Weight**
  - w/ speakers & base : 81.7 lbs
  - wo/ speakers & base : 65.2 lbs

- Weight and dimensions shown are approximate.
- Design specifications are subject to change without notice.

**MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.**

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## PRODUCT SAFETY GUIDELINES

### IMPORTANT SAFETY NOTICE

This manual was prepared for use only by properly trained audio-visual service technicians.

When servicing this product, under no circumstances should the original design be modified or altered without permission from Zenith Electronics Corporation. All components should be replaced only with types identical to those in the original circuit and their physical location, wiring and lead dress must conform to original layout upon completion of repairs.

**CAUTION:** Do not attempt to modify this product in any way.

Never perform customized installations without manufacturer's approval.

Unauthorized modifications will not only void the warranty, but may lead to property damage or user injury.

Service work should be performed only after you are thoroughly familiar with these safety checks and servicing guidelines.

### GRAPHIC SYMBOLS



The exclamation point within an equilateral triangle is intended to alert the service personnel to important safety information in the service literature.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the service personnel to the presence of noninsulated "dangerous voltage" that may be of sufficient magnitude to constitute a risk of electric shock.



The pictorial representation of a fuse and its rating within an equilateral triangle is intended to convey to the service personnel the following fuse replacement caution notice:

**CAUTION:** FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ALL FUSES WITH THE SAME TYPE AND RATING AS MARKED NEAR EACH FUSE.

### SERVICE INFORMATION

While servicing, use an isolation transformer for protection from AC line shock. After the original service problem has been corrected, make a check of the following:

### FIRE AND SHOCK HAZARD

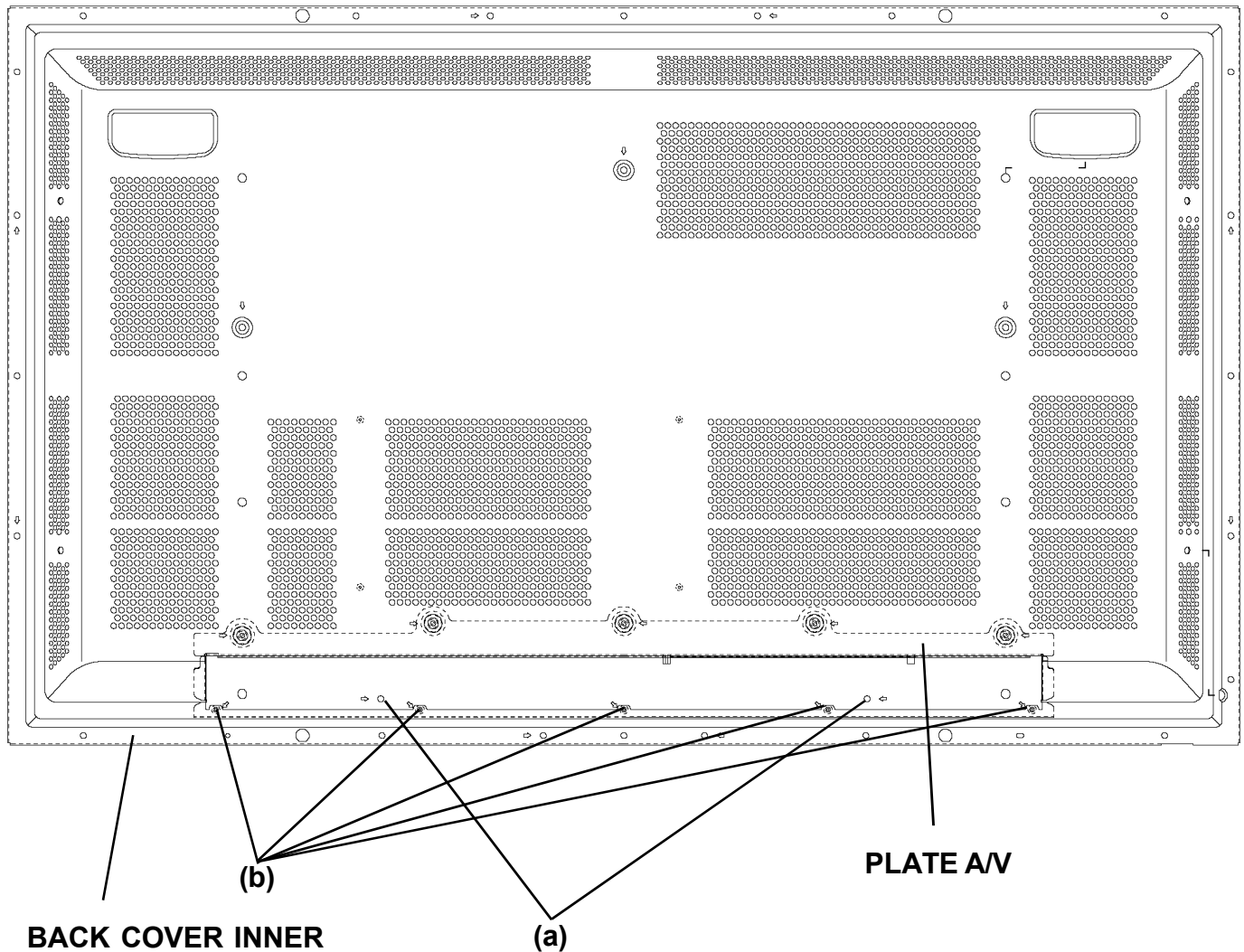
1. Be sure that all components are positioned to avoid a possibility of adjacent component shorts. This is especially important on items transported to and from the repair shop.
2. Verify that all protective devices such as insulators, barriers, covers, shields, strain reliefs, power supply cords, and other hardware have been reinstalled per the original design. Be sure that the safety purpose of the polarized line plug has not been defeated.
3. Soldering must be inspected to discover possible cold solder joints, solder splashes, or sharp solder points. Be certain to remove all loose foreign particles.
4. Check for physical evidence of damage or deterioration to parts and components, for frayed leads or damaged insulation (including the AC cord), and replace if necessary.

5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces must be avoided.
6. After reassembly of the set, always perform an AC leakage test on all exposed metallic parts of the cabinet (the channel selector knobs, antenna terminals, handle and screws) to be sure that set is safe to operate without danger of electrical shock. **DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST.** Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner: Connect a 1500 ohm, 10 watt resistor, paralleled by a .15 mfd 150V AC type capacitor between a known good earth ground water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and .15 mfd capacitor. Reverse the AC plug by using a non-polarized adaptor and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.75 volts RMS. This corresponds to 0.5 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

### TIPS ON PROPER INSTALLATION

1. Never install any receiver in a closed-in recess, cubbyhole, or closely fitting shelf space over, or close to, a heat duct, or in the path of heated air flow.
2. Avoid conditions of high humidity such as: outdoor patio installations where dew is a factor, near steam radiators where steam leakage is a factor, etc.
3. Avoid placement where draperies may obstruct venting. The customer should also avoid the use of decorative scarves or other coverings that might obstruct ventilation.
4. Wall- and shelf-mounted installations using a commercial mounting kit must follow the factory-approved mounting instructions. A product mounted to a shelf or platform must retain its original feet (or the equivalent thickness in spacers) to provide adequate air flow across the bottom. Bolts or screws used for fasteners must not touch any parts or wiring. Perform leakage tests on customized installations.
5. Caution customers against mounting a product on a sloping shelf or in a tilted position, unless the receiver is properly secured.
6. A product on a roll-about cart should be stable in its mounting to the cart. Caution the customer on the hazards of trying to roll a cart with small casters across thresholds or deep pile carpets.
7. Caution customers against using a cart or stand that has not been listed by Underwriters Laboratories, Inc. for use with its specific model of television receiver or generically approved for use with TVs of the same or larger screen size.
8. Caution customers against using extension cords. Explain that a forest of extensions, sprouting from a single outlet, can lead to disastrous consequences to home and family.

## DISASSEMBLY



1. Screws marked (a) hold the Plate Assembly in place (Plate A/V).
2. Screws marked (b) connect Plate Assembly with Back Cover Assembly.
3. Screws marked with an arrow on the back of the PDP connect the Back Cover Assembly & Outer Assembly to the Main Frame.

**NOTE: All three Assemblies should be removed in disassembly.**

## ELECTRICAL ADJUSTMENTS

### Test Equipment

- DMM
- Signal Generator: RGB (VGA) - 1024x768, 60Hz, COMPONENT (YPbPr) - 1280x720p, 60Hz

### Notes

- Do not attempt an adjustment if proper equipment is not available.
- Because this is not a Hot chassis, no isolation transformer is required. However, the use of an isolation transformer will help protect test instruments.
- Perform only the adjustments required, in the correct order.
- Adjustment conditions... Temperature: 68°-86°F. Humidity: 55%-75%. Line Voltage: 100-240V, 50/60 Hz.
- Prior to adjustment, the PDP must be operated for at least 15 minutes while receiving a 100% white pattern.
- CAUTION: If a stationary pattern (i.e. Cross Hatch or digital generator) is displayed for more than 20 minutes, an after image (image burn) can occur.

### 1. PWB Power Assembly Adjustments (*V<sub>a</sub>*, *V<sub>s</sub>* Voltage Adjustments)

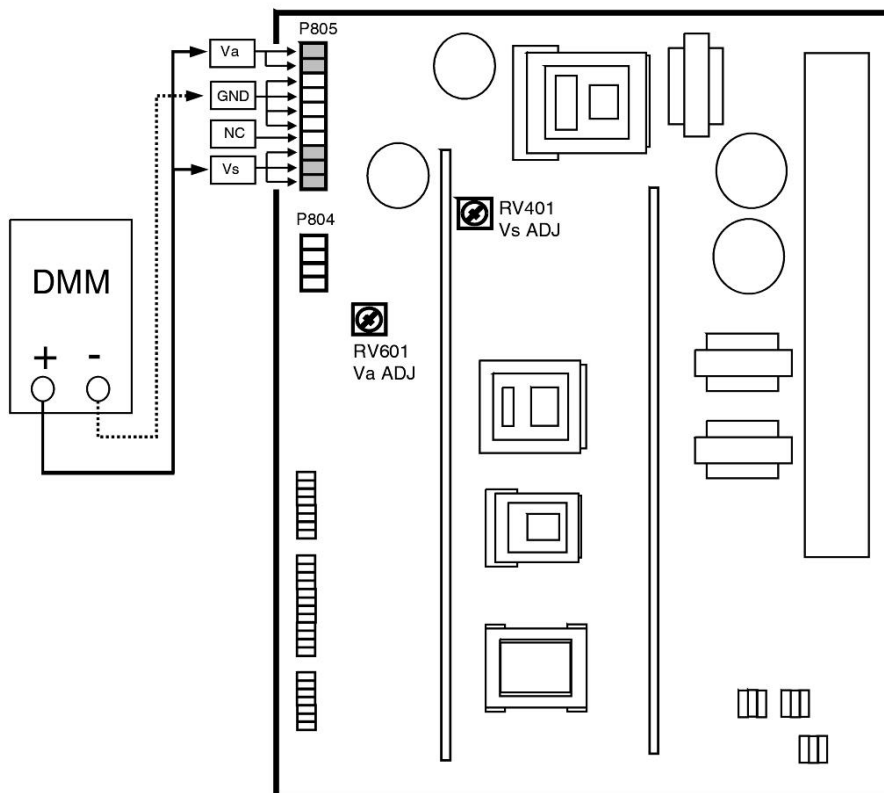
These adjustments must be performed after the repair or replacement of the PWB Power Assembly, or after replacing the PDP.

#### A. *V<sub>a</sub>* Adjustment

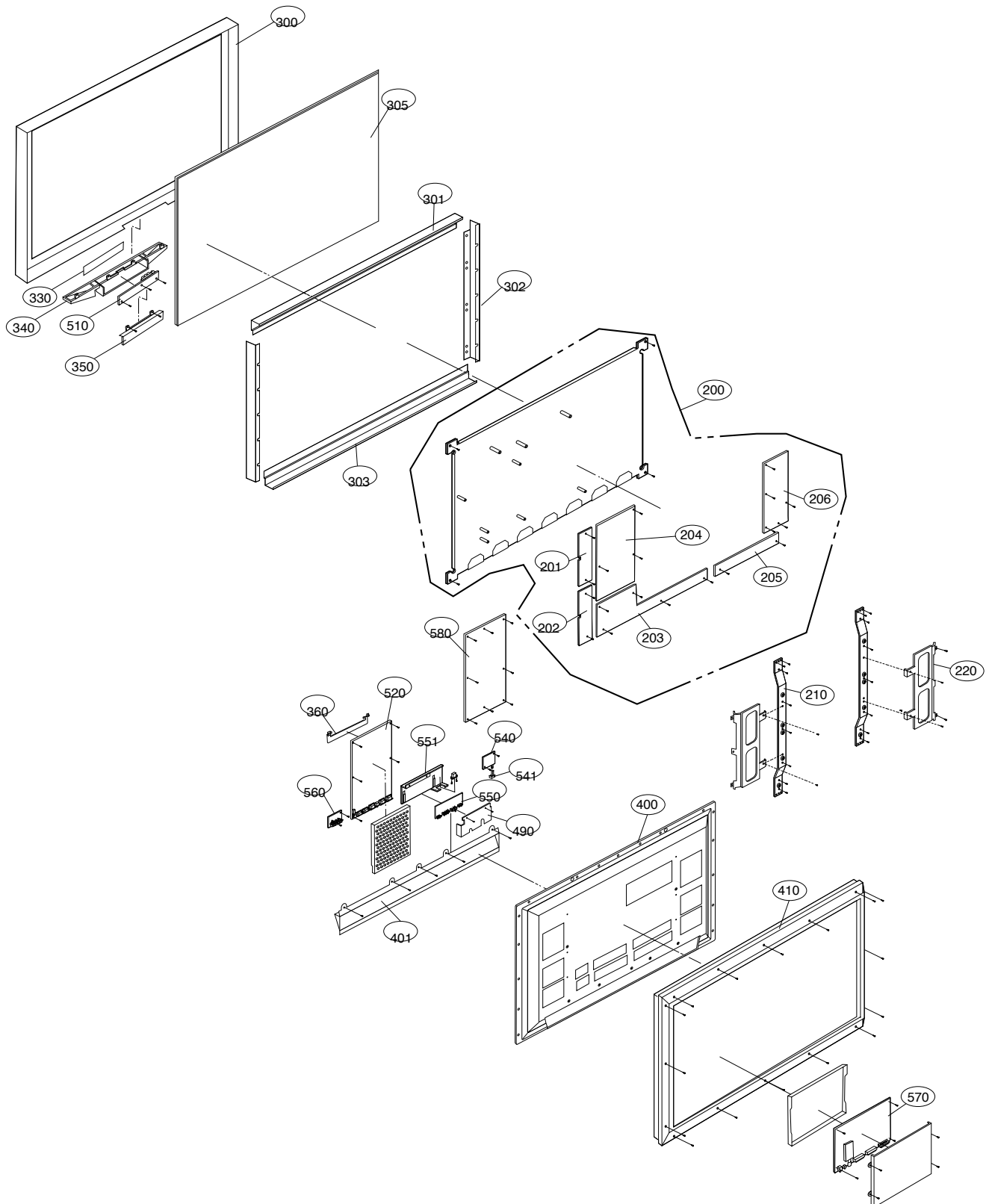
1. Supply a 100% White pattern.
2. Connect a DMM between the *V<sub>a</sub>* and GND pins of P805 on the PWB Power. See *Figure 4*.
3. Note the *V<sub>a</sub>* voltage listed on the label located on the panel, top right side.
4. Adjust RV601 so the voltage is equal to the voltage listed,  $\pm 0.5V$ .

