

# SERVICE MANUAL

W270CZQ / W271CZQ

*notebook*



**Notebook Computer**  
**W270CZQ / W271CZQ**  
**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 *W270CZQ* / *W271CZQ* 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

## 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, 3.42A or 18.5V, 3.5A (**65W**) 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.

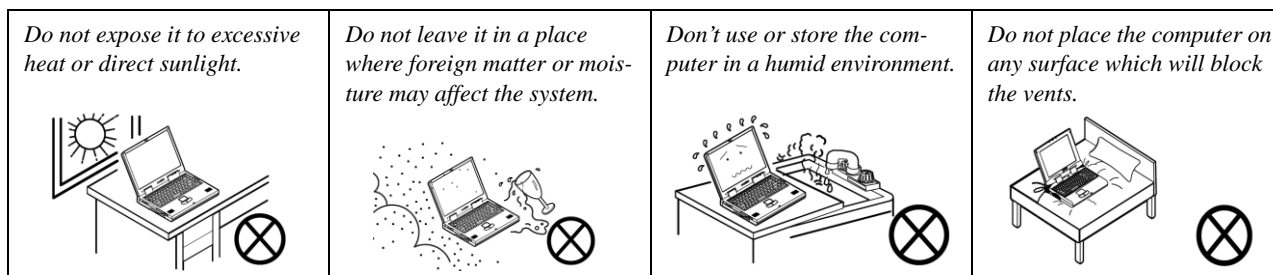
## Instructions for Care and Operation

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

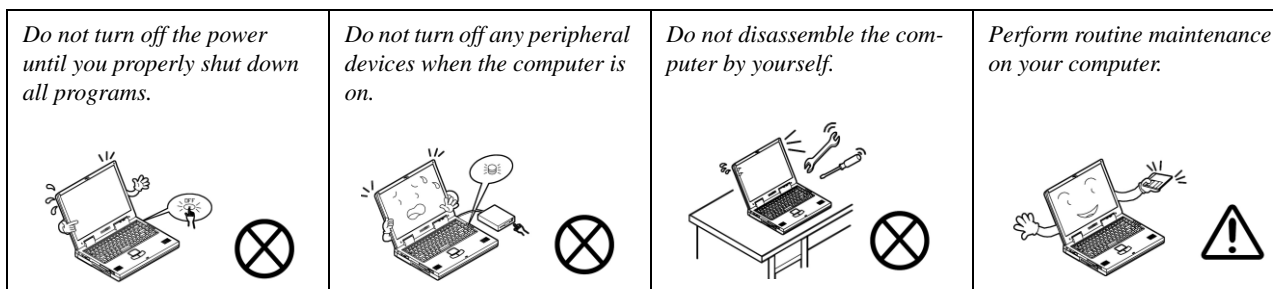
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



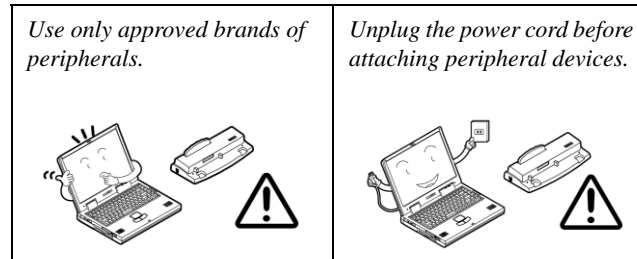
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



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.



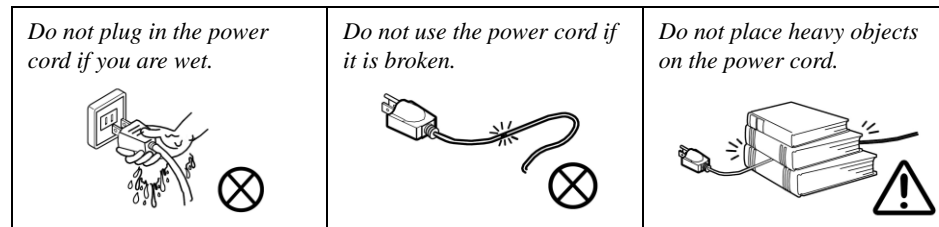
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



## 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

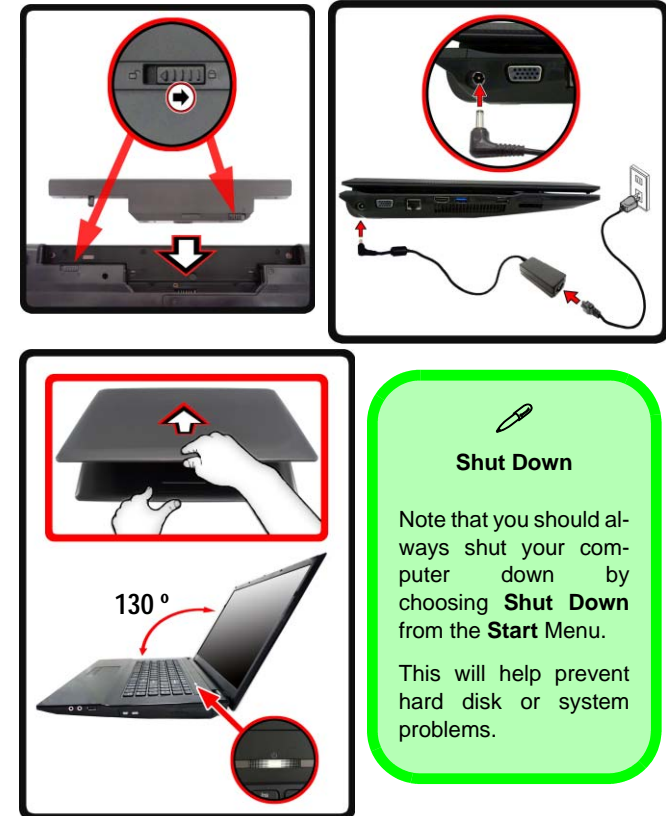
You may also need to consult the following manual for additional information:

### User's Manual on CD/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 on 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

## 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 System Memory (RAM) .....	2-9
Removing the Wireless LAN Module .....	2-11
Removing the Keyboard/CCD .....	2-12

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

Part List Illustration Location .....	A-2
Top .....	A-3
Bottom .....	A-4
SATA BLU-RAY COMBO .....	A-5
SATA DVD DUAL .....	A-6

LCD .....	A-7
-----------	-----

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

System Block Diagram .....	B-2
Processor 1/7 .....	B-3
Processor 2/7 .....	B-4
Processor 3/7 .....	B-5
Processor 4/7 .....	B-6
Processor 5/7 .....	B-7
Processor 6/7 .....	B-8
Processor 7/7 .....	B-9
DDR3 SO-DIMM_0 .....	B-10
DDR3 SO-DIMM_1 .....	B-11
LVDS, Inverter .....	B-12
HDMI, CRT .....	B-13
PantherPoint - M 1/9 .....	B-14
PantherPoint - M 2/9 .....	B-15
PantherPoint - M 3/9 .....	B-16
PantherPoint - M 4/9 .....	B-17
PantherPoint - M 5/9 .....	B-18
PantherPoint - M 6/9 .....	B-19
PantherPoint - M 7/9 .....	B-20
PantherPoint - M 8/9 .....	B-21
PantherPoint - M 9/9 .....	B-22
WLAN, CCD .....	B-23
3G, TPM .....	B-24
Card Reader, LAN RTL8402 .....	B-25
Transformer, SATA HDD, ODD .....	B-26
USB 3.0 TI TUSB7320 .....	B-27
USB 3.0/USB 2.0/USB Charger .....	B-28
KBC-ITE IT8518 .....	B-29

## Preface

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LED .....	B-30
Audio Codec VT1802P/ALC269 .....	B-31
Fan, TP, Multi-Conn .....	B-32
System Power .....	B-33
VDD3, VDD5 .....	B-34
Power 1.5V/0.75V/1.8VS .....	B-35
Power 1.05VS, VTT_CPU .....	B-36
Power 0.85VS .....	B-37
Power V-Core1 .....	B-38
Power V-Core2 .....	B-39
Smart Charger, AC In .....	B-40
Click Board .....	B-41
Audio Board/USB .....	B-42
Power Switch & LID Board .....	B-43
External ODD Board .....	B-44
Power Sequence .....	B-45
<b>Updating the FLASH ROM BIOS.....</b>	<b>C-1</b>
Download the BIOS .....	C-1
Unzip the downloaded files to a bootable CD/DVD/ or 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 **W270CZQ / W271CZQ** 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. *Windows 7*, 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 **W270CZQ / W271CZQ** 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

#### Intel® Celeron® 847 Processor

1.10GHz, 32nm, 2MB L3 Cache, DDR3-1333MHz, TDP: 17W

#### Intel® Celeron® 877 Processor

1.40GHz, 32nm, 2MB L3 Cache, DDR3-1333MHz, TDP: 17W

### Display

17.3" (43.94cm) HD+ / FHD

### Core Logic

Intel® NM70 Chipset

### Memory

Two 204 Pin SO-DIMM Socket Supporting **DDR3 1333/1600MHz** Memory (The real memory operating frequency depends on the FSB of the processor)

Memory Expandable up to **16GB**

### BIOS

One 48Mb SPI Flash ROM

AMI BIOS

### Video Adapter

#### Intel® HD Graphics

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

Microsoft DirectX®10.1 Compatible

### Audio

High Definition Audio Compliant Interface

2 \* Built-In Speakers

Built-In Microphone

### Storage

(**Factory Option**) One Changeable 12.7mm(h) Super Multi Optical Device Drive

One Changeable 2.5" 9.5mm (h) SATA HDD

### Interface

Three USB 2.0 Ports

One Headphone-Out Jack

One Microphone-In Jack

One External Monitor Port

One HDMI-Out Port

One RJ-45 LAN Jack

One DC-in Jack

### Security

Kensington Lock Slot

BIOS Password

### Keyboard

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

### Pointing Device

Built-in Touchpad

### Communication

10Mb/100Mb Ethernet LAN

(**Factory Option**) 300K Pixel/2M HD PC Camera Module

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

(**Factory Option**) Intel® Centrino® Wireless-N 105 Wireless LAN (**802.11b/g/n**)

(**Factory Option**) Intel® Centrino® Wireless-N 135 Wireless LAN (**802.11b/g/n**) + Bluetooth **3.0**

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

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

### Card Reader

Embedded Multi-In-1 Card Reader  
MMC (MultiMedia Card) / RS MMC  
SD (Secure Digital) / Mini SD  
MS (Memory Stick) / MS Pro / MS Duo

### Mini Card Slots

Slot 1 for **WLAN** Module or **WLAN and Bluetooth** Combo Module

### Power

Full Range AC/DC Adapter  
AC Input: 100 - 240V, 50 - 60Hz  
DC Output: 19V, 3.42A/18.5V, 3.5A (**65W**)

Removable 6 Cell Smart Lithium-Ion Battery Pack, 48.84WH  
(**Factory Option**) Removable 6 Cell Smart Lithium-Ion Battery Pack, 62.16WH

### Environmental Spec

#### Temperature

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

#### Relative Humidity

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

### Dimensions & Weight

413mm (w) \* 270mm (d) \* 14 - 40.5mm (h)  
**2.9kg** (with 48.84WH Battery and ODD)

## Introduction

*Figure 1*  
Top View

1. PC Camera  
(Optional)
2. LCD
3. Power Button
4. LED Status  
Indicators
5. Keyboard
6. Built-In  
Microphone
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 Power Indicators

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. External Monitor Port
- 3. RJ-45 LAN Jack
- 4. HDMI-Out Port
- 5. USB 2.0 Port
- 6. Vent
- 7. Multi-in-1 Card Reader

LEFT SIDE VIEW



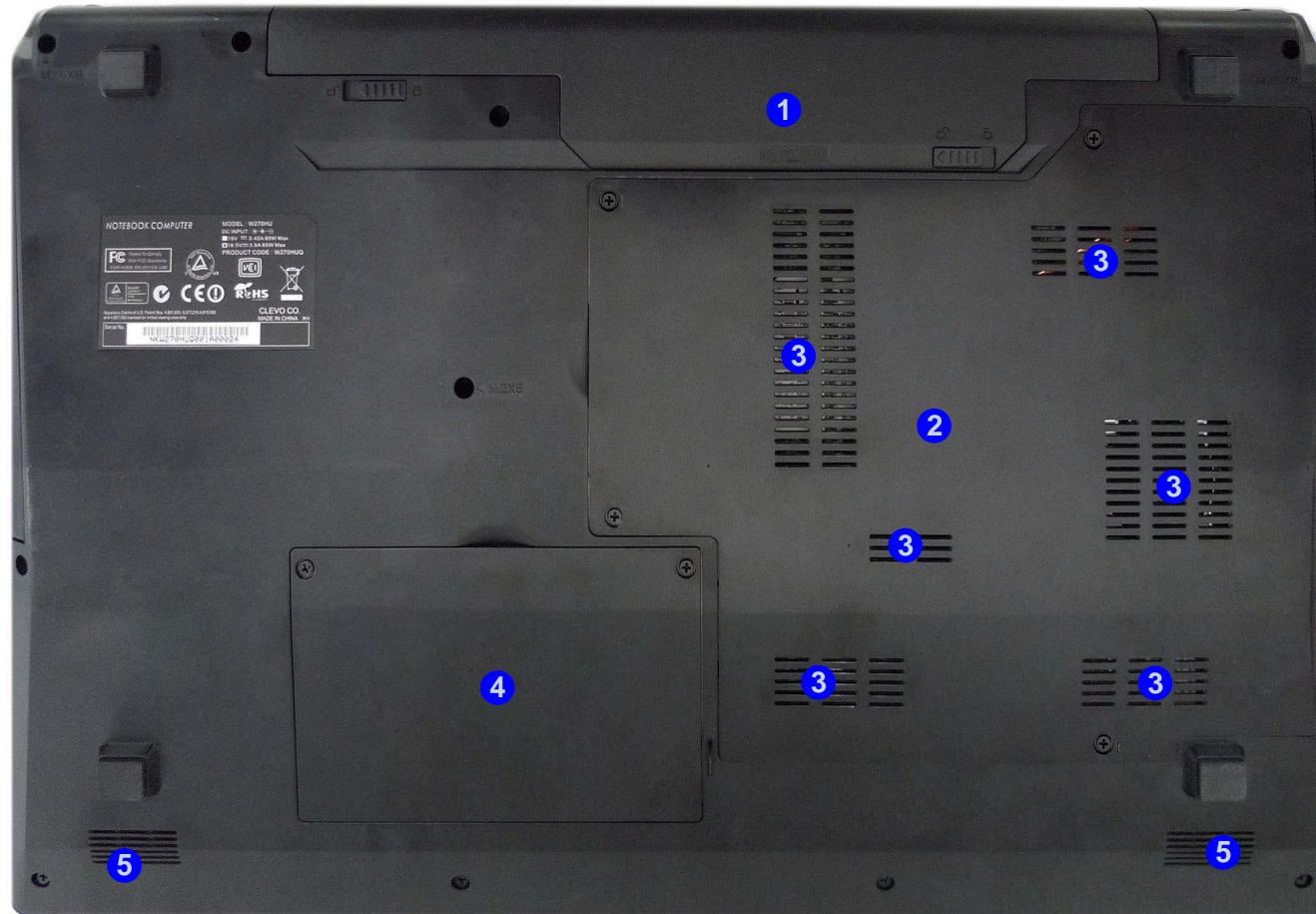
*Figure 5*  
**Rear View**

- 1. Battery

REAR VIEW



## External Locator - Bottom View



*Figure 6*  
**Bottom View**

1. Battery
2. Component Bay Cover
3. Vent
4. Hard Disk Bay Cover
5. Speakers



### **Overheating**

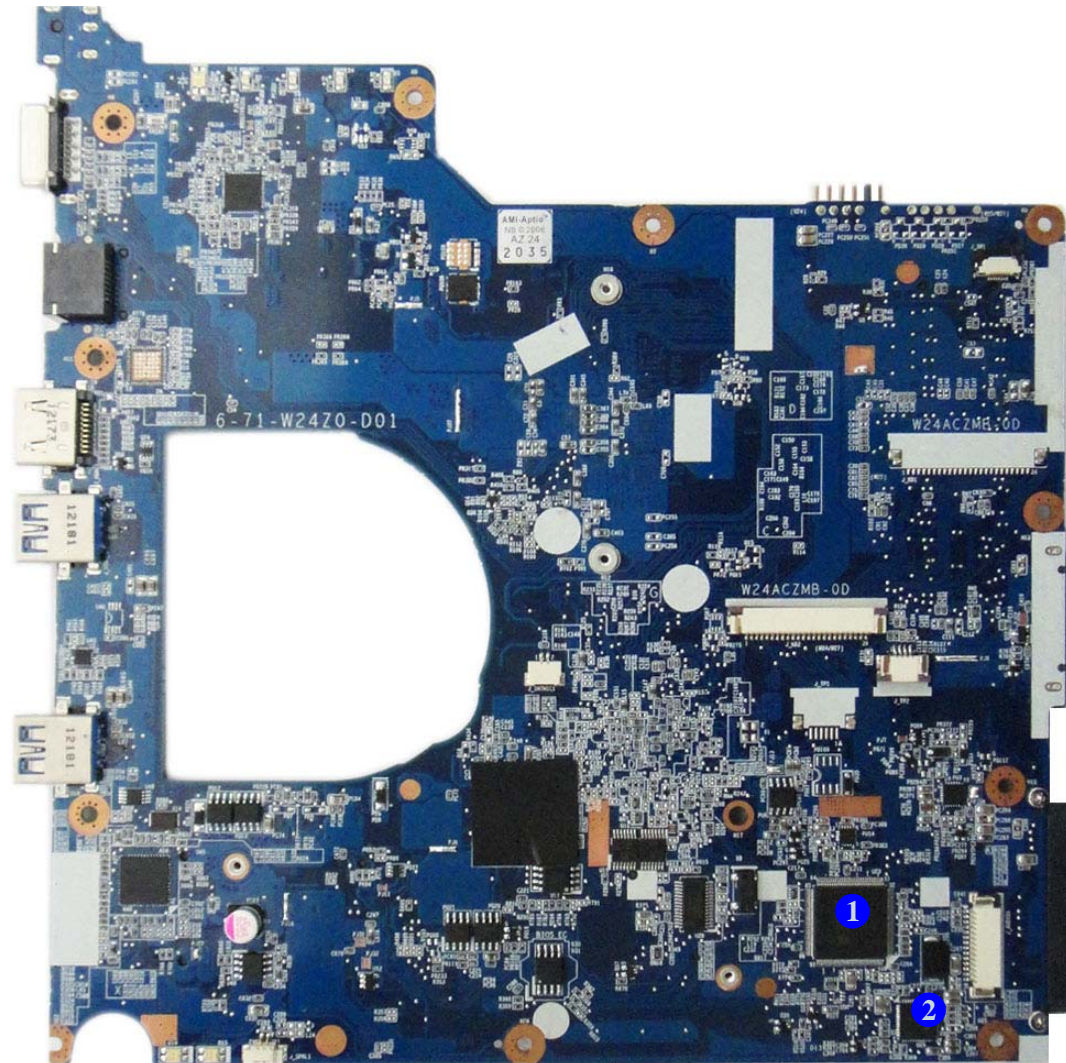
To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

## Introduction

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

1. ITE 8518E
2. AZALIA Codec

## Mainboard Overview - Top (Key Parts)





## Mainboard Overview - Bottom (Key Parts)



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

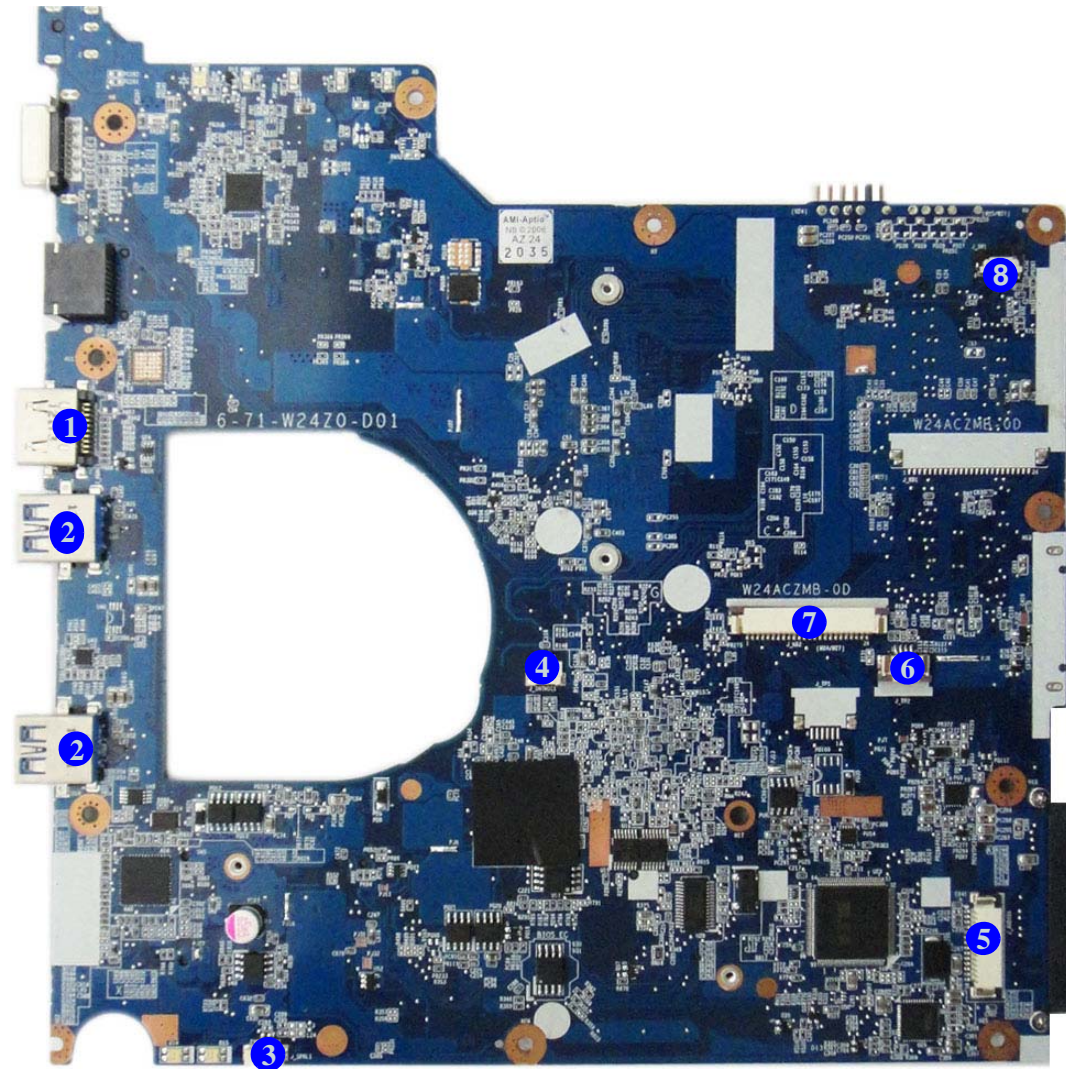
1. Memory Slots  
DDR3 SO-DIMM
2. CPU Socket (No  
CPU installed)
3. Intel PCH
4. CMOS Battery
5. Mini-Card  
Connector (WLAN  
Module)
6. Card Reader  
Socket

## Introduction

*Figure 9*  
**Mainboard Top  
Connectors**

1. HDMI-Out Port
2. USB Port 2.0
3. Speaker Cable Connector
4. Microphone Cable Connector
5. Audio Board Connector
6. TouchPad Cable Connector 1
7. Keyboard Cable Connector
8. Switch Board Cable Connector

## Mainboard Overview - Top (Connectors)





## Mainboard Overview - Bottom (Connectors)



*Figure 10*  
**Mainboard Bottom  
Connectors**

1. Battery Connector
2. ODD Connector
3. HDD Connector
4. CPU Fan Cable Connector
5. RJ-45 LAN Jack
6. External Monitor Port
7. DC-In Jack
8. CCD Cable Connector
9. LCD Cable Connector




# Chapter 2: Disassembly

## Overview

This chapter provides step-by-step instructions for disassembling the **W270CZQ / W271CZQ** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

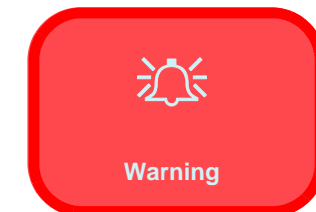
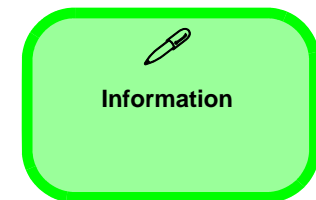
We suggest you completely review any procedure before you take the computer apart.

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 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 Optical device *page 2 - 8*

#### To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 9*

#### To remove the Wireless LAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the WLAN module *page 2 - 11*

#### To remove the Keyboard and CCD:

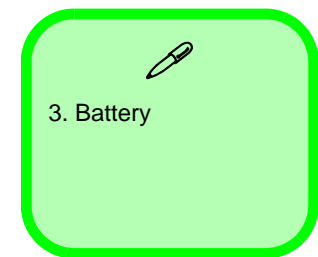
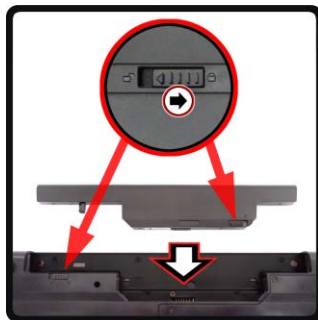
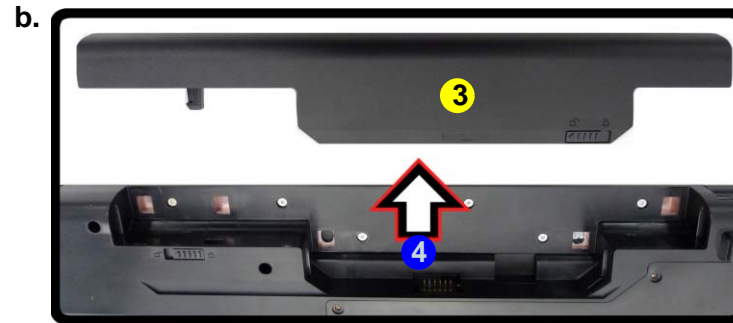
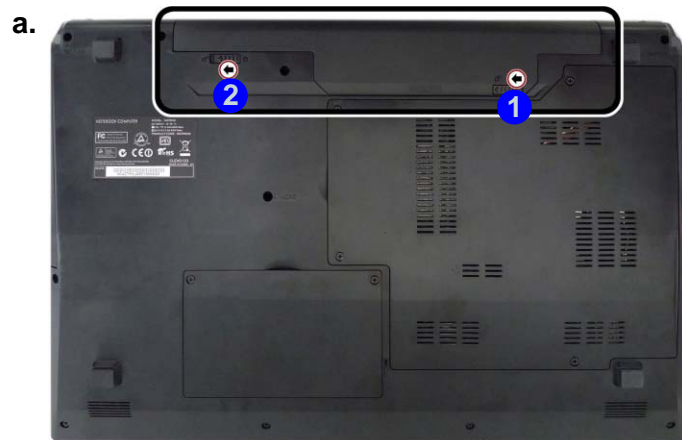
1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 12*

## Removing the Battery

1. Turn the computer **off**, and 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*).

*Figure 1*  
**Battery Removal**

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



## Removing the Hard Disk Drive

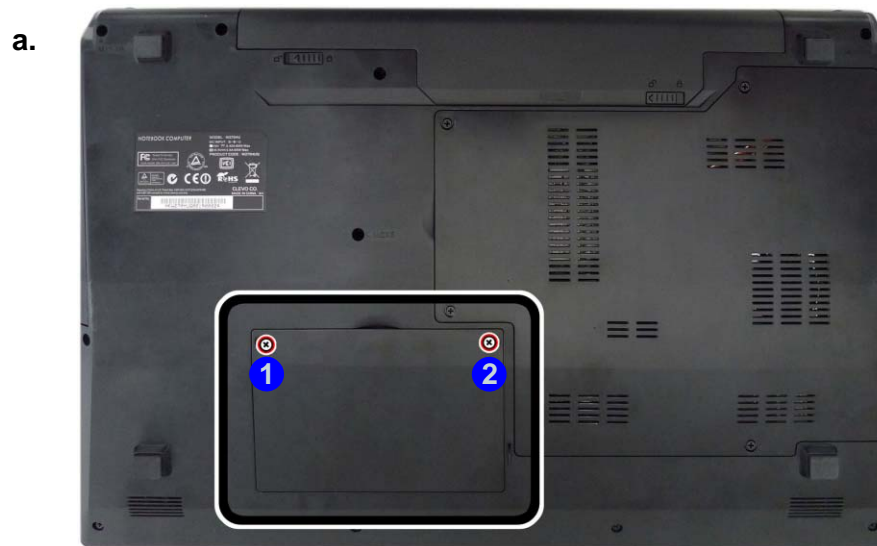
*Figure 2*  
**HDD Assembly  
Removal**

The hard disk drive can be taken out to accommodate other 2.5" serial (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.

