

# HITACHI

## SM016



**SERVICE MANUAL  
MANUEL D'ENTRETIEN  
WARTUNGSHANDBUCH**

**P50T01E  
P50T01U  
P50TP01E  
P50TP01U  
P42T01E  
P42T01U  
P42TP01E  
P42TP01U**

### **CAUTION:**

Before servicing this chassis, it is important that the service technician read the "Safety Precautions" and "Product Safety Notices" in this service manual.

### **ATTENTION:**

Avant d'effectuer l'entretien du châassis, le technicien doit lire les «Précautions de sécurité» et les «Notices de sécurité du produit» présentés dans le présent manuel.

### **VORSICHT:**

Vor Öffnen des Gehäuses hat der Service-Ingenieur die „Sicherheitshinweise“ und „Hinweise zur Produktsicherheit“ in diesem Wartungshandbuch zu lesen.

Data contained within this Service manual is subject to alteration for improvement.

Les données fournies dans le présent manuel d'entretien peuvent faire l'objet de modifications en vue de perfectionner le produit.

Die in diesem Wartungshandbuch enthaltenen Spezifikationen können sich zwecks Verbesserungen ändern.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

**Plasma TV  
May 2007**

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**CAUTION FOR SAFETY**



Please read this page before repairing the monitor.








This page explains the following items for keeping the safety of the set and preventing accidents during repair.

● **Symbols used:**

 <b>Warning</b>	This symbol means "possibility of death or heavy damage"
 <b>Caution</b>	This symbol means "possibility of damage or breakage"

	This symbol means "CAUTION"
	This symbol means "POSSIBILITY of ELECTRIC SHOCK"

	This symbol means "MUST"
	This symbol means "DO NOT"

 <b>WARNING</b>	
<p>■ <b>Follow instructions.</b></p> <p> Special attention parts are indicated on cabinet, chassis and parts by label.</p> <p>Please follow the notes in [Safety Instructions] in the User's Manual.</p>	<p>■ <b>Keep the same style of wiring.</b></p> <p> The Monitor uses insulating tubes or tapes for safety and some components are kept at a distance from PCB surfaces for safety.</p> <p>Internal leads are kept from hot- or high voltage parts by clampers or styling. Return wiring to original condition after repair to prevent electric shock or fire.</p>
<p>■ <b>Prevent electric shock.</b></p> <p> Take care during working because the monitor has high voltage parts and power supply parts.</p> <p>Possibility of electric shock if these parts are touched.</p> <p>Disconnect the mains plug during overhaul, reassembly or parts change. Death or injury by electric shock may occur if live parts are touched.</p>	<p>■ <b>Perform safety check after finishing.</b></p> <p> Every part (removed screws, components and wiring) should be returned to its original condition.</p> <p>Check around the repair position for damage and measure insulation impedance by using a meg-ohm meter.</p> <p>Confirm that the value of impedance is more than 4M ohm. Electric shock or fire may occur if the value is less than 4M ohm.</p>
<p>■ <b>Use recommended components.</b></p> <p> Components and parts with special characteristics for safety or reliability are indicated in parts lists and circuit diagrams by the <math>\Delta</math> mark.</p> <p>Electric shock or fire may occur if non-recommended components or parts are used.</p>	<p>■ <b>The code and combination circuit of the HDCP is not a repairable item.</b></p> <p> Never remove the shield case that is assembled to the code and combination circuit of the HDCP.</p>

## PRECAUTIONS

### Cleaning the plasma screen panel of the monitor

Before cleaning the monitor, turn off the monitor and disconnect the power plug from the power outlet. To prevent scratching or damaging the plasma screen face, do not knock or rub the surface with sharp or hard objects. Clean the screen with a soft cloth moistened with warm water and dry with a soft cloth. If this is not sufficient, use a cloth with mild detergent. Do not use harsh or abrasive cleaners.

### Cleaning the cabinet of the monitor

Use a soft cloth to clean the cabinet and control panel of the monitor. When excessively soiled dilute a neutral detergent in water, wet and wring out the soft cloth then wipe with a dry soft cloth. Never use acid/alkaline detergents, alcoholic detergents, abrasive cleaners, soap powder, OA cleaners, car wax, glass cleaners, etc. because these cause discoloration, scratches or cracks.

### Information for users applicable in European Union countries



This symbol on the product or on its packaging means that your electrical and electronic equipment should be disposed at the end of its life separately from household waste. There are separate collection systems for recycling in EU. For more information, please contact the local authority or the dealer where you purchased the product.

## 1. Features

### Large-screen, high-definition plasma display panel

The 50-inch colour plasma display panel, with a resolution of 1280 (H) x 1080 (V) pixels, and the 42-inch colour plasma display panel, with a resolution of 1024 (H) x 1080 (V) pixels, creates a high-definition, large-screen (aspect ratio: 16:9) and low-profile flat display. Free from electromagnetic interferences from geomagnetic sources and ambient power lines, the panel produces high-quality display images free from colour misconvergence and display distortion.

### High Performance Digital Processor

A wide range of input signals can be handed, including composite, component and HDMI. High Definition Digital Processor creates the fine-textured image with dynamic contrast.

### Easy-to-use remote control and on-screen display system

The remote control included eases the work of setting display controls. Further, the on-screen display system displays the status of signal reception and display control settings in an easy-to-view fashion.

### Connecting to an Audio Visual Device

• Three Scart terminals<sup>\*1</sup>, composite/S terminal<sup>\*2</sup>, a component terminal<sup>\*3</sup> and two HDMI terminals have been added. A composite video output terminal is also provided as a monitoring output.

<sup>\*1</sup> AV1 scart applies composite/ S-video

AV2 and 3 scart applies composite/ RGB

<sup>\*2</sup> AV5 composite/S-Video=Side Input

<sup>\*3</sup> AV4 can be connected to the equipment with either component or composite Output.

### SD card slot installed

### Power Swivel Feature

Allows turning the plasma display left or right within  $\pm 30$  degree using the remote control.

**Digital Terrestrial Television Broadcasting**

Converting to digital signal enables more channels and add various useful features, such as Electric Programme Guide, Digital Teletext and so on. Further, digital signal can create a high quality picture.



This logo indicates that the product is compliant with European Digital Broadcasting. DVB is a registered trademark of the DVB Project.



This logo indicates that the product is set up to view digital terrestrial TV. FREEVIEW and the FREEVIEW logo are trade marks of DTV Services Ltd and are used under license. FREEVIEW Logo © DTV Services Ltd 2002.



## 2. Specifications

Panel	Display dimensions	Approx. 50 inches (1106(H) x 626(V) mm, diagonal 1270mm)	Approx. 42 inches (930(H) x 523(V) , diagonal 1060mm)
	Resolution	1280(H) x 1080 (V) pixels	1024(H) x 1080 (V) pixels
Net dimensions		including Stand: 1240(W)x883(H)x423(D) mm excluding Stand: 1240(W)x821(H)x128(D) mm	including Stand: 1060(W)x780(H)x360(D) mm excluding Stand: 1060(W)x710(H)x110(D) mm
Net weight		including Stand: 47.0kg excluding Stand: 41.0kg	including Stand: 36.2kg excluding Stand: 29.2kg
Ambient conditions	Temperature	Operating: 5°C to 35°C, Storage: 0°C to 40°C	
	Relative humidity	Operating: 20% to 80%, Storage: 20% to 90% (non-condensing)	
Power supply		AC 220~240V, 50Hz	
Power consumption/ at standby		451W / <0.8W	353W / <0.8W
Audio output		Speaker total 20W	
(VIDEO input)			
Input terminals		AV1 : composite video input terminal (SCART) S video input terminal (SCART) L/R audio input terminal (SCART) AV2*3 : composite video input terminal (SCART) RGB video input terminal (SCART) L/R audio input terminal (SCART) AV4 : composite video input terminal (RCA) component video input terminal.(RCA) L/R audio input terminal (RCA) AV5 : composite video input terminal (RCA) S video input terminal (Mini DIN) L/R audio input terminal (RCA) HDMI 1*2 : HDMI input terminal Audio input terminal (3.5mm Stereo Mini Jack) Photo Input : Photo Input terminal / SD card slot	
Input signals		Composite video: PAL, SECAM, NTSC3.58, NTSC4.43, PAL60 Component video: 480i, 576i, 480p, 576p, 720p/50, 720p/60, 1080i/50, 1080i/60 HDMI: 480i, 576i, 480p, 576p, 720p/50, 720p/60, 1080i/50, 1080i/60, 1080p/50, 1080p/60	
Output Signals		OUTPUT (MONITOR): composite video monitor-output terminal (RCA) OUTPUT (MONITOR): L/R audio monitor- output terminal (RCA) OUTPUT (HEADPHONE): L/R audio monitor- output terminal (3.5mm Stereo Mini Jack) AV1 : composite video output terminal (SCART) L/R audio output terminal (SCART) AV2*3 : composite video output terminal (SCART) L/R audio output terminal (SCART) Optical Out: PCM	
(RF input)			
Input terminal / Receiving range		ANT: 75Ω Unbalanced / 40~870MHz	
RF Video System		PAL B, G, H / I / D, K SECAM B, G / K1 / L, L' / D,K DVB-T	

- The unit takes at least 30 minutes to attain the status of optimal picture quality.

### 3. Service points

#### ● Lead free solder

This product uses lead free solder (unleaded) to help preserve the environment. Please read these instructions before attempting any soldering work.

**Caution:** Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead free solder can splatter at high temperatures (600°C).

#### ■ Lead free solder indicator

Printed circuit boards using lead free solder are engraved with an "F."

#### ■ Properties of lead free solder

The melting point of lead free solder is 40-50°C higher than leaded solder.

#### ■ Servicing solder

Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended.

Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

#### Precautions when using leaded solder

- Remove all lead free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead free solder has been completely melted (do not apply the soldering iron without solder).

#### ■ Servicing soldering iron

A soldering iron with a temperature setting capability (temperature control function) is recommended.

The melting point of lead free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

#### Recommended soldering iron:

- Soldering iron with temperature control function (temperature range: 320-450°C)

Recommended temperature range per part:

Part	Soldering iron temperature
Mounting (chips) on mounted PCB	320°C±30°C
Mounting (chips) on empty PCB	380°C±30°C
Chassis, metallic shield, etc.	420°C±30°C

#### Boards which use lead free solder

- ① CONTROL PCB (Control PCB, Slot PCB, SD PCB)
- ② TERMINAL PCB (Terminal PCB, LED PCB, Swivel PCB)
- ③ FILTER PCB
- ④ MAIN PCB

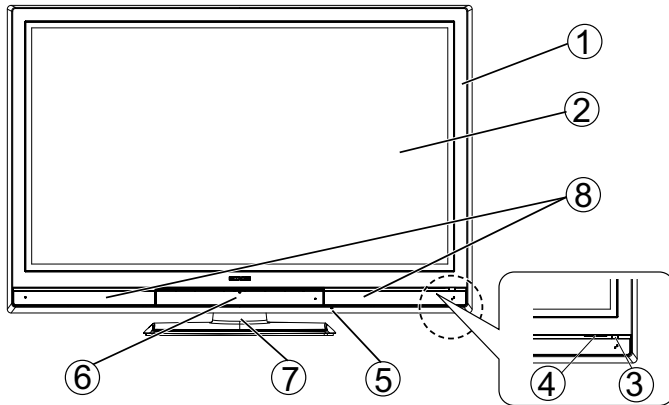
#### ■ Readjustment Power supply voltage

When a PANEL or a Power Unit is exchanged, power supply voltage needs to be adjusted. Please adjust to make the values of Va and Vs of as should on the label currently stuck on the panel back upper parts. Adjustment is performed by VR in the power supply unit. Please refer to the procedures of "Va" and "Vs" adjustments on page 10.

## 4. Component names

[Main unit]

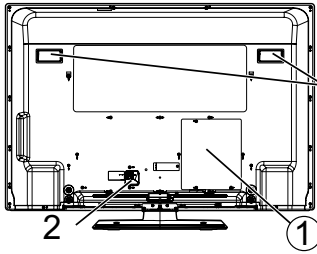
### Front Panel



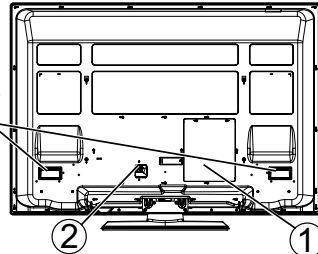
- ① Cabinet
- ② Panel
- ③ Remote Control Receiver
- ④ Indicating Lamp
- ⑤ Main Power Switch (on the bottom surface)
- ⑥ Control Panel and Front Input (see below for details)
- ⑦ Desktop Stand
- ⑧ Speaker

### Rear Panel

42" models

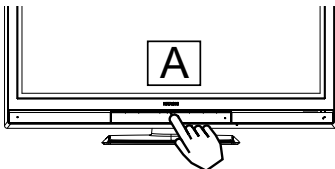


50" models



- ① Terminal Board (External Device Connection)
- ② Power Cord Socket
- ③ Handgrips

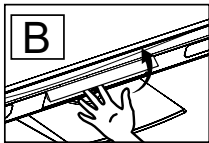
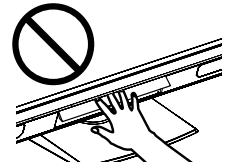
### Control Panel (including front input)



Push here to open the door.

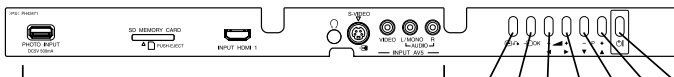
#### CAUTION

- Do not place your fingers into the gap of the opened door. If your fingers are caught in the front door, you may be injured.



- A Push the bottom centre of the front door to unlock.
- B Lift it up from the underside of the door.

42" models

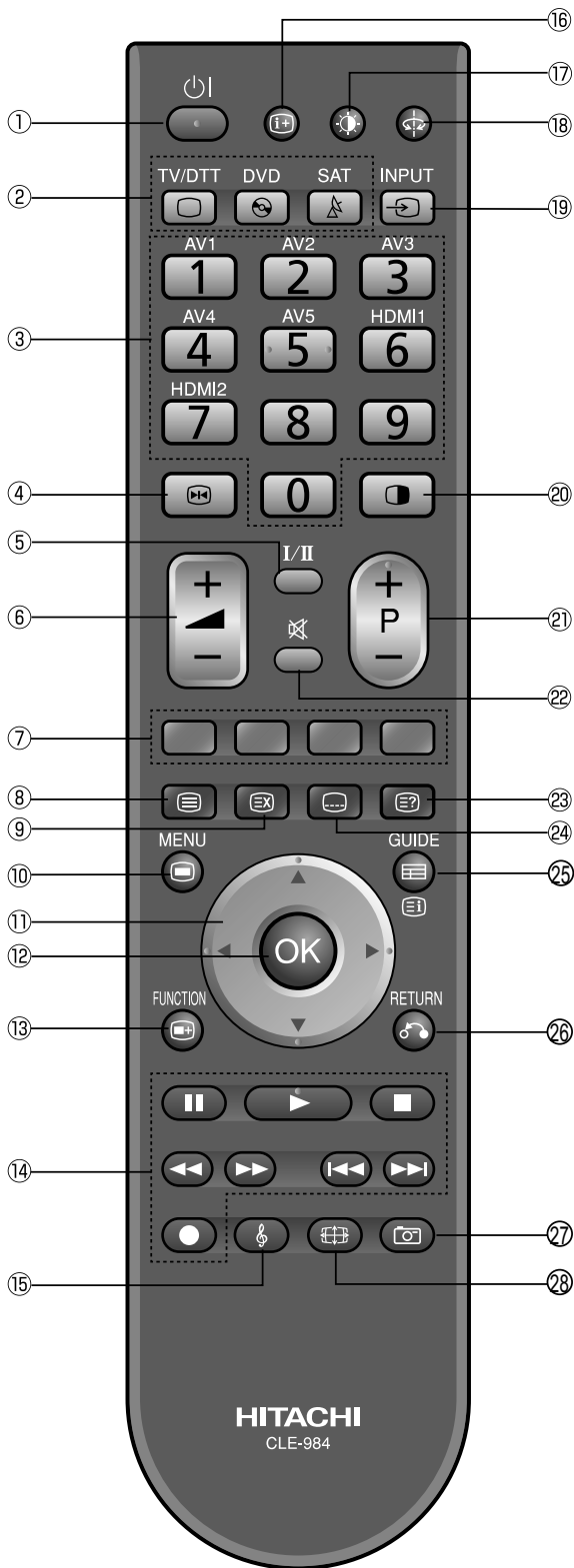


50" models



- ① Front Input
- ② Menu/Return button
- ③ Input Select/OK button
- ④ Volume Down/◀ button
- ⑤ Volume Up/▶ button
- ⑥ Channel Down/▼ button
- ⑦ Channel Up/▲ button
- ⑧ Sub Power button

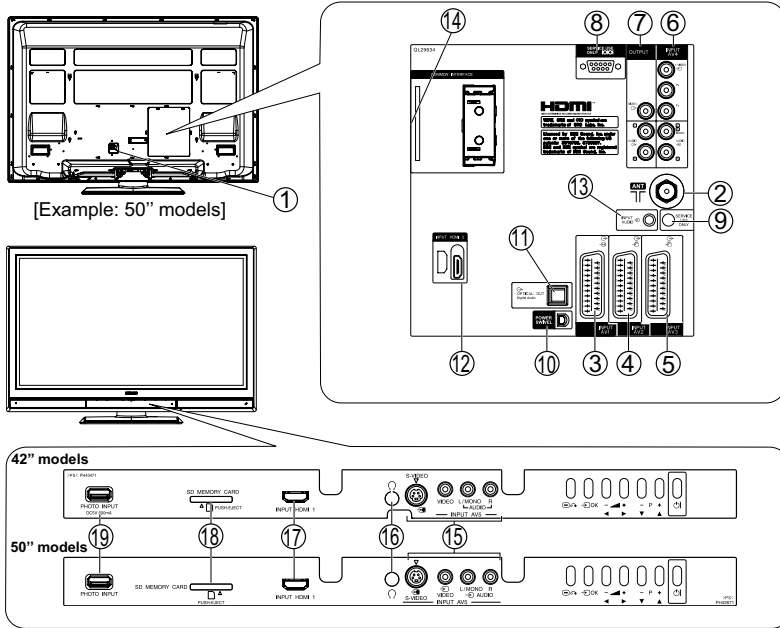
[Remote control]



- ① **Sub Power**
- ② **Function Select (TV/DTT, DVD, SAT)**  
Press these buttons to select function mode. The selected button blinks once. Normally, select "TV/DTT".
- ③ **Programme Select/Input Mode [Page Select]**  
Press these buttons to select a TV programme directly. You can also use these buttons when changing the Input mode.
- ④ **Freeze/Multi Mode [Hold]**  
Press this button to change the picture to freeze mode. Press it again to return to normal picture. In addition, during multi-picture mode, this changes the type of 2-Picture mode. (Also, it holds the page in teletext mode.)
- ⑤ **CHI/II**  
This is exclusively for TV audio A2/NICAM mode. Also, press this button to select Audio Language in DTT mode.
- ⑥ **Volume Up/Down**
- ⑦ **Colour [Colour]**
- ⑧ **TV/Text [TV↔Text]**  
This switches between the TV mode and the Teletext mode.
- ⑨ **[Cancel]**
- ⑩ **Menu**  
Press this button to select Main Menu.
- ⑪ **Cursor [Item Select]**
- ⑫ **OK**
- ⑬ **Function Menu**  
Press this button to select Function Menu.
- ⑭ **DVD Control**  
You can use these buttons whilst operating the selected brand of DVD player.
- ⑮ **Audio Mode**  
Audio mode can be changed each time pressed in the following sequence. Movie→Music→Speech→Favourite
- ⑯ **Recall**  
Press this button to show the input signal status.
- ⑰ **Picture Mode**  
Picture mode can be changed each time pressed in the following sequence. Dynamic→Natural→Cinema
- ⑱ **Swivel (with Desktop Stand)**  
This function is to rotate TV. Select the degree of rotation with cursor key.
- ⑲ **Input Select**  
You can use this to change the input mode.
- ⑳ **Multi Picture [Text↔TV+Text]**  
Press this button to change the picture to multi-picture mode. Press it again to return to normal picture.
- ㉑ **Channel Up/Down [Page Select]**
- ㉒ **Mute**
- ㉓ **[Reveal]**
- ㉔ **[Subtitle]**
- ㉕ **Guide [Index]**  
It displays EPG screen in DTT mode.
- ㉖ **Return**  
You can use this to return to the previous menu.
- ㉗ **Photo Input**  
This button is to display and control the pictures from digital still camera, USB card reader, or SD (MMC) card.
- ㉘ **Zoom**  
Press this button to change picture size.

The function indicated by [ ] are only for Teletext mode.

[Terminal Positions]



**Rear**

- ① Power Cord Socket
- ② Aerial Socket
- ③ AV1
- ④ AV2
- ⑤ AV3
- ⑥ AV4
- ⑦ Monitor Out
- ⑧ Service use only
- ⑨ Service use only
- ⑩ Power Swivel Terminal
- ⑪ Optical Out (Digital Audio)
- ⑫ HDMI 2
- ⑬ Mini stereo for Audio
- ⑭ Common interface slot

**Front**

- ⑮ AV5
- ⑯ Headphone terminal
- ⑰ HDMI 1
- ⑱ SD Memory Card slot
- ⑲ Photo Input terminal

**Connecting Procedure**

This unit is ready for various kinds of connections. Make a connection in the following steps. Be sure to turn off the Main Power first when connecting external equipment.

1. Connect Power Cord to the rear panel.
2. Connect Aerial Lead.
3. Connect your external equipments to the unit if any.
4. Connect the Power Plug to the Wall Socket.

## 5. Adjustment

### ● Activating Adjustment Mode

Use the remote controller with the set turned on to activate adjustment mode.

Press the Programme Select button "1", "GREEN" and "YELLOW" colour button at the same time and hold for more than 3 seconds.

The set displays adjustment mode.

### ● Changing data and Selecting Adjustment code

When the set is in adjustment mode, the cursor ◀, ▶, ▲, ▼ and OK buttons of the remote control may be used as adjustment keys.

▲, ▼ buttons are used for selecting adjustment code.

◀, ▶ buttons are used for changing data values.

OK button is used for confirming data.

After finishing adjustments press, the RETURN button. Adjustment mode is released and the set returns to normal condition.

### ● Memory Initialise operation

**NOTE:** The execution of this function returns the adjustment codes to preset values, therefore, adjustment data will be lost.

When performing MEMORY INITIALISE, the following items are not initialised.

- WHITE/BALANCE ADJUSTMENT DATA
- SUB CONTRAST ADJUSTMENT DATA
- CLANP OFFSET ADJUSTMENT DATA

However, the following items are initialised.

- OTHER ADJUSTMENT DATA
- FACTORY RESET ITEM

#### Procedure

- (1) Enter Adjustment Mode.
- (2) Select MEMORY INIT.
- (3) Activate MEMORY INIT by pressing cursor "Right" button for more than 3 seconds.
- (4) As for the whole Memory Initialise, the cyan screen becomes a green screen.  
It becomes a red screen in the case of abnormality.

### ● Checking accumulated time of panel.

Mentioned in the menu of the last item.

## ● Factory Reset

After all of adjustments of the main chassis are finished, perform a FACTORY RESET.

#### Procedure

- (1) Enter Adjustment Mode.
  - (2) Select FACT RESET.
  - (3) Activate FACT RESET by pressing cursor Right button for more than 3 seconds.
- The unit is set to factory settings.

### ● When flicker is present set contrast mode of picture menu to Normal and set Black enhancement to off.

**Caution:** After upgrading software of the main microcomputer, display a teletext screen and confirm whether a screen position is right.

If an indication point is unusual, adjust using the following method:

#### Procedure

- (1) Enter Adjustment Mode.
- (2) Select DEVICE.
- (3) When indication is replaced, input a device number into DEVICE and press OK or [▶].  
Next, input an item number into ITEM and press OK or [▶].  
Lastly, change data by pressing [◀] or [▶] into DATA and press OK.  
Continue input for the next DEVICE, then push [▼] after the DATA input.

Perform the above for the following items:

(If you make a mistake entering the input number, push RETURN to go to the previous step.)

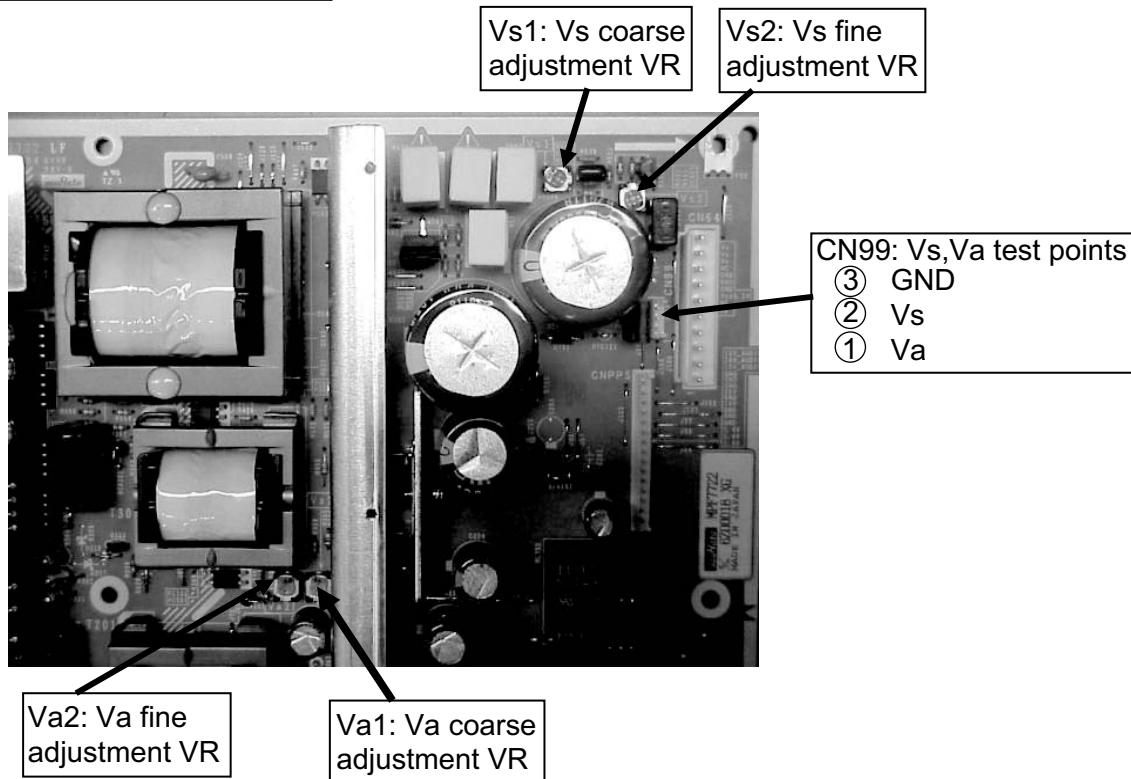
DEVICE	ITEM	DATA
9	107	f8
16	4	b

50PDP Vs and Va Adjustment

Item	Power Unit Vs, Va Adjustment
Preparation	
Procedure	
(1) Turn on the set and perform pre-heat run for more than 1 min on burn-in screen.	(1) Turn Vs ADJ to adjust Vs voltage to within $\pm 0.1V$ of the value specified in the label on the panel. ① Adjust within $\pm 1V$ at Vs1 ② Adjust within $\pm 0.1V$ at Vs2
	(2) Turn Va ADJ to adjust Vs voltage to within $\pm 0.1V$ of the value specified in the label on the panel. ① Adjust within $\pm 1V$ at Va1 ② Adjust within $\pm 0.1V$ at Va2
(2) Receive full back pattern signal. (or Video silence signal; it will automatically turn off after a few seconds by the power save function)	(3) Reconfirm that Vs voltage remains within $\pm 0.45V$ of the specified value. Readjust if outside of the margin.
(3) Connect voltmeter leads to the Vs (or Va) and GND test points of the power unit.	(4) Reconfirm that Va voltage remains within $\pm 0.55V$ of the specified value. Readjust if outside of the margin.

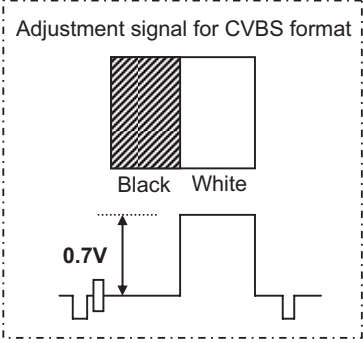
Label example

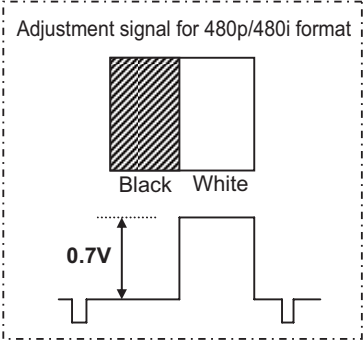
<LOT>N6	
Vs=80.0V	Va=60.0V
Vw=140.0V	Vx=60.0V



**Caution:** 42PDP does not require adjustment. ( 42PDP is self-adjustmenting.)

RGB Amplitude Adjustment (AV Component Input)

Composite video Adjustment	
Item	
Preparation	
<p>(1) Allow the set to heat-run for more than 20 minutes before the final adjustment.</p> <p>(2) Input composite video adjustment signal into AV1 terminal.</p>	<p>(1) Receive composite video adjustment signal at AV1 terminal input. Characters must not be present in both patterns of Black and White.</p> <p>(2) Go into Service Adjustment Menu and select "RGB".</p> <p>(3) Press [▶] for over 2 seconds then RGB Amplitude Adjustment starts automatically. OSD disappears while the adjustment is operating. OSD appears again when the adjustment is completed.</p>
<p>Adjustment signal for CVBS format</p> 	

Component 480p/480i Adjustment	
Item	
Preparation	
<p>(1) Allow the set to heat-run for more than 20 minutes before the final adjustment.</p> <p>(2) Input component 480p adjustment signal into AV4 terminal.</p>	<p>(1) Receive 480p adjustment signal at AV4 terminal input. Characters must not be present in both patterns of Black and White.</p> <p>(2) Go into Service Adjustment Menu and select "RGB".</p> <p>(3) Press [▶] for over 2 seconds then RGB Amplitude Adjustment starts automatically. OSD disappears while the adjustment is operating. OSD appears again when the adjustment is completed.</p> <p>(4) Change signal format from 480p to 480i.</p> <p>(5) Press [▶] for over 2 seconds again, then RGB Amplitude Adjustment starts automatically. OSD disappears while the adjustment is operating. OSD appears again when the adjustment is completed.</p>
<p>Adjustment signal for 480p/480i format</p> 	



Video Colour Temperature Adjustment

Item		Video Colour Temperature Adjustment (Cool)		
Preparation		Procedure		
(1)	Set the signal generator output to white raster. (Window ratio: 100%)	(1)	Perform the following adjustment with the remote control:	
(2)	Component signal (576i or 480i) Video level: 0.700Vp-p Sync level: 0.300Vp-p Setup level: 0V	(2)	Set the CRT colour analyzer (CA-100) at the centre of the panel.	
(3)	Input white raster signal into AV4 Component input terminal.	(3)	Set colour temperature to "Cool".	
(4)	Set Picture Menu to Natural mode.	(4)	Ensure that the adjustment R/G/B DRIVE (COOL) is all set as 255. If the values are not 255, set them to 255.	
(5)	Check that the mode is set as Factory Adjustment mode.	(5)	Receive white raster signal. Step down either R DRV_COOL, G DRV_COOL or B DRV_COOL of the two (or, one) values and adjust to the following value.	
(6)	Set aspect to Full mode.		(Note) At least one of the data items should be 255.	
		<table border="1"> <tr> <td> <p>Specification Video colour temperature (Cool)</p> <p>x=0.266±0.005 y=0.270±0.005 14000K + 0MPCD</p> </td> </tr> </table>		<p>Specification Video colour temperature (Cool)</p> <p>x=0.266±0.005 y=0.270±0.005 14000K + 0MPCD</p>
<p>Specification Video colour temperature (Cool)</p> <p>x=0.266±0.005 y=0.270±0.005 14000K + 0MPCD</p>				

[Remarks]

- (1) Colour temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value of adjustment is set at maximum.
- (2) This adjustment only decreases brightness.
- (3) Beware there is RESET in each Picture mode.

Item		Video Colour Temperature Adjustment (Normal)		
Preparation		Procedure		
(1)	Set the signal generator output to white raster. (Window ratio: 100%)	(1)	Perform the following adjustment with the remote control:	
(2)	Component signal (576i or 480i) Video level: 0.700Vp-p Sync level: 0.300Vp-p Setup level: 0V	(2)	Set the CRT colour analyzer (CA-100) at the centre of the panel.	
(3)	Input white raster signal into AV4 Component input terminal.	(3)	Set colour temperature to "Normal".	
(4)	Set Picture Menu to Natural mode.	(4)	Ensure that the adjustment R/G/B DRIVE (NORMAL) is all set as 255. If the values are not 255, set them to 255.	
(5)	Check that the mode is set as Factory Adjustment mode.	(5)	Receive white raster signal. Step down either R DRV_NORMAL, G DRV_NORMAL or B DRV_NORMAL of the two (or, one) values and adjust to the following value.	
(6)	Set aspect to Full mode.		(Note) At least one of the data items should be 255.	
		<table border="1"> <tr> <td> <p>Specification Video colour temperature (Normal)</p> <p>x=0.285±0.005 y=0.293±0.005 9300K + 0MPCD</p> </td> </tr> </table>		<p>Specification Video colour temperature (Normal)</p> <p>x=0.285±0.005 y=0.293±0.005 9300K + 0MPCD</p>
<p>Specification Video colour temperature (Normal)</p> <p>x=0.285±0.005 y=0.293±0.005 9300K + 0MPCD</p>				

[Remarks]

- (1) Colour temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value of adjustment is set at maximum.
- (2) This adjustment only decreases brightness.
- (3) Beware there is RESET in each Picture mode.

**P50T01U/E P50TP01U/E P42T01U/E P42TP01U/E**

Item	Video Colour Temperature Adjustment (Warm)		
Preparation		Procedure	
(1)	Set the signal generator output to white raster. (Window ratio: 100%)	(1) Perform the following adjustment with the remote control:	
(2)	Component signal (576i or 480i) Video level: 0.700Vp-p Sync level: 0.300Vp-p Setup level: 0V	(2) Set the CRT colour analyzer (CA-100) at the centre of the panel.	
(3)	Input white raster signal into AV4 Component input terminal.	(3) Set colour temperature to "Warm".	
(4)	Set Picture Menu to Natural mode.	(4) Ensure that the adjustment R/G/B DRIVE (WARM) is all set as 255. If the values are not 255, set them to 255.	
(5)	Check that the mode is set as Factory Adjustment mode.	(5) Receive white raster signal. Step down either R DRV_WARM, G DRV_WARM or B DRV_WARM of the two (or, one) values and adjust to the following value.	
(6)	Set aspect to Full mode.	(Note) At least one of the data items should be 255.	
		<table border="1"> <tr> <td align="center">                     Specification                      Video colour temperature (Warm)   <math>x=0.314\pm 0.005</math>  <math>y=0.323\pm 0.005</math>                      6500K + 0MPCD                 </td> </tr> </table>	Specification Video colour temperature (Warm)  $x=0.314\pm 0.005$ $y=0.323\pm 0.005$ 6500K + 0MPCD
Specification Video colour temperature (Warm)  $x=0.314\pm 0.005$ $y=0.323\pm 0.005$ 6500K + 0MPCD			

[Remarks]

- (1) Colour temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value of adjustment is set at maximum.
- (2) This adjustment only decreases brightness.
- (3) Beware there is RESET in each Picture mode.

