

# *SERVICE MANUAL*

P180HM

*notebook*





**Notebook Computer**

**P180HM**

**Service Manual**

## Preface

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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 ***PI80HM*** 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

**Preface****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**

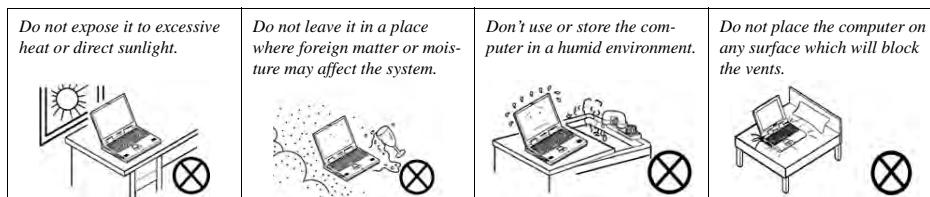
## Instructions for Care and Operation

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

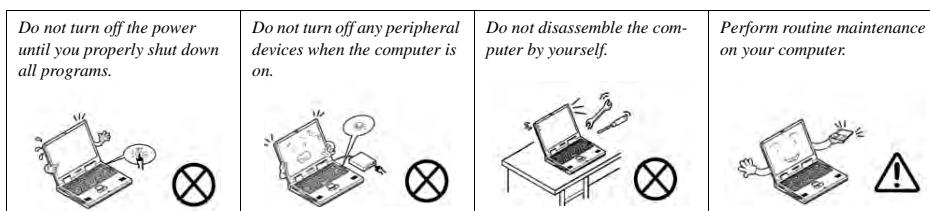
- 1. Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



- 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.



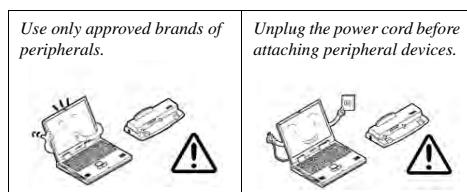
- 3. Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



## Preface

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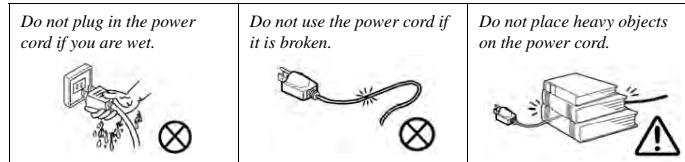
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



## 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.



## 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.

## Preface

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### 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.

## Contents

<b>Introduction .....</b>	<b>1-1</b>
Overview .....	1-1
System Specifications .....	1-2
External Locator - Top View with LCD Panel Open .....	1-4
External Locator - Front & Right side Views .....	1-5
External Locator - Left Side & Rear View .....	1-6
External Locator - Bottom View .....	1-7
Mainboard Overview - Top (Key Parts) .....	1-8
Mainboard Overview - Bottom (Key Parts) .....	1-9
Mainboard Overview - Top (Connectors) .....	1-10
Mainboard Overview - Bottom (Connectors) .....	1-11
<b>Disassembly .....</b>	<b>2-1</b>
Overview .....	2-1
Maintenance Tools .....	2-2
Connections .....	2-2
Maintenance Precautions .....	2-3
Disassembly Steps .....	2-4
Removing the Battery .....	2-5
Removing the Optical (CD/DVD) Device .....	2-6
Removing the Hard Disk Drive .....	2-7
Removing the Keyboard .....	2-10
Removing the System Memory (RAM) -1 .....	2-12
Removing the System Memory (RAM) - 2 .....	2-14
Removing and Installing the Processor .....	2-15
Removing the VGA Card .....	2-18
Installing the VGA Card .....	2-19
Removing the Wireless LAN Module .....	2-20
<b>Part Lists .....</b>	<b>A-1</b>
Part List Illustration Location .....	A-2

Top with Fingerprint .....	A-3
Top without Fingerprint .....	A-4
Bottom .....	A-5
LCD .....	A-6
Mainboard .....	A-7
DVD .....	A-8
COMBO .....	A-9
<b>Schematic Diagrams.....</b>	<b>B-1</b>
System Block Diagram .....	B-2
Sandy Bridge 1/7 DMI, PEG .....	B-3
Sandy Bridge 2/7 CLK, MISC .....	B-4
Sandy Bridge 3/7 DDR3I .....	B-5
Sandy Bridge 4/7 Power .....	B-6
Sandy Bridge 5/7 GFX PWR .....	B-7
Sandy Bridge 6/7 .....	B-8
Sandy Bridge 7/7 RSVD .....	B-9
DDR3 CHA SO-DIMM 0 .....	B-10
DDR3 CHA SO-DIMM 1 .....	B-11
DDR3 CHB SO-DIMM 0 .....	B-12
DDR3 CHB SO-DIMM 1 .....	B-13
MXM 3.0 MASTER .....	B-14
MXM 3.0 SLAVE .....	B-15
CPT 1/9 HDA, SATA .....	B-16
CPT 2/9 PCIE, SMBUS .....	B-17
CPT 3/9 DMI, PWRGD .....	B-18
CPT 4/9 LVDS, DDI, 9/9 GND .....	B-19
CPT 5/9 PCI, USB .....	B-20
CPT 6/9 GPIO, CPU .....	B-21
CPT 7/9 PWR .....	B-22
CPT 8/9 PWR .....	B-23

**Preface**

SATA HDD CONN, Re- Driver .....	B-24
CPT, DVI .....	B-25
LED PANEL .....	B-26
FAN CONTROL .....	B-27
HDMI, RJ45 CONN .....	B-28
ODD, CCD, USB 2.0, BT, TPM .....	B-29
CODEC, DMIC .....	B-30
AUDIO AMP, SPK .....	B-31
WLAN, TV, Charger USB .....	B-32
LAN, Card Reader .....	B-33
IEEE 1394 .....	B-34
USB 3.0 .....	B-35
KBC ITE IT8519-BX .....	B-36
SMALL BOARD CONN-A .....	B-37
SMALL BOARD CONN-B .....	B-38
POWER SYSTEM .....	B-39
PWR VCORE-1 .....	B-40
PWR VCORE-2 .....	B-41
PWR 1.05VS/ 1.05VS CPU .....	B-42
PWR 0.85VS .....	B-43
PWR 1.5V/ VTT MEM .....	B-44
PWR 1.8VS/ 1.5VS/ 1.5VS CPU .....	B-45
PWR VDD3/ VDD5 .....	B-46
PWR CHARGER, DC IN .....	B-47
SCREW HOLE .....	B-48
EXPRESS CARD BOARD .....	B-49
ISDB-T CARD/ TV CARD .....	B-50
AUDIO BOARD .....	B-51
POWER BUTTON BOARD .....	B-52
CLICK & FP BOARD .....	B-53
GAME KEY BOARD .....	B-54
CIR BOARD .....	B-55
FINGER BOARD .....	B-56
POWER ON SEQUENCE .....	B-57

# Chapter 1: Introduction

## Overview

This manual covers the information you need to service or upgrade the **P180HM** 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 **P180HM** 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.

## Introduction

# System Specifications

<b>Processor</b>	<b>BIOS</b>	<b>Pointing Device</b>
<p><b>Intel® Core™ i7 Processor Extreme Edition</b>  <b>i7-2920XM (2.50GHz)</b>            8MB L3 Cache, 32nm, DDR3-1600MHz, TDP 55W</p> <p><b>Intel® Core™ i7 Processor</b>  <b>i7-2820QM (2.30GHz)</b>            8MB L3 Cache, 32nm, DDR3-1600MHz, TDP 45W</p> <p><b>i7-2720QM (2.20GHz) , i7-2630QM (2.0GHz)</b>            6MB L3 Cache, 32nm, DDR3-1600MHz, TDP 45W</p>	AMI BIOS (32Mb SPI Flash-ROM)	Built-in TouchPad (scrolling key functionality integrated)
<b>LCD</b>	<b>Video Adapter</b>	<b>Card Reader</b>
18.4" (46.74cm) FHD TFT LCD	<p><b>nVIDIA® GeForce GTX 560M PCIe Video Card</b></p> 1.5GB GDDR5 Video RAM on board Microsoft DirectX® 11 Compatible Supports nVIDIA® SLI Technology	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
<b>Core Logic</b>	<b>Security</b>	<b>Interface</b>
Intel® HM7 Chipset	Security (Kensington® Type) Lock Slot BIOS Password (Factory Option) Fingerprint Reader Module	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 <a href="#">page 11</a> ). 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
<b>Memory</b>	<b>Keyboard</b>	
Three 204 Pin SO-DIMM Sockets Supporting <b>DDR3 1333/1600MHz</b> 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	Full-size "WinKey" keyboard (with numeric keypad)	<b>Note:</b> External 7.1CH Audio Output Supported by Headphone, Microphone, Line-In and Surround-Out Jacks
<b>Storage</b>	<b>Communication</b>	
Up to Three (Factory Option) Changeable 2.5" (6cm) 9.5mm (h) <b>SATA</b> (Serial) Hard Disk Drives supporting RAID level 0/1/5 <i>Note 1st &amp; 2nd HDDs are in SATA III Interface.</i> (Factory Option) One Changeable 12.7mm(h) Optical Device Type Drive (Super Multi Drive/ Blu-Ray Combo Drive/Blu-Ray Writer Drive)	<b>WLAN/ Bluetooth Half Mini-Card Modules:</b> (Factory Option) Intel® Centrino® Ultimate-N 6300 Wireless LAN (802.11a/g/n) + Bluetooth 3.0 (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	

## 1 - 2 System Specifications

## Introduction

### 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

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## System Specifications 1 - 3

## Introduction

Figure 1  
Top View

### External Locator - Top View with LCD Panel Open

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



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1 - 4 External Locator - Top View with LCD Panel Open

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## Introduction

### 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



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External Locator - Front & Right side Views 1 - 5

## 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



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1 - 6 External Locator - Left Side & Rear View

## Introduction

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### External Locator - Bottom View



Figure 6  
Bottom View

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

1. Introduction



#### Overheating

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

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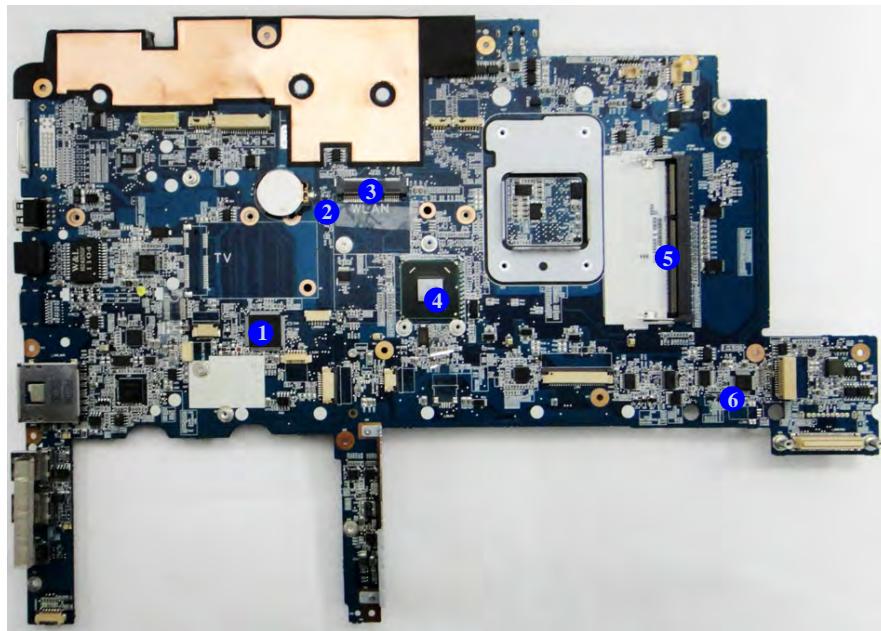
External Locator - Bottom View 1 - 7

## 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)



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1 - 8 Mainboard Overview - Top (Key Parts)

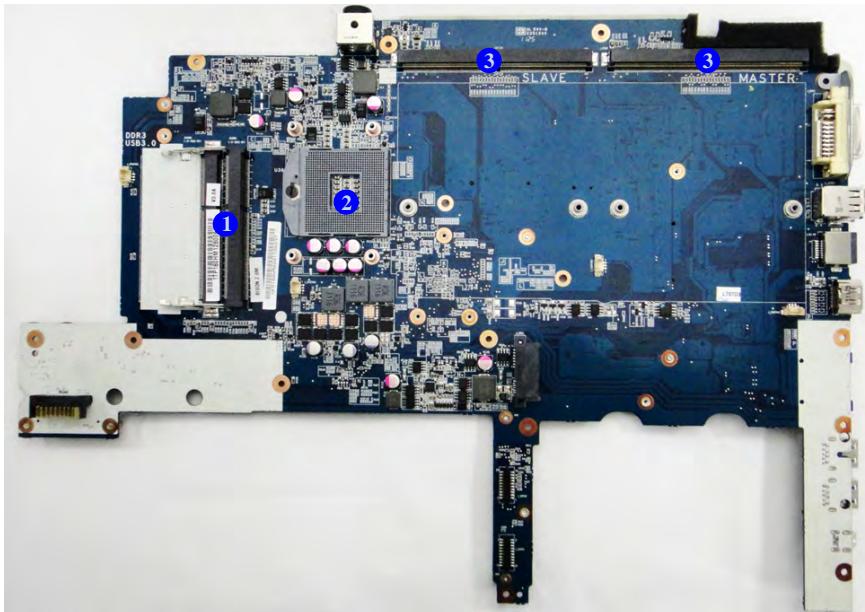
## Introduction

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### Mainboard Overview - Bottom (Key Parts)

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

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



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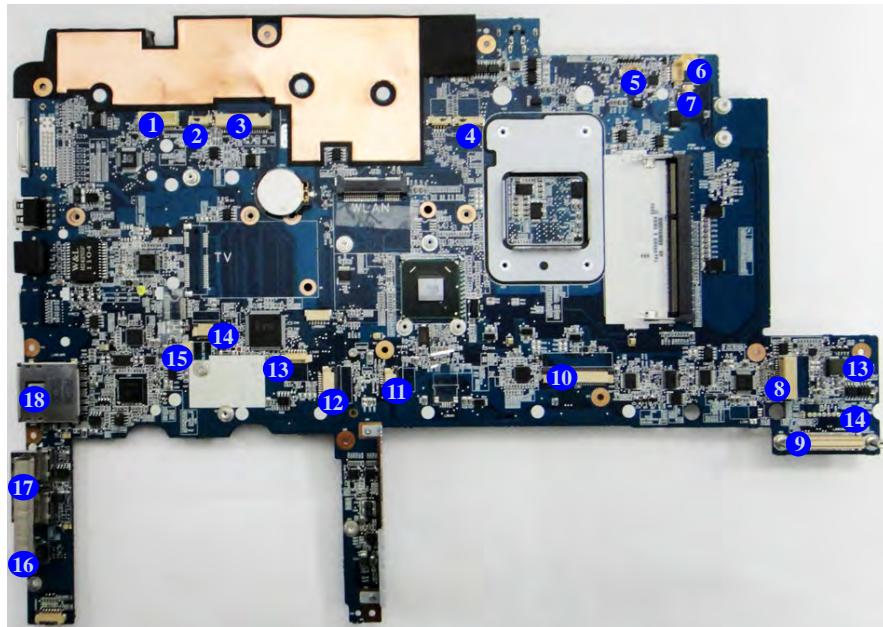
Mainboard Overview - Bottom (Key Parts) 1 - 9

## Introduction

Figure 9  
Mainboard 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 - Top (Connectors)



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## 1 - 10 Mainboard Overview - Top (Connectors)

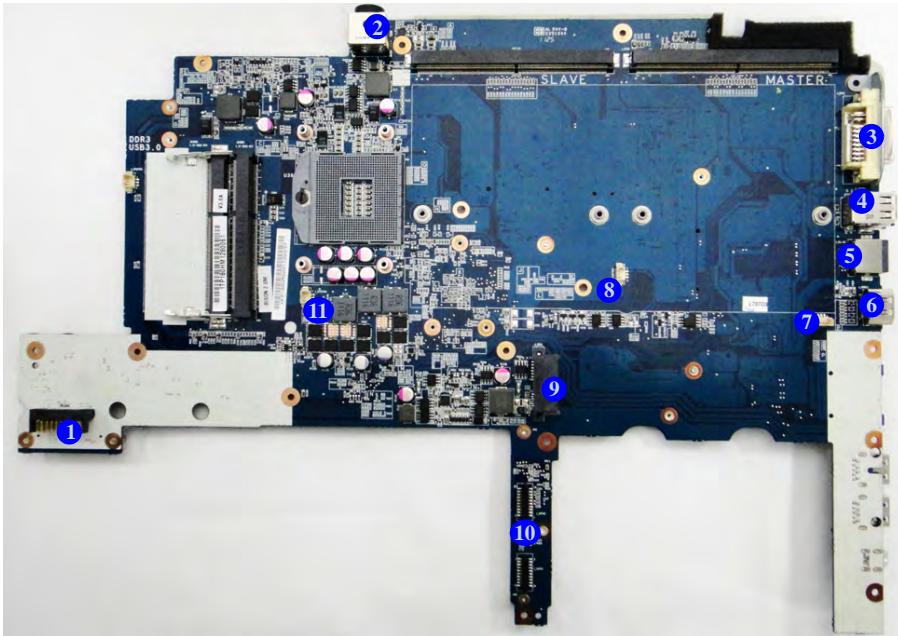
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## Introduction

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### Mainboard Overview - Bottom (Connectors)

Figure 10  
Mainboard Bottom  
Connectors



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Mainboard Overview - Bottom (Connectors) 1 - 11

## **Introduction**

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## Chapter 2: Disassembly

### Overview

This chapter provides step-by-step instructions for disassembling the **P180HM** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

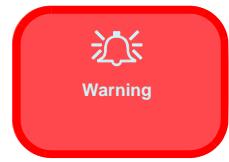
We suggest you completely review any procedure before you take the computer apart.

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.

---

## 2 - 2 Overview

## Disassembly

### 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-born 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.

## Overview 2 - 3

## Disassembly

### 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:

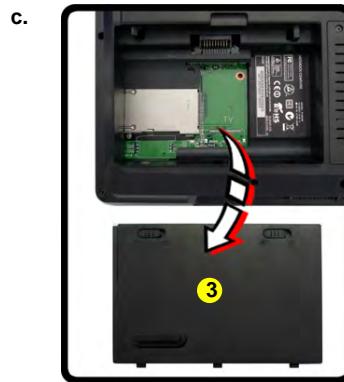
1. Remove the battery [page 2 - 5](#)
2. Remove the Keyboard [page 2 - 10](#)
3. Remove the Wireless LAN [page 2 - 20](#)

## Disassembly

### 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.



### Removing the Battery 2 - 5

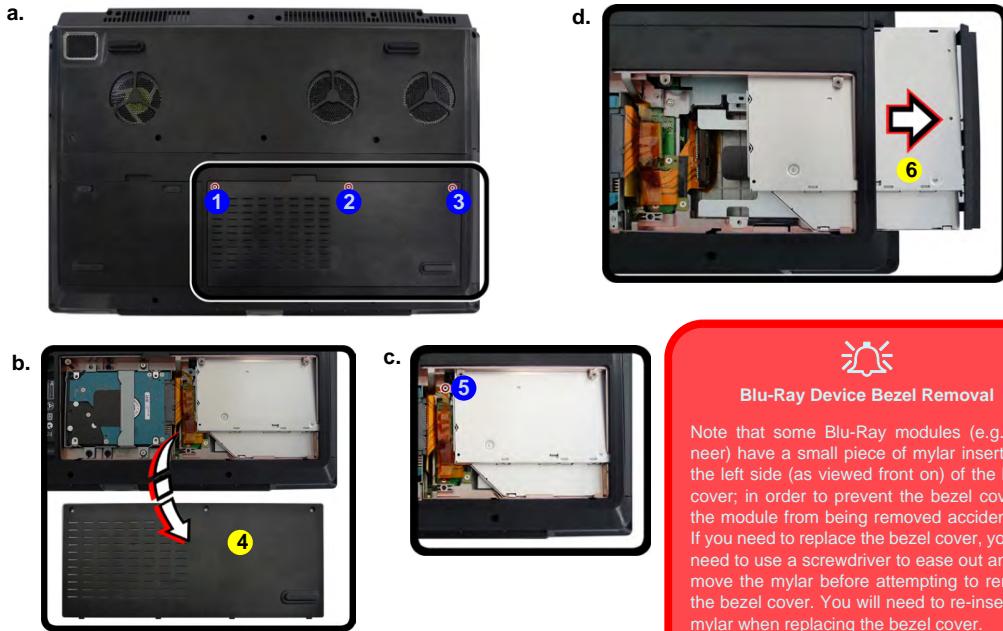
## Disassembly

**Figure 2  
Optical Device Removal**

- a. Remove the screws.
- b. Remove the cover.
- c. Remove the screw.
- d. Push the optical device out of the computer.

### Removing the Optical (CD/DVD) Device

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



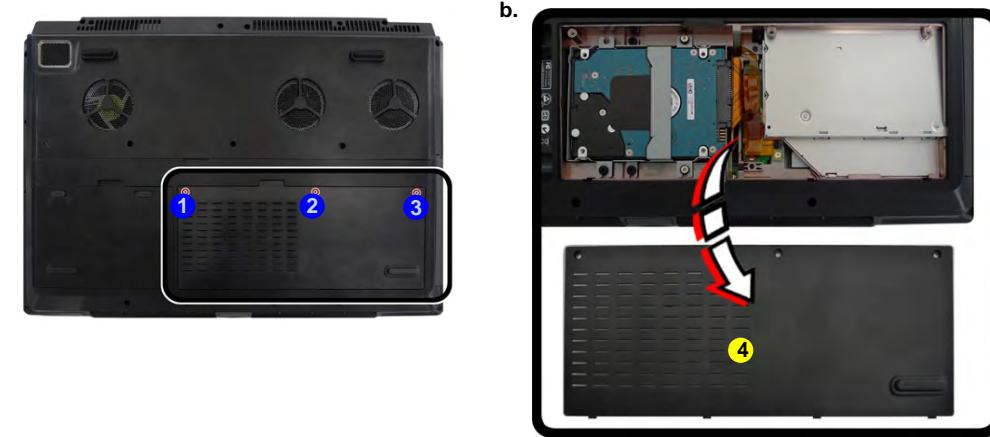
### 2 - 6 Removing the Optical (CD/DVD) Device

**Disassembly****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**.



*Figure 3  
HDD Assembly  
Removal*

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

4. Hard disk Bay Cover
- 3 Screws

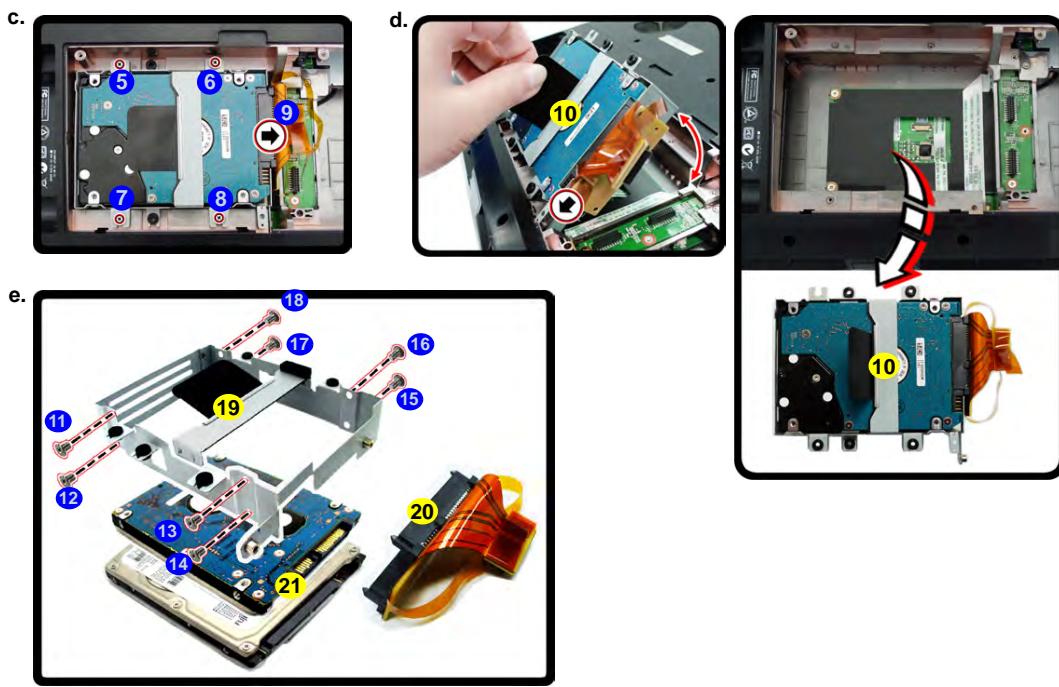
**Removing the Hard Disk Drive 2 - 7**

## Disassembly

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

- c. Remove the screws.
- d. Lift the hard disk assembly up off 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 - 13 (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).



