

SERVICE MANUAL

notebook

W330AU / W331AU



Notebook Computer

W330AU / W331AU

Service Manual

Notice

The company reserves the right to revise this publication or to change its contents without notice. Information contained herein is for reference only and does not constitute a commitment on the part of the manufacturer or any subsequent vendor. They assume no responsibility or liability for any errors or inaccuracies that may appear in this publication nor are they in anyway responsible for any loss or damage resulting from the use (or misuse) of this publication.

This publication and any accompanying software may not, in whole or in part, be reproduced, translated, transmitted or reduced to any machine readable form without prior consent from the vendor, manufacturer or creators of this publication, except for copies kept by the user for backup purposes.

Brand and product names mentioned in this publication may or may not be copyrights and/or registered trademarks of their respective companies. They are mentioned for identification purposes only and are not intended as an endorsement of that product or its manufacturer.

Version 1.0
March 2015

Trademarks

Intel, Intel Core, Pentium and Celeron are trademarks/registered trademarks of Intel Corporation.

Windows® is a registered trademark of Microsoft Corporation.

Other brand and product names are trademarks and /or registered trademarks of their respective companies.

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 *W330AU* / *W331AU* 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, 2.1A (**40 Watts**) minimum AC/DC Adapter.

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.

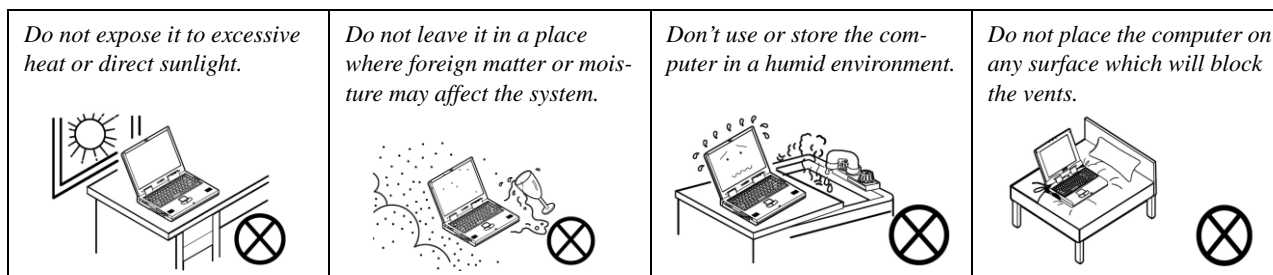
Instructions for Care and Operation

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

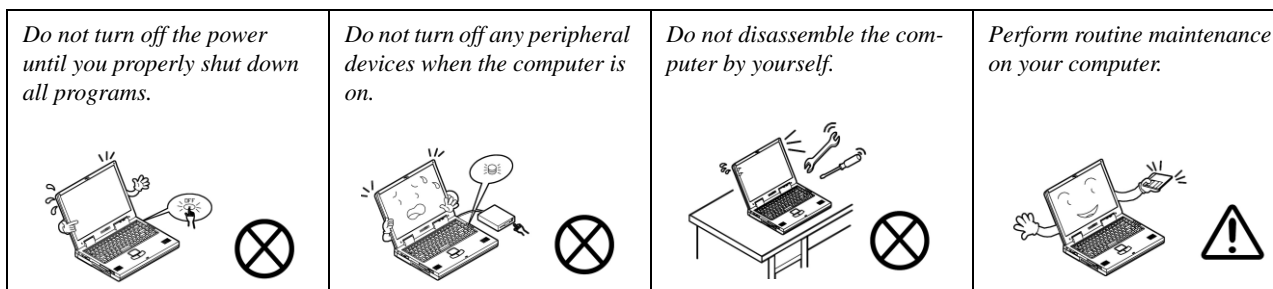
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



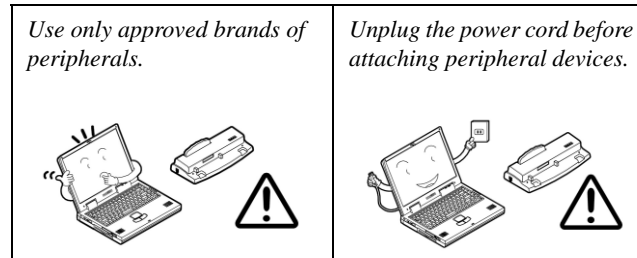
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



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.



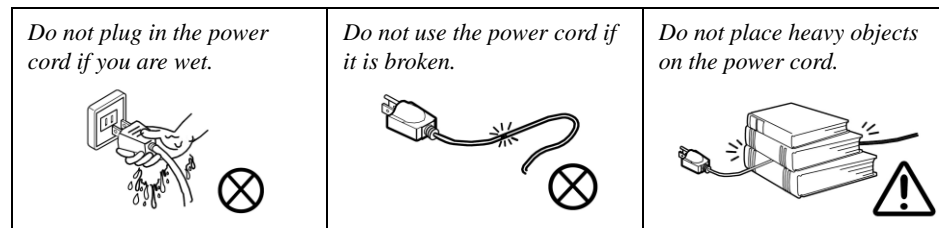
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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 and power cord).

You must also remove your battery in order to prevent accidentally turning the machine on. **Before removing the battery disconnect the AC/DC adapter from the computer.**

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 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.

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.

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. 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.
5. 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).
6. Press the power button to turn the computer "on".

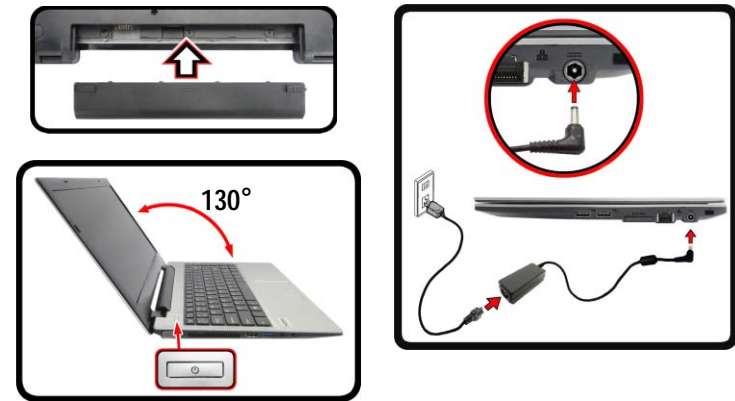


Figure 1
Opening the Lid/LCD/Computer with
AC/DC Adapter Plugged-In

Contents

Introduction	1-1	Parts List Illustration Location	A-2
Overview	1-1	Top	A-3
Specifications	1-2	Bottom	A-4
External Locator - Top View with LCD Panel Open	1-4	LCD (Sharp)	A-5
External Locator - Front & Right Side Views	1-5	LCD (Samsung)	A-6
External Locator - Left Side & Rear View	1-6	LCD (Chimei)	A-7
External Locator - Bottom View	1-7	HDD	A-8
Mainboard Overview - Top (Key Parts)	1-8	Schematic Diagrams.....	B-1
Mainboard Overview - Bottom (Key Parts)	1-9	System Block Diagram	B-2
Mainboard Overview - Top (Connectors)	1-10	Haswell ULT (Display, Misc, CLK)	B-3
Mainboard Overview - Bottom (Connectors)	1-11	Haswell ULT DDR Channel-A/B	B-4
Disassembly	2-1	Haswell ULT RTC/HDA/SAT	B-5
Overview	2-1	Haswell ULT LPC/SPI/SMB/CL	B-6
Maintenance Tools	2-2	Haswell ULT Power Management	B-7
Connections	2-2	Haswell ULT GPIOs	B-8
Maintenance Precautions	2-3	Haswell ULT PCIE, USB, eDP	B-9
Disassembly Steps	2-4	Haswell ULT Power 1	B-10
Removing the Battery	2-5	Haswell ULT Power 2	B-11
Removing the Hard Disk Drive	2-6	Haswell ULT Power-VSS	B-12
Removing the Keyboard	2-8	Haswell ULT CFG, RSVD	B-13
Removing the System Memory (RAM)	2-9	DDR3 SO-DIMM_A_0	B-14
Removing the Wireless LAN Module	2-11	DDR3 SO-DIMM_B_0	B-15
Wireless LAN, and Combo Module Cables	2-12	Panel, Inverter	B-16
Removing the 3G Module	2-13	LVDS_PS8625	B-17
Removing the Click Board Module	2-14	PS8613	B-18
Removing the mSATA Module	2-15	HDMI, Fan	B-19
Removing the SSD Module	2-16	Audio Codec	B-20
Removing the CCD Module	2-18	USB Charge, USB 3.0, I/O Con	B-21
Part Lists	A-1	CCD, TPM, TP, HDD, LED	B-22
		NGFF_WLAN	B-23

Preface


NGFF_3G	B-24
NGFF_SSD	B-25
KBC-ITE IT8587	B-26
DC-In, Charger	B-27
3.3V_SPI, 3.3VS, 3.3V_M, 3.3V	B-28
1.8VS, 1.5VS, 5V, 5VS	B-29
1.05V Series	B-30
VDD3, VDD5	B-31
1.5V or 1.35V/0.75VS PCH 1.5VS	B-32
VCore	B-33
PW SW Board	B-34
IO Board - LAN	B-35
IO Board - USB	B-36
AC-In Conn	B-37
Click Board	B-38
Power On / S4 Resume	B-39
Power Off / Into S4	B-40
Into S3	B-41
S3 Resume	B-42

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **W330AU / W331AU** 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 8.1*, etc.) has its 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 **W330AU / W331AU** 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.

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® Core™ i7 Processor

i7-5500U (2.40GHz)

4MB L3 Cache, 14nm, DDR3L-1600MHz, TDP 15W

Intel® Core™ i5 Processor

i5-5200U (2.20GHz)

3MB L3 Cache, 14nm, DDR3L-1600MHz, TDP 15W

Intel® Core™ i3 Processor

i3-5010U (2.10GHz), i3-5005U (2.00GHz)

3MB L3 Cache, 14nm, DDR3L-1600MHz, TDP 15W

Intel® Pentium™ Processor

3805U (1.90GHz)

2MB L3 Cache, 14nm, DDR3L-1600MHz, TDP 15W

Intel® Celeron™ Processor

3755U (1.70GHz), 3205U (1.50GHz)

2MB L3 Cache, 14nm, DDR3L-1600MHz, TDP 15W

BIOS

48Mb SPI Flash ROM

AMI BIOS

Memory

Two 204 Pin SO-DIMM Socket Supporting **DDR3L 1600MHz** Memory

Memory Expandable up to 16GB

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

LCD Options

13.3" (33.78cm), 16:9, HD+/FHD/WQHD/QHD+ (Thickness: 2.85mm)

Video Adapter

Intel GPU (CPU integrated)

Intel HD Graphics 5500 (Core i7/i5/i3 CPU Integrated)

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

Microsoft DirectX® 11.1 Compatible

Or

Intel HD Graphics (Pentium/Celeron CPU Integrated)

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

Microsoft DirectX® 11.1 Compatible

Storage

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

(**Factory Option**) One M.2 Solid State Drive (SSD)

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Microphone

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Intel® PTT

Keyboard

"WinKey" keyboard (with embedded numeric keypad)

Pointing Device

Built-in Touchpad

Interface

Two USB 2.0 Ports
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

M.2 Slots

Slot 1 for **WLAN and Bluetooth** Combo Module
(For i7-5500U/i5-5200U/i3-5010U/3755U CPU) Slot 2 for **SATA** or **PCI-e x2 SSD**
(For i3-5005U/3805U/3205U CPU) Slot 2 for **SATA SSD**
(Factory Option) Slot 3 for **3G** or **4G** Module

Card Reader

Embedded Multi-In-1 Card Reader
MMC (MultiMedia Card) / RS MMC
SD (Secure Digital) / Mini SD / SDHC/ SDXC

Communication

Built-In 10Mb/100Mb/1000Mb Ethernet LAN
1.0M HD PC Camera Module
(Factory Option) 3G or 4G M.2 Module

WLAN/ Bluetooth M.2 Modules:

(Factory Option) Intel® Wireless-AC 3160 Wireless LAN
(802.11ac) + Bluetooth 4.0
(Factory Option) Intel® Wireless-AC 7265 Wireless LAN
(802.11ac) + Bluetooth 4.0
(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, 2.1A (**40W**)

Removable 3 Cell Smart Lithium-Ion Battery Pack, 24WH
(Factory Option) Removable 3 Cell Smart Lithium-Ion Battery Pack, 31WH

Dimensions & Weight

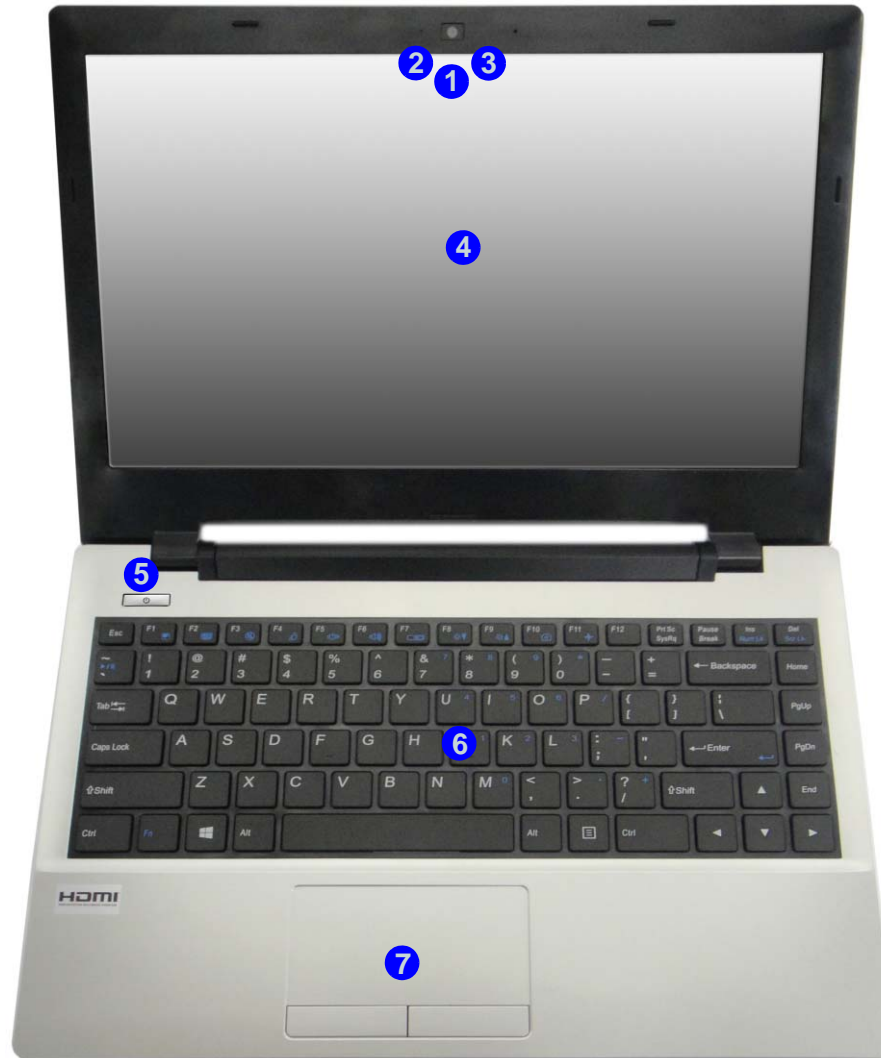
326mm (w) * 231mm (d) * 23.6mm (h)
1.4kg (Barebone with 24WH Battery)

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



RIGHT SIDE VIEW



Figure 2
Front View

1. LED Indicators

Figure 3
Right Side View

1. USB 2.0 Ports
2. Multi-in-1 Card Reader
3. RJ-45 LAN Jack
4. DC-In Jack
5. Security Lock Slot

Introduction

External Locator - Left Side & Rear View

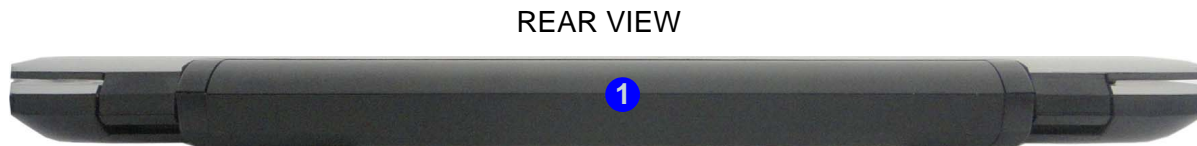
Figure 4
Left Side View

- 1. External Monitor Port
- 2. Vent
- 3. HDMI-Out Port
- 4. USB 3.0 Port
- 5. Microphone-In Jack
- 6. Headphone-Out Jack



Figure 5
Rear View

- 1. Battery



External Locator - Bottom View

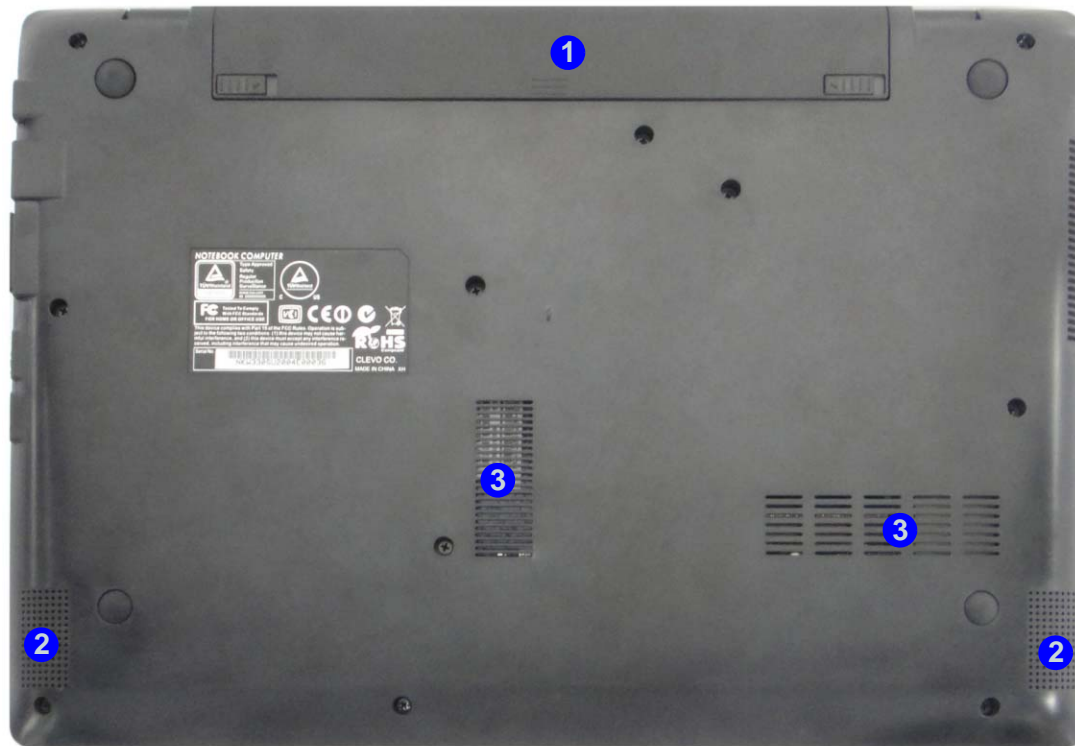


Figure 6
Bottom View

1. Battery
2. Speakers
3. Fan Intake/Vent



Overheating

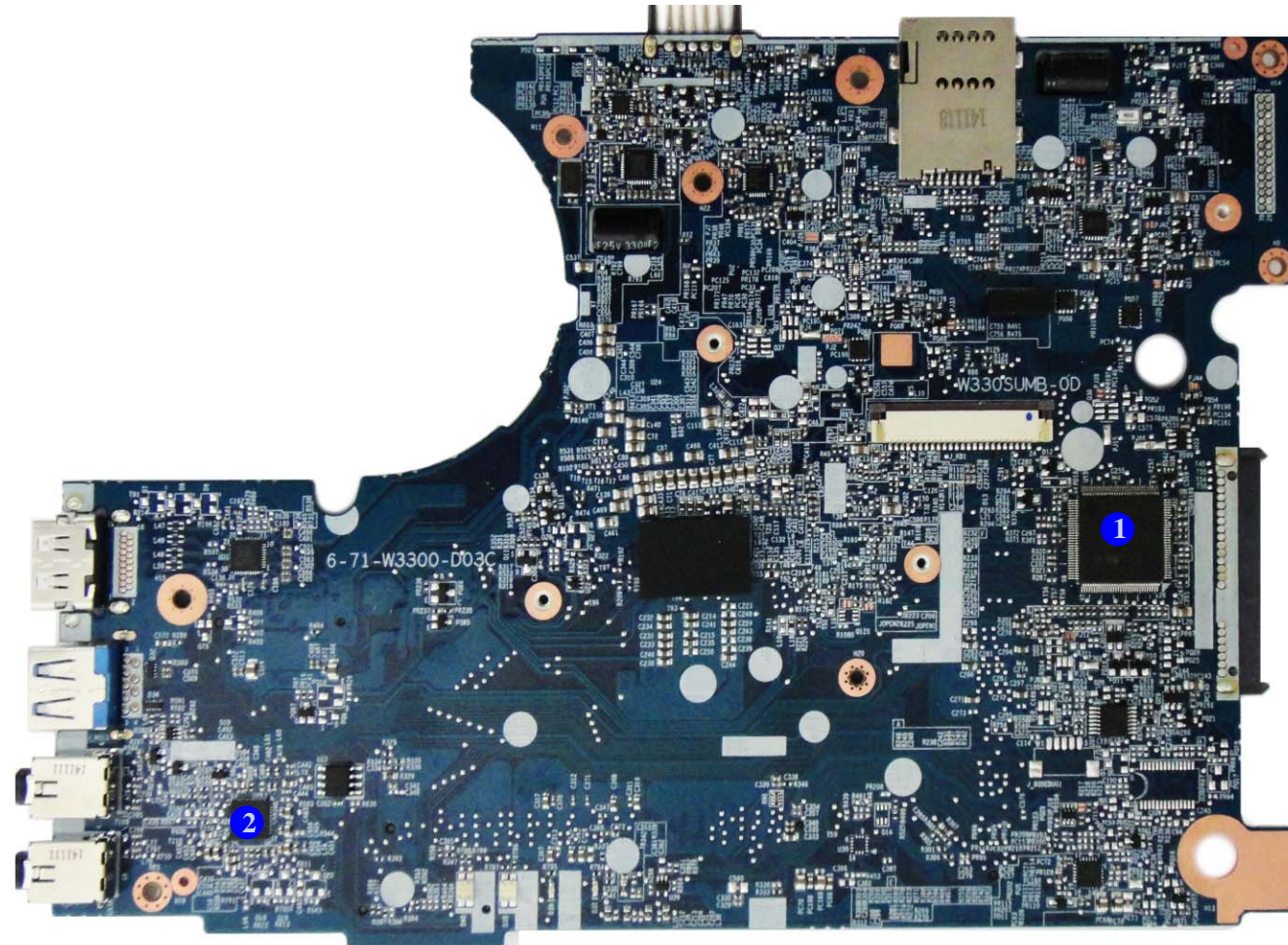
To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

