

# SERVICE MANUAL

P180HM

*notebook*





**Notebook Computer**

**P180HM**

**Service Manual**

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## About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the *P180HM* series notebook PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.

Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists

Appendix B, Schematic Diagrams

## IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit (Full Range AC/DC Adapter – AC Input 100 - 240V, 50 - 60Hz, DC Output 19V, 11.57A).

**This Computer's Optical Device is a Laser Class 1 Product**

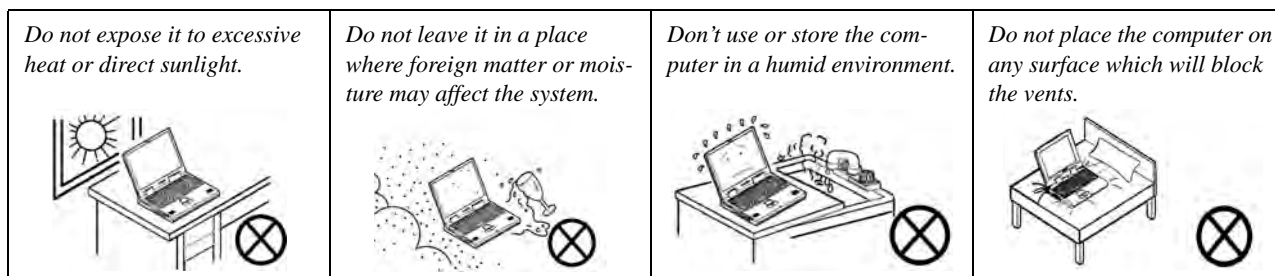
## Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

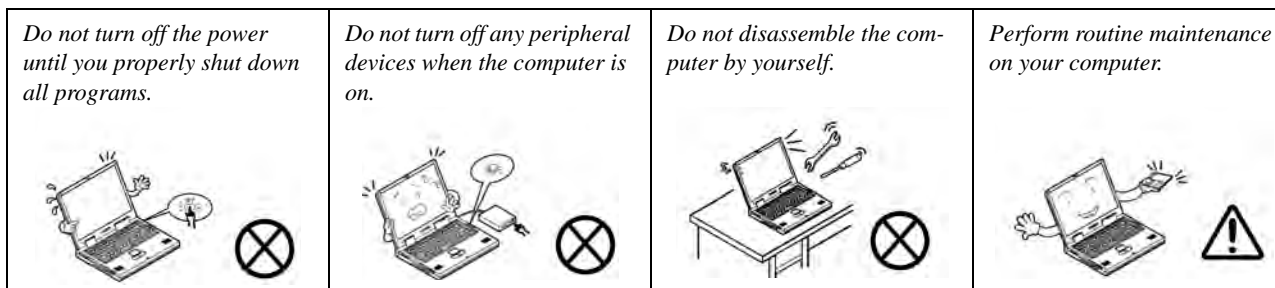
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



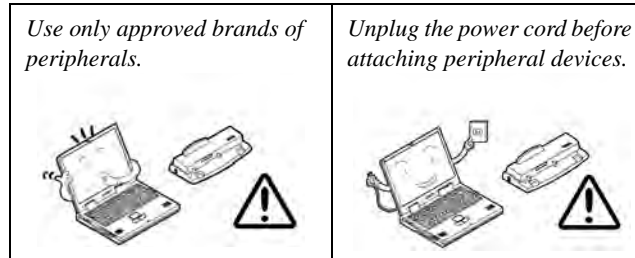
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



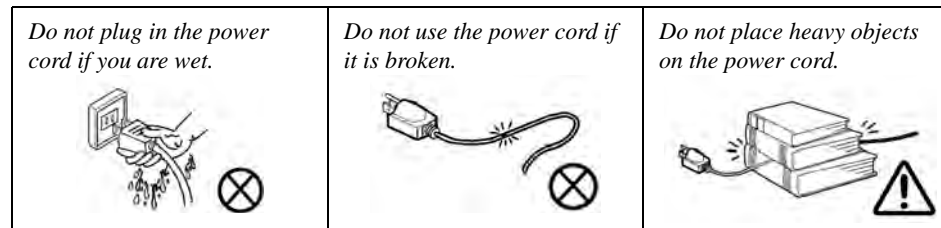
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



## Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.



### Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.



## Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

## Battery Guidelines

The following can also apply to any backup batteries you may have.

- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Before removing the battery for storage charge it to 60% - 70%.
- Check stored batteries at least every 3 months and charge them to 60% - 70%.




### Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

### Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

### Battery Level

Click the battery icon  in the taskbar to see the current battery level and charge status. A battery that drops below a level of 10% will not allow the computer to boot up. Make sure that any battery that drops below 10% is recharged within one week.

### Related Documents

You may also need to consult the following manual for additional information:

#### User's Manual on CD

This describes the notebook PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the notebook PC.

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# Chapter 1: Introduction

## Overview

This manual covers the information you need to service or upgrade the **PI80HM** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in *User's Manual*. That manual is shipped with the computer.

Operating systems (e.g. *Windows 7*, etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The **PI80HM** series notebook is designed to be upgradeable. See [Disassembly on page 2 - 1](#) for a detailed description of the upgrade procedures for each specific component. Please note the warning and safety information indicated by the “” symbol.

The balance of this chapter reviews the computer's technical specifications and features.

# System Specifications

## Processor

**Intel® Core™ i7 Processor Extreme Edition i7-2920XM (2.50GHz)**

8MB L3 Cache, 32nm, DDR3-1600MHz, TDP 55W

**Intel® Core™ i7 Processor i7-2820QM (2.30GHz)**

8MB L3 Cache, 32nm, DDR3-1600MHz, TDP 45W

**i7-2720QM (2.20GHz) , i7-2630QM (2.0GHz)**  
6MB L3 Cache, 32nm, DDR3-1600MHz, TDP 45W

## LCD

18.4" (46.74cm) FHD TFT LCD

## Core Logic

Intel® HM67 Chipset

## Memory

Three 204 Pin SO-DIMM Sockets Supporting **DDR3 1333/1600MHz** Memory

Memory Expandable up to 12GB

Note: 1600 MHz Memory Modules are only supported by Quad-Core CPUs to a maximum of two SO-DIMMs

## Storage

Up to Three **(Factory Option)** Changeable 2.5" (6cm) 9.5mm (h) **SATA** (Serial) Hard Disk Drives supporting RAID level 0/1/5

*Note 1st & 2nd HDDs are in SATA III Interface.*

**(Factory Option)** One Changeable 12.7mm(h) Optical Device Type Drive (Super Multi Drive/ Blu-Ray Combo Drive/Blu-Ray Writer Drive)

## BIOS

AMI BIOS (32Mb SPI Flash-ROM)

## Video Adapter

**nVIDIA® GeForce GTX 560M PCIe Video Card**

1.5GB GDDR5 Video RAM on board

Microsoft DirectX® 11 Compatible

Supports nVIDIA® SLI Technology

## Security

Security (Kensington® Type) Lock Slot

BIOS Password

**(Factory Option)** Fingerprint Reader Module

## Keyboard

Full-size "WinKey" keyboard (with numeric keypad)

## Communication

Built-In Giga Base-TX Ethernet LAN

2.0M Pixel USB PC Camera Module

**(Factory Option)** Bluetooth 2.1 + EDR (Enhanced Data Rate) Module

### **WLAN/ Bluetooth Half Mini-Card Modules:**

**(Factory Option)** Intel® Centrino® Ultimate-N 6300 Wireless LAN **(802.11a/g/n)**

**(Factory Option)** Intel® Centrino® Advanced-N 6230 Wireless LAN **(802.11a/g/n) + Bluetooth 3.0**

**(Factory Option)** Intel® Centrino® Wireless-N 1030 Wireless LAN **(802.11b/g/n) + Bluetooth 3.0**

**(Factory Option)** Third-Party Wireless LAN **(802.11b/g/n) + Bluetooth 3.0**

## Pointing Device

Built-in TouchPad (scrolling key functionality integrated)

## Card Reader

Embedded Multi-In-1 Card Reader

MMC (MultiMedia Card) / RS MMC

SD (Secure Digital) / Mini SD / SDHC/ SDXC

MS (Memory Stick) / MS Pro / MS Duo

## Interface

Four USB 2.0 Ports

(Note: One USB 2.0 port can supply power when the system is off but still powered by the AC/DC adapter, or powered by the battery with a capacity level above 20% - see [page 11.](#))

Two USB 3.0 Ports

One eSATA Port (USB 2.0 Port Combined)

One HDMI-Out Port

One DVI-Out Port

One S/PDIF Out Jack

One Headphone/Speaker-Out Jack

One Microphone-In Jack

One Line-In Jack

One Mini-IEEE1394a Port

One RJ-45 LAN Jack

One DC-In Jack

**Note:** External 7.1CH Audio Output Supported by Headphone, Microphone, Line-In and Surround-Out Jacks

### Slots

One ExpressCard/54(34) Slot  
One Mini Card Slot for **WLAN** Module or  
**WLAN and Bluetooth** Combo Module

### Audio

High Definition Audio Compliant Interface  
S/PDIF Digital Output  
Five Speakers  
One Sub Woofer  
Built-In Microphone  
THX TruStudio Pro

### Environmental Spec

#### Temperature

Operating: 5°C - 35°C  
Non-Operating: -20°C - 60°C

#### Relative Humidity

Operating: 20% - 80%  
Non-Operating: 10% - 90%

### Power

Full Range AC/DC Adapter  
AC Input: 100 - 240V, 50 - 60Hz  
DC Output: 19V, 11.57A (**220W**)

Removable 8-cell Smart Lithium-Ion Battery  
Pack, 89.21WH

### Dimensions & Weight

439mm (w) \* 299mm (d) \* 44mm - 65mm (h)  
Around 5.6kg with 89.21WH Battery and ODD

## Introduction

# External Locator - Top View with LCD Panel Open

*Figure 1*  
Top View

1. Optional Built-In PC Camera
2. LCD
3. Speakers
4. LED Status Indicators
5. Touch Sensor Instant Keys
6. 8 \* Gaming Keys
7. Keyboard
8. TouchPad and Buttons
9. Fingerprint Reader Module (**optional**)
10. LED Power Indicators





## External Locator - Front & Right side Views



*Figure 2*  
**Front Views**

1. Speakers
2. LED Power Indicators



*Figure 3*  
**Right Side Views**

1. ExpressCard/54(34) Slot
2. Headphone-In Jack
3. Microphone-In Jack
4. Line-In Jack
5. S/PDIF-Out Jack
6. Combined eSATA/USB Port
7. USB 2.0 Port
8. Security Lock Slot
9. Power Button

## Introduction

### External Locator - Left Side & Rear View

*Figure 4*  
**Left Side View**

1. DVI-Out Port
2. Powered USB 2.0 Port
3. USB 2.0 Ports
4. RJ-45 LAN Jack
5. HDMI-Out Port
6. Multi-in-1 Card Reader
7. USB 3.0 Ports
8. Mini-IEEE 1394 Port
9. Optional Device Drive Bay



*Figure 5*  
**Rear View**

1. Fan Outlet
2. DC-In Jack



## External Locator - Bottom View



*Figure 6*  
**Bottom View**

1. Sub Woofer
2. Fan Outlet/Intake
3. Component Bay Cover
4. Battery
5. HDD Bay



### Overheating

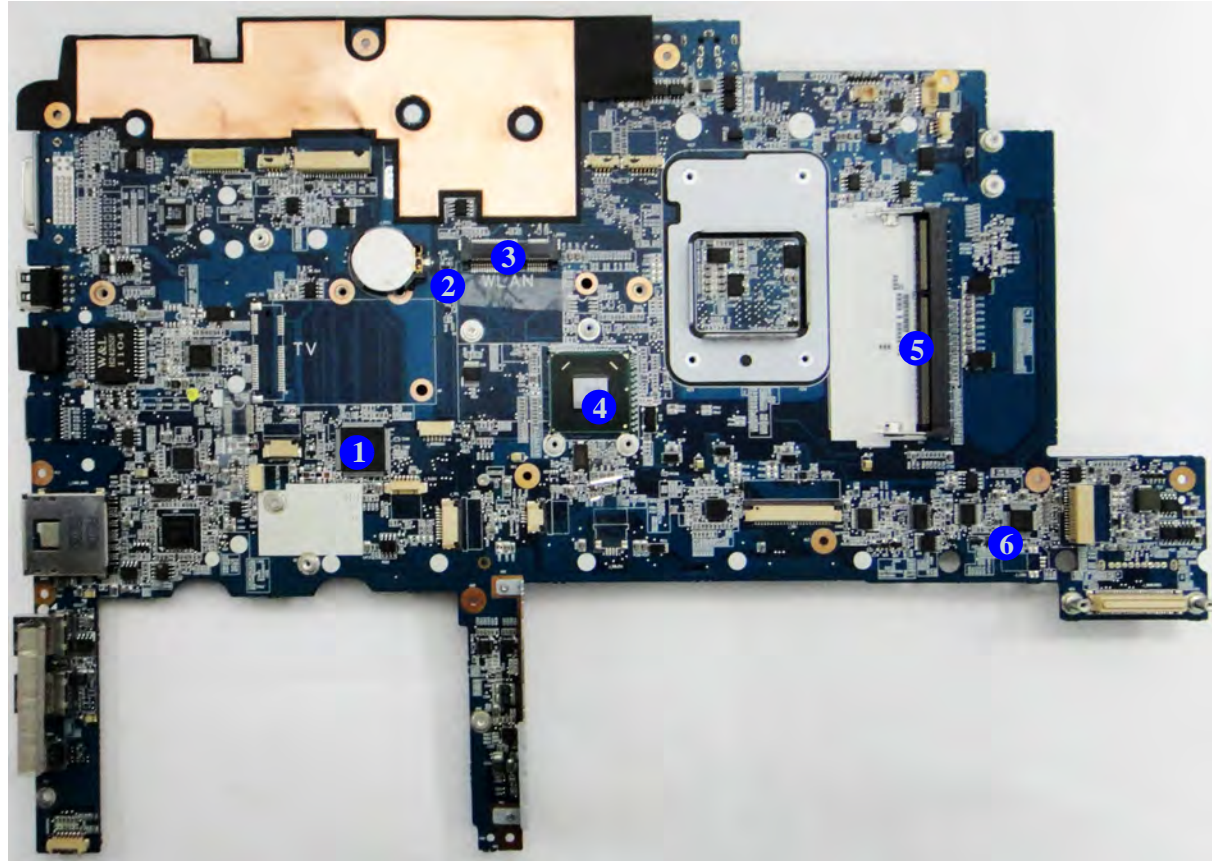
To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

## Introduction

*Figure 7*  
**Mainboard Top  
Key Parts**

1. KBC-IT8519BX
2. CMOS Battery
3. Mini-Card Connector (WLAN Module)
4. CougarPoint Controller
5. Memory Slots DDR3 So-DIMM
6. Audio Codec ALC892

## Mainboard Overview - Top (Key Parts)

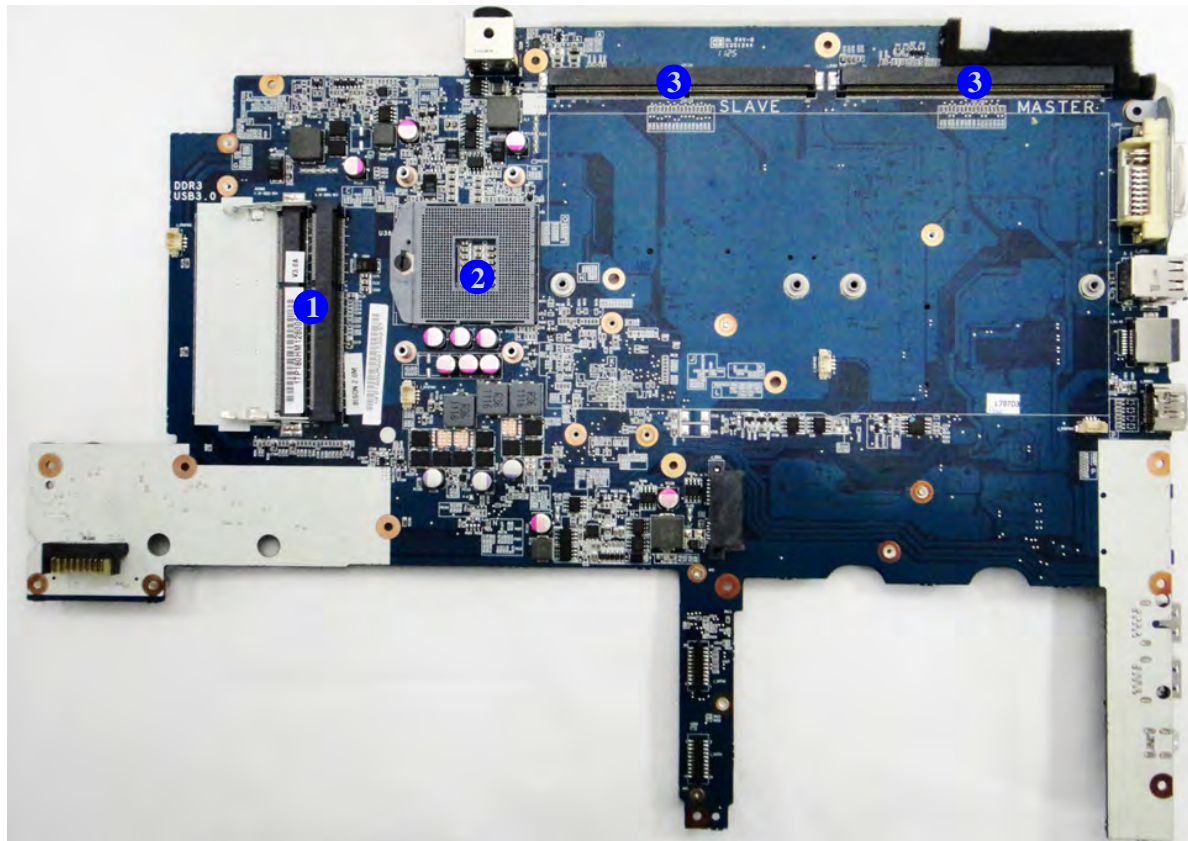




## Mainboard Overview - Bottom (Key Parts)

*Figure 8*  
**Mainboard Bottom  
Key Parts**

1. Memory Slots DDR3 So-DIMM
2. CPU Socket
3. VGA Sockets

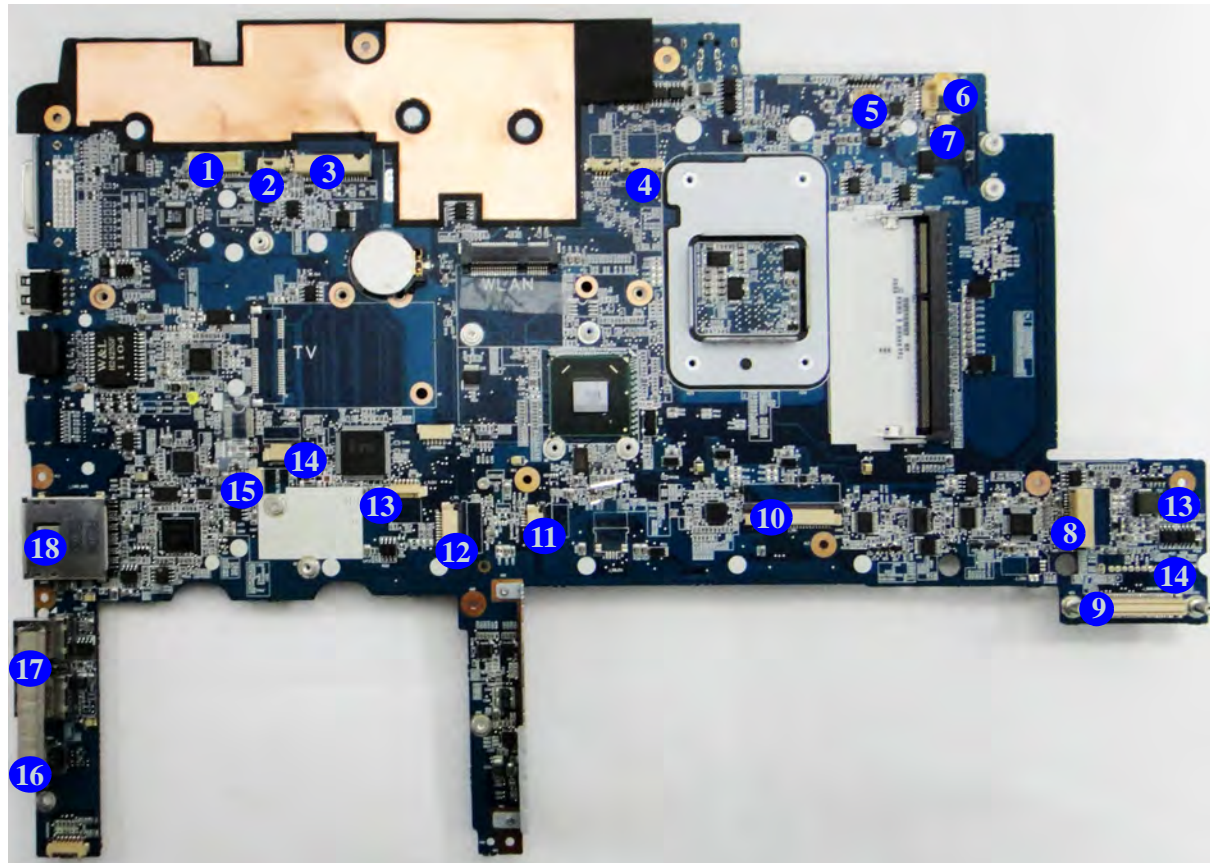


## Introduction

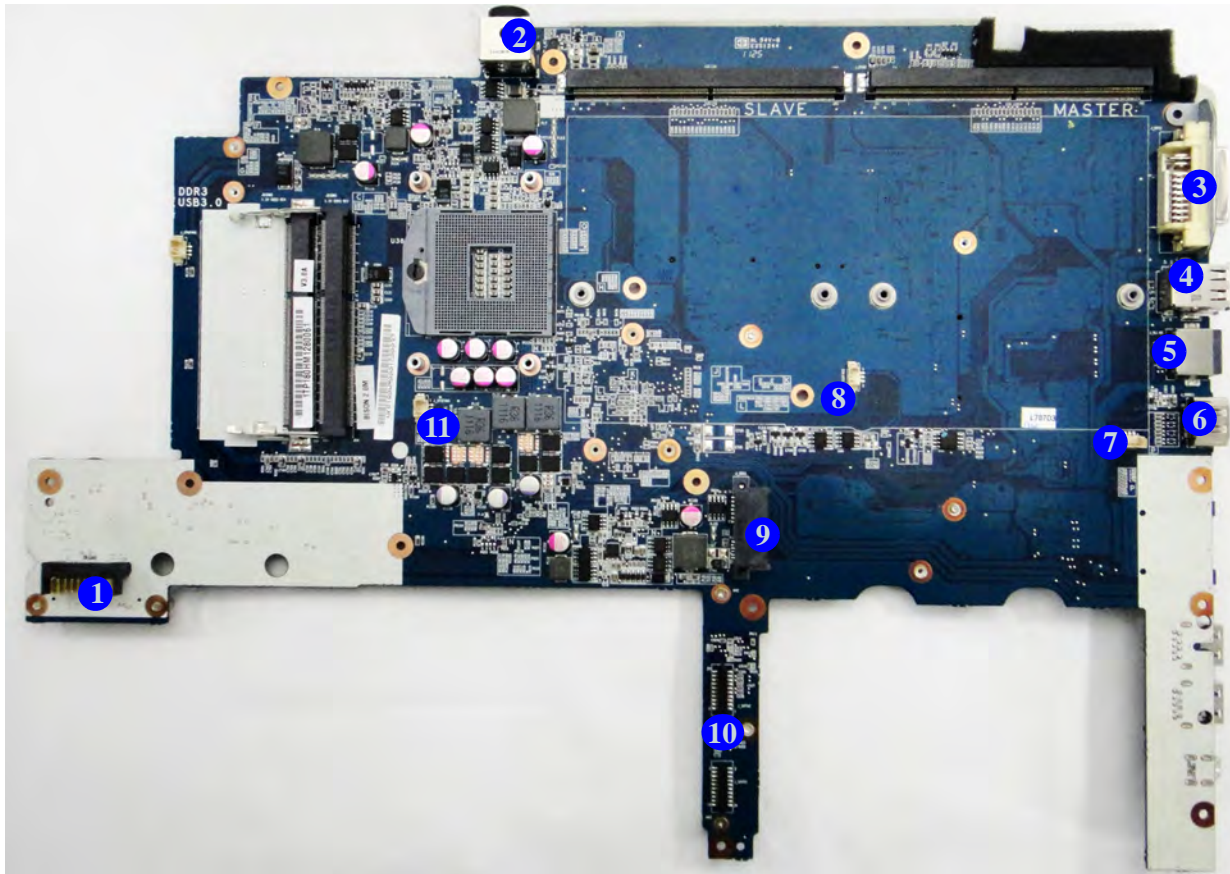
*Figure 9*  
**Mainboard Top  
Connectors**

## Mainboard Overview - Top (Connectors)

1. Touch Sensor Connector
2. MIC Connector
3. LCD Cable Connector
4. LED Cable Connector
5. Subwoofer Connector
6. CCD Cable Connector
7. Power Button Connector
8. Audio Cable Connector
9. New card Connector
10. Keyboard Cable Connector
11. Fingerprint Connector
12. Touch Pad Connector
13. LED Cable Connector
14. Game-Key Cable Connector
15. Bluetooth Module Connector
16. Mini-IEEE 1394 Port
17. USB 3.0 Ports
18. Multi-in-1 Card Reader



## Mainboard Overview - Bottom (Connectors)



*Figure 10*  
**Mainboard Bottom  
Connectors**

1. Battery Connector
2. DC-In Jack
3. DVI Port
4. USB 2.0 Ports
5. RJ-45 LAN Jack
6. HDMI-Out Port
7. VGA Fan 1
8. VGA Fan 2
9. ODD Connector
10. HDD Connectors
11. CPU Fan Connector






# Chapter 2: Disassembly

## Overview

This chapter provides step-by-step instructions for disassembling the *PI80HM* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

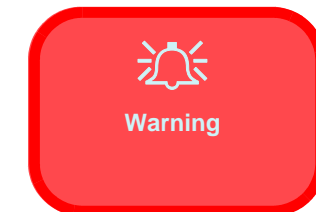
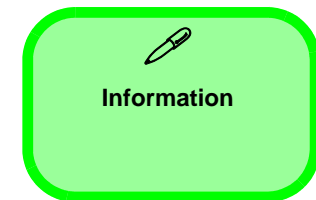
We suggest you completely review any procedure before you take the computer apart.

Procedures such as upgrading/replacing the RAM, optical device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a  lists the relevant parts you will have after the disassembly process is complete. **Note:** The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a  will also provide any possible helpful information. A box with a  contains warnings.

An example of these types of boxes are shown in the sidebar.



## Disassembly

---

**NOTE:** All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

### Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

### Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

## Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it.** Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it.** Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference.** Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry.** This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power.** Avoid accidental shocks, discharges or explosions.
  - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
  - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge.** ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion.** As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean.** Tobacco smoke, dust or other air-borne particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components.** When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

## Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.

Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.



### Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

### Disassembly Steps

The following table lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

#### To remove the Battery:

1. Remove the battery [page 2 - 5](#)

#### To remove the Optical Device:

1. Remove the battery [page 2 - 5](#)
2. Remove the Optical device [page 2 - 6](#)

#### To remove the HDD:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 7](#)

#### To remove the Keyboard:

1. Remove the battery [page 2 - 5](#)
2. Remove the System Memory [page 2 - 10](#)

#### To remove the System Memory:

1. Remove the battery [page 2 - 5](#)
2. Remove the System Memory [page 2 - 12](#)

#### To remove and install the Processor:

1. Remove the battery [page 2 - 5](#)
2. Remove the Processor [page 2 - 15](#)
3. Install the Processor [page 2 - 17](#)

#### To remove the VGA card:

1. Remove the battery [page 2 - 5](#)
2. Remove the VGA card [page 2 - 18](#)

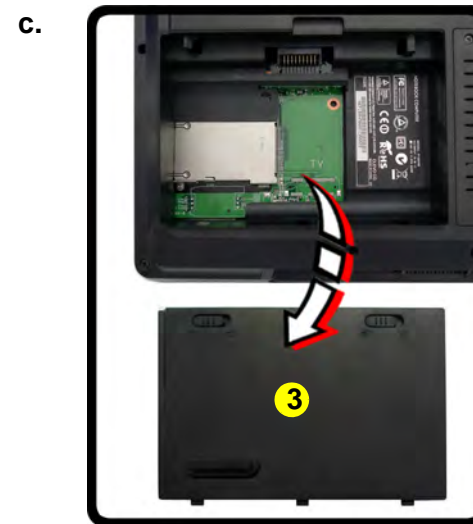
#### To remove the Wireless LAN Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the Keyboard [page 2 - 10](#)
3. Remove the Wireless LAN [page 2 - 20](#)

## Removing the Battery

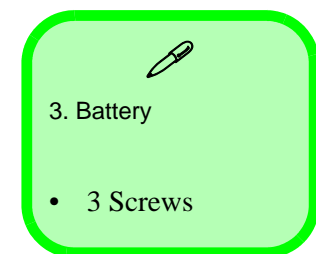
If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery.

1. Turn the computer off, and turn it over.
2. Slide the latch **1** in the direction of the arrow.
3. Slide the latch **2** in the direction of the arrow, and hold it in place.
4. Lift the battery **4** up (*Figure b*) and out of the battery bay.



*Figure 1*  
**Battery Removal**

- a. Slide the latch **1** in the direction of the arrow and slide the latch **2** in the direction of the arrow, and hold it in place.
- b. Release the battery.
- c. Lift the battery out of the bay as indicated.



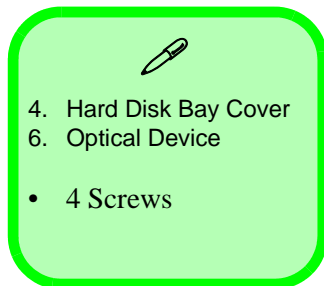
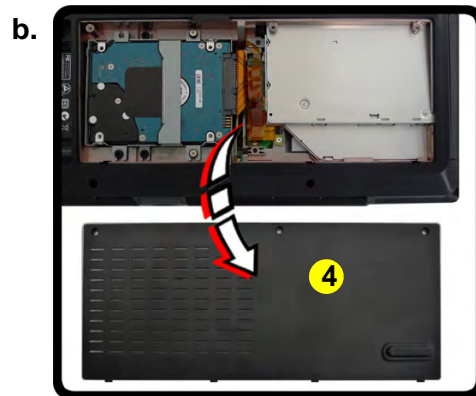
## Disassembly

*Figure 2*  
**Optical Device  
Removal**

- Remove the screws.
- Remove the cover.
- Remove the screw.
- Push the optical device out of the computer.

## Removing the Optical (CD/DVD) Device

- Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)).
- Locate the component bay cover and remove screws 1 - 2, and remove the bay cover 4.
- Remove screw 5.
- Push the optical device drive 6 out of the bay and reverse the process to install the new device.

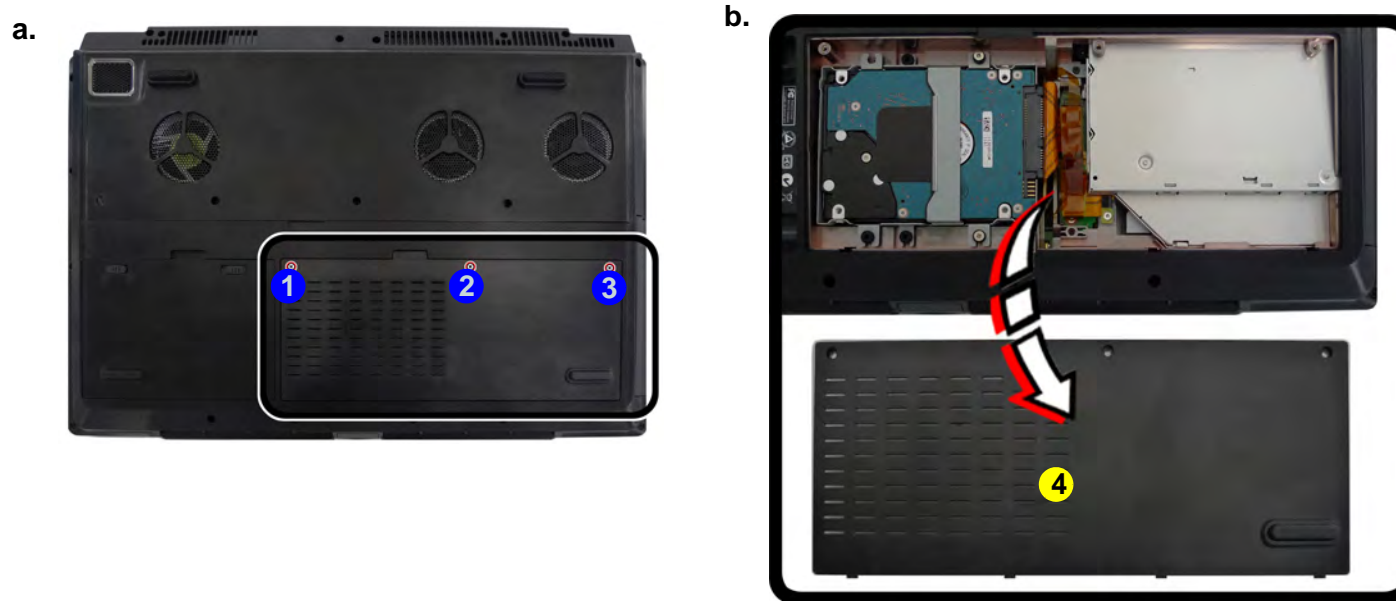


## Removing the Hard Disk Drive

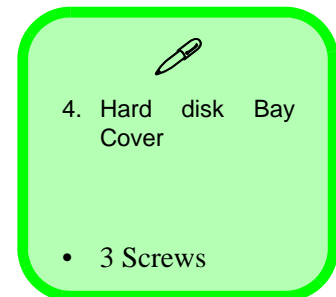
The hard disk drive is mounted in a removable case and can be taken out to accommodate other 2.5" SATA hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

### Hard Disk Upgrade Process

1. Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)).
2. Locate the Hard disk bay cover and remove screws **1** & **3**.
3. Remove the bay cover **4**.



