

# *SERVICE MANUAL*

M980NU

*notebook*





**Notebook Computer**

**M980NU**

**Service Manual**

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## About this Manual

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

It is organized to allow you to look up basic information for servicing and/or upgrading components of the *M980NU* series notebook PC.

The following information is included:

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

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

Appendix A, Part Lists

Appendix B, Schematic Diagrams

## **IMPORTANT SAFETY INSTRUCTIONS**

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

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit (Full Range AC/DC Adapter – AC Input 100 - 240V, 50 - 60Hz, DC Output 20V, 11A or 19V, 11.6A).

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

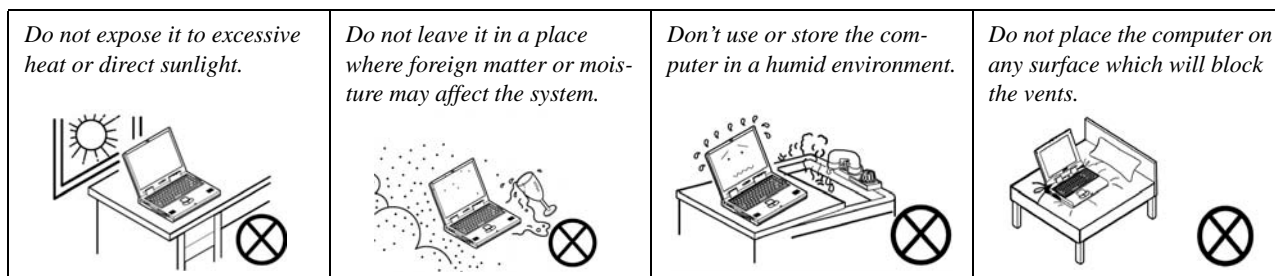
## Instructions for Care and Operation

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

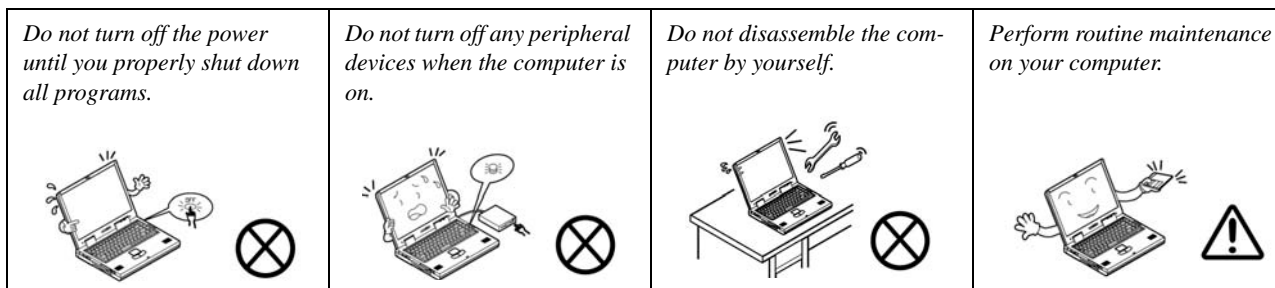
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



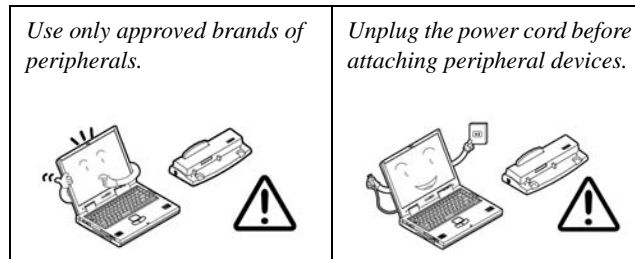
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



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



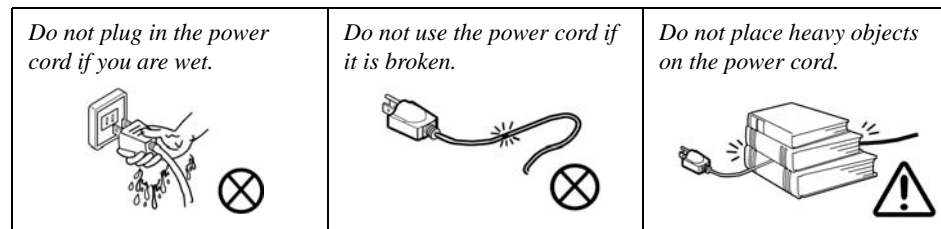
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



## Power Safety

The computer has specific power requirements:

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



### Power Safety Warning

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



## Battery Precautions

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

## Battery Guidelines

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

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




### Battery Disposal

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

### Caution

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

### Battery Level

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

### Related Documents

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

#### User's Manual on CD

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

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# Chapter 1: Introduction

## Overview

This manual covers the information you need to service or upgrade the *M980NU* 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 XP*, *Windows Vista*, 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 *M980NU* series notebook is designed to be upgradeable. See *“Disassembly” on page 2 - 1* for a detailed description of the upgrade procedures for each specific component. Please note the warning and safety information indicated by the “” symbol.

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

# System Specifications

Processor
<p><b>Intel® Core™ 2 Quad Processor</b> - (478-pin) Micro-FC-PGA Package, 45nm (45 Nanometer) Process Technology:  <b>QX93000</b> - 2.53 GHz, 12MB On-die L2 Cache &amp; 1066MHz FSB (45W)  <b>X9100</b> - 2.53GHz, 6MB On-die L2 Cache &amp; 1066MHz FSB (44W)  <b>Q9000</b> - 2.0GHz, 6MB On-die L2 Cache &amp; 1066MHz FSB (45W)  <b>Q9100</b> - 2.26GHz, 12MB On-die L2 Cache &amp; 1066MHz FSB (45W)</p> <p><b>Intel® Core™ 2 Duo Processor</b> - (478-pin) Micro-FC-PGA Package, 45nm (45 Nanometer) Process Technology:  <b>T9400</b> - 2.53 GHz, 6MB On-die L2 Cache &amp; 1066MHz FSB (35W)  <b>T9600</b> - 2.80 GHz, 6MB On-die L2 Cache &amp; 1066MHz FSB (35W)  <b>T9800</b> - 2.93 GHz, 6MB On-die L2 Cache &amp; 1066MHz FSB (35W)</p> <p><b>Intel® Core™ 2 Duo Processor</b> - (478-pin) Micro-FC-PGA Package, 45nm (45 Nanometer) Process Technology:  <b>P9500</b> - 2.66 GHz, 6MB On-die L2 Cache &amp; 1066MHz FSB (25W)  <b>P9600</b> - 2.53 GHz, 6MB On-die L2 Cache &amp; 1066MHz FSB (25W)  <b>P8600</b> - 2.66 GHz, 3MB On-die L2 Cache &amp; 1066MHz FSB (25W)  <b>P8700</b> - 2.53 GHz, 3MB On-die L2 Cache &amp; 1066MHz FSB (25W)</p>
Core Logic
MCP79 SLI Chipset
Display
18.4" Full HD (1920 * 1080) TFT LCD
Memory
<p>Two 64-bit wide <b>DDRIII (DDR3)</b> data channels                  Two 204 Pin SO-DIMM Sockets Supporting <b>DDRIII (DDR3)</b> 1066MHz/1333MHz Memory Modules                  Memory Expandable up to 4GB</p>

Video Adapter
<p>nVIDIA® GeForce GTX 280M SLI PCIe Video Card                  1GB GDDR3 Video RAM On Board                  Supports PCIe * 8 (SLI - 2 * PCIe * 8)                  Supports Microsoft DirectX® 10.0                  Supports HDCP</p>
BIOS
<p>One 8Mb Flash ROM                  Phoenix™ BIOS</p>
Storage
<p>Up to three (<b>Option</b>) Changeable 2.5" 9.5 mm (h) <b>SATA</b> (Serial) Hard Disk Drives supporting RAID level 0/1                  One 12.7 mm Super Multi/Blu-Ray Combo/Writer SATA Optical Device Drive (<b>Option</b>)</p>
Keyboard & Pointing Device
<p>Full Size Winkey Keyboard with Numeric Keypad                  Built-In TouchPad (Scroll Functionality Included)                  Eight Touch Sensor Instant Keys (Color, CCD, Bluetooth, WLAN, Internet, Silent Mode, Sound Effect, Mute)                  Eight Gaming Keys G1 ~ G8</p>
Card Reader
<p>Embedded 7-in-1 Card Reader (MS/ MS Pro/ SD/ Mini SD/ MMC/ RS MMC/ MS Duo) <b>Note:</b> MS Duo/ Mini SD/ RS MMC Cards require a PC adapter</p>

Interface
Four USB 2.0 Ports One eSATA Port One DVI-Out Port (with CRT out) One HDMI (High-Definition Multimedia Interface) Port with Audio Output (with HDCP Support) One Headphone/Speaker-Out Jack One Microphone-In Jack One Line-In Jack One S/PDIF Out Jack One RJ-45 LAN Jack One Mini-IEEE1394a Port One DC-In Jack One Consumer Infrared Port for TV Tuner Remote Controller CATV Jack (for TV Tuner)
Slots
One ExpressCard/34/54 Slot Two Mini Card Slots: <b>Slot 1</b> for PCIe WLAN Module <b>Slot 2</b> for USB TV Tuner Module
Audio
High Definition Audio3D Stereo Enhanced Sound System S/PDIF Digital Output Built-In Microphone 5 * Built-In Speakers (2W/ 1.5W, 4Ω) One Sub Woofer (2W, 4Ω, Dolby Surround Supported
Security
Security (Kensington® Type) Lock Slot BIOS Password Fingerprint Reader Module ( <b>Factory Option</b> ) Trusted Platform Module V1.2 ( <b>Factory Option</b> )

Communication
Built-In Giga Base-TX Ethernet LAN Bluetooth 2.1 + EDR (Enhanced Data Rate) Module ( <b>Factory Option</b> ) Intel® WiFi Link 5300 Series (3*3 - 802.11a/g/n) Wireless LAN PCIe interface Mini-Card Module ( <b>Option</b> ) Intel® WiFi Link 5100 Series (1*2 - 802.11a/g/n) Wireless LAN PCIe interface Mini-Card Module ( <b>Option</b> ) 3rd Party 802.11b/g Wireless LAN PCIe interface Mini-Card Module ( <b>Option</b> ) 2.0M or 3.0M Pixel PC Camera Module with USB interface ( <b>Factory Option</b> )
Operating System
Windows Vista Home Premium/ Business/ Enterprise/ Ultimate Note that the TV Tuner module (factory) option in <b>Windows Vista</b> is supported by the <b>Windows Media Center</b> software which comes built-in to the <b>Windows Vista Home Premium</b> and <b>Ultimate Editions only</b> .
Power Management
Supports Wake on LAN Supports Wake on USB
Power
Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 19V, 11.6A or 19V, 12.2A (220 Watts) Easy Changeable Polima Smart Lithium-Ion 4650mAH Main Battery
Physical Dimensions & Weight
439mm (w) * 299mm (d) * 44mm (h) Around 4.9kg with Battery and ODD

## Introduction

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Environmental Spec
Temperature Operating: 5°C - 35°C Non-Operating: -20°C - 60°C
Relative Humidity Operating: 20% - 80% Non-Operating: 10% - 90%
Optional
Super Multi Drive Module Blu-Ray Combo Drive Module Intel® WiFi Link 5300/5100 Series (3*3/1*2 - 802.11a/g/n) Wireless LAN PCIe Interface Mini-Card Module 3rd Party 802.11b/g Wireless LAN PCIe Interface Mini-Card Module Bluetooth 2.1 + EDR (Enhanced Data Rate) Module <b>(Factory Option)</b> 2.0M or 3.0M Pixel USB 2.0 PC Camera Module <b>(Factory Option)</b> Fingerprint Reader Module <b>(Factory Option)</b> Mini-Card TV Tuner Module with USB Interface <b>(Factory Option)</b>



## External Locator - Top View with LCD Panel Open



*Figure 1*  
**Top View**

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

## Introduction

*Figure 2*  
**Front Views**

1. Color LEDs
2. Speakers
3. LED Power Indicators
4. Consumer Infrared Transceiver (enabled with optional TV Tuner only)

## External Locator - Front & Right side Views



*Figure 3*  
**Right Side Views**

5. Headphone-In Jack
6. Microphone-In Jack
7. Line-In Jack
8. S/PDIF-Out Jack
9. Cable (CATV) Antenna Jack\*
10. Combined eSATA/USB Port
11. USB 2.0 Port
12. Security Lock Slot
13. Power Button



## External Locator - Left Side & Rear View



*Figure 4*  
**Left Side View**

1. DVI-Out Port
2. 2 \* USB 2.0 Ports
3. RJ-45 LAN Jack
4. HDMI-Out Port
5. 7-in-1 Card Reader
6. ExpressCard Slot
7. Mini-IEEE 1394 Port
8. Optional Device Drive Bay



*Figure 5*  
**Rear View**

9. Color LEDs
10. Speakers
11. DC-In Jack

## External Locator - Bottom View

*Figure 6*  
**Bottom View**

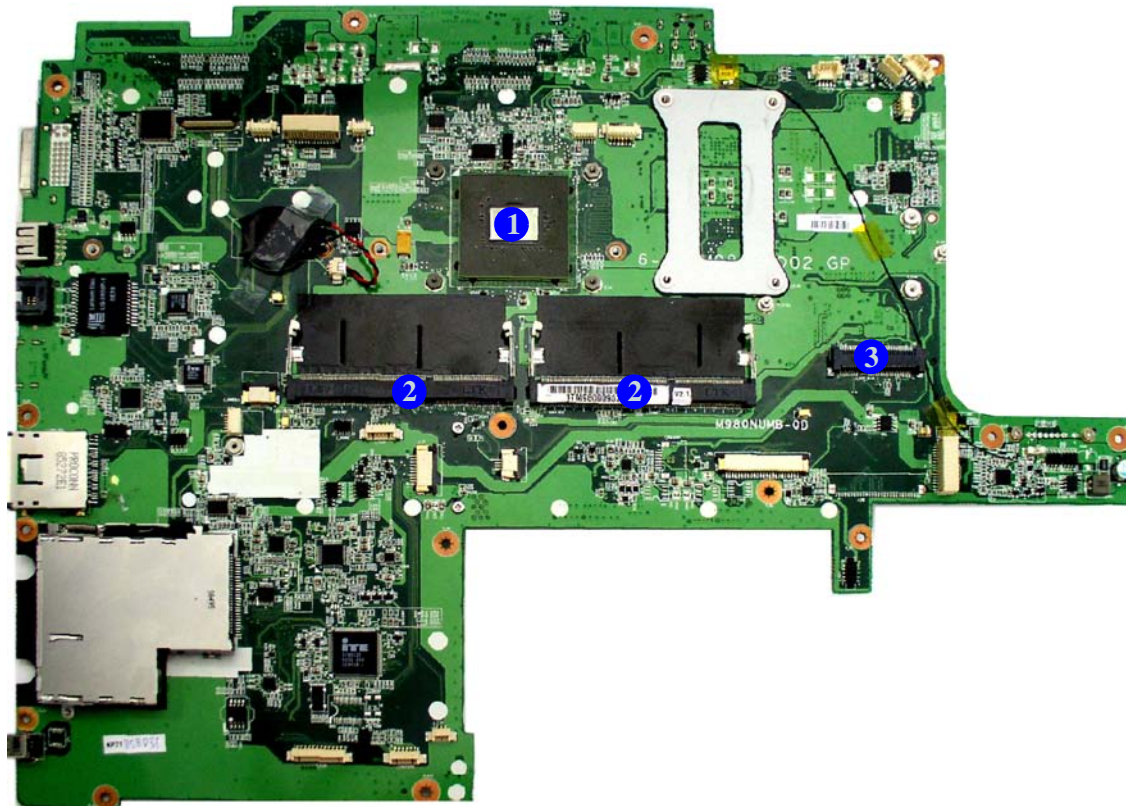
1. Sub Woofer
2. Fan Outlet/Intake
3. Component Bay Cover
4. Battery (Secondary HDD Bay - HDD3)
5. Primary HDD Bay (HDD1 & 2)



### Overheating

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

## Mainboard Overview - Top (Key Parts)



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

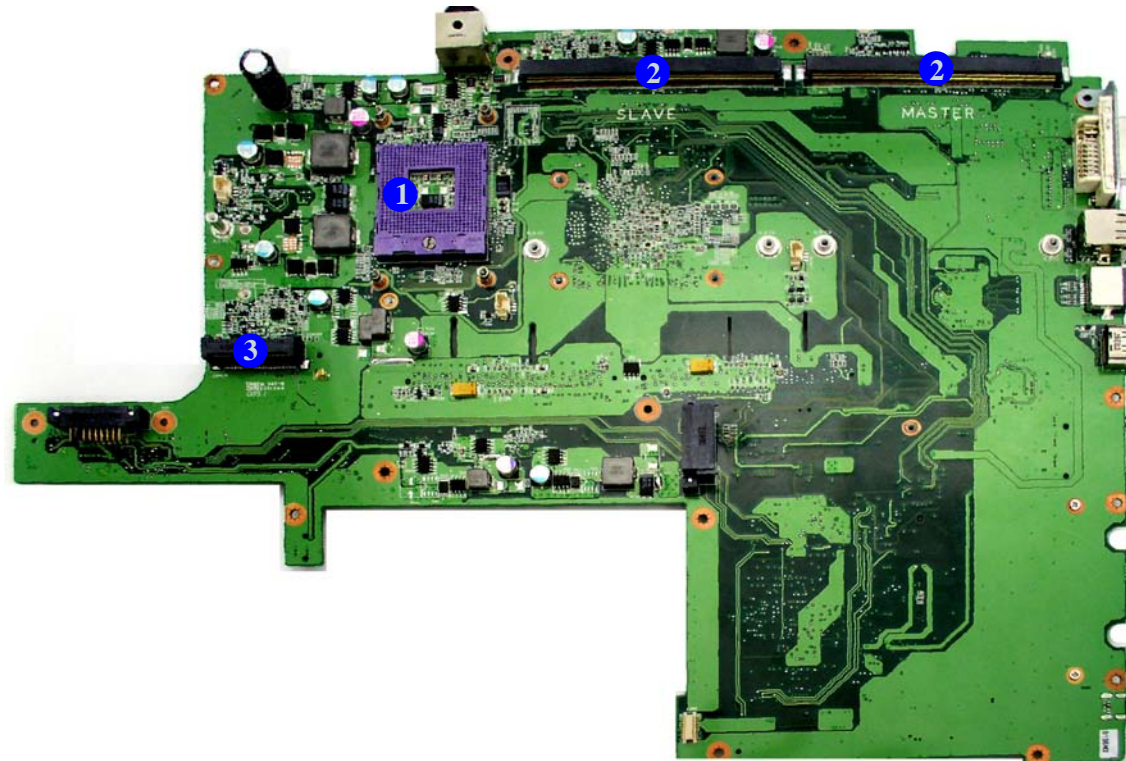
1. North Bridge
2. Memory Slots  
DDR3 So-DIMM
3. Mini-Card  
Connector (WLAN  
Module)

## Introduction

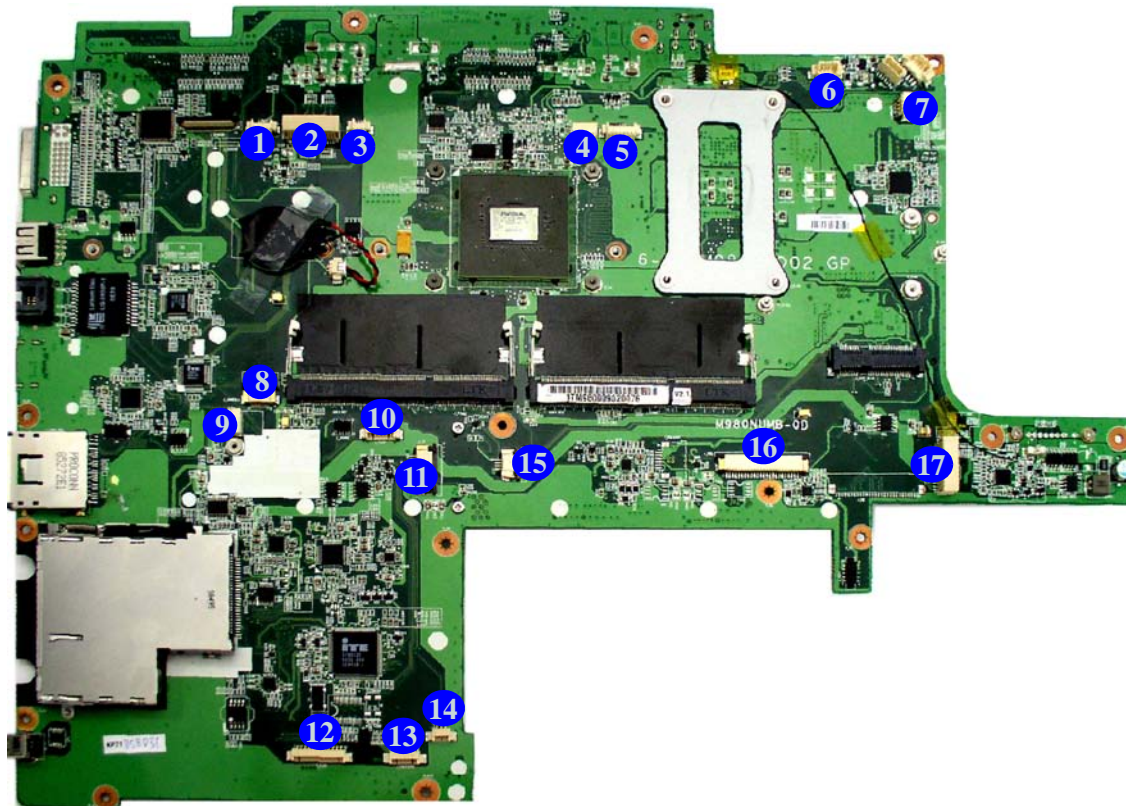
*Figure 8*  
**Mainboard Bottom  
Key Parts**

1. CPU Socket
2. VGA Socket
3. Mini-Card Connector (TV Module)

## Mainboard Overview - Bottom (Key Parts)



## Mainboard Overview - Top (Connectors)



*Figure 9*  
**Mainboard Top Connectors**

1. CCD Cable Connector
2. LCD Cable Connector
3. Side L Cable Connector
4. Inverter Cable Connector
5. LED Cable Connector
6. Subwoofer Connector
7. Power Button Connector
8. Game-Key Cable Connector
9. Bluetooth Module Connector
10. LED Cable Connector
11. Touch Pad Connector
12. USB Cable Connector
13. Audio Cable Connector
14. SW Connector
15. Fingerprint Connector
16. Keyboard Cable Connector
17. Audio Cable Connector

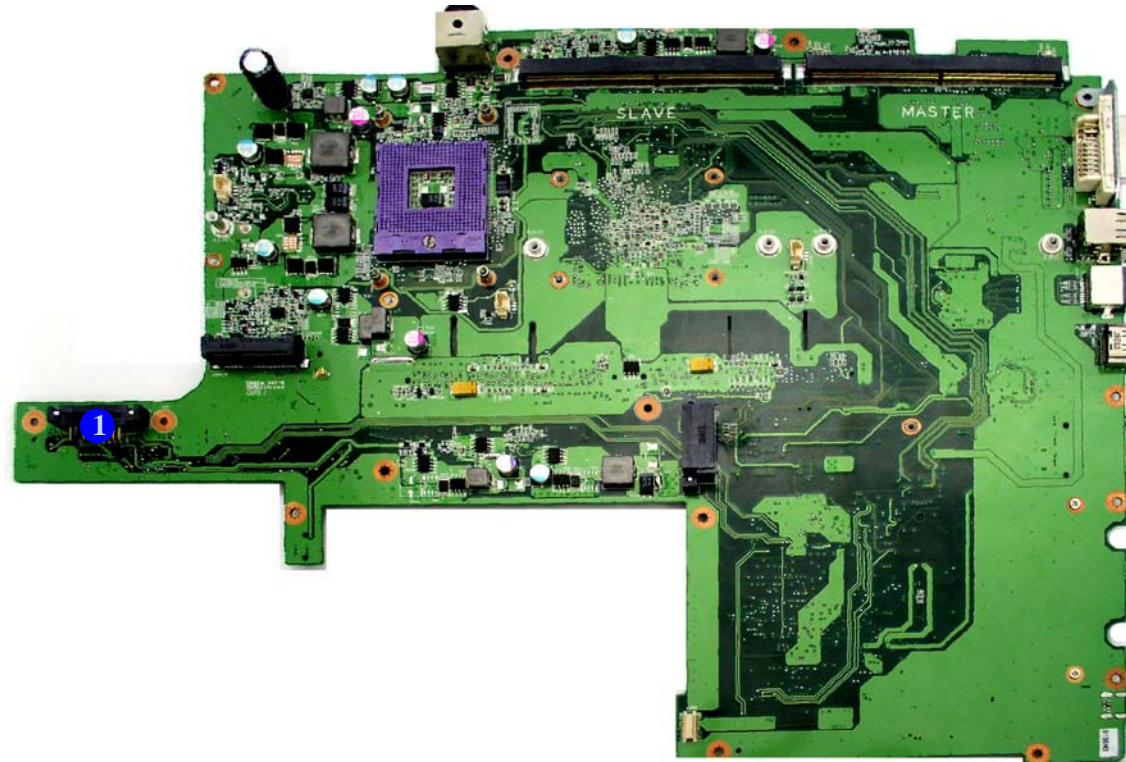
## Introduction

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*Figure 10*  
**Mainboard Bottom  
Connectors**

# Mainboard Overview - Bottom (Connectors)

1. Battery Connector






# Chapter 2: Disassembly

## Overview

This chapter provides step-by-step instructions for disassembling the *M980NU* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

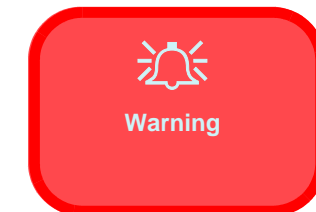
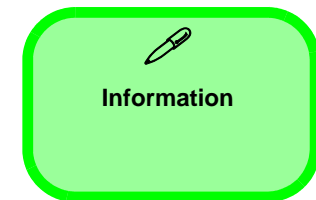
We suggest you completely review any procedure before you take the computer apart.