Introduction

Figure 7
Mainboard Top
Key Parts

1. KBC ITE
IT8587E/FX
2. Audio Codec
ALC2690_VC2

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

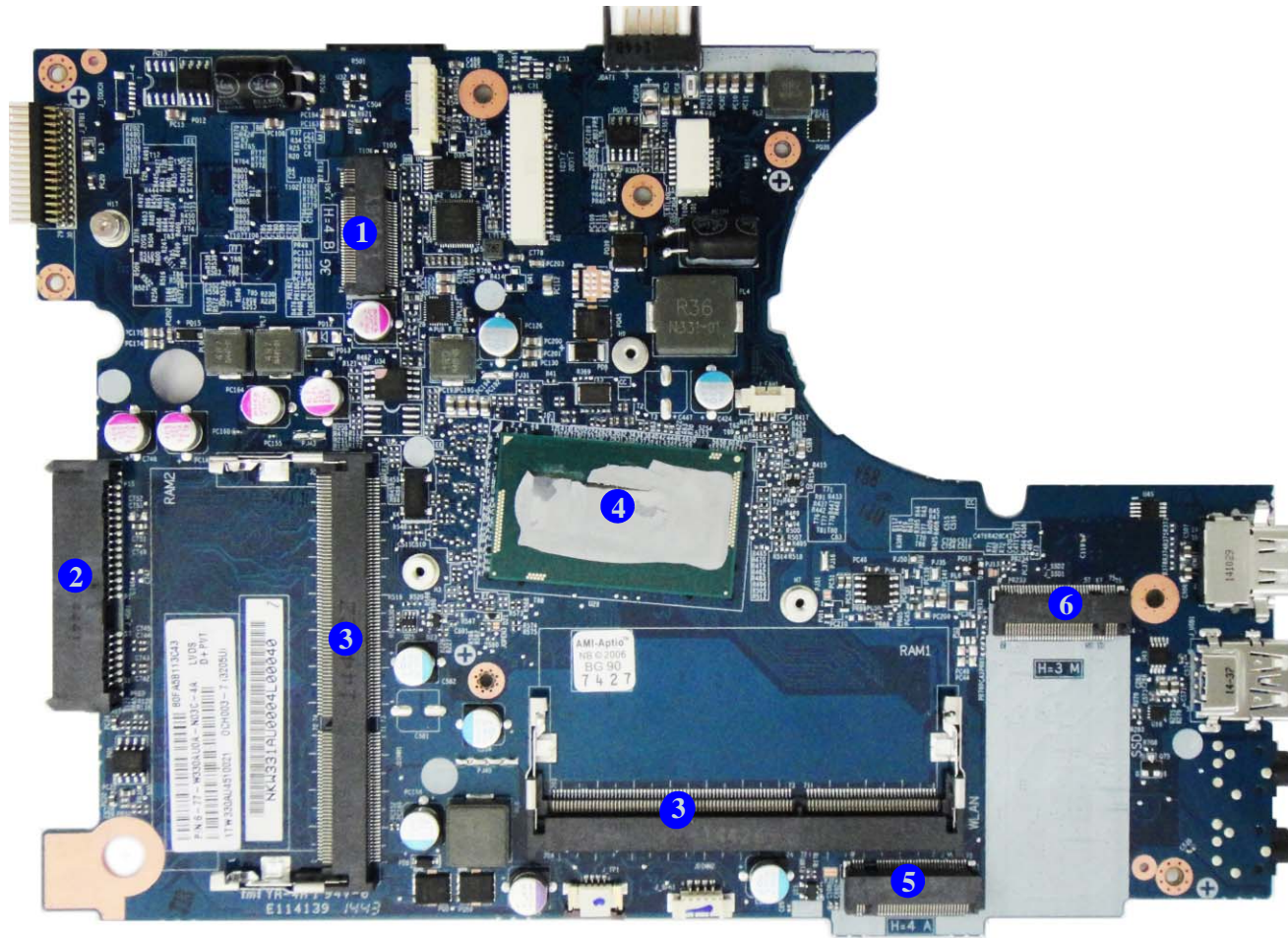


Figure 8
**Mainboard Bottom
Key Parts**

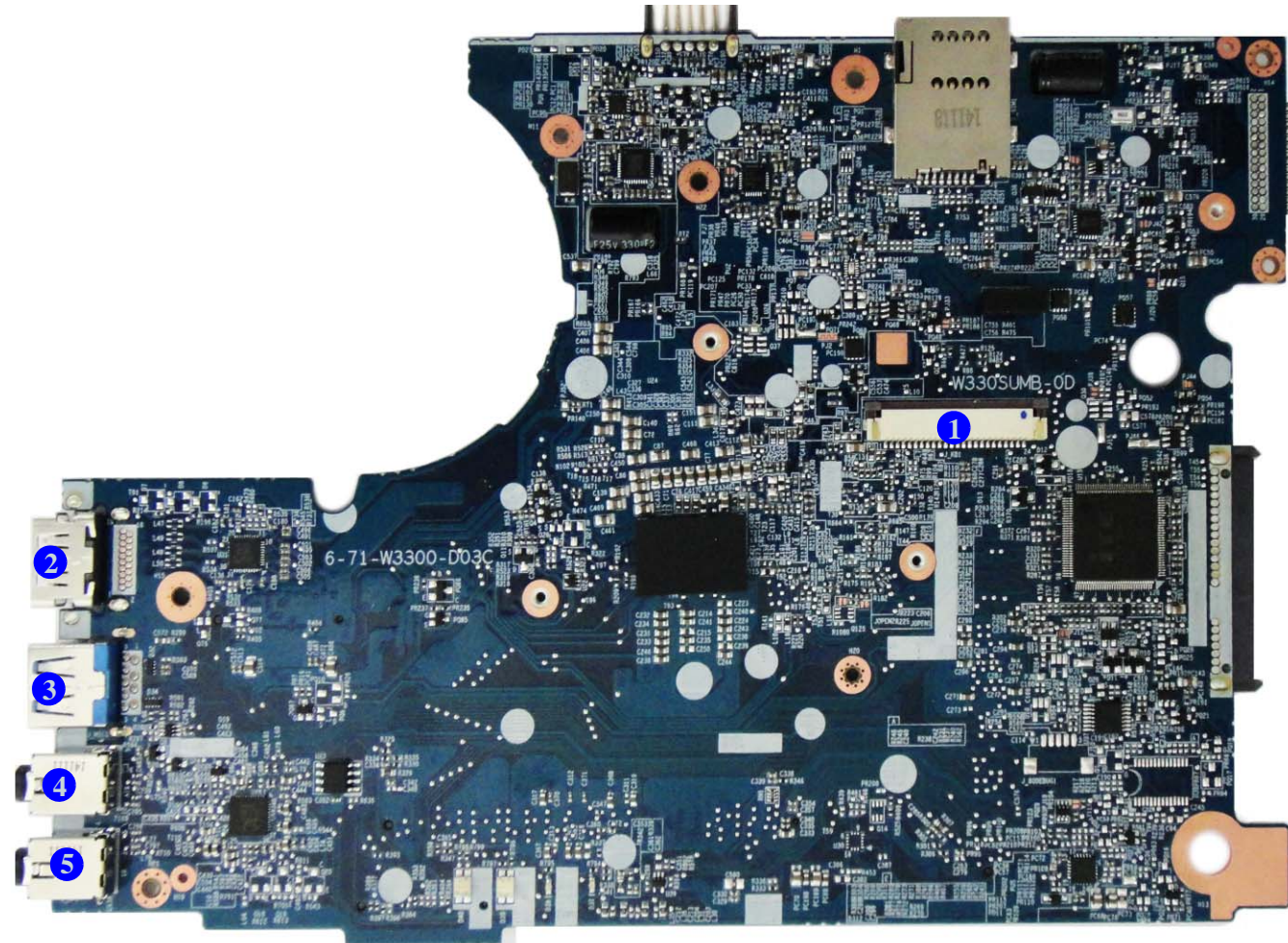
1. M.2 Connector (3G module)
2. HDD Connector
3. Memory Slot (DDR3L SO-DIMM)
4. CPU
5. M.2 Connector (WLAN Module)
6. M.2 Connector (SSD Module)

Introduction

Figure 9
Mainboard Top Connectors

1. Keyboard Cable Connector
2. HDMI-Out Port
3. USB 3.0 Port
4. Microphone-In Jack
5. Headphone-Out Jack

Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

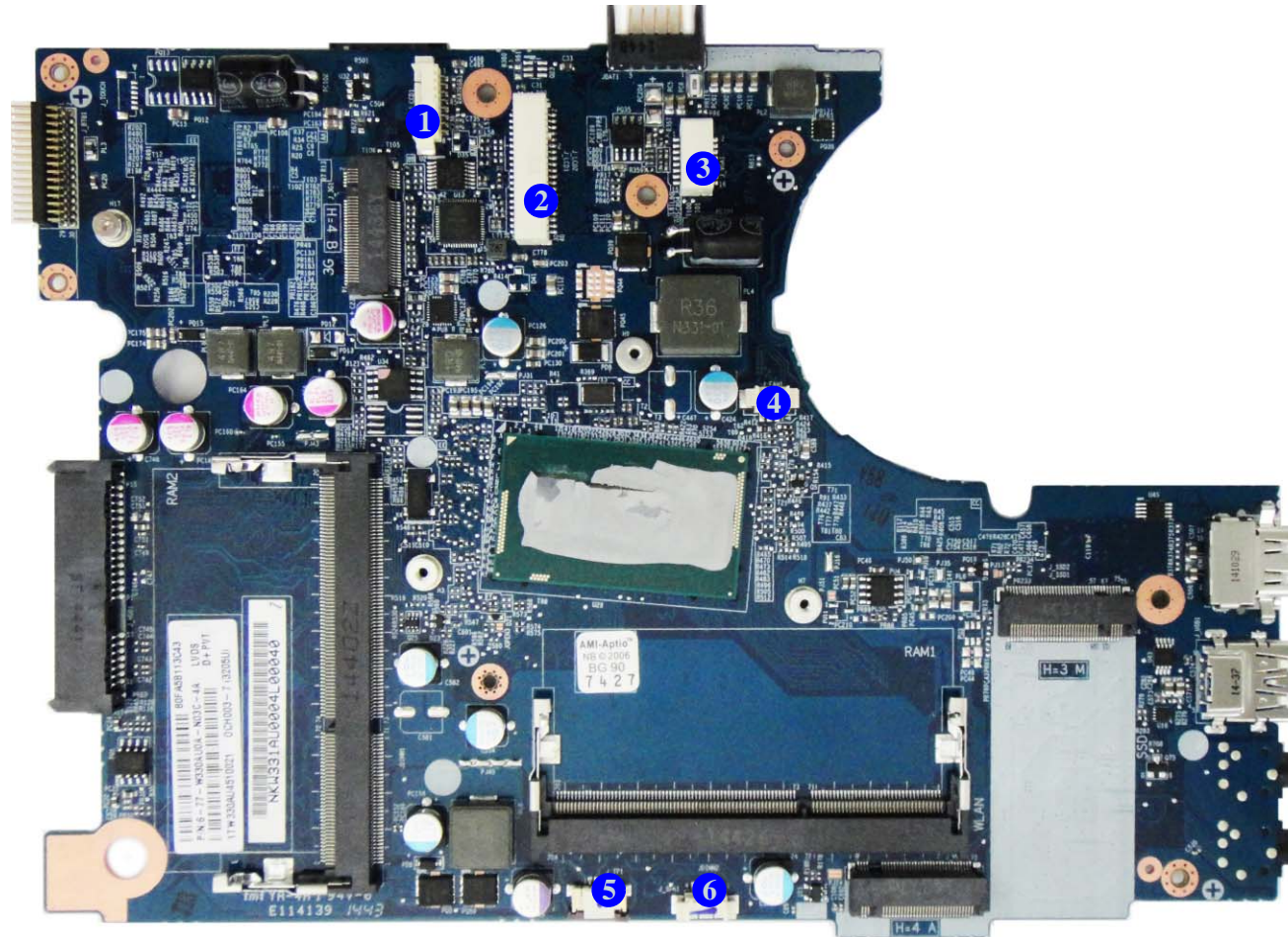


Figure 10
**Mainboard Bottom
Connectors**

1. CCD Cable Connector
2. LCD Connector
3. Power Switch Connector
4. Fan Cable Connector
5. Touchpad Connector
6. Speaker Connector


Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *W330AU / W331AU* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

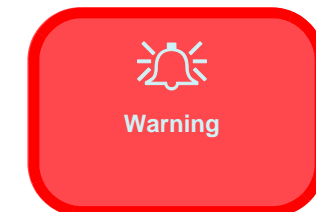
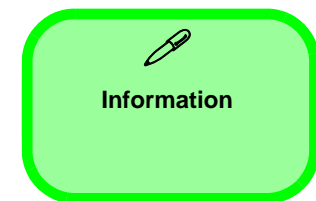
We suggest you completely review any procedure before you take the computer apart.

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). 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 Keyboard:

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

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 - 9](#)

To remove the Wireless LAN Module:

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

To remove the 3G Module:

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

To remove the Click Board:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the click board [page 2 - 14](#)

To remove the mSATA Module:

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

To remove the SSD Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the SSD [page 2 - 16](#)

To remove the CCD:

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

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*).

a.



b.

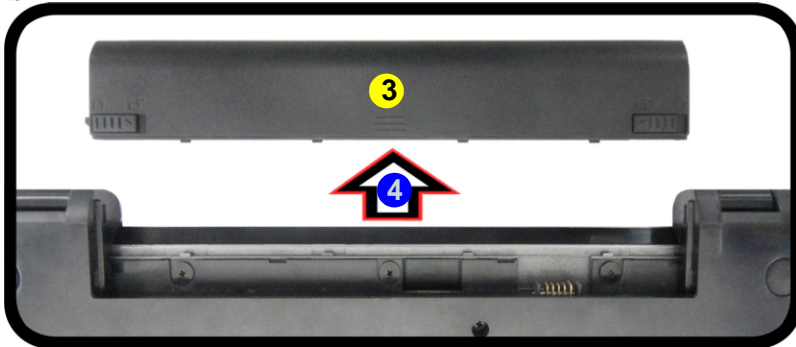
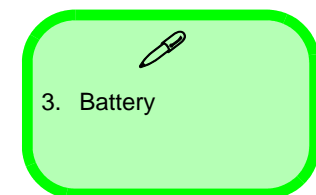


Figure 1
Battery Removal

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



Disassembly

Figure 2
**HDD Assembly
Removal**

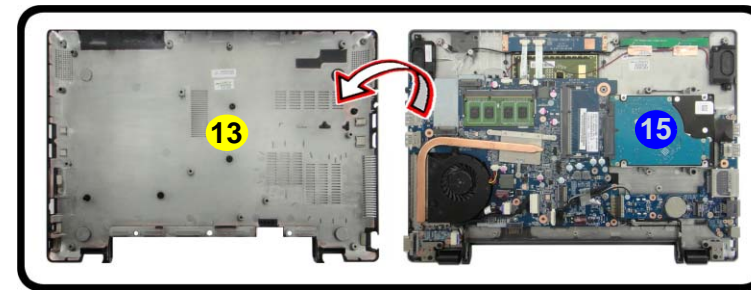
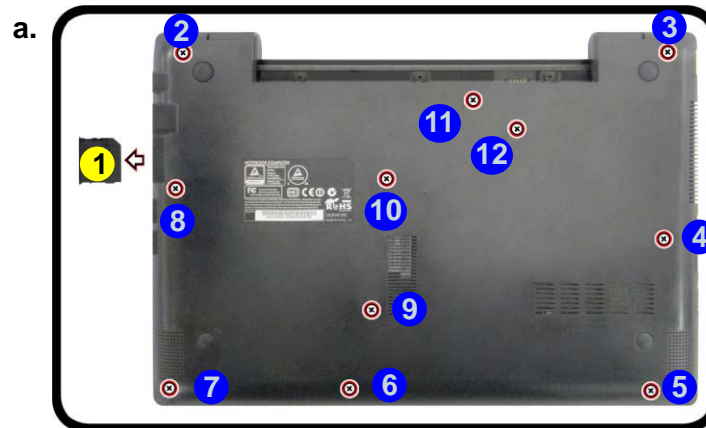
- Remove the cover and screws.
- Remove the bottom case and locate the hard disk.

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 7mm (h) and a speed of **5400 RPM** or lower. 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 and remove the battery ([page 2 - 5](#)).
- Remove the SD card cover **1** and screws **2** - **12** ([Figure 2a](#)).
- Carefully lift the bottom case **13** up in the direction of the arrow **14** and remove it ([Figure 2b](#)).
- The hard disk will be visible at point **15** on the computer. ([Figure 2b](#))



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.



1. SD Card Cover
13. Bottom case

- 15 Screws

- Remove screws **16** - **17** from the HDD assembly (**Figure 3c**).
- Slightly lift and pull the hard disk in the direction of arrow **18** (**Figure 3d**).
- Lift the hard disk assembly **19** out of the bay **20** (**Figure 3e**).
- Remove screws **21** - **22** and bracket **23** from the hard disk **24** (**Figure 3f**).
- Reverse the process to install a new hard disk (do not forget to replace all the screws and cover).

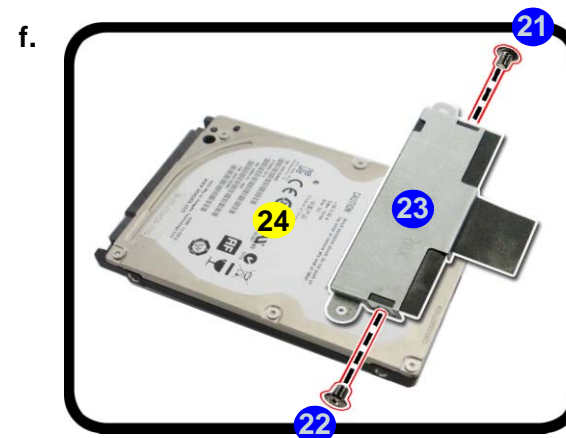
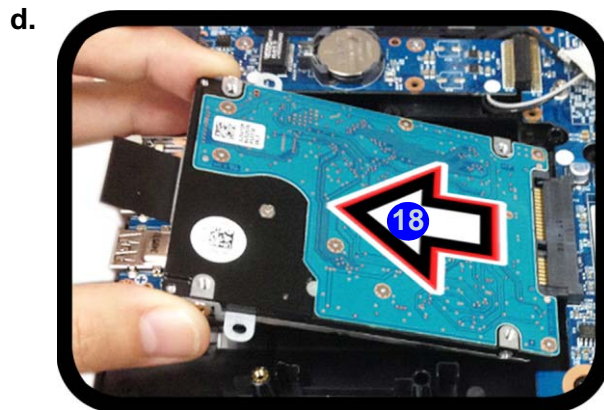
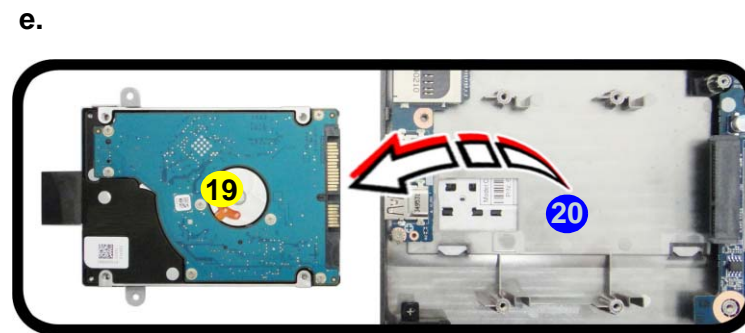
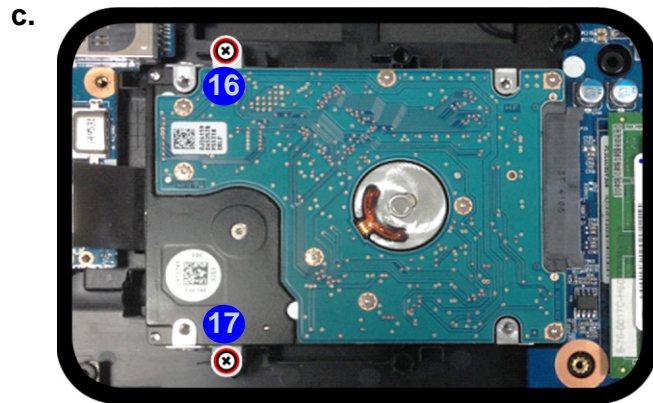
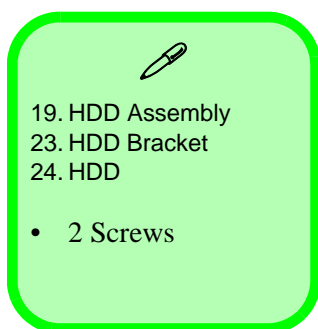


Figure 3
**HDD Assembly
Removal (cont'd.)**

- Remove the screws.
- Slightly lift and pull the HDD in the direction of the arrow.
- Lift the HDD assembly out of the bay.
- Remove the screws and bracket from the HDD.



Disassembly

Figure 4
Keyboard Removal

- Remove screw and press at point ① to release the keyboard.
- Lift the keyboard up and disconnect the cable from the locking collar.
- Remove the keyboard.

Re-Inserting the Keyboard

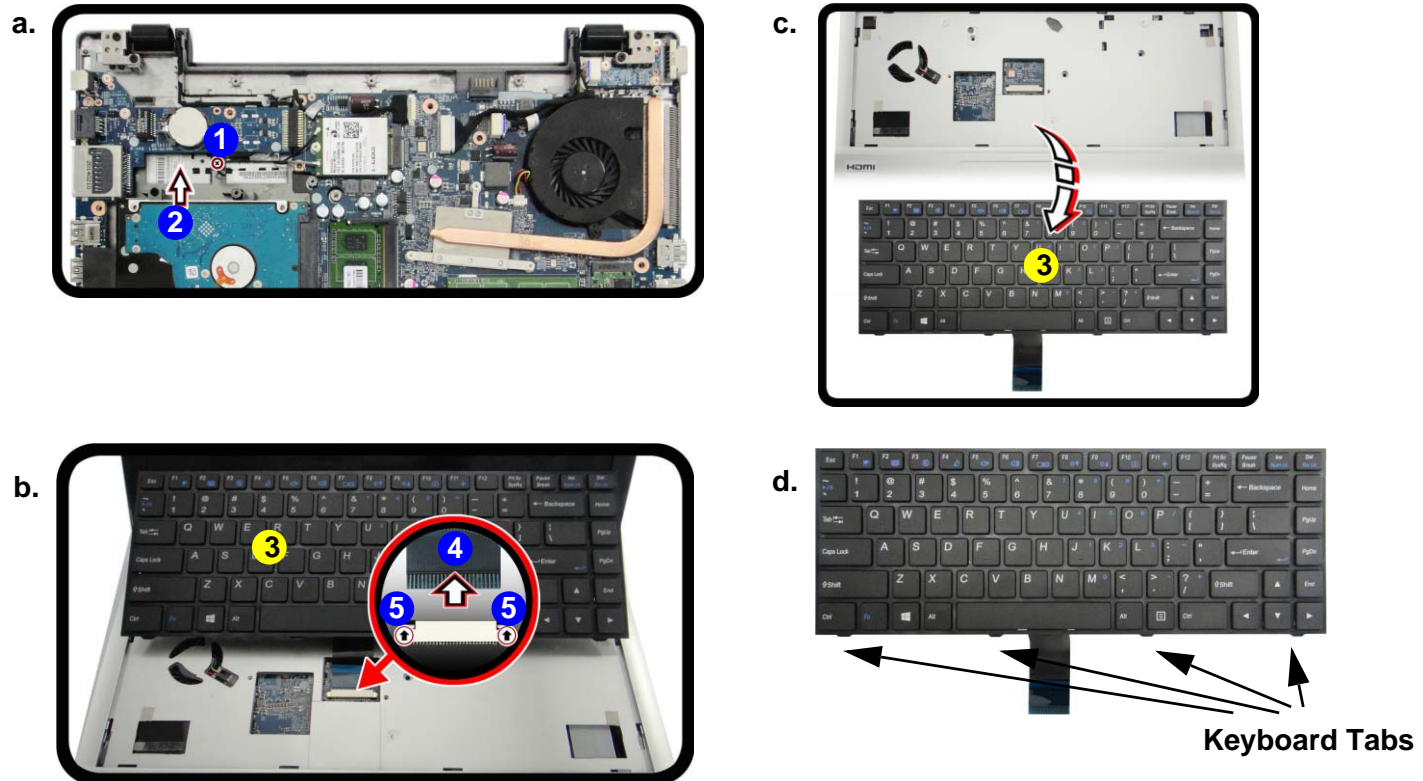
When re-inserting the keyboard, align first the **four** keyboard tabs (Figure 4d) that are located at the bottom, to the slots in the case.

3. Keyboard

- 1 Screw

Removing the Keyboard

- Turn **off** the computer, remove the battery (page 2 - 5), and bottom case (page 2 - 6).
- Remove screw ① and carefully press the keyboard at point ② to elevate the keyboard from its normal position (Figure 4a).
- Carefully lift the keyboard ③ up, being careful not to bend the keyboard ribbon cable ④ (Figure 4b).
- Disconnect the keyboard ribbon cable ④ from the locking collar socket ⑤ (Figure 4b)
- Carefully lift up the keyboard ③ (Figure 4c) off the computer.



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 1600MHz. 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, remove the battery ([page 2 - 5](#)), and bottom case ([page 2 - 6](#)).
2. The RAM modules will be visible at point **1** on the mainboard ([Figure 5a](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 5b](#)).
4. The RAM module **4** will pop-up ([Figure 5c](#)), and you can then remove it.

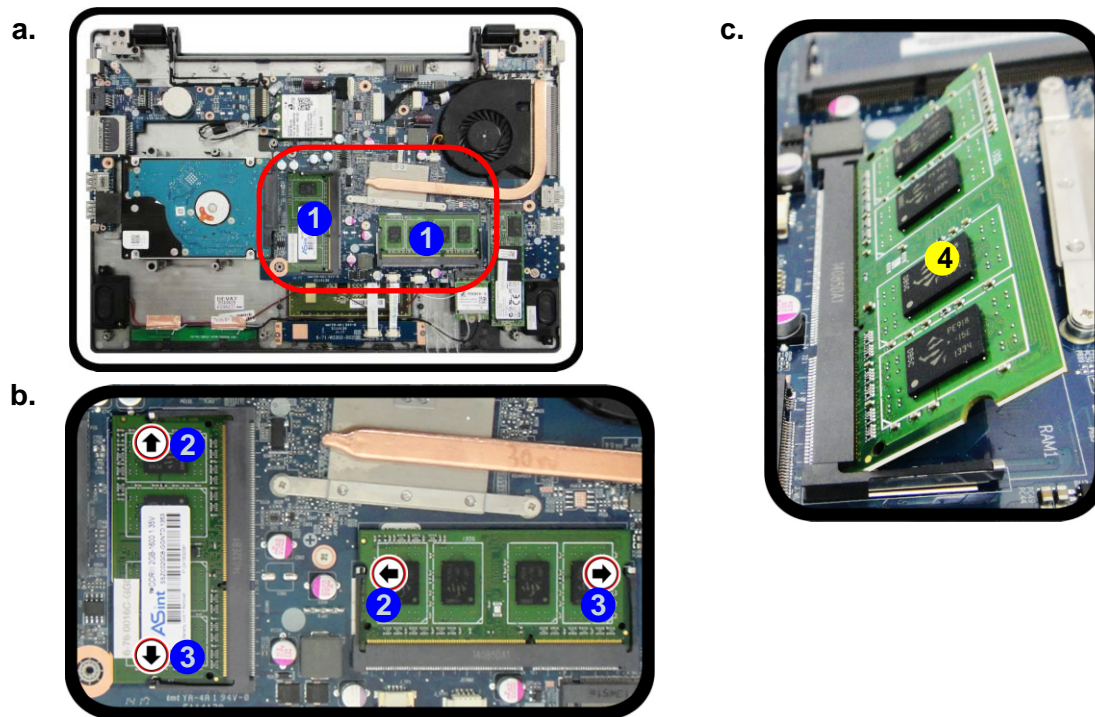


Figure 5
RAM Module Removal

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

d. Replace the bottom case and tighten the screws.

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. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
8. Replace the bottom case and tighten the screws (*Figure 6d*).
9. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.



Removing the Wireless LAN Module

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)), and bottom case ([page 2 - 6](#)).
2. The Wireless LAN module will be visible at point **1** ([Figure 7a](#)) on the mainboard.
3. Carefully disconnect cables **2** & **3**, then remove screw **4** from the module socket ([Figure 7b](#)).
4. The Wireless LAN module **5** ([Figure 7c](#)) will pop-up.
5. Lift the Wireless LAN module **5** ([Figure 7d](#)) up and off the computer.

