

SERVICE MANUAL

N770WU

notebook



Notebook Computer

N770WU

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 *N770WU* series notebook PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.
Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists

Appendix B, Schematic Diagrams

Appendix C, Updating the FLASH ROM BIOS

Preface

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.

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.

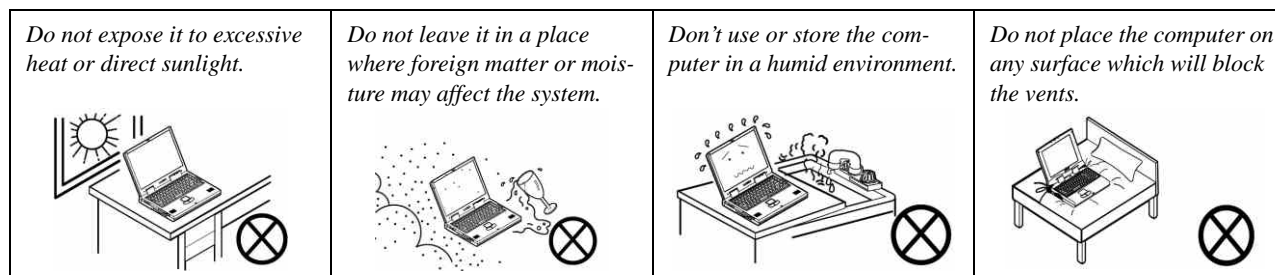
Instructions for Care and Operation

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

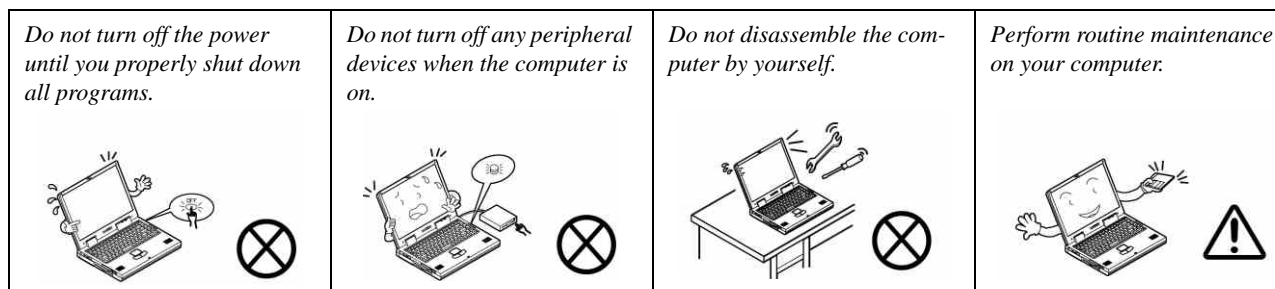
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

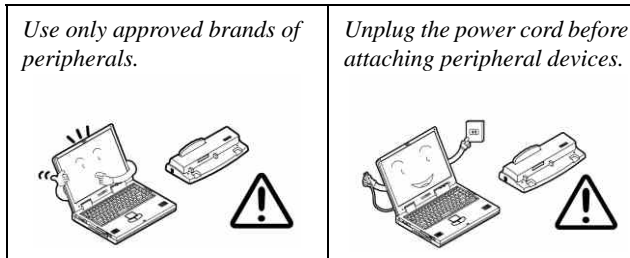


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



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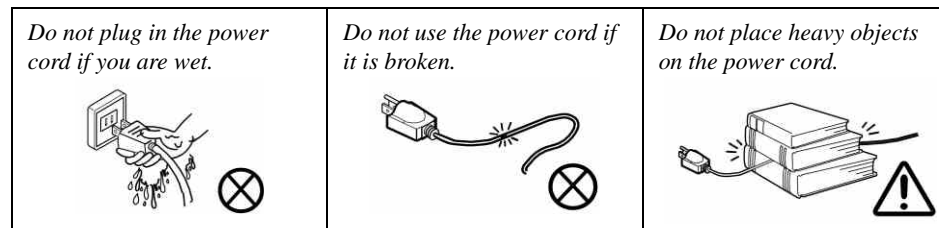
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



Power Safety

The computer has specific power requirements:

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



Power Safety Warning

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

Battery Precautions

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

Battery Guidelines

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

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




Battery Disposal

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

Caution

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

Battery Level

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

Preface

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. **When first setting up the computer use the following procedure** (as to safeguard the computer during shipping, the battery will be locked to not power the system until first connected to the AC/DC adapter and initially set up as below):
 - Attach the AC/DC adapter cord 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 and **leave it there for 6 seconds or longer**.
 - Remove the adapter cord from the computer's DC-In jack, and then plug it back in again; the battery will now be unlocked.
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 120 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".