Item	Video Colour Temperature Adjustment (B&W)		
Preparation		Procedure	
(1)	Set signal generator output as All White. (Window ratio: 100%)	(1) Perform the following adjustment with remote control:	
(2)	Component signal (480i) Video level: 0.700Vp-p Sync level: 0.300Vp-p Setup level: 0V	(2) Set the CRT Colour Analyzer (CA-100) at the centre of the panel.	
(3)	Input white raster signal into AV4 Component input terminal.	(3) Set colour temperature to "Black&White".	
(4)	Set Picture Menu to Natural mode.	(4) Ensure that the adjustment R/G/B DRIVE (B/W) is all set as 255. If the values are not 255, set them to 255.	
(5)	Check that the mode is set as Factory Adjustment mode.	(5) Receive white raster signal. Step down either R DRV_B/W, G DRV_B/W or B DRV_B/W of the two (or, one) values and adjust to the following value.	
(6)	Set aspect to Full mode.	(Note) At least one of the data items should be 255.	
		<table border="1"> <tr> <td align="center">                     Specification                      Video colour temperature (B/W)   <math>x=0.335\pm 0.005</math>  <math>y=0.343\pm 0.005</math>                      5400K + 0MPCD                 </td> </tr> </table>	Specification Video colour temperature (B/W)  $x=0.335\pm 0.005$ $y=0.343\pm 0.005$ 5400K + 0MPCD
Specification Video colour temperature (B/W)  $x=0.335\pm 0.005$ $y=0.343\pm 0.005$ 5400K + 0MPCD			

[Remarks]

- (1) Colour temperature should be adjusted under the condition in which the screen is the brightest, thus the initial adjustment value is set at maximum.
- (2) This adjustment only decreases brightness.
- (3) Beware there is RESET in each Picture mode.

## 6. Troubleshooting

### ● Burn-in mode

This mode displays test patterns of some single colour rasters in turn. These signals are produced by the built-in generator of the panel. So it can be presumed that the panel has a problem when the Burn-in mode screen is abnormal.

Using the remote control with the set turned on can activate the mode.

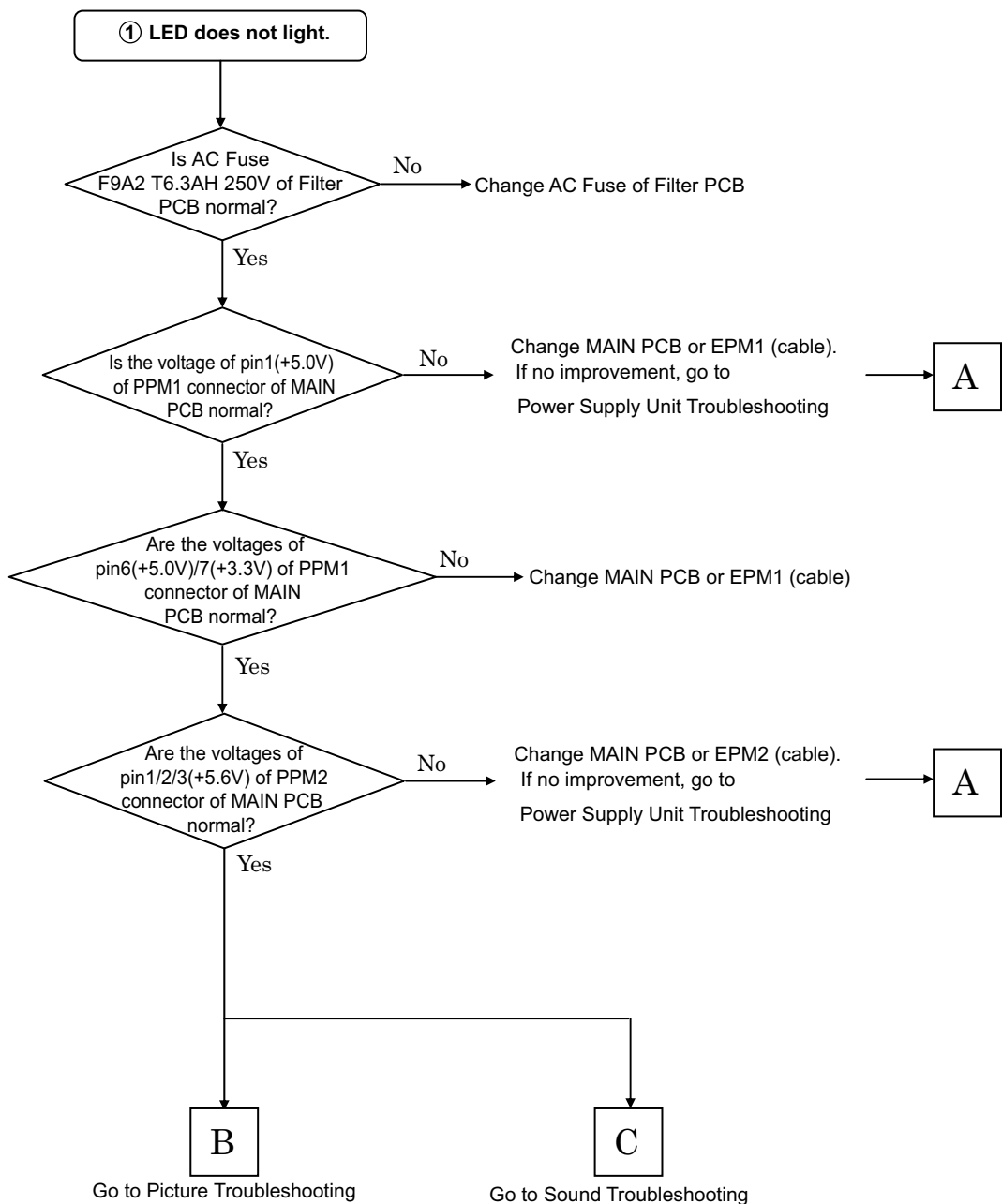
Press the "MENU", "recall", "9", "OK" in turn for less than 2 seconds.

The set turns on with single colour raster and the OSD off [BURN IN: ON].

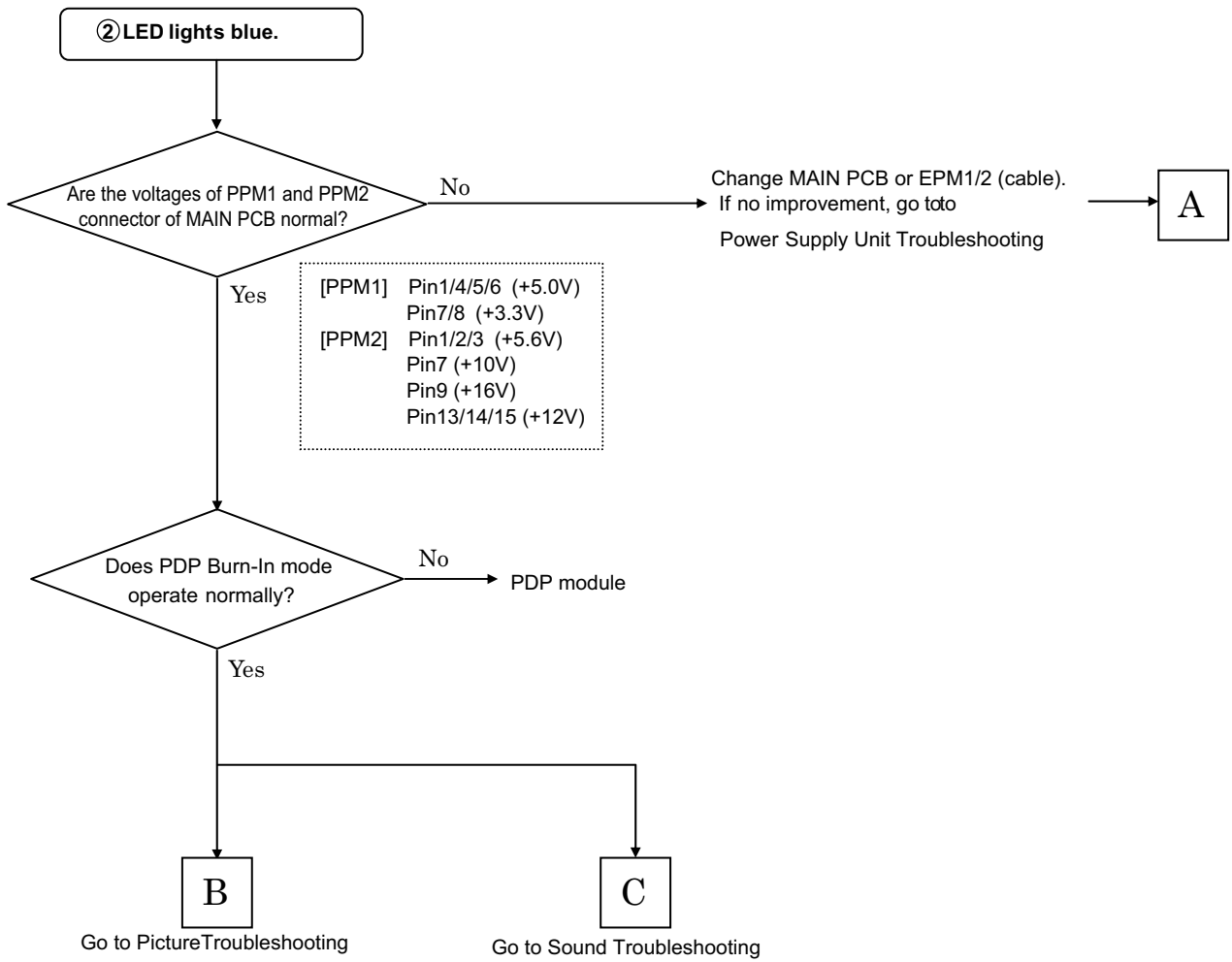
To escape from this mode, press the "MENU", "recall", "9", "OK" in turn for less than 2 seconds.

[no picture, no sound]

Confirm the LED state and examine according to the following Flowcharts:



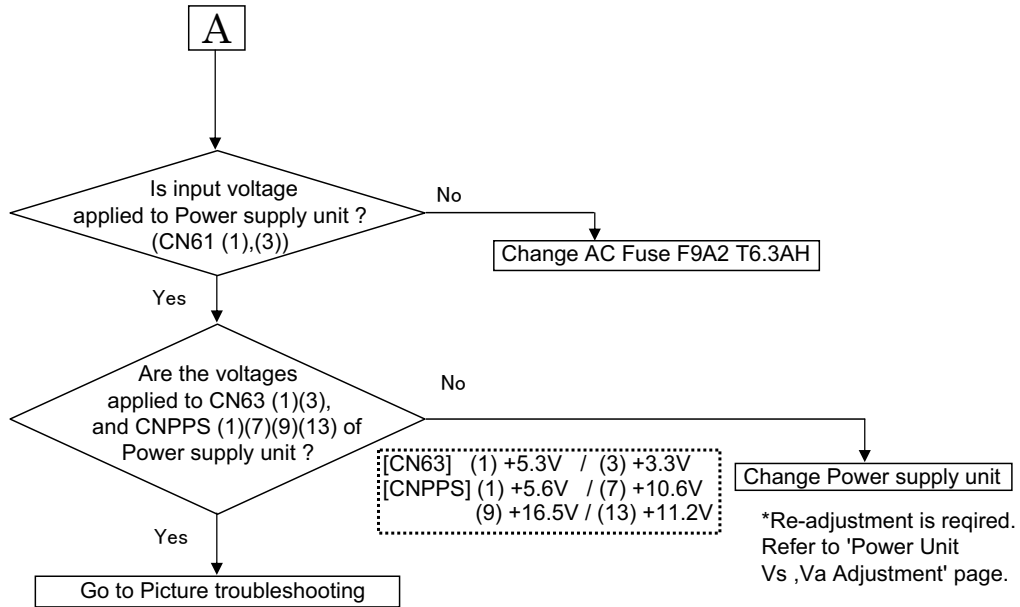
P50T01U/E P50TP01U/E P42T01U/E P42TP01U/E



③ LED blue blinks blue. → It is in video input power save mode. This is not a problem.

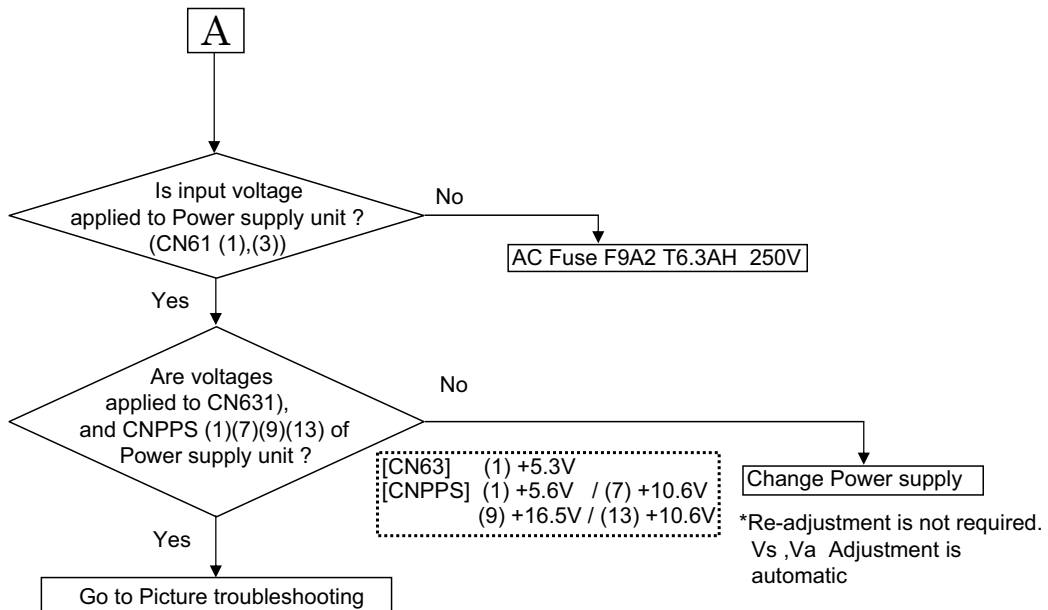
## P50T01U/E P50TP01U/E P42T01U/E P42TP01U/E

### [50PDP Power unit]



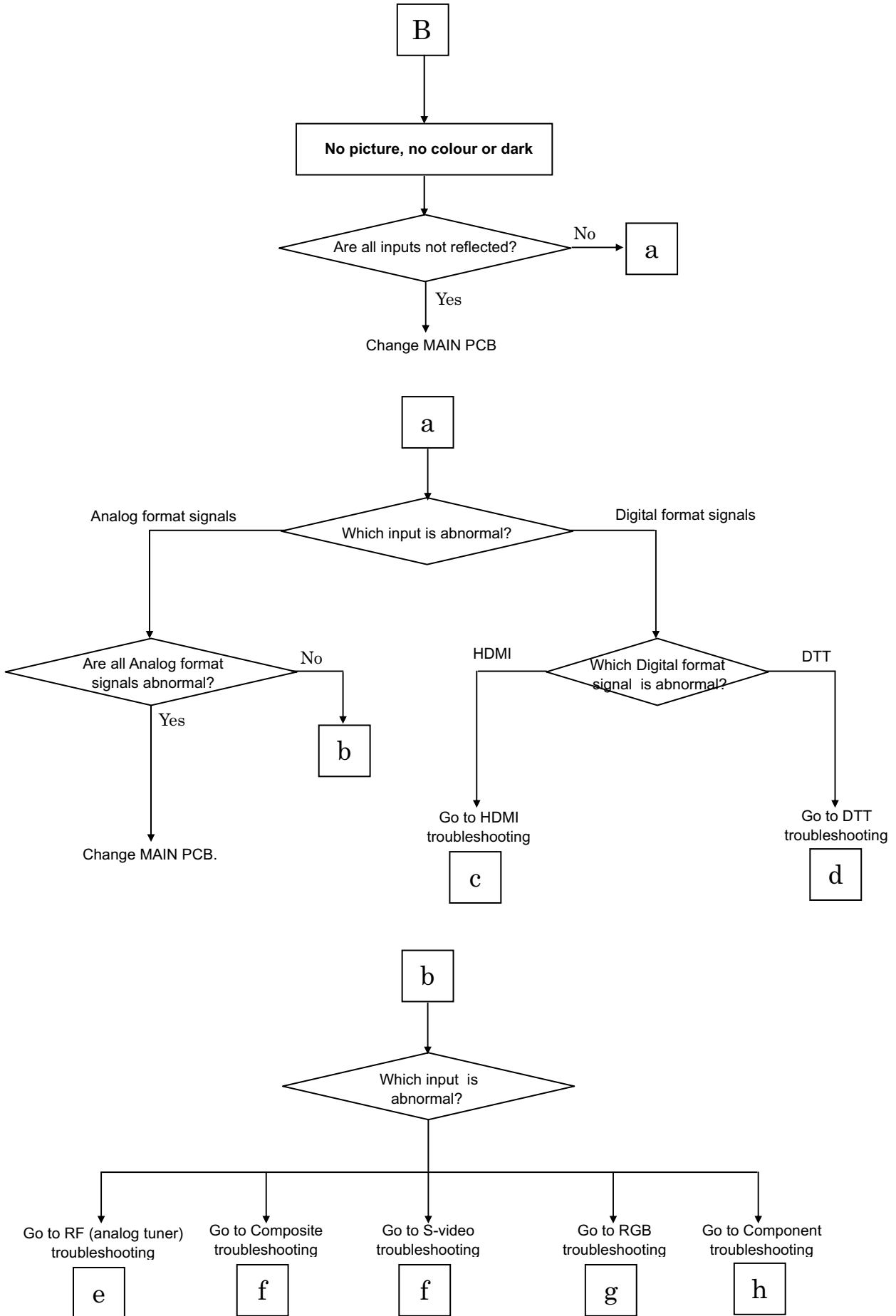
Caution: To take off a PPU1 connector, first take off the filter board and pull up PPU1 connector.

### [42PDP Power unit]

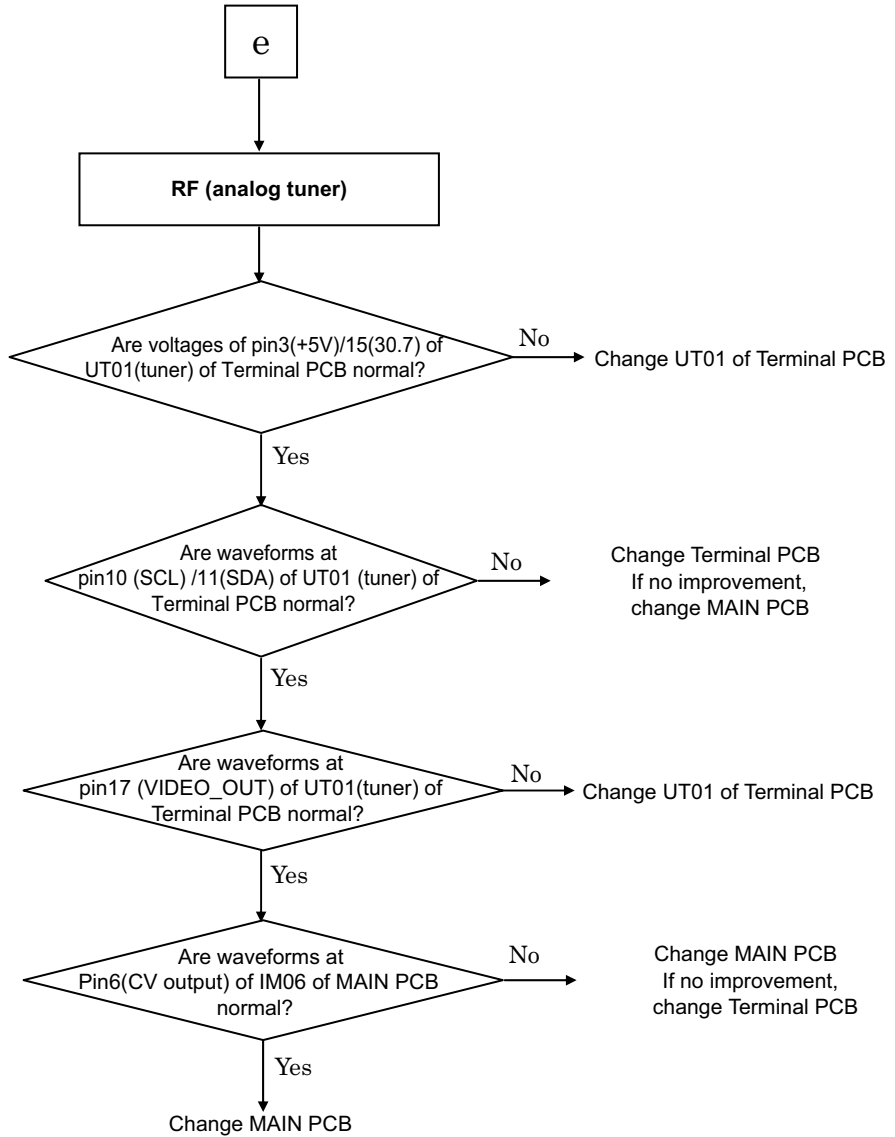


Caution: To take off a PPU1 connector. First take off the filter board and pull up PPU1 connector.

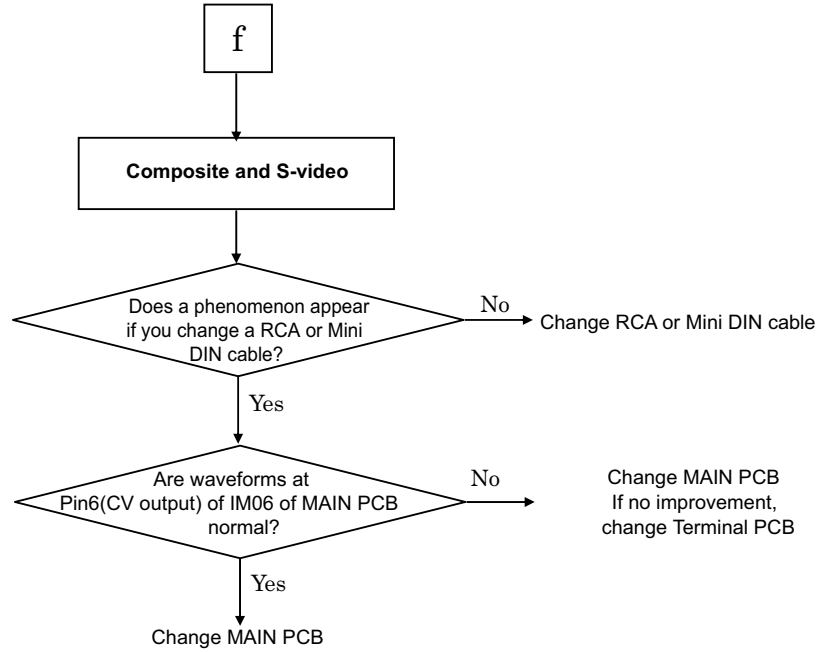
[Picture troubleshooting]



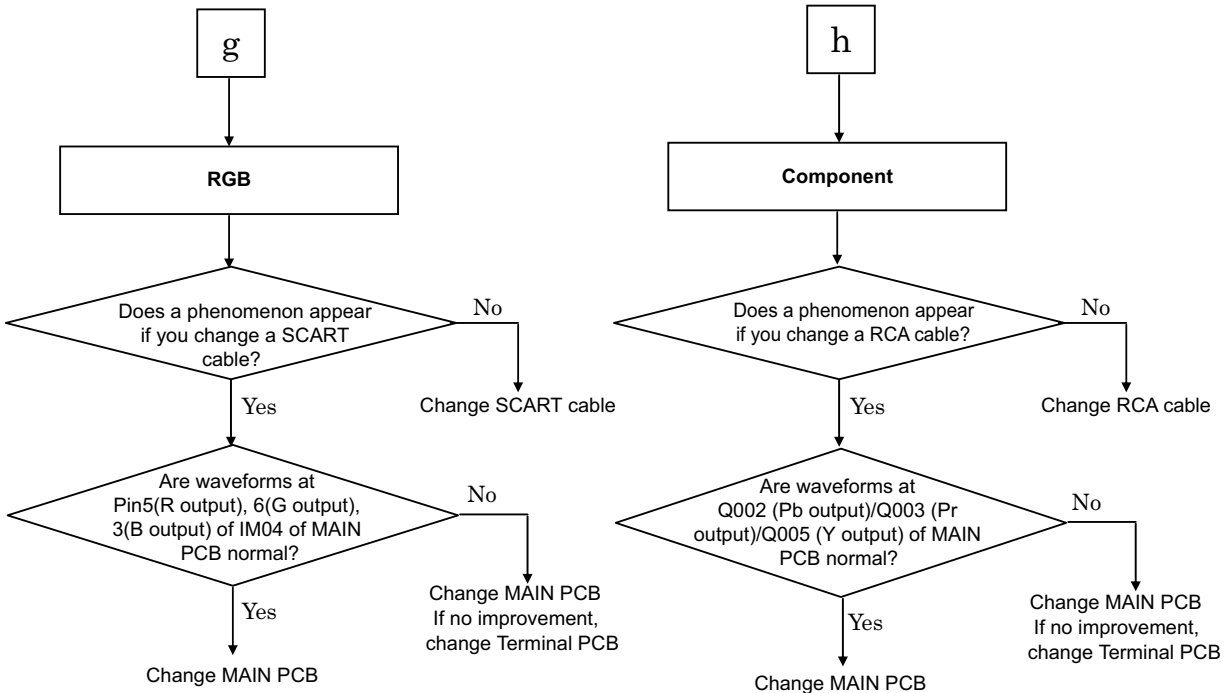
[Picture: RF (analog) troubleshooting]



[Picture: Composite & S-video troubleshooting]



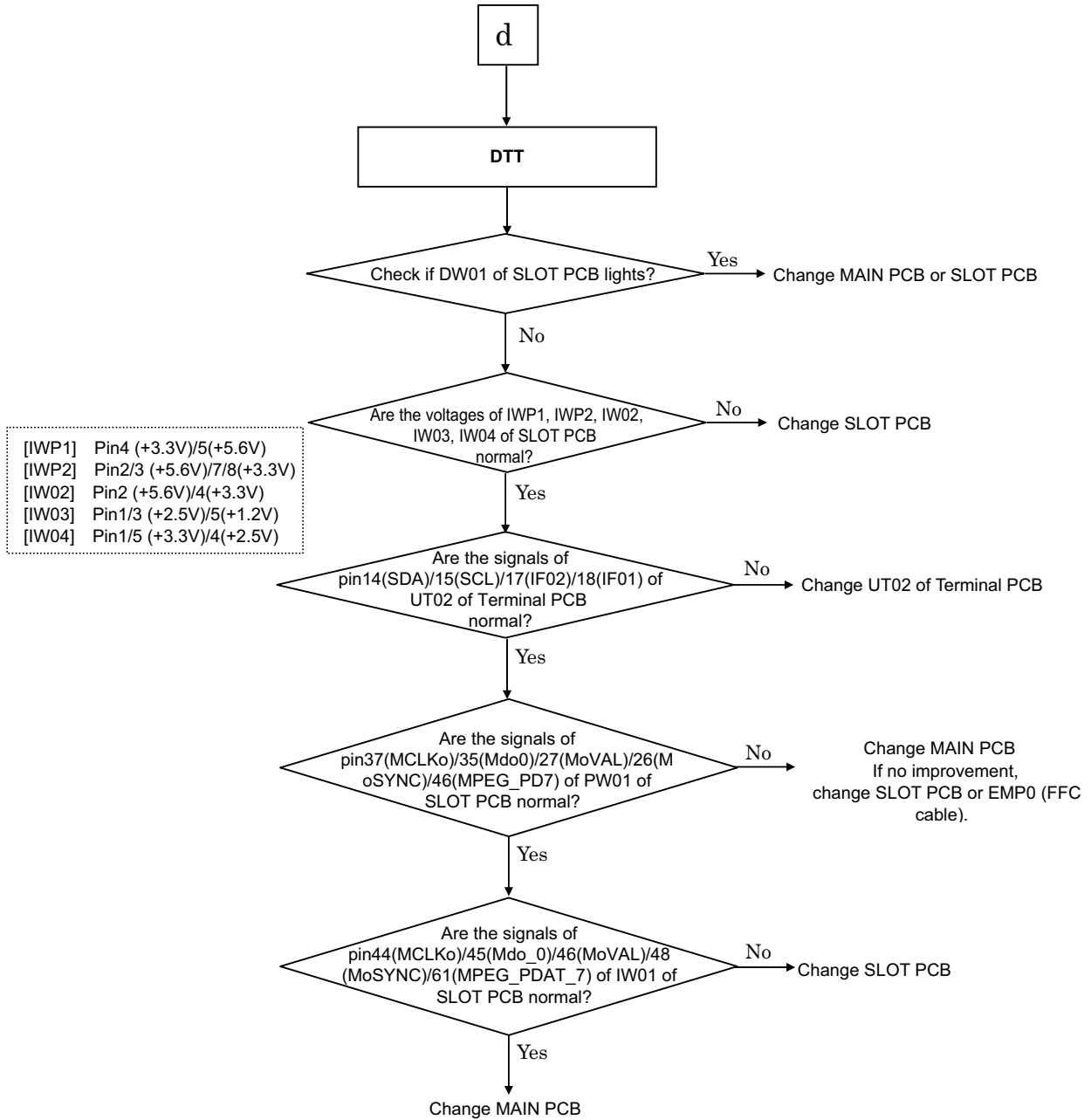
[Picture: RGB & Component troubleshooting]



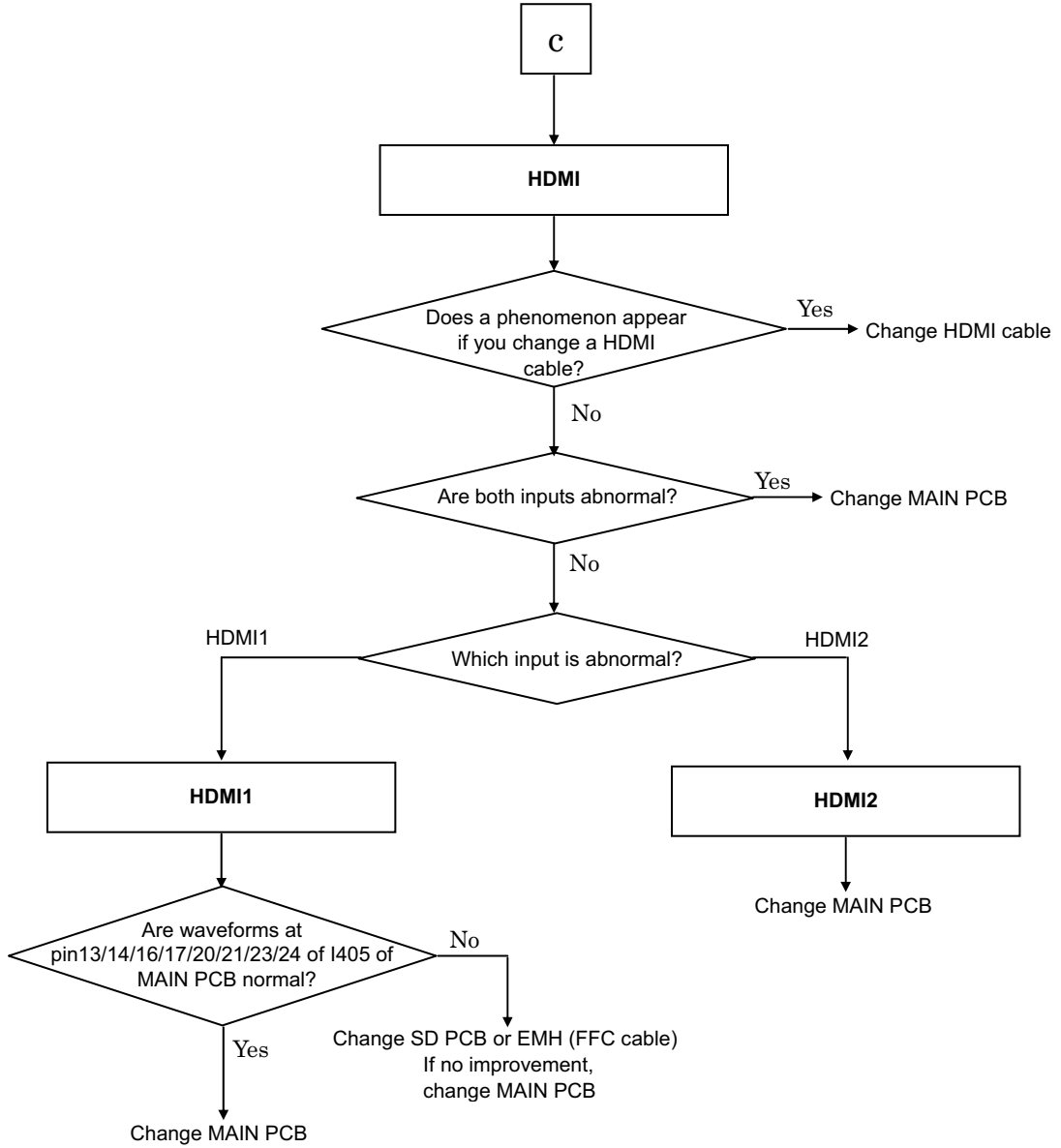


P50T01U/E P50TP01U/E P42T01U/E P42TP01U/E

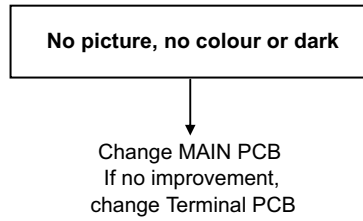
[Picture: DTT troubleshooting]



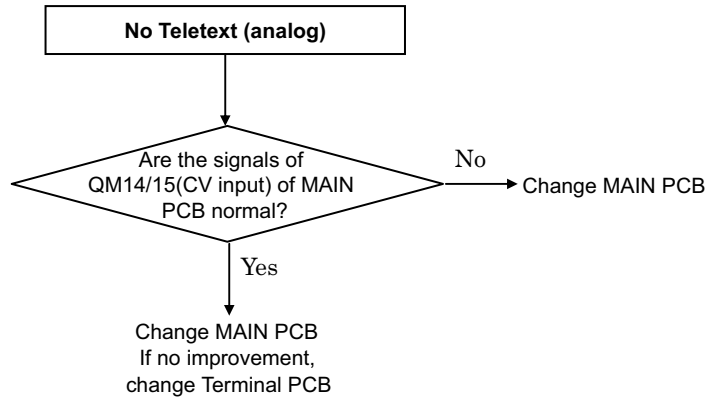
[Picture: HDMI troubleshooting]