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

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

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

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



## Disassembly

---

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

### Maintenance Tools

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

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

### Connections

Connections within the computer are one of four types:

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

## Maintenance Precautions

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

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

## Cleaning

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

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



### Power Safety Warning

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

### Disassembly Steps

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

#### To remove the Battery:

1. Remove the battery *page 2 - 5*

#### To remove the Optical Device:

1. Remove the battery *page 2 - 5*
2. Remove the Optical device *page 2 - 6*

#### To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 7*

#### To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the System Memory *page 2 - 9*

#### To remove the VGA card:

1. Remove the battery *page 2 - 5*
2. Remove the VGA card *page 2 - 11*

#### To remove the TV Tuner Card:

1. Remove the battery *page 2 - 5*
2. Remove the TV tuner card *page 2 - 14*

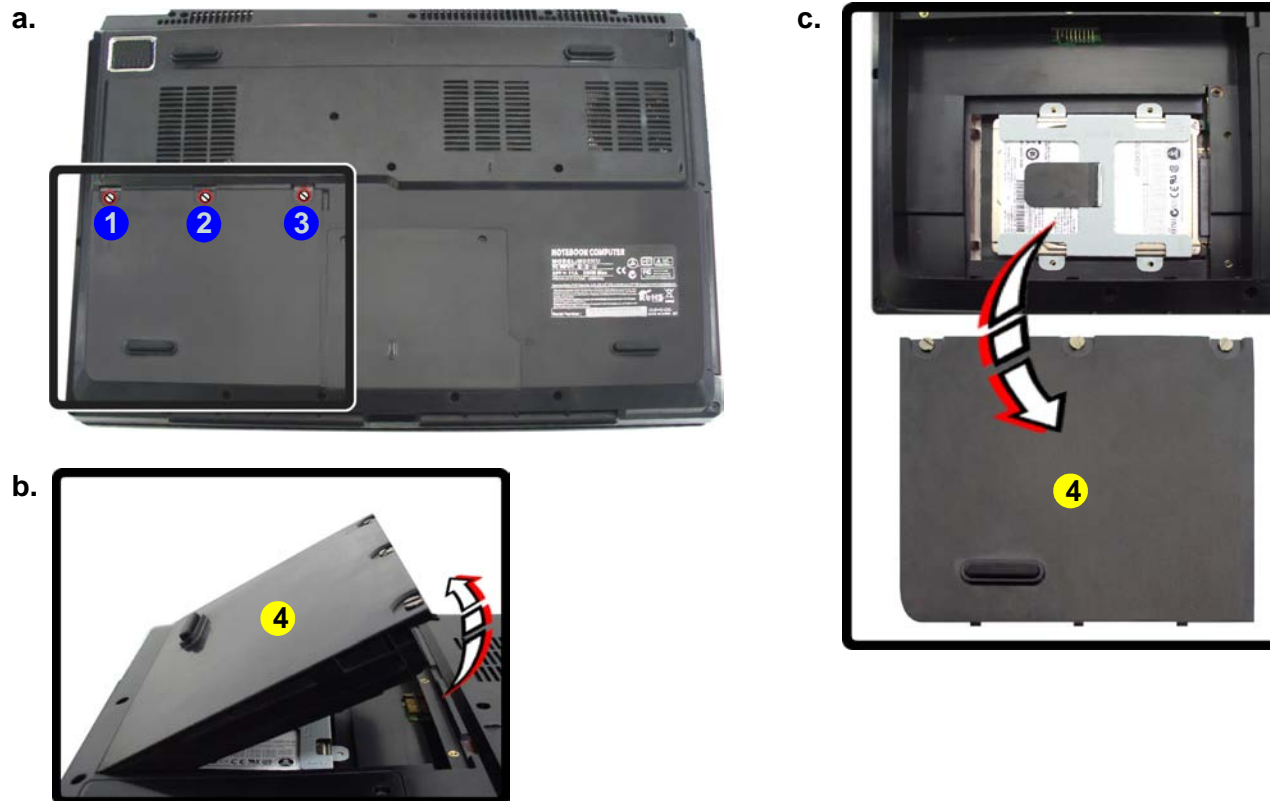
## Removing the Battery

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. Loosen screws ① - ③ and carefully lift the battery ④ up (*Figure b*) .
3. Remove the battery from the battery bay.

*Figure 1*  
**Battery Removal**

- a. Loosen screws.
- b. Release the battery.
- c. Lift the battery out of the bay as indicated.



4. Battery

- 3 Screws

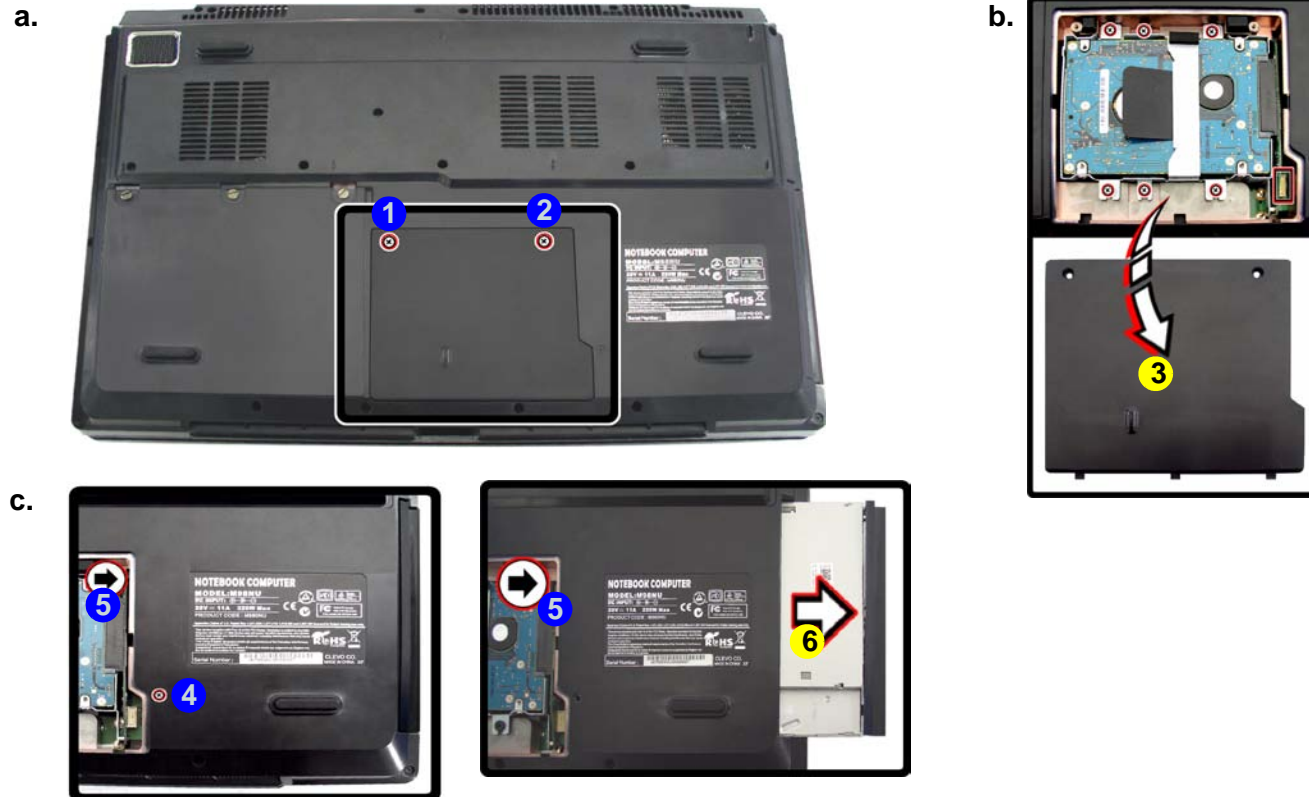
## Disassembly

*Figure 2*  
**Optical Device  
Removal**

- Remove the screws.
- Remove the cover.
- Remove the screw and push the optical device out of the computer at point 8.

## Removing the Optical (CD/DVD) Device

- Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)).
- Locate the hard disk bay cover and remove screws **1** & **2**, and remove the bay cover **3**.
- Remove screw **4**.
- Use the screwdriver to push the optical device **6** out of the computer at point **5**.
- Reverse the process to install the new device.



- Hard Disk Bay Cover
- Optical Device

- 3 Screws

## Removing the Hard Disk Drive

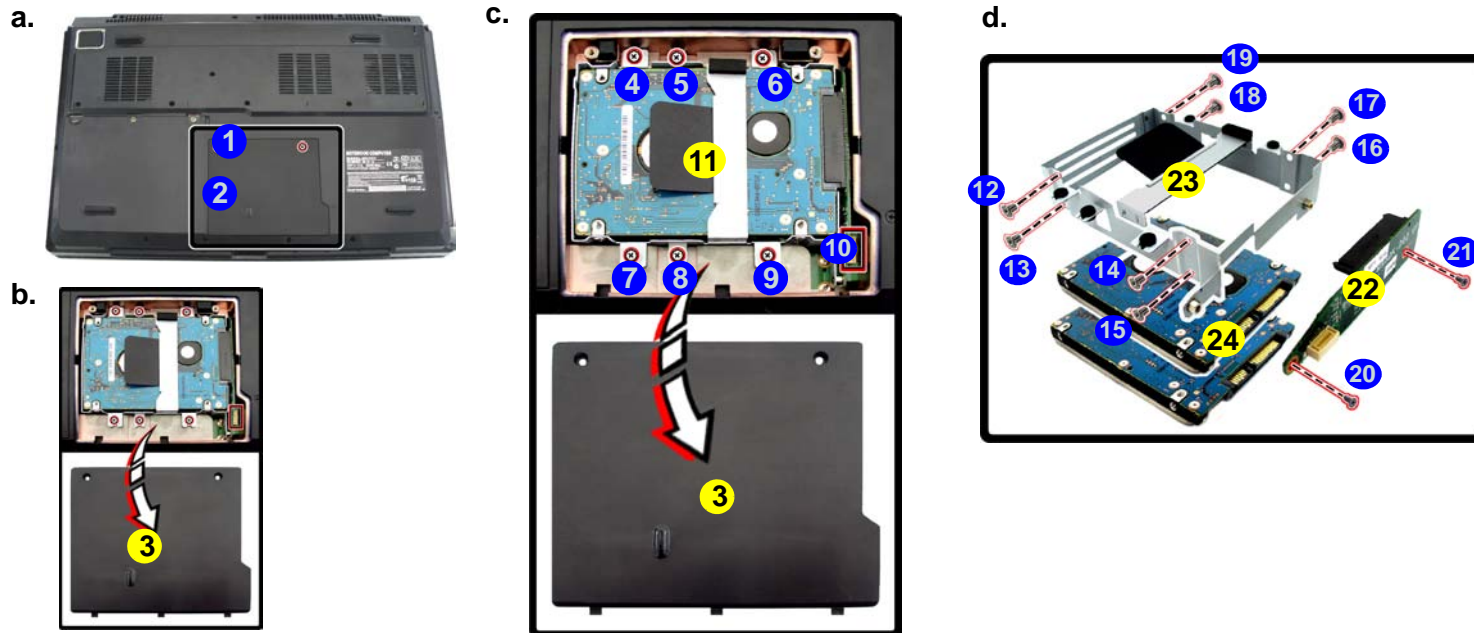
The hard disk drive is mounted in a removable case and can be taken out to accommodate other 2.5" SATA hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) 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** & **2**.
3. Remove the bay cover **3**.
4. Remove screws **4** - **9** and pull the tab to disconnect the connector **10** from hard disk assembly.
5. Lift the hard disk assembly **11** out of the computer.
6. Remove screws **12** - **21** (depending on how many hard disks you have installed in the assembly).
7. Separate the hard disk board connector **22** from the case **23**.
8. Separate the hard disk(s) **24** from the case.
9. Reverse the process to install a new hard disk(s).

*Figure 3*  
**HDD Assembly Removal**

- a. Remove the screws.
- b. Remove the cover
- c. Remove the screws and lift the hard disk assembly up out off the computer.
- d. Remove the screws and separate the HDD(s) from the connector and case.





3. Hard Disk Bay Cover  
11. Hard Disk Assembly  
22. HDD connector  
23. HDD case  
24. HDD

- 18 Screws

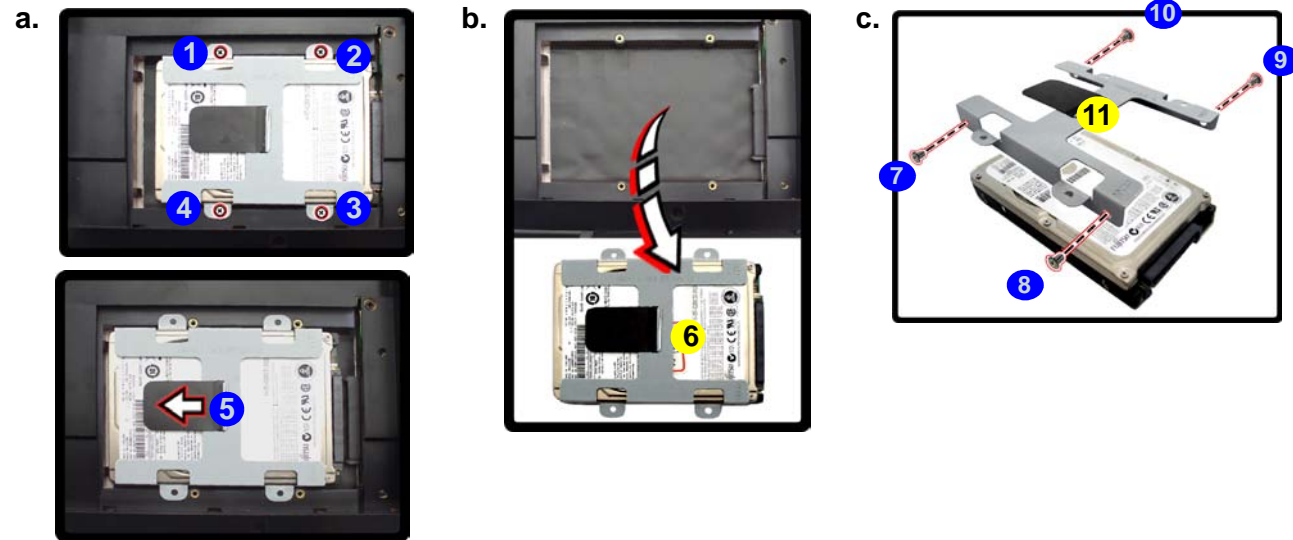
## Disassembly

*Figure 4*  
**Secondary HDD  
Assembly Removal**

- Remove the screws and slide the hard disk assembly in the direction of the arrow.
- Lift the hard disk assembly out of the computer.
- Remove the screws to release the hard disk from the case.

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

- Turn **off** the computer, and turn it over and remove the battery.
- The secondary hard disk bay is located under the battery compartment.
- Remove screw **1** - **4**.
- Slide the hard disk assembly in the direction of the arrow **5**.
- Lift the hard disk assembly **6** out of the compartment.
- Remove the screws **7** - **10** to release the hard disk from the case **11**.
- Reverse the process to install any new hard disk(s).



6. Hard Disk Assembly  
11. Hard Disk Case

- 8 Screws



## Removing the System Memory (RAM)

The computer has two memory sockets for 200 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 6GB. The SO-DIMM modules supported are 1024MB and 2048MB **DDR** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

### Memory Upgrade Process

1. Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)).
2. Remove screws **1** & **2** from the bottom of the computer.
3. Turn the computer over, open the Lid/LCD, and carefully (a cable **3** is connected to the underside of the LED cover module) lift up the LED cover module **4**
4. Remove screws **5** - **9** from the keyboard.

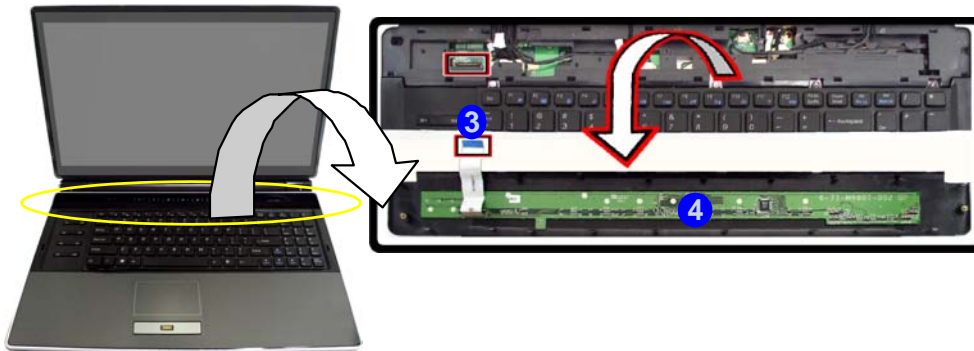
a.



c.



b.



*Figure 5*  
**RAM Module Removal**

- a. Remove the screws from the bottom of the computer.
- b. Turn the computer over, open the lid/LCD and lift the LED cover module.
- c. Remove the screws from the keyboard.



**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.



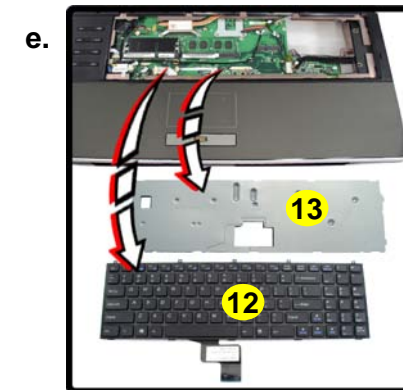
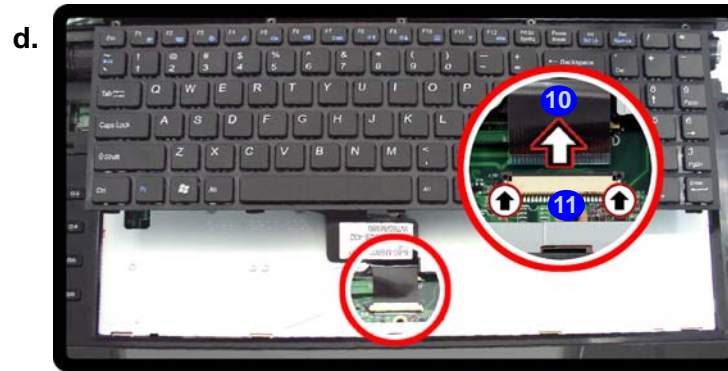
- 7 Screws

## Disassembly

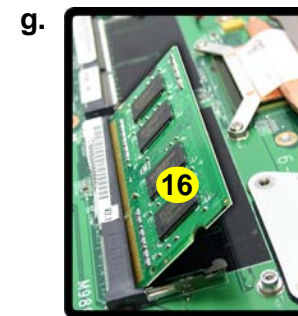
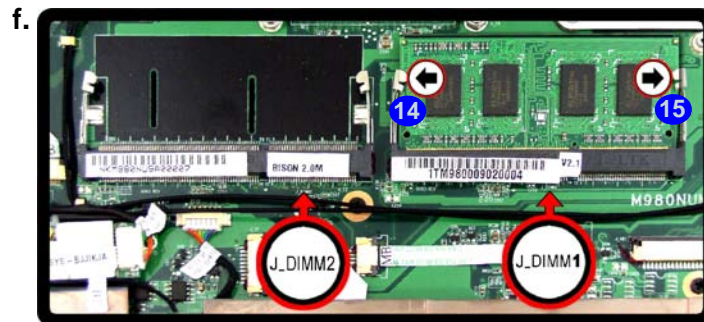
### Figure 6 RAM Module Removal (cont'd.)

- d. Disconnect the cable from the locking collar.
- e. Remove the keyboard and keyboard plate.
- f. Pull the release latch(es).
- g. Remove the module(s).

5. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable.
6. Disconnect the keyboard ribbon cable 10 from the locking collar socket 11.
7. Remove the keyboard 12 and keyboard shielding plate 13.



8. Gently pull the two **release latches** 14 & 15 on the sides of the memory socket in the direction indicated by the arrows (Figure f).
9. The RAM module 16 will pop-up (Figure g), and you can then remove it.



#### 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.



- 12. Keyboard
- 13. Keyboard Shielding Plate
- 16. RAM Module(s)



#### Single Memory Module Installation

If your computer has a single memory module, then insert the module into the **Channel 0 (JDIMM1)** socket as shown in Figure 6 f.

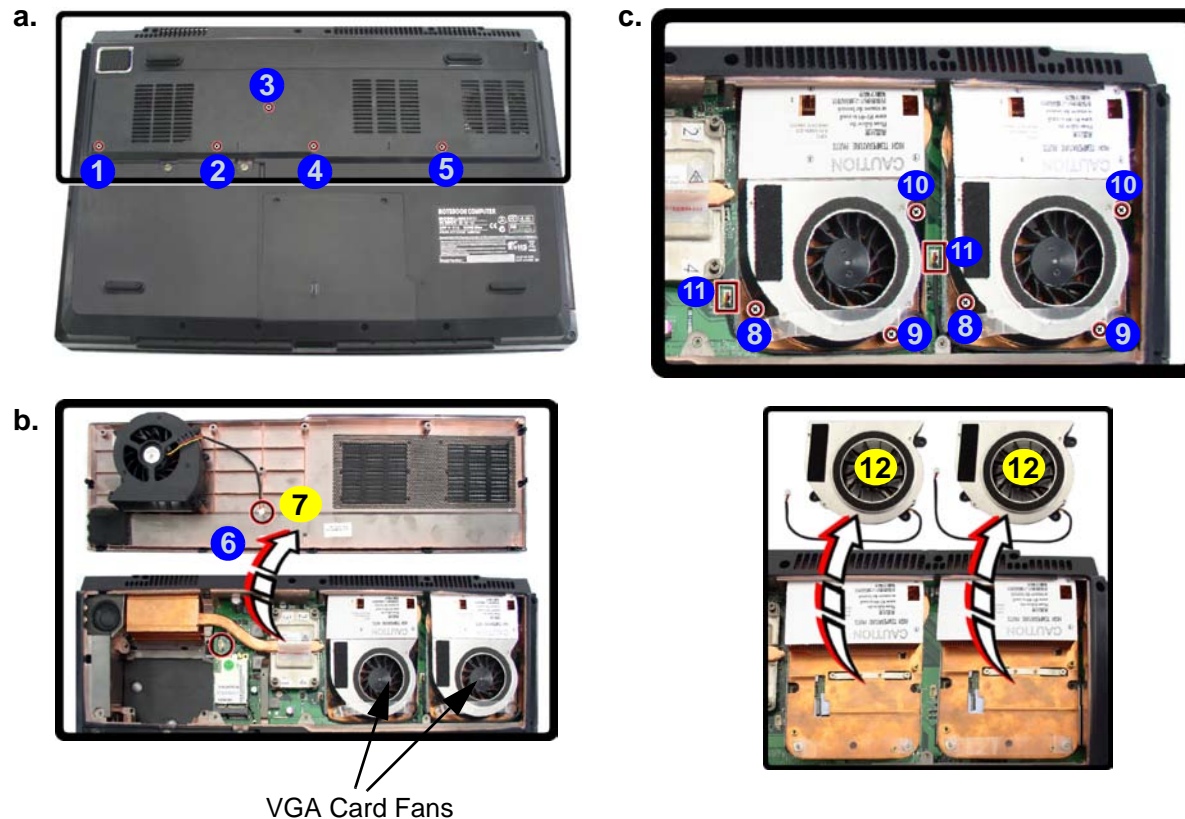
10. Pull the latches to release the second module if necessary.
11. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
12. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the socket as it will go. **DO NOT FORCE** the module; it should fit without much pressure.
13. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
14. Replace the heat sink unit, RAM fan, cover and screws.
15. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

## Removing the VGA Card

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** - **5**.
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 **6**, and remove the bay cover **7**.
5. Remove screws **8** - **10** (two video cards are pictured here) from the video card fan(s) and disconnect the fan cable(s) **11** (if two cards are present).
6. Remove the VGA card fan **12**.

Figure 7  
VGA Card Removal

- a. Remove the screws.
- b. Remove the cover and disconnect the cable(s).
- c. Remove the screws and release the VGA card fan.



7. Bay Cover  
12. VGA card fan

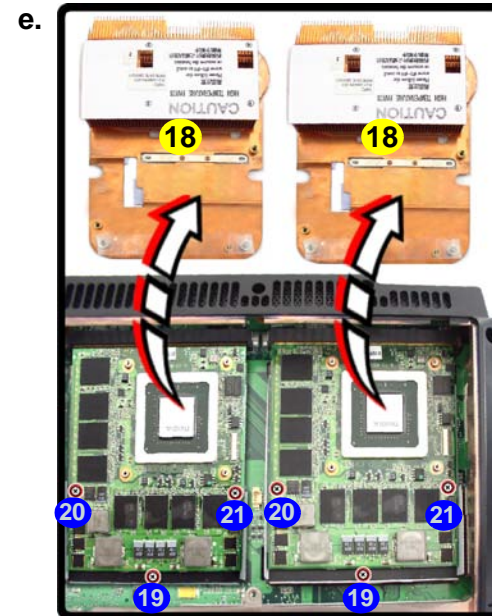
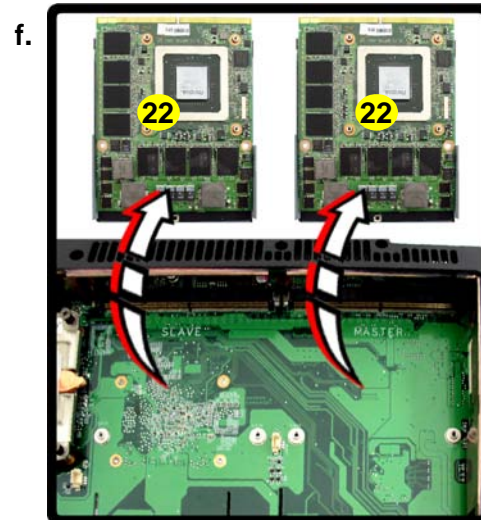
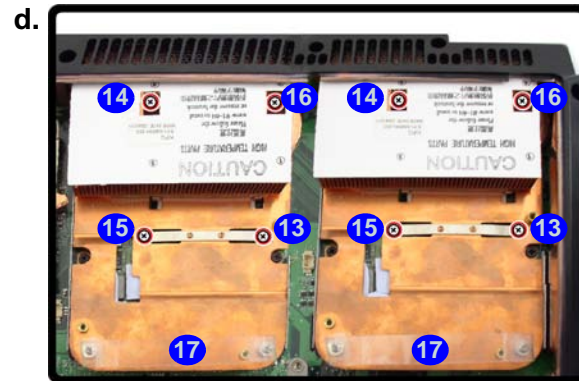
- 11 Screws

## Disassembly

Figure 8  
VGA Card Removal  
(cont'd.)

- d. Remove the screws.
- e. Remove the VGA heat-sink.
- f. Remove the VGA module.

- 7. Remove screws 13 - 16 from the heatsink in the order indicated on the label (two video cards are pictured here).
- 8. Grip the handle 17 and carefully remove the heatsink 18 .
- 9. Remove screws 19 - 21 from the video card.
- 10. Carefully remove the VGA card module 22 from the mainboard.



- 11. Reverse the process to install a new VGA card modules.