#### B. *V<sub>s</sub>* Adjustment

1. Connect the DMM between the *V<sub>s</sub>* and GND pins of P805.
2. Note the *V<sub>s</sub>* voltage listed on the label located on the panel, top right side.
3. Adjust RV401 so the voltage is equal to the voltage listed,  $\pm 0.5V$ .



## EXPLODED VIEW



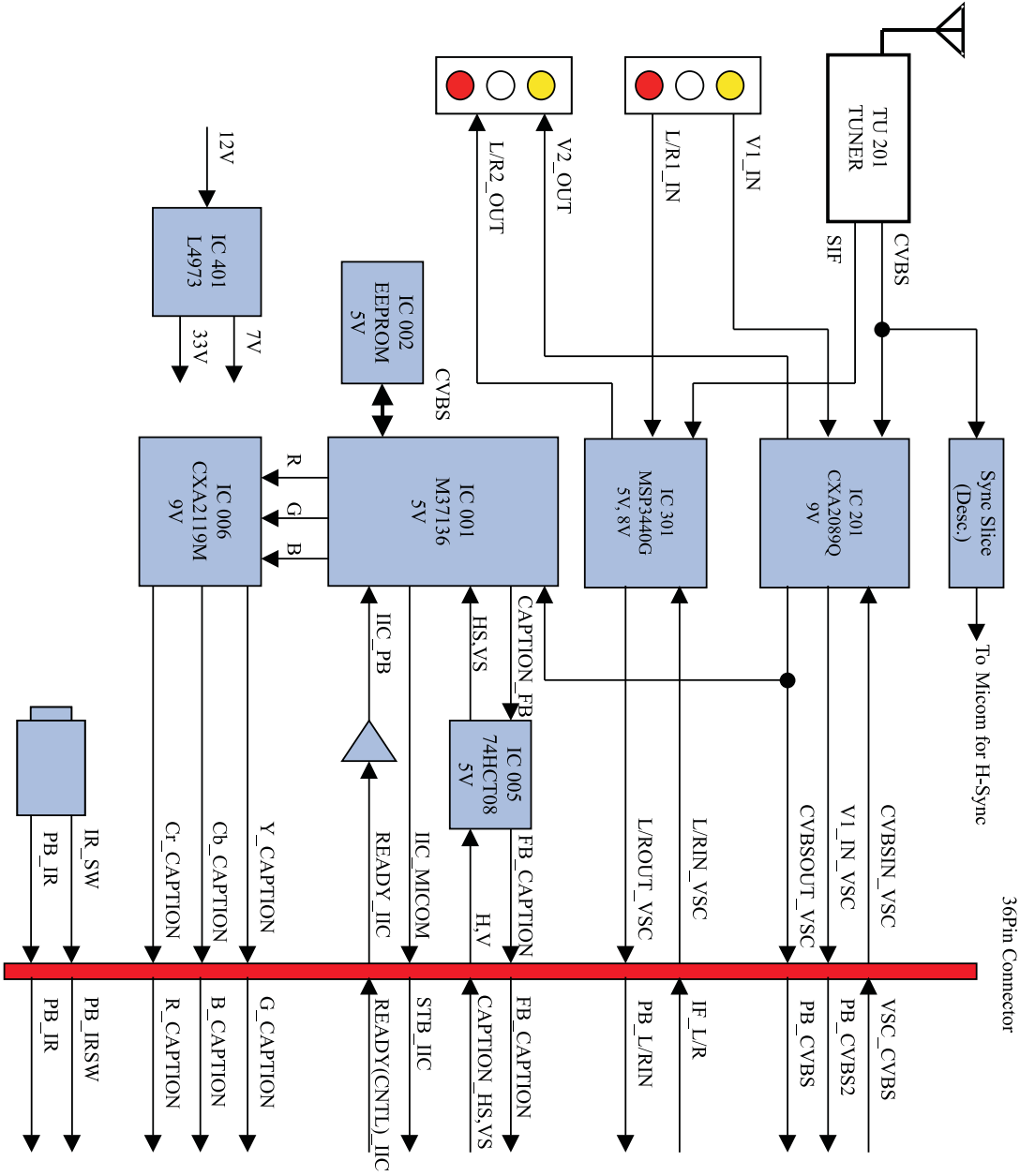
## REPLACEMENT PARTS LIST

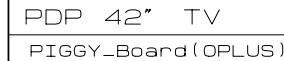
Ref. No.	Part Number	Description
200	6348Q-E037T	PDP-NP50C2MF01 (T/A REQ)
201	6871QDH051A	PWB-DSP YDRV ASSY (PD4225)
202	6871QDH052A	PWB-DSP YDRV ASSY (PD4225)
203	6871QCH025A	PWB-PDP-DRV-CONTROL
204	6871QYH027A	PWB-YSUS ASSY (PD4225)
205	6871QRH034A	PWB-XRRT ASSY (PD4225)
206	6871QZH030A	PWB-ZSUS (PD4225)
210	4980V00460A	SUPPORTER, VERTICAL MN-42PZ40
220	4980V00464B	SUPPORTER
300	3211V00126B	FRAME-ASSY FRONT
305	5230V00016A	SCREEN SHIELD (FILTER)
330	3581V00038A	DOOR-CONTROL
340	3110V00324B	CASE-ASSY
350	4810V00826A	COVER-BRACKET
400	3809V00A58E	FRAME-COVER REAR
401	3301V00010S	PLATE-ASSY
410	3809V00A47N	COVER-BACK ASSY
510	6871VSMV64B	PWB-FRONT-CONTROL
520	6871VMMP39F	PWB-MAIN (PD4225)
540	6871VSMV04A	PWB-PSW (PD4225)
541	5020V00666D	BUTTON-POWER
550	6871VSMU98B	PWB-AV (PD4225)
560	6871VSMU45A	PWB-SPK (PD4225)
570	6871VSMX52B	PWB-SUB VIDEO ASSY (PD4225)
580	3501V00148A	BOARD-ASSY (POWER)
	6850J00002A	CABLE-DVI
	6410VUH005A	CORD-POWER AC
	6710V00129A	REMOTE
	SPEAKER-PD4225S	SPEAKER ASSEMBLY
	BRACKET-SPEAKER	BRACKET-SPEAKER (EXTERNAL)

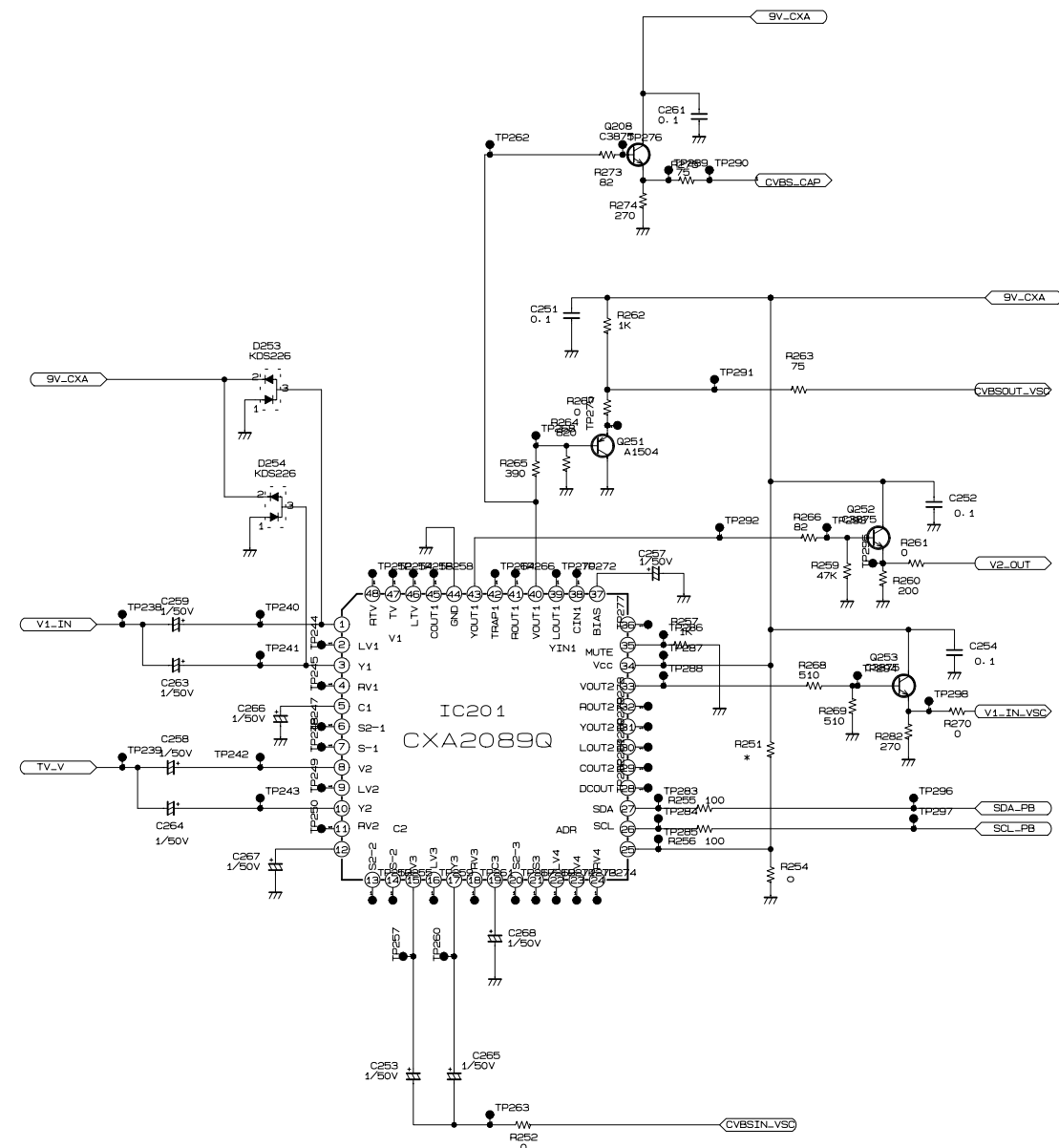
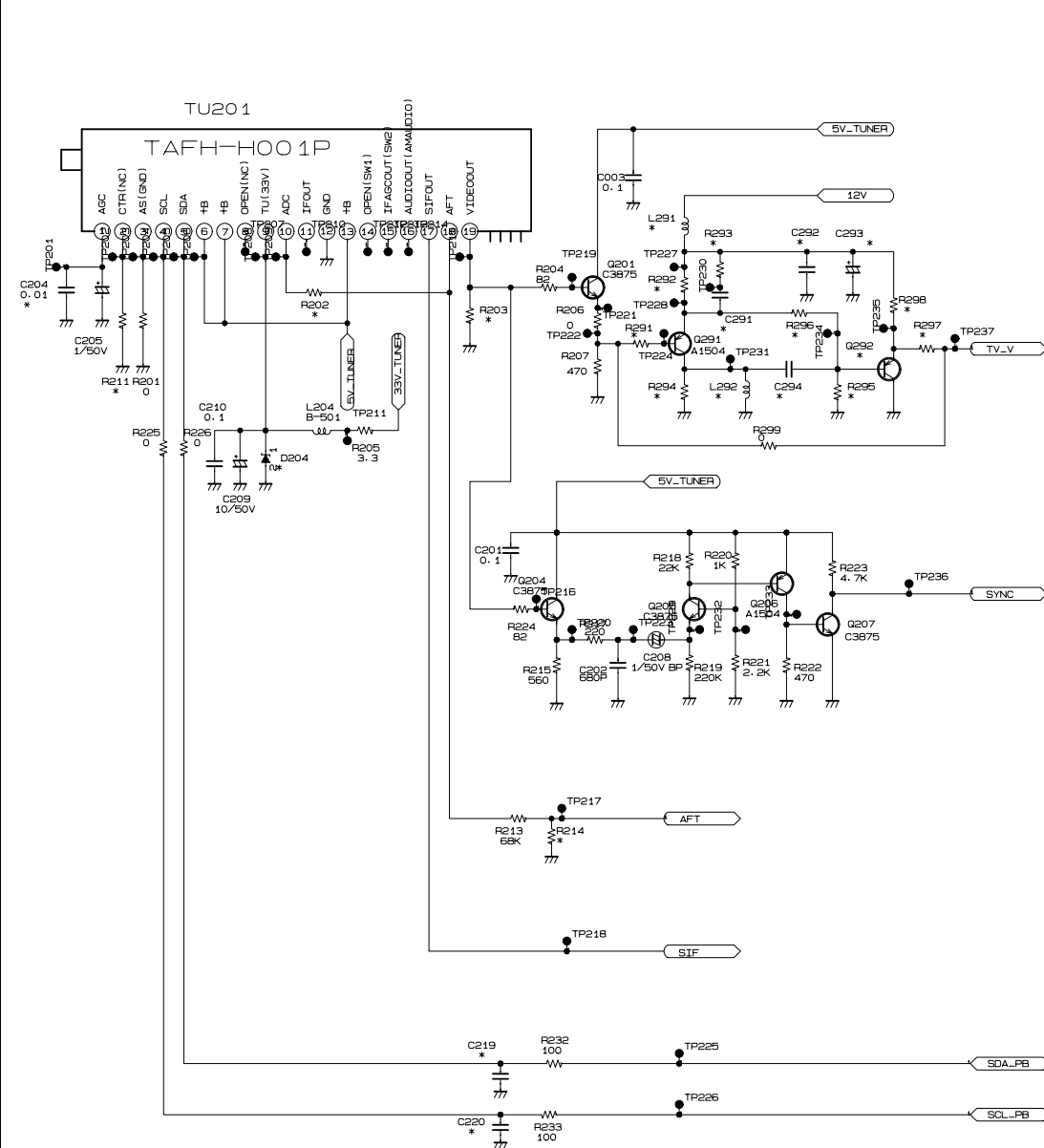