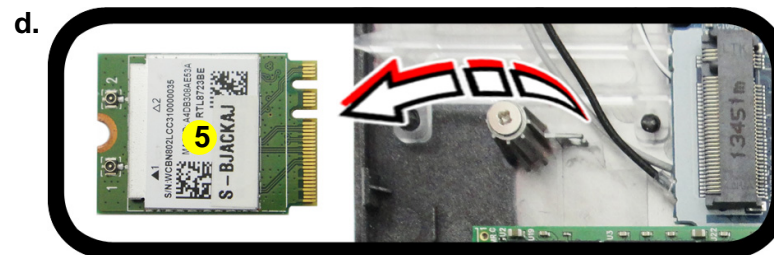
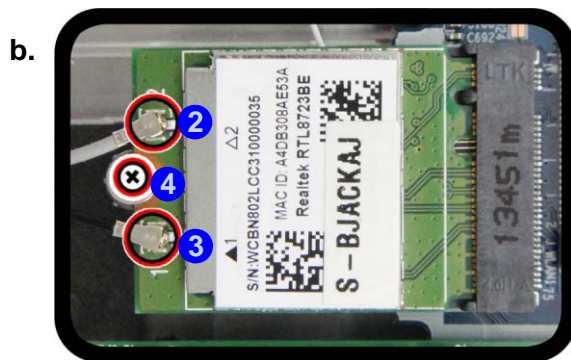
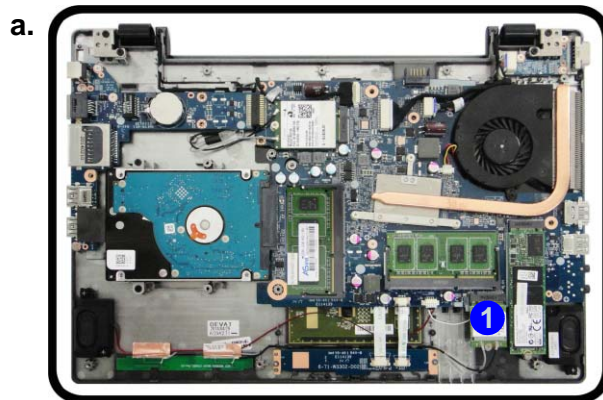



Figure 7
**Wireless LAN
Module Removal**

- a. Locate the wireless LAN module.
- b. Disconnect the cables and remove the screw.
- c. The WLAN module will pop up.
- d. Lift the WLAN module out.

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



5. WLAN Module.

- 1 Screw

Wireless LAN, and Combo Module Cables

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo, 3G and LTE 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	
LTE Broadband	LTE 1	Black	Black
	LTE 2	Gray	
3G Broadband	3G 1	Black	Black
	3G 2	Gray	

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

Removing the 3G Module

1. Turn off the computer, remove the battery ([page 2 - 5](#)), and bottom case ([page 2 - 6](#)).
2. The 3G module will be visible at point **1** ([Figure 7a](#)) on the mainboard.
3. Carefully disconnect cables **2** & **3**, then remove screw **4** from the module socket ([Figure 7b](#)).
4. The 3G module **5** ([Figure 7c](#)) will pop-up.
5. Lift the 3G module **5** ([Figure 7d](#)) up and off the computer.

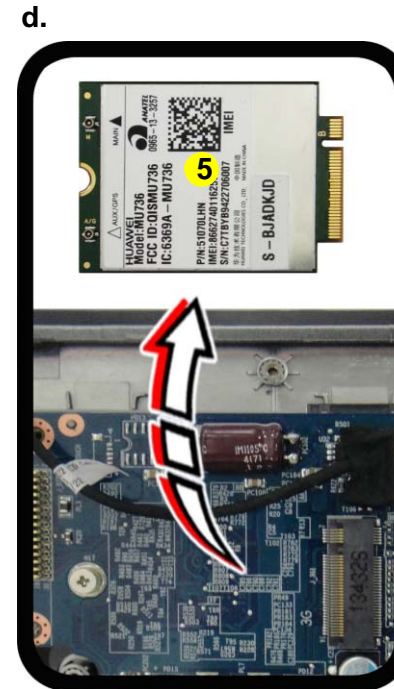
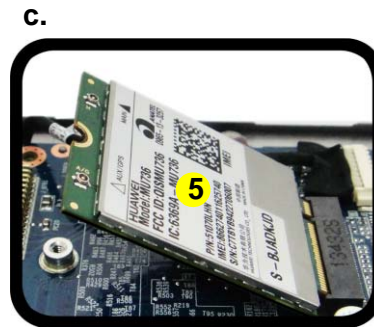
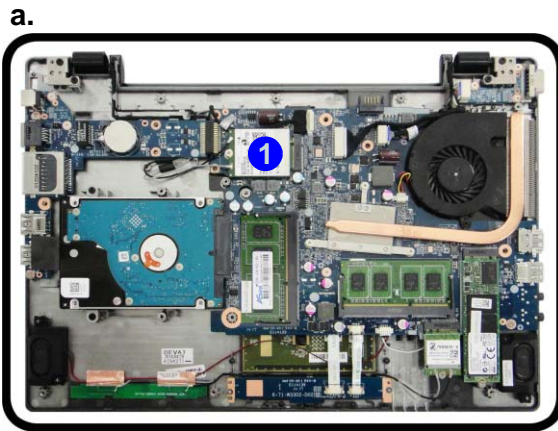
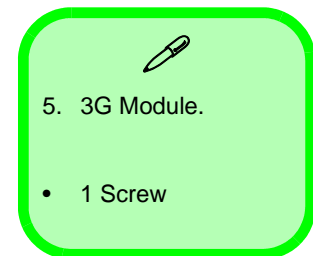


Figure 8
3G Module Removal

- a. Locate the 3G module.
- b. Disconnect the cables and remove the screw.
- c. The 3G module will pop up.
- d. Lift the 3G module out.

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



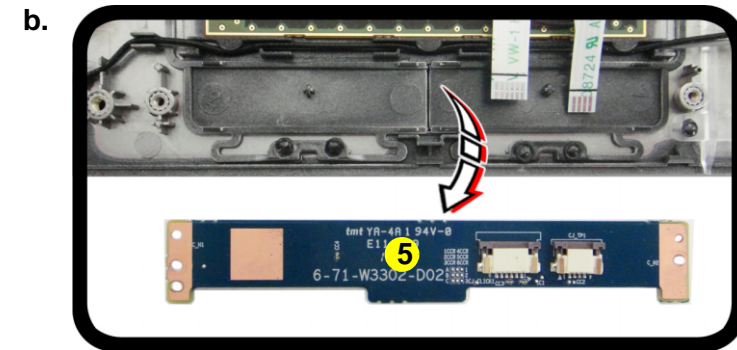
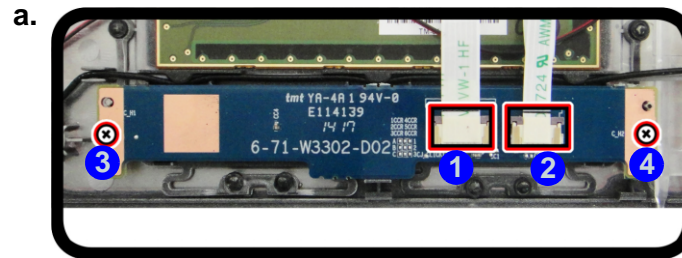
Disassembly

Figure 9
**Click Board Module
 Removal**

- a. Disconnect the cables and remove the screw.
 b. Lift the click board out.

Removing the Click Board Module

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)), and bottom case ([page 2 - 6](#)).
2. Carefully disconnect cables **1** & **2**, then remove screws **3** & **4** from the module ([Figure 7a](#)).
3. Lift the click board module **5** ([Figure 7b](#)) up and off the computer.



5. Click Board Module

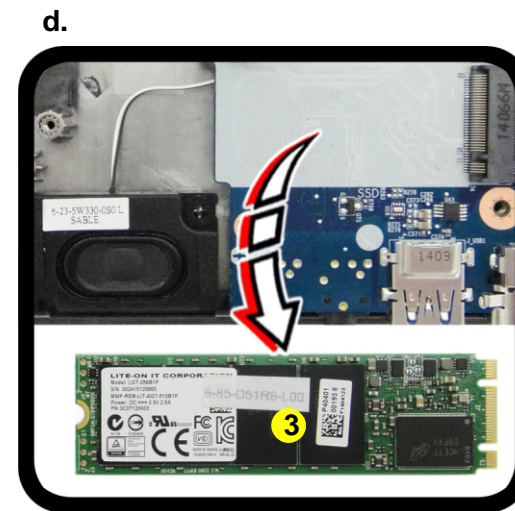
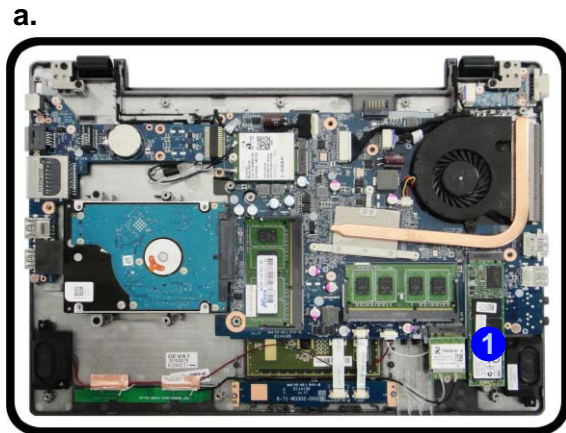
- 2 Screws

Removing the mSATA Module

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)), keyboard ([page 2 - 8](#)), and bottom case ([page 2 - 6](#)).
2. The mSATA module will be visible at point **1** ([Figure 7a](#)) on the mainboard.
3. Remove screw **2** from the module socket ([Figure 7b](#)).
4. The mSATA module **3** ([Figure 7c](#)) will pop-up.
5. Lift the mSATA module **3** ([Figure 7d](#)) up and off the computer.

Figure 10
mSATA Module Removal

- a. Locate the mSATA module.
- b. Remove the screw.
- c. The mSATA module will pop up.
- d. Lift the mSATA module out.



3. SSD Module.

- 1 Screw

Disassembly

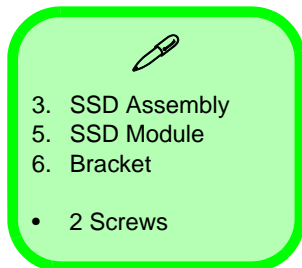
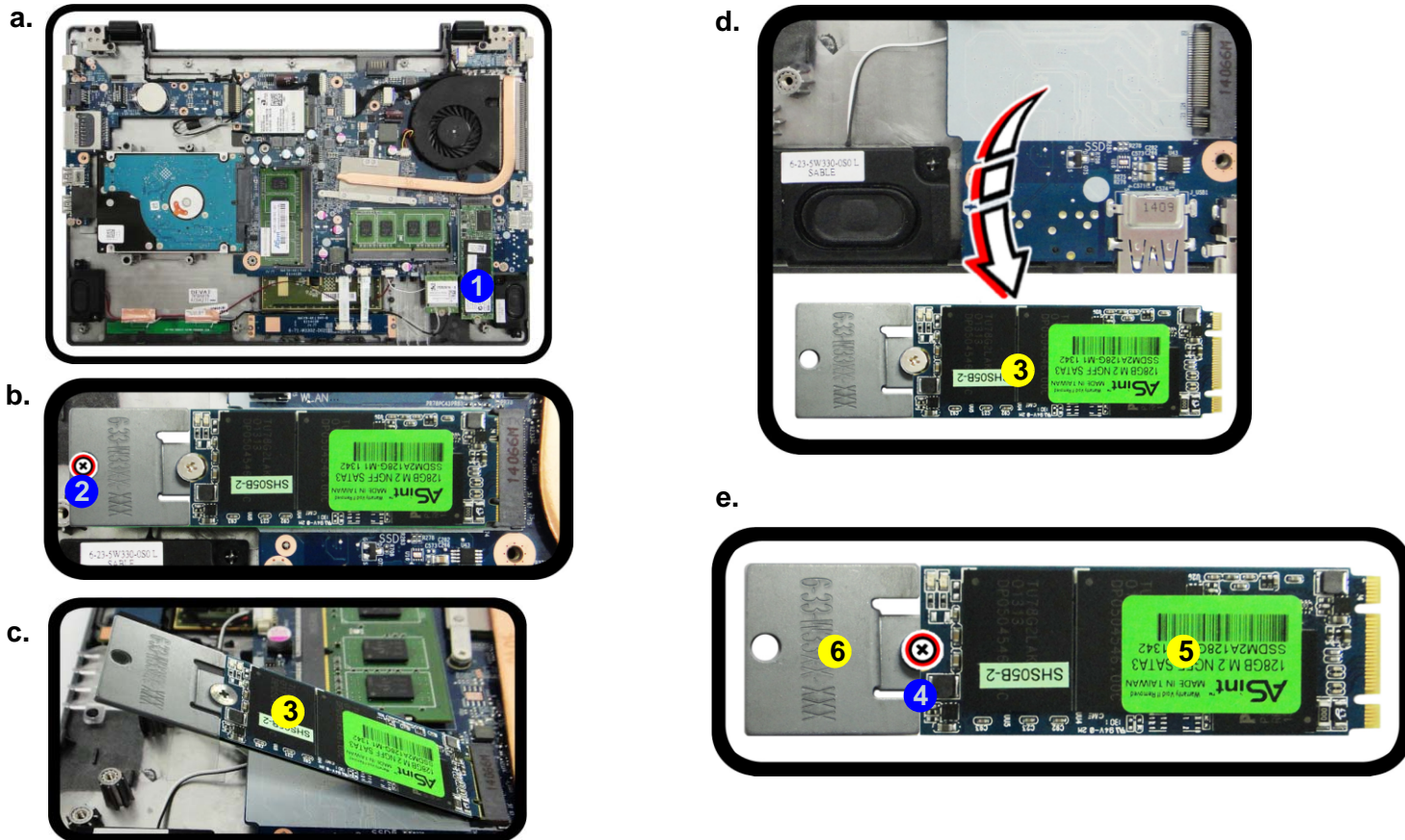
Figure 11
SSD-1 Module
Removal

- Locate the SSD assembly.
- Remove the screw.
- The SSD assembly will pop up.
- Lift the SSD assembly out.
- Remove the screw to separate the SSD module and bracket.

Removing the SSD Module

SSD-1 module removal

- Turn **off** the computer, remove the battery ([page 2 - 5](#)), keyboard ([page 2 - 8](#)), and bottom case ([page 2 - 6](#)).
- The SSD module will be visible at point **1** ([Figure 7a](#)) on the mainboard.
- Remove screw **2** from the module socket ([Figure 7b](#)).
- The SSD assembly **3** ([Figure 7c](#)) will pop-up.
- Lift the SSD assembly **3** ([Figure 7d](#)) up and off the computer.
- Remove screw **4** to separate the SSD module **5** and bracket **6** ([Figure 7e](#)).

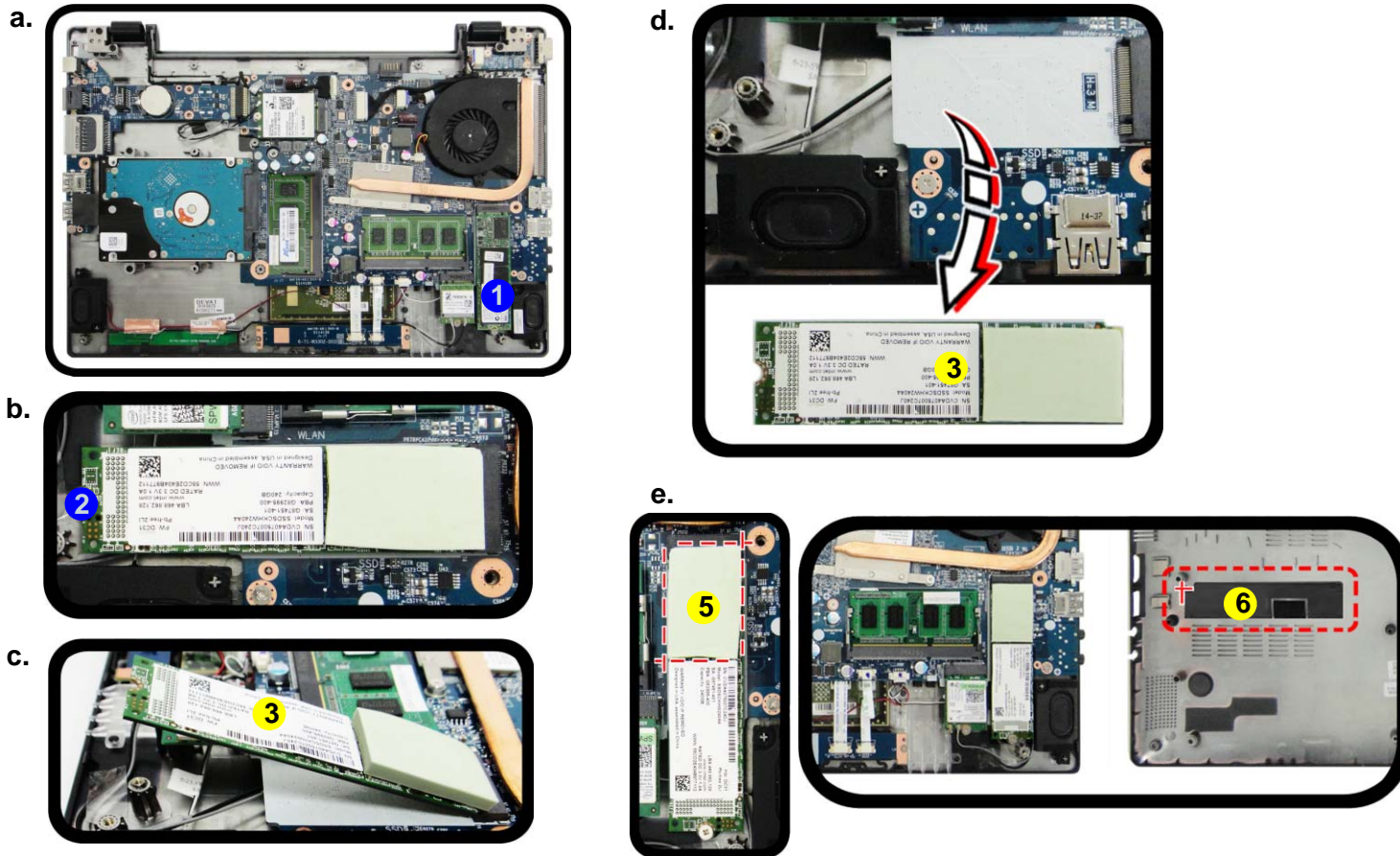



SSD-2 module removal

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)), keyboard ([page 2 - 8](#)), and bottom case ([page 2 - 6](#)).
2. The SSD module will be visible at point **1** ([Figure 7a](#)) on the mainboard.
3. Remove screw **2** from the module socket ([Figure 7b](#)).
4. The SSD module **3** ([Figure 7c](#)) will pop-up.
5. Lift the SSD module **3** ([Figure 7d](#)) up and off the computer.
6. Reverse the process to install a new module (do not forget to place the thermal pad in the module, & copper shielding in the bottom cover as shown in [Figure 7e](#)).

Figure 12
SSD-2 Module Removal

- a. Locate the SSD.
- b. Remove the screw.
- c. The SSD assembly will pop up.
- d. Lift the SSD assembly out.





- 3. SSD Module
- 5. Thermal pad
- 6. Copper Shielding

- 1 Screw

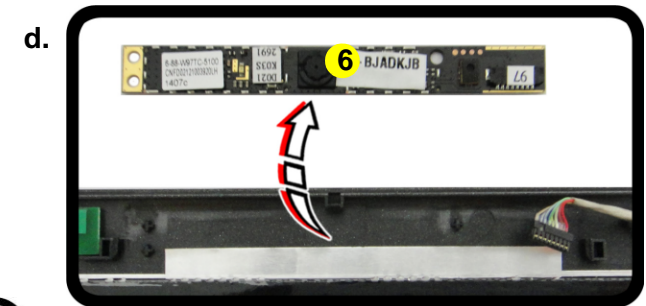
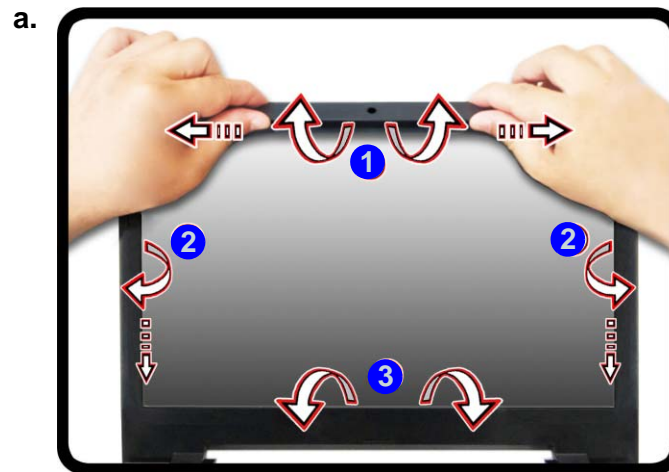
Disassembly

Figure 13
**CCD Module
 Removal**

- Insert your fingers to lift the frame up around 10~15 degrees and then slide your fingers along to separate the frame and LCD.
- Remove the LCD front panel.
- Disconnect the cable.
- Remove the CCD module.

Removing the CCD Module

- Turn **off** the computer, remove the battery ([page 2 - 5](#)).
- Turn the computer over and open the LCD,
- Insert your fingers under the frame of the LCD at the point **1** and lift it up around 10~15 degrees and then slide your finger along the inner frame towards points **2** & **3** to separate it from the LCD ([Figure 13a](#)).
- Remove the LCD front panel **4** from the LCD ([Figure 13b](#)).
- Disconnect the cable **5** ([Figure 13c](#)).
- Remove the CCD module **6** off ([Figure 13d](#)).



4. LCD Front Panel
 6. CCD Module

Appendix A:Part Lists

This appendix breaks down the *W330AU / W331AU* 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.

Parts List Illustration Location

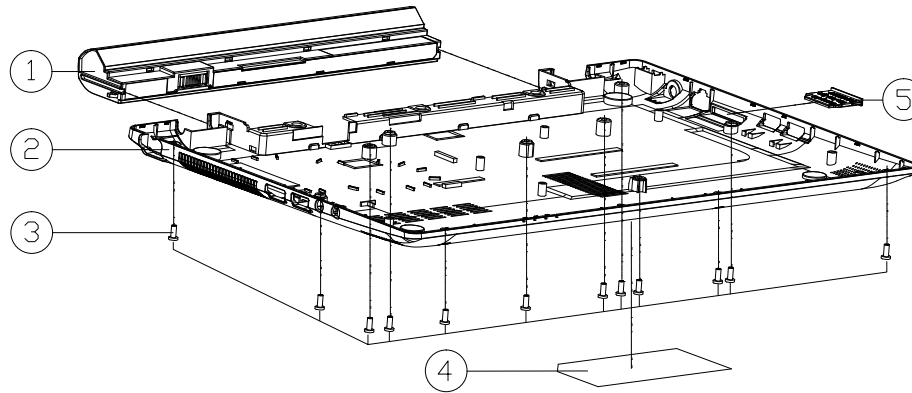
The following table indicates where to find the appropriate parts list illustration.