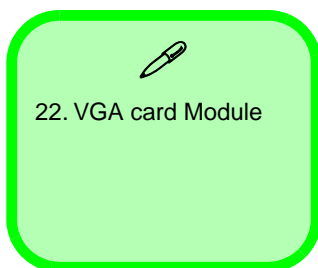
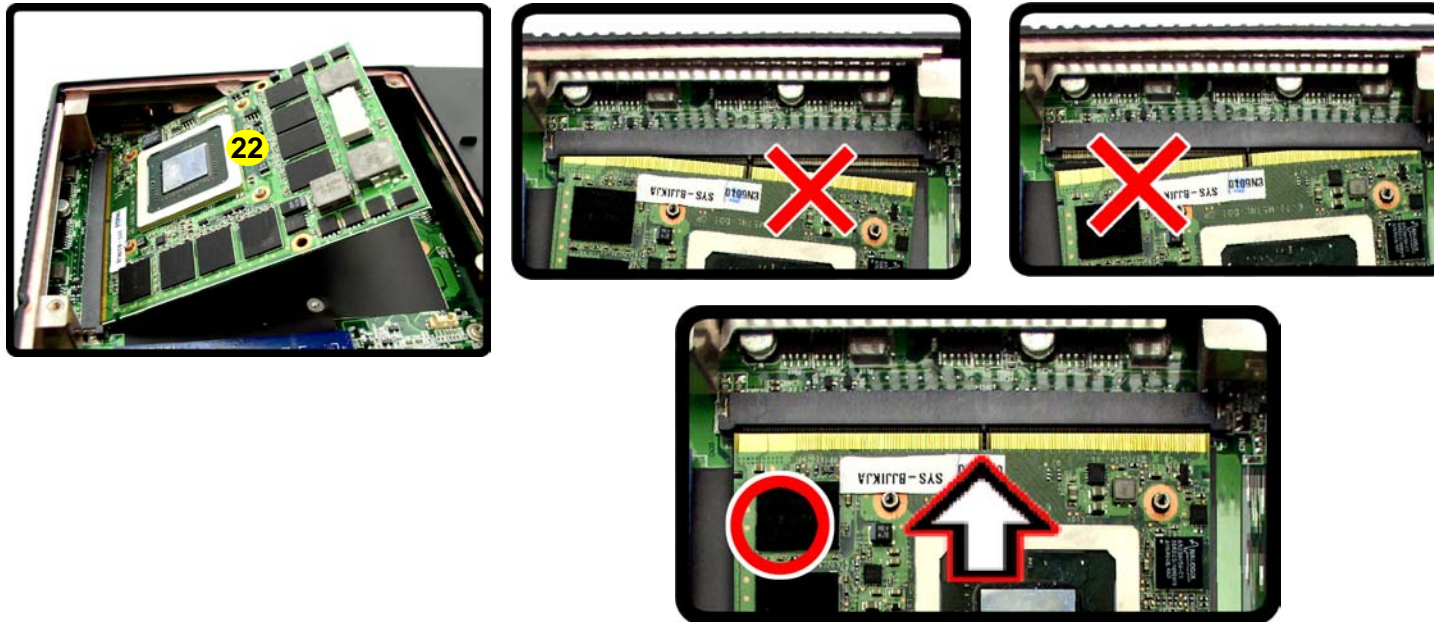
18. VGA Card Heatsink  
22. VGA Card Module

- 16 Screws

## Installing the VGA Card

1. Prepare to fit the VGA card **22** 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 **19** - **21** (*Figure 8e on page 2 - 12*).
7. Place the heatsink **18** back on the card, and secure the screws in the order indicated in *Figure 8e on page 2 - 12*.
8. Attach the VGA card fan and secure with the screws as indicated in *Figure 7 on page 2 - 11*.
9. Reinsert the component bay cover, and secure with the screws as indicated in *Figure 7 on page 2 - 11*.

a.



a. Carefully Insert the VGA Card.

*Figure 9*  
**VGA Card Installation**

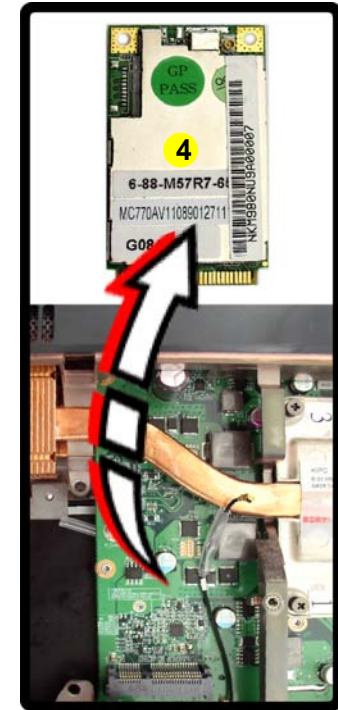
## Disassembly

*Figure 10*  
**TV Tuner Card  
Removal**

- Remove the screws and disconnect the cable.
- The TV tuner card will pop up and remove it.

## Removing the TV Tuner Card

- Turn off the computer, and turn it over, remove the battery ([page 2 - 5](#)).
- The TV tuner card is visible at point **1**.
- Remove the screw **2** from the TV tuner module and disconnect the cable **3**.
- The TV tuner card **4** will pop-up and you can remove it.



4. TV tuner card

- 1 Screw

# Appendix A: Part Lists

This appendix breaks down the *M980NU* series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

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

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

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

## Part List Illustration Location

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

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

Parts	M980NU
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>
Blu-Ray Combo	<i>page A - 8</i>
DVD Super Multi	<i>page A - 9</i>



# Top with Fingerprint

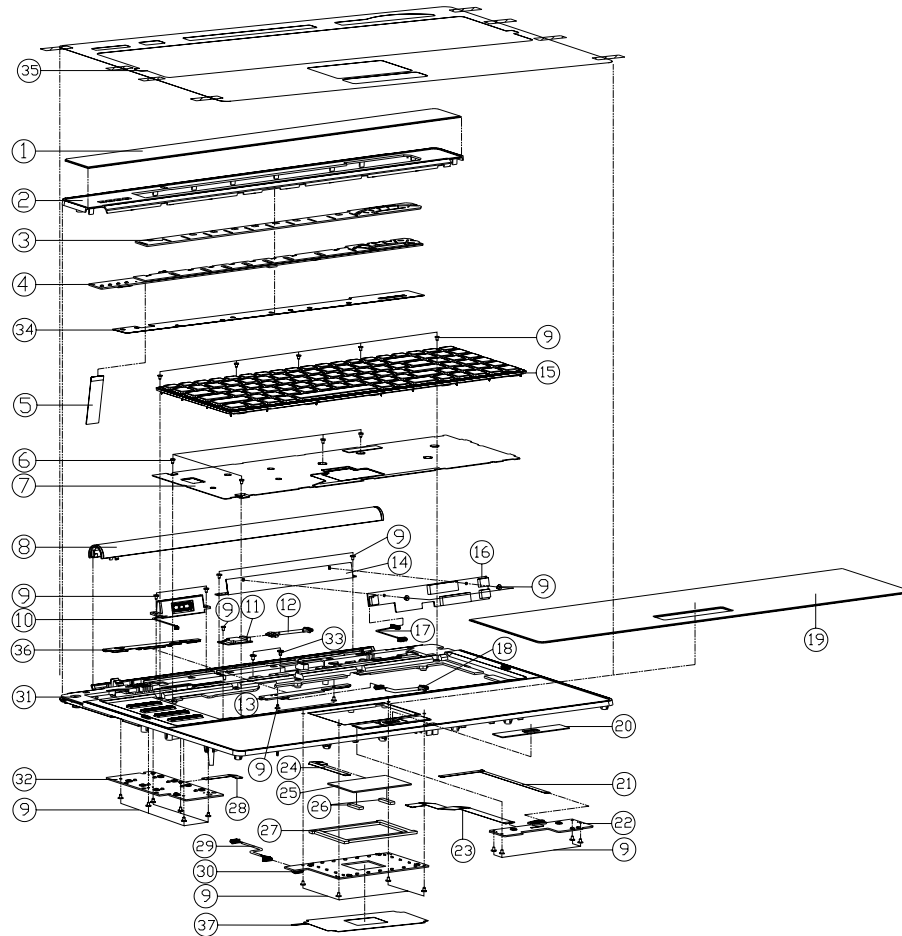


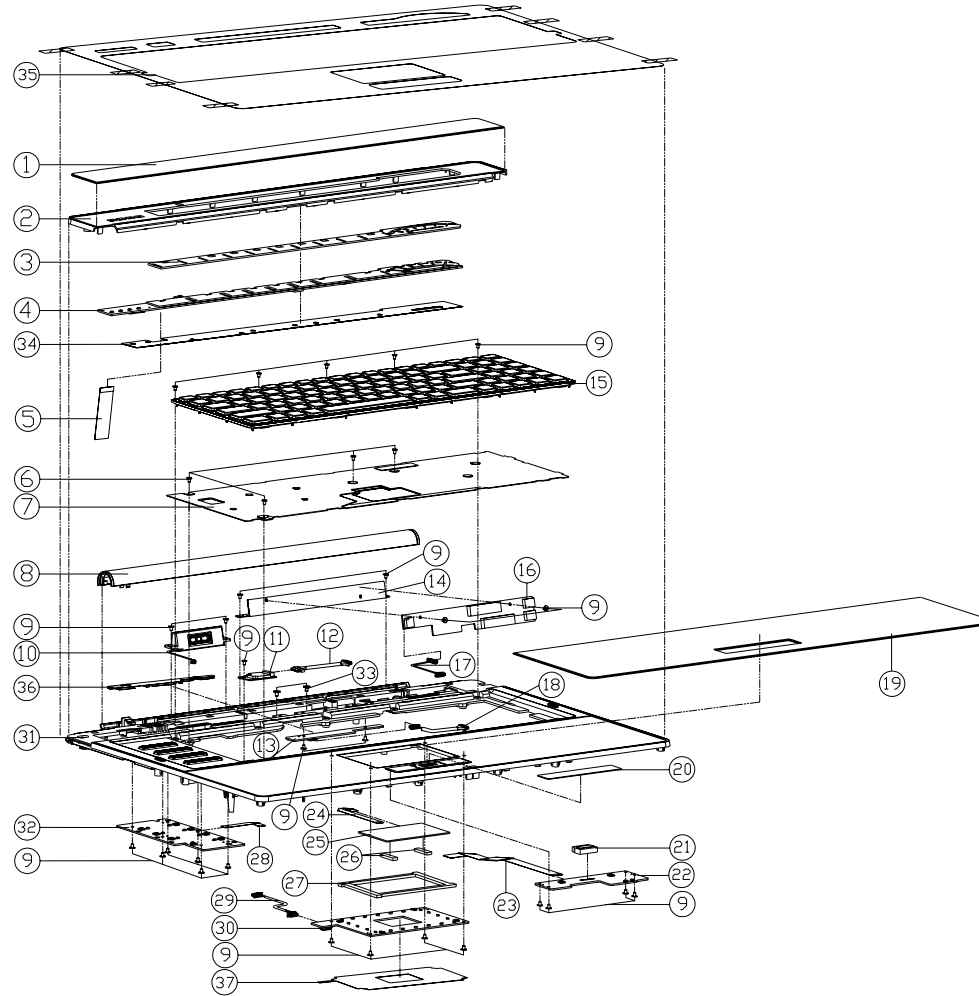
Figure A - 1  
Top with  
Fingerprint

ITEM	PART NAME	PART NO	REMARK
1	PMMA FOR CENTER COVER M980U	6-42-M9802-011	
2	CENTER COVER MODULE M980U	6-42-M9802-201	
3	LIGHT GUIDE FOR CENTER COVER PC M980U	6-42-M9802-092	
4	TOUCH SENSOR BOARD V30A M980U	6-77-M9801-003A	
5	W1 CABLE FOR W1 TO TOUCH SENSOR EXP M980U	6-43-M9803-012	
6	SCREW M2X3L KI NI ICT NY	6-35-B1120-38A	
7	KB SHIELDING MODULE SECC M980U	6-33-M9807-012	
8	INVERTOR COVER MODULE M980U	6-33-M9808-201	
9	SCREW M2X3L KI NI ICT NY	6-35-B1120-38E	
10	PLATE HOLE FOR TOP CASE	6-22-M9800-020	
11	INVERTOR COVER MODULE M980U	6-33-M9807-012	
12	W1 CABLE FOR W1 TO INVERTOR MODULE FOR W1	6-43-M745B-010	
13	BACK L SIDE LED BOARD V30A M980U	6-77-M9803-003A	
14	INVERTOR BKT SECC M980U	6-33-M9808-020	
15	K/B MODULE FOR FRAME AND MODULE M980U	6-79-M9800UK-190	
16	INVERTOR MODULE FOR INVERTOR COVER M980U	6-76-M9808-011	
17	W1 CABLE FOR W1 TO INVERTOR EXP M980U	6-43-M9808-011	
18	W1 CABLE FOR W1 TO FPC LED EXP M980U	6-43-M9800-071	
19	PMMA FOR PLAM RESET M980U	6-42-M9802-061	
20	PMMA FOR OP WITH FINGER M980U	6-42-M9802-071	
21	FPC CABLE FOR W1 TO TOUCH PAD BOARD	6-43-M980F-011	
22	CABLE FOR W1 TO TOUCH PAD BOARD	6-77-M980A-N63-1	
23	FPC CABLE FOR W1 TO TOUCH PAD BOARD	6-43-M9800-041	
24	FPC CABLE FOR W1 TO TOUCH PAD BOARD	6-43-M9802-011	
25	TOUCH PAD SYNAPTICS 14-0298-011 M980U	6-49-M7452-010	
26	TOUCH PAD SPONGE 030500 C0000 M980U	6-47-M9802-020	
27	LIGHT GUIDE FOR TOUCH PAD PC M980U	6-42-M9802-0A1	
28	FPC CABLE FOR W1 TO CASE KEY BOARD	6-43-M9800-011	
29	W1 CABLE FOR W1 TO TOUCH PAD BOARD	6-43-M9802-022	
30	TOUCH PAD LED BOARD V30A M980U	6-77-M980G-003A	
31	TOP CASE MODULE M980U	6-39-M9802-012	
32	GAME-KEY BOARD V30 M980U	6-77-M9807-003	
33	SCREW M2X3L KI NI ICT NY	6-35-B6125-5R0	
34	MOLAR CU FOIL FOR CENTER COVER M980U	6-40-M9802-030	
35	TOP CASE PROTECT-MILAR PRET M980U	6-40-M9802-020	
36	MOLAR FOR FPC LED BOARD M980U	6-40-M9802-050	
37	TOUCH PAD LED BOARD M980U	6-40-M9802-010	

A.Part Lists

# Top without Fingerprint

Figure A - 2  
Top without  
Fingerprint



ITEM	PART NAME	PART NO	REMARK
1	PMMA FOR CENTER COVER M980U	6-42-M9802-011	
2	CENTER COVER MODULE M980U	6-42-M9802-201	
3	LIGHT GUIDE FOR CENTER COVER PC M980U	6-42-M9802-092	
4	TOUCH SENSOR BOARD V30A M980U	6-77-M9801-D03A	
5	WIRE CABLE FOR KB TO TOUCH SENSOR CP M980U	6-43-M9803-012	
6	SCREW M2x3L KI NI ICT NY	6-35-B1120-3RA	
7	KB SHIELDING MODULE SECC M980U	6-33-M9807-012	
8	INVERTOR COVER MODULE M980U	6-33-M980R-201	
9	SCREW M2x3L KI NI ICT NY	6-35-B1120-3RE	
10	SPEAKER MODULE FOR TOP CASE 4 PIN	6-23-5M980-030	
11	INVERTOR MODULE FOR TOP CASE 4 PIN	6-88-M73T5-3900	
12	WIRE CABLE FOR KB TO SPK BLUETOOTH MODULE FOR M980U	6-43-M745B-010	
13	BACK L SIDE LED BOARD V30A M980U	6-77-M9803-D03A	
14	INVERTOR BKT SECC M980U	6-33-M980R-020	
15	KB LED LIGHT FRAME 4000 MODULE M980U	6-79-M980JOK-190	
16	INVERTOR MODULE FOR M980U	6-76-M980R-011	
17	WIRE CABLE FOR KB TO INVERTOR CP M980U V20	6-43-M980R-011	
18	WIRE CABLE FOR M9 TO FAN-LED CP M980U	6-42-M9802-071	
19	PMMA FOR P/LM REST M980U	6-42-M9802-061	
20	PMMA FOR CP KNOB W/O FINGER M980U	6-42-M9802-081	
21	RUBBER FOR CP KNOB DUMMY M980U	6-47-M9802-050	
22	CLOCK BOARD V30A/W/O FFP M980U	6-77-M9802-D03A	
23	FFC CABLE FOR M9 TO CLOCK BOARD V20	6-43-M9802-041	
24	FFC CABLE FOR M9 TO TOUCH PAD BOARD V20	6-43-M9802-011	
25	TOUCH PAD SYNAPTICS TM-0098-001 M745	6-49-M745S-010	
26	TOUCH PAD SPONGE 08x50 08x35 M980U	6-47-M9802-020	
27	LIGHT GUIDE FOR TOUCH PAD PC M980U	6-42-M9802-0A1	
28	FFC CABLE FOR M9 TO GAME KEY BOARD V20	6-43-M9802-011	
29	WIRE CABLE FOR M9 TO TOUCH PAD-LED CP M980U	6-43-M9802-021	
30	TOUCH PAD LED BOARD V30A M980U	6-77-M980G-D03A	
31	TOP CASE MODULE M980U	6-39-M9802-012	
32	GAME-KEY BOARD V30 M980U	6-77-M9807-D03	
33	SCREW M2.5x5L KI NI ICT NY	6-35-B6125-SR0	
34	NYLAR CU FOIL FOR CENTER COVER M980U	6-40-M9802-030	
35	TOP CASE PROTECT NYLAR-PET M980U	6-40-M9802-020	
36	NYLAR FOR FAN LED PCB/FR03 1-0405-M980U	6-40-M980S-050	
37	TOUCH PAD LED BOARD NYLAR-FR03 M980U	6-40-M980S-010	

Bottom

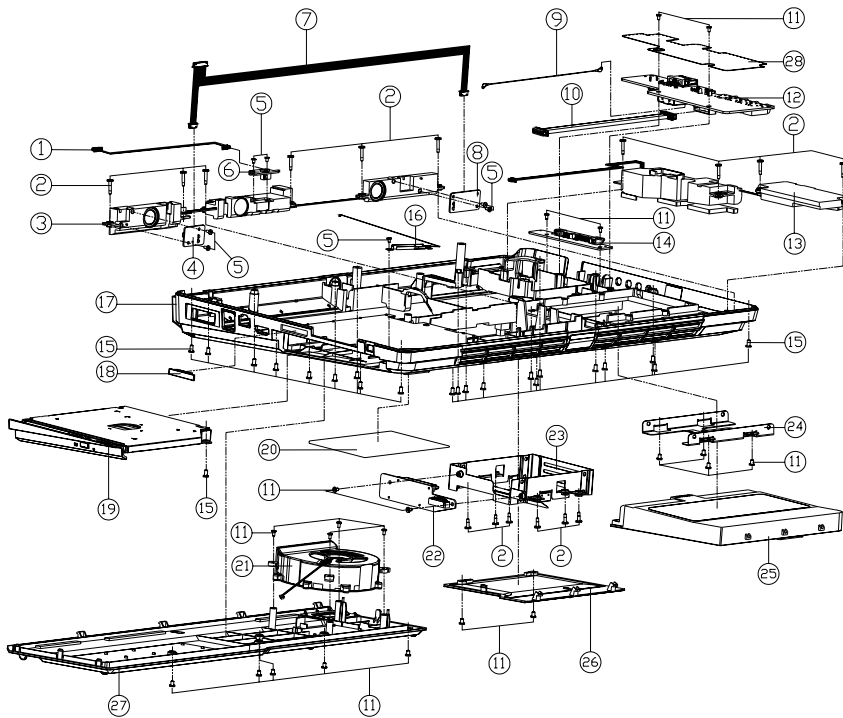


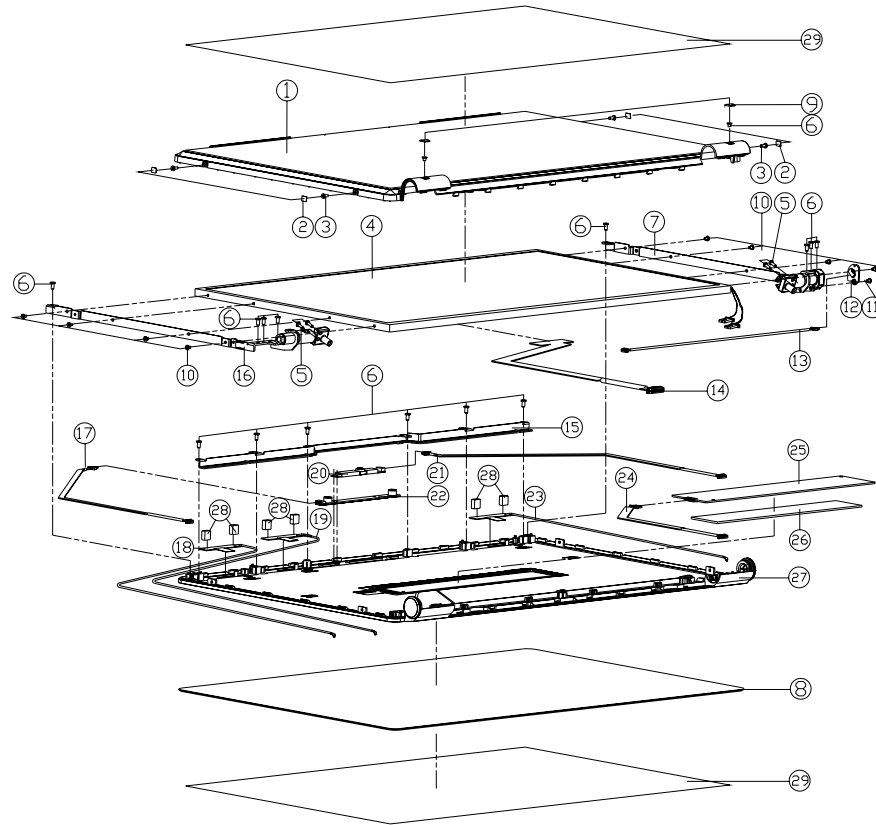
Figure A - 3  
Bottom

ITEM	PART	NAME	PART	NO	REMARK
1	WIRE CABLE	TOP WIRE TO FRONT-BOTTOM OF FRONT	6-43-M9800-020		
2	SCREW	M2.5X6 KI BK/2 NY-ICT	6-35-81120-750		
3	SPACER	L-R MODULE BY 4	6-23-SM980-022		
4	FRONT R SIDE LED BOARD	V30A M980J	6-77-M9804-003A		
5	SCREW	M2.5X6 KI BK/2 NY-ICT	6-35-81120-3RE		
6	CIR. BOARD	V30 ASS'Y M980J	6-77-M980H-003		
7	WIRE CABLE	FOR WIRE TO LED-R of FRONT WIRE	6-43-M9800-061		
8	FRONT L SIDE LED BOARD	V30A M980J	6-77-M9805-003A		
9	CABLE	CABLE W/24 PIN FOR TV TUNER M980J	6-43-M980T-010		
10	WIRE CABLE	FOR WIRE TO AUDIO 3P M980J WIRE	6-43-M9800-051		
11	SCREW	M2.5X6 KI BK/2 NY-ICT	6-35-86125-50A		
12	AUDIO BOARD	V30 M980J	6-77-M980B-003		
13	SPACER	L-R MODULE BY 4	6-23-SM980-011		
14	PCB	SINGLE HDD BOARD V30A M980J	6-77-M980J-003A		
15	SCREW	M2.5X6 KI BK/2 NY-ICT	6-35-86125-8R0		
16	ALUMINUM	ALUMINUM 24 PIN L-R	6-23-7M980-040		
17	BOTTOM CASE	MODULE M980J	6-39-M9803-012		
18	CABLE	KEYBOARD CABLE W/24 PIN	6-47-M980E-011		
19	SATA	ATA SUPER MULTI 24PIN ASSY M980J	6-79-M980J00-000		
20	SATA	ATA BLU-RAY COMBO'S 24P ASSY M980J	6-79-M980J00-000		
21	PRODUCT	LABEL M980J	6-45-M9803-012		
22	FAN	LANCOSHIP BY 43 80MMX20 3000RPM	6-23-AM980-010		
23	DUAL	HDD BOARD V30 M980J	6-77-M980K-003		
24	HDD	3 BKT MODULE M980J	6-33-M980J-100		
25	HDD	3 BKT MODULE M980J	6-33-M980J-200		
26	HDD	COVER PC-ABS(CN)40 M980J	6-87-M9805-4X51		
27	CPU	COVER MODULE M980J	6-42-M980J-011		
28	AUDIO	BOARD W/24 PIN FREQ M980J	6-40-M9805-020		

A.Part Lists

# LCD

Figure A - 4  
LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER MIDDLE M9800J	6-39-M9801-011	
2	LCD SCREW MYLAR M9800J	6-40-M9801-021	
3	SCREW M2.5xL K1 NI ICT NY	6-35-B1120-5R0	
4	LCD BKT FIB OPTIC LENS IN OUT	6-50-P28265-M00	
4	LCD BKT FIB OPTIC MOUNT OF ASM	6-50-P28265-D03	
4	LCD BKT FIB OPTIC LENS IN OUT	6-50-P28265-D01	
5	SCREW M2.5xL K1 BK/Z NY ICT	6-35-B6125-8R0	
6	SCREW M2.5xL K1 BK/Z ICT NY	6-35-B6125-5R4	
7	LCD HINGE R (SECC) M9800J	6-33-M9801-022	
8	LCD HINGE L (SECC) M9800J	6-42-M9801-032	
9	HINGE CAP RUBBER SILICONE B0 M9800J	6-47-M9801-020	
10	SCREW M2.5xL K1 NI ICT NY	6-35-B1120-3R4	
11	SCREW M2.5xL K1 BK/Z NY ICT	6-35-B1120-5R2	
12	POWER BUTTON BOARD V3.0A M9800J	6-77-M9806-003A	
13	WIRE CABLE FOR MIA TO POWER BUTTON M9800J	6-43-M9800-020	
14	WIRE CABLE FOR MIA TO LCD TOP M9800J	6-43-M9801-011	
15	LCD BRACKET TOP SECC M9800J	6-33-M9801-011	
16	LCD HINGE L (SECC) M9800J	6-33-M9801-032	
17	WIRE CABLE FOR MIA TO I/O M9800J	6-43-M9804-011	
18	MICRO USB 2.0/3.0/4.0 PORT M9800J	6-23-7M980-011	
19	MICRO USB 2.0/3.0/4.0 PORT M9800J	6-23-7M980-031	
20	DC CABLE USB TO M9800J	6-88-M740C-4913	(OPTION)
21	WIRE CABLE FOR MIA TO LED SP M9800J	6-43-M9801-021	
22	DIGITAL MIC MODULE IN-402 FOR M9800J	6-23-EM980-010	
23	MICRO USB 2.0/3.0/4.0 PORT M9800J	6-23-7M980-021	
24	WIRE CABLE FOR MIA TO LED-LEFT M9800J	6-43-M9800-031	
25	LEDG LED BOARD V3.0A M9800J	6-77-M9806-003A	
26	LIGHT GUIDE FOR LCD BACK COVER M9800J	6-42-M9801-080	
27	LCD BACK COVER MIDDLE M9800J	6-39-M9801-022	
28	MICRO USB 2.0/3.0/4.0 PORT M9800J	6-47-0019A-080	
29	LCD PROTECT FILM ADHESIVE M9800J	6-40-M9801-040	