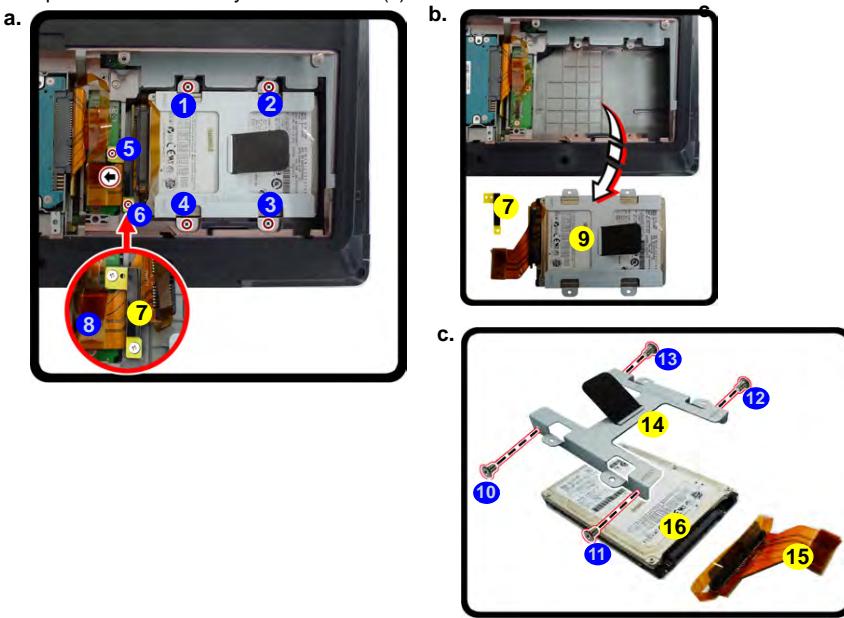
### 2 - 8 Removing the Hard Disk Drive

## Disassembly

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### 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

---

### Removing the Hard Disk Drive 2 - 9

## Disassembly

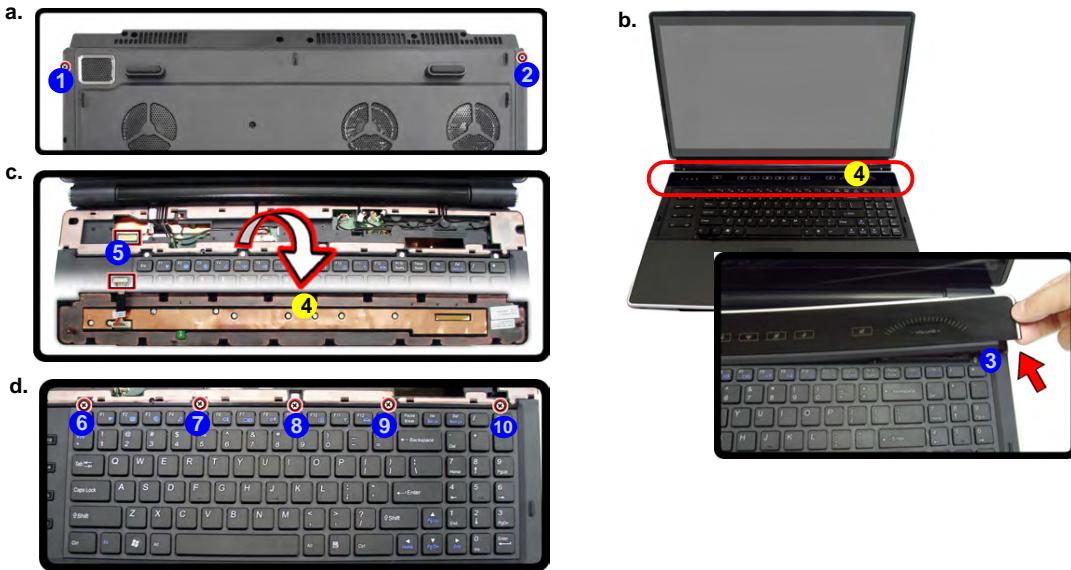
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*Figure 6*  
**Keyboard  
Removal**

- Remove the screws from the bottom of the computer.
- Turn the computer over, open the lid/LCD and unsnap the LED cover at point 3.
- Lift the LED cover module and disconnect the cable.
- Remove the screws from the keyboard.

### Removing the Keyboard

- Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)).
- Remove screws ① & ② from the bottom of the computer.
- 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.
- Lift up the LED cover module ④ and disconnect the cable ⑤.
- Remove screws ⑥ - ⑩ from the keyboard.




---

### 2 - 10 Removing the Keyboard

## Disassembly

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**.



Keyboard Tabs

### 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.

9. Replace keyboard (make sure to reconnect the keyboard cable).
10. Snap the LED cover module down **14** at the top of 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.



**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.

13. Keyboard  
14. LED cover module

## Removing the Keyboard 2 - 11

## Disassembly

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*Figure 8*  
**RAM-1 Module Removal**

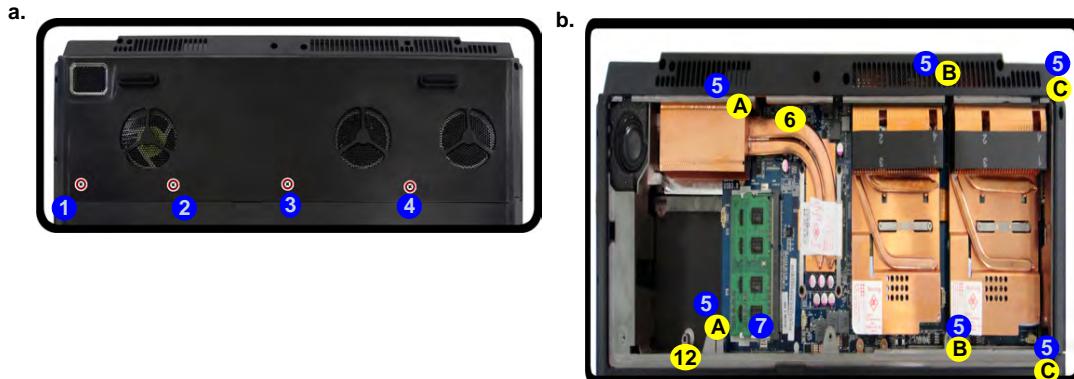
- a. Remove the screws.
- b. Lift the cover and disconnect the fan cable.

### 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)

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



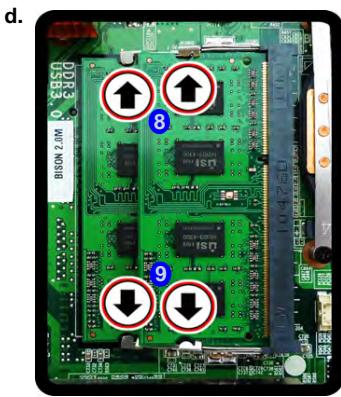
- 6. Component Bay Cover
- 4 Screws

---

### 2 - 12 Removing the System Memory (RAM) -1

**Disassembly**

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.

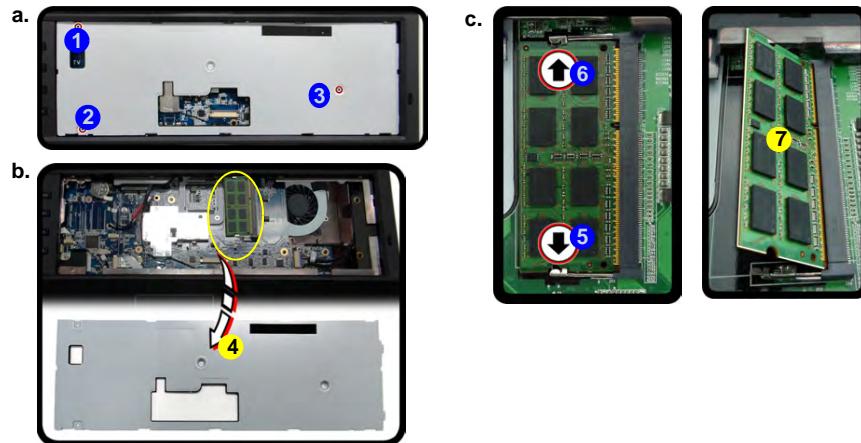
**10. RAM Module****Removing the System Memory (RAM) -1 2 - 13**

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

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

**Removing the System Memory (RAM) - 2****Memory Upgrade Process**

1. Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)) and remove the keyboard ([page 2 - 5](#)).
2. Remove screws **1** - **3** from the keyboard shielding plate.
3. Remove the keyboard shielding plate **4**.
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](#)).
5. The RAM module **7** will pop-up, and you can then remove it.



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

6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. 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.
8. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
9. Replace the shielding plate, keyboard, LED cover module and screws (make sure to reconnect the keyboard cable) -see [Figure 9 on page 2 - 13](#).
10. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

**2 - 14 Removing the System Memory (RAM) - 2**

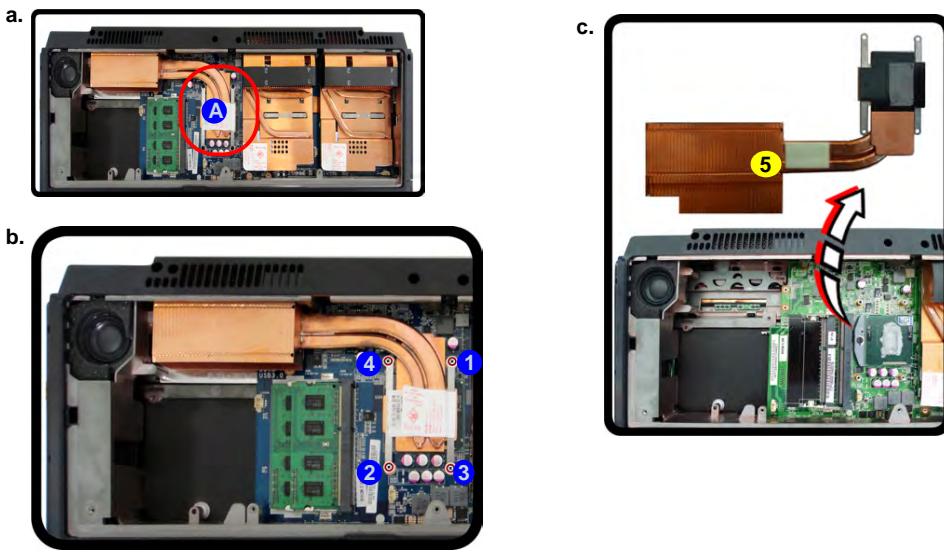
## Disassembly

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### 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

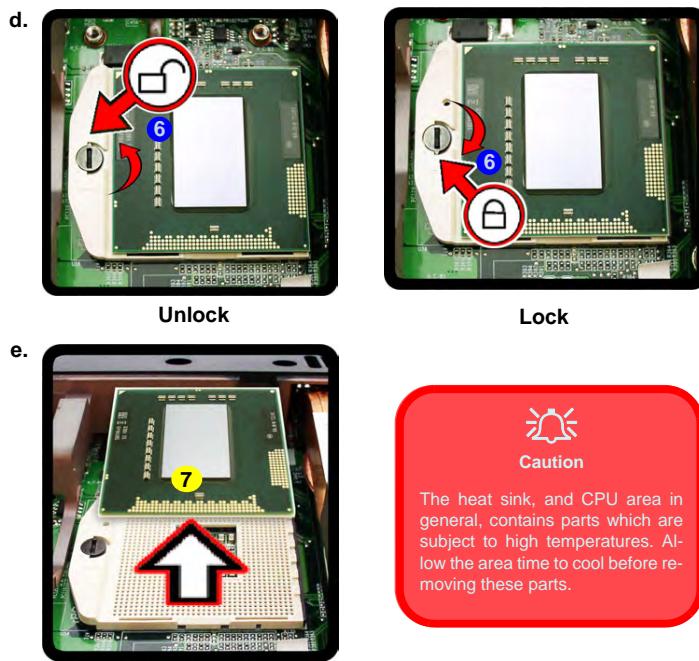
- 4 Screws

## 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!).

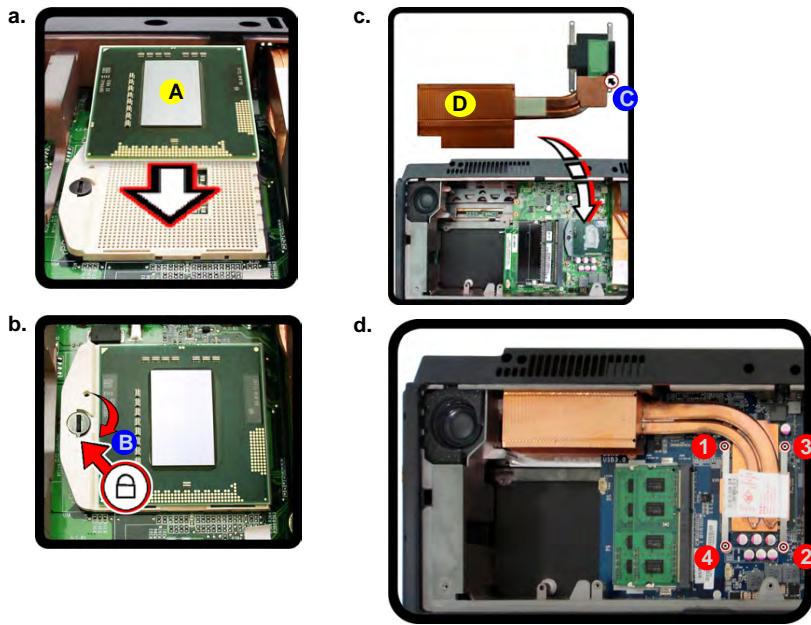


## 2 - 16 Removing and Installing the Processor

## Disassembly

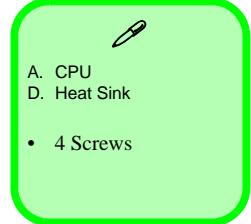
### Processor Installation Procedure

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.



### Removing and Installing the Processor 2 - 17

## Disassembly

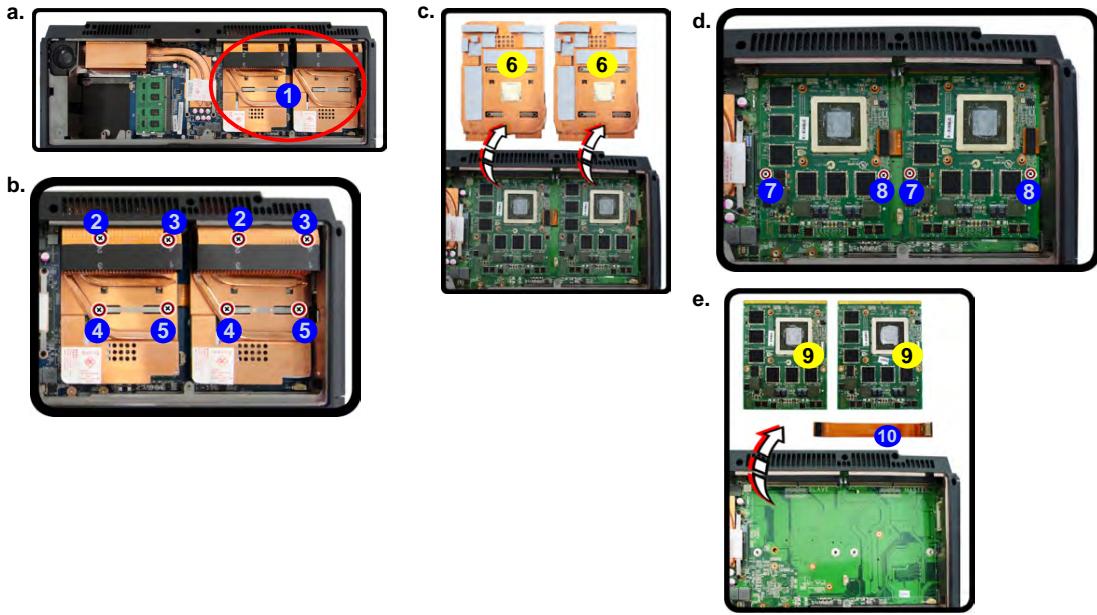
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*Figure 14*  
**VGA Card Removal**

- a. Locate the VGA cards.
- b. Remove the screws.
- c. Remove the heat sink
- d. Remove the screws
- e. Remove the VGA cards.

## Removing the VGA Card

1. Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)) and component bay cover ([page 2 - 5](#)).
2. The VGA card will be visible at point **1** on the mainboard ([Figure 16a](#)).
3. Remove screws **2** - **5** in the order indicated on the label (and on the heat sink unit itself).
4. Remove the heat sink unit **6** (two heat sink units are pictured here).
5. Remove screws **7** & **8** from the video card (two video cards are pictured).
6. Carefully remove the video cards **9**.
7. 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).



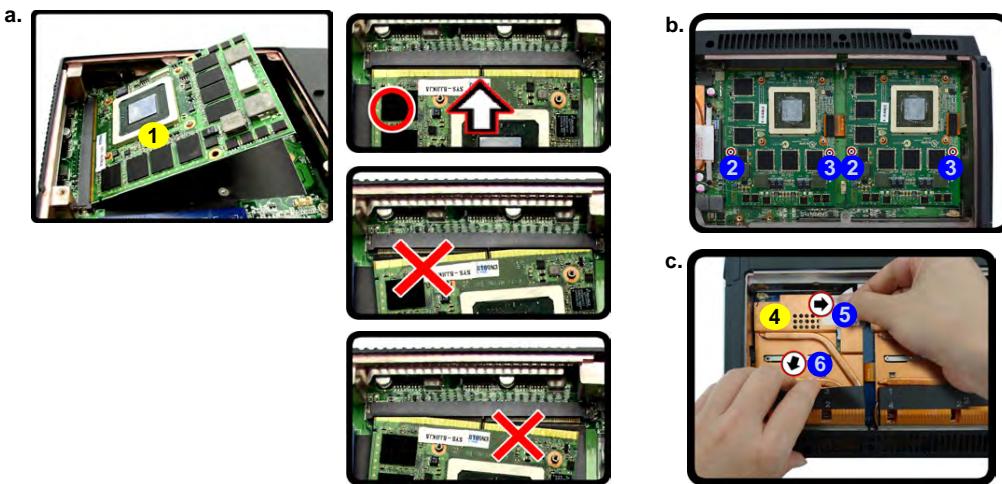

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## 2 - 18 Removing the VGA Card

## Disassembly

### 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.

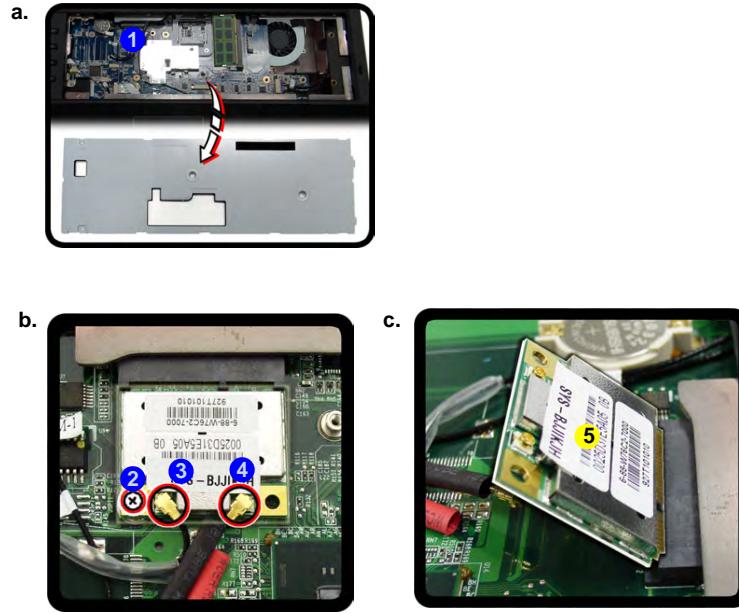
### Removing the VGA Card 2 - 19

## Disassembly

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

- Locate the WLAN module.
- Remove the screw and disconnect the cables.
- Remove the WLAN module.

Note: Make sure you reconnect the antenna cables.




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### 2 - 20 Removing the Wireless LAN Module

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 Lists****Part List Illustration Location**

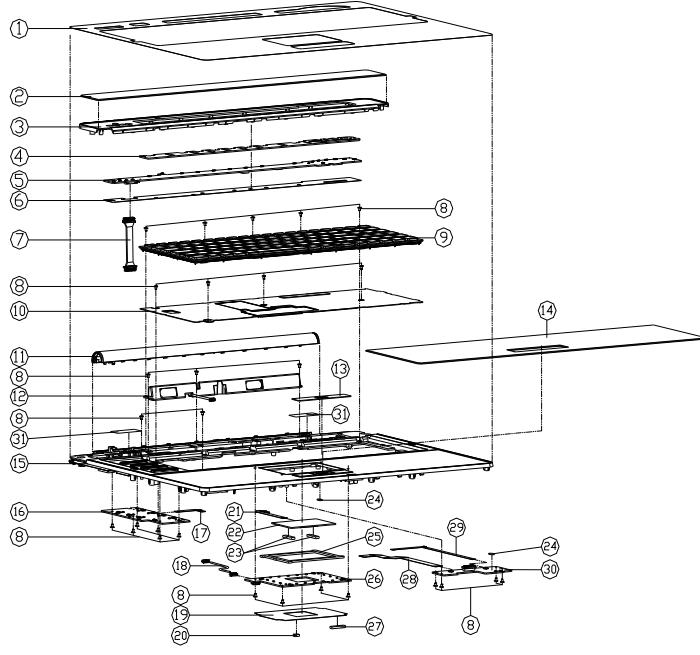
The following table indicates where to find the appropriate part list illustration.