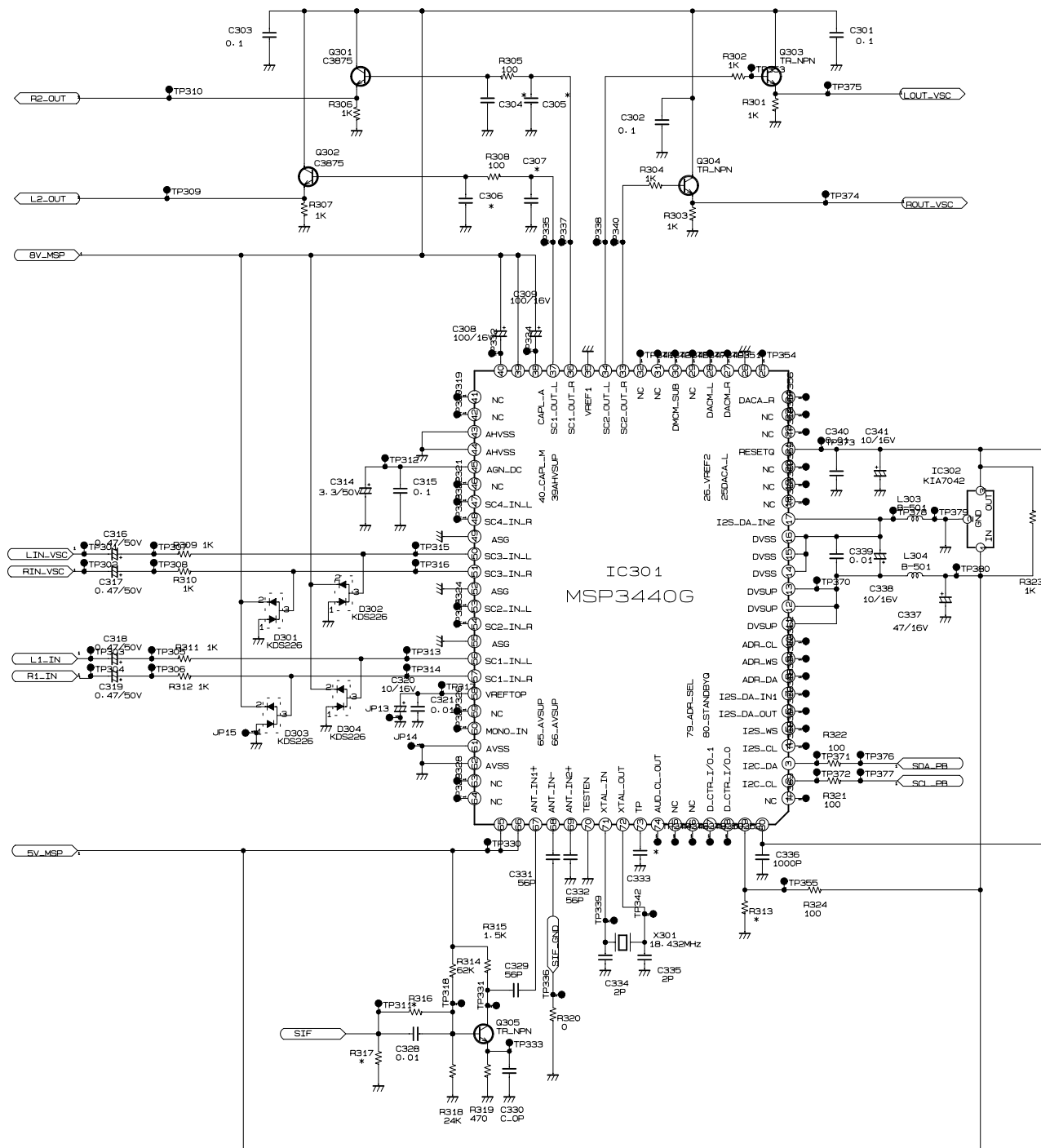


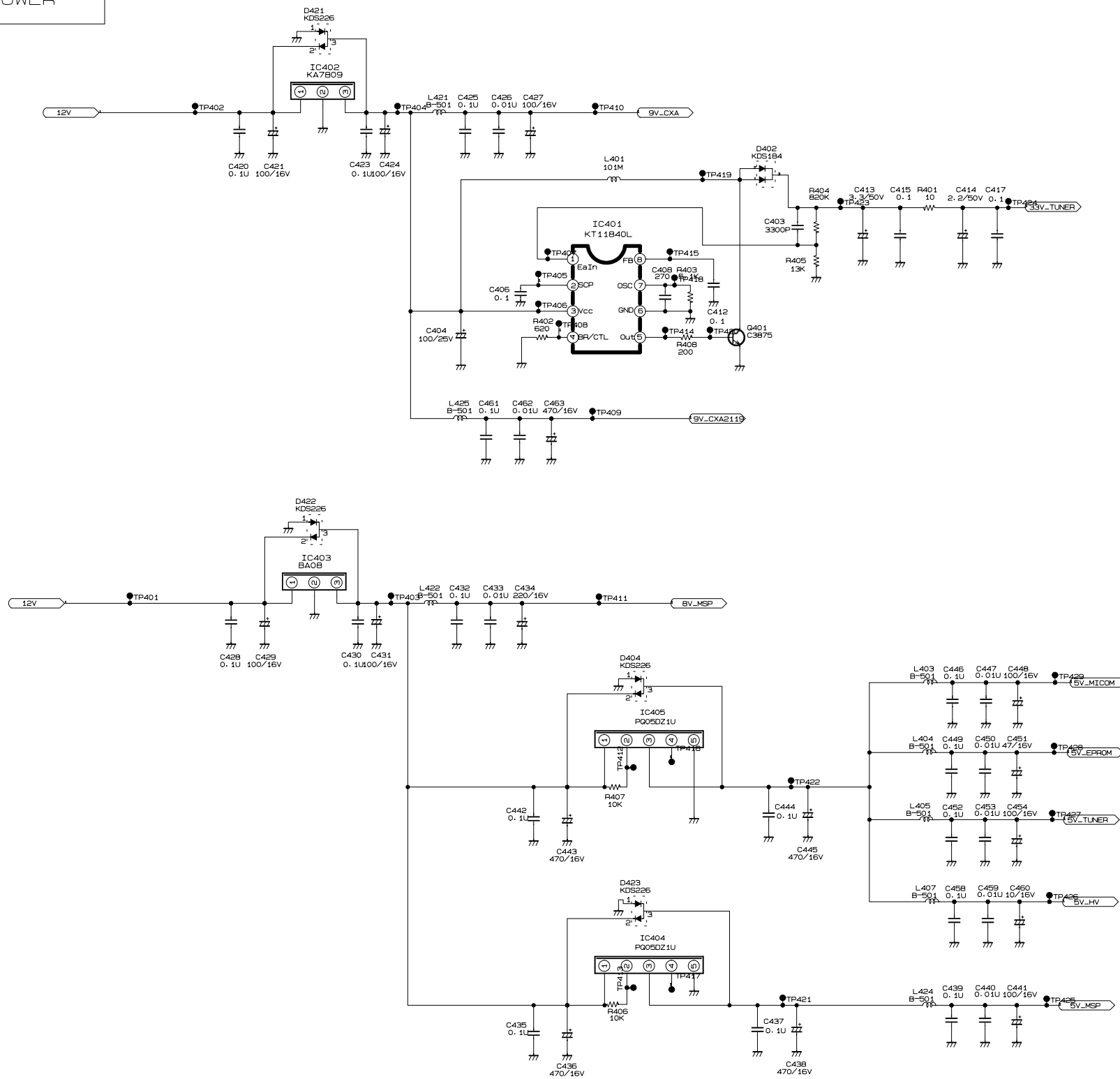
42 Piggy Back Block Diagram







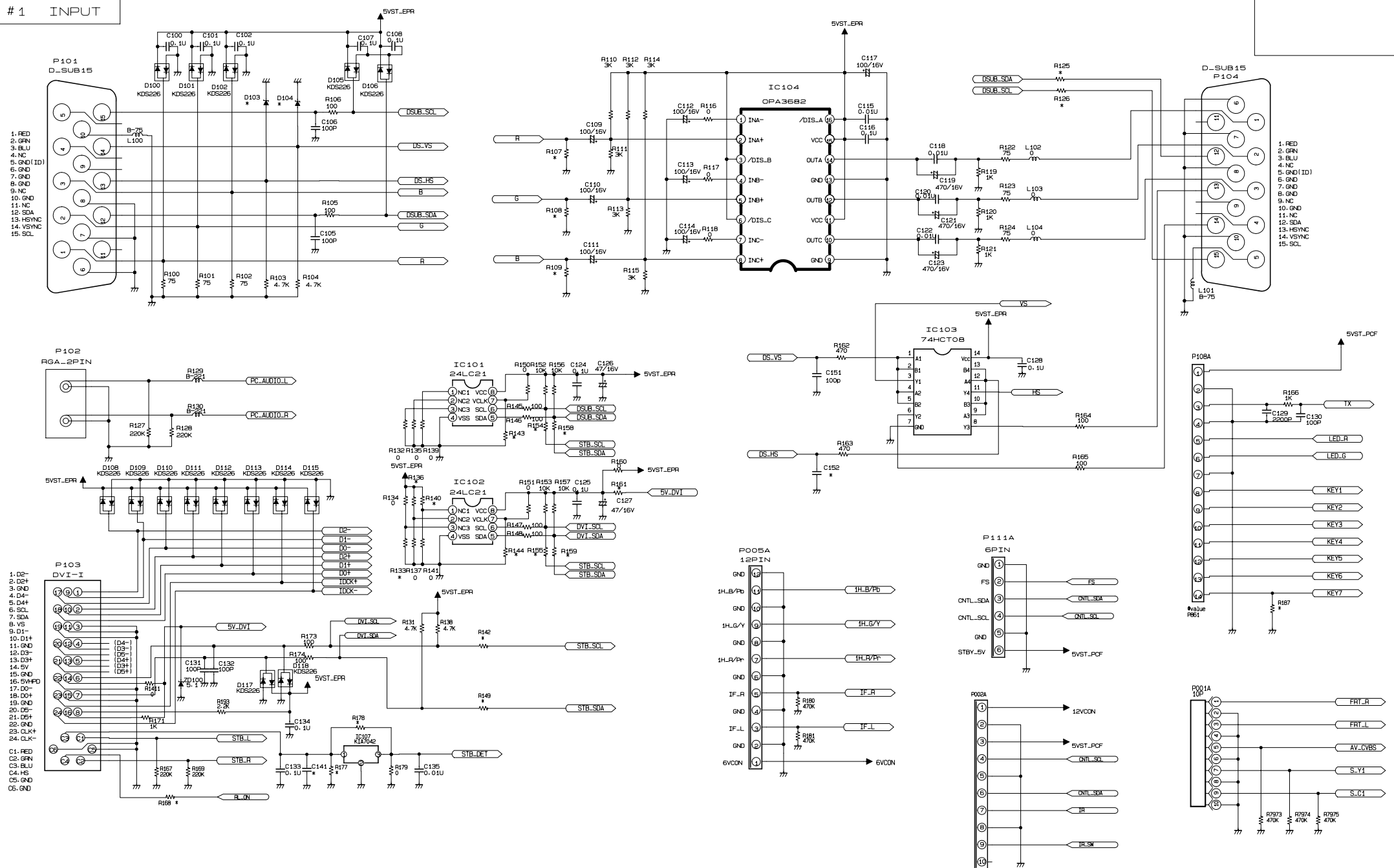


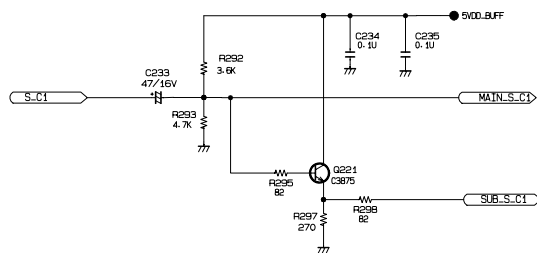
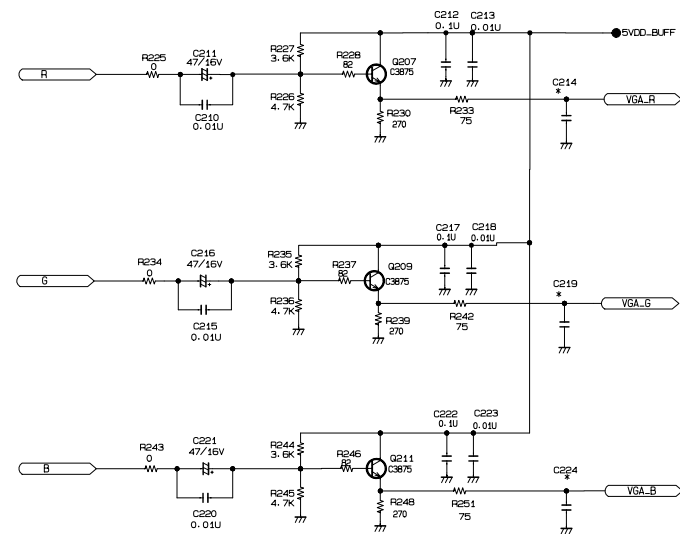
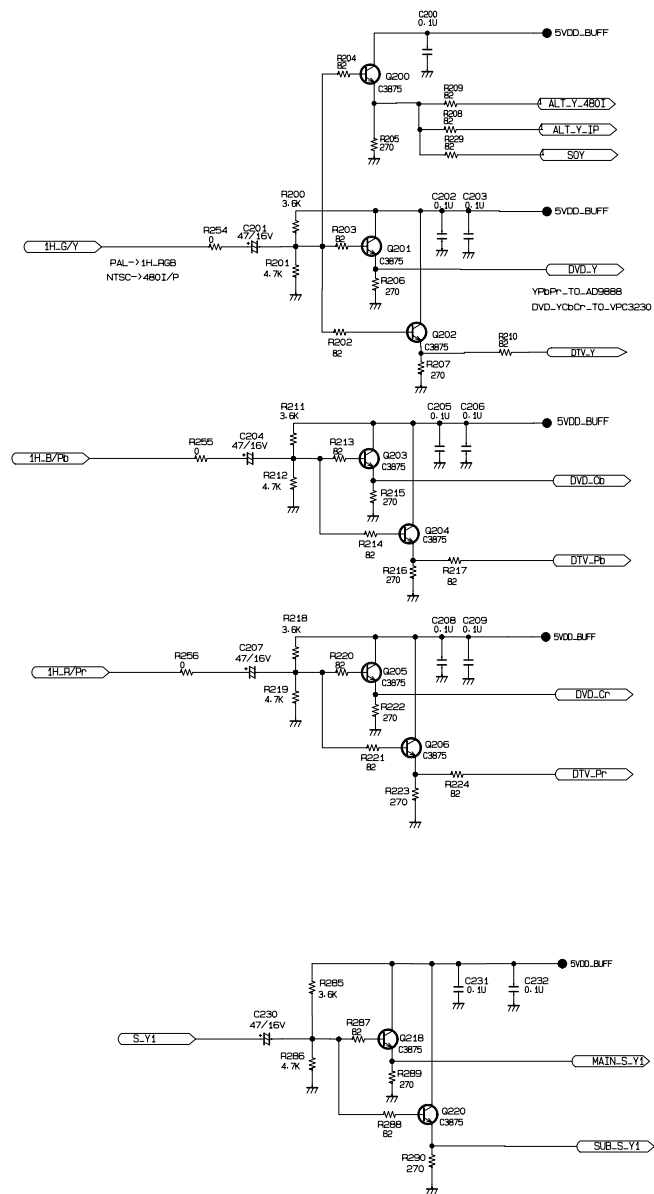