# Mainboard

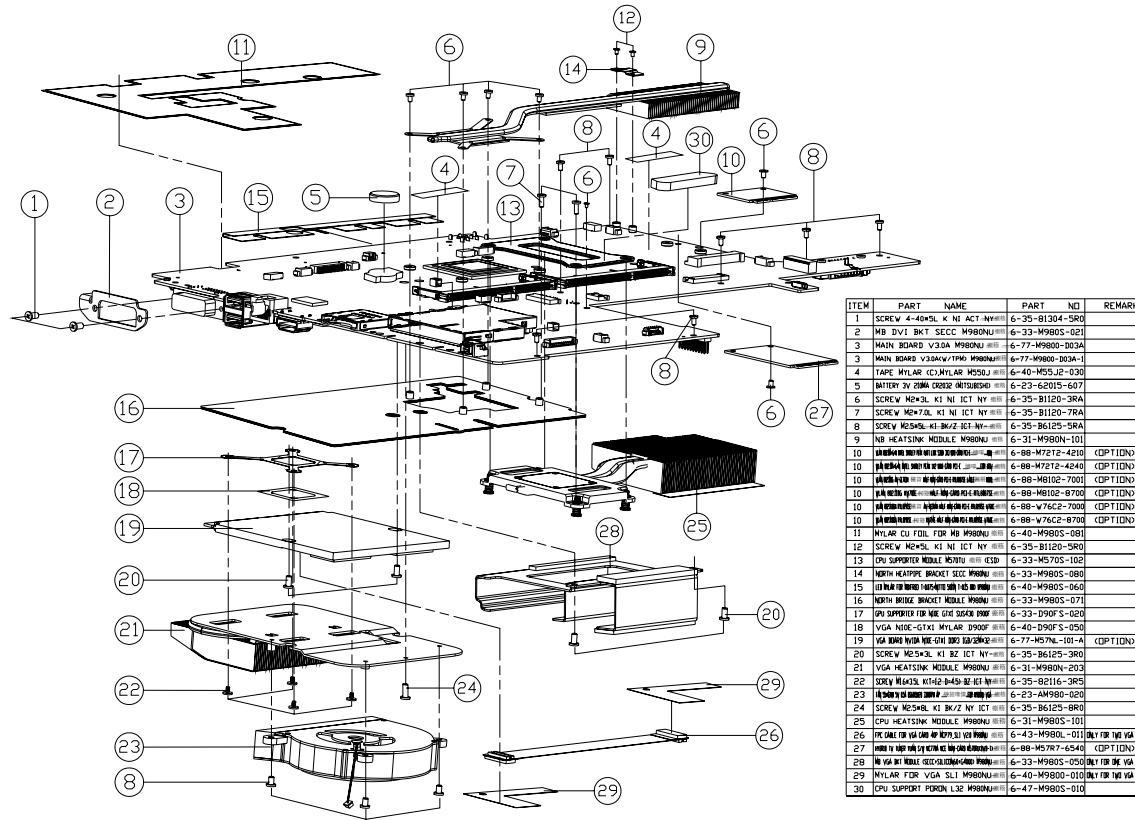


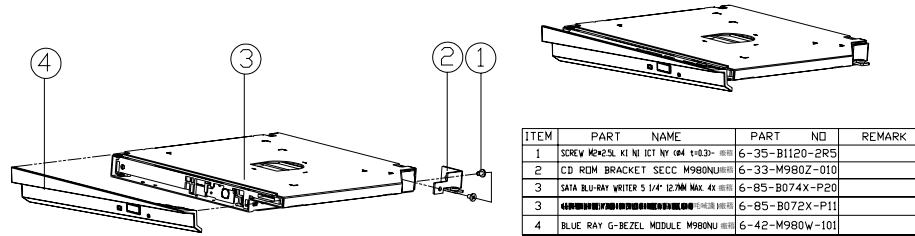
Figure A - 5  
Mainboard

ITEM	PART NAME	PART NO	REMARK
1	SCREW 4-40xSL K NI ACT NY#	6-35-81304-5R0	
2	MB DIV1 BKT SECC M980N#	6-33-M980S-021	
3	MAIN BOARD V3.0A M980J#	6-77-M980-003A	
3	MAIN BOARD V3.0A V1P0 M980J#	6-77-M980-003A-1	
4	TAPE NYLAR (C)NYLAR M550J#	6-40-M55J2-030	
5	BATTERY 3V 50MA 5000HRS M980N#	6-23-62035-507	
6	SCREW M2xSL KI NI ICT NY#	6-35-B1120-38A	
7	SCREW M2xSL KI NI ICT NY#	6-35-B1120-39A	
8	SCREW M2xSL KI BK/2 ICT NY#	6-35-B6125-38A	
9	NB HEATSINK MODULE M980N#	6-31-M980N-101	
10	HEATSINK FOR MB CPU SOCKET	6-88-M712-4210	(OPT ION)
10	HEATSINK FOR MB CPU SOCKET	6-88-M712-4240	(OPT ION)
10	HEATSINK FOR MB CPU SOCKET	6-88-M8102-7001	(OPT ION)
10	HEATSINK FOR MB CPU SOCKET	6-88-M8102-8702	(OPT ION)
10	HEATSINK FOR MB CPU SOCKET	6-88-W76C2-7002	(OPT ION)
10	HEATSINK FOR MB CPU SOCKET	6-88-W76C2-8702	(OPT ION)
11	NYLAR CU FOIL FOR MB M980N#	6-40-M980S-081	
12	SCREW M2xSL KI NI ICT NY#	6-35-B1120-580	
13	GPU SUPPORTER MODULE M980N#	6-33-M570S-100	
14	NORTH BRIDGE BRACKET SEC M980N#	6-33-M980S-080	
15	HEATSINK FOR MB CPU SOCKET	6-40-M980S-060	
16	NORTH BRIDGE BRACKET MODULE M980N#	6-33-M980S-071	
17	GPU SUPPORTER FOR MB CPU SOCKET	6-33-D90F S-020	
18	VGA NICE-GTXI NYLAR P900F#	6-40-D90F S-050	
19	VGA BRD NYLAR NYLAR 3000 3000 3000 3000	6-77-M57N-101-A	(OPT ION)
20	SCREW M2xSL KI BK ICT NY#	6-35-B6125-380	
21	VGA HEATSINK MODULE M980N#	6-31-M980N-210	
22	SCREW M2xSL KI BK/2 ICT NY#	6-35-B2116-38S	
23	SCREW M2xSL KI BK/2 NY ICT NY#	6-23-AM980-020	
24	SCREW M2xSL KI BK/2 NY ICT NY#	6-35-B6125-380	
25	CPU HEATSINK MODULE M980N#	6-31-M980S-101	
26	PC CASE TOP VISA GRP NYLAR NYLAR	6-43-M980L-011	ONLY FOR THE VISA CASE
27	HEATSINK FOR MB CPU SOCKET	6-88-M5787-6540	(OPT ION)
28	NY VISA BRIDGE BRACKET M980N#	6-33-M980S-050	ONLY FOR THE VISA CASE
29	NYLAR FOR VGA SLT M980N#	6-40-M9800-010	ONLY FOR THE VISA CASE
30	CPU SUPPORT FORK L3C M980N#	6-47-M980S-010	

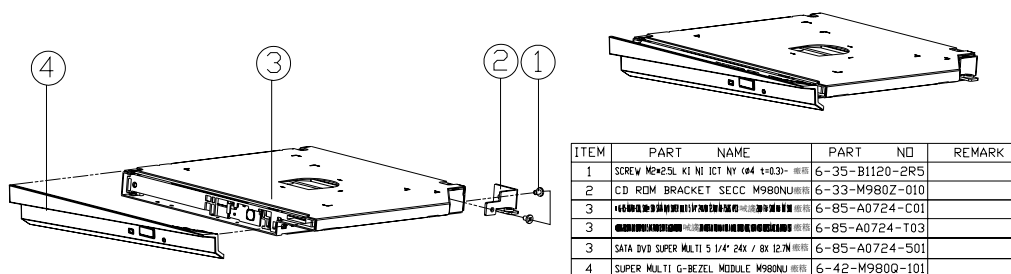
A.Part Lists

# Blu-Ray Combo

Figure A - 6  
Blu-Ray Combo



# DVD Super Multi



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2x2.5L KI NI ICT NY (#4 1+0.3)	6-35-B1120-2R5	
2	CD ROM BRACKET SECC M980NJ	6-33-M980Z-010	
3	SATA DVD SUPER MULTI 5 1/4" 24X / 8X 12.7M	6-85-A0724-C01	
3	SATA DVD SUPER MULTI 5 1/4" 24X / 8X 12.7M	6-85-A0724-T03	
3	SATA DVD SUPER MULTI 5 1/4" 24X / 8X 12.7M	6-85-A0724-501	
4	SUPER MULTI G-BEZEL MODULE M980NJ	6-42-M9800-101	

Figure A - 7  
DVD Super Multi





# Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *M980NU* 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>CRT, DVI - Page B - 19</i>	<i>Power 1.0VS - Page B - 36</i>
<i>PENRYN 1/2 - Page B - 3</i>	<i>ODD, CCD, BT, USB 2.0 - Page B - 20</i>	<i>Power 3.3V/5V - Page B - 37</i>
<i>PENRYN3 2/2 - Page B - 4</i>	<i>KBC ITE IT8512-J - Page B - 21</i>	<i>Power Charger, DC-In - Page B - 38</i>
<i>MCP79 FSBI - Page B - 5</i>	<i>PHY RTL8211CL - Page B - 22</i>	<i>Single HDD Board - Page B - 39</i>
<i>MCP79 MEM CTRL (1) - Page B - 6</i>	<i>Codec, Subwoofer, DMIC - Page B - 23</i>	<i>Dual HDD Board - Page B - 40</i>
<i>MCP79 MEM CTRL (2) - Page B - 7</i>	<i>Audio AMP - Page B - 24</i>	<i>Audio Board - Page B - 41</i>
<i>MCP79 PCI-E - Page B - 8</i>	<i>HDMI Switch - Page B - 25</i>	<i>Power Button Board - Page B - 42</i>
<i>MCP79 LAN, Panel - Page B - 9</i>	<i>New Card, Mini Card - Page B - 26</i>	<i>Click &amp; FP Board - Page B - 43</i>
<i>MCP79 PCI, LPC - Page B - 10</i>	<i>Card Reader, IEEE 1394 - Page B - 27</i>	<i>Logo LED Board - Page B - 44</i>
<i>MCP79 SATA, USB - Page B - 11</i>	<i>MXM 3.0 Master - Page B - 28</i>	<i>Game Key Board - Page B - 45</i>
<i>MCP79 HDA, Misc - Page B - 12</i>	<i>MXM 3.0 Slave - Page B - 29</i>	<i>TouchPad LED Board - Page B - 46</i>
<i>MCP79 Power - Page B - 13</i>	<i>MB to Small B'd Connector A - Page B - 30</i>	<i>Front R Side LED Board - Page B - 47</i>
<i>MCP79 GND, RMGT PWR, PWRGD - Page B - 14</i>	<i>MB to Small B'd Connector B - Page B - 31</i>	<i>Front L Side LED Board - Page B - 48</i>
<i>DDR3 SO-DIMM_0 - Page B - 15</i>	<i>Power System - Page B - 32</i>	<i>Back L Side LED Board - Page B - 49</i>
<i>DDR SO-DIMM_1 - Page B - 16</i>	<i>Power VCore - Page B - 33</i>	<i>Touch Sensor Board A - Page B - 50</i>
<i>Panel, Inverter, TPM - Page B - 17</i>	<i>PWR 1.05V, Screw Hole - Page B - 34</i>	<i>Touch Sensor Board B - Page B - 51</i>
<i>HDMI, Fan Control - Page B - 18</i>	<i>Power 1.5V/0.75V - Page B - 35</i>	<i>CIR Board - Page B - 52</i>

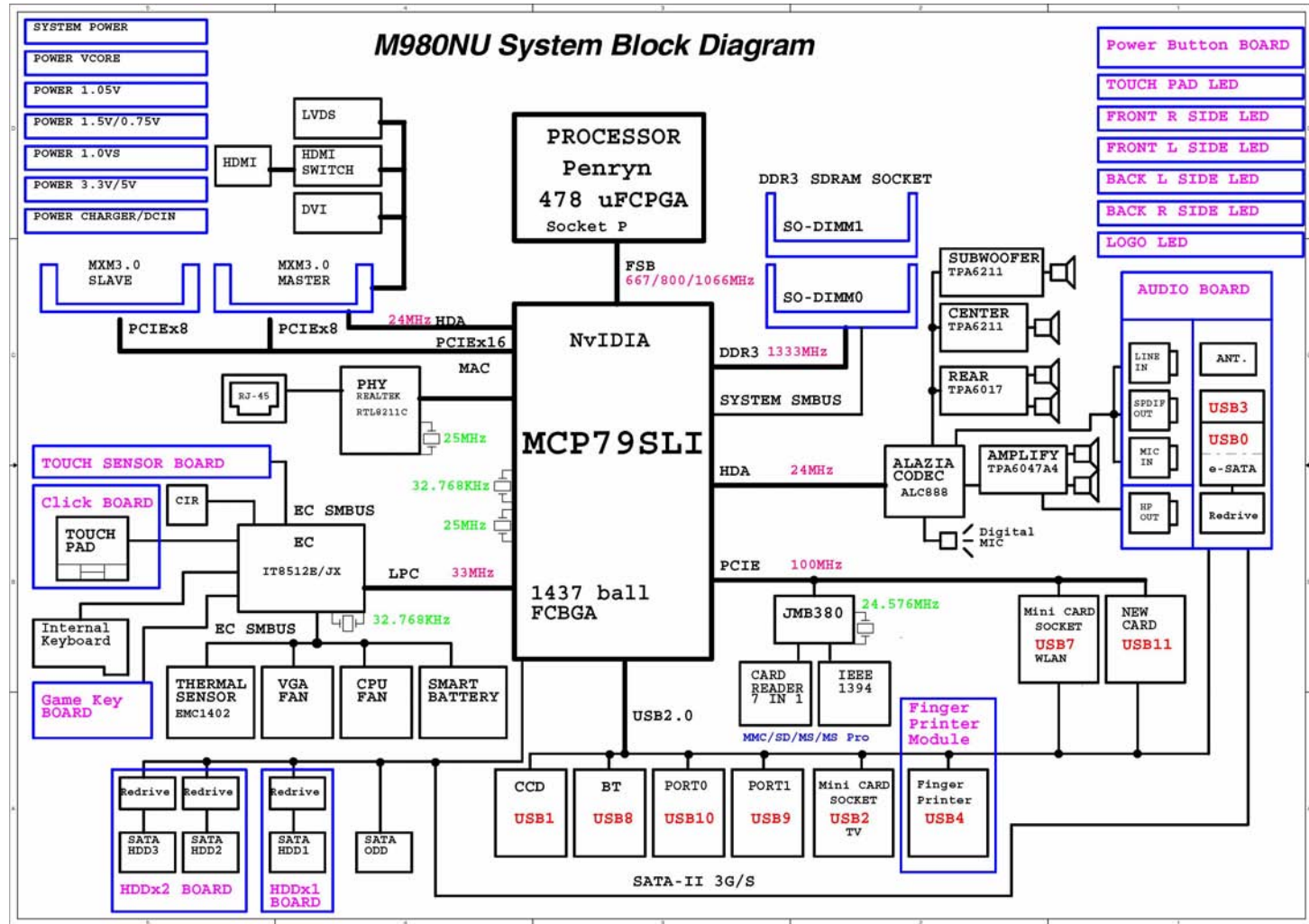
*Table B - 1*  
**Schematic  
Diagrams**



### Version Note

The schematic diagrams in this chapter are based upon version 6-7P-M980F-002. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