- a. Locate the HDD bay cover and remove the screws.

### Hard Disk Upgrade Process

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Locate the hard disk bay cover and remove screws **1** & **2** ([Figure 2a](#)).



#### 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.

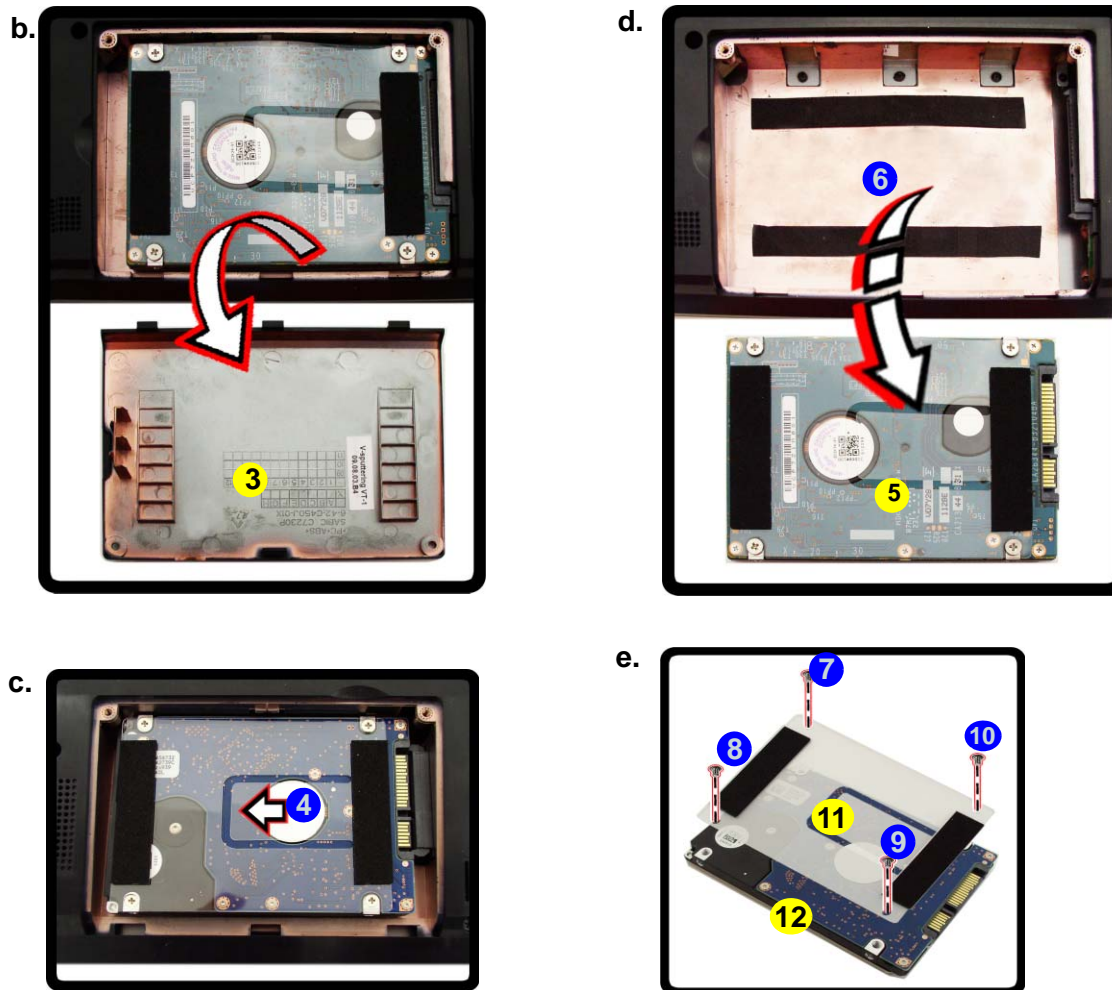
You have all the CD-ROMs and FDDs required to install your operating system and programs.

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.



- 2 Screws

3. Remove the hard disk bay cover **3** (*Figure 3b*).
4. Grip the tab and slide the hard disk in the direction of arrow **4** (*Figure 3c*).
5. Lift the hard disk assembly **5** out of the bay **6** (*Figure 3d*).
6. Remove screws **7** - **10** and the mylar cover **11** from the hard disk **12** (*Figure 3e*).
7. Reverse the process to install a new hard disk (do not forget to replace all the screws and covers).



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

- b. Remove the HDD bay cover.
- c. Grip the tab and slide the HDD assembly in the direction of the arrow.
- d. Lift the HDD assembly out of the bay.
- e. Remove the screws and mylar cover.



- 3. HDD Bay Cover
- 5. HDD Assembly
- 11. Mylar Cover
- 12. HDD

- 4 Screws

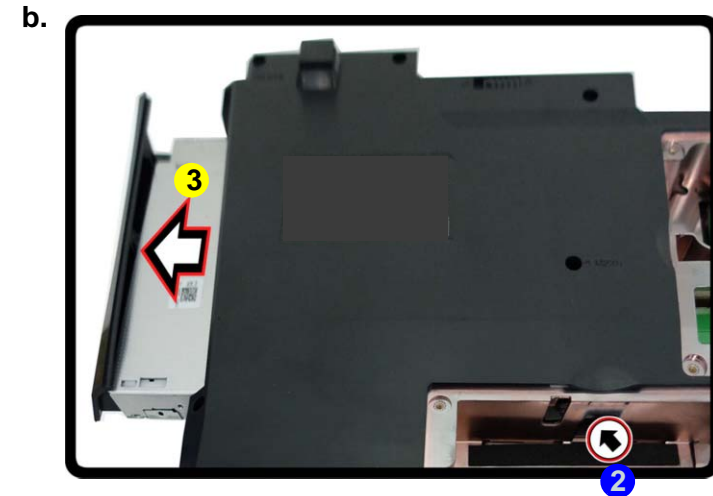
## Disassembly

*Figure 4*  
**Optical Device  
Removal**

- Remove the screw at point **1**.
- Use a screwdriver to carefully push out the optical device at point **2**.

## Removing the Optical (CD/DVD) Device

- Turn **off** the computer, remove the battery ([page 2 - 5](#)) and hard disk ([page 2 - 6](#)).
- Remove the screw at point **1** ([Figure 4a](#)).
- Use a screwdriver to carefully push out the optical device **3** at point **2** ([Figure 4b](#)).
- Insert the new device and carefully slide it into the computer (the device only fits one way. **DO NOT FORCE IT**; The screw holes should line up).
- Restart the computer to allow it to automatically detect the new device.



3. Optical Device

- 1 Screw

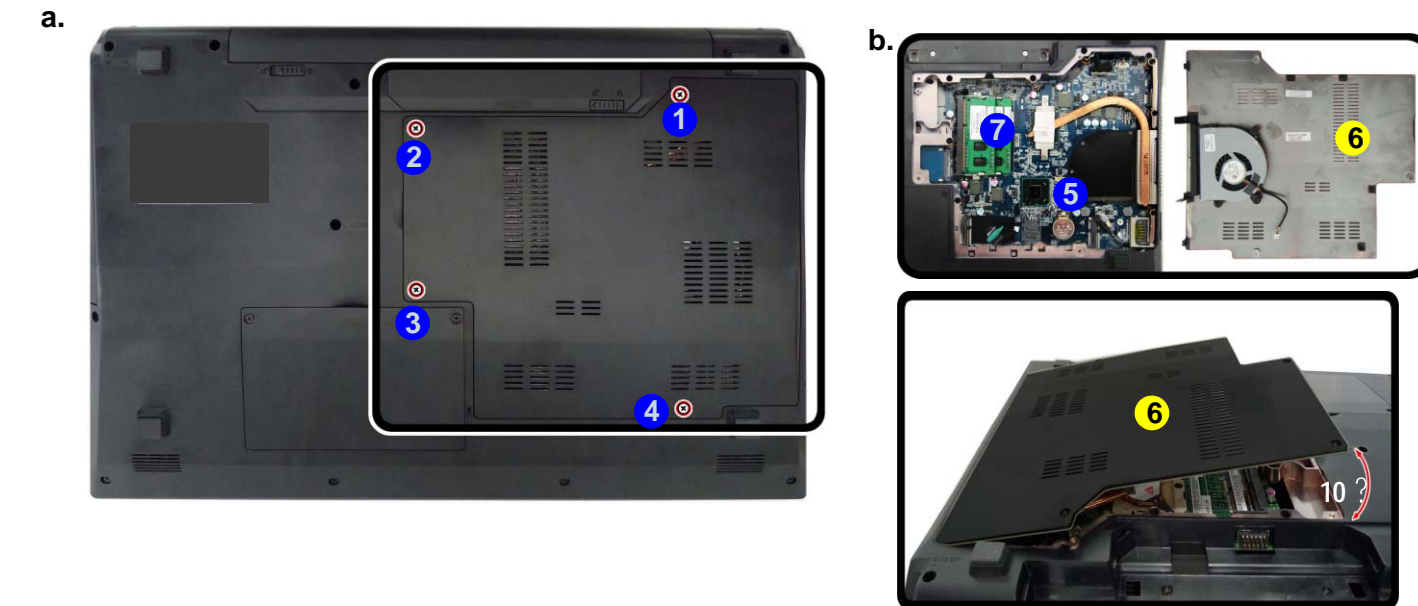


## Removing the System Memory (RAM)

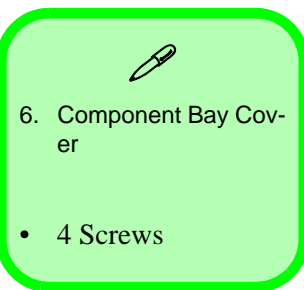
The computer has two memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDRIII (DDR3) Up to 1066/1333 MHz. The main memory can be expanded up to 8GB. The SO-DIMM modules supported are 1024MB and 2048MB **DDRIII** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

### Memory Upgrade Process

1. Turn **off** the computer, turn it over and remove the battery ([page 2 - 5](#)).
2. Remove screws **1** - **4** from the component bay cover ([Figure 5a](#)).
3. Carefully (**a fan and cable are attached to the under side of the cover**) lift up the bay cover.
4. Carefully disconnect the fan cable **5**, and remove the cover **6** (note that you need to raise the bottom cover up to an angle of around 30° angle).
5. The RAM modules will be visible at point **7** on the mainboard ([Figure 5b](#)).



- a. Remove the screws.
- b. The RAM modules will be visible at point **7** on the mainboard.





## Disassembly

*Figure 6*  
**RAM Module  
 Removal (cont'd)**

- c. Pull the release latches.  
 d. Remove the module.

c.



d.



e.



**Note:**

The component bay cover has four cover pins, and these need to be aligned with the slots in the case to insure a proper cover fit. Make sure also that the cover is raised at a 10 degree angle during removal and installation.

7. Pull the latches to release the second module if necessary.
8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
9. 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.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the bay cover by inserting it at an angle and aligning the cover pins (*Figure 6e*).
12. Replace the screws (**make sure you reconnect the fan cable before replacing all the screws and screwing down the bay cover**).
13. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.



**Contact Warning**

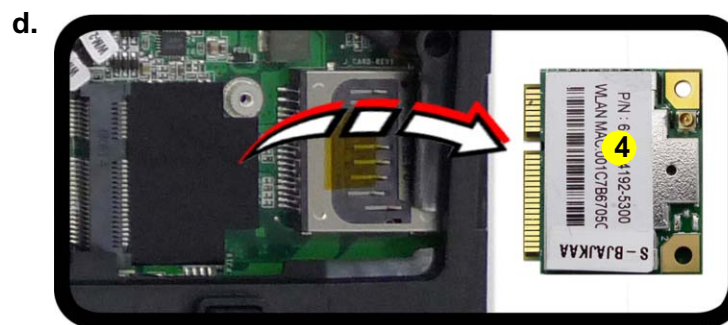
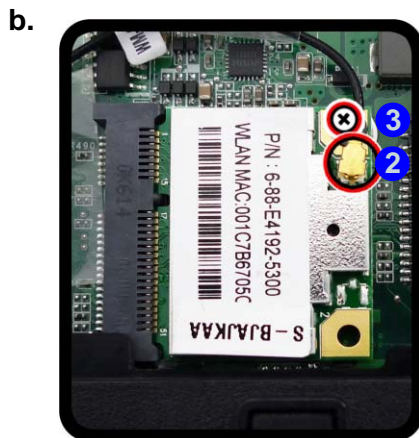
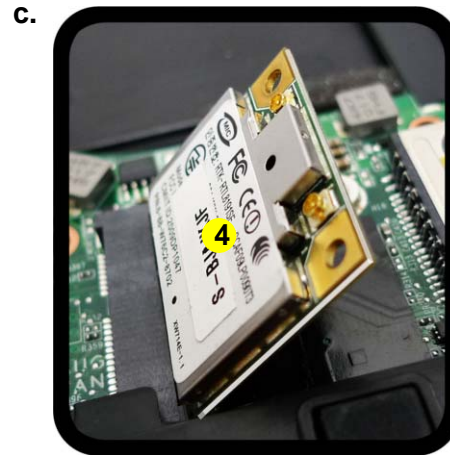
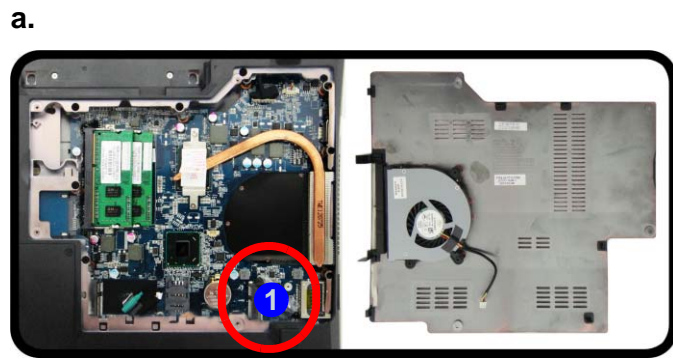
Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.



10. RAM Module

## Removing the Wireless LAN Module

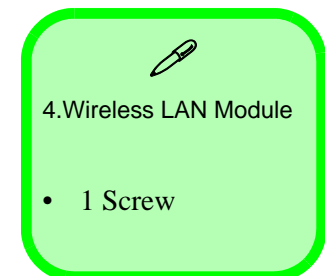
1. Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard ([Figure 7a](#)).
3. Carefully disconnect the cable **2**, and then remove the screw **3** ([Figure 7b](#)).
4. The Wireless LAN module **4** ([Figure 7c](#)) will pop-up, and you can remove it from the computer ([Figure 7d](#)).



*Figure 7*  
**Wireless LAN  
Module Removal**

- a. Locate the WLAN.
- b. Disconnect the cable and remove the screw.
- c. The WLAN module will pop up.
- d. Remove the Wireless LAN module.

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket ([Figure 7b](#)).



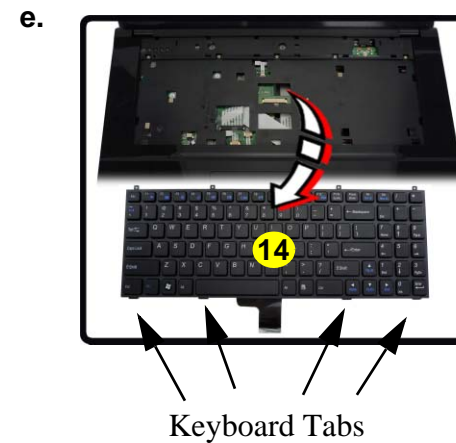
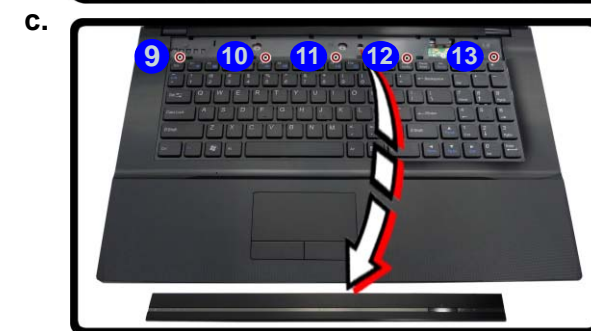
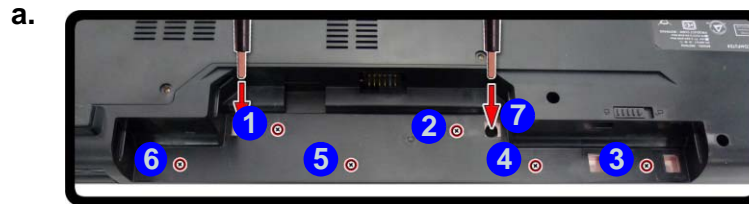
## Disassembly

*Figure 8*  
**Keyboard / CCD Removal**

- Remove screws from the bottom of the computer.
- Turn the computer over, unsnap up the LED cover module from the center of the computer.
- Remove screws from the keyboard.
- Carefully lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins away from the base.
- Remove the keyboard.

## Removing the Keyboard/CCD

- Turn **off** the computer, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
- Remove screws **1 - 6** from the bottom of the computer (inside the battery compartment), and then press at point **7** to unsnap the LED cover module (use the eject pin tool provided to do this [Figure 8a](#)).
- Turn the computer over, unsnap up the LED cover module **8** from the center of the computer ([Figure 8b](#)).
- Remove screws **9 - 13** from the keyboard ([Figure 8c](#)).
- Carefully lift the keyboard **14** up, being careful not to bend the keyboard ribbon cable **15**. Disconnect the keyboard ribbon cable **15** from the locking collar socket **16** by using a flat-head screwdriver to pry the locking collar pins **17** away from the base ([Figure 8d](#)).
- Carefully lift up the keyboard **14** ([Figure 8e](#)) off the computer.



8. LED Cover Module  
14. Keyboard  
11 Screws

### Re-Inserting the Keyboard

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



7. Disconnect cables 18 - 22 and remove screw 23.
8. Turn the computer over, remove screws 24 - 43 from the bottom case.
9. Turn the computer over, pry the top case 44 off the bottom case at points A & B simultaneously, then run your fingers around the inner frame of the top case at points C - E.
10. Carefully lift the top case 44 up and off the bottom case.
11. Carefully remove the rubber screw covers 45 - 50 and screws 51 - 56 from the front cover.

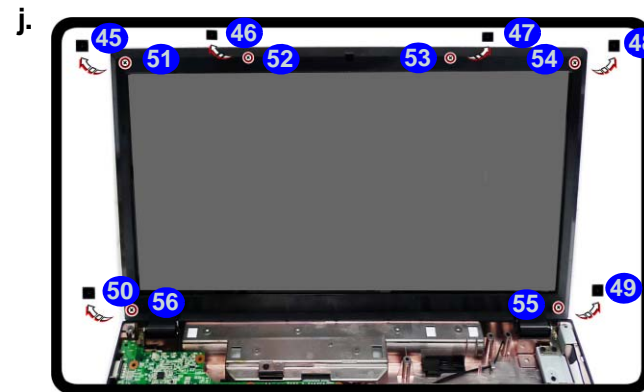
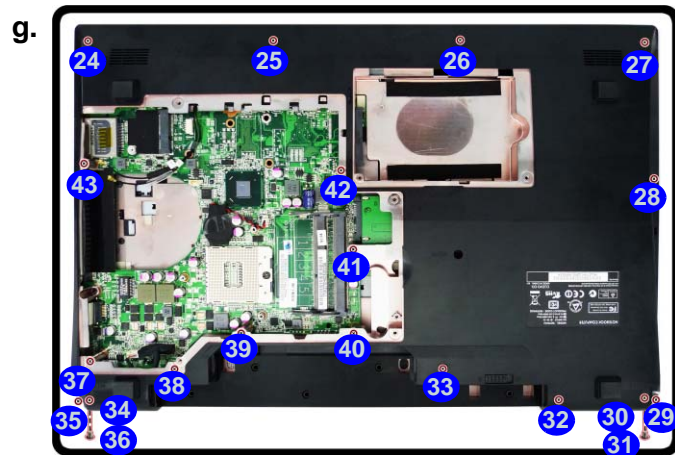
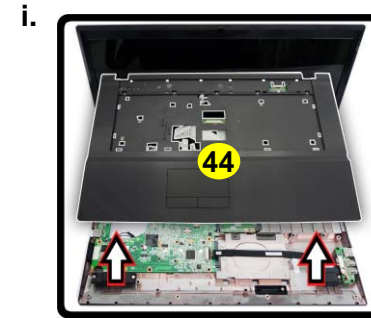
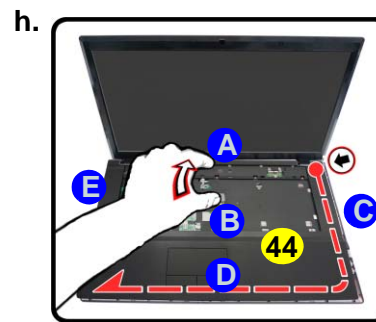
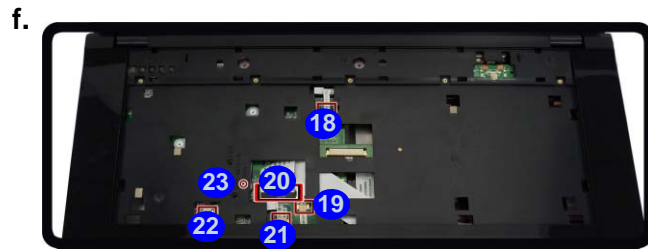
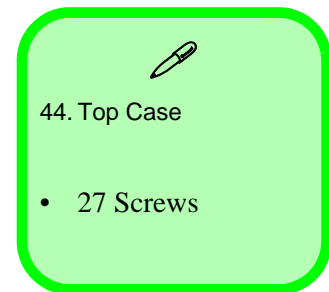


Figure 9  
Keyboard / CCD  
Module Removal

- f. Disconnect the cables and remove the screw.
- g. Turn the computer over, remove the screws from the bottom case.
- h. Turn the computer over, pry the top case off the bottom case at points A & B simultaneously, then run your fingers around the inner frame of the top case at points C - E.
- i. Carefully lift the top case up and off the bottom case.
- j. Carefully remove the rubber screw covers and screws from the front cover.



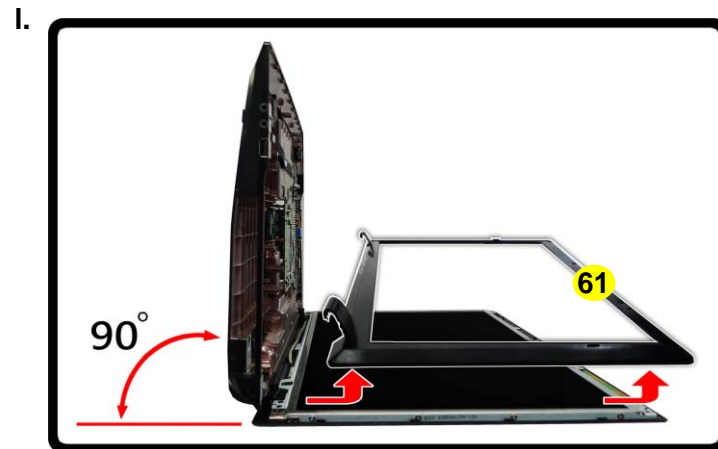
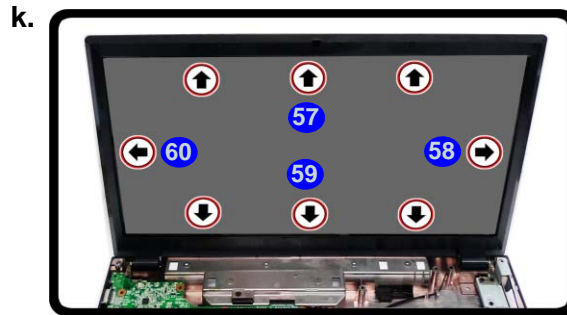
## Disassembly

Figure 10

### Keyboard / CCD Removal

- k. Run your fingers around the inner frame of the LCD panel at the points indicated by the arrows.
- l. 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.
- m. Disconnect the cable.
- n. Remove the CCD module.

12. Run your fingers around the inner frame of the LCD panel at the points indicated by the arrows 57 - 60 .
13. Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Push the LCD front panel 61 upwards before carefully lifting it up.
14. Disconnect cable 62.
15. Remove the CCD module 63 .



61. LCD Front Panel  
63. CCD Module

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# Appendix A:Part Lists

This appendix breaks down the *W270CZQ / W271CZQ* 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	W270CZQ / W271CZQ
Top	<i>page A - 3</i>
Bottom	<i>page A - 4</i>
SATA BLU-RAY COMBO	<i>page A - 5</i>
SATA DVD DUAL	<i>page A - 6</i>
LCD	<i>page A - 7</i>

# Top

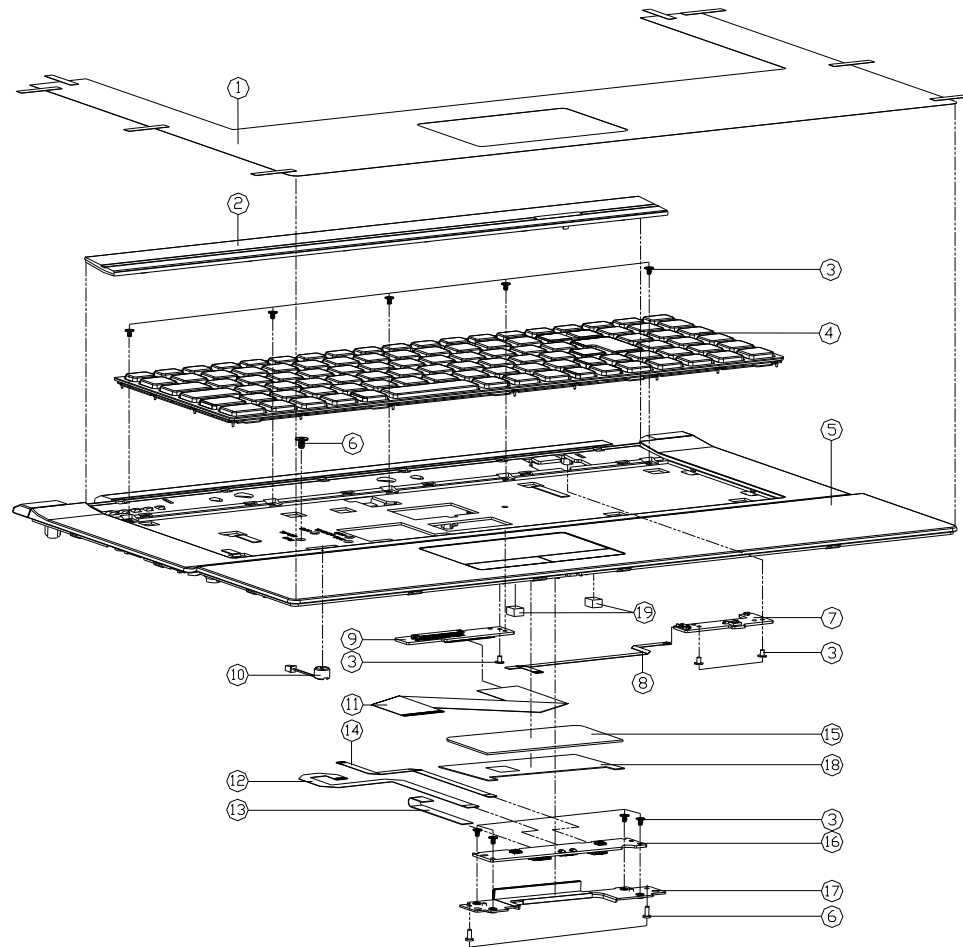


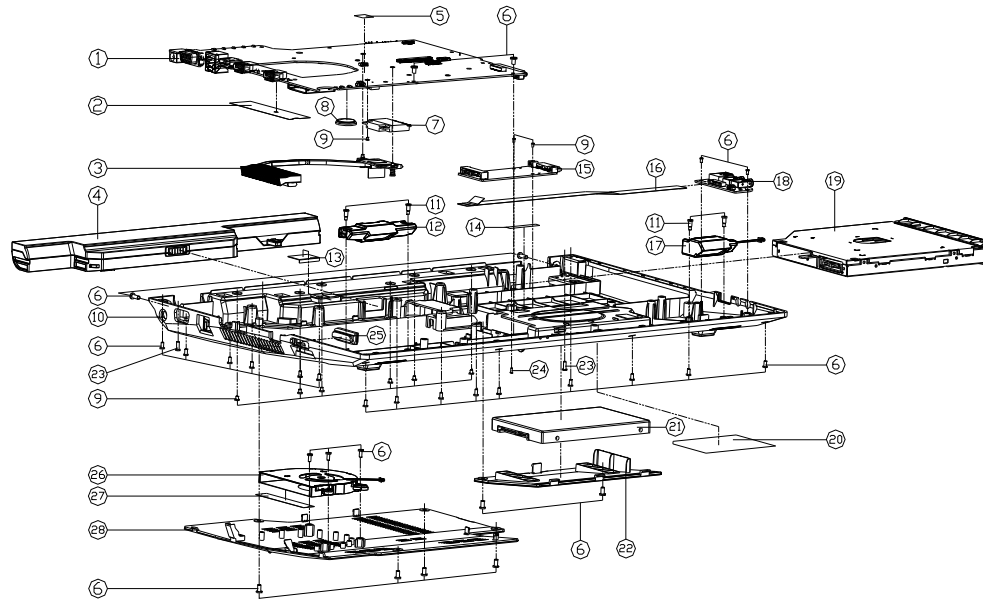
Figure A - 1  
Top

ITEM	PART NAME	PART NO	REMARK
1	PALM REST PROTECT NYLAR (8835) W270HD	6-40-W27HB-011	
2	K/B COVER MODULE W270HD	6-42-W27HB-102	
3	SCREW M2X3 KI NI ICT NY (00-#45.0T-04)	6-35-B1120-3RE	
4	K/B US/BLACK/FRANCUS) MODULE W270HD	6-79-W270HUK-010	
5	TOP CASE MODULE (ADD SPRINGZ) W270HD	6-39-W27H2-015	
5	TOP CASE MODULE (ADD SPRINGZ) W270HD	6-39-W2712-011	
6	SCREW M2X5L K1T+0.8 D=4.0 BK/Z ICT NY	6-35-B6120-5RO	
7	SWITCH BOARD V1.0 W270HD	6-77-W27HS-D01	
8	FFC CABLE 6PIN FOR W/B TO POWER BOARD(W270HD)	6-43-W27H0-041-2	
9	K/B BRIDGE BOARD V1.0 W270HD	6-77-W27H7-D01	
10	NYLAR SPRINGZ FOR W/B TO K/B BRIDGE BOARD (00-#45.0T-04)	6-23-E54G-012-2	
11	FFC CABLE 6PIN FOR W/B TO K/B BRIDGE BOARD (W270HD)	6-43-W27H0-011-2	
12	FFC CABLE 6PIN FOR W/B TO CLICK BOARD (W270HD)	6-43-W27H0-021-2	
13	FFC CABLE FOR TOUCH PAD 6PIN C4500	6-43-C4502-010	
14	FFC CABLE 6PIN FOR W/B TO CLICK BOARD (W270HD)	6-43-W27H0-031-2	
15	TOUCH PAD SYMPTICS TM-0146-000 MULTI-GESTURE C400	6-49-C4802-010	
16	CLICK BOARD V2.0A W270BUO	6-77-W2402-D02A-A	FOR W270BZQ
16	CLICK BOARD V1.0 W255EU	6-77-W24E2-D01-A	FOR W270CZQ
17	TP BRACKET MODULE (SECC 08T) W270HD	6-33-W27H2-101	
18	TAPE NYLAR (C) (86*38.80MM) C4105	6-40-00150-861	
19	SPRINGZ (5*5*6TMM) FOR W270BAQ	6-47-0019A-051	