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

Parts	
Top (10W)	<i>page A - 3</i>
Bottom	<i>page A - 4</i>
LCD (Sharp)	<i>page A - 5</i>
LCD (Samsung)	<i>page A - 6</i>
LCD (Chimei)	<i>page A - 7</i>
HDD	<i>page A - 8</i>

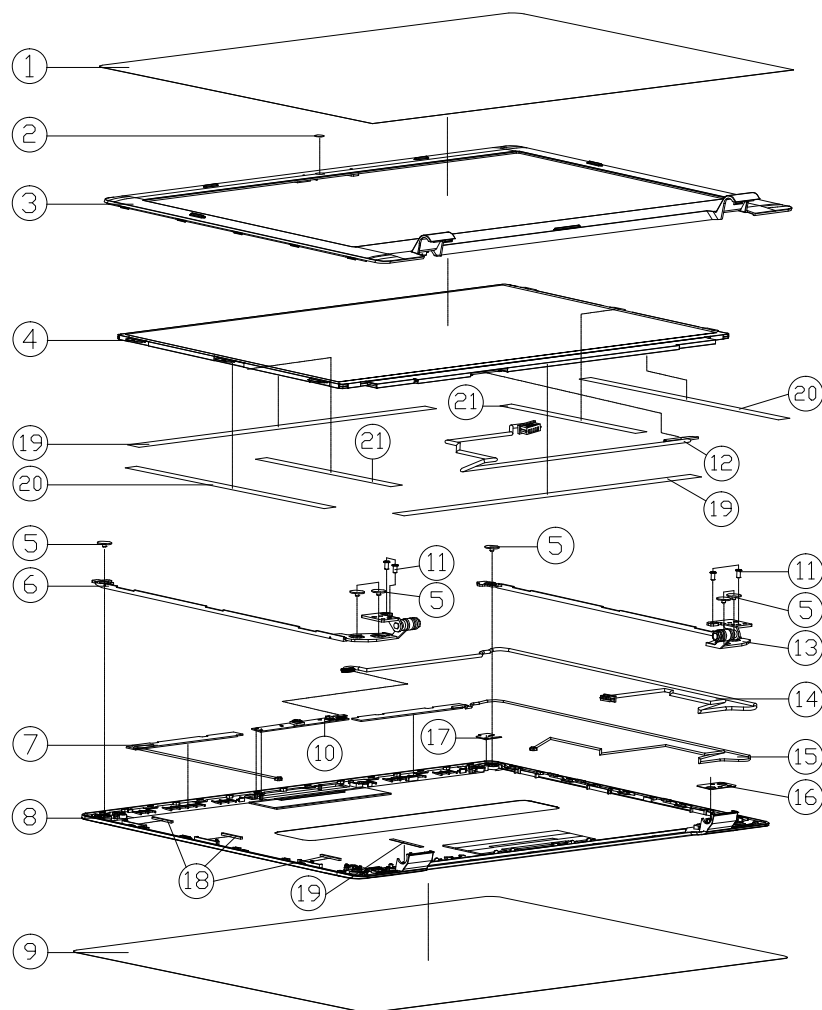
Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	IMP S LI 11U/22W/24H COP 50P/30U 50U/424P/CTURD V501U	6-87-W510S-4291	
1	IMP S LI 11U/22W/24H COP 50P/30U 50U/424P/CTURD V501U	6-87-W510S-42F1	
1	IMP S LI 11U/22W/24H COP 50P/30U 50U/424P/CTURD V501U	6-87-W510S-4UF1	
2	BOTTOM CASE MODULE (MP)FOR W330SU2	6-39-W3303-013	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	PRODUCT LABEL FOR W331AU	6-45-W331AU03-010	
4	PRODUCT LABEL FOR W330AU	6-45-W330AU03-010	
4	PRODUCT LABEL FOR W330SU2	6-45-W330SU23-010	
5	PRODUCT LABEL (HANSUNG/HANSUNG104S) FOR W331SU2	6-45-W331SU23-4P0	
5	DUMMY 30U NON PUSH TYPE PCBMS (C723P-7010) W570SU	6-42-W9708-030	

LCD (Sharp)



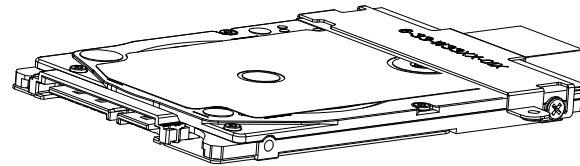
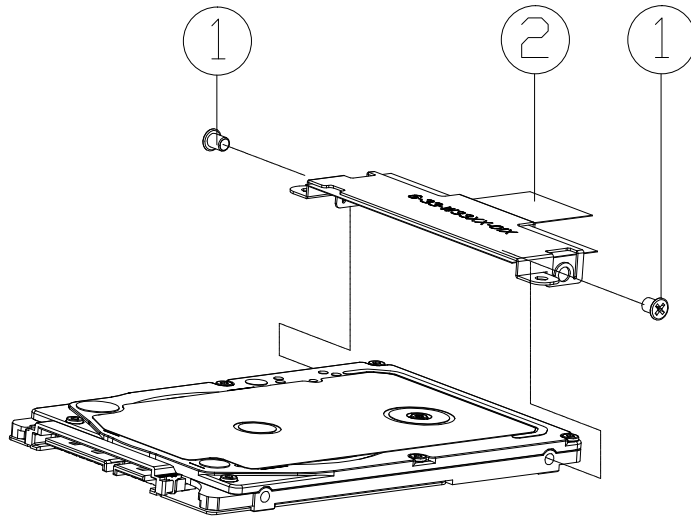
ITEM	PART NAME	PART NO	REMARK
1	FRONT COVER PROTECTION MYLAR (MP) FOR W330SU2	6-40-W3301-011	
2	CCD LENS (D=6MM)(PMMA) W740SU	6-42-W740T-010	
3	LCD FRONT COVER (MODIFY TOLERANCE) MODULE FOR W330SU2	6-39-W3301-013	
4	LCD 13.3" WHD SHARP L0833T1JW02L000A5690 LED (EIP) 26MM	6-50-G6226-A00	
5	SCREW M2*2L K1 BK/Z ICT NY(ΦB,T=0.6)	6-35-B6120-2RE	
6	LCD HINGE L (BRACKET MODIFY) W330SU2	6-33-W3301-0L3	
7	ANTENNA 3<LT; WT LIE-2 PCB 016/08/09/16/06/19/26/26<LT; L=50MM W330SU2	6-23-7W330-021	FOR W330SU2
7	ANTENNA WLAN COMBO WT LIE-4<LT; PCB 246/56 W3-60MM W2-60MM W330SU2	6-23-7W330-031	FOR W330AU
8	LCD BACK COVER MODULE (CANCEL DOWN SIDE RIB) FOR W330SU2	6-39-W3301-023	
8	LCD BACK COVER MODULE W331SU2	6-39-W3311-011	
9	BACK COVER PROTECTION MYLAR FOR (MP) W330SU2	6-40-W3301-021	
10	UVC CAMERA B<LT;M FIX 0<LT;V<LT;0<LT;7-300 30 30 HD 10<LT;K B<LT;2 V<LT;0<LT;00 F<LT;0<LT;0<LT;0 W<LT;0-0<LT;0	6-88-W940C-4902	
10	UVC CAMERA CH<LT;O<LT;NY FIX 0<LT;V<LT;0<LT;7-300 30 30 HD 10<LT;K B<LT;2 V<LT;0<LT;00 F<LT;0<LT;0<LT;0 W<LT;0-0<LT;0	6-88-W940C-5100	
11	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
12	WIRE CABLE FOR EIP 40P 19V 3<LT;59MM (HL/LA) W330SU2 FOR SHARP	6-43-W3301-021-P	
13	LCD HINGE R (BRACKET MODIFY) W330SU2	6-33-W3301-0R3	
14	WIRE CABLE FOR CCD 8P 3.3V 57<LT;0MM (HL) W330SU2	6-43-W330T-011	
15	ANTENNA 3<LT;LT; WT LIE-1 PCB 016/08/09/16/06/19/26/26<LT; L=50MM W330SU2	6-23-7W330-011	
16	HINGE TAPE RIGHT BOTTOM SIDE T60 FOR W330SU2	6-40-W3301-1R0	
17	HINGE TAPE RIGHT TOP SIDE T60 FOR W330SU2	6-40-W3301-0R0	
18	LCD SP<LT;NGE 05<LT;4<LT;3<LT;6<LT;90 L-SIDE FOR SHARP (L<LT;SS + W<LT;0<LT;3<LT;65 6400) W330SU2	6-47-0019A-15H	FOR EDP/SHARP
19	MYLAR< 285*15*0.2MM 单面背胶) FOR W230SS	6-40-W230S-030	
20	MYLAR< 140*15*0.2MM 单面背胶) FOR W230SS	6-40-W230S-020	
21	SHARP LCD NOISE MYLAR<140*7*0.2MM? FOR W230SS	6-40-W230S-040	
22	TAPE MYLAR TRANSPARENT (30<LT;5*0.05) W25HPQ	6-40-W25P3-010	

Figure A - 3
LCD (Sharp)

A. Part Lists

HDD

Figure A - 6
HDD



ITEM	PART NAME	PART NO	REMARK
1	SCREW M3*2.5L KI NI ICT NY	6-35-B1130-2R5	
2	HDD BRACKET<SECC> W330SU2	6-33-W330J-011	

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *W330AU / W331AU* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Table B - 1
**SCHEMATIC
DIAGRAMS**

Diagram - Page	Diagram - Page	Diagram - Page
<i>System Block Diagram - Page B - 2</i>	<i>Panel, Inverter - Page B - 16</i>	<i>1.05V Series - Page B - 30</i>
<i>Haswell ULT (Display, Misc, CLK) - Page B - 3</i>	<i>LVDS_PS8625 - Page B - 17</i>	<i>VDD3, VDD5 - Page B - 31</i>
<i>Haswell ULT DDR Channel-A/B - Page B - 4</i>	<i>PS8613 - Page B - 18</i>	<i>1.5V or 1.35V/0.75VS PCH 1.5VS - Page B - 32</i>
<i>Haswell ULT RTC/HDA/SAT - Page B - 5</i>	<i>HDMI, Fan - Page B - 19</i>	<i>VCore - Page B - 33</i>
<i>Haswell ULT LPC/SPI/SMB/CL - Page B - 6</i>	<i>Audio Codec - Page B - 20</i>	<i>PW SW Board - Page B - 34</i>
<i>Haswell ULT Power Management - Page B - 7</i>	<i>USB Charge, USB 3.0, I/O Con - Page B - 21</i>	<i>IO Board - LAN - Page B - 35</i>
<i>Haswell ULT GPIOs - Page B - 8</i>	<i>CCD, TPM, TP, HDD, LED - Page B - 22</i>	<i>IO Board - USB - Page B - 36</i>
<i>Haswell ULT PCIE, USB, eDP - Page B - 9</i>	<i>NGFF_WLAN - Page B - 23</i>	<i>AC-In Conn - Page B - 37</i>
<i>Haswell ULT Power 1 - Page B - 10</i>	<i>NGFF_3G - Page B - 24</i>	<i>Click Board - Page B - 38</i>
<i>Haswell ULT Power 2 - Page B - 11</i>	<i>NGFF_SSD - Page B - 25</i>	<i>Power On / S4 Resume - Page B - 39</i>
<i>Haswell ULT Power-VSS - Page B - 12</i>	<i>KBC-ITE IT8587 - Page B - 26</i>	<i>Power Off / Into S4 - Page B - 40</i>
<i>Haswell ULT CFG, RSVD - Page B - 13</i>	<i>DC-In, Charger - Page B - 27</i>	<i>Into S3 - Page B - 41</i>
<i>DDR3 SO-DIMM_A_0 - Page B - 14</i>	<i>3.3V_SPI, 3.3VS, 3.3V_M, 3.3V - Page B - 28</i>	<i>S3 Resume - Page B - 42</i>
<i>DDR3 SO-DIMM_B_0 - Page B - 15</i>	<i>1.8VS, 1.5VS, 5V, 5VS - Page B - 29</i>	

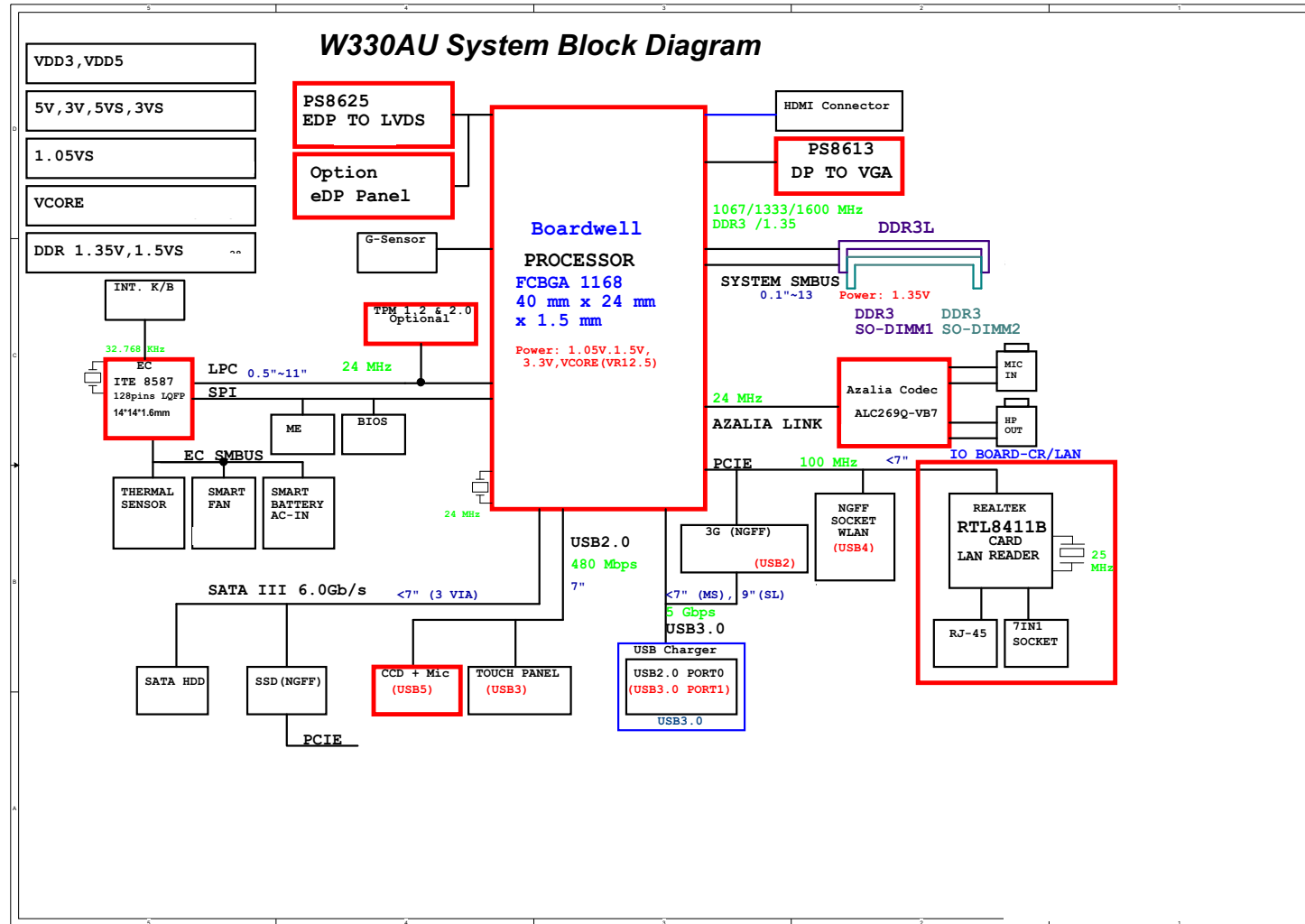


Version Note

The schematic diagrams in this chapter are based upon version 6-7P-W3305-006. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

