

# SERVICE MANUAL

W950TU

*notebook*





**Notebook Computer**

**W950TU**

**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 **W950TU** 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

Appendix C, Updating the FLASH ROM BIOS

## Preface

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### 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 with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 1.58A (**30 Watts**) minimum AC/DC Adapter.

### CAUTION

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

### FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

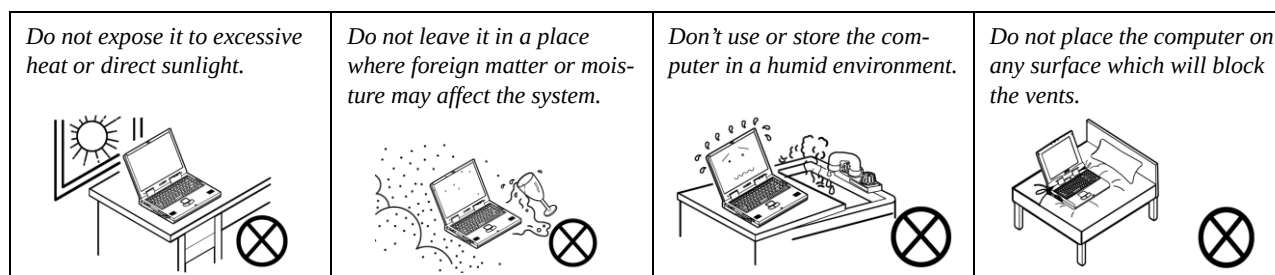
## Instructions for Care and Operation

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

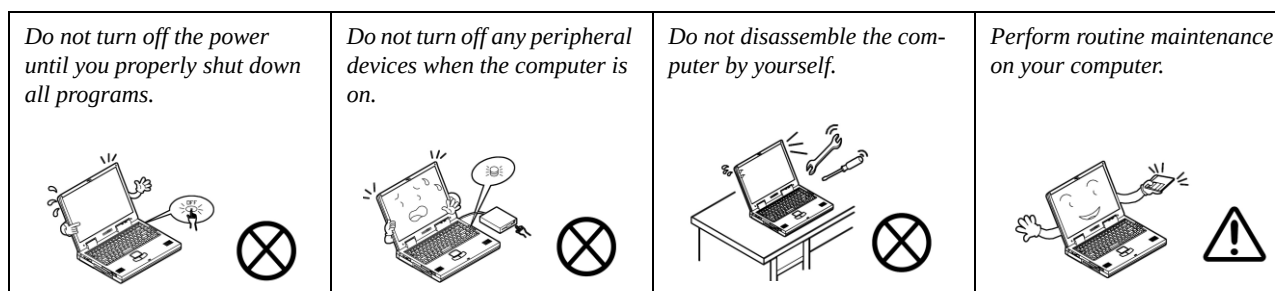
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

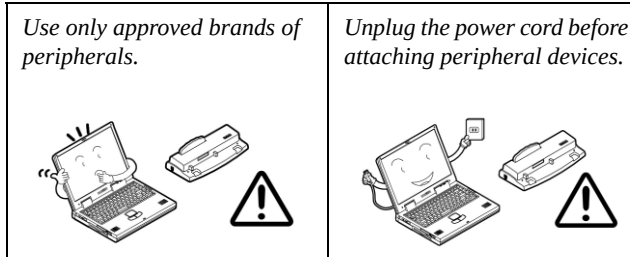


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



## Preface

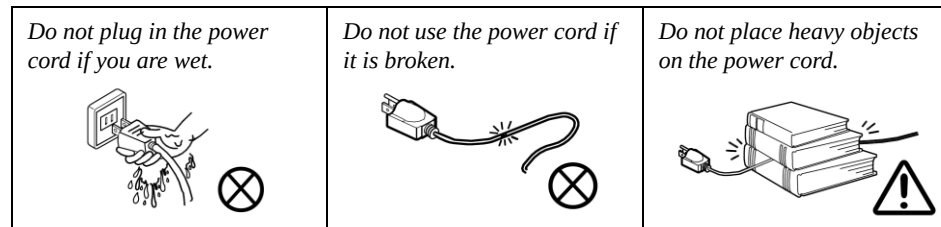
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



## 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 and power cord). 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/DVD

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.

## System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Insert the battery and make sure it is locked in position.
4. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
5. Attach the AC/DC adapter to the DC-In jack at the left of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 130 degrees); use the other hand (as illustrated in Figure 1) to support the base of the computer (**Note: Never** lift the computer by the lid/LCD).
7. Press the power button to turn the computer "on".



*Figure 1*  
**Opening the Lid/LCD/  
Computer with AC/DC  
Adapter Plugged-In**



### **Shut Down**

Note that you should always shut your computer down by choosing **Shut Down** from the **Start** Menu.

This will help prevent hard disk or system problems.

# Contents

## Introduction .....1-1

|                                                       |      |
|-------------------------------------------------------|------|
| Overview .....                                        | 1-1  |
| 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 |

## Disassembly .....2-1

|                                            |      |
|--------------------------------------------|------|
| 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 Hard Disk Drive .....         | 2-6  |
| Removing the Optical (CD/DVD) Device ..... | 2-8  |
| Removing the Caddy/Second Hard disk .....  | 2-10 |
| Removing the System Memory (RAM) .....     | 2-11 |
| Removing the Keyboard .....                | 2-13 |
| Removing the Wireless LAN Module .....     | 2-15 |
| Wireless LAN and Combo Module Cables ..... | 2-16 |
| Removing the CCD .....                     | 2-17 |

## Part Lists .....A-1

|                                       |     |
|---------------------------------------|-----|
| Part List Illustration Location ..... | A-2 |
| Top (1 DIMM) .....                    | A-3 |

|                    |     |
|--------------------|-----|
| Top (2 DIMM) ..... | A-4 |
| Bottom .....       | A-5 |
| LCD .....          | A-6 |
| DVD DUAL .....     | A-7 |
| HDD .....          | A-8 |
| HDD Caddy .....    | A-9 |

## Schematic Diagrams.....B-1

|                                 |      |
|---------------------------------|------|
| System Block Diagram .....      | B-2  |
| Processor 1/8 .....             | B-3  |
| Processor 2/8 .....             | B-4  |
| Processor 3/8 .....             | B-5  |
| Processor 4/8 .....             | B-6  |
| Processor 5/8 .....             | B-7  |
| Processor 6/8 .....             | B-8  |
| Processor 7/8 .....             | B-9  |
| Processor 8/8 .....             | B-10 |
| DDR3 SO-DIMM_0 .....            | B-11 |
| DDR3 SO-DIMM_1 .....            | B-12 |
| RTD2136 .....                   | B-13 |
| Panel, CRT .....                | B-14 |
| HDMI .....                      | B-15 |
| LAN, Card Reader .....          | B-16 |
| Mini Card .....                 | B-17 |
| HDD, ODD, LED, LID .....        | B-18 |
| USB, Touch Panel .....          | B-19 |
| Conn, CCD, Fan, Click, TV ..... | B-20 |
| Audio Codec .....               | B-21 |
| KBC-ITE IT8587E .....           | B-22 |
| AU6259 .....                    | B-23 |
| 5VS, 3VS, 1.8VS, 1.0VS .....    | B-24 |

## Preface

---

|                            |      |
|----------------------------|------|
| VDD3, VDD5 .....           | B-25 |
| 1.5VS, 1.5V, VTT_MEM ..... | B-26 |
| 1.0V, 1.05VS, 1.24V .....  | B-27 |
| VCore .....                | B-28 |
| AC IN, Charger .....       | B-29 |
| Audio Board .....          | B-30 |
| TPM .....                  | B-31 |
| SW Board .....             | B-32 |
| Touch Panel Board .....    | B-33 |
| Level Shifter 1 .....      | B-34 |
| Level Shifter 2 .....      | B-35 |

## Updating the FLASH ROM BIOS..... C-1

|                                                                              |     |
|------------------------------------------------------------------------------|-----|
| Download the BIOS .....                                                      | C-1 |
| Unzip the downloaded files to a bootable CD/DVD/ or<br>USB Flash drive ..... | C-1 |
| Set the computer to boot from the external drive .....                       | C-1 |
| Use the flash tools to update the BIOS .....                                 | C-2 |
| Restart the computer (booting from the HDD) .....                            | C-2 |

# Chapter 1: Introduction

## Overview

This manual covers the information you need to service or upgrade the **W950TU** 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 the *User's Manual*. The manual is shipped with the computer.

Operating systems (e.g. *Window 8*, etc.) have their own manuals as do application softwares (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The **W950TU** 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 take note of the warning and safety information indicated by the “” symbol.

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

## Introduction

## Specifications



### Latest Specification Information

The specifications listed here are correct at the time of sending them to the press. Certain items (particularly processor types/speeds) may be changed, delayed or updated due to the manufacturer's release schedule. Check with your service center for more details.



### CPU

The CPU is not a user serviceable part. Accessing the CPU in any way may violate your warranty.

### Processor Options

#### Intel® Pentium™ Processor

##### N3520 (2.17GHz)

2MB L3 Cache, **22nm**, DDR3L-1333MHz, TDP 7.5W

#### Intel® Celeron™ Processor

##### N2920 (1.86GHz)

2MB L3 Cache, **22nm**, DDR3L-1066MHz, TDP 7.5W

##### N2820 (2.13GHz), N2815 (1.86GHz)

1MB L3 Cache, **22nm**, DDR3L-1066MHz, TDP 7.5W

##### N2806 (1.60GHz)

1MB L3 Cache, **22nm**, DDR3L-1066MHz, TDP 4.3W

### BIOS

64Mb SPI Flash ROM

AMI BIOS

### Storage

(**Factory Option**) One Changeable 9.5mm(h) Super Multi Optical Device Drive

(**Factory Option**) Dummy ODD

One Changeable 2.5" 7.0mm (h) SATA **HDD/SSD**

### Memory

#### For N3520, N2920, N2820 & N2815 Processors:

Two 204 Pin SO-DIMM Sockets Supporting **DDR3L 1066/1333MHz** Memory

Memory Expandable up to 8GB

(The real memory operating frequency depends on the FSB of the processor.)

#### For N2806 Processor

One 204 Pin SO-DIMM Socket Supporting **DDR3L 1066MHz** Memory

Memory Expandable up to 8GB

(The real memory operating frequency depends on the FSB of the processor.)

### LCD

15.6" (39.62cm) HD (Thickness: 3.8mm)

### Video Adapter

#### Intel HD Graphics

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)

Microsoft DirectX® 11 Compatible

### Audio

High Definition Audio Compliant Interface

2 \* Built-In Speakers

Built-In Microphone

### Security

Security (Kensington® Type) Lock Slot

BIOS Password

(**Factory Option**) TPM v1.2

### Keyboard

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

### Pointing Device

Built-in Touchpad

### Interface

One USB 3.0 Port

One HDMI-Out Port

One External Monitor Port

One Headphone-Out Jack

One Microphone-In Jack

One RJ-45 LAN Jack

One DC-in Jack

Three USB 2.0 Ports

### Mini Card Slots

One Slot for **WLAN** Module or **WLAN and Bluetooth** Combo Module

### Card Reader

Embedded Multi-In-1 Card Reader

MMC (MultiMedia Card) / RS MMC

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

MS (Memory Stick) / MS Pro / MS Duo

### Communication

Built-In 10/100Mb Ethernet LAN

1.0M HD PC Camera Module

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

(Factory Option) Intel® Wireless-N 3160 Wireless LAN  
(802.11a/c) + Bluetooth 4.0

(Factory Option) Intel® Wireless-N 7260 Wireless LAN  
(802.11b/g/n) + Bluetooth 4.0

(Factory Option) Third-Party Wireless LAN (802.11b/g/n)

(Factory Option) Third-Party Wireless LAN (802.11b/g/n) +  
Bluetooth 4.0

### 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, 1.58A (30W)

Removable 4 Cell Smart Lithium-Ion Battery Pack, 32WH

### Dimensions & Weight

374mm (w) \* 258.5mm (d) \* 12 - 24.7mm (h)

2.1kg (barebone with ODD and 32WH Battery)

## Introduction

Figure 1  
Top View

1. PC Camera
2. \*PC Camera LED  
*\*When the PC camera is in use, the LED will be illuminated in red.*
3. Built-In Microphone
4. LCD
5. Power Button
6. Keyboard
7. Touchpad & Buttons

## External Locator - Top View with LCD Panel Open





## External Locator - Front & Right Side Views

FRONT VIEW



*Figure 2*  
**Front View**

1. LED Indicator
2. Multi-in-1 Card Reader

RIGHT SIDE VIEW



*Figure 3*  
**Right Side View**

1. Microphone-In Jack
2. Headphone-Out Jack
3. USB 2.0 Port
4. Optical Device Drive Bay
5. Emergency Eject Hole
6. Security Lock Slot

## Introduction

### External Locator - Left Side & Rear View

*Figure 4*  
**Left Side View**

1. DC-In Jack
2. RJ-45 LAN Jack
3. External Monitor Port
4. Vent
5. HDMI-Out Port
6. USB 2.0 Port
7. USB 3.0 Port

LEFT SIDE VIEW



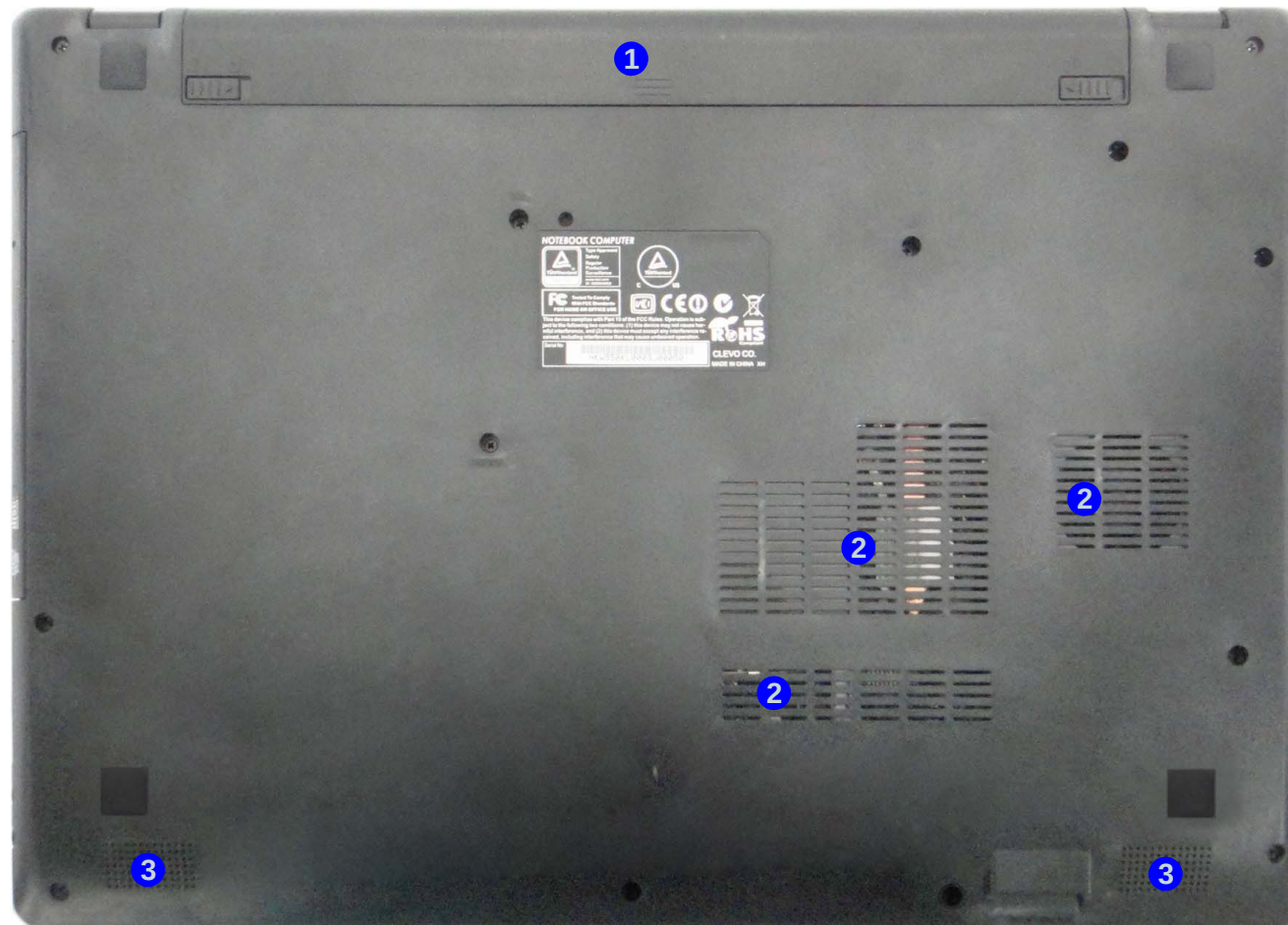
*Figure 5*  
**Rear View**

1. Battery

REAR VIEW



## External Locator - Bottom View



*Figure 6*  
**Bottom View**

1. Battery
2. Vent
3. Speakers



### **Overheating**

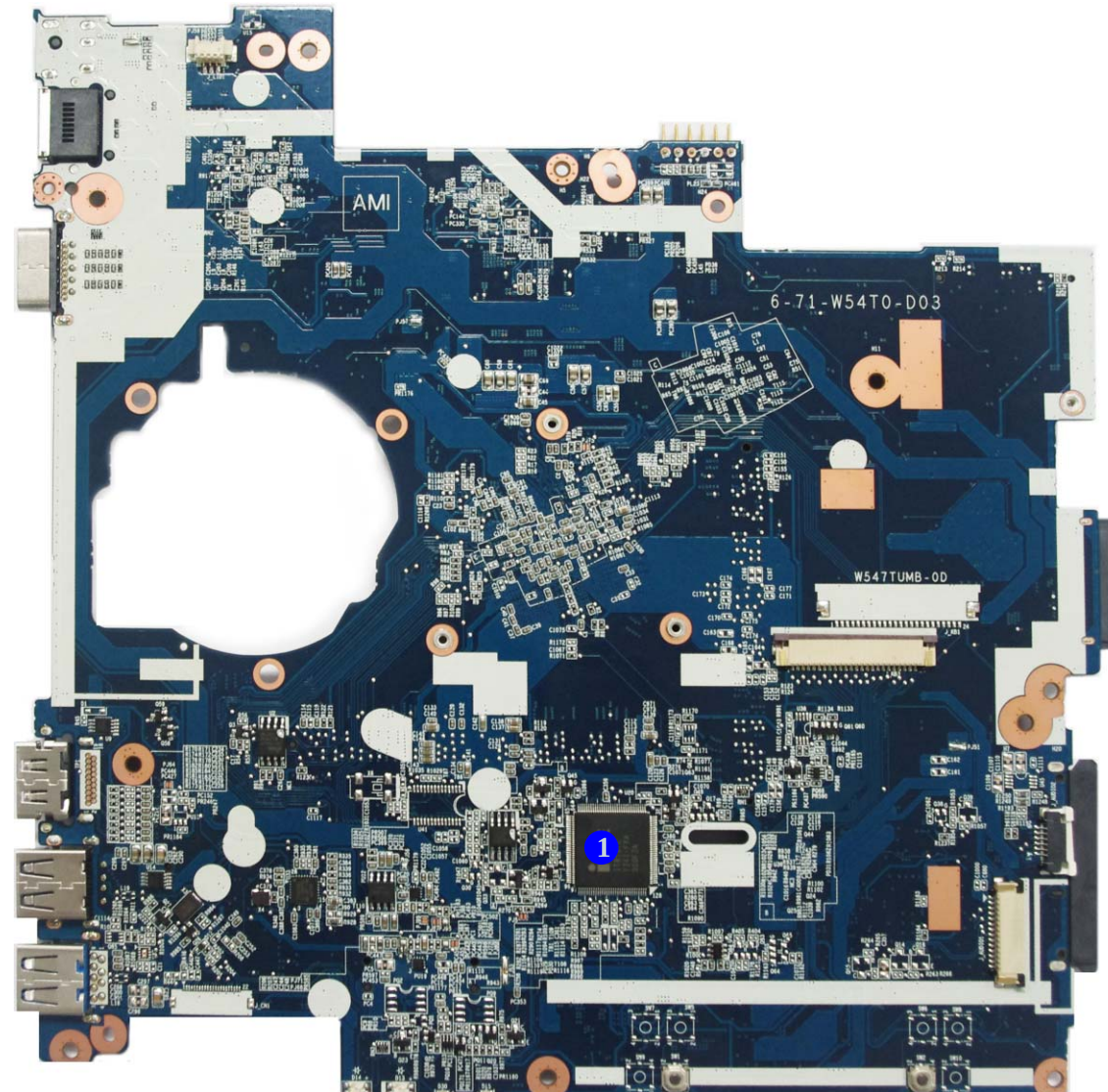
To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

## Introduction

*Figure 7*  
Mainboard Top  
Key Parts

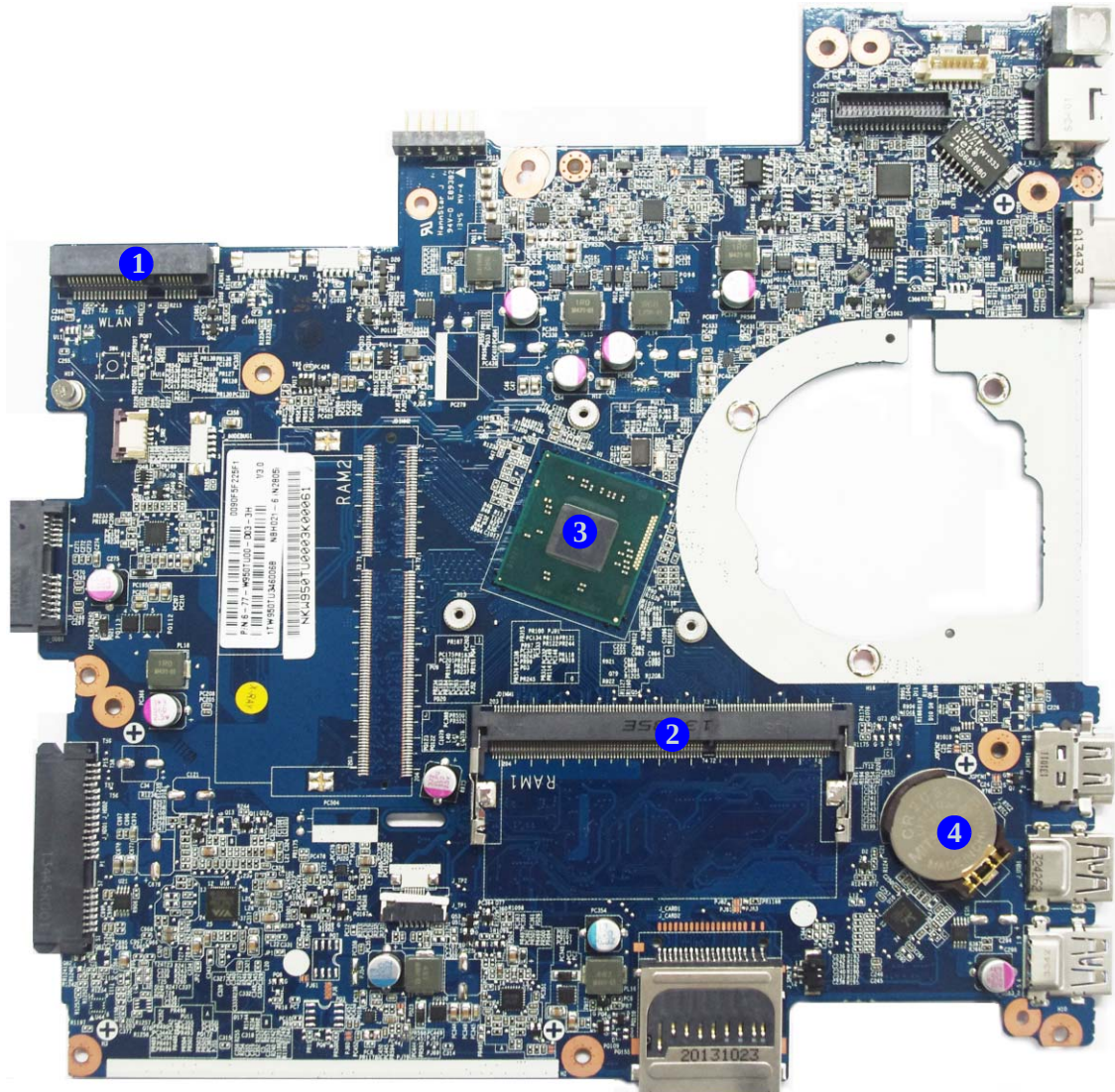
1. KBC-ITE IT8587

## Mainboard Overview - Top (Key Parts)





## Mainboard Overview - Bottom (Key Parts)



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

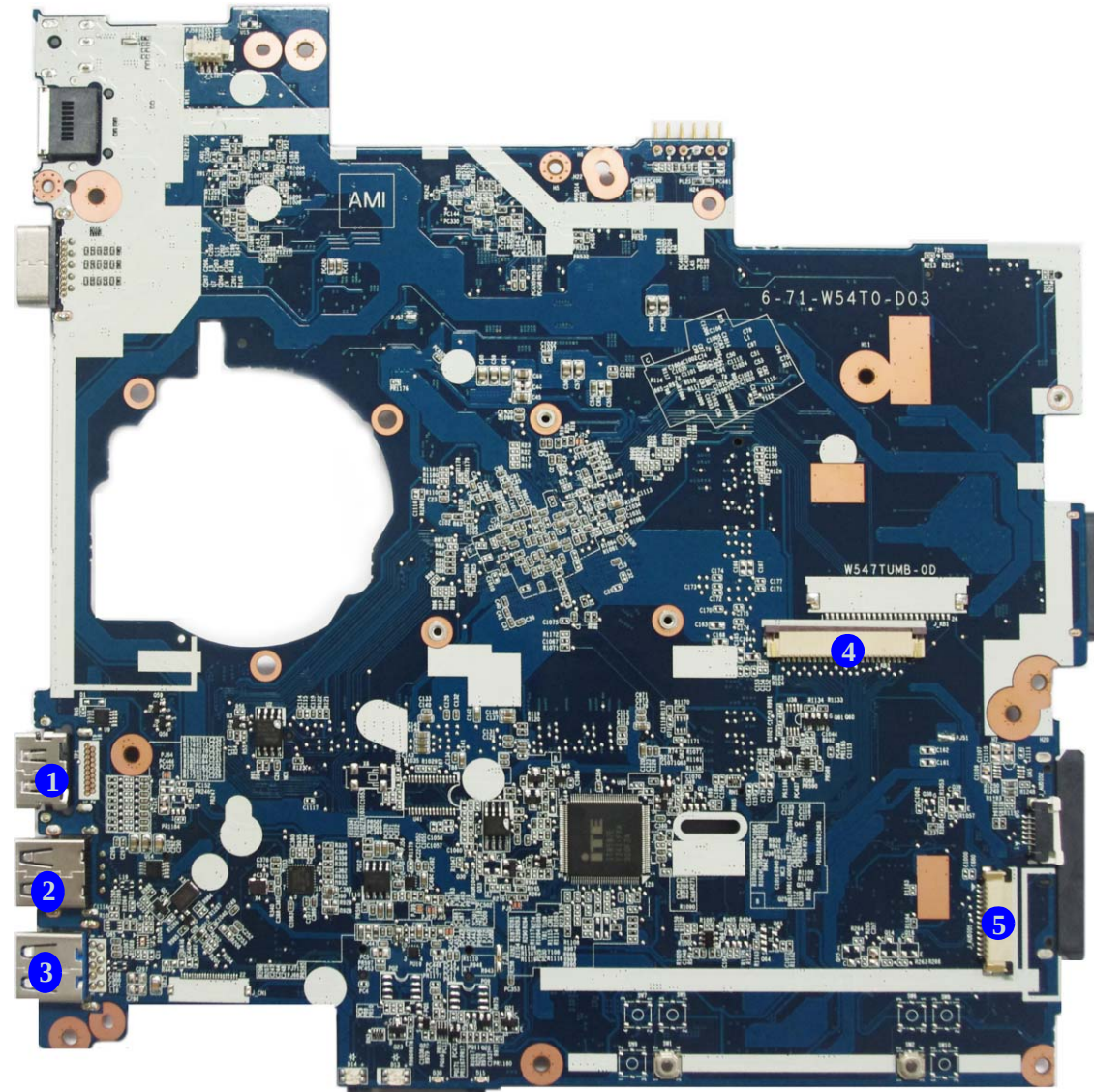
1. Mini-Card Connector
2. Memory Slots  
DDR3L SO-DIMM
3. CPU
4. CMOS Battery