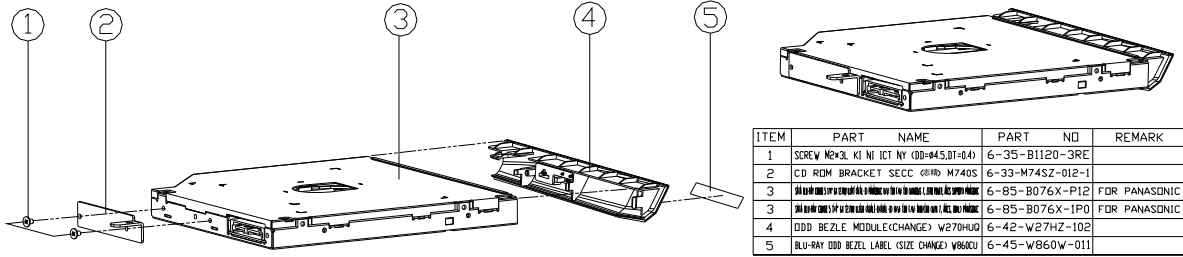
# Bottom

Figure A - 2  
Bottom



ITEM	PART NAME	PART NO	REMARK
1	MAIN BOARD V28 (V1794) W27C20	6-77-W27C20-000	
1	MAIN BOARD V28 (V1794) W27C20	6-77-W27C20-000-1	
1	MAIN BOARD V28 (V1794) W27C20	6-77-W27C20-000-2	
2	W/LR PET FOR W/LR FM CHARGE LUNAR W2400	6-40-W2400-011	
3	CPU HEATSINK MODULE W24ACZ	6-31-W24ZM-101	
4	RFI SHIELDING FOR MAIN BOARD (40)	6-87-E425-407A	(OPTION)
4	RFI SHIELDING FOR MAIN BOARD (40)	6-87-W24E-4V4	(OPTION)
4	RFI SHIELDING FOR MAIN BOARD (40)	6-87-C480S-4G4B	(OPTION)
5	ADD MAIN BOARD (40) (1.5) R10M NO ITEM	6-40-C455S-030	
6	SCREW W25*W/LR KT BK/CZ ICT NYL	6-35-B612S-30A	
7	MAIN BOARD V28 (V1794) W27C20	6-88-W24SF-9400	(OPTION)
7	MAIN BOARD V28 (V1794) W27C20	6-88-W25HC-9400	(OPTION)
7	MAIN BOARD V28 (V1794) W27C20	6-88-W25HE-7000	(OPTION)
7	MAIN BOARD V28 (V1794) W27C20	6-88-W34SF-8700	(OPTION)
7	MAIN BOARD V28 (V1794) W27C20	6-88-W34SF-7000	(OPTION)
8	BATTERY 3V ZINBA 30200228 KIT3	6-23-6A23E-030	
9	SCREW NYL6.4 M ICT NY (00-443)1-44	6-35-B1120-38E	
10	BOTTOM CASE MODULE AND SPRING W27H40	6-35-W27H3-014	
11	SCREW NY6.4 M ICT NY FOR SPEAKER	6-35-Z1120-6R2	
12	SPEAKER 0.5W 8 OHM 10KHZ 100V 100V	6-23-SC510-011-1	
13	RF SHIELD FOR MAIN BOARD (40)	6-40-W27H3-020	
14	TAPE NYL6.4 (03) NYL6.4 M550J	6-40-M55JL-020	
15	BRIDGE PCB BOARD V10 W27H40	6-77-W27H1-001	
16	PC CABLE 0P 0.5W 100V 100V 100V	6-43-W27B0-010-2	
17	PHONE 0.5W 8 OHM 10KHZ 100V 100V	6-23-SC510-011-1	
18	AUDIO BOARD V4.0 W24ACZ	6-77-W24E-104-A	
19	SATA DVD SUPER MULTI ASSY (OPTION)	6-79-W27CUG-000	
19	SATA BLU-RAY COMBO ASSY (OPTION)	6-79-W27CUG-030	
19	W/D ODD ASSY W27H40 (OPTION)	6-79-W27H40Z-000	
20	PRODUCT LABEL FOR W27C20	6-45-W27C20-000	
20	PRODUCT LABEL FOR W27C20	6-45-W27C20-000	
21	W/D HDD ASS'Y E51200	6-79-E51200J-000	
21	W/D HDD ASS'Y C4800	6-79-C48000J-000	
22	HDD COVER PC ABS W27H40	6-42-W27HJ-011	
23	SCREW W25*W/LR KT BK/CZ ICT NYL	6-35-B612S-300	
24	SCREW NYL6.4 0-40 BK/CZ ICT NY	6-35-B6120-300	
25	ESATA USB RUBBER SILICON W27H40	6-47-W27H3-030	
26	FAN MODULE W2511H40	6-31-W25HS-100	
27	AIRDUCT NYL6.4 0F117 W2400	6-40-W24H0-011	
28	CPU COVER MODULE W27H40	6-42-W27H0-301	

# SATA BLU-RAY COMBO

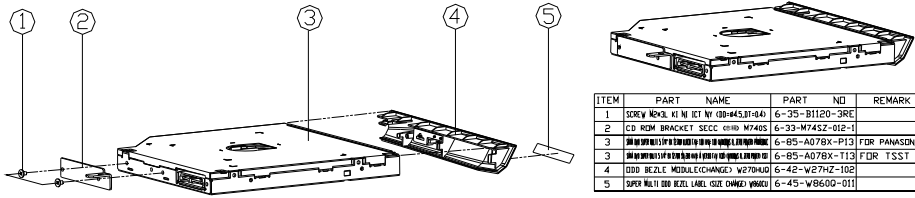


ITEM	PART NAME	PART NO	REMARK
1	SCREW M2x3L KI NI ICT NY (DD#45,DT#04)	6-35-B1120-3RE	
2	CD RDM BRACKET SECC @RH M740S	6-33-M74SZ-012-1	
3	DDD BEZLE MODULE (CHANGE) W270H102	6-85-B076X-P12	FOR PANASONIC
3	DDD BEZLE MODULE (CHANGE) W270H102	6-85-B076X-1P0	FOR PANASONIC
4	DDD BEZLE MODULE (CHANGE) W270H102	6-42-W27HZ-102	
5	BLU-RAY DDD BEZEL LABEL (SIZE CHANGE) W86D0	6-45-W86DW-011	

Figure 3  
SATA BLU-RAY  
COMBO

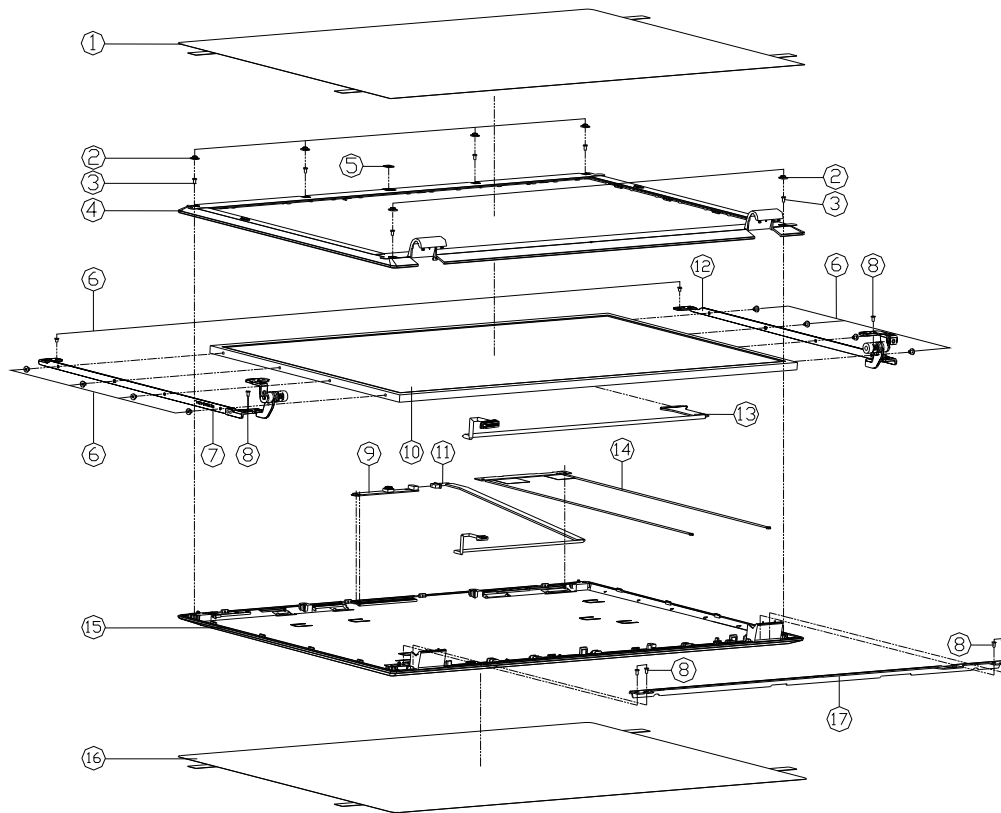
# SATA DVD DUAL

Figure 4  
SATA DVD DUAL



ITEM	PART NAME	PART NO	REMARK
1	SCREW NOKI KI NI ICT NY (QB#45JTB4)	6-35-B1120-3RE	
2	CD ROM BRACKET SECC (C#10 M7405)	6-33-M74SZ-012-1	
3	BEZEL MODULE (C#10 M7405)	6-B5-A078X-P13	FOR PANASONIC
3	BEZEL MODULE (C#10 M7405)	6-B5-A078X-T13	FOR TSST
4	DDO BEZLE MODULE (CHANGE) V270HJ00	6-42-W27HZ-102	
5	SMPR No.11 DDD BEZEL LABEL (C#10 M7405)	6-45-W86G0-011	

# LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT CASE PROTECT MILAR PET B710	6-40-B7118-012	
2	LCD COVER SCREW RUBBER SILICON W270H0	6-47-W27H0-020	
3	SCREW M2.5*5L K1 BK/2 ICT NY	6-35-B6125-5RA	
4	LCD FRONT COVER MODULE (CHANGE) W270H0	6-39-W27H1-012	
4	LCD FRONT COVER MODULE (CHANGE) W270H0	6-39-W27H1-013-G	
5	CCD LENS PMMA (CHANGE PRINT) W270H0	6-40-W27H1-061	
5	W/D CCD LENS PMMA W270H0	6-40-W27H1-070	
6	SCREW HexCL KI NI ICT NY (00#*4.5,01-04)	6-35-B1120-3RE	
7	LCD HINGE L K7 W270H0	6-33-W27H1-021	
8	SCREW HexSL KKT-08 B-40 BK/2 ICT NY	6-35-B6120-5R0	
9	LVC CAMERA BEZEL FOR BREVINVO-000 2M 500K 1/3" CCD	6-88-W15EC-4901	OPTION
9	LVC CAMERA BEZEL FOR BREVINVO-000 2M 500K 1/3" CCD	6-88-W21EC-5100	OPTION
9	LVC CAMERA BEZEL FOR BREVINVO-000 300K 1/4" CCD	6-88-M115C-4902	OPTION
9	LVC CAMERA BEZEL FOR BREVINVO-000 300K 1/4" CCD	6-88-W25CC-4900	OPTION
9	LVC CAMERA BEZEL FOR BREVINVO-000 300K 1/4" CCD	6-88-E510C-4904	OPTION
9	LVC CAMERA BEZEL FOR BREVINVO-000 300K 1/4" CCD	6-88-M115C-4900	OPTION
9	LVC CAMERA BEZEL FOR BREVINVO-000 300K 1/4" CCD	6-88-M110C-4901	OPTION
9	LVC CAMERA BEZEL FOR BREVINVO-000 300K 1/4" CCD	6-88-E510C-4902	OPTION
9	LVC CAMERA BEZEL FOR BREVINVO-000 300K 1/4" CCD	6-88-M115C-4901	OPTION
10	LCD 17.3" HD LG LPT27W01-TL02 QLED 480*800 6.0 MM	6-50-NA160-L07	OPTION
10	LCD 17.3" HD LG LPT27W01-TL01 QLED 480*800 6.0 MM	6-50-NB260-D01	OPTION
10	LCD 17.3" HD LG LPT27W01-TL02 QLED 480*800 6.0 MM	6-50-NA160-L04	OPTION
10	LCD 17.3" HD CHINA M1730L-L02 QLED 500K	6-50-NA158-D00	OPTION
10	LCD 17.3" HD SAMUNG L1730R1R-00 QLED 500K	6-50-NA158-M01	OPTION
10	LCD 17.3" HD LG LPT27W01-TL03 QLED 6.0 MM	6-50-NA160-L00	OPTION
10	LCD 17.3" HD LG LPT27W01-TL03 QLED 6.0 MM	6-50-NA160-L02	OPTION
10	LCD 17.3" HD AU B7230V01 V0 QLED 6.0 MM	6-50-NA160-G00	OPTION
10	LCD 17.3" HD AU B7230V01 V0 QLED 6.0 MM	6-50-NB258-N00	OPTION
11	WIRE CABLE FOR CCD SP 436MM ONLY FOR W270H0	6-43-W27H1-010	
12	LCD HINGE R K7 W270H0	6-33-W27H1-011	
13	CABLE FOR LVDS HP 1730M OR CONSTRUCTION BREVINVO	6-43-W27H1-010-2A	
14	BEZEL WITH CAMERA FOR BREVINVO-000 2M 500K 1/3" CCD	6-23-7W27H-020	
15	LCD BACK IRR COVER MODULE W270H0	6-39-W27H1-021	
15	LCD BACK COVER FE ADJUSTABLE BRACKET FOR MODULE W270H0	6-39-W2711-021	
15	LCD BACK COVER FOR BREVINVO-000 2M 500K 1/3" CCD	6-39-W2711-020-G	
16	BACK COVER PROTECT MILAR OPTI-060505 W270H0	6-40-W27H1-041	
17	LCD SUPPORT SECC W270H0	6-33-W27H1-031	

Figure A - 5  
LCD



# Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the **W270CZQ / W271CZQ** 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>PantherPoint - M 6/9 - Page B - 19</i>	<i>Power 1.05VS, VTT_CPU - Page B - 36</i>
<i>Processor 1/7 - Page B - 3</i>	<i>PantherPoint - M 7/9 - Page B - 20</i>	<i>Power 0.85VS - Page B - 37</i>
<i>Processor 2/7 - Page B - 4</i>	<i>PantherPoint - M 8/9 - Page B - 21</i>	<i>Power V-Core1 - Page B - 38</i>
<i>Processor 3/7 - Page B - 5</i>	<i>PantherPoint - M 9/9 - Page B - 22</i>	<i>Power V-Core2 - Page B - 39</i>
<i>Processor 4/7 - Page B - 6</i>	<i>WLAN, CCD - Page B - 23</i>	<i>Smart Charger, AC In - Page B - 40</i>
<i>Processor 5/7 - Page B - 7</i>	<i>3G, TPM - Page B - 24</i>	<i>Click Board - Page B - 41</i>
<i>Processor 6/7 - Page B - 8</i>	<i>Card Reader, LAN RTL8402 - Page B - 25</i>	<i>Audio Board/USB - Page B - 42</i>
<i>Processor 7/7 - Page B - 9</i>	<i>Transformer, SATA HDD, ODD - Page B - 26</i>	<i>Power Switch &amp; LID Board - Page B - 43</i>
<i>DDR3 SO-DIMM_0 - Page B - 10</i>	<i>USB 3.0 TI TUSB7320 - Page B - 27</i>	<i>External ODD Board - Page B - 44</i>
<i>DDR3 SO-DIMM_1 - Page B - 11</i>	<i>USB 3.0/USB 2.0/USB Charger - Page B - 28</i>	<i>Power Sequence - Page B - 45</i>
<i>LVDS, Inverter - Page B - 12</i>	<i>KBC-ITE IT8518 - Page B - 29</i>	
<i>HDMI, CRT - Page B - 13</i>	<i>LED - Page B - 30</i>	
<i>PantherPoint - M 1/9 - Page B - 14</i>	<i>Audio Codec VT1802P/ALC269 - Page B - 31</i>	
<i>PantherPoint - M 2/9 - Page B - 15</i>	<i>Fan, TP, Multi-Conn - Page B - 32</i>	
<i>PantherPoint - M 3/9 - Page B - 16</i>	<i>System Power - Page B - 33</i>	
<i>PantherPoint - M 4/9 - Page B - 17</i>	<i>VDD3, VDD5 - Page B - 34</i>	
<i>PantherPoint - M 5/9 - Page B - 18</i>	<i>Power 1.5V/0.75V/1.8VS - Page B - 35</i>	

*Table B - 1*  
**SCHEMATIC  
DIAGRAMS**



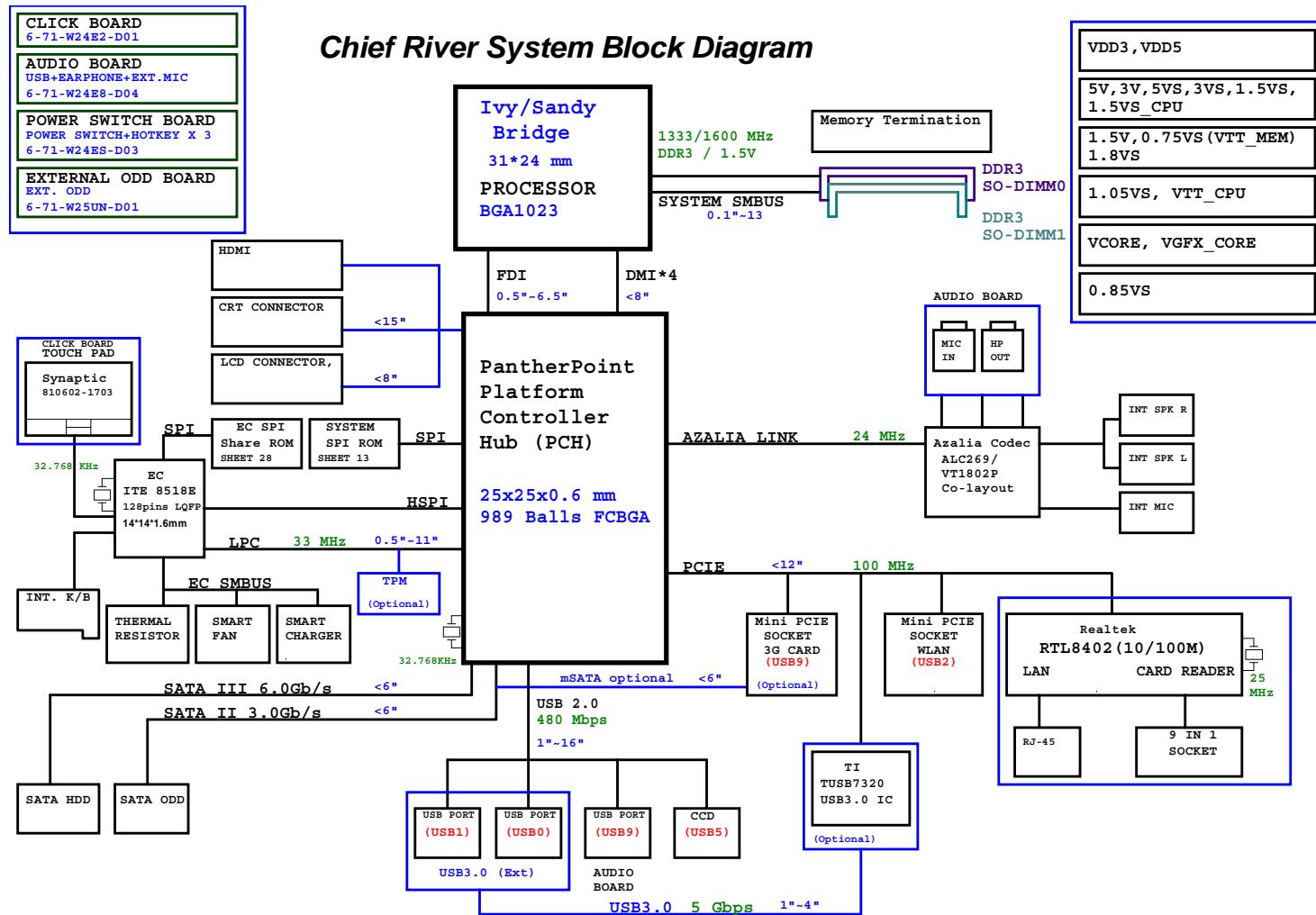
### Version Note

The schematic diagrams in this chapter are based upon version 6-7P-W24Z5-002. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).



# System Block Diagram

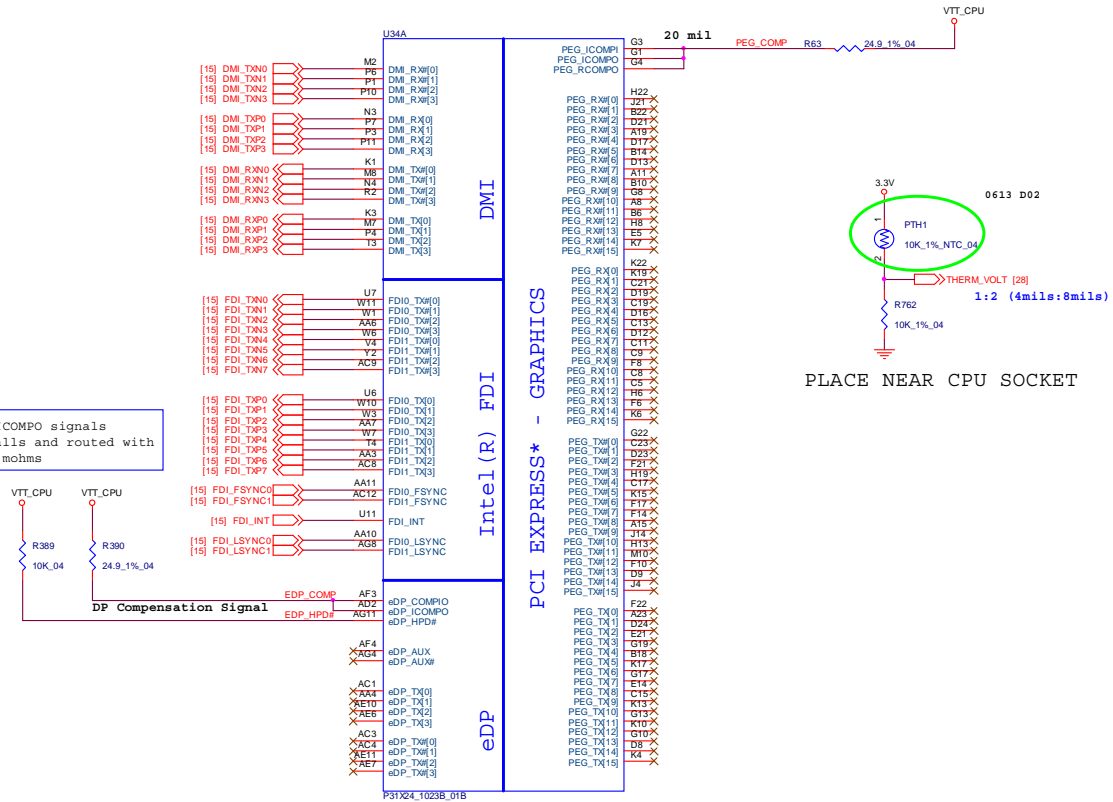
Sheet 1 of 44  
System Block  
Diagram



# Processor 1/7

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

CAD NOTE: DP\_COMPIO and ICOMPO signals should be shorted near balls and routed with - typical impedance < 25 mohms



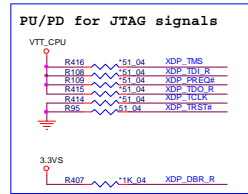
[3,6,11,13,14,15,17,18,19,20,22,23,26,28,32,34,35,36] 3.3V  
[3,5,18,19,20,35,36] VTT\_CPU

B.Schematic Diagrams

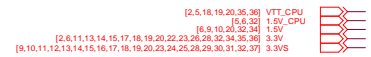
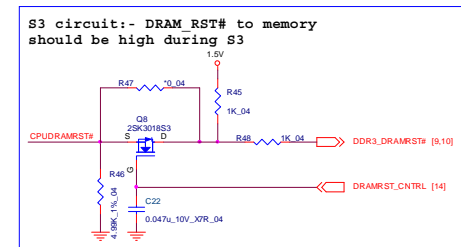
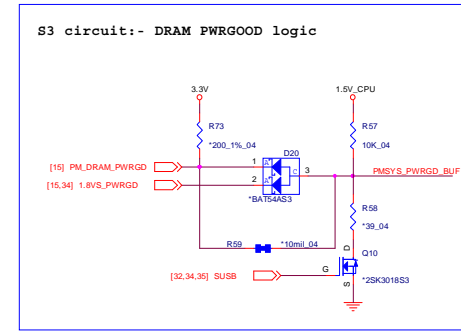
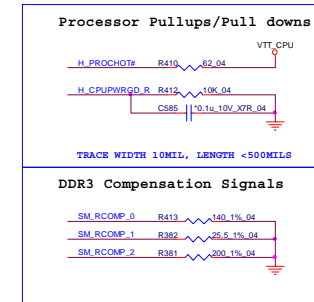
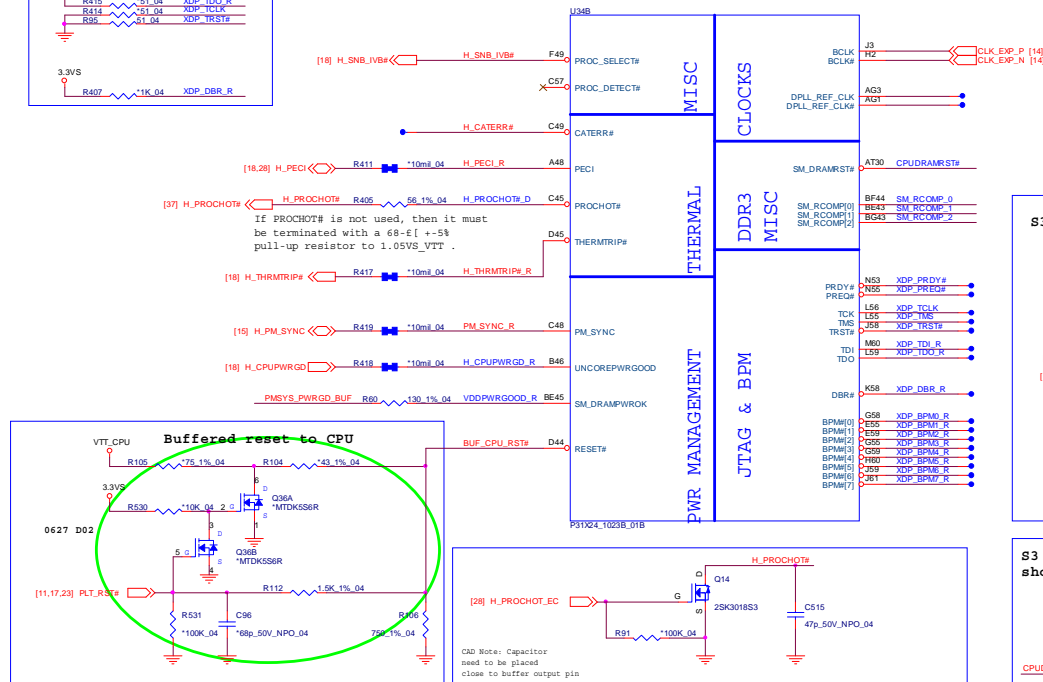
Sheet 2 of 44  
Processor 1/7