- a. Remove the screws.
- b. Remove the cover



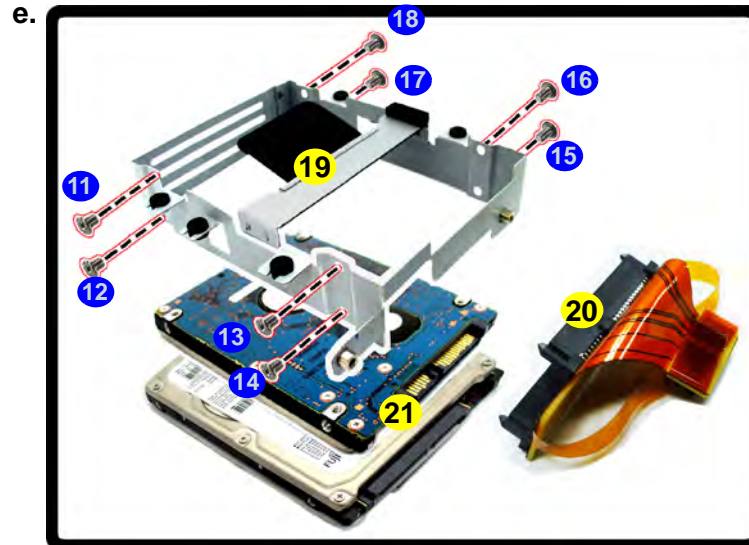
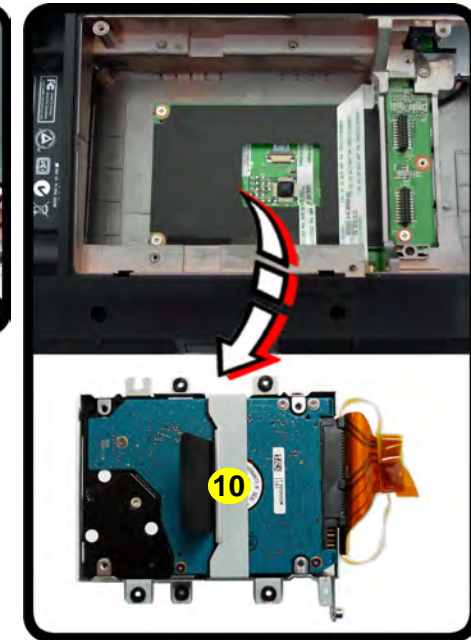
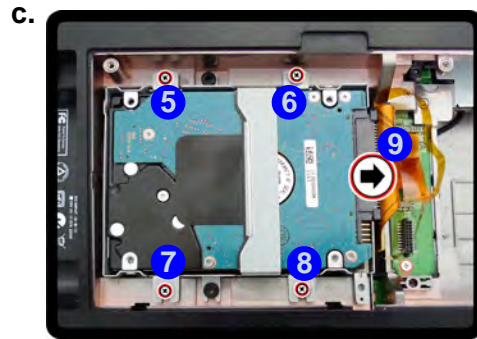


## Disassembly

### Figure 4 HDD Assembly Removal (cont'd.)

- c. Remove the screws.  
d. Lift the hard disk assembly up out of the computer.  
e. Remove the screws and separate the HDD(s) from the connector and case.

4. Remove screws 5 - 8 and pull the tab to disconnect the connector 9 from hard disk assembly.
5. Lift the hard disk assembly 10 out of the computer.
6. Remove screws 11 - 18 (depending on how many hard disks you have installed in the assembly).
7. Separate the hard disk board connector 20 from the case 19.
8. Separate the hard disk(s) 21 from the case.
9. Reverse the process to install a new hard disk(s).



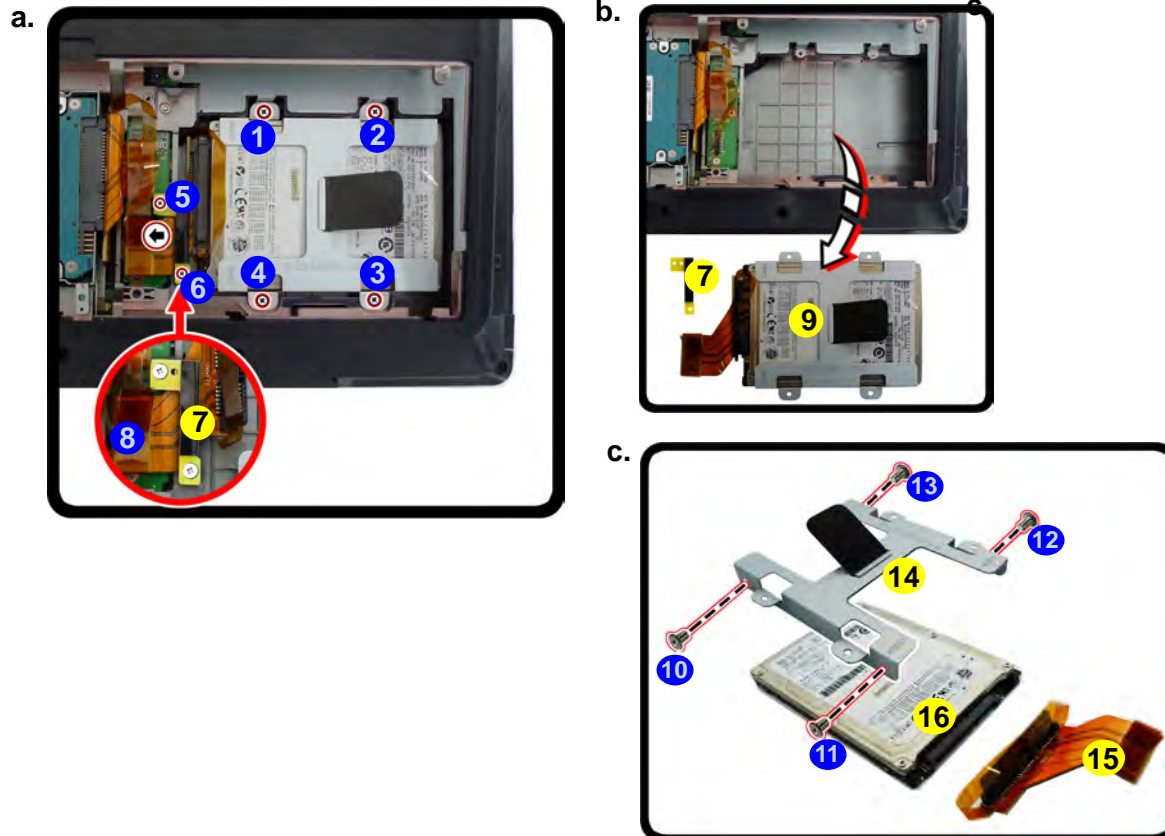
10. Hard Disk Assembly  
19. Hard Disk Case  
20. Hard Disk Board Connector  
21. Hard Disks

- 8 Screws




## Removing the Hard Disk(s) in the Secondary HDD Bay

1. Turn **off** the computer, and turn it over and remove the battery and remove the optical device drive
2. The secondary hard disk bay is located under the optical device drive.
3. Remove screws **1** - **6**.
4. Remove the retaining pin **7** and disconnect the hard disk cable **8**.
5. Lift the hard disk assembly **9** out of the compartment.
6. Remove the screws **10** - **13** to release the hard disk **16** from the case **14**.
7. Remove the cable **15**.
8. Reverse the process to install any new hard disk(s).



*Figure 5*  
**Secondary HDD  
Assembly Removal**

- a. Remove the screws and the retaining pin and disconnect the hard disk cable.
- b. Lift the hard disk assembly out of the computer.
- c. Remove the screws to release the hard disk from the case.



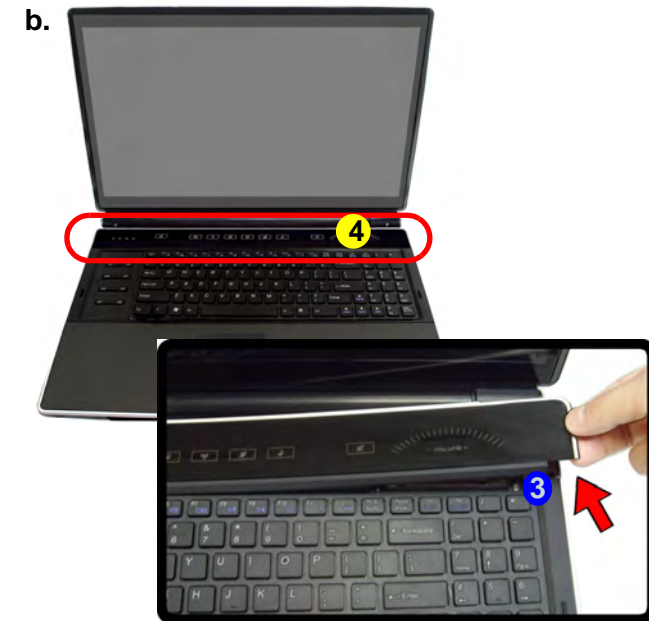
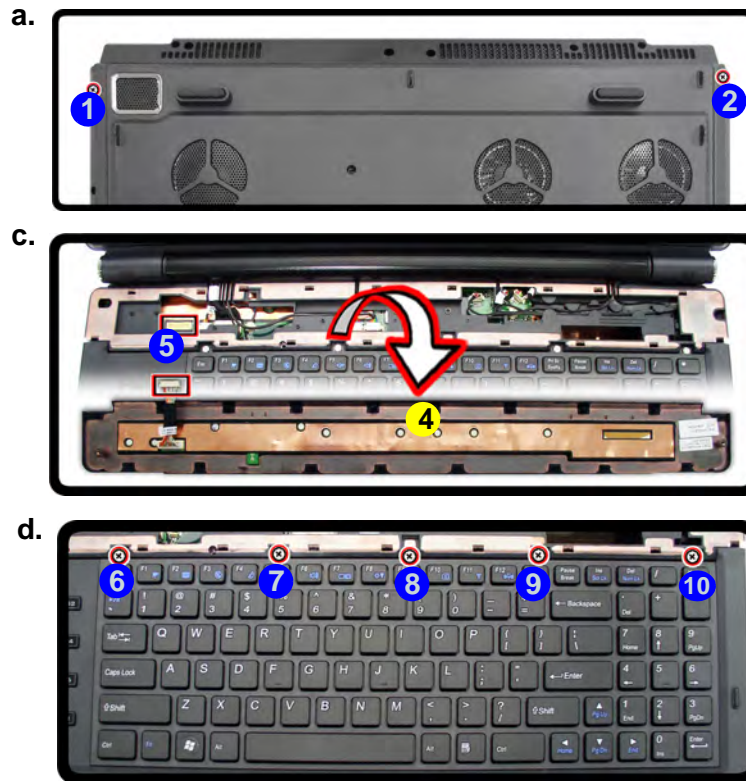
9. Hard Disk Assembly  
14. Hard Disk Case  
15. Hard Disks Cable  
16. Hard Disks

- 10 Screws

## Disassembly

*Figure 6*  
**Keyboard  
Removal**

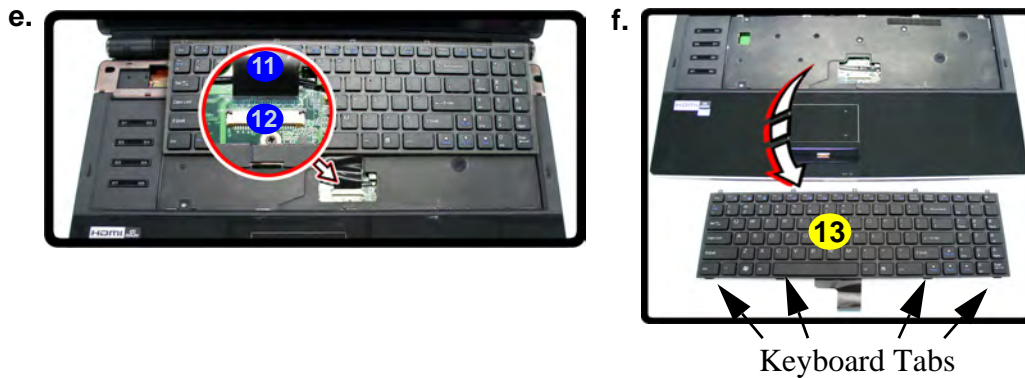
- a. Remove the screws from the bottom of the computer.
  - b. Turn the computer over, open the lid/LCD and unsnap the LED cover at point 3.
  - c. Lift the LED cover module and disconnect the cable.
  - d. Remove the screws from the keyboard.
1. Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)).
  2. Remove screws 1 & 2 from the bottom of the computer.
  3. Turn the computer over, open the Lid/LCD, and carefully (a cable is connected to the underside of the LED cover module) unsnap up the LED cover module 4 from point 3 on the right.
  4. Lift up the LED cover module 4 and disconnect the cable 5.
  5. Remove screws 6 - 10 from the keyboard.



4. LED cover module

- 7 Screws

6. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable.
7. Disconnect the keyboard ribbon cable **11** from the locking collar socket **12**.
8. Remove the keyboard **13**.



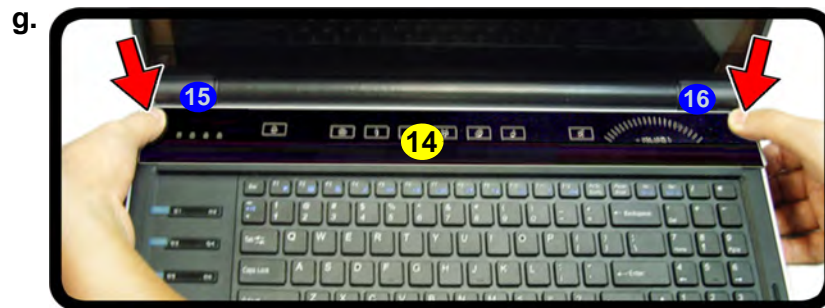
**Re-Inserting the Keyboard**

When re-inserting the keyboard firstly align the **four** keyboard tabs at the bottom (*Figure 8e*) at the bottom of the keyboard with the slots in the case.

*Figure 7*  
**Keyboard Removal (cont'd.)**

- e. Disconnect the cable from the locking collar.
- f. Remove the keyboard.
- g. Snap down the LED cover.
- h. Push the LED cover on the left side at point **17** and the slide toward the right to secure it in place.

9. Replace keyboard (make sure to reconnect the keyboard cable).
10. Snap the LED cover module **14** at the top to the module at point **15** & **16**.
11. Push the LED cover module down on the left side at point **17**, and then slide the module to the right (as illustrated) and snap down to secure it in place.
12. Replace the screws on the bottom of the computer.



13. Keyboard  
14. LED cover module

## Disassembly

Figure 8  
RAM-1 Module  
Removal

- Remove the screws.
- Lift the cover and disconnect the fan cable.

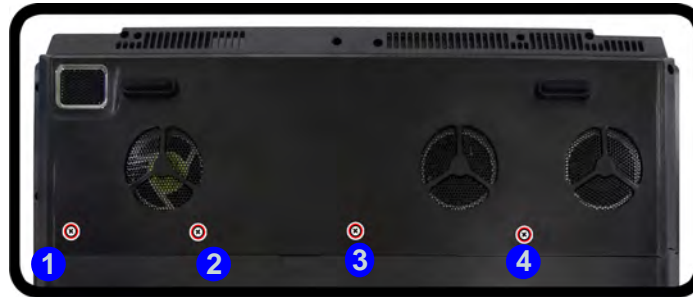
## Removing the System Memory (RAM) -1

The computer has three memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) DDR III (DDR3) supporting 1066/1333 MHz. The main memory can be expanded up to 8GB. The total memory size is automatically detected by the POST routine once you turn on your computer.

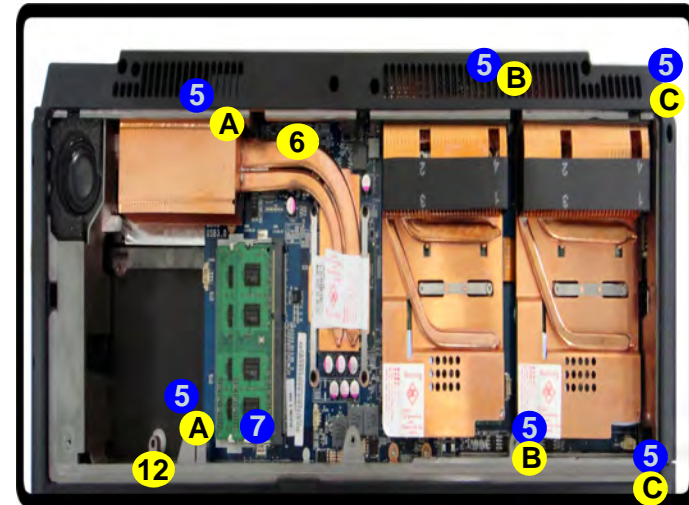
### Removing the Primary System Memory (2 memory sockets)

- Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)).
- Locate the component bay cover and remove screws ① - ④.
- Carefully (a fan and cable are attached to the under side of the cover) lift up the bay cover.
- Carefully disconnect the fan cable ⑤ in the order A, B & C and remove the cover ⑥.
- The primary memory sockets are visible at point ⑦.

a.



b.

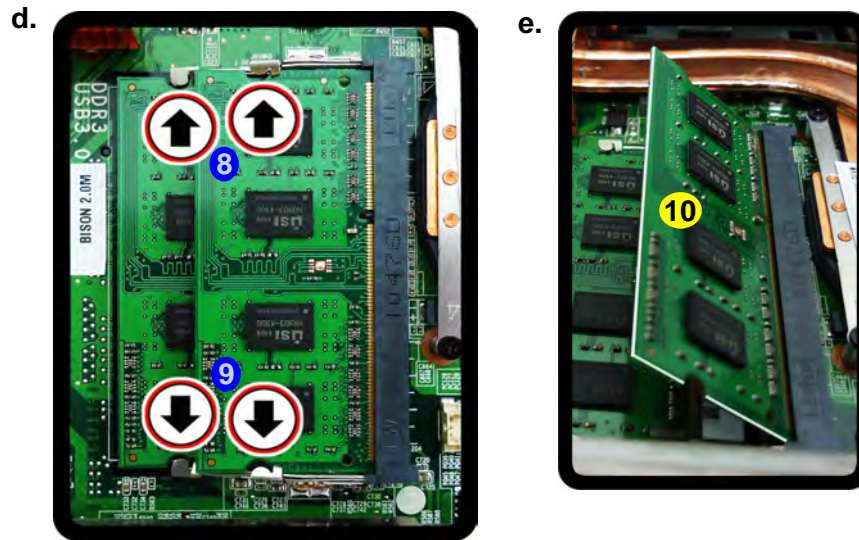


6. Component Bay  
Cover

- 4 Screws




6. Gently pull the two **release latches 8 & 9** on the sides of the memory socket in the direction indicated by the arrows (**Figure d**).
7. The RAM module **10** will pop-up (**Figure e**), and you can then remove it.



*Figure 9*  
**RAM-1 Module Removal (cont'd.)**

- d. Pull the release latch.
- e. Remove the module.

8. Pull the latches to release the second module if necessary.
9. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
10. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the socket as it will go. **DO NOT FORCE** the module; it should fit without much pressure.
11. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
12. Replace the component bay cover and make sure you reconnect the fan cable (see **Figure 9 on page 2 - 13**).
13. Replace all the component bay cover screws.
14. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

  
**Contact Warning**

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.


  
**10. RAM Module**

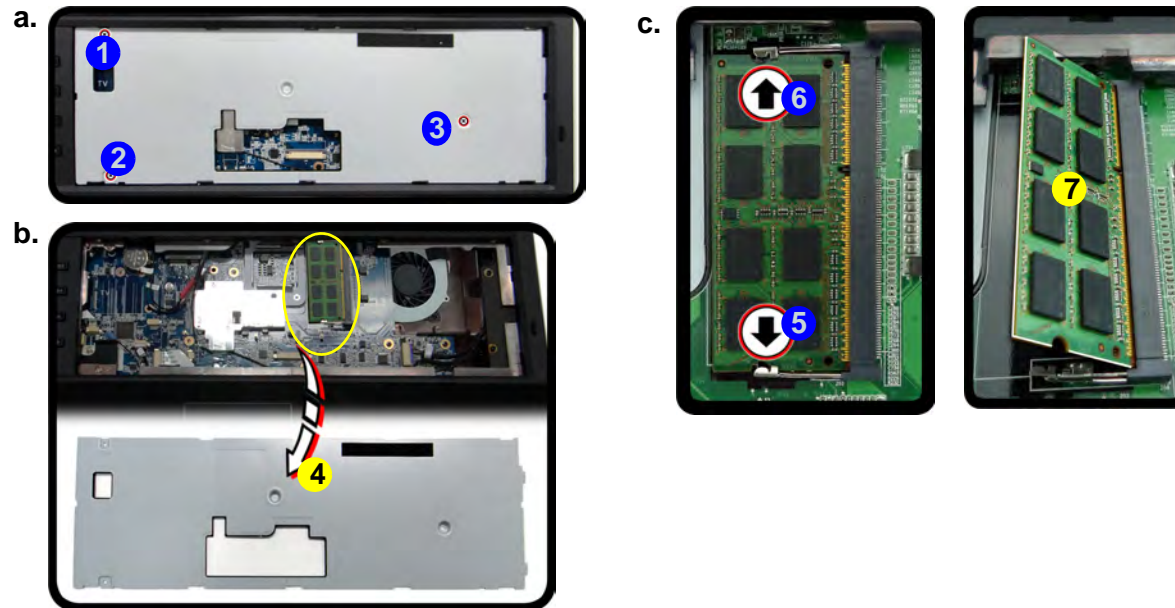
Figure 10  
RAM-2 Module  
Removal (cont'd.)

- Remove screws and keyboard plate.
- Remove the keyboard plate.
- Pull the release latch(es) and remove the module.

## Removing the System Memory (RAM) - 2

### Memory Upgrade Process

- Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)) and remove the keyboard ([page 2 - 5](#)).
- Remove screws ① - ③ from the keyboard shielding plate.
- Remove the keyboard shielding plate ④.
- Gently pull the two **release latches** ⑤ & ⑥ **on the sides of the memory socket in the direction indicated by the arrows (Figure c)**.
- The RAM module ⑦ will pop-up, and you can then remove it.



- 4. Keyboard Shielding Plate
- 7. RAM Module(s)
- 3 Screws

- Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
- The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the socket as it will go. **DO NOT FORCE** the module; it should fit without much pressure.
- Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
- Replace the shielding plate, keyboard, LED cover module and screws (make sure to reconnect the keyboard cable) -see [Figure 9 on page 2 - 13](#).
- Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

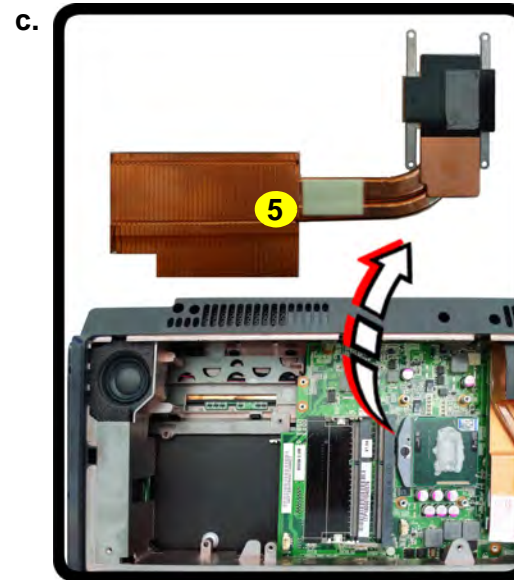
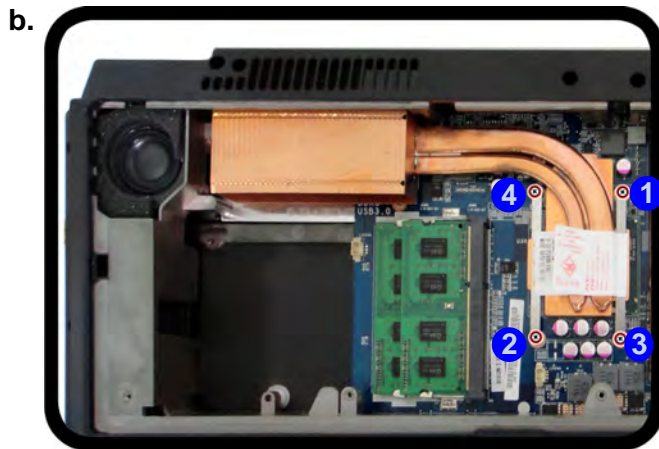
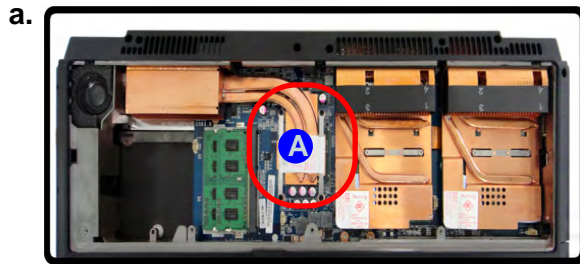
# Removing and Installing the Processor


## Processor Removal Procedure

1. Turn off the computer, and turn it over, remove the battery ([page 2 - 5](#)), and component bay cover ([page 2 - 10](#)).
2. The CPU heat sink will be visible at point **A** (Figure 6a) on the mainboard.
3. Remove screws **4**, **3**, **2**, **1**, the reverse order indicated on the label ([Figure 6b](#)).
4. Carefully (it may be hot) lift up the heat sink **5** off the computer.

*Figure 11*  
Processor Removal


- a. Locate the heat sink.
- b. Remove the screws.
- c. Remove the heat sink





**Caution**

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.




5. CPU Heat Sink

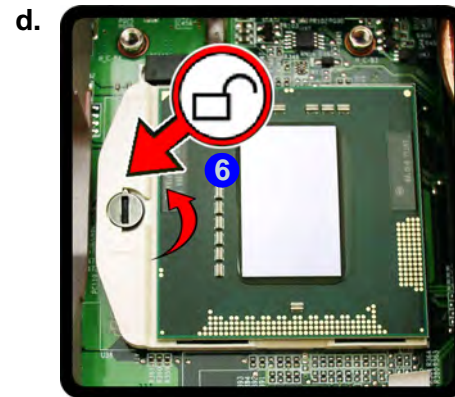
- 4 Screws

## Disassembly

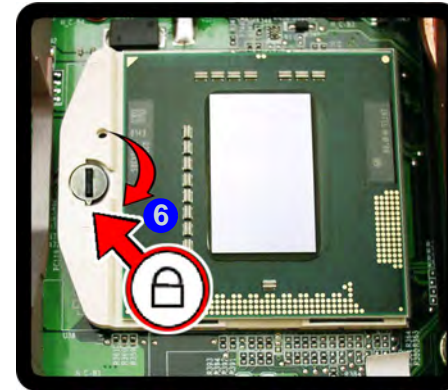
### Figure 12 Processor Removal (cont'd)

- d. Turn the release latch to unlock the CPU.
- e. Lift the CPU out of the socket.

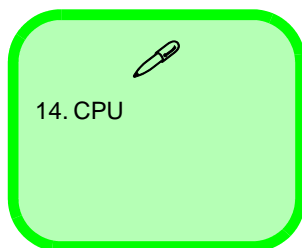
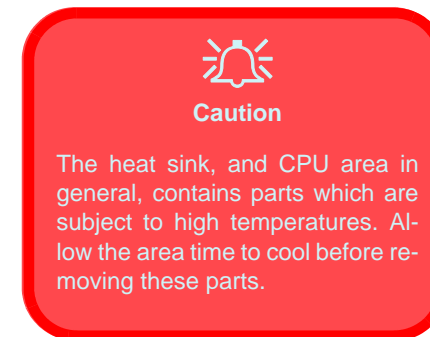
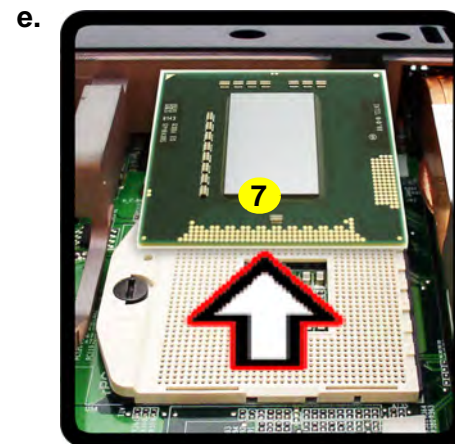
- 5. Turn the release latch **6** towards the unlock symbol , to release the CPU (*Figure 12a*).
- 6. Carefully (it may be hot) lift the CPU **7** up out of the socket (*Figure 12b*).
- 7. See [page 2 - 17](#) for information on inserting a new CPU.
- 8. Reverse the process to install a new CPU.
- 9. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).



Unlock




Lock



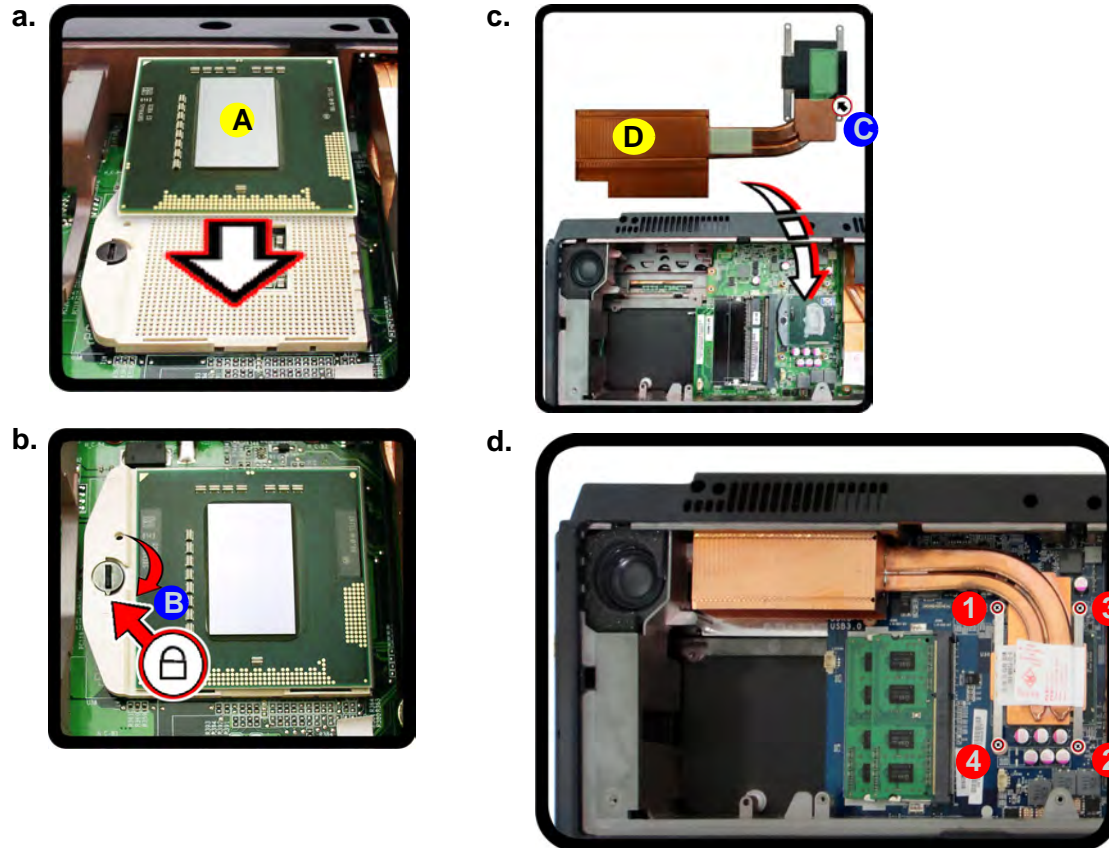



**Processor Installation Procedure**

1. Insert the CPU **A**, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!), and turn the release latch **B** towards the lock symbol  (*Figure 13b*).
2. **Remove the sticker C** (*Figure 13c*) from the heat sink.
3. Insert the heat sink **D** as indicated in *Figure 13c*.
4. Tighten the CPU heat sink screws **1**, **2**, **3**, & **4** (*Figure 13d*).
5. Replace the component bay cover and tighten the screws (*page 2 - 15*).

*Figure 13*  
**Processor Installation**

- a. Insert the CPU.
- b. Turn the release latch towards the lock symbol.
- c. Remove the sticker from the heat sink and insert the heat sink.
- d. Tighten the screws.





A. CPU  
D. Heat Sink

- 4 Screws

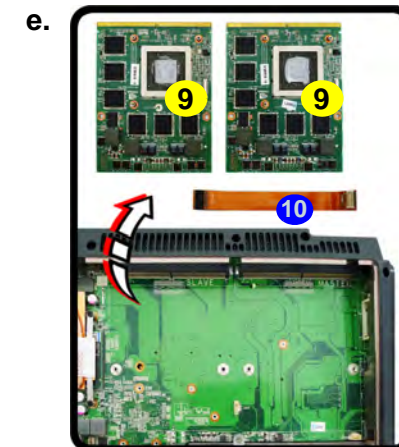
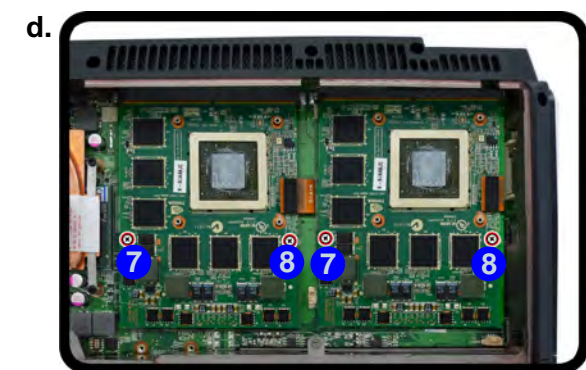
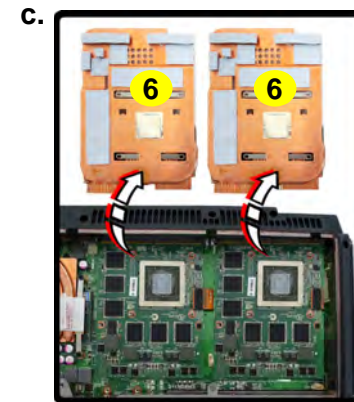
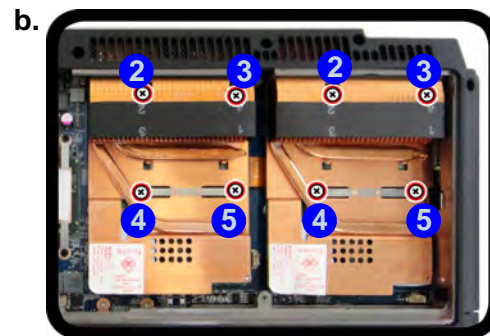
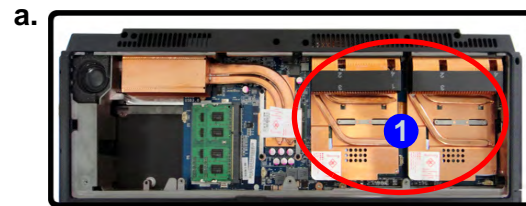
## Disassembly

Figure 14  
VGA Card Removal

- Locate the VGA cards.
- Remove the screws.
- Remove the heat sink
- Remove the screws
- Remove the VGA cards.