# System Block Diagram

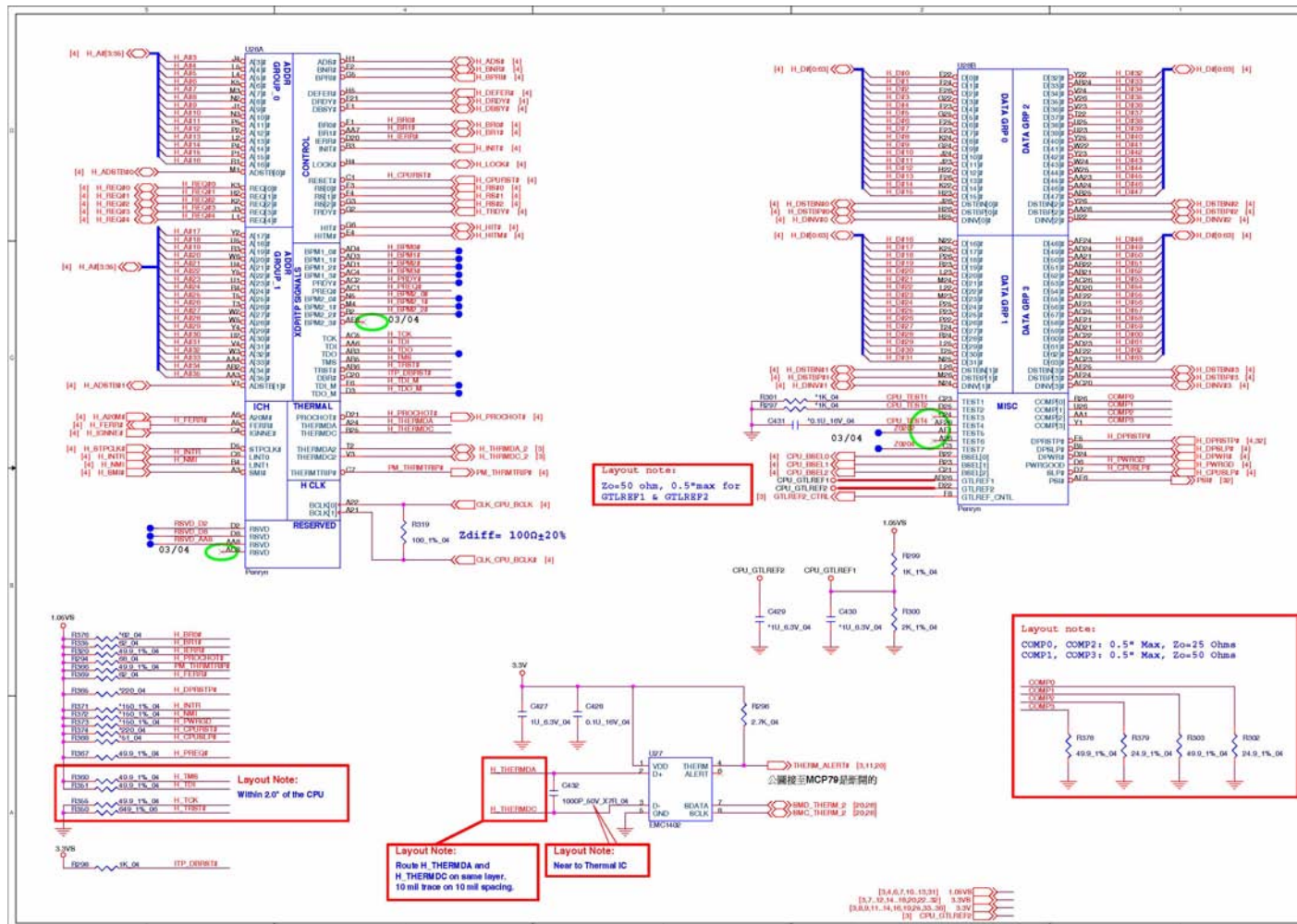


Sheet 1 of 53  
System Block  
Diagram

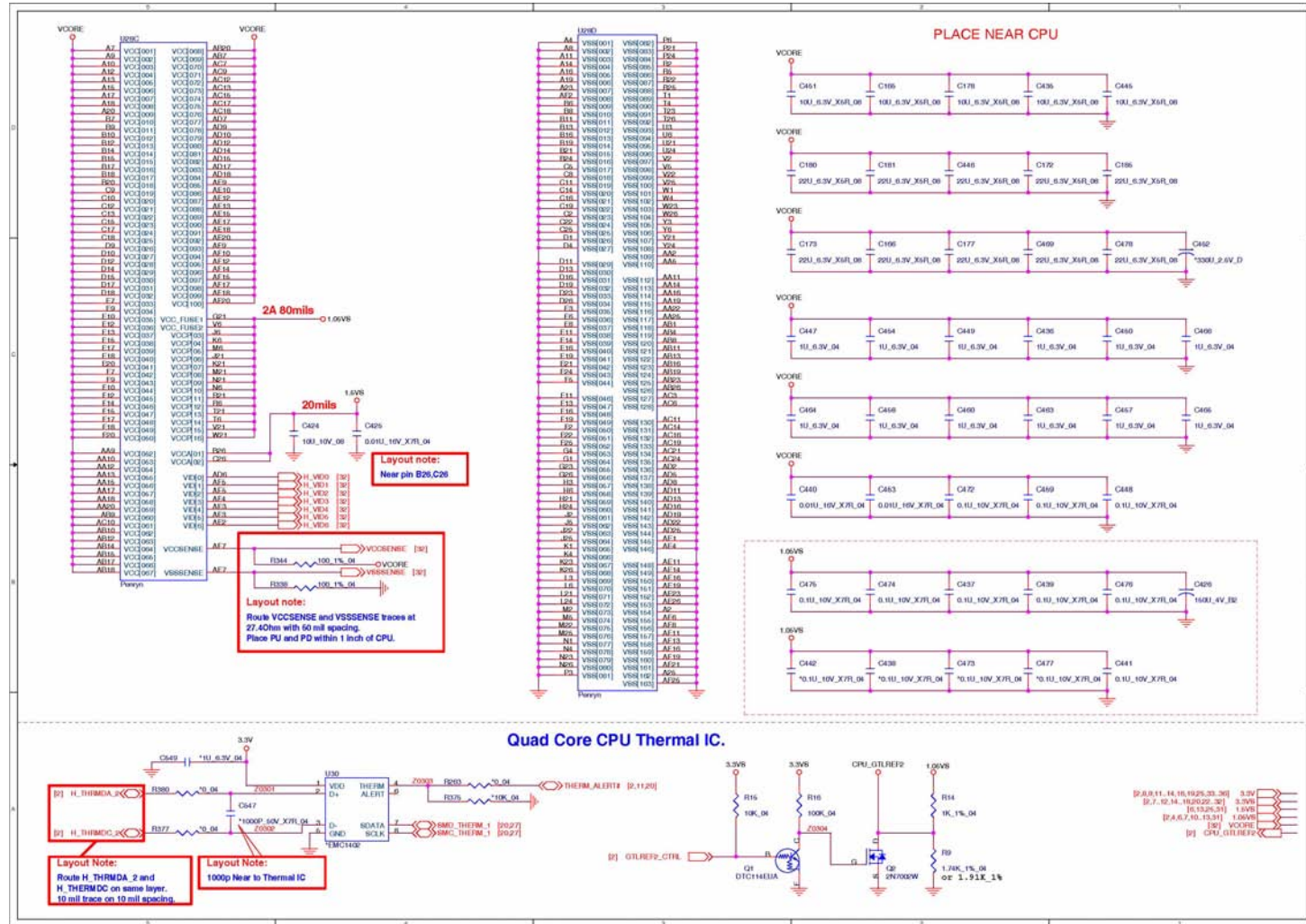
# PENRYN 1/2

Sheet 2 of 53  
PENRYN 1/2

B. Schematic Diagrams



# PENRYN3 2/2



Sheet 3 of 53  
PENRYN 2/2

B.Schematic Diagrams

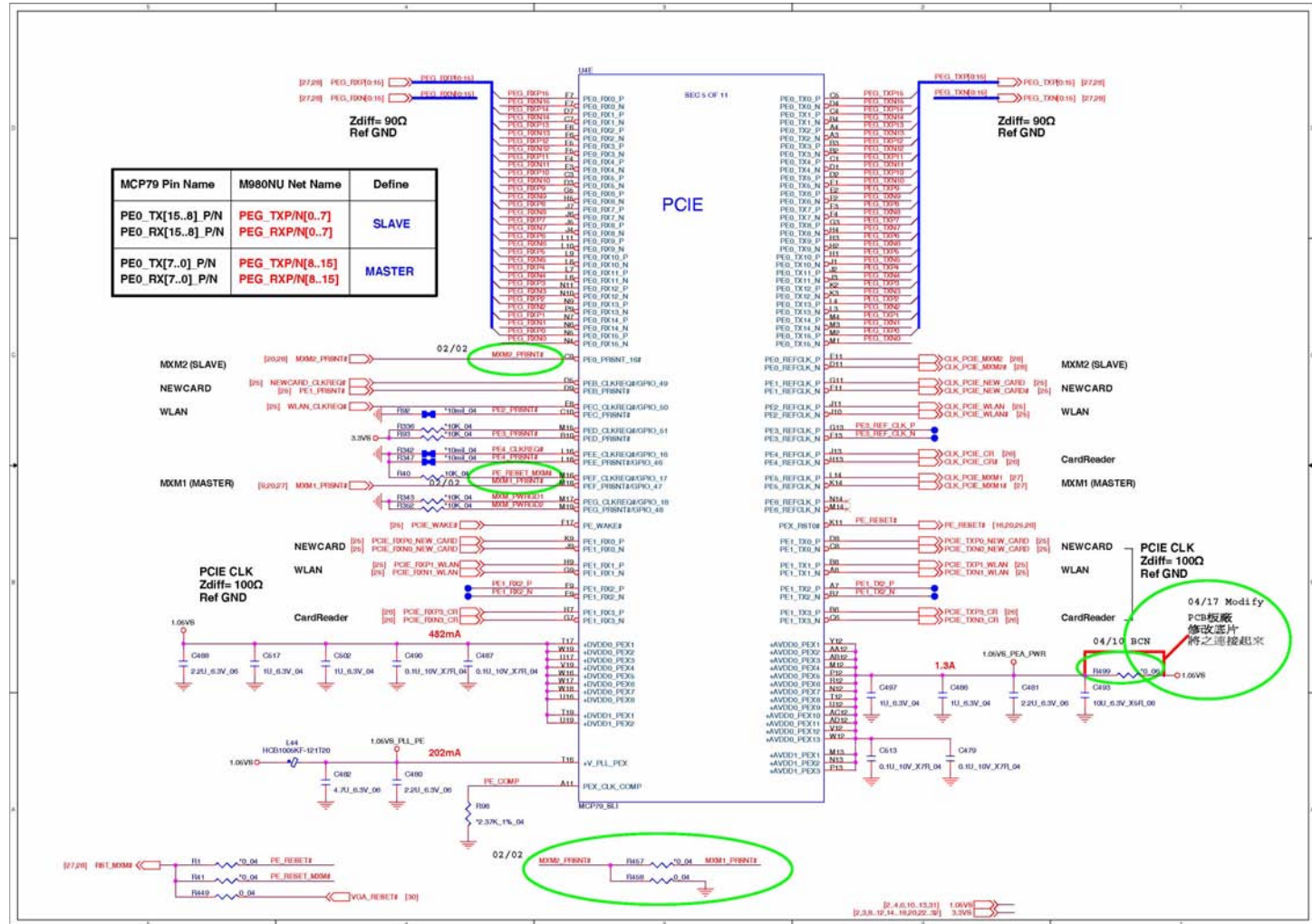






# MCP79 PCI-E

Sheet 7 of 53  
MCP79 PCI-E

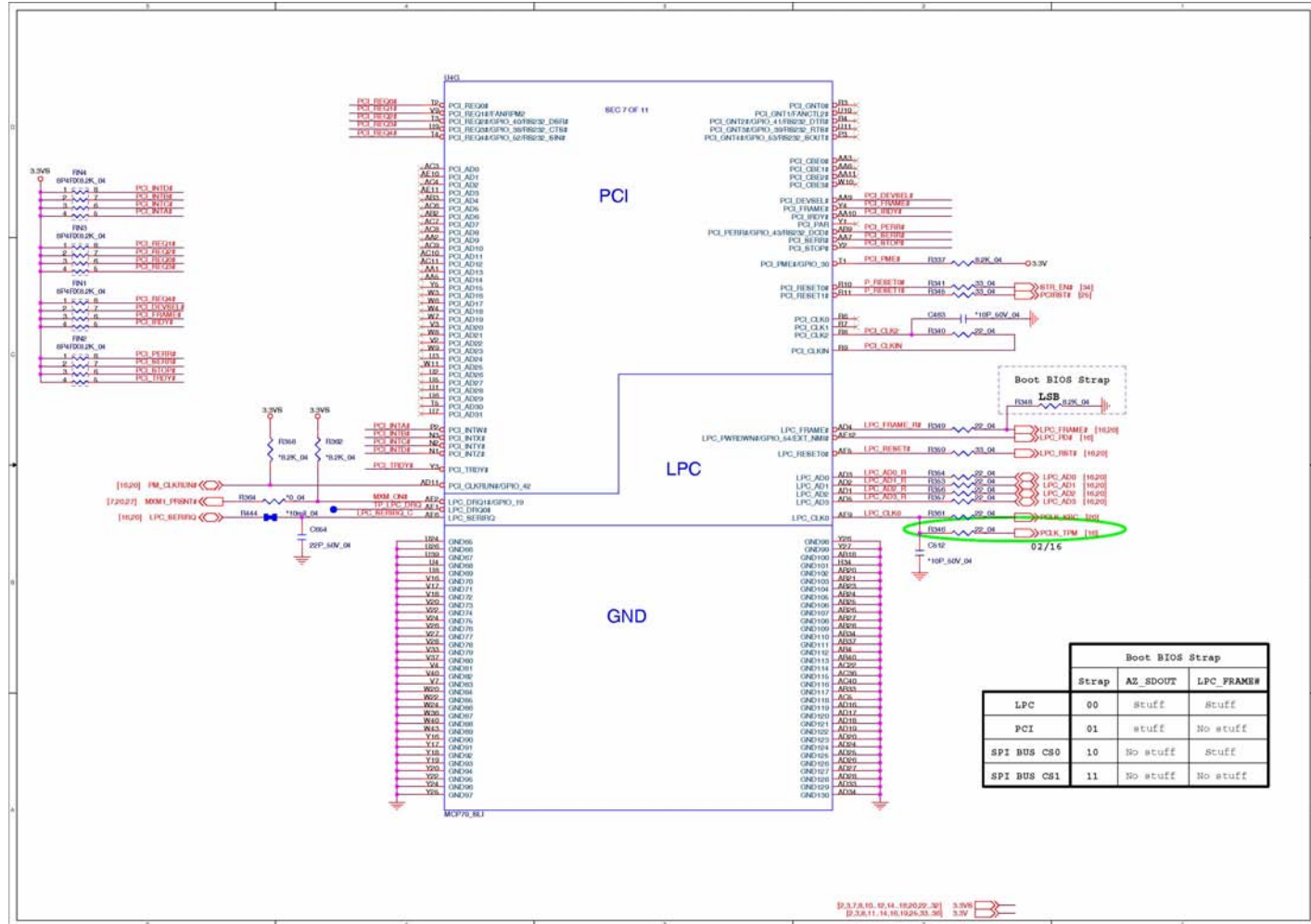






# MCP79 PCI, LPC

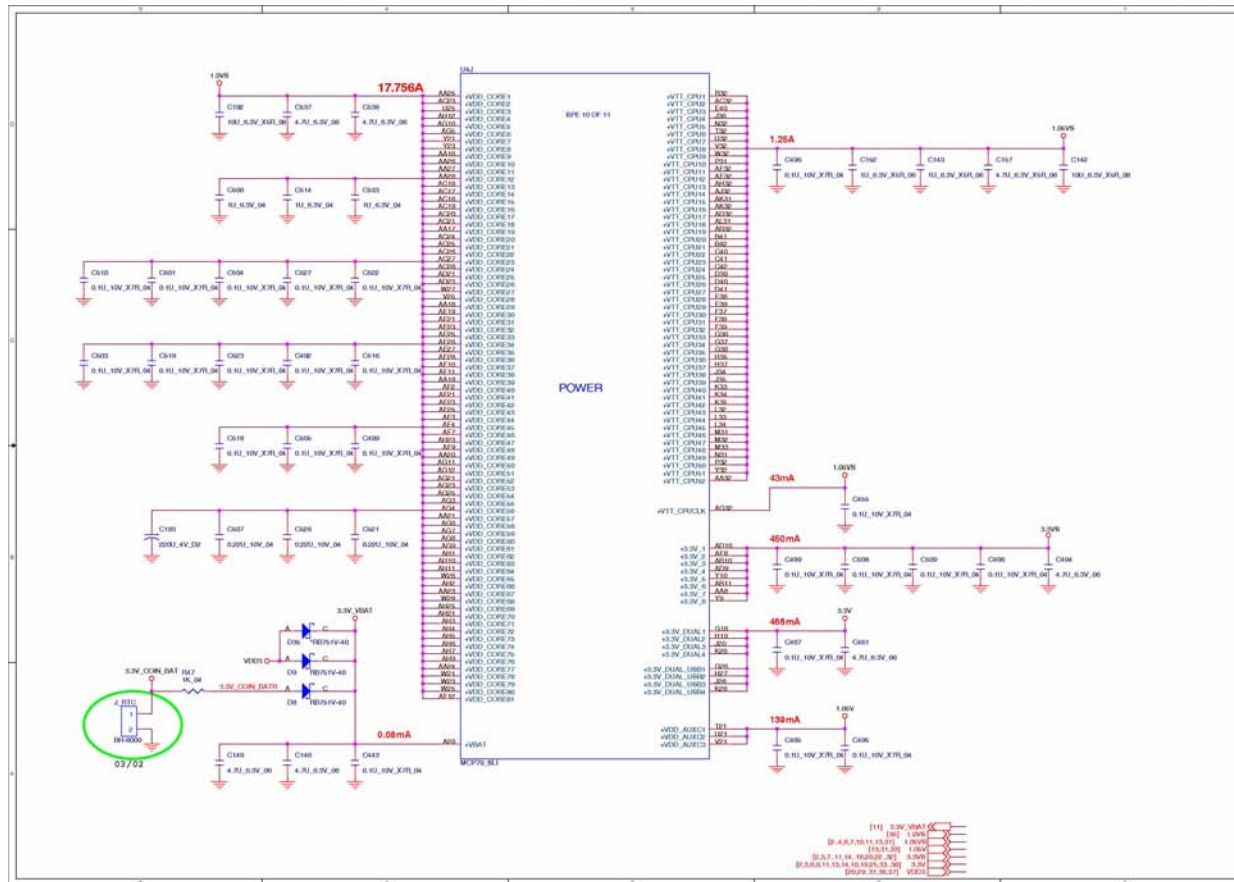
Sheet 9 of 53  
MCP79 PCI, LPC







# MCP79 Power

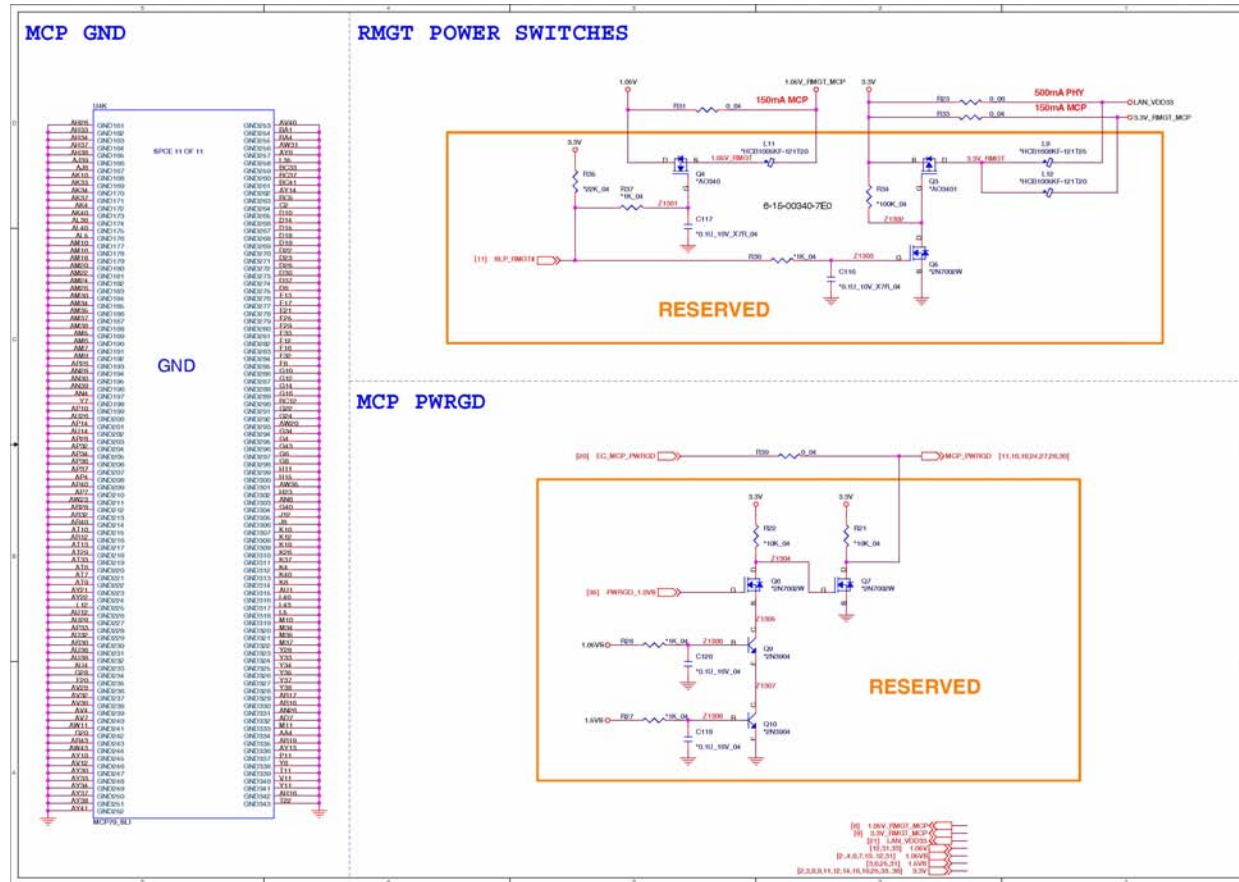


Sheet 12 of 53  
MCP79 Power

B. Schematic Diagrams

# MCP79 GND, RMGT PWR, PWRGD

Sheet 13 of 53  
MCP79 GND, RMGT  
PWR, PWRGD

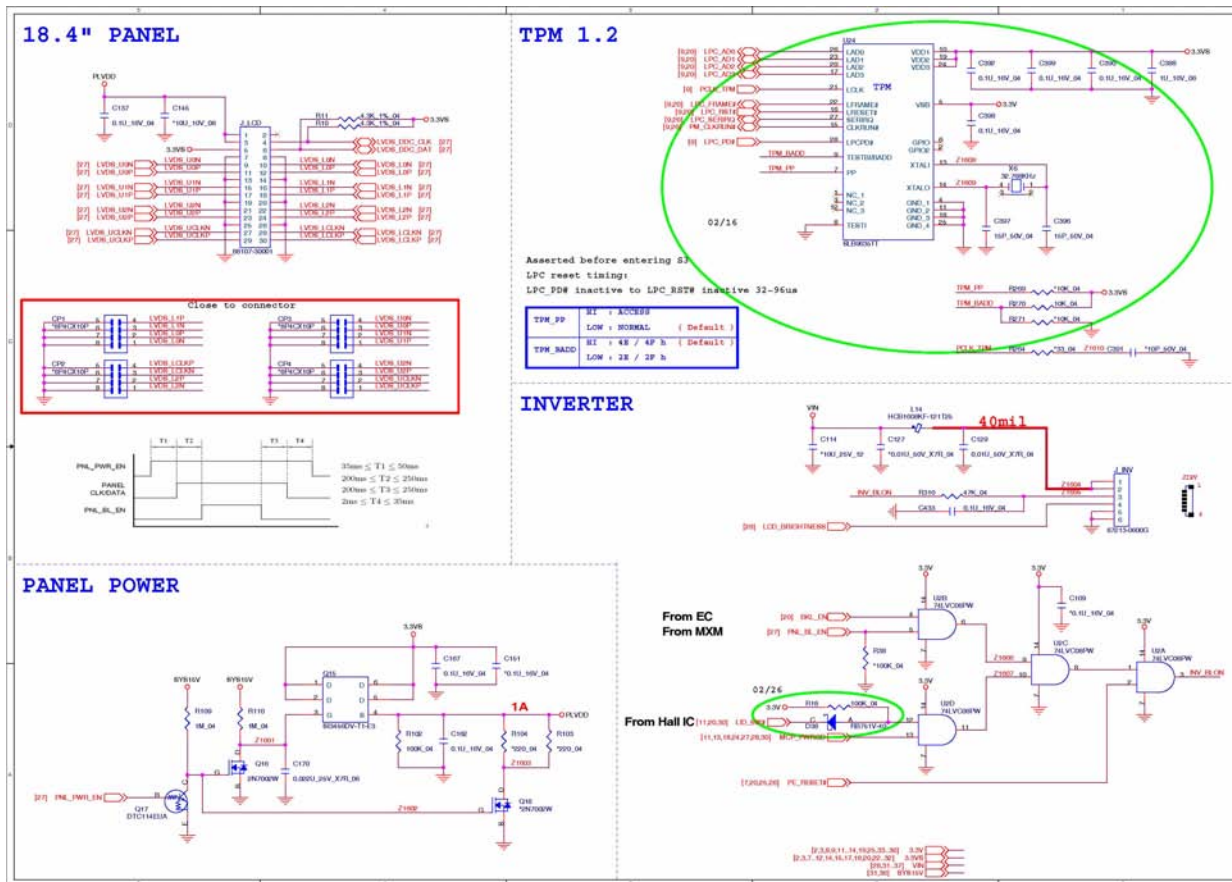








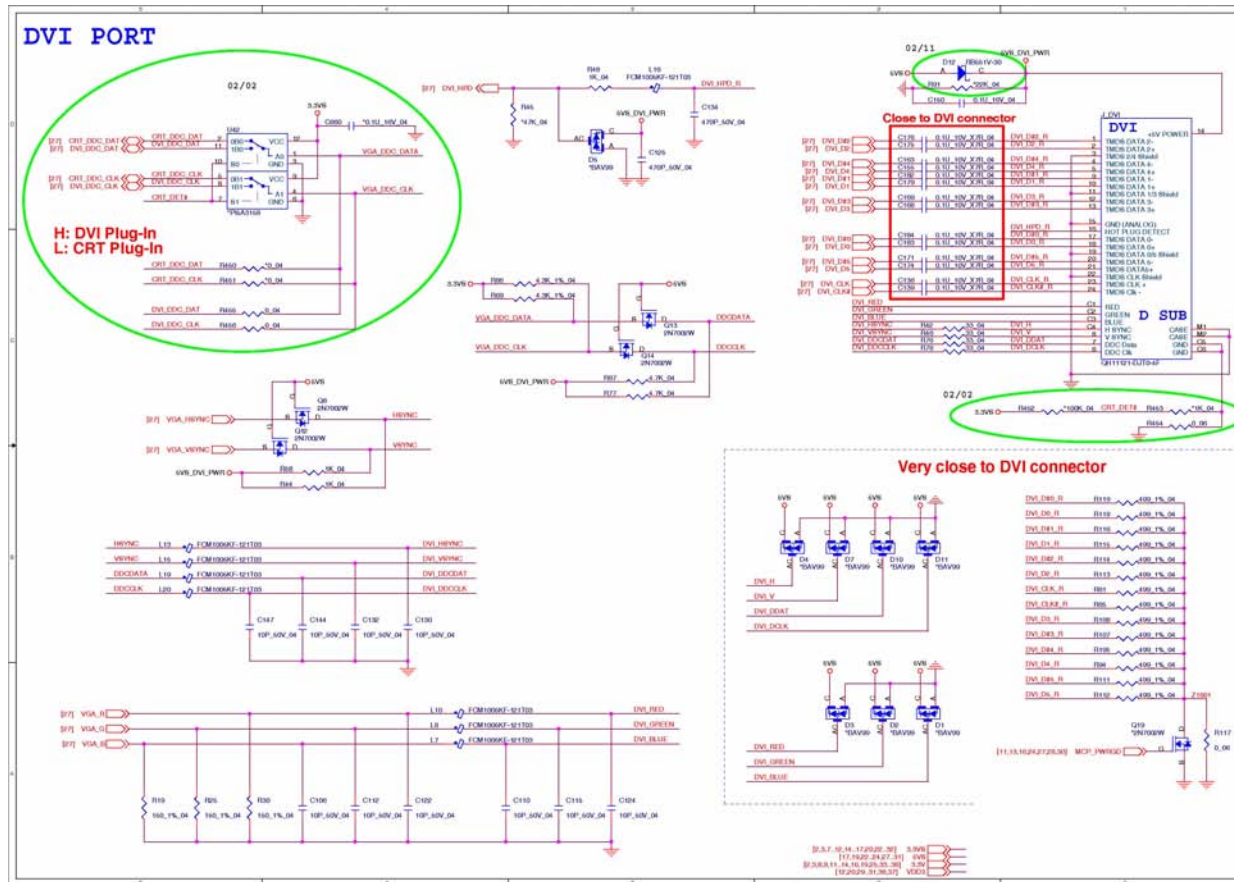
# Panel, Inverter, TPM



Sheet 16 of 53  
Panel, Inverter,  
TPM



# CRT, DVI

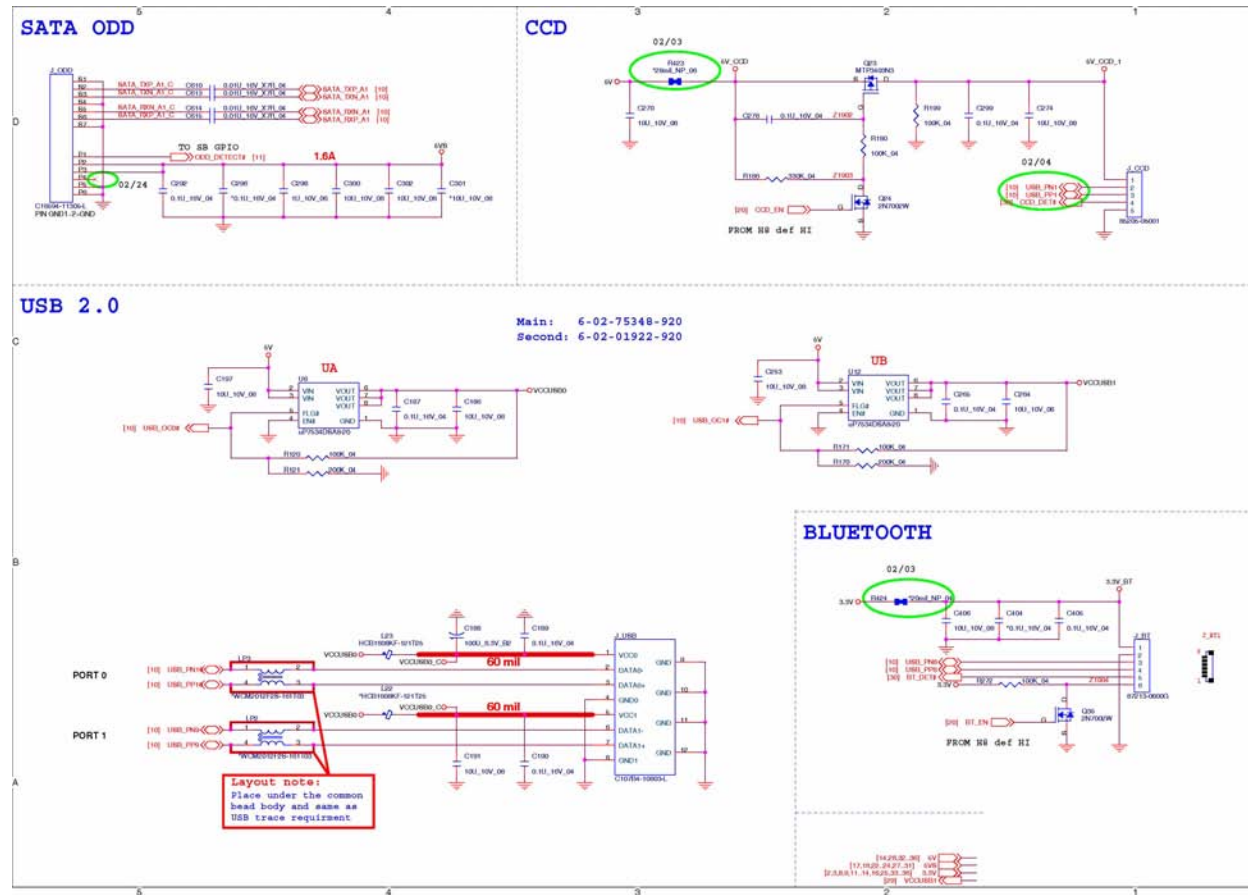


Sheet 18 of 53  
CRT, DVI

Schematic Diagrams

ODD, CCD, BT, USB 2.0

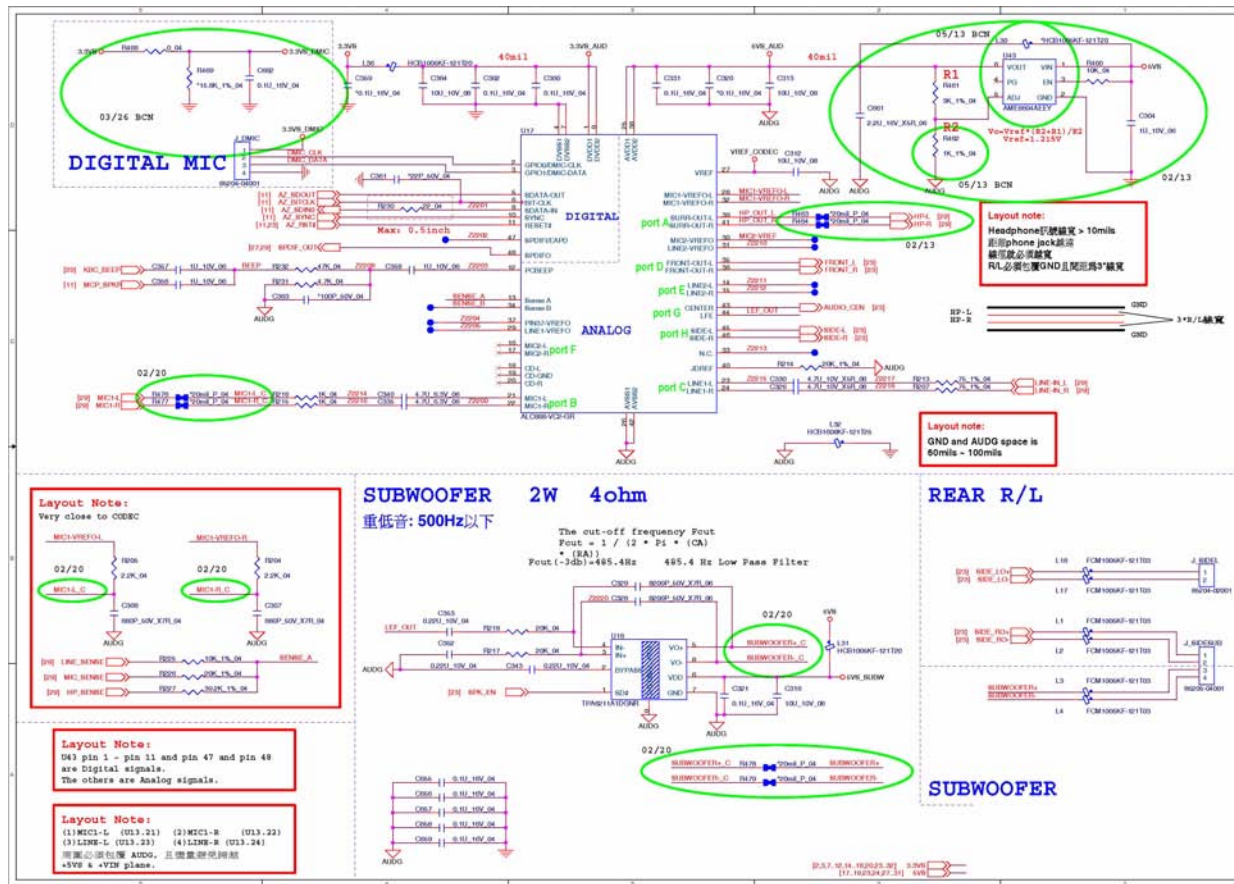
Sheet 19 of 53  
ODD, CCD, BT,  
USB 2.0