## Introduction

*Figure 9*  
**Mainboard Top  
Connectors**

1. HDMI-Out Port
2. USB Port 2.0
3. USB Port 3.0
4. Keyboard Cable Connector
5. Audio Board Cable Connector

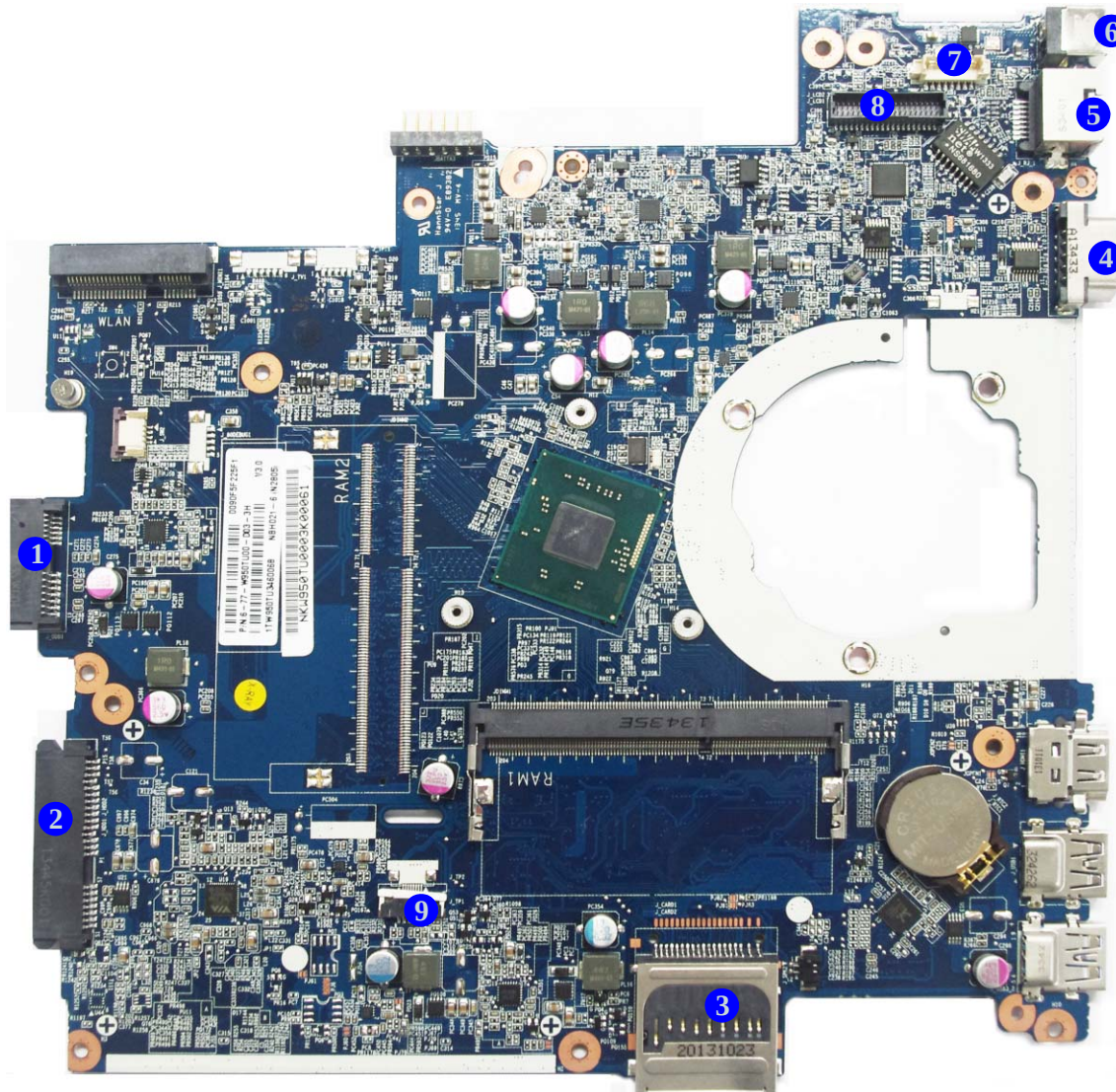
## Mainboard Overview - Top (Connectors)





*Figure 10*  
**Mainboard Bottom  
Connectors**

1. ODD Connector
2. HDD Connector
3. Multi-in-1 Card Reader
4. External Monitor Port
5. RJ-45 LAN Jack
6. DC-In Jack
7. CCD Connector
8. LCD Cable Connector
9. Touchpad Connector







# Chapter 2: Disassembly

## Overview

This chapter provides step-by-step instructions for disassembling the **W950TU** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

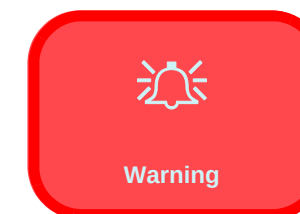
We suggest you completely review any procedure before you take the computer apart.

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-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 and power cord). 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 HDD:

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

### To remove the Optical Device:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the optical device [page 2 - 8](#)

### To remove the Caddy/2nd HDD:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the optical device [page 2 - 8](#)
4. Remove the caddy [page 2 - 10](#)

### To remove the System Memory:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the system memory [page 2 - 11](#)

### To remove the Keyboard:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the keyboard [page 2 - 13](#)

### To remove the Wireless LAN Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the WLAN [page 2 - 15](#)

### To remove the CCD Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the CCD module [page 2 - 17](#)

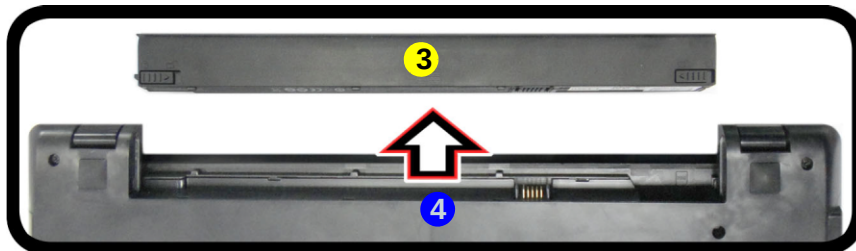
## Removing the Battery

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

a.



b.



*Figure 1*  
**Battery Removal**

- a. Slide the latch and hold it in place.
- b. Slide the battery out in the direction of the arrow.



3. Battery

## Disassembly

*Figure 2*  
**HDD Assembly  
Removal**

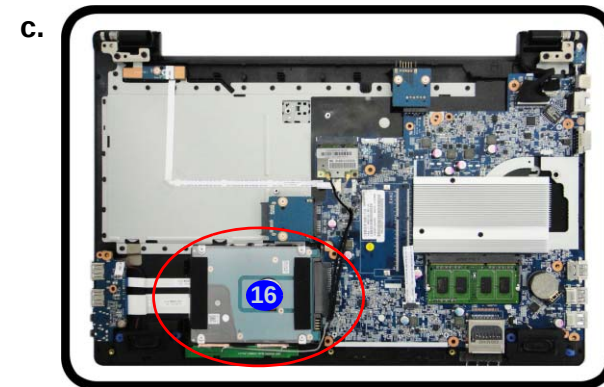
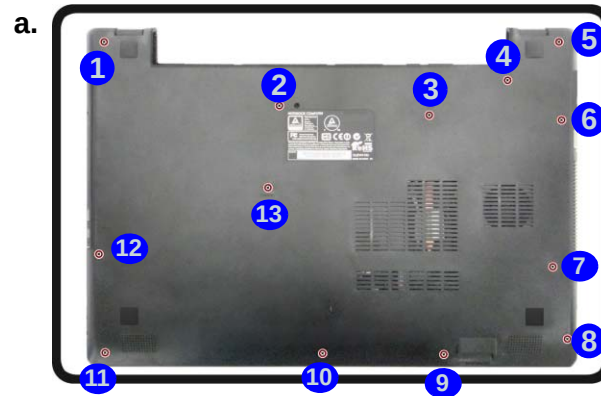
- Remove the screws.
- Remove the bottom cover.
- Locate the HDD assembly.

## Removing the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 7.0mm (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

- Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
- Remove the screws **1** - **13** ([Figure 2a](#)).
- Lift the bottom cover **14** up from point **15** ([Figure 2b](#)).
- The hard disk drive will be visible at point **16** ([Figure 2c](#)).



#### HDD System Warning

New HDD's are blank. Before you begin make sure:

You have backed up any data you want to keep from your old HDD.

You have all the CD-ROMs and FDDs required to install your operating system and programs.

If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

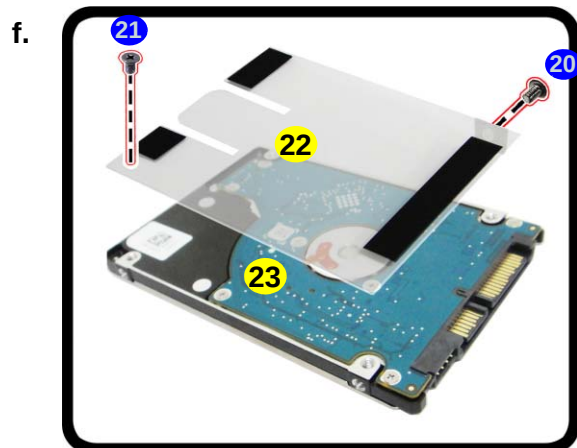
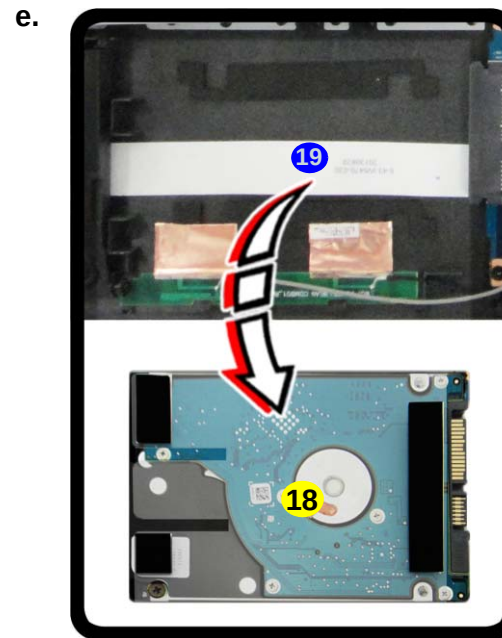
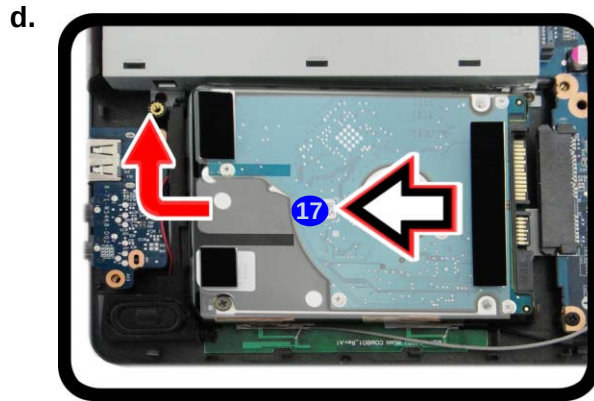


14. Bottom Cover

- 13 Screws



5. Slightly lift and pull the hard disk assembly in the direction of arrow 17 (Figure 3d).
6. Lift the hard disk assembly 18 out of the bay 19 (Figure 3e).
7. Remove the screws 20 - 21 and the adhesive cover 22 from the hard disk 23 (Figure 3f).
8. Reverse the process to install a new hard disk (do not forget to replace all the screws and bottom cover).



*Figure 3*  
**HDD Assembly  
Removal (cont'd.)**

- d. Slightly lift and pull the HDD assembly in the direction of the arrow.
- e. Lift the HDD assembly out of the bay.
- f. Remove the screws and adhesive cover.



18. HDD Assembly  
22. Adhesive Cover  
23. HDD

- 2 Screws

## Disassembly

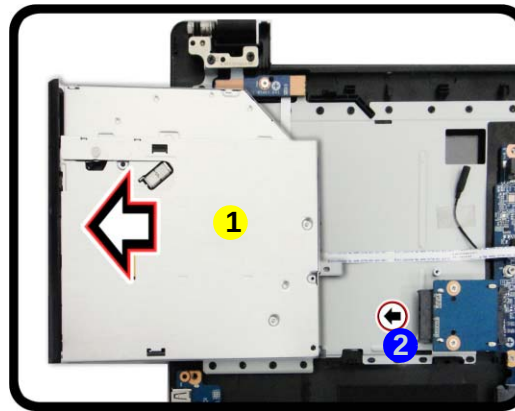
*Figure 4*  
**Optical Device  
Removal**

- Pull out the optical device.
- Pry the bezel off the optical device.
- Separate the bezel and optical device.

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

- Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
- Carefully pull out the optical device **1** out of the bay at point **2** ([Figure 4a](#)).
- Carefully pry the bezel **4** off the optical device at point **3** ([Figure 4b](#)).
- Separate the bezel **4** and the optical device ([Figure 4c](#)).

a.



b.



c.



- Optical Device
- Bezel

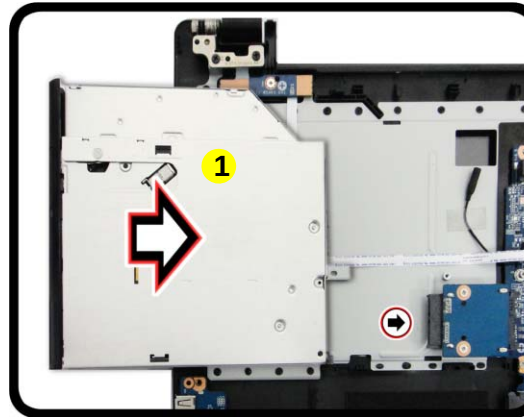
*Figure 5*  
**Optical Device  
Assembly**

d. Install the front bezel.  
e. Insert the optical device.

d.



e.



- 1. Optical Device
- 4. Bezel

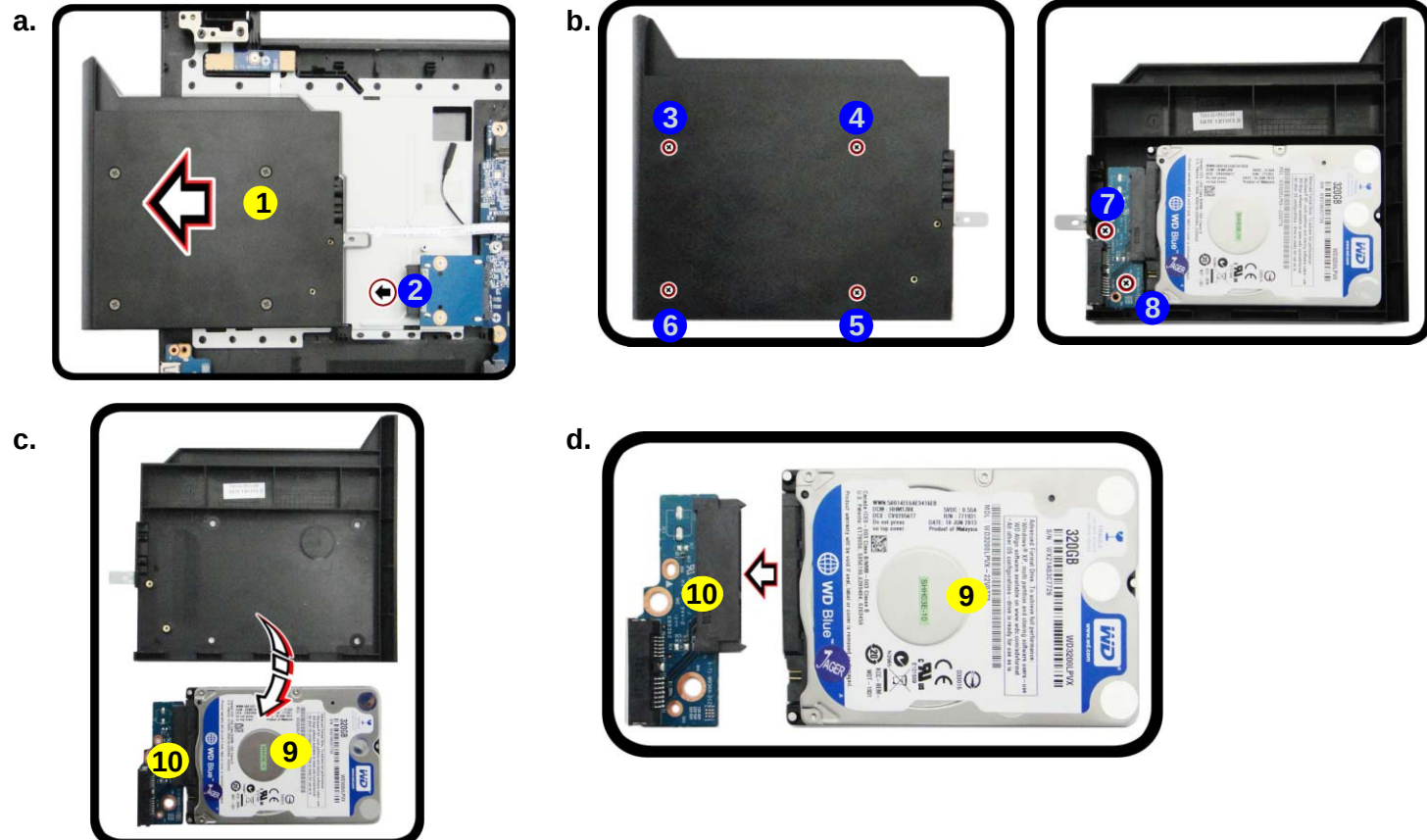
## Disassembly

*Figure 6*  
**Caddy/2nd HDD  
Removal**

- Remove the caddy from the ODD bay.
- Remove the screws.
- Lift the HDD assembly out.
- Separate the connector and HDD.

## Removing the Caddy/Second Hard disk

- Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
- Carefully pull out the caddy **1** out of the bay at point **2** ([Figure 6a](#)).
- Remove screws **3 - 8** ([Figure 6b](#)) to release the hard disk assembly.
- Lift the hard disk **9** and connector **10** out ([Figure 6c](#)).
- Separate the hard disk **9** and connector **10** ([Figure 6d](#)).
- Reverse the process to install a new HDD (do not forget to replace the screws and bottom cover).
- Restart the computer to allow it to automatically detect the new device.



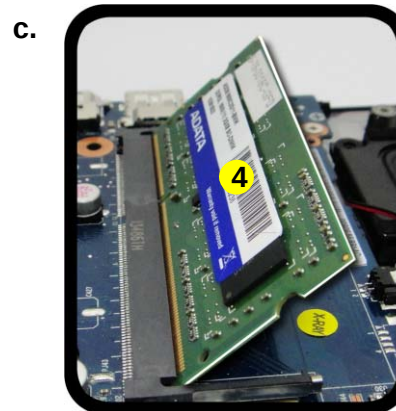
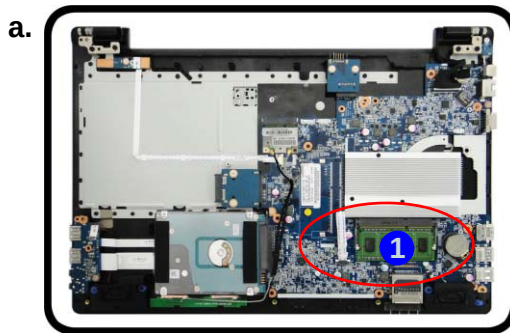
1. Caddy  
9. HDD  
10. HDD Connector
- 6 Screws

## Removing the System Memory (RAM)

The computer has two memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR3L Up to 1066/1333 MHz. The main memory can be expanded up to 8GB. The SO-DIMM modules supported are 1024MB and 2048MB **DDR3L** 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, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
2. The RAM modules will be visible at point **1** on the mainboard ([Figure 7b](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 7b](#)). The RAM module **4** will pop-up ([Figure 7c](#)), and you can then remove it.



*Figure 7*  
**RAM Module Removal**

- a. The RAM modules will be visible at point **1** on the mainboard.
- b. Pull the release latches.
- c. Remove the module.



#### 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.



4. RAM Module



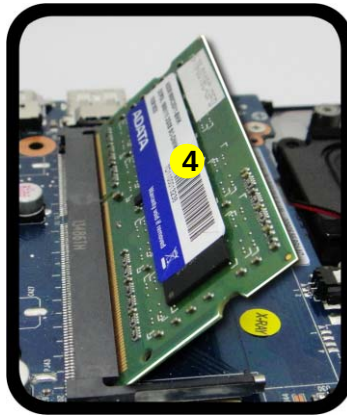
## Disassembly

*Figure 8*  
**RAM Module Assembly**

d. Insert the RAM modules properly.

4. Pull the latches to release the second module if necessary.
5. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
6. The module will only fit one way as defined by its pin alignment. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE IT; it should fit without much pressure.
7. Replace the bottom case and the screws (see [page 2 - 6](#)).
8. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

d.



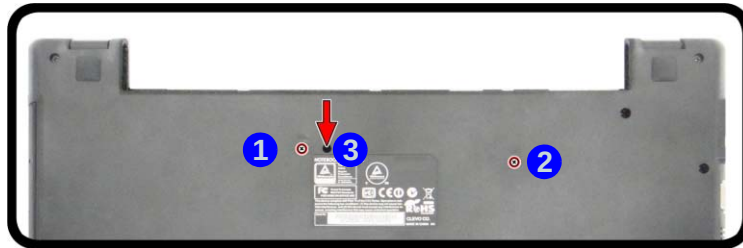
4. RAM Module



## Removing the Keyboard

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
2. Remove screws **1** - **2** from the bottom case and press at point **3** to release the keyboard ([Figure 9a](#)).
3. Turn the computer over, remove the keyboard **4** ([Figure 9c](#)).
4. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable **5**. Disconnect the keyboard ribbon cable from the locking collar socket **6** ([Figure 9d](#)).
5. Carefully lift up the keyboard **4** off the computer ([Figure 9e](#)).

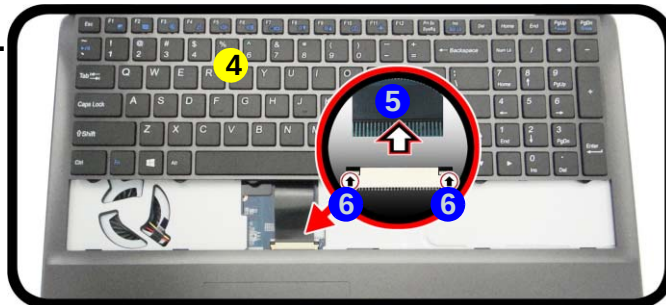
a.



c.



b.