*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>

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**A - 2 Part List Illustration Location**

**Part Lists****Top with Fingerprint**

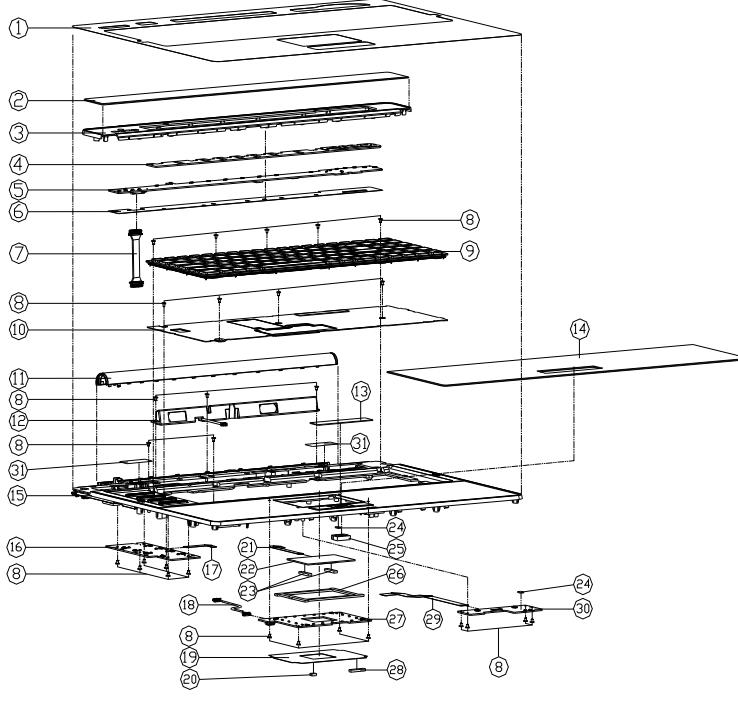
ITEM	PART	NAME	PART	ND	REMARK
1	TOP CASE PROJECT MULAR PCB WIRING	6-40-M9802-023			
2	PRIMA FIX CENTER COVER PCBW	6-42-P1B02-010			
3	CENTER COVER MODULE WIRINGU	6-42-M9802-203			
4	LIGHT GUIDE FOR CENTER COVER PC WIRING	6-42-M9802-092			
5	TOUCH SENSOR BOARD V2.0 PCBW	6-77-P1B01-002			
6	MULAR CUI BOARD FOR CENTER COVER WIRING	6-40-M9802-030			
7	YKE CABLE FOR WIRE TO TOUCH SENSOR 2P WIRING	6-43-M9803-012			
8	OPEN NEST X1 X1 Y1 Y1 0B4451E1641	6-35-B1120-3R2			
9	KIN LUTRA TIG GO WIRE WIRING	6-79-P9800K-001			
10	KER SHIELDING MODULE SEC PCBW	6-33-P1B02-101			
11	INVERTER COVER MODULE PCBW	6-33-P1B02-200			
12	SPRAYER + ADHESIVE MODULE PCB WIRING	6-47-X8102-001			
13	YKE CABLE FOR CENTER COVER WIRING	6-42-M9802-071			
14	PRIMA FIX PLATE REST WIRINGU	6-42-M9802-263			
15	TOP CASE MODULE WIRINGU	6-39-M9802-014			
16	GAME KEY BOARD V2.0 PCBW	6-77-P1B01T-002			
17	YKE CABLE SP FOR WIRE TO GAME KEY BOARD WIRING	6-43-M9800-011			
18	YKE CABLE FOR WIRE TO TOUCH PAD PCB WIRING	6-43-M9802-023			
19	TOUCH PAD LED BOARD MULAR PCB WIRING	6-40-P1B02-011			
20	RUBBER FOR TOP CASE 75X64X1 MM K800	6-47-X8102-030			
21	YKE CABLE SP FOR WIRE TO TOUCH PAD PCB WIRING	6-43-M9802-011			
22	TOUCH PAD IN 00398-003 V840T	6-49-V8412-020			
23	TOUCH PAD SPRUE (B950-04245 WIRING)	6-47-M9802-020			
24	RUBBER FOR TOP CASE 86X47 MM K800	6-47-X8102-010			
25	YKE CABLE FOR TOP CASE PCB WIRING	6-77-P1B02-002			
26	LINE ADHESIVE FOR TOP CASE PCB WIRING	6-77-P1B02-002			
27	RUBBER FOR TOP CASE 25X54X1 MM K800	6-47-X8102-020			
28	YKE CABLE SP FOR WIRE TO LINE ADHESIVE WIRING	6-43-M9800-041			
29	YKE CABLE FOR WIRE TO INTEGRATED WIRE V1 WIRING	6-43-M980F-011			
30	LINE ADHESIVE FOR INTEGRATED WIRE V1 WIRING	6-77-P1B04-162A			
31	TOP CASE MULAR PCB 25X74X5 PCBW	6-40-P1B02-030			

Figure A - 1  
Top with  
Fingerprint

**Top with Fingerprint A - 3**

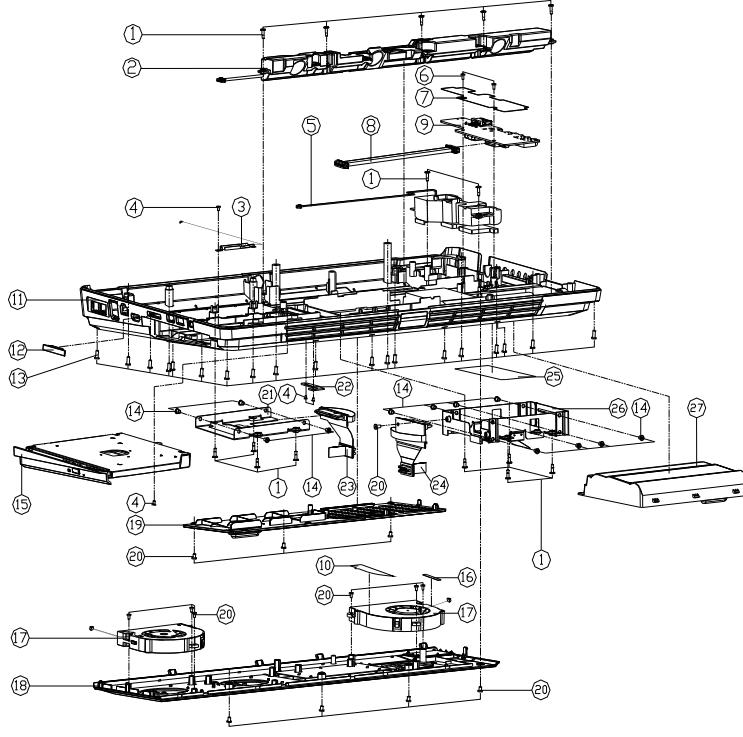
**Part Lists****Top without Fingerprint**

*Figure A - 2  
Top without  
Fingerprint*



ITEM	PART NAME	PART NO	REMARK
1	TOP CASE PROJECT MYLAR PET M980M	6-40-M9802-021	
2	PMMA FOR CENTER COVER P180M	6-42-P1802-010	
3	CENTER COVER MODULE M980M	6-42-M9802-203	
4	LIGHT GUIDE FOR CENTER COVER PC M980M	6-42-M9802-092	
5	TOUCH SENSOR BOARD V2.0 P180M	6-77-P1801-002	
6	MYLAR FOIL FOR CENTER COVER M980M	6-40-M9802-030	
7	WIRE CABLE FOR W/O TO TOUCH-BOARD P180M	6-43-M9803-012	
8	SIDE V. NCKL X1 M12 IEC NY (08-0453-014)	6-35-B1120-3RE	
9	AV GNDN FRAME AND MYLAR M980M	6-79-M980MOK-010	
10	KD SHIELDING MODULE SECCE P180M	6-33-P1802-101	
11	INVERTER COVER MODULE P180M	6-33-P1802-200	
12	SPAKER L+R-REAR MODULE SW 4.1 P180M	6-23-SP180-011	
13	PMMA FOR GP KNCR W/O FINGER M980M	6-42-M9802-081	
14	PMMA FOR PLAN REST M980M	6-42-M9802-061	
15	TOP CASE MODULE M980M	6-39-M9802-014	
16	GAM KEY BOARD V2.0 P180M	6-77-P1807-D02	
17	ITC CABLE FOR W/O TO GAM-KEY BOARD V2	6-43-M9800-011	
18	WIRE CABLE FOR W/O TO TOUCH-BOARD P180M	6-43-M9802-021	
19	TOUCH PAD LED BOARD MYLAR P180M	6-40-P1802-011	
20	RUBBER FOR TOP CASE 75x45x1 MM 180M	6-47-XB102-030	
21	ITC CABLE FOR W/O TO TOUCH PAD BOARD V2	6-43-M9802-011	
22	TOUCH PAD TM-00398-003 W840T	6-49-W8412-020	
23	TOUCH PAD SPRING (0802) 24X35 M980M	6-47-M9802-020	
24	RUBBER FOR TOP CASE 8x4x2 MM 180M	6-47-XB102-010	
25	RUBBER FOR GP KNCR M980M	6-47-M9802-050	
26	LIGHT GUIDE FOR TOUCH PAD PC M980M	6-42-M9802-061	
27	WIRE CABLE FOR GP LED BOARD V2 P180M	6-77-P180C-002	
28	RUBBER FOR TOP CASE 25x54x5 MM 180M	6-47-XB102-020	
29	ITC CABLE FOR W/O TO CLICK BOARD V2	6-43-M9800-041	
30	CLICK BOARD (V/D) FP V2.0 P180M	6-77-P1802-002-1	
31	TOP CASE MYLAR TR80 25x74x5 P180M	6-40-P1802-030	

**A - 4 Top without Fingerprint**

**Part Lists****Bottom**

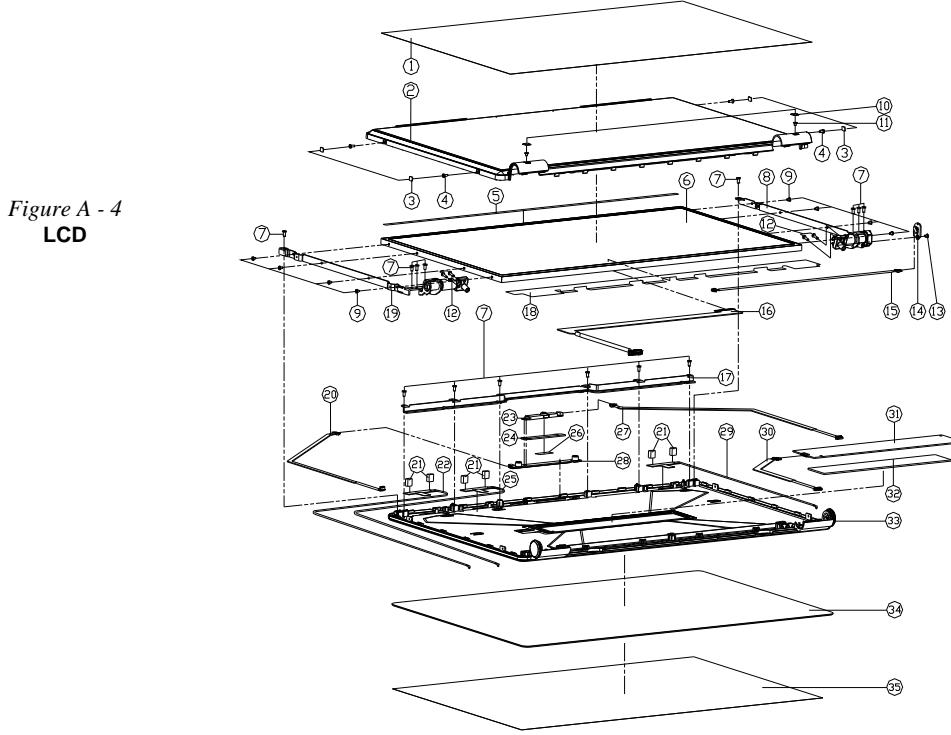
ITEM	PART	NAME	PART NO	REMARK
1	SCREW M2x7L	11-21 L45 S25 K N ICI	6-35-81120-750	
2	SPACER	44 MMODLE P180H	6-23-5P180-022	
3	SCREW	4.0MM X 10MM	6-23-7N745-030	
4	SCREW	M2X7L KI ICI NY 0.08-0.5JH-04	6-35-81120-03E	
5	SPAKER SUB WIRE MODULE	4.0P P180H	6-23-5P180-030	
6	SCREW	M2.5x8L KI BK/Z ICI NY	6-35-86125-5R0	
7	AUDIO BOARD	MYLA P180H M980H	6-40-M980S-020	
8	VIDE CARD	WIFI 16GB RAM 8GB VR P180H	6-43-P1800-011	
9	AUDIO BOARD	V3.0A P180H	6-77-P1800-03A	
10	CPU FAN	W/W FINE 50.72PMSL25 P180H	6-40-P180S-040	
11	BOTTOM CASE	MODULE P180H	6-39-P1803-012	
12	ON BOARD RAM	16GB 2666Mhz DDR4 P180H	6-47-M980E-011	
13	SCREW	M2.5x8L KI BK/Z ICI NY	6-35-86125-5R0	
14	SCREW	M2x2.5L KI NI ICI NY	6-35-B1130-2R5	
15	SATA DVD	SUPER MULTI 16X ASST P180H	6-79-P180H-000-000	OPTION
15	SATA BLU-RAY	COMBO 6X ASSY P180H	6-79-P180H-000-000	OPTION
16	TAPE	MYLA (CD) M580J	6-40-M9532-030	
17	SCREW	4.0MM X 10MM	6-23-AW15H-010	
18	CPU COVER	MODULE P180H	6-42-P180S-102	
19	P180H	HDD COVER MODULE	6-42-P180J-101	
20	SCREW	M2.5x8L KI BK/Z ICI NY	6-35-86125-5R0	
21	HDD 3.5 BKT	MODULE P180H	6-33-P180J-100	
22	SUPPORTER	MODULE FOR 3.5 HDD P180H	6-40-P1803-101	ONLY FOR 3.5 HDD P180H
23	TPC CARD	SPIN W/ 16GB RAM S1000 H/D P180H	6-43-P180J-012	
24	TPC CARD	SPIN W/ 16GB RAM S1000 H/D P180H	6-43-P180J-023	
25	PRODUCT LABEL	FOR P180H	6-45-P180-003-010	
26	2INI	HDD BKT MODULE M980H	6-33-M980J-100	
27	WIRE	WIRE	6-87-P180S-4271	

Figure A - 3  
**Bottom**

**Bottom A - 5**

## Part Lists

LCD

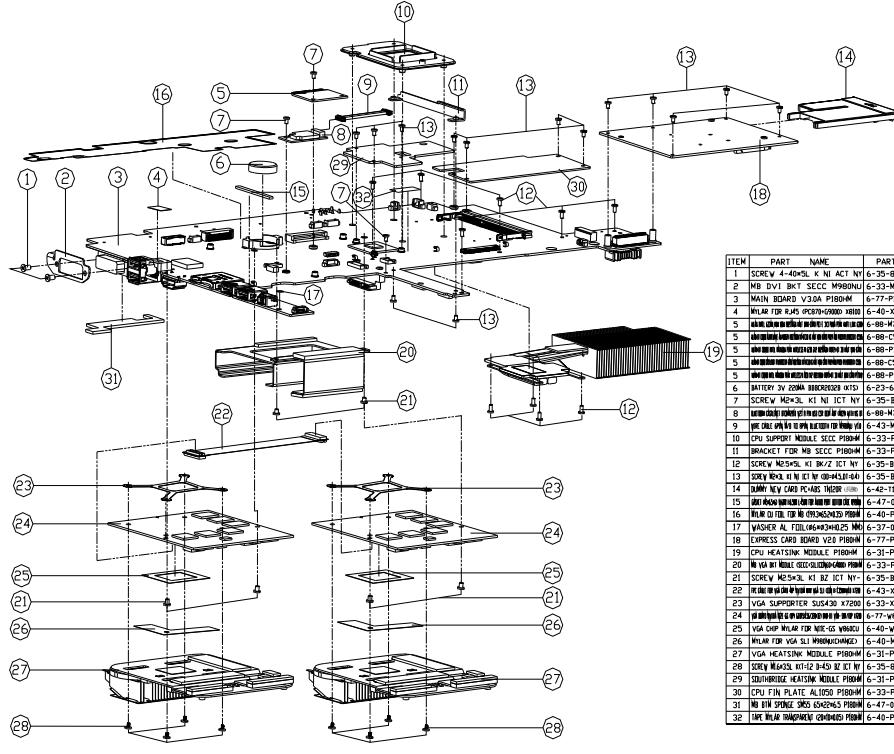


ITEM	PART	NAME	PART	ND	REMARK
1	LCD FRONT COVER PROTEC	KI YU KI WING	6-49-M901-010		
2	LCD FRONT COVER MODULE	XBLB 6-9	3-XB10-011		
3	LCD SCREW	MLYL MRBONU	6-49-M901-021		
4	SCREW	M4X51	KI NCT	6-35-B120-580	
5	MYLAR	MS45X65Z1BLK	BLACK	6-40-00151-Z65	
6	LED FOR THE ONE LINE	LE1	BLK	6-50-P9262-060	
7	SCREW	M2.5X10	KI KTC	6-35-B1625-584	
8	LED	LE1	BLK	6-50-P9262-060	
9	SCREW	M2.5X10	KI NC	6-35-B120-204	
10	WING	BARBER SILICONE	40 MMH	5-47-M901-028	
11	SCREW	M2.5X10	KI F	6-35-B120-380	
12	SCREW	M2.5X8	KI BLK	6-35-B120-380	
13	SCREW	M2.5X10	KI NC	6-35-B120-380	
14	PWR BUTTON BOARD	2.0	PWBH	6-77-P1809-D02	
15	WING	TAI TO	BLK	6-43-M901-020	
16	WING	TAI TO	BLK	6-43-M901-020	
17	LCD BRACKET TOP SEC	WSB90N	6-33-M901-011		
18	WING	WING	WING	6-40-00151-Z67	
19	LCD HINGE	LGEC+SOSC	XBLB	6-33-XB10-020	
20	WING	TAI TO	BLK	6-43-M904-011	
21	ANTENNA	SP45-100	PCB	6-33-Y901-080	
22	ANTENNA	SP45-100	PCB	6-33-Y901-080	
23	SCREW	M2.5X10	KI NC	6-35-B120-380	
24	CCD PROJ.	X1010	6-40-X010-010		
25	WING	TAI TO	BLK	6-33-XB10-020	
26	CCD	AI	F1010	6-40-X010-010	
27	WIRE	CABLE	FOR XBLB	6-43-M901-021	
28	WIRE	CABLE	FOR XBLB	6-43-M901-021	
29	WING	TAI TO	BLK	6-33-XB10-020	
30	WING	TAI TO	BLK	6-43-M901-020	
31	LOGO LED BOARD	2.0	PWBH	6-77-P1803-D02	
32	LIGHT GUIDE	FOR LCD	DLVY	6-42-M901-080	
33	LCD BACK COVER MODULE	DLVY	WING	59-M901-024	
34	LCD PROJ. FOR THE ONE LINE	DLVY	WING	6-42-M901-032	
35	LCD PROJECT W/LAMP	DLVY	WING	6-40-M901-040	

A - 6 LCD

## Part Lists

### Mainboard



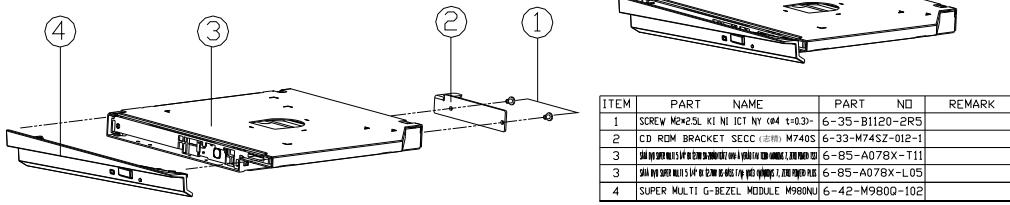
ITEM	PART NAME	PART NO	REMARK
1	SCREW 4-40#SL K NI ACT NY	6-35-81304-580	
2	MB DVI BKRT SEC C M980NU	6-33-M9805-02	
3	MAIN BOARD V3.0A P1804M	6-77-P1800-D03A	
4	WHEEL FOR R45 XPSN-0980H	6-40-XB105-040	
5	SCREW M4X10L KI BZ ICH NY	6-88-477C2-4220	(OPTION)
6	SCREW M4X10L KI BZ ICH NY	6-88-475F2-700	(OPTION)
7	SCREW M4X10L KI BZ ICH NY	6-88-471E2-200	(OPTION)
8	SCREW M4X10L KI BZ ICH NY	6-88-471E2-230	(OPTION)
9	SCREW M4X10L KI BZ ICH NY	6-88-471E2-240	(OPTION)
10	BATTERY JV 20MA 88P8228 010	6-23-G4282-030	(OPTION)
11	SCREW M6X3L KI NI ICT NY	6-35-81120-380	
12	SCREW M6X3L KI NI ICT NY	6-35-81120-380	
13	SCREW M6X3L KI NI ICT NY	6-35-81120-380	
14	SCREW M6X3L KI NI ICT NY	6-35-81120-380	
15	SCREW M6X3L KI NI ICT NY	6-47-01900-451	
16	SCREW M6X3L KI NI ICT NY	6-40-P1805-031	
17	WASHER AL FOD164X30X2.5	6-37-02000-682	
18	EXPRESS CARD BOARD V2.0 P180M	6-77-P1809-003	
19	CPU HEATPIPE MODULE P180M	6-31-P180N-102	
20	VID W/ M.2 M226G128GB P180M	6-33-P1805-2000Y (FOR ONE VGA)	
21	SCREW M2.5X3L KI BZ ICH NY	6-35-81620-380	
22	SCREW M2.5X3L KI BZ ICH NY	6-43-X7200-0700Y (FOR TWO VGA)	
23	VGA SUPPORT SLV P180M	6-37-02000-682	
24	VGA CHIP MODULE P180M	6-77-V805-102	(OPTION)
25	VGA CHIP MODULE P180M	6-40-V805-060	(OPTION)
26	WIFAR FK XG151 WIFAR(WK2)	6-40-W800-0110Y (FOR TWO WIFAR)	
27	VGA HEATPIPE MODULE P180M	6-31-P180N-201	
28	SCREW M4X5.5X12.545 M2.5T NY	6-35-82116-395	
29	SOUTHBRIDGE HEATPIPE MODULE P180M	6-31-P180N-301	
30	CPU FIN PLATE AL1050 P180M	6-33-P1803-020	
31	NO BW SPRING SPGS 5242645 P180M	6-47-0019A-453	
32	TAPE W/PLATE FRAGMENT 010405 P180M	6-40-P1803-020	

Figure A - 5  
Mainboard

## Part Lists

### DVD

Figure A - 6  
DVD



A - 8 DVD

## Part Lists

### COMBO

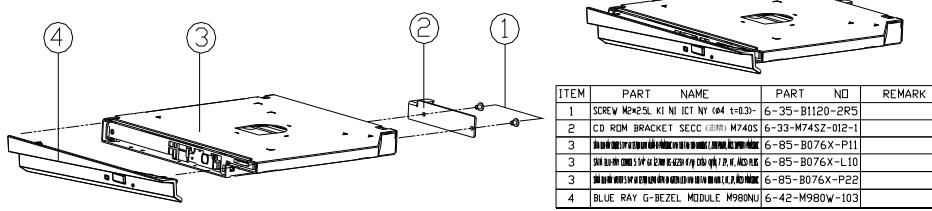


Figure A - 7  
COMBO

ITEM	PART NAME	PART NO	REMARK
1	SCREW M2x25, KI NI ICI NY (44 t=03)	6-35-B1120-2R5	
2	CD ROM BRACKET, SECC (BRM) M740S	6-33-M74S2-012-1	
3	BLUE RAY G-BEZEL MODULE M980W	6-85-B076X-P11	
3	BLUE RAY G-BEZEL MODULE M980W	6-85-B076X-L10	
3	BLUE RAY G-BEZEL MODULE M980W	6-85-B076X-P22	
4	BLUE RAY G-BEZEL MODULE M980W	6-42-M980W-103	

## Part Lists

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## Schematic Diagrams

# 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



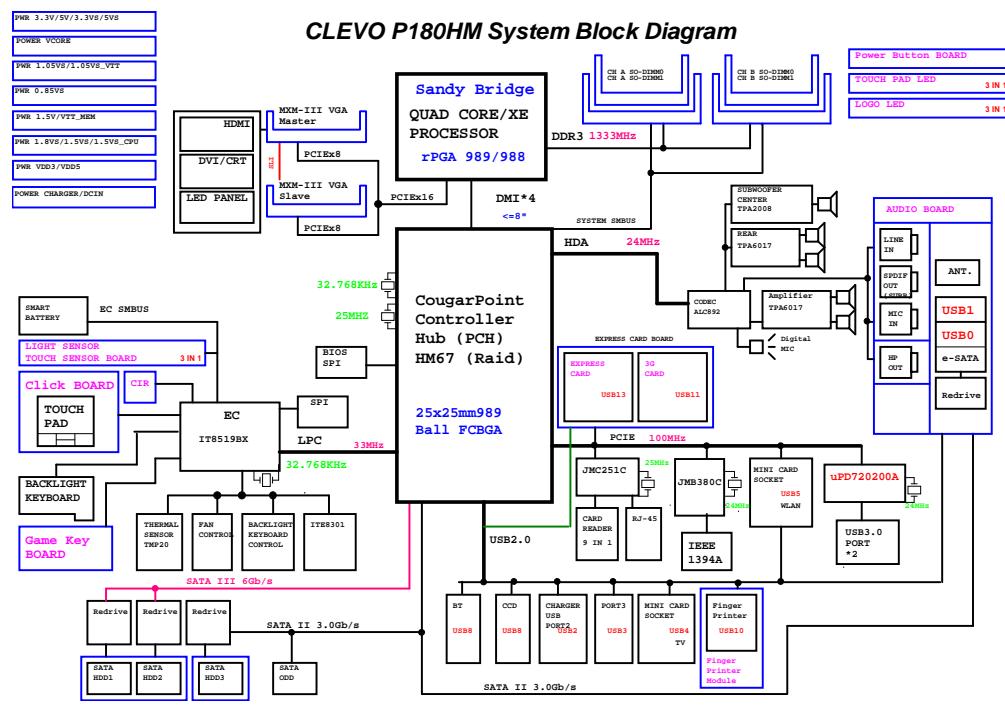
### Version Note

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).