PDP 42" TV

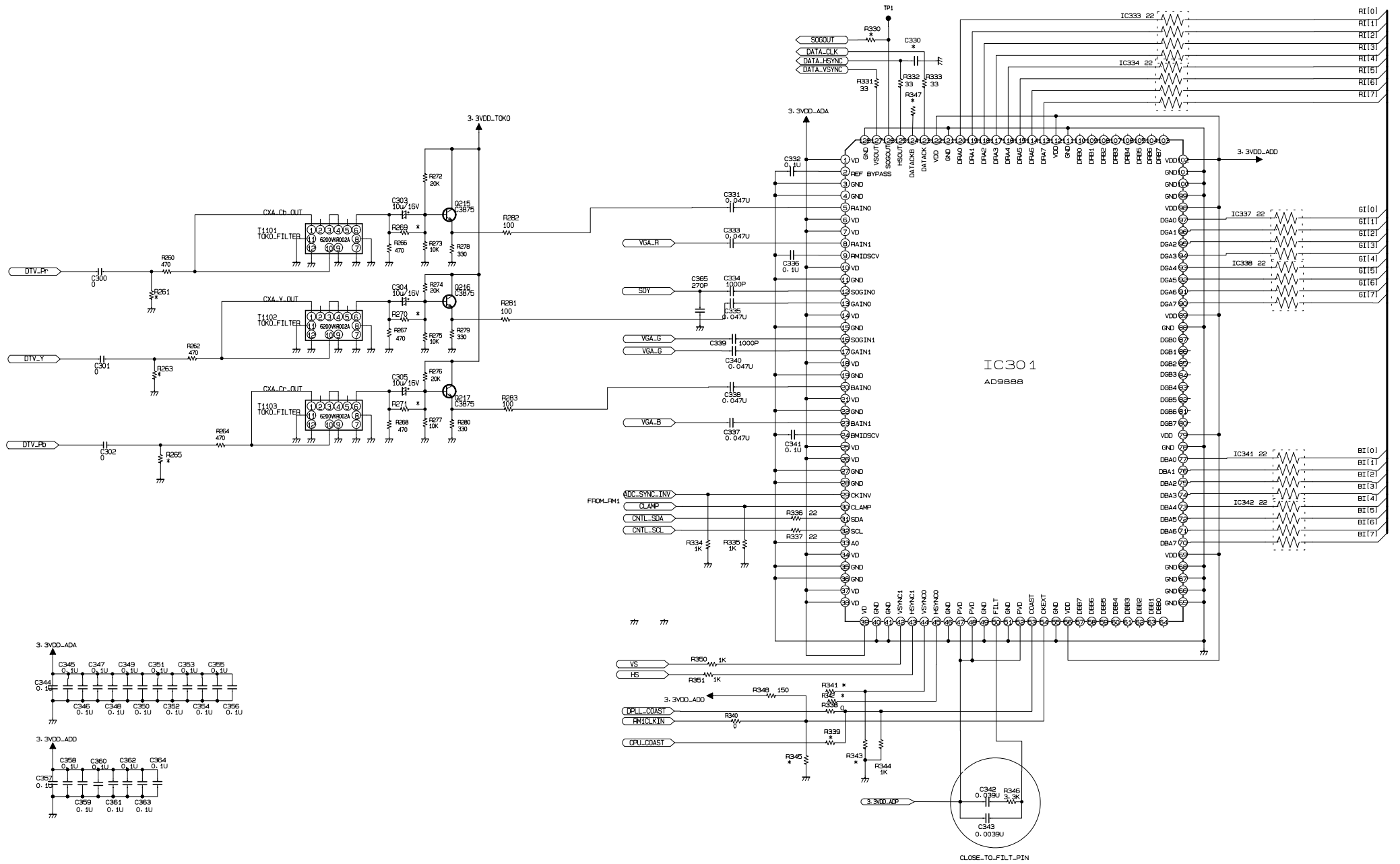
PIGGY\_Board (OPLUS)