# Processor 2/7

Sheet 3 of 44  
Processor 2/7

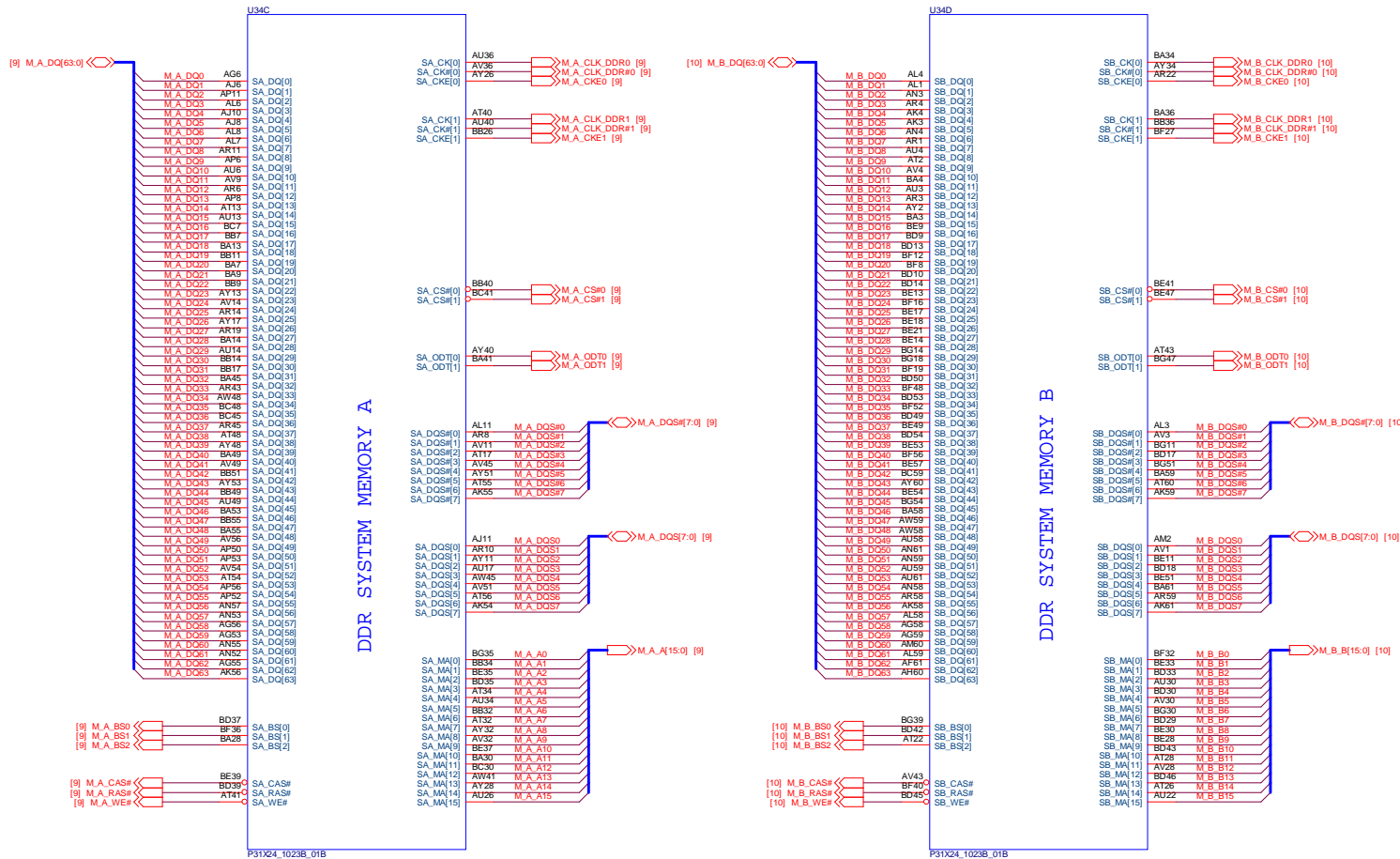


## Ivy/Sandy Bridge Processor 2/7 ( CLK, MISC, JTAG )



# Processor 3/7

## Ivy/Sandy Bridge Processor 3/7 ( DDR3 )



Sheet 4 of 44  
Processor 3/7

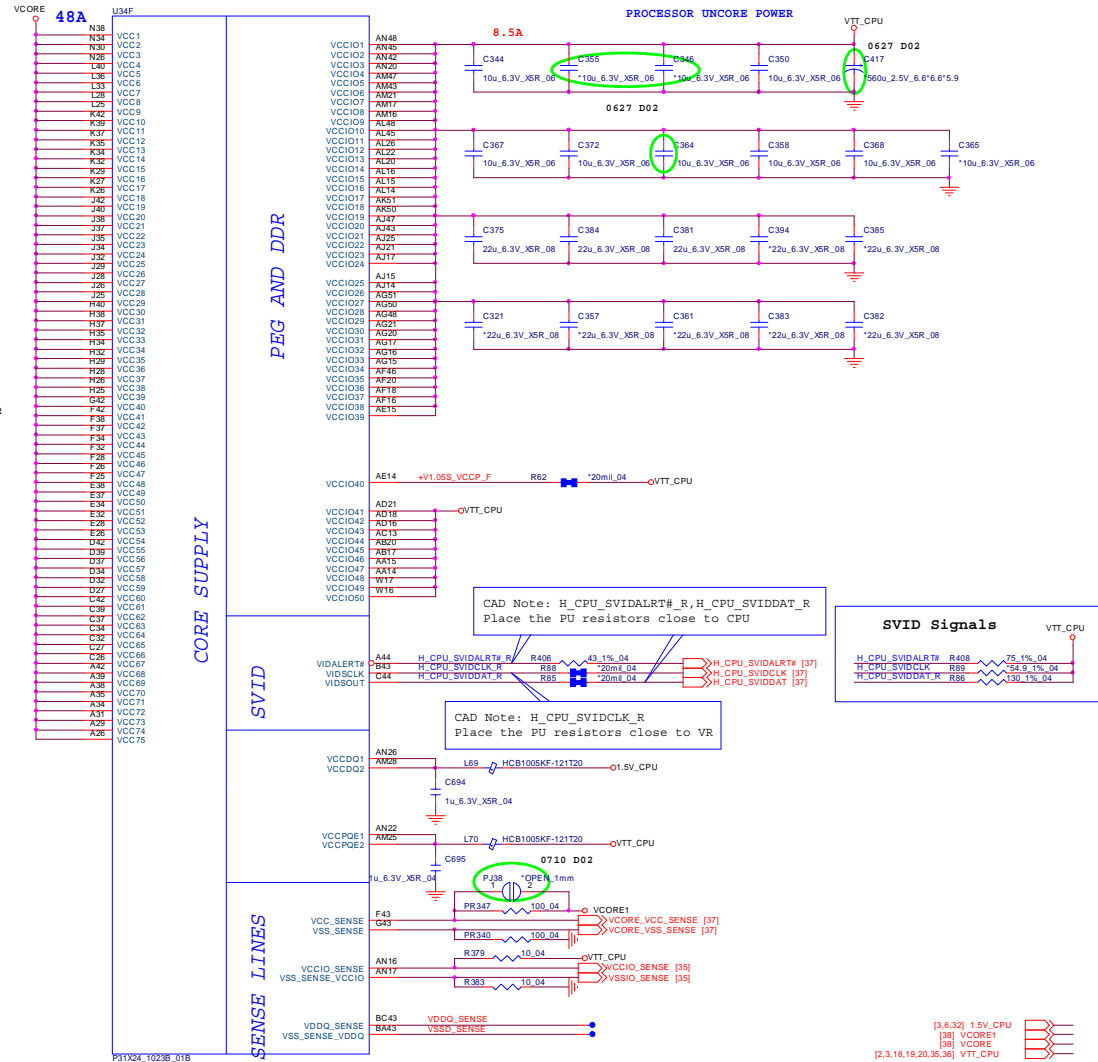
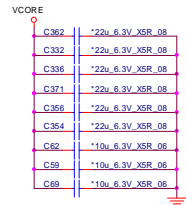
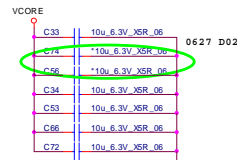
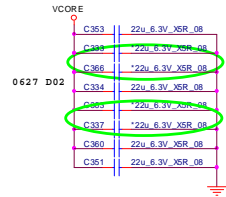
B.Schematic Diagrams

# Processor 4/7

## Ivy/Sandy Bridge Processor 4/7

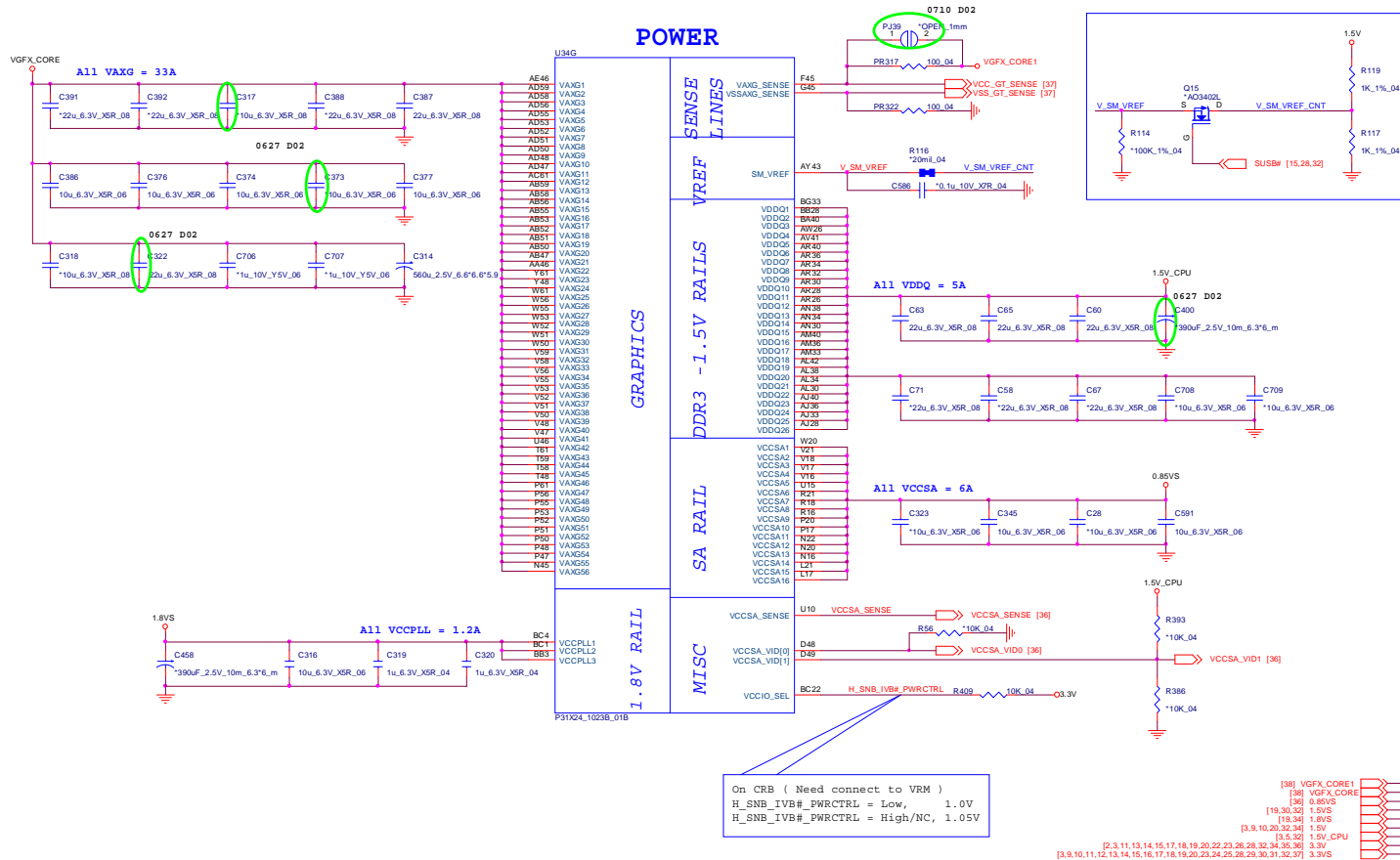
Sheet 5 of 44  
Processor 4/7

PROCESSOR CORE POWER  
ICCMAX Maximum Processor SV 48



# Processor 5/7

## Ivy/Sandy Bridge Processor 5/7 ( GRAPHICS POWER )



Sheet 6 of 44  
Processor 5/7

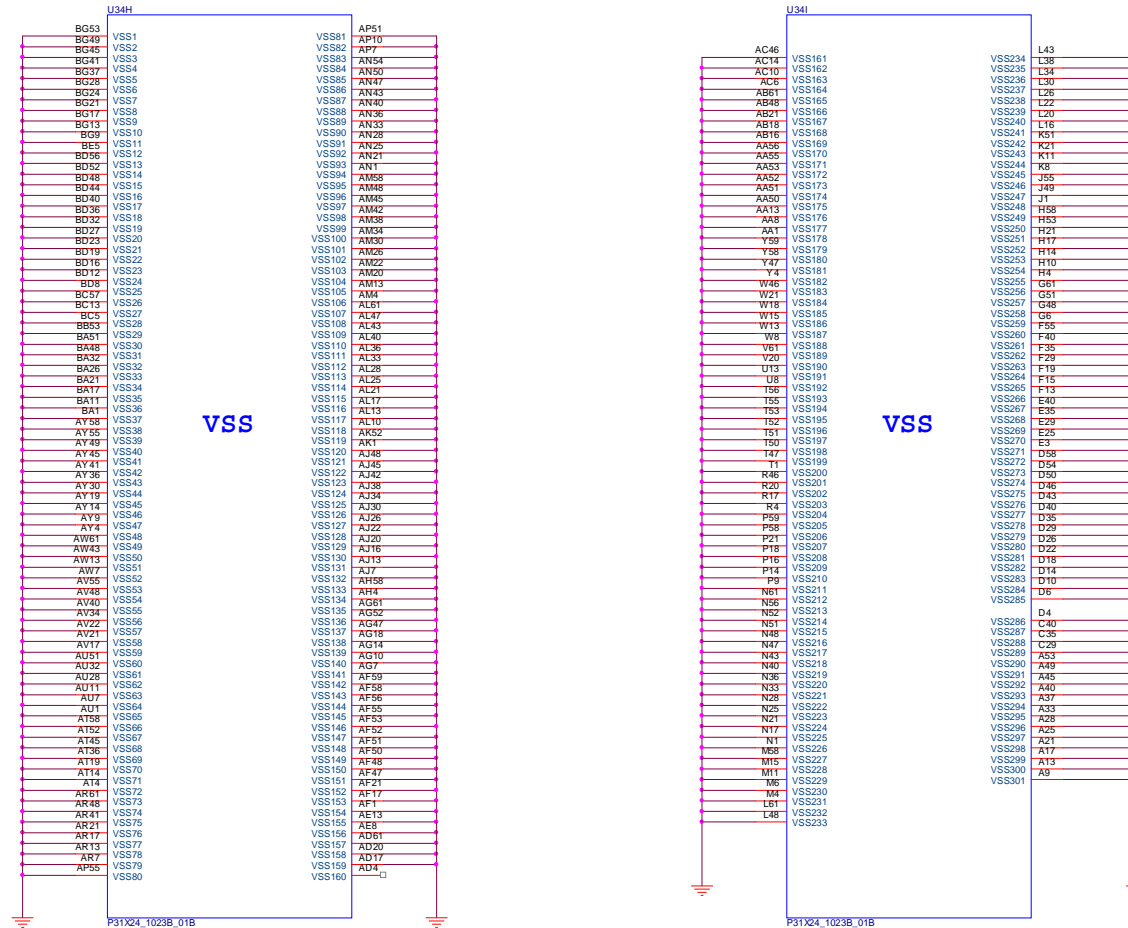


# Processor 6/7

## Ivy\Sandy Bridge Processor 6/7 ( GND )

B.Schematic Diagrams

Sheet 7 of 44  
Processor 6/7



# Processor 7/7

## Ivy/Sandy Bridge Processor 7/7 ( RESERVED )

**CFG Straps for Processor**

PEG Static Lane Reversal - CFG2 is for the 16x

CFG2	1: (Default) Normal Operation; Lane # definition matches socket pin map definition 0: Lane Reversed
------	--

Display Port Presence Strap

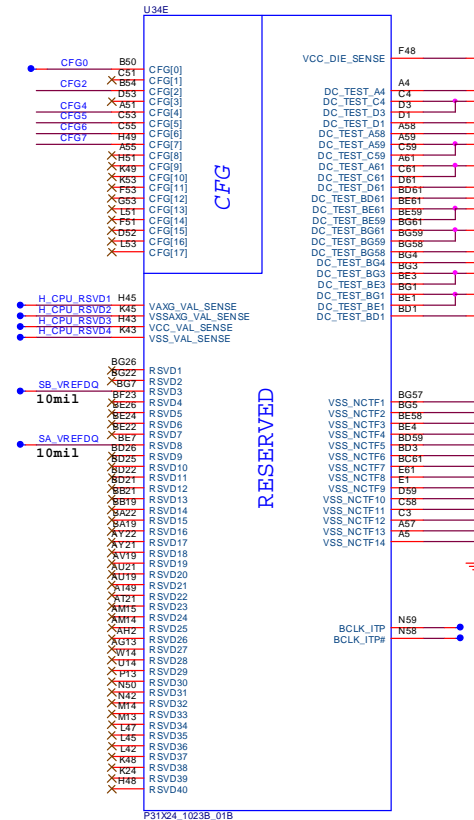
CFG4	1: (Default) Disabled; No Physical Display Port attached to Embedded Display Port 0: Enabled; An external Display Port device is connected to the Embedded Display Port
------	--

PCIe Port Bifurcation Straps

CFG [6 : 5]	11: (Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled
-------------	--

PEG DEFER TRAINING

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



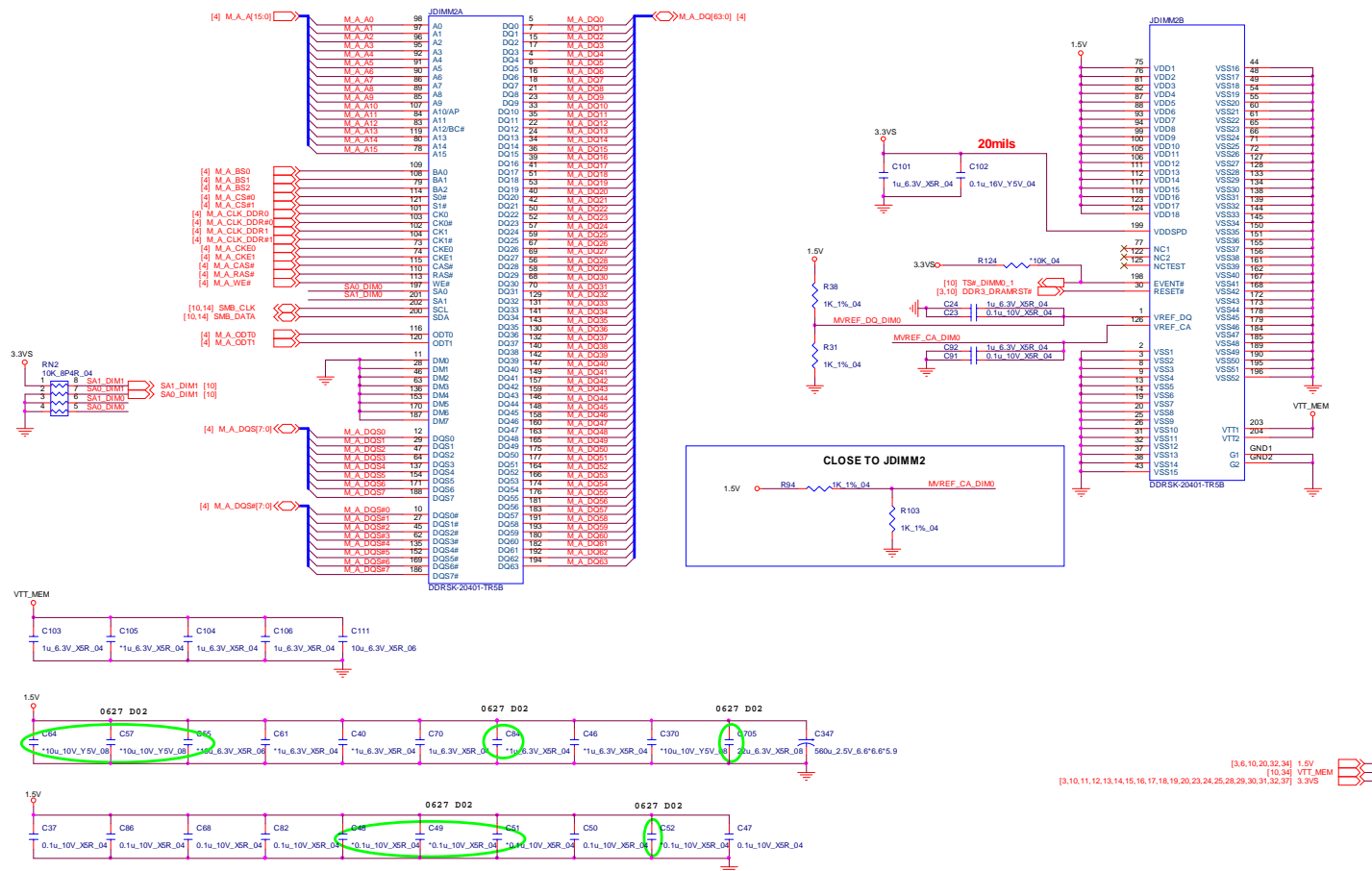
Sheet 8 of 44  
Processor 7/7

B.Schematic Diagrams

## DDR3 SO-DIMM\_0

Sheet 9 of 44  
DDR3 SO-DIMM\_0

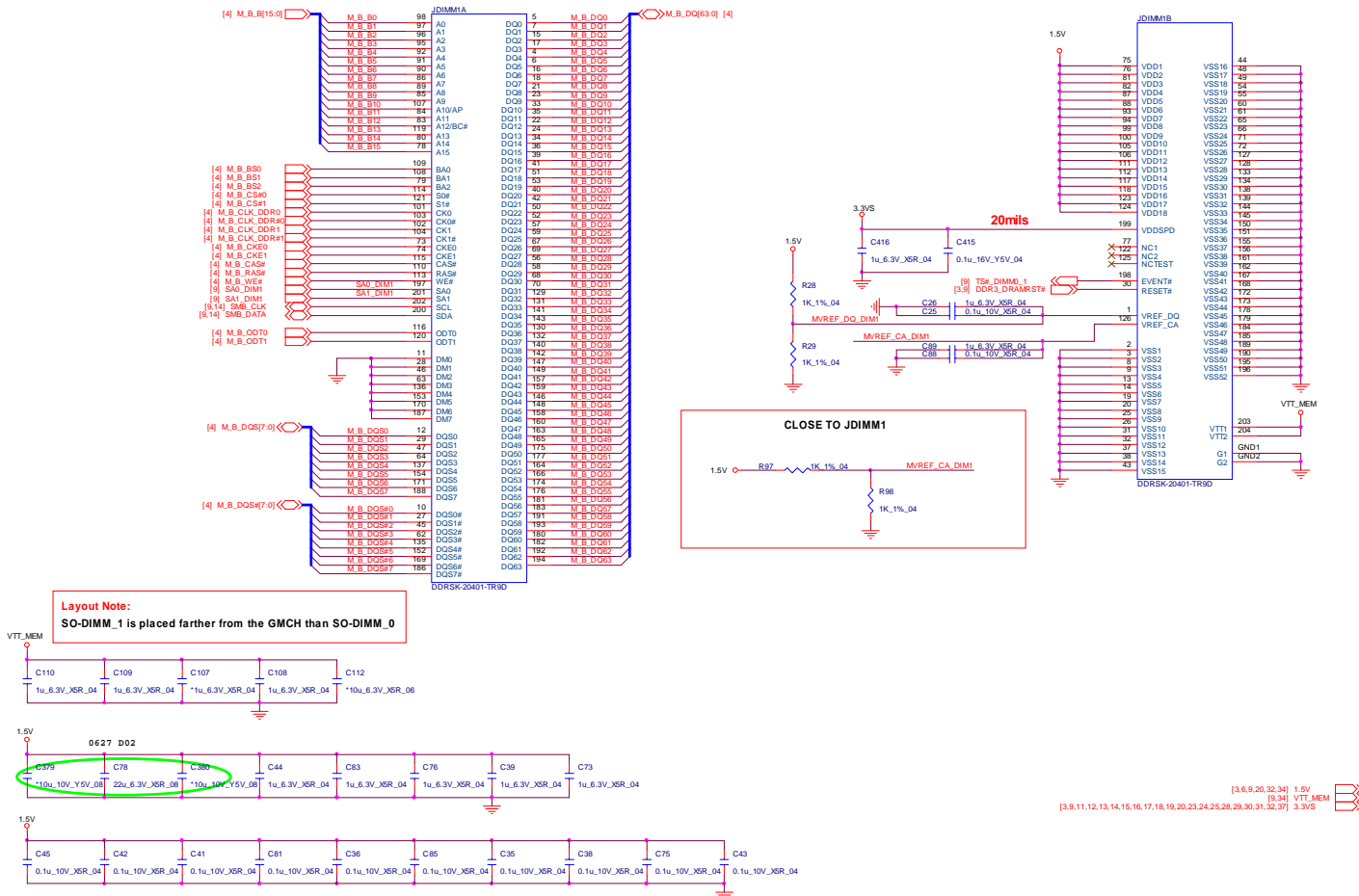
### SO-DIMM A CHANGE TO STANDARD



# DDR3 SO-DIMM\_1

## SO-DIMM B

CHANGE TO STANDARD

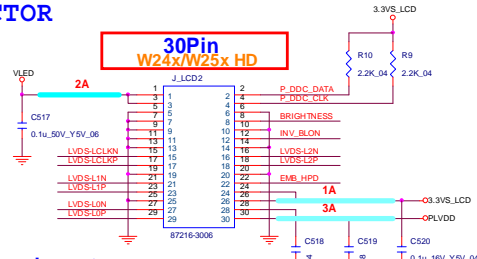


Sheet 10 of 44  
DDR3 SO-DIMM\_1

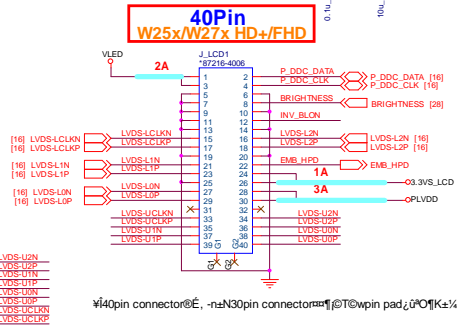
B.Schematic Diagrams

# LVDS, Inverter

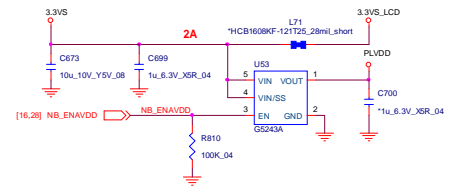
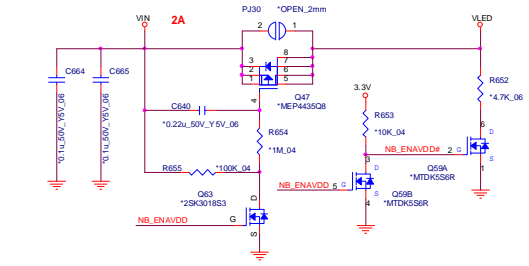
## PANEL CONNECTOR