# Codec, Subwoofer, DMIC

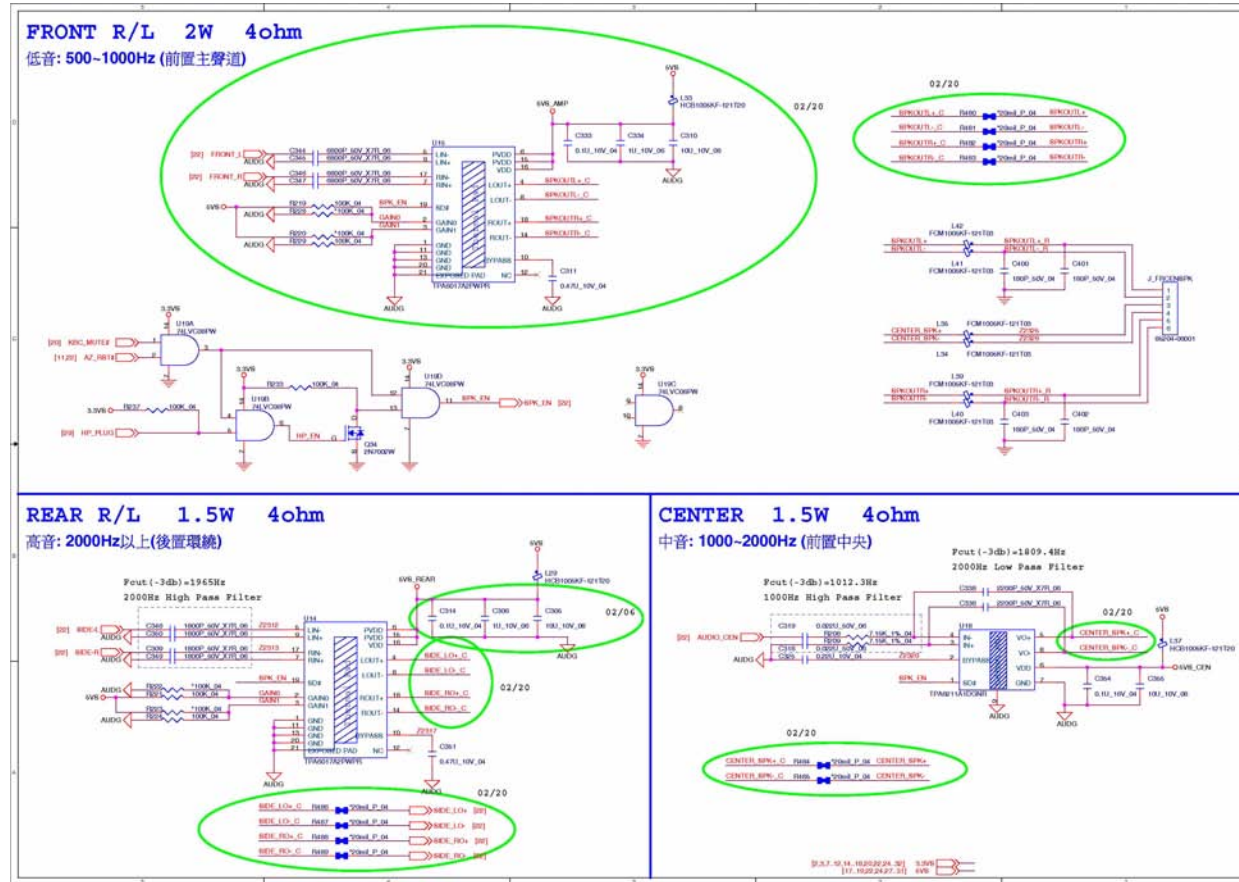


B. Schematic Diagrams

Sheet 22 of 53  
Codec, Subwoofer,  
DMIC

# Audio AMP

Sheet 23 of 53  
Audio AMP

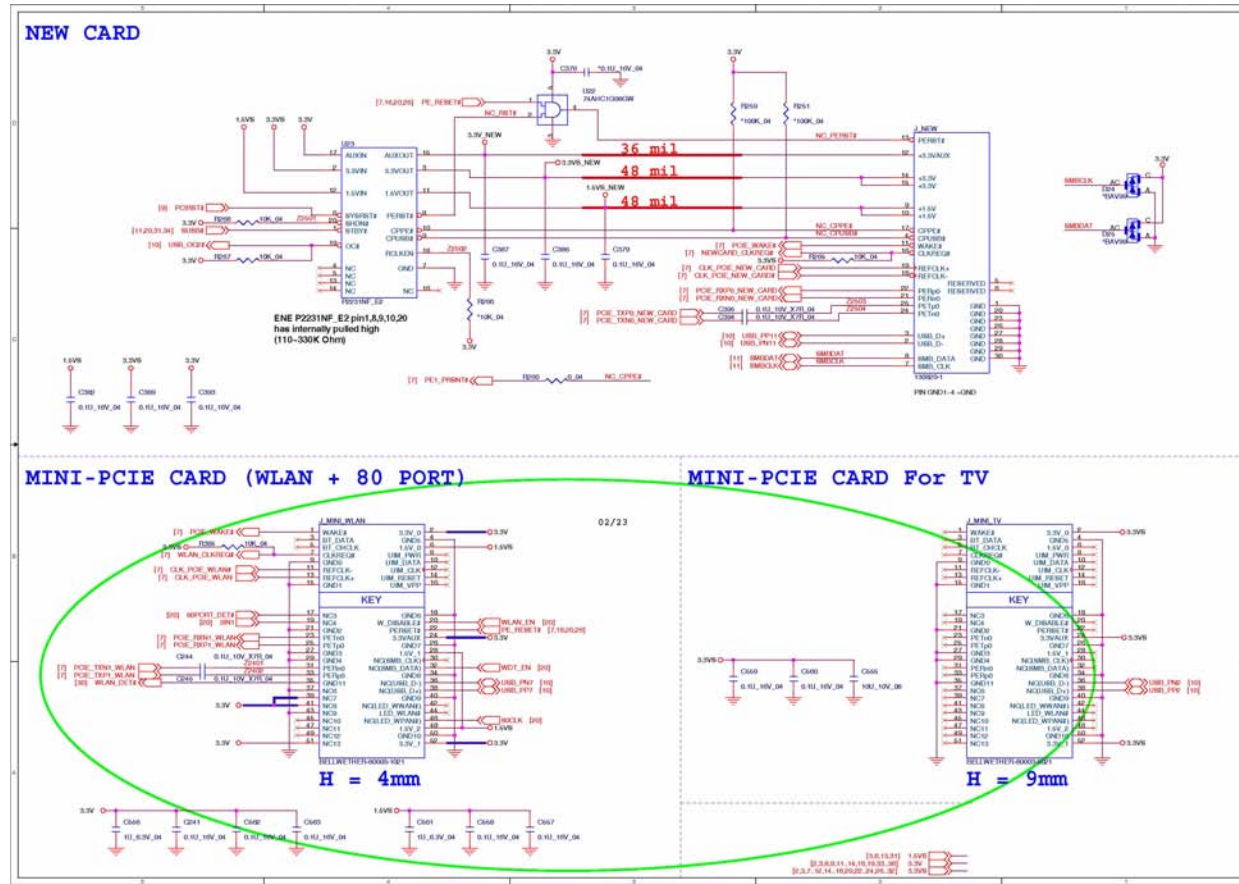






# New Card, Mini Card

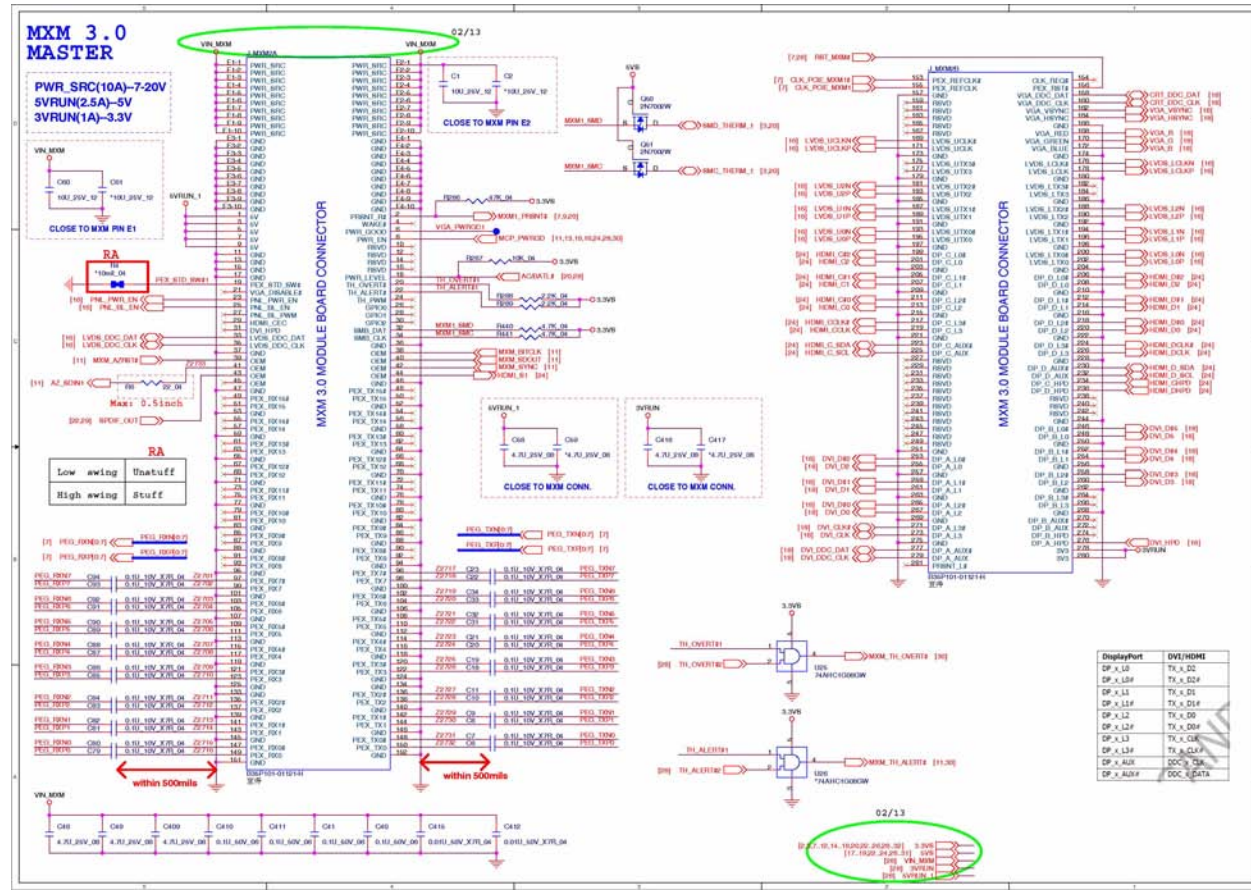
Sheet 25 of 53  
New Card, Mini Card





# MXM 3.0 Master

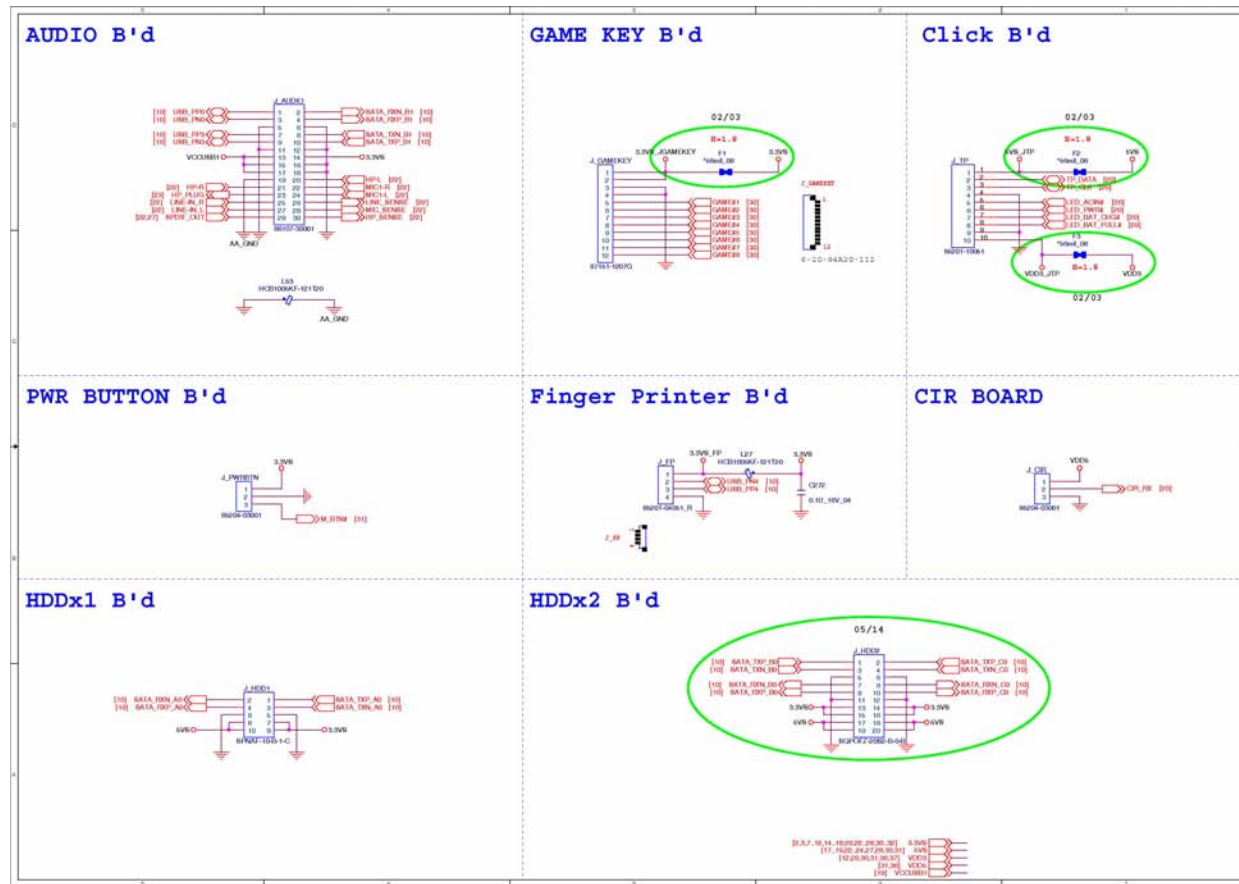
Sheet 27 of 53  
MXM 3.0 Master



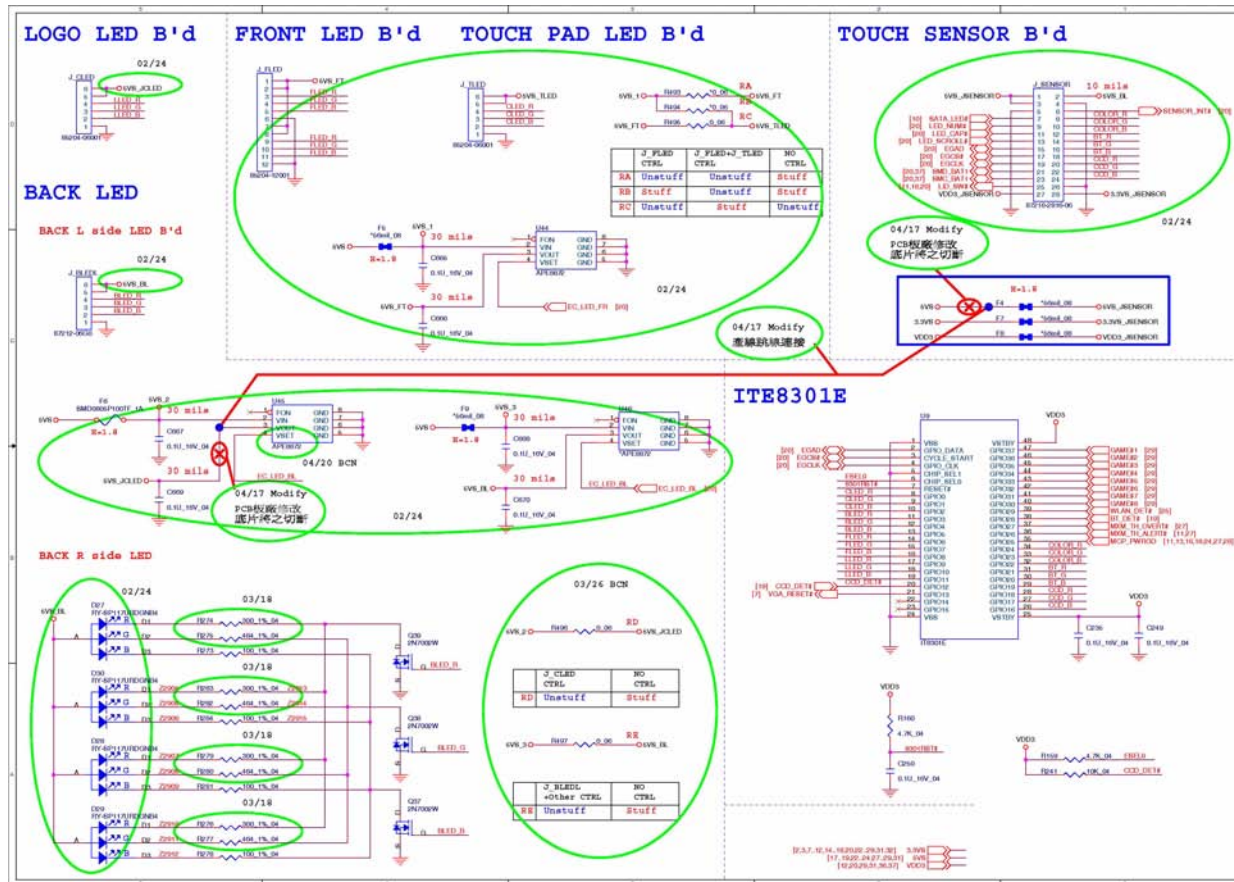


# MB to Small B'd Connector A

Sheet 29 of 53  
MB to Small B'd  
Connector A



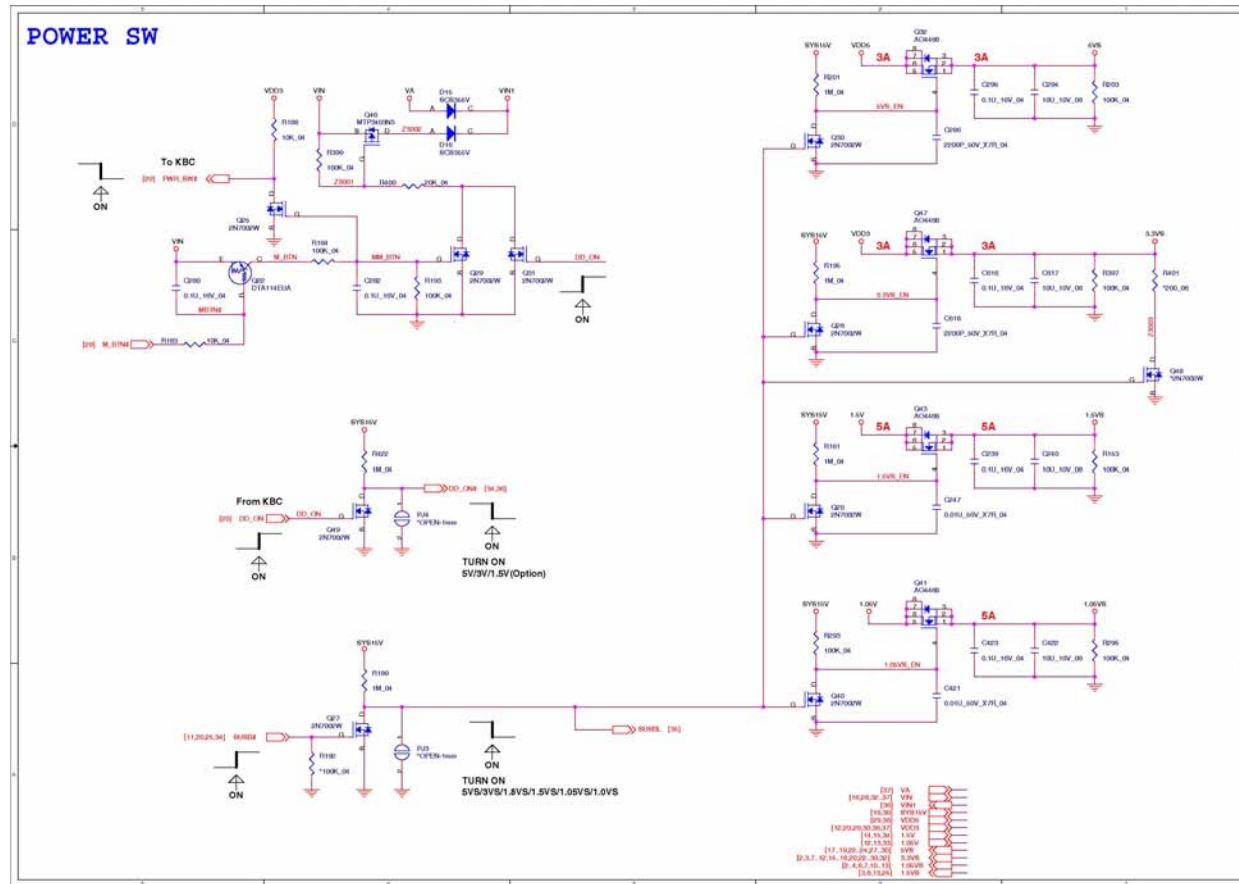
# MB to Small B'd Connector B



Sheet 30 of 53  
MB to Small B'd  
Connector B

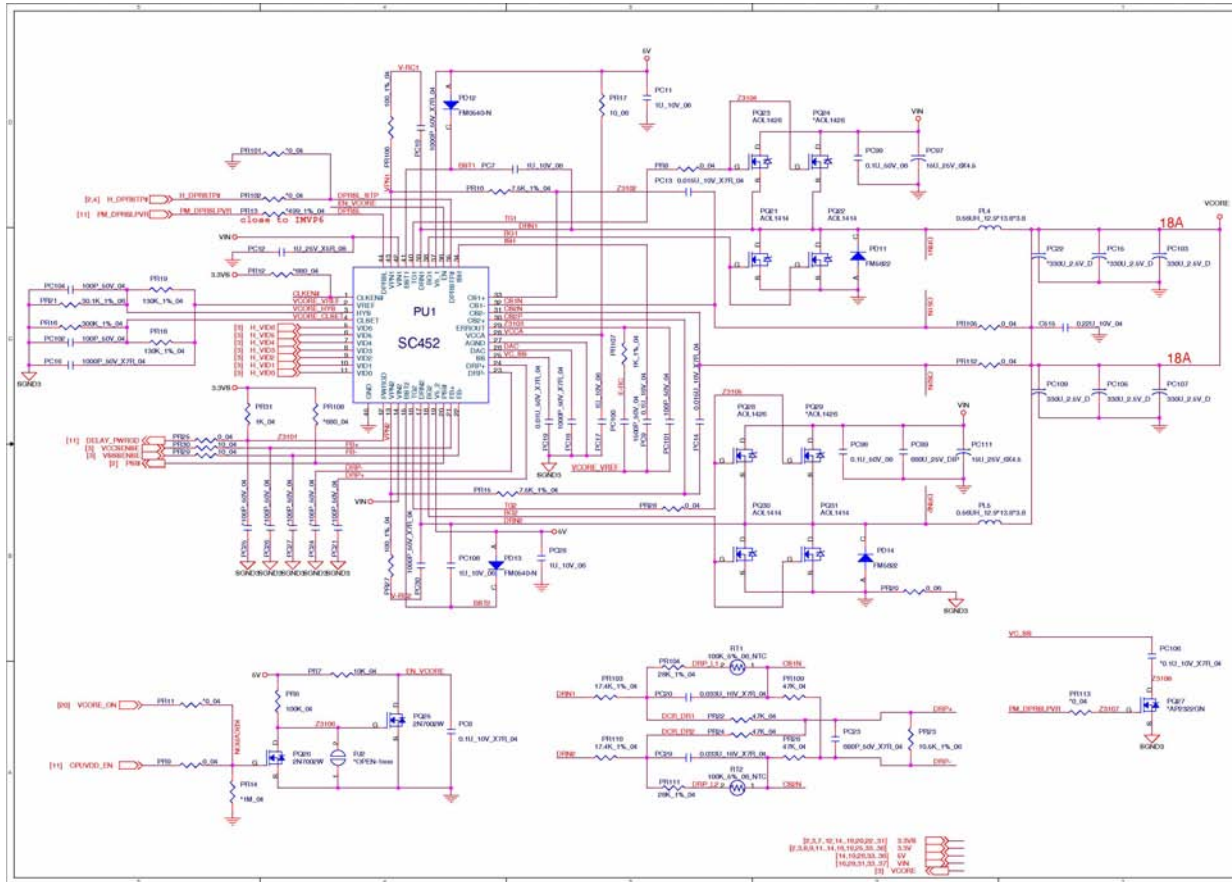
# Power System

Sheet 31 of 53  
Power System





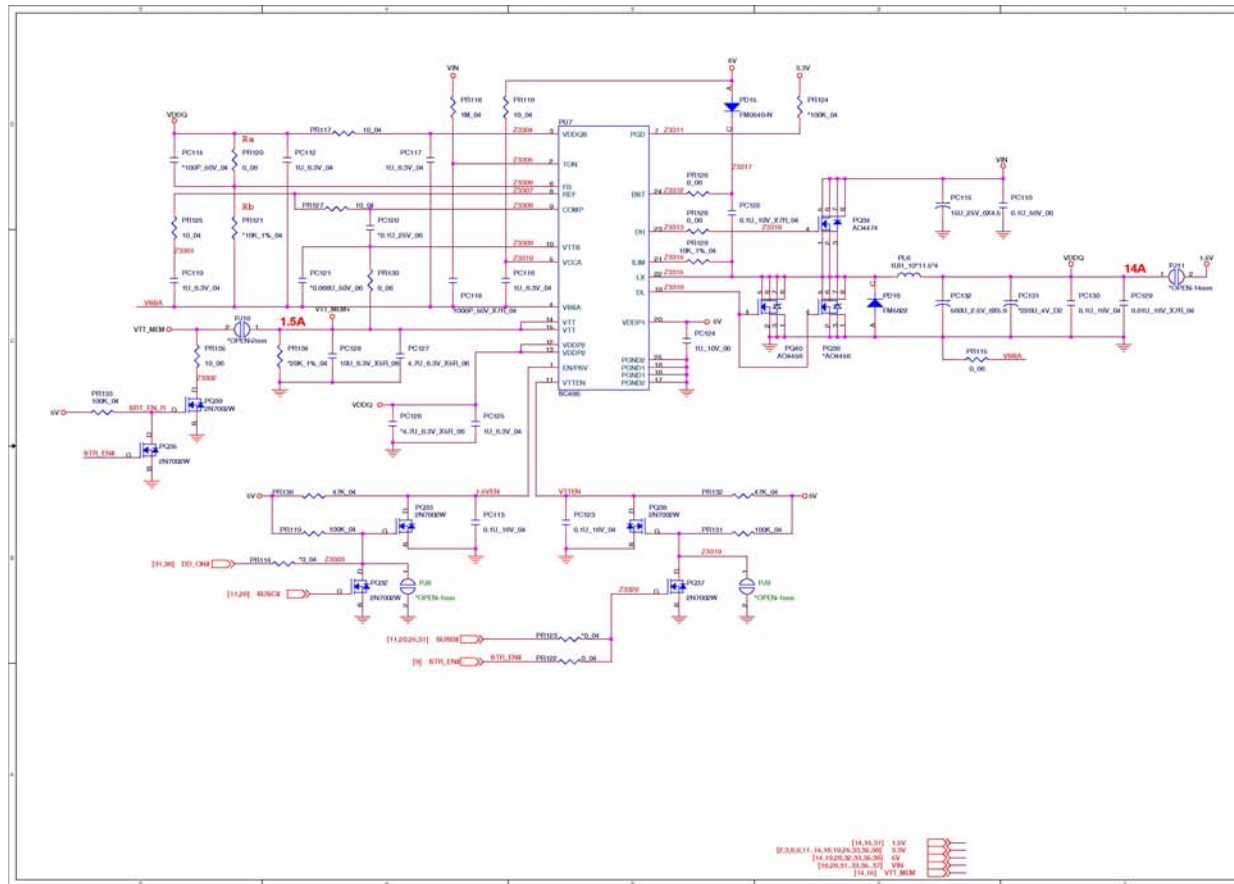
# Power VCore



Sheet 32 of 53  
Power VCore



Power 1.5V/0.75V



Sheet 34 of 53  
Power 1.5V/0.75V

B. Schematic Diagrams