## Removing the VGA Card

- Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)) and component bay cover ([page 2 - 5](#)).
- The VGA card will be visible at point **1** on the mainboard ([Figure 16a](#)).
- Remove screws **2 - 5** in the order indicated on the label (and on the heat sink unit itself).
- Remove the heat sink unit **6** (two heat sink units are pictured here).
- Remove screws **7 & 8** from the video card (two video cards are pictured).
- Carefully remove the video cards **9**.
- If your system includes two video cards you will need to disconnect the cable **10** between the master and slave cards (do not forget to reconnect the cable if you are replacing two cards).



- 6. VGA Card Heatsink
- 9. VGA Card Module

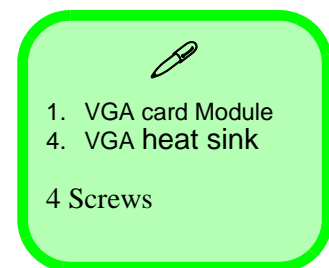
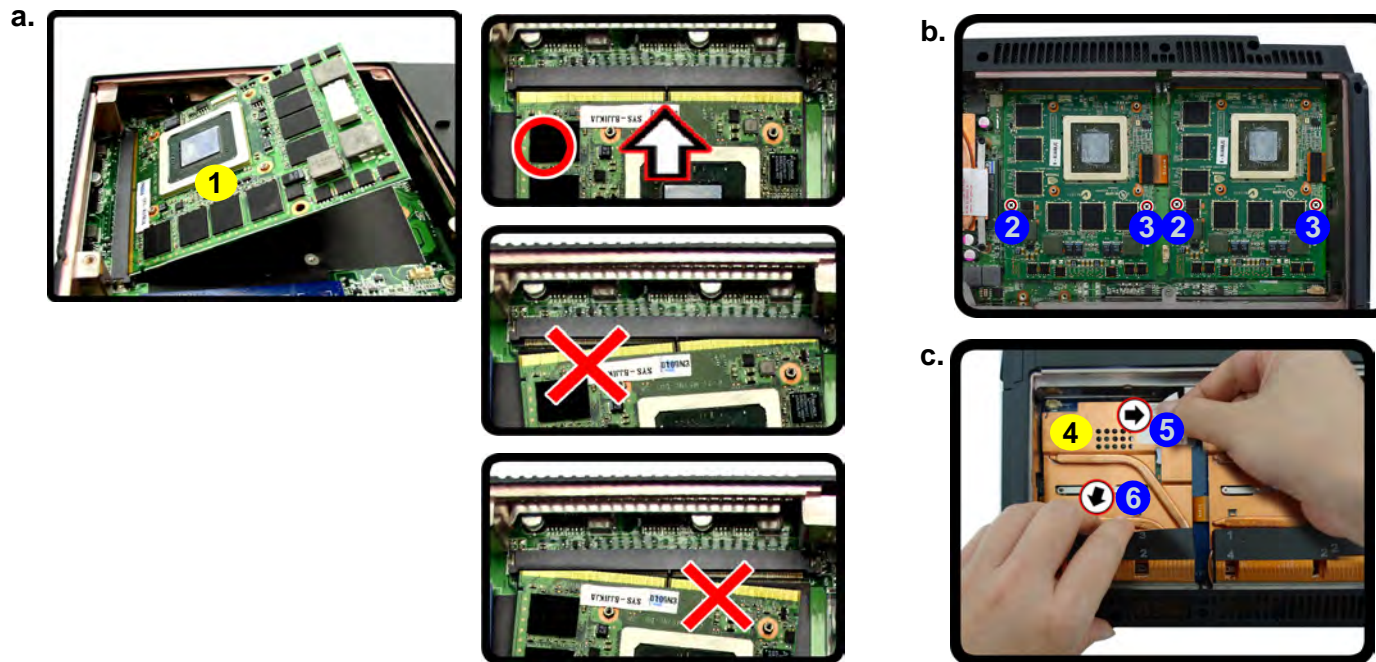
- 12 Screws

## Installing the VGA Card

1. Prepare to fit the VGA card **1** into the slot by holding it at about a 30° angle.
2. The card needs to be fully into the slot, and the VGA card and socket have a guide-key and pin which align to allow the card to fit securely.
3. Fit the connectors firmly into the socket, straight and evenly.
4. DO NOT attempt to push one end of the card in ahead of the other.
5. The card's pin alignment will allow it to only fit one way. **Make sure the module is seated as far into the socket as it will go** (none of the gold colored contact should be showing). DO NOT FORCE the card; it should fit without much pressure.
6. Secure the card with screws **2** & **3** (two video cards are pictured).
7. Press the heat sink unit **4** onto the board using two hands at points **5** & **6** and secure the screws in the order indicated in (*Figure 16c*).
8. Attach the VGA card fan and secure with the screws as indicated in (*page 2 - 18*).
9. Reinsert the component bay cover, and secure with the screws as indicated in (*page 2 - 12*).

*Figure 15*  
**VGA Card Installation**

- a. Carefully Insert the VGA Card.
- b. Tighten the screws.
- c. Press the VGA heat sink.





## Disassembly

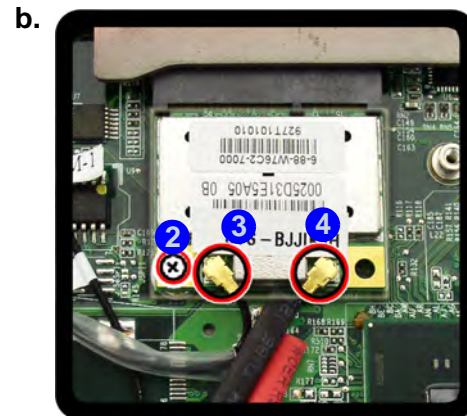
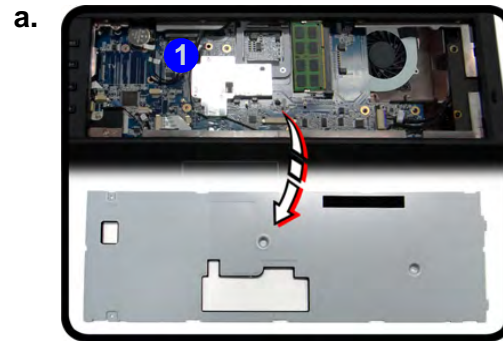
*Figure 16*  
**Wireless LAN  
 Module Removal**

- a. Locate the WLAN module.
- b. Remove the screw and disconnect the cables.
- c. Remove the WLAN module.

Note: Make sure you reconnect the antenna cables.

## Removing the Wireless LAN Module

1. Turn off the computer, and turn it over, remove the battery ([page 2 - 5](#)), keyboard and keyboard shielding plate ([page 2 - 10](#)).
2. The Wireless LAN Module will be visible at point ①.
3. Remove the screw ② and carefully disconnect cables ③ - ④.
4. The Wireless LAN Module ⑤ ([Figure c](#)) will pop-up, and you can remove it.



5. Wireless LAN Module

- 1 Screw

# Appendix A: Part Lists

This appendix breaks down the *P180HM* series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

**Note:** This section indicates the *manufacturer's* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

**Note:** Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

**Note:** Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

## Part List Illustration Location

The following table indicates where to find the appropriate part list illustration.

*Table A- 1*  
**Part List Illustration  
Location**

Parts	P180HM
Top with Fingerprint	<i>page A - 3</i>
Top without Fingerprint	<i>page A - 4</i>
Bottom	<i>page A - 5</i>
LCD	<i>page A - 6</i>
Mainboard	<i>page A - 7</i>
DVD	<i>page A - 8</i>
COMBO	<i>page A - 9</i>

# Top with Fingerprint

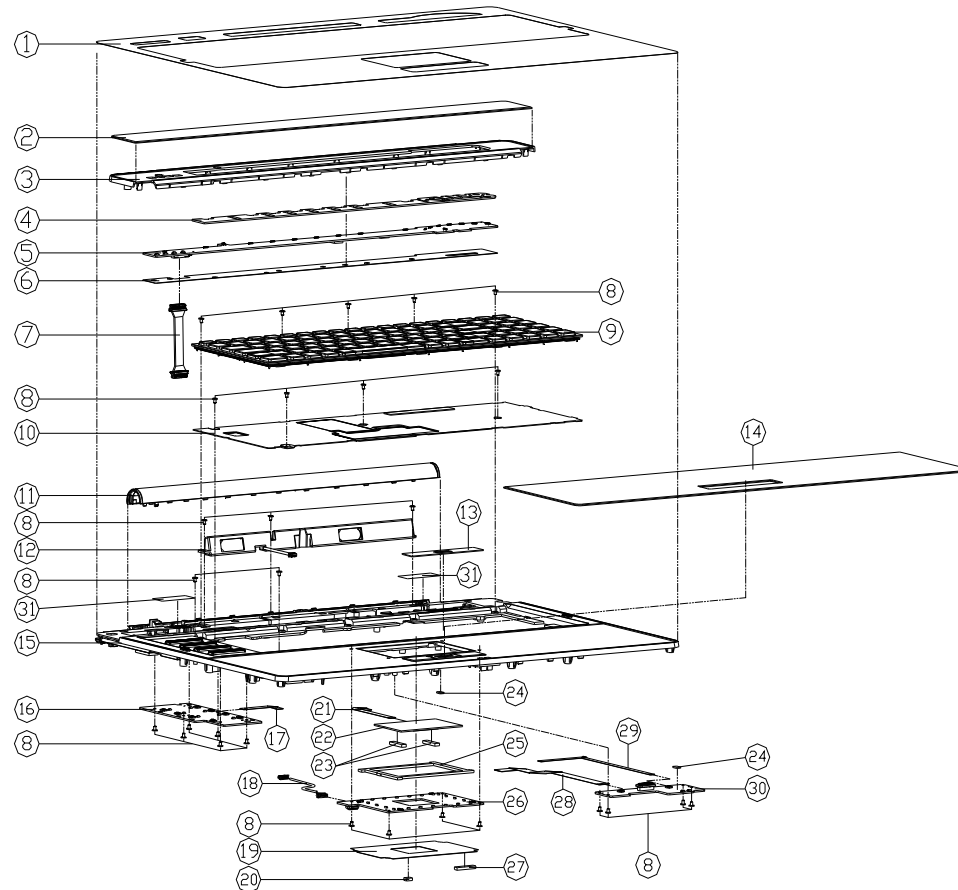
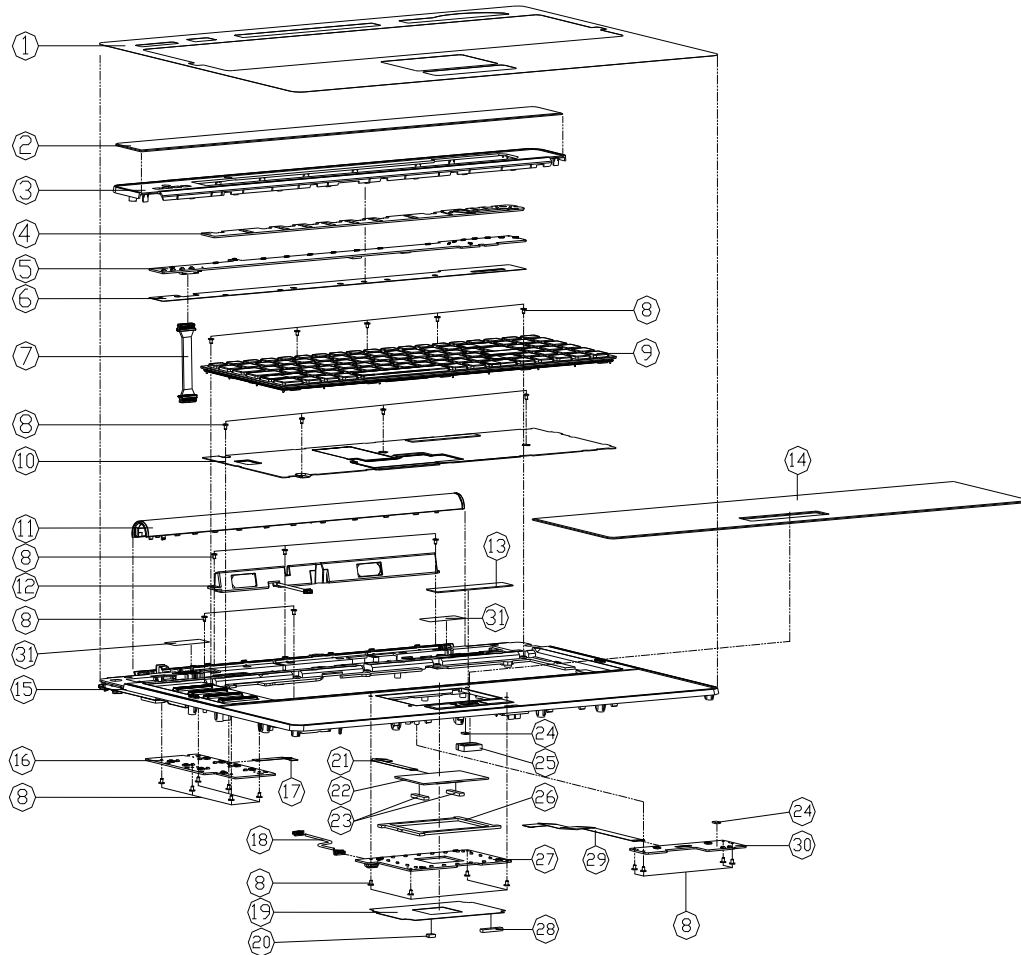


Figure A - 1  
Top with  
Fingerprint

ITEM	PART NAME	PART NO	REMARK
1	TOP CASE PROTECT MYLAR PET M980U	6-40-M9802-021	
2	PMMA FOR CENTER COVER P180HM	6-42-P1802-010	
3	CENTER COVER MODULE M980NU	6-42-M9802-203	
4	LIGHT GUIDE FOR CENTER COVER PC M980U	6-42-M9802-092	
5	TOUCH SENSOR BOARD V2.0 P180HM	6-77-P1801-D02	
6	MYLAR CU FOIL FOR CENTER COVER M980U	6-40-M9802-030	
7	WIRE CABLE FOR W/B TO TOUCH-SENSOR 20P M980U	6-43-M9802-012	
8	SCREW HEXCL X1.1X1.1CT NY (00-#45.01-04)	6-35-B1120-3RE	
9	K/2 ISO4774 FRAME 105 MODULE M980U/M980U/200	6-79-M980NUK-010	
10	KB SHIELDING MODULE SECC P180HM	6-33-P1802-101	
11	INVERTOR COVER MODULE P180HM	6-33-P1802-200	
12	SPEAKER L-R-REAR MODULE 15W 474P P180HM	6-23-5P180-011	
13	PMMA FOR GP KNOB WITH FINGER M980U	6-42-M9802-071	
14	PMMA FOR PLAM REST M980NU	6-42-M9802-061	
15	TDP CASE MODULE M980NU	6-39-M9802-014	
16	GAME KEY BOARD V2.0 P180HM	6-77-P1807-D02	
17	FFC CABLE 12P FOR W/B TO GAME-KEY BOARD V2.0	6-43-M9800-011	
18	WIRE CABLE FOR W/B TO TOUCH-PAID-LED 6P M980U	6-43-M9802-021	
19	TOUCH PAD LED BOARD MYLAR FR83 P180HM	6-40-P1802-011	
20	RUBBER FOR TOP CASE 75*54*1.61 MM X8100	6-47-X8102-030	
21	FFC CABLE 12P FOR W/B TO TOUCH PAD BOARD V2.0	6-43-M9802-011	
22	TOUCH PAD TM-00398-003 W840T	6-49-W84T2-020	
23	TOUCH PAD SPONGE (08*5*2) C04305 M980NU	6-47-M9802-020	
24	RUBBER FOR TOP CASE 84*6*21 MM X8100	6-47-X8102-010	
25	LIGHT GUIDE FOR TOUCH PAD PC M980U	6-42-M9802-0A1	
26	BARE PCB TOUCH PAD LED BOARD V2.0 P180HM	6-77-P180G-D02	
27	RUBBER FOR TOP CASE 25*35*1.61 MM X8100	6-47-X8102-020	
28	FFC CABLE 12P FOR W/B TO CLICK BOARD V2.0	6-43-M9800-041	
29	FFC CABLE 4P FOR W/B TO FINGERPRINT BOARD V2.0 M980U	6-43-M980F-011	
30	CLICK BOARD V2.0+KEY PRINTER BOARD V2.0 ASY P180HM	6-77-P180A-NO2A	
31	TOP CASE MYLAR FR83 25*74*0.05 P180HM	6-40-P1802-030	

# Top without Fingerprint

Figure A - 2  
Top without Fingerprint



ITEM	PART NAME	PART NO	REMARK
1	TOP CASE PROTECT WTLAR PET M980U	6-40-M9802-021	
2	PMMA FDR CENTER COVER P180HM	6-42-P1802-010	
3	CENTER COVER MODULE M980NU	6-42-M9802-203	
4	LIGHT GUIDE FOR CENTER COVER PC M980U	6-42-M9802-092	
5	TOUCH SENSOR BOARD V2.0 P180HM	6-77-P1801-D02	
6	WTLAR CU FOIL FOR CENTER COVER M980U	6-40-M9802-030	
7	WIRE CABLE FOR W/B TO TOUCH-SENSOR ZBP M980U	6-43-M9803-012	
8	SCREW M2*3L KI NI ICT NY (00-#4.5,DT-0.4)	6-35-B1120-3RE	
9	K/B US&UK FR&C QSD MODULE M980U/8700U/7200	6-79-M9800UK-010	
10	KB SHIELDING MODULE SECC P180HM	6-33-P1802-101	
11	INVERTOR COVER MODULE P180HM	6-33-P1802-200	
12	SPEAKER L-R-REAR MODULE 15W 4 Ω AP P180HM	6-23-5P180-011	
13	PMMA FDR GP KNOB W/O FINGER M980U	6-42-M9802-081	
14	PMMA FDR PLAM REST M980NU	6-42-M9802-061	
15	TOP CASE MODULE M980NU	6-39-M9802-014	
16	GAME KEY BOARD V2.0 P180HM	6-77-P1807-D02	
17	FFC CABLE I2P FOR W/B TO GAME-KEY BOARD V2.0	6-43-M9800-011	
18	WIRE CABLE FOR W/B TO TOUCH-PAD-LED GP M980U	6-43-M9802-021	
19	TOUCH PAD LED BOARD WTLAR FR83 P180HM	6-40-P1802-011	
20	RUBBER FOR TOP CASE 75*54*1.6T MM X8100	6-47-X8102-030	
21	FFC CABLE I2P FOR W/B TO TOUCH PAD BOARD V2.0	6-43-M9802-011	
22	TOUCH PAD TM-00398-003 W840T	6-49-W8412-020	
23	TOUCH PAD SPRING (08*5*2) CR4305 M980NU	6-47-M9802-020	
24	RUBBER FOR TOP CASE 8*6*2T MM X8100	6-47-X8102-010	
25	RUBBER FOR GP KNOB DUMMY M980NU	6-47-M9802-050	
26	LIGHT GUIDE FOR TOUCH PAD PC M980U	6-42-M9802-0A1	
27	BARC PCB TOUCH PAD LED BOARD V2.0 P180HM	6-77-P180G-D02	
28	RUBBER FOR TOP CASE 25*35*1.6T MM X8100	6-47-X8102-020	
29	FFC CABLE I2P FOR W/B TO CLICK BOARD V2.0	6-43-M9800-041	
30	CLICK BOARD (4/1) FP V2.0 P180HM	6-77-P1802-D02-1	
31	TOP CASE WTLAR FR83 25*74*0.5 P180HM	6-40-P1802-030	



Bottom

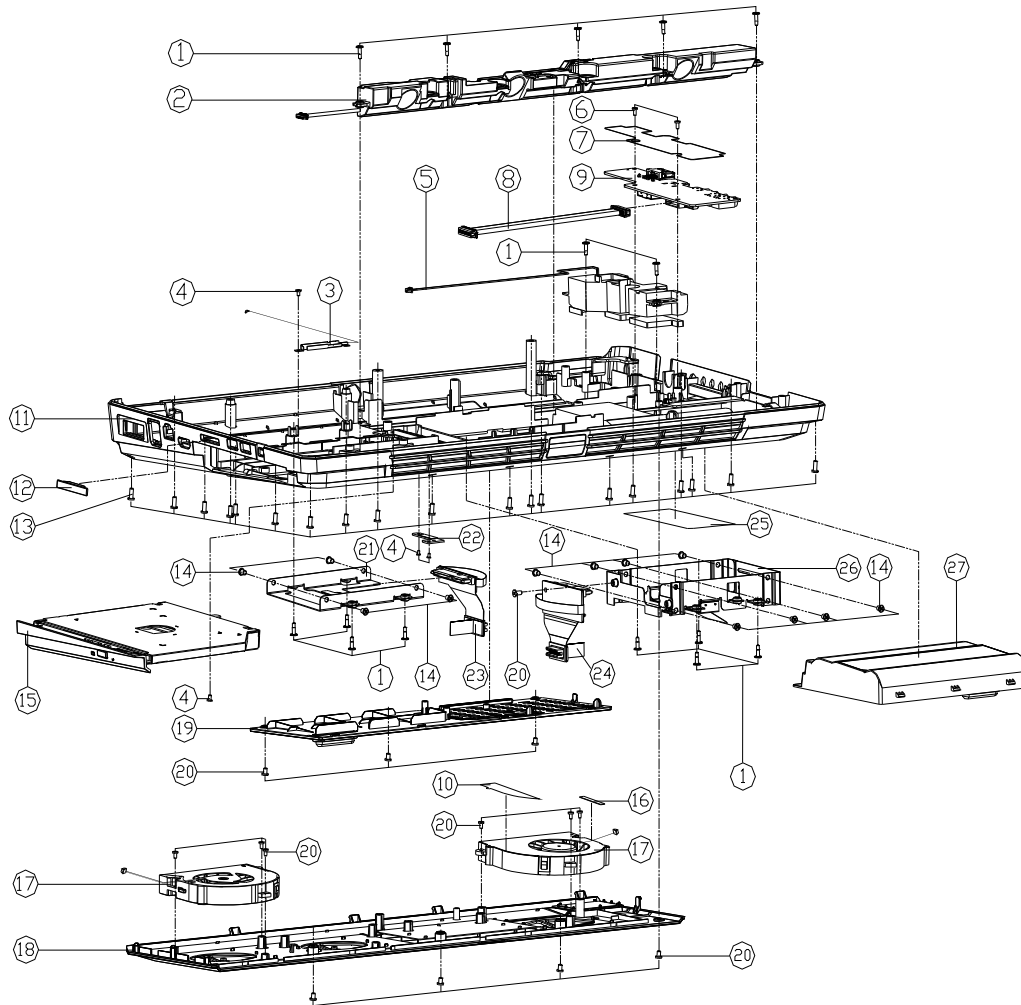


Figure A - 3  
Bottom

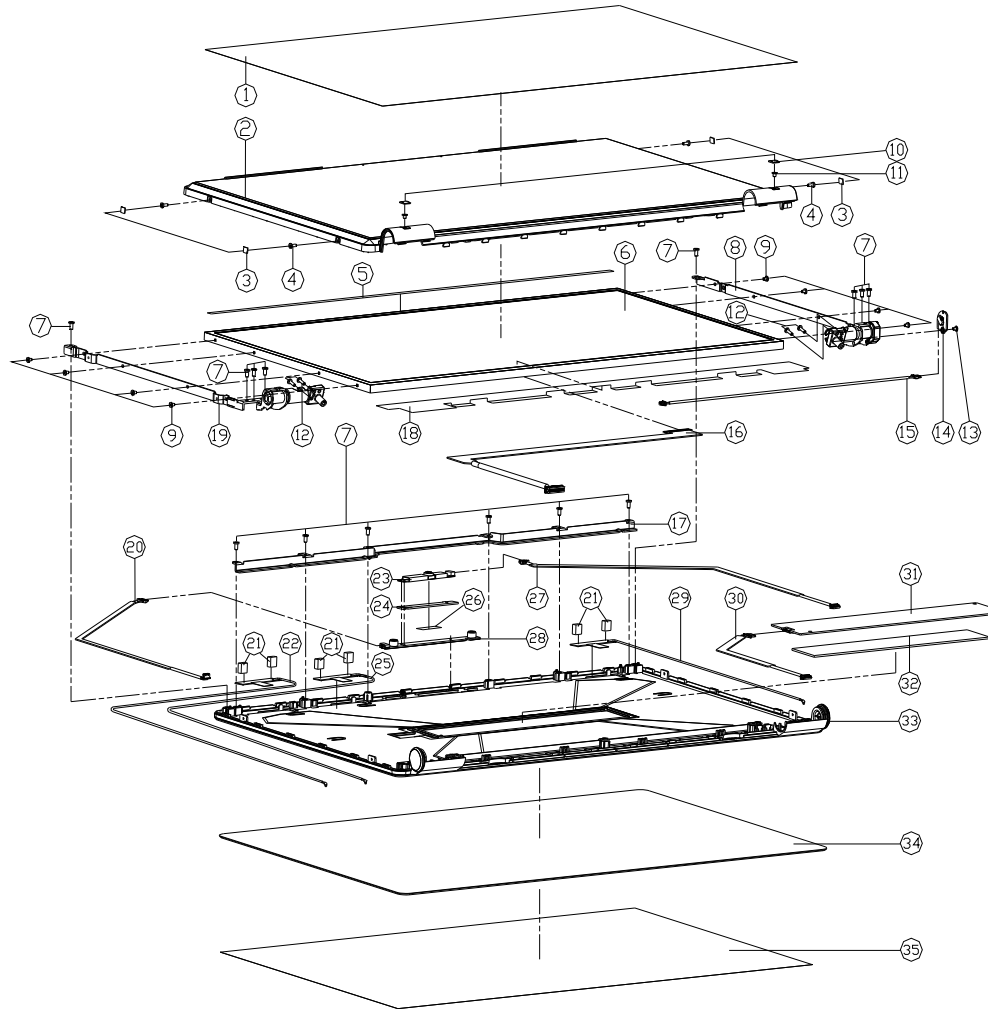
ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*7.5L D1=21 L=45 S=25 K NI ICT	6-35-81120-750	
2	SPEAKER L+R MODULE-FRONT & CENTER 2W 4Ω CAP P180HM	6-23-5P180-022	
3	ANTENNA BLUETOOTH VCI BT PIFA 2.4G L= 295MM W/45S	6-23-7M74S-030	
4	SCREW M2*3L K1 NI ICT NY 10D=045,D1=041	6-35-B1120-3RE	
5	SPEAKER SUB_WOOFER MODULE 2W 4Ω 2P P180HM	6-23-5P180-030	
6	SCREW M2.5*5L 3000.4MM K1 BK/Z ICT NY	6-35-B6125-5R0	
7	AUDIO BOARD MYLAR FR83 M980NU	6-40-M980S-020	
8	WIRE CABLE 3PIN W/B TO AUDIO BOARD FOR P180HM(L)	6-43-P1800-011	
9	AUDIO BOARD V3.0A P180HM	6-77-P1808-D03A	
10	CPU FAN MYLAR FR83 59.7*12.8*12.5 P180HM	6-40-P180S-040	
11	BOTTOM CASE MODULE P180HM	6-39-P1803-012	
12	CARD READER RUBBER C (FRONT KE-SATA) BLACK 60 M980NU	6-47-M980E-011	
13	SCREW M2.5*8L K1 BK/Z NY ICT	6-35-B6125-8R0	
14	SCREW M3*2.5L K1 NI ICT NY	6-35-B1130-2R5	
15	SATA DVD SUPER MULTI 24X/8X ASSY P180HM	6-79-P180M00-010	OPTION
15	SATA BLU-RAY COMBO 6X ASSY P180HM	6-79-P180M00W-010	OPTION
16	TAPE MYLAR (C)MYLAR M550J	6-40-M55J2-030	
17	FAN/CPU 1075*92*26W 5V 6A 6A/1000 3000RPM F180HM P180HM	6-23-AW15H-010	
18	CPU COVER MODULE P180HM	6-42-P180S-102	
19	P180HM HDD COVER MODULE	6-42-P180J-101	
20	SCREW M2.5*5L K1 BK/Z ICT NY	6-35-B6125-5RA	
21	HDD 3 BKT MODULE P180HM	6-33-P180J-100	
22	SUPPORTER MODULE FOR 2ND HDD FPC P180HM	6-40-P1803-101	ONLY FOR 2ND HDD FPC
23	FPC CABLE 20PIN W/B TO 3RD SATA HDD FOR P180HM	6-43-P180J-012	
24	FPC CABLE 20PIN W/B TO DUAL SATA HDD FOR P180HM	6-43-P180J-023	
25	PRODUCT LABEL FOR P180HM	6-45-P180M03-010	
26	2IN1 HDD BKT MODULE M980NU	6-33-M980J-100	
27	WIPER BLUETOOTH ANTENNA FOR 2ND HOD FPC	6-87-P180S-4271	

A.Part Lists

Part Lists

LCD

Figure A - 4  
LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECT MYLAR PET M980NU	6-40-M9801-050	
2	LCD FRONT COVER MODULE X8100	6-39-X8101-011	
3	LCD SCREW MYLAR M980NU	6-40-M9801-021	
4	SCREW M2*5L K1 NI ICT NY	6-35-B1120-5R0	
5	MYLAR (415*5*0.25T.BLACK) X8100	6-40-00151-Z65	
6	LED 184' FHD ORN1 M980-LR GLARE TYPE 6.5MM LED	6-50-PB263-D00	
7	SCREW M2.5*5L K1 BK/Z ICT NY	6-35-B6125-5R4	
8	LCD HINGE R (SECC+SS0C) X8100	6-33-X8101-010	
9	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3R4	
10	HINGE CAP RUBBER SILICONE 80 M980NU	6-47-M9801-020	
11	SCREW M2.5*3L F NI ICT NY	6-35-21125-3R0	
12	SCREW M2.5*5L K1 BK/Z NY ICT	6-35-B6125-8R0	
13	SCREW M2*3L K1 NI ICT NY (00=45.0T=04)	6-35-B1120-3RE	
14	PWR BUTTON BOARD V2.0 P180H-M	6-77-P180W-D02	
15	WIRE CABLE FOR W/B TO POWER-BOTTOM SP M980NU	6-43-M9800-020	
16	WIRE CABLE 4PIN W/B TO LVDS FOR P180M/L/T/D	6-43-P1801-011-A	
17	LCD BRACKET TOP SECC M980NU	6-33-M9801-011	
18	MYLAR (415*5*0.25T) I-NEED/3AD CHANGE LEFT X8100	6-40-00151-Z67	
19	LCD HINGE L (SECC+SS0C) X8100	6-33-X8101-020	
20	WIRE CABLE FOR W/B TO DIG-MIC AP M980NU V2.0	6-43-M9804-011	
21	ANTENNA SPONGE (0*140) (SPONGE+30*40) M980NU	6-47-0019A-080	
22	ANTENNA VMAX 24G/37G/5G PCB W/ 3.5MM X8100	6-23-7X810-010	
23	DVC CAMERA BEZEL FIX BRACKET-80 2K HANGZHEN P180M	6-88-X510C-4900	
24	CCD PRON X8100	6-40-X810T-010	
25	ANTENNA VMAX 24G/37G/5G PCB W/ 3.5MM X8100	6-23-7X810-030	
26	CCD AL F10L (20*10*0.1) M815L	6-47-M815C-010	
27	WIRE CABLE FOR W/B TO CCD SP M980NU V2.0	6-43-M980T-021	
28	DIGITAL-MIC MODULE BK-A02 FER M980NU	6-23-EM980-010-1	
29	ANTENNA VMAX 24G/37G/5G PCB W/ 2.75MM X8100	6-23-7X810-020	
30	WIRE CABLE FOR W/B TO LOGO-LIGHT SP M980NU	6-43-M9800-031	
31	LOGO LED BOARD V2.0 P180H-M	6-77-P1803-D02	
32	LIGHT GUIDE FOR LCD BACK COVER M980NU	6-42-M9801-080	
33	LCD BACK COVER MODULE (CHANGE) M980NU	6-39-M9801-024	
34	SPONGE LOGO PINK FOR LCD BACK COVER M980NU	6-42-M9801-032	
35	LCD PROTECT MYLAR(PET+308915) M980NU	6-40-M9801-040	