## Schematic Diagrams

### System Block Diagram

Sheet 1 of 56  
System Block  
Diagram

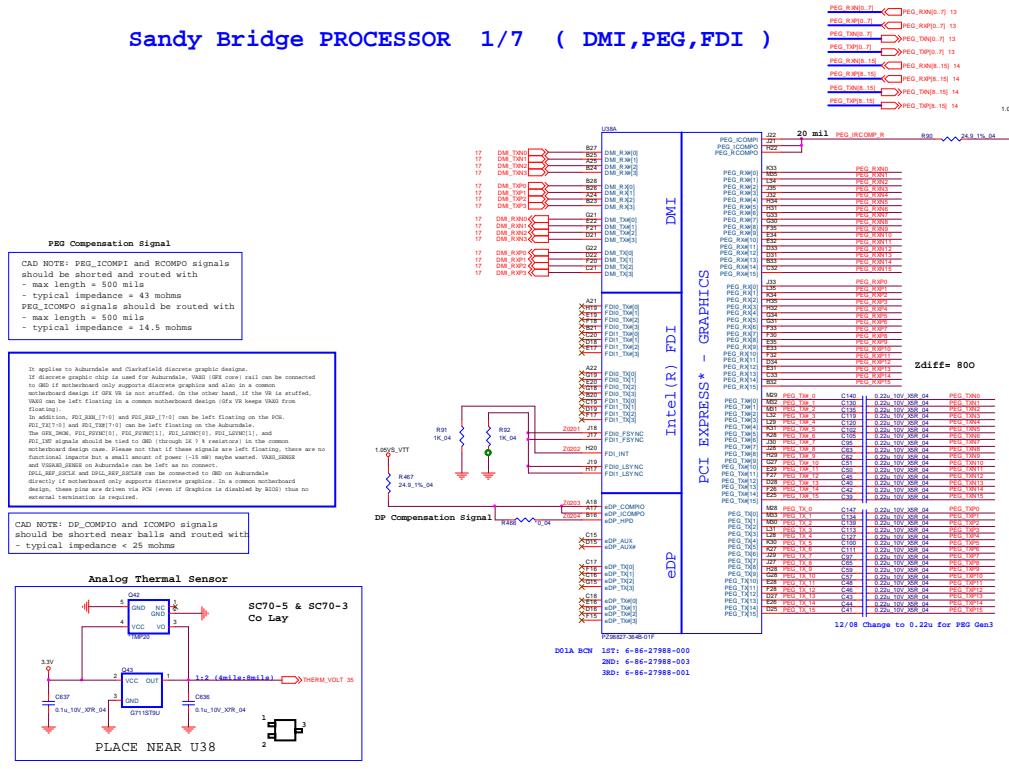


### B - 2 System Block Diagram

## Schematic Diagrams

## **Sandy Bridge 1/7 DMI, PEG**

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

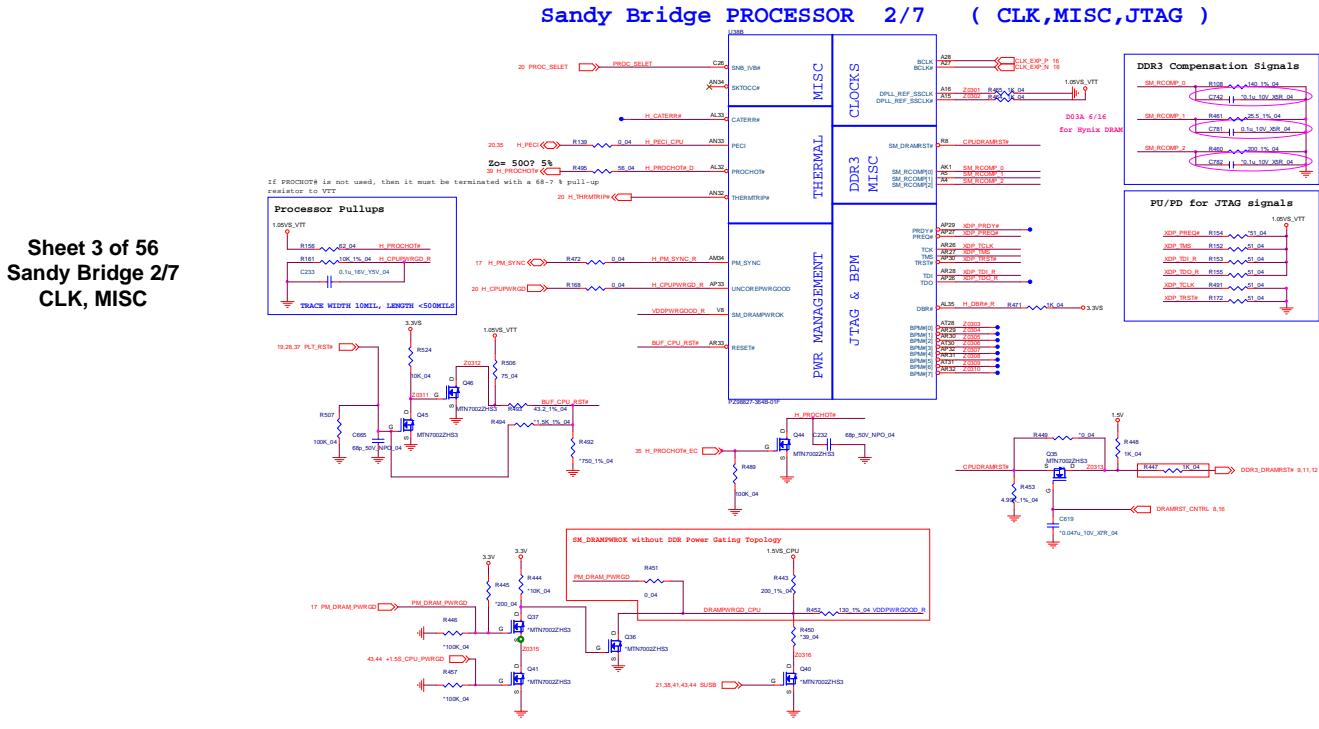


Sheet 2 of 56  
Sandy Bridge 1/7  
DMI, PEG

Sandy Bridge 1/7 DMI, PEG B - 3

## Schematic Diagrams

## Sandy Bridge 2/7 CLK, MISC

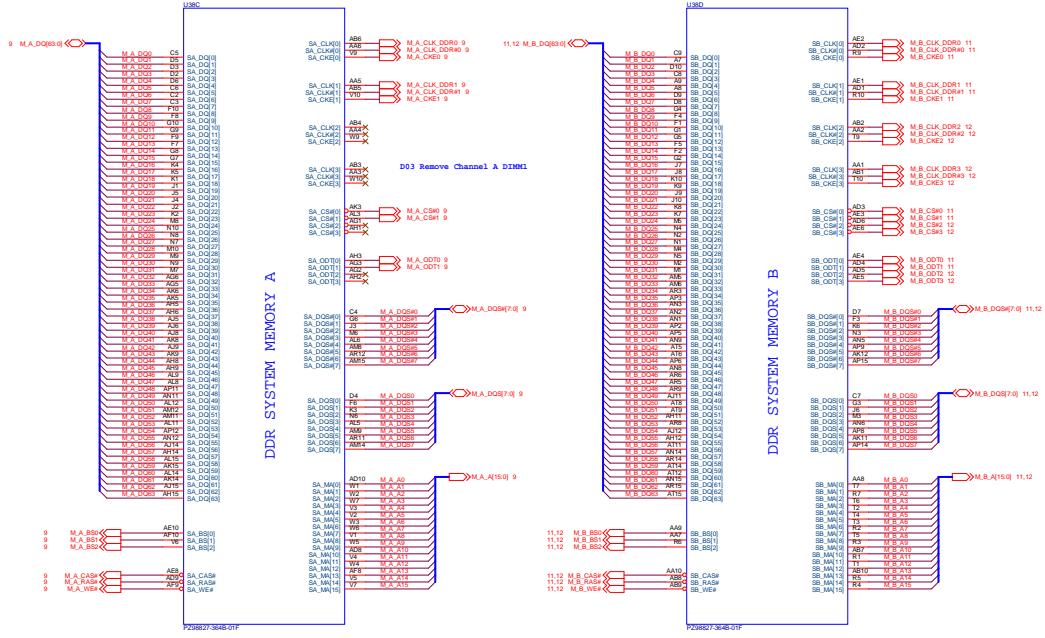


## B - 4 Sandy Bridge 2/7 CLK, MISC

## Schematic Diagrams

# Sandy Bridge 3/7 DDR3I

## Sandy Bridge PROCESSOR 3/7 ( DDR3 )

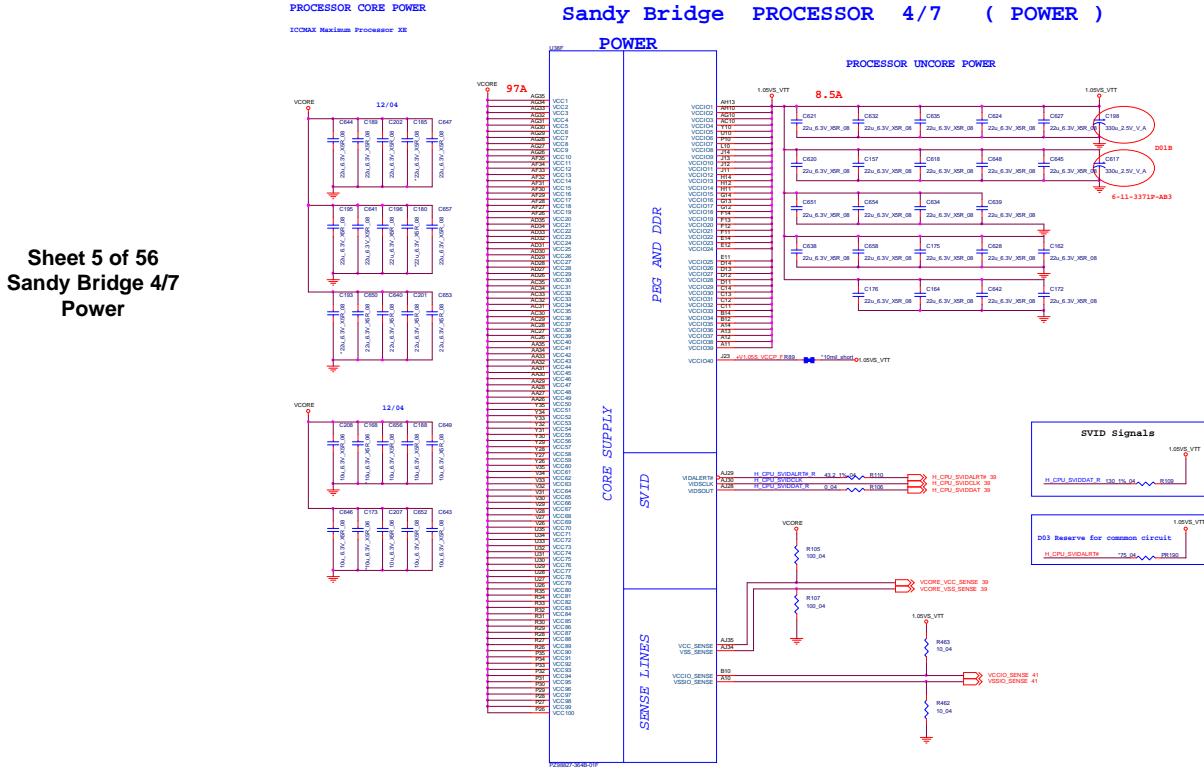


Sheet 4 of 56  
Sandy Bridge 3/7  
DDR3

## **Sandy Bridge 3/7 DDR3I B - 5**

## Schematic Diagrams

## Sandy Bridge 4/7 Power

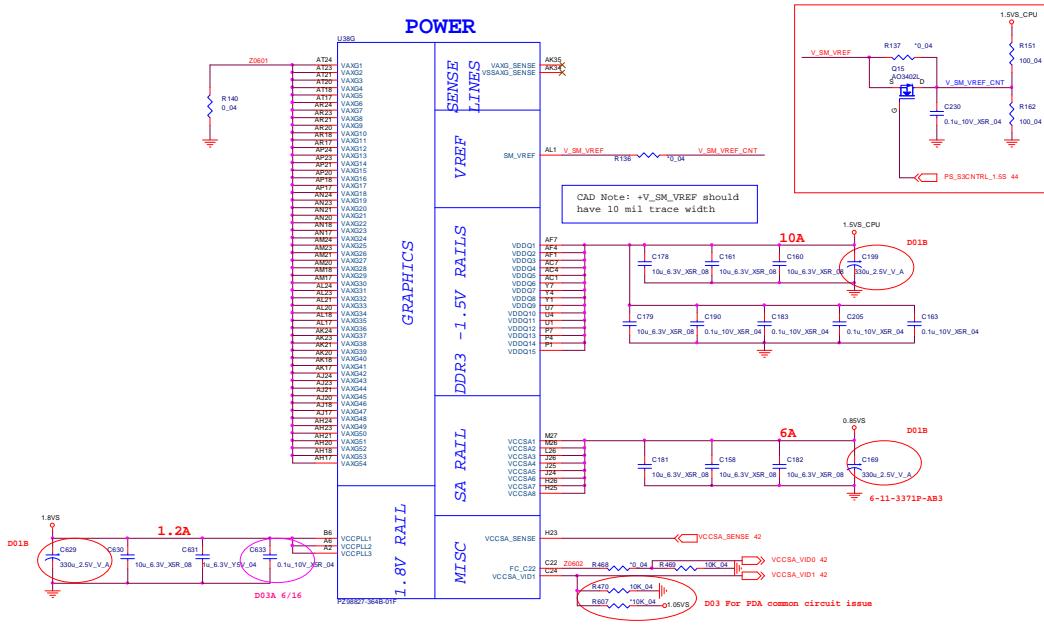


## B - 6 Sandy Bridge 4/7 Power

## Schematic Diagrams

### Sandy Bridge 5/7 GFX PWR

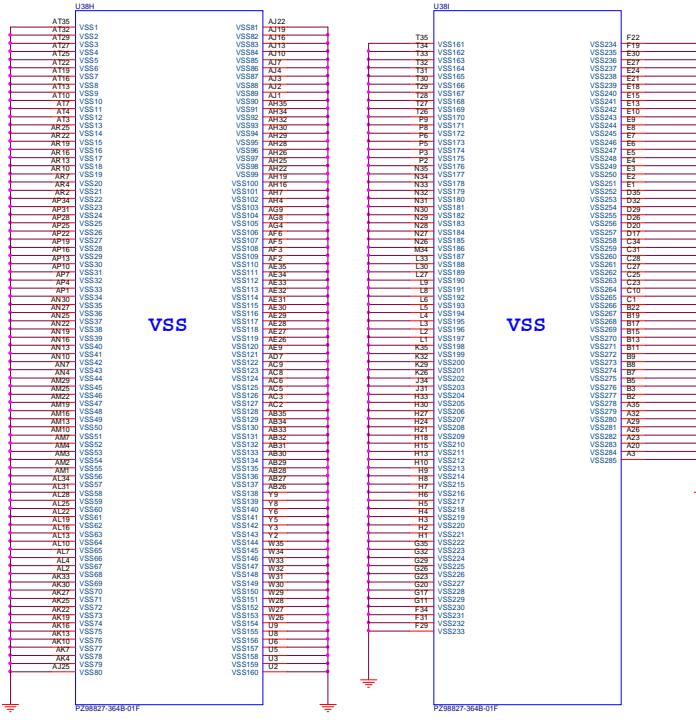
Sandy Bridge PROCESSOR 5/7 ( GRAPHICS POWER )



## Schematic Diagrams

# Sandy Bridge 6/7

Sandy Bridge Processor 6/7 ( GND )

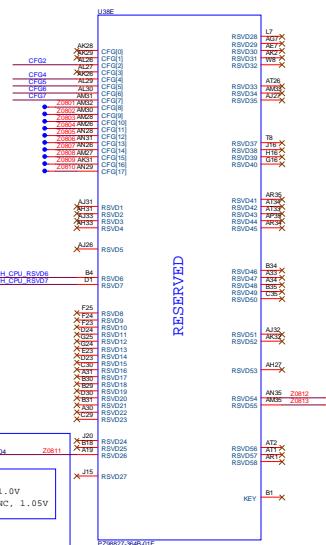
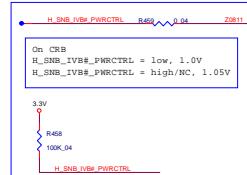
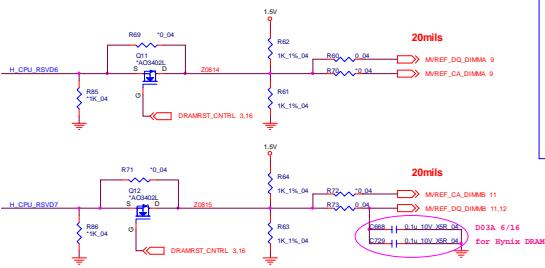
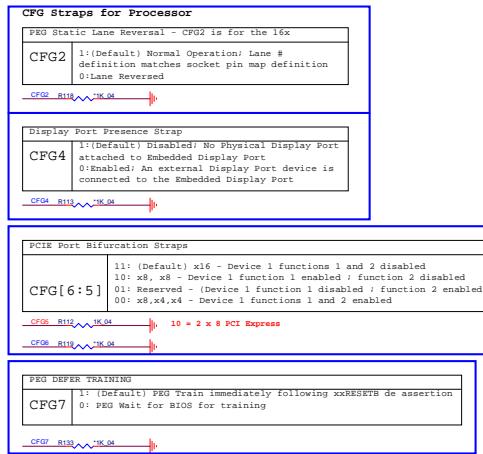


## B - 8 Sandy Bridge 6/7

## Schematic Diagrams

## Sandy Bridge 7/7 RSVD

Sandy Bridge Processor 7/7 ( RESERVED )



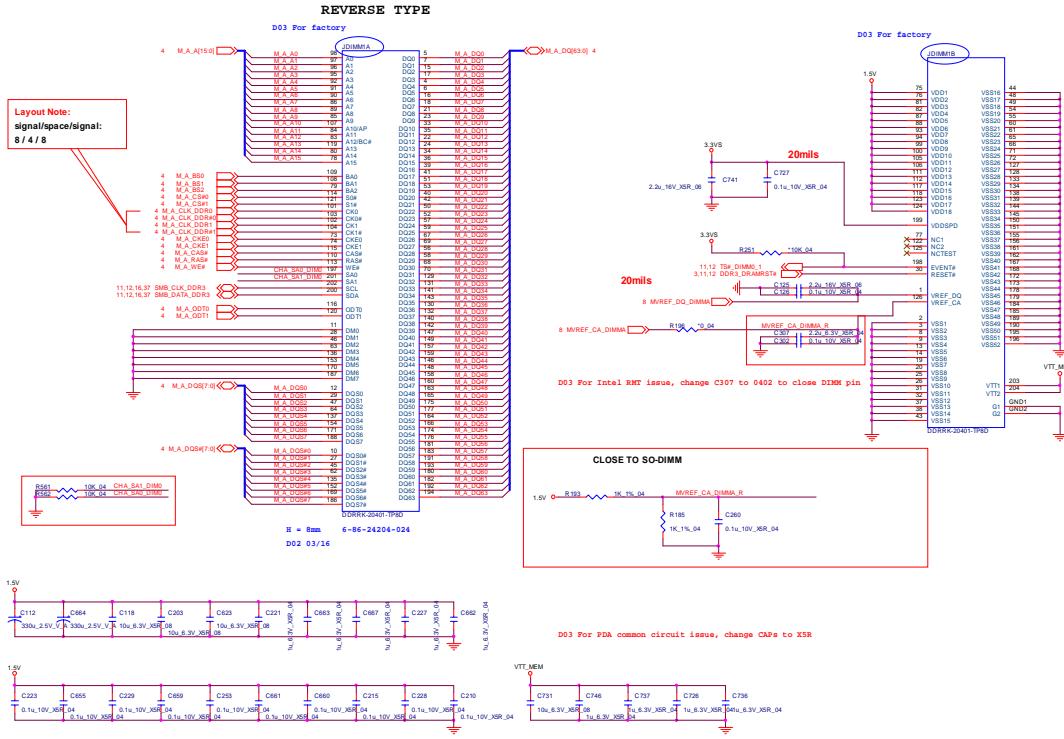
Sheet 8 of 56  
Sandy Bridge 7/7  
RSVD

**Sandy Bridge 7/7 RSVD B - 9**

## Schematic Diagrams

## **DDR3 CHA SO-DIMM 0**

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



## B - 10 DDR3 CHA SO-DIMM 0

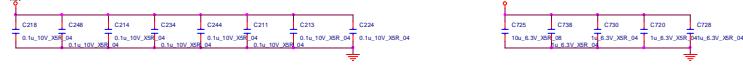
## Schematic Diagrams

### **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**



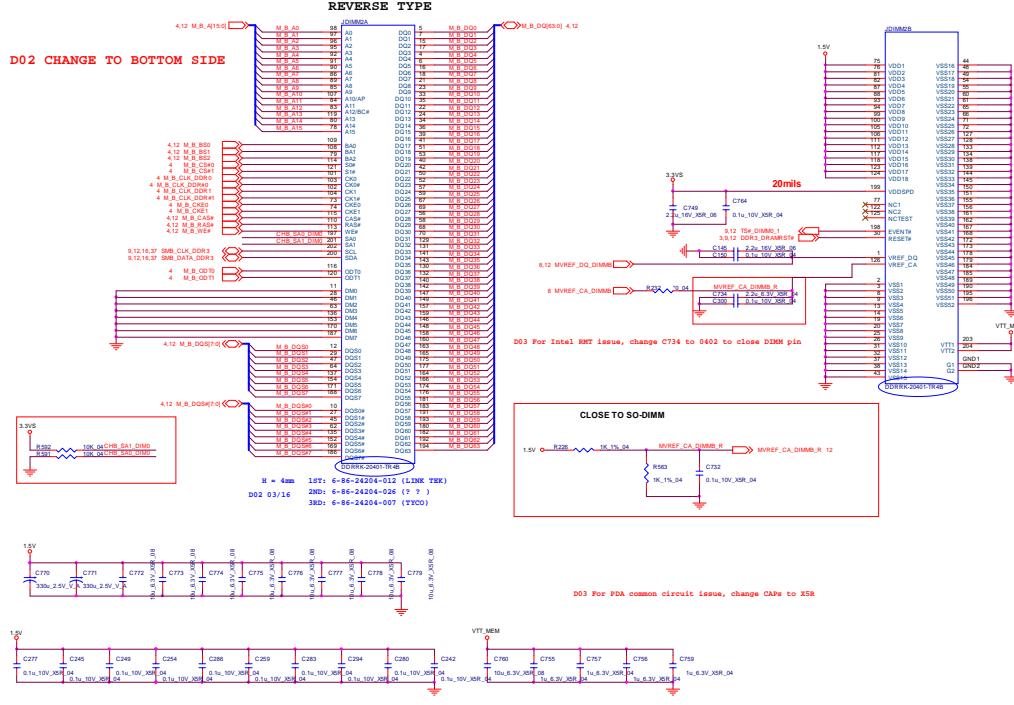
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**DDR3 CHA SO-DIMM 1 B - 11**

## Schematic Diagrams

## **DDR3 CHB SO-DIMM 0**

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

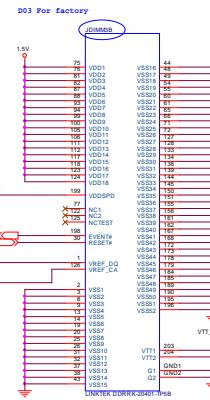
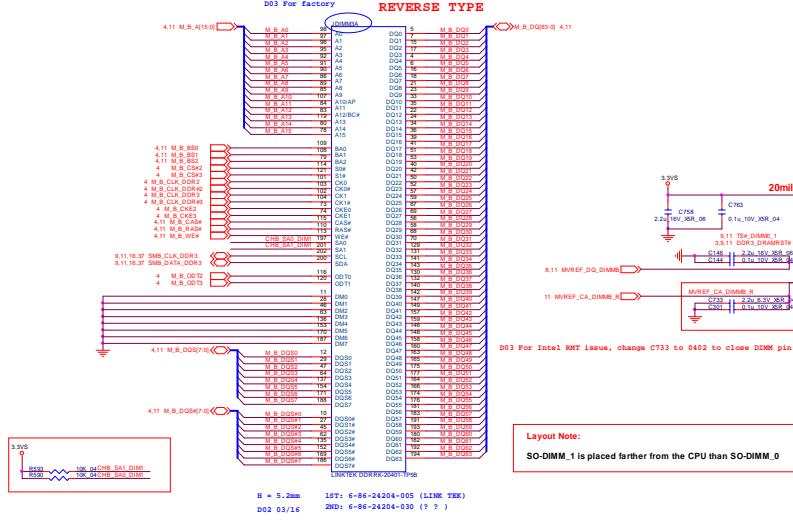