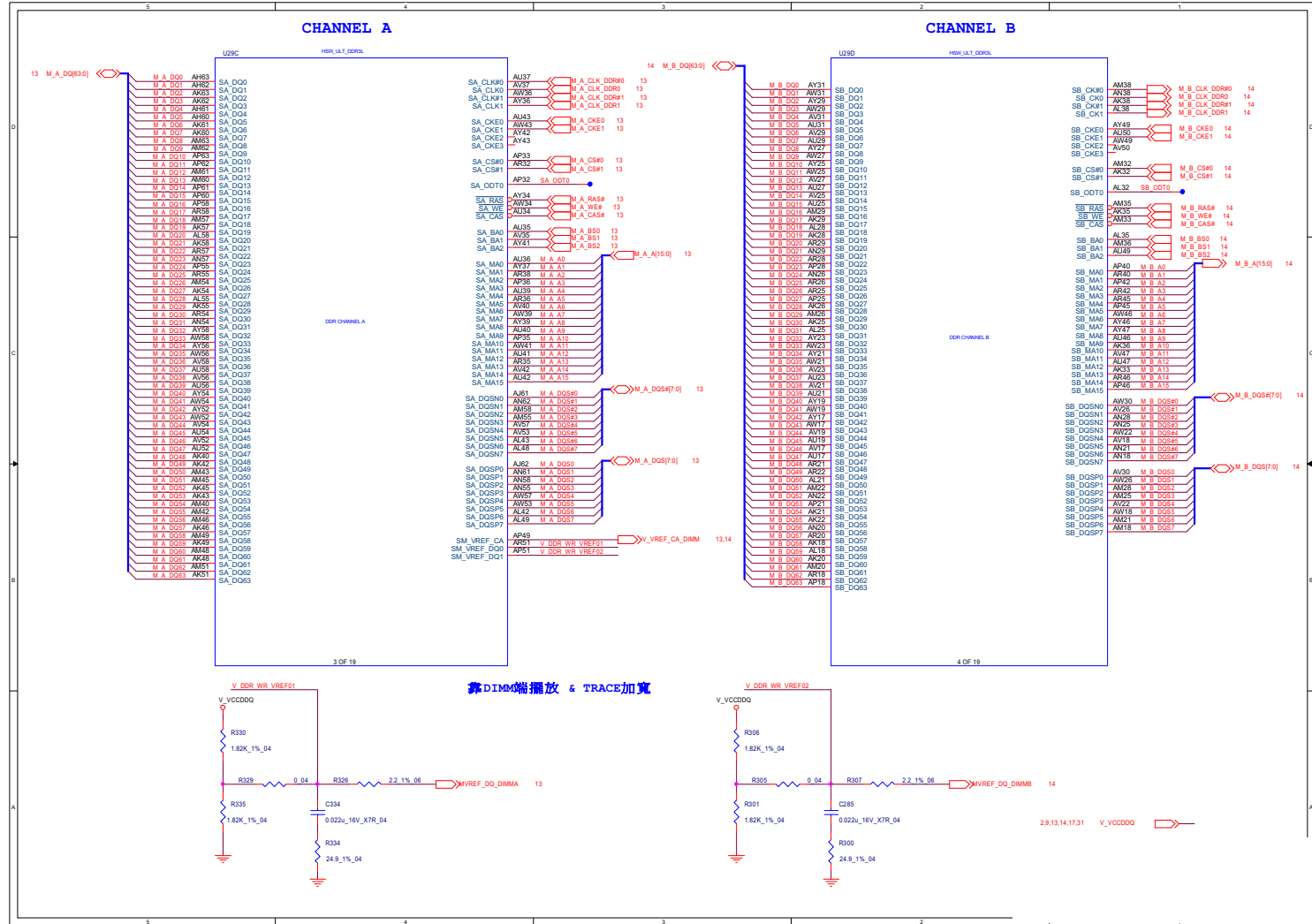
System Block Diagram

Sheet 1 of 41
System Block
Diagram

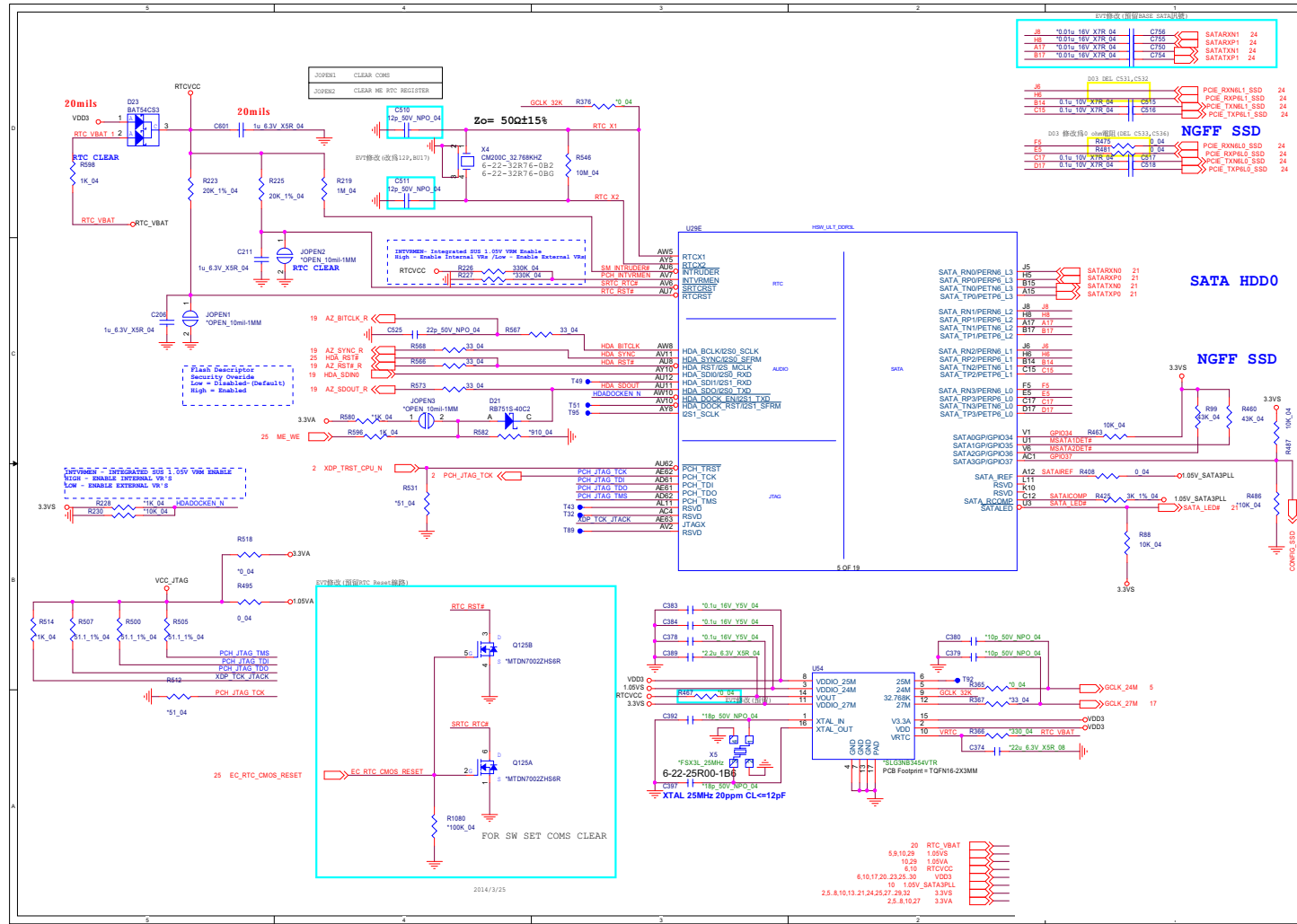


Haswell ULT DDR Channel-A/B

Sheet 3 of 41
Haswell ULT DDR
Channel-A/B



Haswell ULT RTC/HDA/SAT

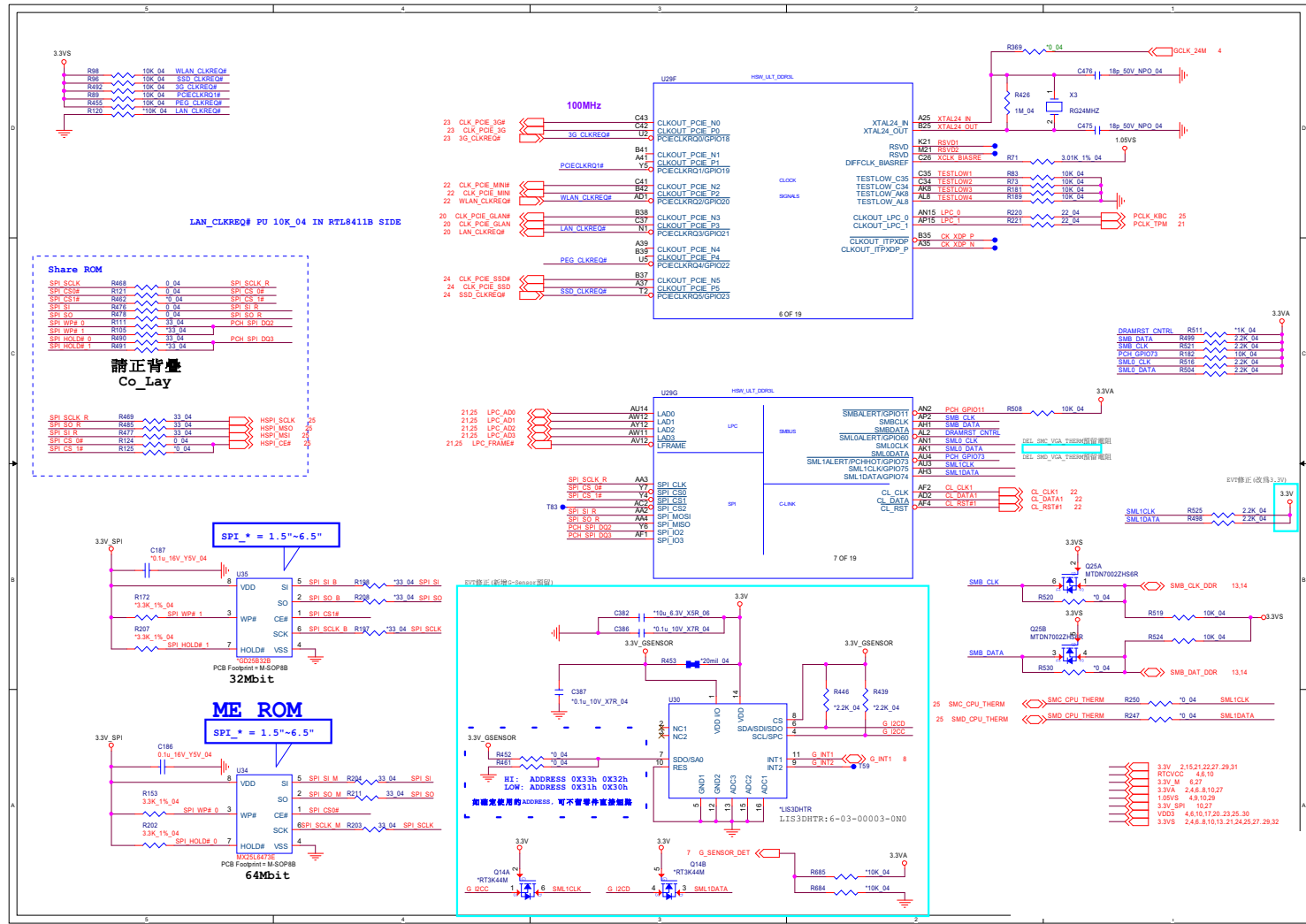


B.Schematic Diagrams

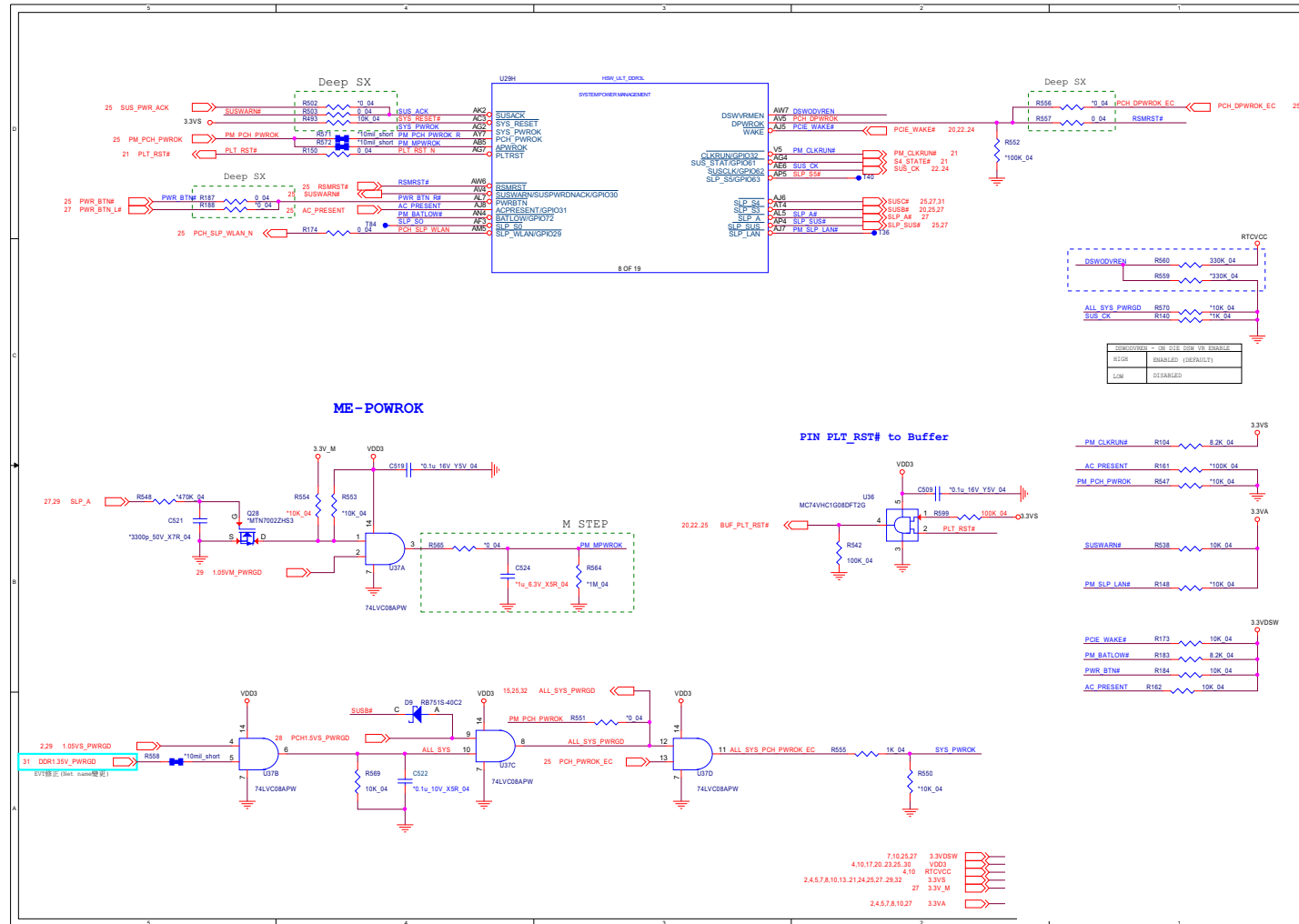
Sheet 4 of 41
Haswell ULT RTC/
HDA/SAT

Haswell ULT LPC/SPI/SMB/CL

Sheet 5 of 41
Haswell ULT LPC/
SPI/SMB/CL



Haswell ULT Power Management

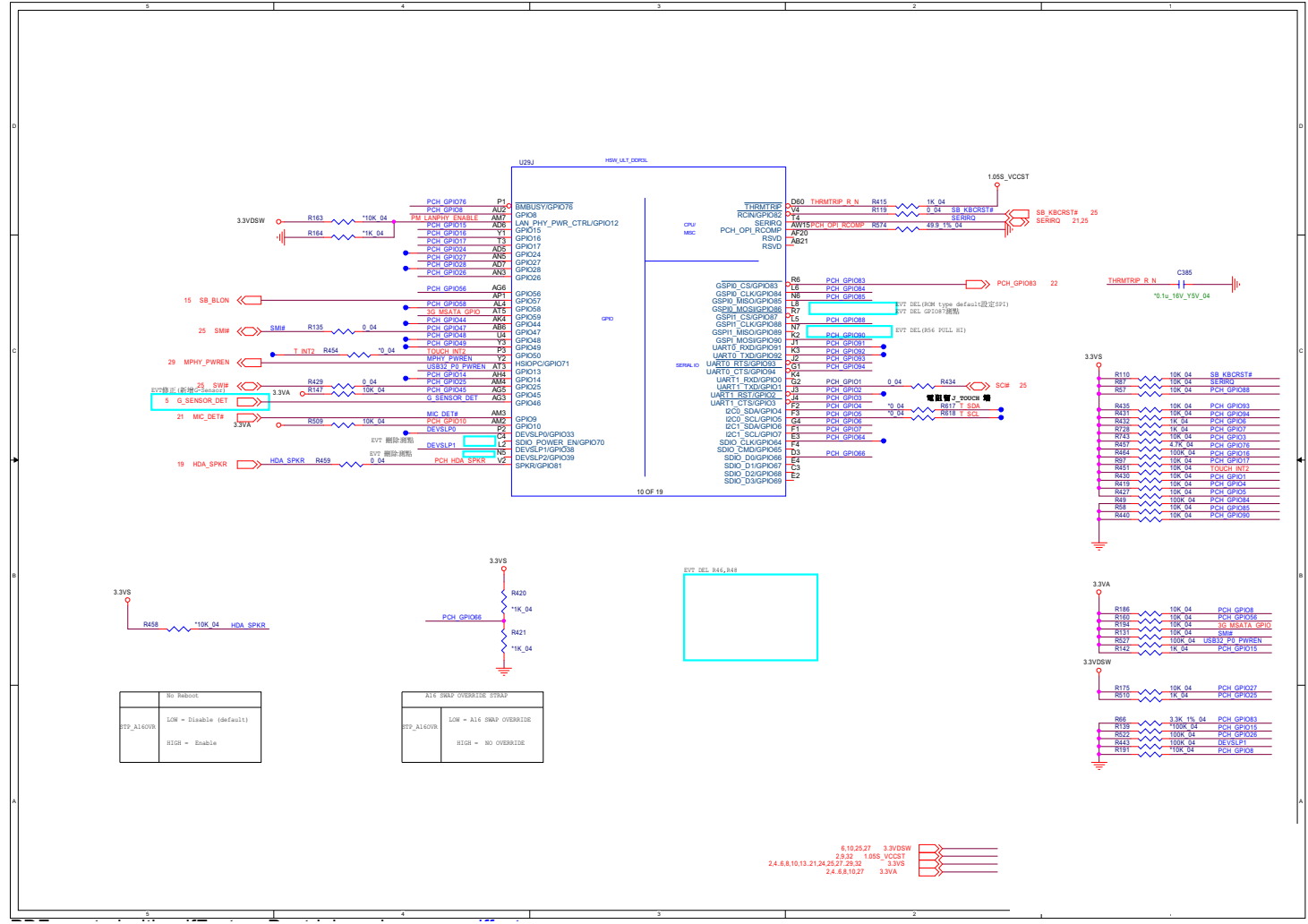


B.Schematic Diagrams

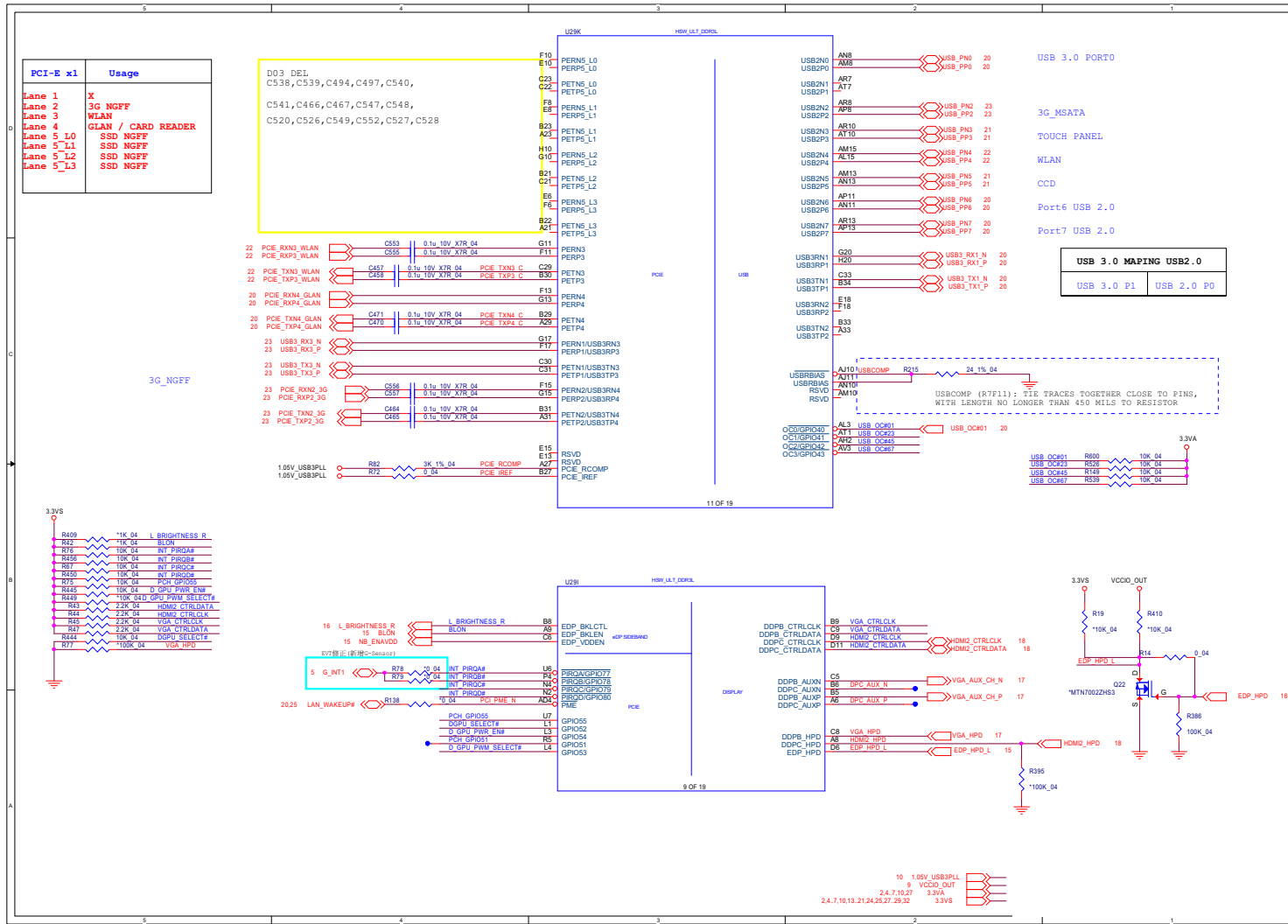
Sheet 6 of 41
Haswell ULT Power Management