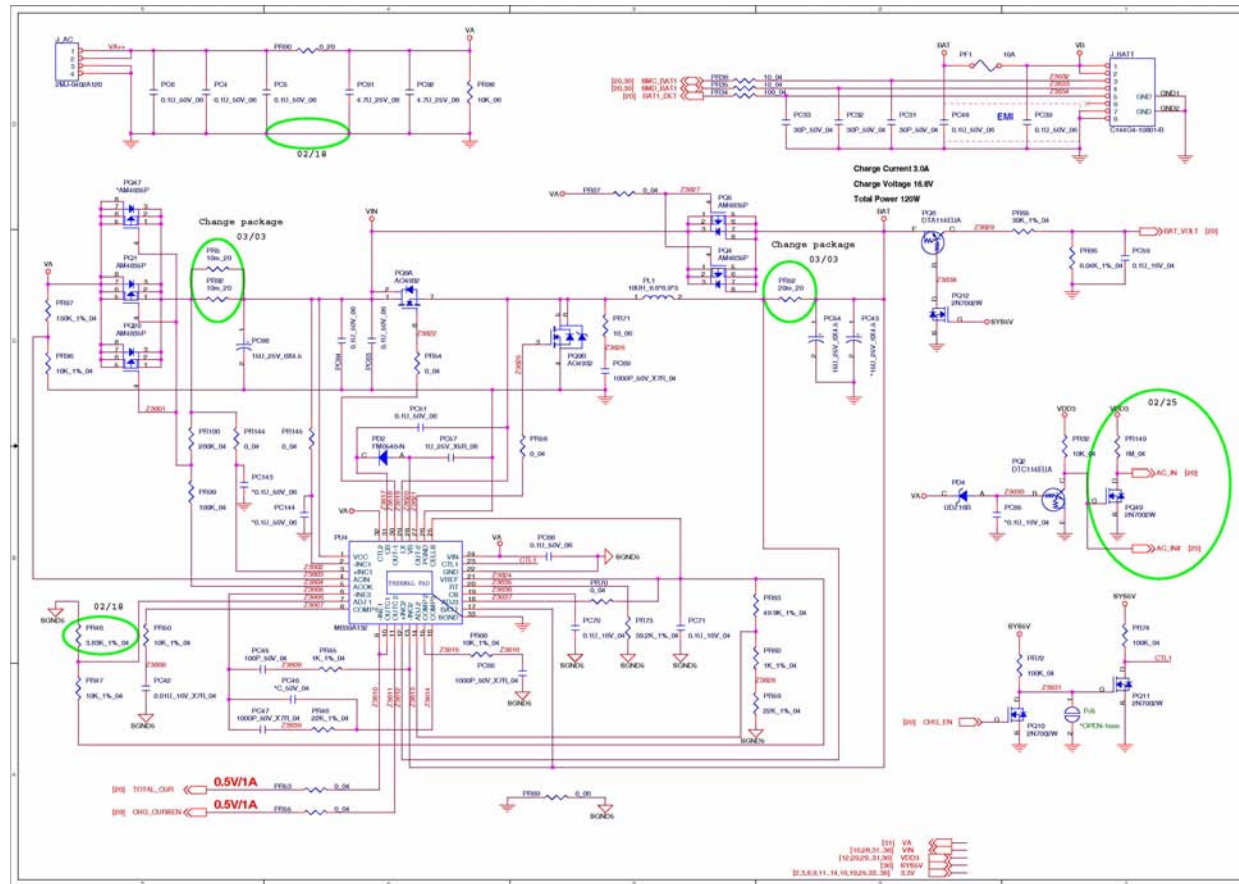




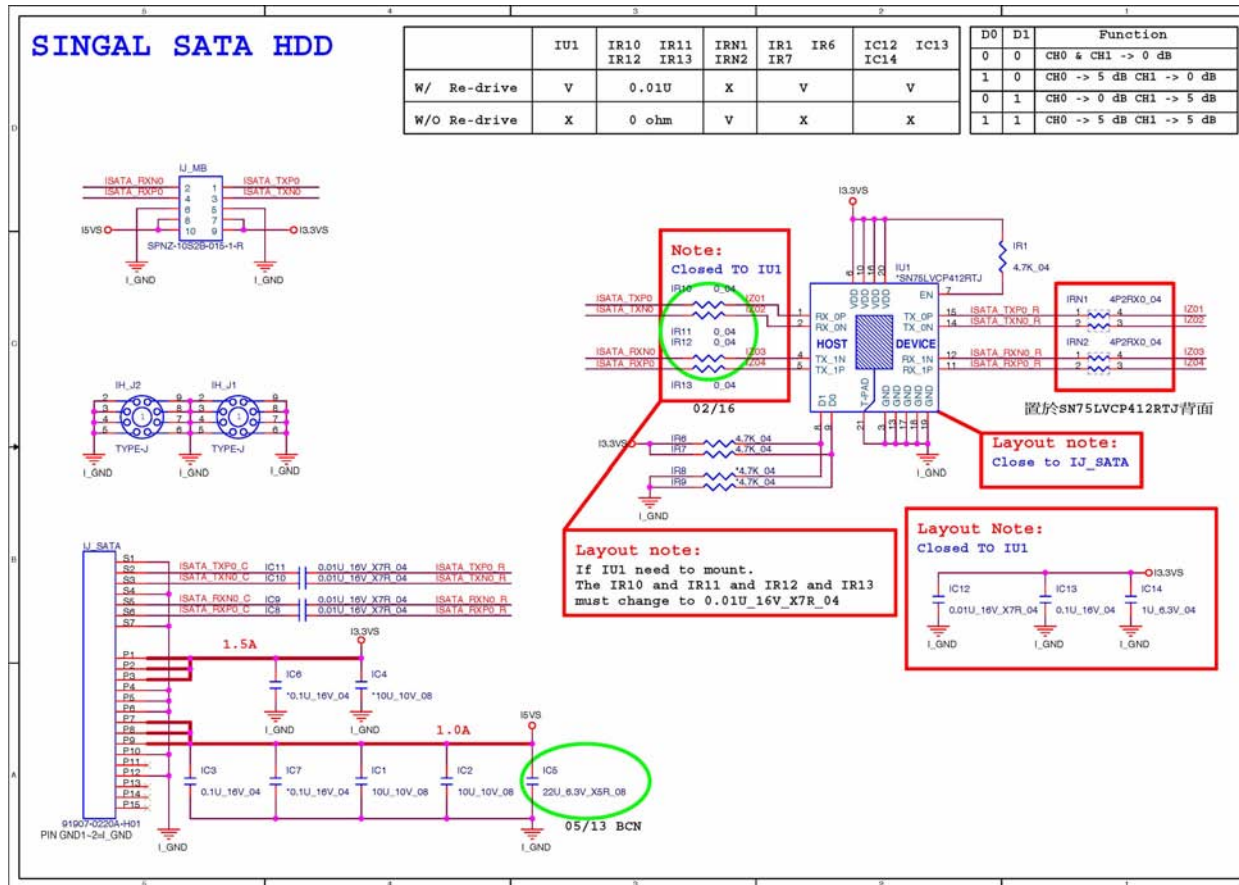
# Schematic Diagrams

## Power Charger, DC-In

Sheet 37 of 53  
Power Charger,  
DC-In



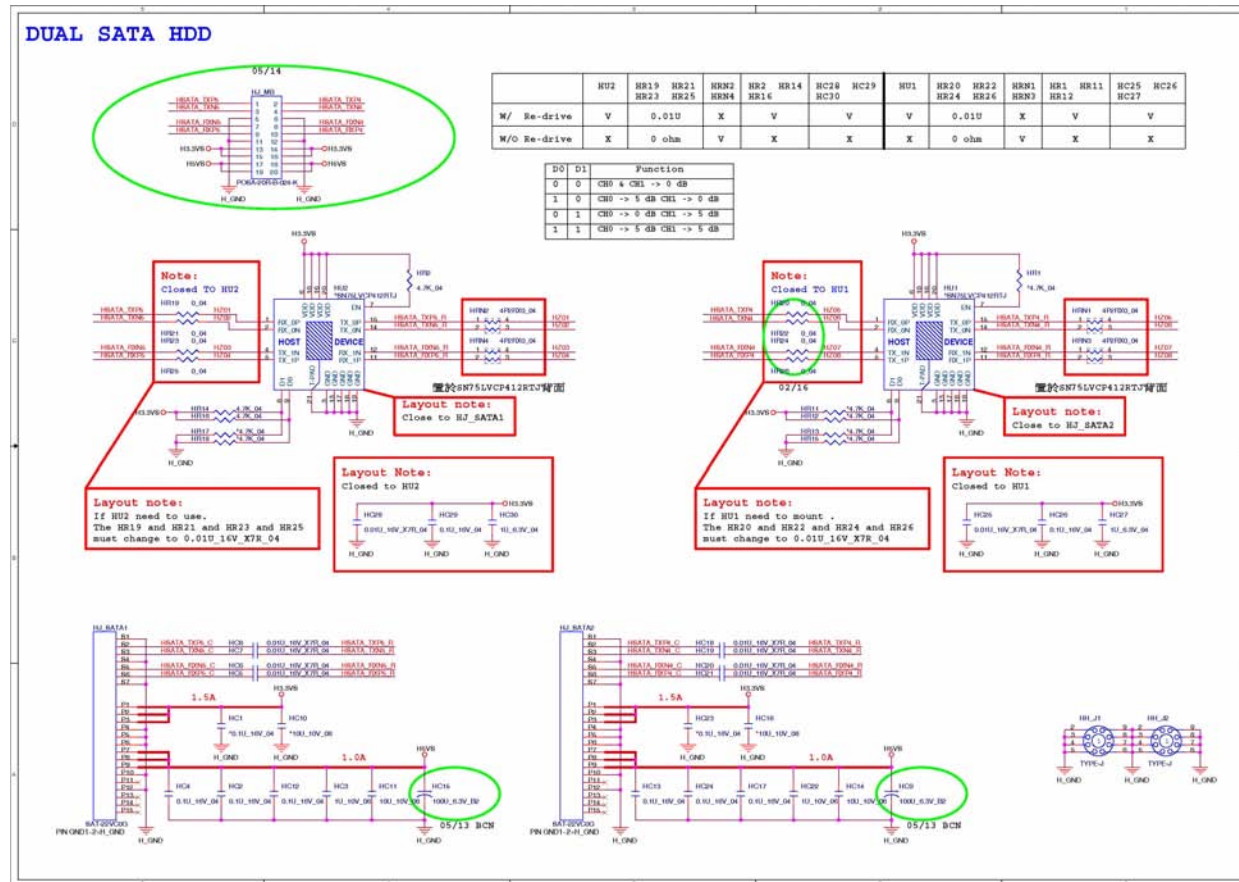
# Single HDD Board



Sheet 38 of 53  
Single HDD Board

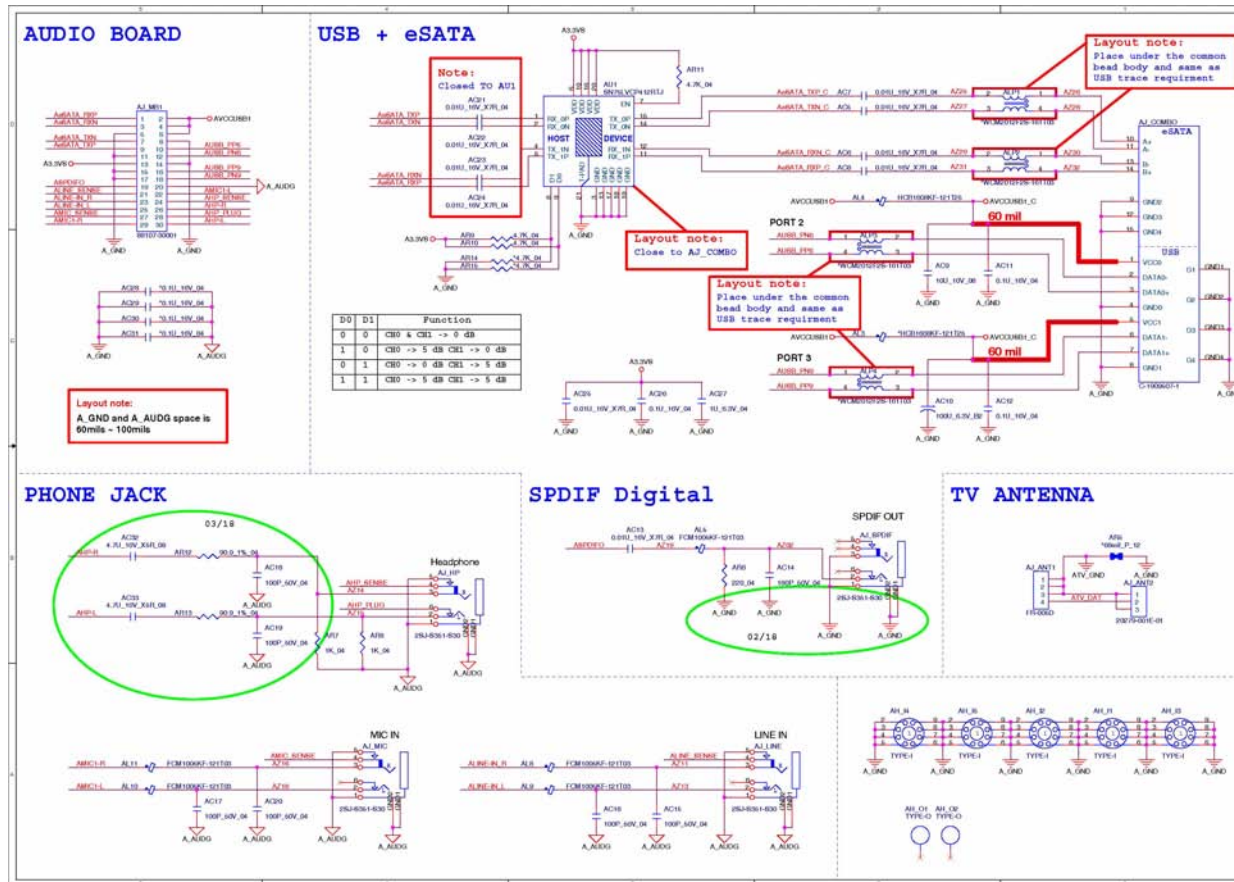
# Dual HDD Board

Sheet 39 of 53  
Dual HDD Board





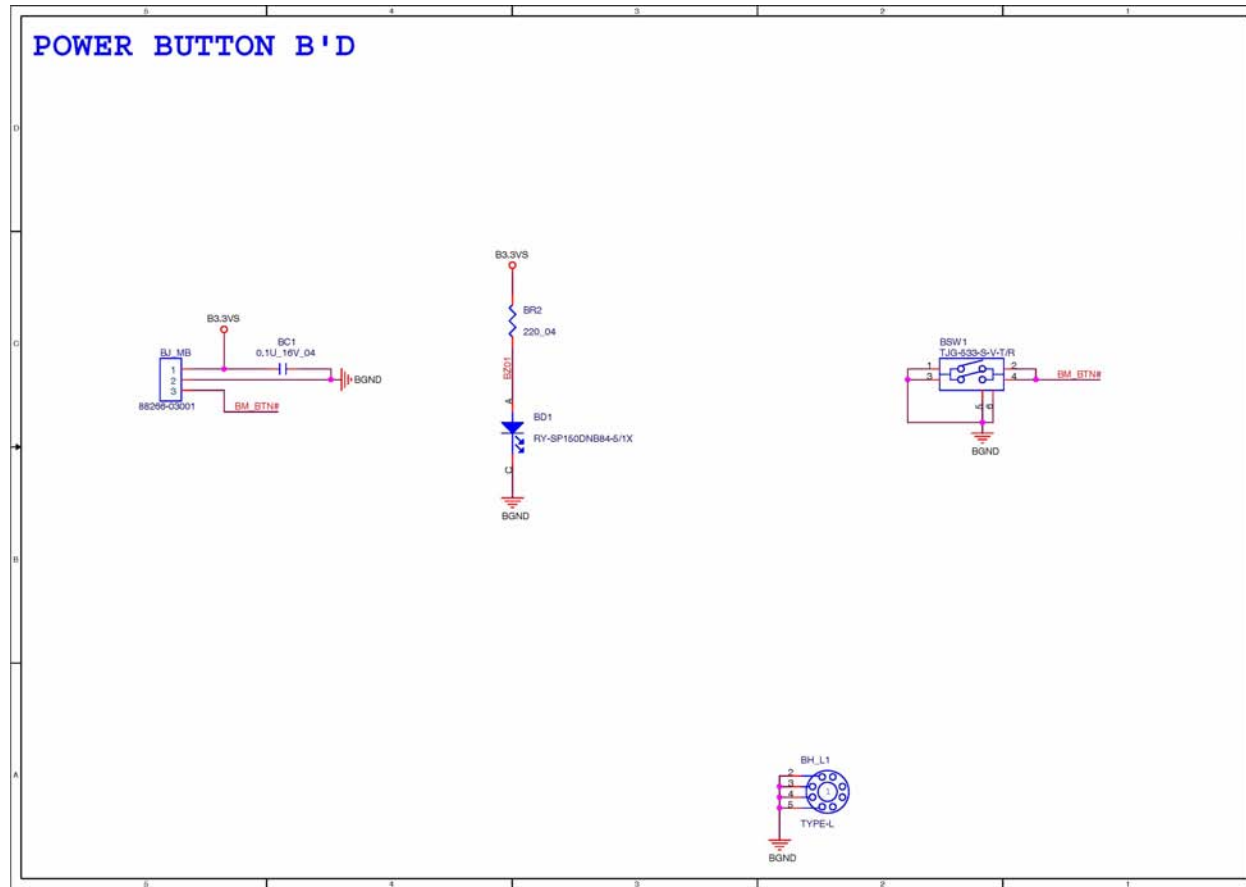
# Audio Board



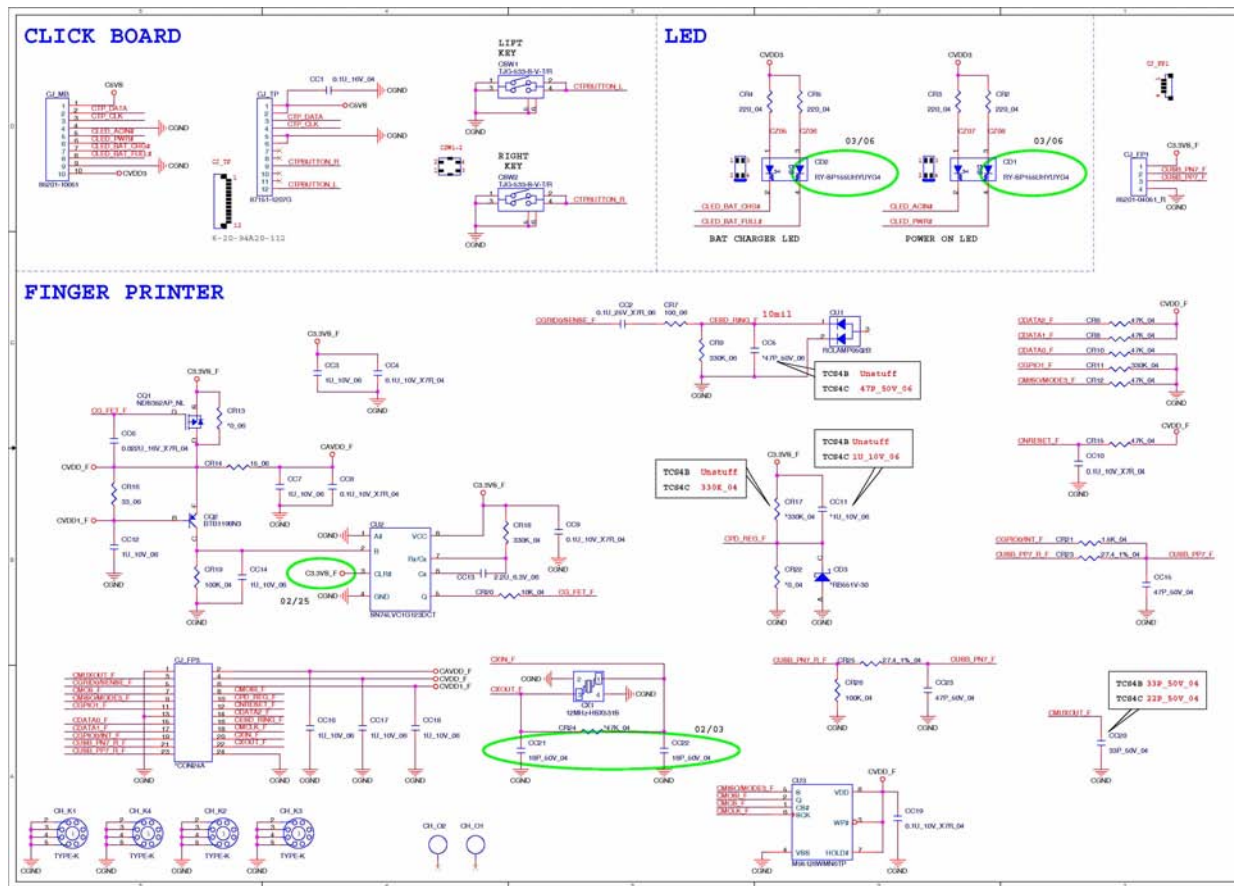
Sheet 40 of 53  
Audio Board

# Power Button Board

Sheet 41 of 53  
Power Button  
Board



# Click & FP Board



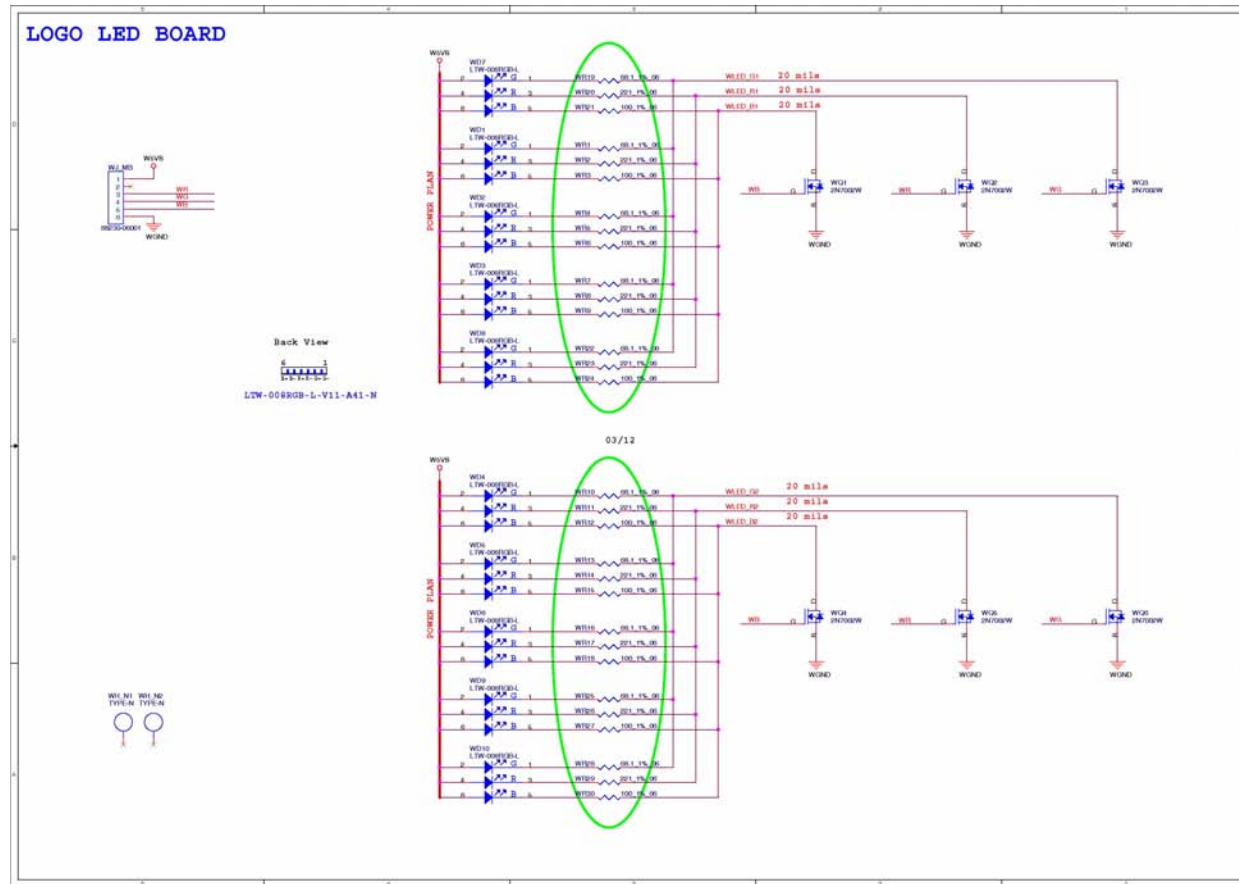
Sheet 42 of 53  
Click & FP Board

B.Schematic Diagrams

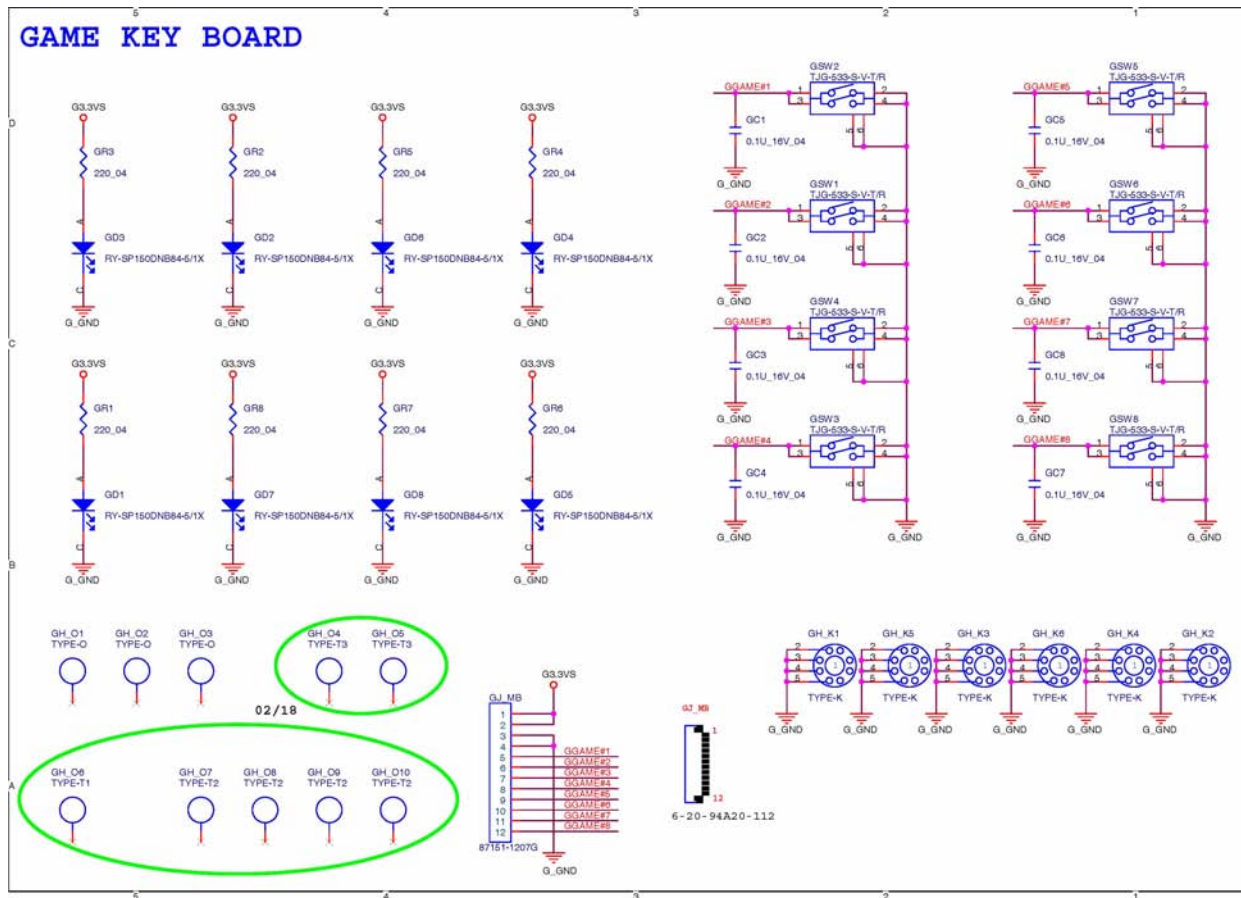
# Schematic Diagrams

## Logo LED Board

Sheet 43 of 53  
Logo LED Board



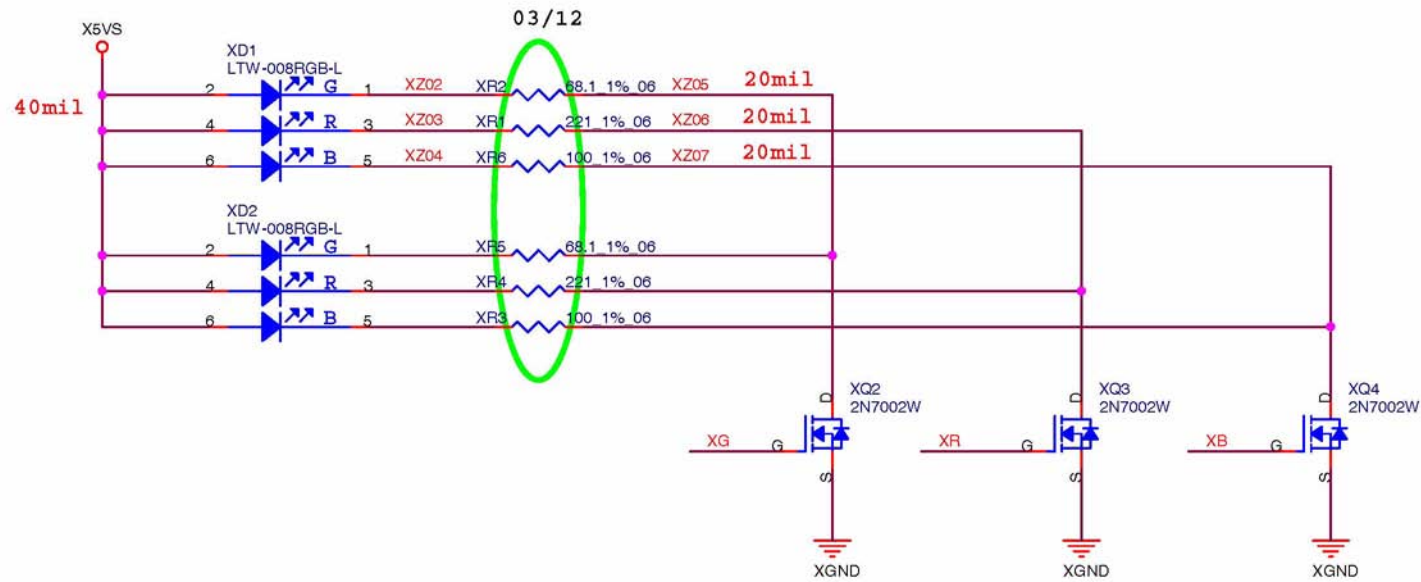
# Game Key Board



Sheet 44 of 53  
Game Key Board

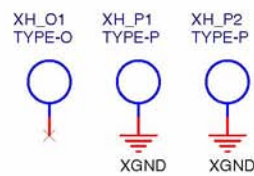


# Front R Side LED Board



Sheet 46 of 53  