*Figure 9*  
**Keyboard Removal**

- a. Remove screw and release the keyboard by pressing at point **3**.
- b. Disconnect the keyboard ribbon cable from the locking collar socket.
- c. Remove the keyboard.



4. Keyboard

- 2 Screws

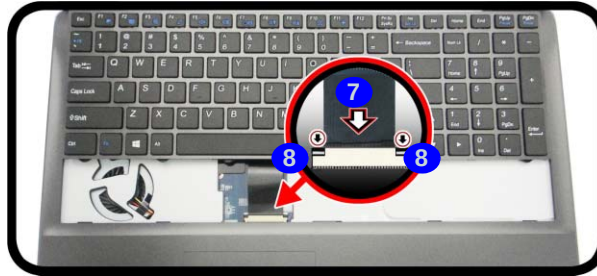
## Disassembly

*Figure 10*  
**Keyboard Assembly**

- d. Connect the keyboard ribbon cable to the locking collar socket.
- e. Insert the keyboard at point 9 and slide it in at point 10 and 11 (Figure 10e).
- f. Tighten the screws.

- 6. Connect the keyboard ribbon cable to the locking collar socket 8, and be careful not to bend the keyboard ribbon cable 7 (Figure 10d).
- 7. Insert the keyboard 4 at point 9 and then slide the keyboard in at point 10 and 11 (Figure 10e).
- 8. Tighten the screws 12 - 13 to secure the keyboard (Figure 10f).

d.



e.



f.

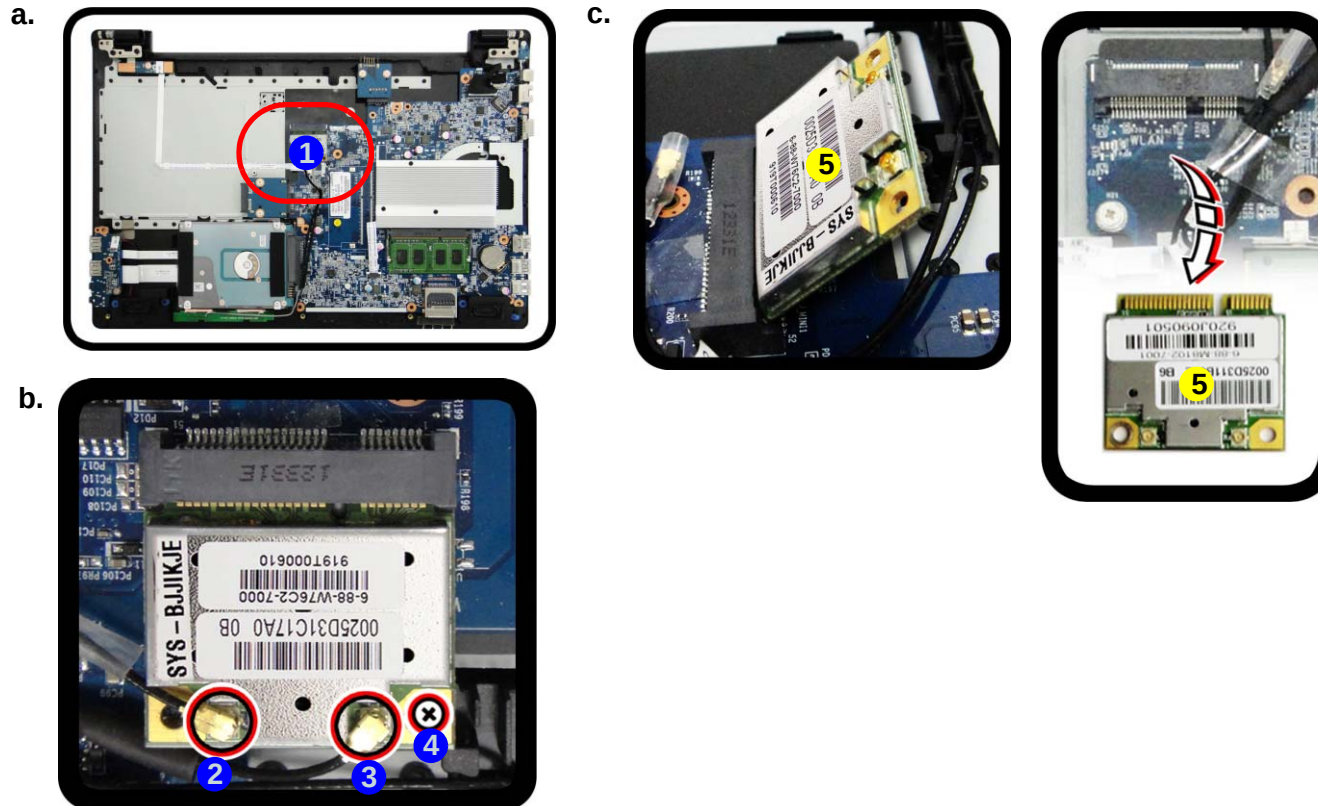


4. Keyboard

- 2 Screws

## Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard ([Figure 11a](#)).
3. Carefully disconnect the cables **2** & **3**, and then remove the screw **4** ([Figure 11b](#)).
4. The Wireless LAN module **5** ([Figure 11c](#)) will pop-up, and you can remove it from the computer.



*Figure 11*  
**Wireless LAN  
Module Removal**

- a. Locate the WLAN.
- b. Disconnect the cable and remove the screw.
- c. The WLAN module will pop up and lift it out of the computer.

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket ([Figure 11b](#)).



### 5. Wireless LAN Module

- 1 Screw

## Disassembly

### Wireless LAN and Combo Module Cables

Note that the cables for connecting to the antennae on WLAN and WLAN & Bluetooth Combo modules are not labelled. The cables/covers (each cable will have either a black or transparent cable cover) are color coded for identification as outlined in the table below.

| Module Type                 | Antenna Type | Cable Color | Cable Cover Type |
|-----------------------------|--------------|-------------|------------------|
| WLAN/WLAN & Bluetooth Combo | WM 1         | Black       | Transparent      |
|                             | WM 2         | Gray        |                  |
|                             | WM 3         | White       |                  |

Cable 1 is usually connected to antenna 1 (Main) on the module, and cable 2 to antenna 2 (Aux).

## Removing the CCD

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
2. Run your fingers around the inner frame of the LCD panel at the points as indicated by the arrows **1** - **4** ([Figure 12a](#)).
3. Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Push the LCD front cover **5** upwards before carefully lifting it up.
4. Remove the LCD front cover **5** ([Figure 12c](#)).

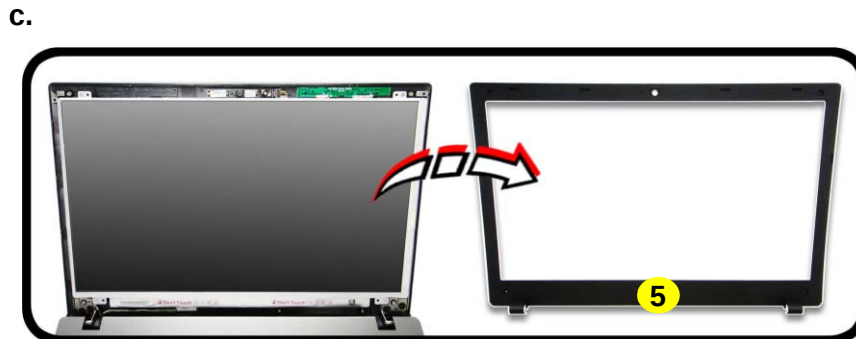
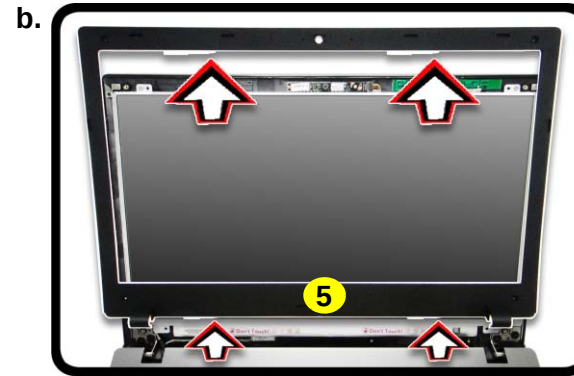
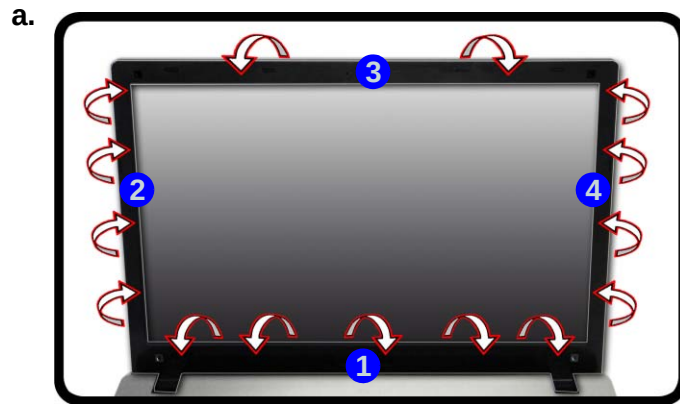


Figure 12  
CCD Removal

- a. Run your fingers around the inner frame of the LCD panel at the points indicated by the arrows.
- b. Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Push the LCD front panel upwards before carefully lifting it up.
- c. Remove the LCD front cover.



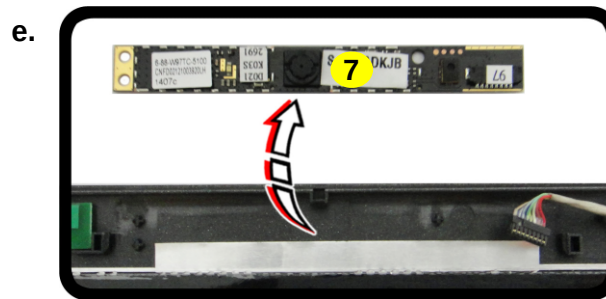
5. LCD Front Cover

## Disassembly

*Figure 13*  
**CCD Removal**  
**(cont'd)**

- d. Disconnect the cable.
- e. Remove the CCD module.

- 5. Disconnect the cable ⑥.
- 6. Remove the CCD module ⑦ (*Figure 13f*).
- 7. Reverse the process to install a new CCD module.



7. CCD Module



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# Appendix A:Part Lists

This appendix breaks down the **W950TU** 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.

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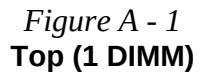
## Part List Illustration Location

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

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

| Part           |                   |
|----------------|-------------------|
| Top (1 DIMM)   | <i>page A - 3</i> |
| Top (2 DIMM)   | <i>page A - 4</i> |
| Bottom         | <i>page A - 5</i> |
| LCD            | <i>page A - 6</i> |
| DVD Dual Drive | <i>page A - 7</i> |
| HDD            | <i>page A - 8</i> |
| HDD Caddy      | <i>page A - 9</i> |

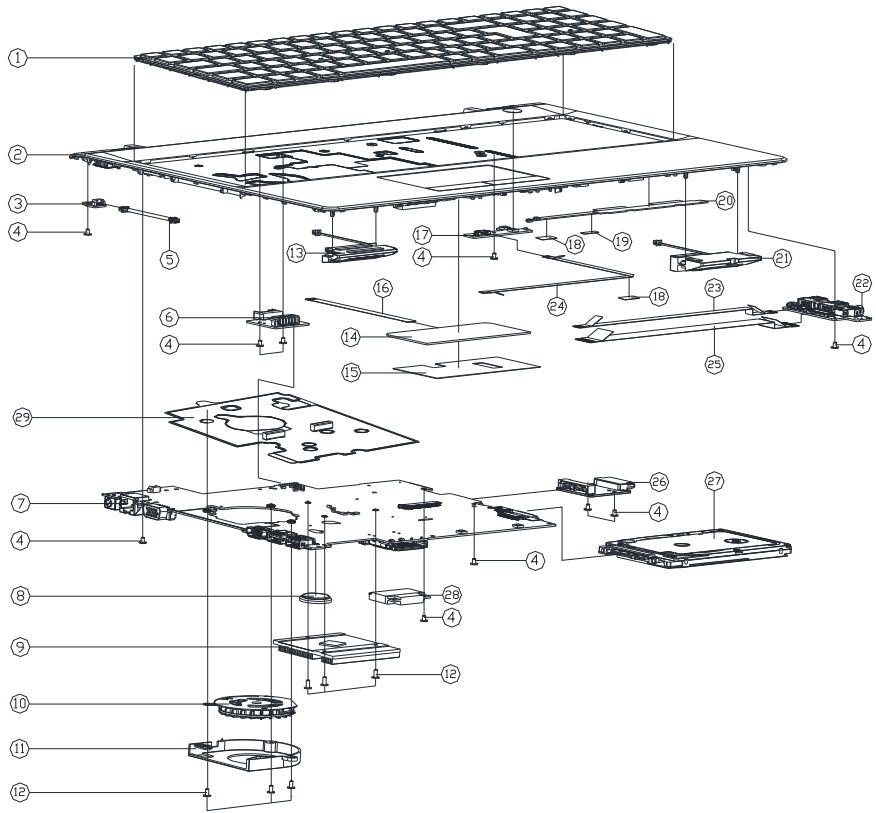
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## A.Part Lists

Top (2 DIMM)

Figure A - 1  
Top (2 DIMM)



| ITEM | PART NAME                                            | PART NO             | REMARK   |
|------|------------------------------------------------------|---------------------|----------|
| 1    | VMM K/B USABLOCK FRAMED MODULE W950U2                | 6-79-W950U2K-000-W  |          |
| 2    | TOP CASE MODULE W950SU2                              | 6-39-W95S2-011      |          |
| 3    | HALL SENSOR BOARD V10 W950KU                         | 6-77-W95K1-D01      |          |
| 4    | SCREW M2X4 KT NY ICT NY 008-845JBT-040               | 6-35-B1120-3RE      |          |
| 5    | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-43-W5503-011      |          |
| 6    | BATTERY BOARD V2.0 W950KU                            | 6-77-W95KQ-D02      |          |
| 7    | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-77-W95TU00-D03-2S |          |
| 7    | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-77-W95TU00-D03-A  |          |
| 7    | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-77-W95TU00-D03-B  |          |
| 7    | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-77-W95TU00-D03-C  |          |
| 8    | BATTERY 3V 220MA BBBCR2032B (KTS)                    | 6-23-6A2B2-030      |          |
| 9    | CPU HEATSINK AL6063 W940TU                           | 6-31-W940S-011      |          |
| 10   | FAN MODULE (A-POWER) W547BL                          | 6-31-W547S-102-1    |          |
| 11   | FAN HOUSING THERMOPHASE T0750X W940TU                | 6-42-W940S-011      |          |
| 12   | SCREW M2X4L KT BZ ICT NY                             | 6-35-B6120-4RA      |          |
| 13   | SPK CABLE L 2Y 47 22MM 0P2524900 W950KU              | 6-23-5W95K-0L1      |          |
| 14   | TOUCH PAD SYMPHONY TM-0104G-RED MULTI-GE5            | 6-49-C4802-010      |          |
| 15   | TP TAPE NYLAR PCT W540EU                             | 6-40-W540I-010      |          |
| 16   | TTC CABLE FOR KEY TO HALL SENSOR 4MM OILY W950KU     | 6-43-W35E2-011      |          |
| 17   | POWER SWITCH BOARD V30 W950SU2                       | 6-77-W54KS-D03-B    |          |
| 18   | TAPE NYLAR TRANSPARENT CONDUCTIVE PDS00M             | 6-40-P1803-020      |          |
| 19   | TAPE NYLAR TRANSPARENT CONDUCTIVE W200MP             | 6-40-W25P3-010      |          |
| 20   | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-23-7W940-022      |          |
| 21   | SPK CABLE R 2Y 47 22MM 0P2524900 W950KU              | 6-23-5W95K-0R1      |          |
| 22   | AUDIO BOARD Q/SPD1 V20 W950KU                        | 6-77-W95S8-D02-A    |          |
| 23   | TTC CABLE RE TO AUDIO BOARD 4MM OILY W950KU          | 6-43-W95S0-020-1    |          |
| 24   | TTC CABLE FOR POWER ON TO BUS 5MM 2Y 4MM OILY W950KU | 6-43-W95S0-010      |          |
| 25   | TTC CABLE RE TO AUDIO BOARD 4MM OILY W950KU          | 6-43-W95S0-030-1    |          |
| 26   | ODD BOARD V3.0 W950KU                                | 6-77-W95KN-D03      |          |
| 27   | W/O HDD ASS'Y W950KU                                 | 6-79-W950KUJ-010    |          |
| 27   | W/O HDD ASS'Y W950KU                                 | 6-79-W950KUJ-020    |          |
| 27   | 2ND HDD CADDY ASSY W/O HDD W950KU                    | 6-79-W950KUJ-040    | (OPTION) |
| 28   | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-88-W230F-4210     |          |
| 28   | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-88-W25W7-4200     |          |
| 28   | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-88-W54SF-7000     |          |
| 28   | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-88-W54SF-9400     |          |
| 28   | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-88-W54SF-7010     |          |
| 28   | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-88-P3702-9400     |          |
| 28   | WIRE CABLE FOR LID 3P 4MM OILY W950KU                | 6-88-P3702-7000     |          |
| 29   | AL TOOL KIT + NYLAR KIT + TAPE DS-5 W940TU           | 6-47-W940S-010      |          |

Bottom

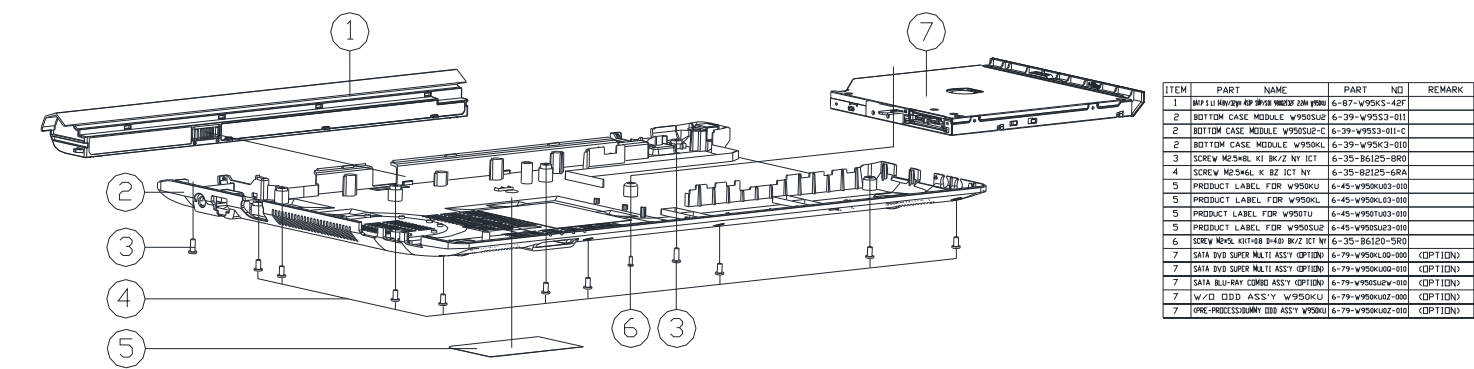
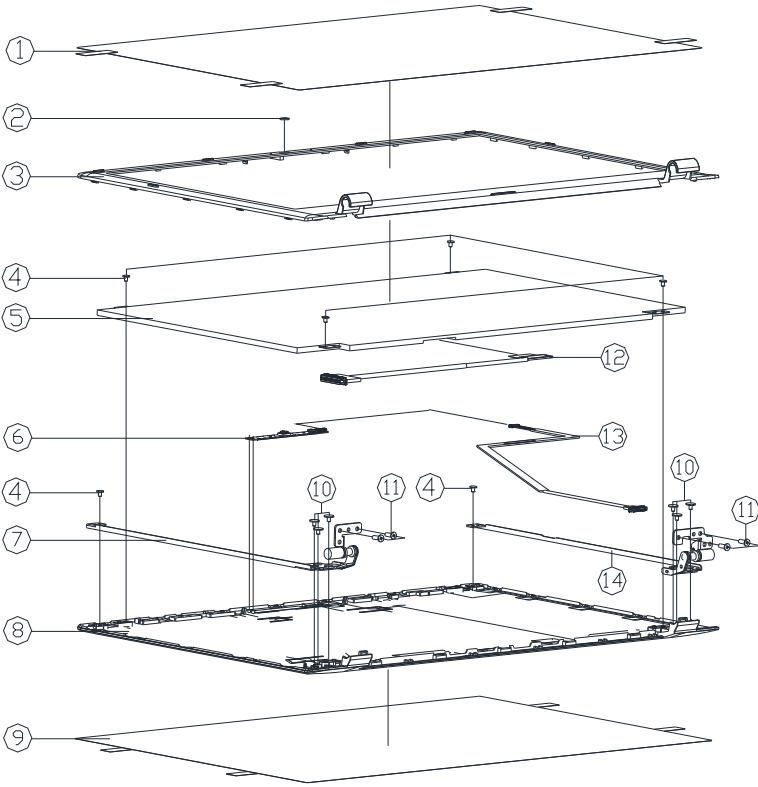


Figure A - 2  
Bottom

| ITEM | PART NAME                          | PART NO          | REMARK   |
|------|------------------------------------|------------------|----------|
| 1    | REAR BEZEL FOR W950U               | 6-87-W95K5-4BF   |          |
| 2    | BOTTOM CASE MODULE W950U           | 6-39-W95K3-011   |          |
| 2    | BOTTOM CASE MODULE W950U-C         | 6-39-W95K3-011-C |          |
| 3    | BOTTOM CASE MODULE W950U           | 6-39-W95K3-010   |          |
| 3    | SCREW M2.5x6L K1 BZ/2 NY ICT       | 6-35-B6125-8R0   |          |
| 4    | SCREW M2.5x6L K1 BZ/2 NY ICT       | 6-35-B6125-8R0   |          |
| 5    | PRODUCT LABEL FOR W950U            | 6-45-W950U03-010 |          |
| 5    | PRODUCT LABEL FOR W950U            | 6-45-W950U03-010 |          |
| 5    | PRODUCT LABEL FOR W950U            | 6-45-W950U03-010 |          |
| 5    | PRODUCT LABEL FOR W950U            | 6-45-W950U03-010 |          |
| 6    | SCREW M2.5x6L K1 BZ/2 NY ICT       | 6-35-B6125-8R0   |          |
| 7    | SATA DVD SUPER MULTI ASSY (OPTION) | 6-79-W950U00-000 | (OPTION) |
| 7    | SATA DVD SUPER MULTI ASSY (OPTION) | 6-79-W950U00-010 | (OPTION) |
| 7    | SATA BLU-RAY COMBO ASSY (OPTION)   | 6-79-W950U00-010 | (OPTION) |
| 7    | W/O HDD ASSY W950U                 | 6-79-W950U02-000 | (OPTION) |
| 7    | PRE-PROCESSOR ASSY W950U           | 6-79-W950U02-010 | (OPTION) |

LCD

Figure A - 3  
LCD



| ITEM | PART NAME                                                            | PART NO          | REMARK |
|------|----------------------------------------------------------------------|------------------|--------|
| 1    | LCD FRONT COVER PROTECTION MILAR (PET-000000) (15200)                | 6-40-E5101-030-1 |        |
| 2    | CCD LENS PMMA W650SR                                                 | 6-42-W6501-010   |        |
| 3    | LCD FRONT COVER MODULE W950SU2                                       | 6-39-W95S1-012   |        |
| 4    | SCREW M2x3L KI NI ICT NY (00#44.5,01#0.4)                            | 6-35-B1120-3RE   |        |
| 5    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-50-L8138-L03   |        |
| 5    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-50-L8138-L02   |        |
| 5    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-50-L8138-L01   |        |
| 5    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-50-L8138-M00   |        |
| 5    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-50-L8132-G00   |        |
| 5    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-50-L8132-D00   |        |
| 5    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-50-L8132-G01   |        |
| 6    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-88-W940C-4901  | OPTION |
| 6    | LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM                | 6-88-W940C-5100  | OPTION |
| 7    | LCD HINGE L W950SU2                                                  | 6-33-W95S1-0L1   |        |
| 8    | LCD BACK COVER MODULE W950SU2                                        | 6-39-W95S1-022   |        |
| 8    | LCD BACK COVER MODULE W950SU2-C                                      | 6-39-W95S1-022-C |        |
| 9    | LCD BACK COVER PROTECTION MILAR (PET-000000) (15200)                 | 6-40-W6508-011   |        |
| 10   | SCREW M2x2L KI BK/Z ICT NY (00#48.1,01#0.6)                          | 6-35-B6120-2RE   |        |
| 11   | SCREW M2.5x6L K BZ ICT NY                                            | 6-35-82125-6RA   |        |
| 12   | WIRE CABLE FOR LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM | 6-43-W95K1-011-N |        |
| 13   | WIRE CABLE FOR LCD 15.6" HD LG IPS6000-PLUS (GLARE TYPE) (LED) 38 MM | 6-43-W95K1-011   |        |
| 14   | LCD HINGE R W950SU2                                                  | 6-33-W95S1-0R1   |        |