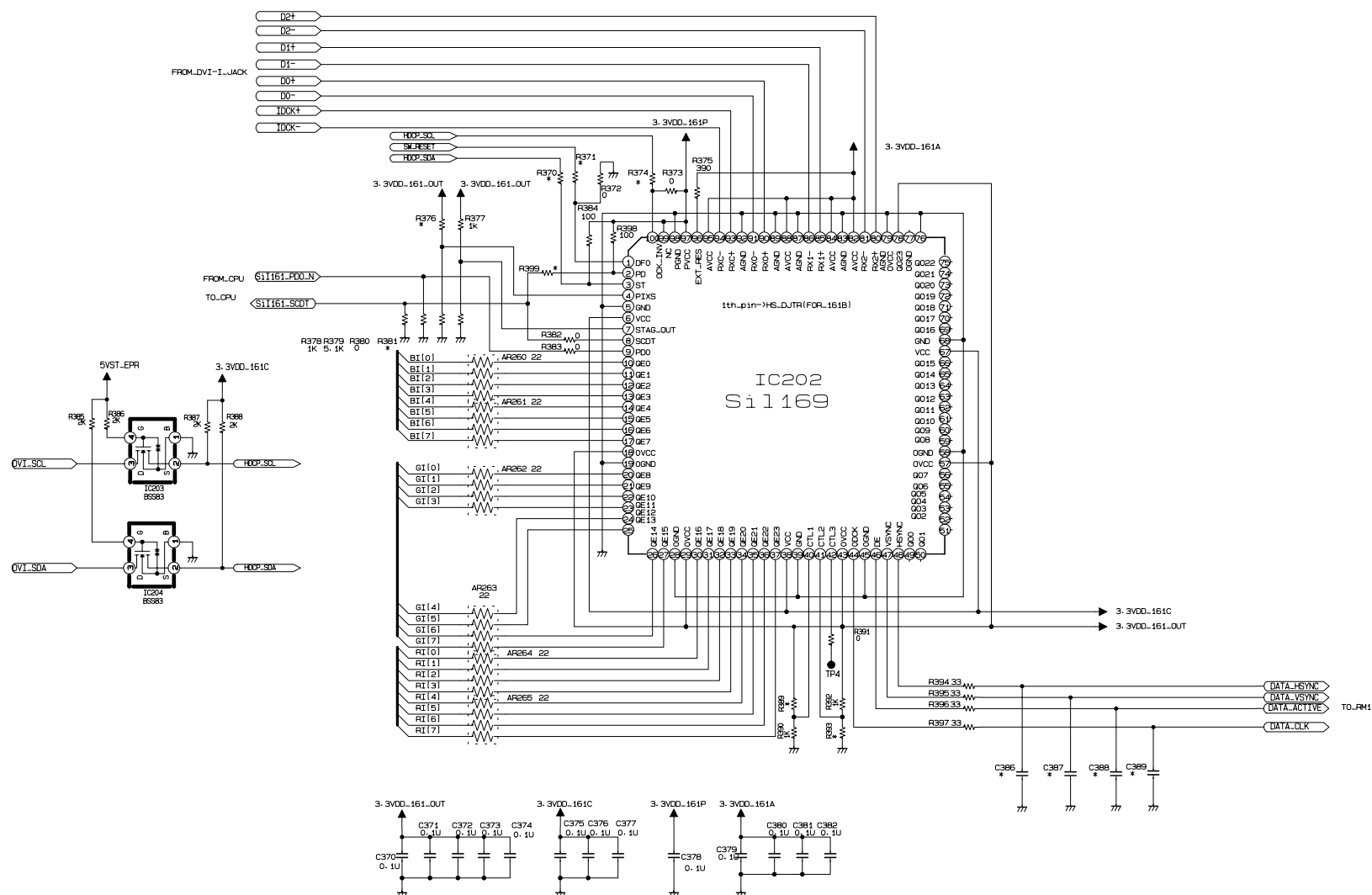
# # 1 INPUT

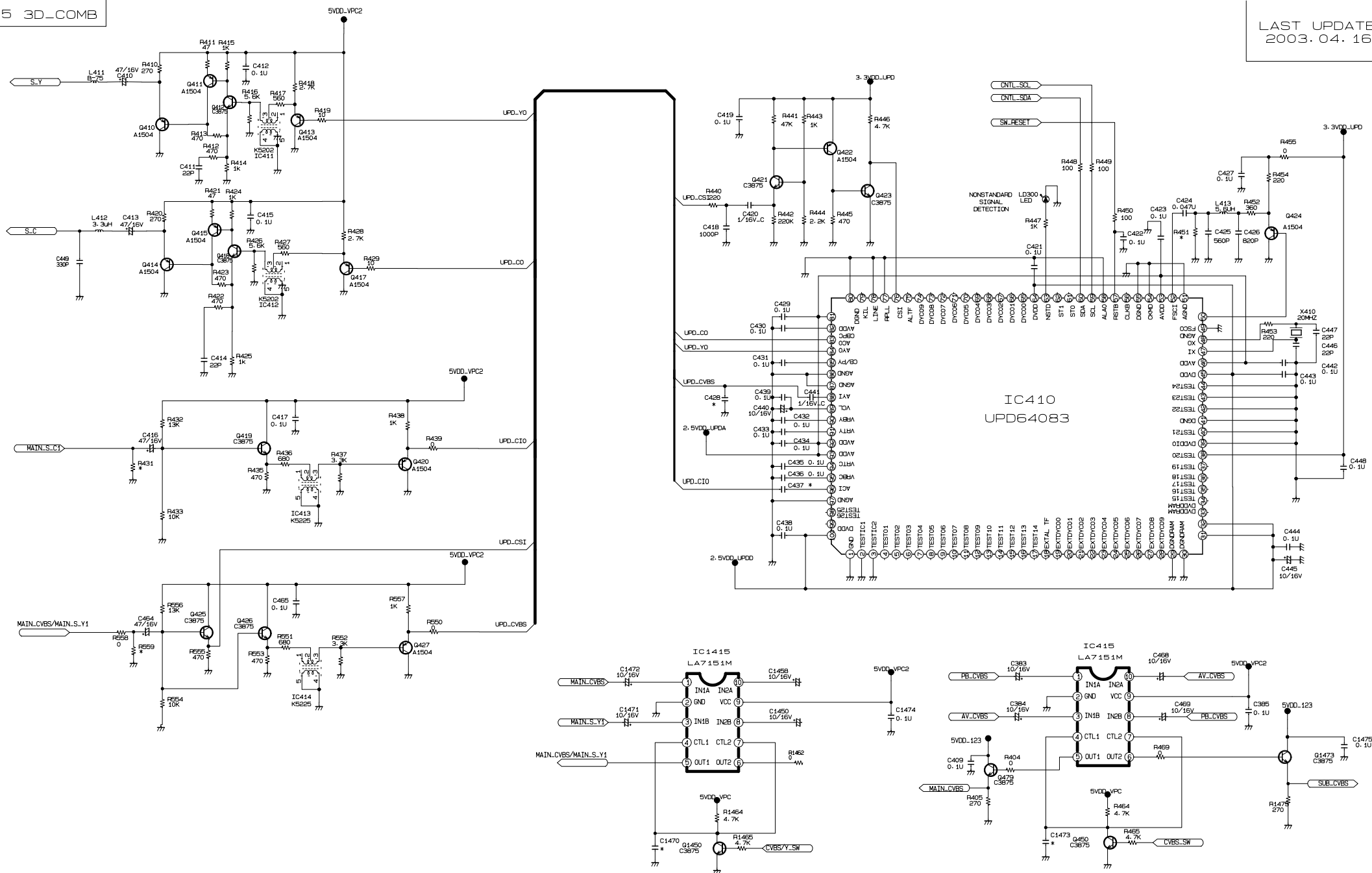




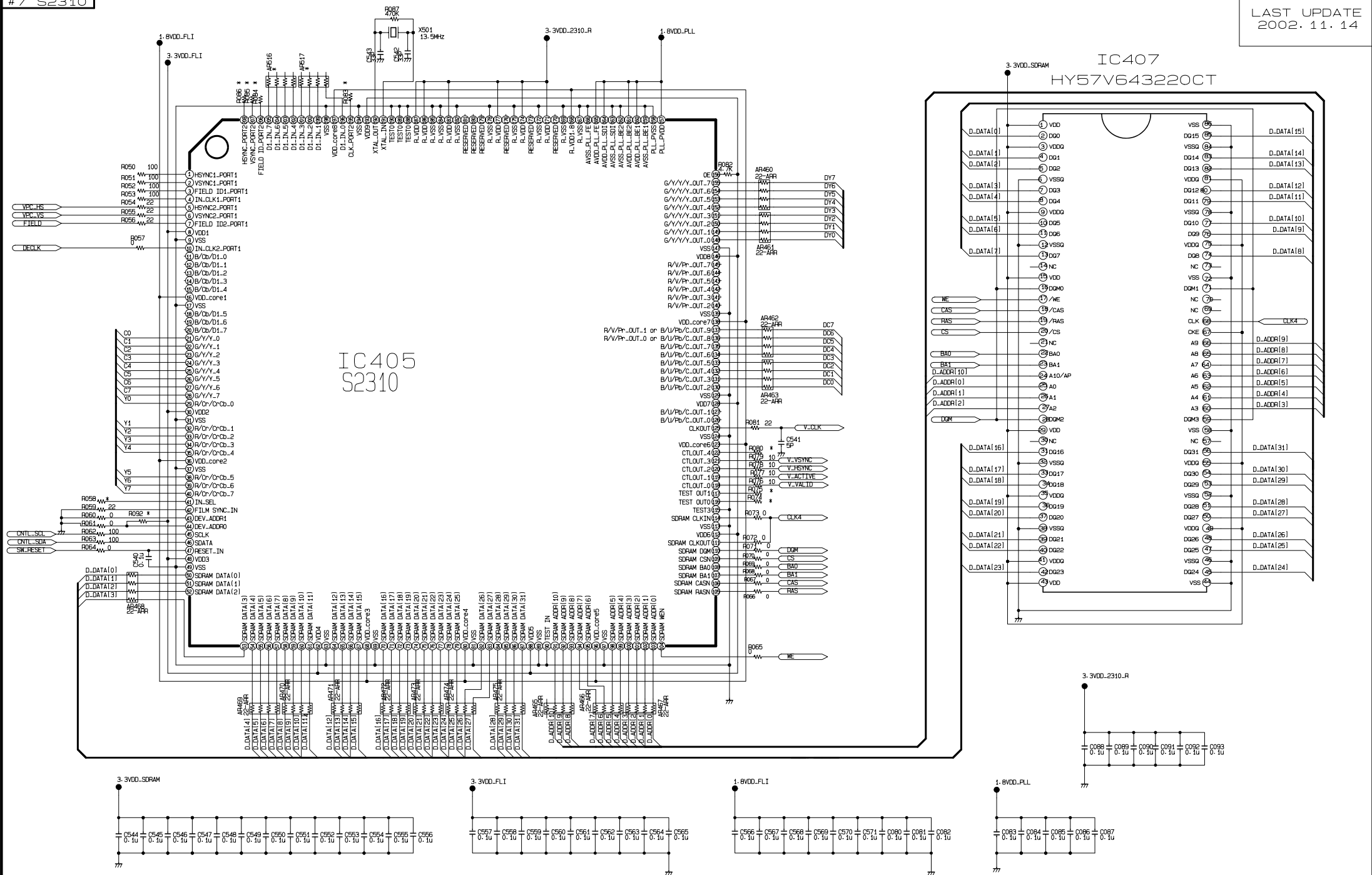


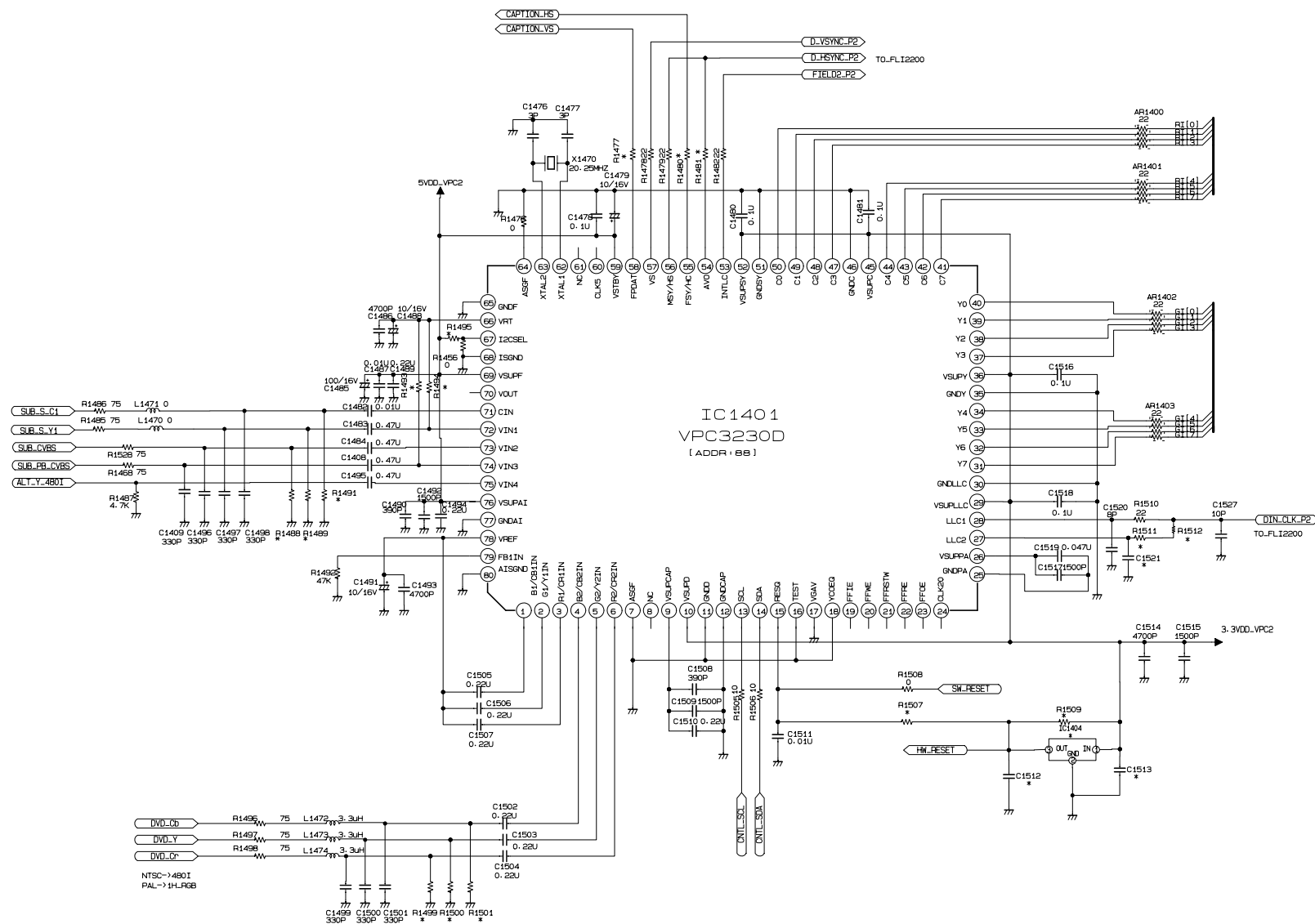




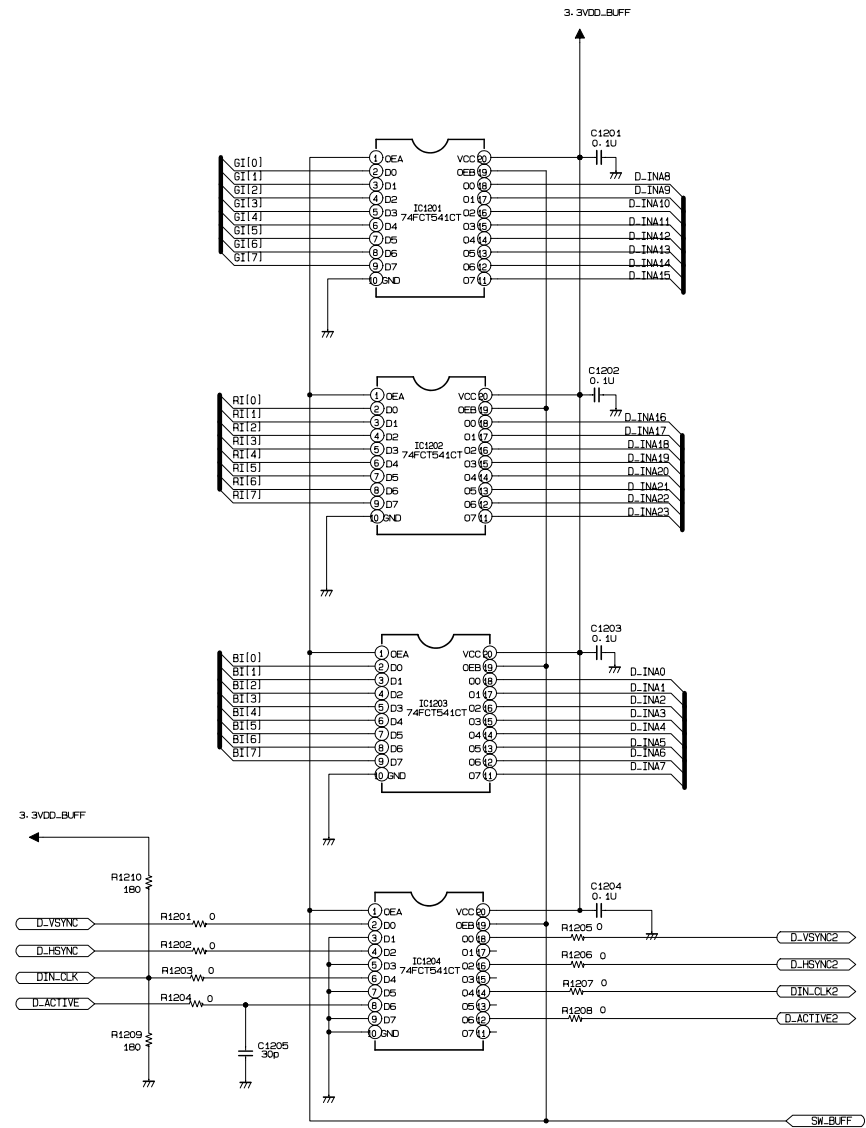
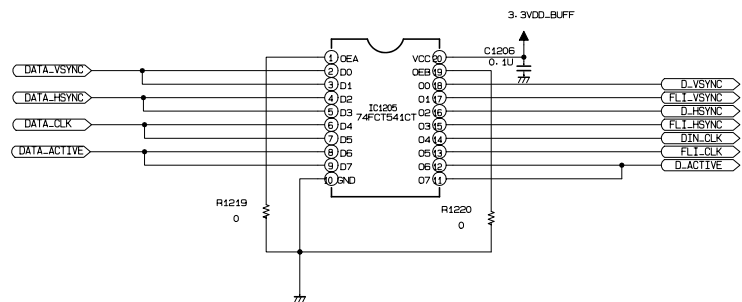