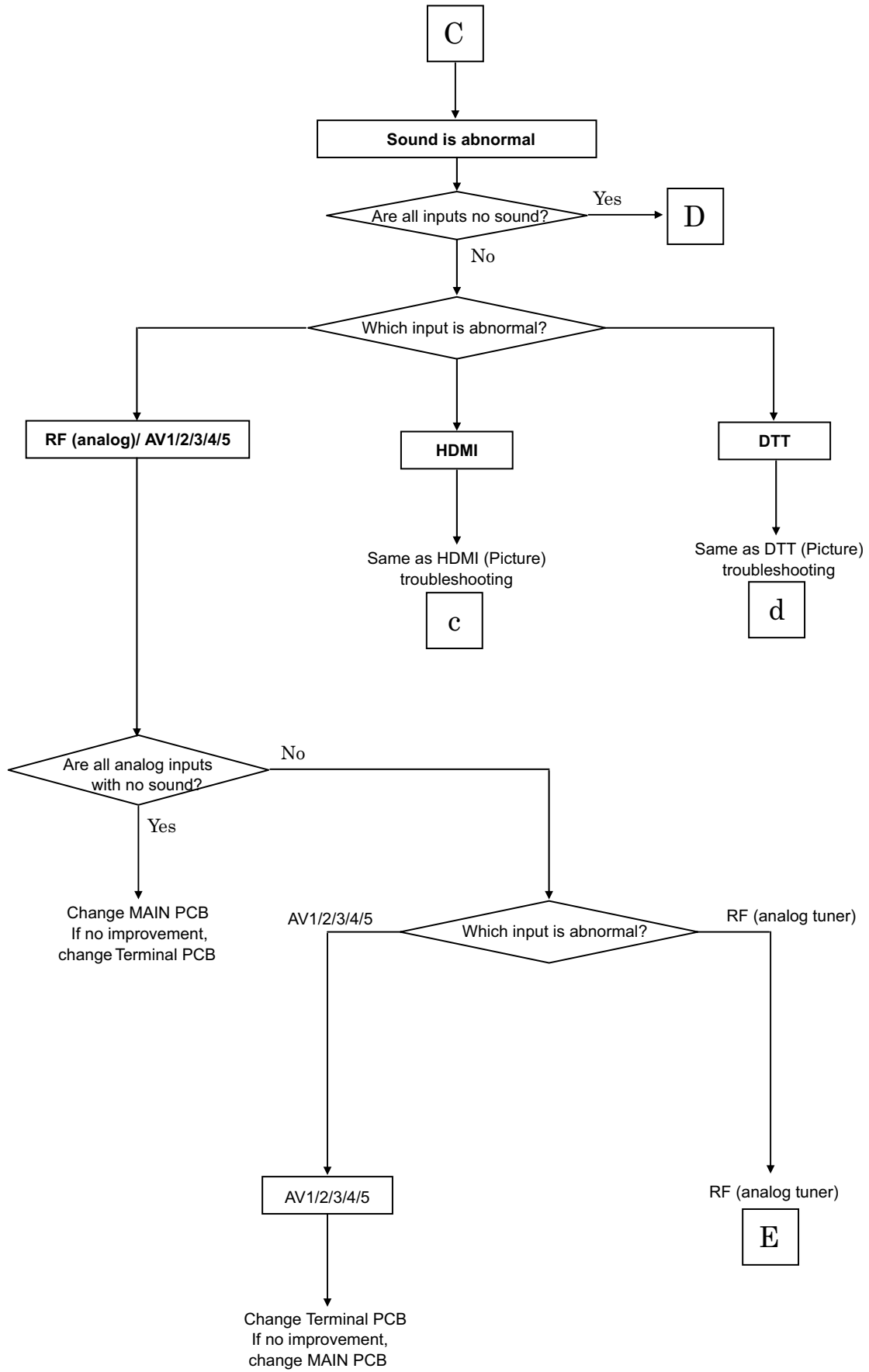
**[Sub Picture troubleshooting]**



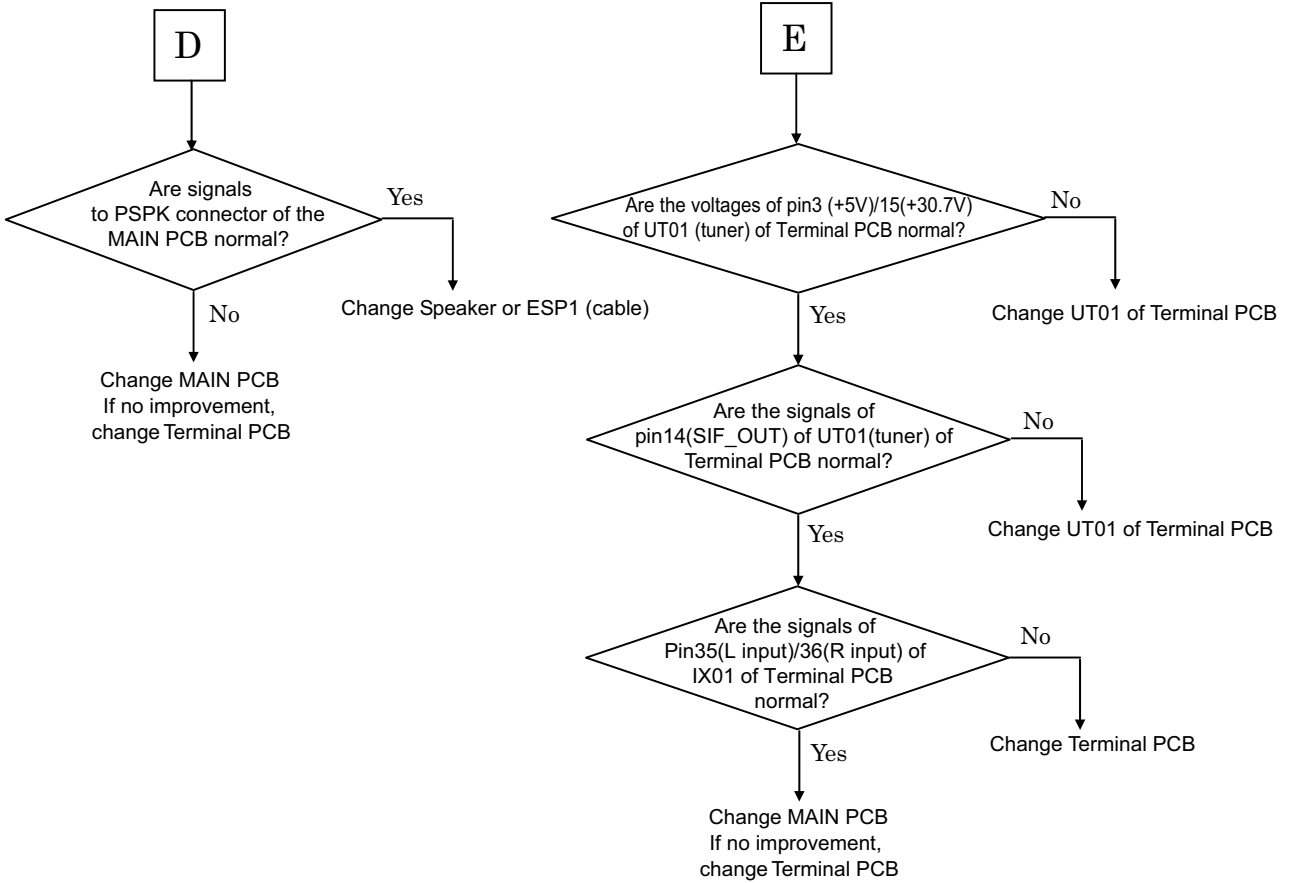
**[Teletext troubleshooting]**



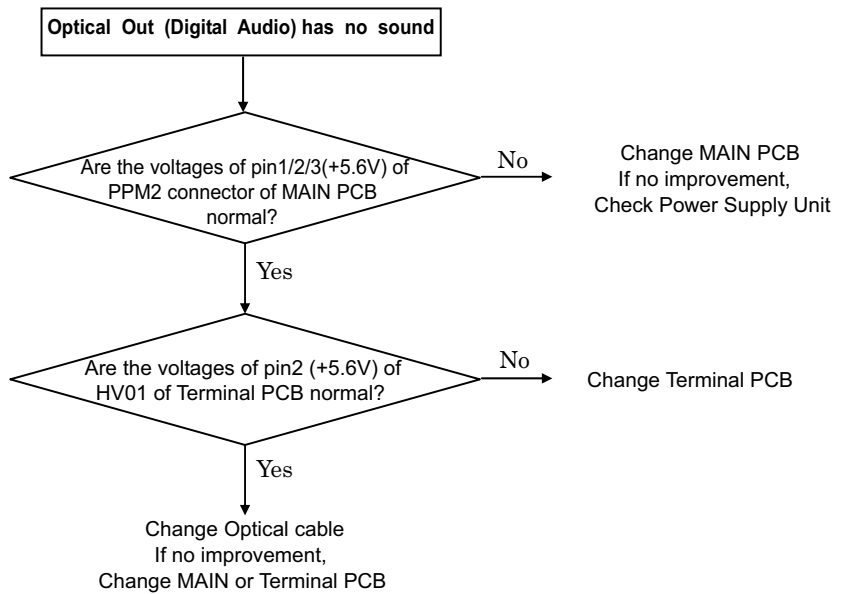
[Sound troubleshooting]



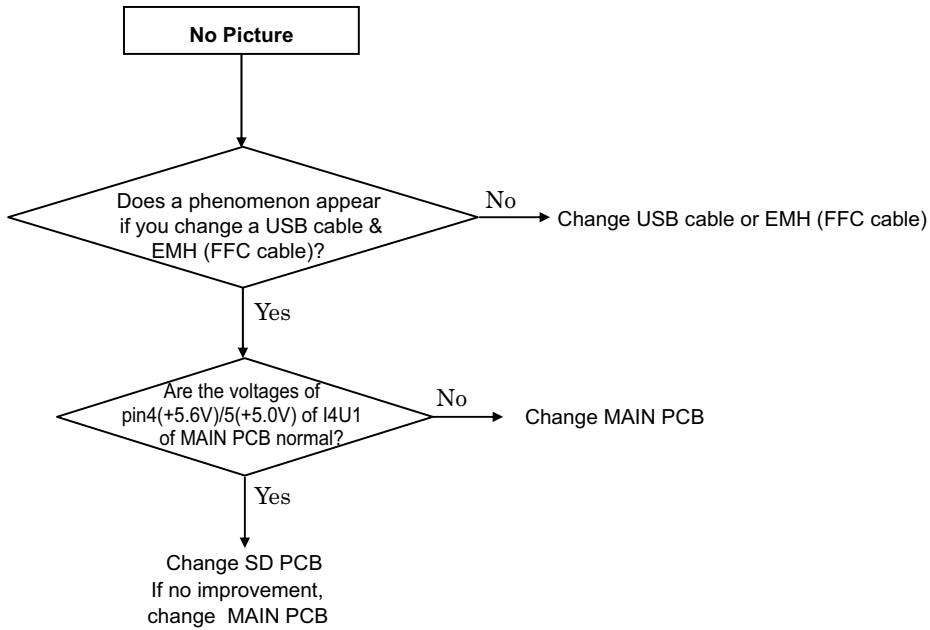
P50T01U/E P50TP01U/E P42T01U/E P42TP01U/E



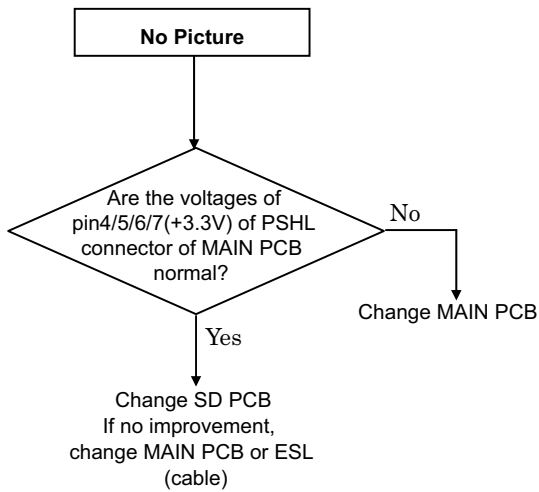
[Optical Out (Digital Audio) troubleshooting]



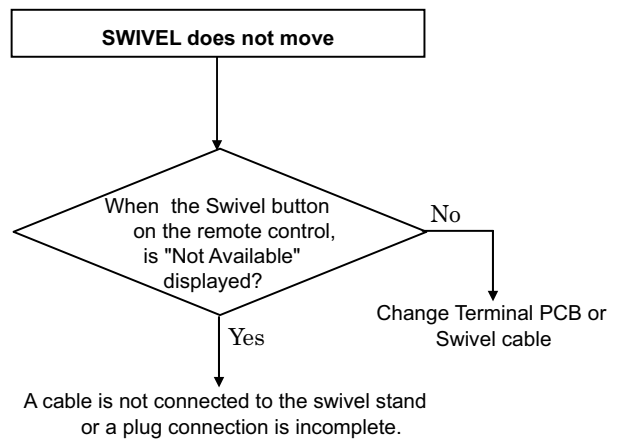
[USB troubleshooting]



[SD Card troubleshooting]



[SWIVEL troubleshooting]



## 7. Self-Diagnosis Function

### ● PDP panel self-diagnosis function

This function is for a PDP panel failure with no picture.

Panel failure is automatically self-diagnosed.

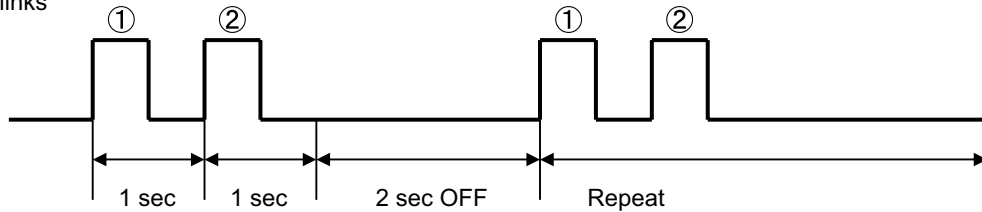
It is shown by the blinking of the power indicator light (blue).

The next table shows the PDP PCB in which failure most probably would be allocated according to the number of blinks.

Number of blue blinks of power indicator light	Presumed failing PCB of PDP panel	
1	Logic	
2	X-SUS	
3	Y-SUS, SDM	SDM: Scan Driver Module
4	X-SUS, Y-SUS, SDM, PSU	PSU: Power Supply Unit
5	ABUS, ADM, PSU	ABUS: Address Bus Module
6	ADM temperature	ADM: Address Driver Module
7	ADM temperature	
8	All of above-mentioned PCBs	Note) SDM is in permanent contact with glass part.

[Number of blinks of power indication light]

Ex. 2 blinks



Note)

- 1) Main Power switch-off operation cancels the Self-Diagnosis mode.
- 2) Priority is given when a FAN error occurs (shown by red blinks).

## ● Digital module self-diagnosis function

At main microcomputer startup, hardware (mainly LSI) is checked by a self diagnosis program.

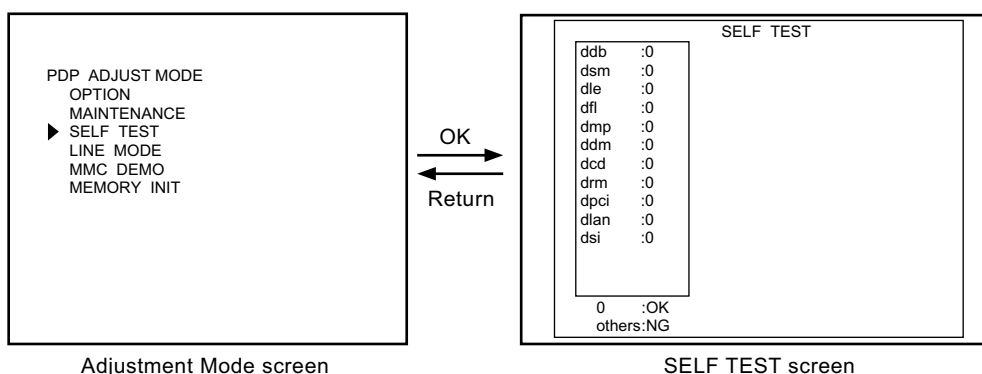
To enter this Self-Diagnosis mode, follow the following steps:

### Procedure:

- 1) Enter Adjustment Mode.
- 2) Select SELF TEST and press OK button.
- 3) SELF TEST screen is displayed.
- 4) Each code is displayed in a SELF TEST screen.

A diagnosis result is displayed with a numerical value to the right side of each code.

Numerical value of 0 indicates normal, all values except 0 are errors.

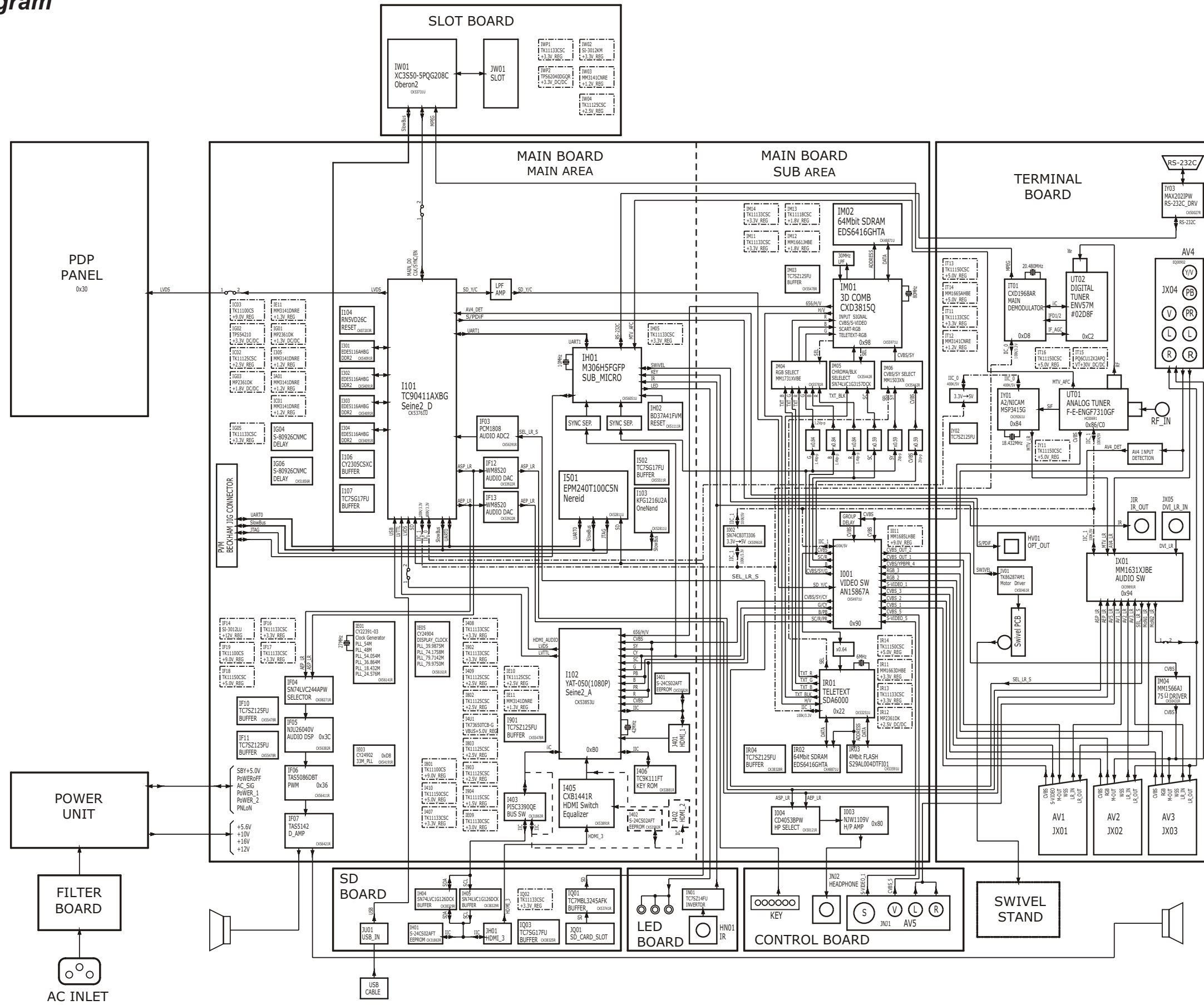


## ● A list of codes

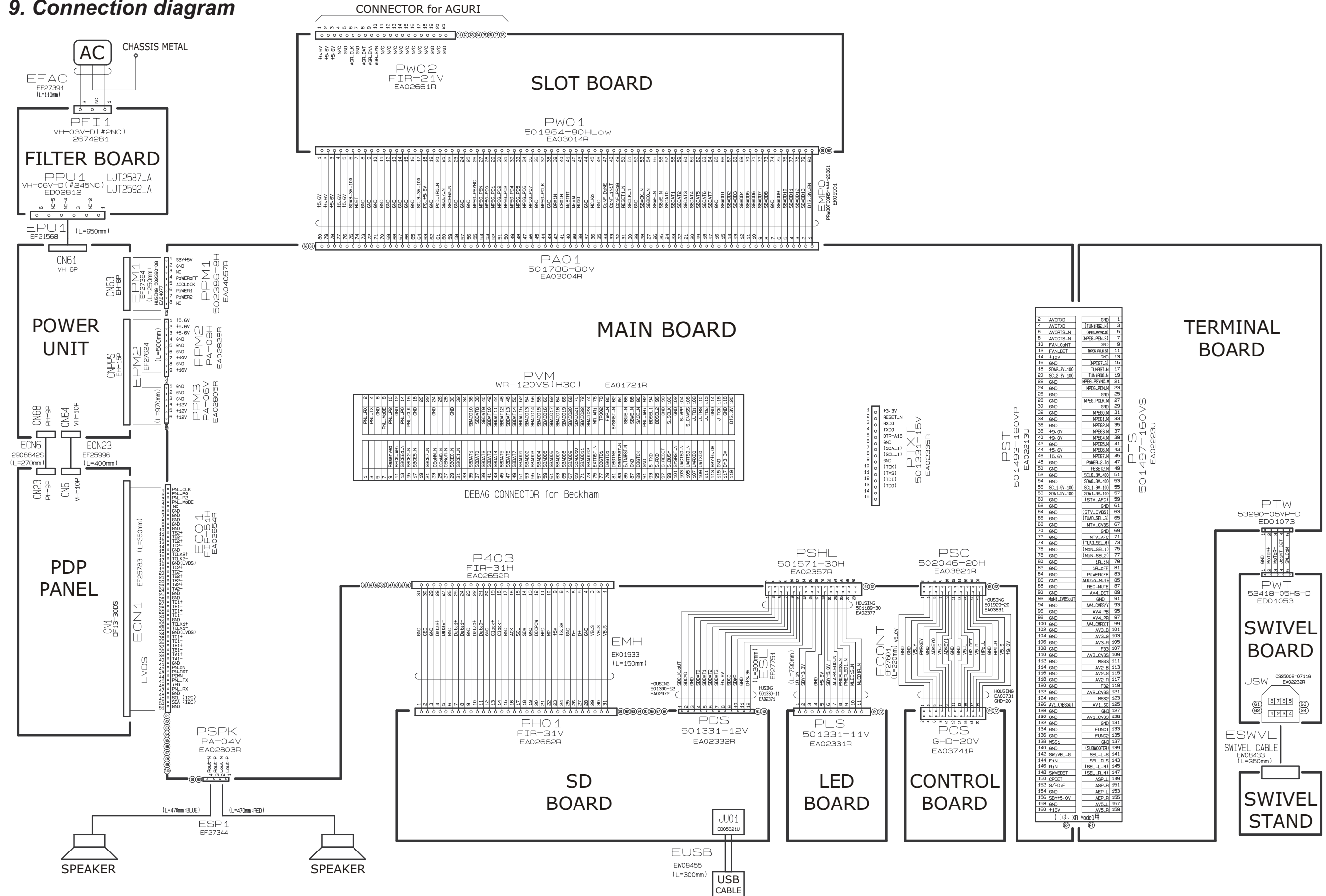
code	function	circuit No.	PCB name	Error contents
ddb	Debug	I101	MAIN	parameter error, system error
dsm	Sub-microcomputer	IH04	MAIN	system error (-1)
dle	LED	IH04	MAIN	seine general-purpose port lead error, lighting time error, system error
dfl	flash	I103	MAIN	parameter error, device error, system error
dmp	MPEG	I101	MAIN	Video error (2), Audio error (4)
ddm	demulti	-	-	error
drm	key scan	IH04	MAIN	system error (-1) / others error (3)
dic	IICbus driver	I101	MAIN	R_SYS_ERROR(-1), DIC_R_DEVICE_ERROR(2)
dvad	ADC	I101	MAIN	system error (-1) /device (I2C) error (2) / driver error (6)
dfc	FC	I101	MAIN	firmware error code, system error
dhdn	HDMI	I102	MAIN	system error (-1) / parameter error (1) / device (I2C) error (2)
dvdc	Video decoder	I102	MAIN	device error, system error
dmdp	PDPpanel (for PDP)	-	PDP panel	system error
dldp	LCDpanel (for LCD)	-	LCD panel	state impossible of command acceptance, standby, parameter error
dvi	Video	I101	MAIN	device error(firmware error), system error
dvbi	VBI slicer	I102	MAIN	system error
dsl	Video Switch	I101	MAIN	system error
dada	Audio amplifier	IF07	MAIN	parameter error, setting error in suspend, system error I2C communication error with TAS3103 or TAS5508
dau	Audio	I101	MAIN	system error
dhp	Headphones amplifier	I003	SUB	standby, state error
dtu	Digital / Analog tuner	UT01,UT02	Terminal	fail in initialisation, system error
dswv	Swivel	IH04	MAIN	system error (-1) / parameter error (1) / sub-microcomputer driver communication error (2) / initialisation registration not possible error (4)
dmmc	MMC	-	-	driver initialisation error, system error
dptp	PTP driver	I101	MAIN	R_SYS_ERROR (-1) other errors (10)
dpq	Picture control driver	I102, IM01	MAIN,SUB	parameter error, system error, suspend error, device error
ddp	Display driver	I101	MAIN	system error
dttc	Analog TeleText	IR01	SUB	device error, system error
dpyc	PAL3DY/C Video decoder	IM01	SUB	device error, system error
dsp	Multiplex driver	IY01	SUB	system error (-1) / I2C communication error (2)



8. Block diagram



9. Connection diagram



### 10. Wiring diagrams

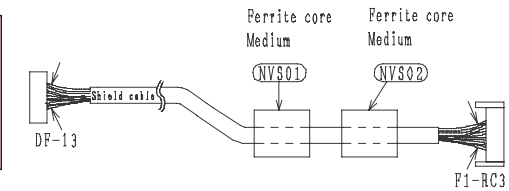
(For P50T01U, P50T01E, P50TP01U and P50TP01E)

**Ferrite Core Sizes:**  
 Large (P/N GX00667):  
 NVS05, NVS06, NVS10  
 Medium (P/N GX00666):  
 NVS01, NVS02, NVS03, NVS04,  
 NVS07, NVS08, NVS09, NVS11.

Use 11 in total when 1 includes  
 a harness product ferrite core.

**CAUTION (Connectors)**

Do not grip in the direction of the arrow  
 to avoid defects such as breaking the wire  
 and/or opening the pin connector part.  
 This is because the core is thin.

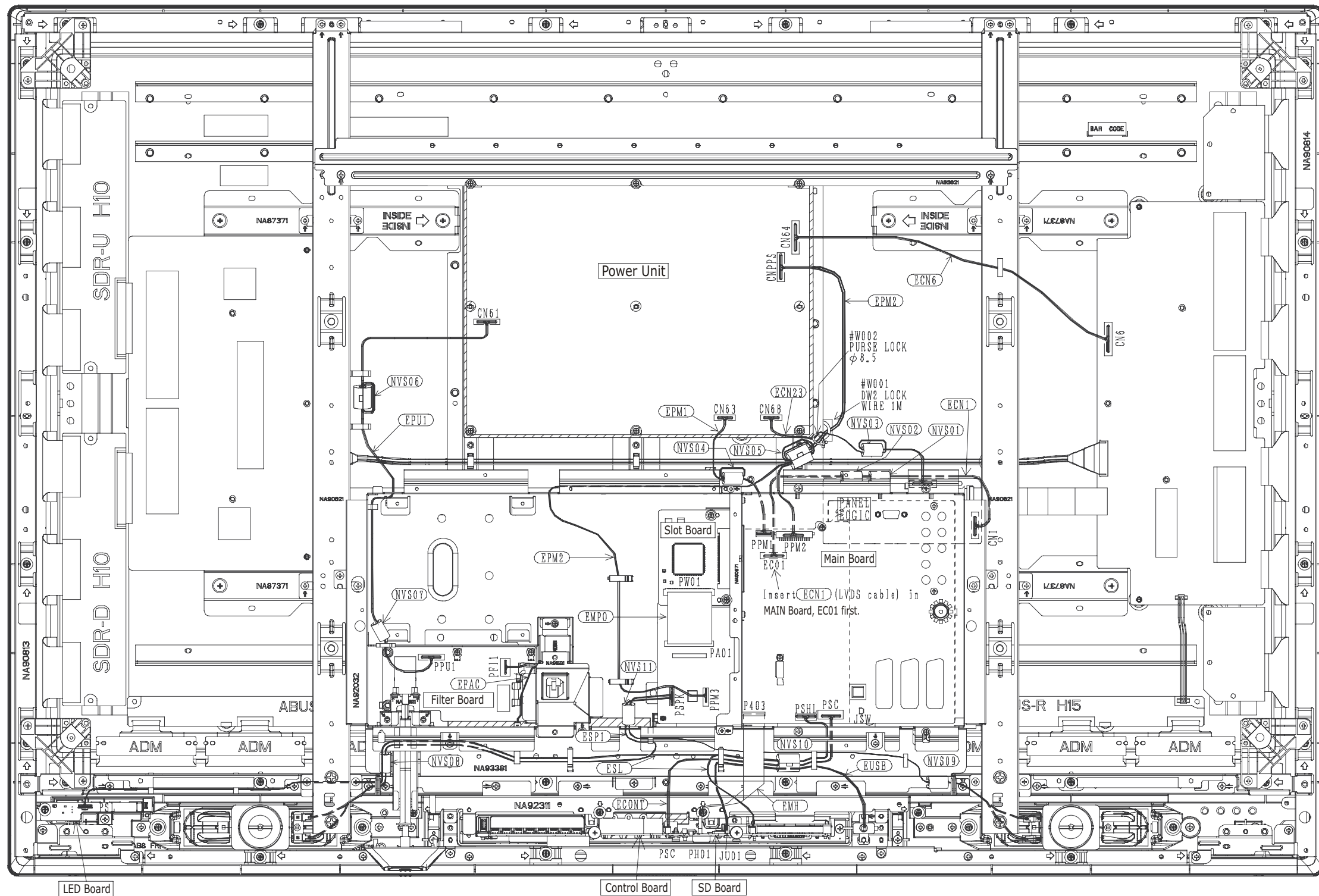


**PURSE LOCK**

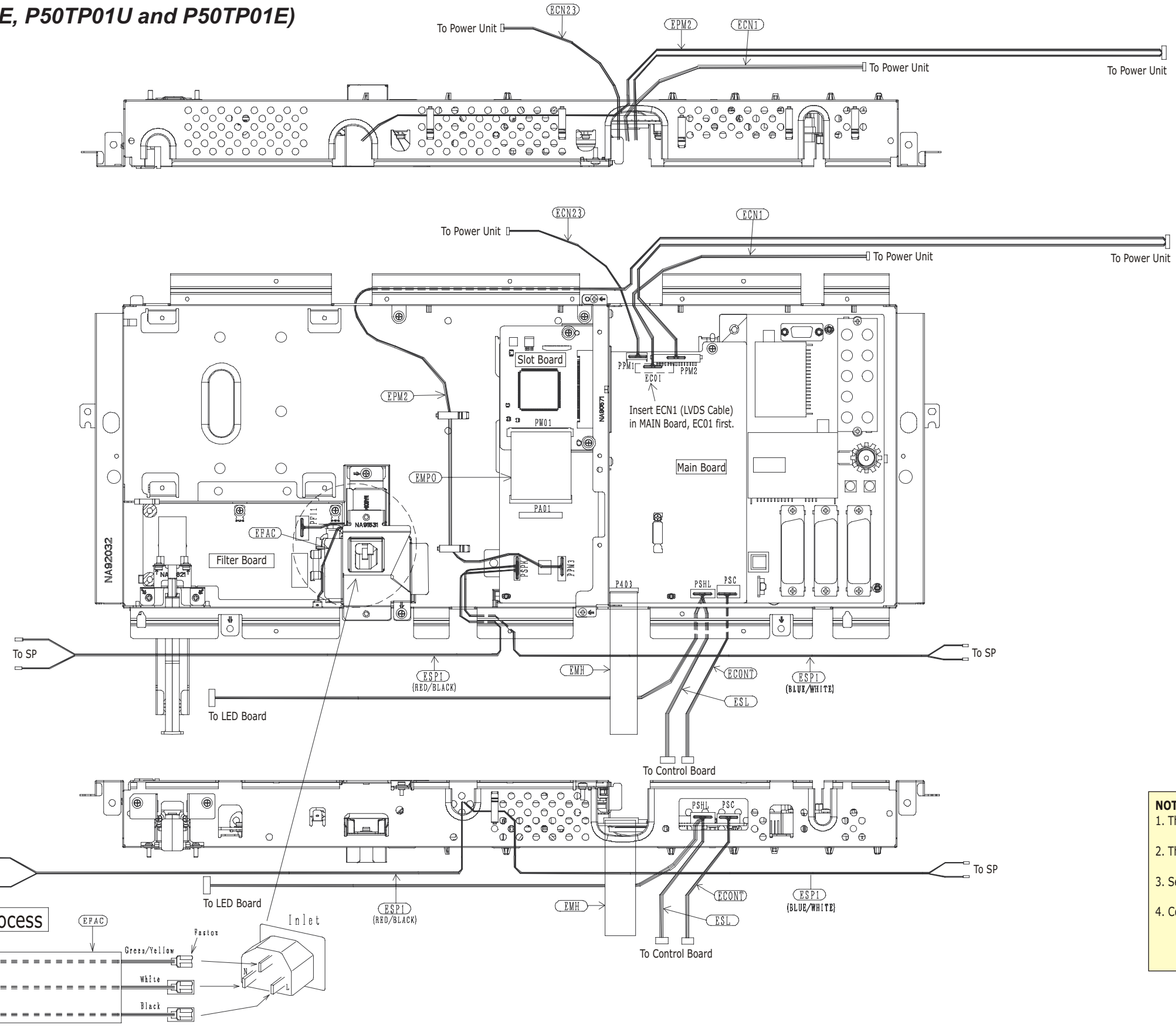
- Ø 5.0 (P/N 3749612)
- Ø 8.5 (P/N NJ04411)
- Ø 11.5 (P/N NJ04401)

**NOTES:**

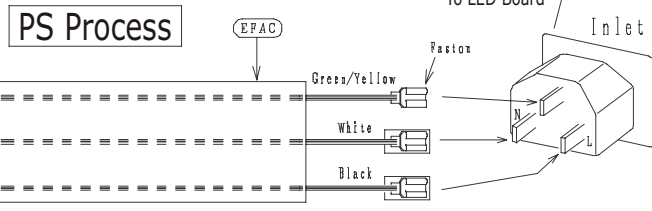
1. This drawing shows connection and wire styling.
2. This drawing shows the rear view of the set.
3. Securely lock the lead holder in place.
4. Cores and SK binders with ( ) round brackets should be delivered integrated with harness.



(For P50T01U, P50T01E, P50TP01U and P50TP01E)



**EFAC Preparation:**  
Securely insert Faston of EFAC in the terminal of the inlet as follows:



- NOTES:**
1. This drawing shows connection and wire styling.
  2. This drawing shows the rear view of the set.
  3. Securely lock the lead holder in place.
  4. Cores and SK binders with ( ) round brackets should be delivered integrated with harness.