DVD DUAL

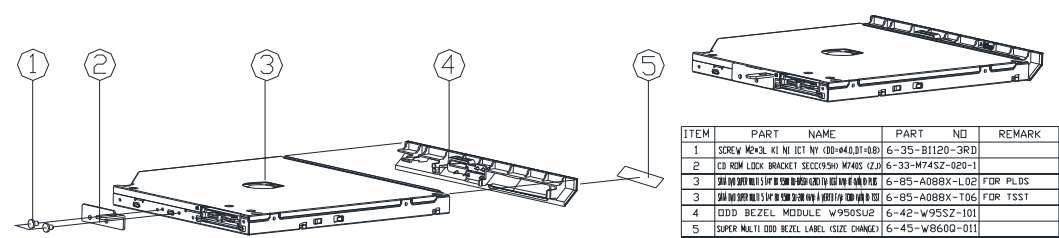
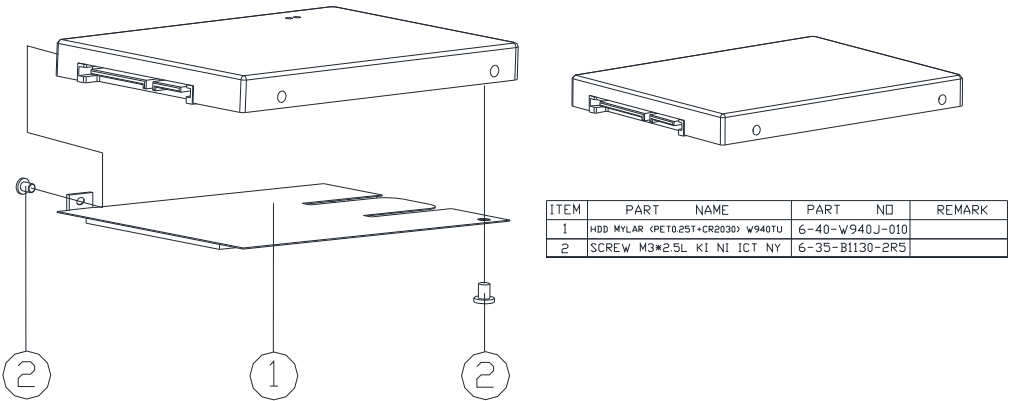


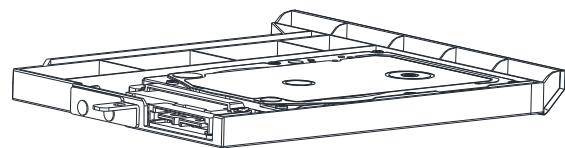
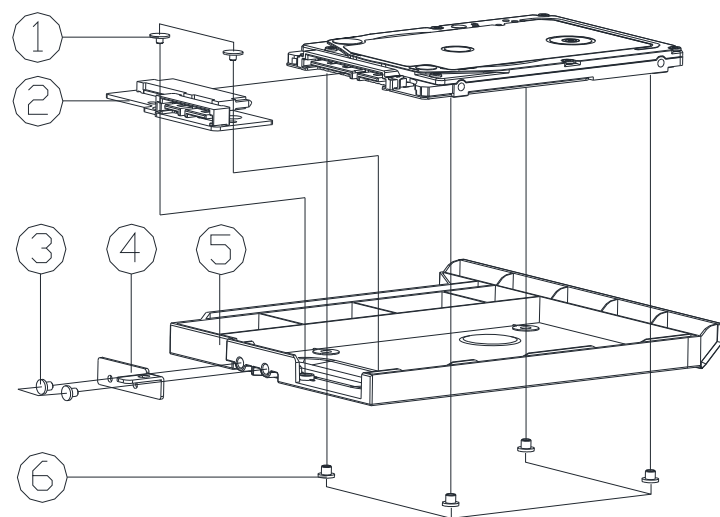
Figure A - 4  
DVD DUAL

HDD

Figure A - 5  
HDD



# HDD Caddy



| ITEM | PART        | NAME                                | PART             | NO | REMARK |
|------|-------------|-------------------------------------|------------------|----|--------|
| 1    | SCREW       | M2*2L KI BK/Z ICT NY (Ø6,T=0.5)     | 6-35-B6120-2RC   |    |        |
| 2    | DDD TO HDD  | BOARD V2.0 W950KU                   | 6-77-W95KN-D12   |    |        |
| 3    | SCREW       | M2*3L KI NI ICT NY (DD=Ø4.5,DT=0.4) | 6-35-B1120-3RE   |    |        |
| 4    | CD ROM LOCK | BRACKET SECC(9.5H) M740S (ZJ)       | 6-33-M74SZ-020-1 |    |        |
| 5    | DUMMY DDD   | PC+ABS GINAR D23I(+) W950SU2        | 6-42-W95SZ-041   |    |        |
| 6    | SCREW       | M3*2.5L KI NI ICT NY                | 6-35-B1130-2R5   |    |        |

Figure A - 6  
HDD Caddy



# Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the **W950TU** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

| Diagram - Page                    | Diagram - Page                          | Diagram - Page                     |
|-----------------------------------|-----------------------------------------|------------------------------------|
| System Block Diagram - Page B - 2 | Panel, CRT - Page B - 14                | 1.5VS, 1.5V, VTT_MEM - Page B - 26 |
| Processor 1/8 - Page B - 3        | HDMI - Page B - 15                      | 1.0V, 1.05VS, 1.24V - Page B - 27  |
| Processor 2/8 - Page B - 4        | LAN, Card Reader - Page B - 16          | VCore - Page B - 28                |
| Processor 3/8 - Page B - 5        | Mini Card - Page B - 17                 | AC IN, Charger - Page B - 29       |
| Processor 4/8 - Page B - 6        | HDD, ODD, LED, LID - Page B - 18        | Audio Board - Page B - 30          |
| Processor 5/8 - Page B - 7        | USB, Touch Panel - Page B - 19          | TPM - Page B - 31                  |
| Processor 6/8 - Page B - 8        | Conn, CCD, Fan, Click, TV - Page B - 20 | SW Board - Page B - 32             |
| Processor 7/8 - Page B - 9        | Audio Codec - Page B - 21               | Touch Panel Board - Page B - 33    |
| Processor 8/8 - Page B - 10       | KBC-ITE IT8587E - Page B - 22           | Level Shifter 1 - Page B - 34      |
| DDR3 SO-DIMM_0 - Page B - 11      | AU6259 - Page B - 23                    | Level Shifter 2 - Page B - 35      |
| DDR3 SO-DIMM_1 - Page B - 12      | 5VS, 3VS, 1.8VS, 1.0VS - Page B - 24    |                                    |
| RTD2136 - Page B - 13             | VDD3, VDD5 - Page B - 25                |                                    |

Table B - 1  
**SCHEMATIC  
DIAGRAMS**

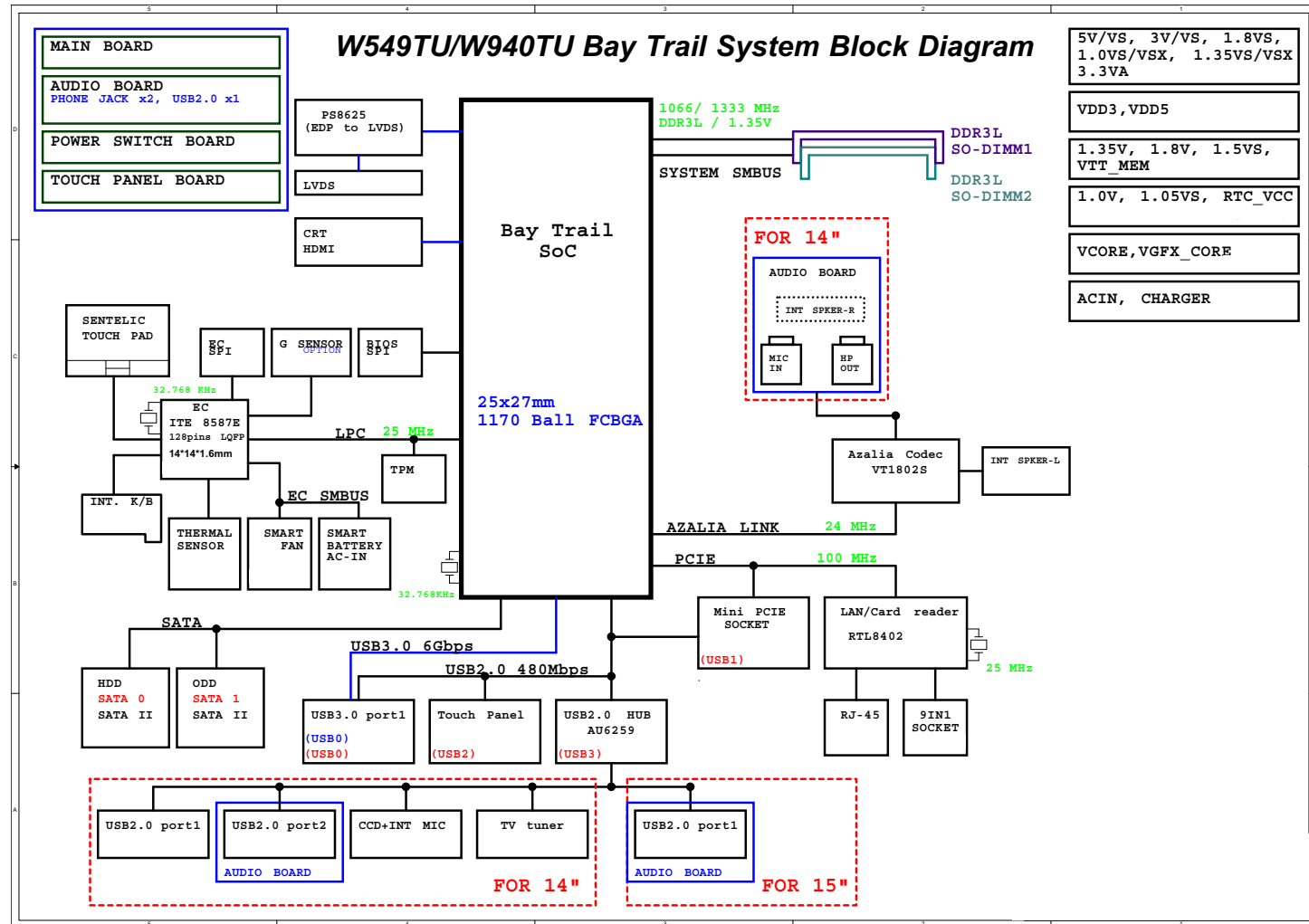


## Version Note

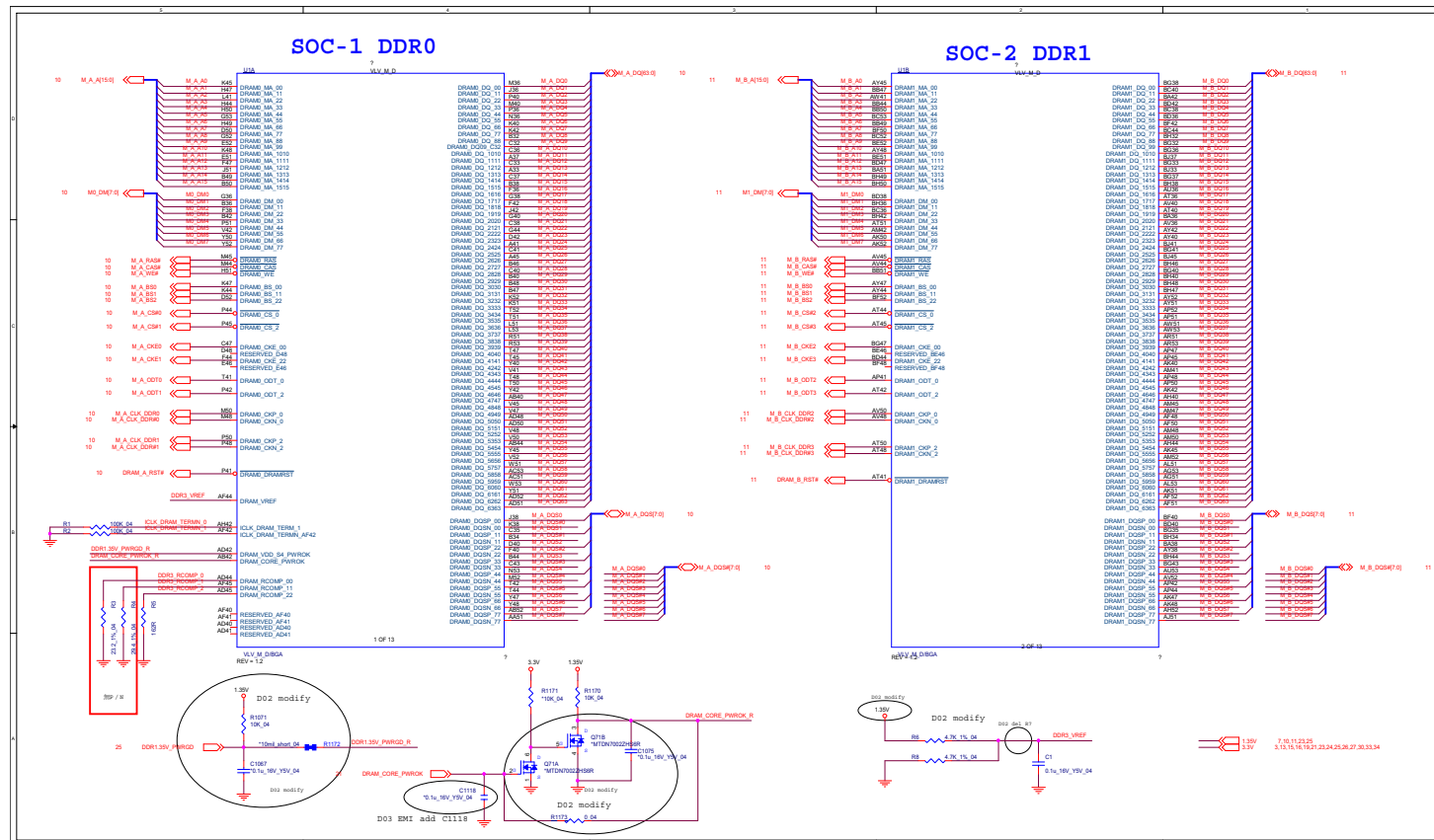
The schematic diagrams in this chapter are based upon version 6-7P-W54T4-004. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