## B - 12 DDR3 CHB SO-DIMM 0

## Schematic Diagrams

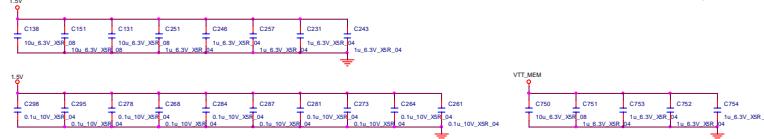
### DDR3 CHB SO-DIMM 1

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



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

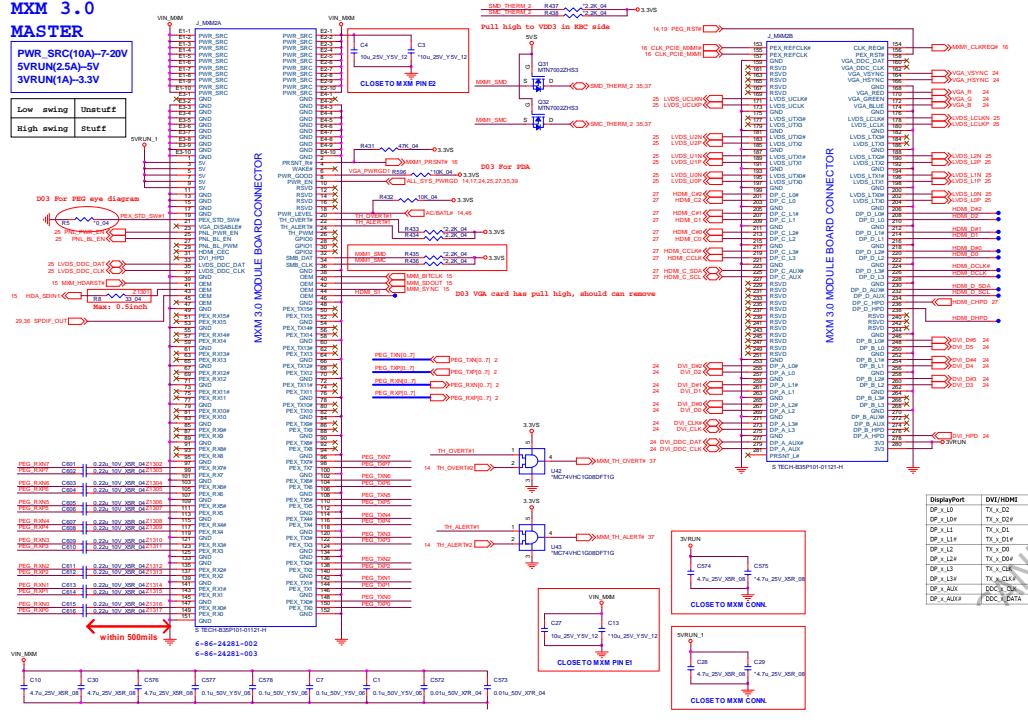
DDR3 CHB SO-DIMM 1 B - 13



## **Schematic Diagrams**

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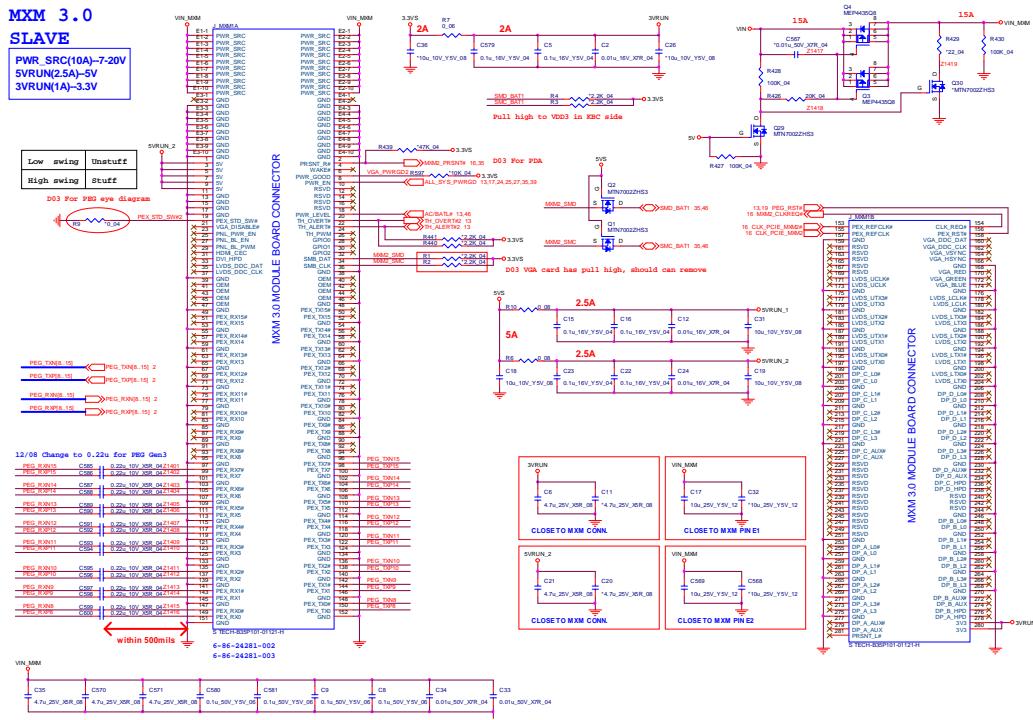
## **MXM 3.0 MASTER**



B - 14 MM 3.0 MASTER

## Schematic Diagrams

# **MXM 3.0 SLAVE**

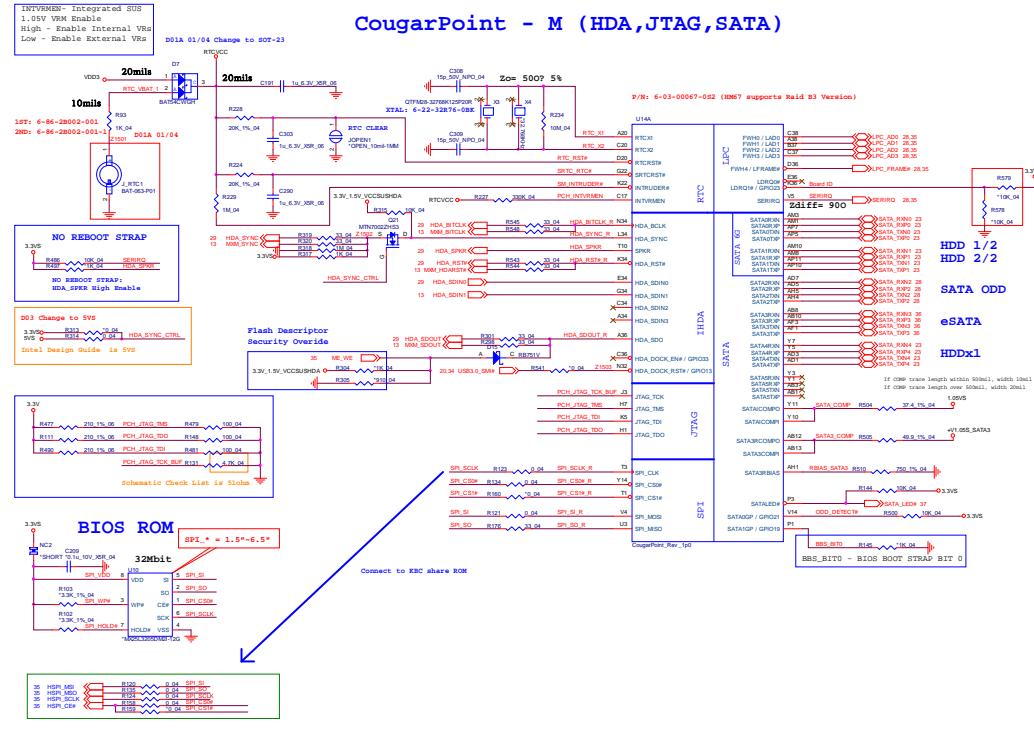


Sheet 14 of 56  
PCH 3/8  
MXM 3.0 SLAVE

**MXM 3.0 SLAVE B - 15**

## Schematic Diagrams

## CPT 1/9 HDA, SATA

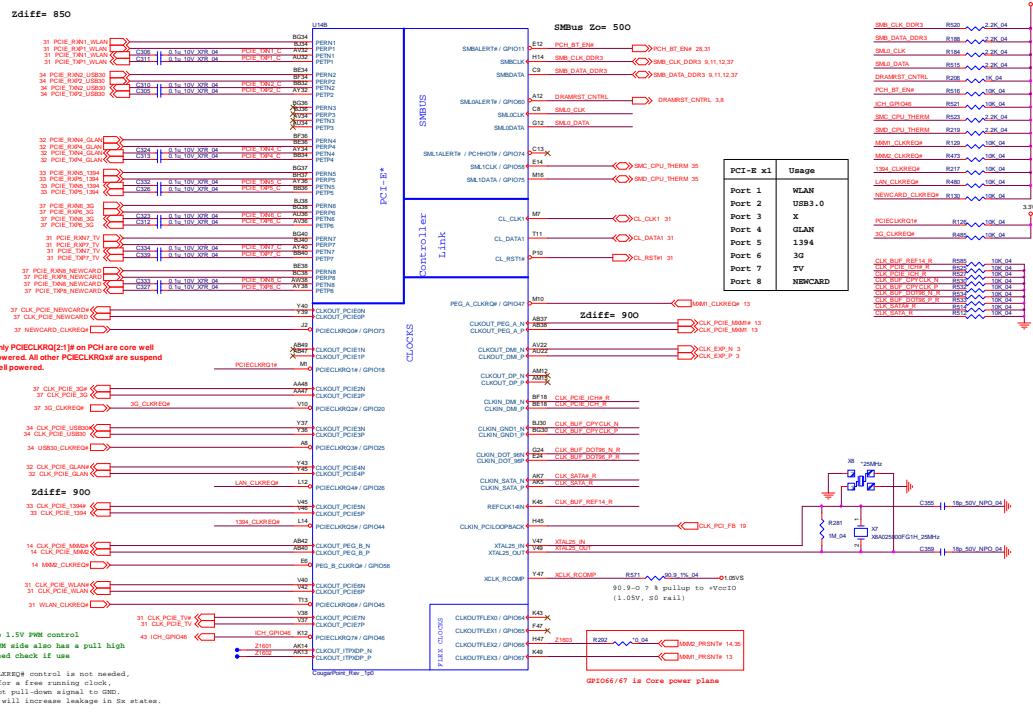


## B - 16 CPI 1/9 HDA, SATA

## Schematic Diagrams

# CPT 2/9 PCIE, SMBUS

## CougarPoint - M (PCI-E,SMBUS,CLK)



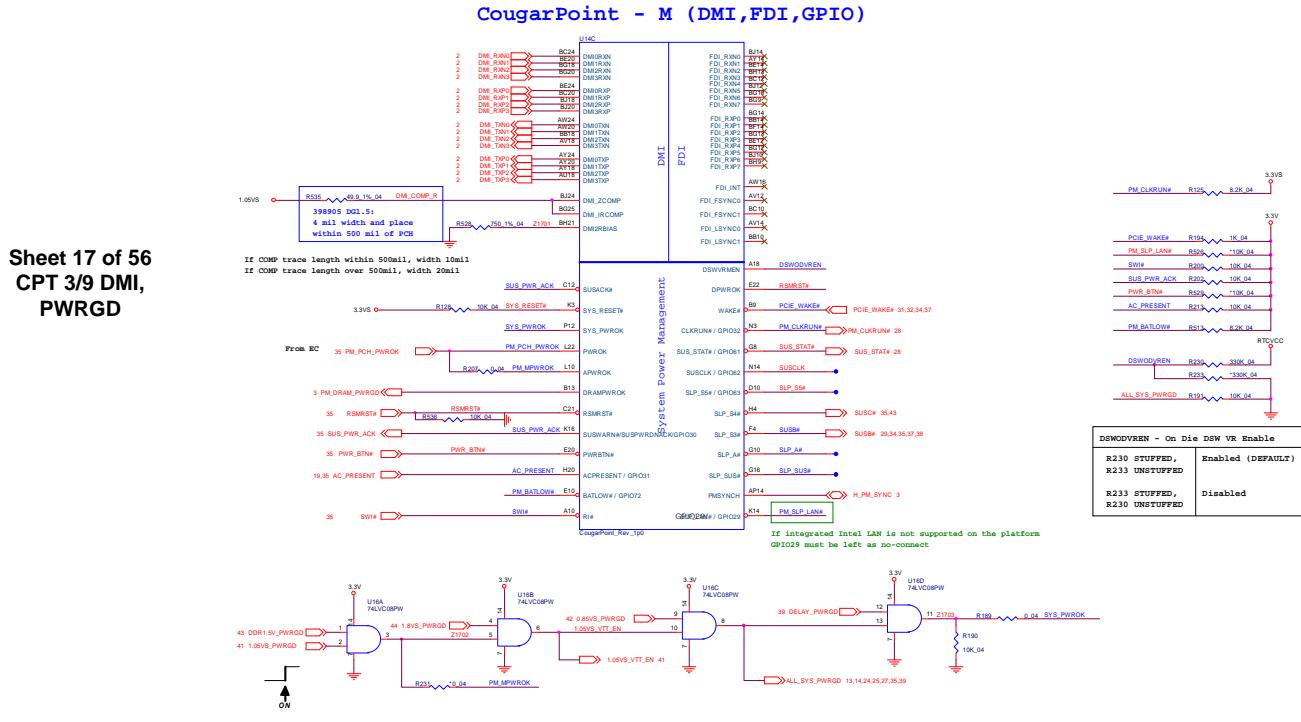
Sheet 16 of 56  
CPT 2/9 PCIE,  
SMBUS

CPT 2/9 PCIE, SMBUS B - 17

## **Schematic Diagrams**

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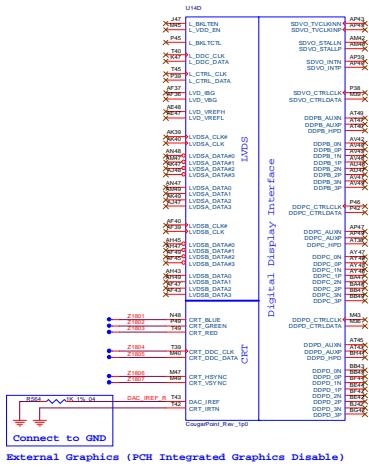
**CPT 3/9 DMI, PWRGD**



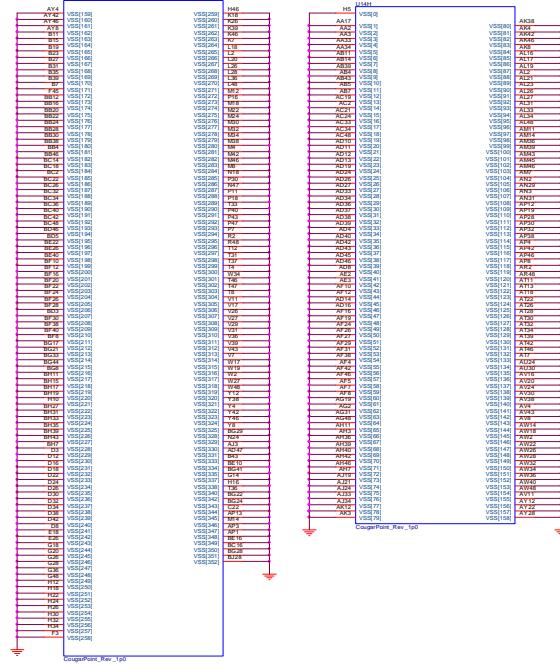
## Schematic Diagrams

## CPT 4/9 LVDS, DDI, 9/9 GND

## CougarPoint - M (LVDS, DDI)



CougarPoint - M (GND)



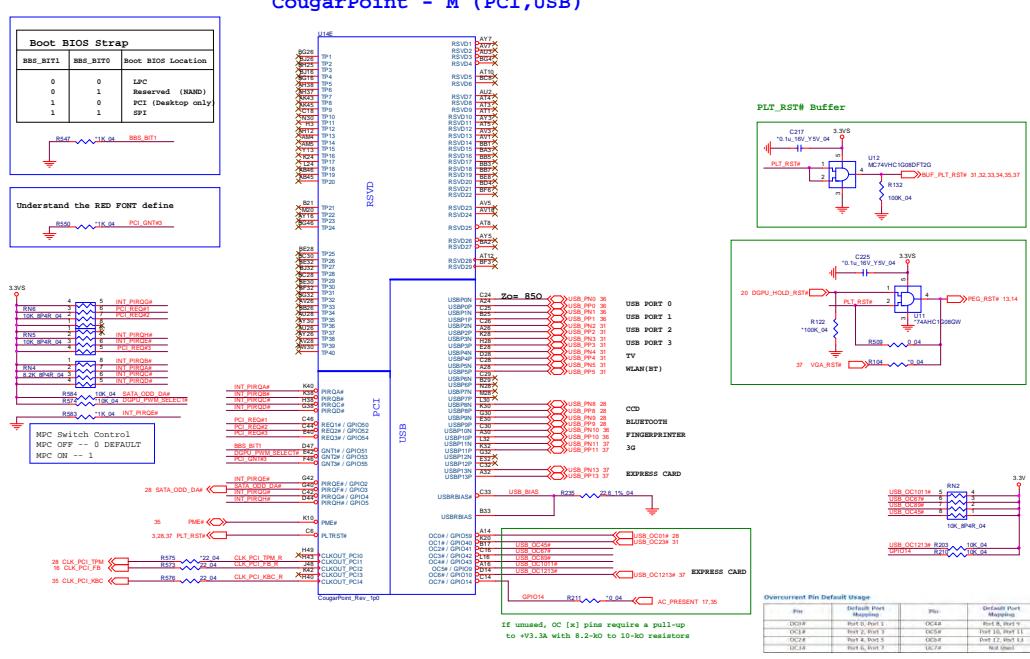
Sheet 18 of 56  
CPT 4/9 LVDS, DDI,  
9/9 GND

CPT 4/9 LVDS, DDI, 9/9 GND B - 19

## Schematic Diagrams

### CPT 5/9 PCI, USB

Sheet 19 of 56  
CPT 5/9 PCI, USB

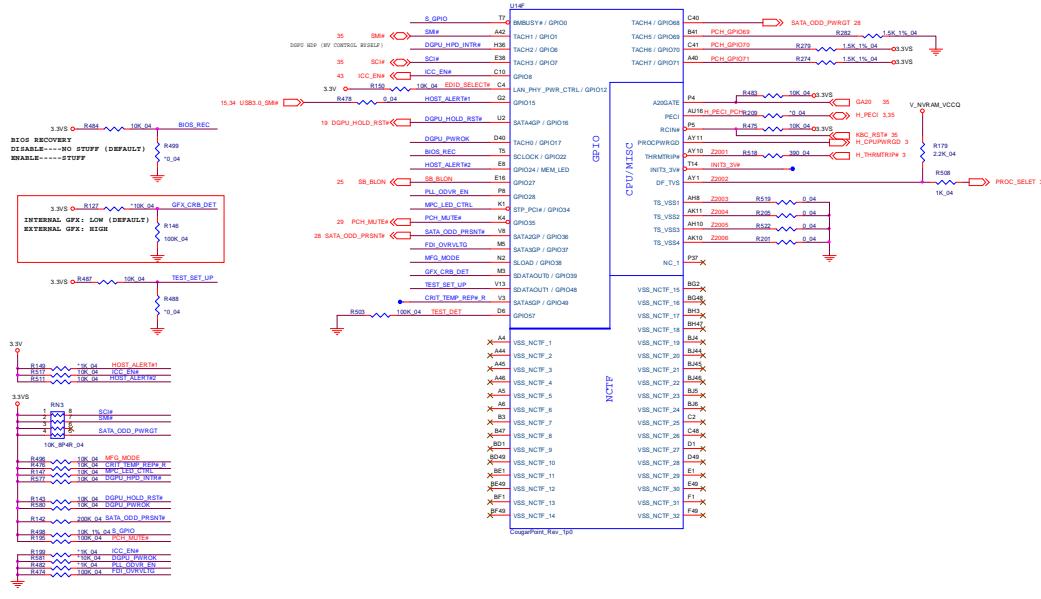


## **Schematic Diagrams**

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## CPT 6/9 GPIO, CPU

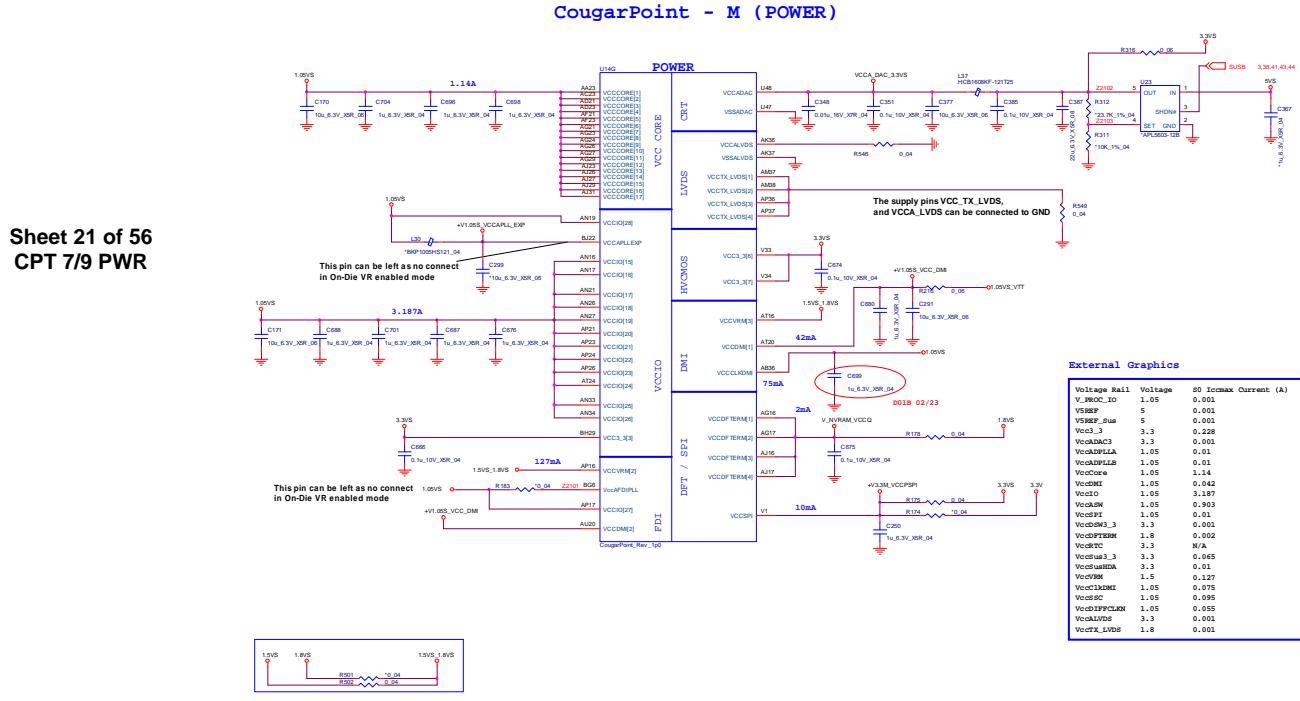
CougarPoint - M (GPIO,VSS\_NCTF,RSVD)



Sheet 20 of 56  
CPT 6/9 GPIO, CPU

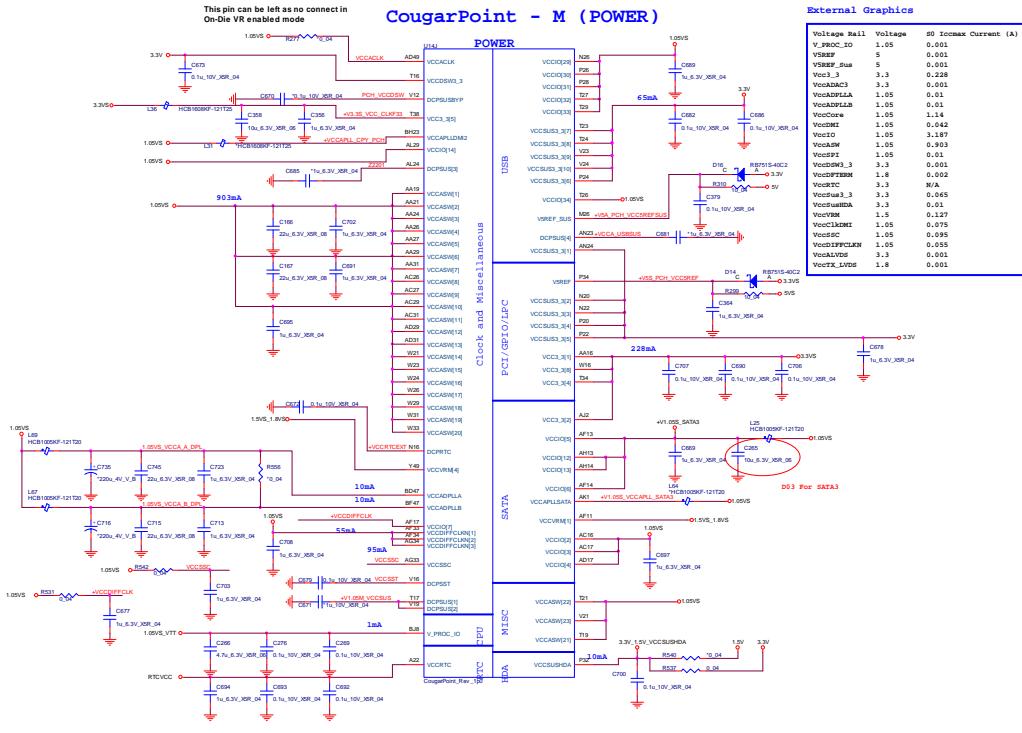
## Schematic Diagrams

CPT 7/9 PWR



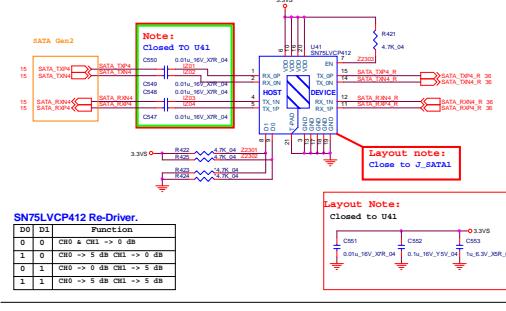
## Schematic Diagrams

### CPT 8/9 PWR

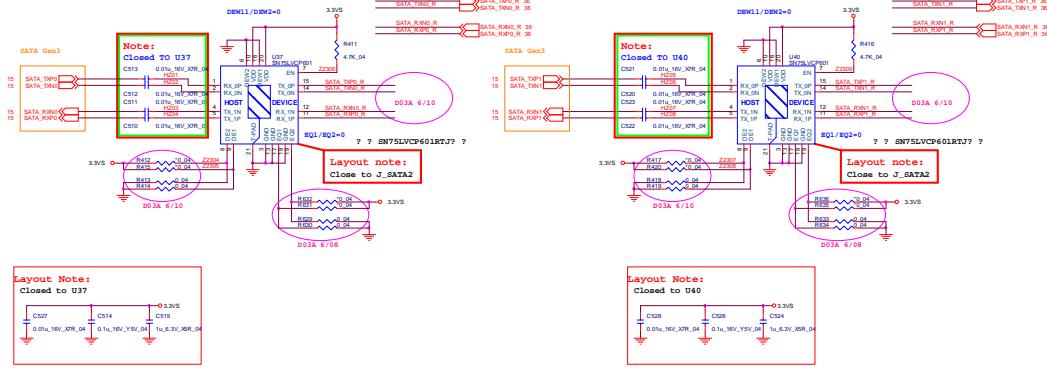


Sheet 22 of 56  
CPT 8/9 PWR

CPT 8/9 PWR B - 23

**Schematic Diagrams****SATA HDD CONN, Re- Driver****SINGAL SATA HDD**

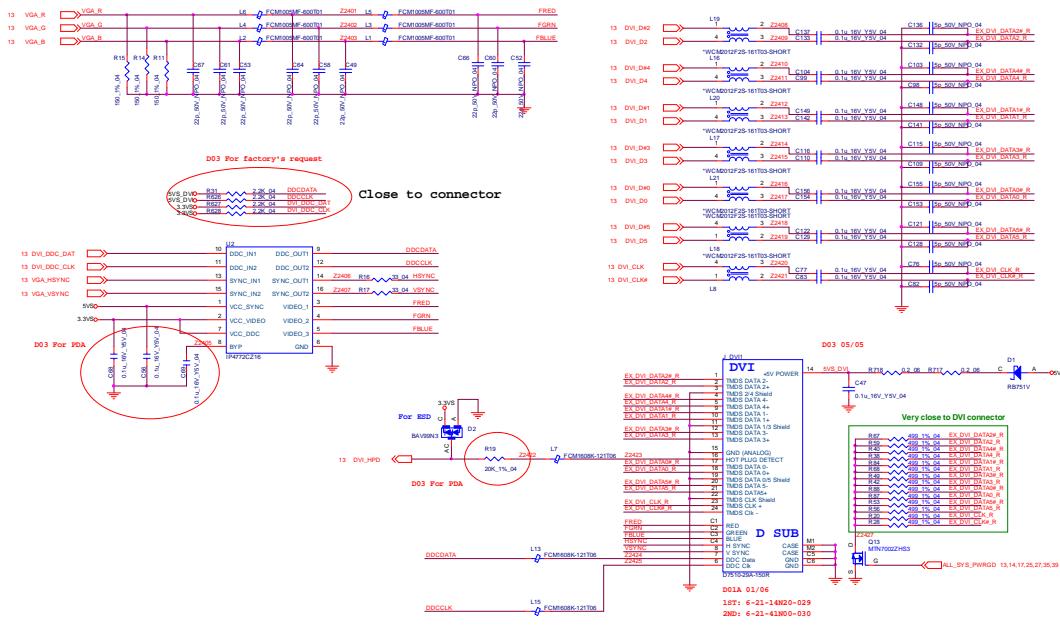
DB1	DB2	Description
NC	NC	-4 dB (default)
0	0	0
1	1	-2
EQ1	EQ2	Equalization dB (at 6Gb/s)
NC	NC	0 (default)
0	0	?
1	1	14
DIMM	DEW	DIM Width
0	0	Short (at SATA 1.5/3/6 Gbps)
1	1	Long (at SATA 1.5/3 Gbps)
EN	DE	Device Function-Standy Mode
0	0	Device in standby mode
1	1	Device enabled