Haswell ULT GPIOs

Sheet 7 of 41
Haswell ULT GPIOs



Haswell ULT PCIE, USB, eDP

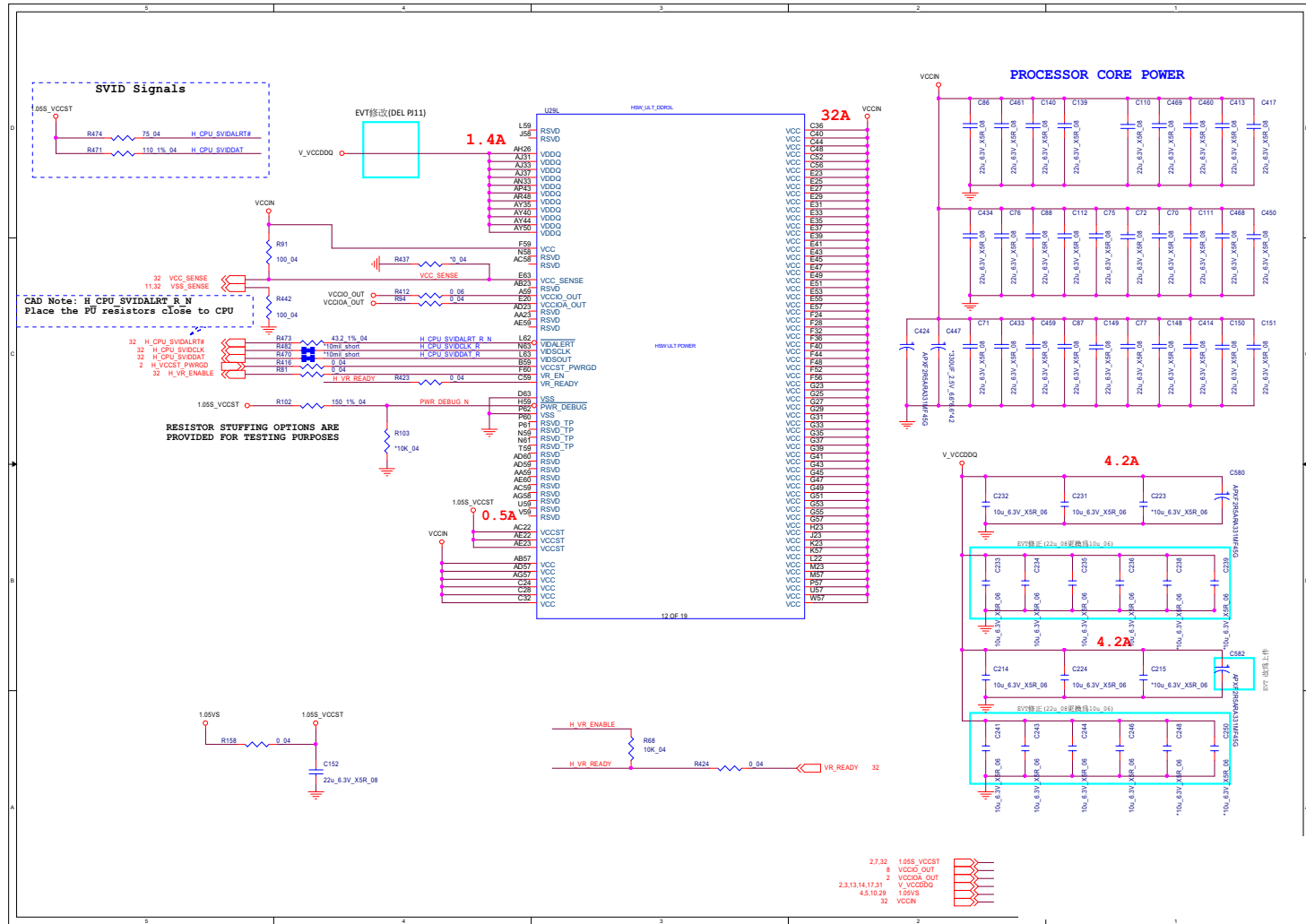


B.Schematic Diagrams

Sheet 8 of 41
Haswell ULT PCIE,
USB, eDP

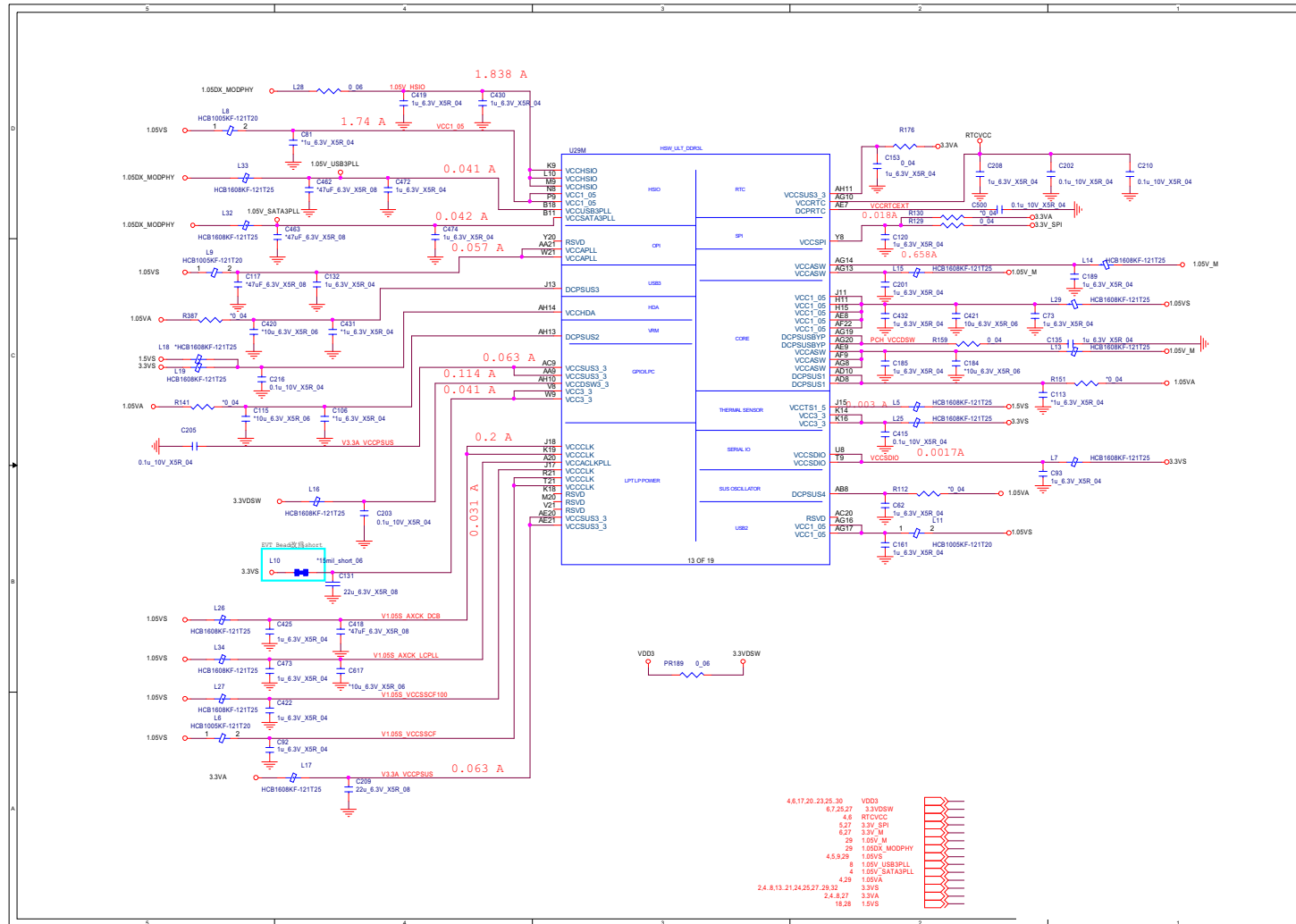
Haswell ULT Power 1

Sheet 9 of 41
Haswell ULT Power
1



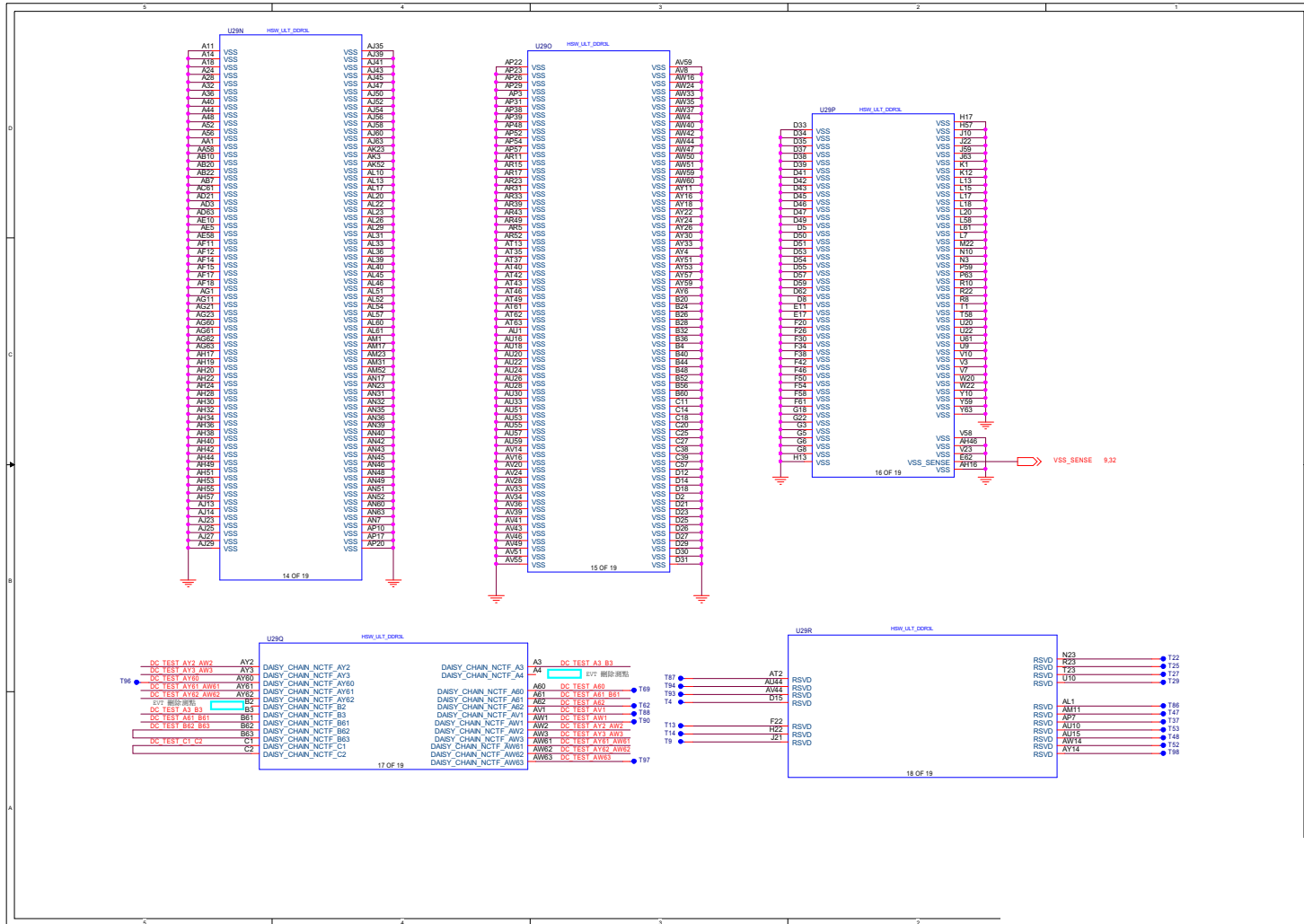
Haswell ULT Power 2

Sheet 10 of 41
Haswell ULT Power
2



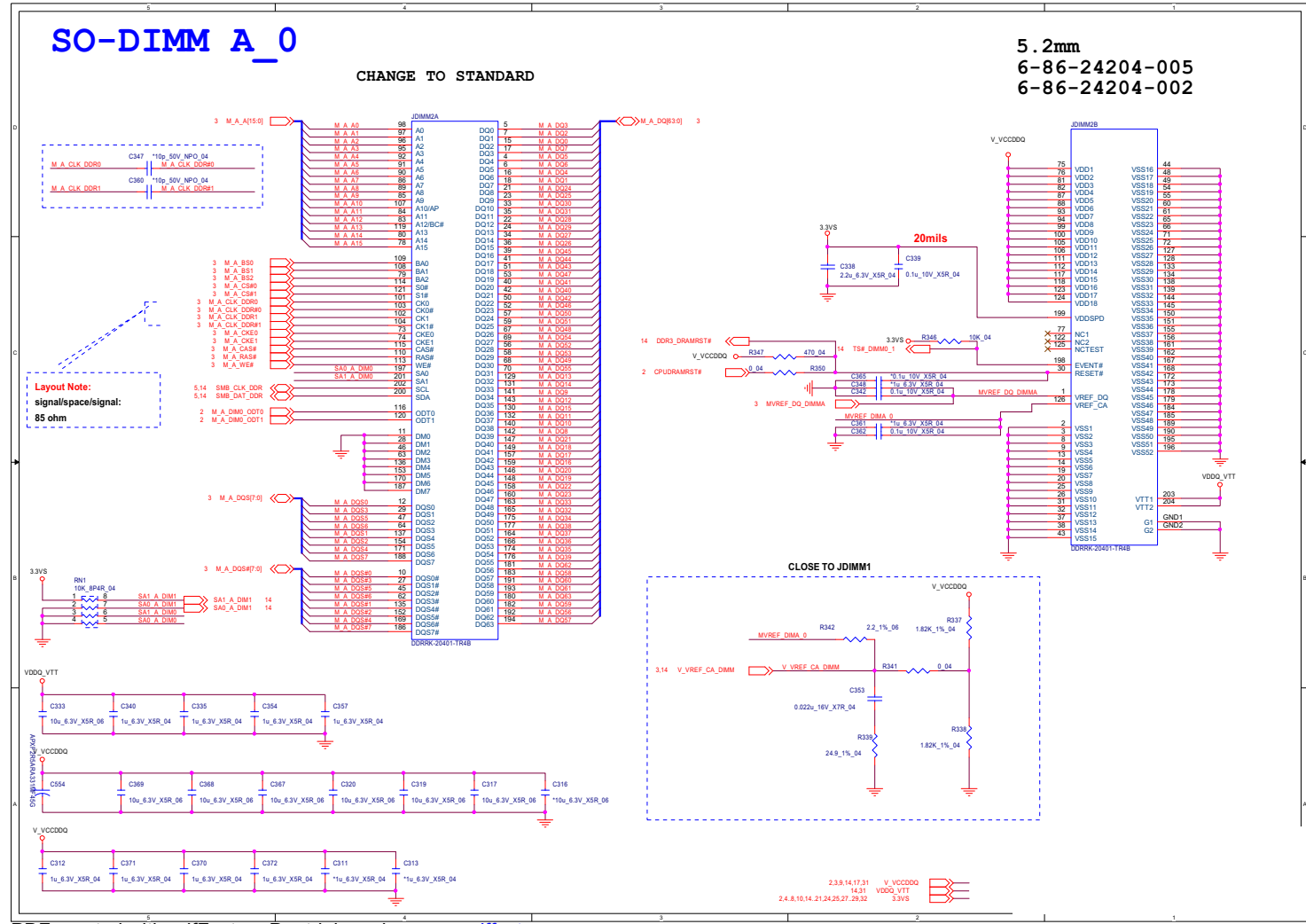
Haswell ULT Power-VSS

Sheet 11 of 41
Haswell ULT
Power-VSS



DDR3 SO-DIMM_A_0

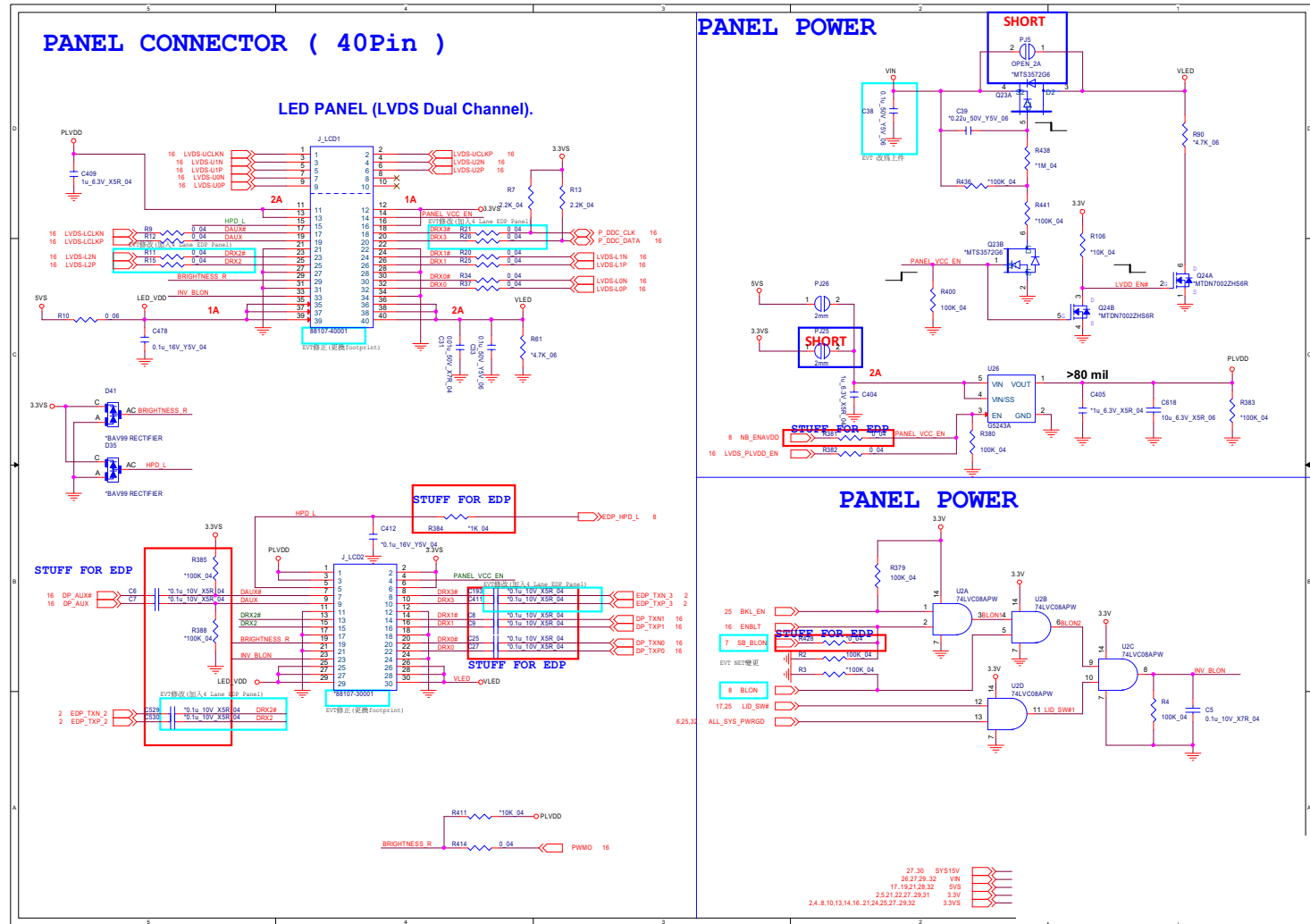
Sheet 13 of 41
DDR3 SO-DIMM_A_0



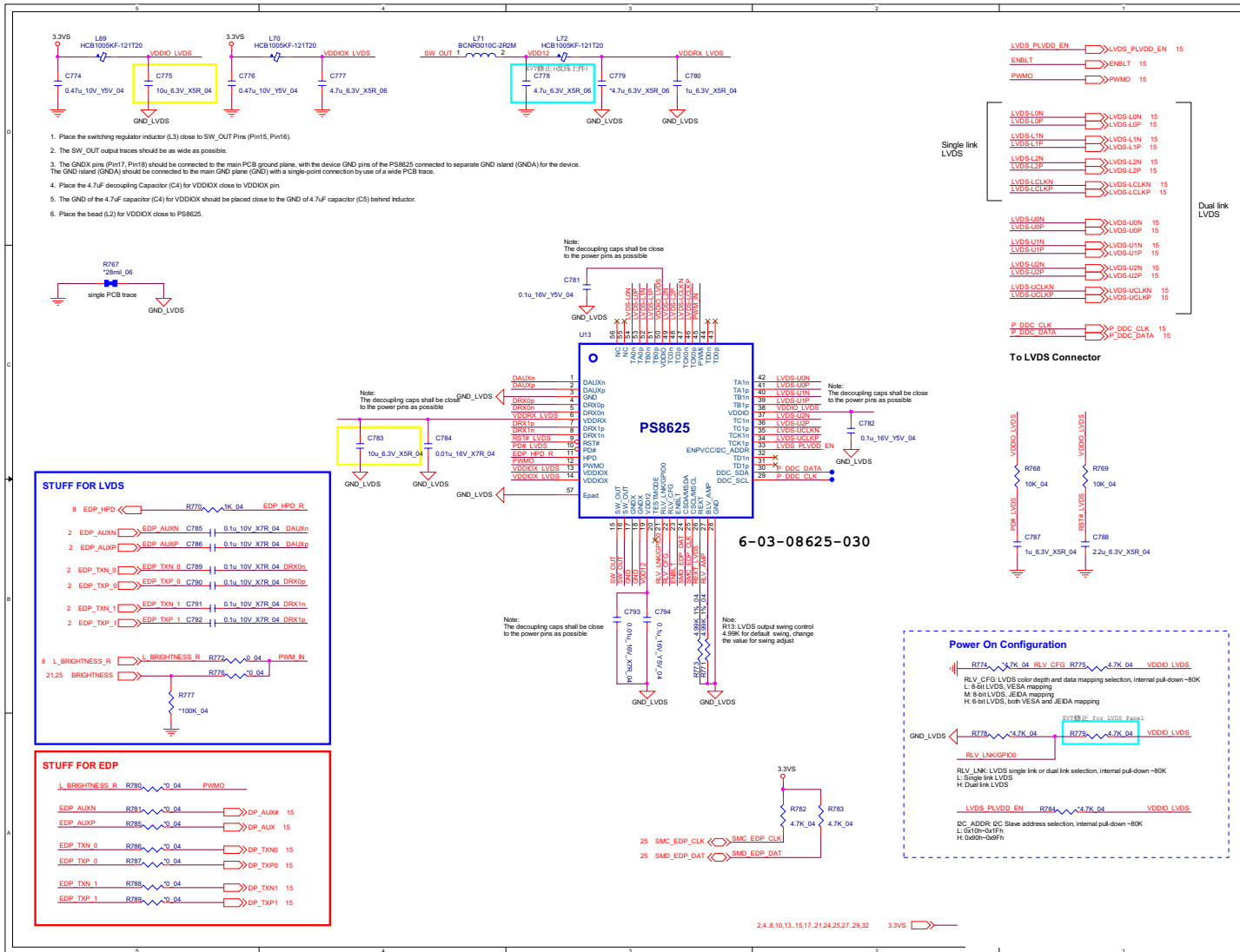
Panel, Inverter

B.Schematic Diagrams

Sheet 15 of 41
Panel, Inverter



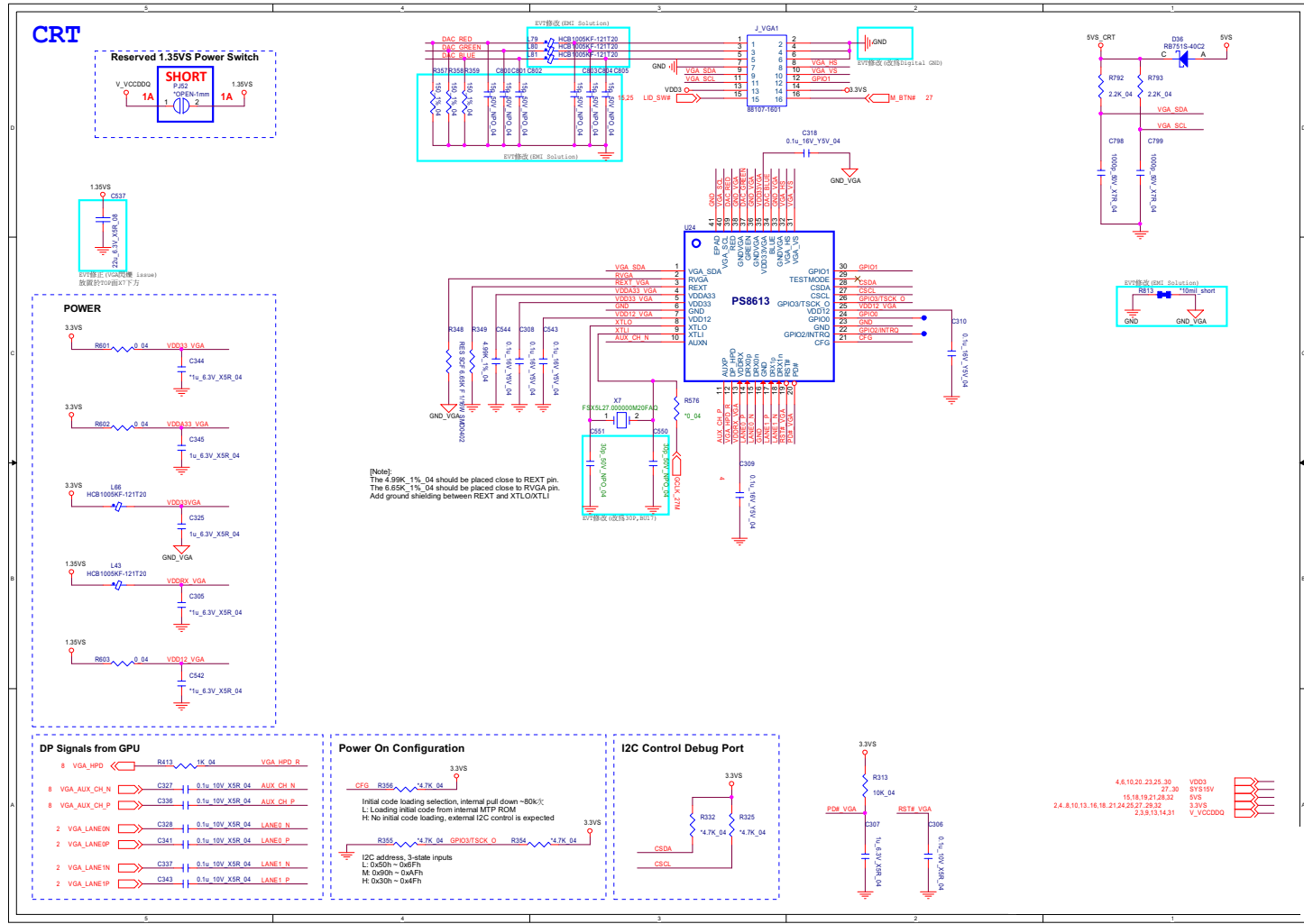
LVDS_PS8625



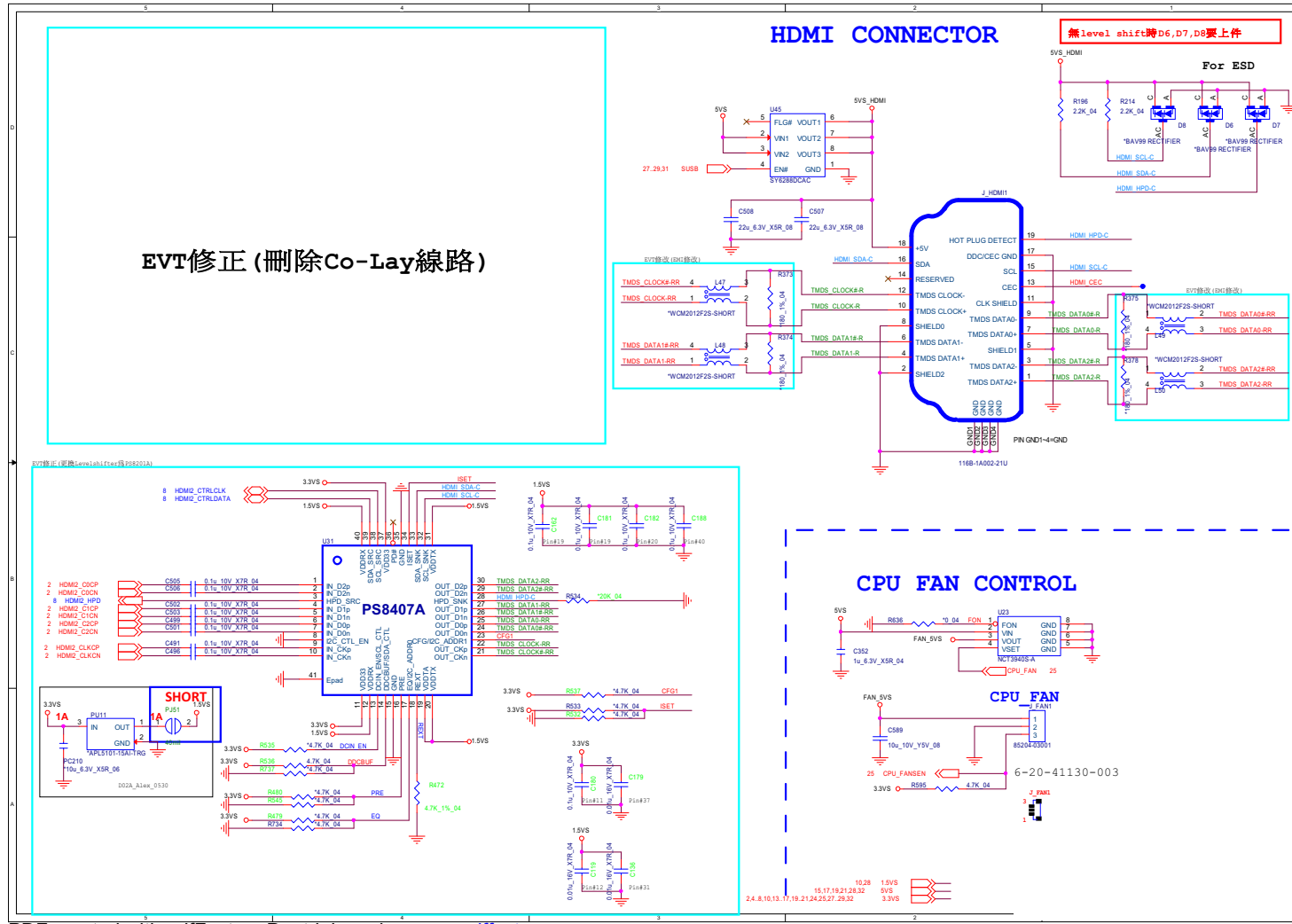
Sheet 16 of 41
LVDS_PS8625

PS8613

Sheet 17 of 41
PS8613



HDMI, Fan

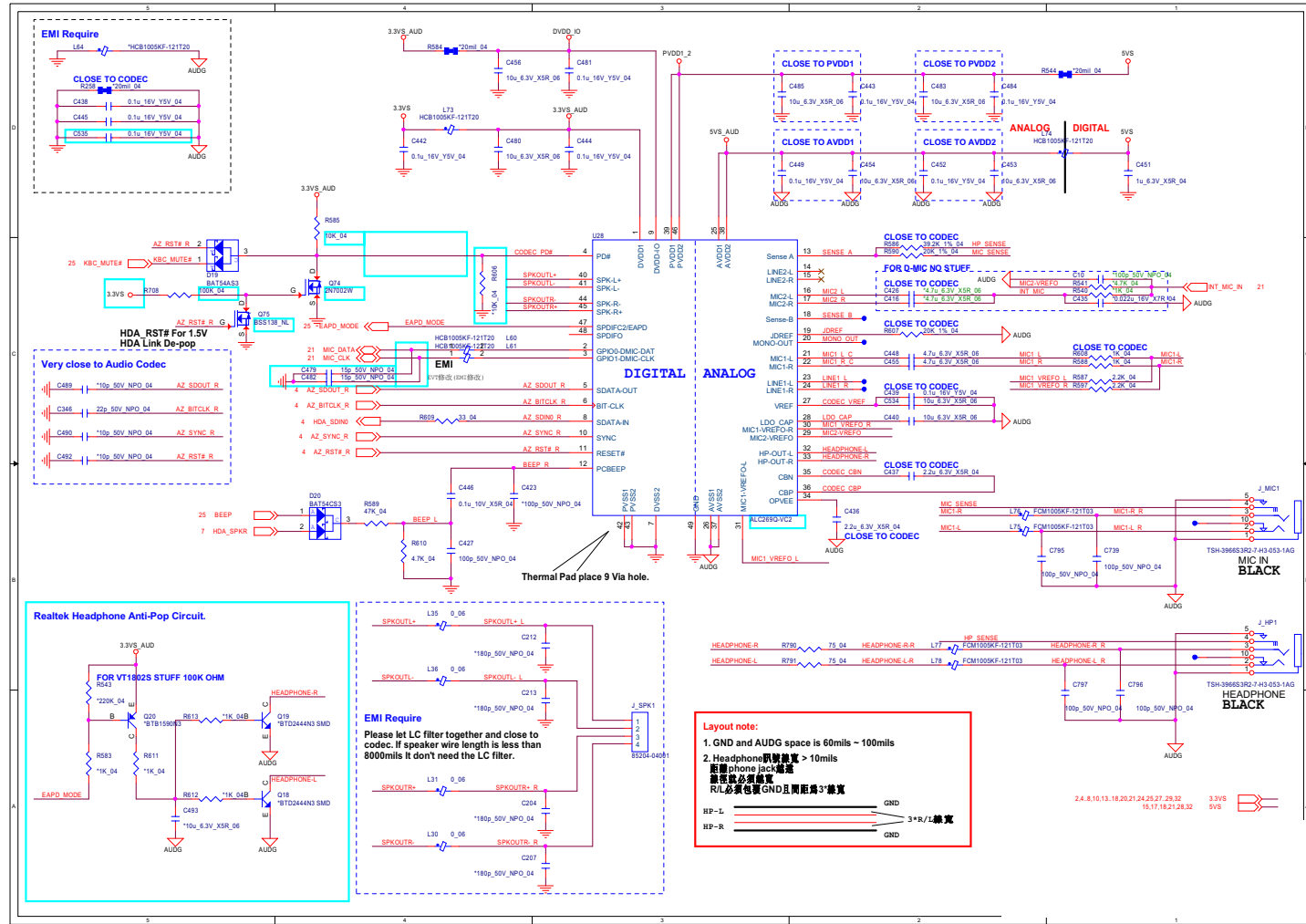