# Mainboard

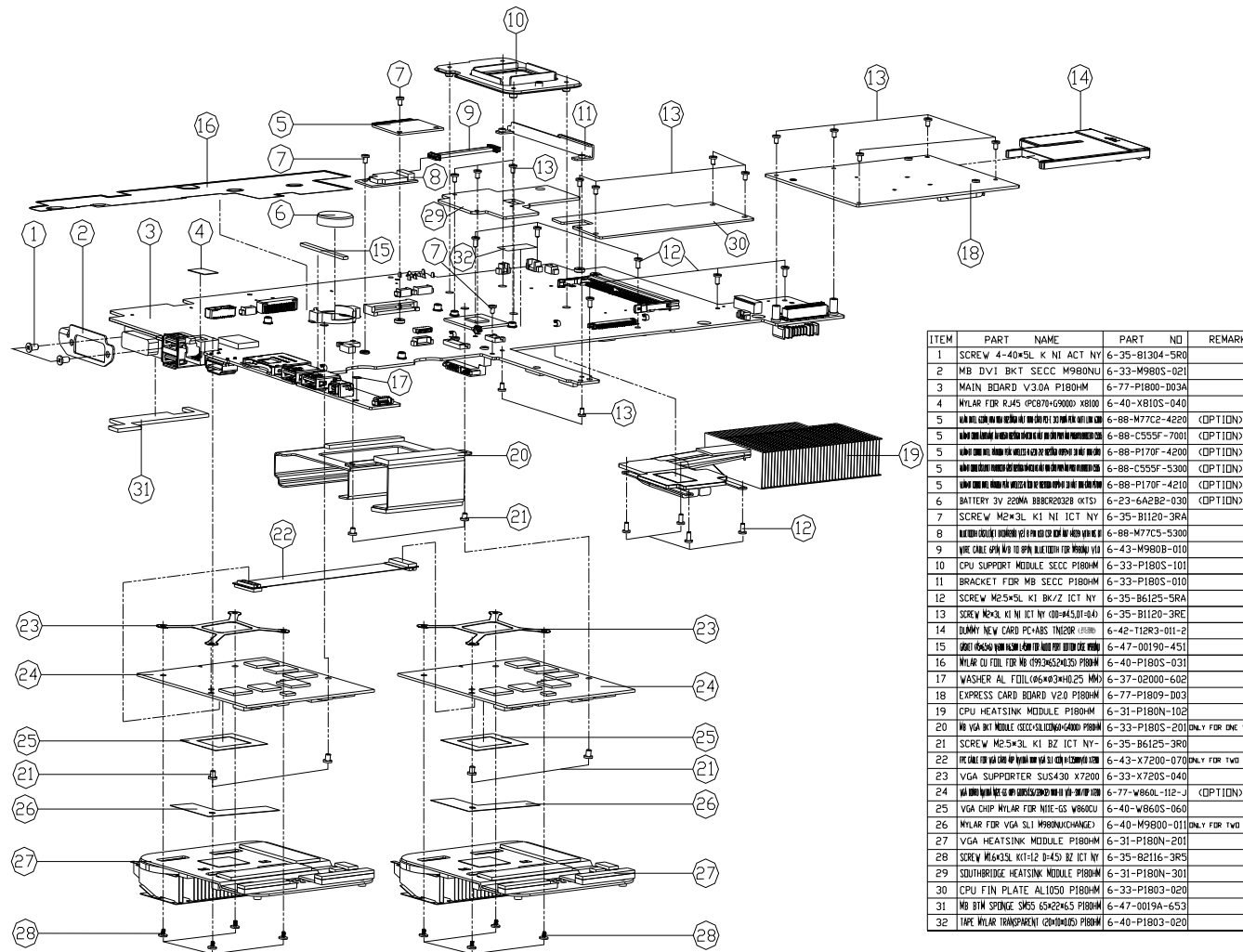


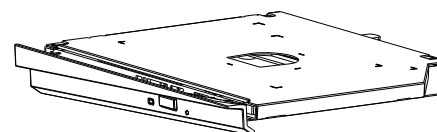
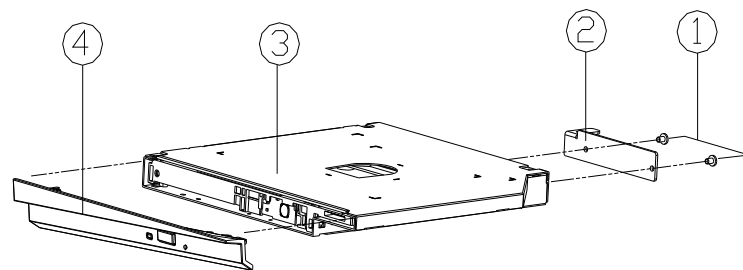
Figure A - 5  
Mainboard

ITEM	PART	NAME	PART	NO	REMARK
1	SCREW	4-40*5L K NI ACT NY	6-35-81304-5R0		
2	MB DVI BKT SECC	M9B0NLI	6-33-M9B0S-021		
3	MAIN BOARD	V30A P180HM	6-77-P1800-003A		
4	MYLAR FOR RJ45	(PC870+G9000) X8100	6-40-X810S-040		
5	HEAT SINK FOR CPU	AL1050 P180HM	6-88-N77C2-4220		(OPTION)
5	HEAT SINK FOR CPU	AL1050 P180HM	6-88-C555F-7001		(OPTION)
5	HEAT SINK FOR CPU	AL1050 P180HM	6-88-P170F-4200		(OPTION)
5	HEAT SINK FOR CPU	AL1050 P180HM	6-88-C555F-5300		(OPTION)
5	HEAT SINK FOR CPU	AL1050 P180HM	6-88-P170F-4210		(OPTION)
6	BATTERY 3V 220MA	B88CR2032B (K1S)	6-23-6A2B2-030		(OPTION)
7	SCREW	M2*3L K1 NI ICT NY	6-35-B1120-3RA		
8	HEAT SINK FOR VGA	AL1050 P180HM	6-88-N77C5-5300		
9	VGA CABLE GPU	NO TO GPU BLUE TOOTH FOR M9B0N V10	6-43-M9B0B-010		
10	CPU SUPPORT MODULE	SECC P180HM	6-33-P180S-101		
11	BRACKET FOR MB SECC	P180HM	6-33-P180S-010		
12	SCREW	M2.5*5L KI BK/2 ICT NY	6-35-B6125-5RA		
13	SCREW	M2*3L KI NI ICT NY (00+4.5,01+04)	6-35-B1120-3RE		
14	DUMMY NEW CARD	PC+ABS TNE20R (GREEN)	6-42-T12R3-011-2		
15	GPU HEATSINK	AL1050 P180HM	6-47-00190-451		
16	MYLAR CU FOL FOR MB	(09926524030) P180HM	6-40-P180S-031		
17	WASHER	AL F01L(06*03*0.25 MM)	6-37-02000-602		
18	EXPRESS CARD BOARD	V20 P180HM	6-77-P1809-003		
19	CPU HEATSINK MODULE	P180HM	6-31-P180N-102		
20	NO VGA RT MODULE	SECC-SUS430/CARD P180HM	6-33-P180S-201		ONLY FOR ONE VGA
21	SCREW	M2.5*3L K1 BZ ICT NY	6-35-B6125-3R0		
22	HEAT SINK FOR VGA	AL1050 P180HM	6-43-X7200-070		ONLY FOR TWO VGA
23	VGA SUPPORTER	SUS430 X7200	6-33-X720S-040		
24	VGA HEATSINK	AL1050 P180HM	6-77-W860L-112-J		(OPTION)
25	VGA CHIP MYLAR	FOR NITE-GS W860CU	6-40-W860S-060		
26	MYLAR FOR VGA SLI	M9B0N(XCHANGE)	6-40-M9B00-011		ONLY FOR TWO VGA
27	VGA HEATSINK MODULE	P180HM	6-31-P180N-201		
28	SCREW	M1.6*3.5L KI(H-2 D-4.5) BZ ICT NY	6-35-B2116-3RS		
29	SOUTHBRIDGE HEATSINK MODULE	P180HM	6-31-P180N-301		
30	CPU FIN PLATE	AL1050 P180HM	6-33-P1803-020		
31	NO BTH SPRING SHES	65422465 P180HM	6-47-0019A-653		
32	TAPE MYLAR TRANSPARENT	(20*40*0.03) P180HM	6-40-P1803-020		

A.Part Lists



# COMBO



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*2.5L KI NI ICT NY (ø4 t=0.3)-	6-35-B1120-2R5	
2	CD RDM BRACKET SECC (镀锌) M740S	6-33-M74SZ-012-1	
3	SATA BLUE COMBO 5.25" 6X 12MM 16.625X 6.75" CD/DVD RW, 7.25" 16.625X 6.75" DVD-RW	6-85-B076X-P11	
3	SATA BLUE COMBO 5.25" 6X 12MM 16.625X 6.75" CD/DVD RW, 7.25" 16.625X 6.75" DVD-RW	6-85-B076X-L10	
3	SATA BLUE COMBO 5.25" 6X 12MM 16.625X 6.75" CD/DVD RW, 7.25" 16.625X 6.75" DVD-RW	6-85-B076X-P22	
4	BLUE RAY G-BEZEL MODULE M980NU	6-42-M980W-103	

Figure A - 7  
COMBO



# Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *P180HM* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
<i>System Block Diagram - Page B - 2</i>	<i>CPT 6/9 GPIO, CPU - Page B - 21</i>	<i>PWR VCORE-1 - Page B - 40</i>
<i>Sandy Bridge 1/7 DMI, PEG - Page B - 3</i>	<i>CPT 7/9 PWR - Page B - 22</i>	<i>PWR VCORE-2 - Page B - 41</i>
<i>Sandy Bridge 2/7 CLK, MISC - Page B - 4</i>	<i>CPT 8/9 PWR - Page B - 23</i>	<i>PWR 1.05VS/ 1.05VS CPU - Page B - 42</i>
<i>Sandy Bridge 3/7 DDR3I - Page B - 5</i>	<i>SATA HDD CONN, Re-Driver - Page B - 24</i>	<i>PWR 0.85VS - Page B - 43</i>
<i>Sandy Bridge 4/7 Power - Page B - 6</i>	<i>CPT, DVI - Page B - 25</i>	<i>PWR 1.5V/ VTT MEM - Page B - 44</i>
<i>Sandy Bridge 5/7 GFX PWR - Page B - 7</i>	<i>LED PANEL - Page B - 26</i>	<i>PWR 1.8VS/ 1.5VS/ 1.5VS CPU - Page B - 45</i>
<i>Sandy Bridge 6/7 - Page B - 8</i>	<i>FAN CONTROL - Page B - 27</i>	<i>PWR VDD3/ VDD5 - Page B - 46</i>
<i>Sandy Bridge 7/7 RSVD - Page B - 9</i>	<i>HDMI, RJ45 CONN - Page B - 28</i>	<i>PWR CHARGER, DC IN - Page B - 47</i>
<i>DDR3 CHA SO-DIMM 0 - Page B - 10</i>	<i>ODD, CCD, USB 2.0, BT, TPM - Page B - 29</i>	<i>SCREW HOLE - Page B - 48</i>
<i>DDR3 CHA SO-DIMM 1 - Page B - 11</i>	<i>CODEC, DMIC - Page B - 30</i>	<i>EXPRESS CARD BOARD - Page B - 49</i>
<i>DDR3 CHB SO-DIMM 0 - Page B - 12</i>	<i>AUDIO AMP, SPK - Page B - 31</i>	<i>ISDB-T CARD/ TV CARD - Page B - 50</i>
<i>DDR3 CHB SO-DIMM 1 - Page B - 13</i>	<i>WLAN, TV, Charger USB - Page B - 32</i>	<i>AUDIO BOARD - Page B - 51</i>
<i>MXM 3.0 MASTER - Page B - 14</i>	<i>LAN, Card Reader - Page B - 33</i>	<i>POWER BUTTON BOARD - Page B - 52</i>
<i>MXM 3.0 SLAVE - Page B - 15</i>	<i>IEEE 1394 - Page B - 34</i>	<i>CLICK &amp; FP BOARD - Page B - 53</i>
<i>CPT 1/9 HDA, SATA - Page B - 16</i>	<i>USB 3.0 - Page B - 35</i>	<i>GAME KEY BOARD - Page B - 54</i>
<i>CPT 2/9 PCIE, SMBUS - Page B - 17</i>	<i>KBC ITE IT8519-BX - Page B - 36</i>	<i>CIR BOARD - Page B - 55</i>
<i>CPT 3/9 DMI, PWRGD - Page B - 18</i>	<i>SMALL BOARD CONN-A - Page B - 37</i>	<i>FINGER BOARD - Page B - 56</i>
<i>CPT 4/9 LVDS, DDI, 9/9 GND - Page B - 19</i>	<i>SMALL BOARD CONN-B - Page B - 38</i>	<i>POWER ON SEQUENCE - Page B - 57</i>
<i>CPT 5/9 PCI, USB - Page B - 20</i>	<i>POWER SYSTEM - Page B - 39</i>	

*Table B - 1*  
**Schematic  
Diagrams**

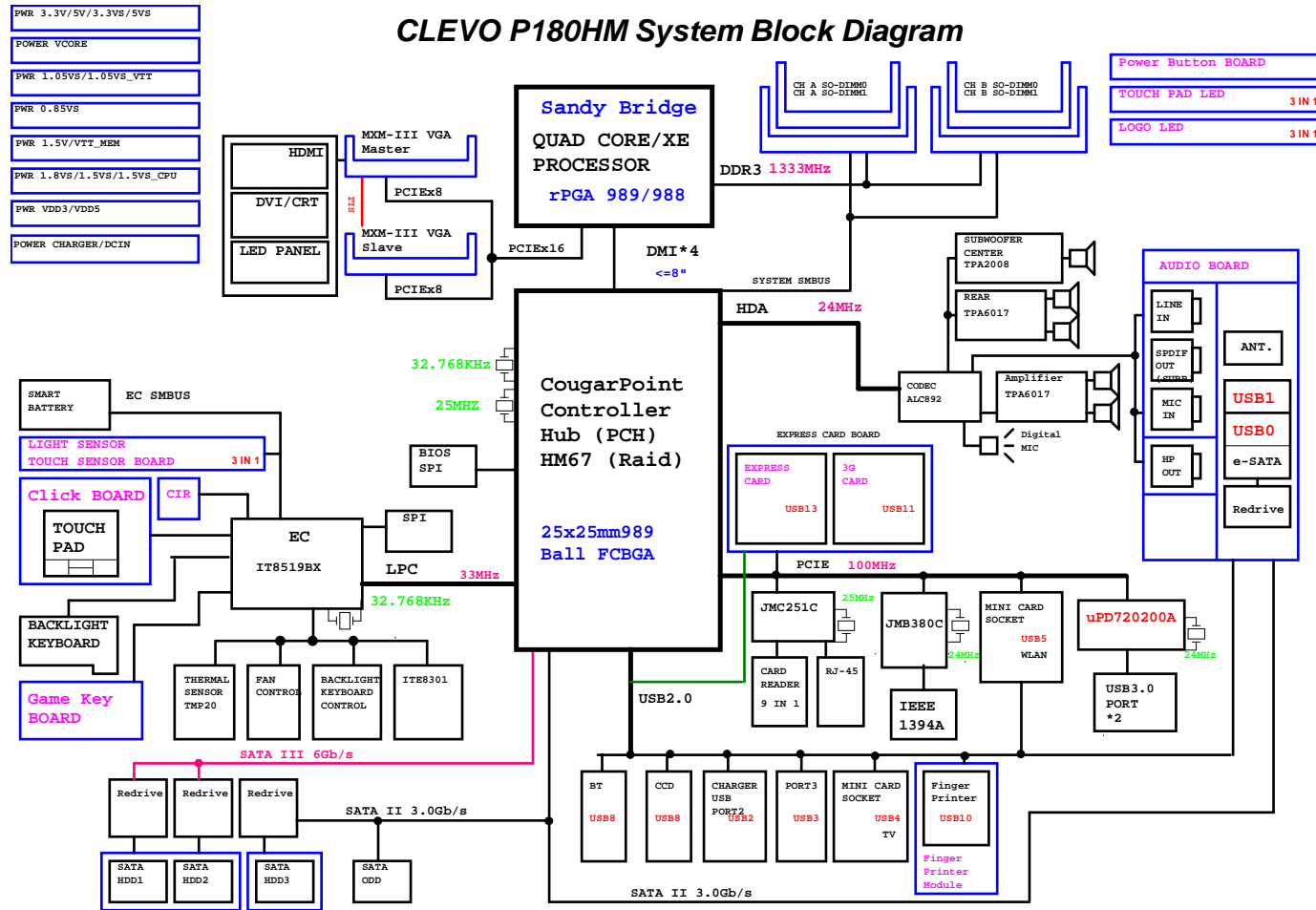


### Version Note

The schematic diagrams in this chapter are based upon version 6-7P-P1808-006. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

# System Block Diagram

Sheet 1 of 56  
System Block  
Diagram





# Sandy Bridge 1/7 DMI, PEG

## Sandy Bridge PROCESSOR 1/7 ( DMI,PEG,FDI )

**PEG Compensation Signal**

CAD NOTE: PEG\_ICOMPI and RCOMP0 signals should be shorted and routed with

- max length = 500 mils
- typical impedance = 43 mohms

PEG\_ICOMPO signals should be routed with

- max length = 500 mils
- typical impedance = 14.5 mohms

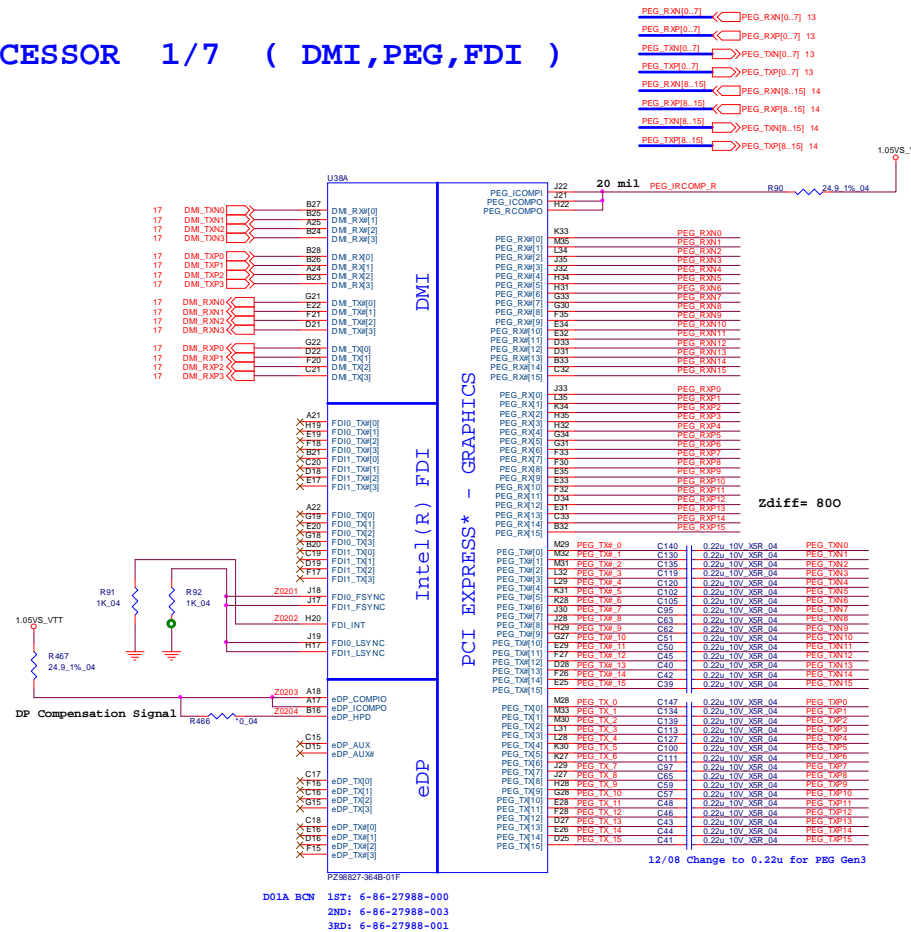
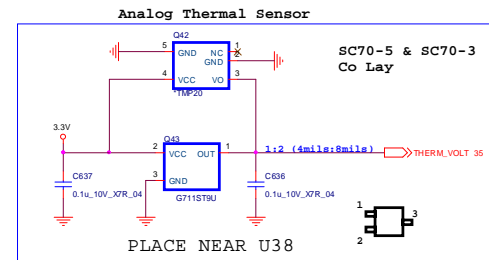
It applies to Auburndale and Clarkfield discrete graphic designs. If discrete graphic chip is used for Auburndale, Vaux (GFX core) rail can be connected to GND if motherboard only supports discrete graphics and also in a common motherboard design if GFX VR is not asserted. On the other hand, if the VR is asserted, Vaux can be left floating in a common motherboard design (GFX VR keeps Vaux from floating).

In addition, FDI\_RX0[7:0] and FDI\_RXD[7:0] can be left floating on the PCB. FDI\_TX[7:0] and FDI\_TXD[7:0] can be left floating on the Suburdale. The GFX\_DGMV, FDI\_FSYNC(0), FDI\_FSYNC(1), FDI\_LSYNC(0), FDI\_LSYNC(1), and FDI\_INT signals should be tied to GND (through 1K ? resistors) in the common motherboard design case. Please note that if these signals are left floating, there are no functional impacts but a small amount of power (~15 mW) maybe wasted. Vaux\_SENSE and Vaux\_ZENNER on Auburndale can be left as no connect.

D5L4\_SFP\_S02X and D5L4\_SFP\_S02X19 can be connected to GND on Auburndale directly if motherboard only supports discrete graphics. In a common motherboard design, these pins are driven via PCR (even if Graphics is disabled by BIOS) thus no external termination is required.

CAD NOTE: DP\_COMP0 and ICOMPO signals should be shorted near balls and routed with

- typical impedance < 25 mohms



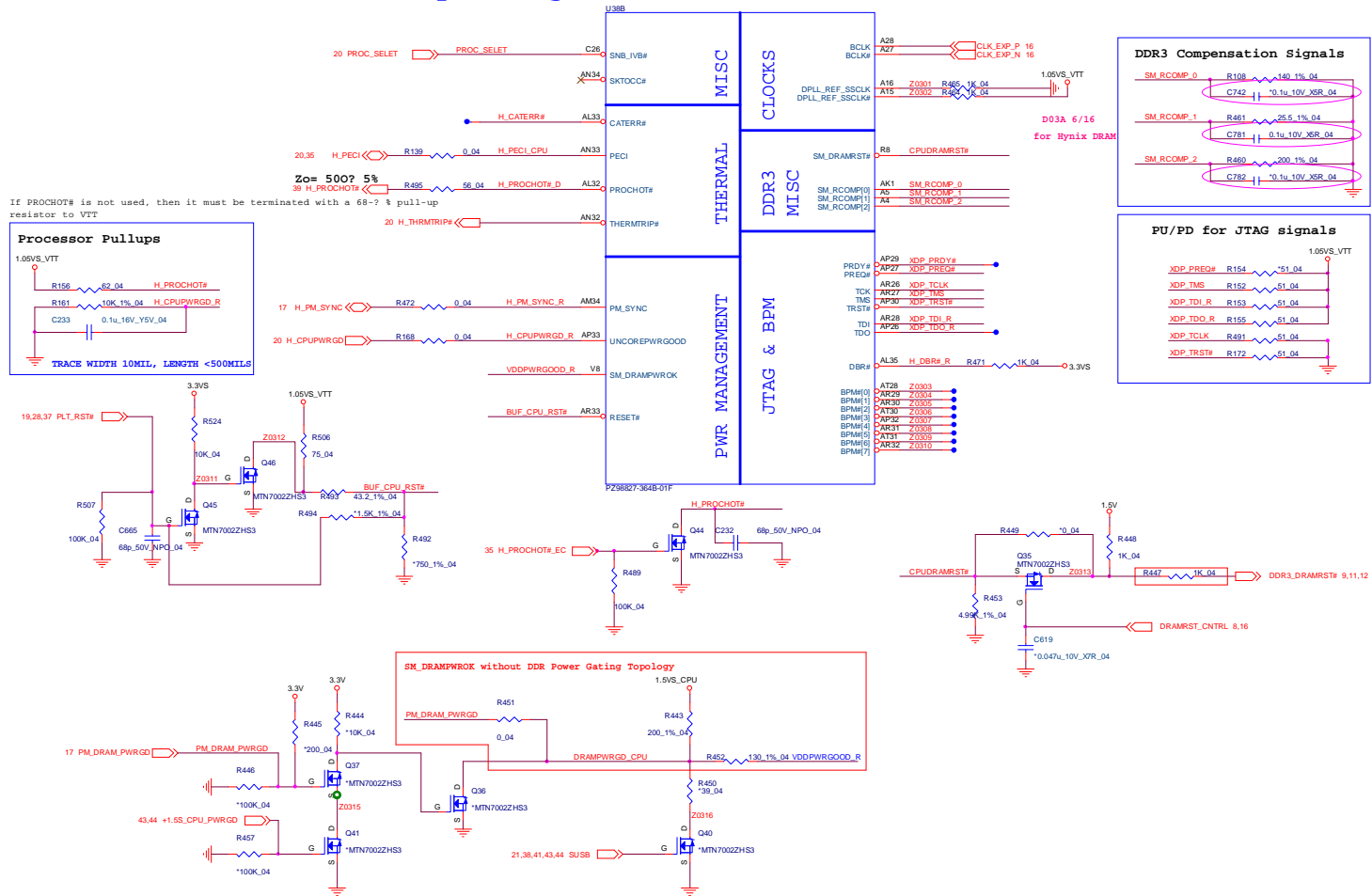
Sheet 2 of 56  
Sandy Bridge 1/7  
DMI, PEG

B.Schematic Diagrams

# Sandy Bridge 2/7 CLK, MISC

Sheet 3 of 56  
Sandy Bridge 2/7  
CLK, MISC

## Sandy Bridge PROCESSOR 2/7 ( CLK,MISC,JTAG )

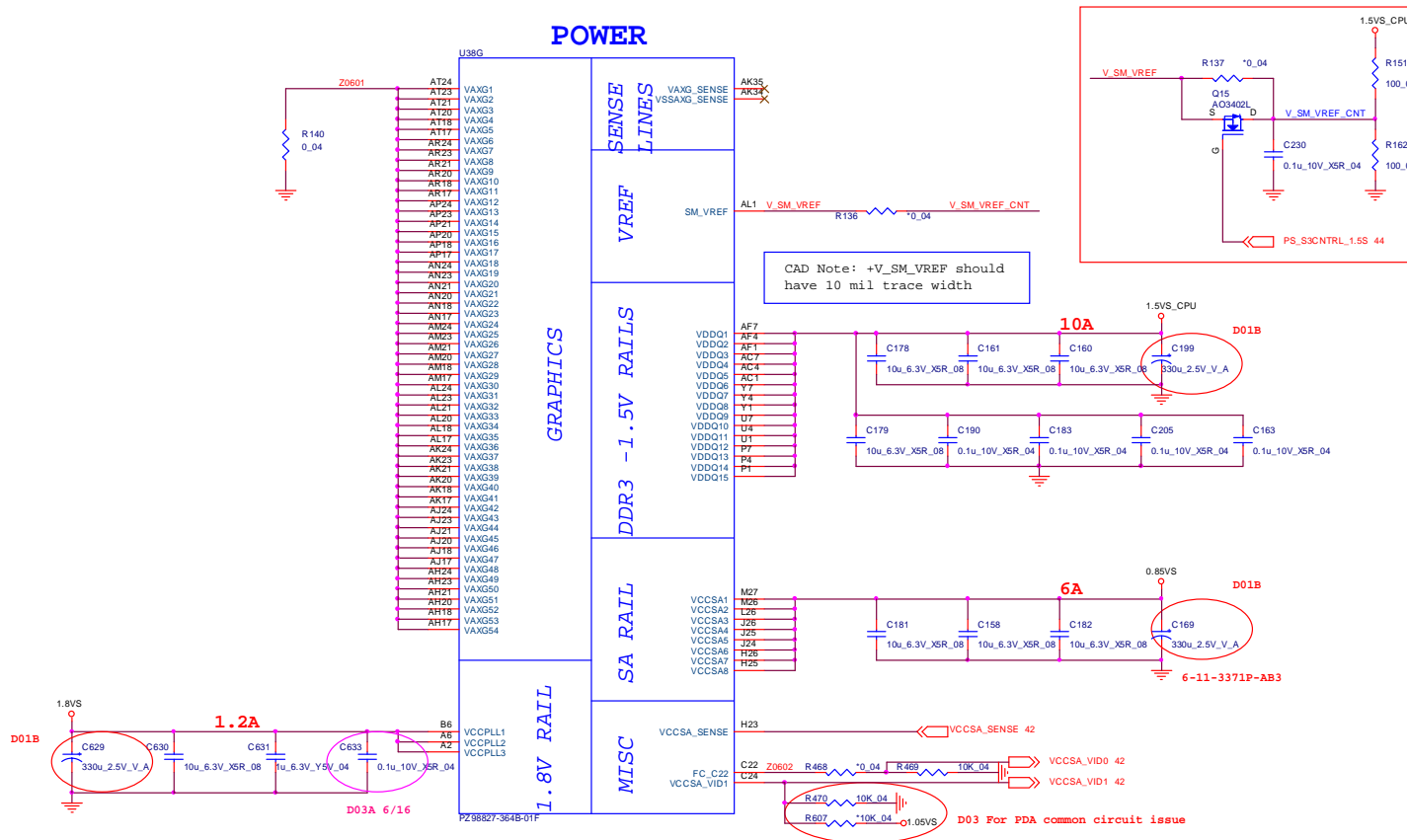






# Sandy Bridge 5/7 GFX PWR

## Sandy Bridge PROCESSOR 5/7 ( GRAPHICS POWER )



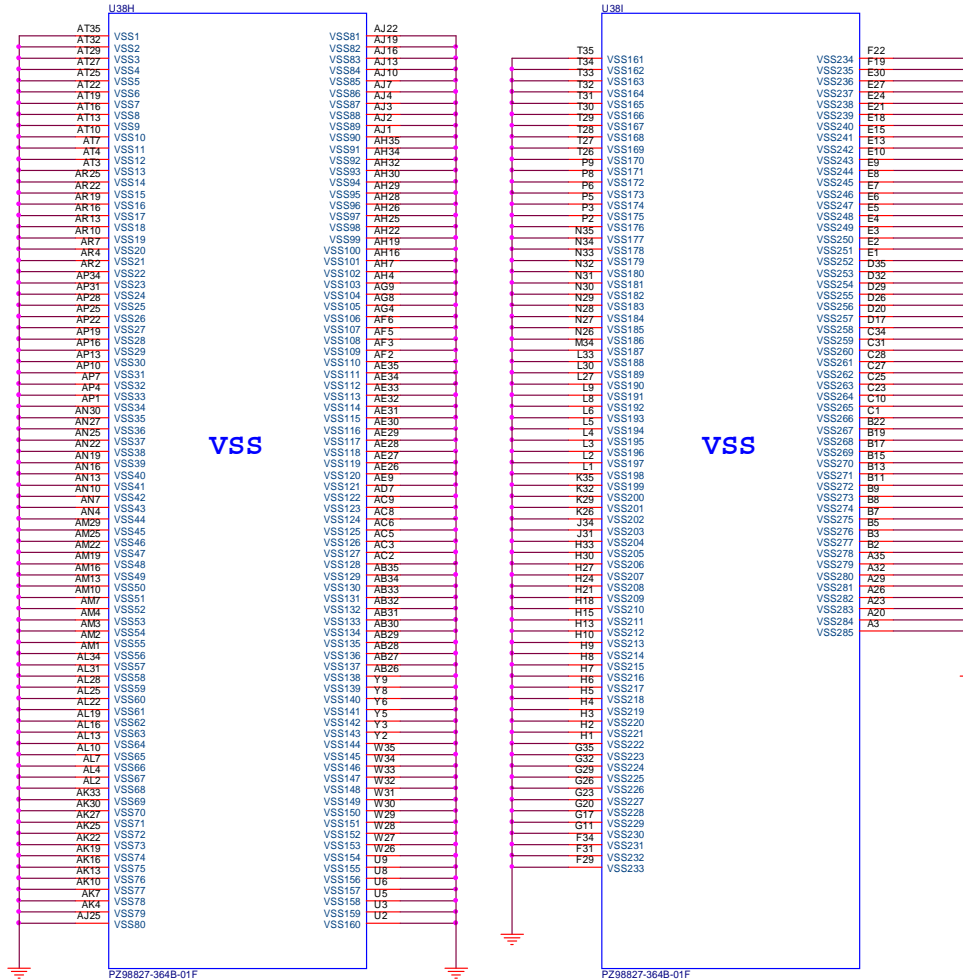
Sheet 6 of 56  
Sandy Bridge 5/7  
GFX PWR

# Sandy Bridge 6/7

## Sandy Bridge Processor 6/7 ( GND )

B.Schematic Diagrams

Sheet 7 of 56  
Sandy Bridge 6/7



# Sandy Bridge 7/7 RSVD

## Sandy Bridge Processor 7/7 ( RESERVED )

**CFG Straps for Processor**

PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1:(Default) Normal Operation; Lane # definition matches socket pin map definition 0:Lane Reversed

CFG2 R118 1K\_04

---

Display Port Presence Strap	
CFG4	1:(Default) Disabled; No Physical Display Port attached to Embedded Display Port 0:Enabled; An external Display Port device is connected to the Embedded Display Port

CFG4 R113 1K\_04

**PCIe Port Bifurcation Straps**

CFG[6:5]	11: (Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled
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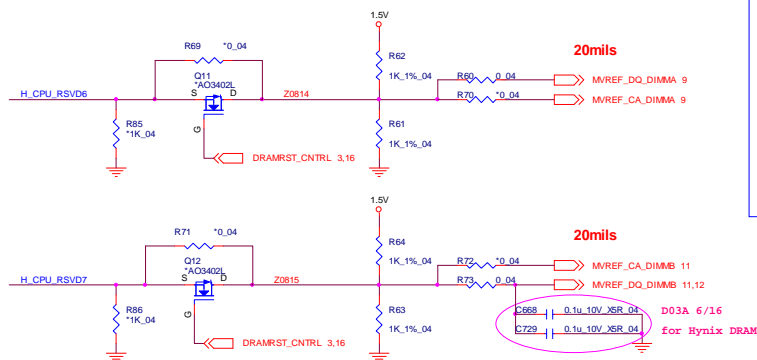
CFG5 R112 1K\_04 10 = 2 x 8 PCI Express