**DUAL SATA HDD**

## Schematic Diagrams

CPT, DVI

## CRT/DVI Connector



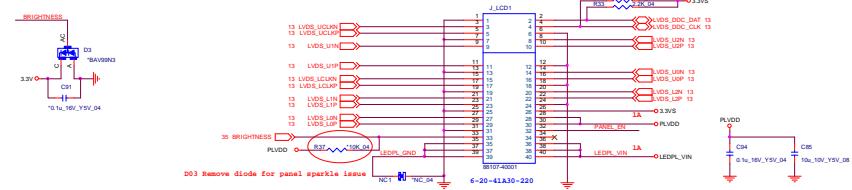
Sheet 24 of 56  
CPT, DVI

CPT, DVI B - 25

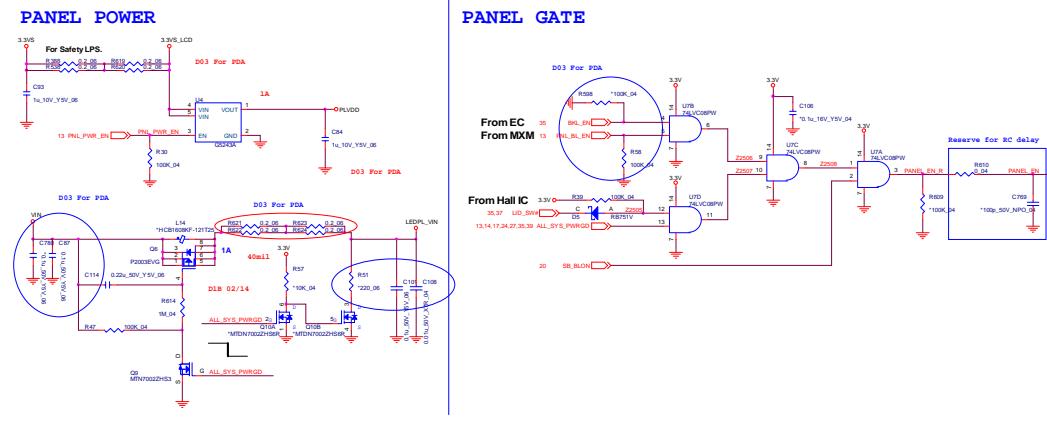
## Schematic Diagrams

### LED PANEL

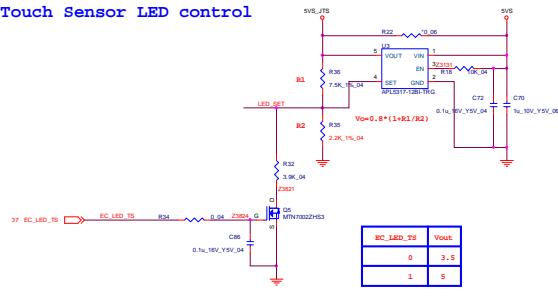
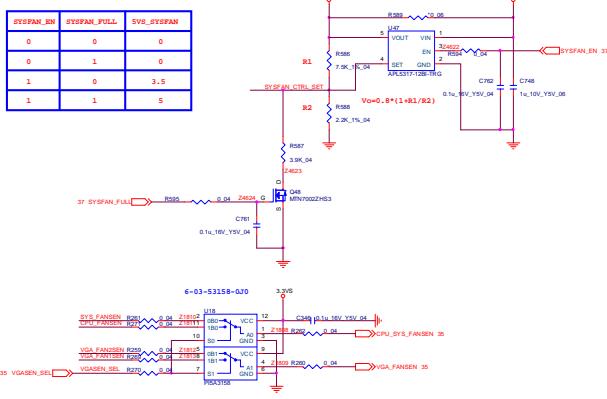
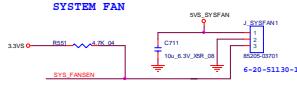
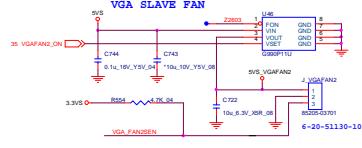
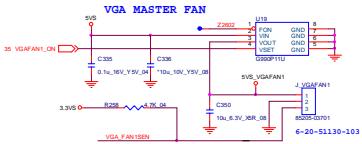
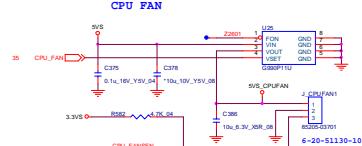
#### 18.4" PANEL



Sheet 25 of 56  
LED PANEL



### B - 26 LED PANEL

**Schematic Diagrams****FAN CONTROL****Touch Sensor LED control****SYSTEM FAN control****FAN CONTROL**

**Sheet 26 of 56**  
**FAN CONTROL**

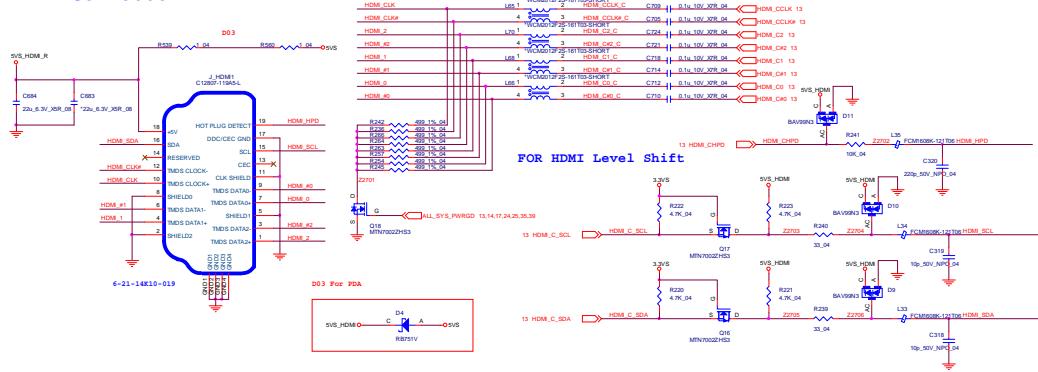
**FAN CONTROL B - 27**

## Schematic Diagrams

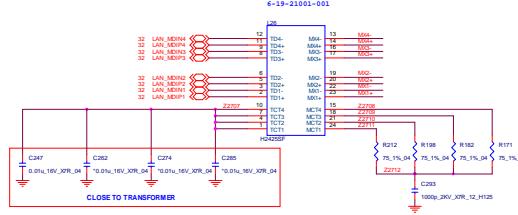
### HDMI, RJ45 CONN

Sheet 27 of 56  
HDMI, RJ45 CONN

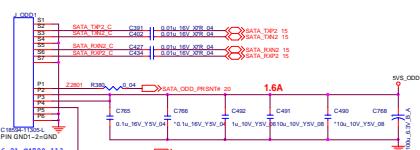
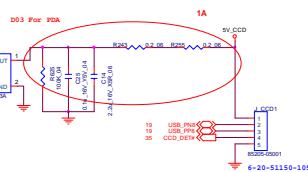
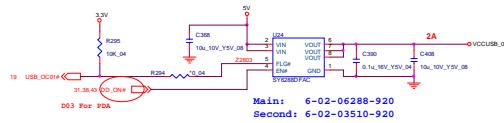
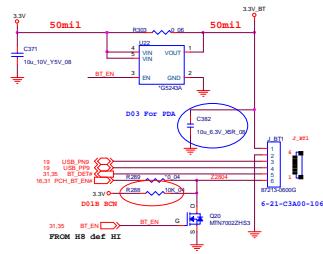
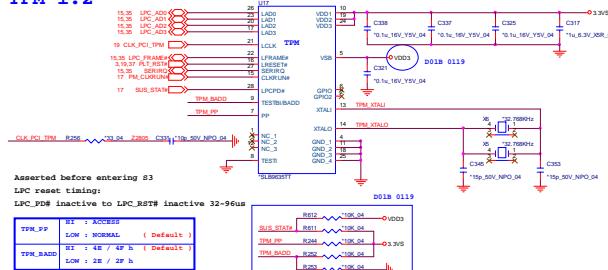
#### HDMI Connector



#### RJ45 Connector



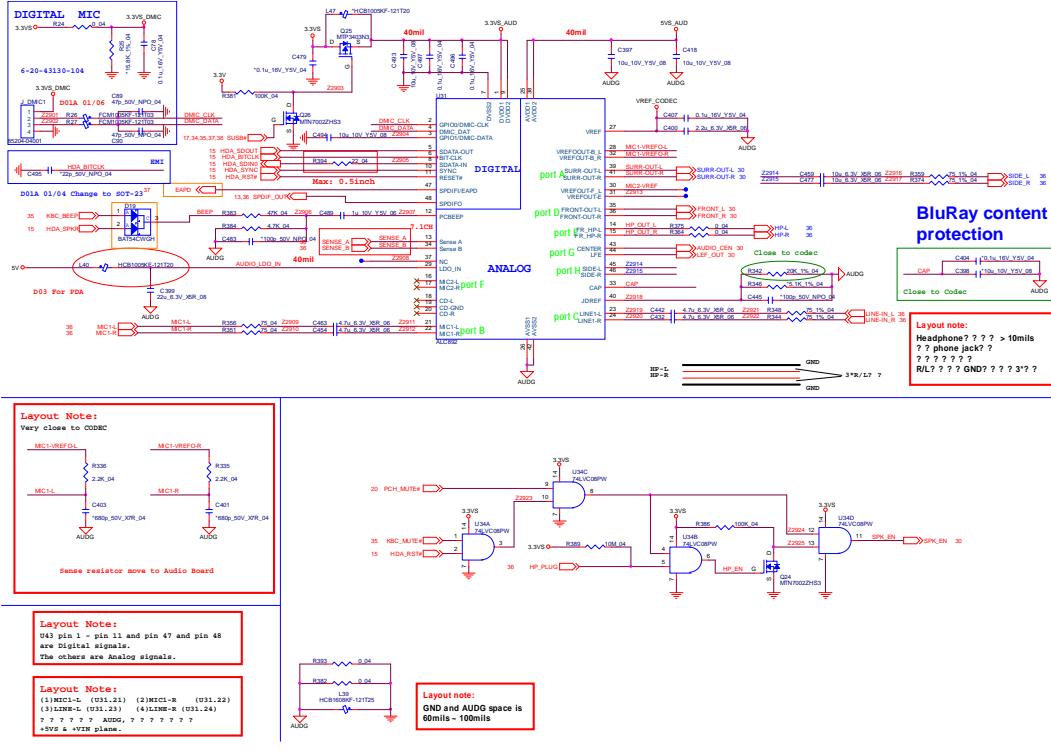
**B - 28 HDMI, RJ45 CONN**

**Schematic Diagrams****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**

## Schematic Diagrams

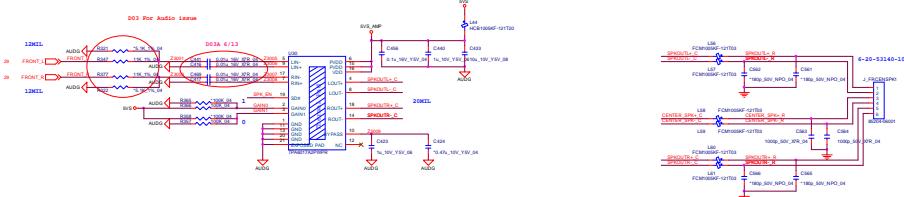
# **CODEC, DMIC**



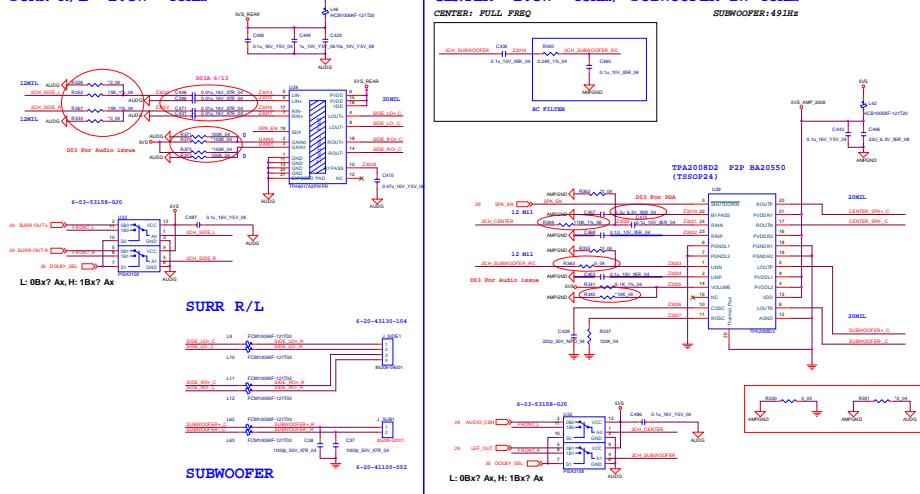
## B - 30 CODEC, DMC

**Schematic Diagrams****AUDIO AMP, SPK**

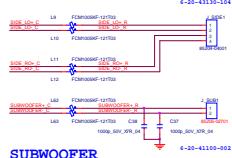
FRONT R/L 2W 4ohm



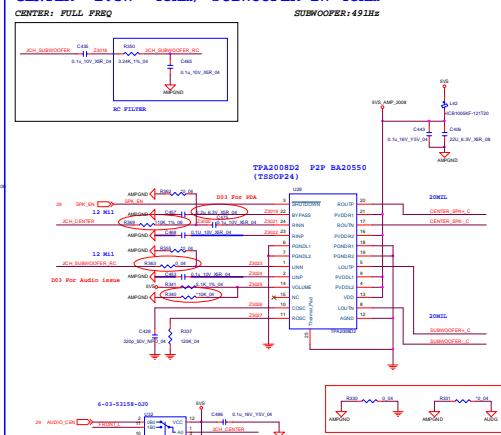
SURR R/L 1.5W 4ohm



SURR R/L



CENTER 1.5W 4ohm/ SUBWOOFER 2W 4ohm

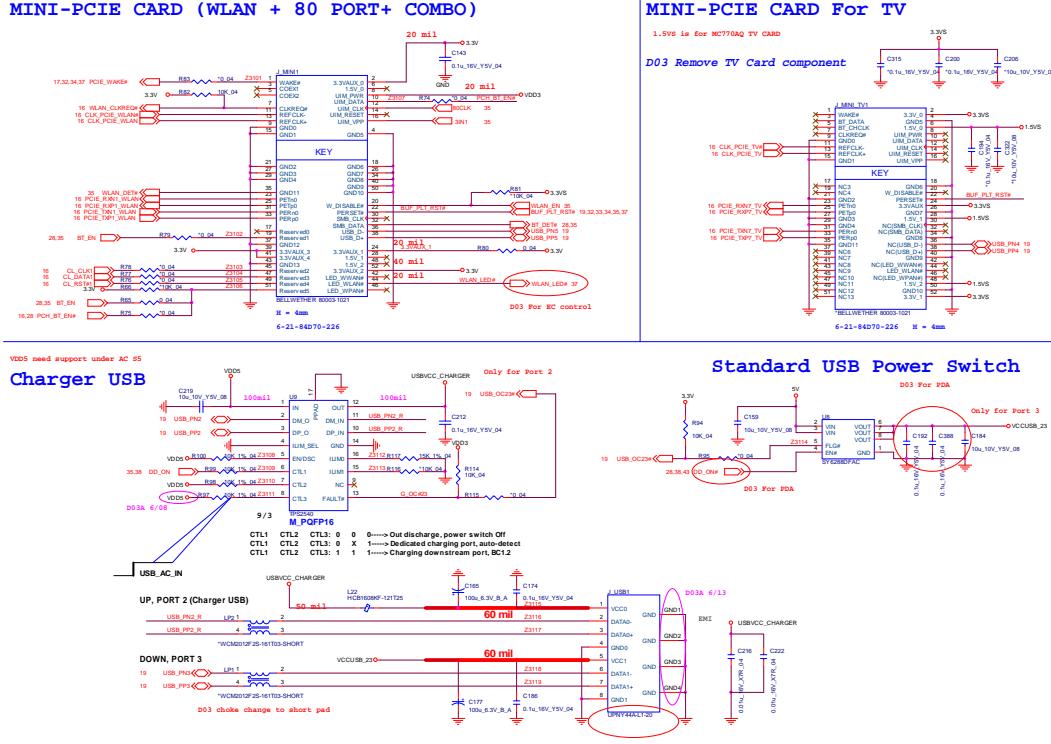


**Sheet 30 of 56**  
**AUDIO AMP, SPK**

**AUDIO AMP, SPK B - 31**

## Schematic Diagrams

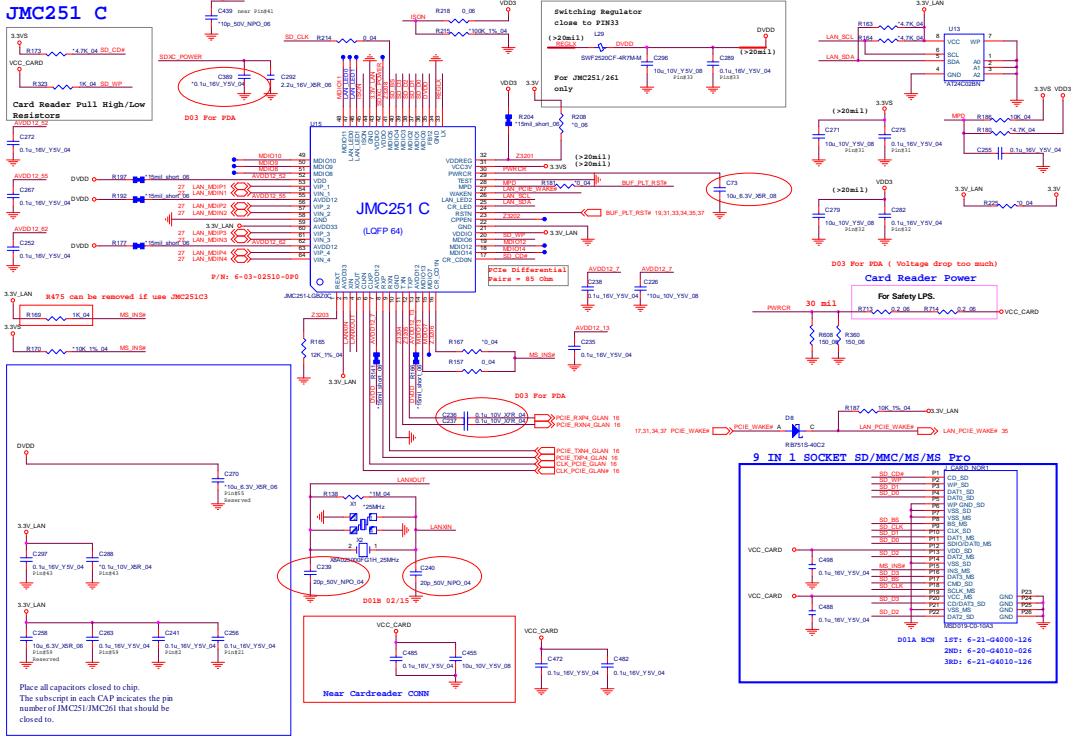
# WLAN, TV, Charger USB



## B - 32 WLAN, TV, Charger USB

## Schematic Diagrams

### LAN, Card Reader



Sheet 32 of 56  
LAN, Card Reader

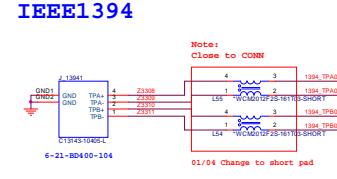
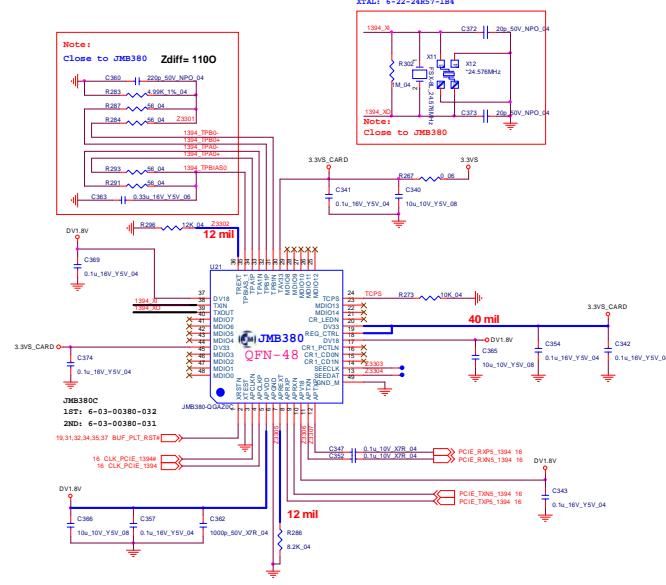
LAN, Card Reader B - 33