30 pin & 40 pin co-layout for LED panel



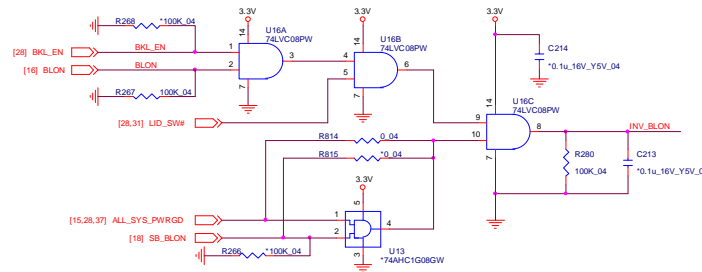
40pin connector @ E, -naN30pin connector @ T @ wpin pad @ 0.1K @ 1/4



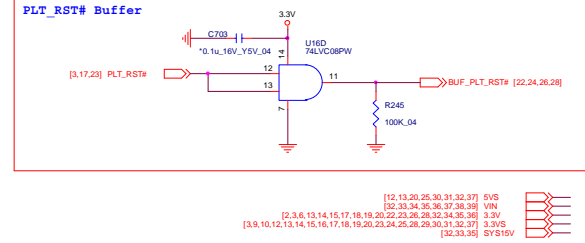
B.Schematic Diagrams

Sheet 11 of 44  
LVDS, Inverter

## INVERTER CONNECTOR

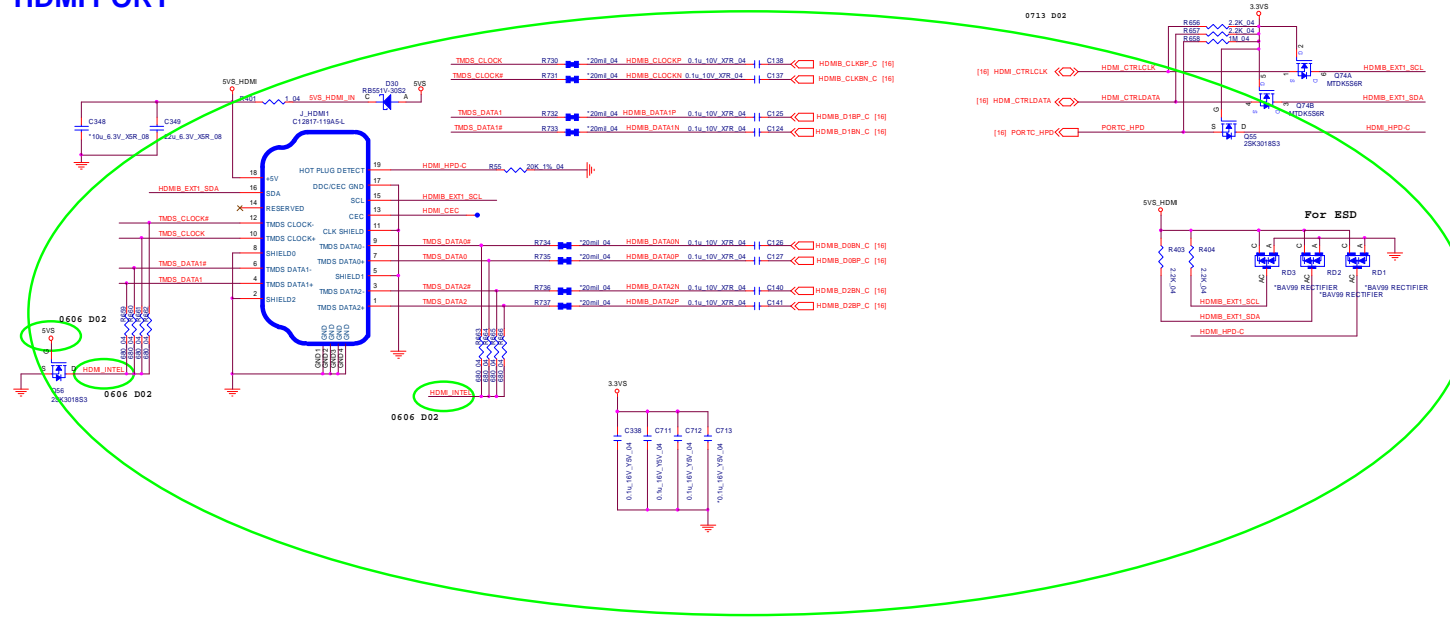


## PLT\_RST# Buffer



# HDMI, CRT

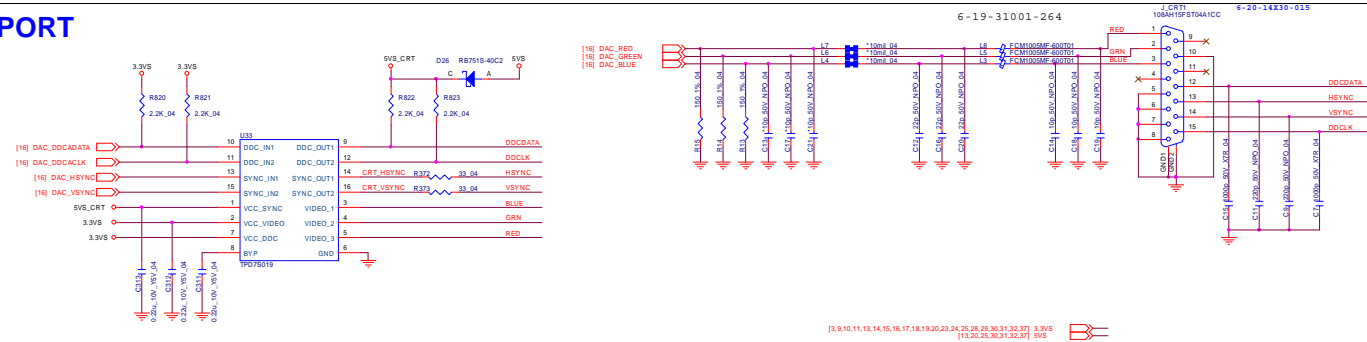
## HDMI PORT



Sheet 12 of 44  
HDMI, CRT

B.Schematic Diagrams

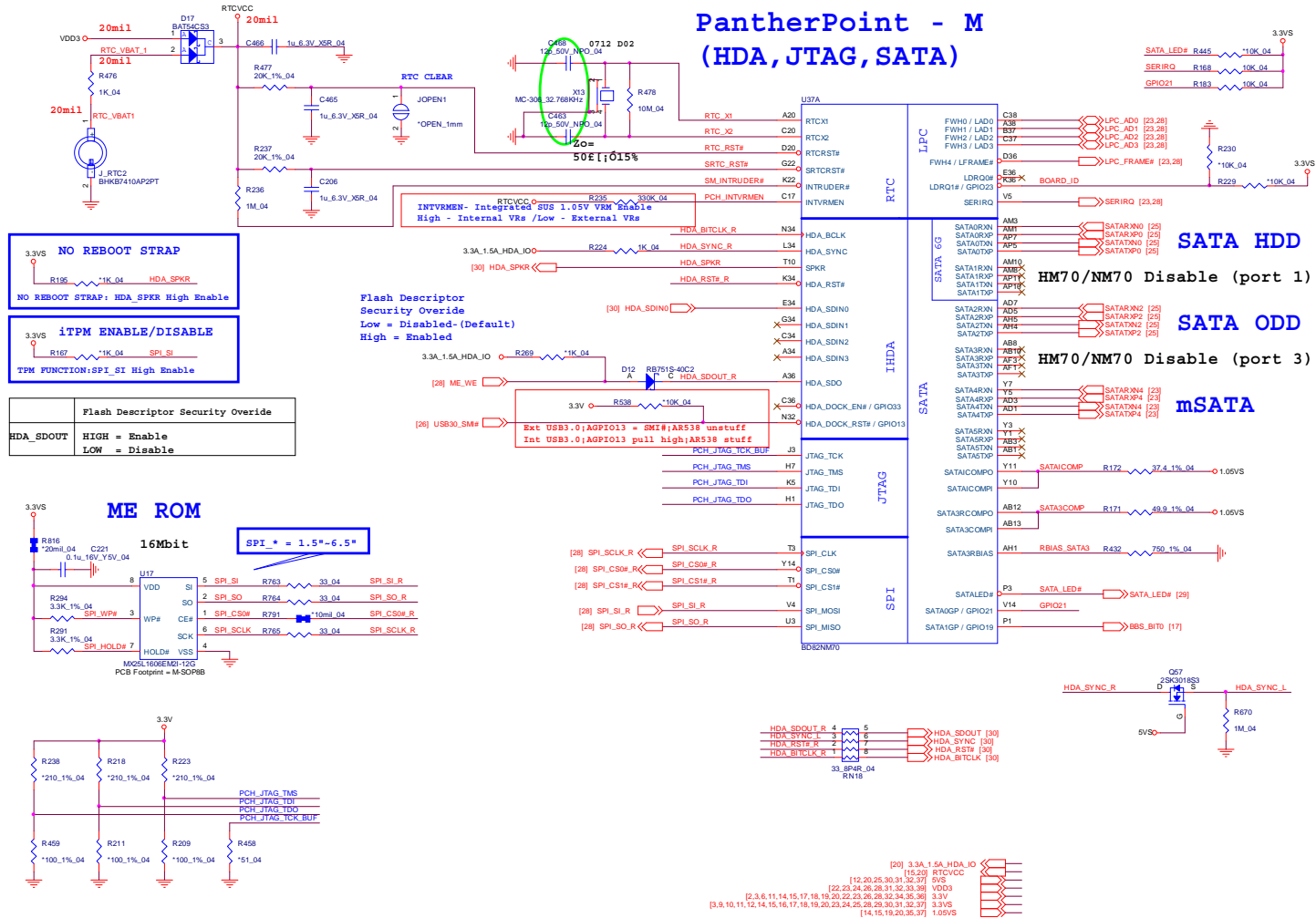
## CRT PORT



# PantherPoint - M 1/9

B.Schematic Diagrams

Sheet 13 of 44  
PantherPoint - M  
1/9



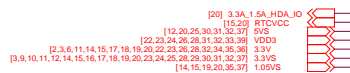
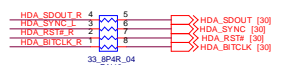
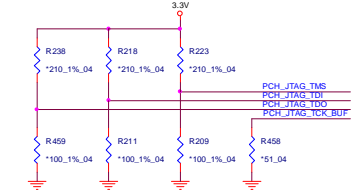
**NO REBOOT STRAP**

NO REBOOT STRAP: HDA\_SPKR High Enable

**ITPM ENABLE/DISABLE**

TPM FUNCTION: SPI\_SI High Enable

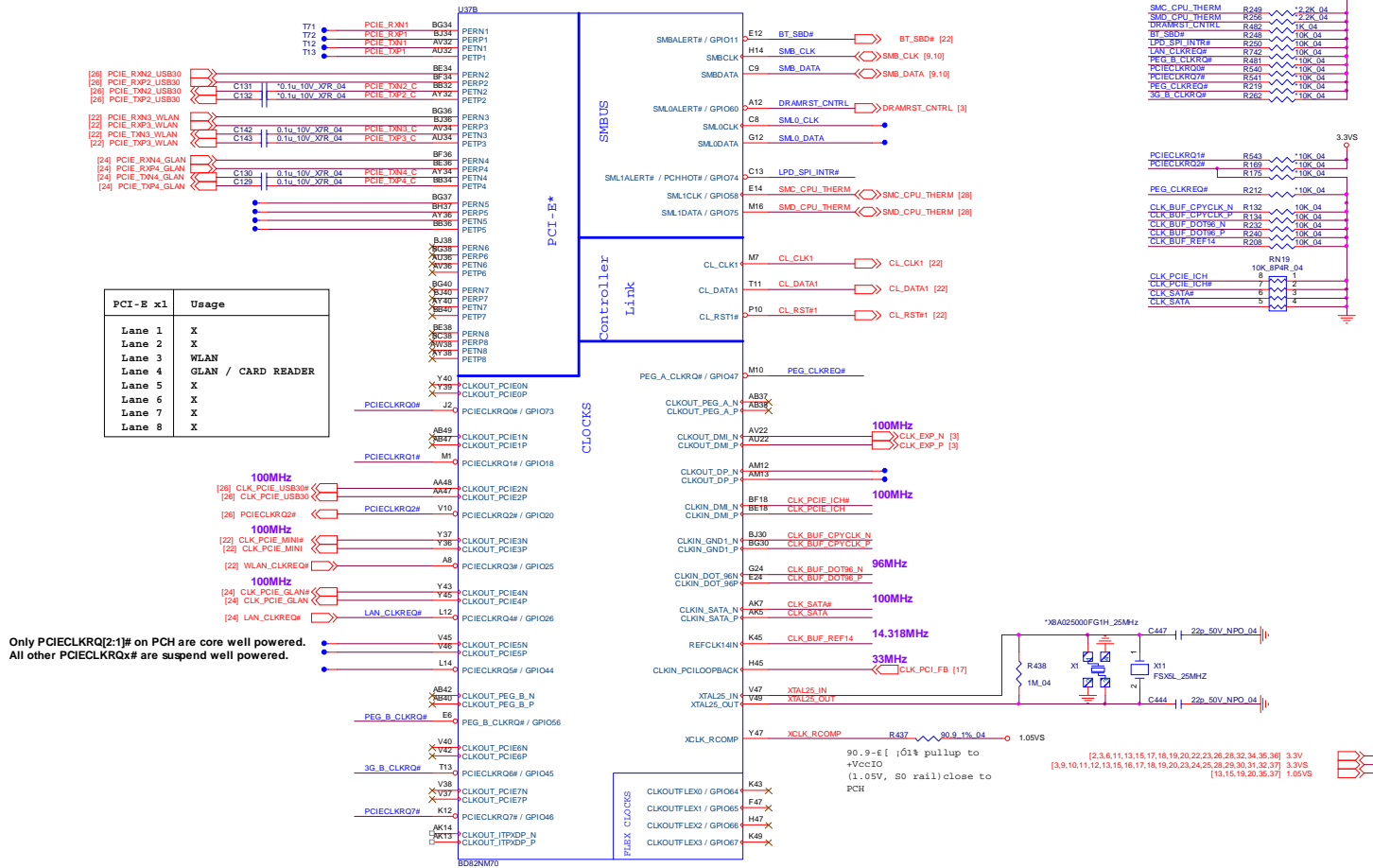
	Flash Descriptor Security Override
HDA_SDOUT	HIGH = Enable LOW = Disable





# PantherPoint - M 2/9

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



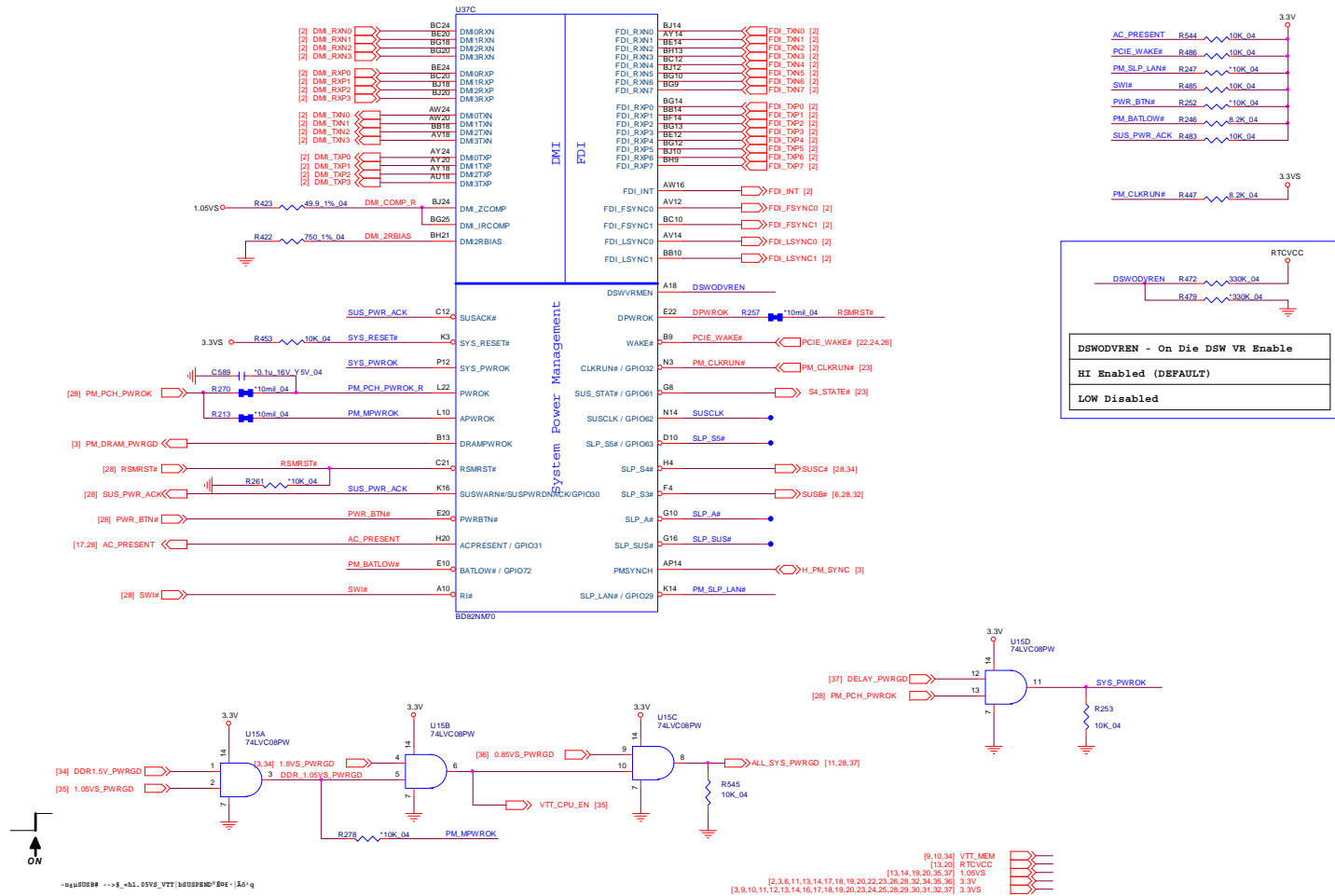
Sheet 14 of 44  
PantherPoint - M  
2/9

B.Schematic Diagrams

# PantherPoint - M 3/9

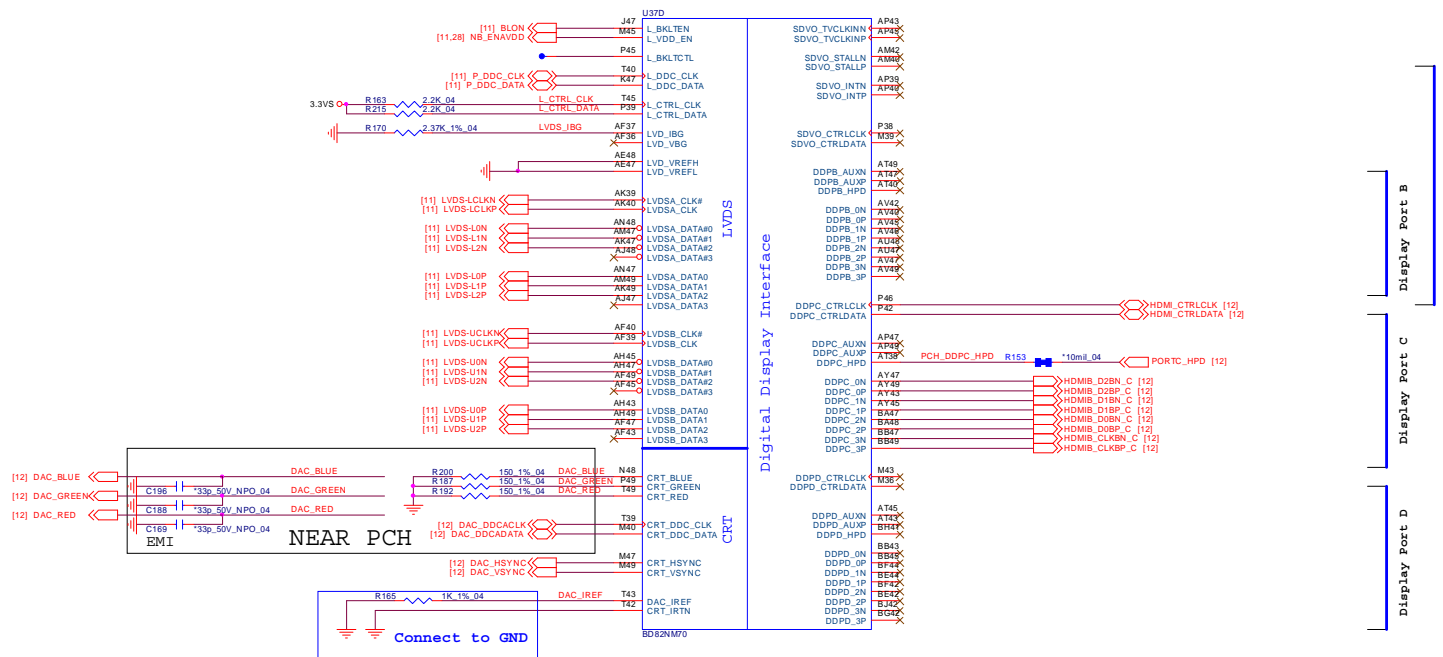
## PantherPoint -M (DMI, FDI, GPIO)

Sheet 15 of 44  
PantherPoint - M  
3/9



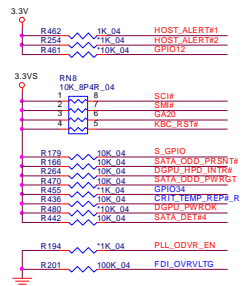
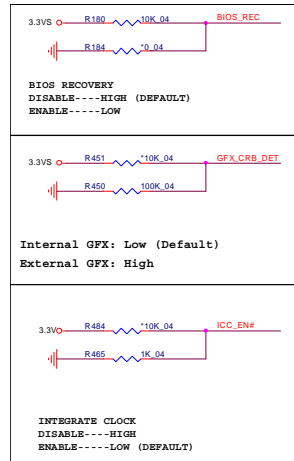
# PantherPoint - M 4/9

## PantherPoint - M (LVDS, DDI, CRT)

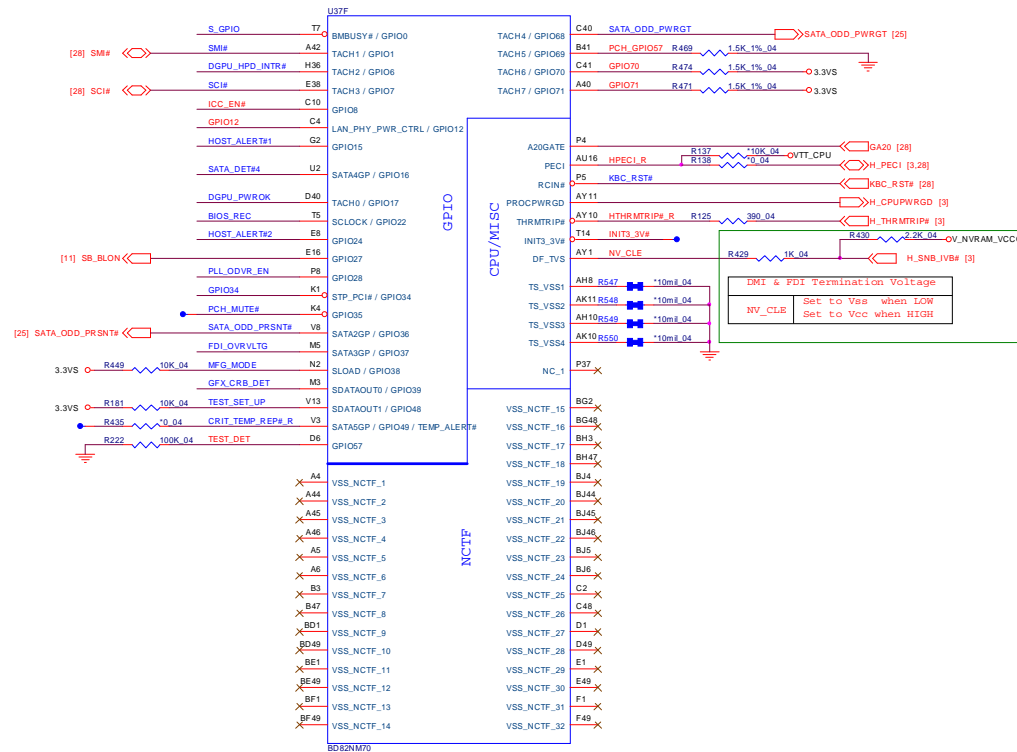




# PantherPoint - M 6/9



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



[2,3,6,11,13,14,15,17,19,20,22,23,26,28,32,34,35,36] VTT\_CPU  
 [3,8,10,11,12,13,14,15,16,17,19,20,23,24,25,26,28,29,30,31,32,37] 3.3V  
 [19] V\_NVRAM\_VCCO

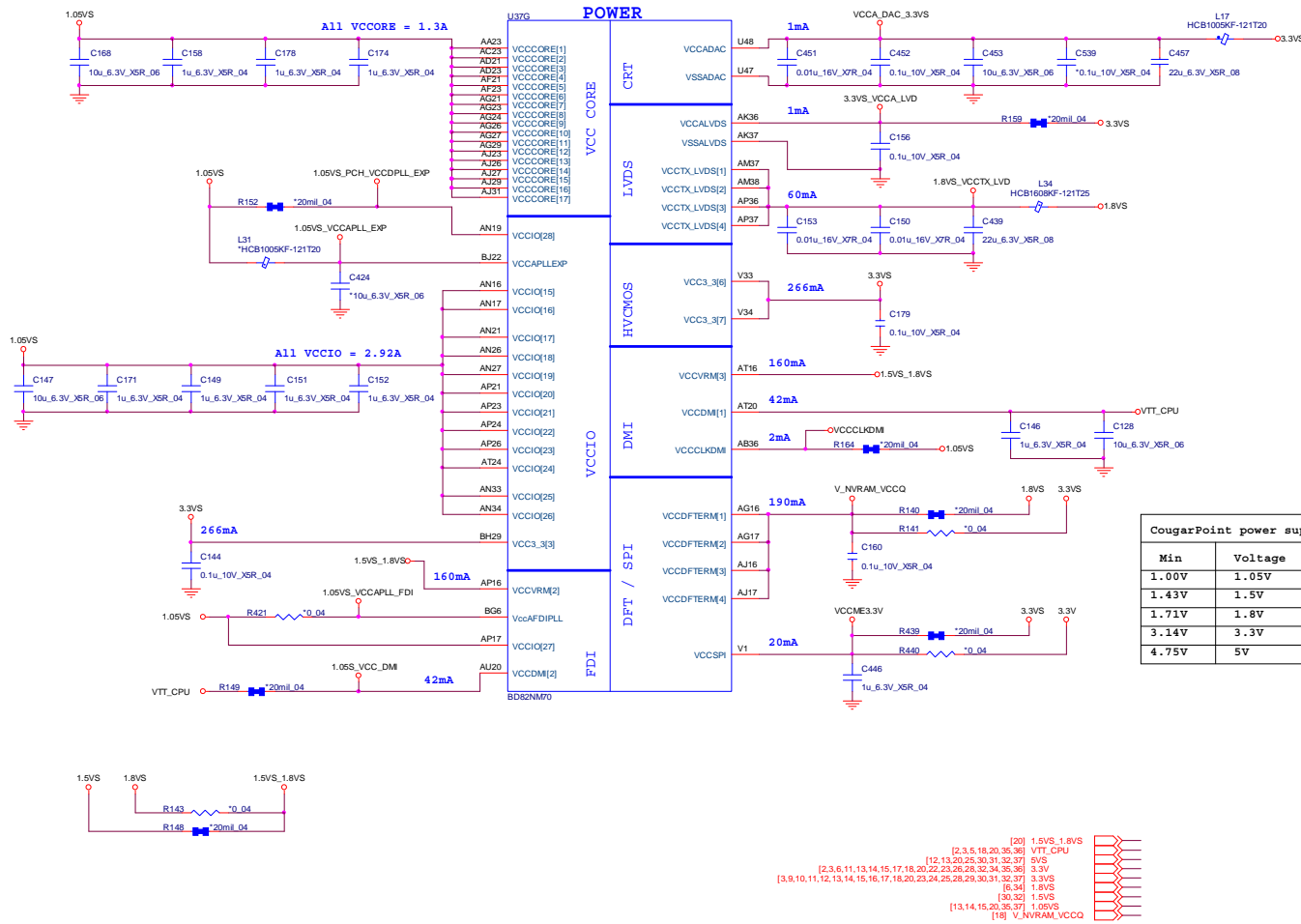
Sheet 18 of 44  
 PantherPoint - M  
 6/9