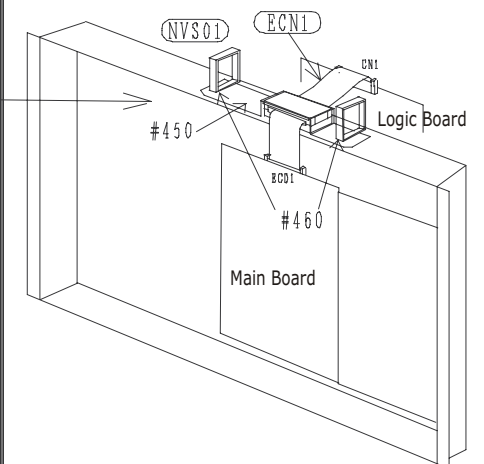
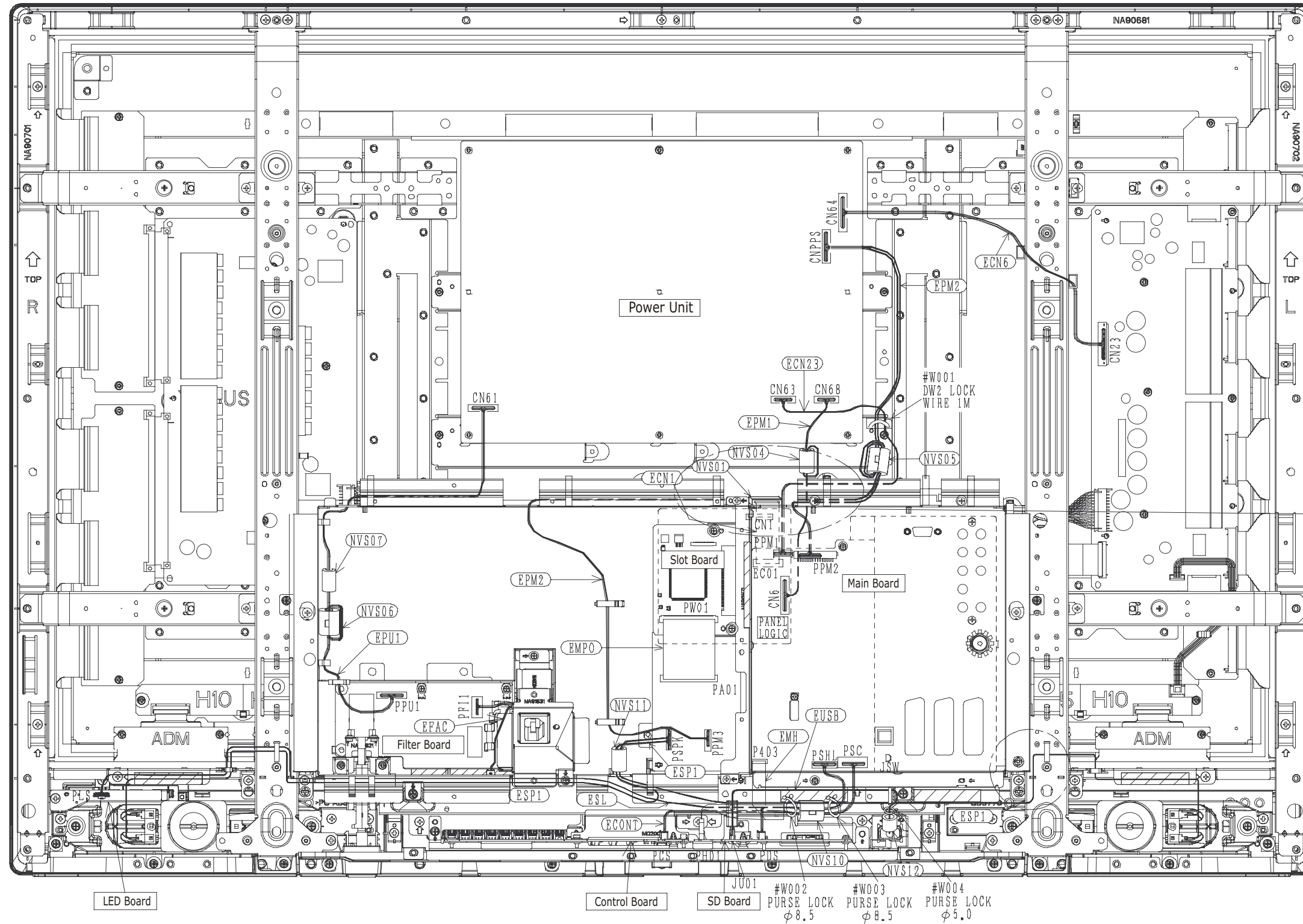


(For P42T01U, P42T01E, P42TP01U and P42TP01E)

**PURSE LOCK**  
 Ø 5.0 (P/N 3749612)  
 Ø 8.5 (P/N NJ04411)  
 Ø 11.5 (P/N NJ04401)

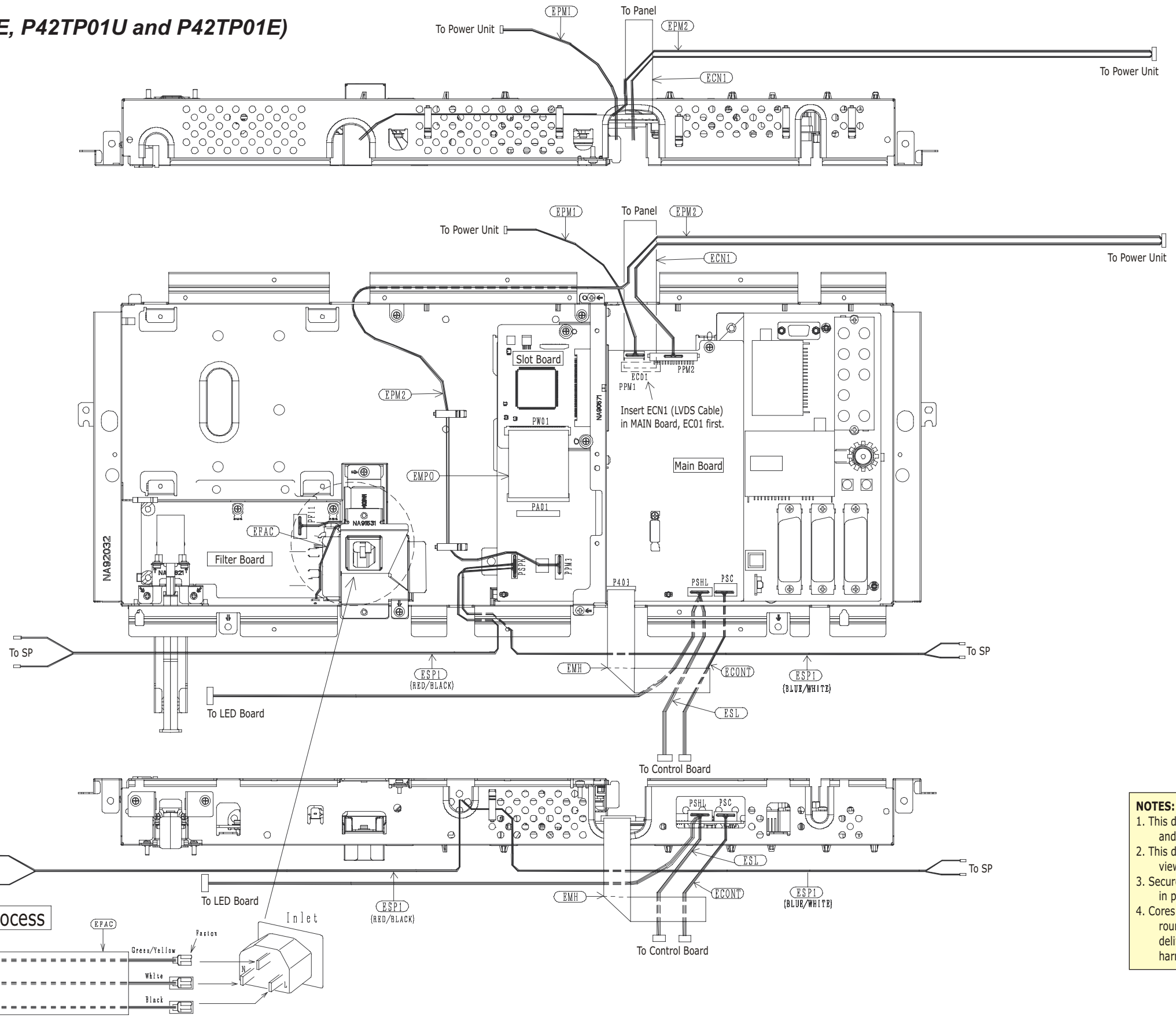
**Ferrite Core Sizes:**  
 Large (P/N GX00667):  
 NVS05, NVS06, NVS10  
 Medium (P/N GX00666):  
 NVS03, NVS04, NVS07  
 NVS11, NVS12  
 For FFC (P/N GX00751)  
 NVS01.  
 Use 9 in total when 1 includes  
 a harness product ferrite core.

Name	Connection Point			
	Name	Board	Name	Board or Location
ECN1	EC01	Power Unit	CN1	Panel Logic
EPU1	CN61	Power Unit	PPU1	Filter Board
ECN6	CN64	Power Unit	CN23	Panel X-SUS
EPM1	CN63	Power Unit	PPM1	Main Board
EPM2	PML1	Power Unit	PPM2	Main Board
			PPM3	Main Board
ECN23	CN68	Power Unit	CN6	Panel Logic
ECONT	PSC	Main Board	PSC	Control Board
ESL	PSHL	Main Board	PDS	SD Board
			PLS	LED Board
ESP1	PSPK	Main Board	---	(Right SP)
			---	(Left SP)
EMPO	PA01	Main Board	PW01	Slot Board
EMH	P403	Main Board	PH01	SD Board
EFAC	---	Inlet	PW01	Filter Board
			---	(Chassis Metal)



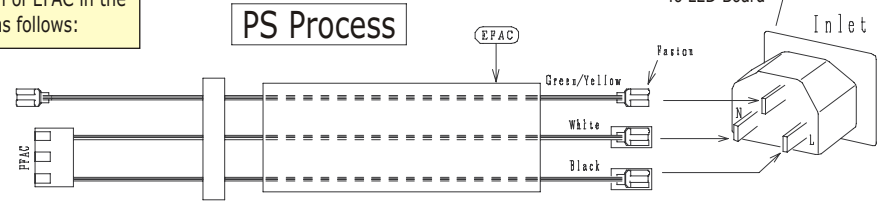
- NOTES:**
1. This drawing shows connection and wire styling.
  2. This drawing shows the rear view of the set.
  3. Securely lock the lead holder in place.
  4. Cores and SK binders with ( ) round brackets should be delivered integrated with harness.

(For P42T01U, P42T01E, P42TP01U and P42TP01E)

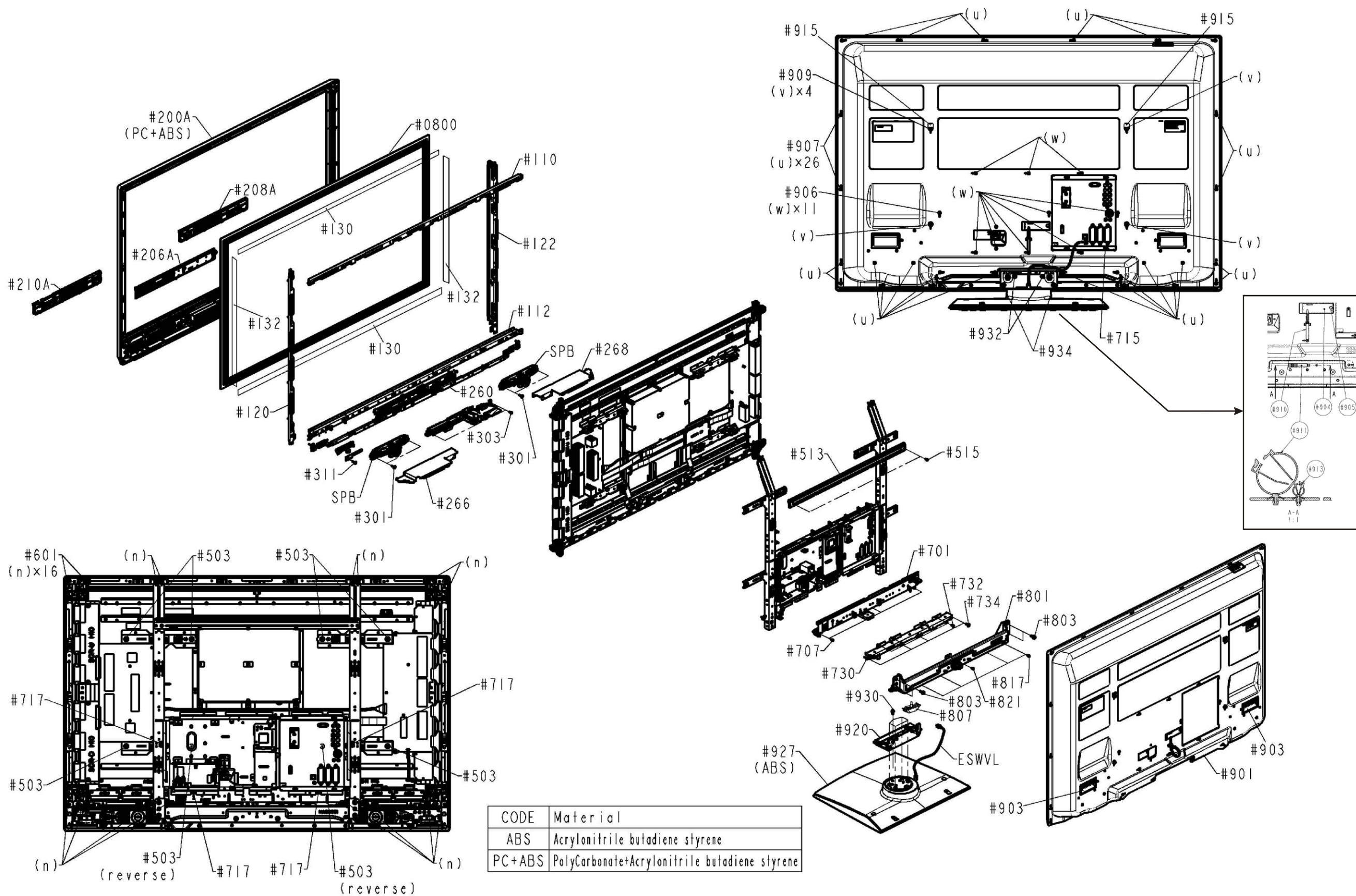


- NOTES:**
1. This drawing shows connection and wire styling.
  2. This drawing shows the rear view of the set.
  3. Securely lock the lead holder in place.
  4. Cores and SK binders with ( ) round brackets should be delivered integrated with harness.

**EFAC Preparation:**  
Securely insert Faston of EFAC in the terminal of the inlet as follows:



11. Disassembly diagrams (For P50T01U, P50T01E, P50TP01U and P50TP01E)



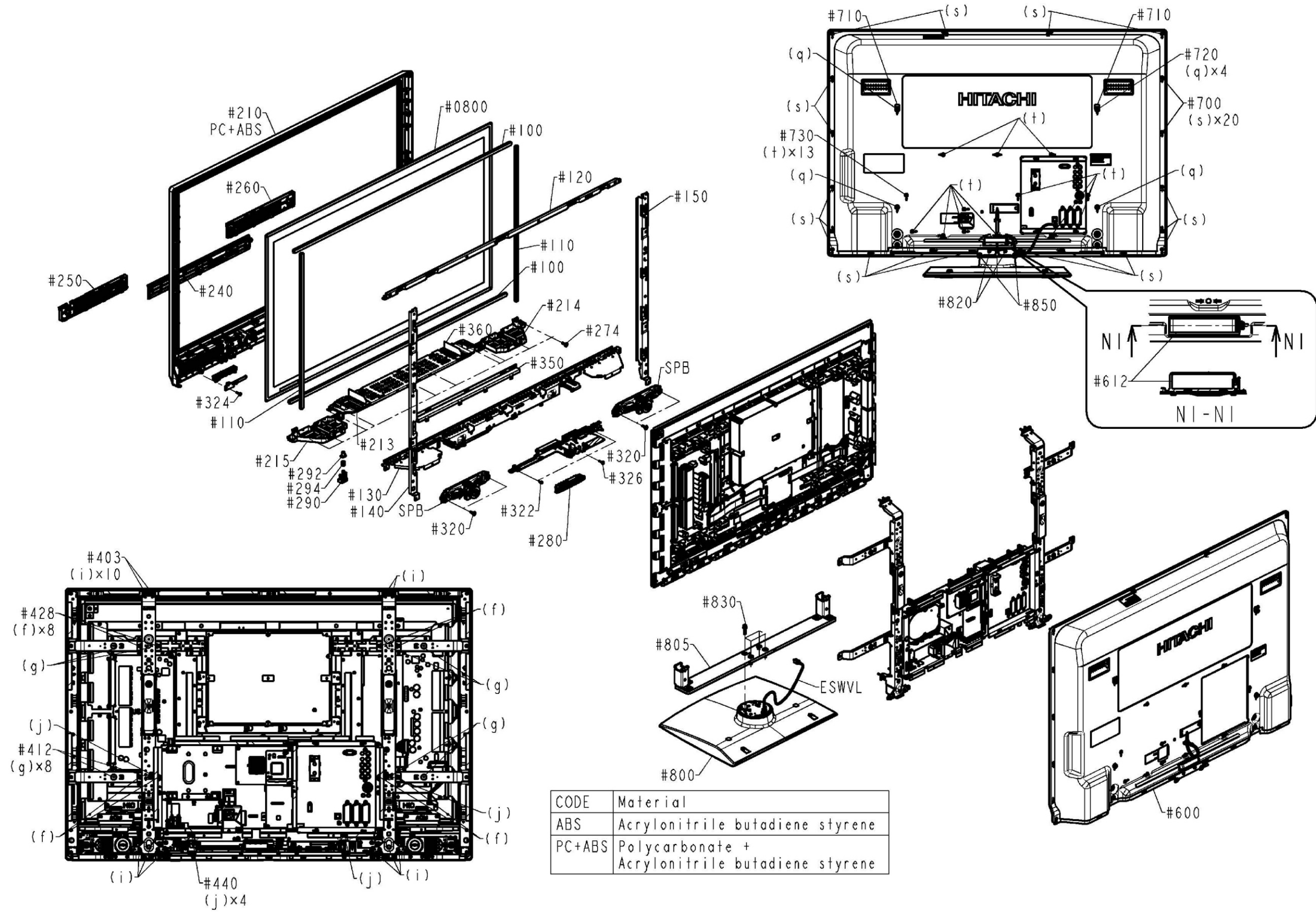
SM016

ASSEMBLY DRAWING

HITACHI



(For P42T01U, P42T01E, P42TP01U and P42TP01E)



SM016

ASSEMBLY DRAWING

**HITACHI**

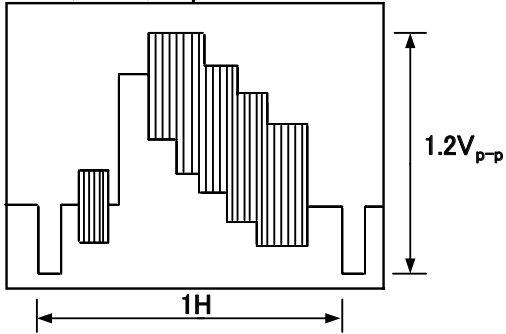


**THE UPDATED PARTS LIST  
FOR THIS MODEL IS  
AVAILABLE ON ESTA**

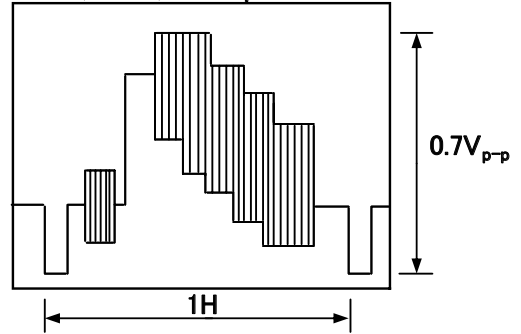
### 13. Circuit diagrams

● Waveforms

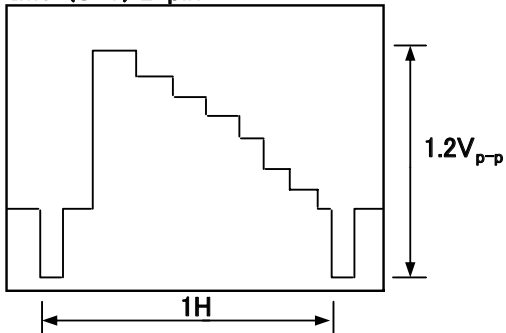
IM01(CVBS) 21pin



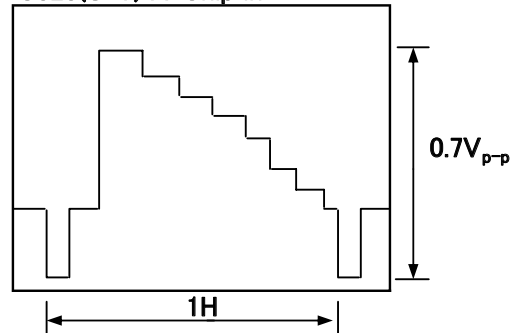
C828(CVBS) A-Chip in



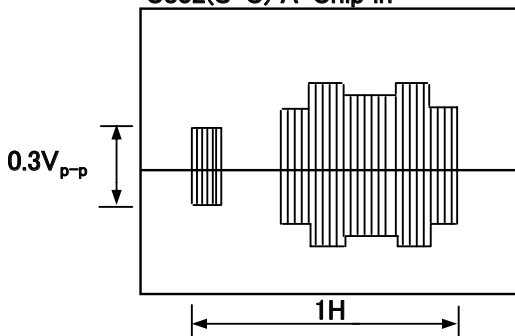
IM01(S-Y) 21pin



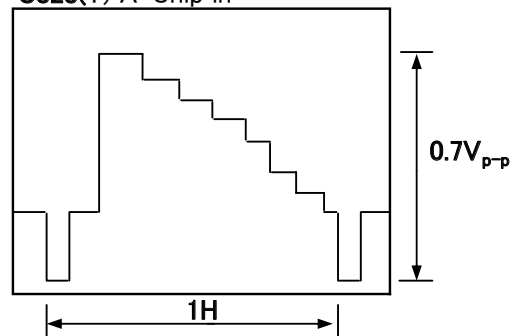
C828(S-Y) A-Chip in



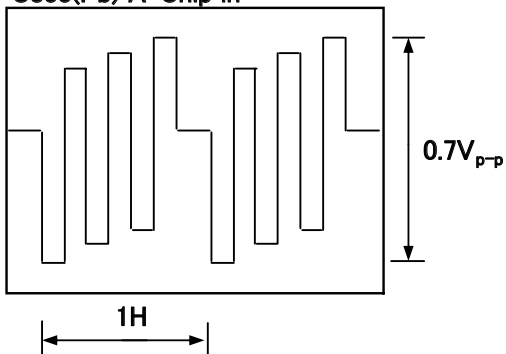
IM01(S-C) 30pin  
C832(S-C) A-Chip in



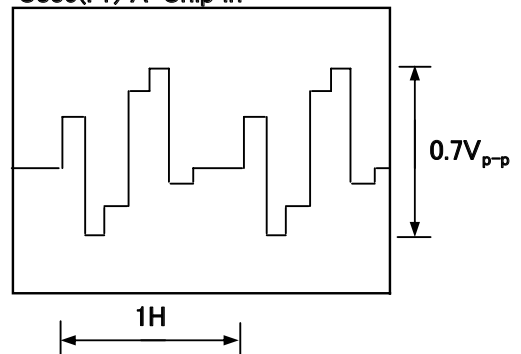
C828(Y) A-Chip in



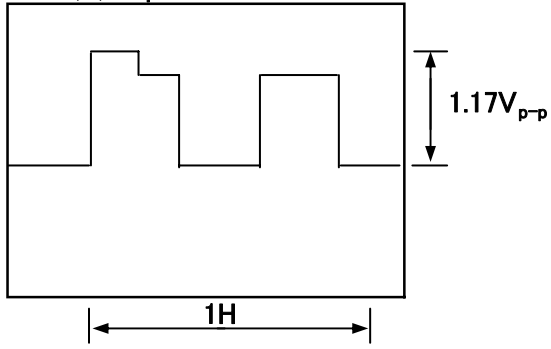
C833(Pb) A-Chip in



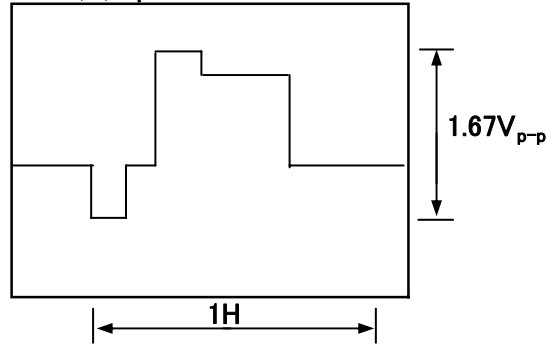
C835(Pr) A-Chip in



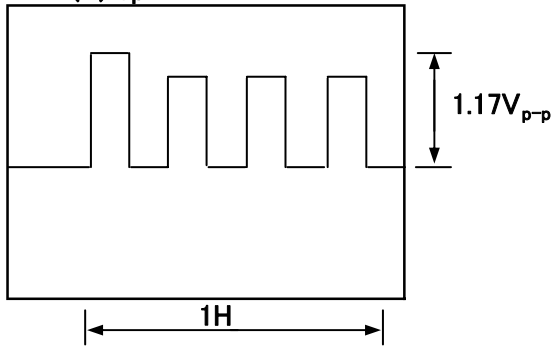
IM01(R) 15pin



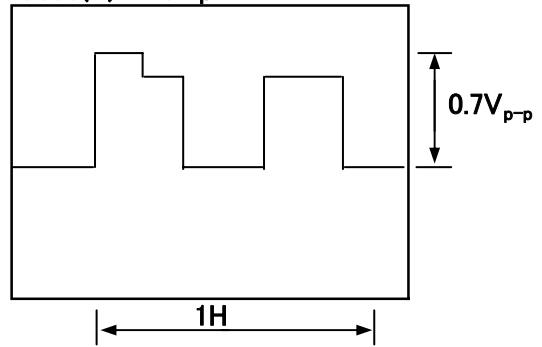
IM01(G) 8pin



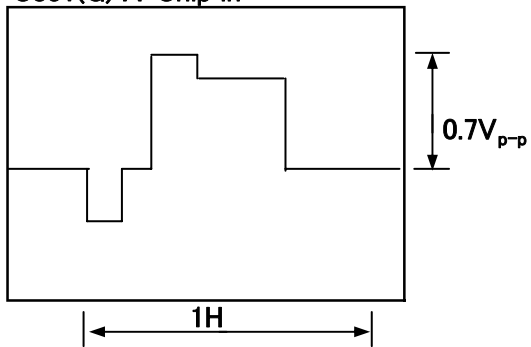
IM01(B) 3pin



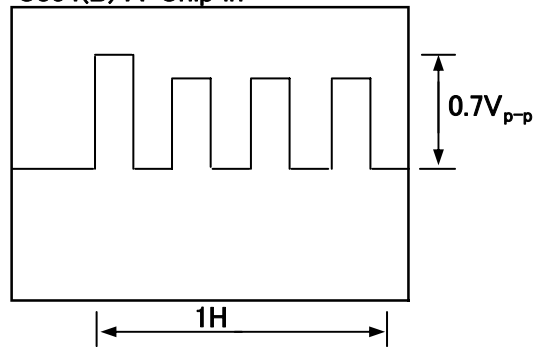
C836(R) A-Chip in



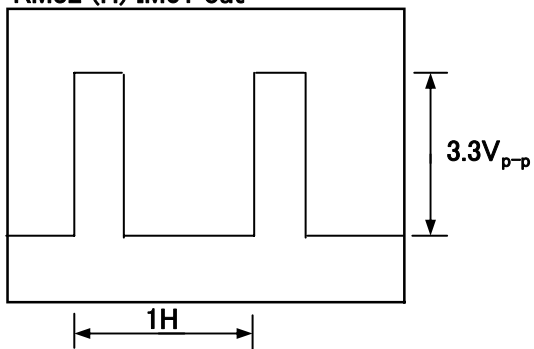
C831(G) A-Chip in



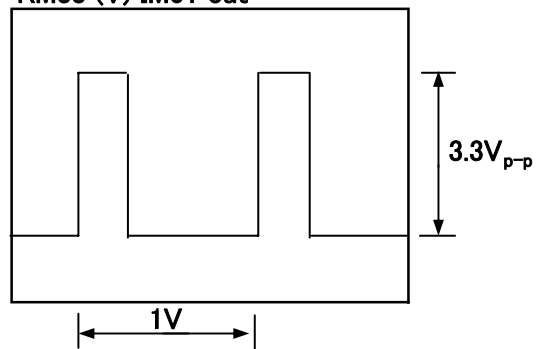
C834(B) A-Chip in



RM32 (H) IM01 out



RM33 (V) IM01 out

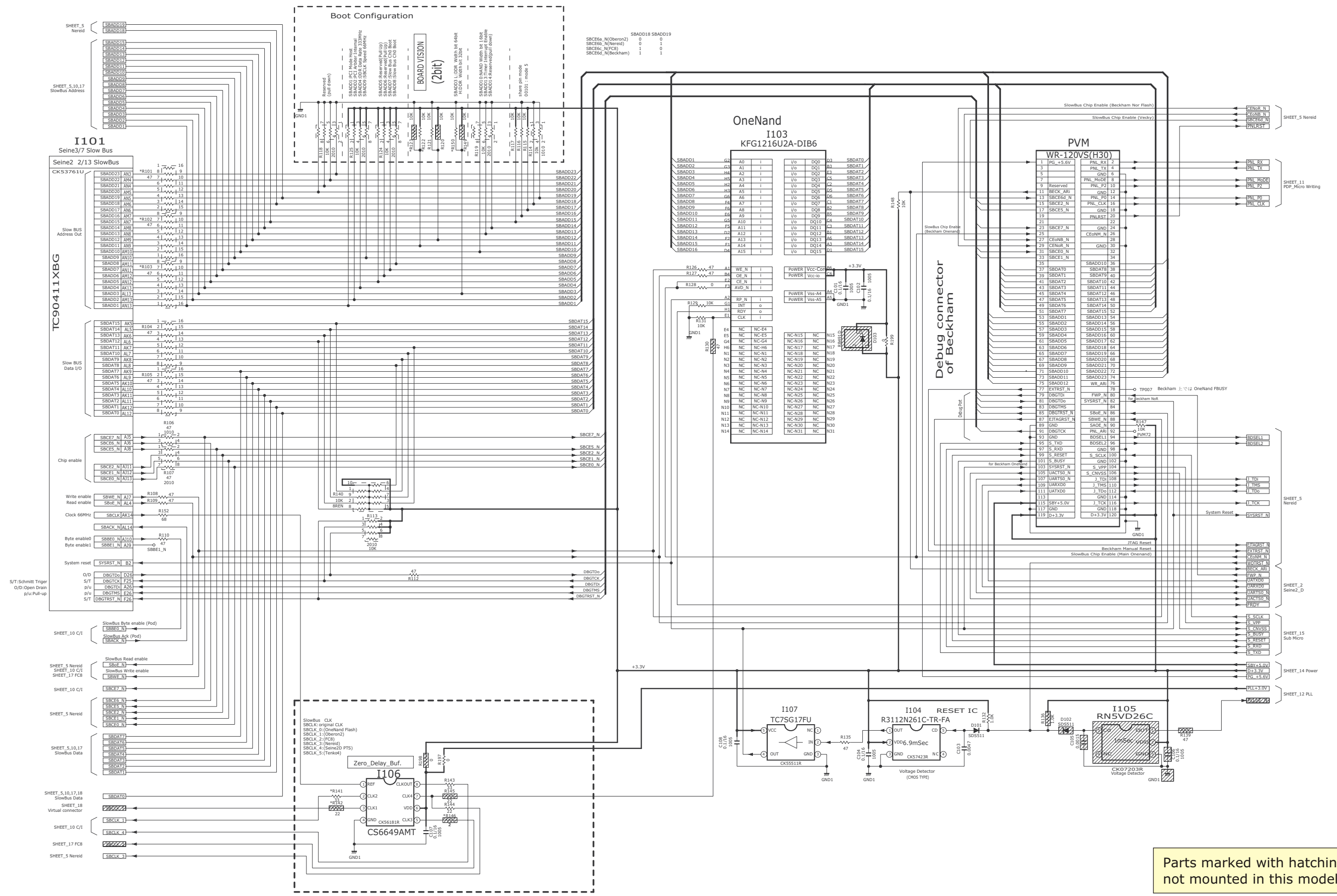


## Circuit diagram list

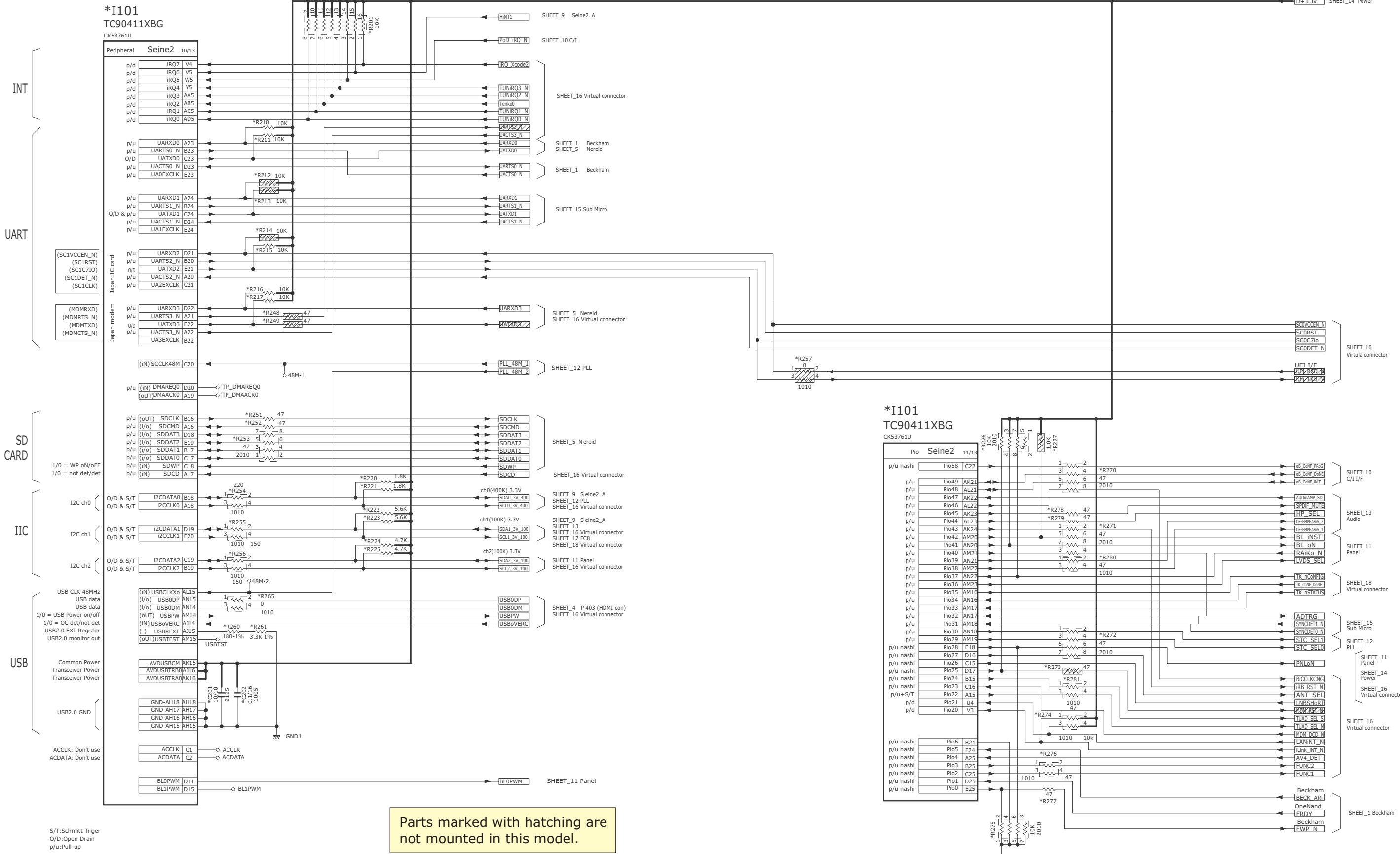
MAIN 1 (P50T01U/P42T01U).....	41
MAIN 2 (P50T01U/P42T01U).....	42
MAIN 3 (P50T01U/P42T01U).....	43
MAIN 4 (P50T01U/P42T01U).....	44
MAIN 5 (P50T01U/P42T01U).....	45
MAIN 6 (P50T01U/P42T01U).....	45
MAIN 7 (P50T01U/P42T01U).....	47
MAIN 8 (P50T01U/P42T01U).....	48
MAIN 9 (P50T01U/P42T01U).....	49
MAIN 10 (P50T01U/P42T01U).....	50
MAIN 11 (P50T01U/P42T01U).....	51
MAIN 12 (P50T01U/P42T01U).....	52
MAIN 13 (P50T01U/P42T01U).....	53
MAIN 14 (P50T01U/P42T01U).....	54
MAIN 15 (P50T01U/P42T01U).....	55
MAIN 16 (P50T01U/P42T01U).....	56
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MAIN 7 (P50T01E/P42T01E).....	47
MAIN 8 (P50T01E/P42T01E).....	48
MAIN 9 (P50T01E/P42T01E).....	49
MAIN 10 (P50T01E/P42T01E).....	50
MAIN 11 (P50T01E/P42T01E).....	51
MAIN 12 (P50T01E/P42T01E).....	52
MAIN 13 (P50T01E/P42T01E).....	53
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MAIN 15 (P50T01E/P42T01E).....	55
MAIN 16 (P50T01E/P42T01E).....	56
MAIN 17 (P50T01E/P42T01E).....	57

## Circuit diagram list

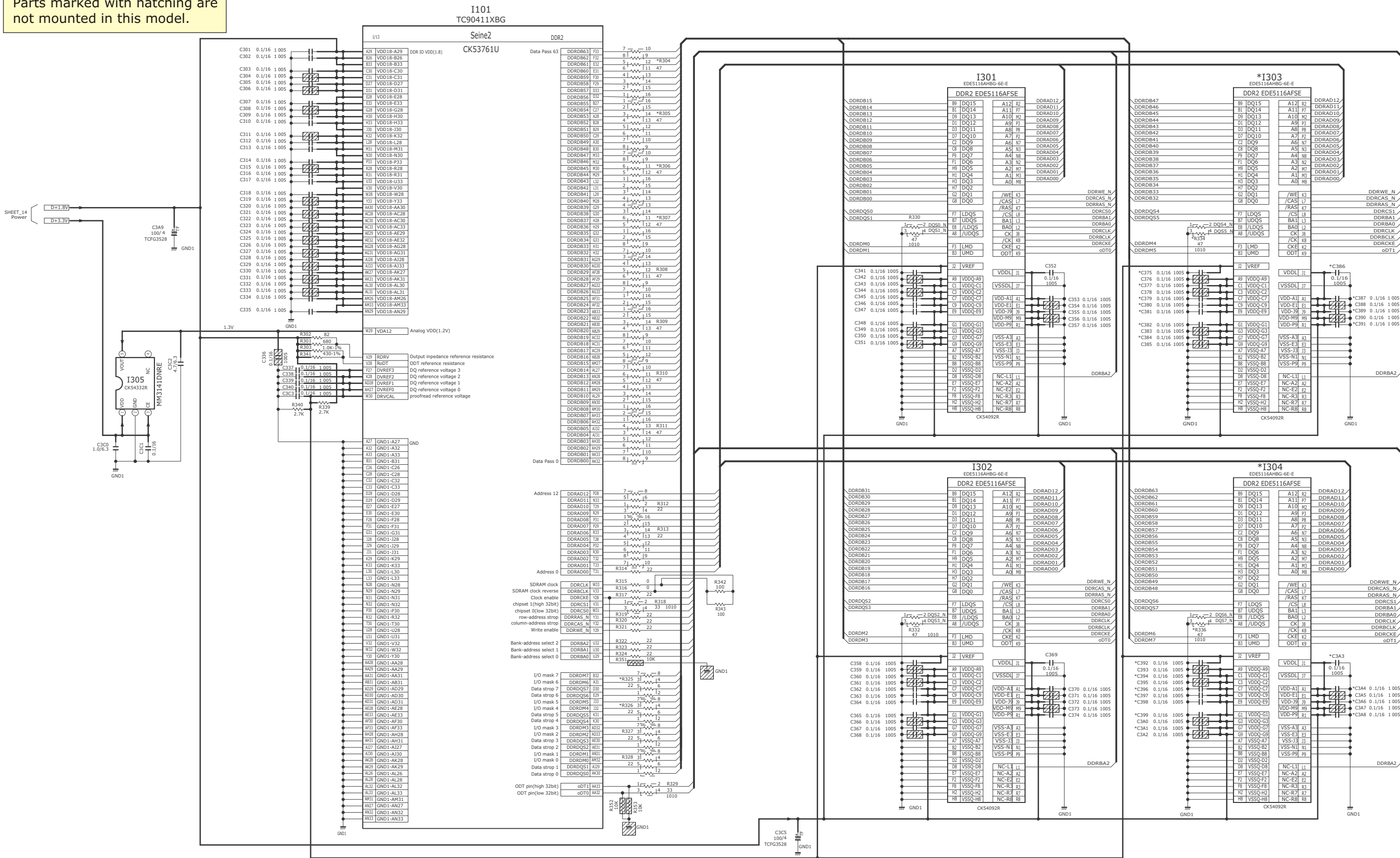
SUB 1 (P50T01U/P42T01U).....	58
SUB 2 (P50T01U/P42T01U).....	59
SUB 3 (P50T01U/P42T01U).....	60
SUB 4 (P50T01U/P42T01U).....	61
SUB 5 (P50T01U/P42T01U).....	62
SUB 1 (P50T01E/P42T01E).....	58
SUB 2 (P50T01E/P42T01E).....	59
SUB 3 (P50T01E/P42T01E).....	60
SUB 4 (P50T01E/P42T01E).....	61
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TERMINAL 4 (P50T01E/P42T01E) .....	75



Parts marked with hatching are not mounted in this model.