Sheet 18 of 41
HDMI, Fan

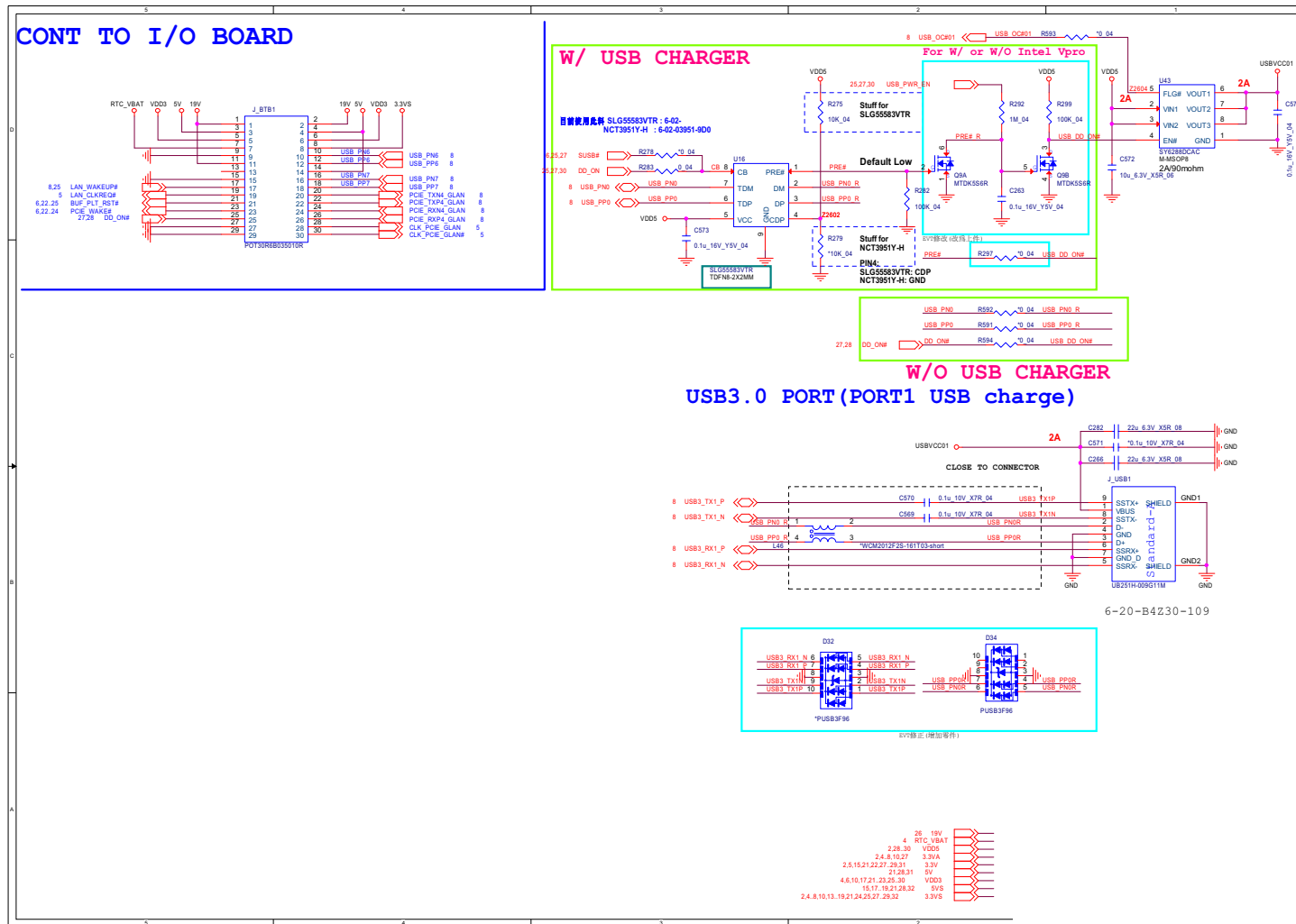
B.Schematic Diagrams

Audio Codec

Sheet 19 of 41
Audio Codec



USB Charge, USB 3.0, I/O Con

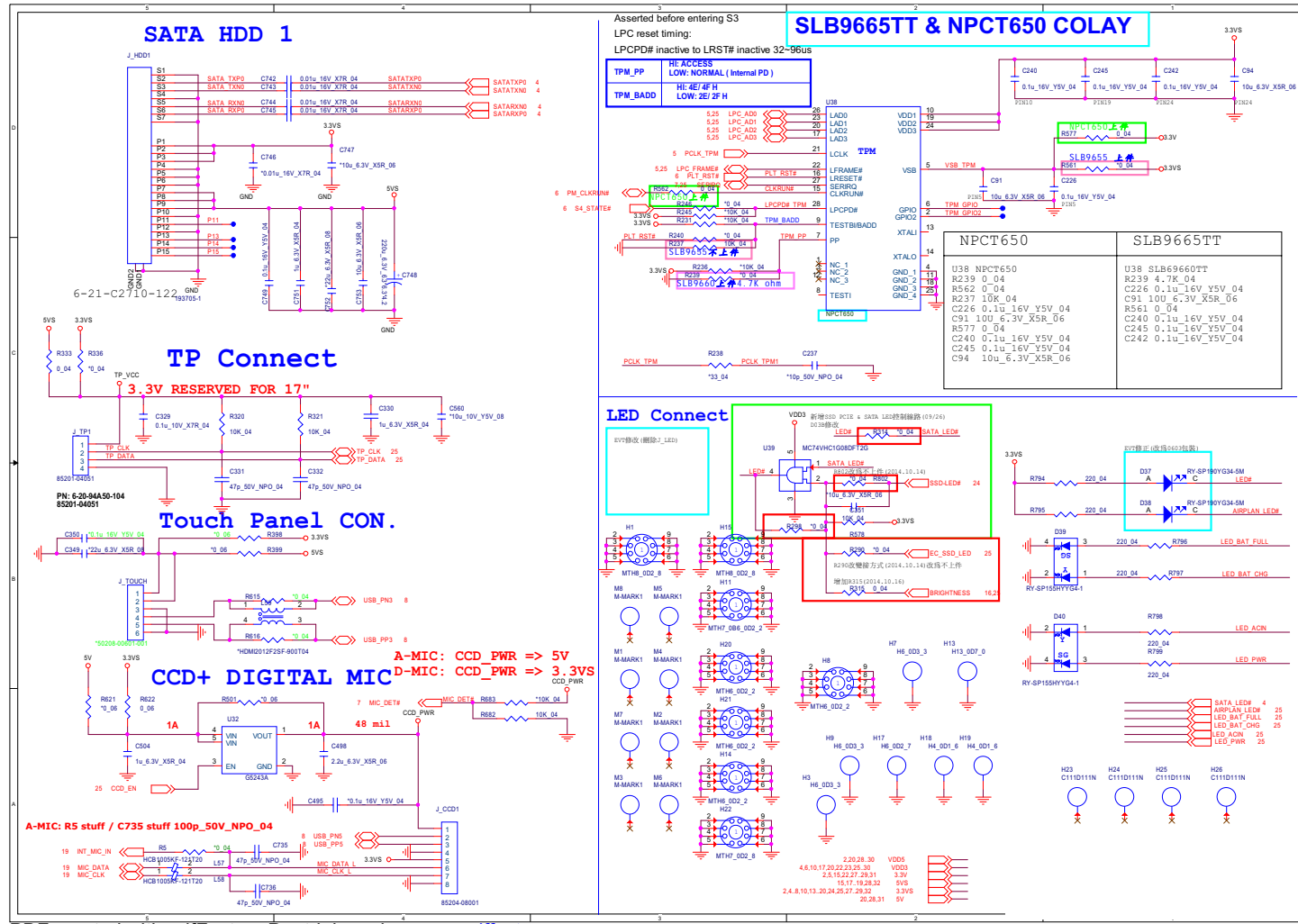


Sheet 20 of 41
USB Charge,
USB 3.0, I/O Con

B.Schematic Diagrams

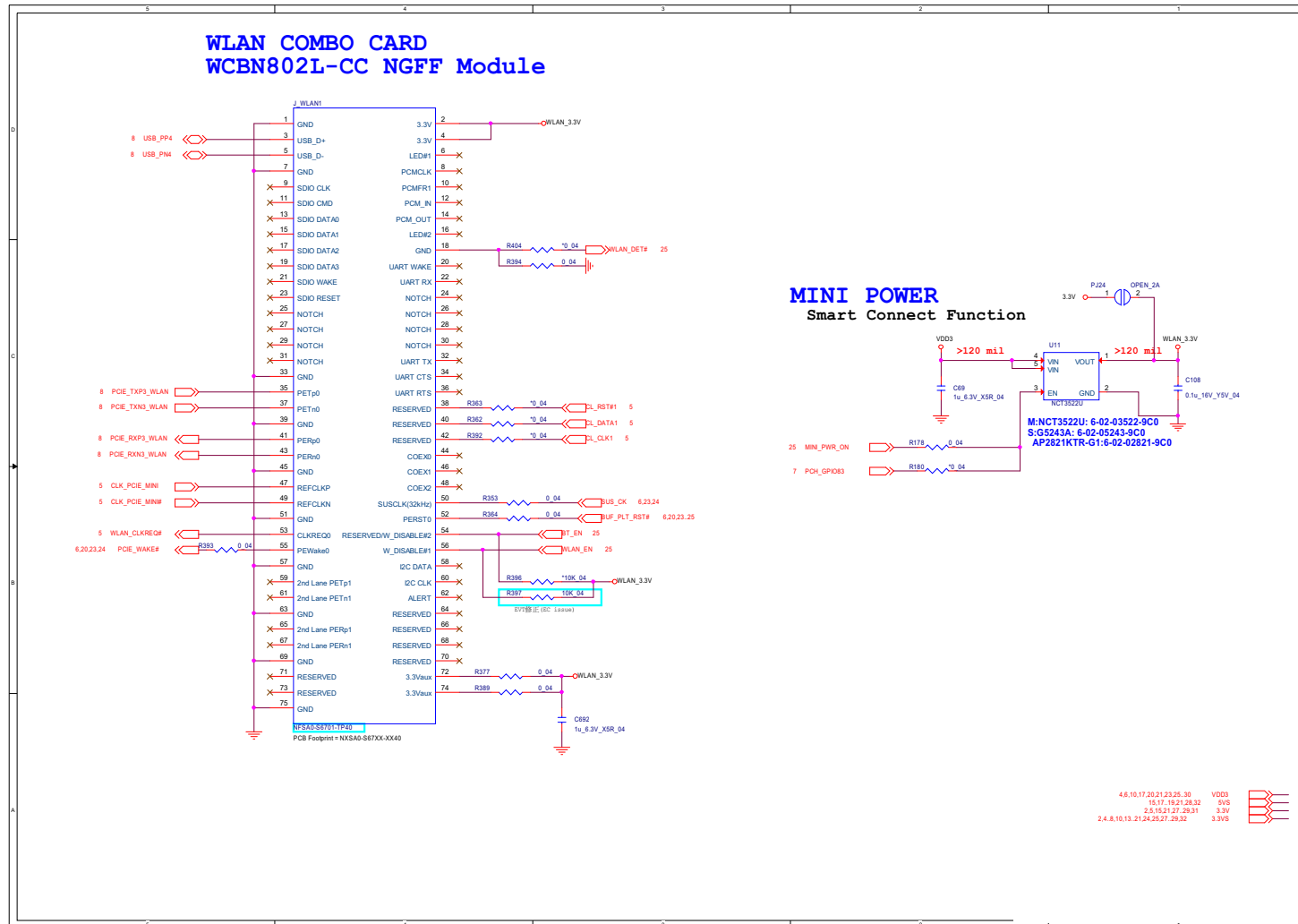
CCD, TPM, TP, HDD, LED

Sheet 21 of 41
CCD, TPM, TP,
HDD, LED



NGFF_WLAN

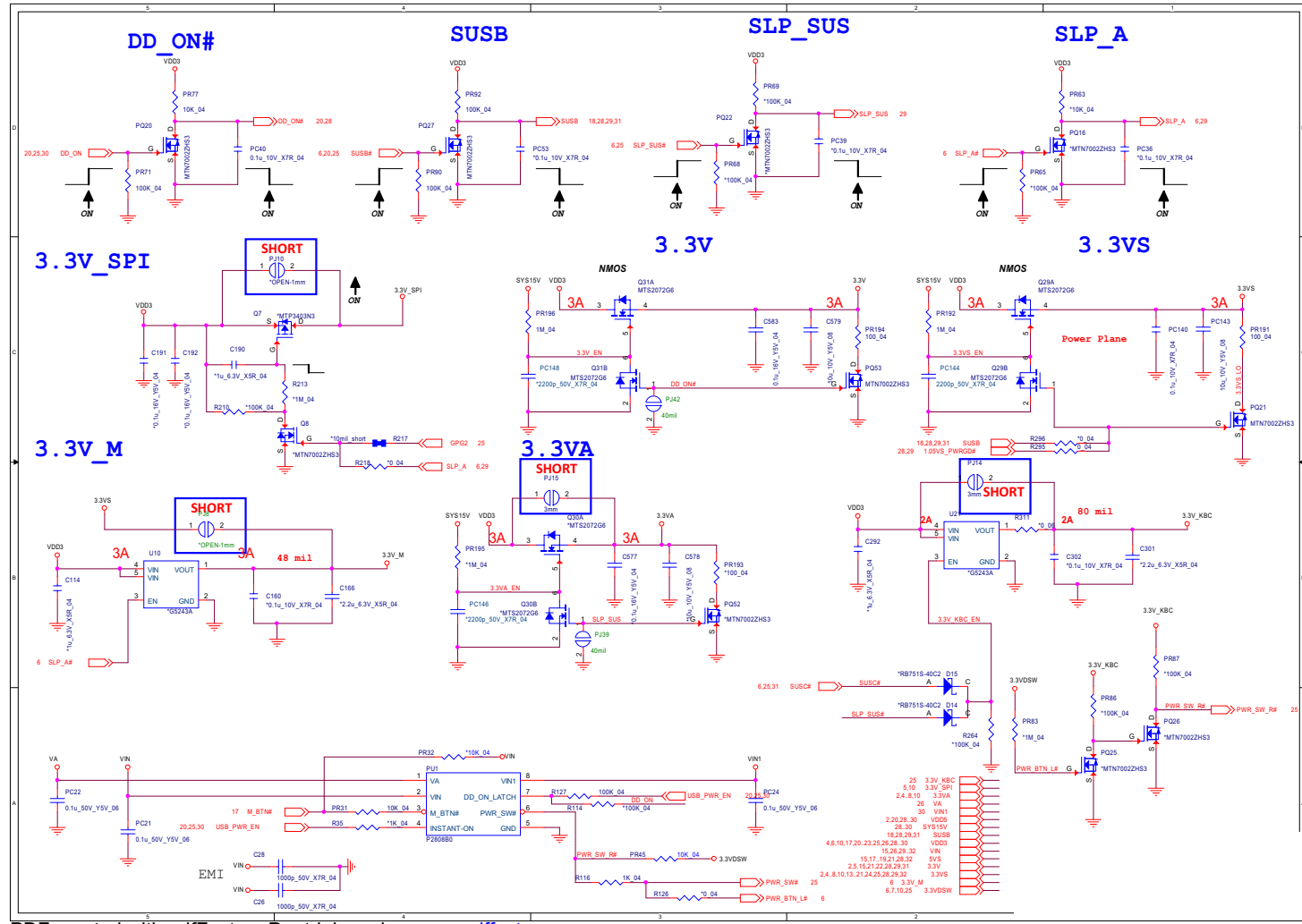
Sheet 22 of 41
NGFF_WLAN



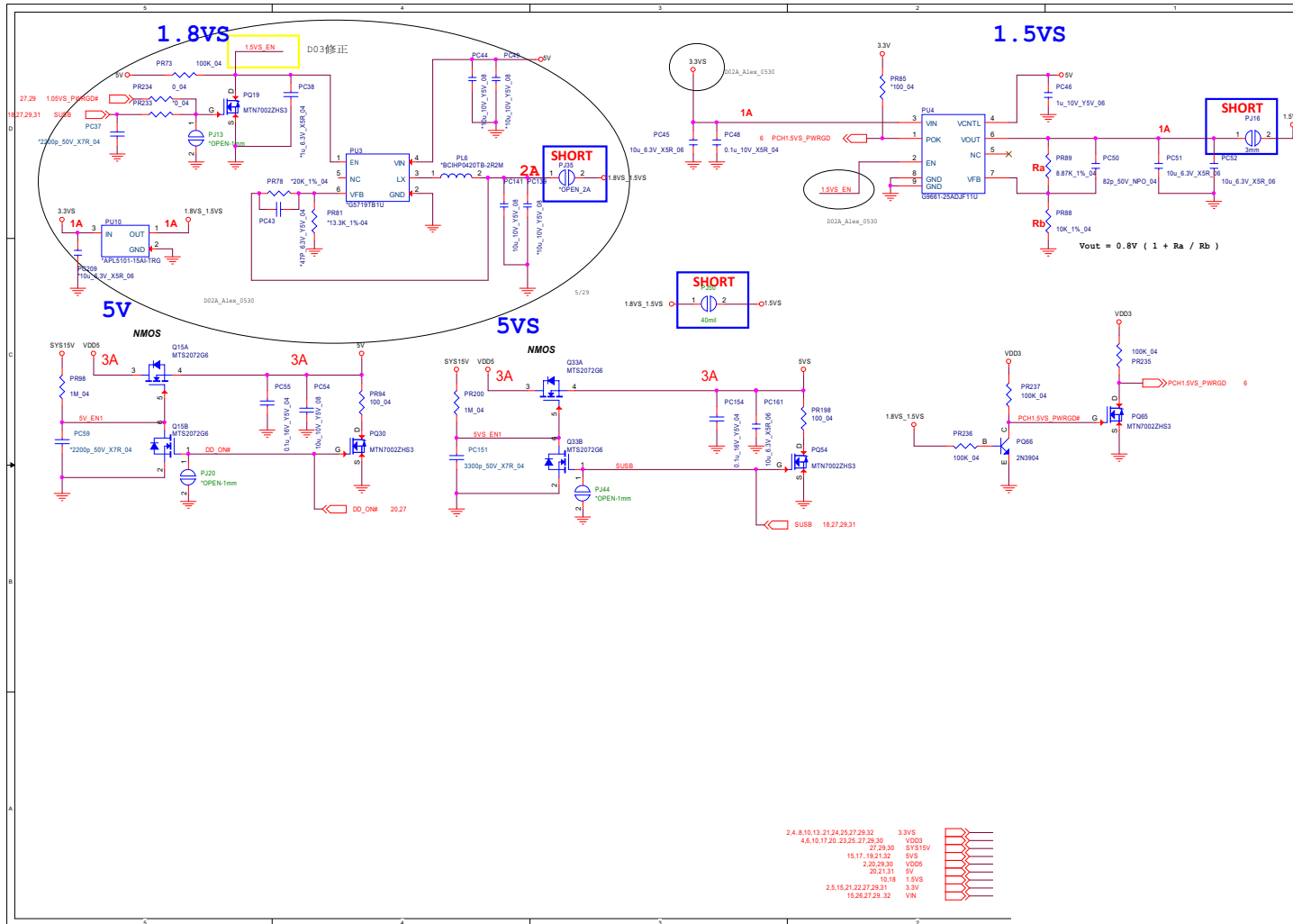
Schematic Diagrams

3.3V_SPI, 3.3VS, 3.3V_M, 3.3V

Sheet 27 of 41
3.3V_SPI, 3.3VS,
3.3V_M, 3.3V

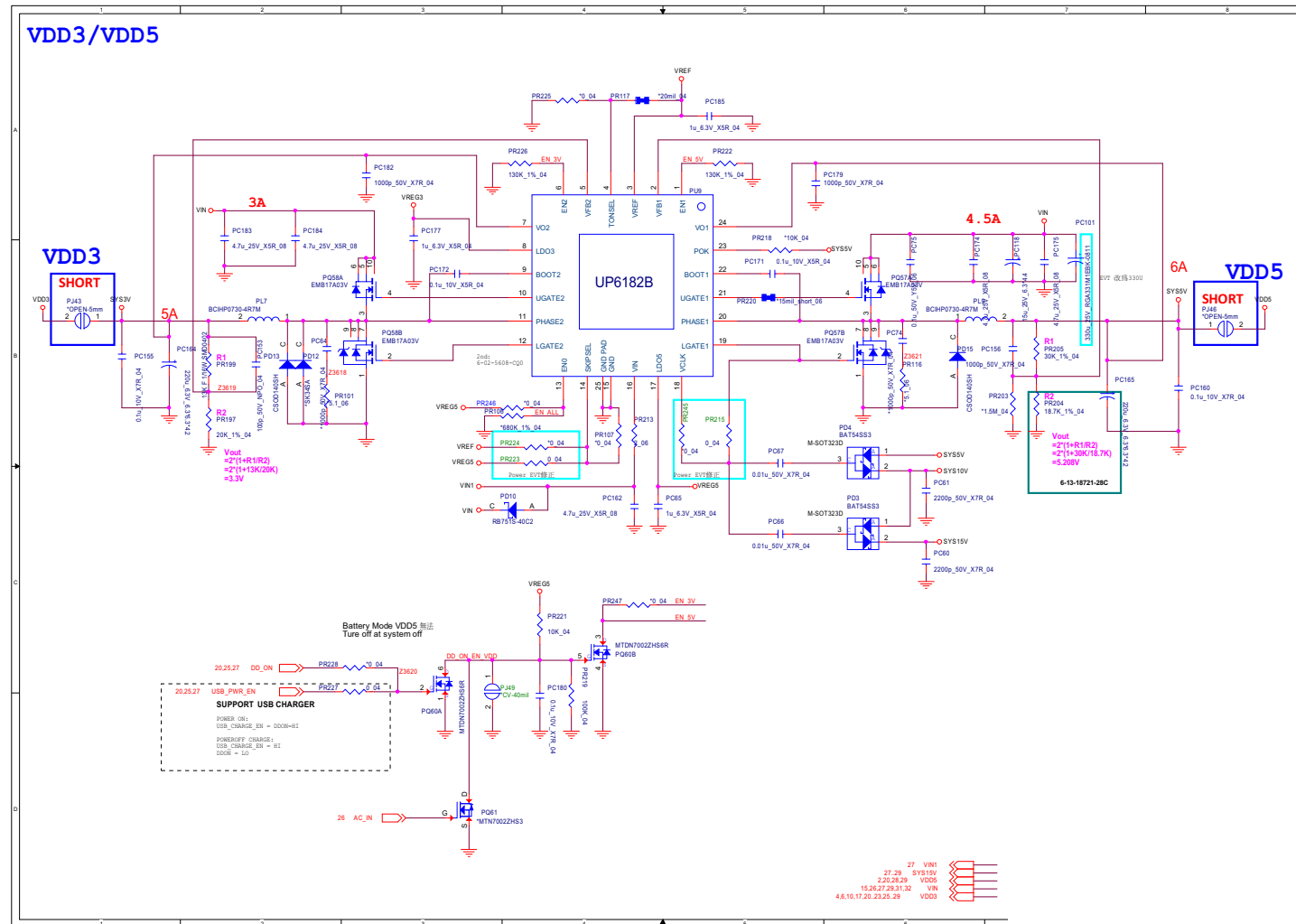


1.8VS, 1.5VS, 5V, 5VS



Sheet 28 of 41
1.8VS, 1.5VS, 5V,
5VS

VDD3, VDD5



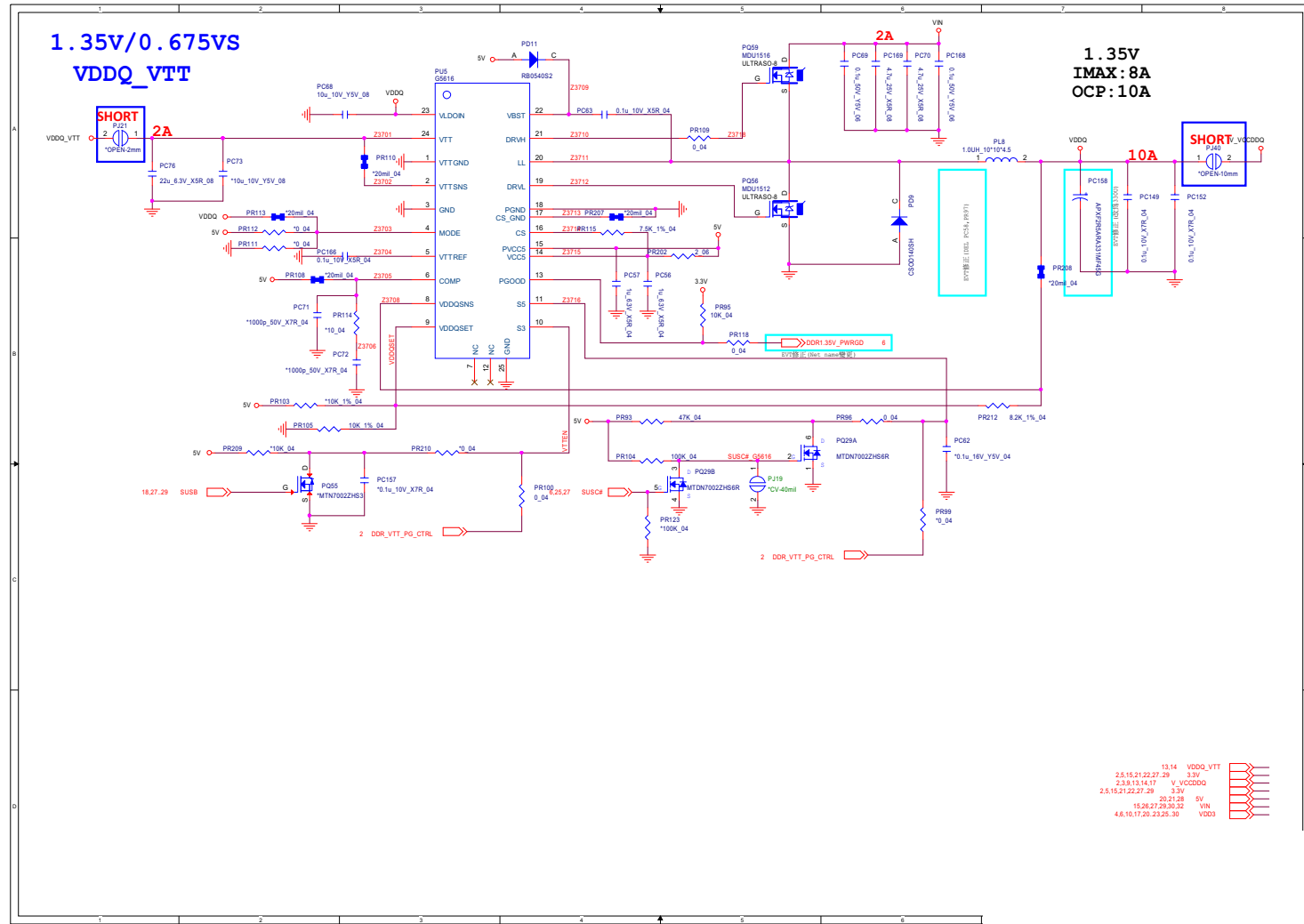
Sheet 30 of 41
VDD3, VDD5

Schematic Diagrams

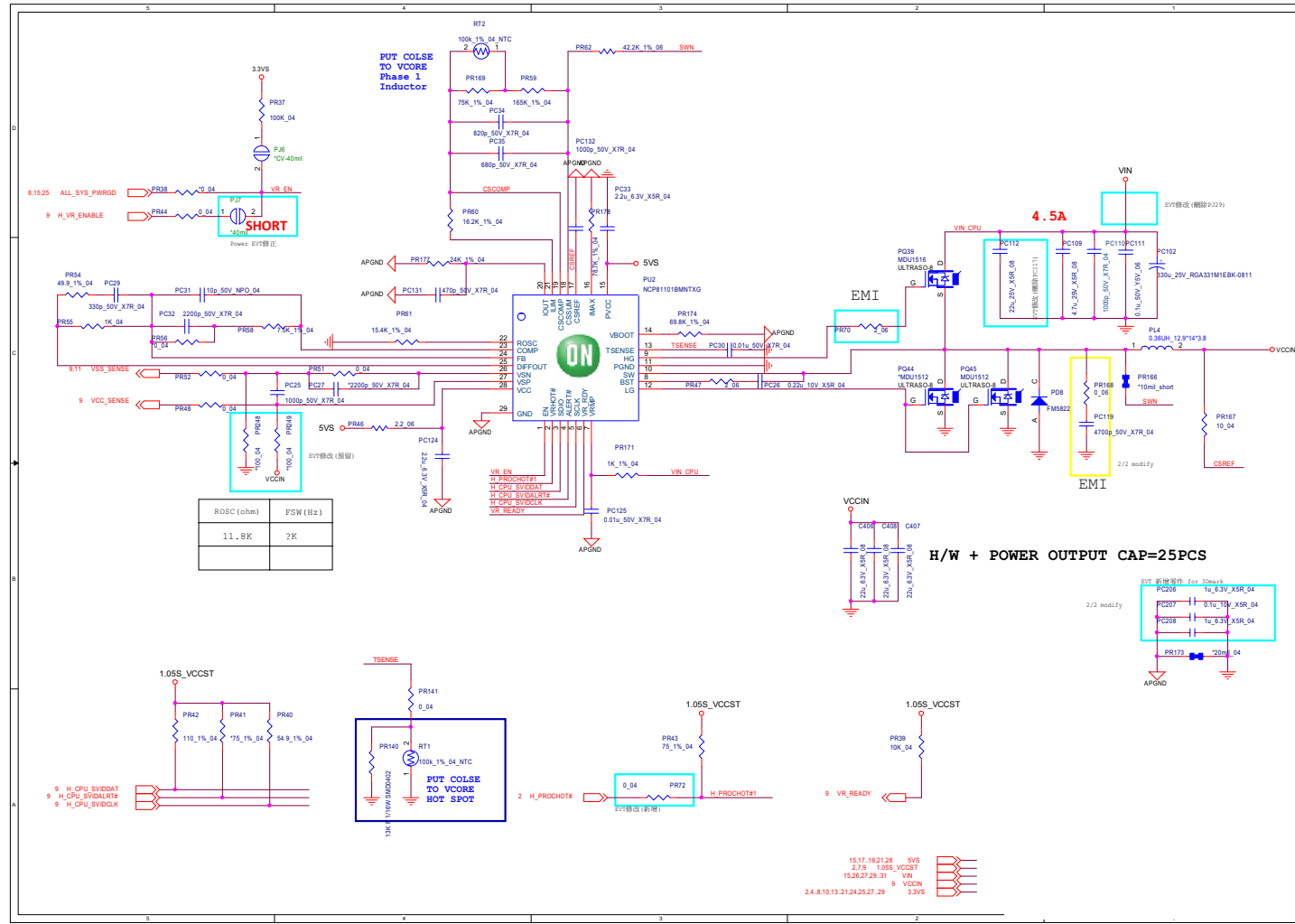
1.5V or 1.35V/0.75VS PCH 1.5VS

B.Schematic Diagrams