CFG6 R119 1K\_04

**PEG DEPER TRAINING**

CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training
------	---

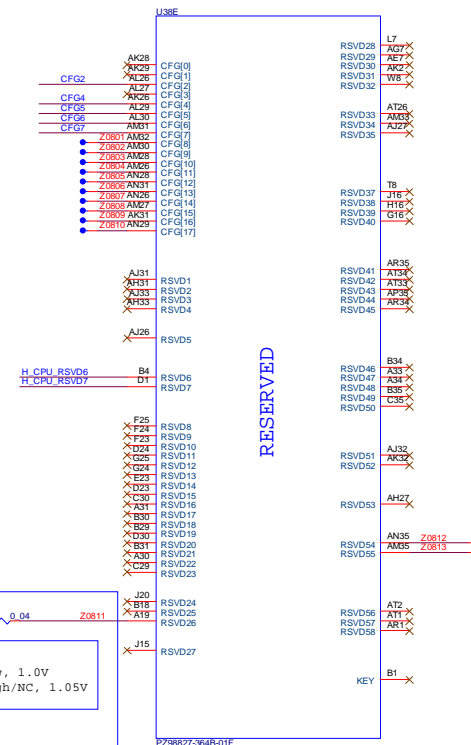
CFG7 R133 1K\_04



H\_SNB\_IVB#\_PWRCTRL R458 0.04 Z0811

On CRB  
H\_SNB\_IVB#\_PWRCTRL = low, 1.0V  
H\_SNB\_IVB#\_PWRCTRL = high/NC, 1.05V

3.3V  
R458 100K\_04  
H\_SNB\_IVB#\_PWRCTRL



Sheet 8 of 56  
Sandy Bridge 7/7  
RSVD

B.Schematic Diagrams

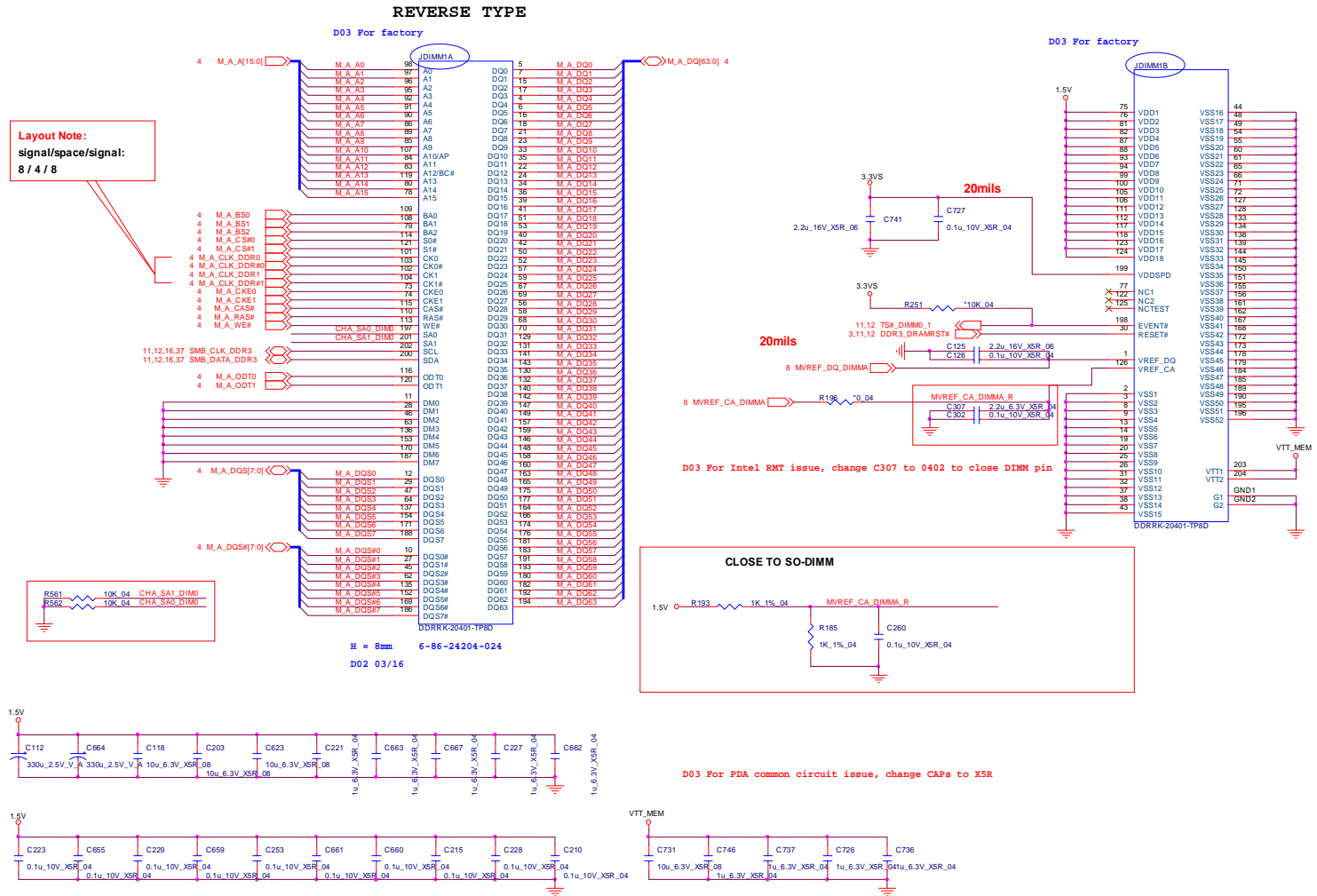


# DDR3 CHA SO-DIMM 0

## Channel A SO-DIMM 0 (Button Side)

B.Schematic Diagrams

Sheet 9 of 56  
DDR3 CHA SO-DIMM 0

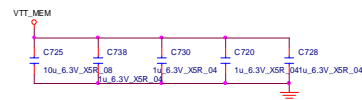
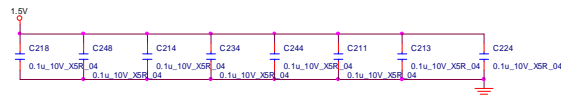


# DDR3 CHA SO-DIMM 1

Channel A SO-DIMM 1 (Button Side)

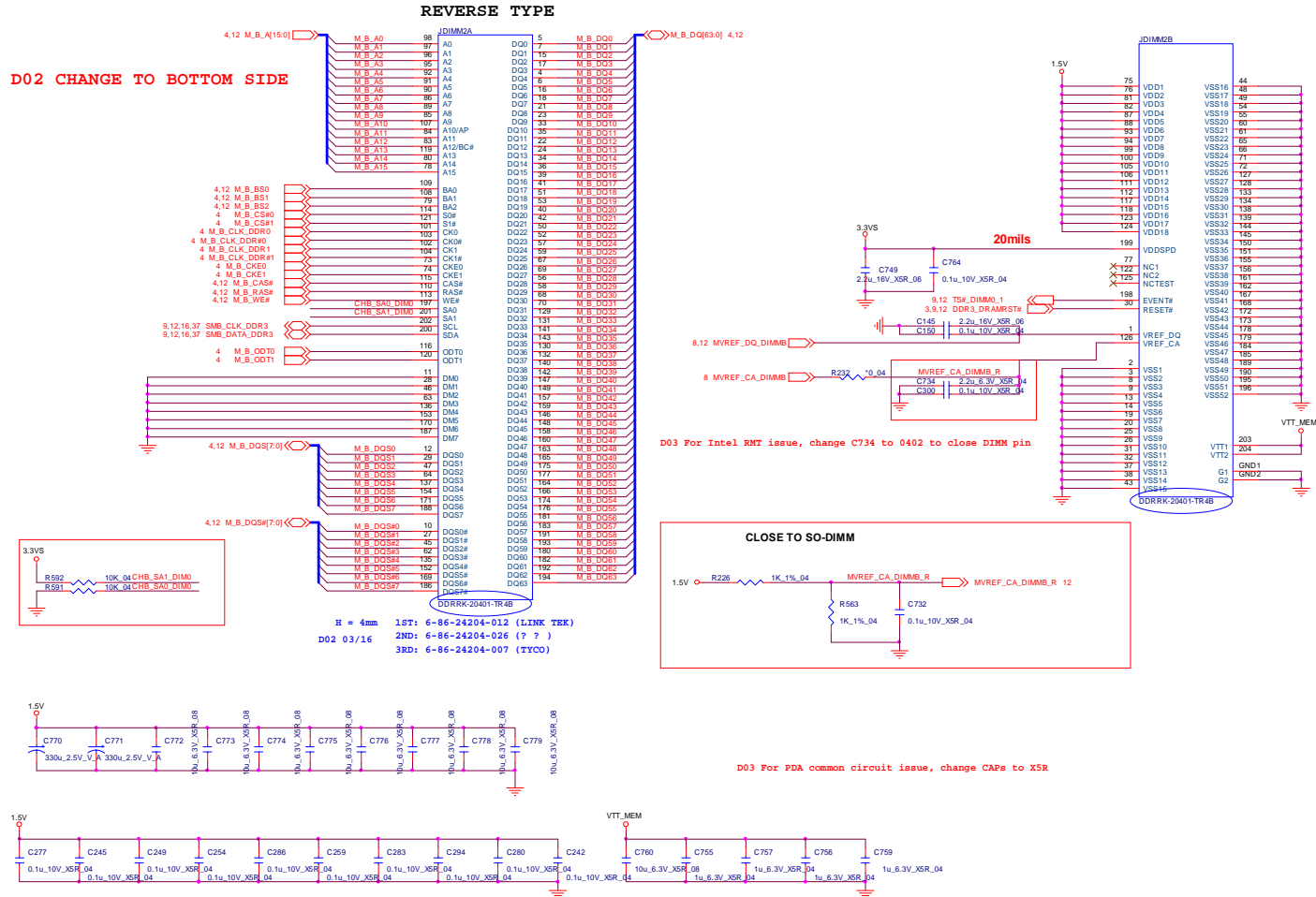
Sheet 10 of 56  
DDR3 CHA SO-DIMM 1

***D03 Remove Channel A DIMM1***



# DDR3 CHB SO-DIMM 0

## Channel B SO-DIMM 0 (Bottom Side)

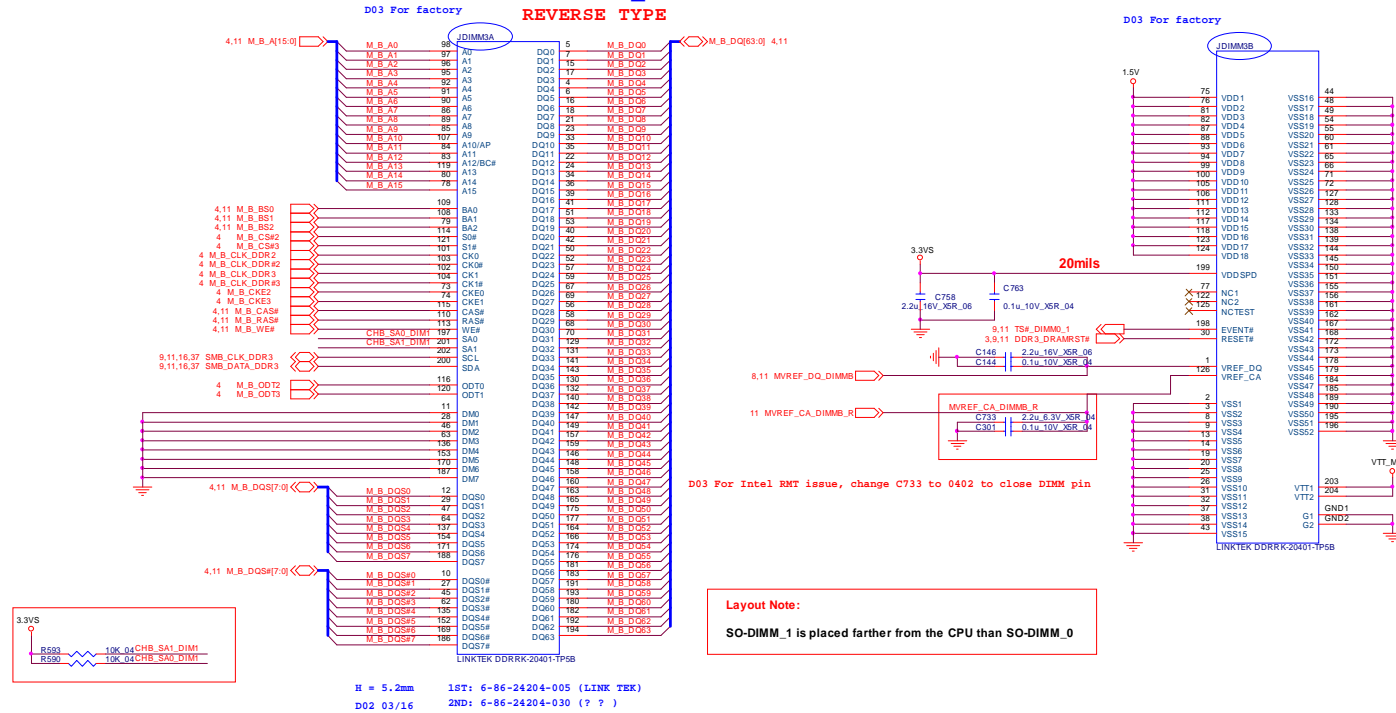


B.Schematic Diagrams

Sheet 11 of 56  
 DDR3 CHB SO-DIMM 0

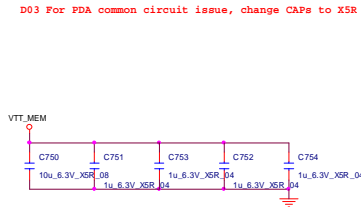
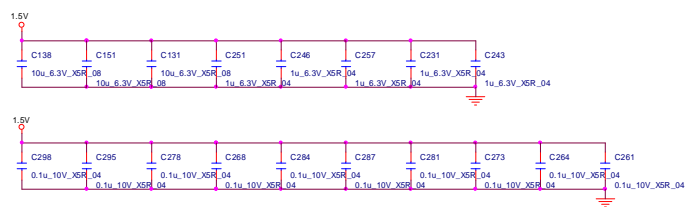
# DDR3 CHB SO-DIMM 1

## Channel B SO-DIMM 1 (Top Side)



Sheet 12 of 56  
PCH 1/8  
DDR3 CHB SO-DIMM 1

B.Schematic Diagrams

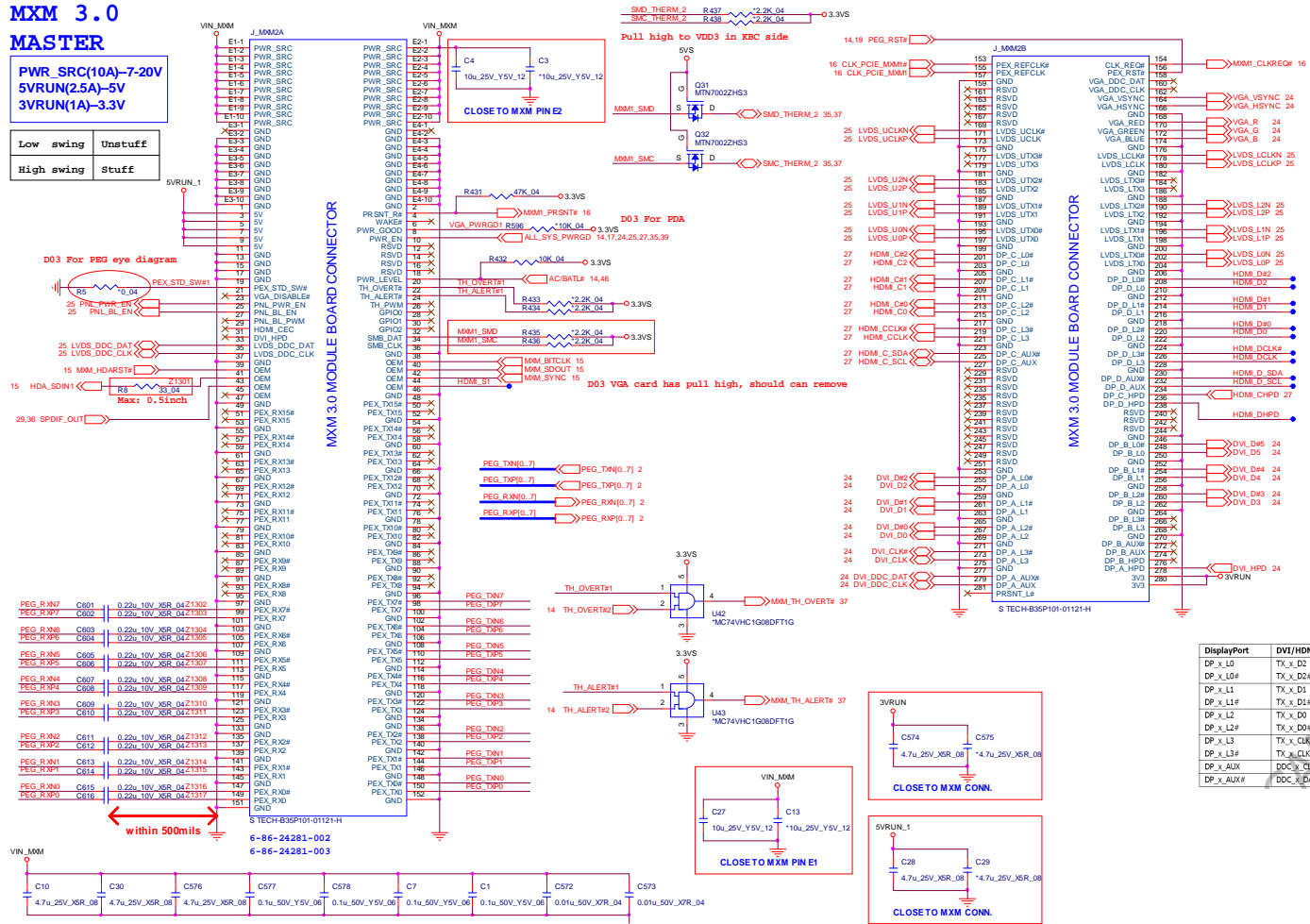


# MXM 3.0 MASTER

## MXM 3.0 MASTER

PWR\_SRC(10A)-7-20V  
5VRUN(2.5A)-5V  
3VRUN(1A)-3.3V

Low swing Unstuff  
High swing Stuff



DisplayPort	DVI/HDMI
DP_x_L0#	TX_x_D2
DP_x_L0#	TX_x_D2#
DP_x_L1#	TX_x_D1
DP_x_L2#	TX_x_D0
DP_x_L2#	TX_x_D0#
DP_x_L3	TX_x_CLK
DP_x_L3#	TX_x_CLK#
DP_x_AUX	DDC_SCK
DP_x_AUX#	DDC_DATA

B.Schematic Diagrams

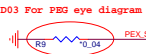
Sheet 13 of 56  
MXM 3.0 MASTER

# MXM 3.0 SLAVE

## MXM 3.0 SLAVE

PWR\_SRC(10A)-7-20V  
5VRUN(2.5A)-5V  
3VRUN(1A)-3.3V

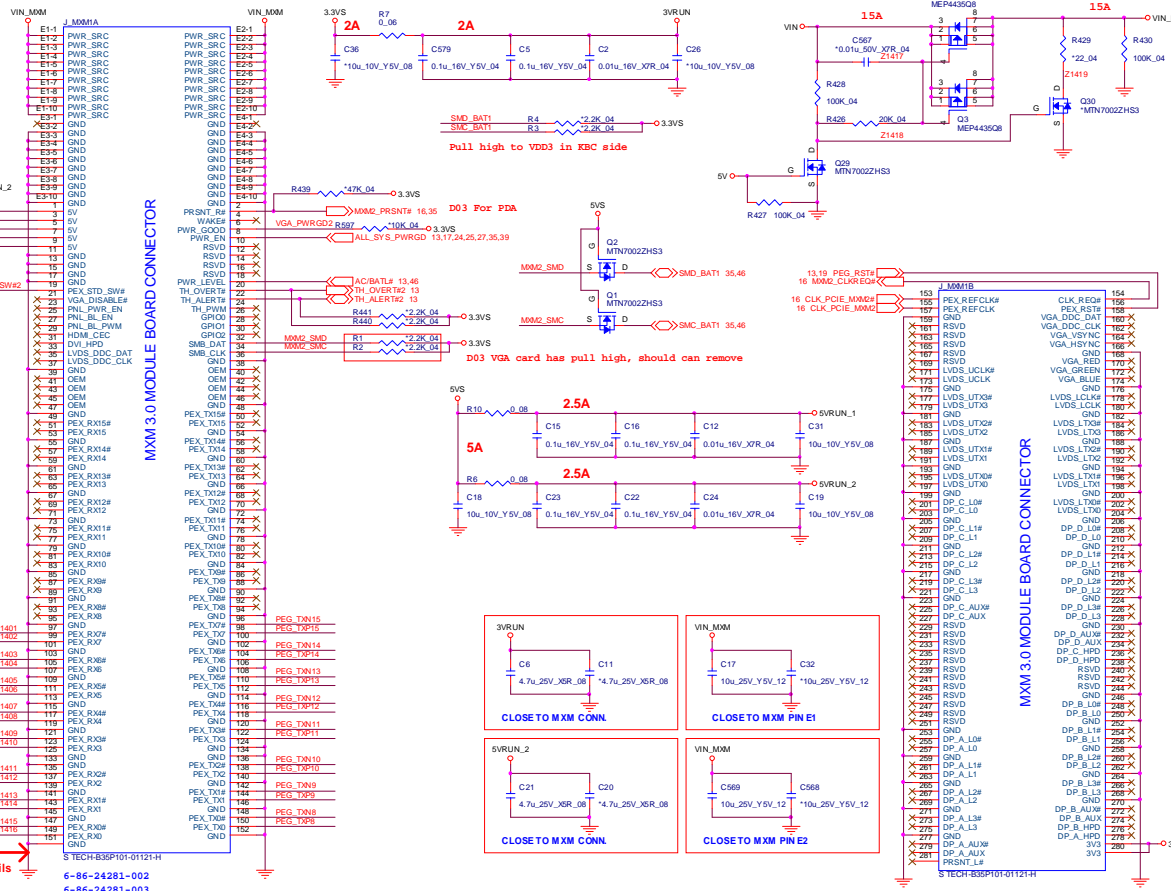
Low swing	Unstuff
High swing	Stuff



12/08 Change to 0.22u for PEG Gen3

PEG_R.XN15	C585	0.22u 10V XSR_04Z1401
PEG_R.XP15	C586	0.22u 10V XSR_04Z1402
PEG_R.XN14	C587	0.22u 10V XSR_04Z1403
PEG_R.XP14	C588	0.22u 10V XSR_04Z1404
PEG_R.XN13	C589	0.22u 10V XSR_04Z1405
PEG_R.XP13	C590	0.22u 10V XSR_04Z1406
PEG_R.XN12	C591	0.22u 10V XSR_04Z1407
PEG_R.XP12	C592	0.22u 10V XSR_04Z1408
PEG_R.XN11	C593	0.22u 10V XSR_04Z1409
PEG_R.XP11	C594	0.22u 10V XSR_04Z1410
PEG_R.XN10	C595	0.22u 10V XSR_04Z1411
PEG_R.XP10	C596	0.22u 10V XSR_04Z1412
PEG_R.XN9	C597	0.22u 10V XSR_04Z1413
PEG_R.XP9	C598	0.22u 10V XSR_04Z1414
PEG_R.XN8	C599	0.22u 10V XSR_04Z1415
PEG_R.XP8	C600	0.22u 10V XSR_04Z1416

within 500mils  
S TECH:83SP101-01121-H  
6-86-24281-002  
6-86-24281-003



MXM 3.0 MODULE BOARD CONNECTOR

MXM 3.0 MODULE BOARD CONNECTOR

Sheet 14 of 56  
PCH 3/8  
MXM 3.0 SLAVE

B.Schematic Diagrams

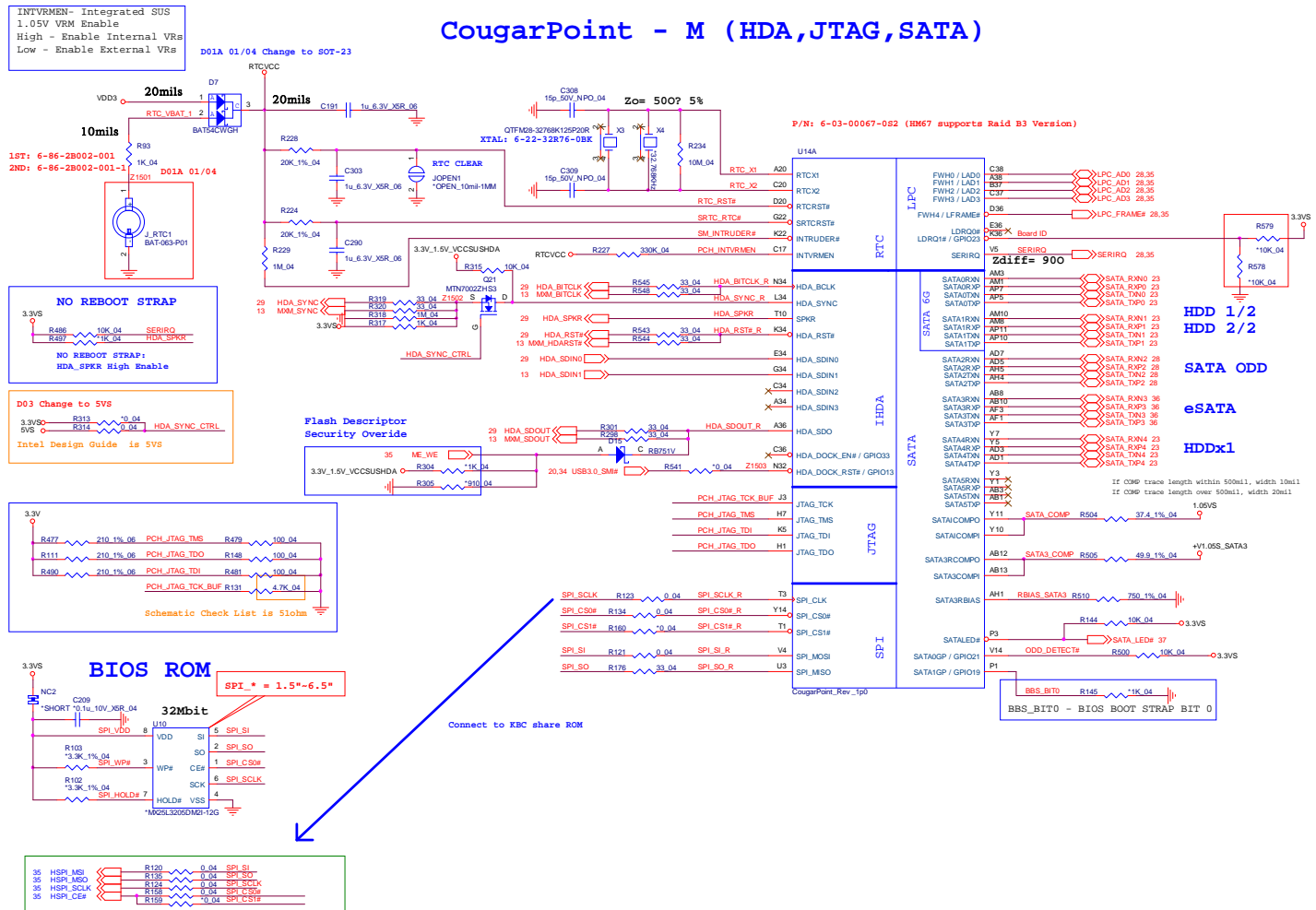


# CPT 1/9 HDA, SATA

B.Schematic Diagrams

Sheet 15 of 56  
PCH 4/8  
CPT 1/9 HDA, SATA

## CougarPoint - M (HDA, JTAG, SATA)





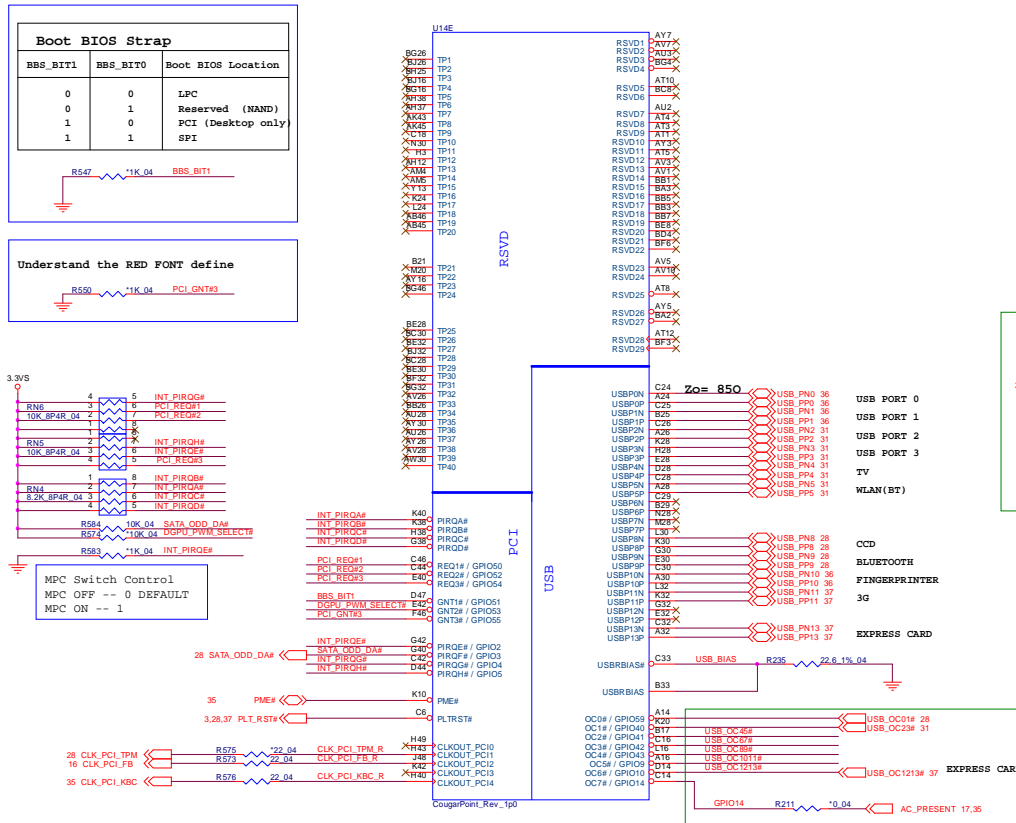




# CPT 5/9 PCI, USB

Sheet 19 of 56  
CPT 5/9 PCI, USB

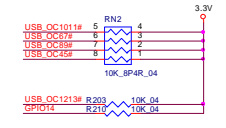
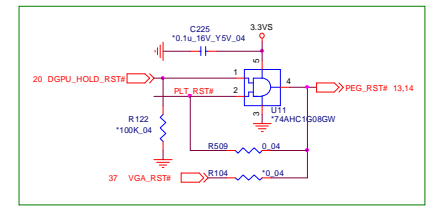
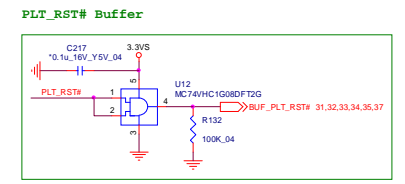
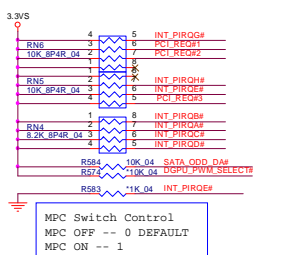
## CougarPoint - M (PCI,USB)



Boot BIOS Strap		
BBS_BIT1	BBS_BIT0	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI (Desktop only)
1	1	SPI

Understand the RED FONT define

R549 1K\_04 PCI\_GNT#3

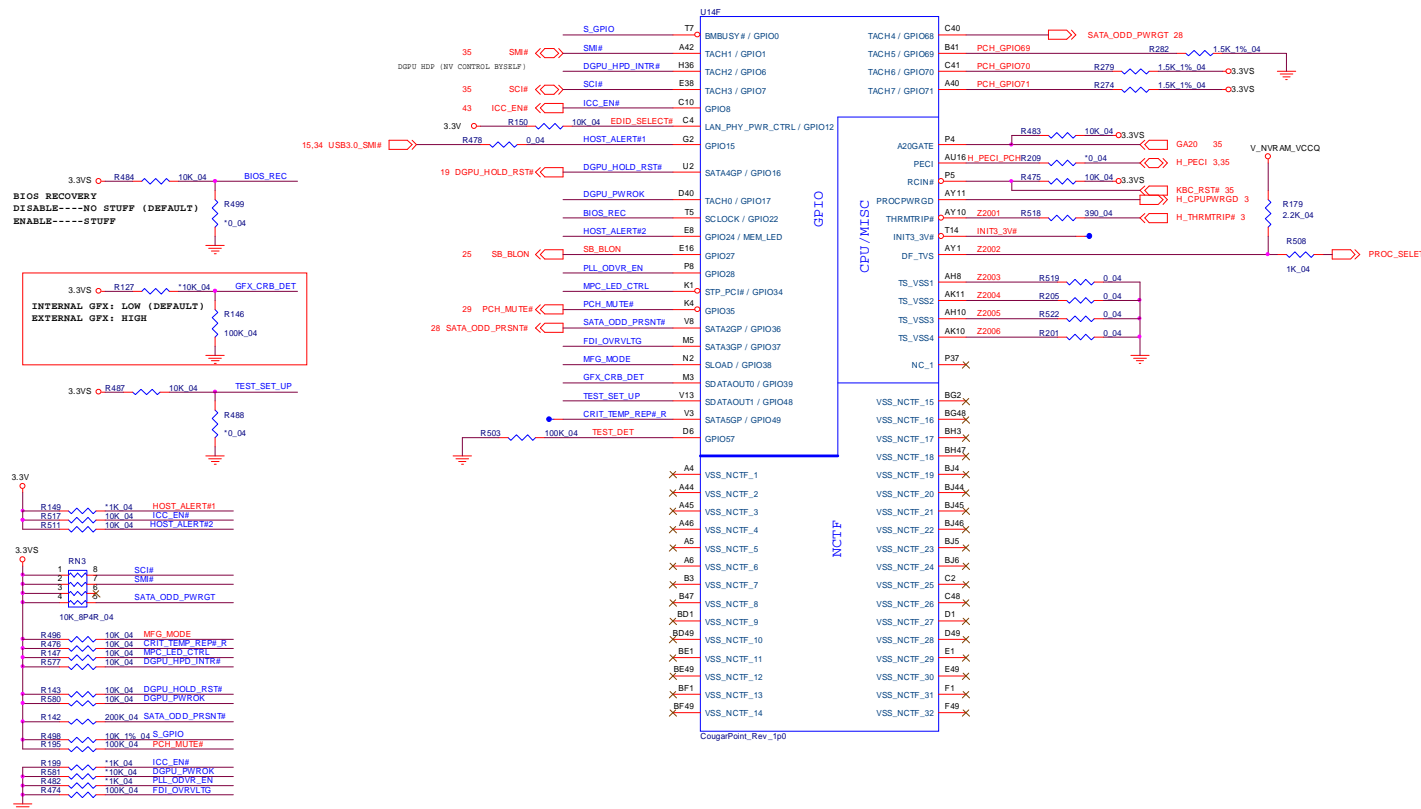


Pin	Default Port Mapping	Pin	Default Port Mapping
OC3#	Port 0, Port 1	OC4#	Port 8, Port 9
OC1#	Port 2, Port 3	OC5#	Port 10, Port 11
OC2#	Port 4, Port 5	OC6#	Port 12, Port 13
OC7#	Port 6, Port 7	OC7#	Not Used