B.Schematic Diagrams

# Schematic Diagrams

## PantherPoint - M 7/9

### PantherPoint -M (POWER)



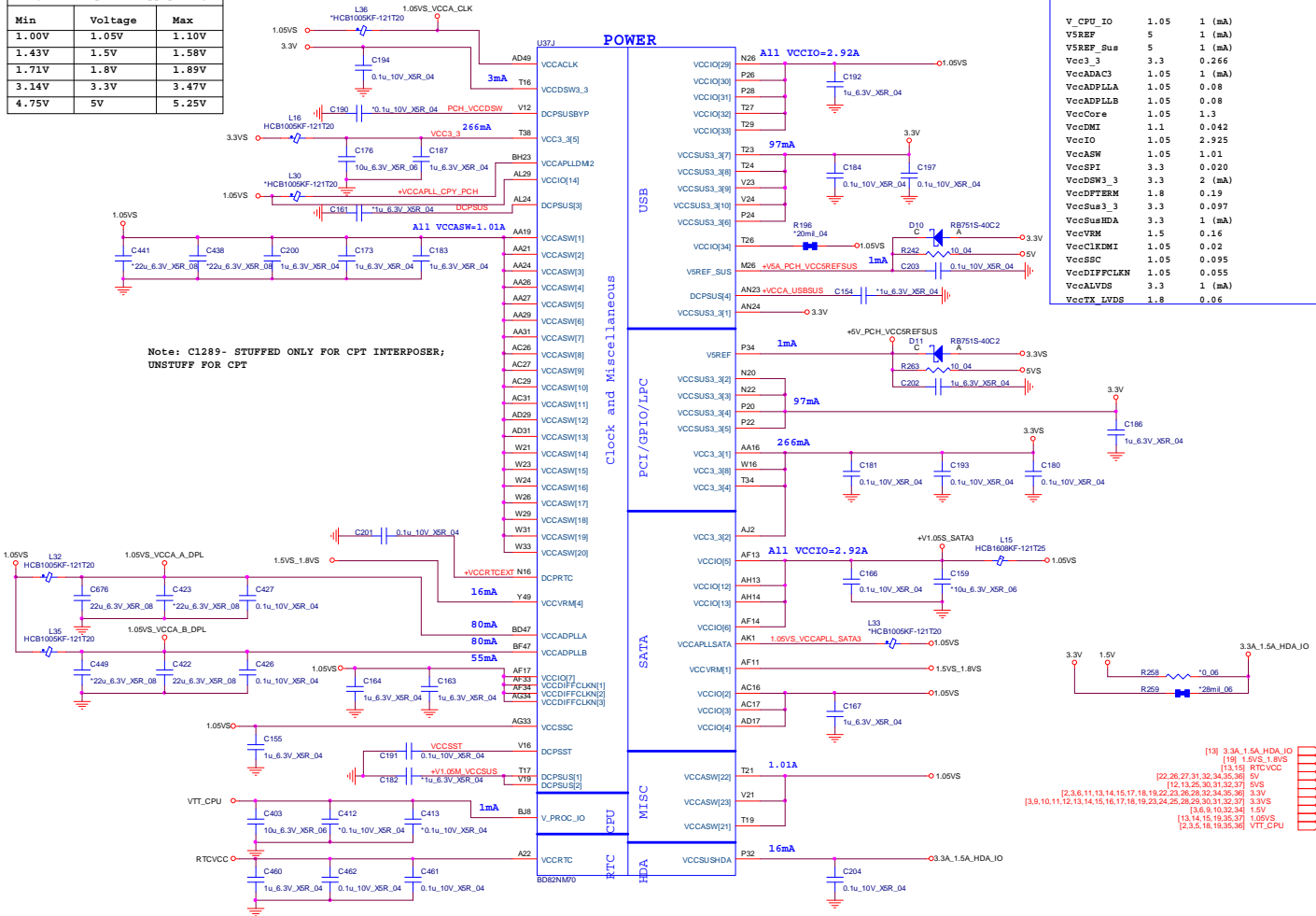
B.Schematic Diagrams

Sheet 19 of 44  
 PantherPoint - M  
 7/9

# PantherPoint - M 8/9

CougarPoint power supply range		
Min	Voltage	Max
1.00V	1.05V	1.10V
1.43V	1.5V	1.58V
1.71V	1.8V	1.89V
3.14V	3.3V	3.47V
4.75V	5V	5.25V

## PantherPoint - M (POWER)



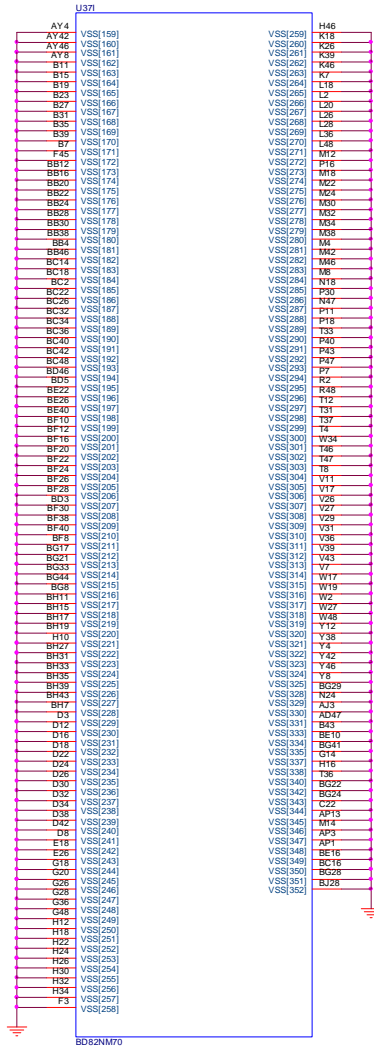
Sheet 20 of 44  
PantherPoint - M  
8/9

B.Schematic Diagrams

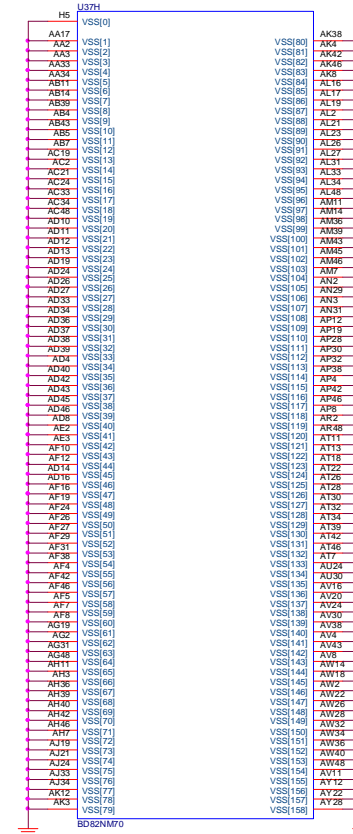


# PantherPoint - M 9/9

Sheet 21 of 44  
PantherPoint - M  
9/9

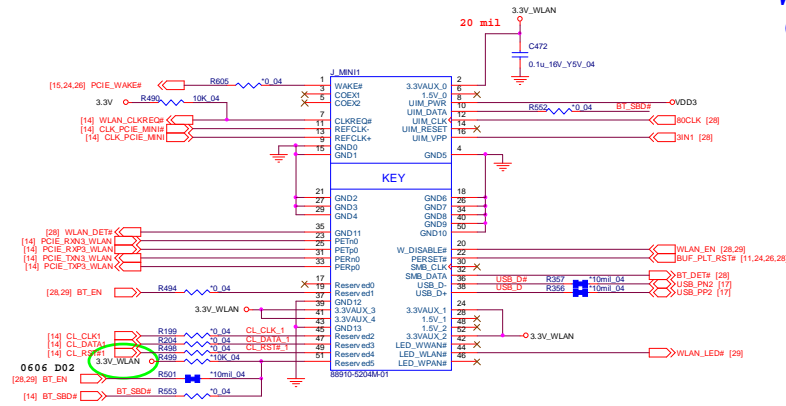


## PantherPoint -M (GND)

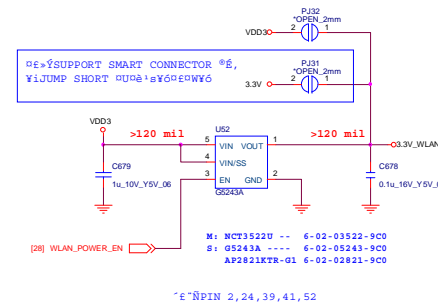


# WLAN, CCD

## MINI CARD WLAN



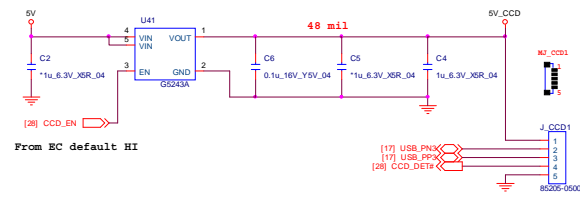
## WLAN POWER (FOR INTEL SMART CONNECTOR)



Sheet 22 of 44  
WLAN, CCD

B.Schematic Diagrams

## CCD



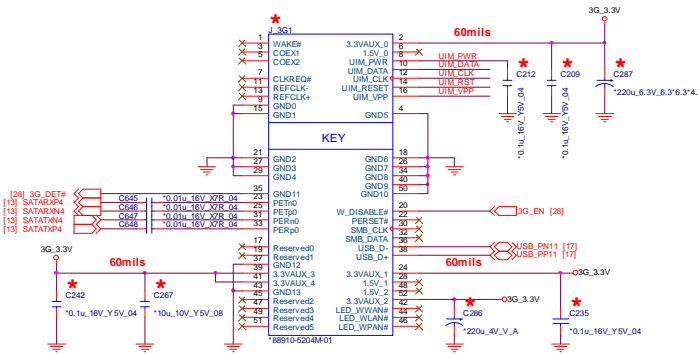
[2,3,6,11,13,14,15,17,18,19,20,23,26,28,32,34,35,36] 3.3V  
 [20,26,27,31,32,34,35,36] 5V  
 [13,23,24,26,28,31,32,33,39] VDD3

Schematic Diagrams

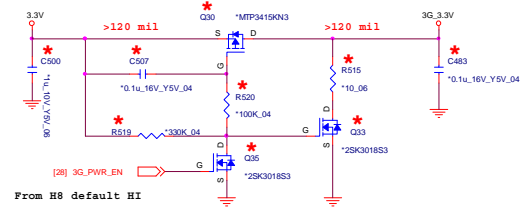
# 3G, TPM

## MINI CARD 3G (Port 6)

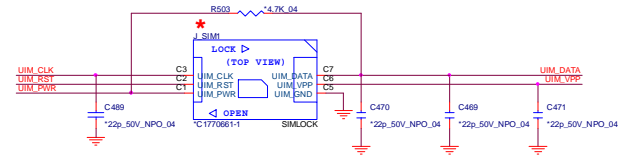
W/ 3G<sub>i</sub>G  
Y \* \*\* \* eY6-nDWF6



## 3G POWER



## SIM CONN

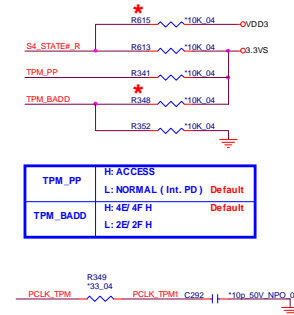
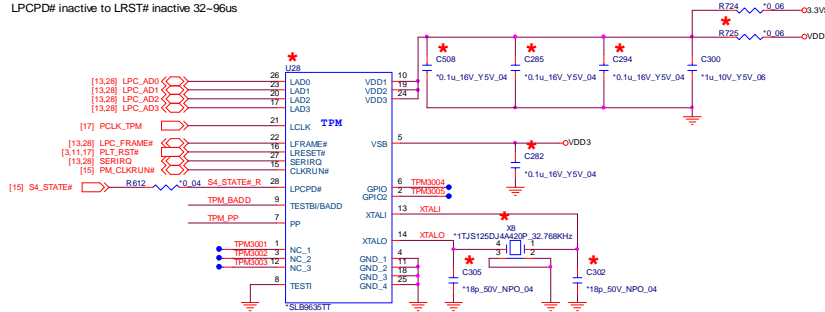


Sheet 23 of 44  
3G, TPM

## TPM 1.2

W/ TPM<sub>i</sub>G  
Y \* \*\* \* eY6-nDWF6 (AV) \$t;G  
PCLK\_TPM1GR214 (F17)

Asserted before entering S3  
LPC reset timing:  
LPCPD# inactive to LRST# inactive 32-96us



TPM_PP	H: ACCESS	
TPM_BADD	L: NORMAL (Int. PD)	Default
	H: 4E/ 4F H	Default
	L: 2E/ 2F H	

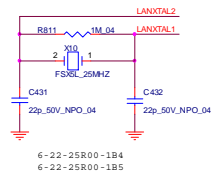
6-03-09635-0H3 Ver 1G3.17

[13,22,24,26,28,31,32,33,39] VDD3  
[2,3,6,11,13,14,15,17,18,19,20,22,26,28,30,34,35,36] 3.3V  
[3,9,10,11,12,13,14,15,16,17,18,19,20,24,25,26,28,29,30,31,32,37] 3.3VS

B.Schematic Diagrams

# Card Reader, LAN RTL8402

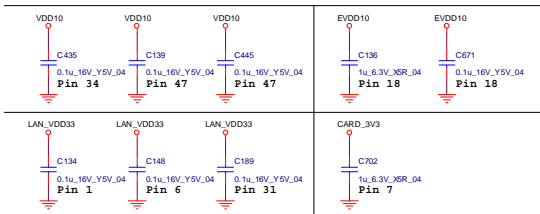
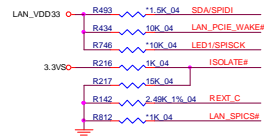
## RTL8402



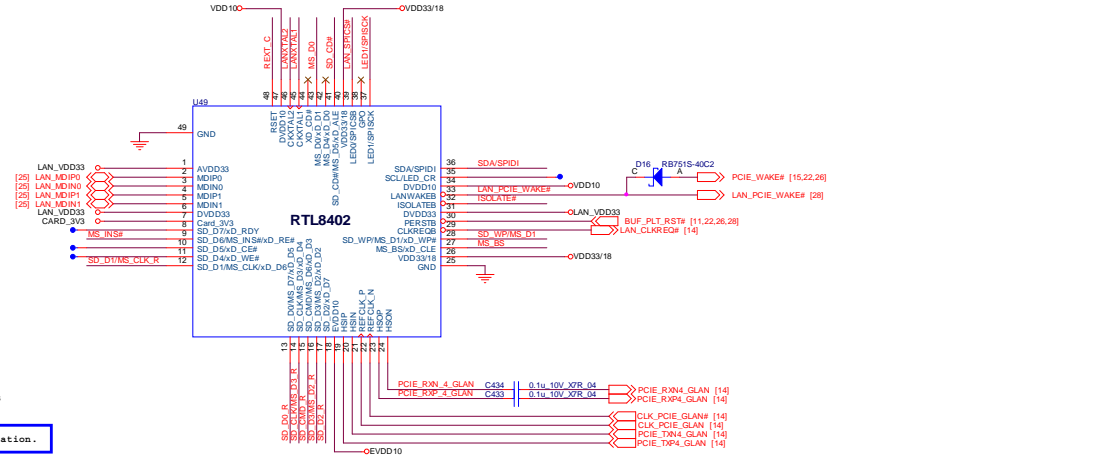
LAN VDD33 Rising Time;G  
1ms ~ 100ms



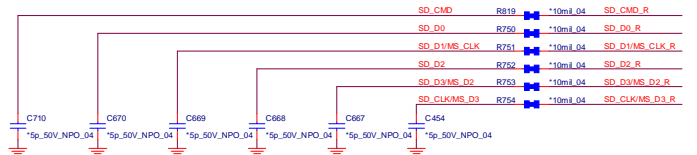
R749 must be removed for RTL8402 application.



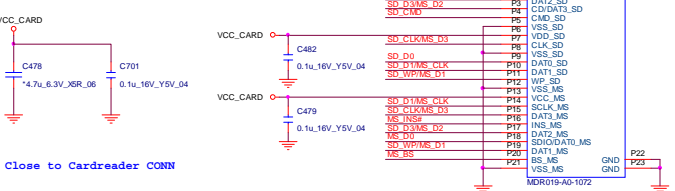
### SD UHS Mode Power Supply



### Close to RTL8402 for SDXC EMI



### 4 IN 1 SOCKET SD/MMC/MS/MS Pro



### Close to Cardreader CONN

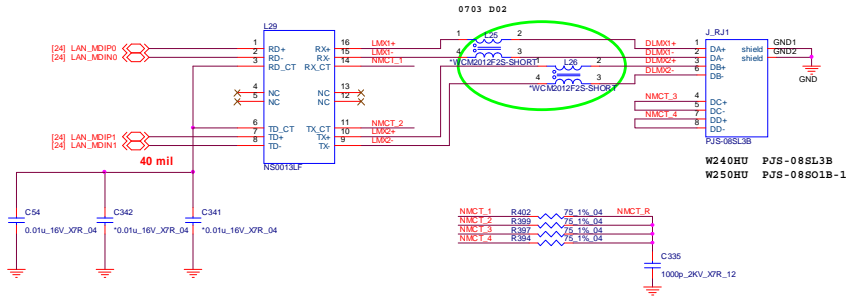


Sheet 24 of 44  
Card Reader, LAN  
RTL8402

B.Schematic Diagrams

# Transformer, SATA HDD, ODD

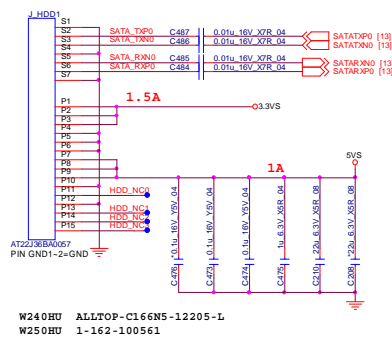
## 10/100 LAN Transformer



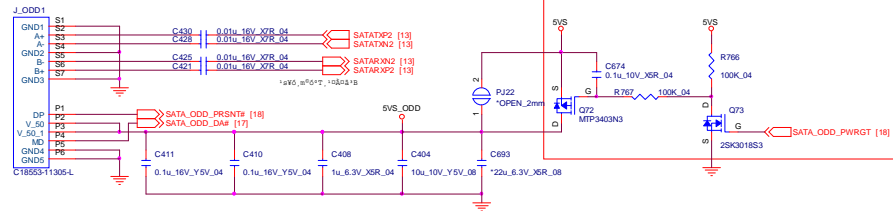
Sheet 25 of 44  
Transformer, SATA  
HDD, ODD

B.Schematic Diagrams

## SATA HDD

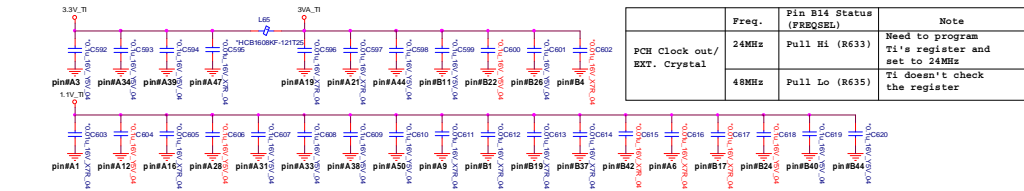


## SATA ODD

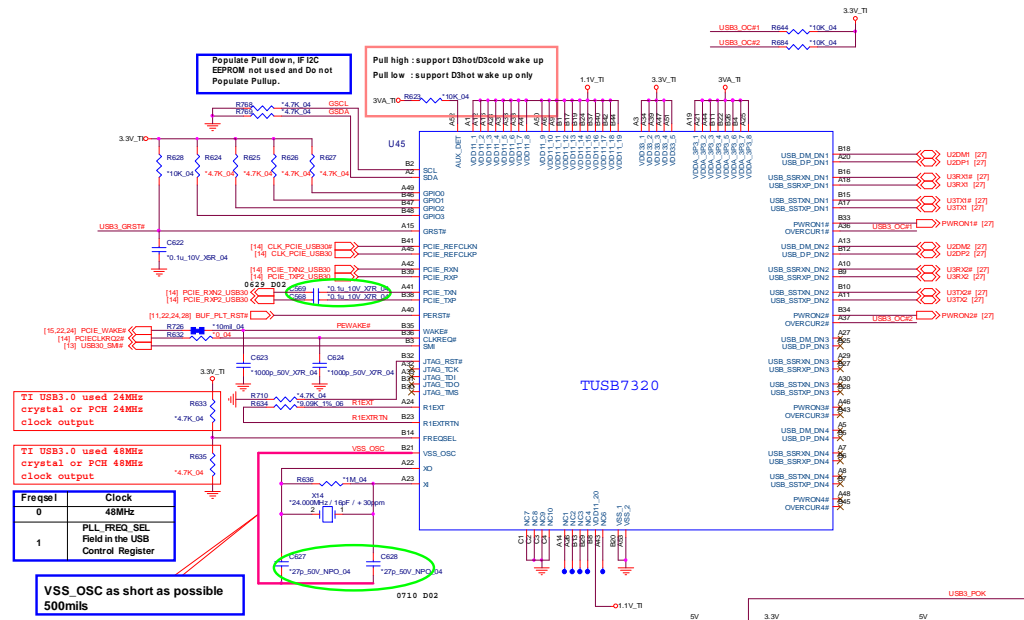


[3,9,10,11,12,13,14,15,16,17,18,19,20,23,24,28,29,30,31,32,37] 3.3VS  
[12,13,20,30,31,32,37] 5VS

# USB 3.0 TI TUSB7320



	Freq.	Pin B14 Status (FRBQSEL)	Note
PCH Clock out/ EXT. Crystal	24MHz	Pull Hi (R633)	Need to program TI's register and set to 24MHz
	48MHz	Pull Lo (R635)	TI doesn't check the register



Populate Pull down, if I2C EEPROM not used and Do not Populate Pullup.

Pull high : support D3hot/D3cold wake up  
Pull low : support D3hot wake up only

TI USB3.0 used 24MHz crystal or PCH 24MHz clock output

TI USB3.0 used 48MHz crystal or PCH 48MHz clock output

Freqsel	Clock
0	48MHz
1	PLL_FREQ_SEL Field in the USB Control Register

VSS\_OSC as short as possible 500mils

Internal Chip Trace Length Mismatch

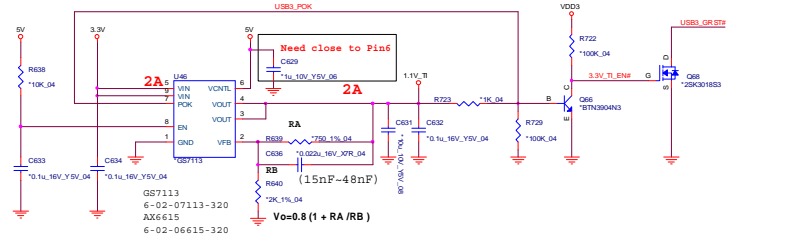
Ball no	NetName	Bondwire Length(m)	Difference (m)
A41	PCIEX_RXN2_USB30	118	28
B38	PCIEX_RXP2_USB30	89	28
A42	PCIEX_TXN2_USB30	112	27
B39	PCIEX_TXP2_USB30	85	27
B41	CLK_PCIE_USB30#	87	19
A45	CLK_PCIE_USB30	106	19

Internal Chip Trace Length Mismatch

Ball no	NetName	Bondwire Length(m)	Difference (m)
B15	USTX1#	96	20
A17	USTX1	116	20
A16	USRX1#	91	20
B18	USD8T1	83	22
A20	USD2P1	105	22
B10	USTX2#	73	31
A11	USTX2	104	31
A10	USRX2#	94	27
B9	USRX2	67	27
A13	USD2M2	127	34
B12	USD2P2	93	34

Sheet 26 of 44  
USB 3.0 TI  
TUSB7320

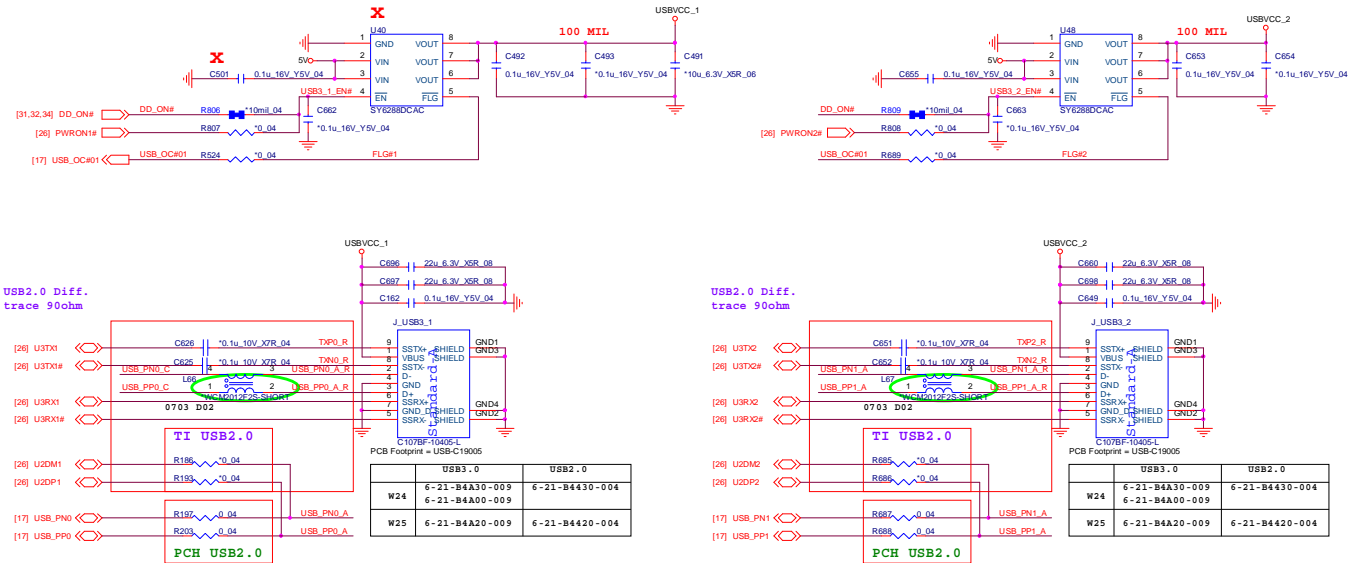
B.Schematic Diagrams



2,3,6,11,13,14,15,17,18,19,20,22,23,28,32,34,36,38, 3.3V  
(10,22,27,31,32,34,36,38, 0V  
(13,22,23,24,28,31,32,33,38) VDD3

# USB 3.0/USB 2.0/USB Charger

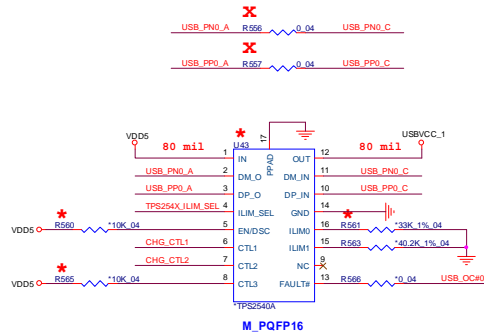
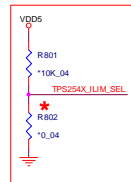
## USB 3.0/USB2.0



Sheet 27 of 44  
USB 3.0/USB 2.0/  
USB Charger

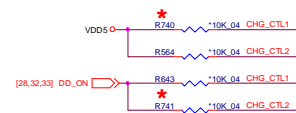
## WITH USB CHARGER

ILIM\_SEL (FOR TP82543/TP82540A)  
ILIM\_SEL=HI, FOR TP82543  
ILIM\_SEL=LOW, FOR TP82540A



## W/ USB CHARGER;G

Y \* \*\*aY6-10WY6;AY}t;G  
R770 (P28);B  
PQ65;BPR225;BPC221;BPR227 (P32)  
PQ73 (P33)  
Y \* \*\*aY60WY6;AY}t;G  
U40;BC501 (P27)  
R771 (P28)



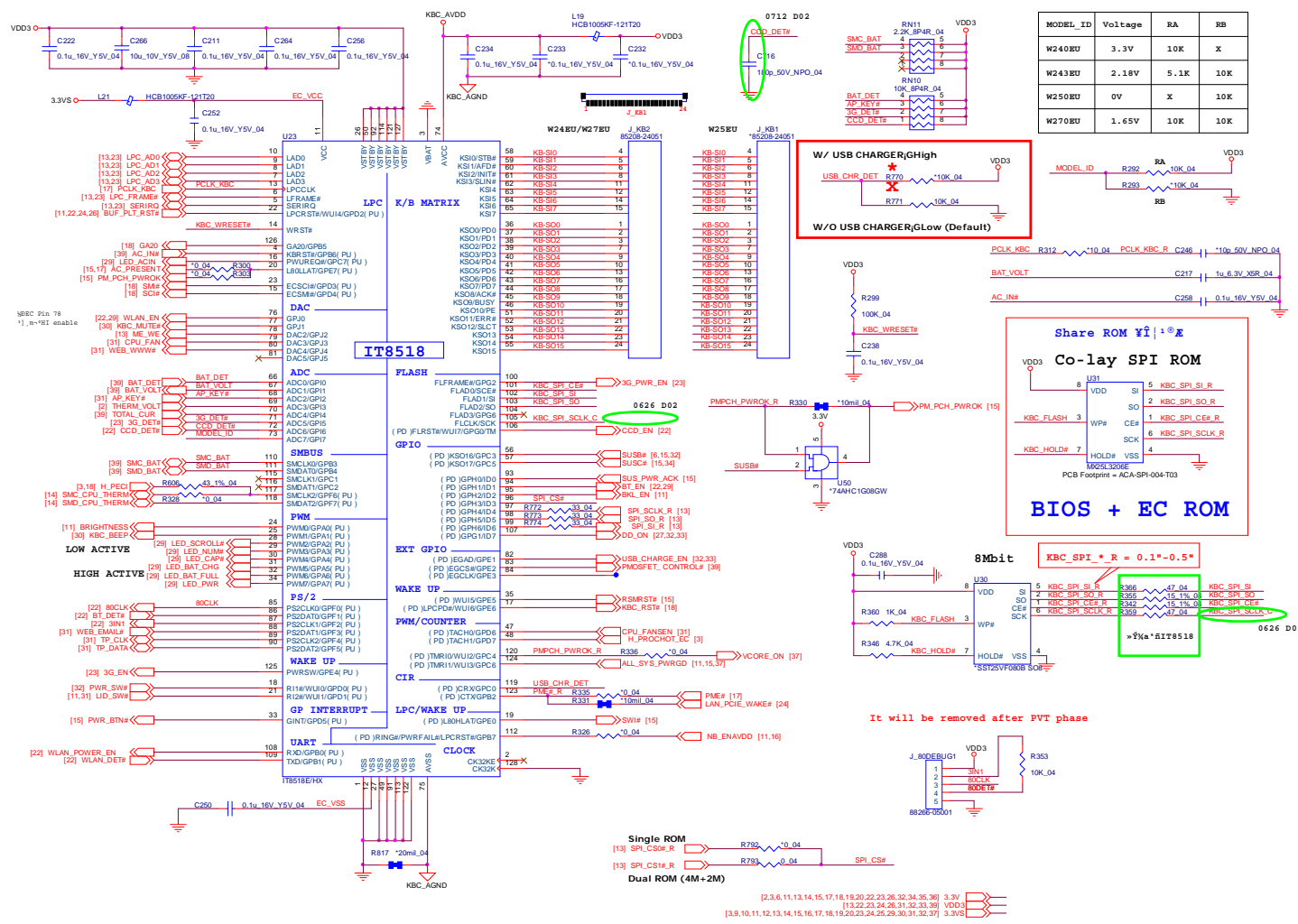
CTL1	CTL2	CTL3:	0	0	0	Out discharge, power switch Off
CTL1	CTL2	CTL3:	0	x	1	Dedicated charging port, auto-detect
CTL1	CTL2	CTL3:	1	0	1	Dedicated charging port, Divider Mode only
CTL1	CTL2	CTL3:	1	1	1	Charging downstream port, BC1.2.