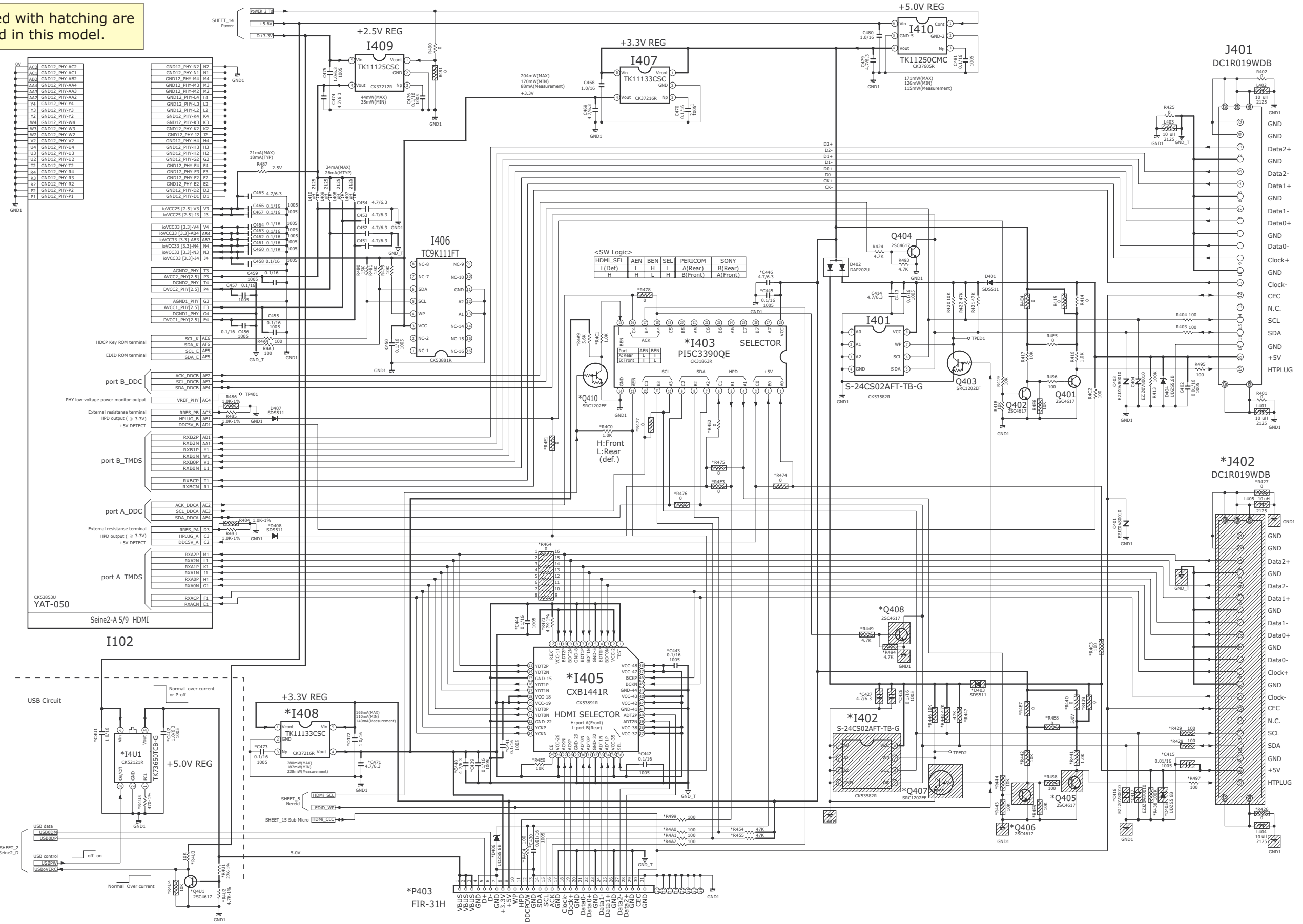


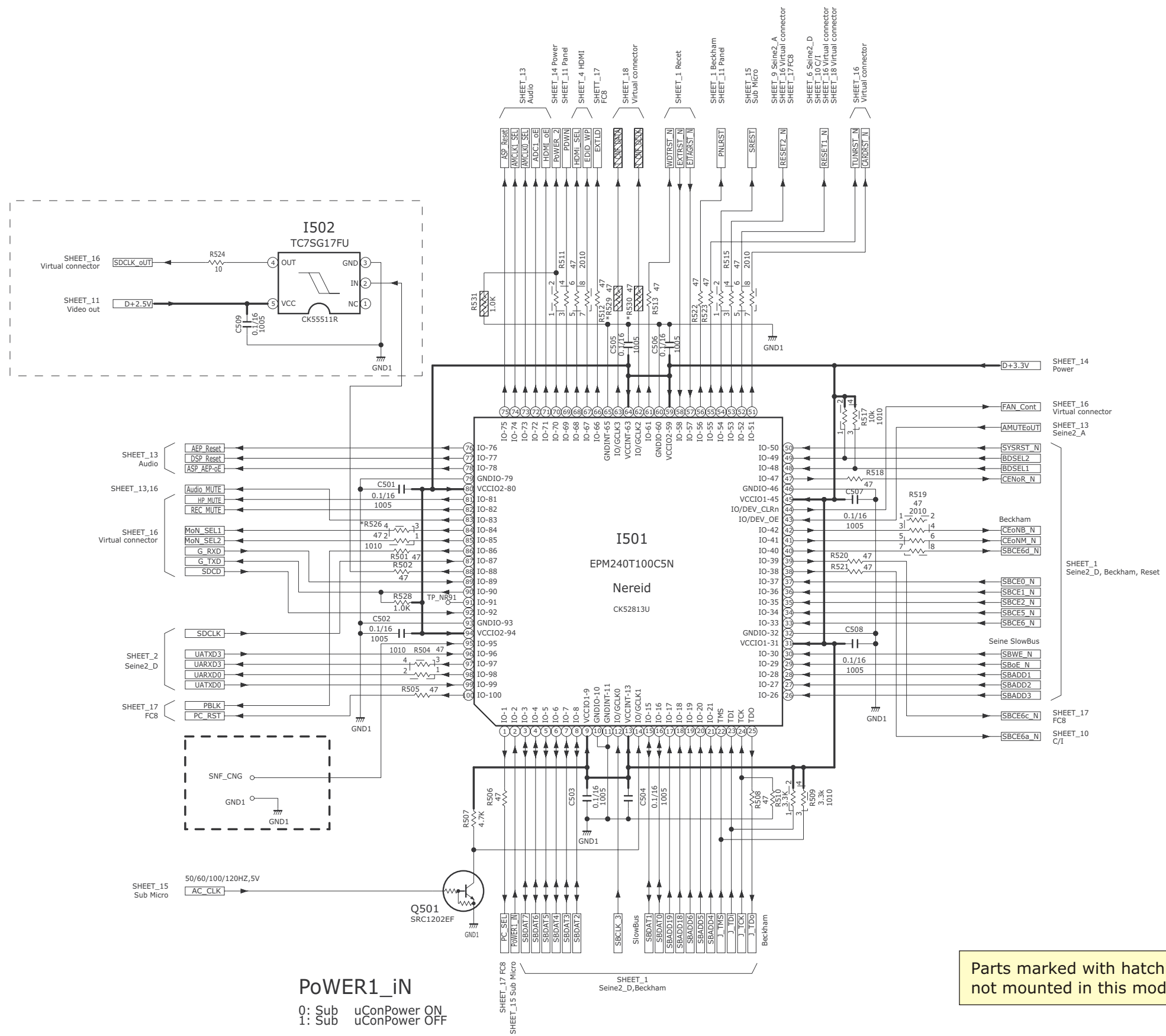
Parts marked with hatching are not mounted in this model.





Parts marked with hatching are not mounted in this model.



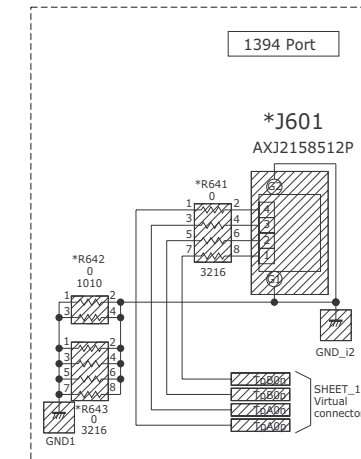
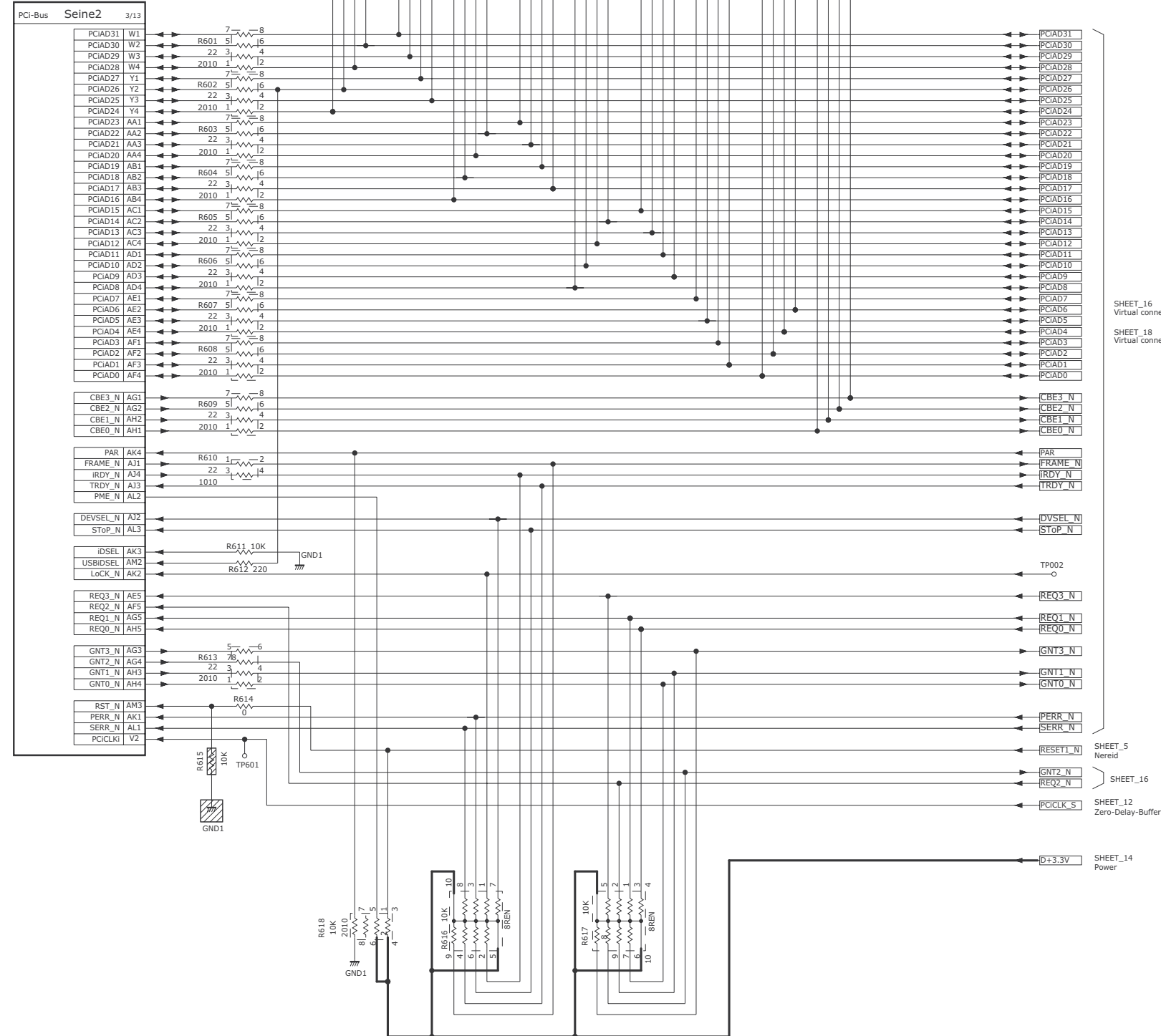


POWER1\_iN  
 0: Sub uConPower ON  
 1: Sub uConPower OFF

Parts marked with hatching are not mounted in this model.

Parts marked with hatching are not mounted in this model.

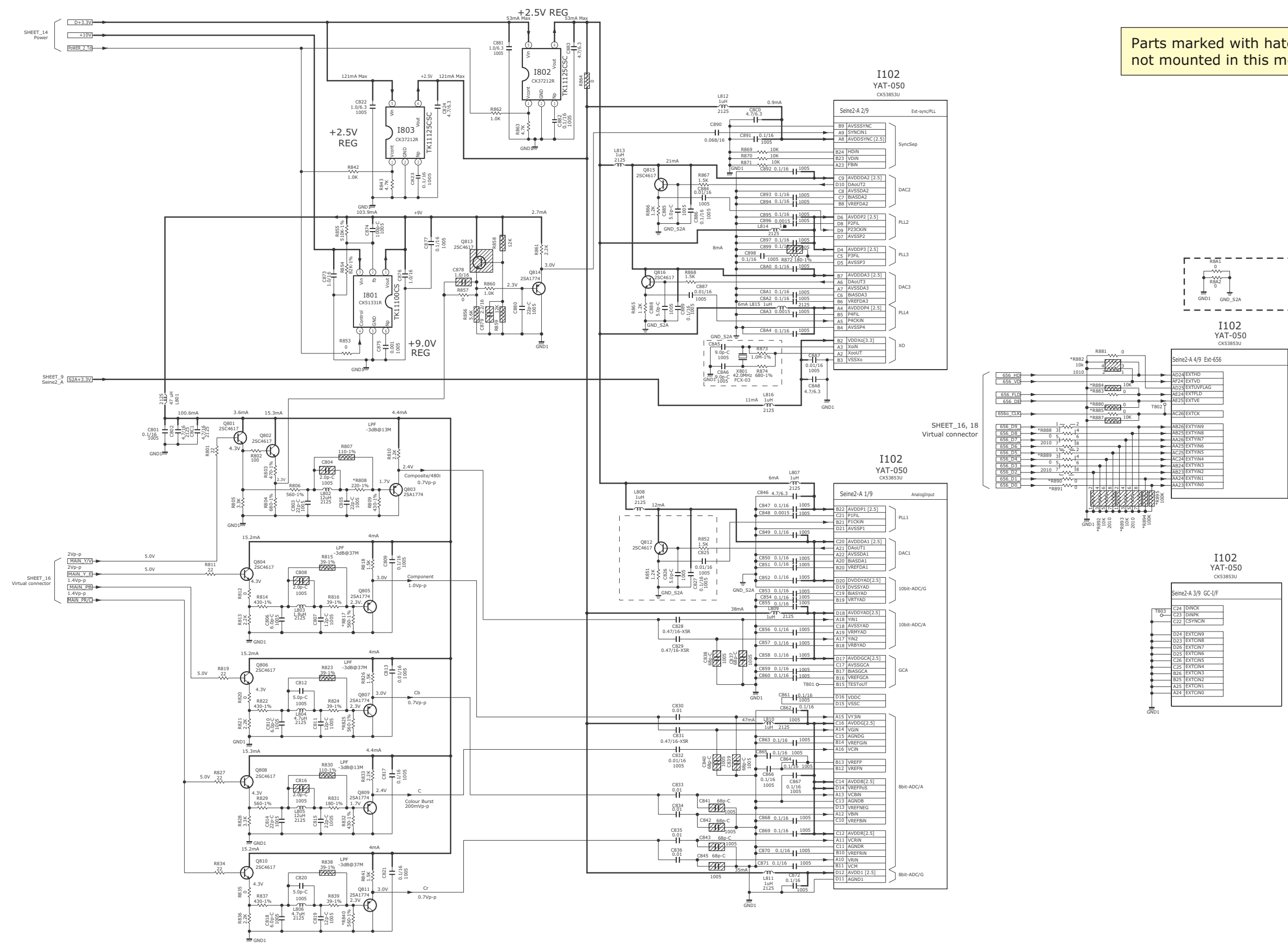
I101  
TC90411XBG  
CK53761U

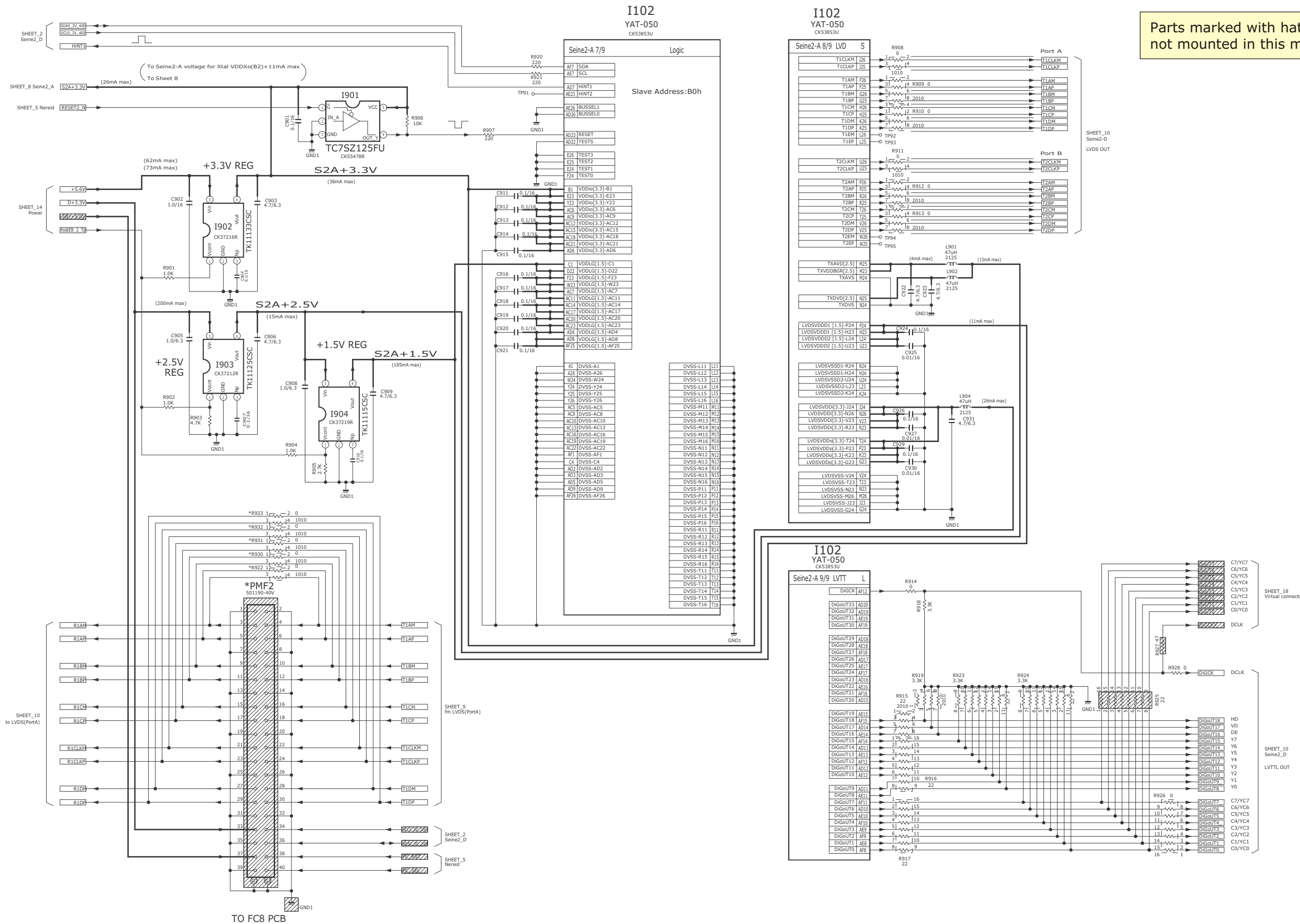


SHEET\_16  
Virtual connector  
SHEET\_18  
Virtual connector

SHEET\_5  
Nereid  
SHEET\_16  
SHEET\_12  
Zero-Delay-Buffer  
SHEET\_14  
Power

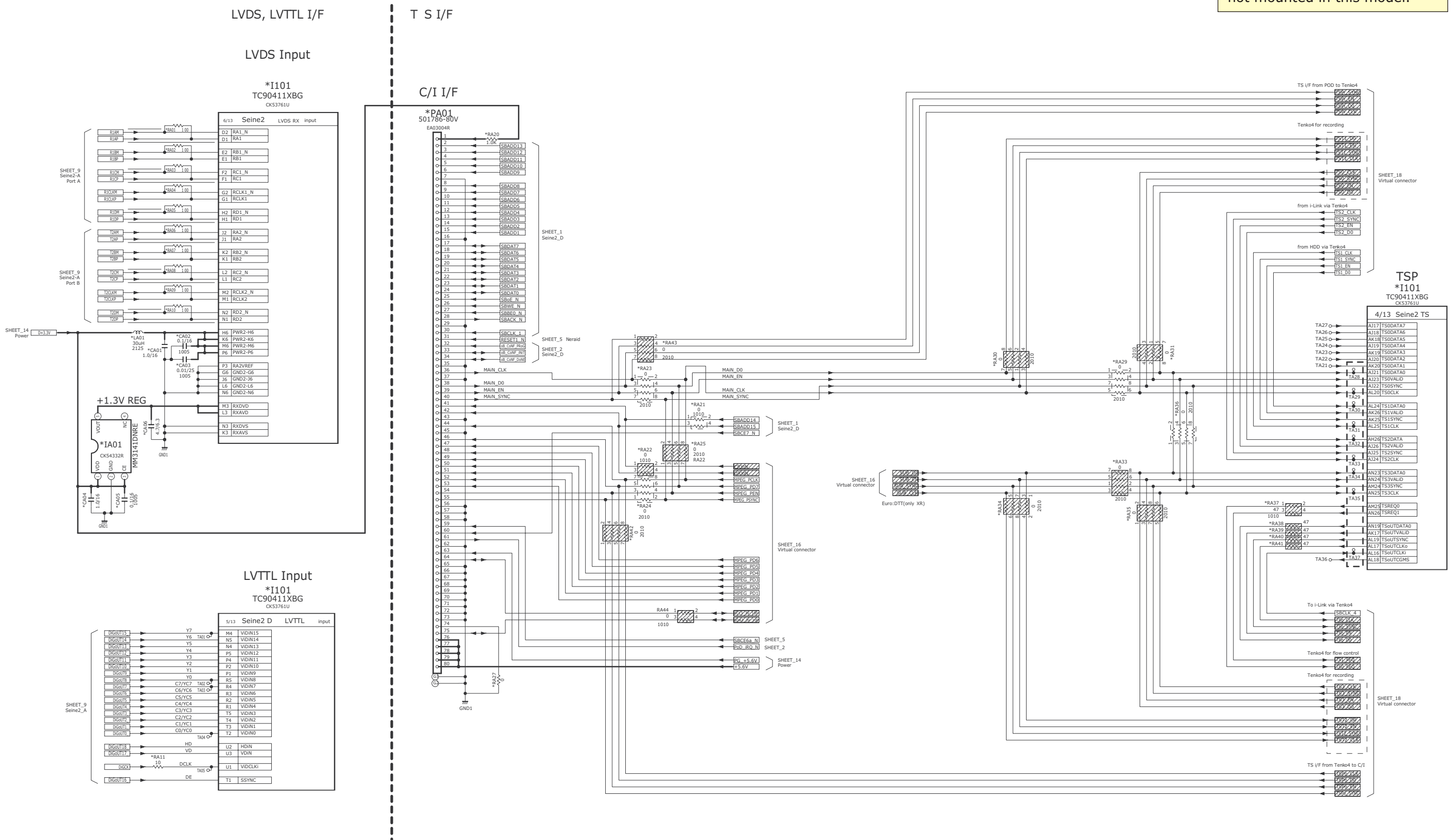
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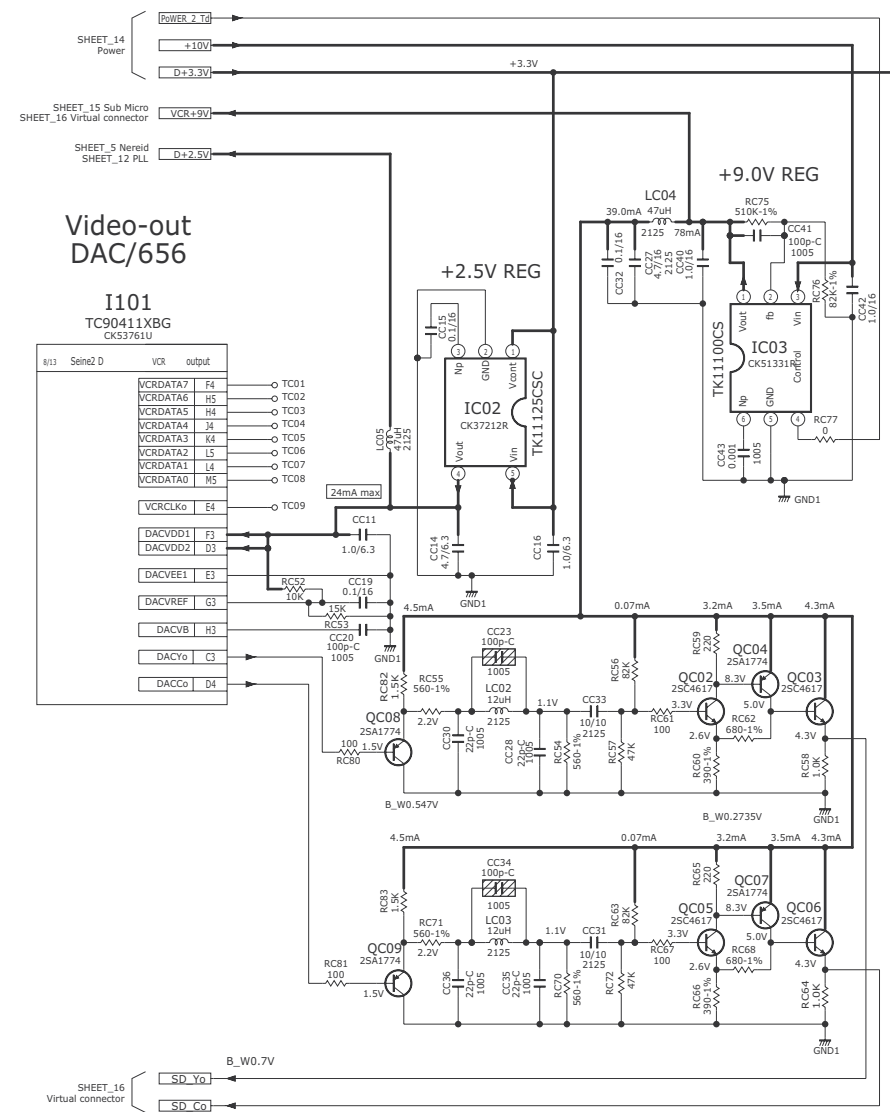
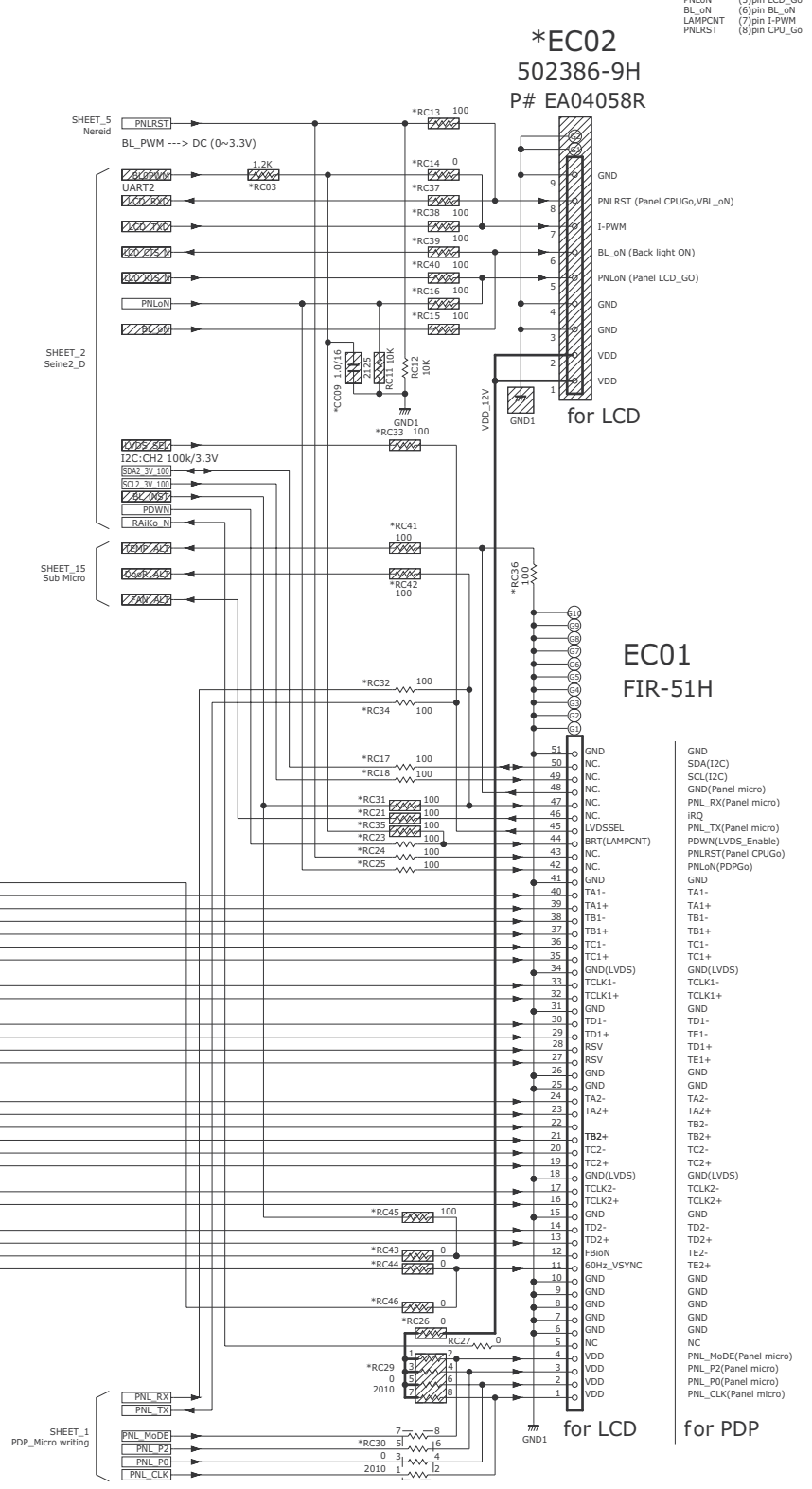
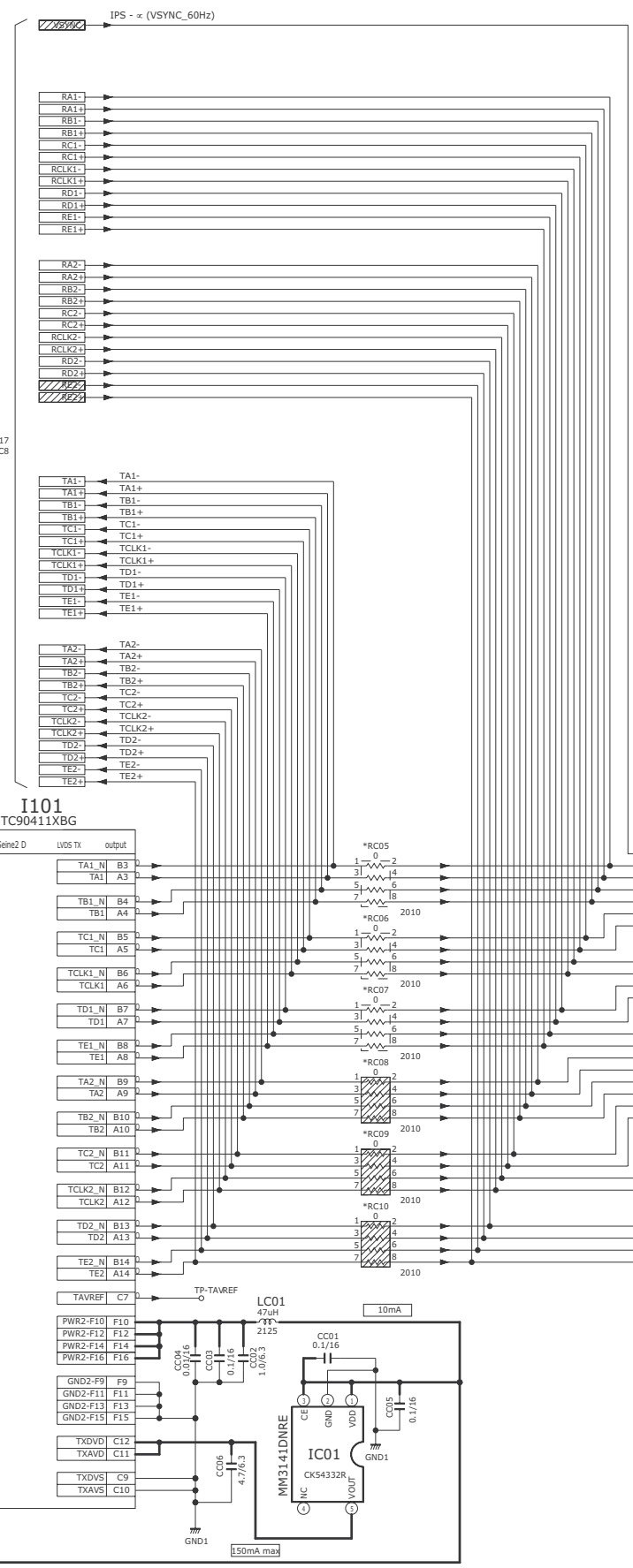


Parts marked with hatching are not mounted in this model.