If unused, OC [x] pins require a pull-up to +V3.3A with 8.2-k to 10-k resistors

# CPT 6/9 GPIO, CPU

## CougarPoint - M (GPIO,VSS\_NCTF,RSVD)



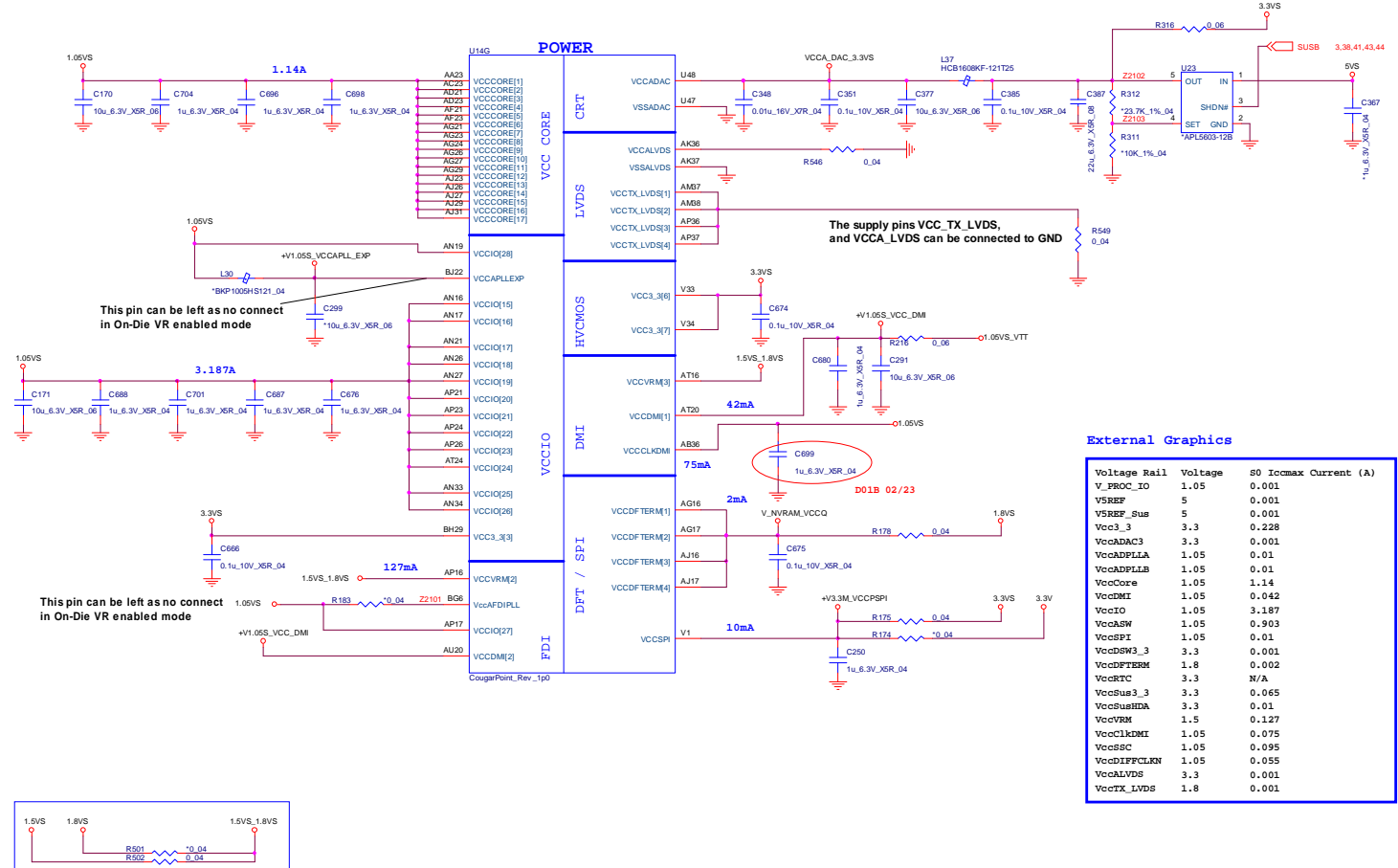
Sheet 20 of 56  
CPT 6/9 GPIO, CPU

B. Schematic Diagrams

# CPT 7/9 PWR

## CougarPoint - M (POWER)

Sheet 21 of 56  
CPT 7/9 PWR

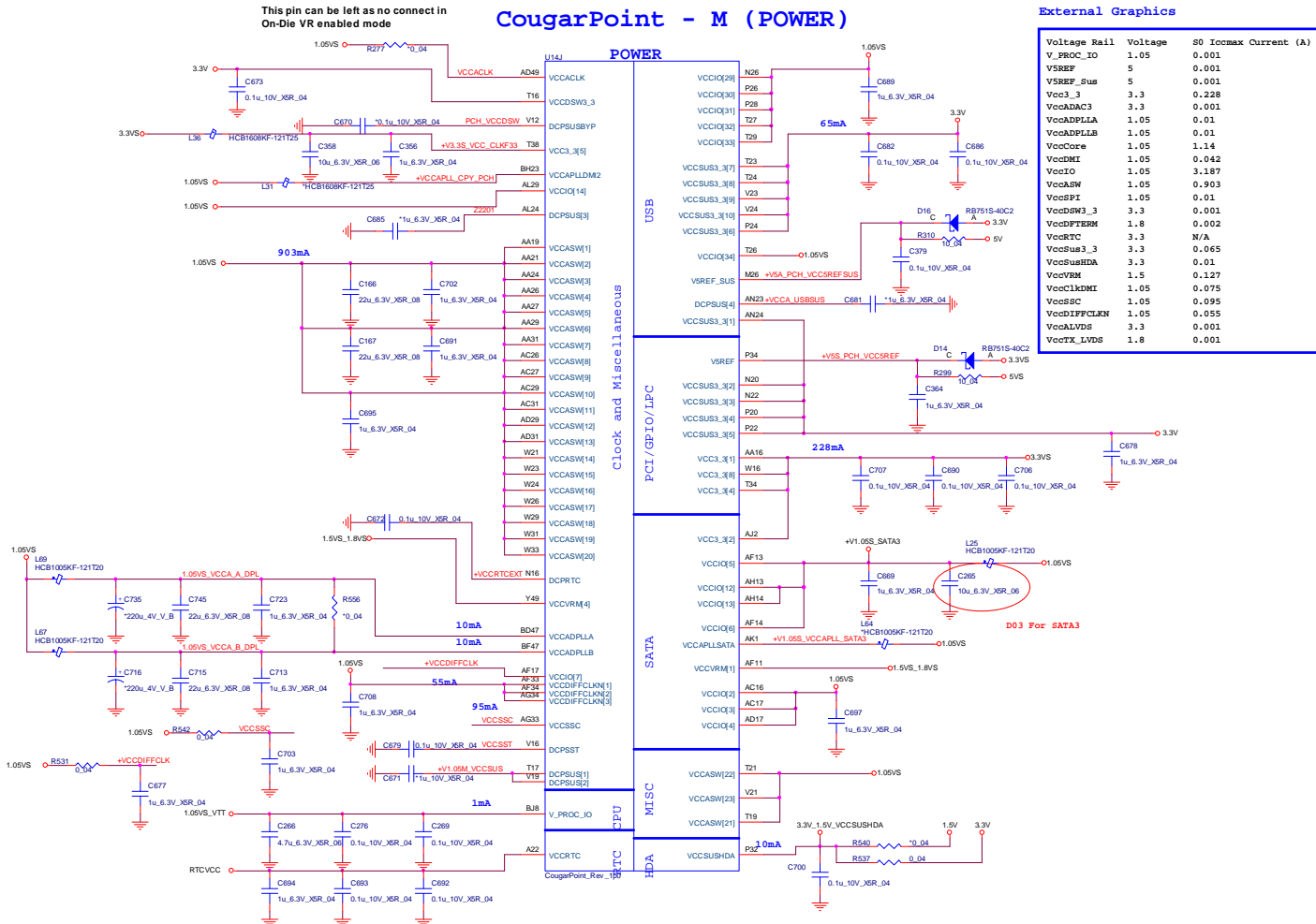


**External Graphics**

Voltage Rail	Voltage	80 Iocmax Current (A)
V_PROC_IO	1.05	0.001
V5REF	5	0.001
V5REF_Sus	5	0.001
Vcc3_3	3.3	0.228
VccADAC3	3.3	0.001
VccADPLL	1.05	0.01
VccADPLL	1.05	0.01
VccCore	1.05	1.14
VccDMI	1.05	0.042
VccIO	1.05	3.187
VccASW	1.05	0.903
VccSPI	1.05	0.01
VccDSW3_3	3.3	0.001
VccDFTERM	1.8	0.002
VccRVC	3.3	N/A
VccSus3_3	3.3	0.065
VccSusHDA	3.3	0.01
VccVRM	1.5	0.127
VccClkDMI	1.05	0.075
VccSSC	1.05	0.095
VccDIFFCLKN	1.05	0.055
VccaLVDS	3.3	0.001
VccTX_LVDS	1.8	0.001



# CPT 8/9 PWR

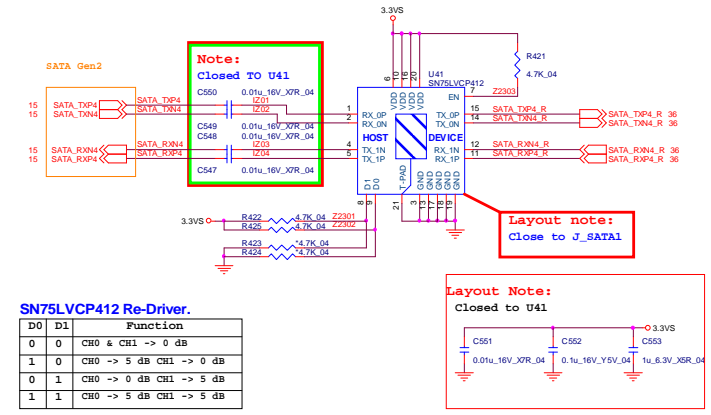


Sheet 22 of 56  
CPT 8/9 PWR

B. Schematic Diagrams

# SATA HDD CONN, Re- Driver

## SINGAL SATA HDD



### SN75LVCP601RTJ Re-Driver.

DE1	DE2	De-Emphasis dB (at 6Gbps)
NC	NC	-4 (default)
0	0	0
1	1	-2

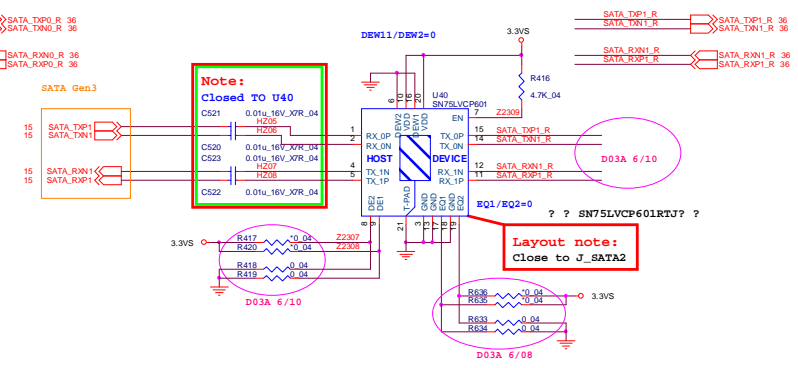
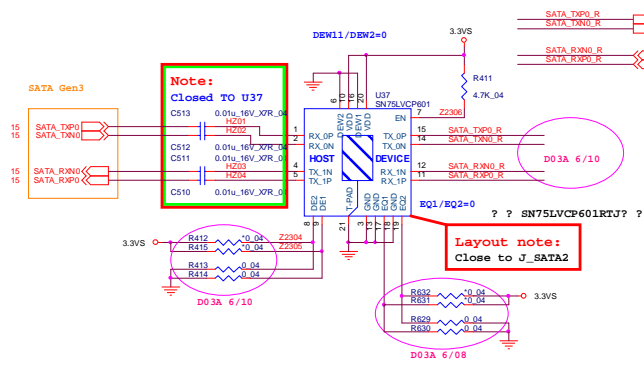
EQ1	EQ2	Equalization dB (at 6Gbps)
NC	NC	0 (default)
0	0	7
1	1	14

DEW1	DEW2	DE Width
0	0	Short (at SATA 1.5/3/6 Gpbs)
1	1	Long (at SATA 1.5/3 Gpbs)

EN	Device Function--Standby Mode
0	Device in standby mode
1	Device enabled

## DUAL SATA HDD

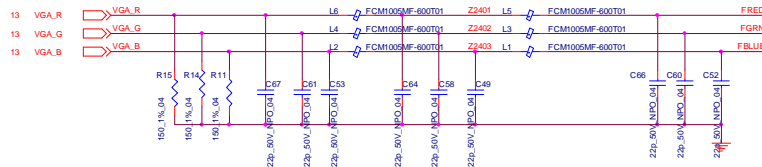
D03 Change port0 and port1 Re-Driver to GEN3



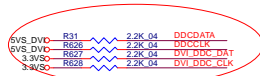
Sheet 23 of 56  
SATA HDD CONN,  
Re- Driver

# CPT, DVI

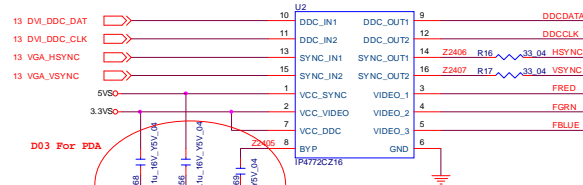
## CRT/DVI Connector



D03 For factory's request



Close to connector

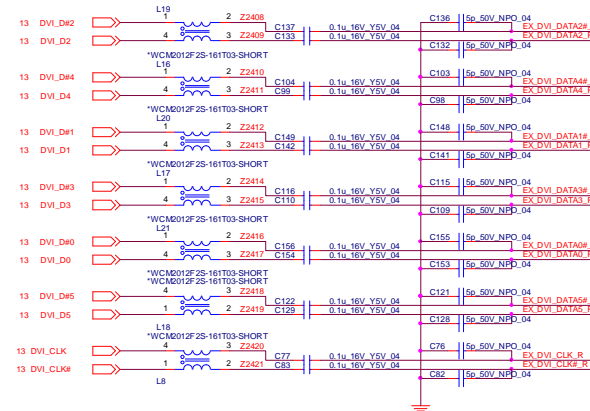


D03 For PDA

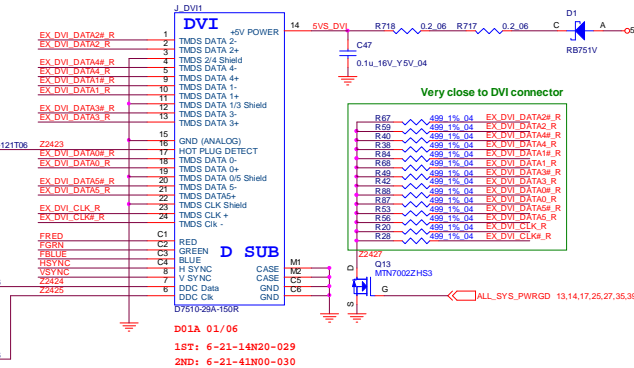
For ESD

D03 For PDA

Close to connector



D03 05/05



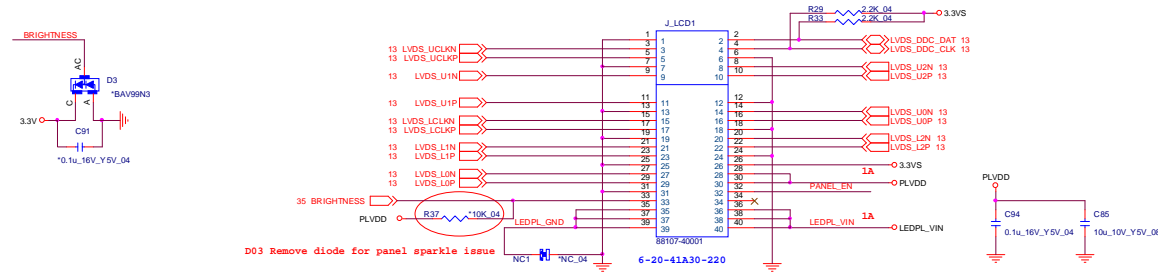
Very close to DVI connector

Sheet 24 of 56  
CPT, DVI

B.Schematic Diagrams

# LED PANEL

## 18.4" PANEL

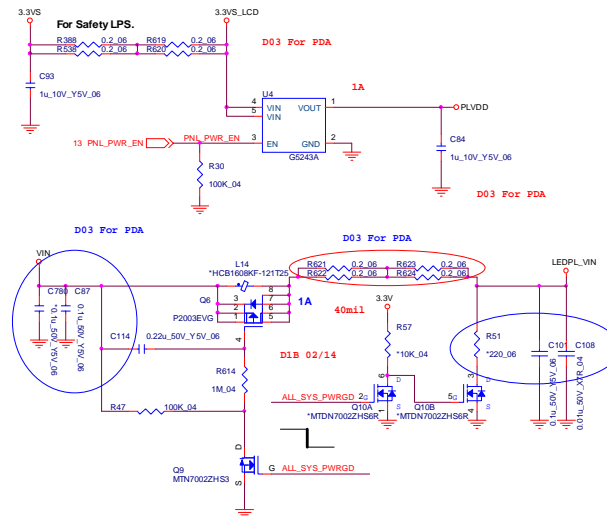


D03 Remove diode for panel sparkle issue

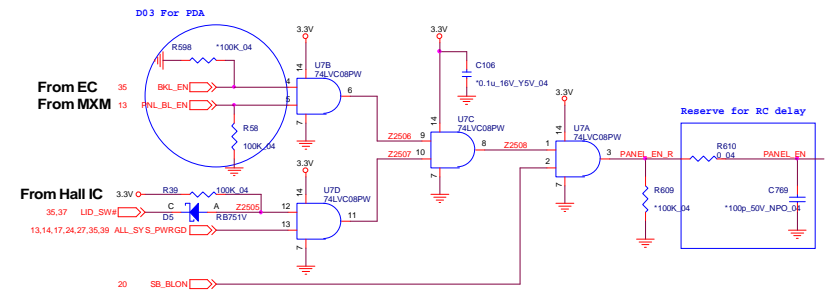
Sheet 25 of 56  
LED PANEL

B.Schematic Diagrams

### PANEL POWER

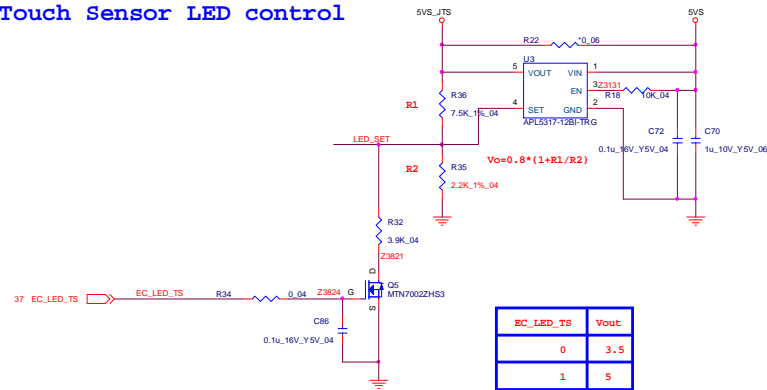


### PANEL GATE



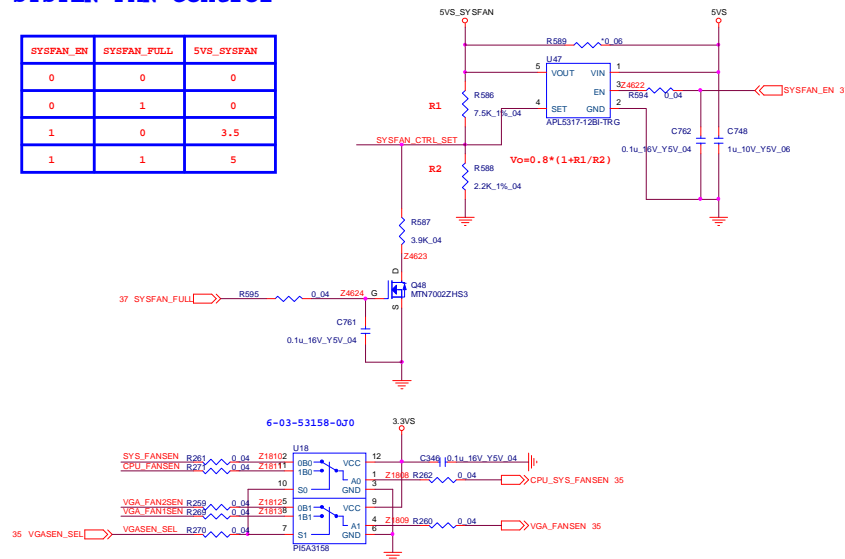
# FAN CONTROL

## Touch Sensor LED control

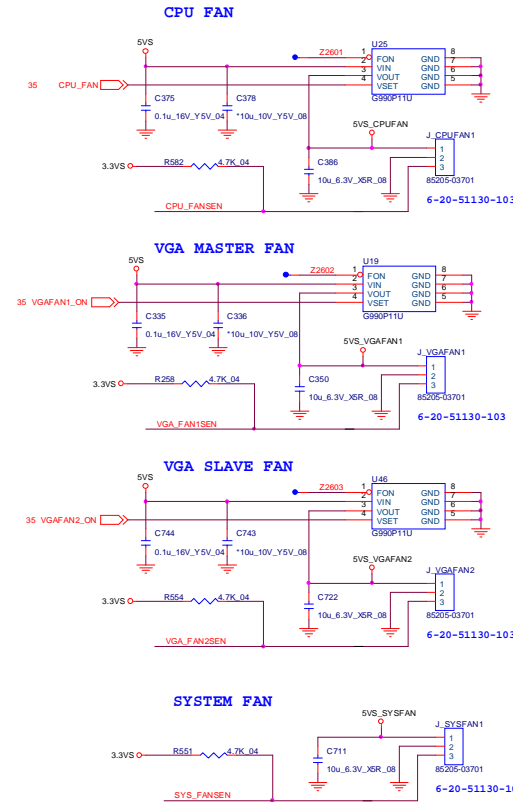


## SYSTEM FAN control

SYSPAN_EN	SYSPAN_PULLL	5VS_SYSFAN
0	0	0
0	1	0
1	0	3.5
1	1	5



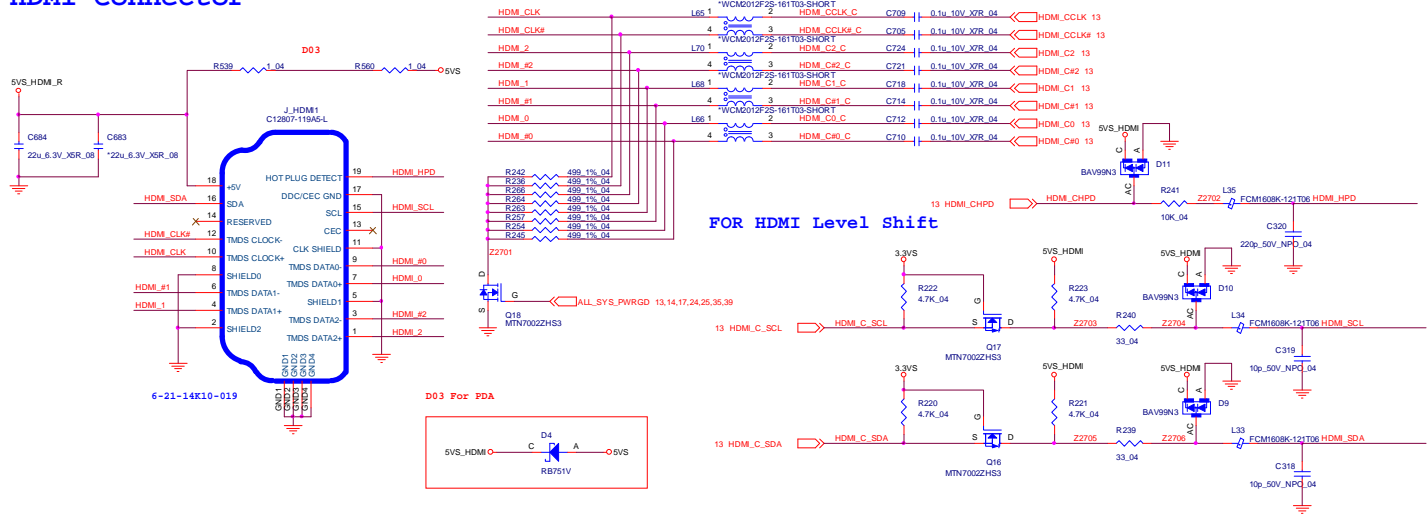
## FAN CONTROL



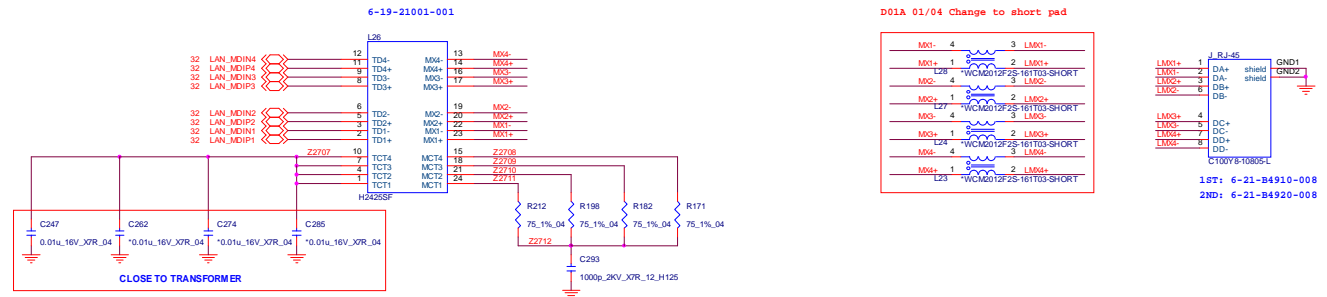
Sheet 26 of 56  
FAN CONTROL

# HDMI, RJ45 CONN

## HDMI Connector



## RJ45 Connector

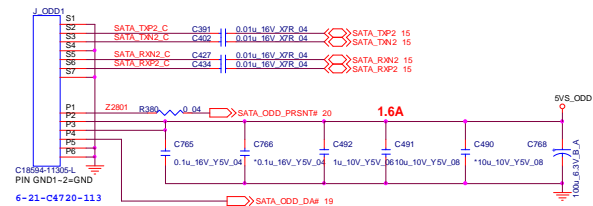


B.Schematic Diagrams

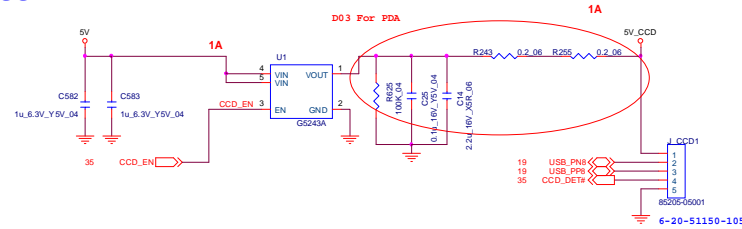
Sheet 27 of 56  
HDMI, RJ45 CONN

# ODD, CCD, USB 2.0, BT, TPM

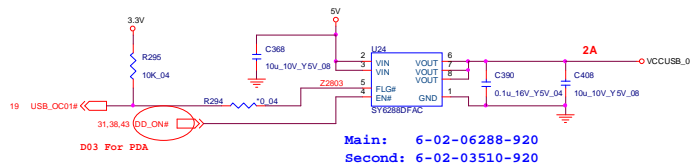
SATA ODD



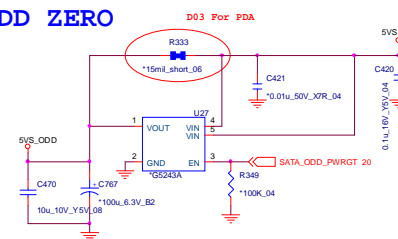
CCD



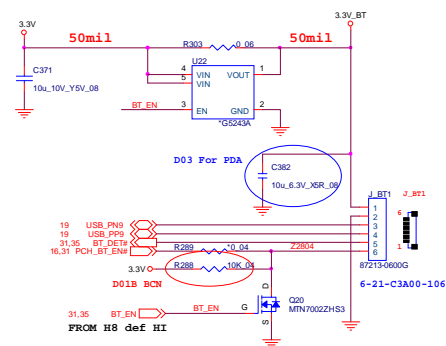
USB 2.0



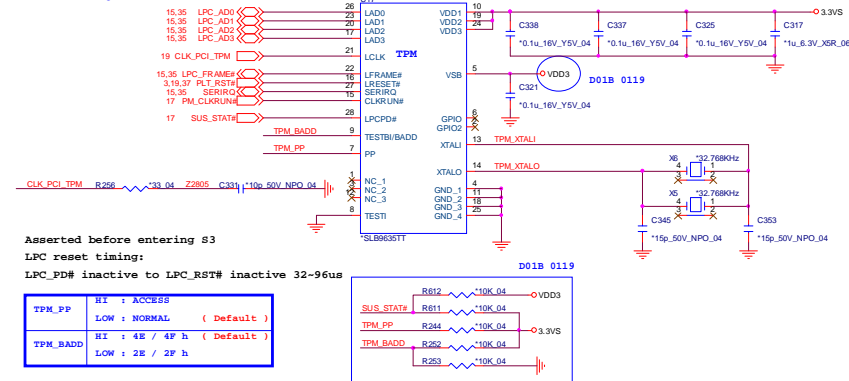
SATA ODD ZERO POWER



Bluetooth



TPM 1.2

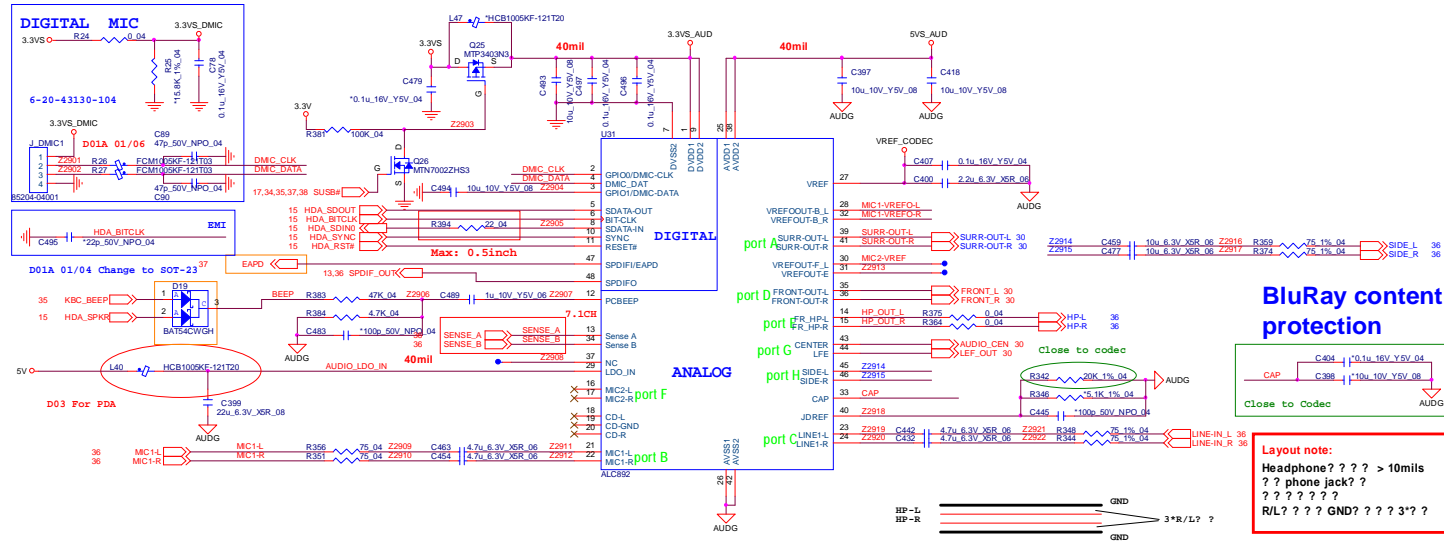


Sheet 28 of 56  
ODD, CCD, USB  
2.0, BT, TPM



# CODEC, DMIC

Sheet 29 of 56  
CODEC, DMIC

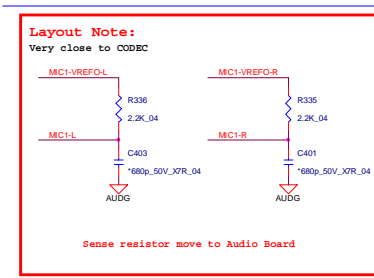


**BluRay content protection**

Close to Codec

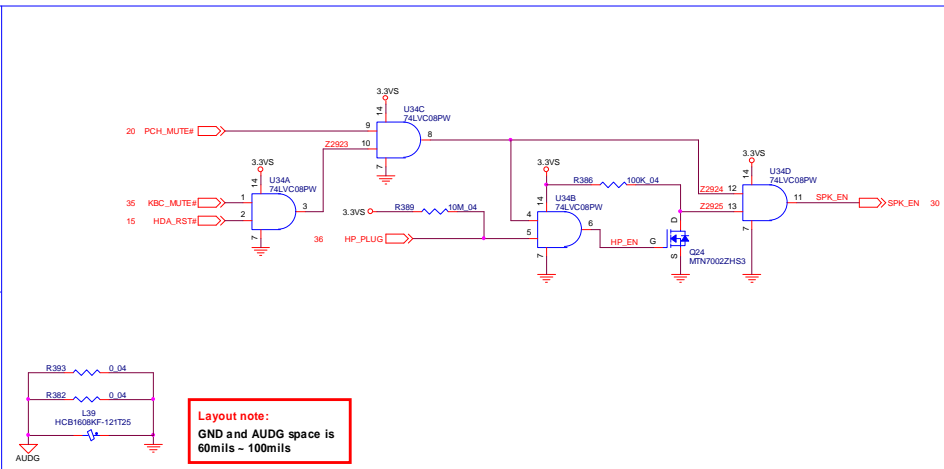
Close to Codec

Layout note:  
Headphone ??? ? ? > 10mils  
? ? phone jack? ?  
? ? ? ? ? ?  
R/L? ? ? ? GND? ? ? ? 3"? ?



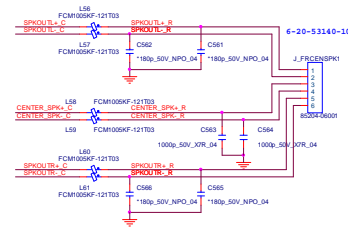
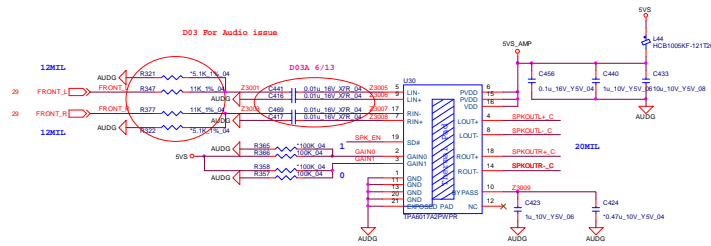
**Layout Note:**  
U43 pin 1 + pin 11 and pin 47 and pin 48 are Digital signals. The others are Analog signals.