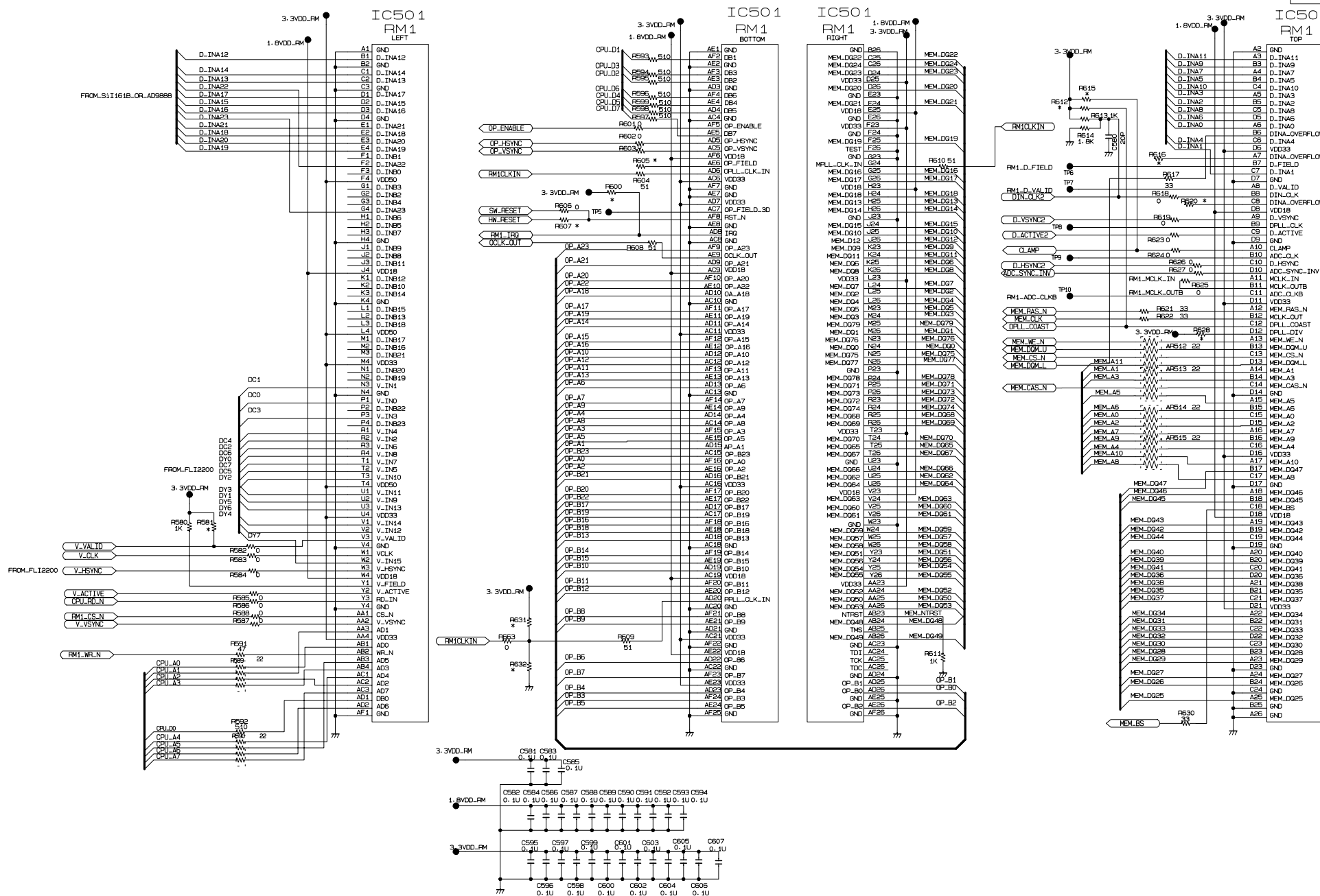


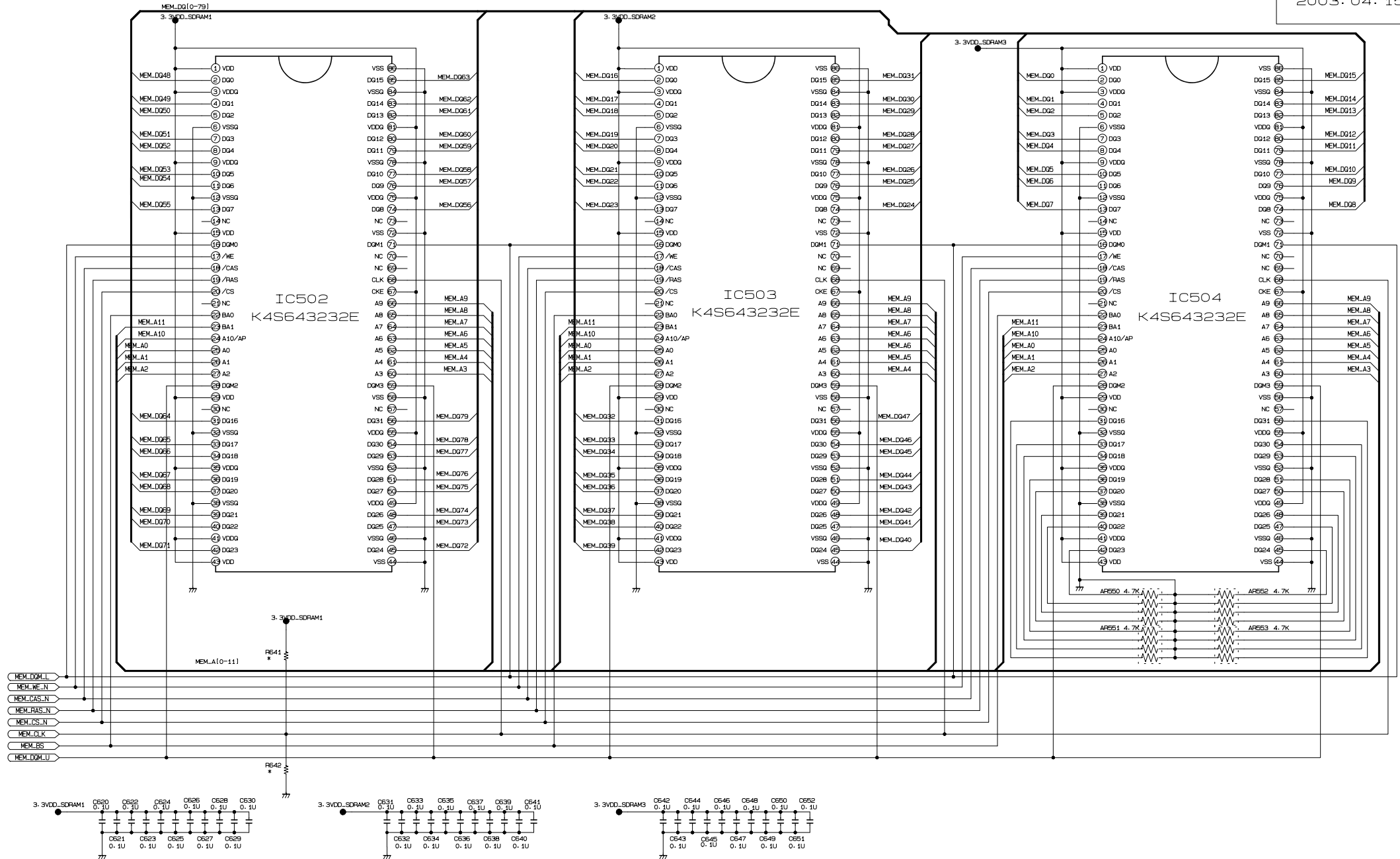


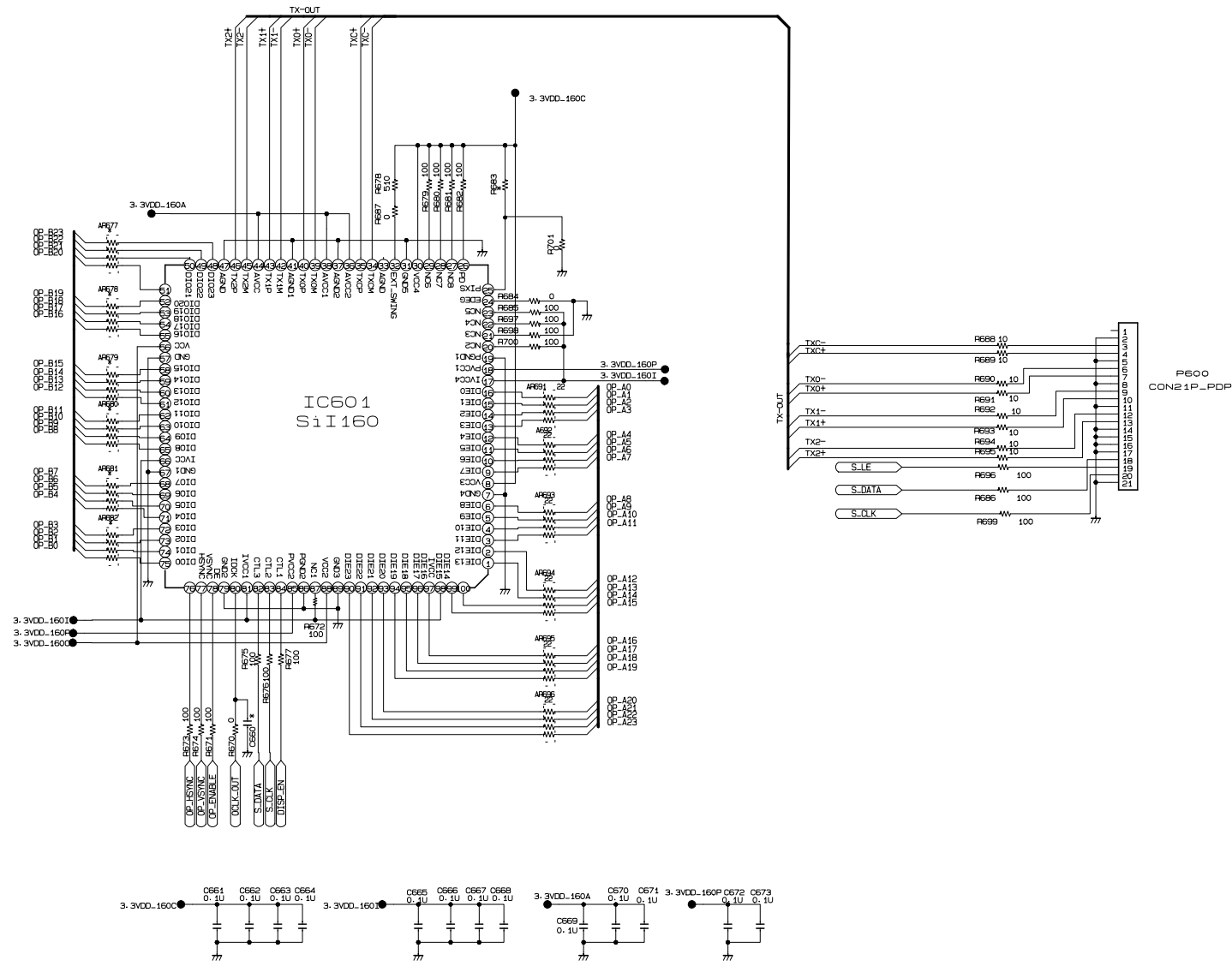


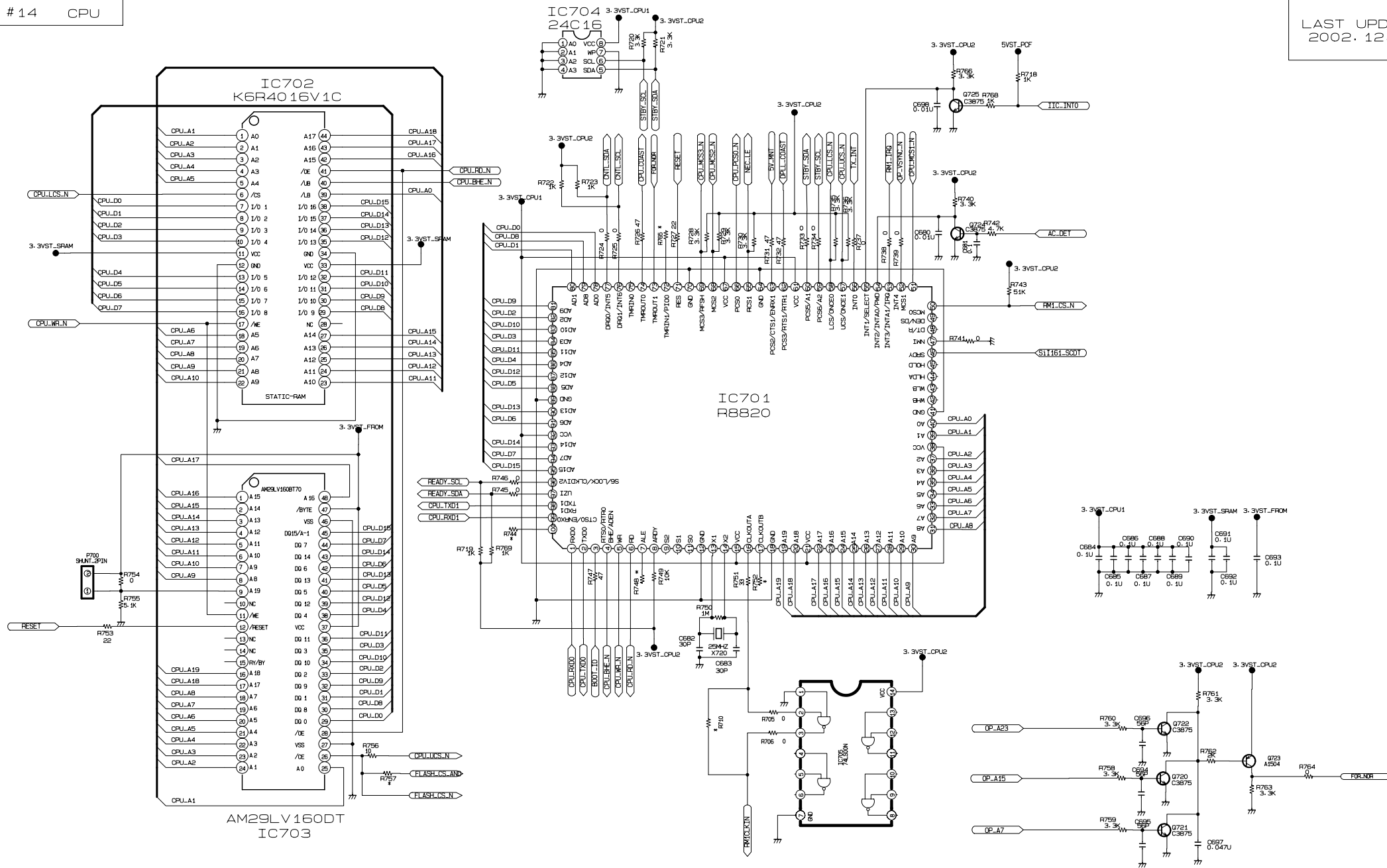






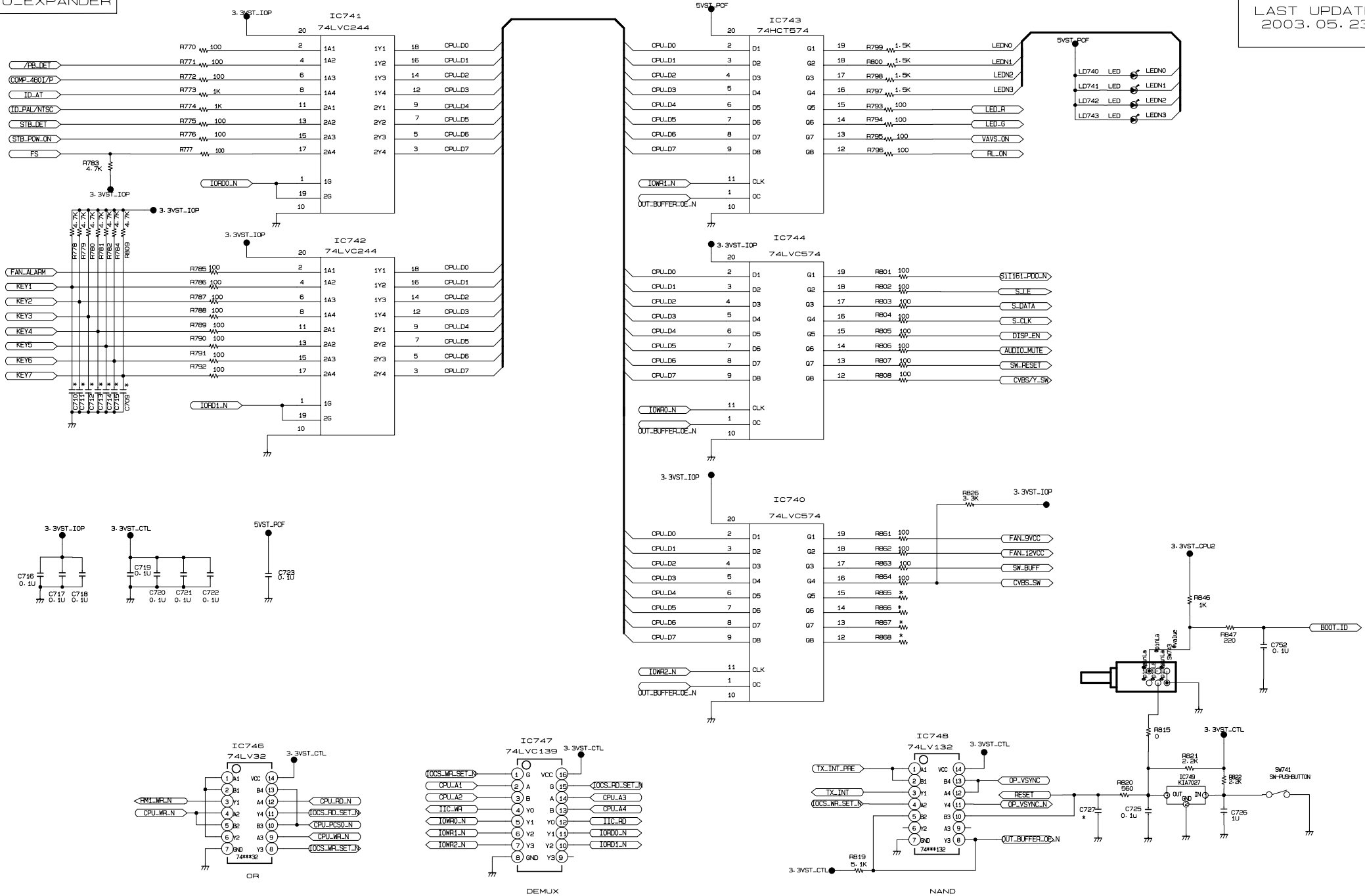


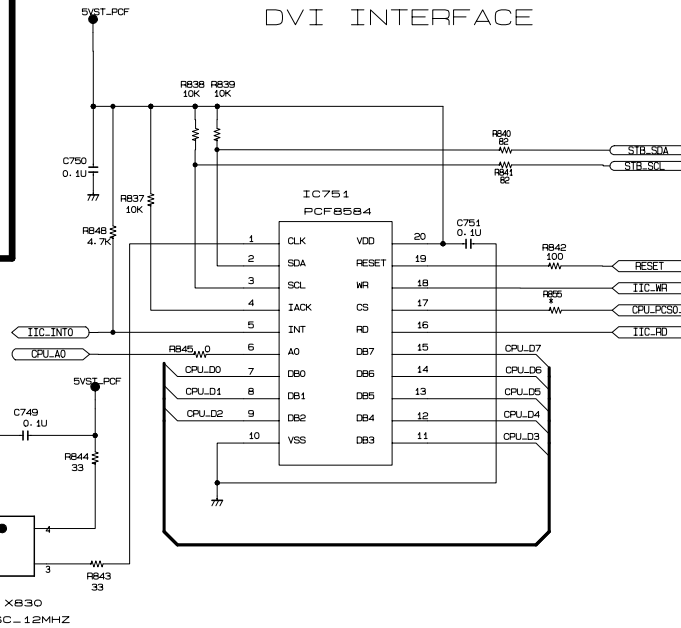
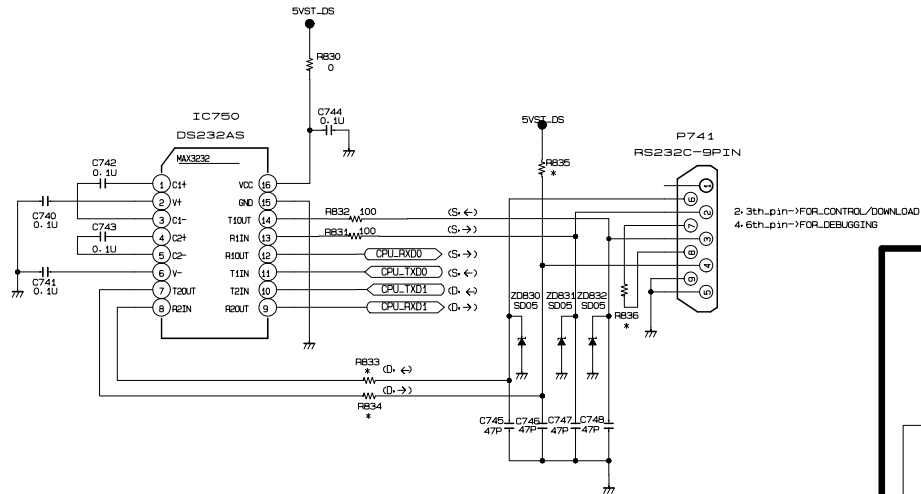
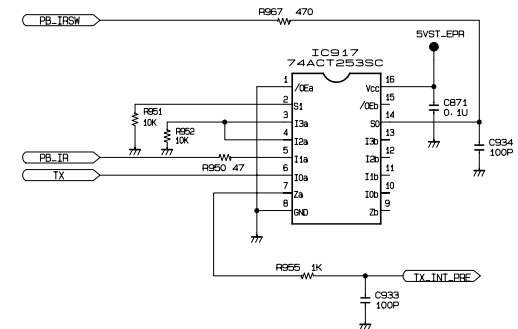
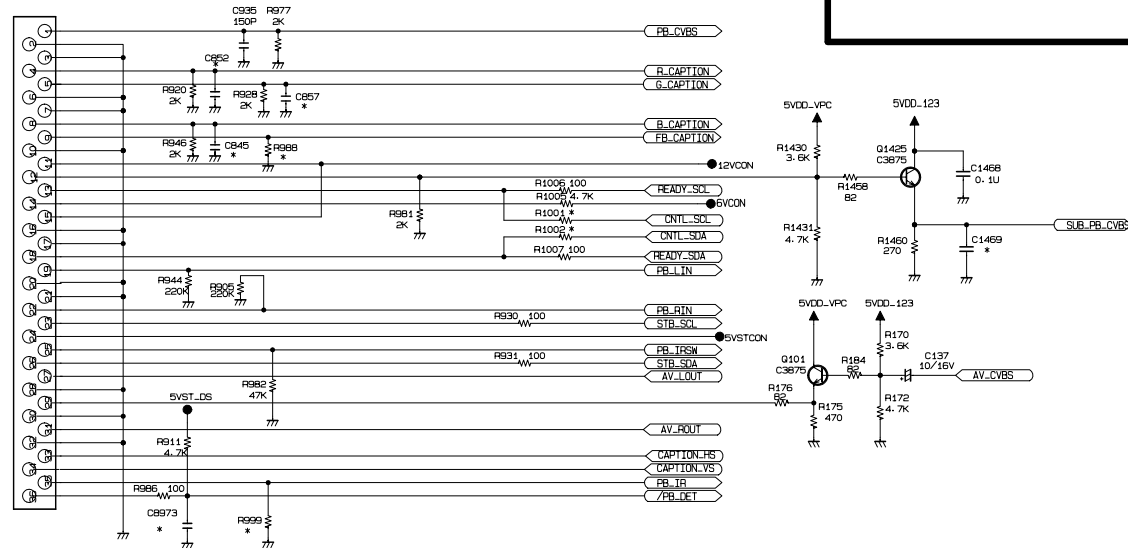