# System Block Diagram

Sheet 1 of 34  
System Block  
Diagram

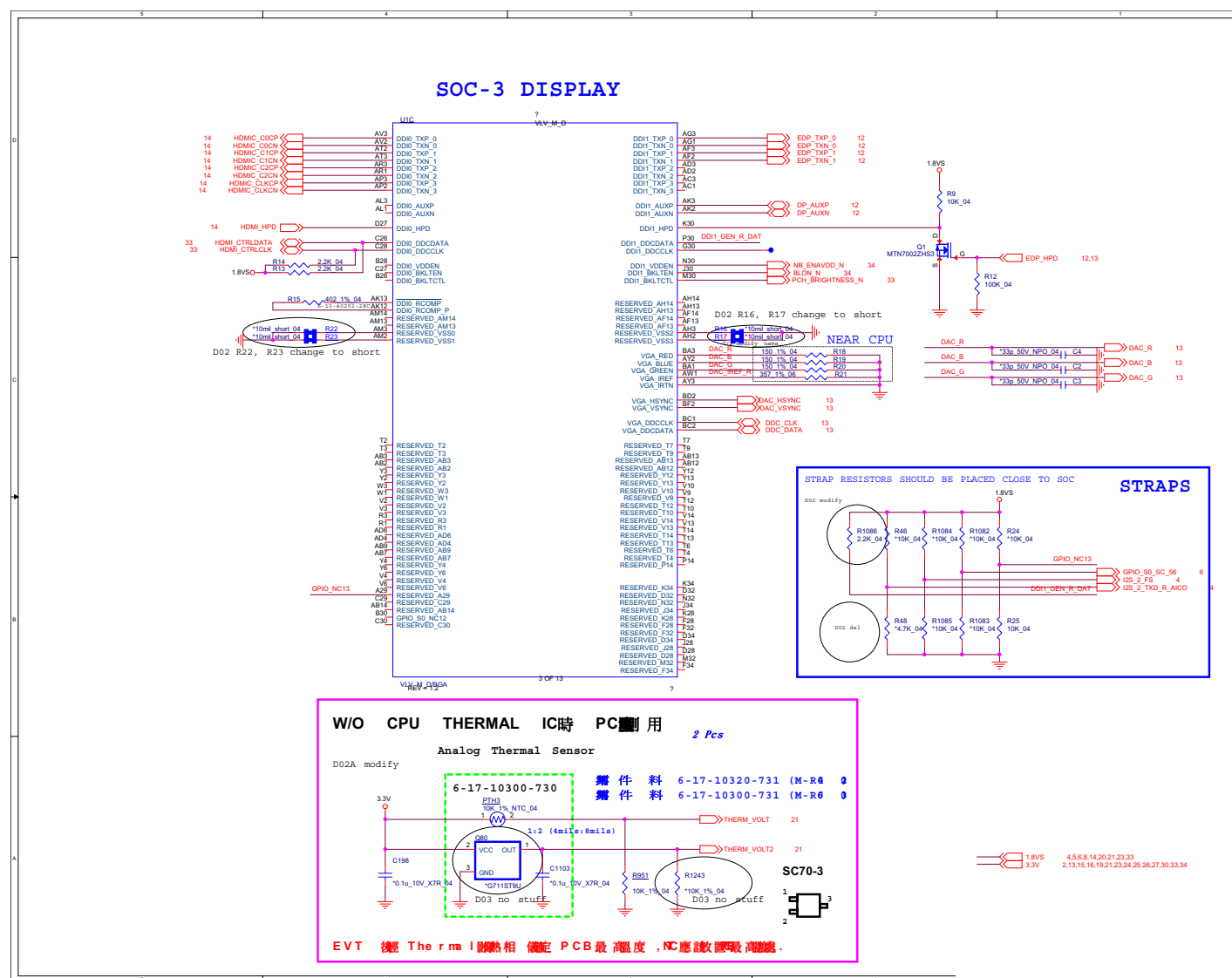


Sheet 2 of 34  
Processor 1/8





Sheet 3 of 34  
Processor 2/8



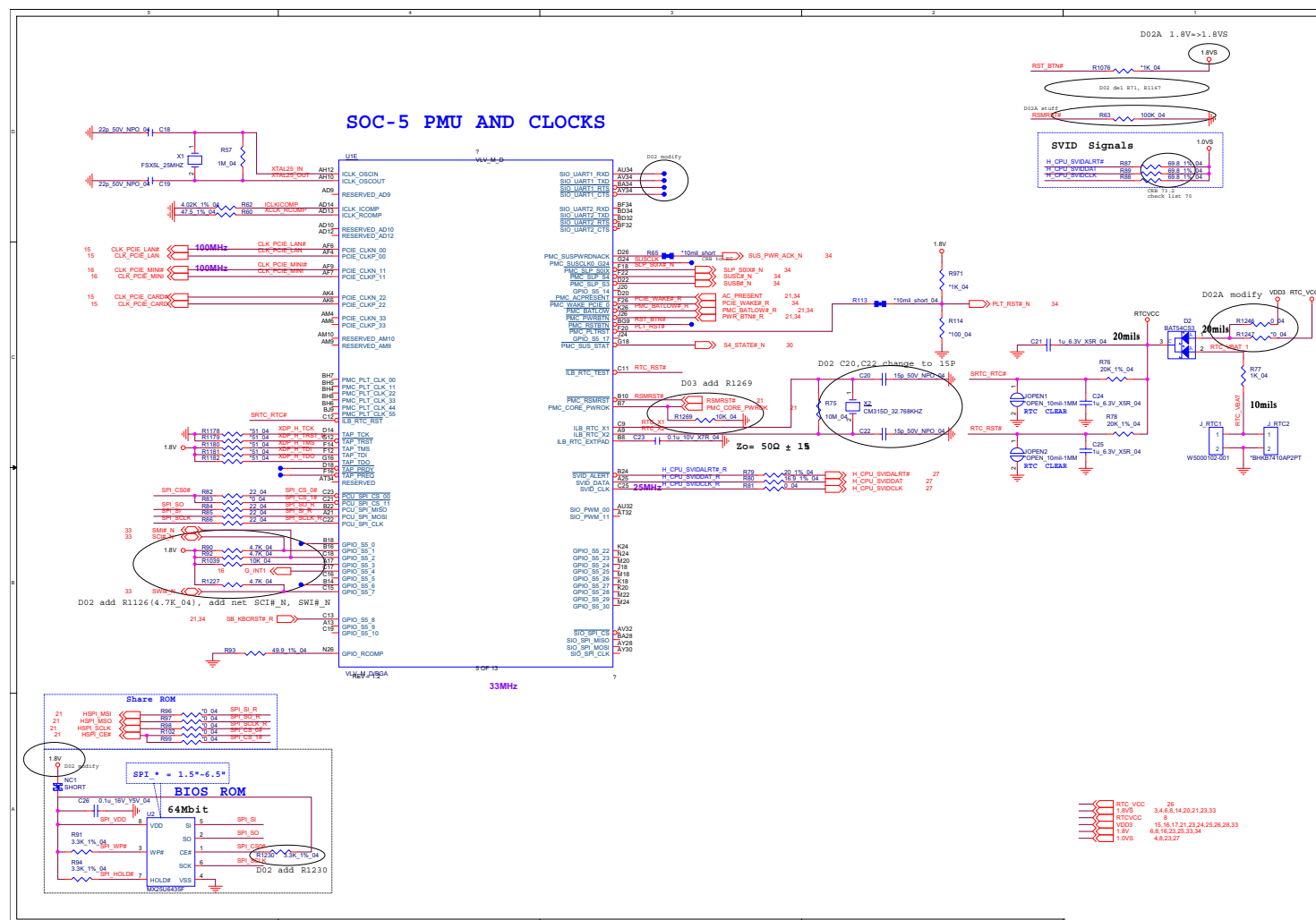
**Processor 3/8 B - 5**

**Processor 3/8 B - 5**

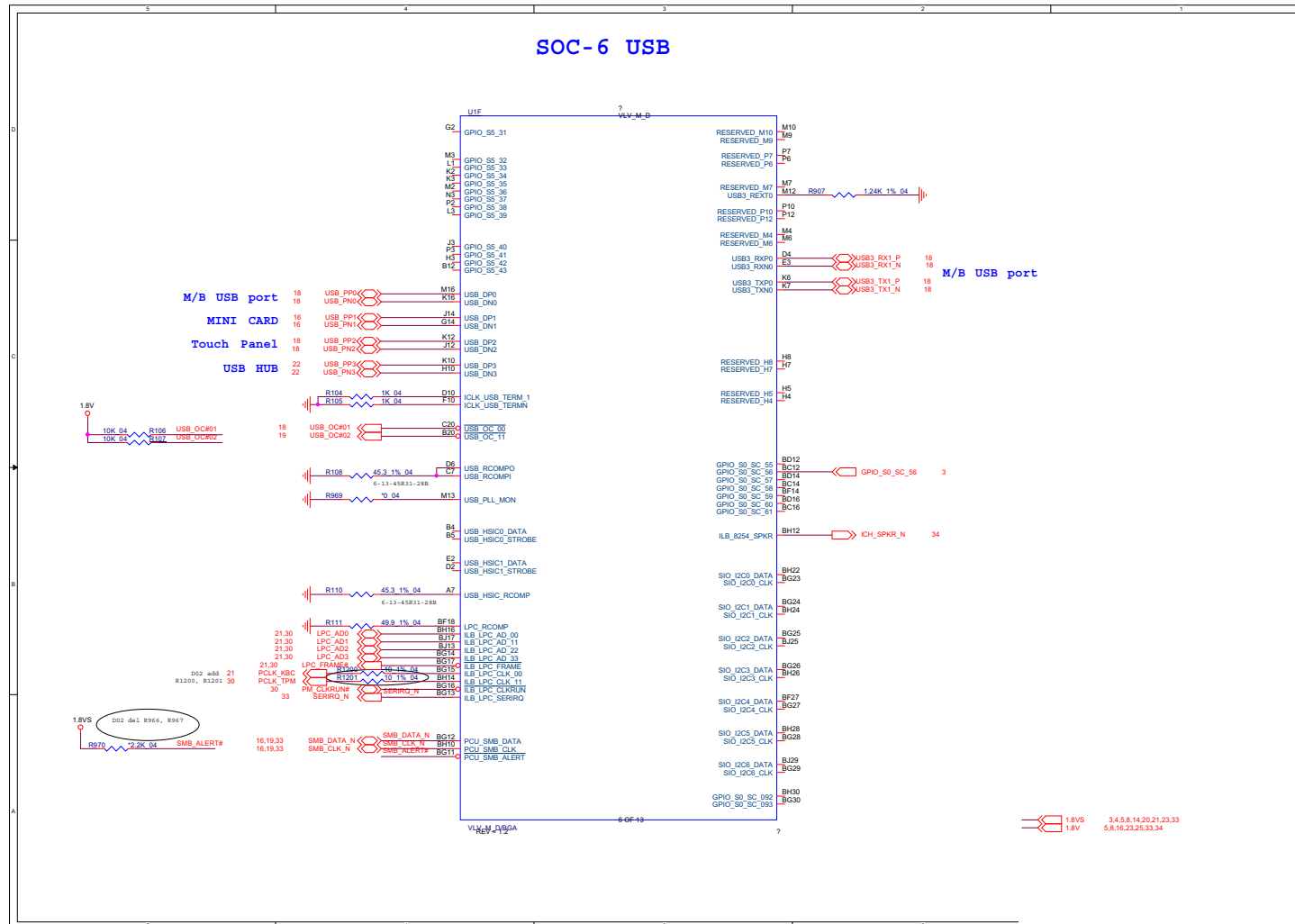


## Processor 4/8

Sheet 5 of 34  
Processor 4/8



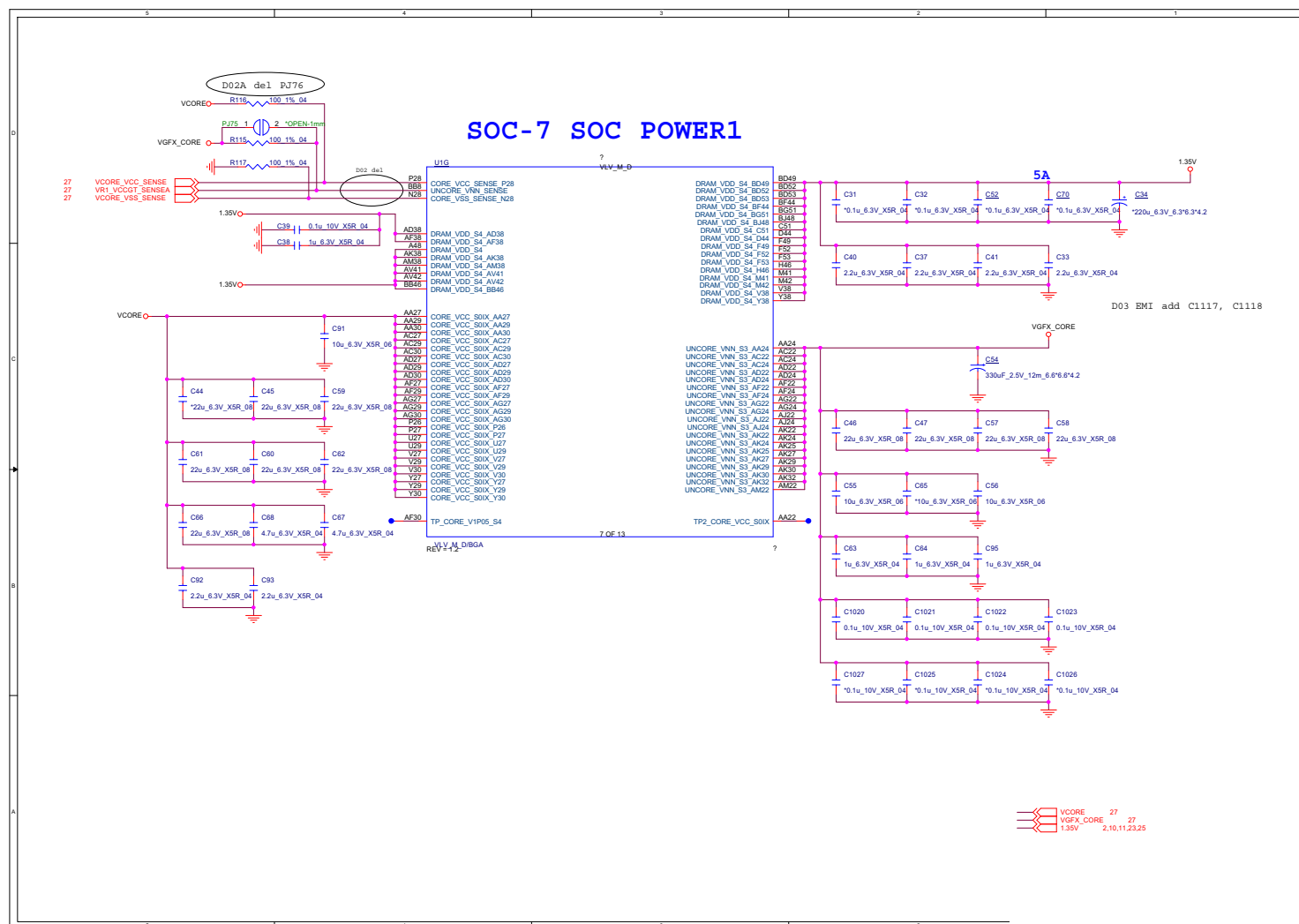
## Processor 5/8

Sheet 6 of 34  
Processor 5/8

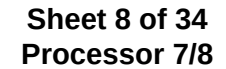
## Processor 6/8

## B. Schematic Diagrams

Sheet 7 of 34  
Processor 6/8



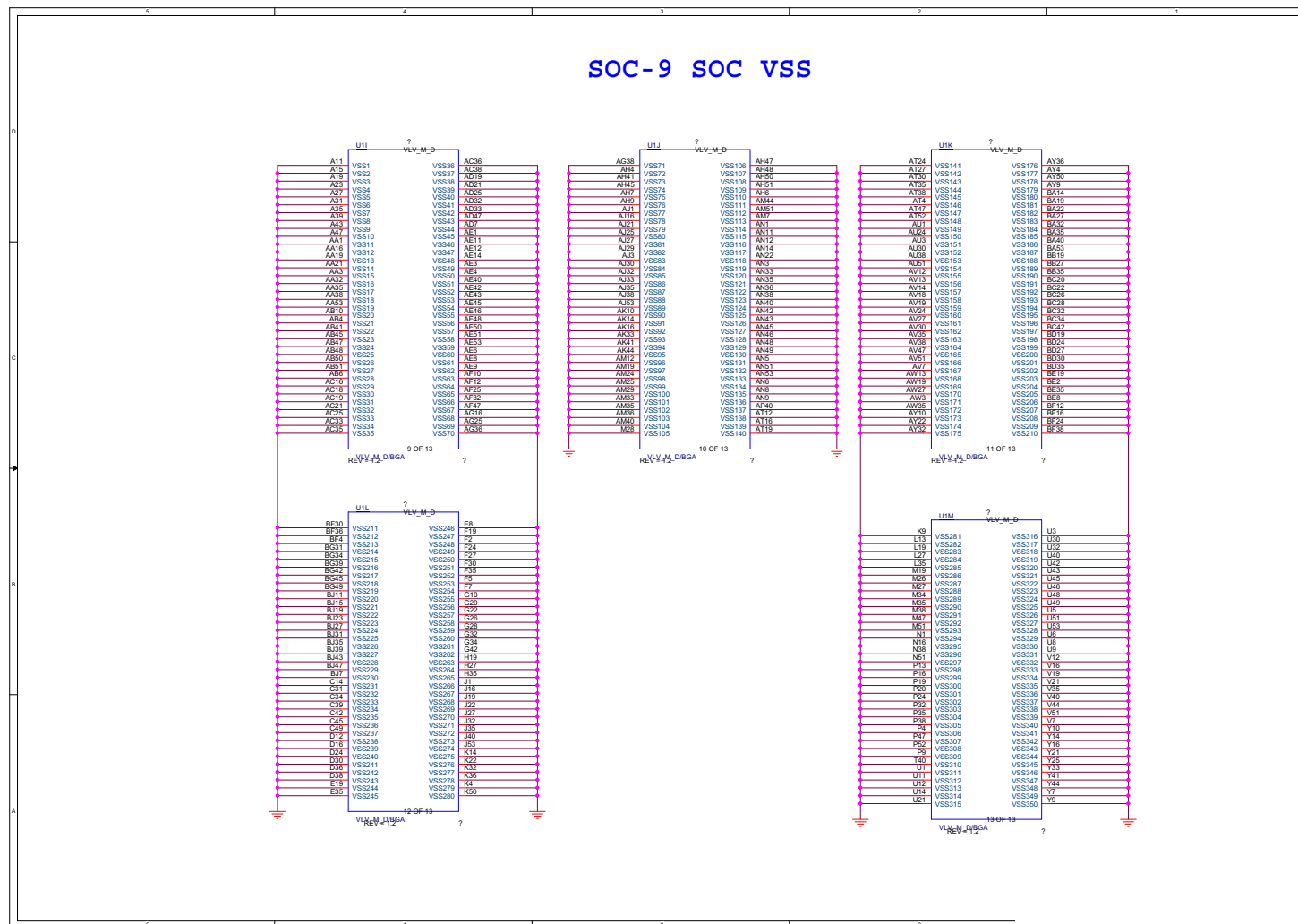
## B.Schematic Diagrams



## Processor 8/8

## B.Schematic Diagrams

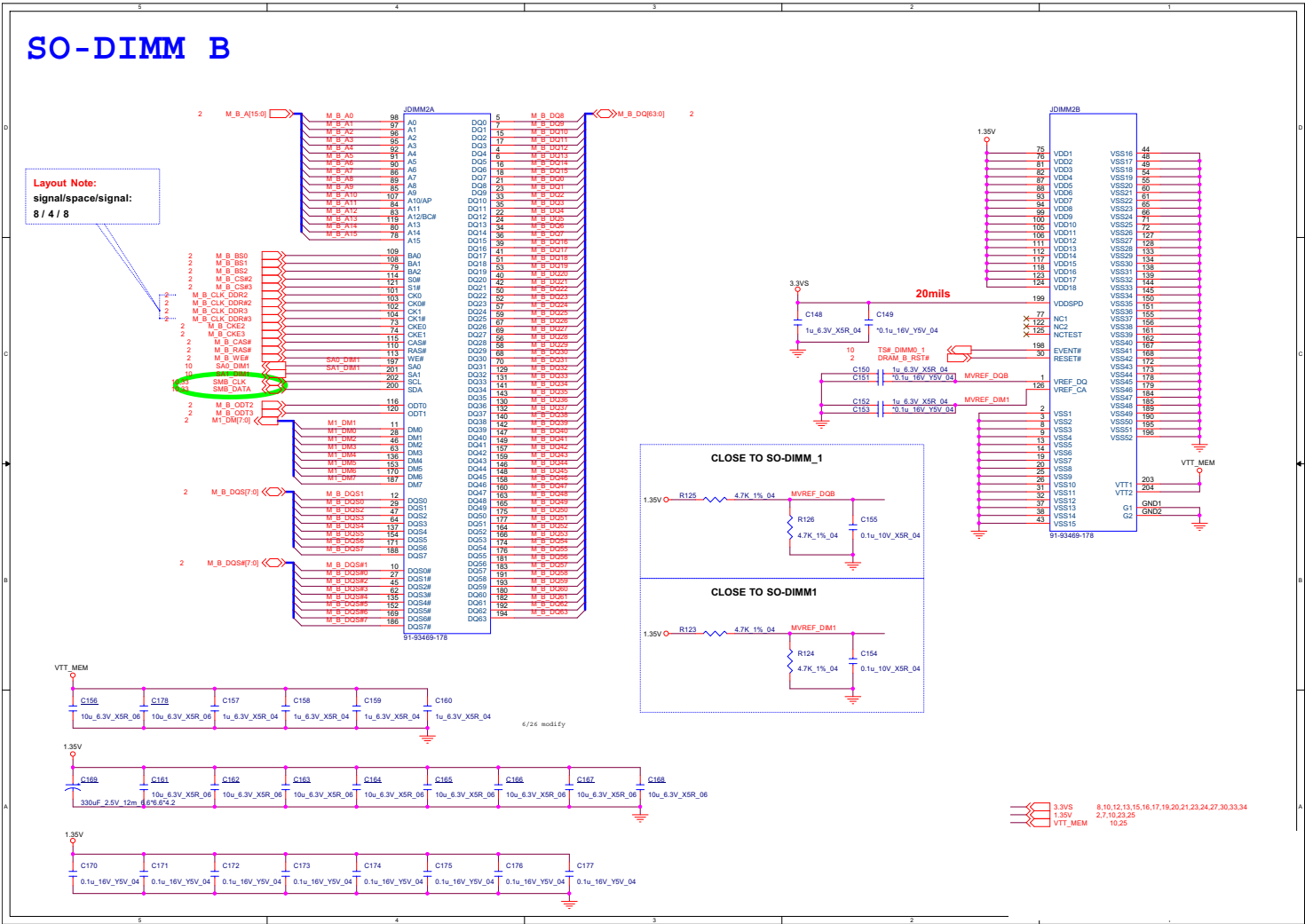
Sheet 9 of 34  
Processor 8/8



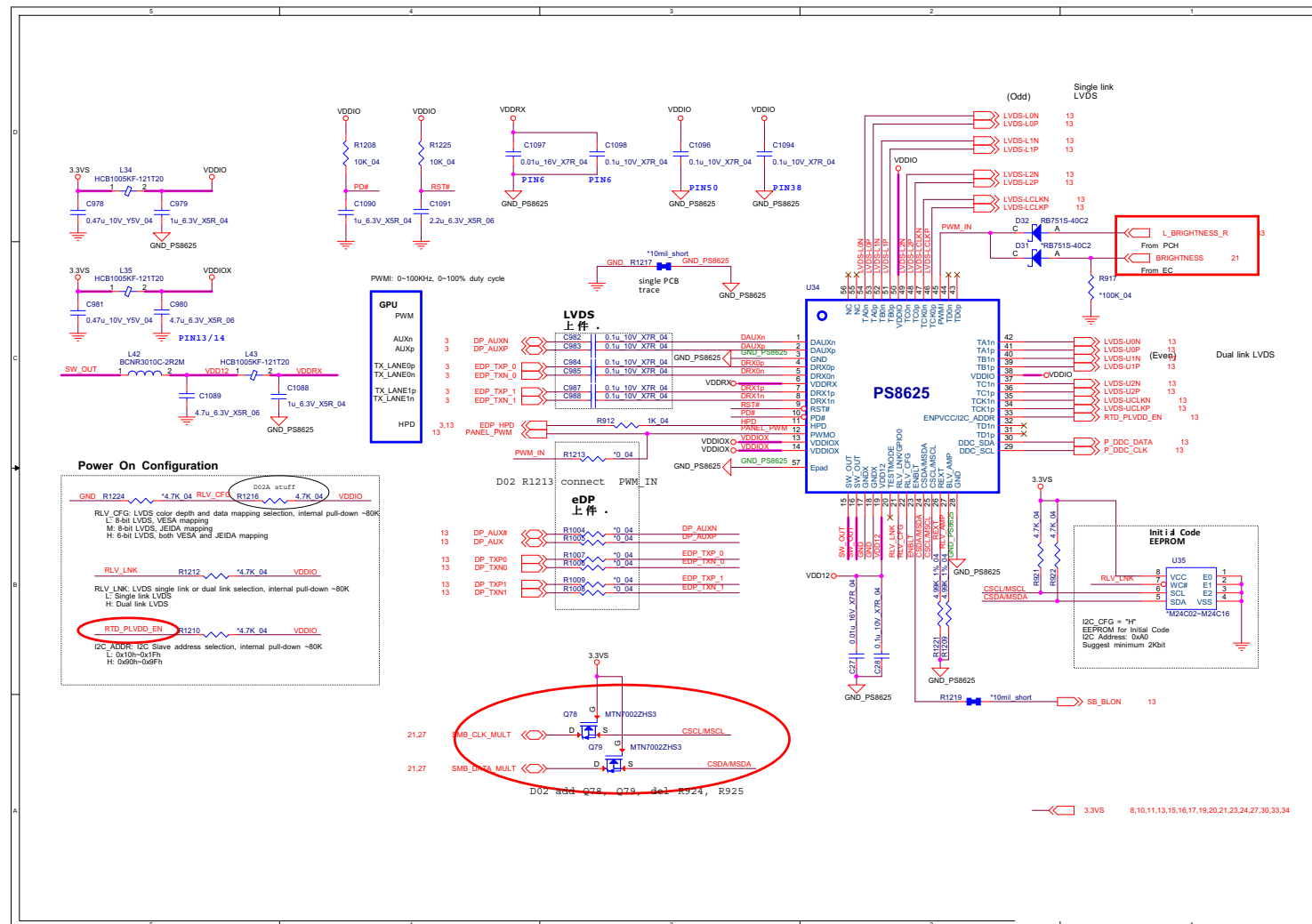


## B.Schematic Diagrams

DDR3 SO-DIMM\_1



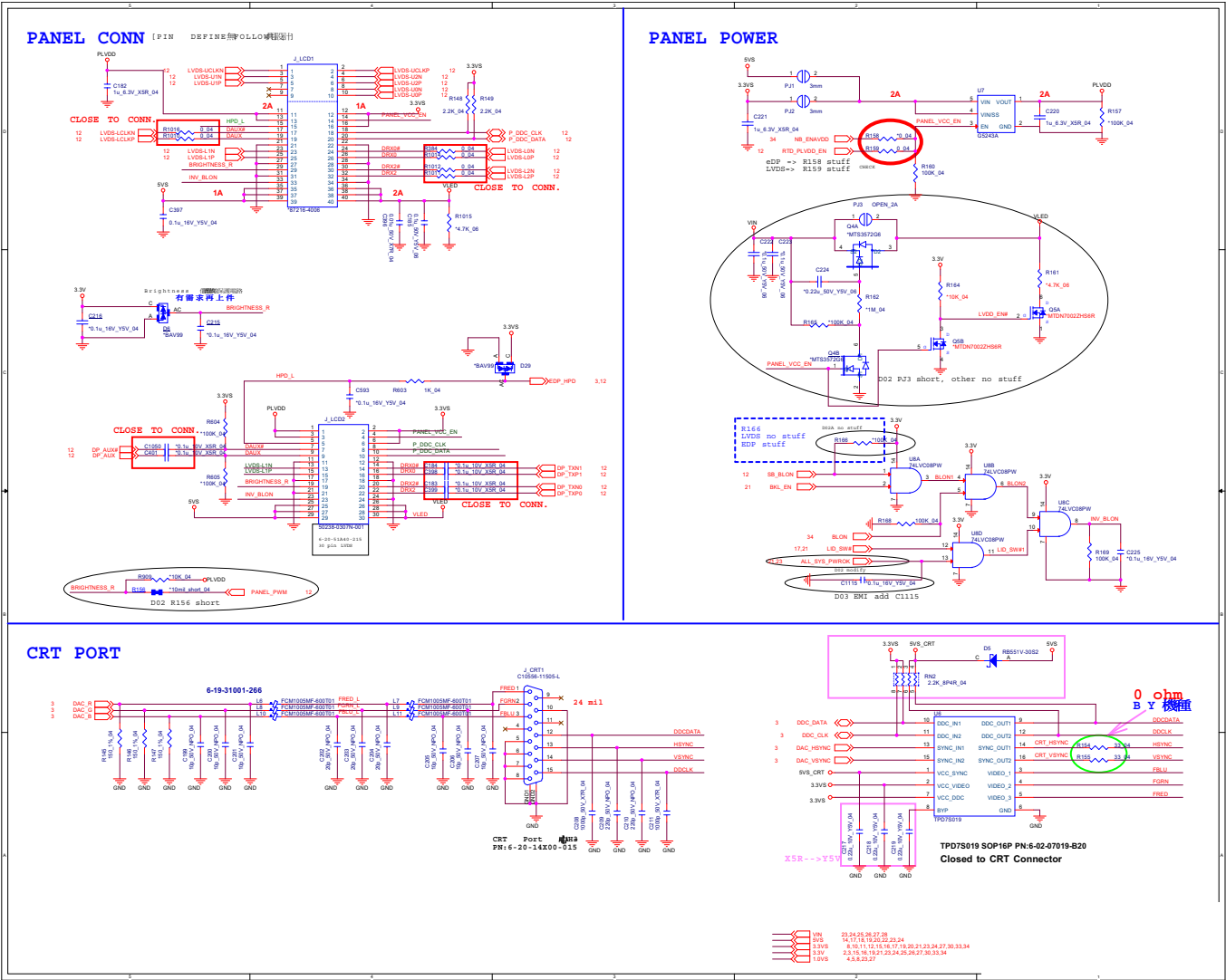
## RTD2136

Sheet 12 of 34  
RTD2136

Schematic Diagrams

Panel, CRT

Sheet 13 of 34  
Panel, CRT



60950-1 安規要求  
外供電源 符合LPS  
≤ 8 A 設計

D02 add D1, R45

5V\_S

D1  
\*R6051H-3052

R45  
1.04

5V\_S\_HDMI

C226  
0.1uF 10V X7R 04

5V\_S\_HDMI

J\_HDMI

HOT PLUG DETECT

DOVCEC GND

SCL

HDMI\_CEC

CLK SHIELD

TMSD\_CLOCK#

TMSD\_CLOCK

TMSD\_DATA0#

TMSD\_DATA0

TMSD\_DATA0#

TMSD\_DATA0

TMSD\_DATA1#

TMSD\_DATA1

TMSD\_DATA2#

TMSD\_DATA2

116B-1A002-21U  
PIN GND1-4=GND

5V\_S

Q7  
MTN7002ZH53

1.8V\_S

R186  
10K\_04

Q8  
MTN7002ZH53

1.8V\_S

R189  
100K\_04

3

HDMI\_HPD

Q9  
MTN7002ZH53

1.8V\_S

R199  
10K\_04

D10  
TA9V99

D11  
TA9V99

For ESD

33

HDMI\_SCL-C

33

HDMI\_SDA-C

HDMI\_HPD-C

D02 R171, R172, R178, R180 short

TMSD\_CLOCK#-R

R171  
10ml short

TMSD\_CLOCK-R

R172  
10ml short

TMSD\_DATA1#-R

R173  
10ml short

TMSD\_DATA1-R

R174  
10ml short

TMSD\_DATA2#-R

R175  
10ml short

TMSD\_DATA2-R

R176  
10ml short

TMSD\_DATA0#-R

R177  
10ml short

TMSD\_DATA0-R

R178  
10ml short

TMSD\_DATA1#-R

R179  
10ml short

TMSD\_DATA1-R

R180  
10ml short

TMSD\_DATA2#-R

R181  
10ml short

TMSD\_DATA2-R

R182  
10ml short

TMSD\_DATA0#-R

R183  
10ml short

TMSD\_DATA0-R

R184  
10ml short

TMSD\_DATA1#-R

R185  
10ml short

TMSD\_DATA1-R

R186  
10ml short

TMSD\_DATA2#-R

R187  