Sheet 31 of 41
1.5V or 1.35V/
0.75VS PCH 1.5VS



VCore



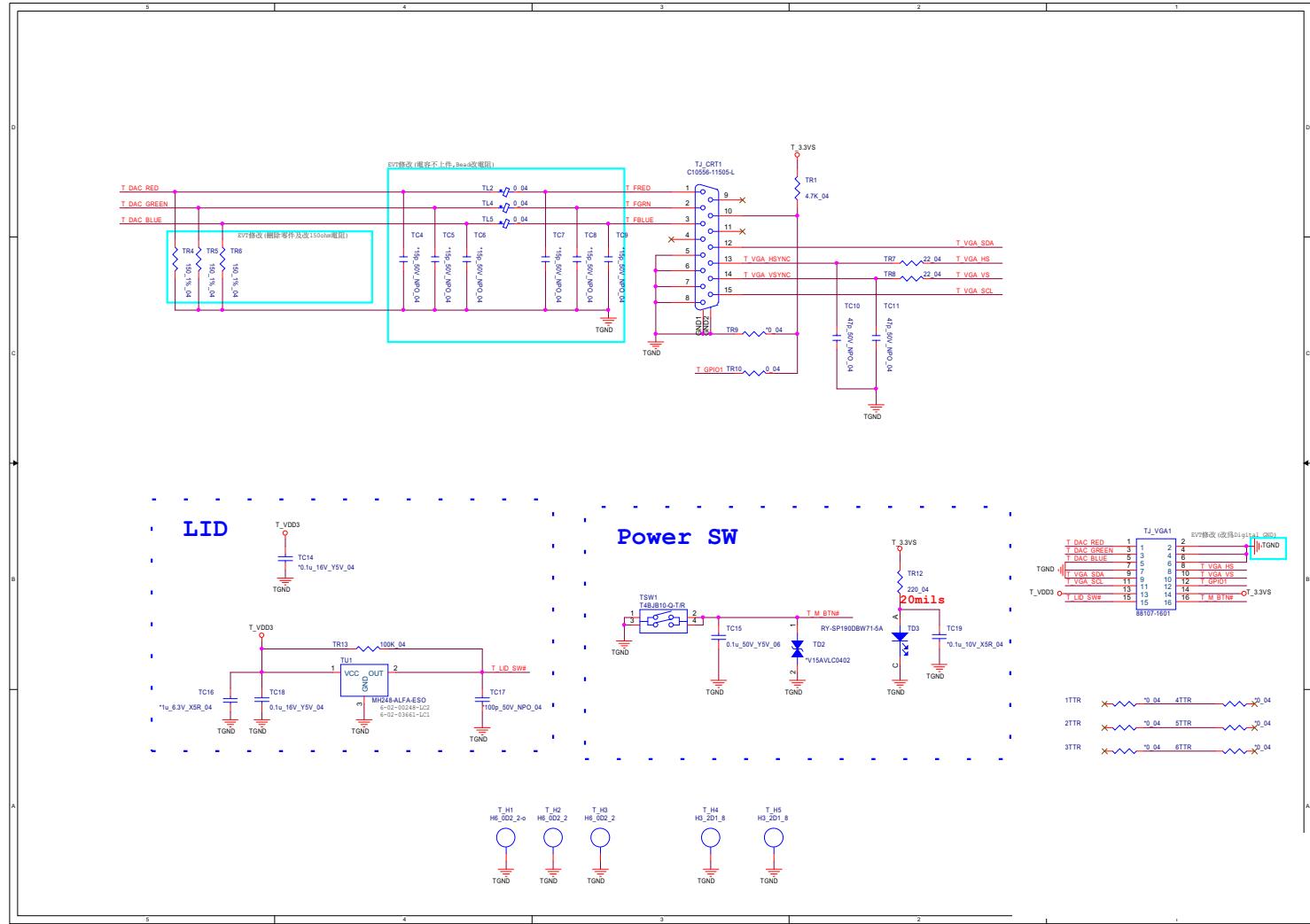
Sheet 32 of 41
VCore

Schematic Diagrams

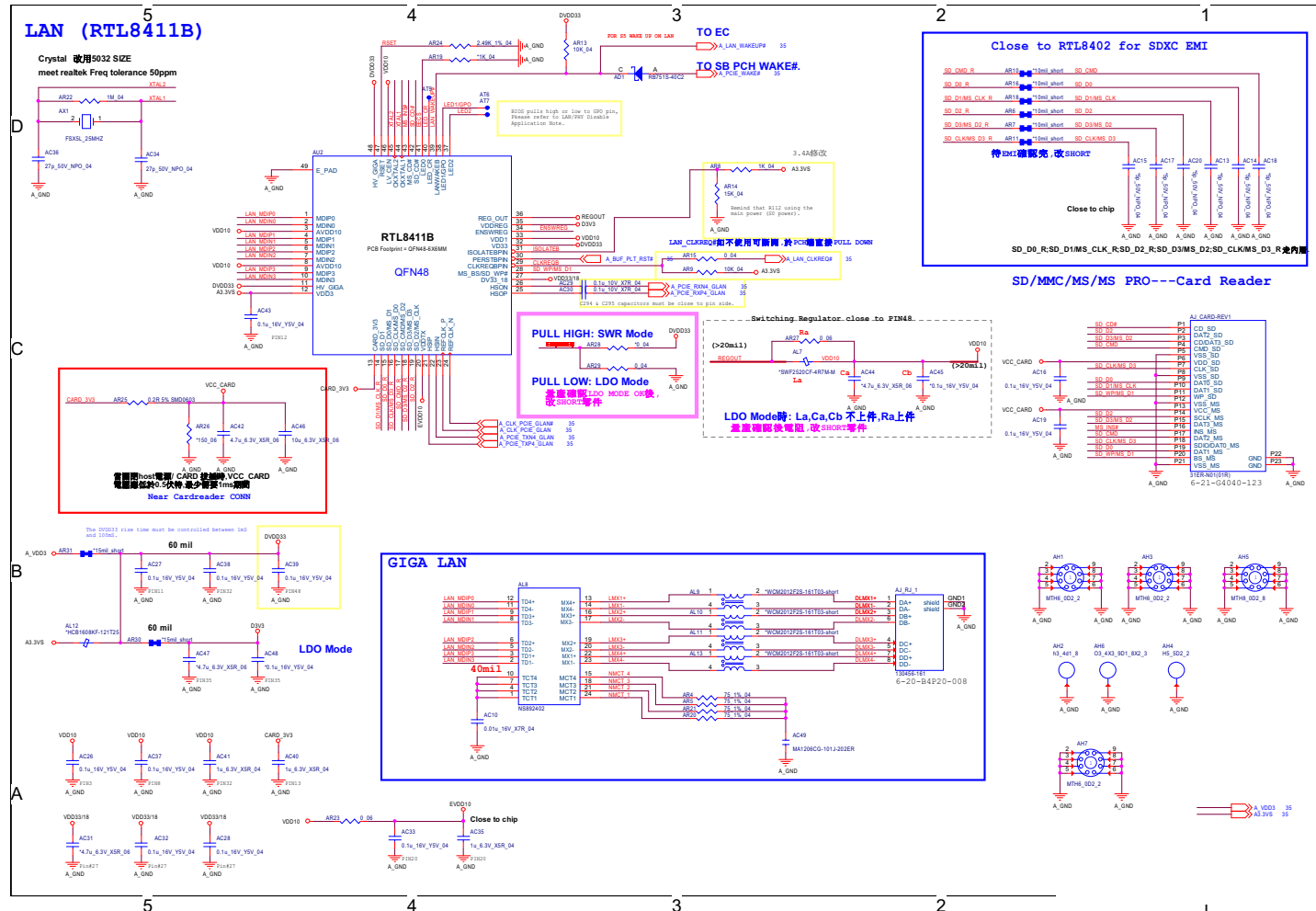
PW SW Board

B.Schematic Diagrams

Sheet 33 of 41
PW SW Board



IO Board - LAN

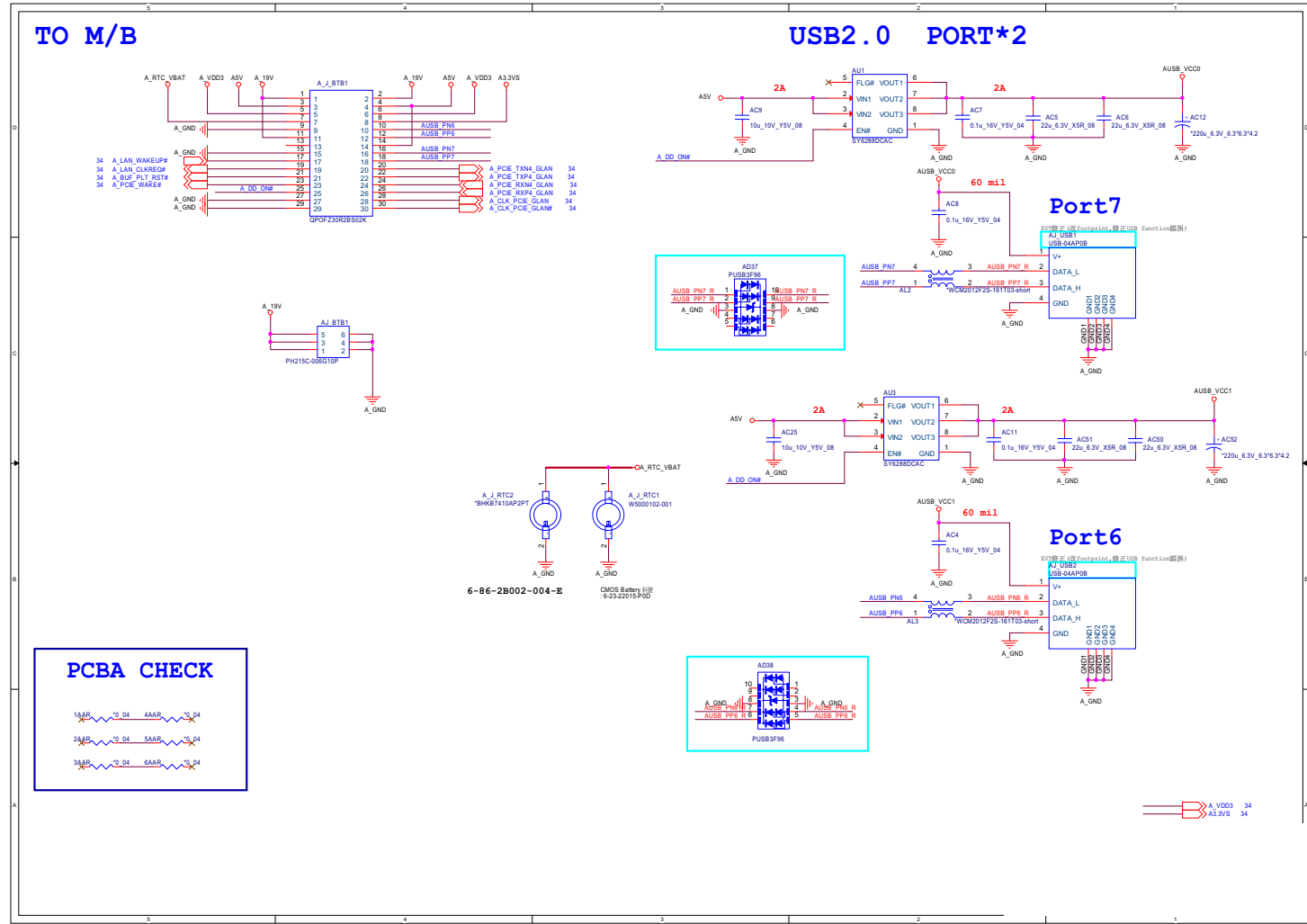


Sheet 34 of 41
IO Board - LAN

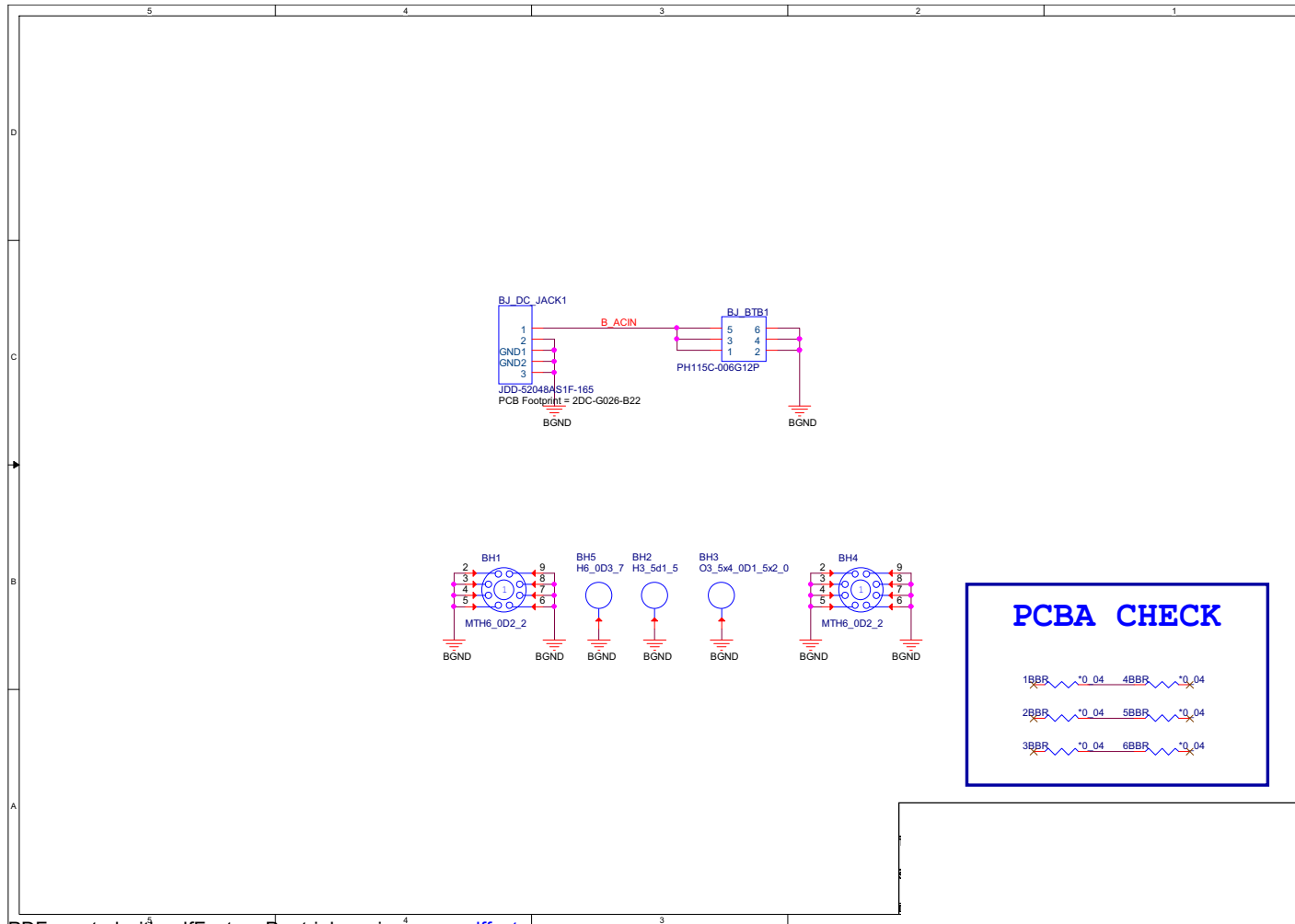
Schematic Diagrams

IO Board - USB

Sheet 35 of 41
IO Board - USB



AC-In Conn

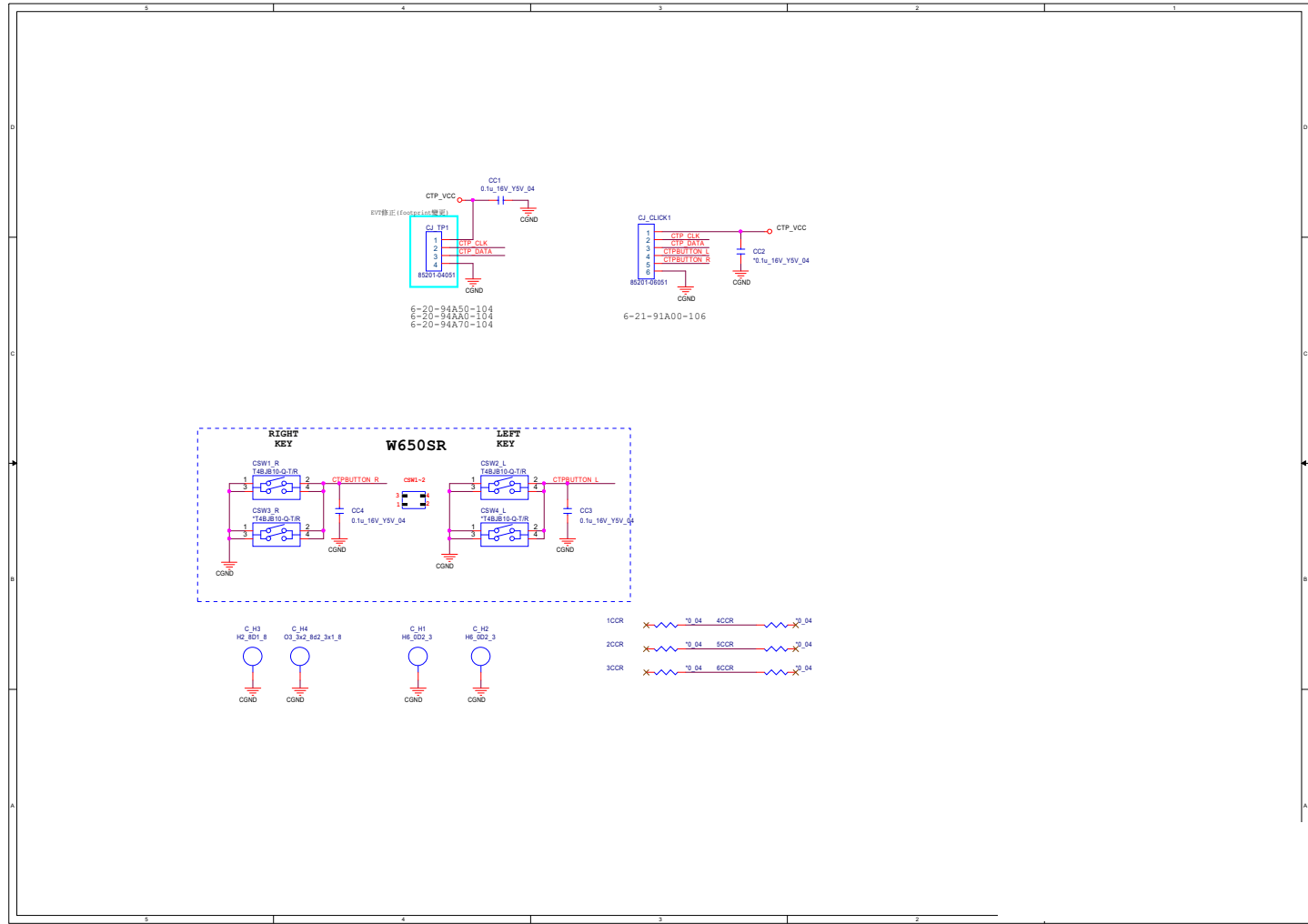


Sheet 36 of 41
AC-In Conn

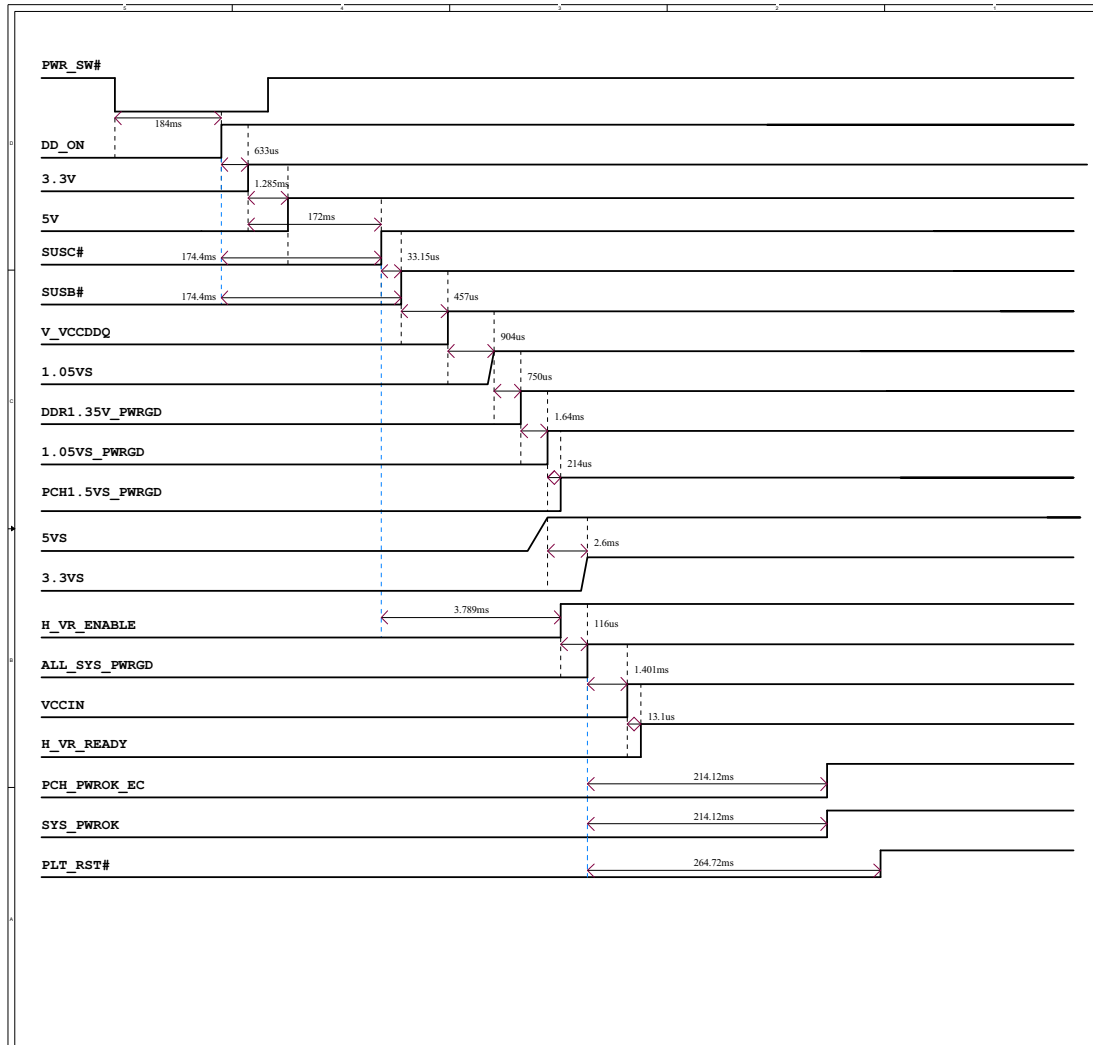
B.Schematic Diagrams

Click Board

Sheet 37 of 41
Click Board



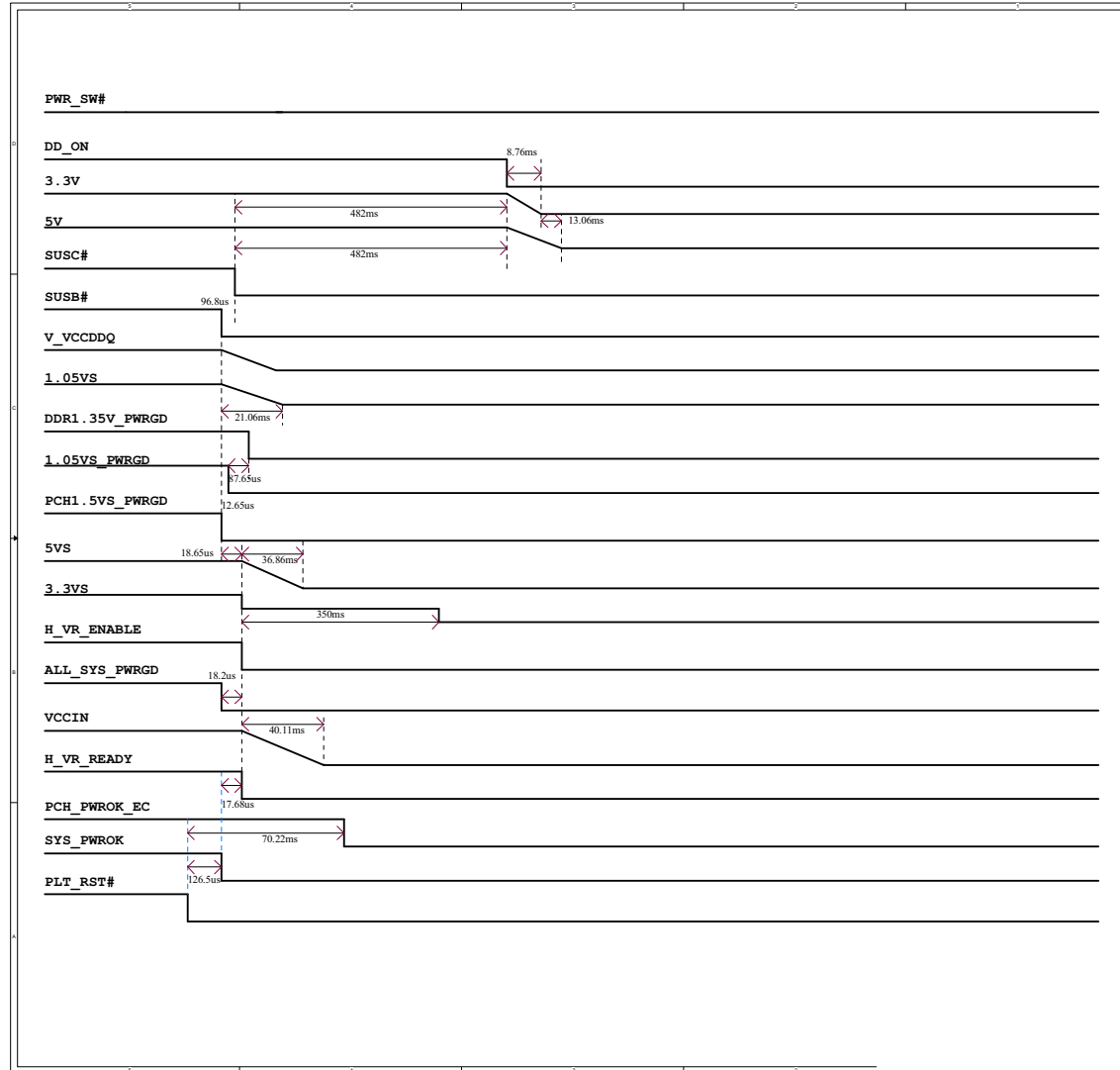
Power On / S4 Resume



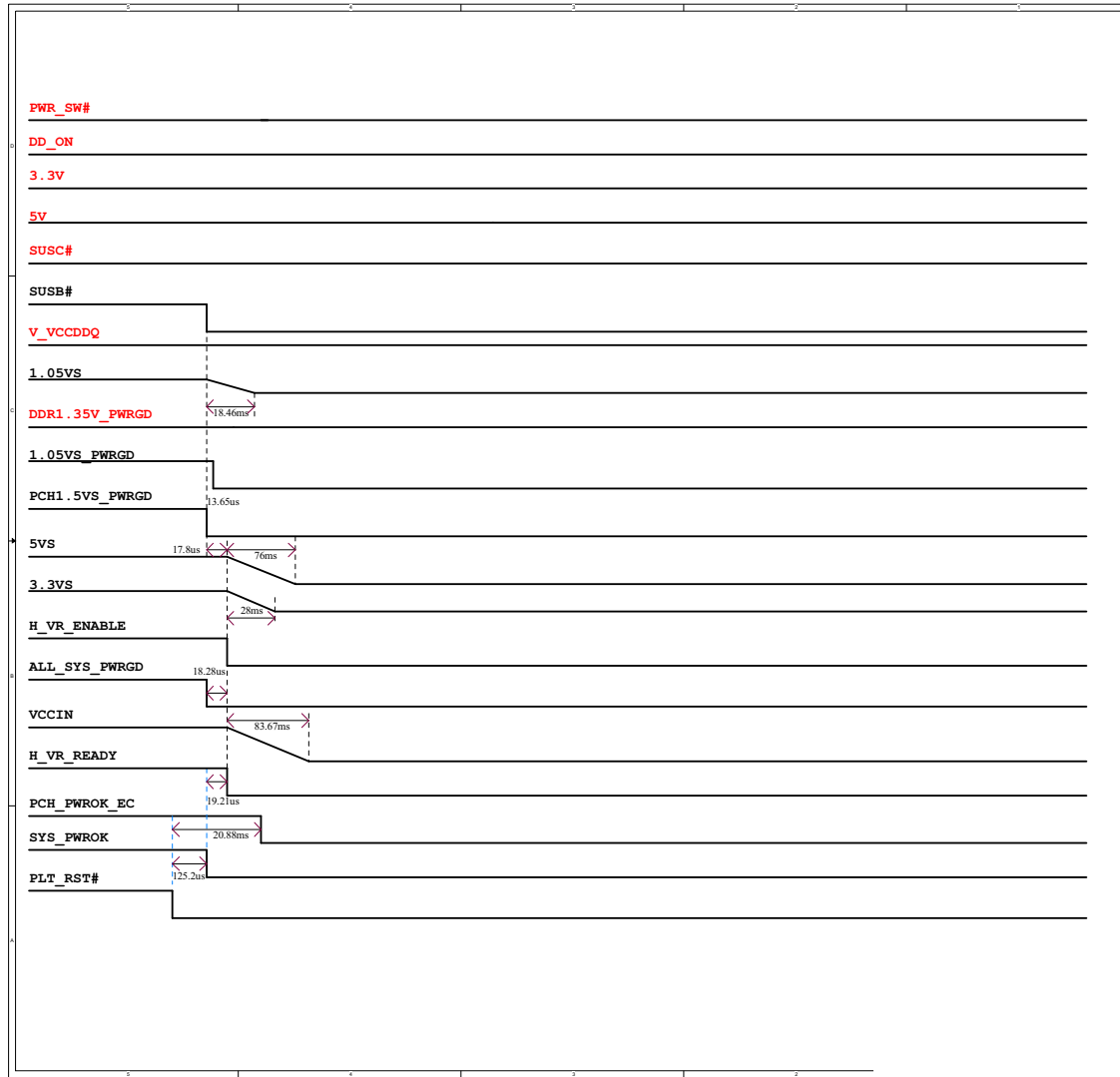
Sheet 38 of 41
Power On /
S4 Resume

Power Off / Into S4

Sheet 39 of 41
Power Off / Into S4



Into S3



Sheet 40 of 41
Into S3

S3 Resume

Sheet 41 of 41
S3 Resume