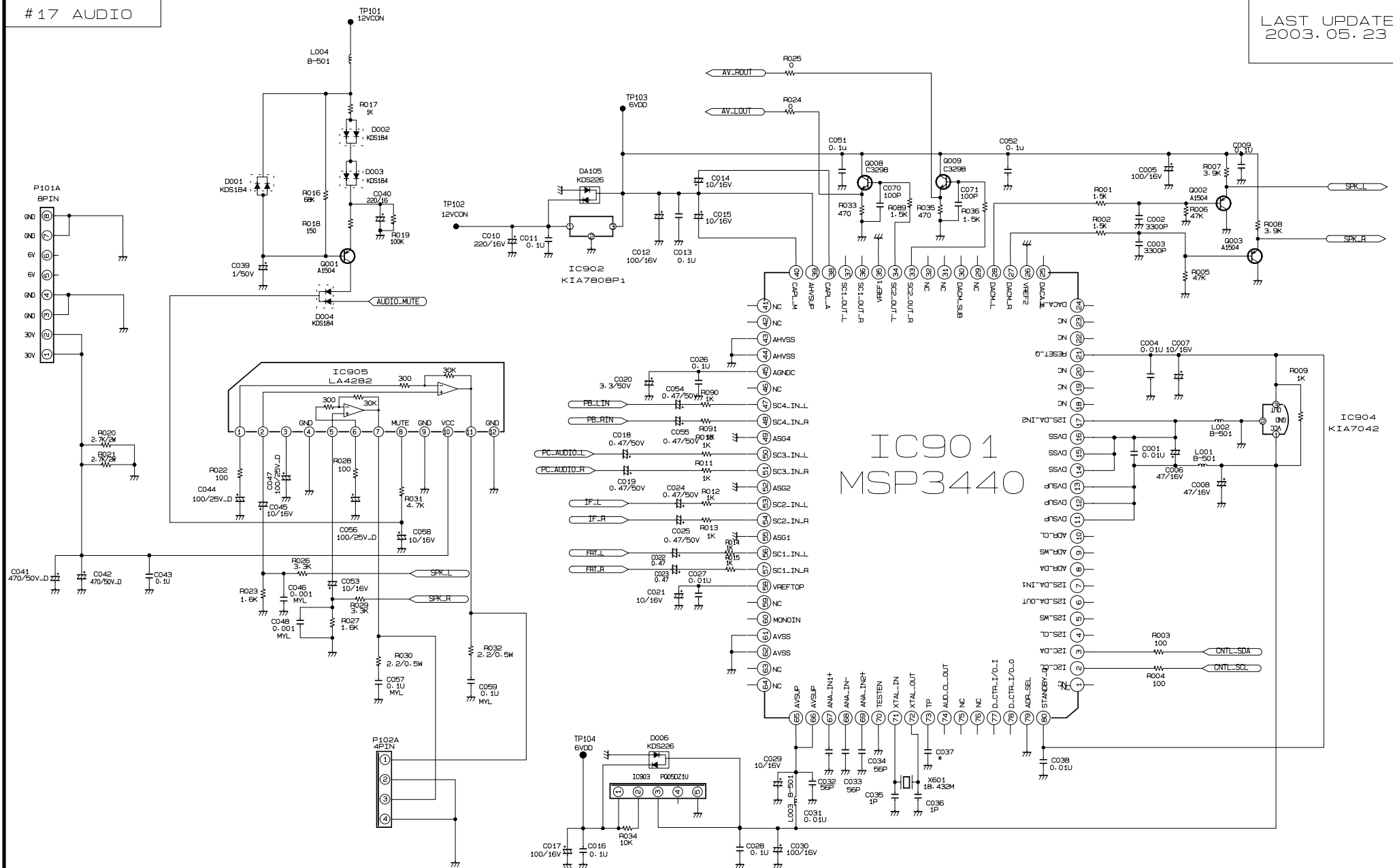


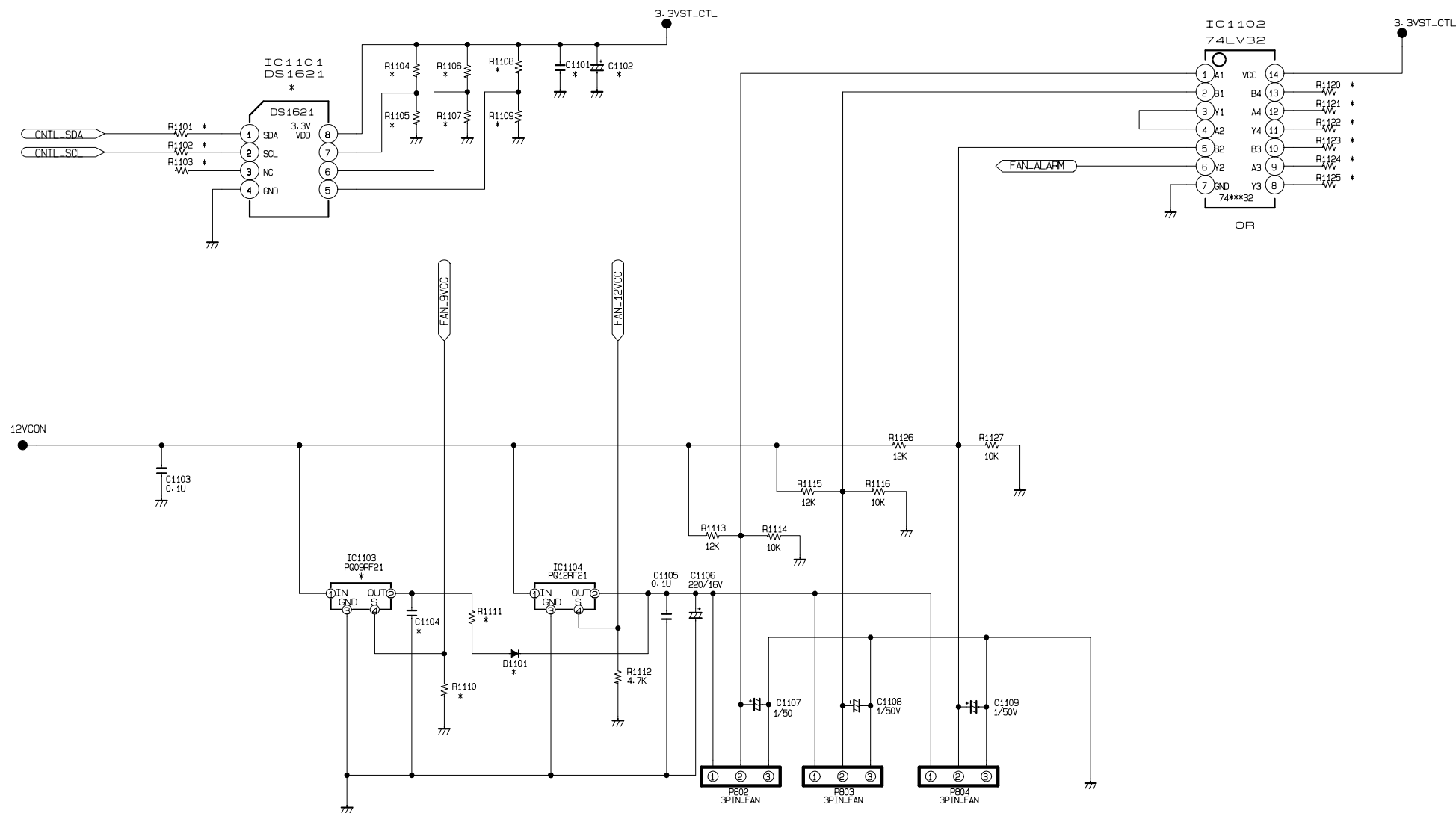
# #15 IO\_EXPANDER

LAST UPDATE  
2003.05.23

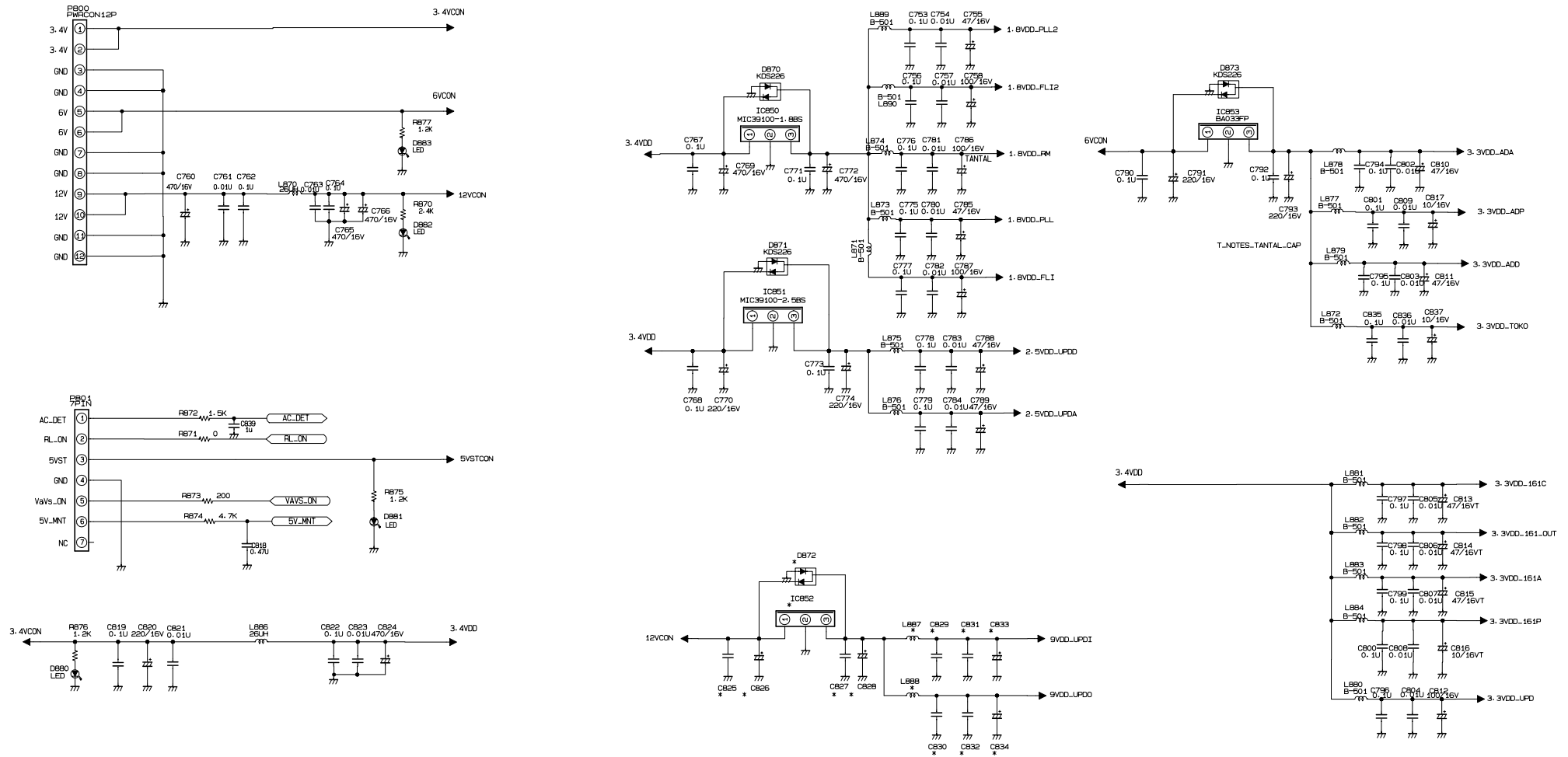


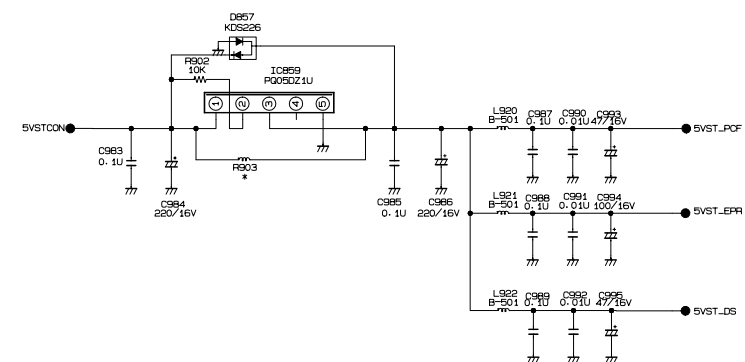
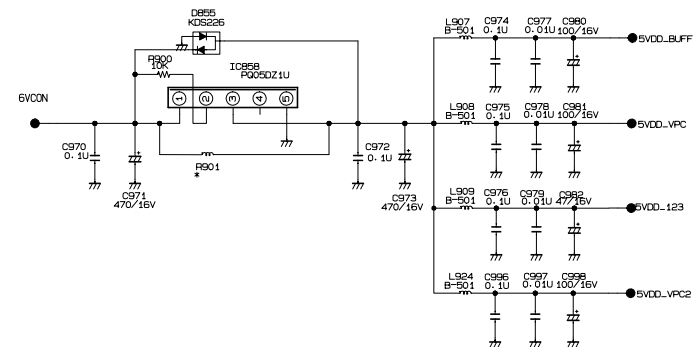
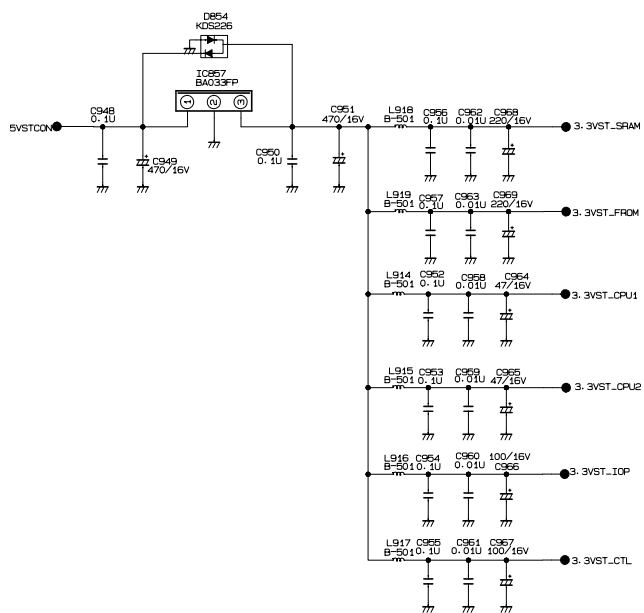
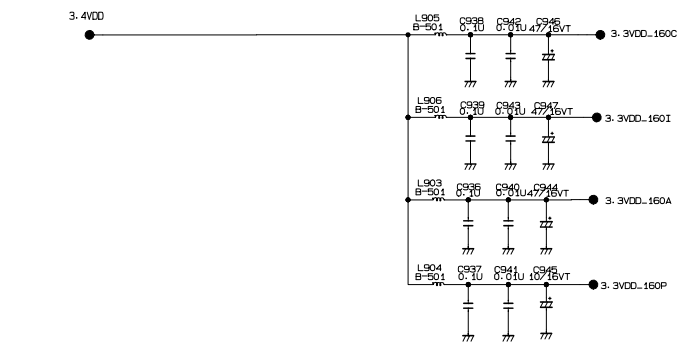
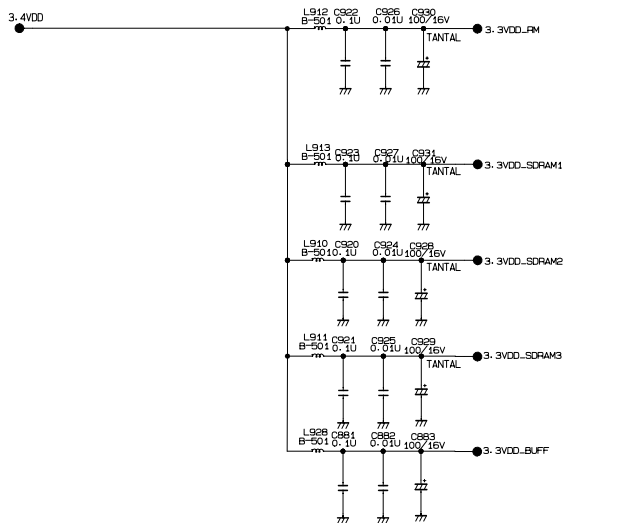
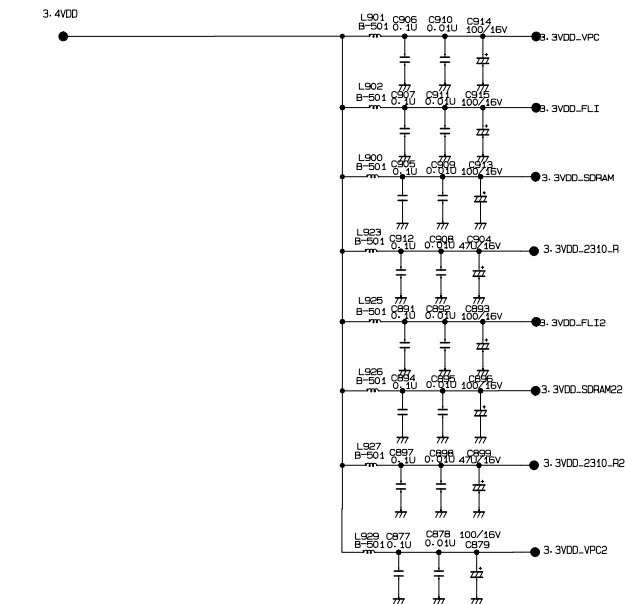