10ml short

TMSD\_DATA2-R

R188  
10ml short

TMSD\_DATA0#-R

R189  
10ml short

TMSD\_DATA0-R

R190  
10ml short

TMSD\_DATA1#-R

R191  
10ml short

TMSD\_DATA1-R

R192  
10ml short

TMSD\_DATA2#-R

R193  
10ml short

TMSD\_DATA2-R

R194  
10ml short

TMSD\_DATA0#-R

R195  
10ml short

TMSD\_DATA0-R

R196  
10ml short

TMSD\_DATA1#-R

R197  
10ml short

TMSD\_DATA1-R

R198  
10ml short

TMSD\_DATA2#-R

R199  
10ml short

TMSD\_DATA2-R

D02 R171, R172, R178, R180 short

TMSD\_CLOCK#-R

R171  
10ml short

TMSD\_CLOCK-R

R172  
10ml short

TMSD\_DATA1#-R

R173  
10ml short

TMSD\_DATA1-R

R174  
10ml short

TMSD\_DATA2#-R

R175  
10ml short

TMSD\_DATA2-R

R176  
10ml short

TMSD\_DATA0#-R

R177  
10ml short

TMSD\_DATA0-R

R178  
10ml short

TMSD\_DATA1#-R

R179  
10ml short

TMSD\_DATA1-R

R180  
10ml short

TMSD\_DATA2#-R

R181  
10ml short

TMSD\_DATA2-R

R182  
10ml short

TMSD\_DATA0#-R

R183  
10ml short

TMSD\_DATA0-R

R184  
10ml short

TMSD\_DATA1#-R

R185  
10ml short

TMSD\_DATA1-R

R186  
10ml short

TMSD\_DATA2#-R

R187  
10ml short

TMSD\_DATA2-R

R188  
10ml short

TMSD\_DATA0#-R

R189  
10ml short

TMSD\_DATA0-R

R190  
10ml short

TMSD\_DATA1#-R

R191  
10ml short

TMSD\_DATA1-R

R192  
10ml short

TMSD\_DATA2#-R

R193  
10ml short

TMSD\_DATA2-R

R194  
10ml short

TMSD\_DATA0#-R

R195  
10ml short

TMSD\_DATA0-R

R196  
10ml short

TMSD\_DATA1#-R

R197  
10ml short

TMSD\_DATA1-R

R198  
10ml short

TMSD\_DATA2#-R

R199  
10ml short

TMSD\_DATA2-R

D02 R171, R172, R178, R180 short

TMSD\_CLOCK#-R

R171  
10ml short

TMSD\_CLOCK-R

R172  
10ml short

TMSD\_DATA1#-R

R173  
10ml short

TMSD\_DATA1-R

R174  
10ml short

TMSD\_DATA2#-R

R175  
10ml short

TMSD\_DATA2-R

R176  
10ml short

TMSD\_DATA0#-R

R177  
10ml short

TMSD\_DATA0-R

R178  
10ml short

TMSD\_DATA1#-R

R179  
10ml short

TMSD\_DATA1-R

R180  
10ml short

TMSD\_DATA2#-R

R181  
10ml short

TMSD\_DATA2-R

R182  
10ml short

TMSD\_DATA0#-R

R183  
10ml short

TMSD\_DATA0-R

R184  
10ml short

TMSD\_DATA1#-R

R185  
10ml short

TMSD\_DATA1-R

R186  
10ml short

TMSD\_DATA2#-R

R187  
10ml short

TMSD\_DATA2-R

R188  
10ml short

TMSD\_DATA0#-R

R189  
10ml short

TMSD\_DATA0-R

R190  