[20,22,26,31,32,34,35,36] VDD5 5V

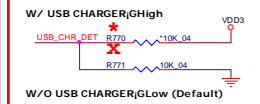


# KBC-ITE IT8518

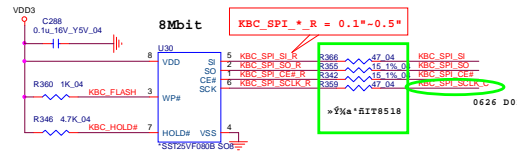
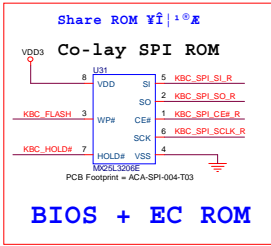
B.Schematic Diagrams



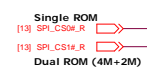
MODEL_ID	Voltage	RA	RB
W240BU	3.3V	10K	X
W243BU	2.16V	5.1K	10K
W250BU	0V	X	10K
W270BU	1.65V	10K	10K



Sheet 28 of 44  
KBC-ITE IT8518



It will be removed after PVT phase

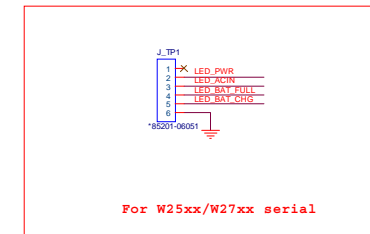
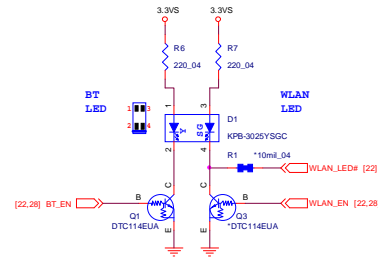
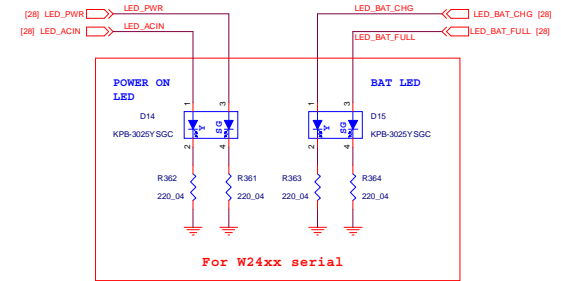
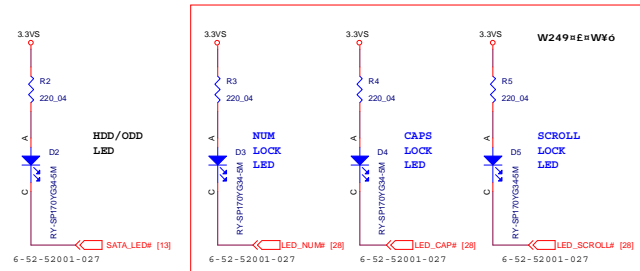


[2,3,6,11,13,14,15,17,18,19,20,22,23,26,32,34,35,36] 3.3V  
 [13,22,23,24,26,31,32,33,39] VDD3  
 [3,9,10,11,12,13,14,15,16,17,18,19,20,23,24,26,29,30,31,32,37] 3.3V

# Schematic Diagrams

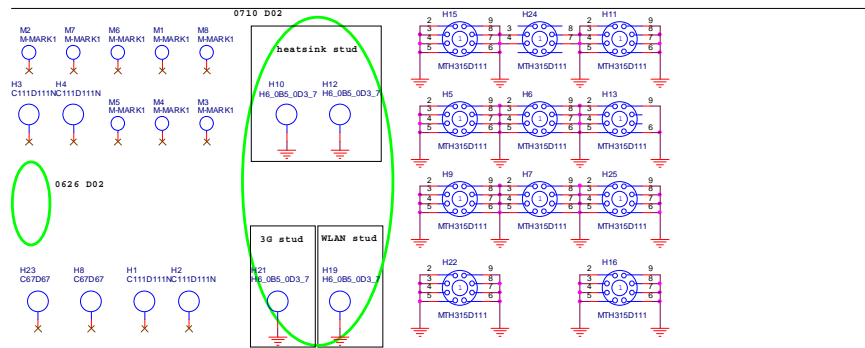
## LED

### LED



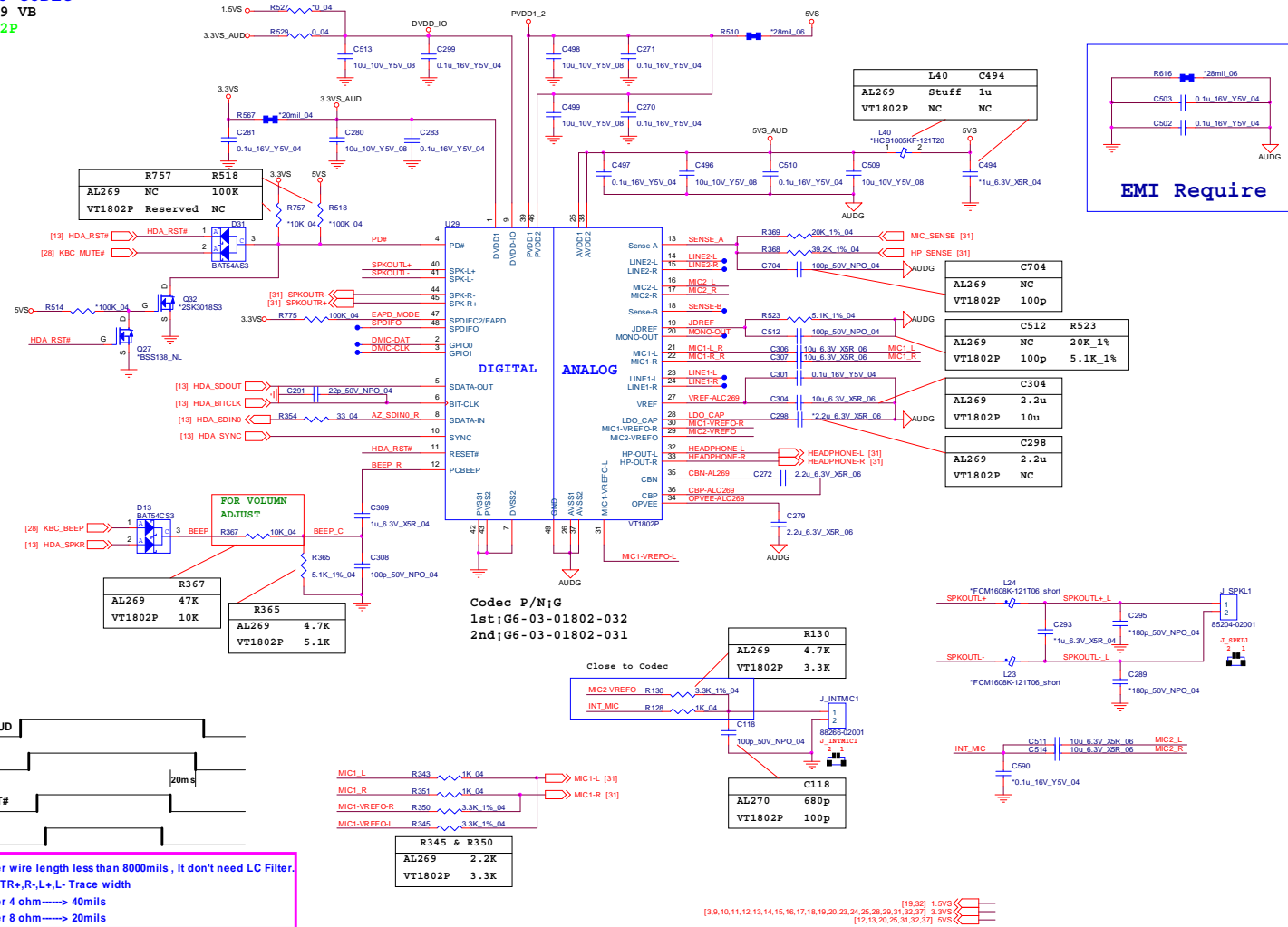
[3,9,10,11,12,13,14,15,16,17,18,19,20,23,24,25,26,30,31,32,37] 3.3VS

Sheet 29 of 44  
LED



# Audio Codec VT1802P/ALC269

AUDIO CODEC  
ALC269 VB  
VT1802P

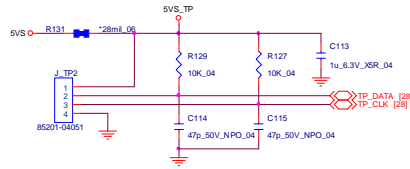


Sheet 30 of 44  
Audio Codec  
VT1802P/ALC269

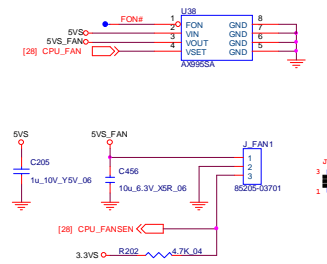
B.Schematic Diagrams

# Fan, TP, Multi-Conn

CLICK B'd CONN

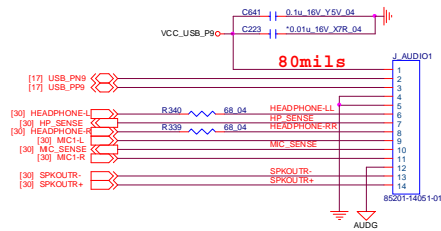
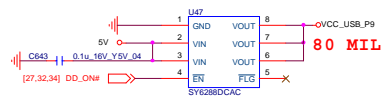


FAN CONTROL

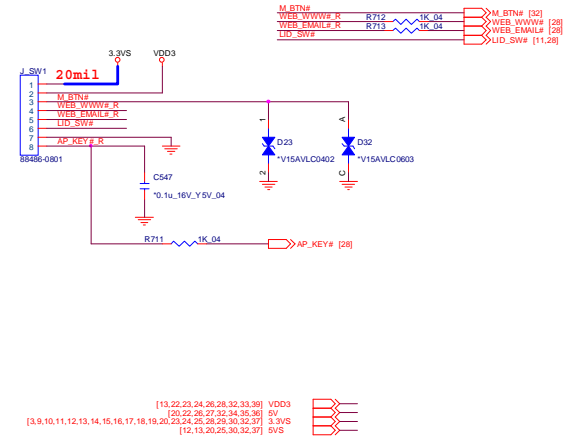


Sheet 31 of 44  
Fan, TP, Multi-Conn

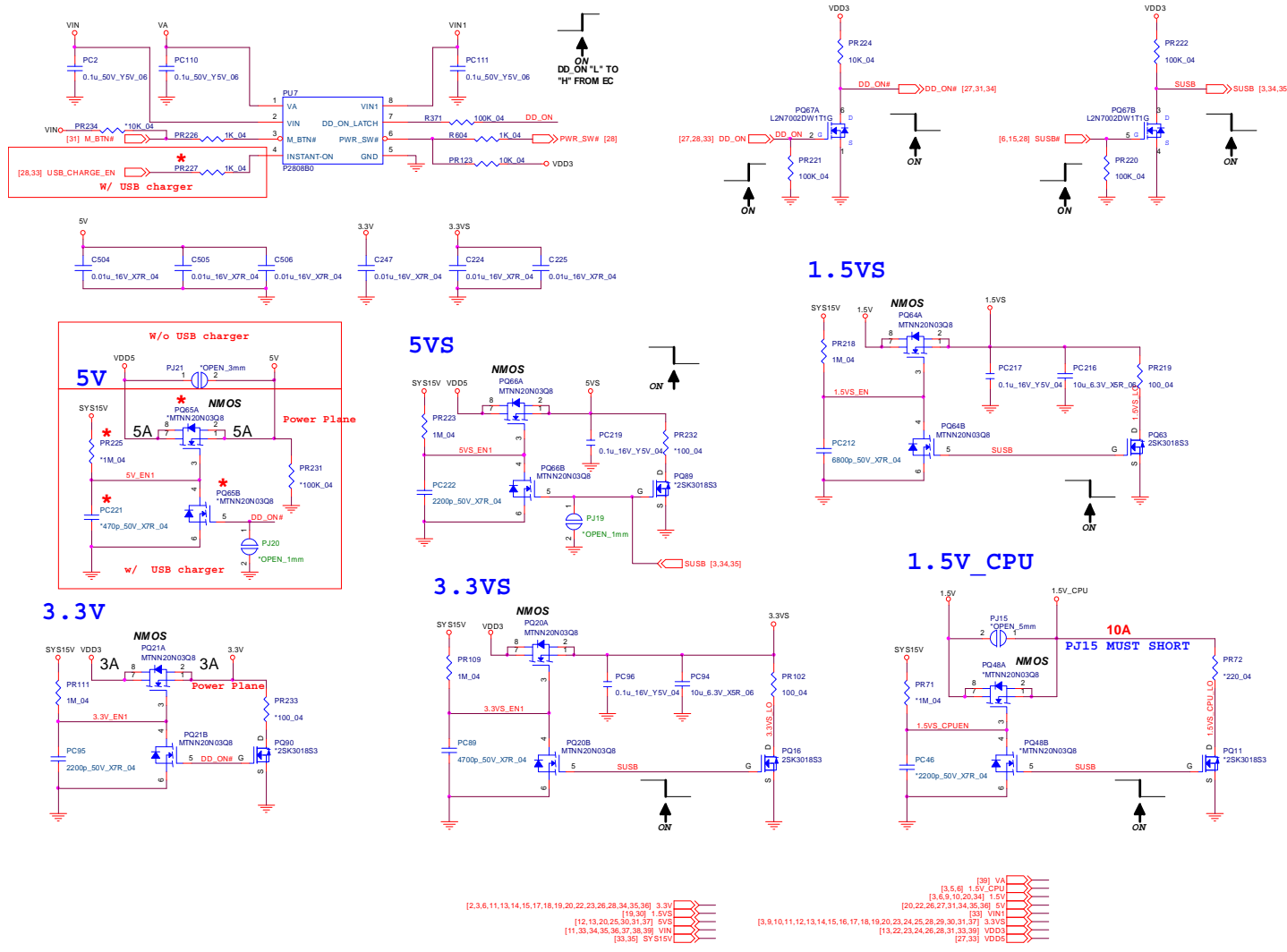
Audio B'd CONN



POWER SWITCH B'd CONN



# System Power

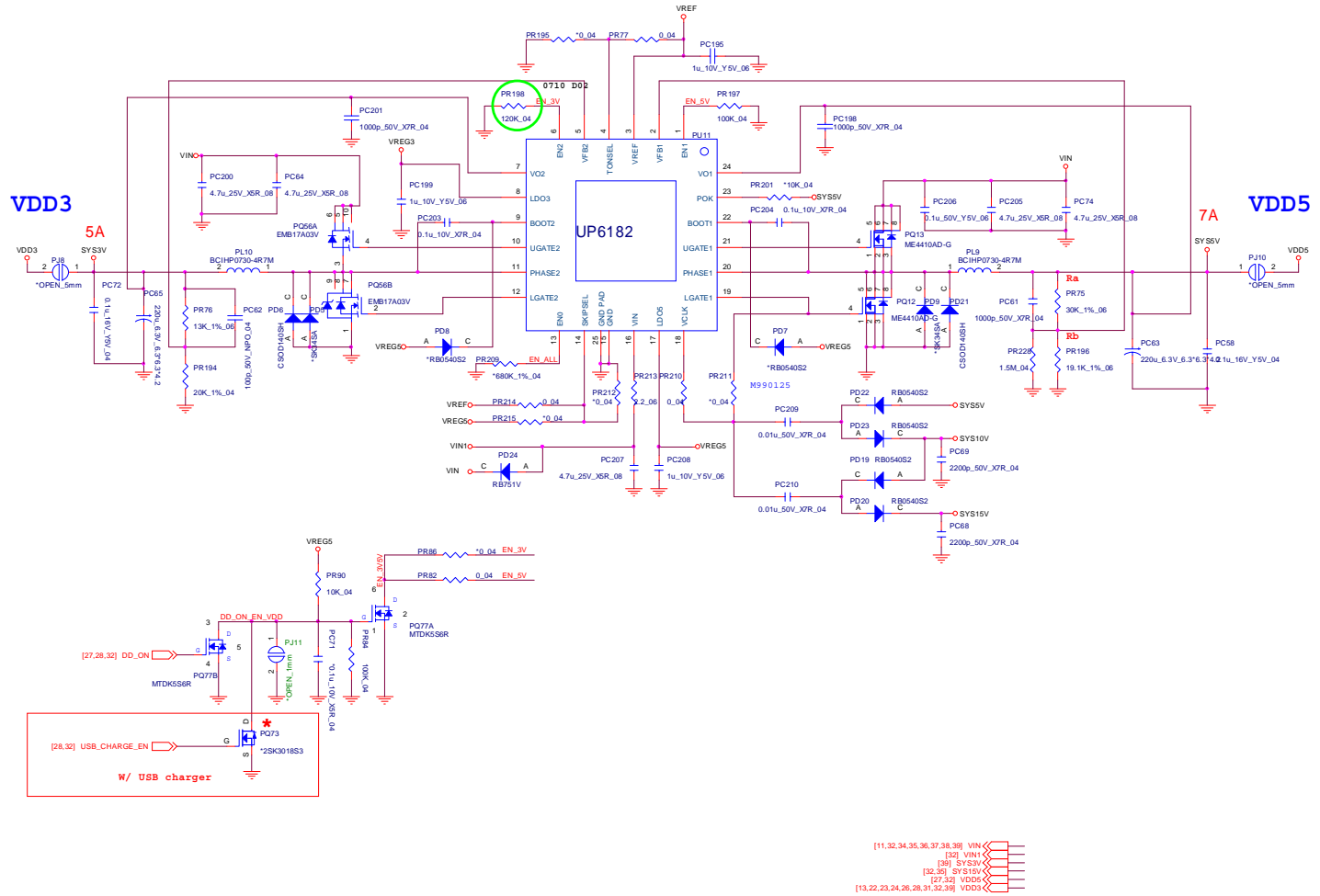


Sheet 32 of 44  
System Power

# Schematic Diagrams

## VDD3, VDD5

VDD3 / VDD5

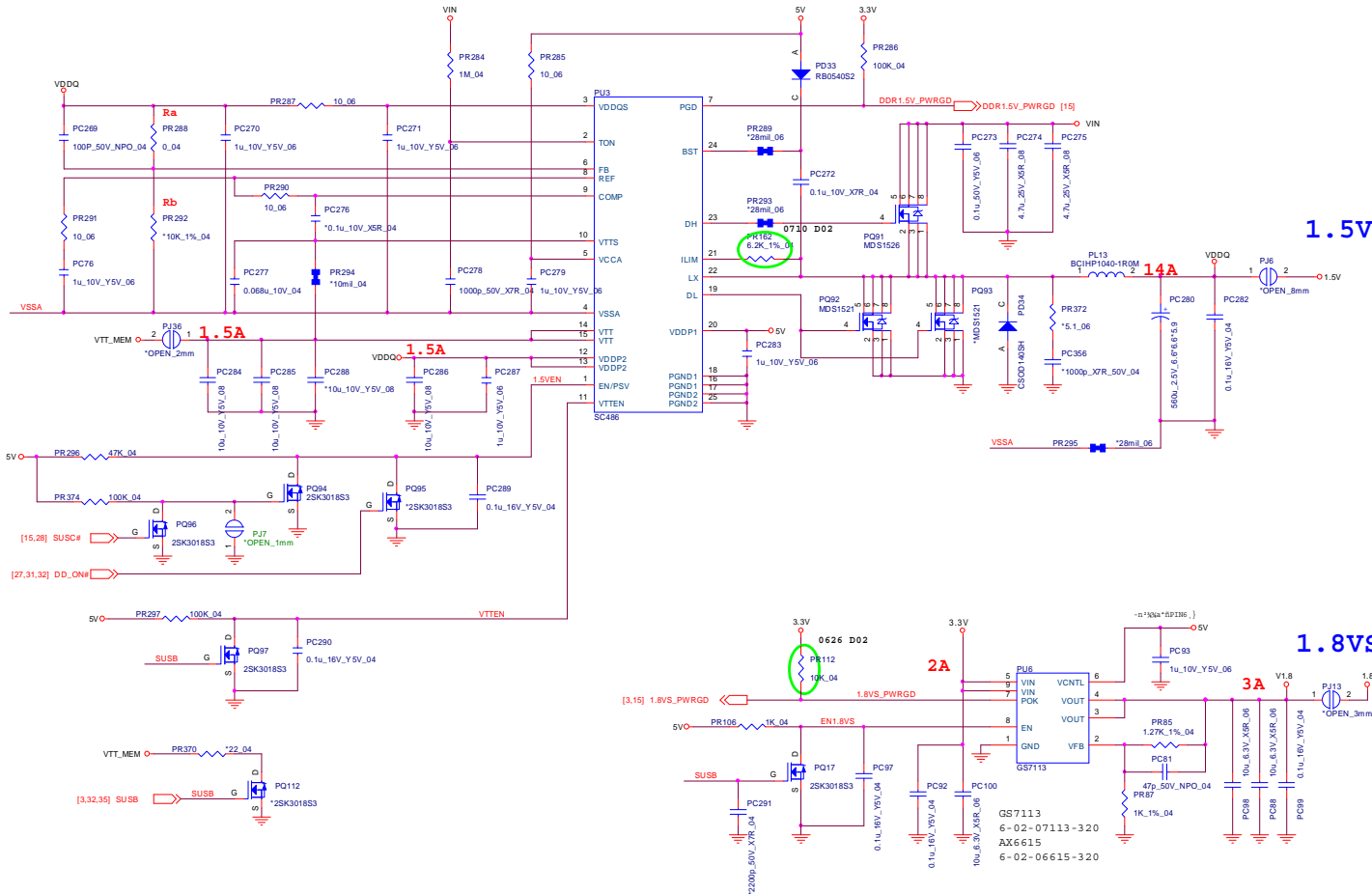


Sheet 33 of 44  
VDD3, VDD5

B.Schematic Diagrams

- [11,32,34,35,36,37,38,39] VIN
- [32] VIN
- [38] SYS5V
- [32,38] SYS15V
- [27,32] VDD5
- [13,22,23,24,26,31,32,39] VDD3

# Power 1.5V/0.75V/1.8VS



1.5V

1.8VS

Sheet 34 of 44  
Power 1.5V/0.75V/  
1.8VS

B.Schematic Diagrams

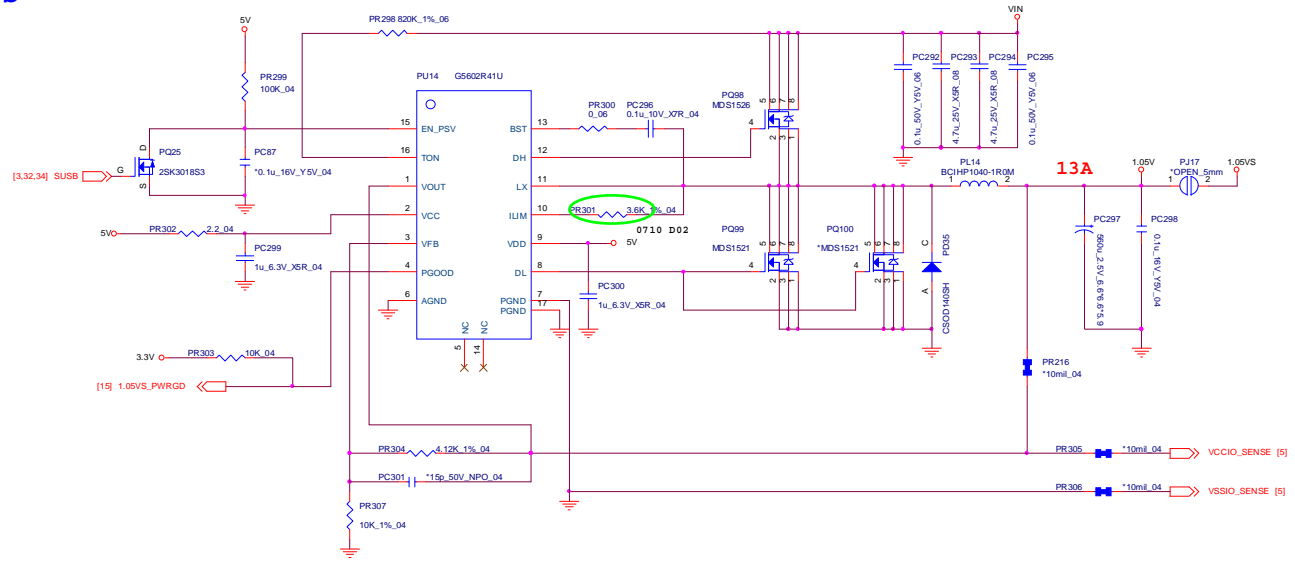
- [2,3,6,11,13,14,15,17,18,19,20,22,23,26,28,32,35,36] 3.3V
- [30,32,28,27,31,32,35,36] 5V
- [11,32,33,35,36,37,38,39] V<sub>IN</sub>
- [18,19] VTT<sub>MEM</sub>
- [3,6,6,10,20,30] 1.5V
- [6,19] 1.8VS



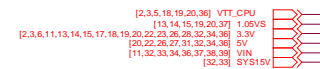
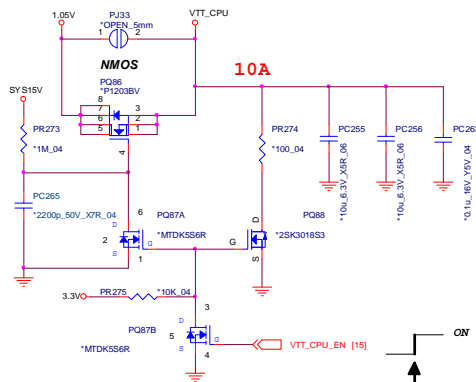
# Schematic Diagrams