Parts marked with hatching are not mounted in this model.

Panel-IF LVDS

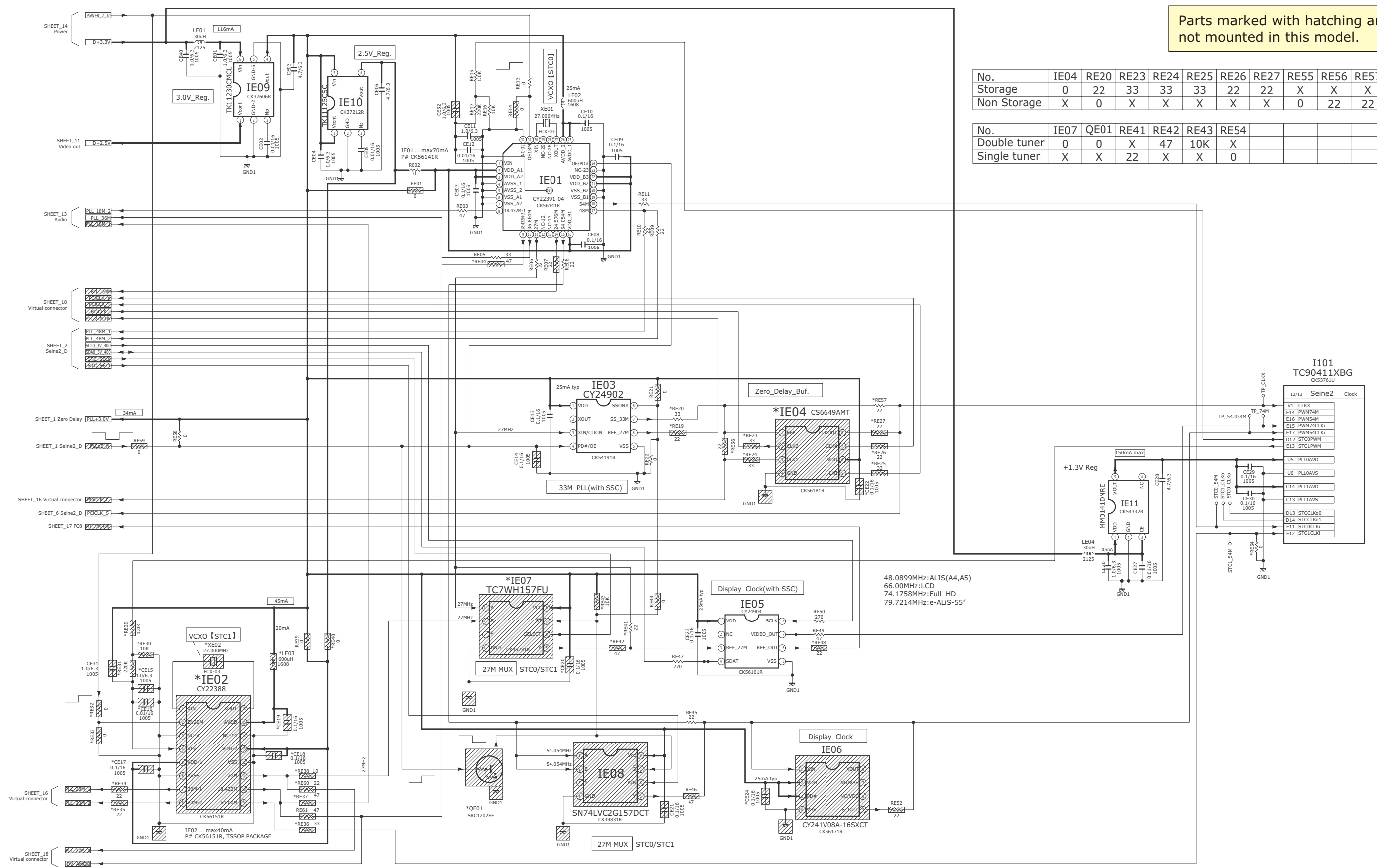


Parts marked with hatching are not mounted in this model.

No.	IE04	RE20	RE23	RE24	RE25	RE26	RE27	RE55	RE56	RE57
Storage	0	22	33	33	33	22	22	X	X	X
Non Storage	X	0	X	X	X	X	X	0	22	22

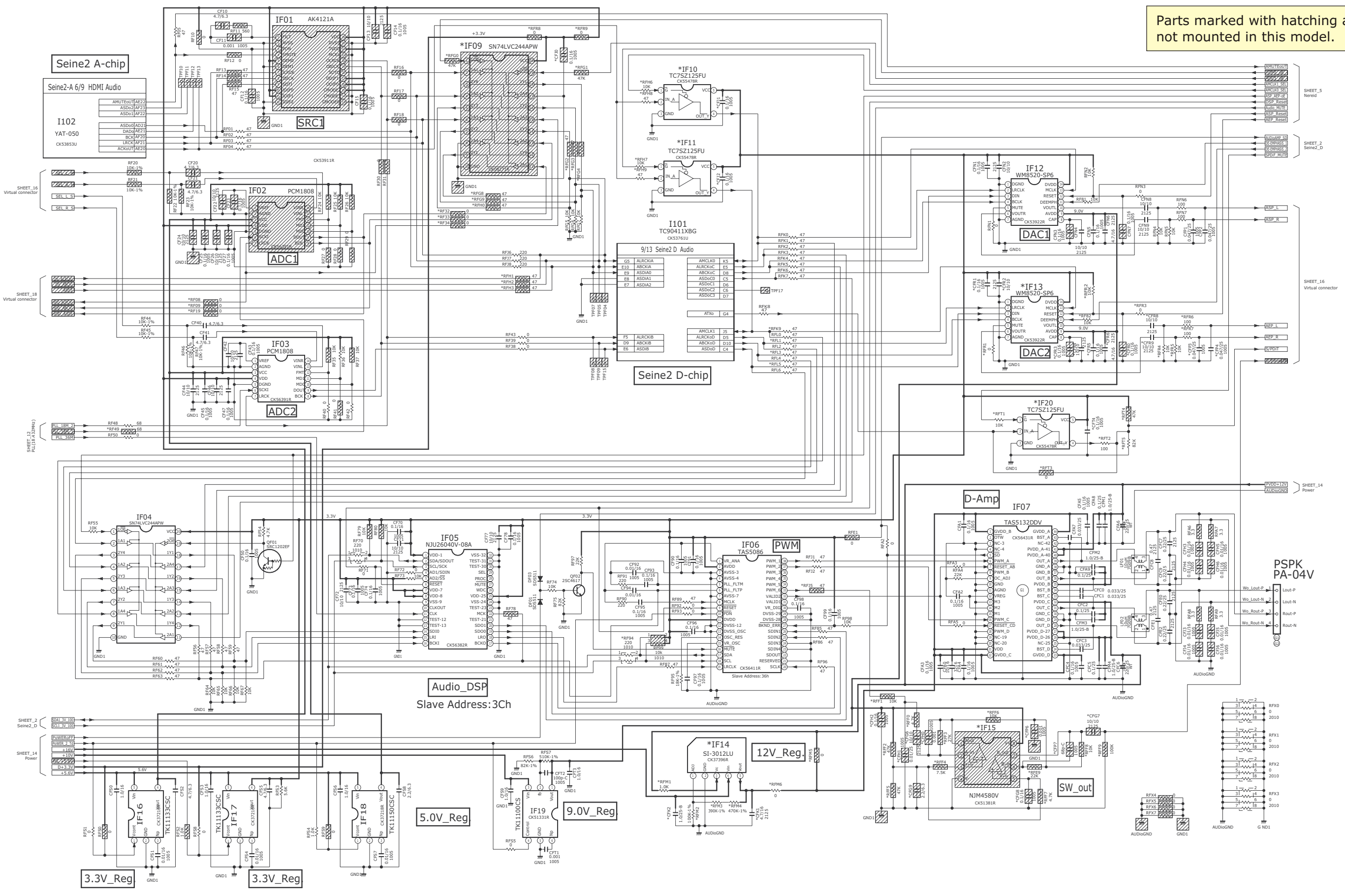
  

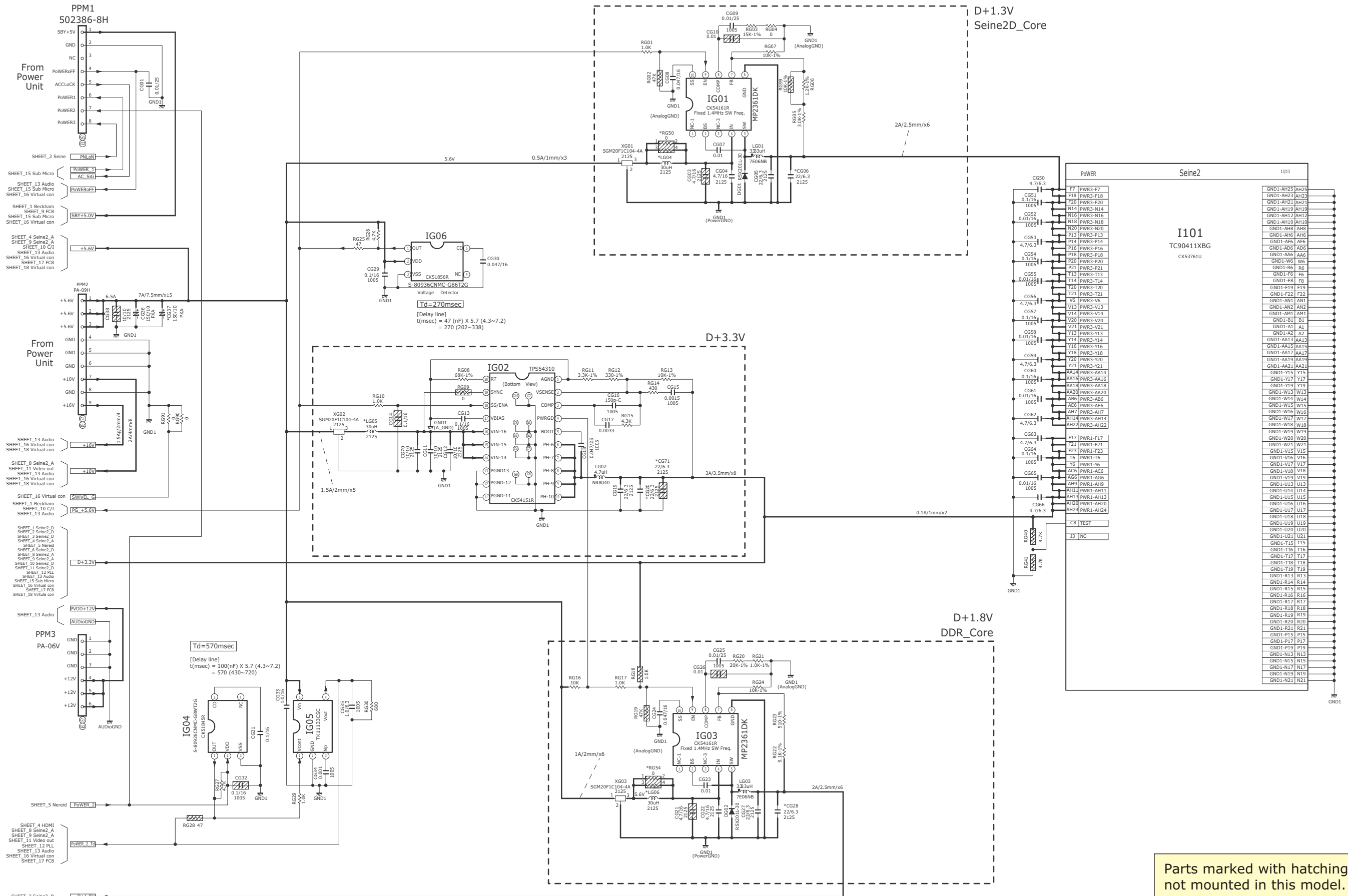
No.	IE07	QE01	RE41	RE42	RE43	RE54
Double tuner	0	0	X	47	10K	X
Single tuner	X	X	22	X	X	0



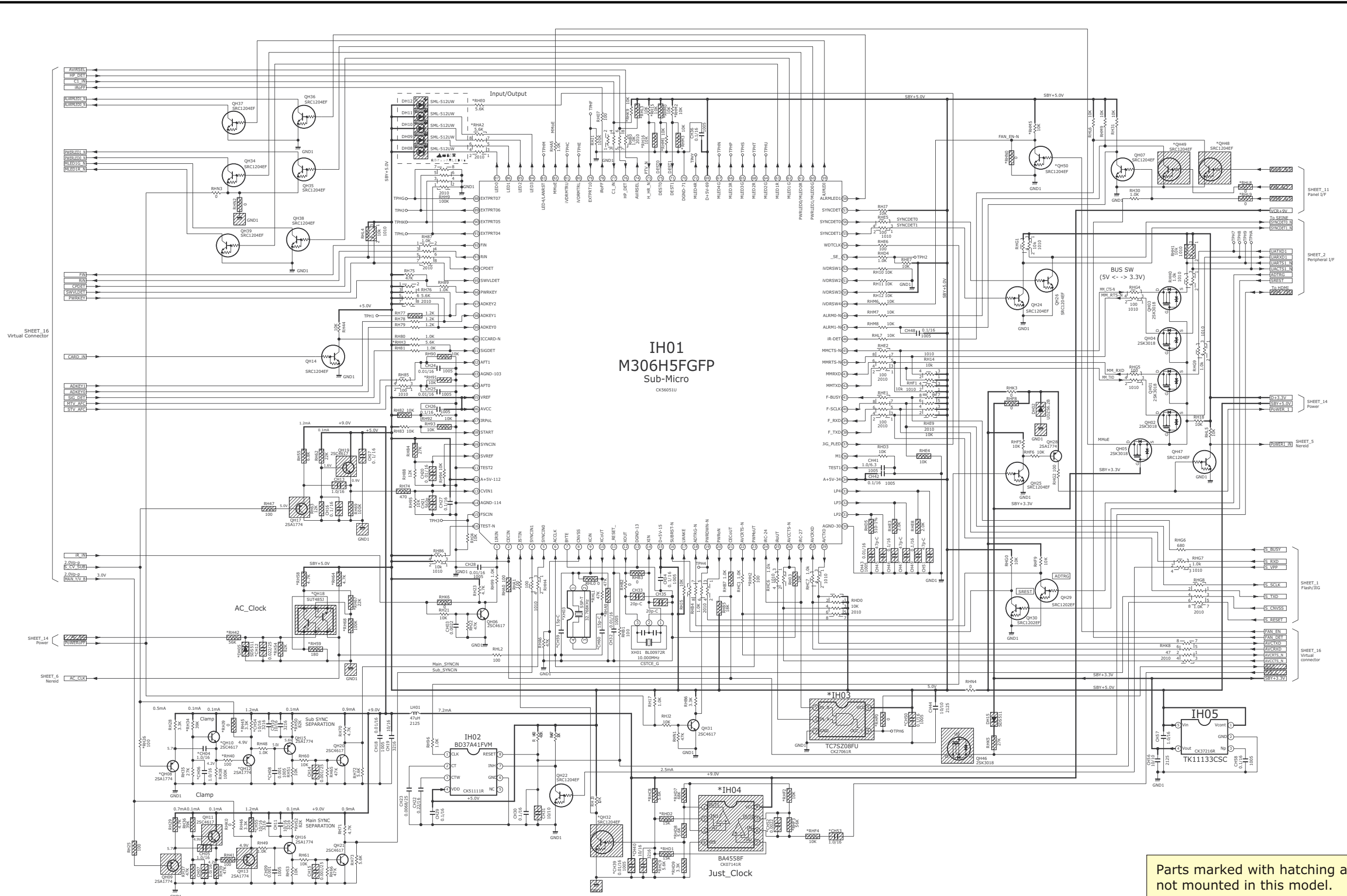


Parts marked with hatching are not mounted in this model.



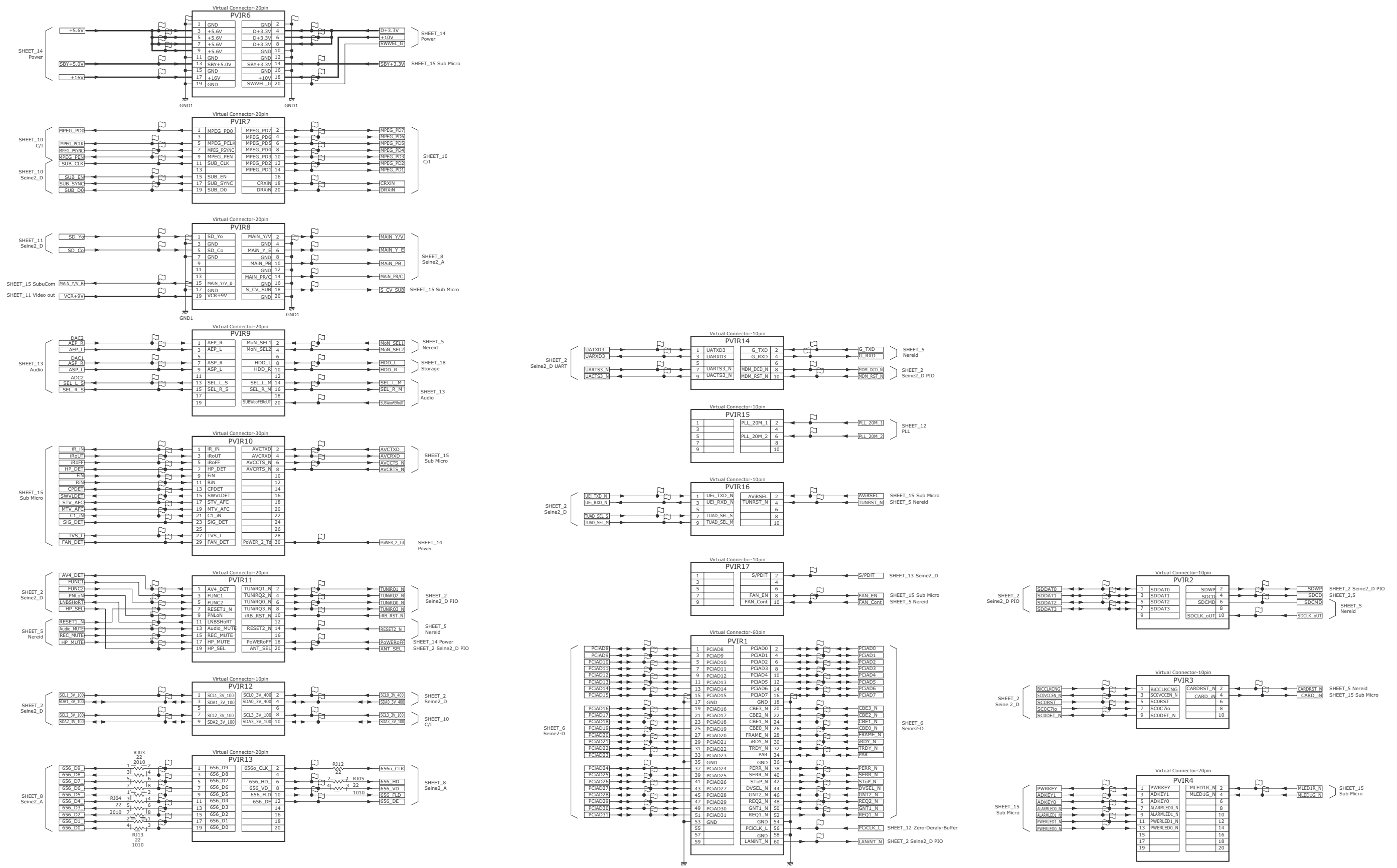


Parts marked with hatching are not mounted in this model.



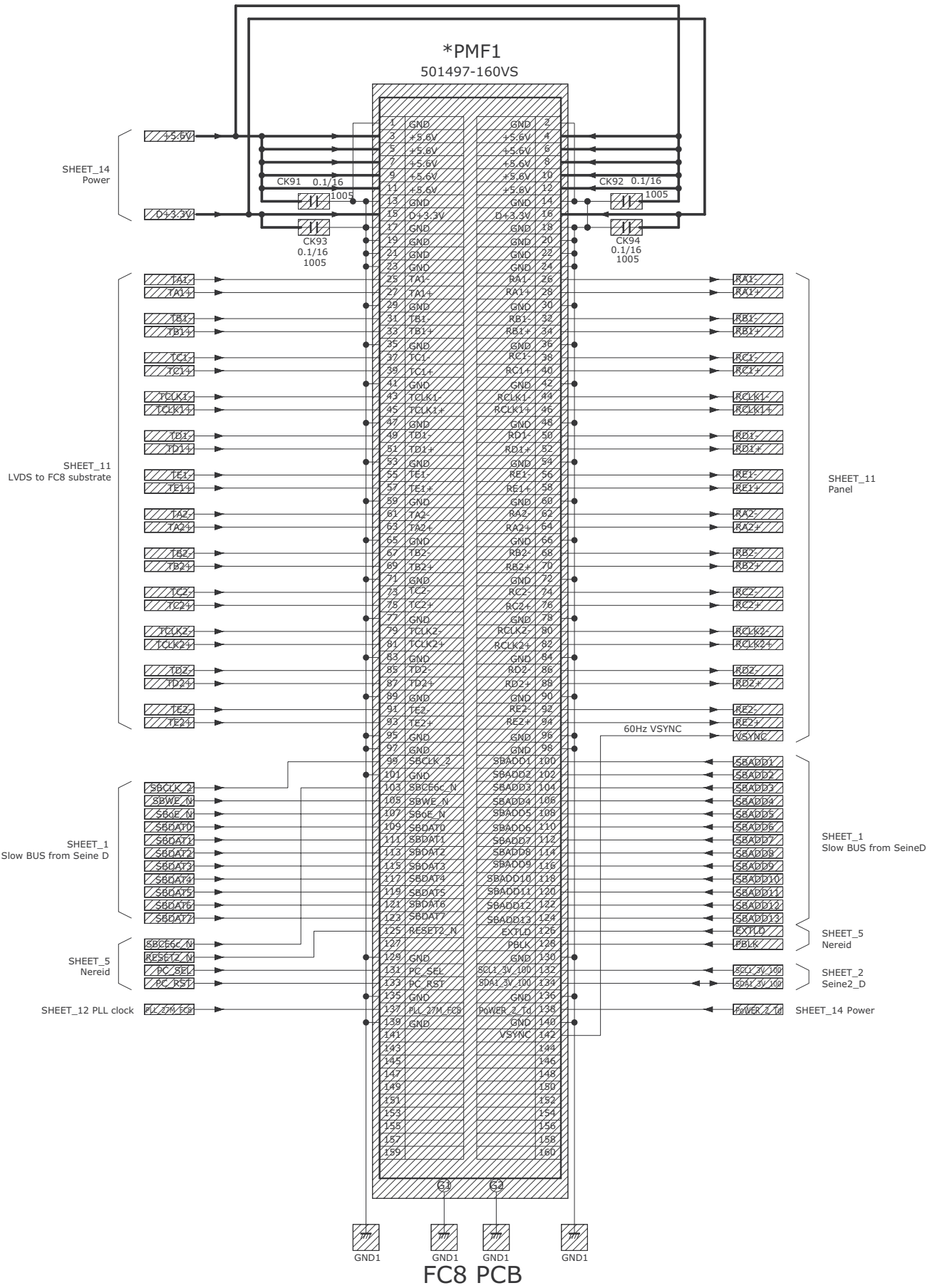
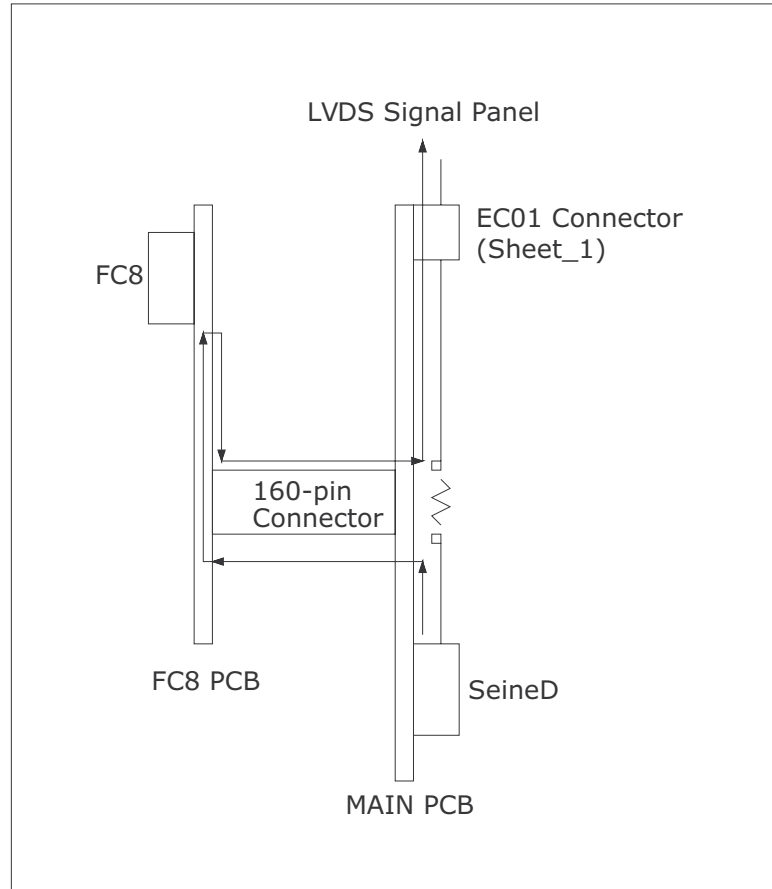
Parts marked with hatching are not mounted in this model.

Virtual connector (Main-Sub)



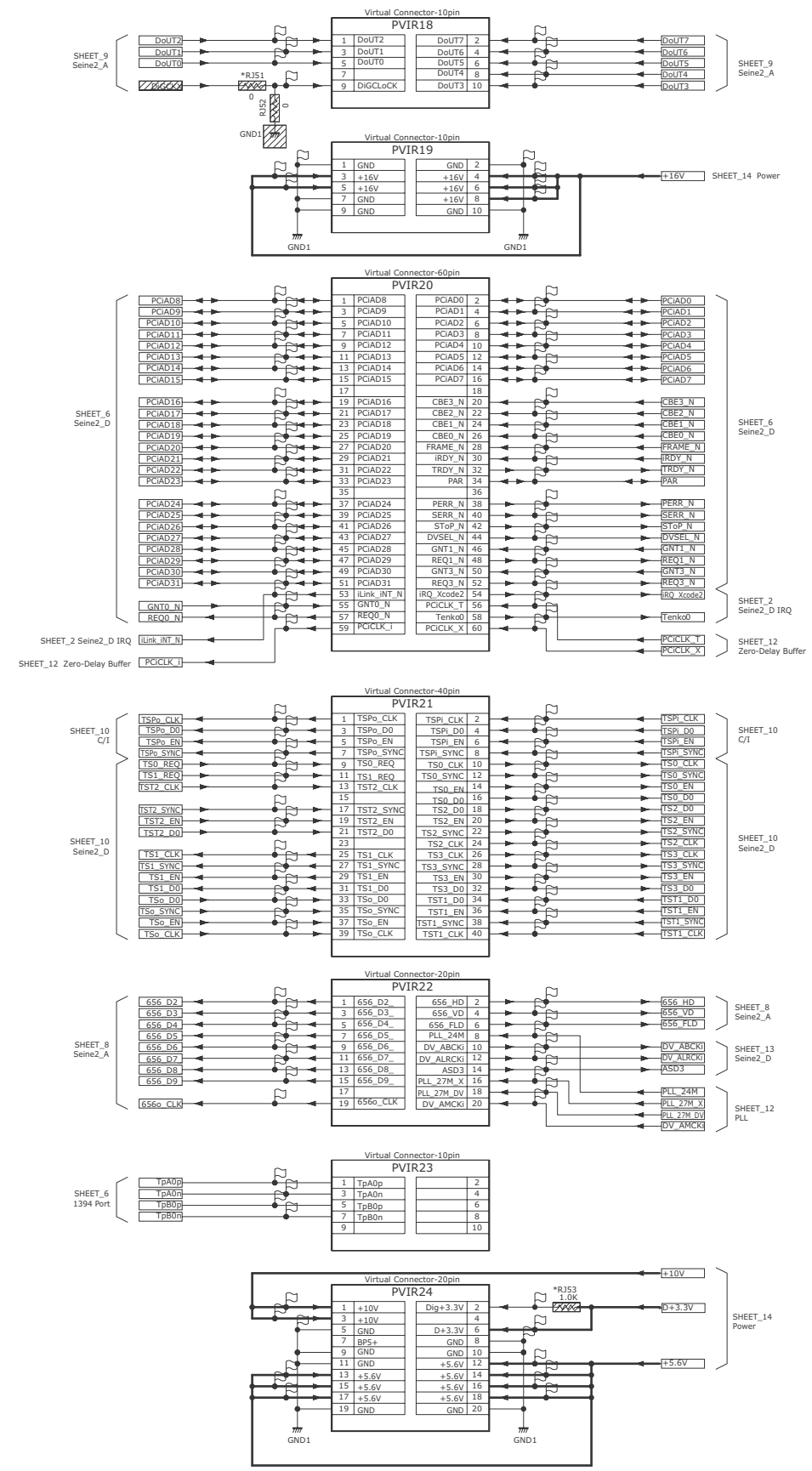


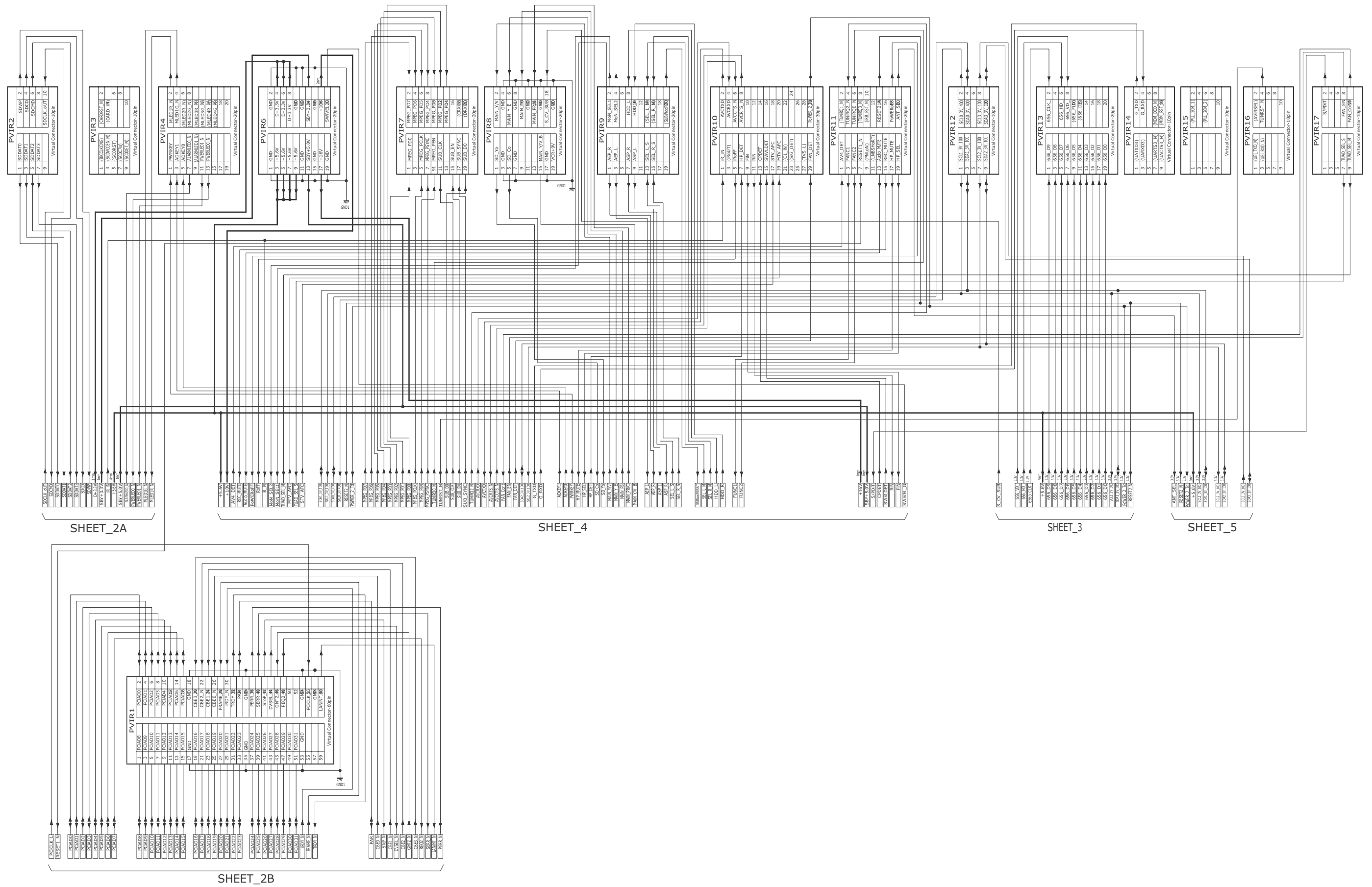
Parts marked with hatching are not mounted in this model.