## Schematic Diagrams

IEEE 1394

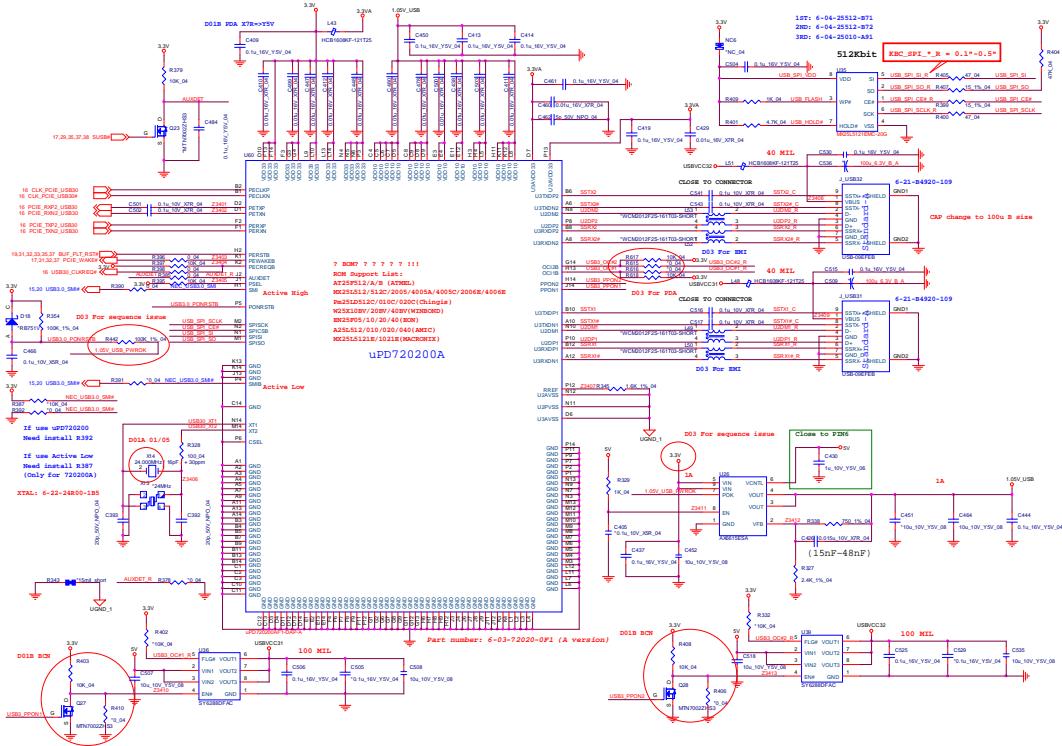
JMB380C

Sheet 33 of 56  
IEEE 1394



## Schematic Diagrams

**USB 3.0**

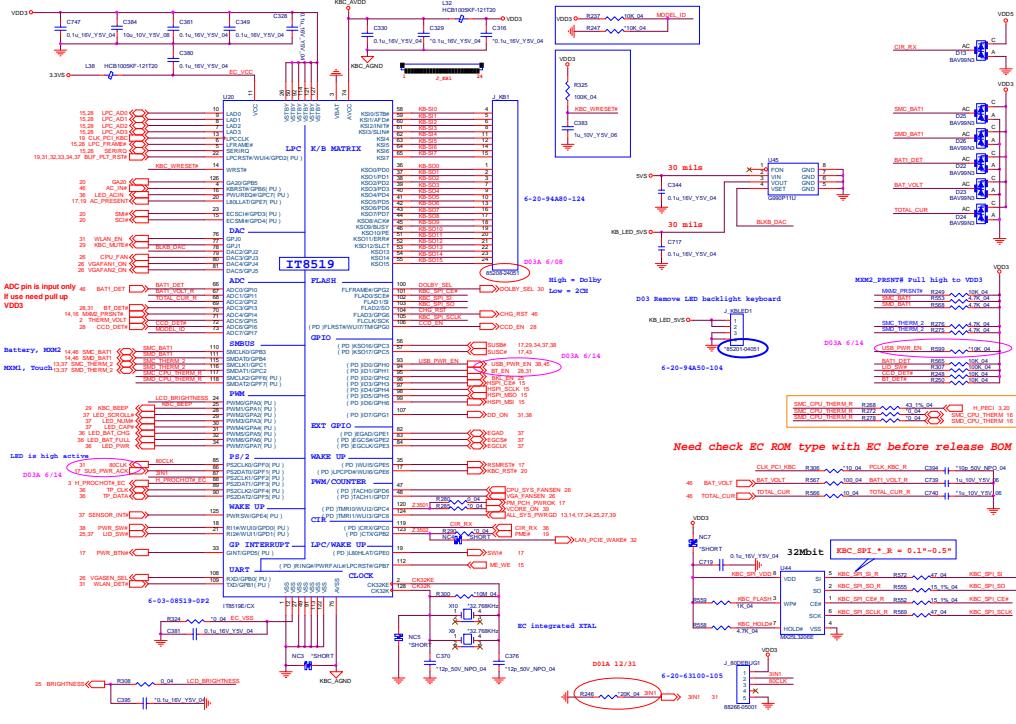


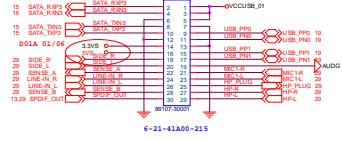
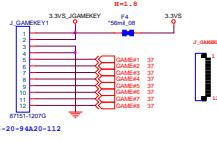
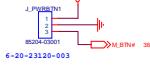
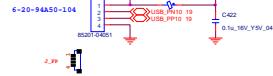
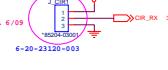
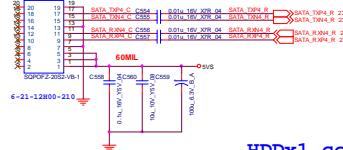
Sheet 34 of 56  
USB 3.0

**USB 3.0 B - 35**

**Schematic Diagrams****KBC ITE IT8519-BX**

**Sheet 35 of 56**  
**KBC ITE IT8519-BX**

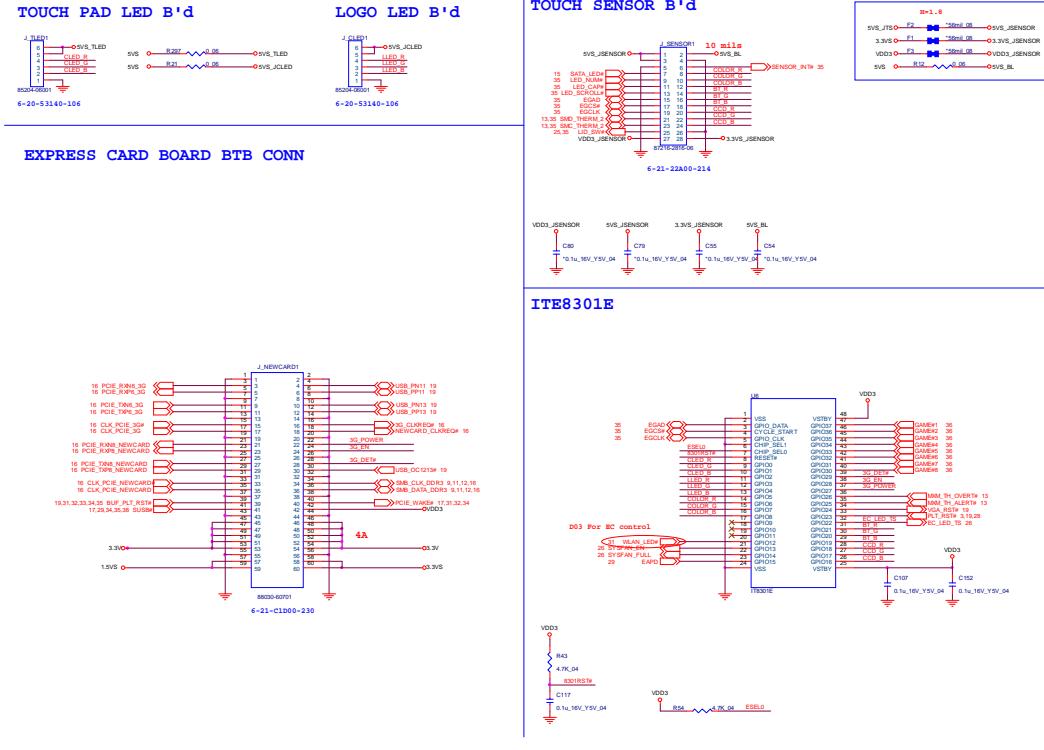


**Schematic Diagrams****SMALL BOARD CONN-A****AUDIO B'd****GAME KEY B'd****Click B'd****PWR BUTTON B'd****Finger Printer B'd****CIR BOARD****HDDx2 connector****HDDx1 connector**