**Layout Note:**  
(1)MIC1-L (U31.21) (2)MIC1-R (U31.22)  
(3)LINE-L (U31.23) (4)LINE-R (U31.24)  
? ? ? ? ? ? AUDG, ? ? ? ? ? ?  
+5V8 & +VIN planes.

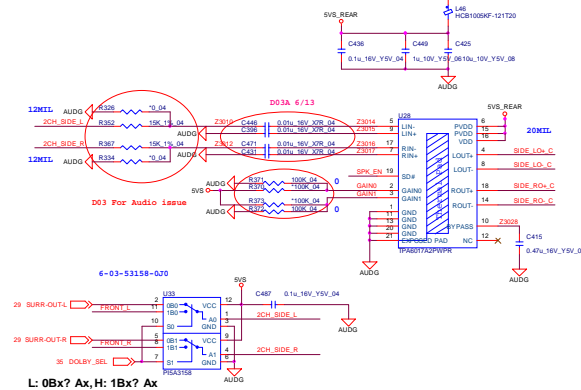


# AUDIO AMP, SPK

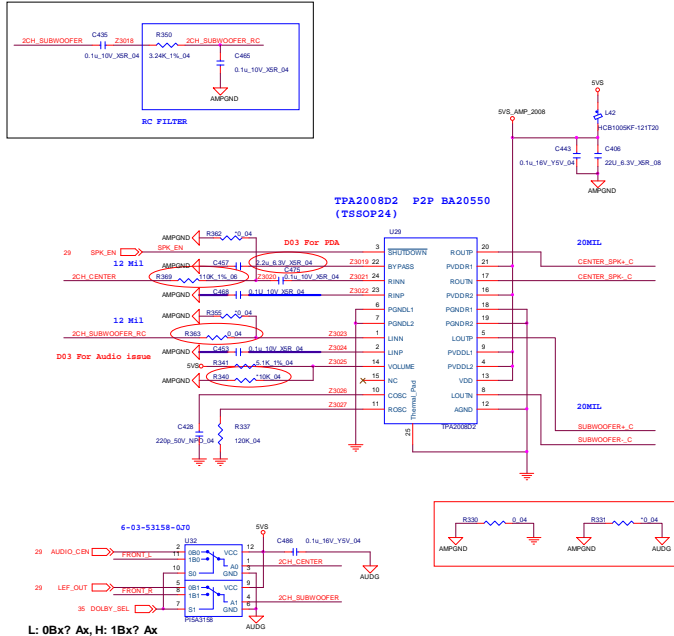
FRONT R/L 2W 4ohm



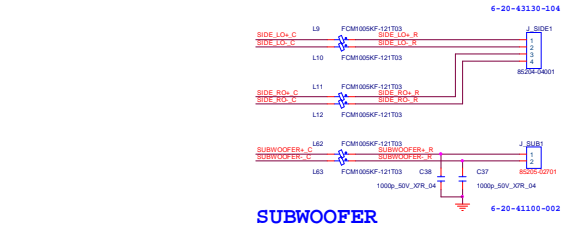
SURR R/L 1.5W 4ohm



CENTER 1.5W 4ohm/ SUBWOOFER 2W 4ohm  
CENTER: FULL FREQ SUBWOOFER: 491Hz



SURR R/L



Sheet 30 of 56  
AUDIO AMP, SPK

B.Schematic Diagrams

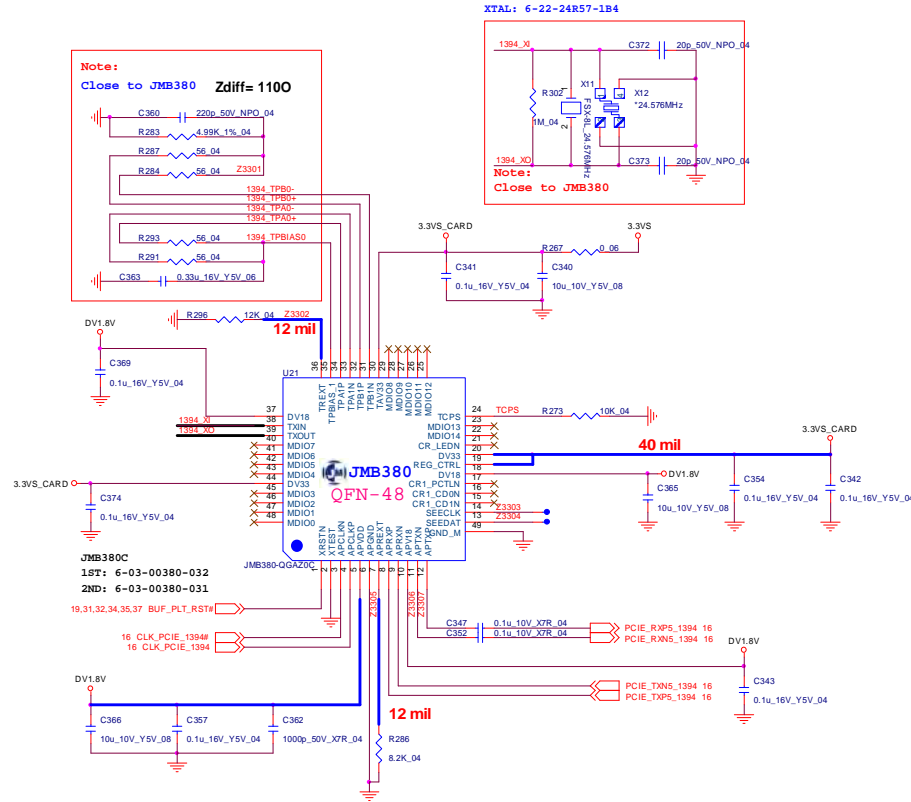




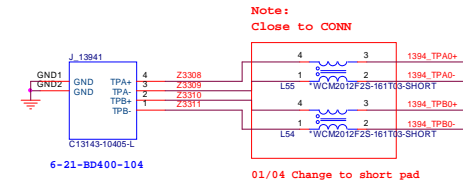
# IEEE 1394

## JMB380C

Sheet 33 of 56  
IEEE 1394



## IEEE1394



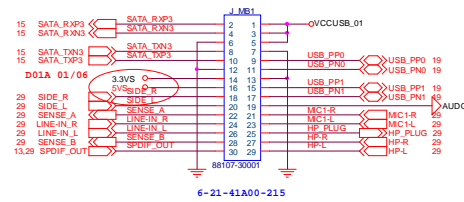




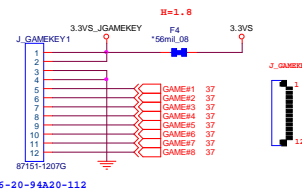


# SMALL BOARD CONN-A

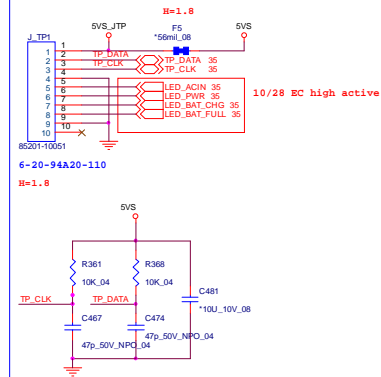
AUDIO B'd



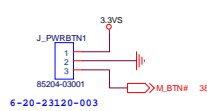
GAME KEY B'd



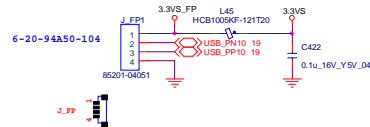
Click B'd



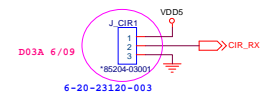
PWR BUTTON B'd



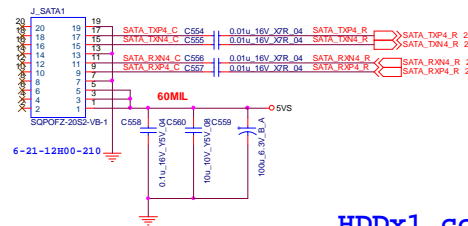
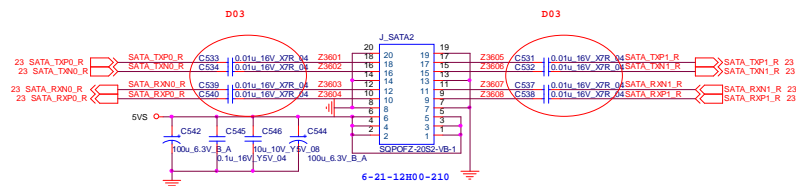
Finger Printer B'd



CIR BOARD



HDDx2 connector

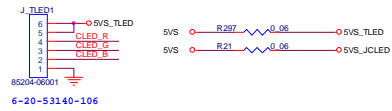


HDDx1 connector

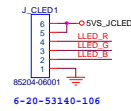
Sheet 36 of 56  
SMALL BOARD  
CONN-A

# SMALL BOARD CONN-B

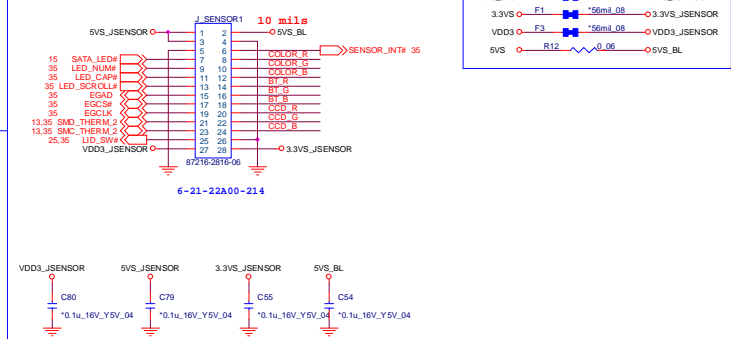
TOUCH PAD LED B'd



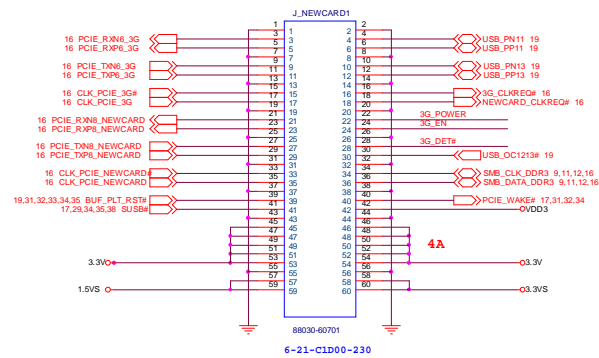
LOGO LED B'd



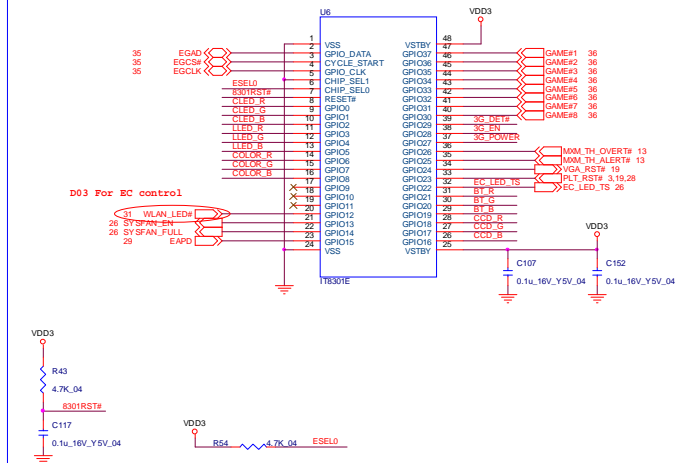
TOUCH SENSOR B'd



EXPRESS CARD BOARD BTB CONN



ITE8301E

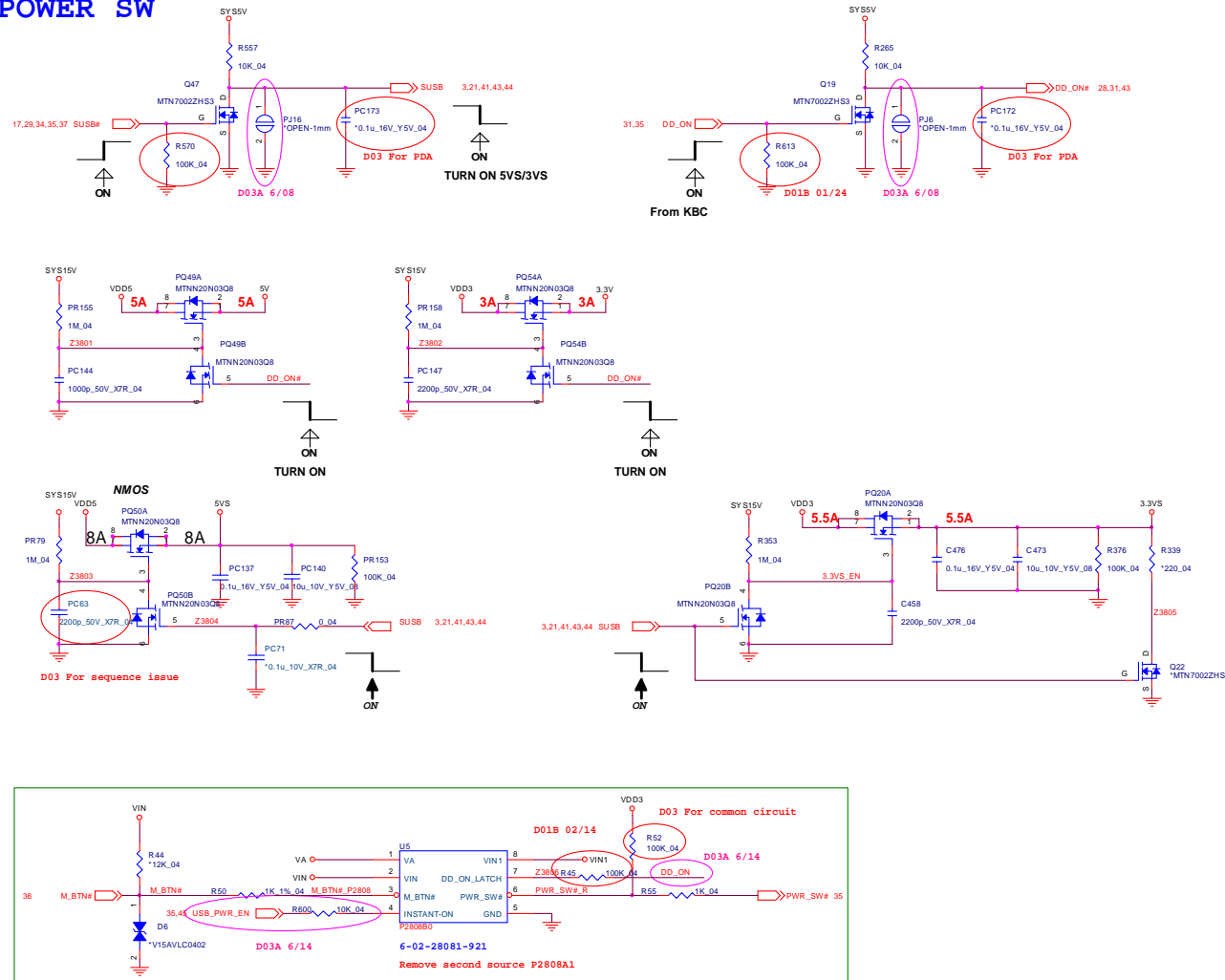


B.Schematic Diagrams

Sheet 37 of 56  
SMALL BOARD  
CONN-B

# POWER SYSTEM

## POWER SW



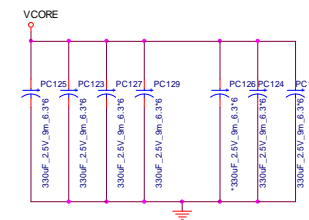
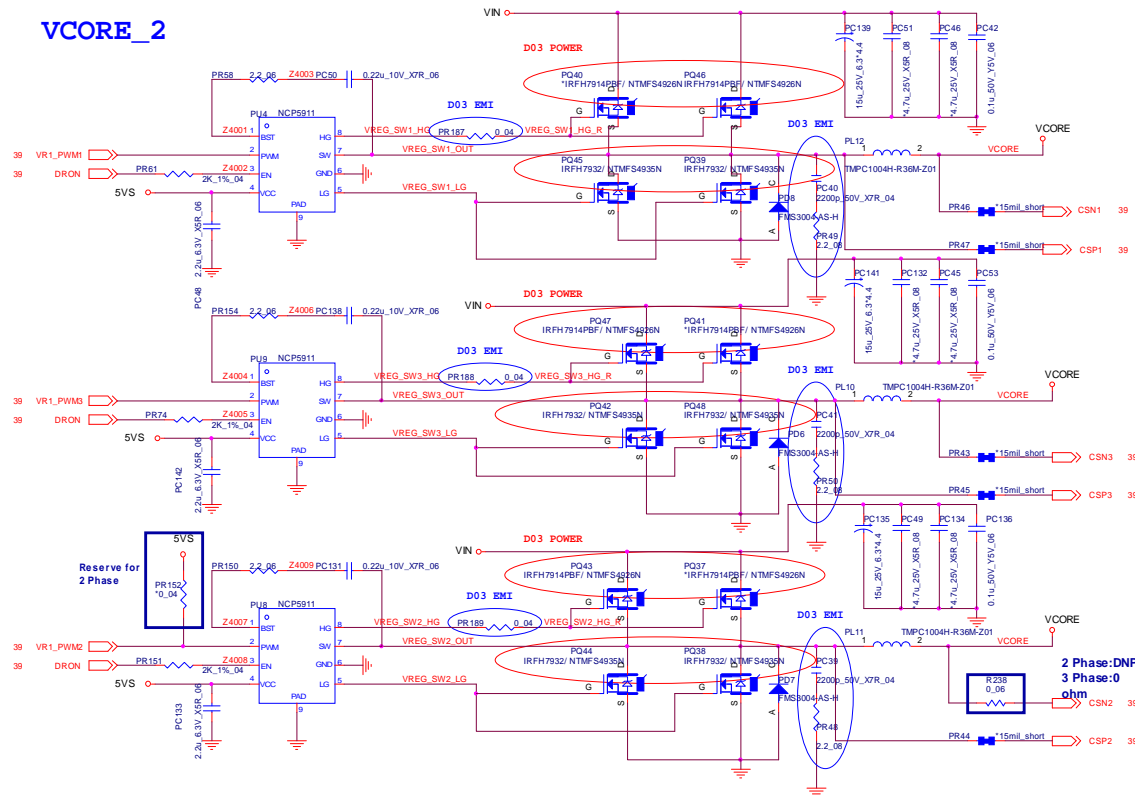
Sheet 38 of 56  
POWER SYSTEM

B. Schematic Diagrams



# PWR VCORE-2

VCORE\_2



Sheet 40 of 56  
PWR VCORE-2

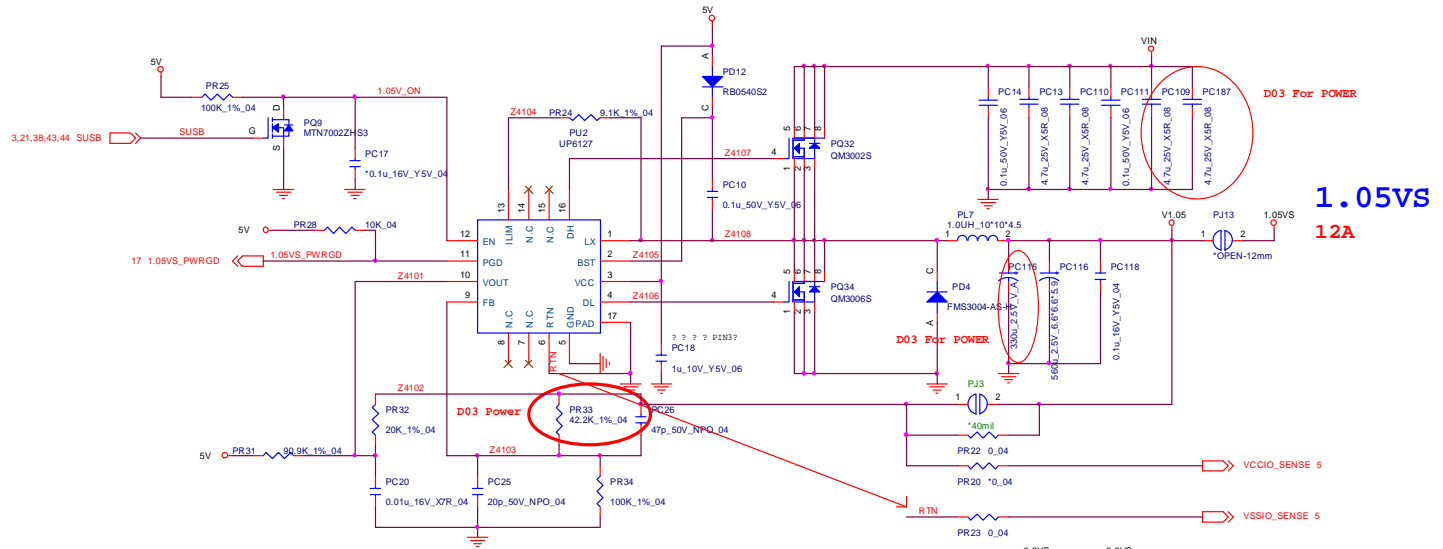
B. Schematic Diagrams

# Schematic Diagrams

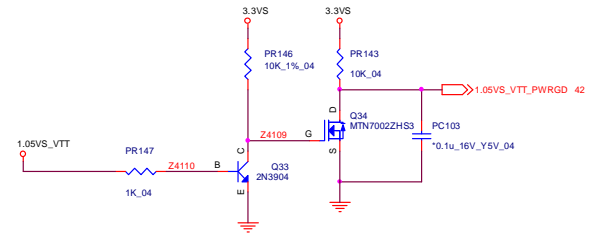
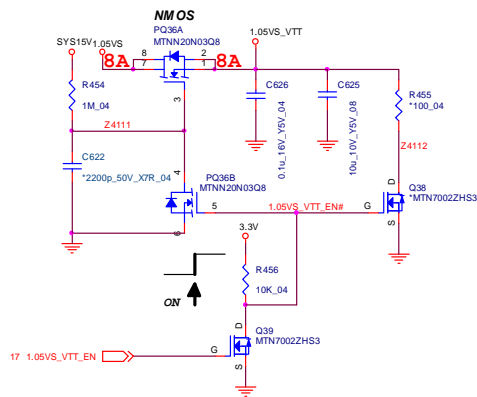
## PWR 1.05VS/ 1.05VS CPU

B.Schematic Diagrams

Sheet 41 of 56  
PWR 1.05VS/  
1.05VS CPU

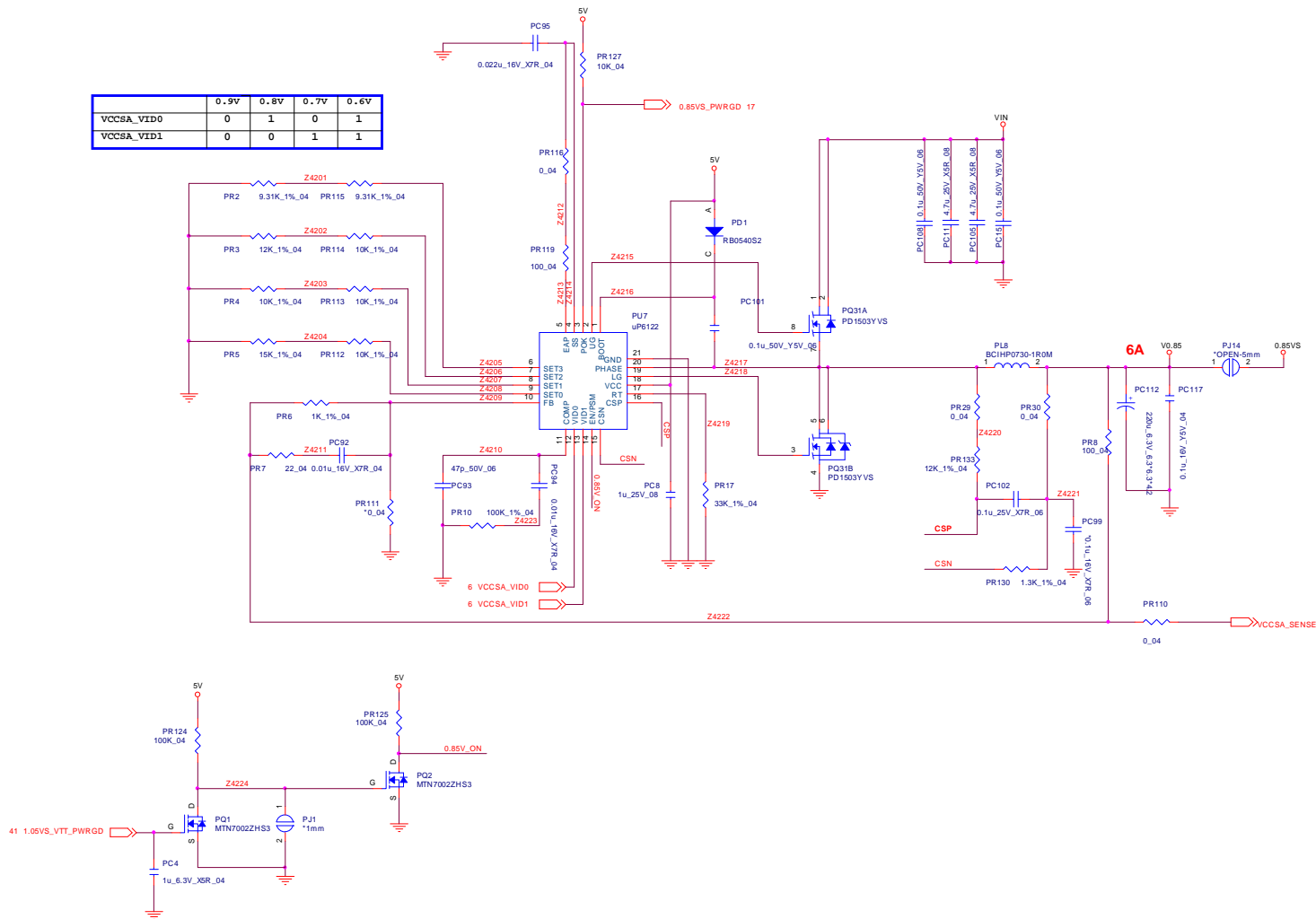


### 1.05VS\_VTT Sandy Bridge EDS CPU VTT is 8.5A



# PWR 0.85VS

	0.9V	0.8V	0.7V	0.6V
VCCSA_VID0	0	1	0	1
VCCSA_VID1	0	0	1	1



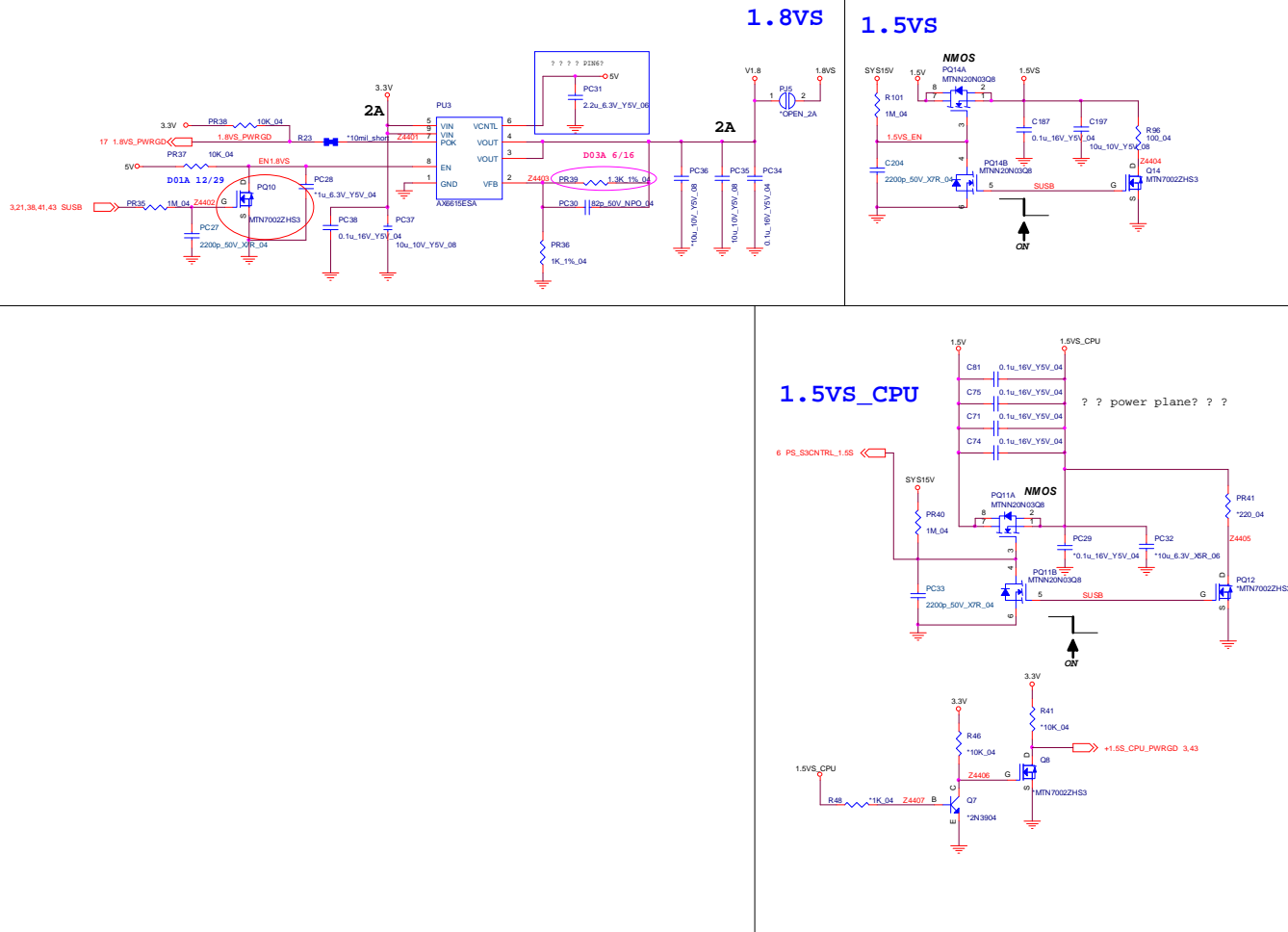
Sheet 42 of 56  
PWR 0.85VS

B. Schematic Diagrams





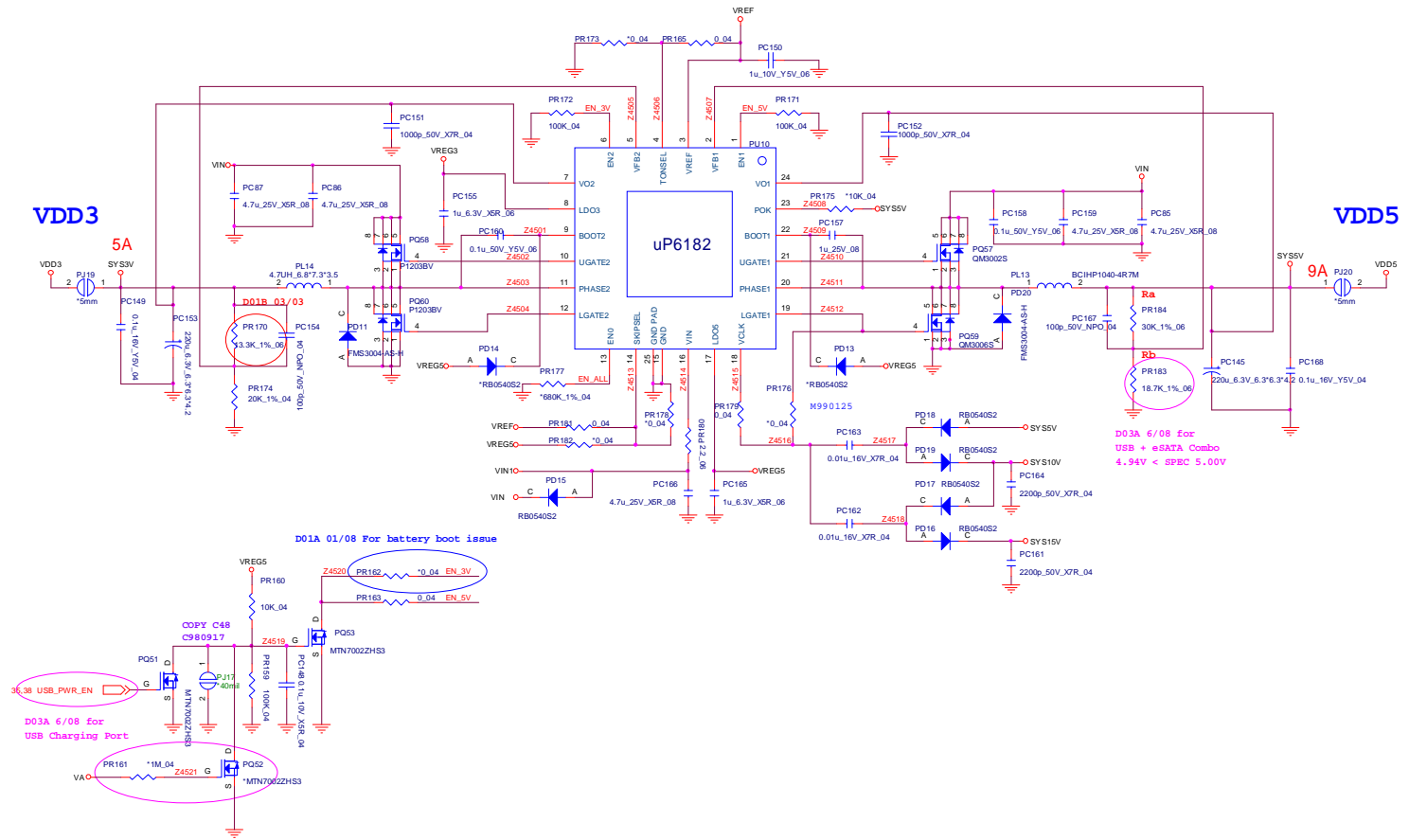
# PWR 1.8VS/ 1.5VS/ 1.5VS CPU



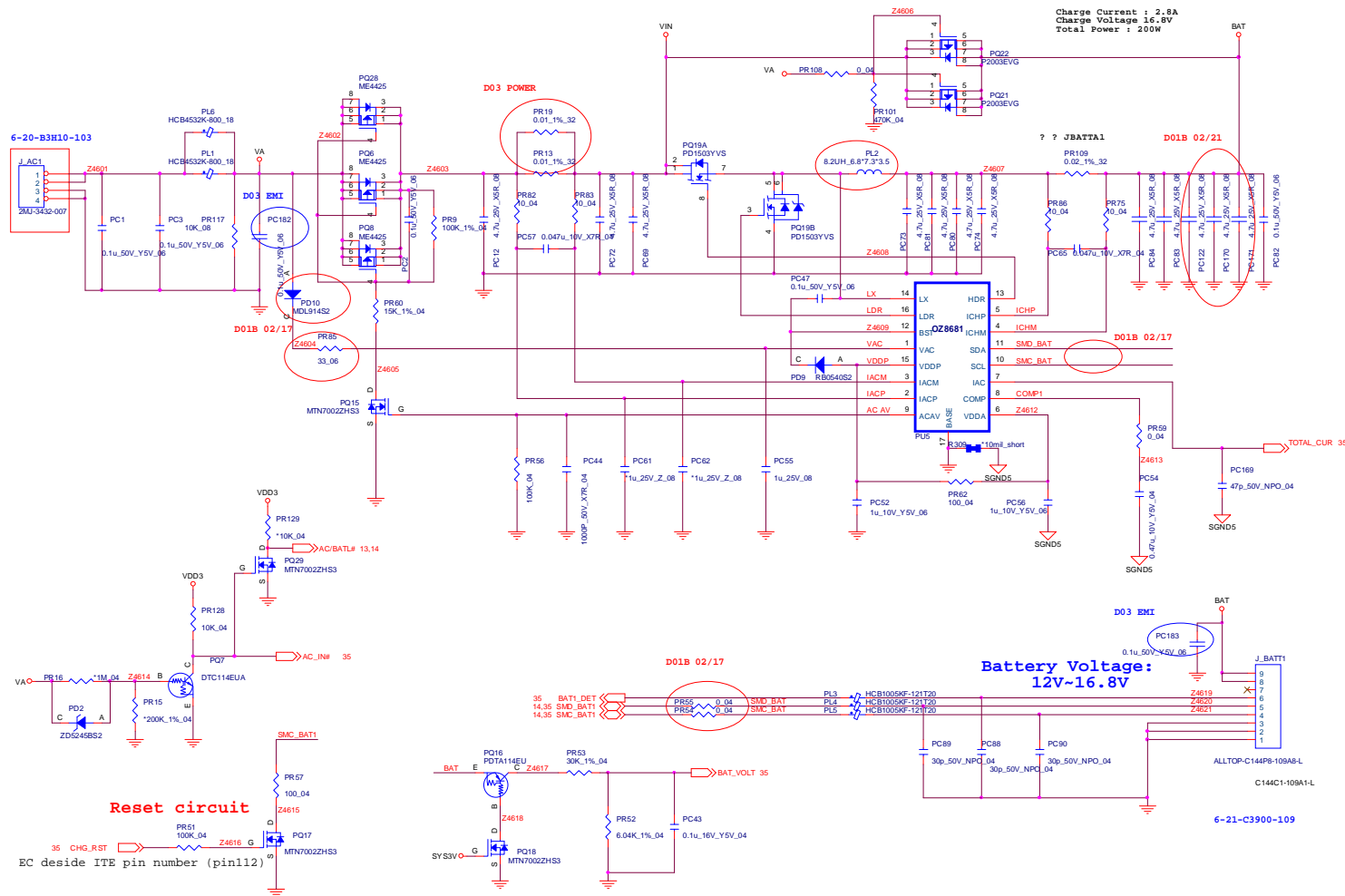
Sheet 44 of 56  
PWR 1.8VS/ 1.5VS/  
1.5VS CPU