Parts marked with hatching are not mounted in this model.

Virtual connector  
(Strage-Main)

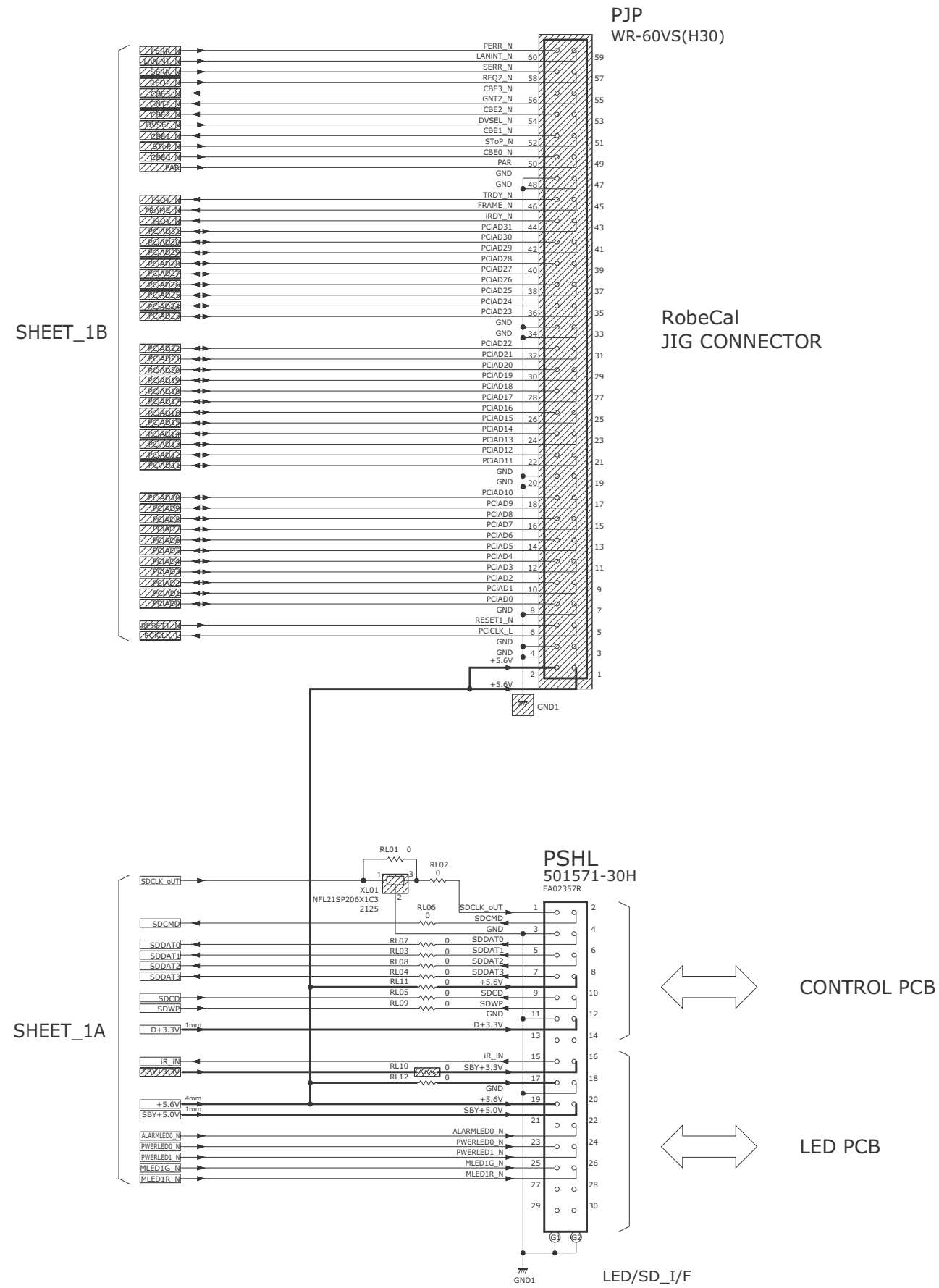




SM016

SUB BOARD CIRCUIT - SHEET 1

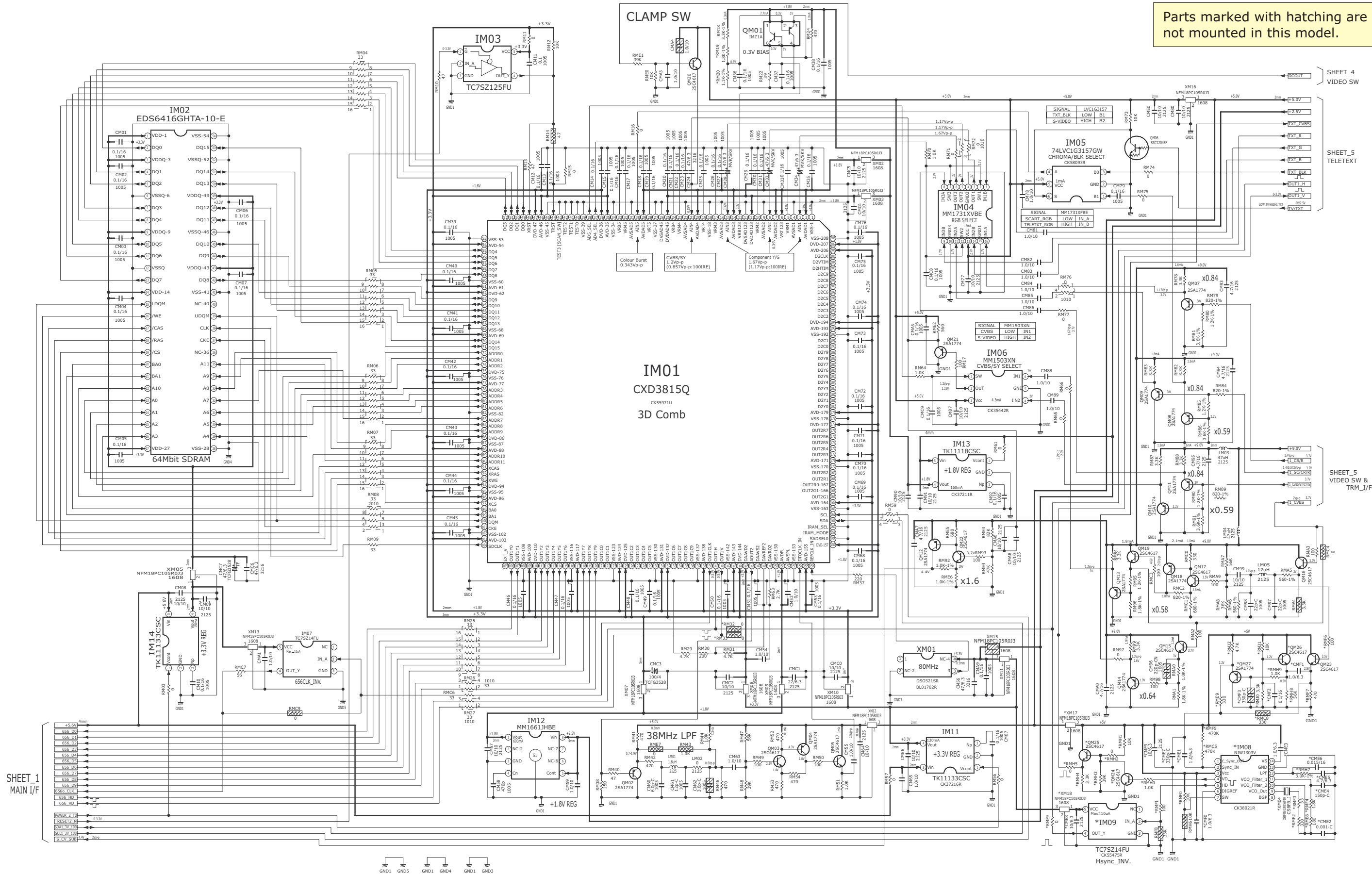
HITACHI



Parts marked with hatching are not mounted in this model.



Parts marked with hatching are not mounted in this model.



SHEET\_1  
MAIN I/F

SHEET\_4  
VIDEO SW

SHEET\_5  
TELETEXT

SHEET\_5  
VIDEO SW &  
TRM\_I/F

SM016

SUB BOARD CIRCUIT - SHEET 3

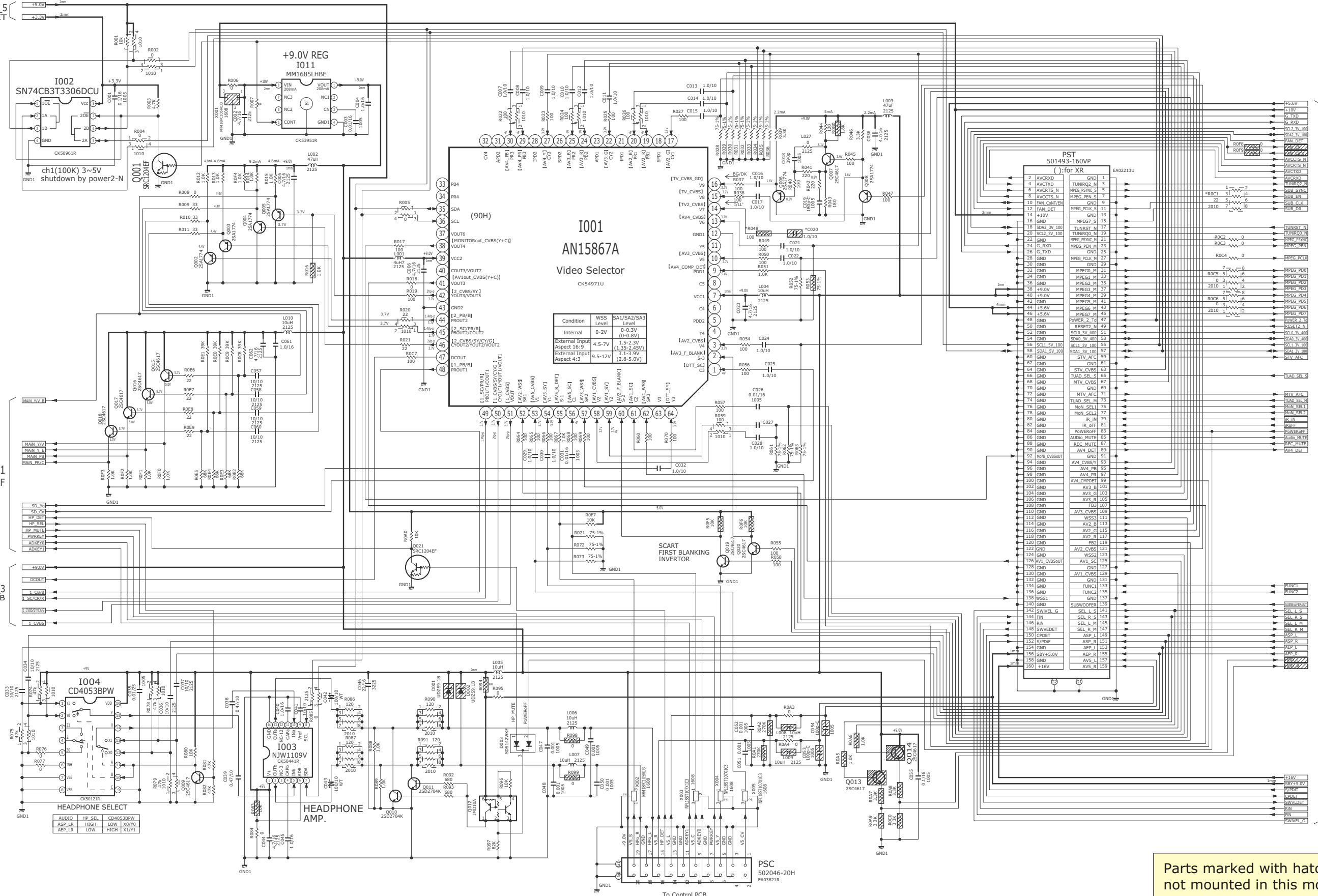
HITACHI

SHEET\_5  
TELETEXT

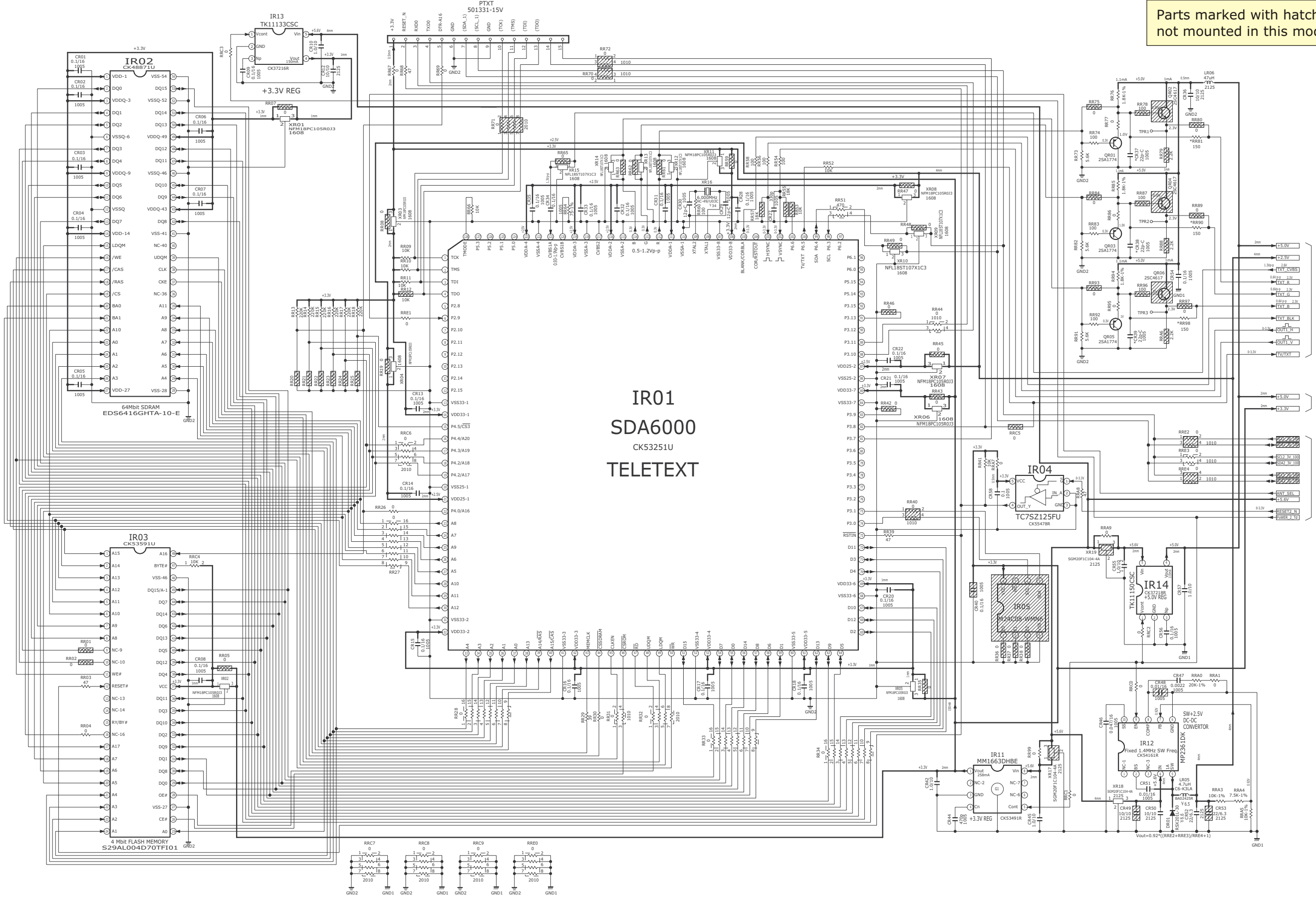
SHEET\_1  
MAIN I/F

SHEET\_3  
3D-COMB

SHEET\_1  
MAIN I/F



Parts marked with hatching are not mounted in this model.

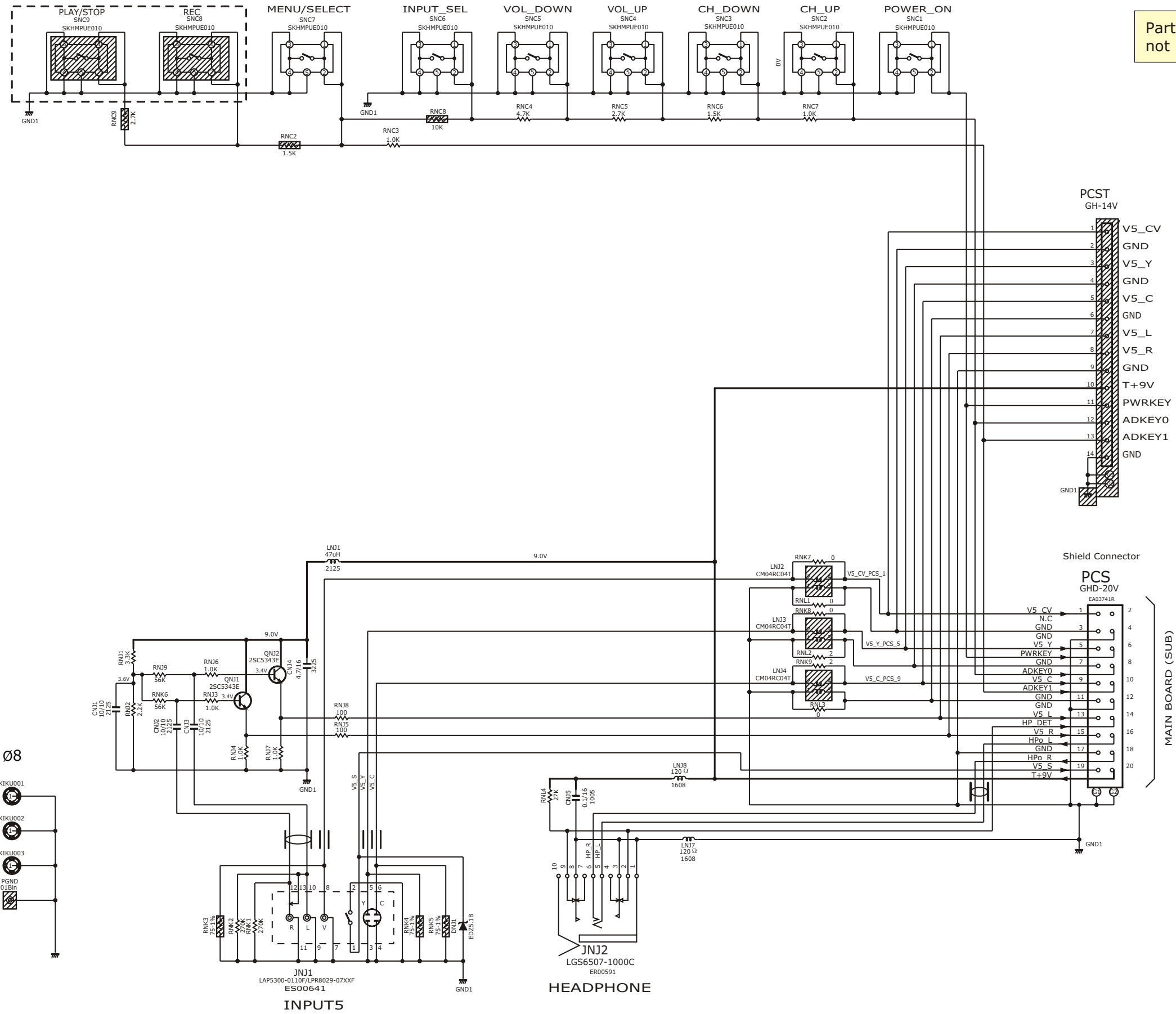


IR01  
SDA6000  
CK53251U  
TELETEXT

SHEET\_3

SHEET\_4

SHEET\_1

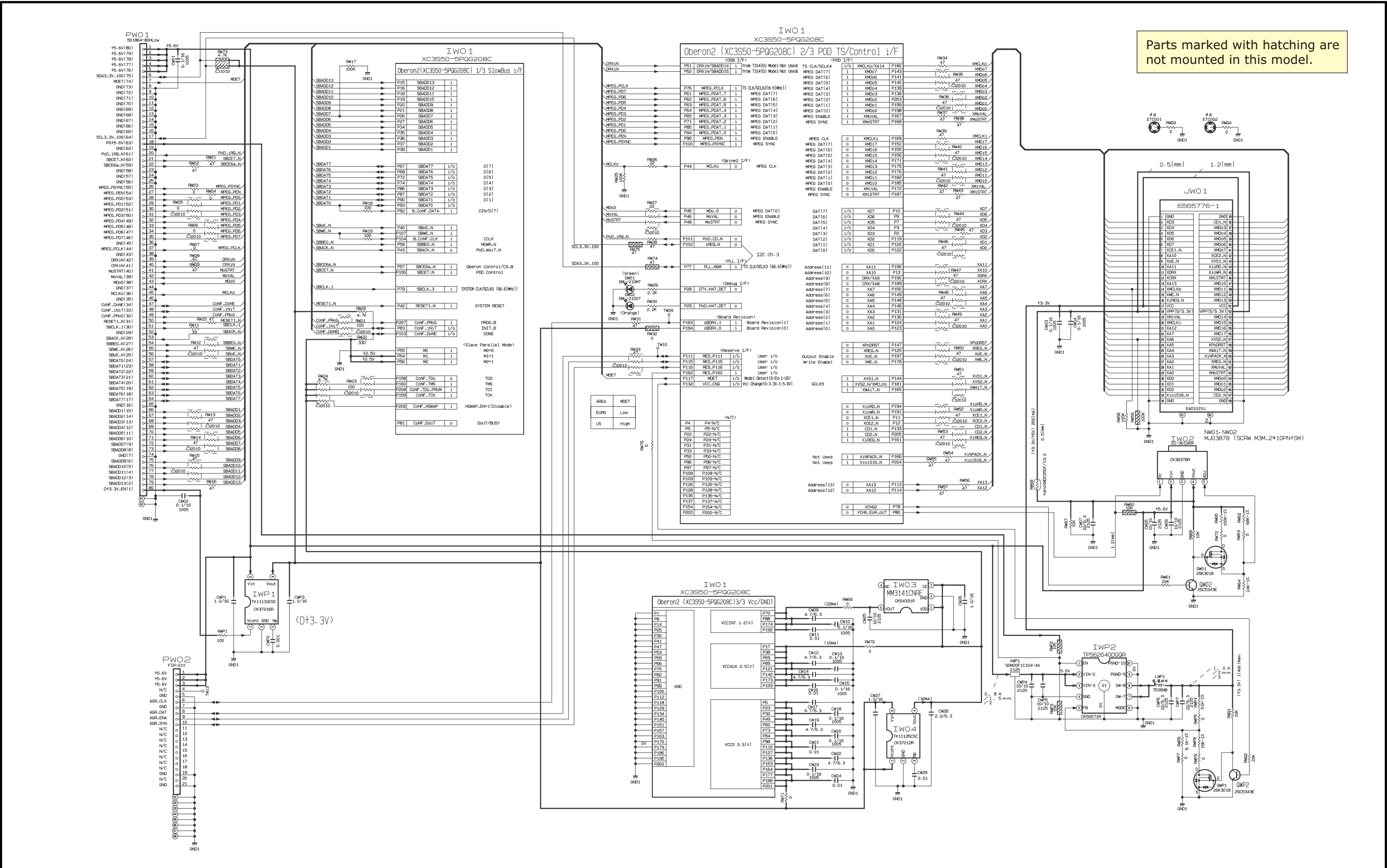


Parts marked with hatching are not mounted in this model.



P50T01U/E P50TP01U/E P42T01U/E P42TP01U/E

Parts marked with hatching are not mounted in this model.

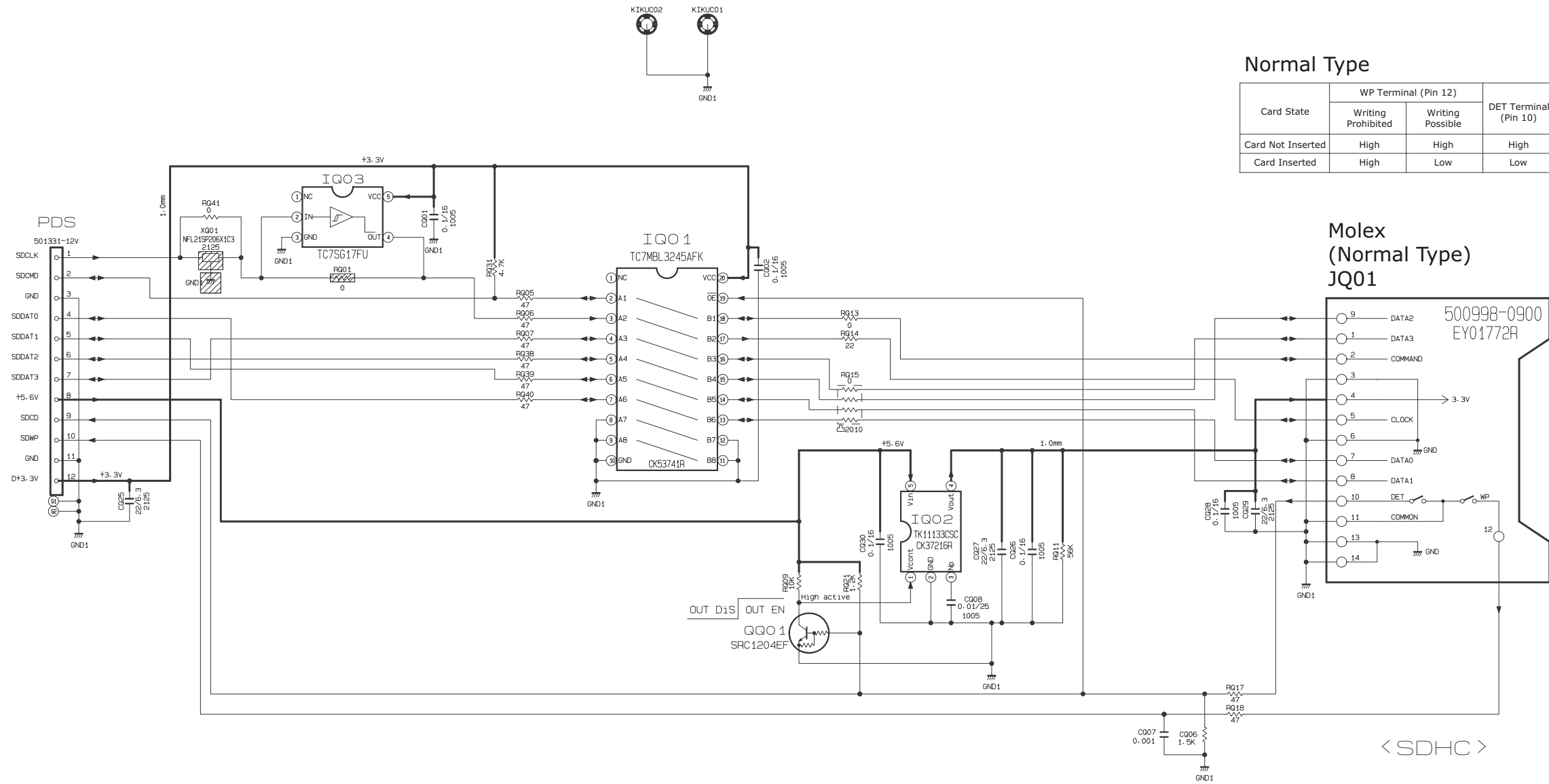


SM016

SLOT BOARD CIRCUIT

HITACHI

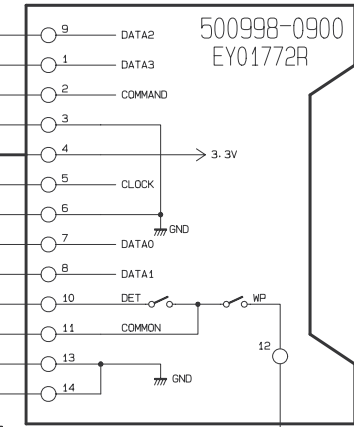
Parts marked with hatching are not mounted in this model.



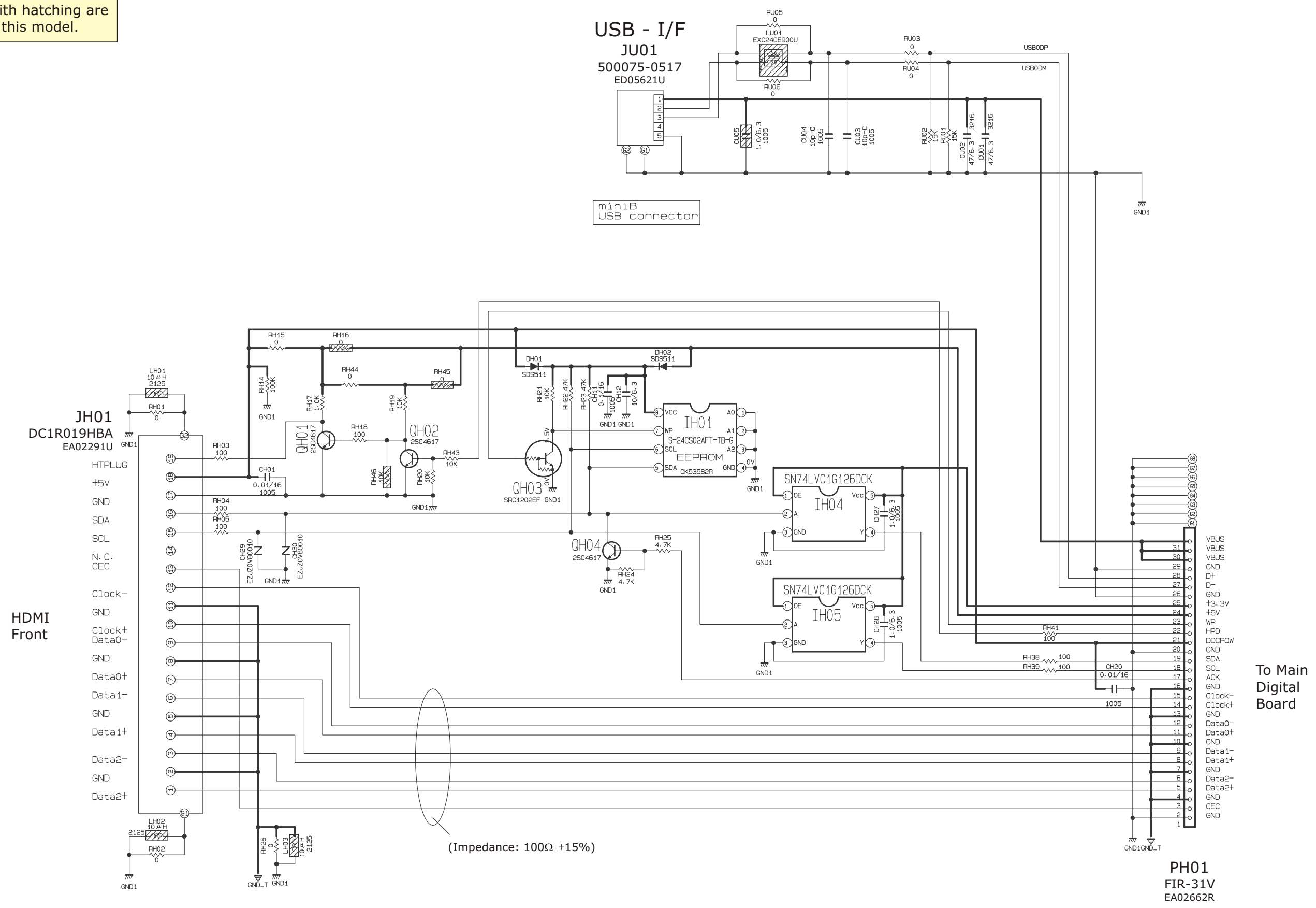
Normal Type

Card State	WP Terminal (Pin 12)		DET Terminal (Pin 10)
	Writing Prohibited	Writing Possible	
Card Not Inserted	High	High	High
Card Inserted	High	Low	Low

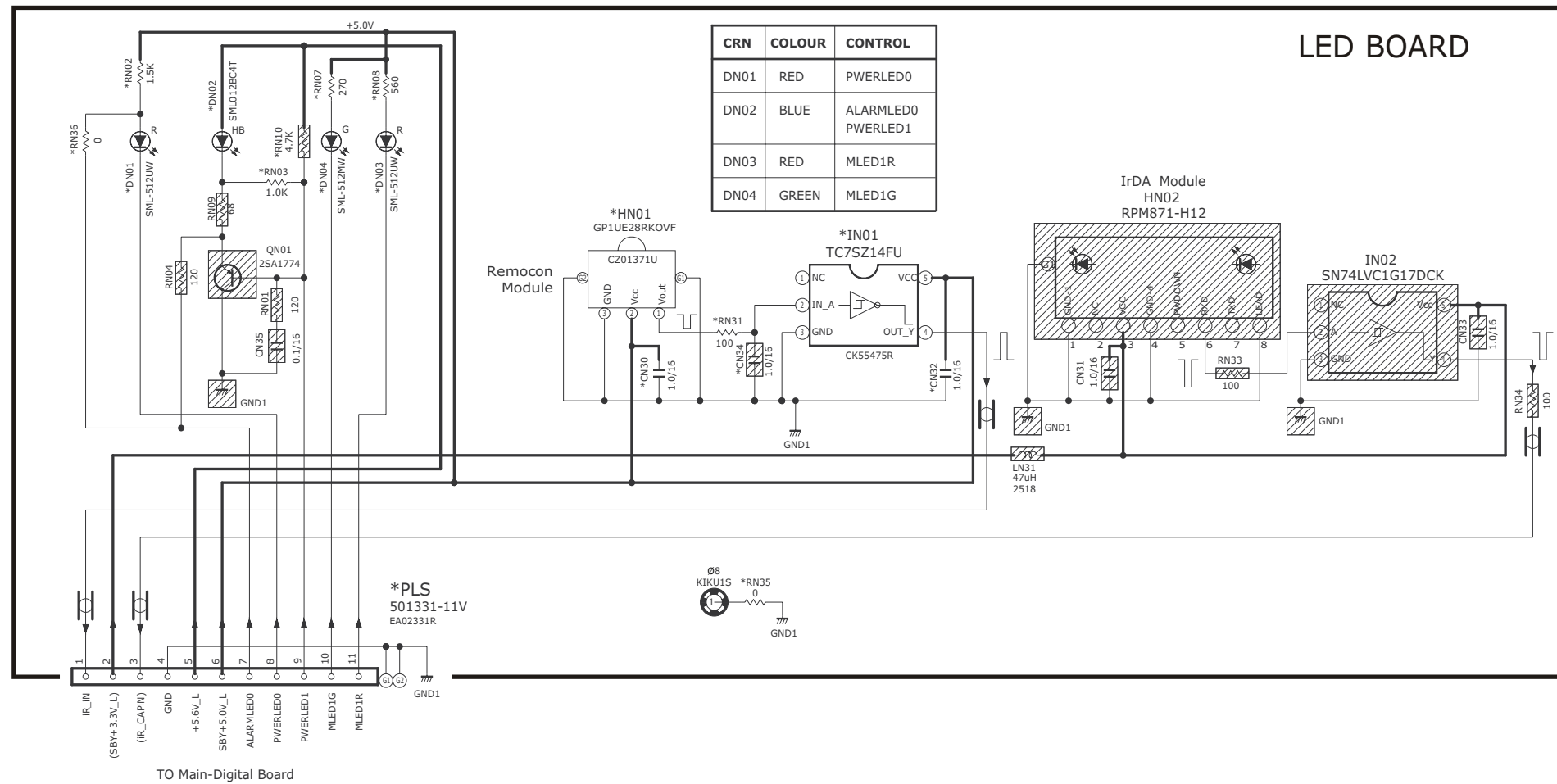
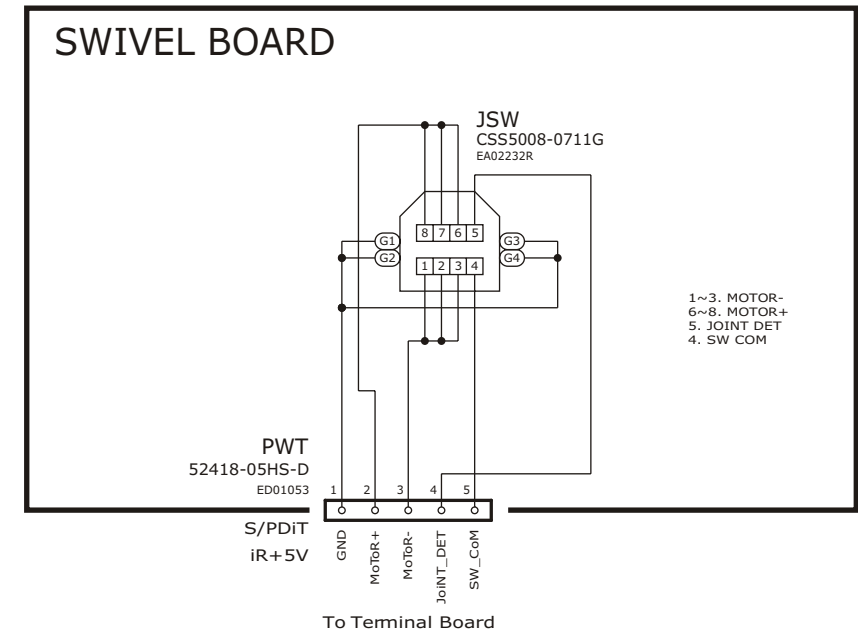
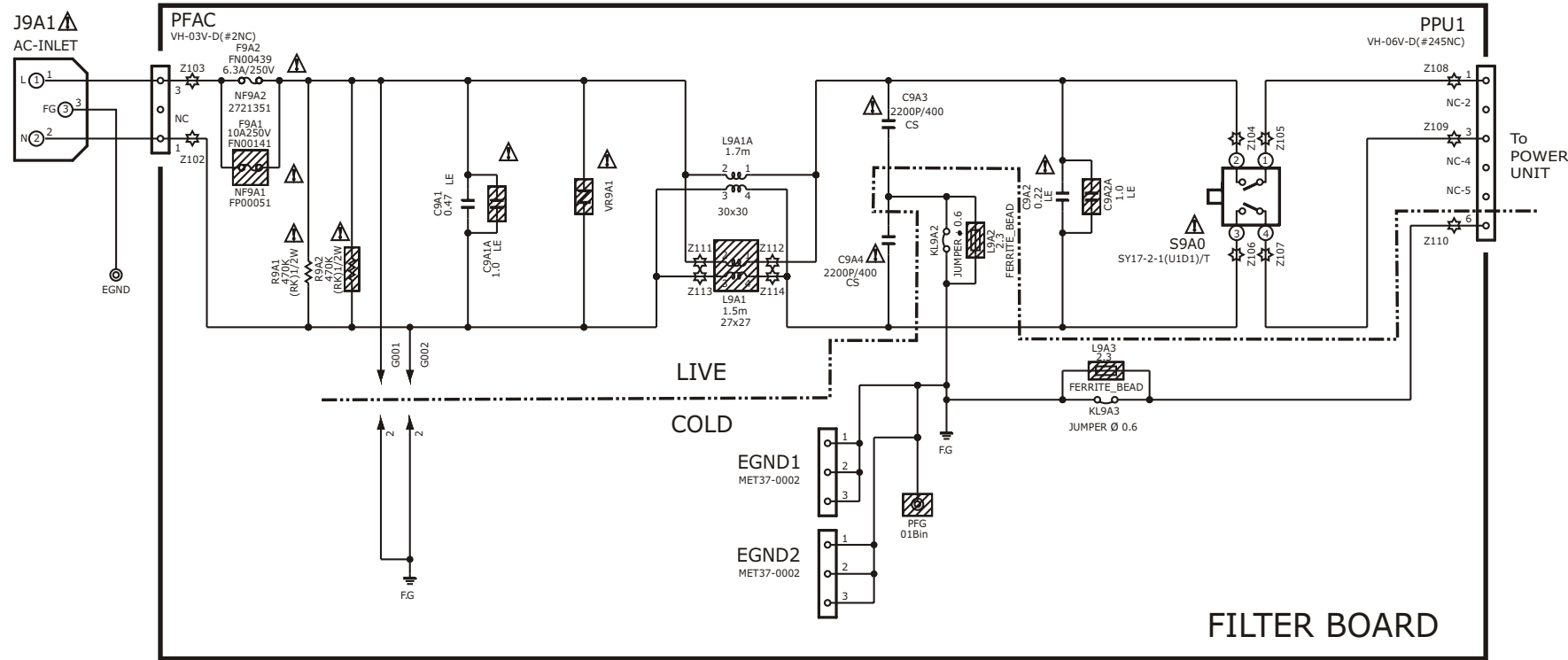
Molex (Normal Type) JQ01



Parts marked with hatching are not mounted in this model.