10ml short

TMSD\_DATA1#-R

R191  
10ml short

TMSD\_DATA1-R

R192  
10ml short

TMSD\_DATA2#-R

R193  
10ml short

TMSD\_DATA2-R

R194  
10ml short

TMSD\_DATA0#-R

R195  
10ml short

TMSD\_DATA0-R

R196  
10ml short

TMSD\_DATA1#-R

R197  
10ml short

TMSD\_DATA1-R

R198  
10ml short

TMSD\_DATA2#-R

R199  
10ml short

TMSD\_DATA2-R

D02 R171, R172, R178, R180 short

TMSD\_CLOCK#-R

R171  
10ml short

TMSD\_CLOCK-R

R172  
10ml short

TMSD\_DATA1#-R

R173  
10ml short

TMSD\_DATA1-R

R174  
10ml short

TMSD\_DATA2#-R

R175  
10ml short

TMSD\_DATA2-R

R176  
10ml short

TMSD\_DATA0#-R

R177  
10ml short

TMSD\_DATA0-R

R178  
10ml short

TMSD\_DATA1#-R

R179  
10ml short

TMSD\_DATA1-R

R180  
10ml short

TMSD\_DATA2#-R

R181  
10ml short

TMSD\_DATA2-R

R182  
10ml short

TMSD\_DATA0#-R

R183  
10ml short

TMSD\_DATA0-R

R184  
10ml short

TMSD\_DATA1#-R

R185  
10ml short

TMSD\_DATA1-R

R186  
10ml short

TMSD\_DATA2#-R

R187  
10ml short

TMSD\_DATA2-R

R188  
10ml short

TMSD\_DATA0#-R

R189  
10ml short

TMSD\_DATA0-R

R190  
10ml short

TMSD\_DATA1#-R

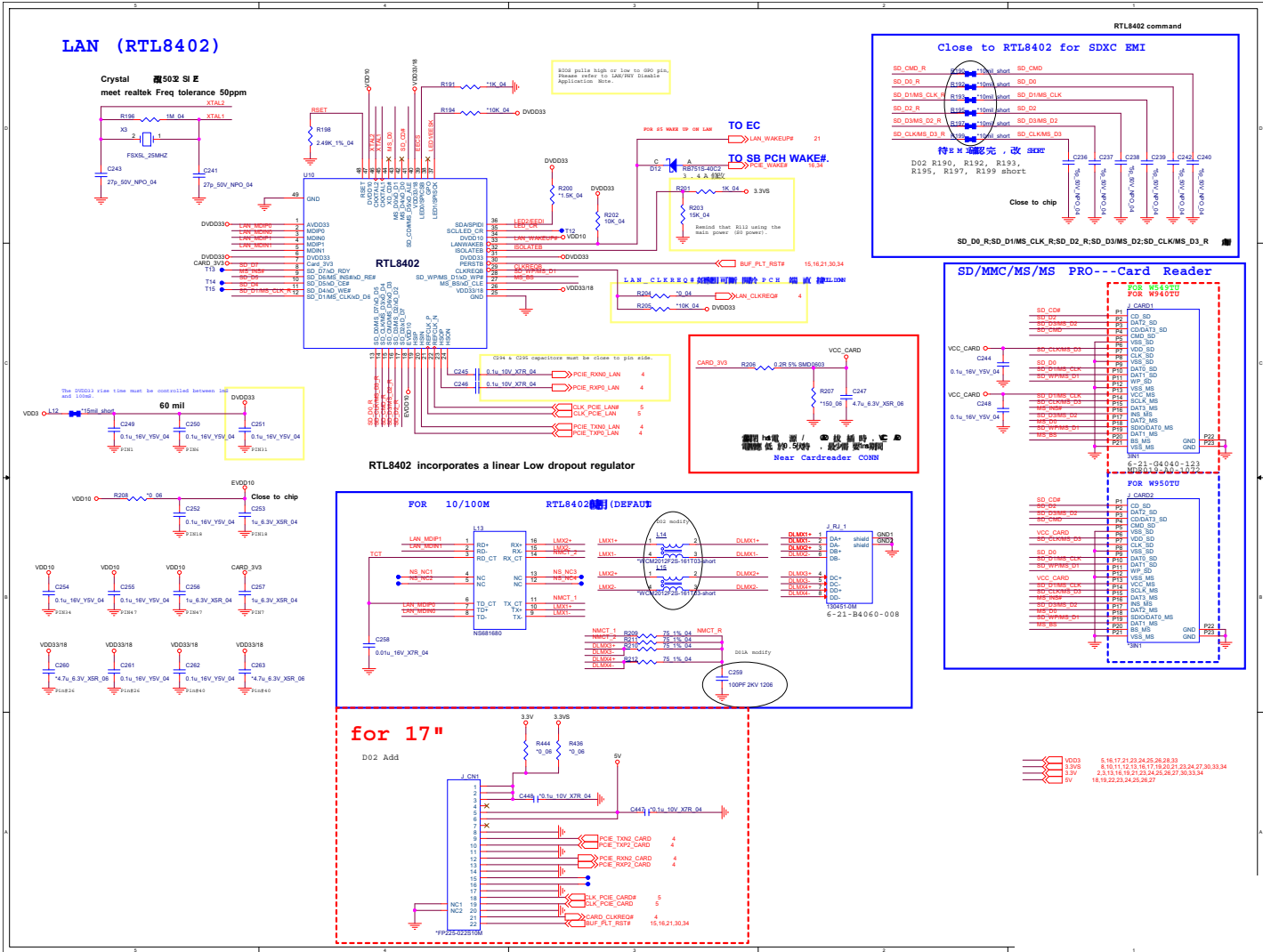
R191  
10ml short

\_\_\_\_\_

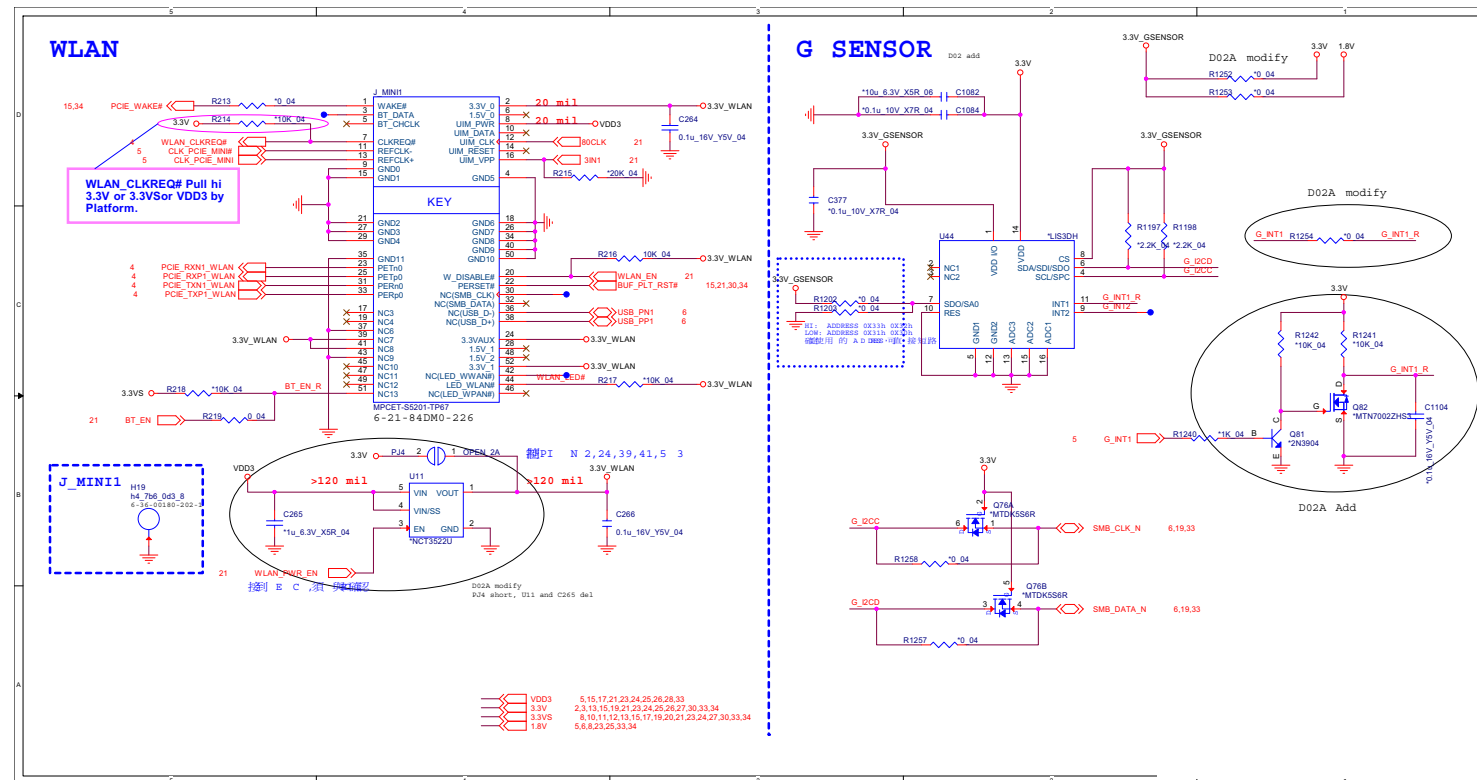
## LAN, Card Reader

### 3. Schematic Diagrams

Sheet 15 of 34  
LAN, Card Reader



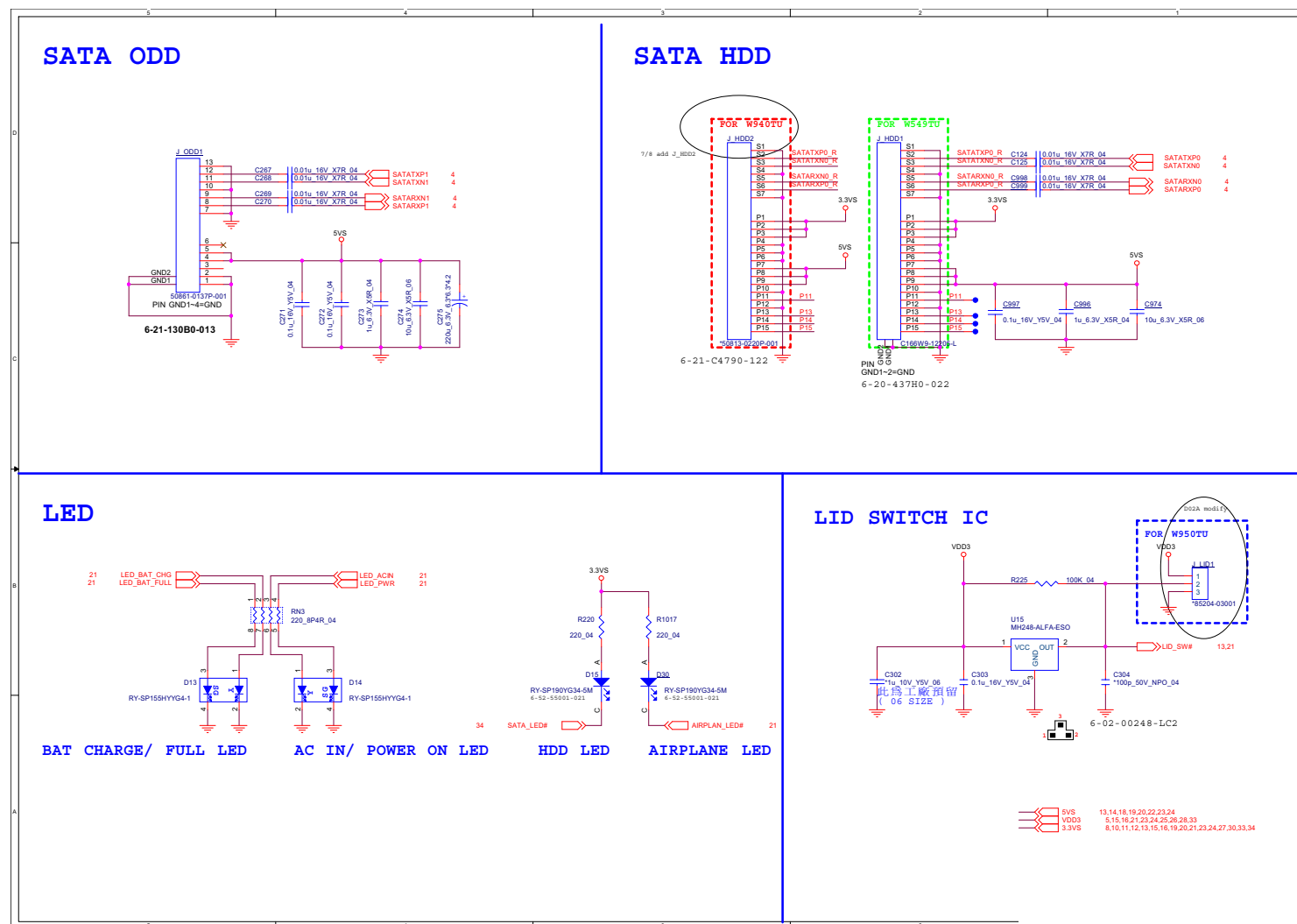
## Mini Card

Sheet 16 of 34  
Mini Card

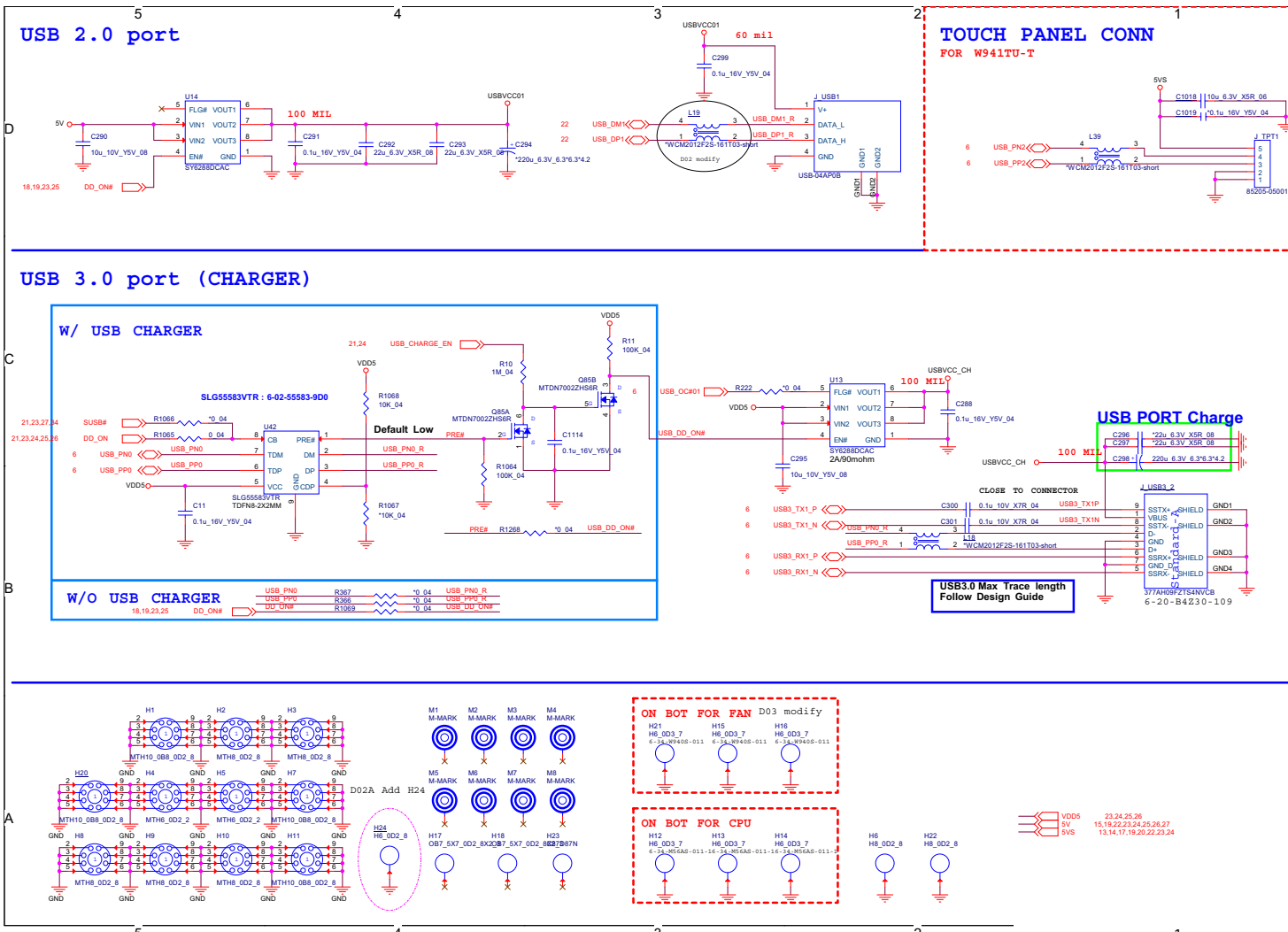


## HDD, ODD, LED, LID

Sheet 17 of 34  
HDD, ODD, LED,  
LID



# USB, Touch Panel

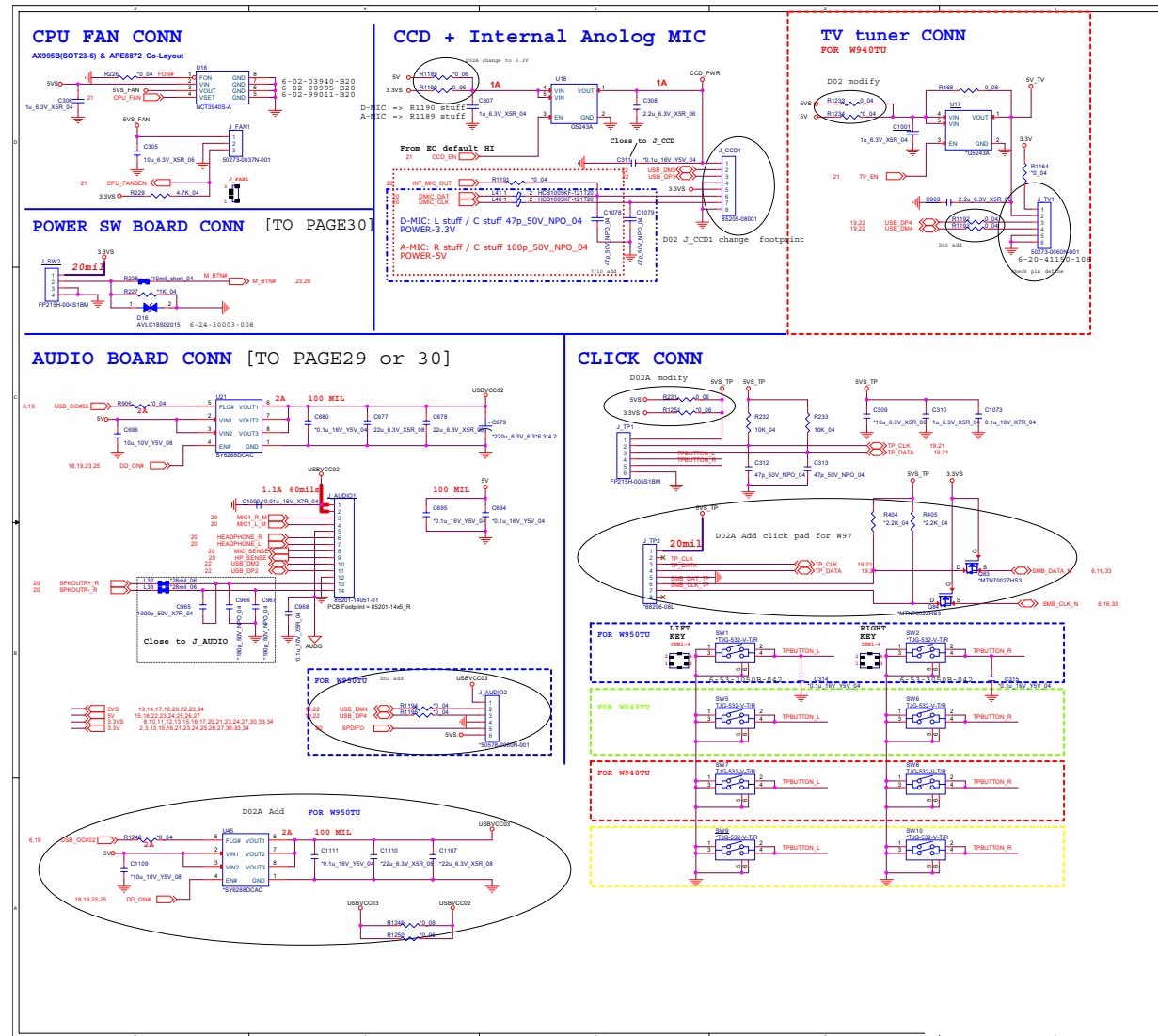


Sheet 18 of 34  
USB, Touch Panel

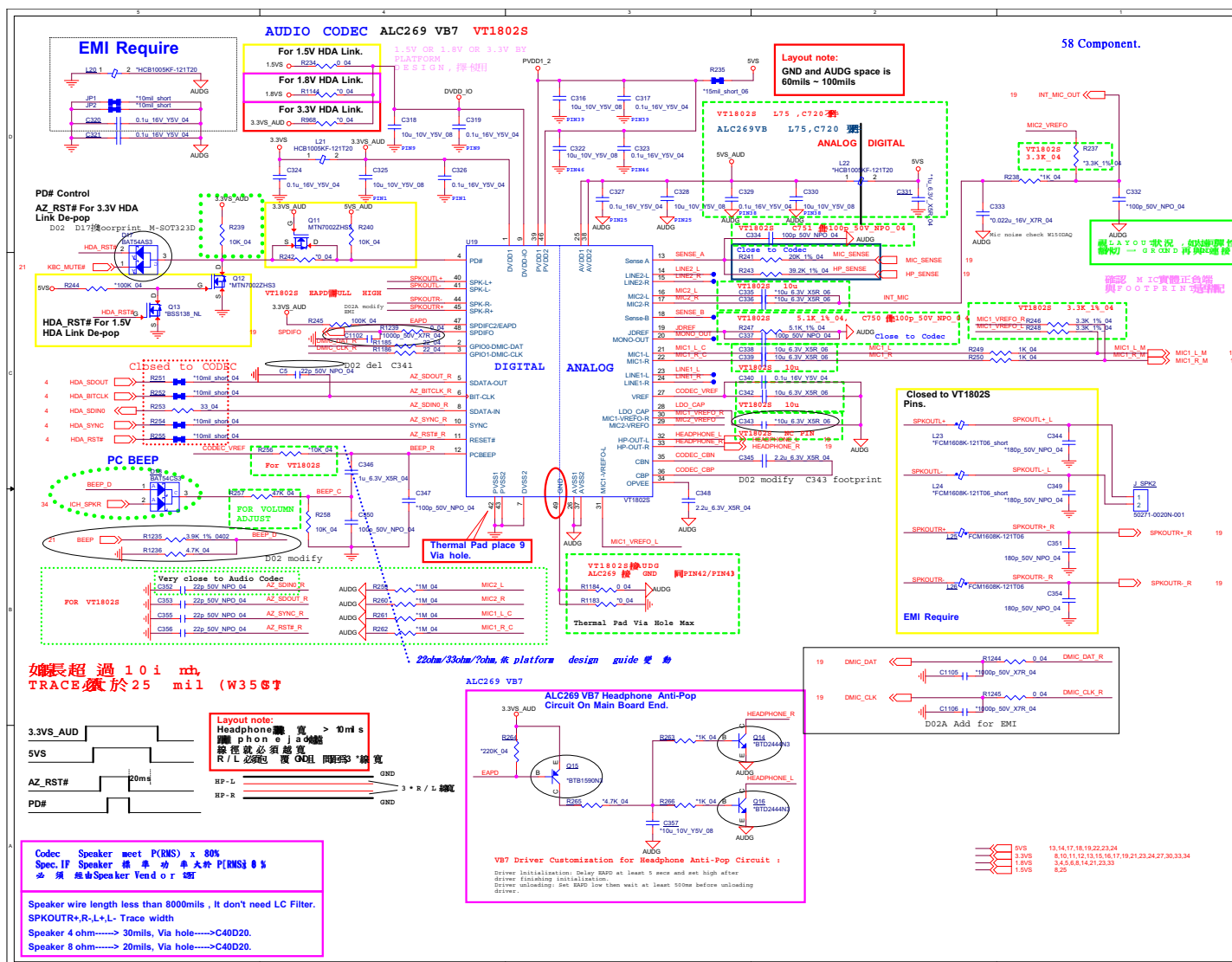
## Schematic Diagrams

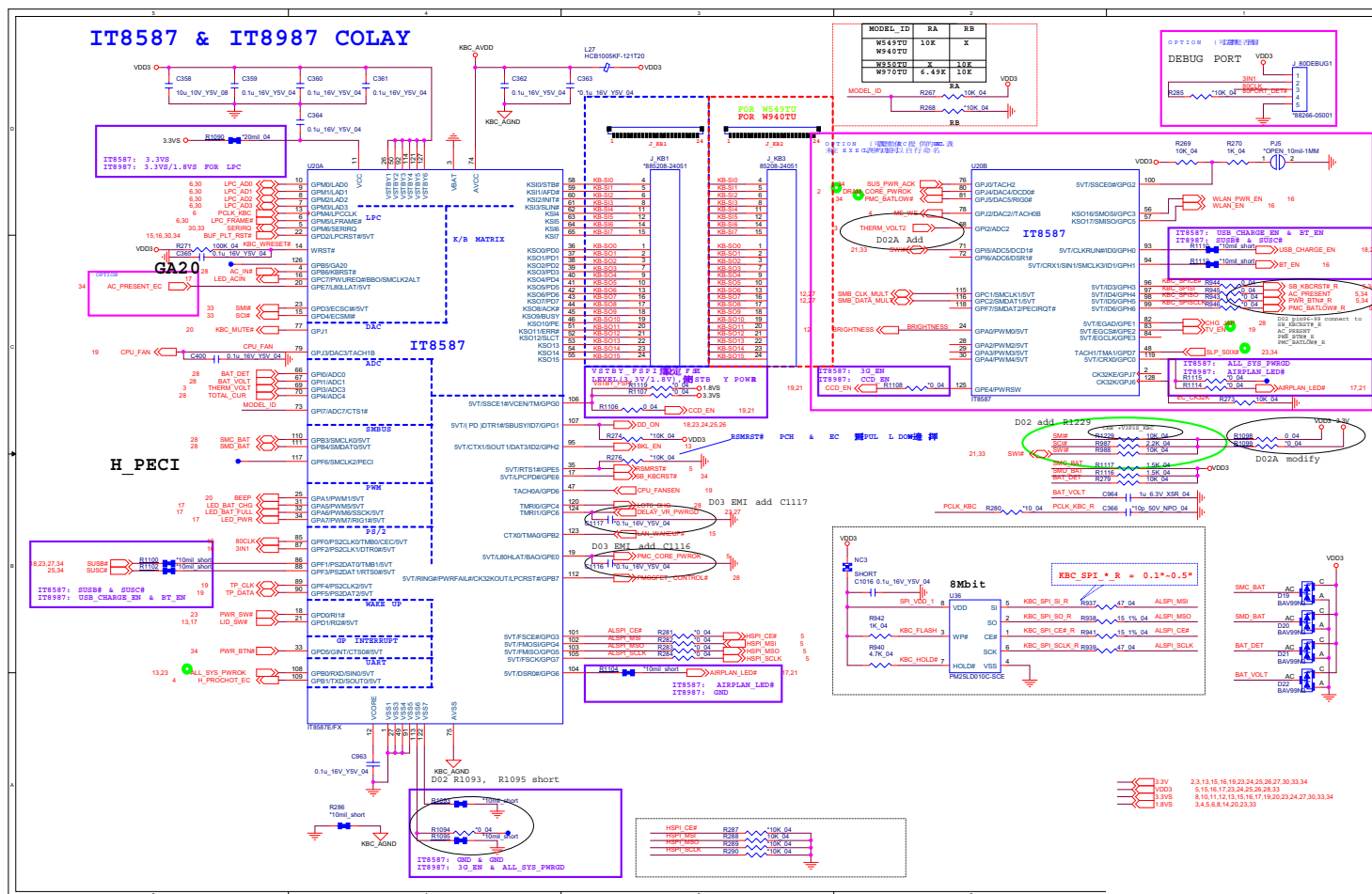
## Conn, CCD, Fan, Click, TV

Sheet 19 of 34  
Conn, CCD, Fan,  
Click, TV

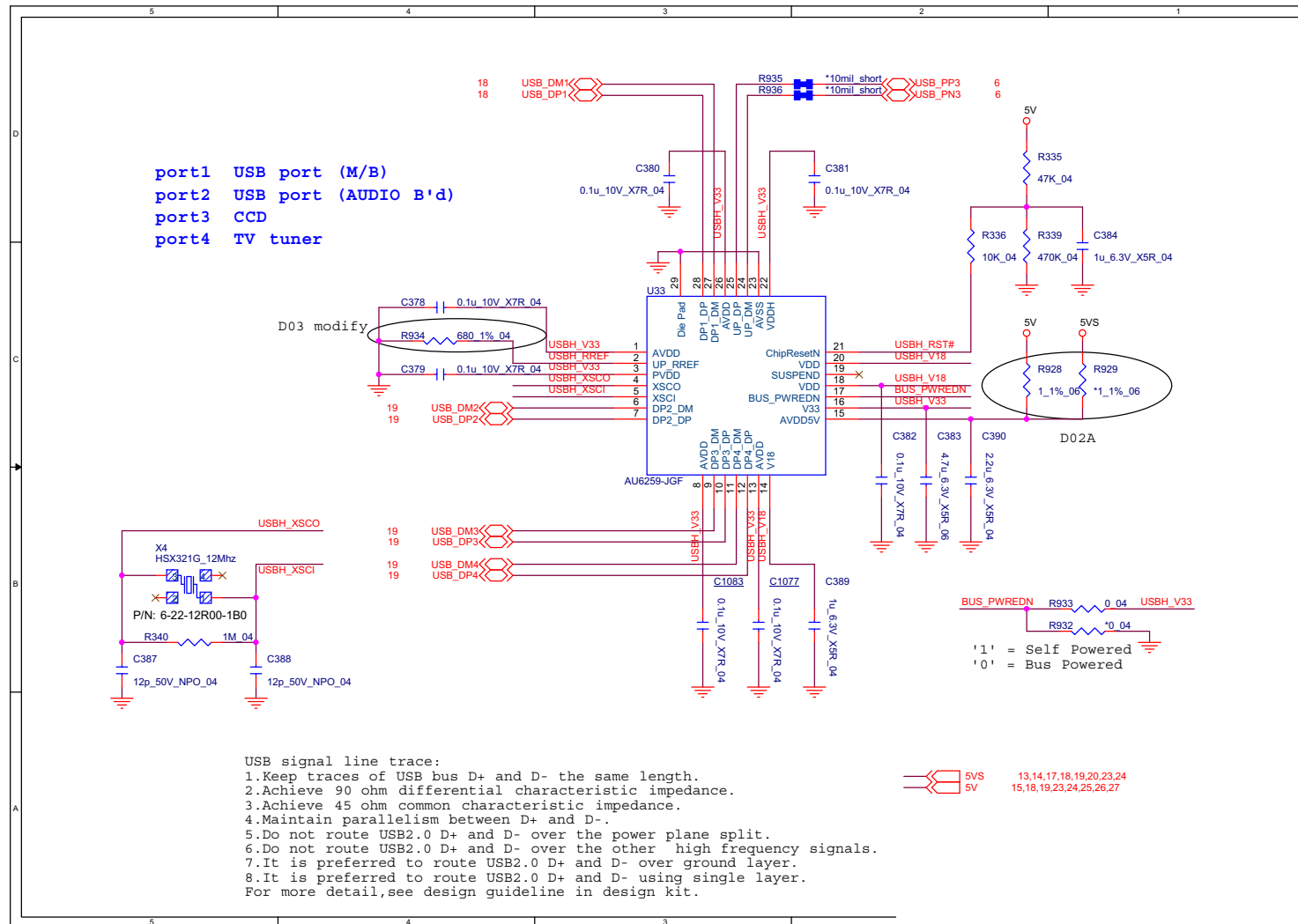


## Audio Codec B - 21



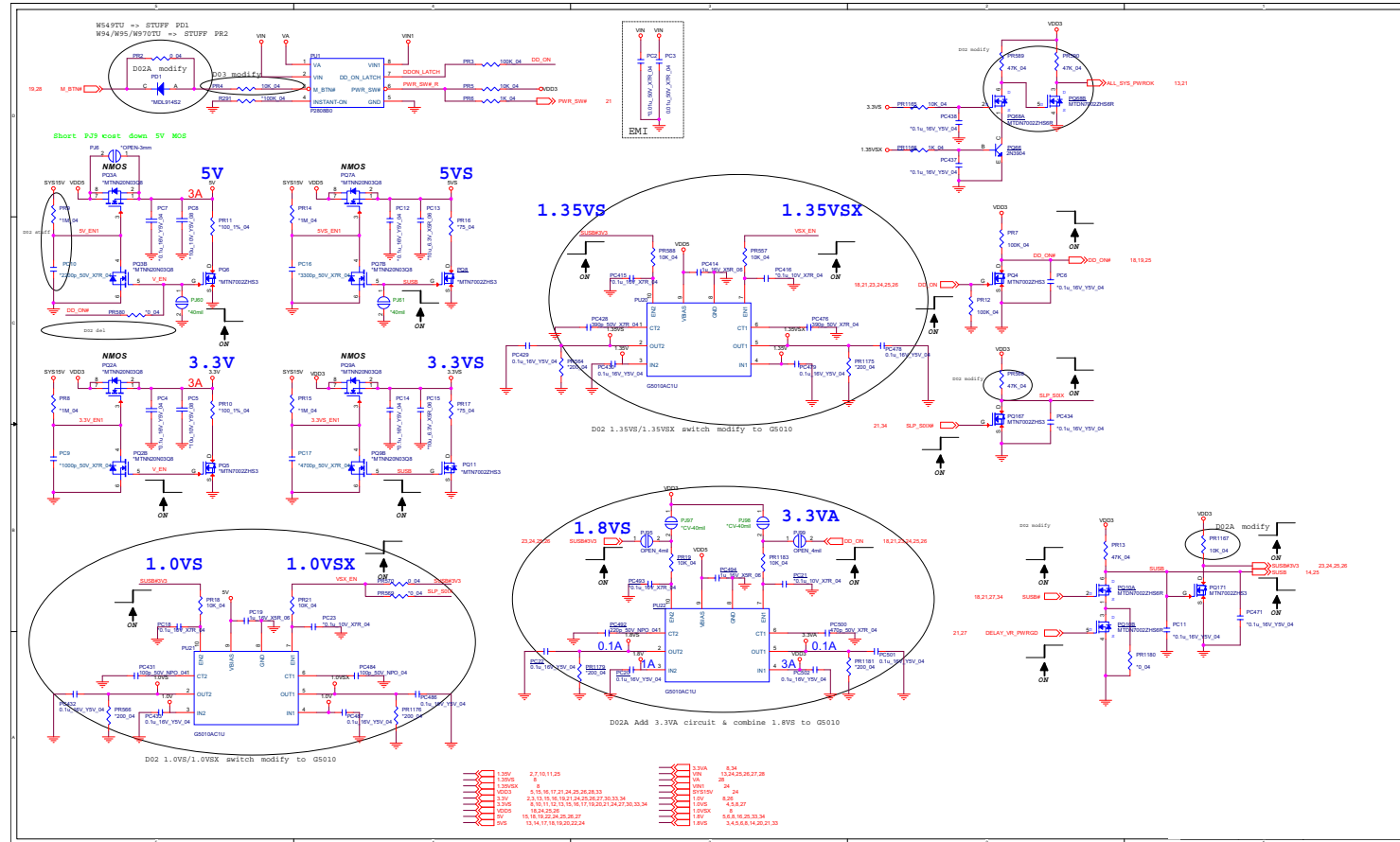


## AU6259

Sheet 22 of 34  
AU6259

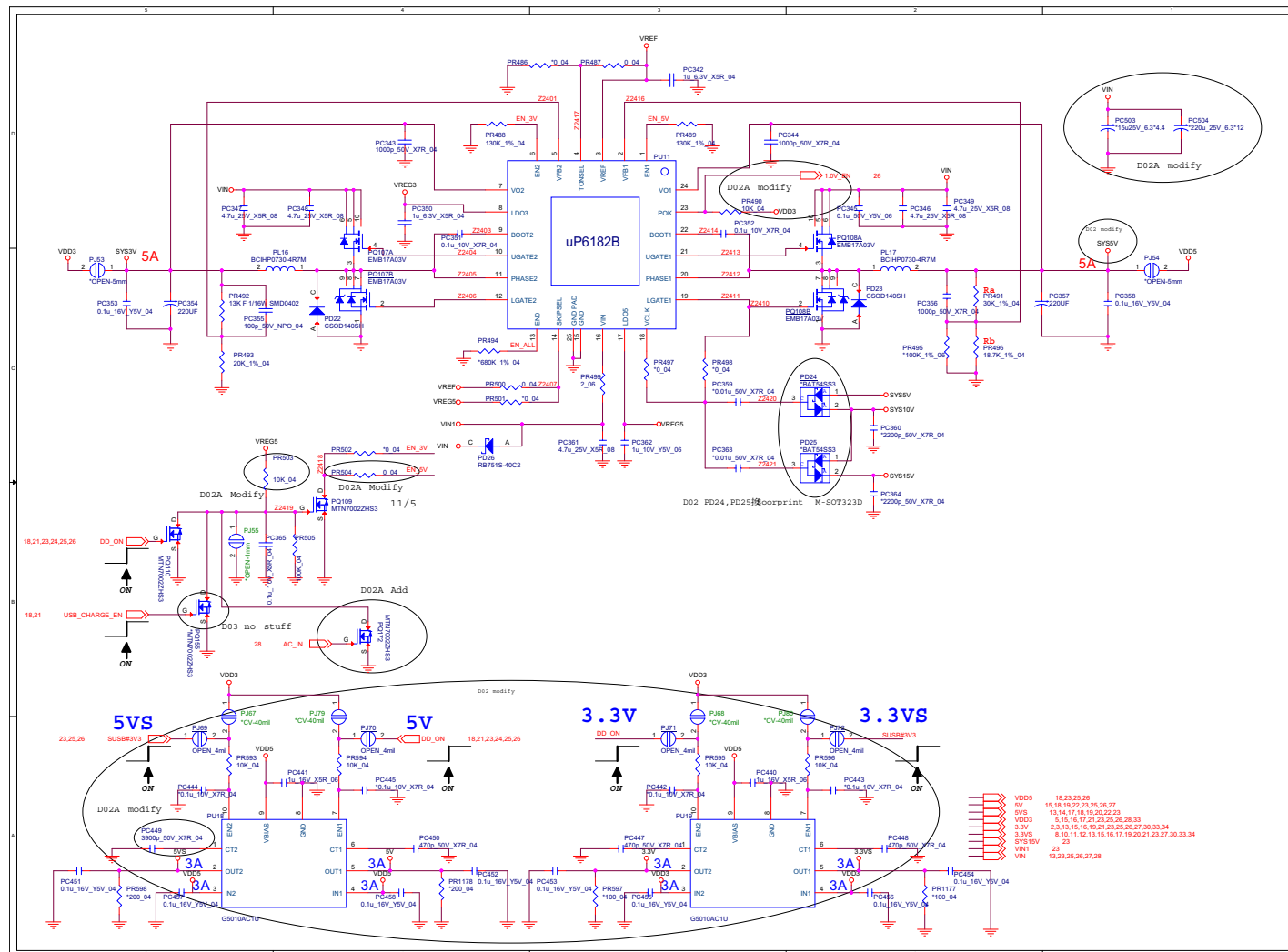
## Schematic Diagrams

# 5VS, 3VS, 1.8VS, 1.0VS



Sheet 23 of 34  
5VS, 3VS, 1.8VS,  
1.0VS

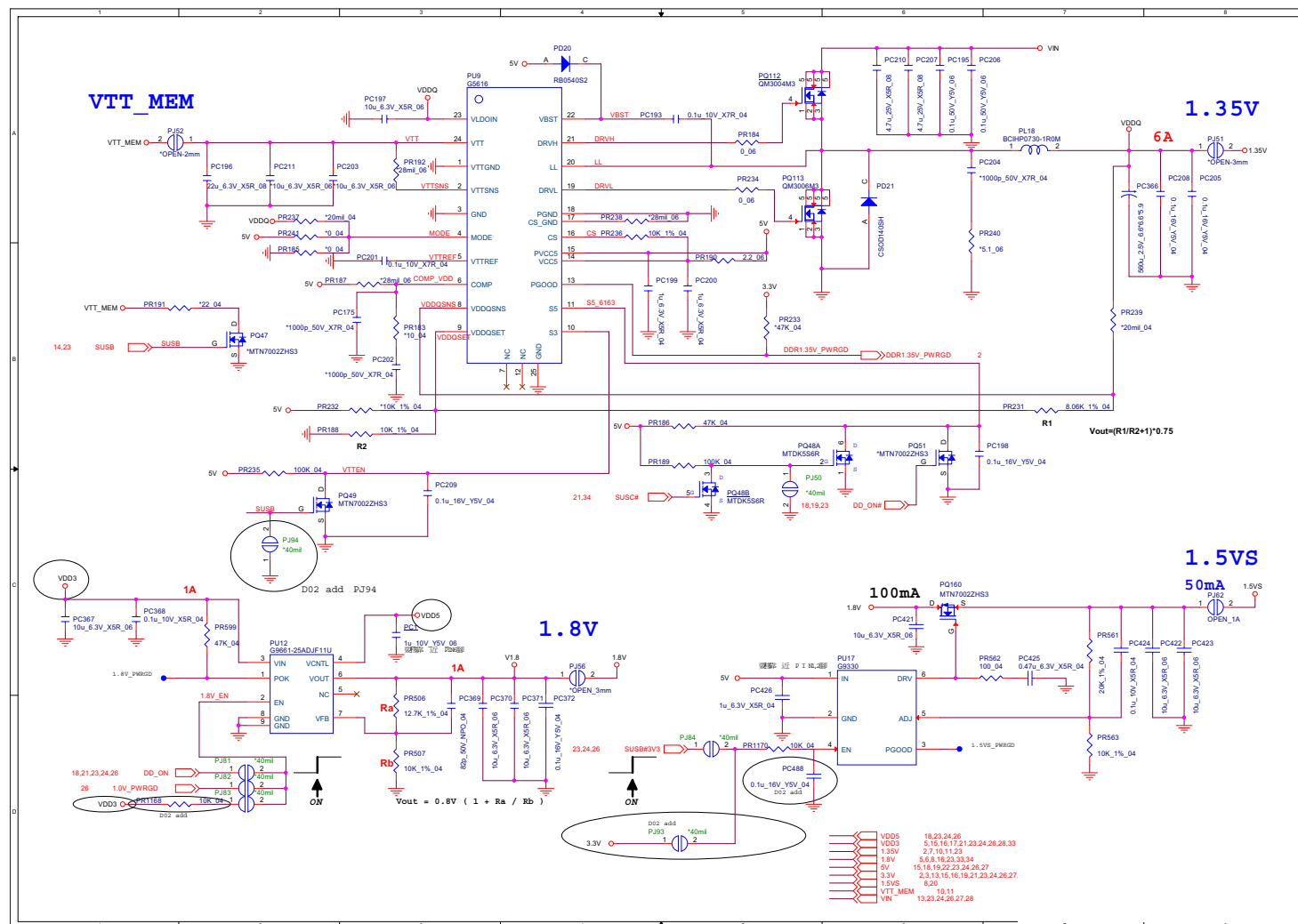
## VDD3, VDD5 B - 25





## 1.5VS, 1.5V, VTT\_MEM

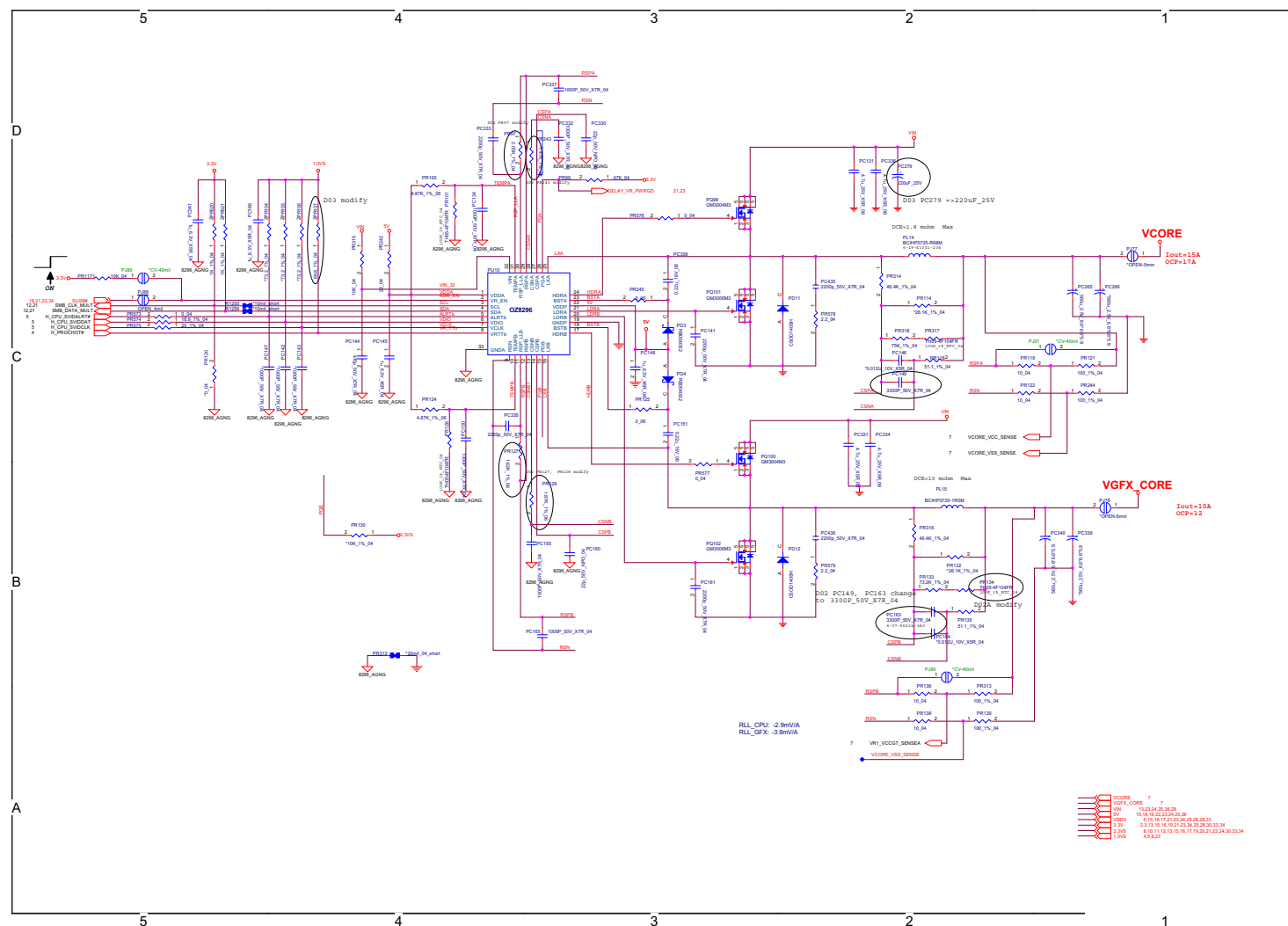
Sheet 25 of 34  
1.5VS, 1.5V,  
VTT\_MEM