# PWR VDD3/ VDD5

Sheet 45 of 56  
PWR VDD3/ VDD5

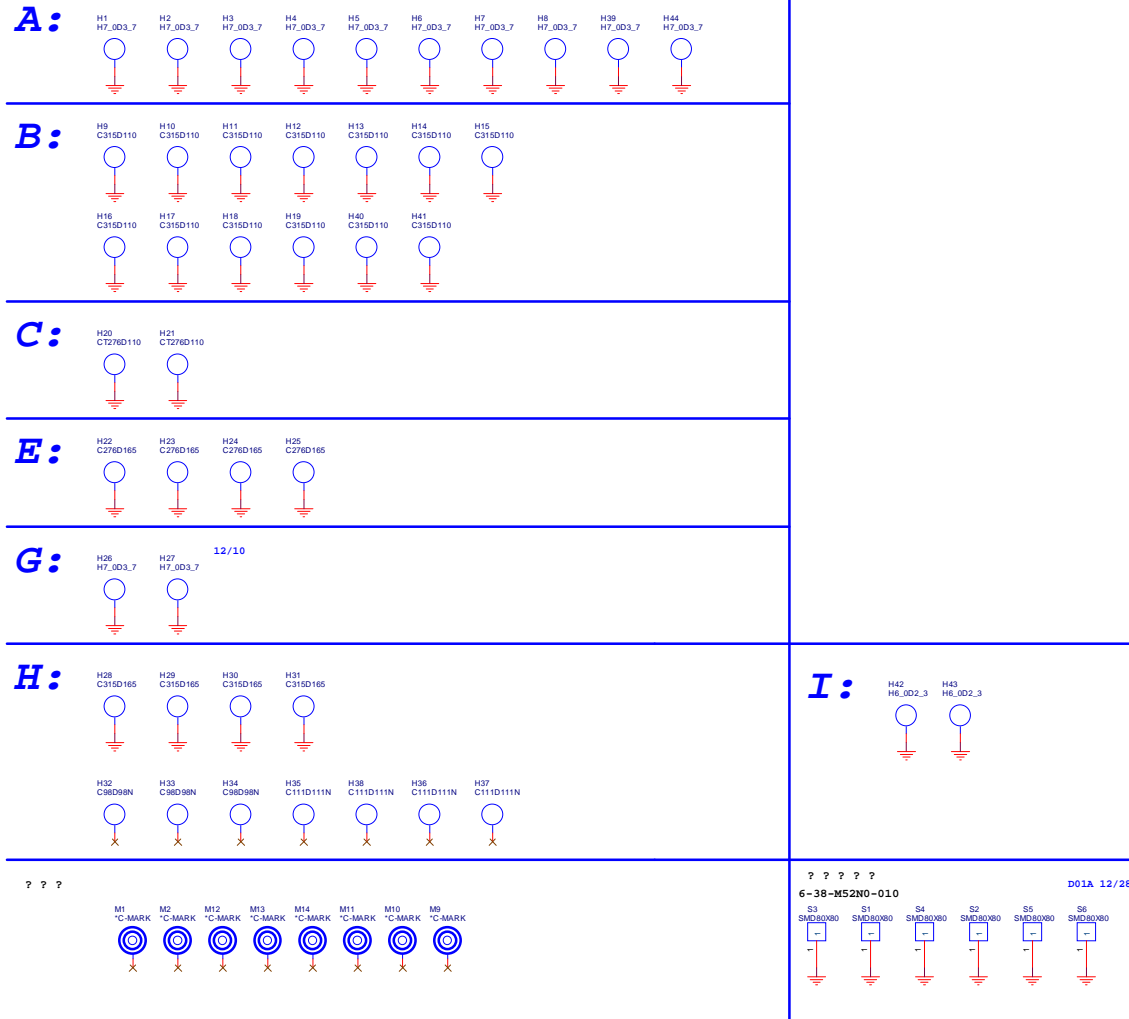


# PWR CHARGER, DC IN



Sheet 46 of 56  
PWR CHARGER,  
DC IN

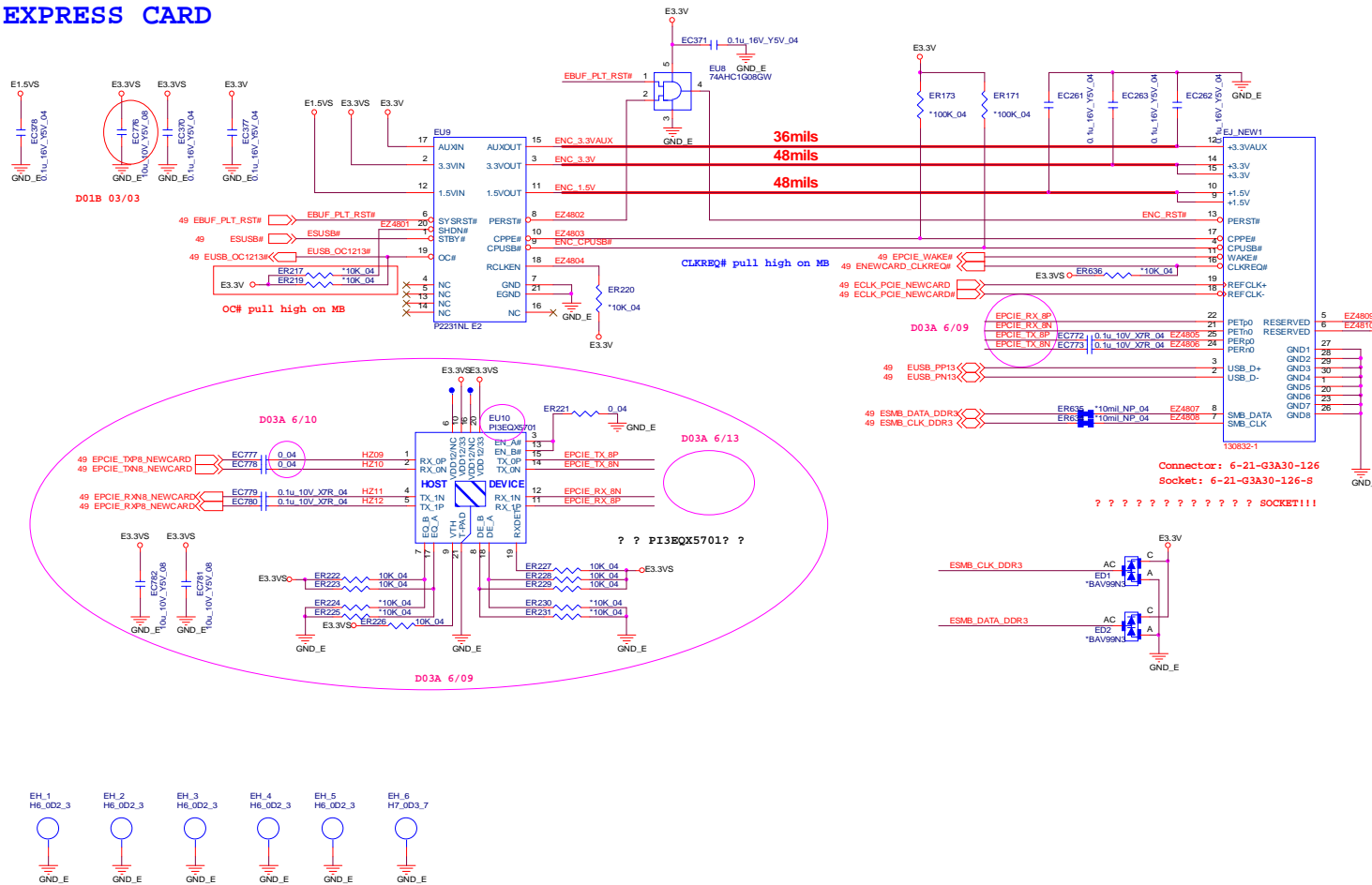
# SCREW HOLE



Sheet 47 of 56  
SCREW HOLE

# EXPRESS CARD BOARD

## EXPRESS CARD

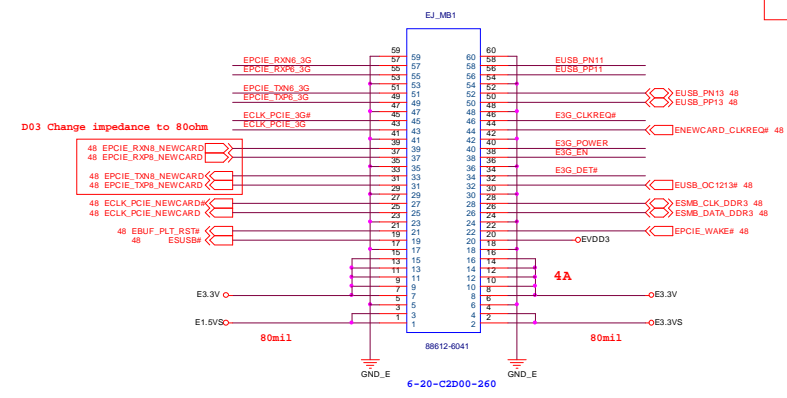
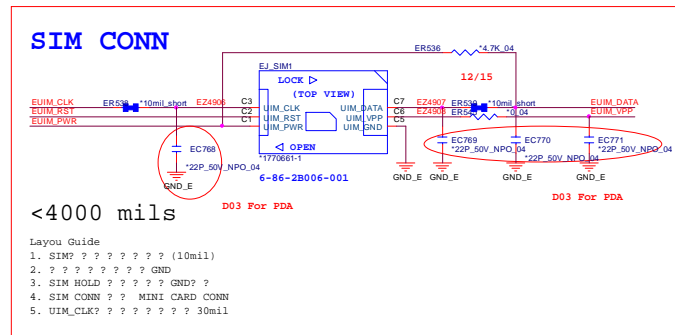
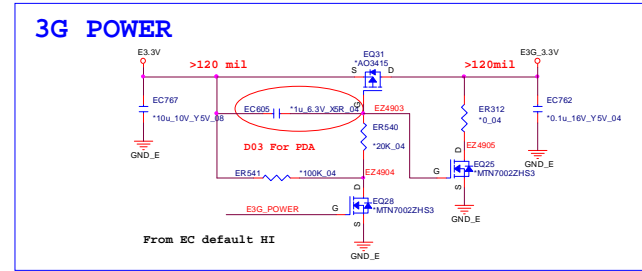
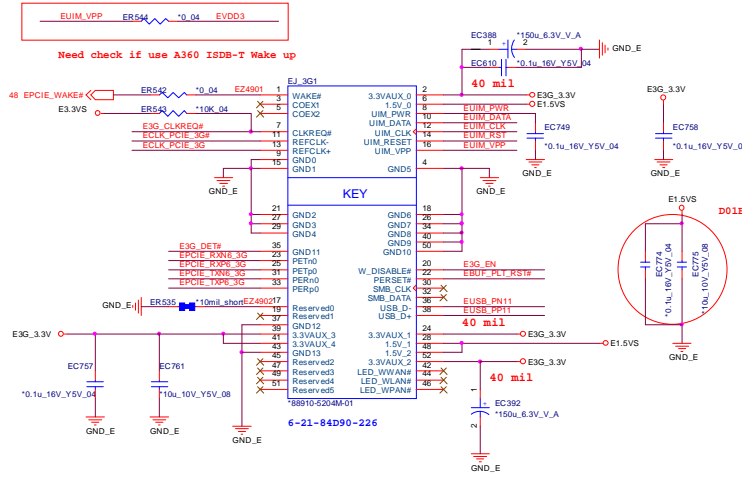


Sheet 48 of 56  
EXPRESS CARD  
BOARD

B.Schematic Diagrams

# ISDB-T CARD/ TV CARD

ISDB-T CARD/ TV CARD D01B 0119 Add 1.5VS for 3G MINI CARD to support MC770A0



D03 Uninstall TV Card component

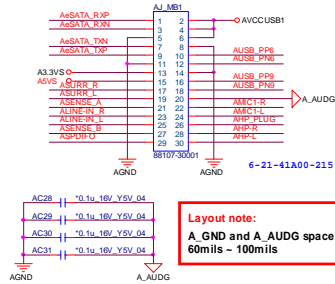
B.Schematic Diagrams

Sheet 49 of 56  
ISDB-T CARD/ TV  
CARD



# AUDIO BOARD

## AUDIO BOARD

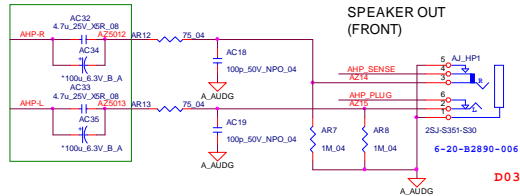


## SENSE pin

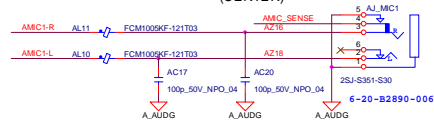


## PHONE JACK

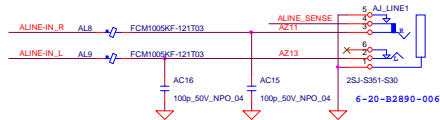
Vendor suggest to use 100uF



## MIC IN (CENTER)



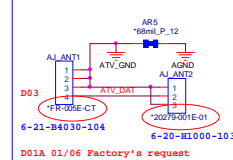
## LINE IN (SURR)



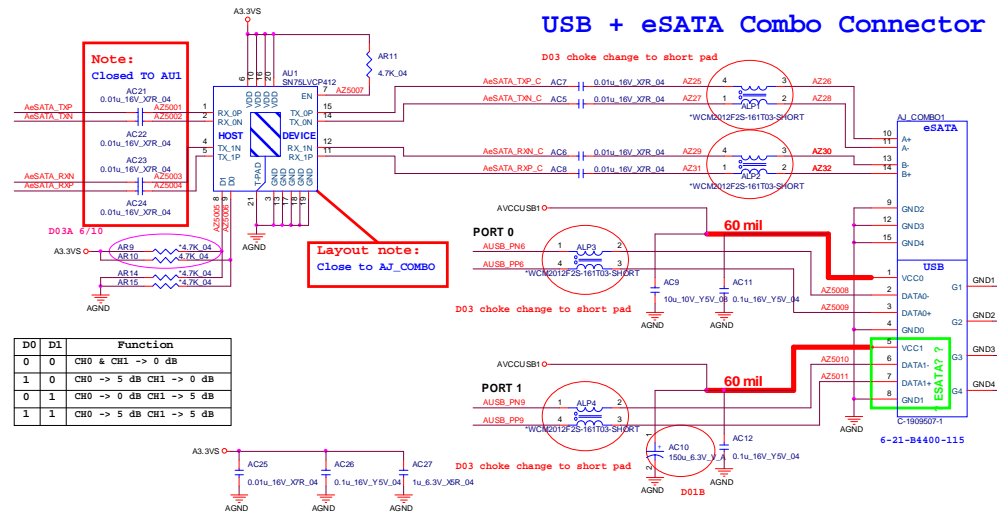
## SPDIF Digital (SIDE)



## TV ANTENNA



## USB + eSATA Combo Connector



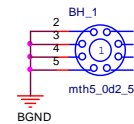
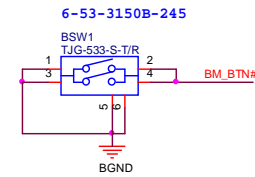
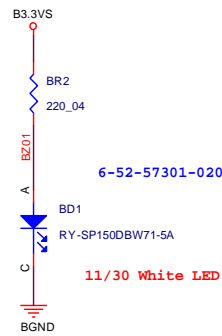
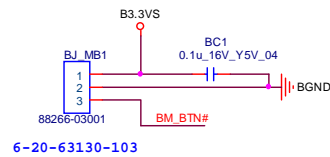
Sheet 50 of 56  
AUDIO BOARD

B.Schematic Diagrams

# POWER BUTTON BOARD

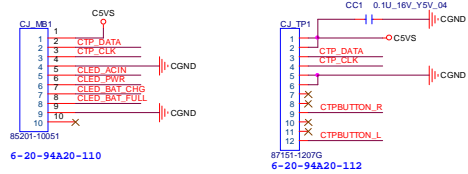
## POWER BUTTON B'D

Sheet 51 of 56  
POWER BUTTON  
BOARD

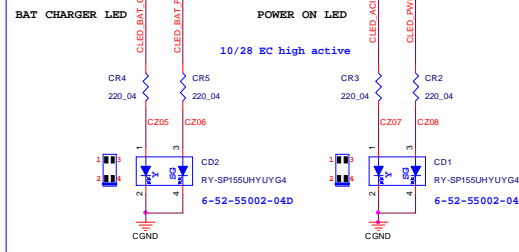


# CLICK & FP BOARD

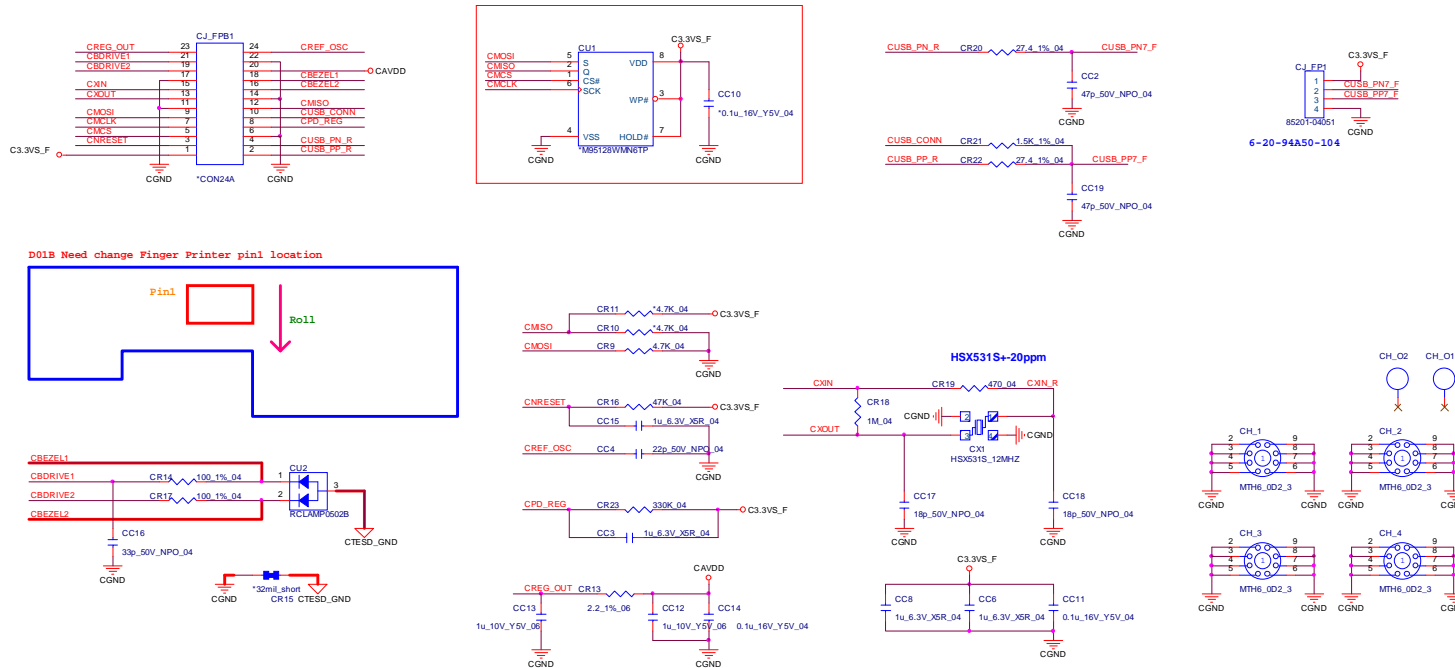
## CLICK BOARD



## LED



## FINGER PRINTER



Sheet 52 of 56  
CLICK & FP  
BOARD

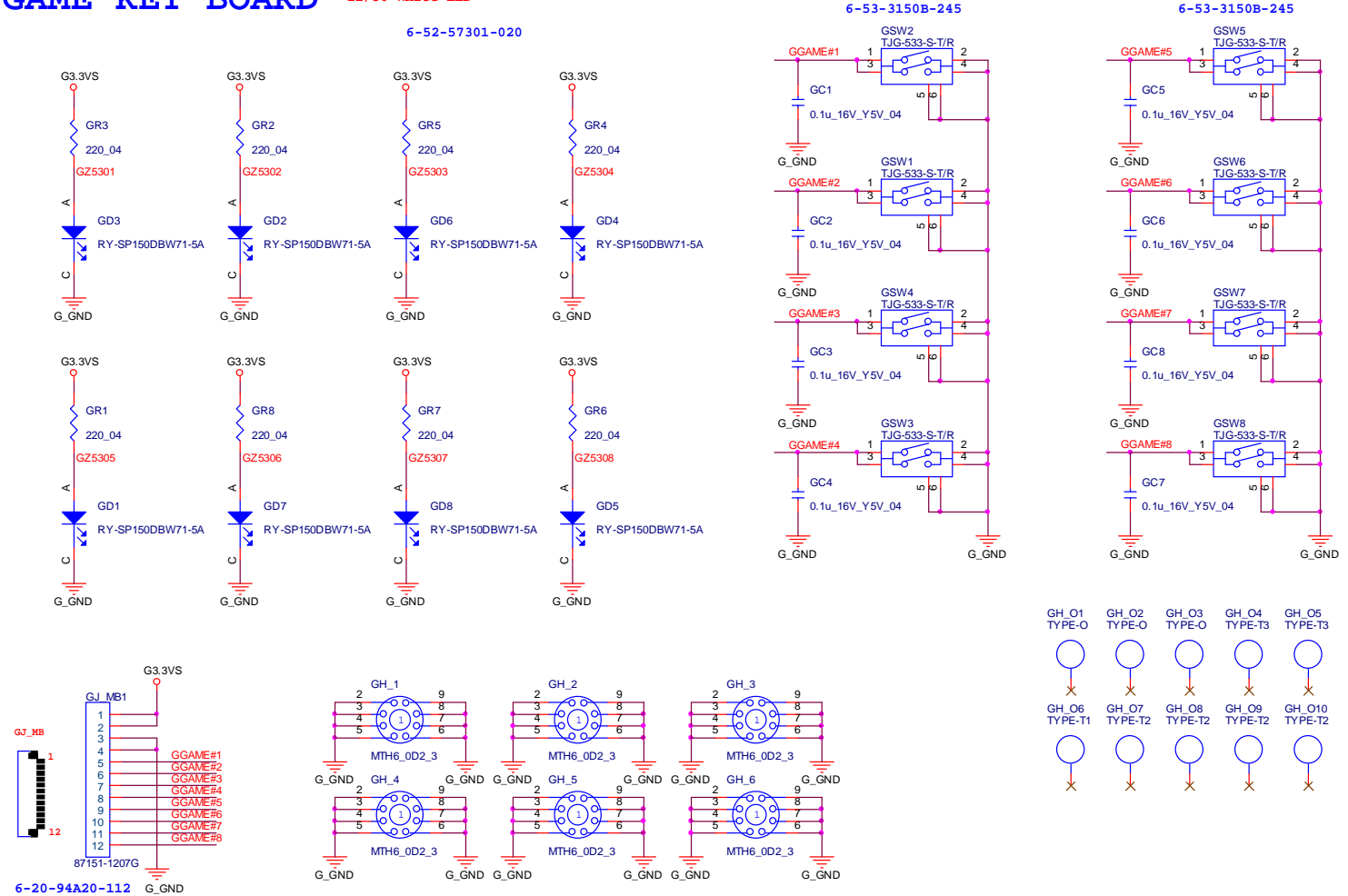
B.Schematic Diagrams

# GAME KEY BOARD

## GAME KEY BOARD 11/30 White LED

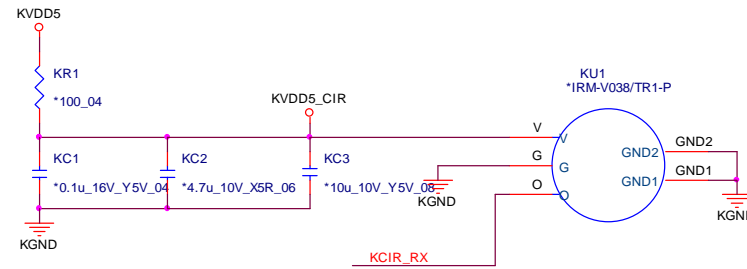
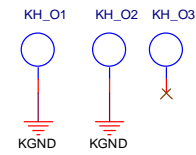
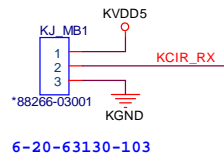
B.Schematic Diagrams

Sheet 53 of 56  
GAME KEY BOARD



# CIR BOARD

## CIR BOARD

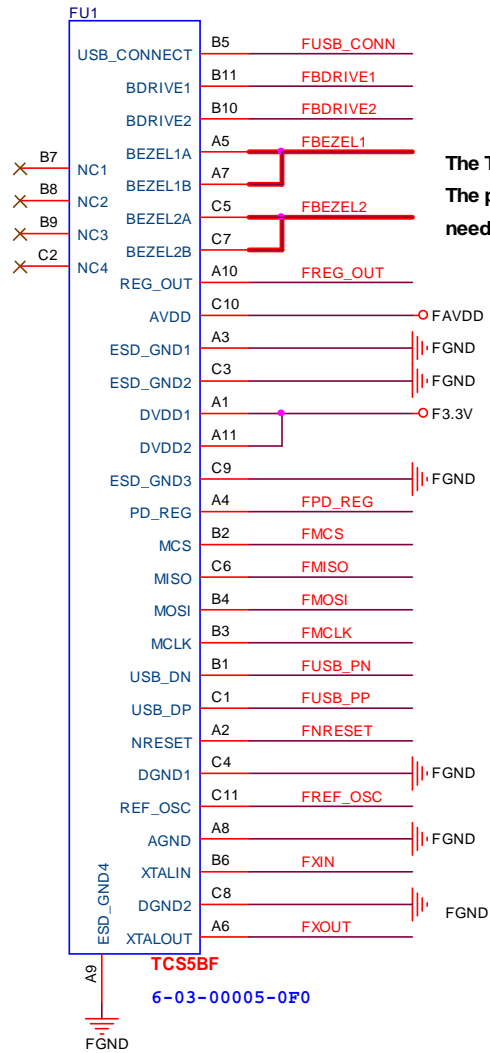


Sheet 54 of 56  
CIR BOARD

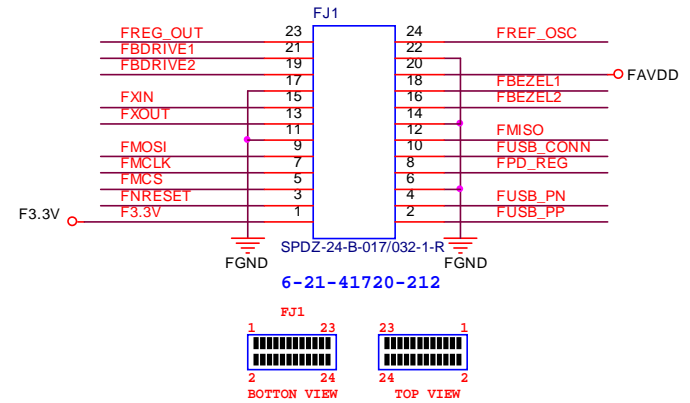
***D03 Uninstall CIR component***

# FINGER BOARD

Sheet 55 of 56  
FINGER BOARD

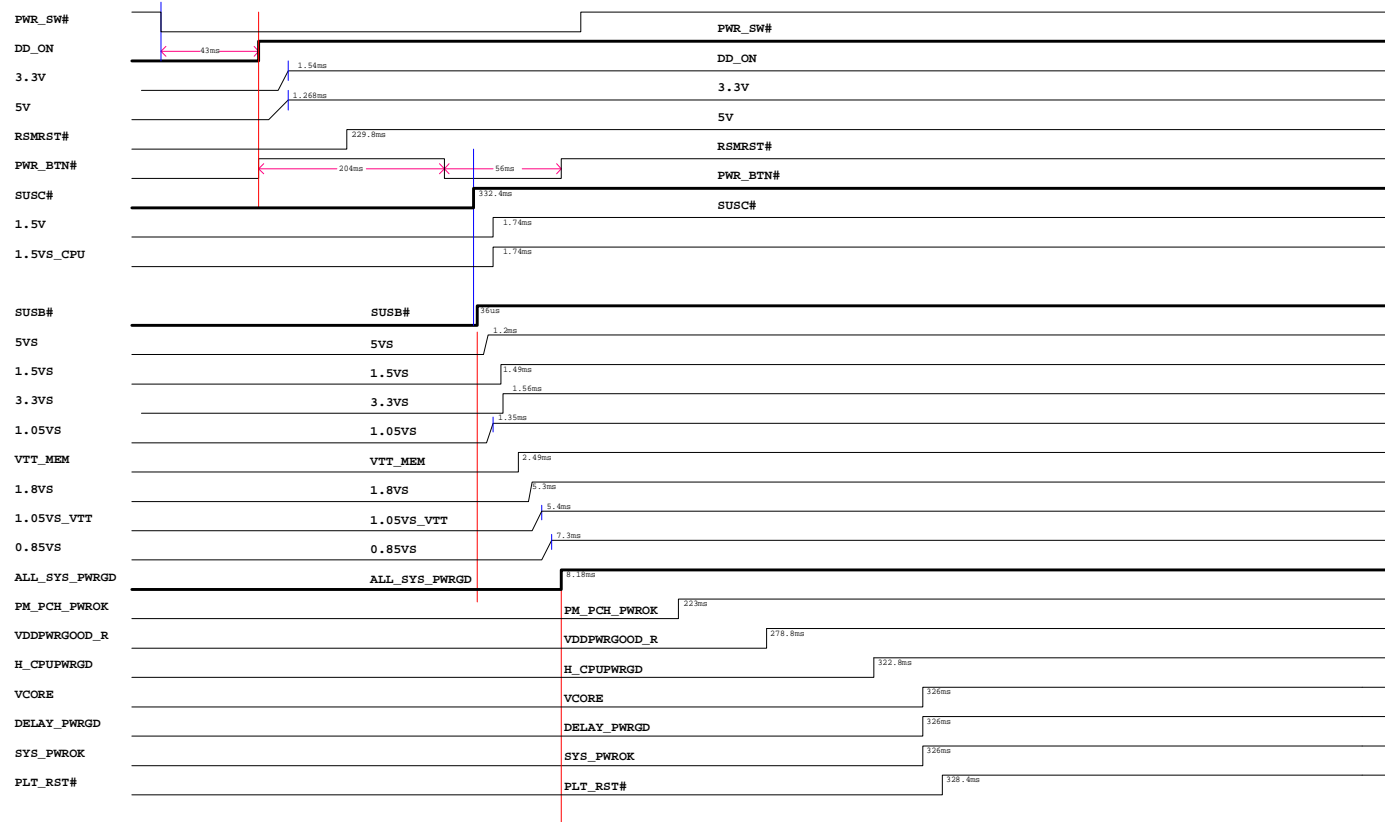


The TESD\_GND trace has to be wide (> 20mil)  
The path be marked in RED  
needs to be design to be short and at low impedance.



# POWER ON SEQUENCE

P180HM D01 EVT POWER ON SEQUENCE



BIOS: 1.00.E1  
Test date: 2011/01/03

Sheet 56 of 56  
POWER ON  
SEQUENCE



**Schematic Diagrams**

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