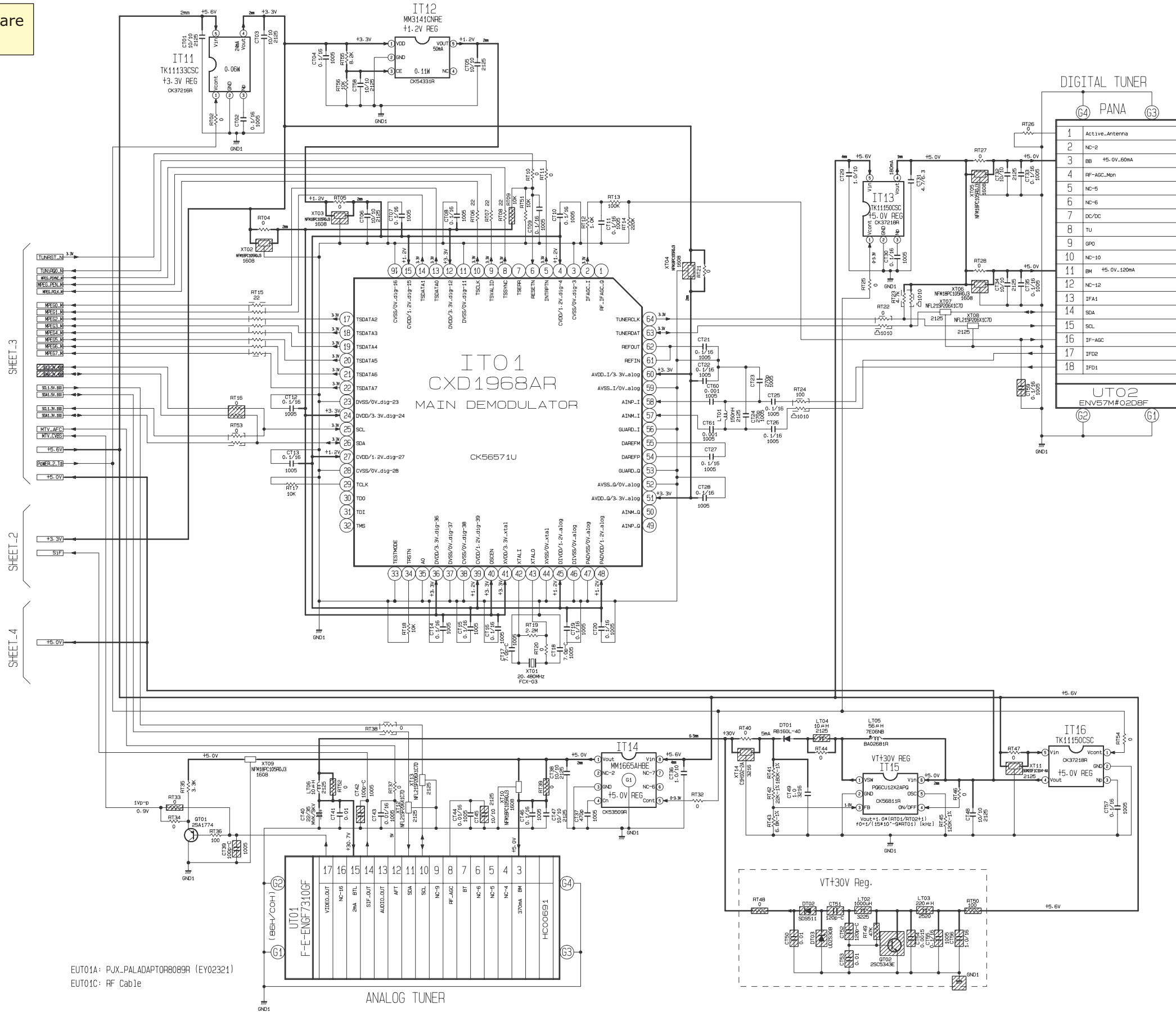


Parts marked with hatching are not mounted in this model.

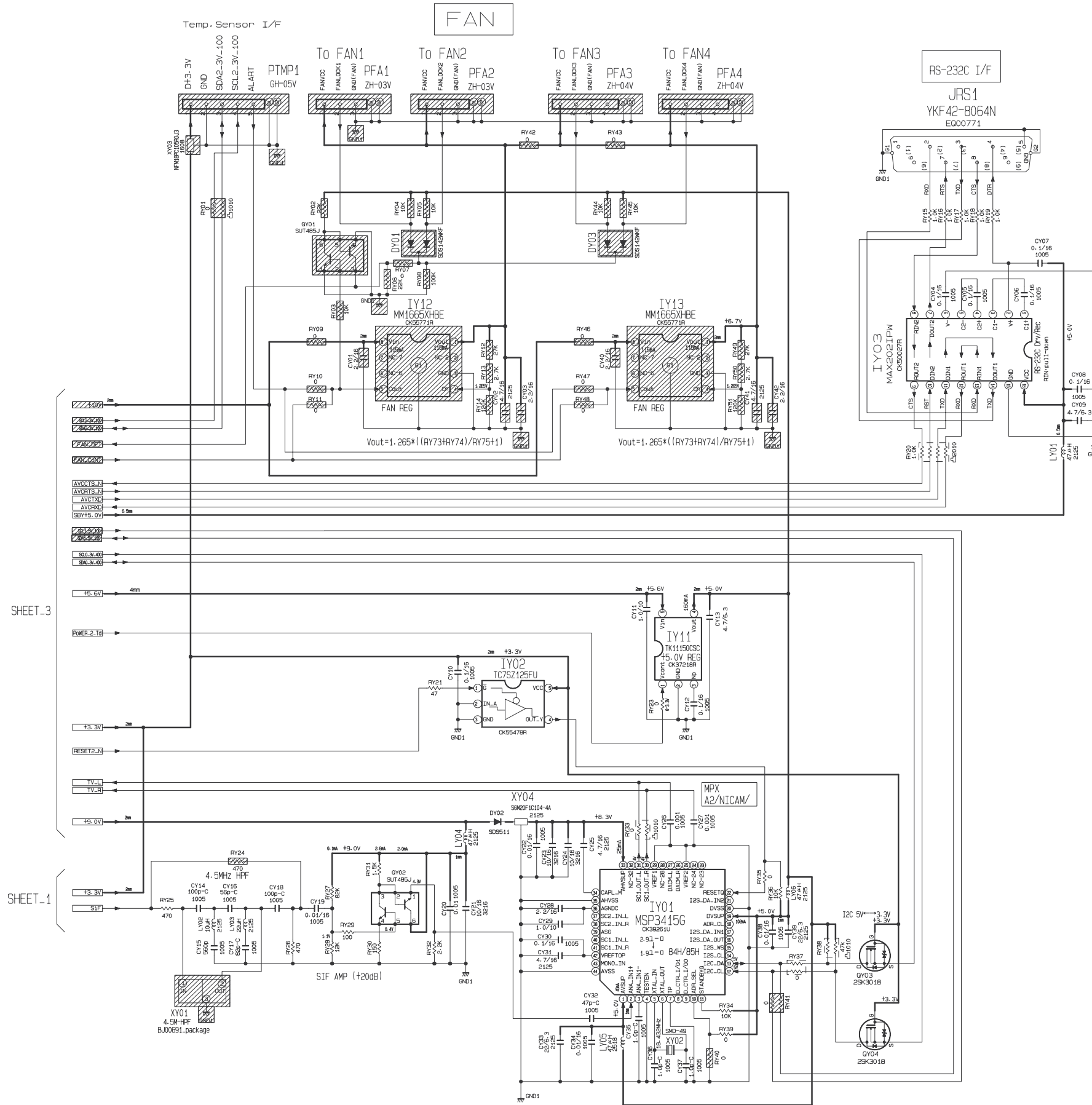




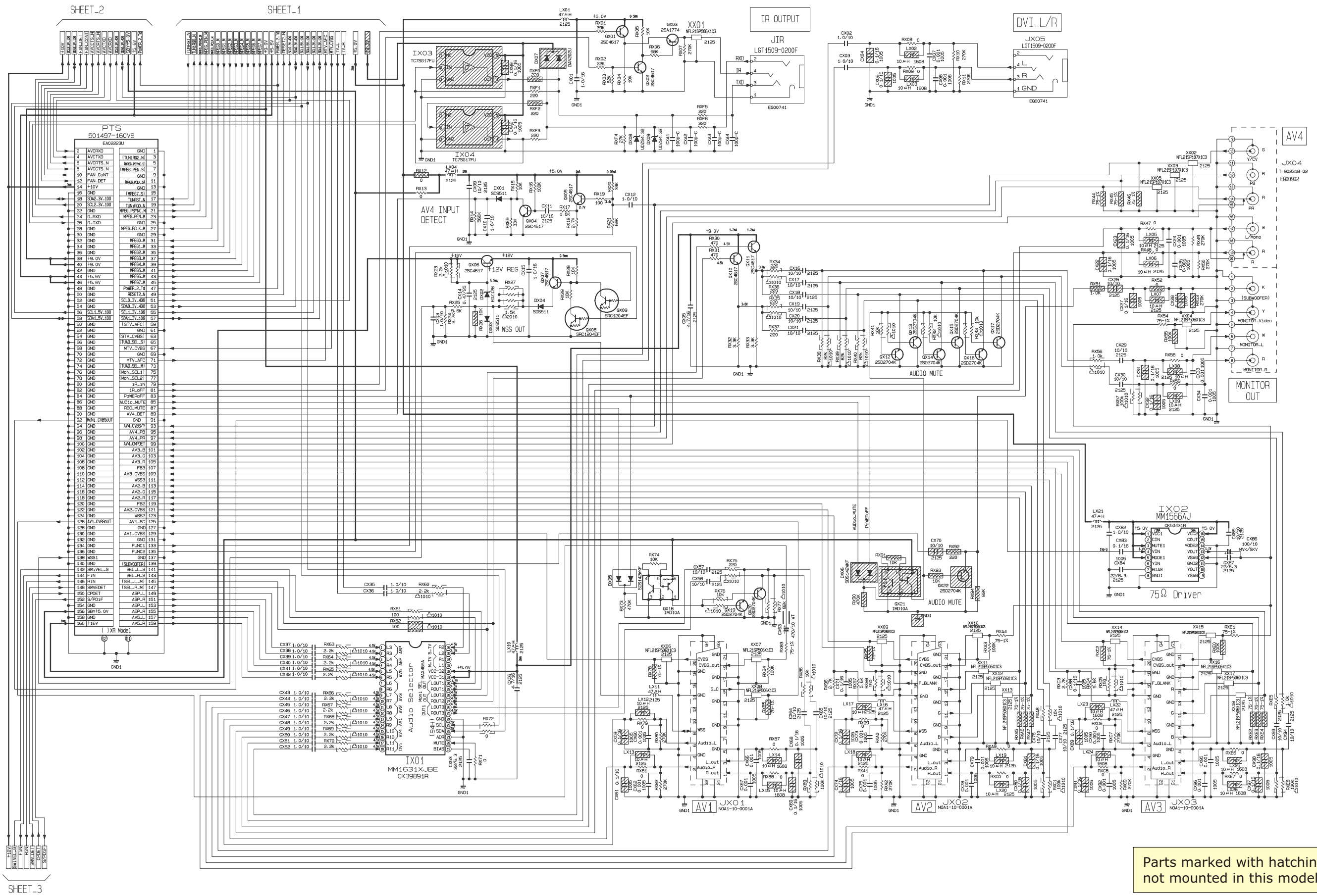
Parts marked with hatching are not mounted in this model.



EUT01A: P.JX\_PALADAPTORB089 (EY02321)  
EUT01C: RF Cable

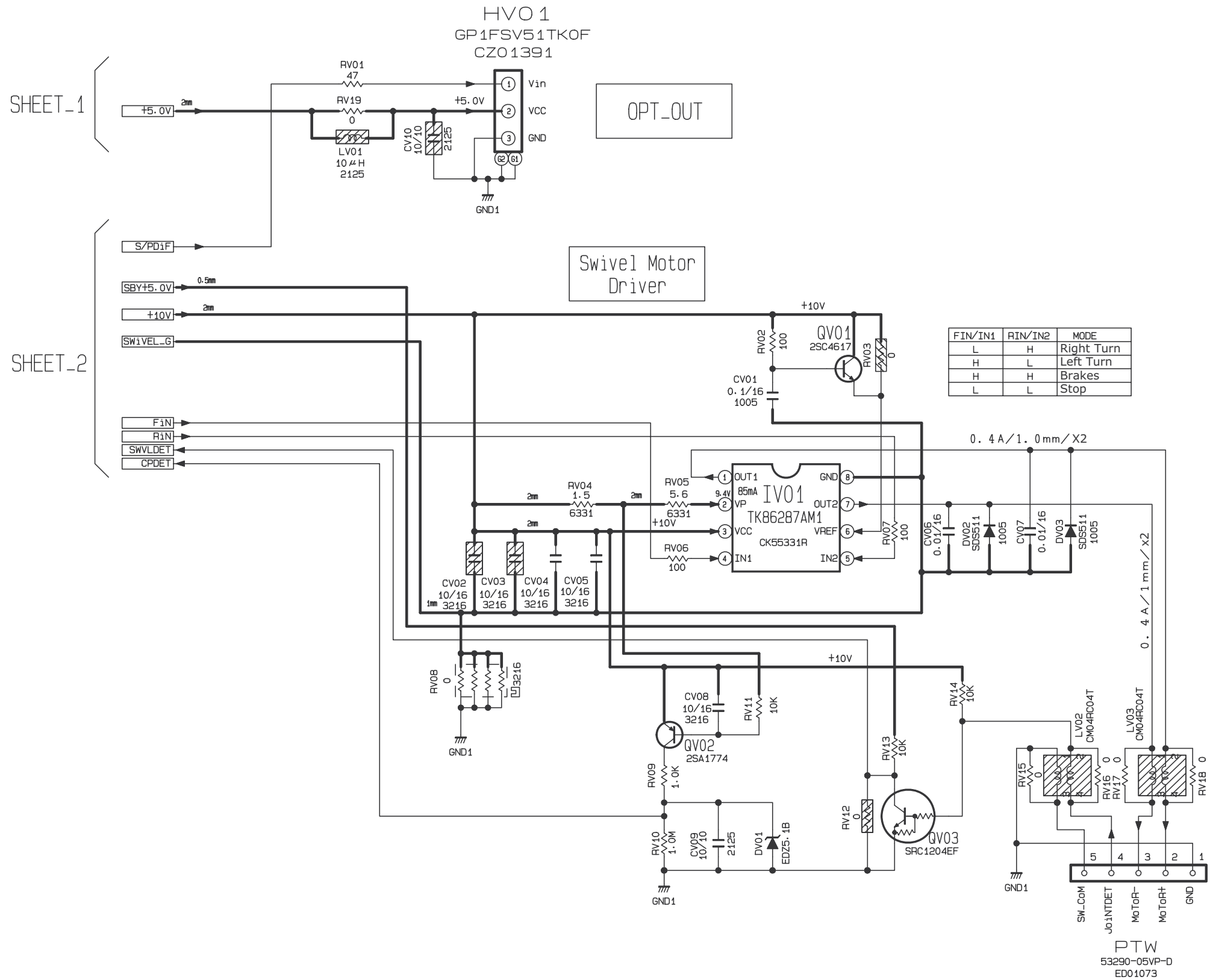


Parts marked with hatching are not mounted in this model.

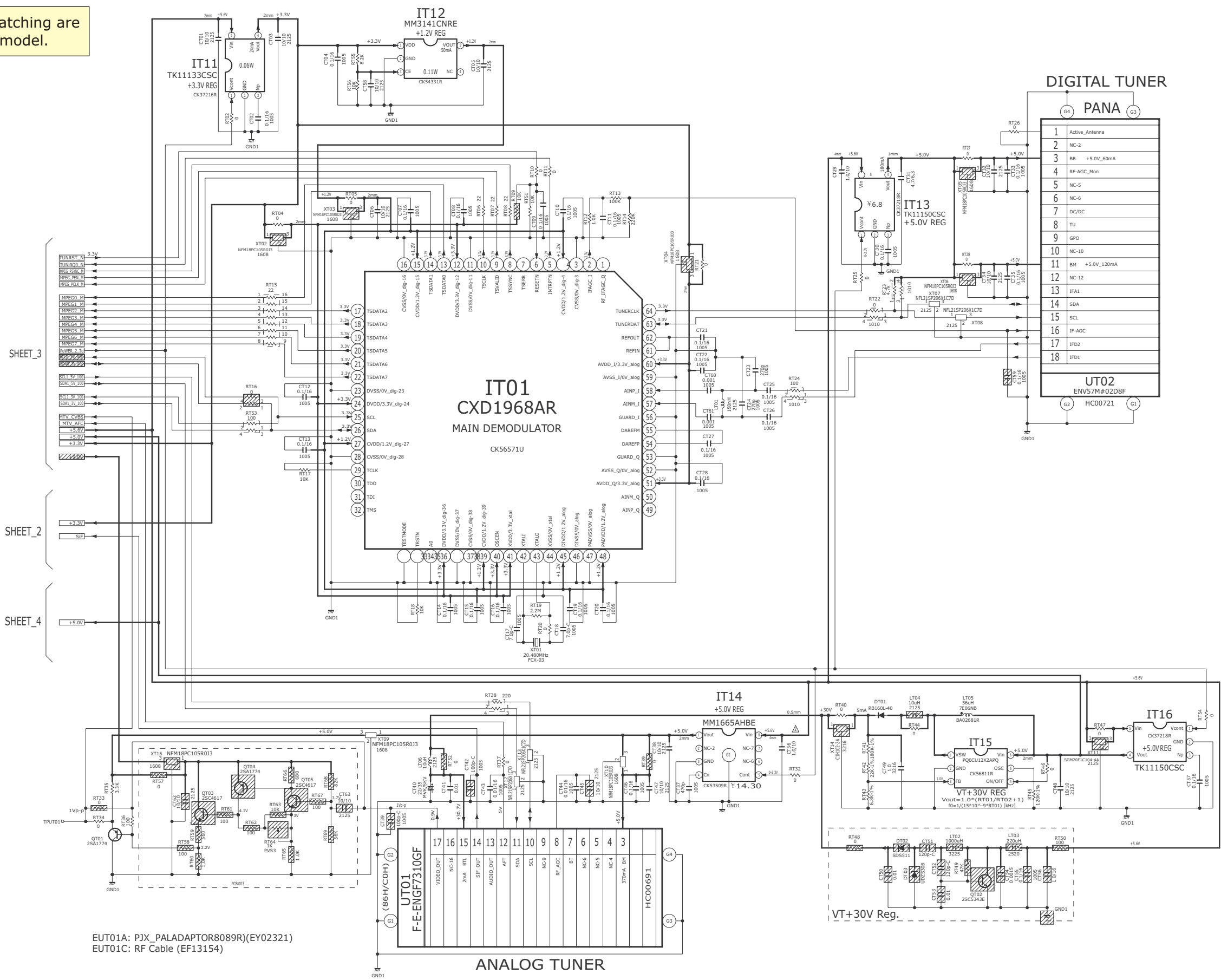


Parts marked with hatching are not mounted in this model.

Parts marked with hatching are not mounted in this model.



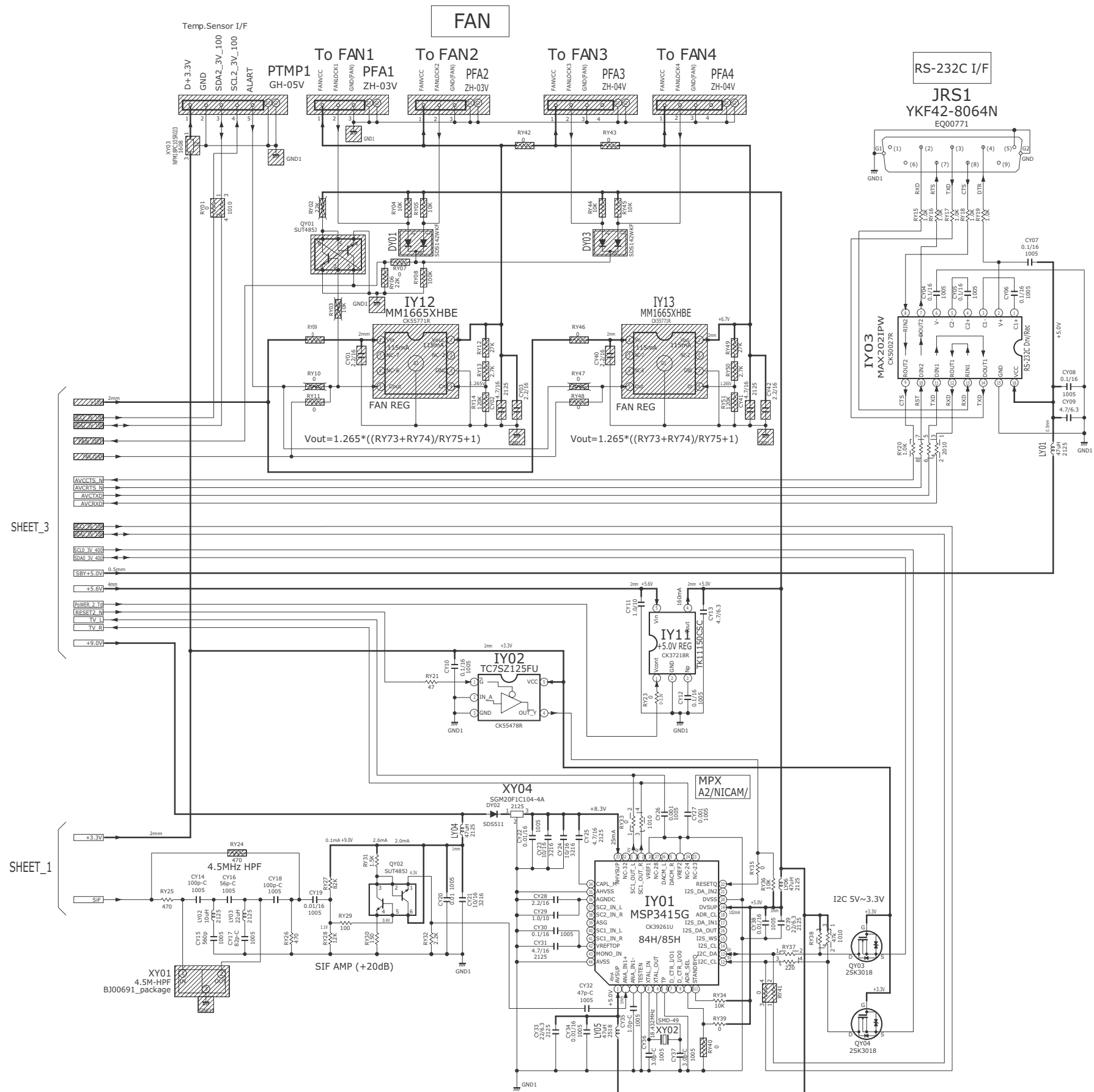
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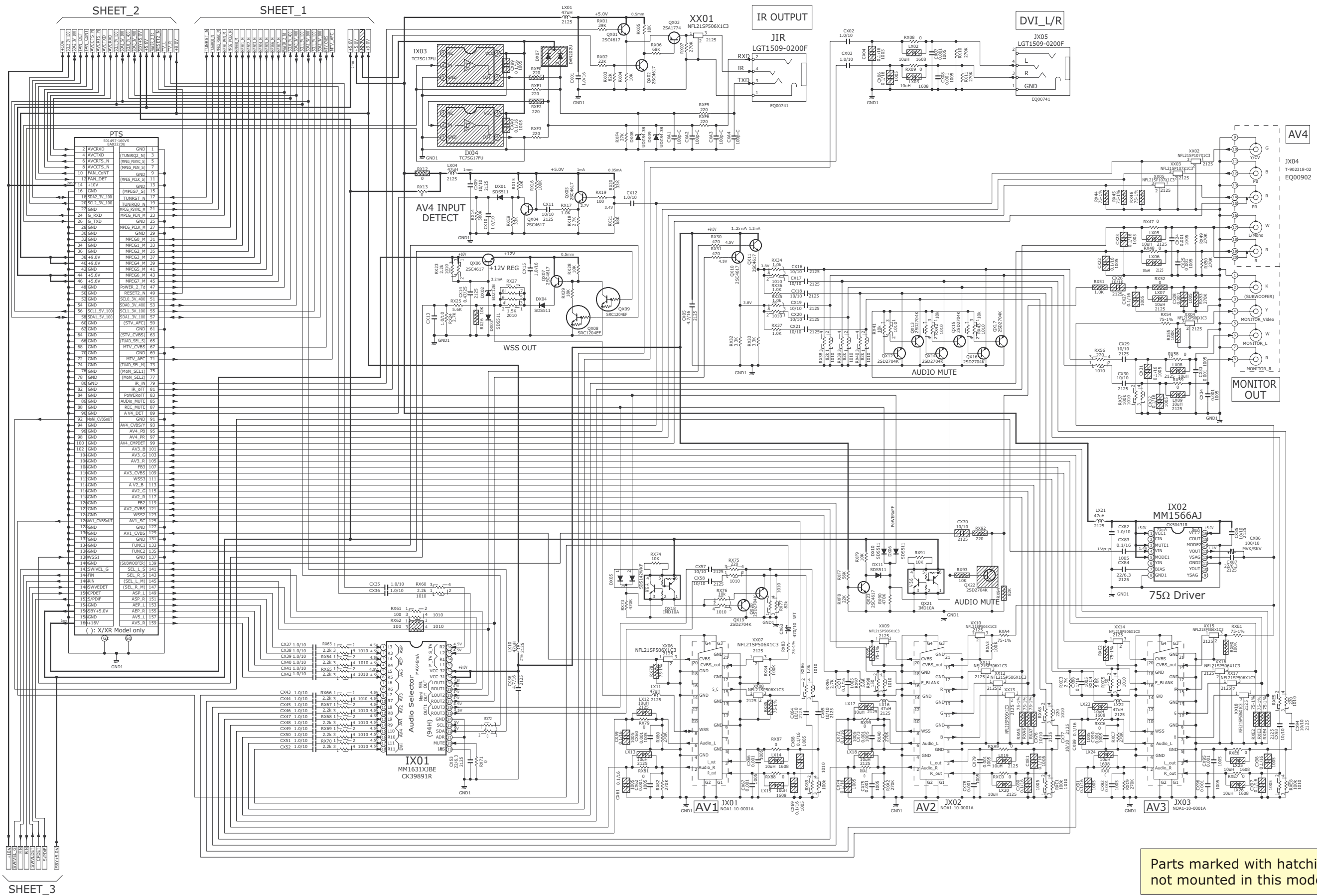


EUT01A: PJX\_PALADAPTOR8089R(EY02321)  
EUT01C: RF Cable (EF13154)

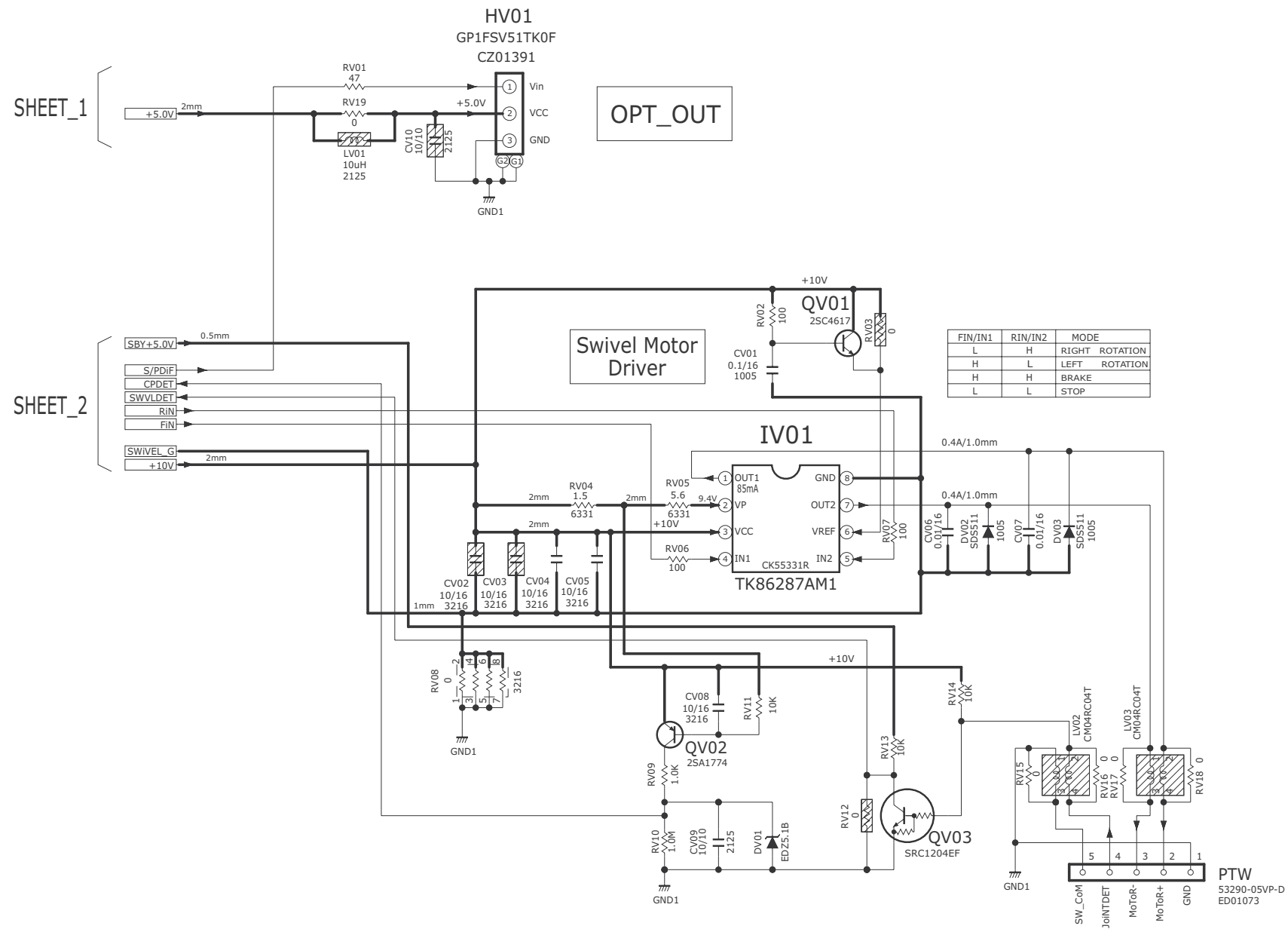


Parts marked with hatching are not mounted in this model.





Parts marked with hatching are not mounted in this model.



Parts marked with hatching are not mounted in this model.



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