## Power 1.05VS, VTT\_CPU

### 1.05VS



### VTT\_CPU

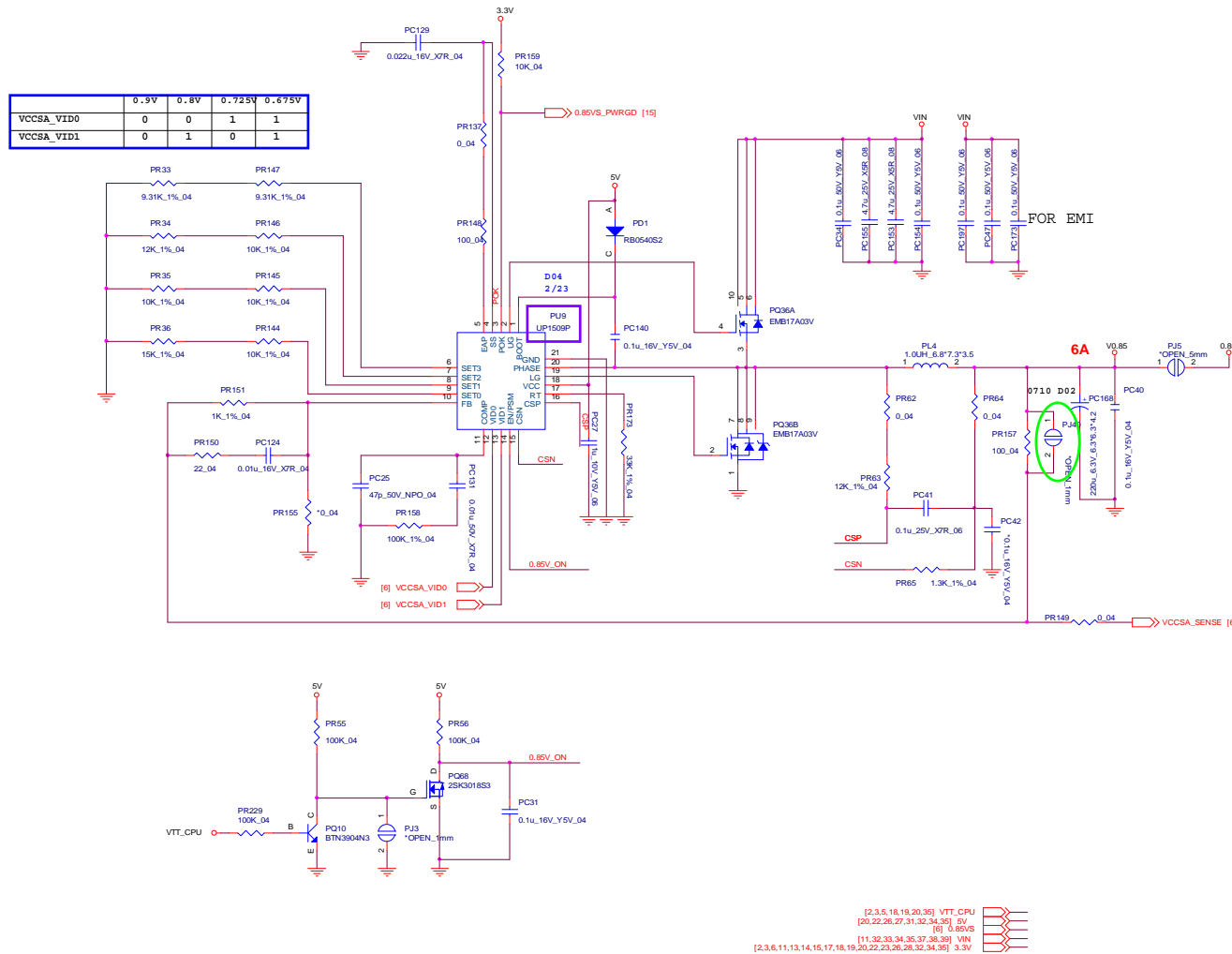


Sheet 35 of 44  
Power 1.05VS,  
VTT\_CPU

B.Schematic Diagrams

# Power 0.85VS

0.85VS

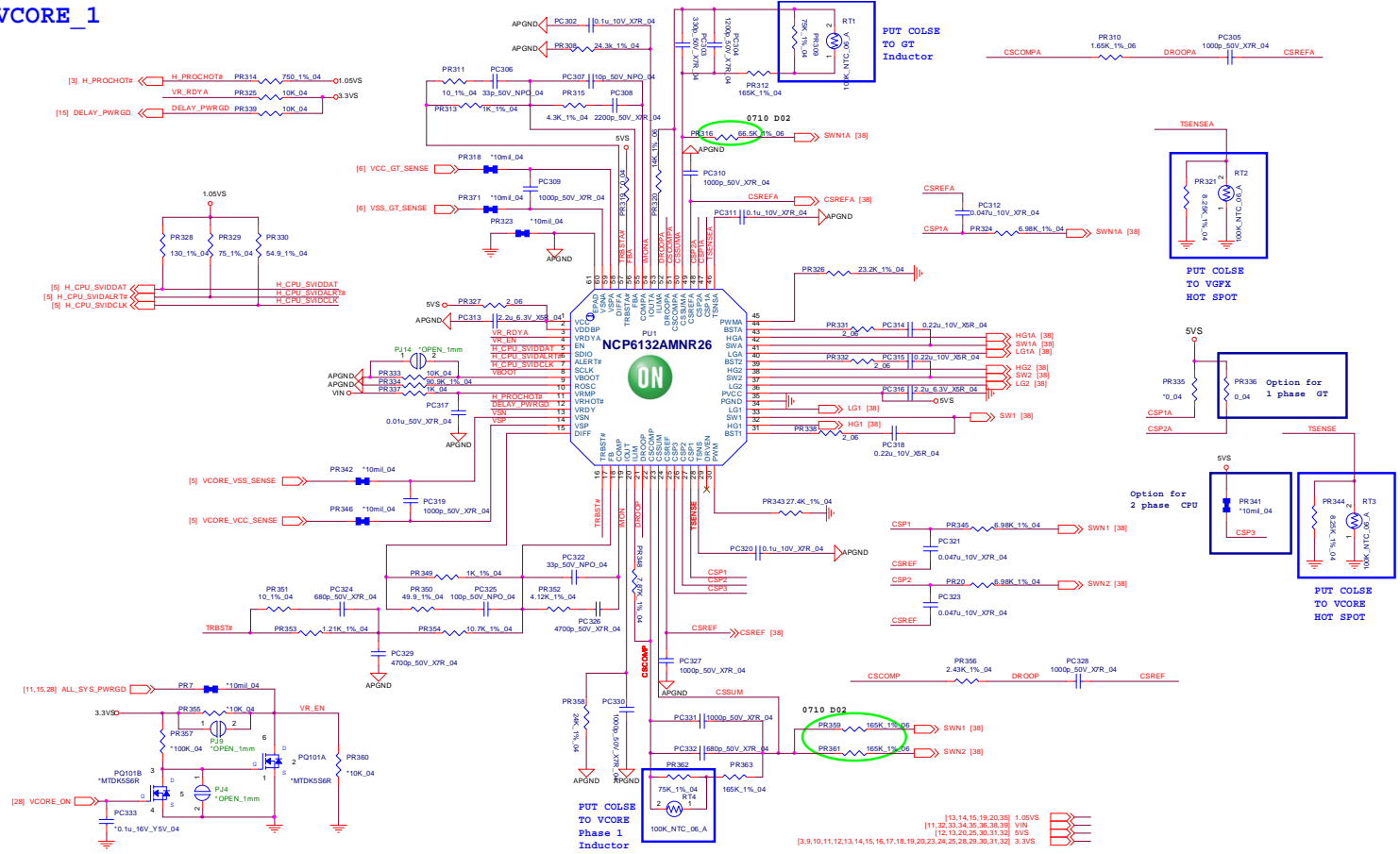


Sheet 36 of 44  
Power 0.85VS

# Schematic Diagrams

## Power V-Core1

VCORE\_1

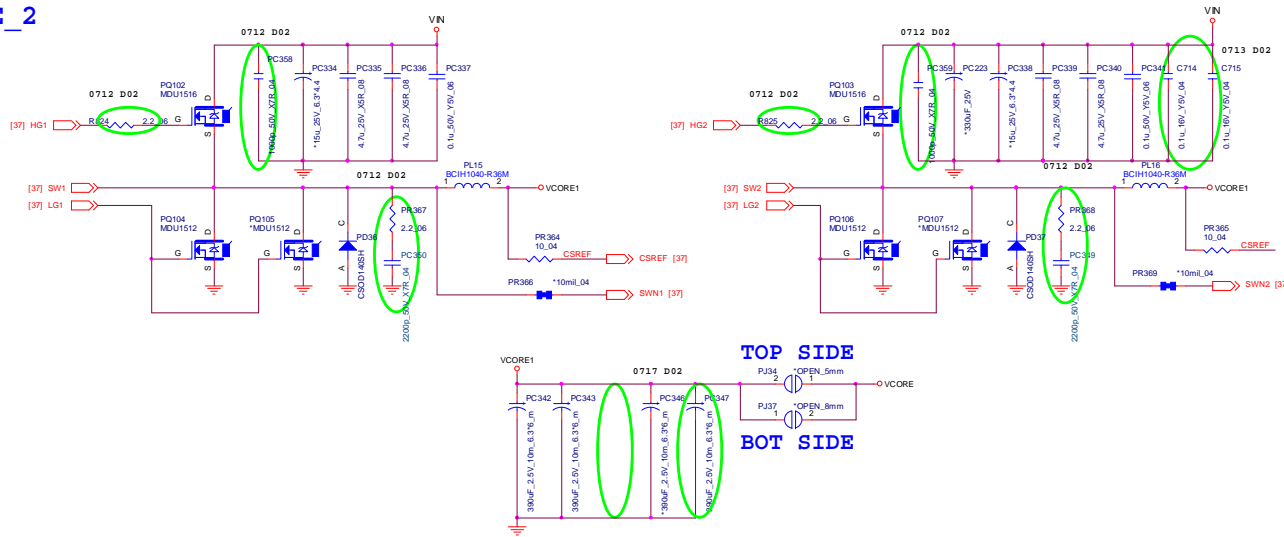


Sheet 37 of 44  
Power V-Core1

B.Schematic Diagrams

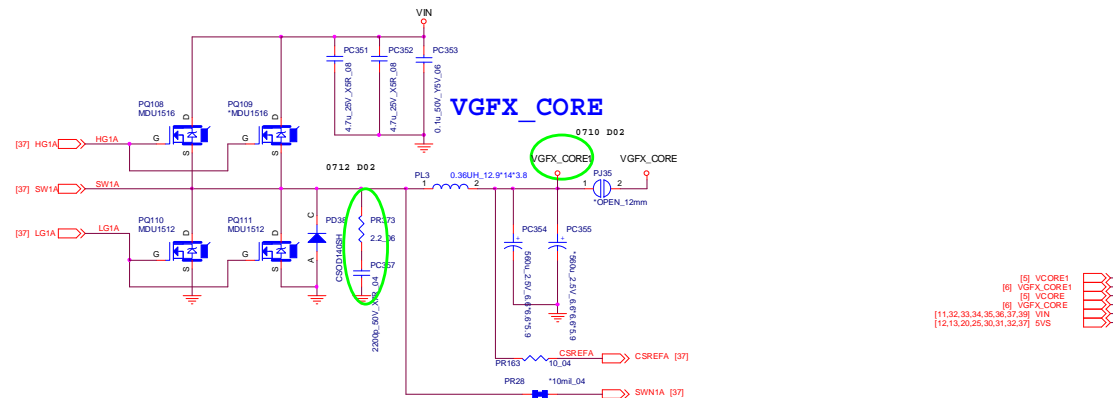
# Power V-Core2

## VCORE\_2



Sheet 38 of 44  
Power V-Core2

## VGFX\_CORE



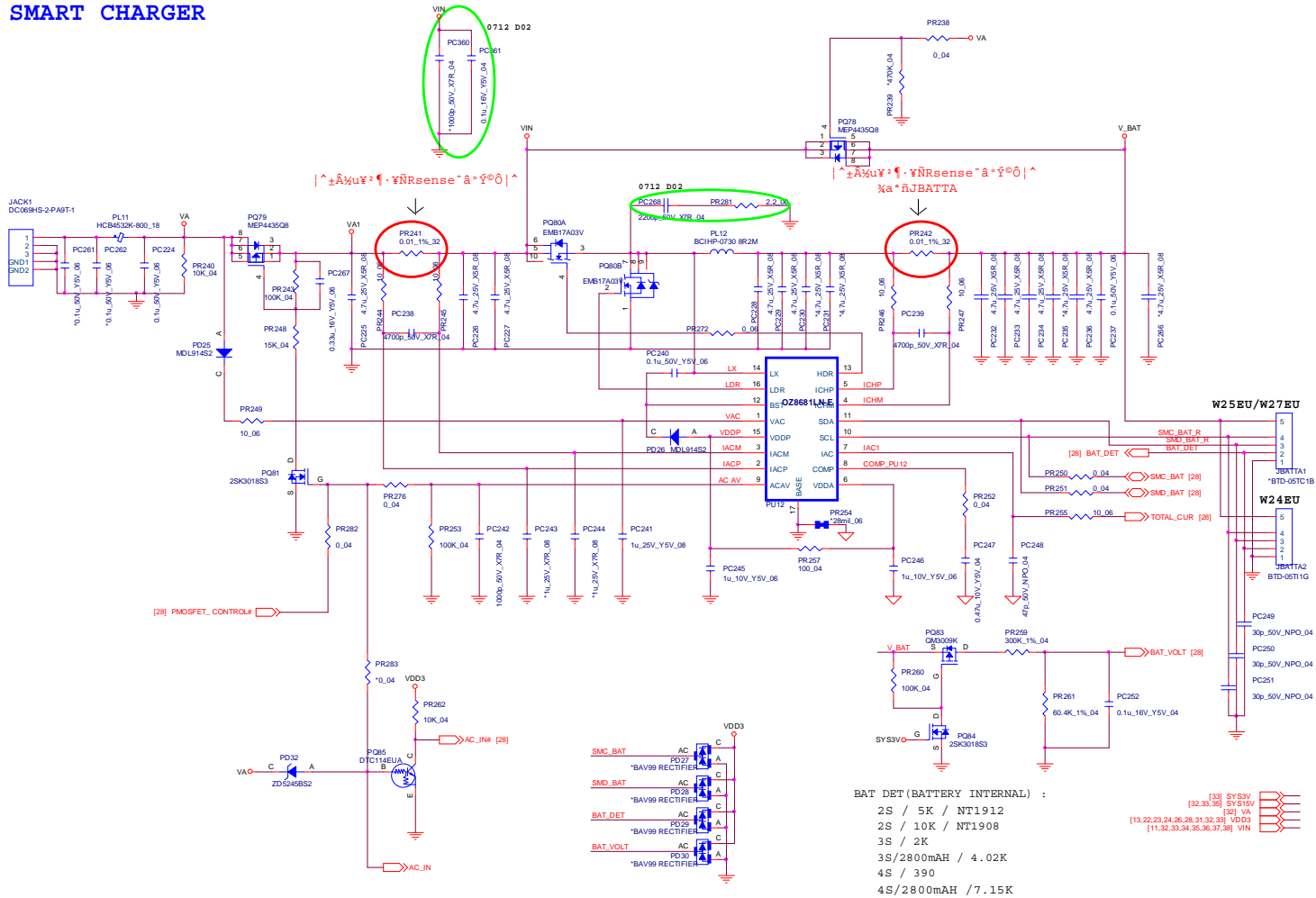
- [5] VCORE1
- [6] VGFX\_CORE1
- [5] VCORE
- [8] VGFX\_CORE
- [11,32,33,34,35,36,37,38] VIN
- [12,13,20,25,30,31,32,37] 5VS

# Schematic Diagrams

## Smart Charger, AC In

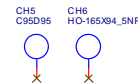
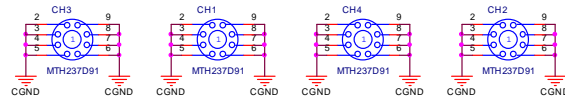
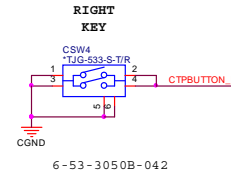
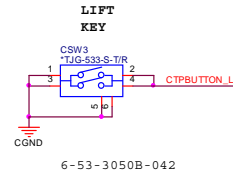
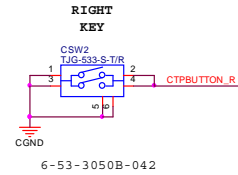
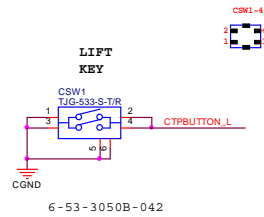
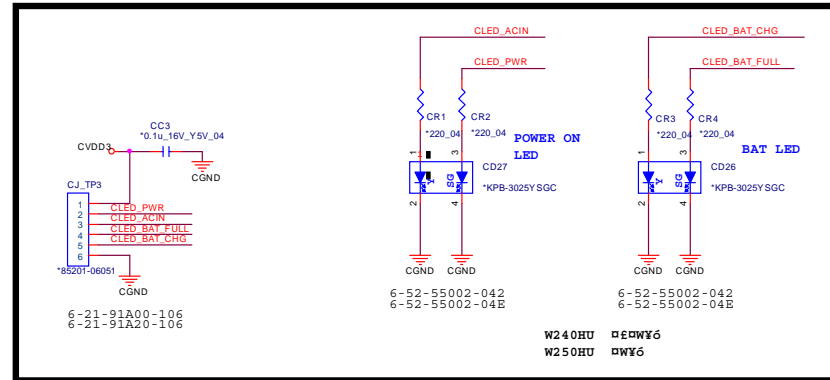
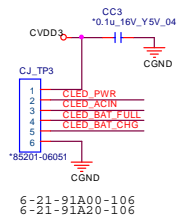
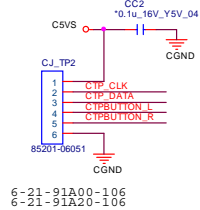
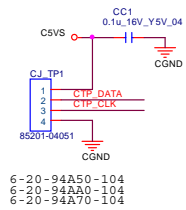
Sheet 39 of 44  
Smart Charger, AC In

### SMART CHARGER



# Click Board

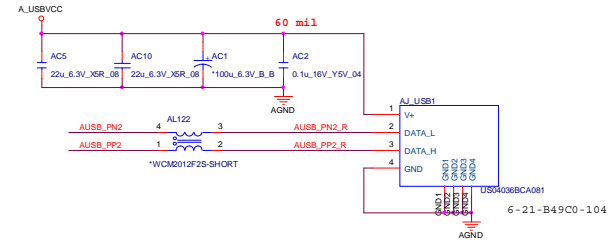
## CLICK BOARD



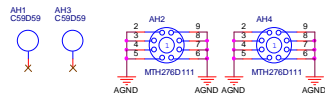
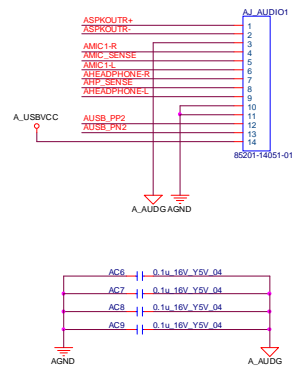
Sheet 40 of 44  
Click Board

# Audio Board/USB

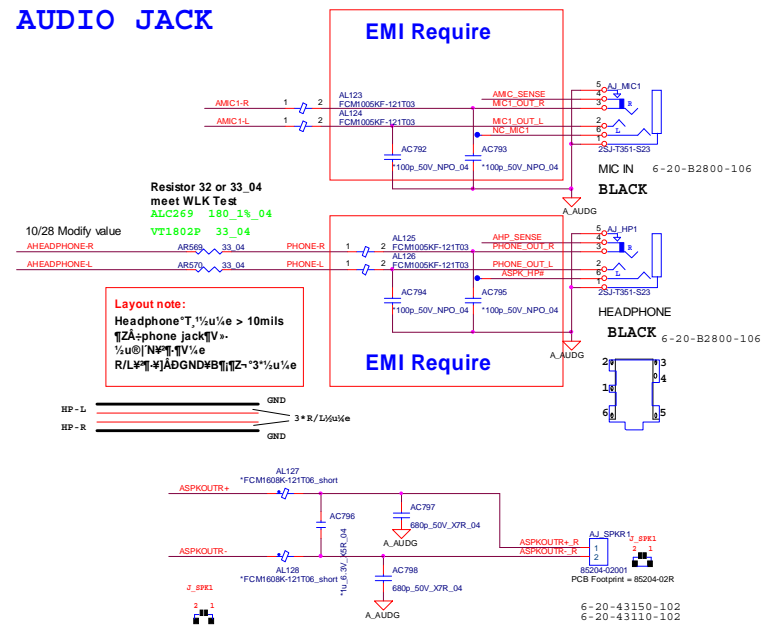
## USB PORT



## TO M/B



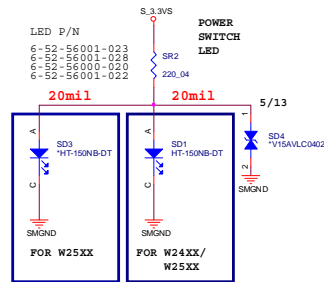
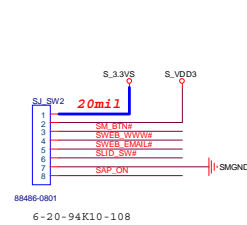
## AUDIO JACK



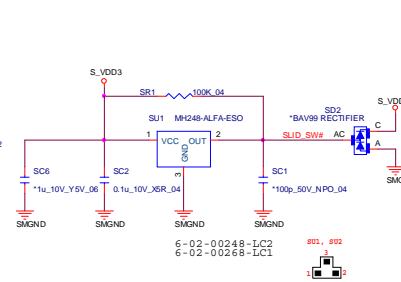
Sheet 41 of 44  
Audio Board/USB

# Power Switch & LID Board

## POWER SW & LED & HOT KEY



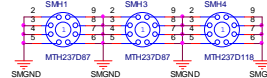
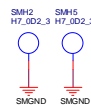
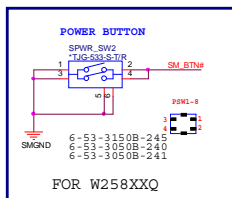
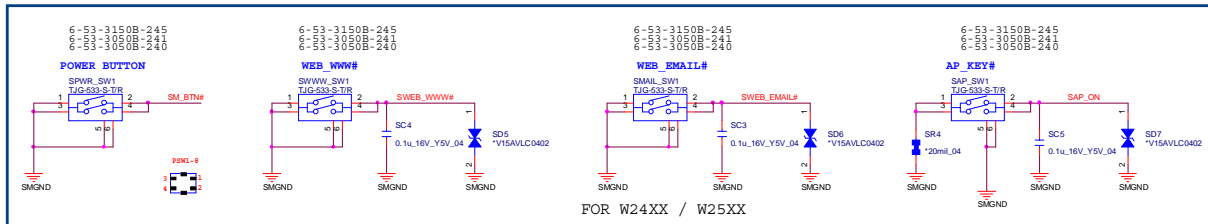
## LID SWITCH IC



Sheet 42 of 44  
Power Switch & LID  
Board

B.Schematic Diagrams

## HOT KEY

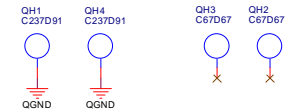
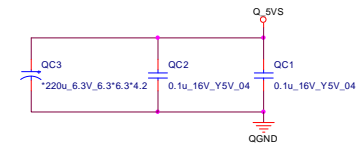
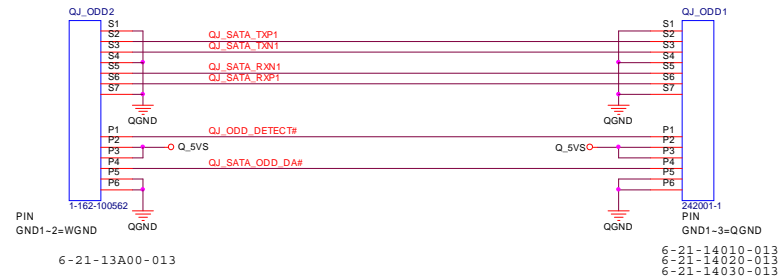




# External ODD Board

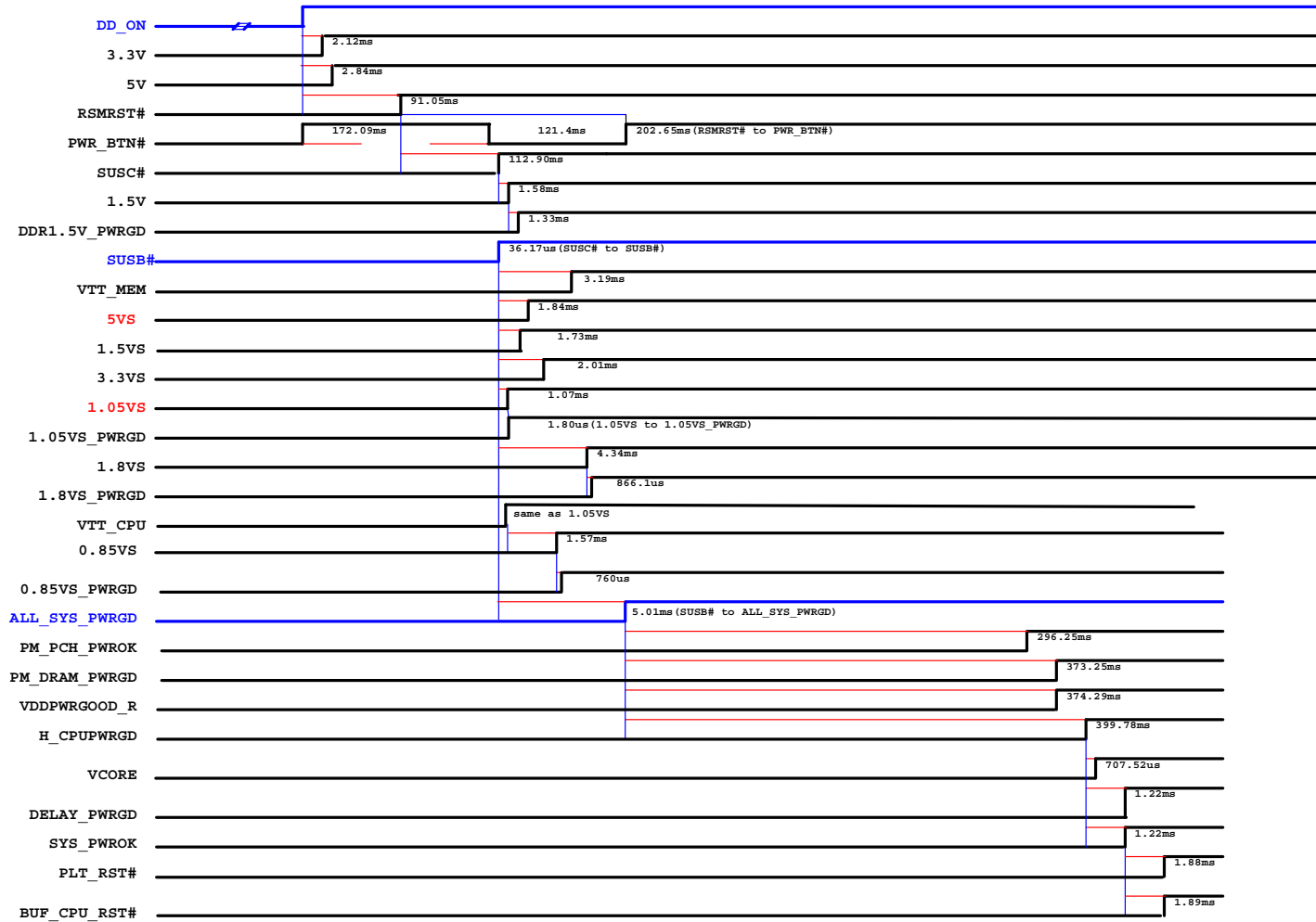
## ODD BOARD

Sheet 43 of 44  
External ODD  
Board



# Power Sequence

W2xxCZ-D01 POWER ON SEQUENCE



Sheet 44 of 44  
Power Sequence

**Schematic Diagrams**

# 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 “**Starting MS-DOS**”. You will then be prompted to give “**Y**” or “**N**” responses to the programs being loaded by DOS. Choose “**N**” for any memory management programs.
2. You should now be at the DOS prompt e.g: DISK C:\> (C is the designated drive letter for the CD/DVD drive/USB flash drive).
3. **Type the following command** at the DOS prompt:

**C:\> Flash.bat**

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.

[www.s-manuals.com](http://www.s-manuals.com)