P036  
36PIN.D-SUB

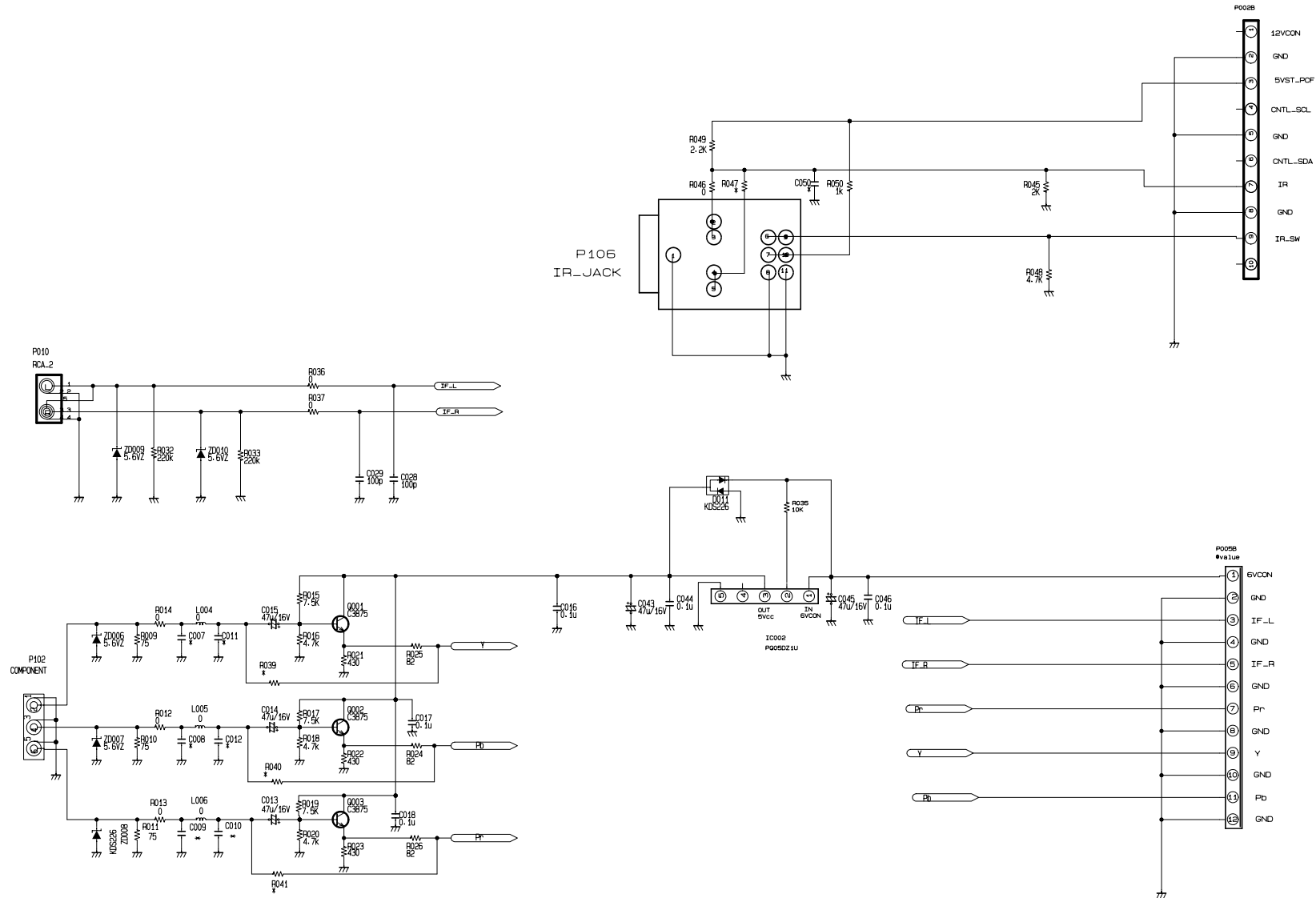


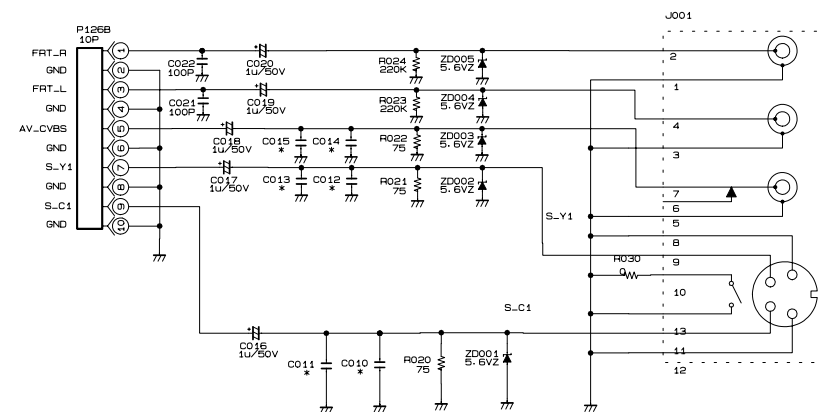
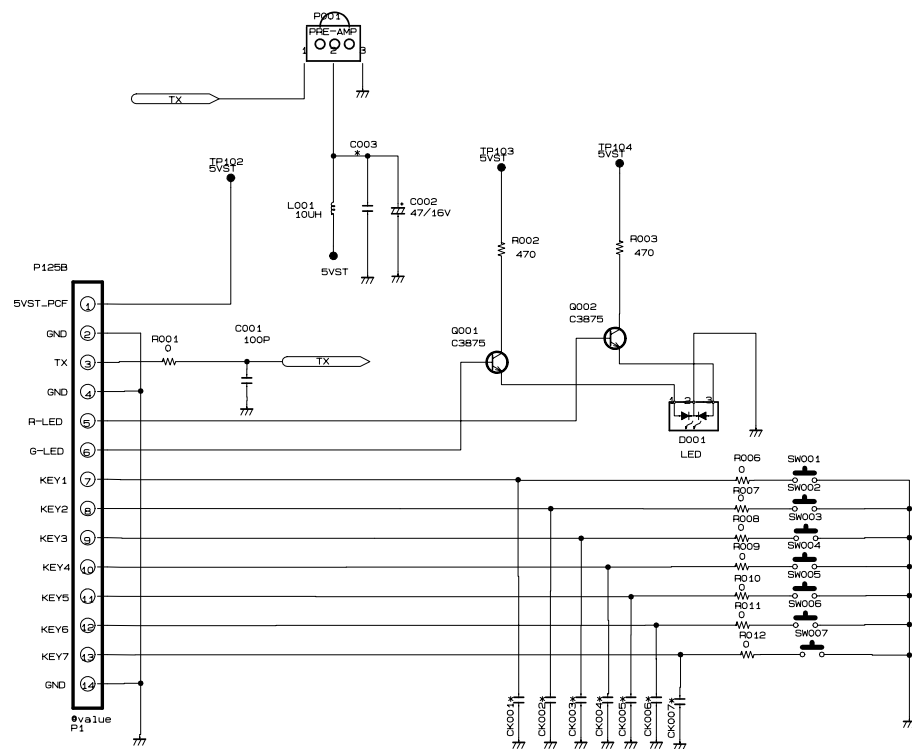




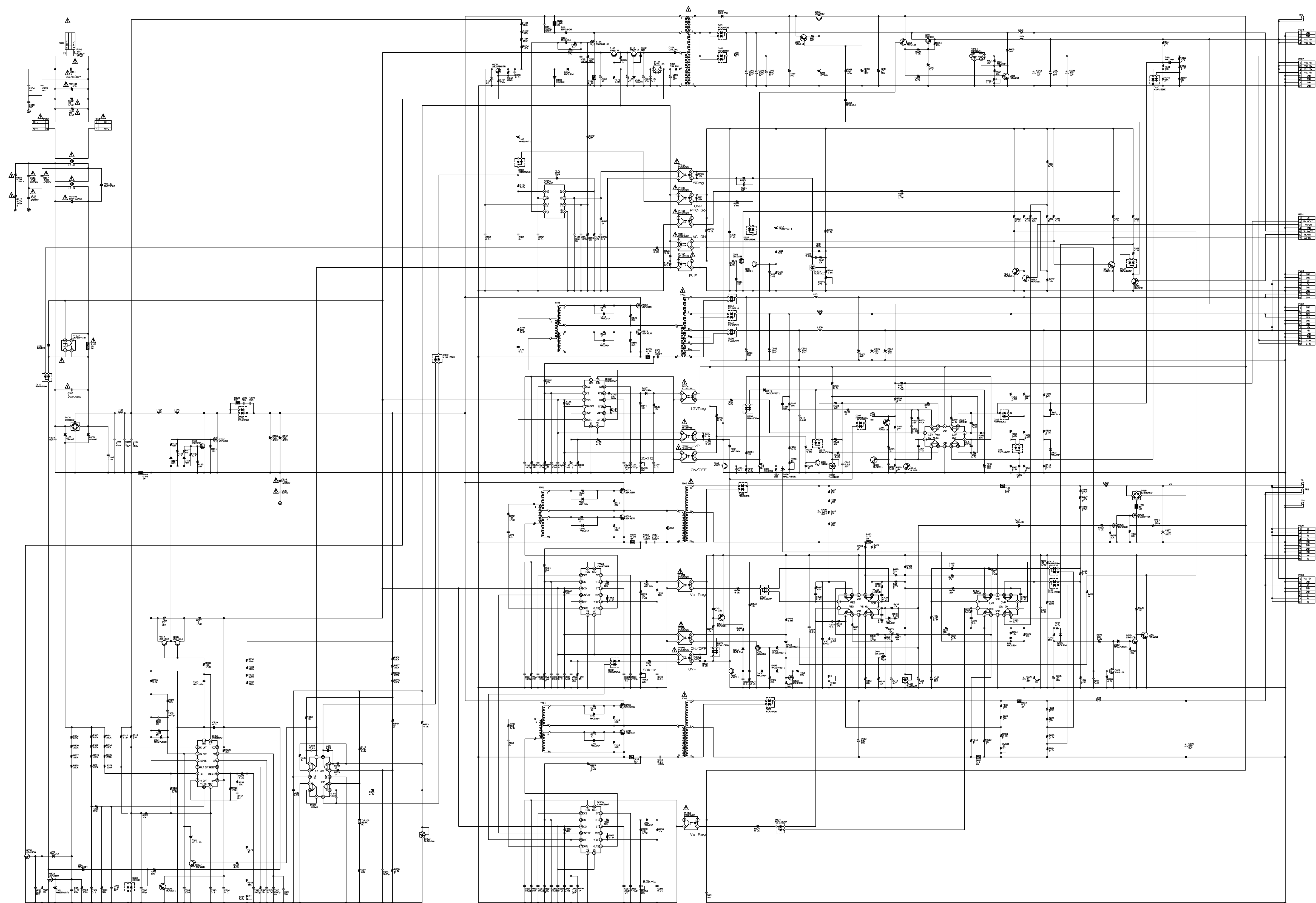








PD-4225S POWER PWB



Note:  
 \* All capacitors are in  $\mu\text{F}$ . (p means pF)  
 50V unless otherwise noted.  
 \* All resistors are in ohms.  
 1/10W unless otherwise noted.