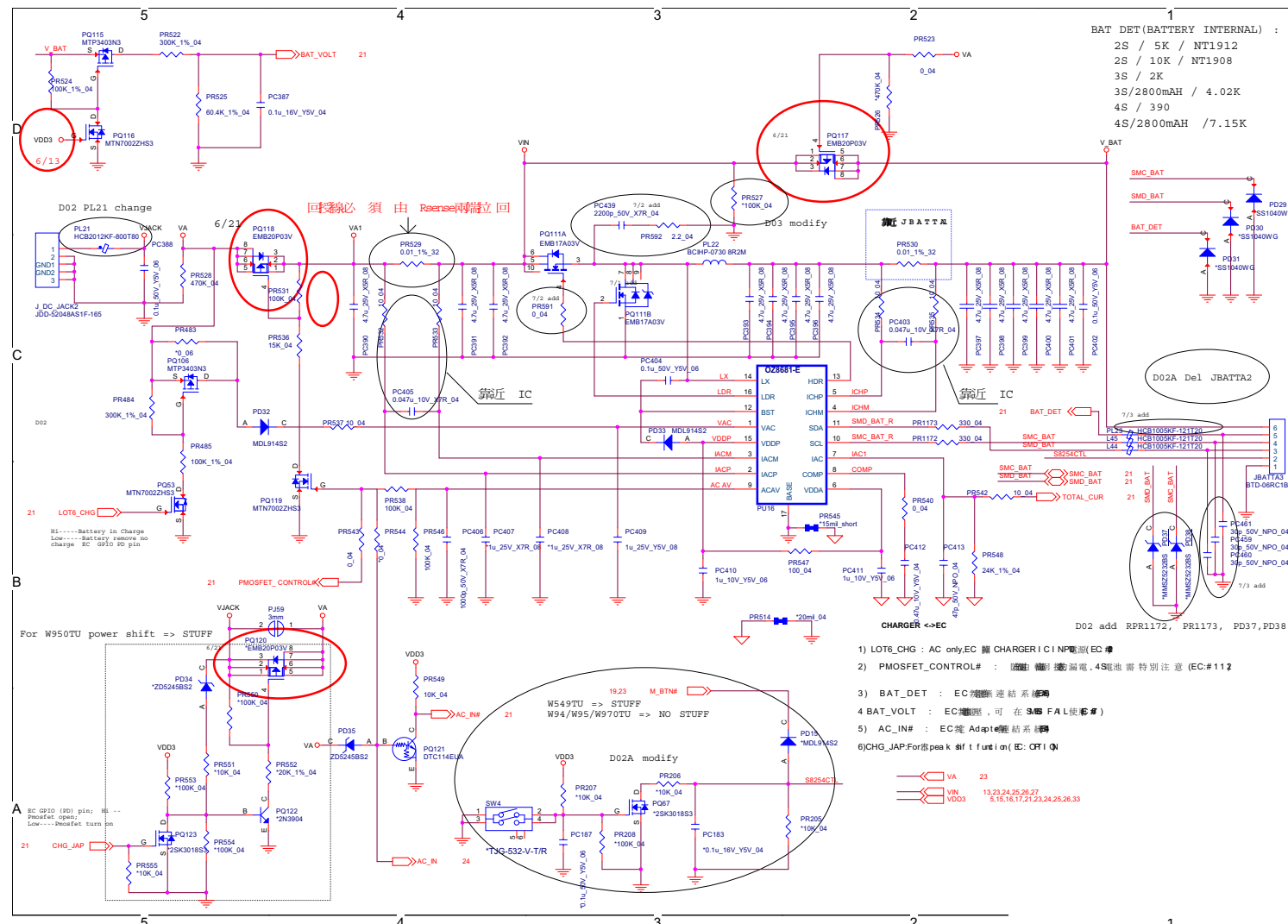
**1.0V, 1.05VS, 1.24V B - 27**

## VCore

Sheet 27 of 34  
VCore



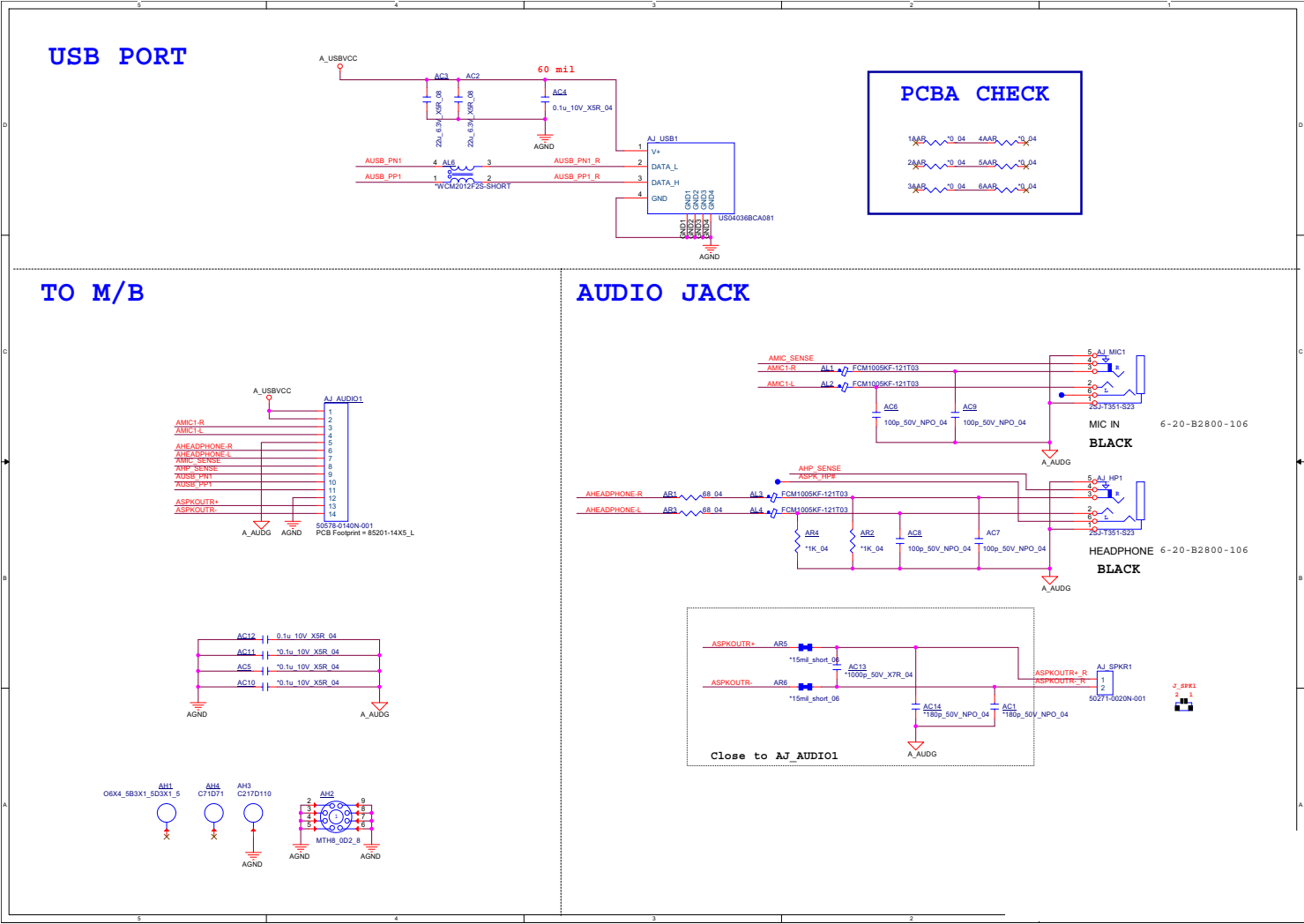
## AC IN, Charger

Sheet 28 of 34  
AC In, Charger

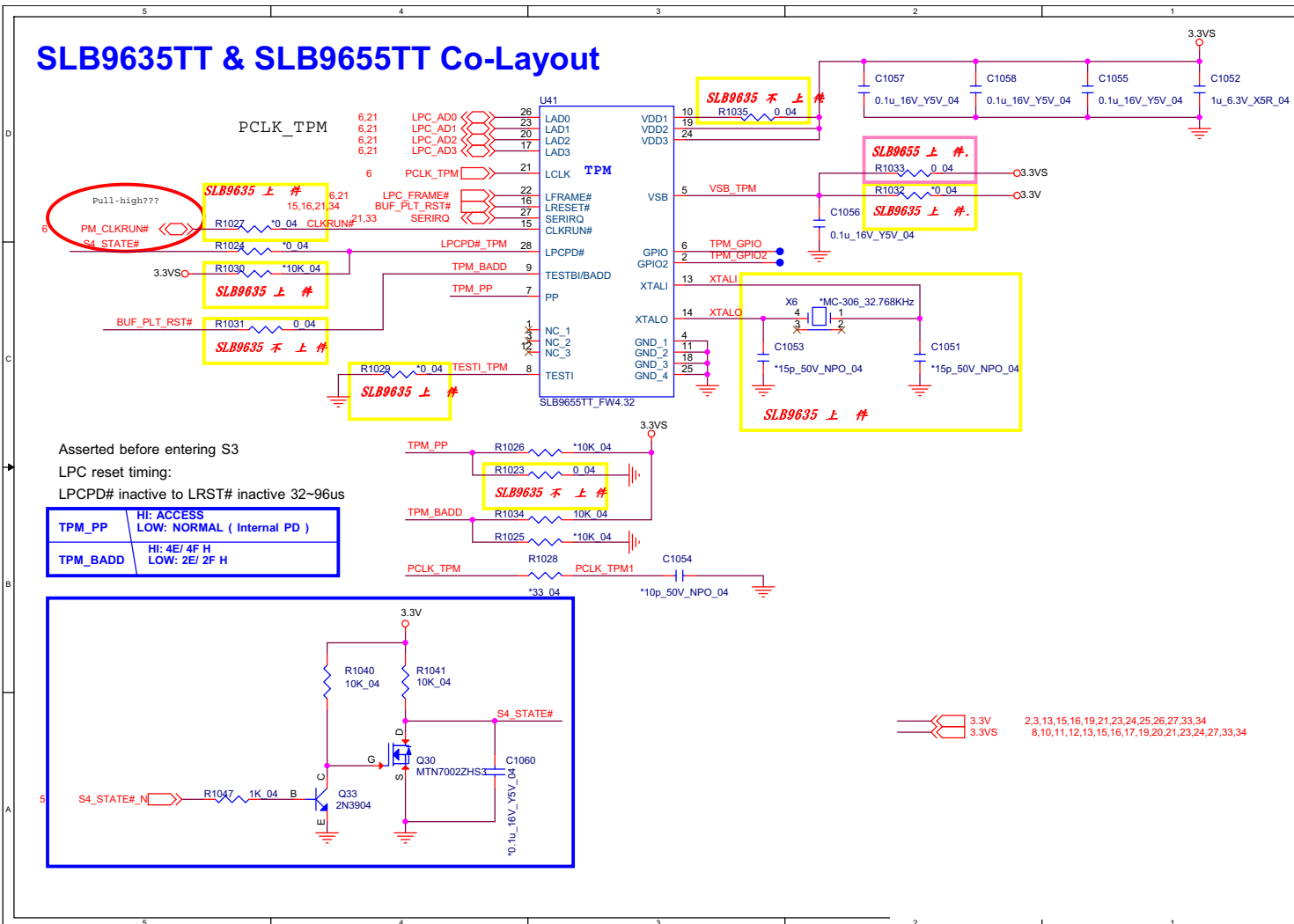
Schematic Diagrams

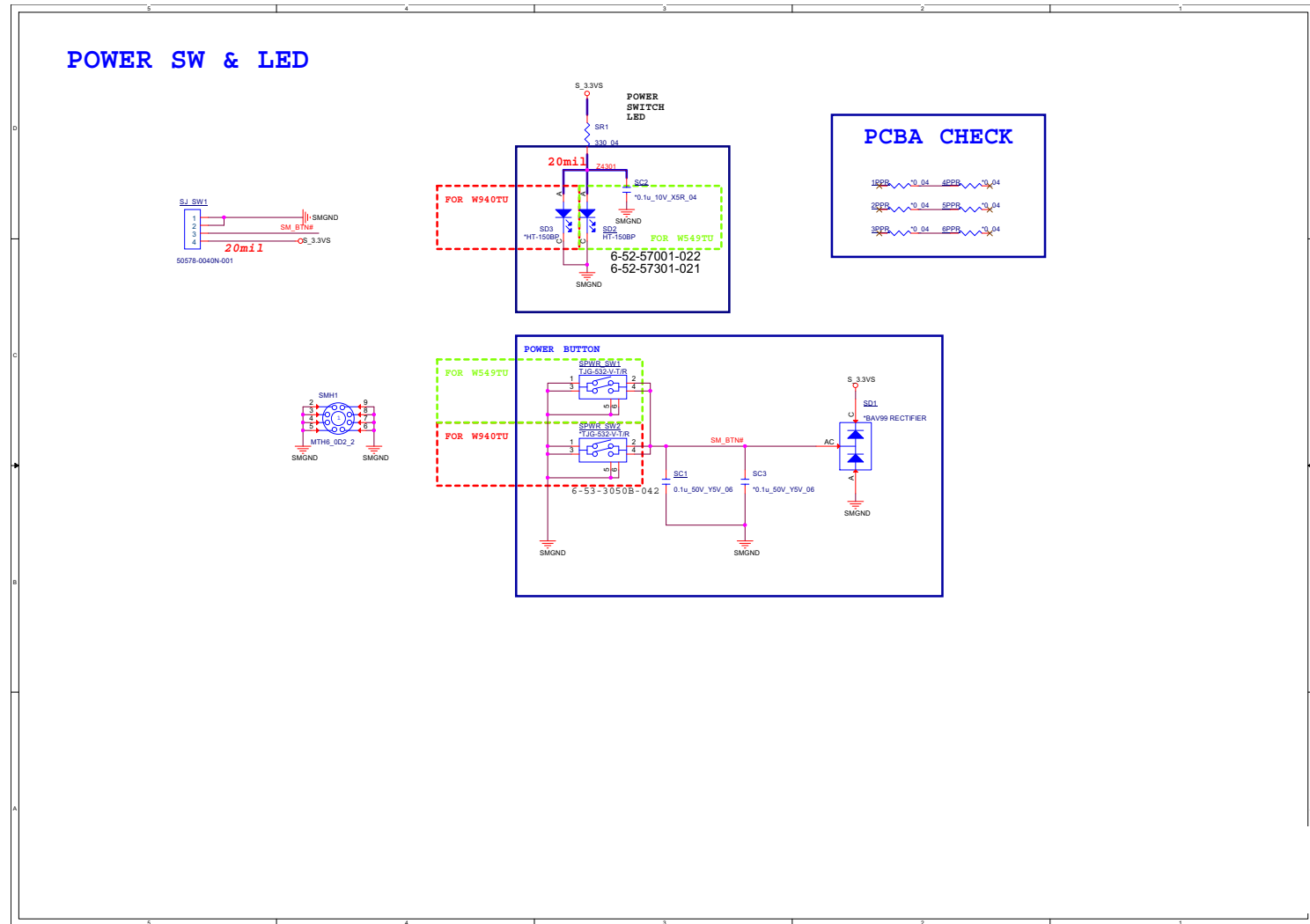
Audio Board

Sheet 29 of 34  
Audio Board

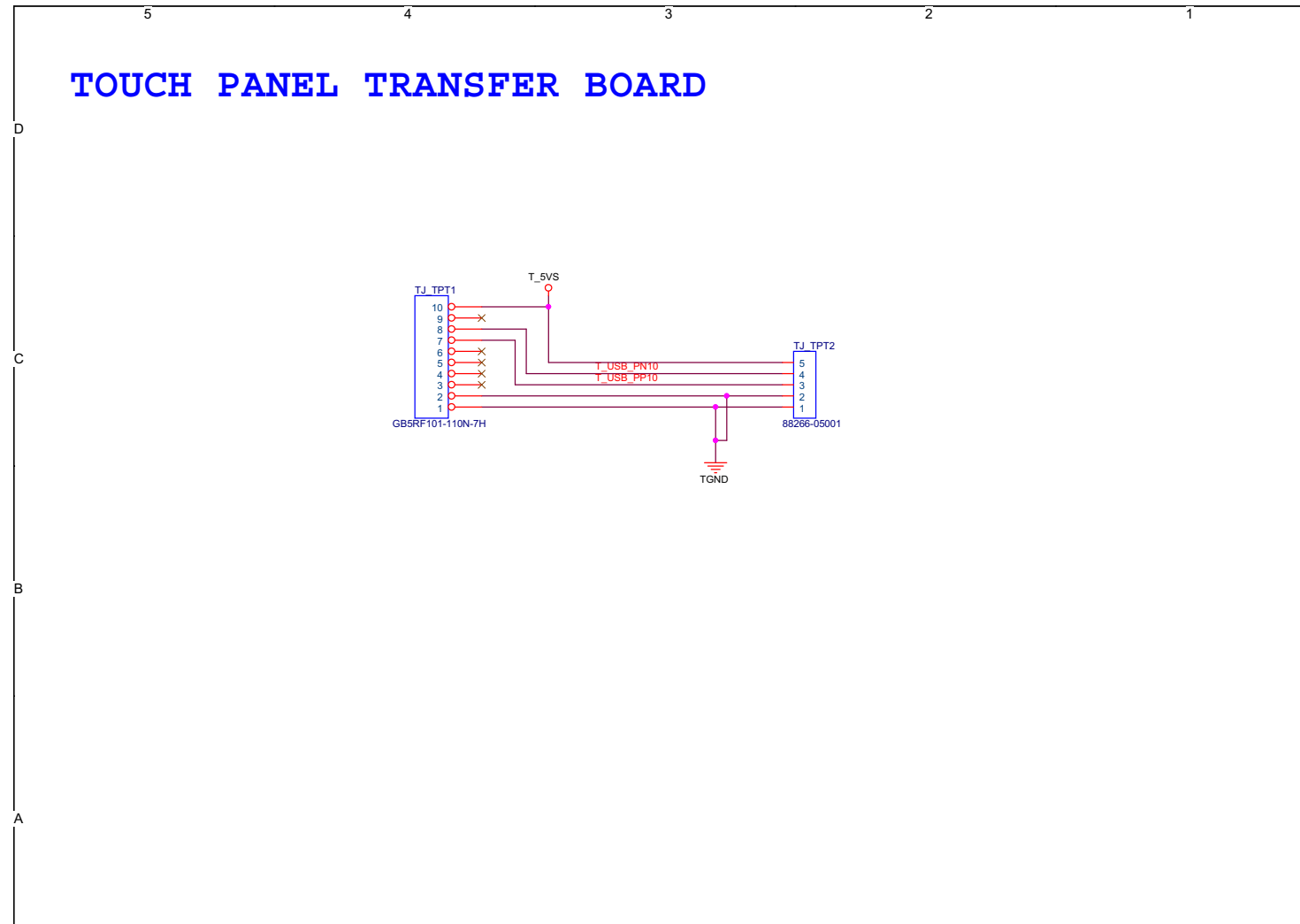


## TPM

Sheet 30 of 34  
TPM



# Touch Panel Board



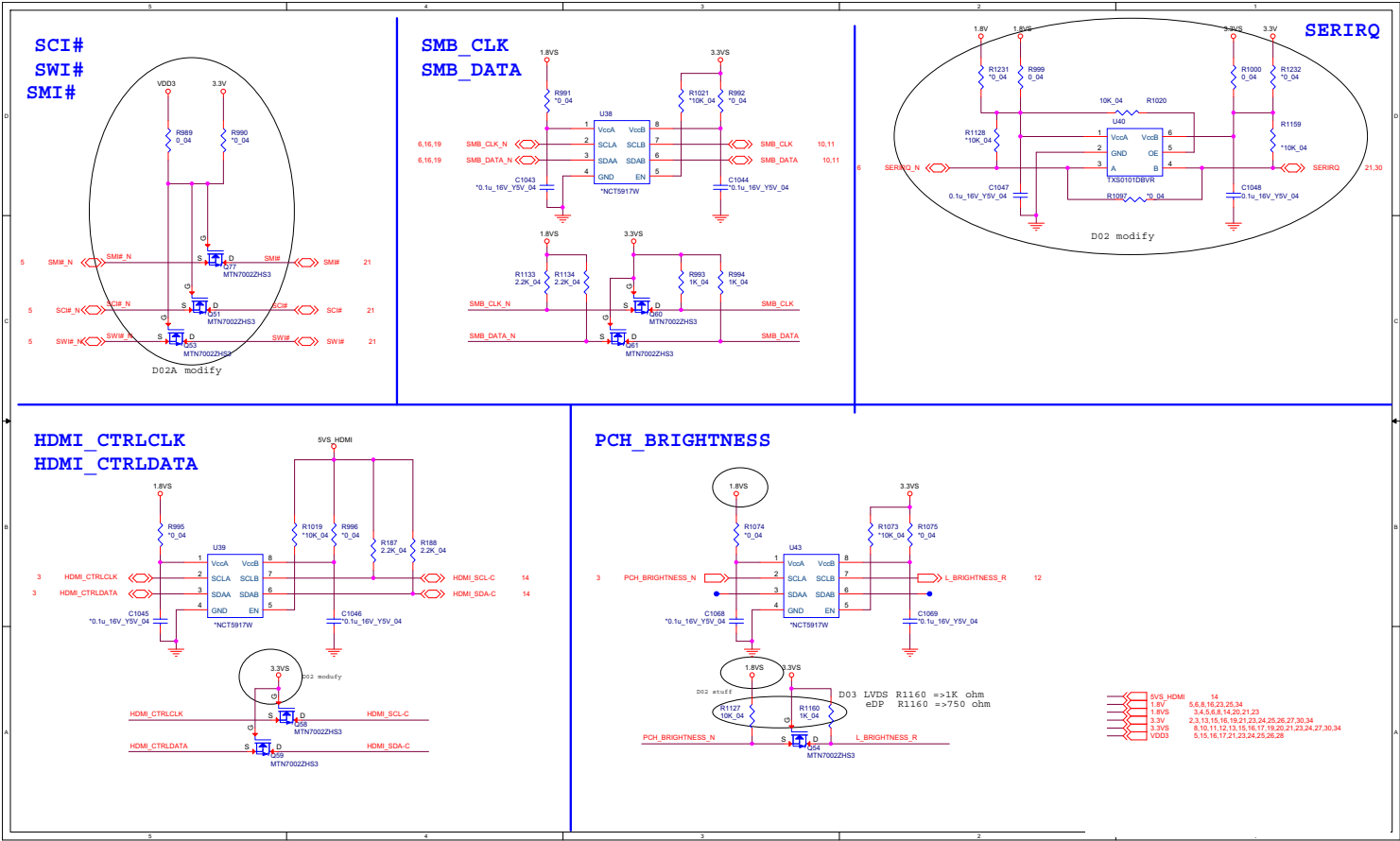
Sheet 32 of 34  
Touch Panel Board



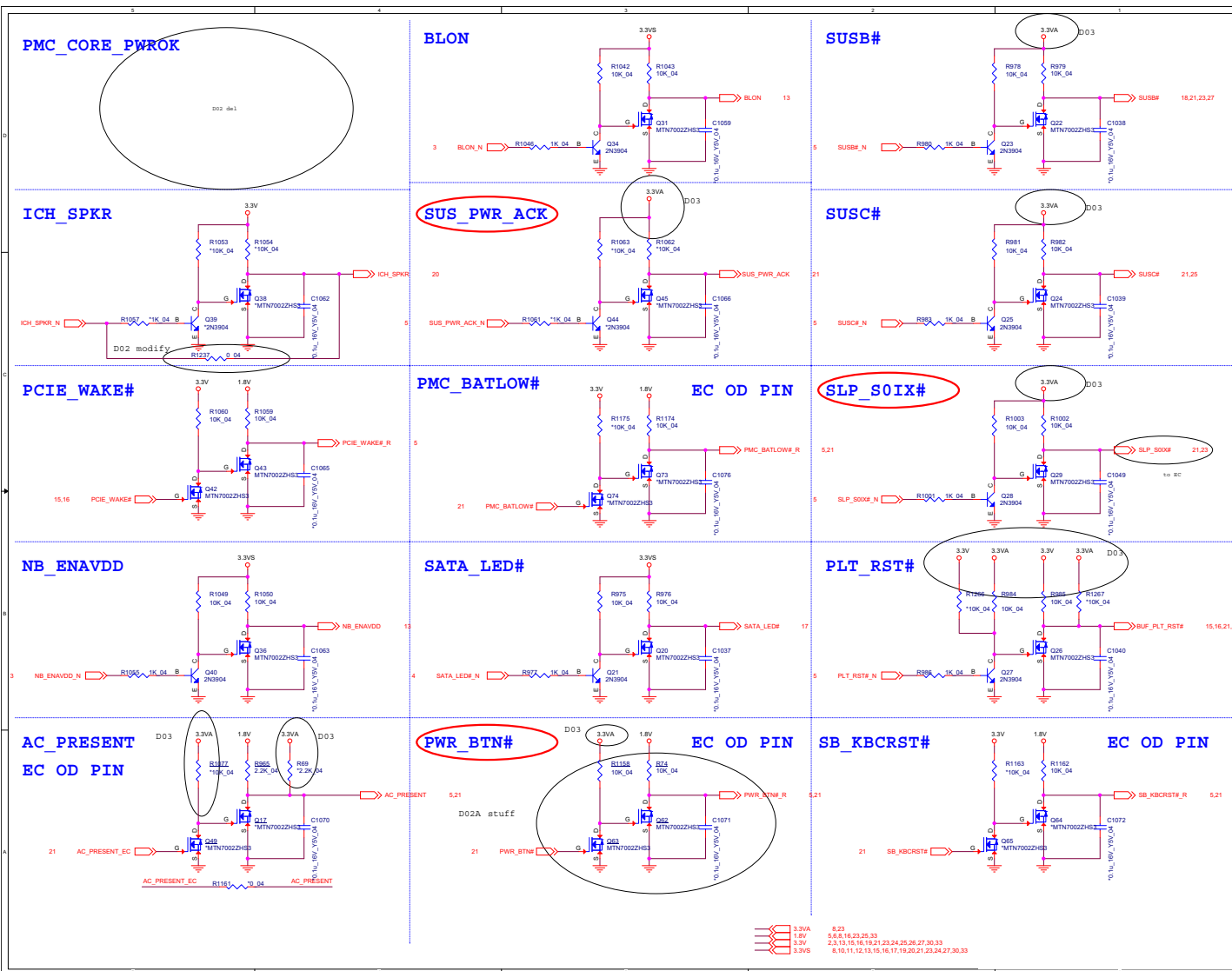
Schematic Diagrams

Level Shifter 1

Sheet 33 of 34  
Level Shifter 1



# Level Shifter 2



Sheet 34 of 34  
Level Shifter 2



# Appendix C: Updating the FLASH ROM BIOS

## To update the FLASH ROM BIOS, you must:

- Download the BIOS update from the web site.
- Unzip the files onto a bootable CD/DVD/USB Flash Drive.
- Reboot your computer from an external CD/DVD/USB Flash Drive.
- Use the flash tools to update the flash BIOS using the commands indicated below.
- Restart the computer booting from the HDD and press **F2** at startup enter the BIOS.
- Load setup defaults from the BIOS and save the default settings and exit the BIOS to restart the computer.
- After rebooting the computer you may restart the computer again and make any required changes to the default BIOS settings.

## Download the BIOS

1. Go to [www.clevo.com.tw](http://www.clevo.com.tw) and point to **E-Services** and click **E-Channel**.
2. Use your user ID and password to access the appropriate download area (BIOS), and download the latest BIOS files (the BIOS file will be contained in a batch file that may be run directly once unzipped) for your computer model (see sidebar for important information on BIOS versions).

## Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive

1. Insert a bootable CD/DVD/USB flash drive into the CD/DVD drive/USB port of the computer containing the downloaded files.
2. Use a tool such as Winzip or Winrar to unzip all the BIOS files and refresh tools to your bootable CD/DVD/USB flash drive (you may need to create a bootable CD/DVD with the files using a 3rd party software).

## Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the “+” and “-” keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F4** to save any changes you have made and exit the BIOS to restart the computer.



### BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are **V1.01.XX or higher** as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore **you may not downgrade your BIOS to an older version** after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

## BIOS Update

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### Use the flash tools to update the BIOS

1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message “**EFI Shell**”. You will then be prompted to give “**Y**” or “**N**” responses to the programs being loaded by EFI Shell. Choose “**N**” for any memory management programs.
2. You should now see **DISK fsX:\>** (X is the designated drive number for the CD/DVD drive/USB flash drive).
3. **Type the following command:**

**fsX:\> Flash.nsh**

4. The utility will then proceed to flash the BIOS.
5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

### Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F3**) and select “**Yes**” to confirm the selection.
5. Press **F4** to save any changes you have made and exit the BIOS to restart the computer.

### Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.