**Sheet 36 of 56**  
**SMALL BOARD**  
**CONN-A**

## Schematic Diagrams

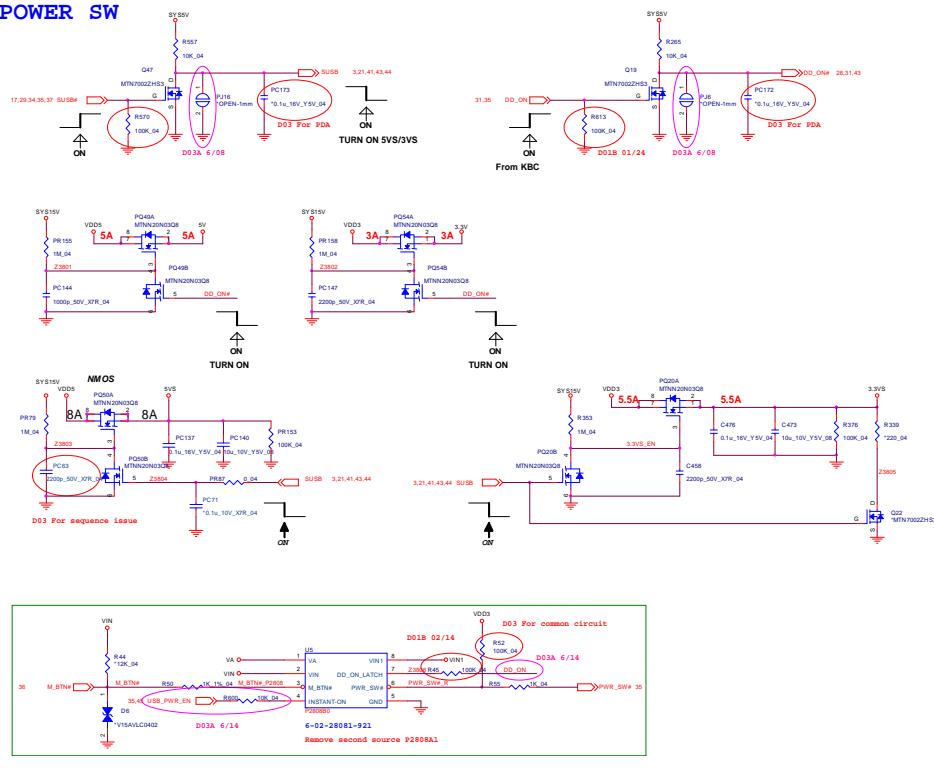
## **SMALL BOARD CONN-B**



## Schematic Diagrams

# **POWER SYSTEM**

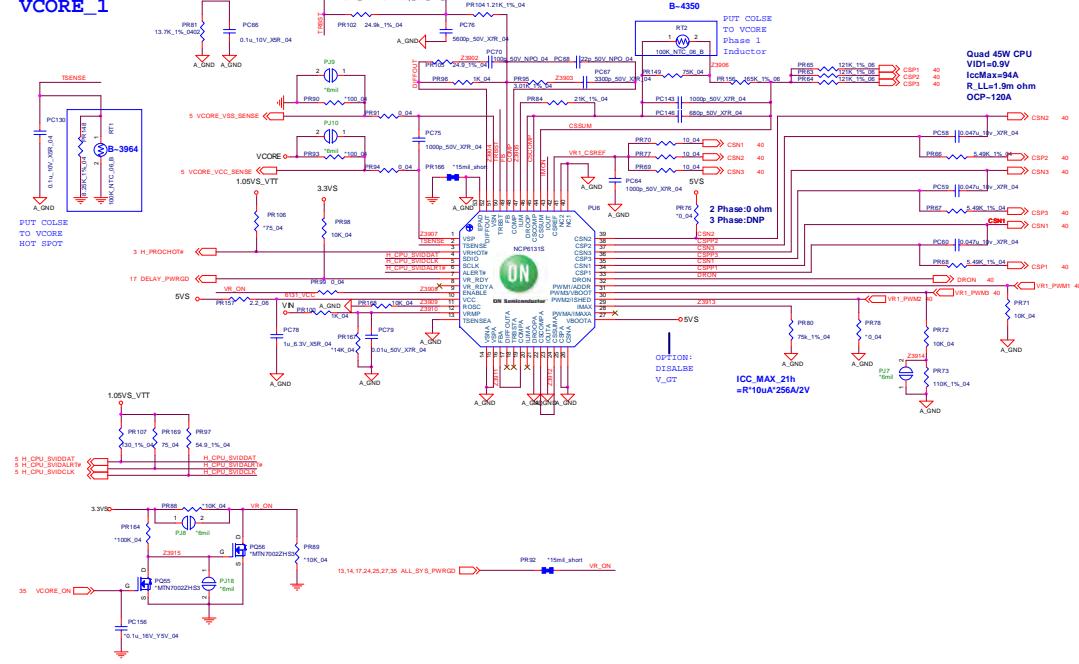
POWER SW



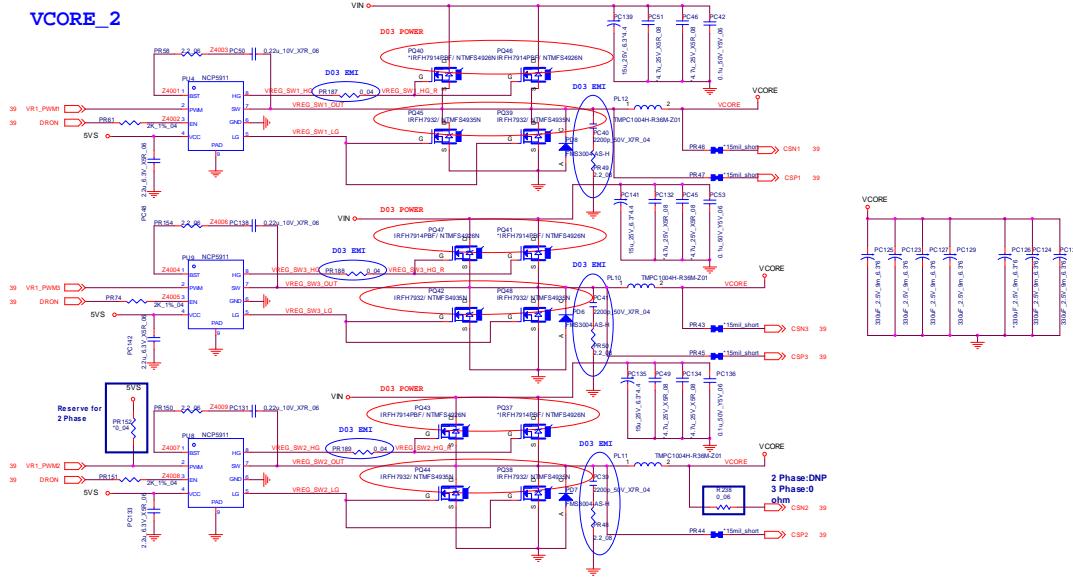
Sheet 38 of 56  
**POWER SYSTEM**

## Schematic Diagrams

PWR VCORE-1



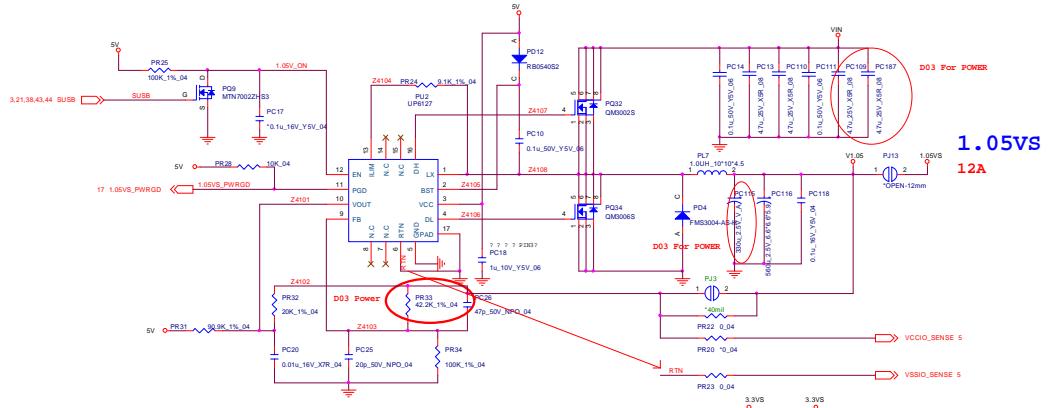
B - 40 PWR VCORE-1

**Schematic Diagrams****PWR VCORE-2**

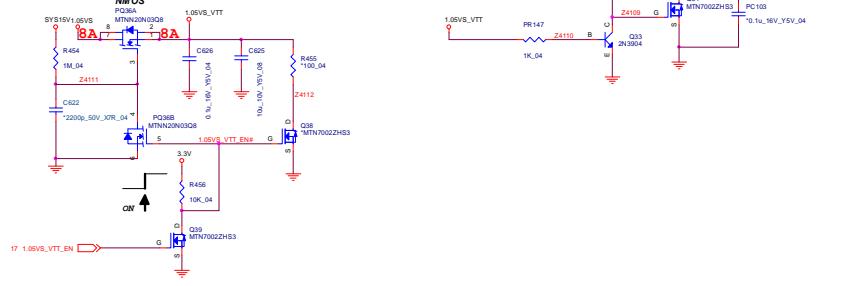
## Schematic Diagrams

### PWR 1.05VS/ 1.05VS CPU

Sheet 41 of 56  
PWR 1.05VS/  
1.05VS CPU

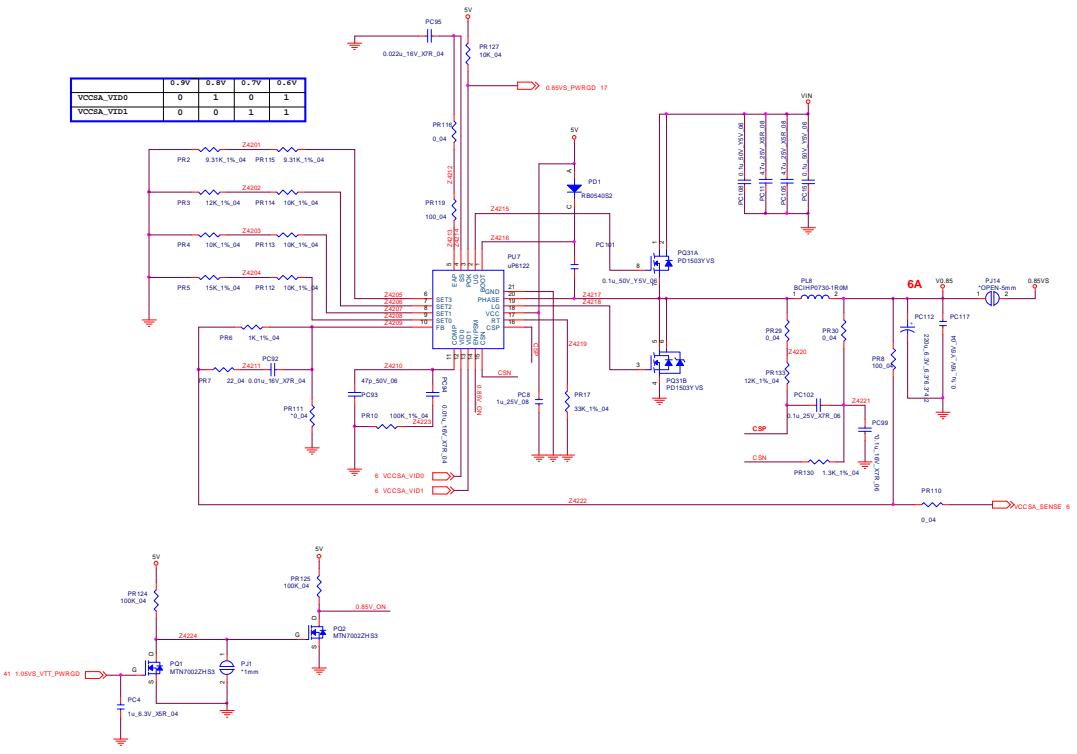


1.05VS\_VTT Sandy Bridge EDS CPU VTT is 8.5A



## Schematic Diagrams

PWR 0.85VS



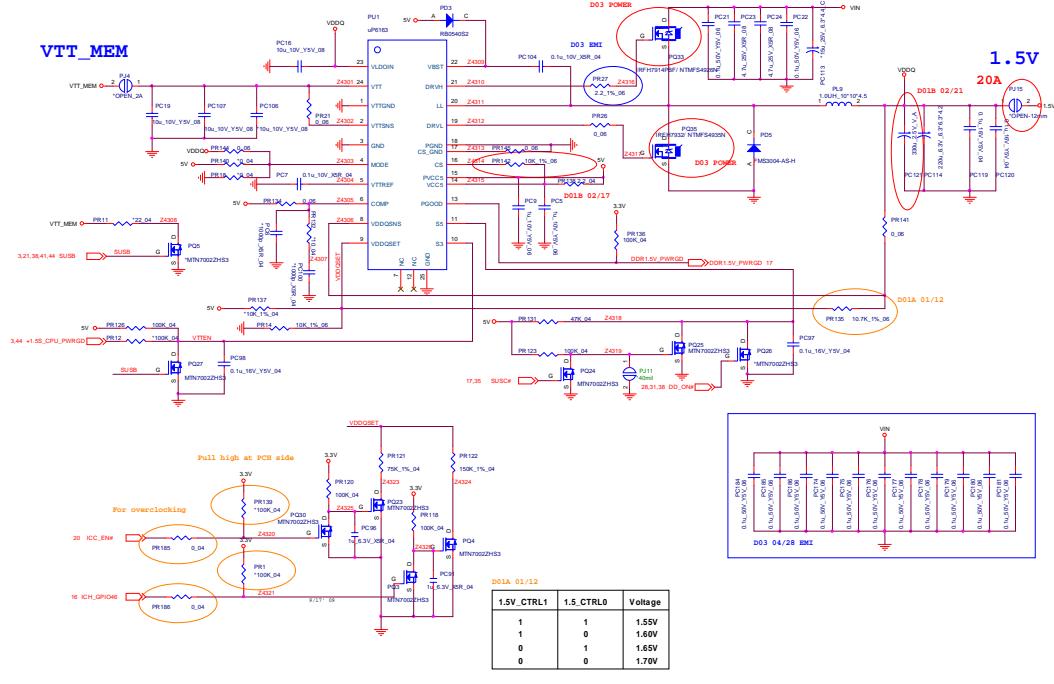
Sheet 42 of 56  
PWR 0.85VS

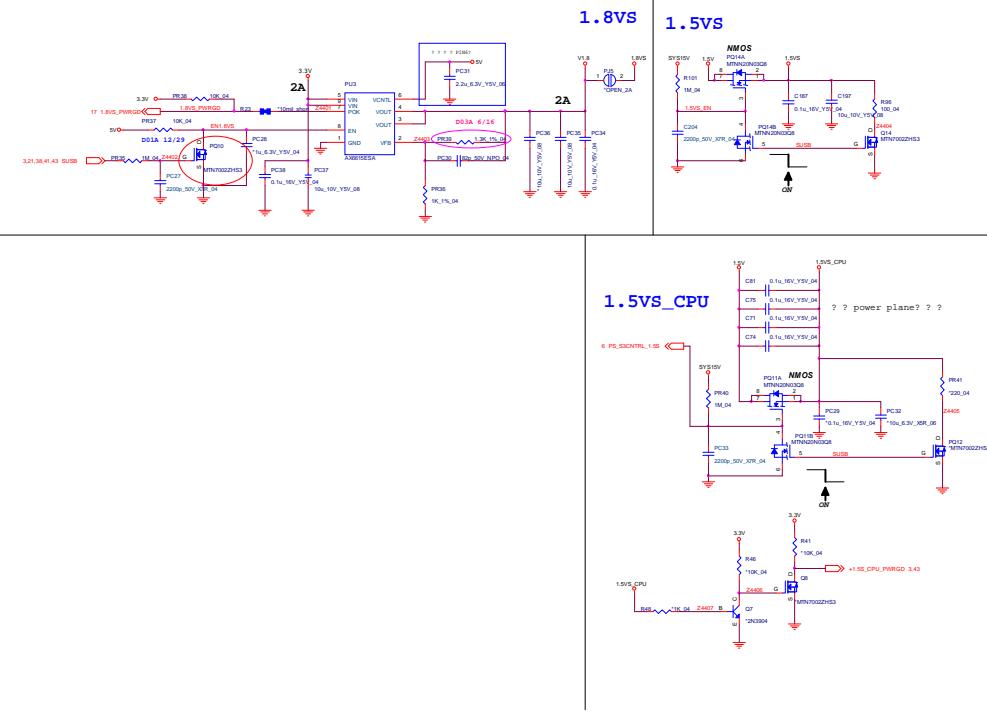
PWR 0.85VS B - 43

## Schematic Diagrams

### PWR 1.5V/ VTT MEM

Sheet 43 of 56  
PWR 1.5V/ VTT  
MEM

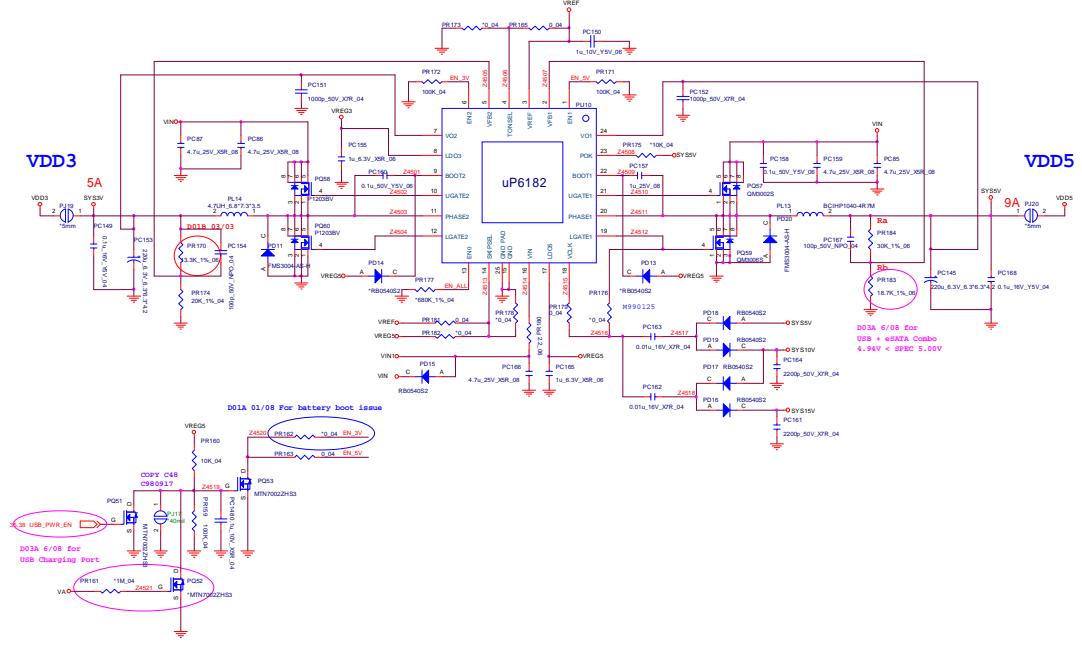


**Schematic Diagrams****PWR 1.8VS/ 1.5VS/ 1.5VS CPU**

## Schematic Diagrams

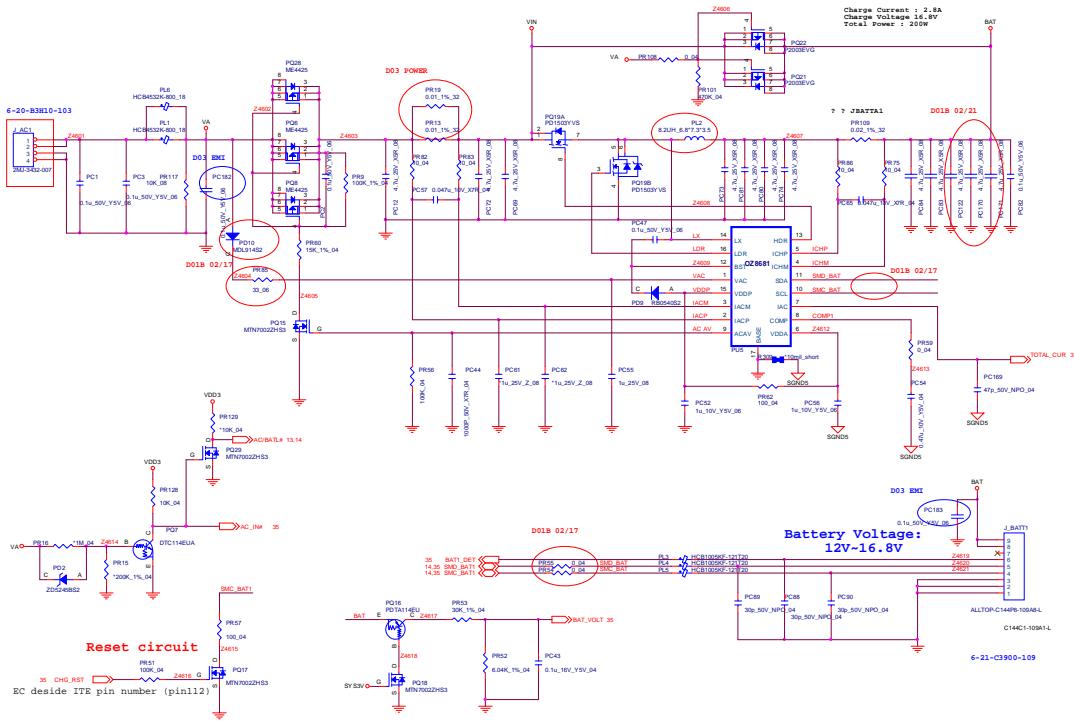
## PWR VDD3/ VDD5

Sheet 45 of 56  
PWR VDD3/ VDD5



## Schematic Diagrams

## PWR CHARGER, DC IN



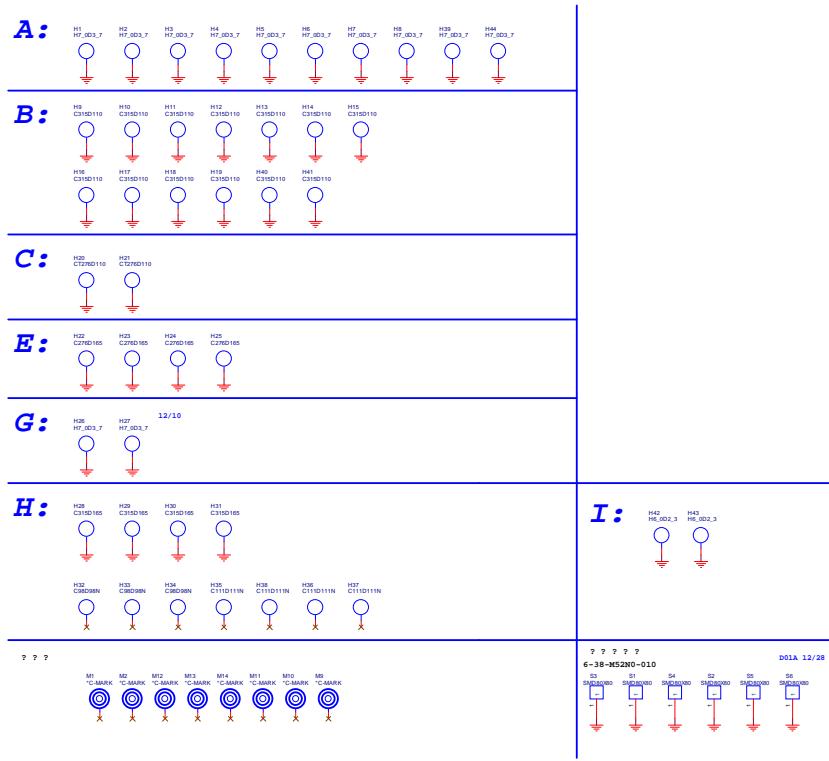
Sheet 46 of 56  
**PWR CHARGER,  
DC IN**

PWR CHARGER, DC IN B - 47

## Schematic Diagrams

## **SCREW HOLE**

Sheet 47 of 56  
SCREW HOLE

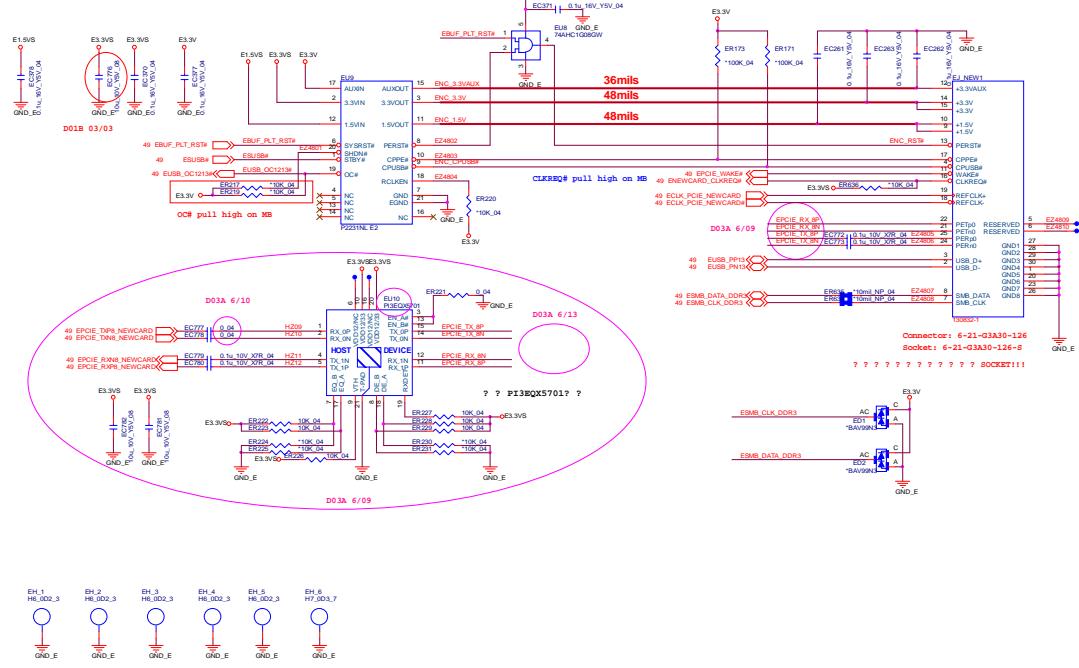


## **B - 48 SCREW HOLE**

## Schematic Diagrams

# EXPRESS CARD BOARD

EXPRESS CARD



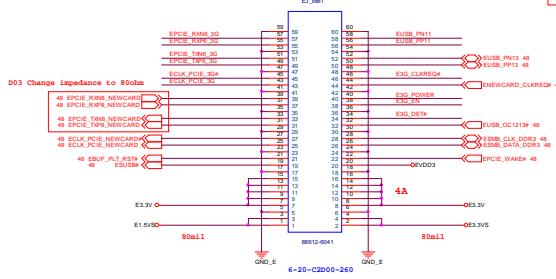
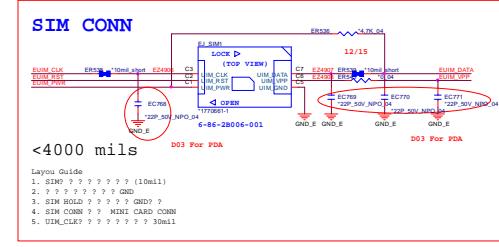
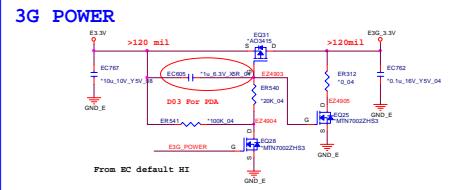
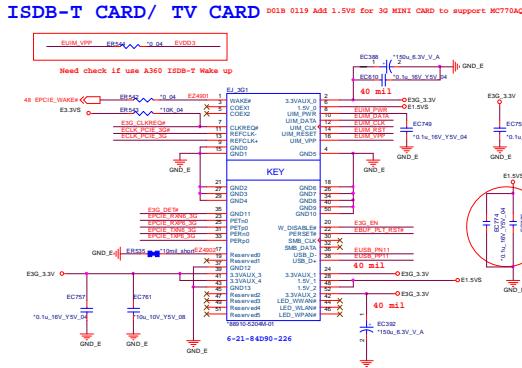
Sheet 48 of 56  
**EXPRESS CARD  
BOARD**

**EXPRESS CARD BOARD B - 49**

## Schematic Diagrams

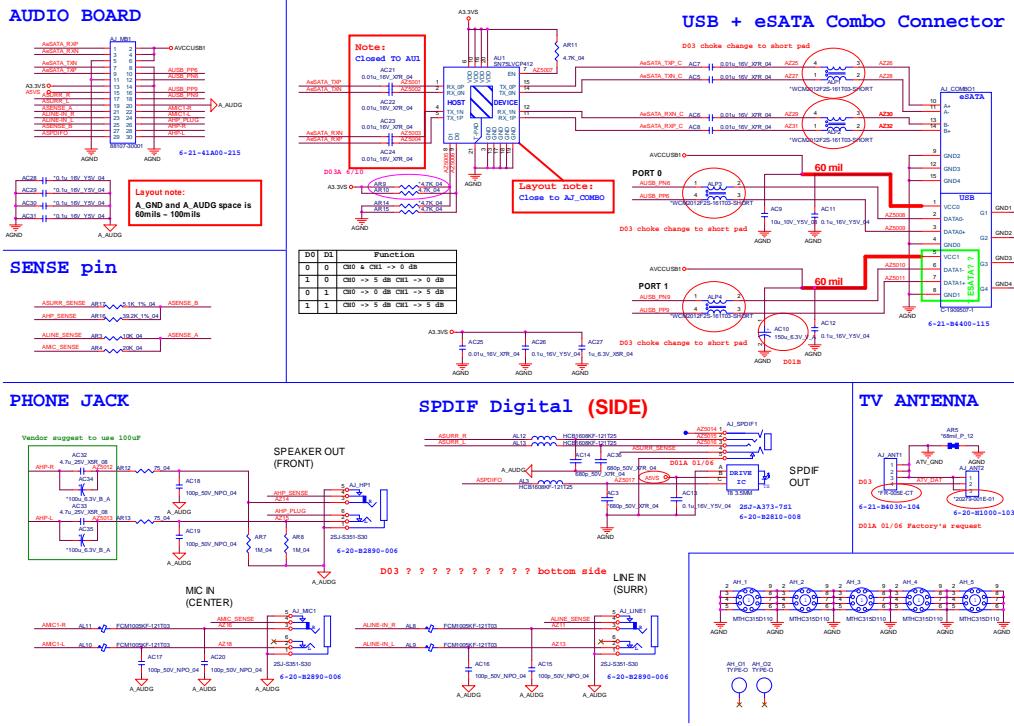
## **ISDB-T CARD/ TV CARD**

Sheet 49 of 56  
ISDB-T CARD/ TV  
CARD



# AUDIO BOARD

## Schematic Diagrams



Sheet 50 of 56  
**AUDIO BOARD**

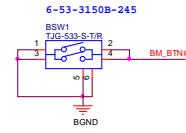
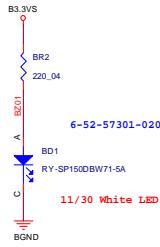
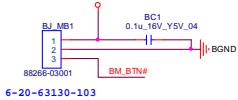
AUDIO BOARD B - 51

**Schematic Diagrams**

**POWER BUTTON BOARD**

**POWER BUTTON B'D**

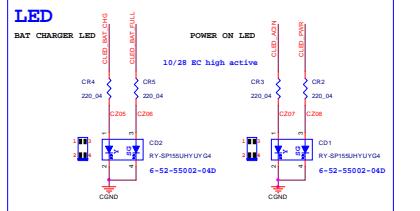
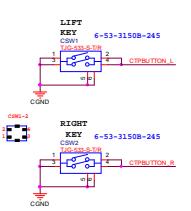
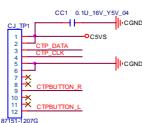
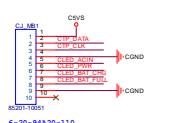
**Sheet 51 of 56**  
**POWER BUTTON**  
**BOARD**



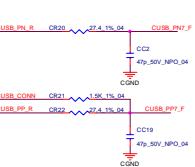
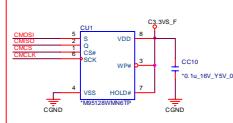
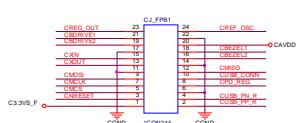
## Schematic Diagrams

# **CLICK & FP BOARD**

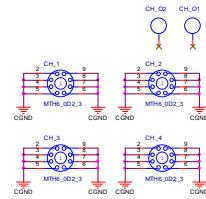
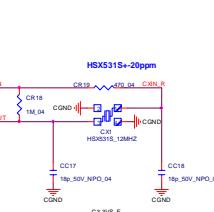
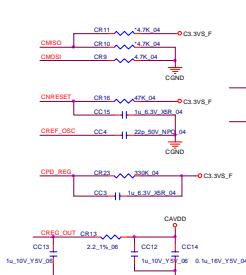
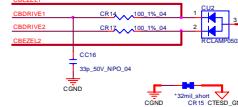
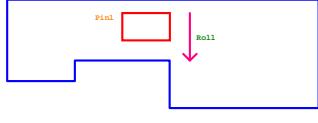
## **CLICK BOARD**



## FINGER PRINTER



D01B Need change Finger Printer pin1 location



**Sheet 52 of 56**  
**CLICK & FP**  
**BOARD**

**CLICK & FP BOARD B - 53**

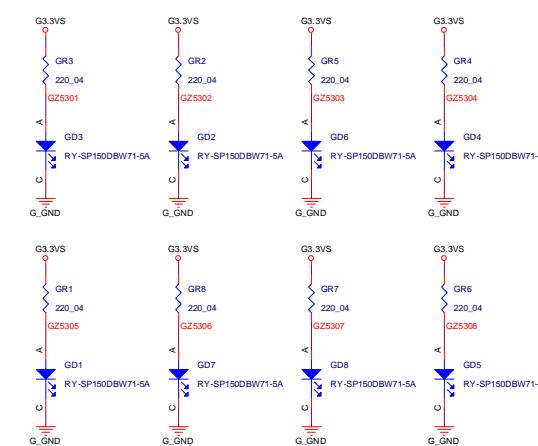
## Schematic Diagrams

### GAME KEY BOARD

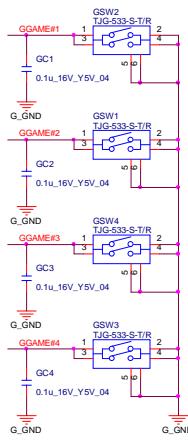
Sheet 53 of 56  
GAME KEY BOARD

#### GAME KEY BOARD 11/30 White LED

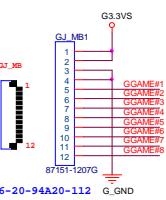
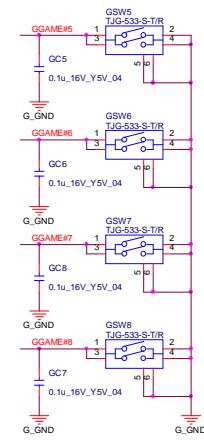
6-52-57301-020



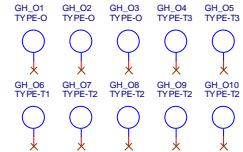
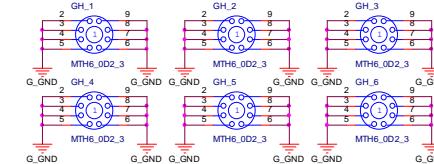
6-53-3150B-245



6-53-3150B-245



6-20-94A20-112 G\_GND

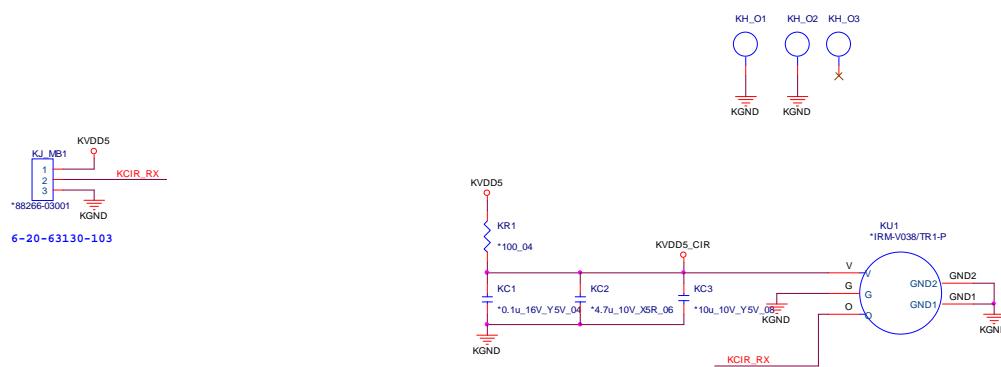


**B - 54 GAME KEY BOARD**

## Schematic Diagrams

### CIR BOARD

#### CIR BOARD



Sheet 54 of 56  
CIR BOARD

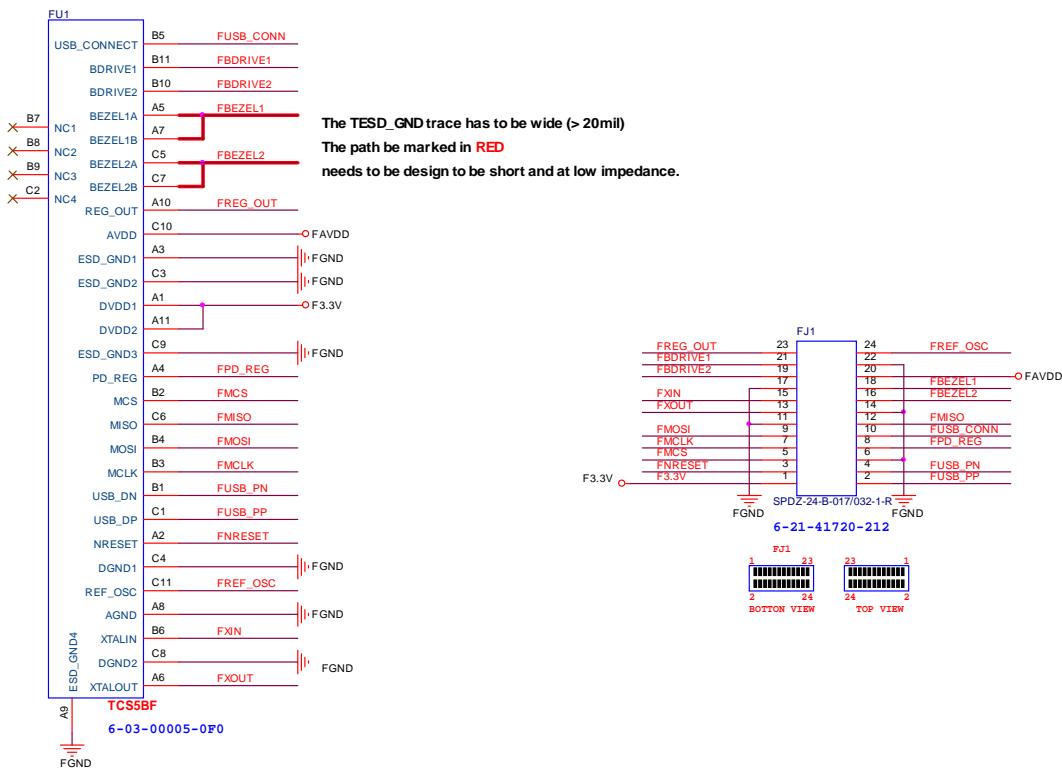
D03 Uninstall CIR component

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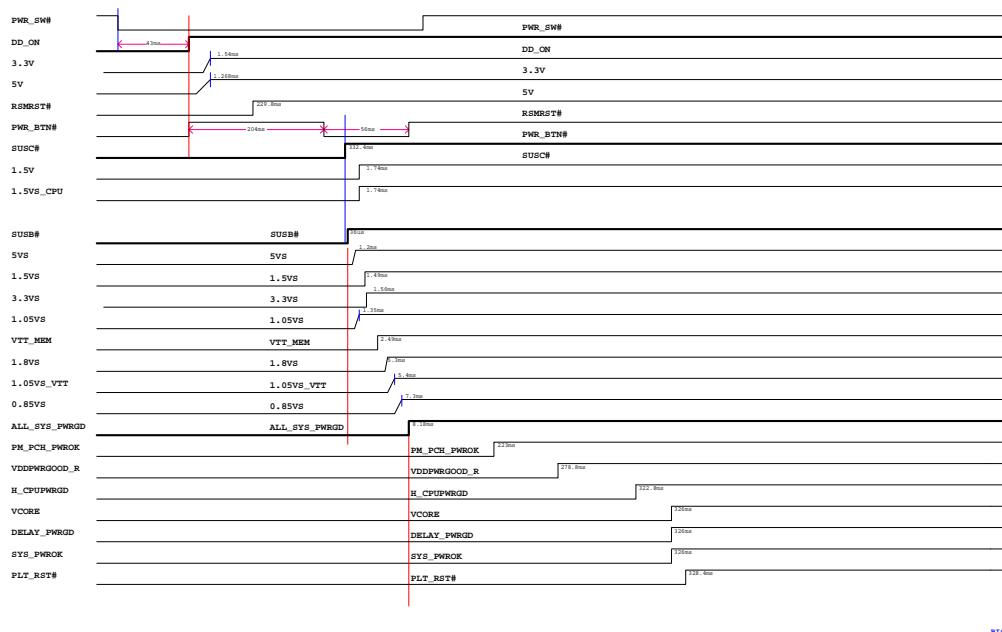
CIR BOARD B - 55

**Schematic Diagrams****FINGER BOARD**

**Sheet 55 of 56**  
**FINGER BOARD**



**B - 56 FINGER BOARD**

**POWER ON SEQUENCE****P180HM D01 EVT POWER ON SEQUENCE**

## **Schematic Diagrams**