Front R Side LED  
Board

B. Schematic Diagrams



4

3

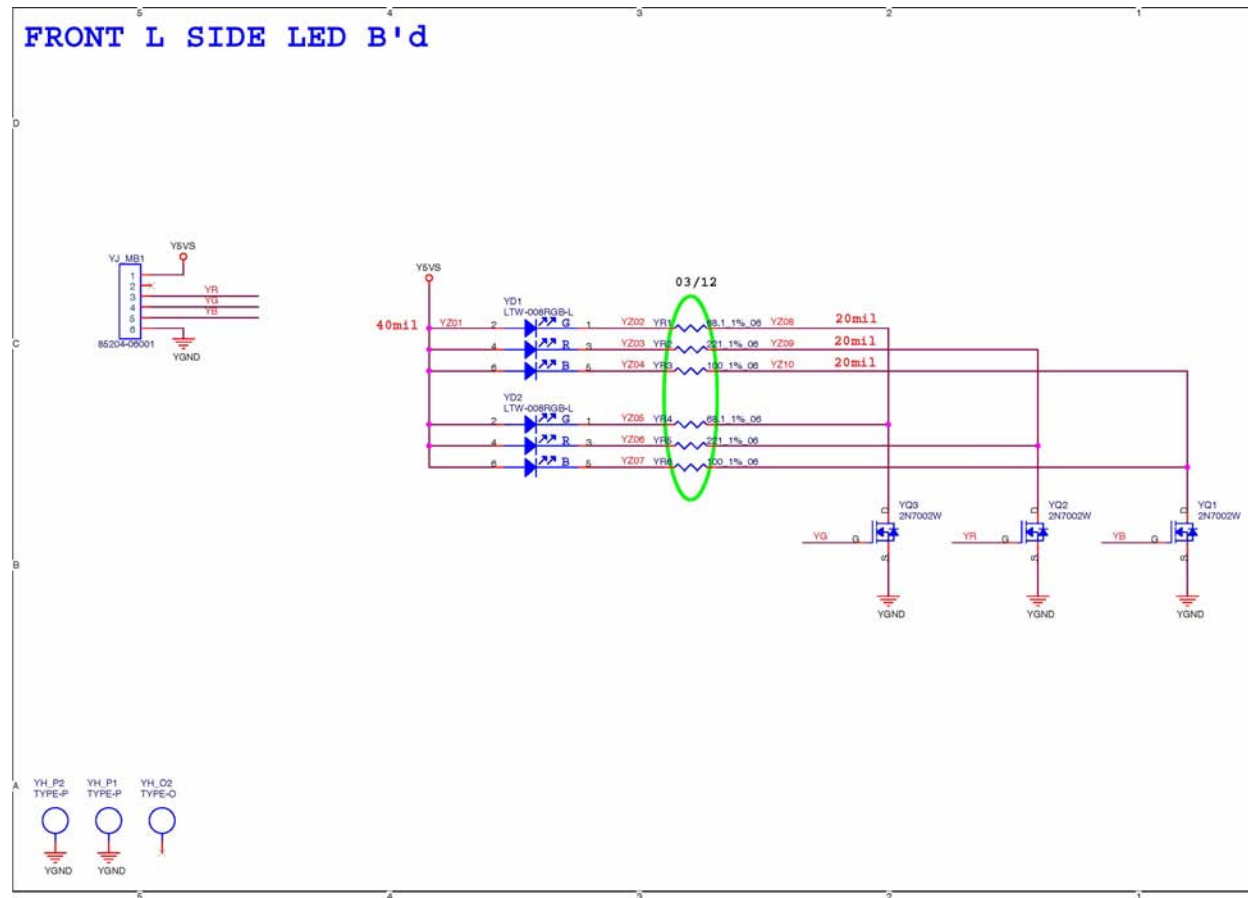
2

1

Schematic Diagrams

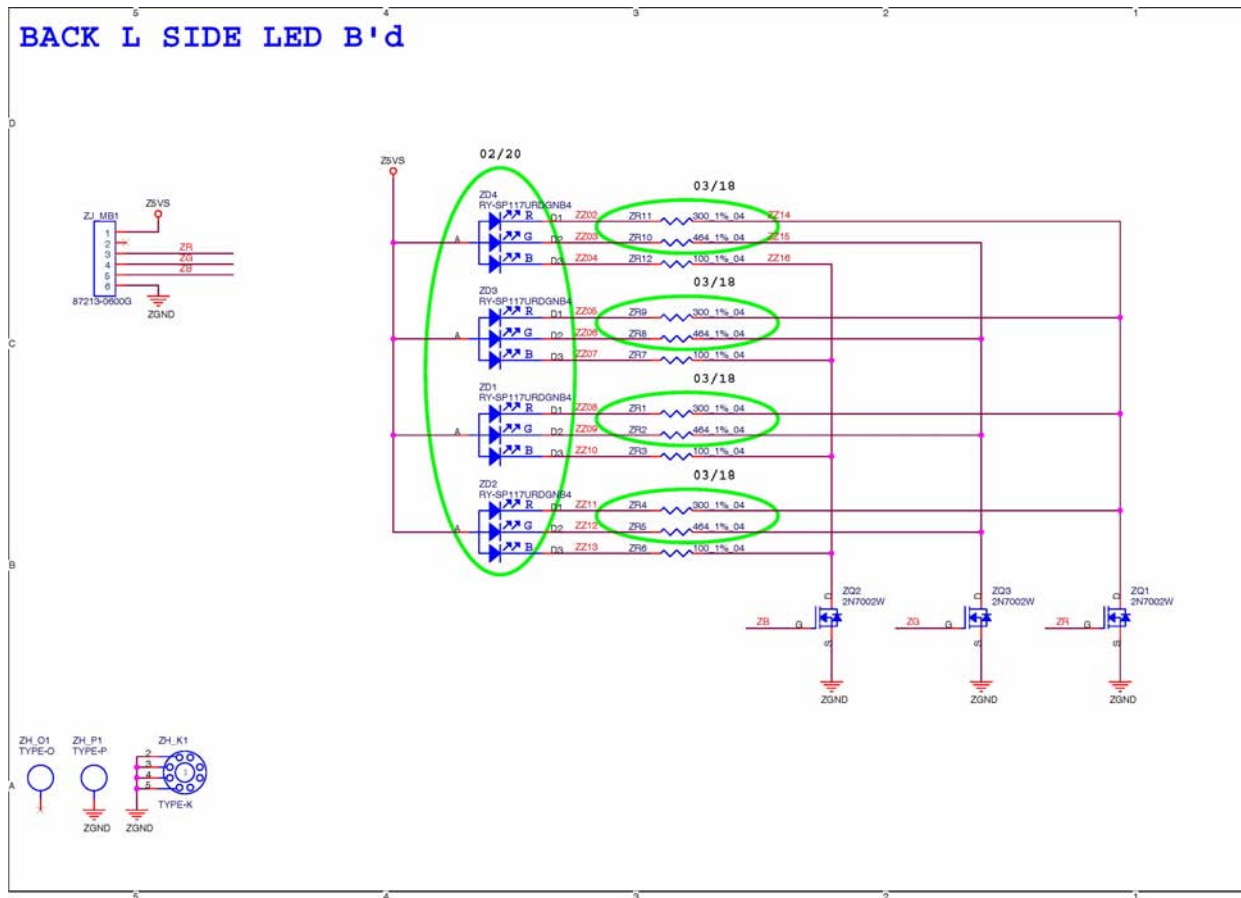
# Front L Side LED Board

Sheet 47 of 53  
Front L Side LED  
Board





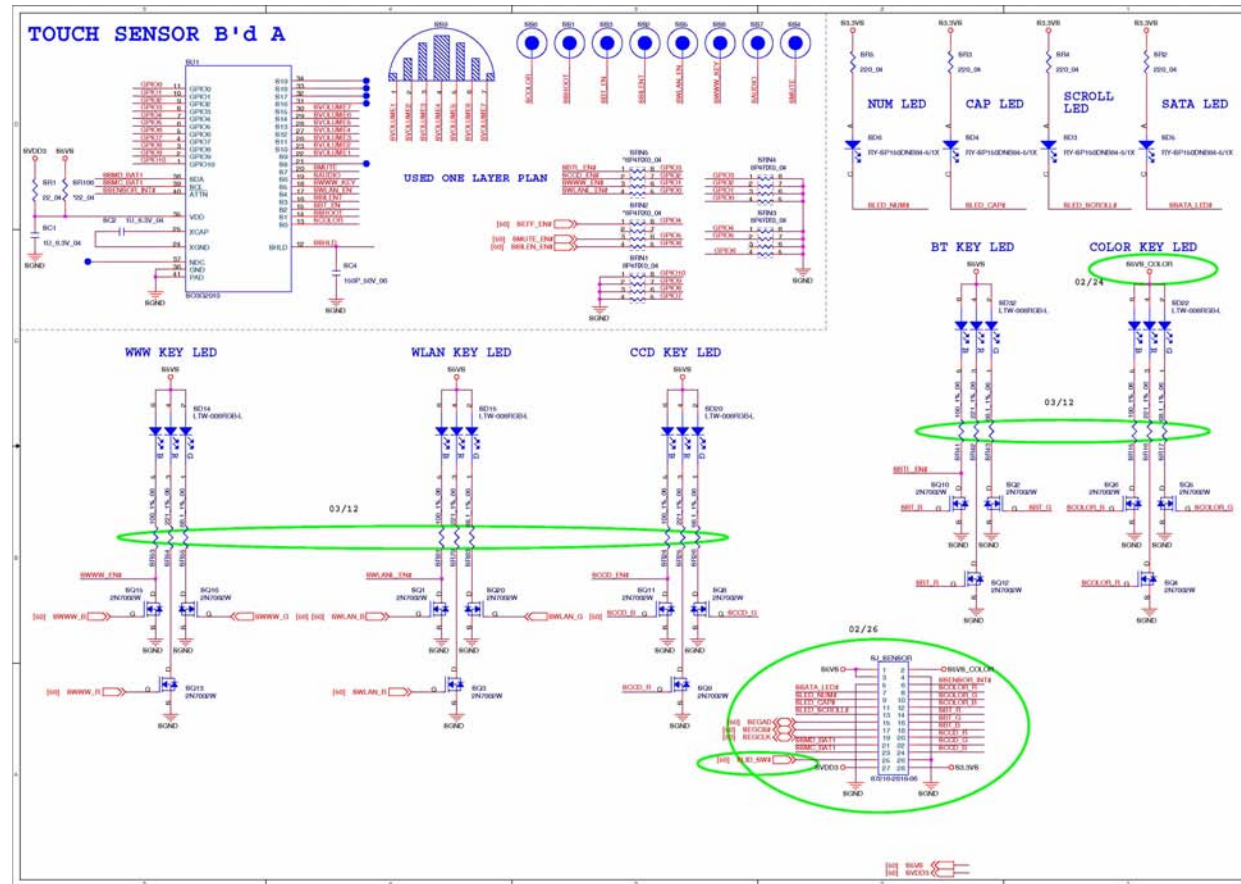
# Back L Side LED Board



Sheet 48 of 53  
Back L Side LED  
Board

# Schematic Diagrams

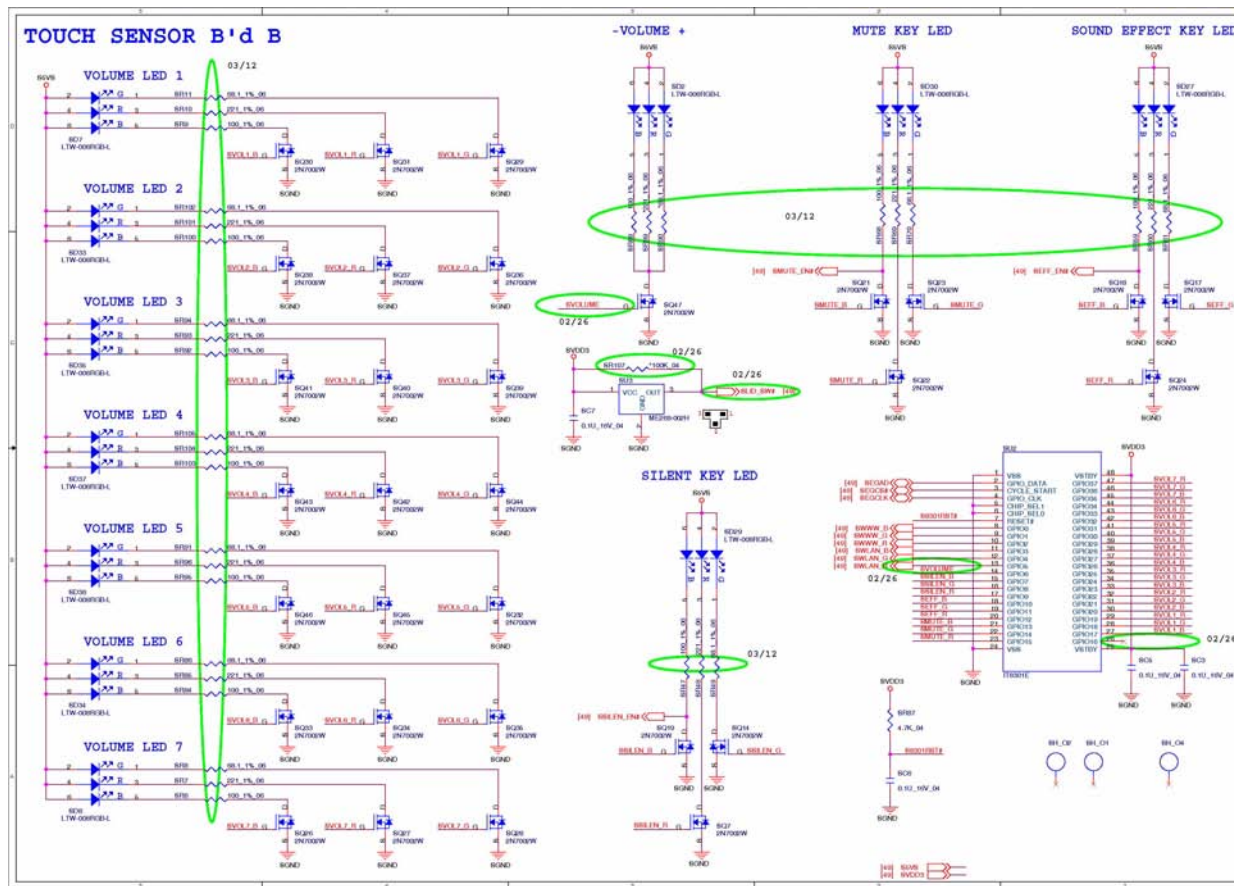
## Touch Sensor Board A



Sheet 49 of 53  
Touch Sensor  
Board A

B.Schematic Diagrams

# Touch Sensor Board B



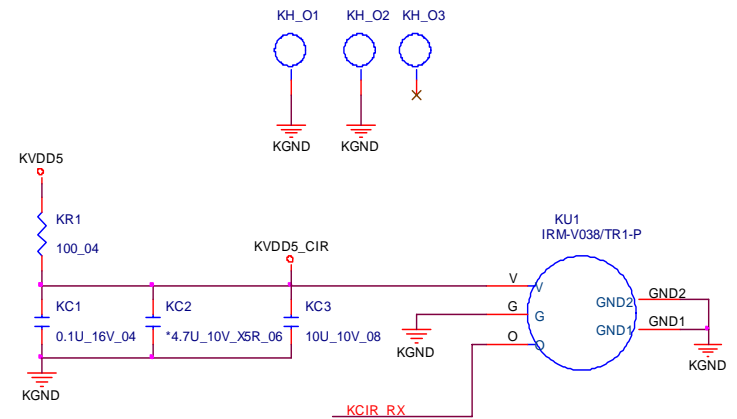
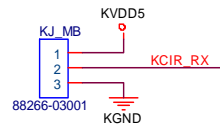
Sheet 50 of 53  
Touch Sensor  
Board B

B. Schematic Diagrams

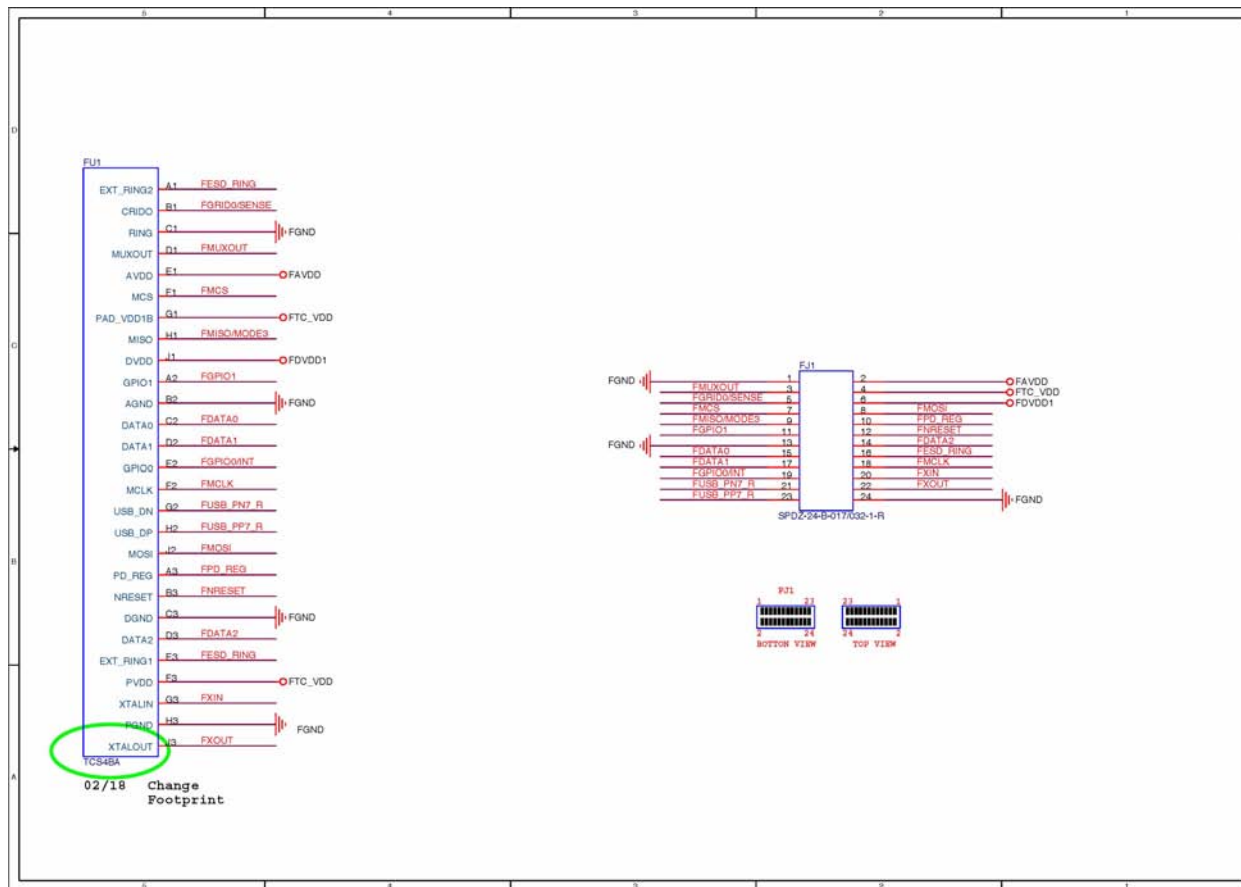
# CIR Board

## CIR BOARD

Sheet 51 of 53  
CIR Board



# Finger Board



Sheet 52 of 53  
Finger Board

B. Schematic Diagrams

02/18 Change Footprint

# PWR on SEQ Diagram

Sheet 53 of 53  
PWR on SEQ  
Diagram