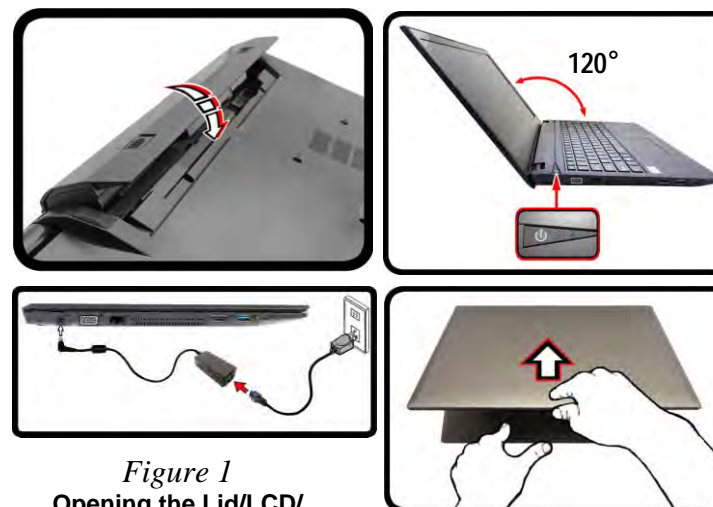


Figure 1
**Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In**

Powering the Computer On

After every disassembly, make sure that the bottom case's screws are all inserted and tightened before turning the computer on.

Shut Down

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

This will help prevent hard disk or system problems.

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the *N770WU* 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 10*, 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 *N770WU* series notebook is designed to be upgradeable. See [Disassembly on page 2 - 1](#) for a detailed description of the upgrade procedures for each specific component. Please take note of the warning and safety information indicated by the “” symbol.

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

Introduction

Specifications



Latest Specification Information

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



CPU

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

Processor Options

Intel® Core™ i7 Processor

i7-8550U (1.80GHz)

6MB Smart Cache, 14nm, DDR4-2400MHz, TDP 15W

Intel® Core™ i5 Processor

i5-8250U (1.60GHz)

6MB Smart Cache, 14nm, DDR4-2400MHz, TDP 15W

Intel® Core™ i3 Processor

i3-7100U (2.40GHz)

3MB Smart Cache, 14nm, DDR4-2400MHz, TDP 15W

BIOS

64Mb SPI Flash ROM

AMI BIOS

Memory

Two 260 Pin SO-DIMM Sockets Supporting **DDR4 2400 MHz** Memory

Memory Expandable up to 32GB

Compatible with 4GB, 8GB or 16GB Modules

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

LCD Options

15.6" (39.62cm), 16:9, HD (1366x768)/FHD (1920x1080)
(Thickness: 3.2mm)

Video Adapter

Intel HD Graphics 620 (for i3-7100U only)

Dynamic Frequency

Intel Dynamic Video Memory Technology

Microsoft DirectX®12 Compatible

Intel UHD Graphics 620 (for i7-8550U, i5-8250U only)

Dynamic Frequency

Intel Dynamic Video Memory Technology

Microsoft DirectX®12 Compatible

Storage

One Changeable 2.5" 7mm (h) SATA HDD/SSD

(Factory Option) One 9.5mm/9.0mm(h) Optical Device Type Drive (DVD Writer)

Or

(Factory Option) Dummy ODD

Or

(Factory Option) 7mm (h) 2nd HDD/SSD Caddy

(Factory Option) One M.2 **SATA/PCIe Gen3 x4** Solid State Drive (SSD)

Pointing Device

Built-in Touchpad

Keyboard

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

Or

(Factory Option) Full-size "WinKey" **Illuminated White-LED** Keyboard (with numeric keypad)

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Microphone

(Factory Option) Built-In Array Microphone

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Intel PTT for Systems Without TPM Hardware

(Factory Option) TPM 2.0

M.2 Slots

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

Slot 2 for **SATA/PCIe Gen3 x4 SSD**

(Factory Option) Slot 3 for **3G/4G** Module

Interface

Two USB 2.0

One USB 3.0 (USB 3.1 Gen 1) Type-A Port

One USB 3.0 (USB 3.1 Gen 1)

Or

(Factory Option) One USB 3.1 Gen 2

Three USB 3.0 (USB 3.1 Gen 1) Type-A Ports

One HDMI-Out Port

One External Monitor Port

One Microphone-In Jack

One Headphone-Out Jack

One RJ-45 LAN Jack

One DC-in Jack

**USB 3.1 Gen 2**

Note that when a single USB device is plugged in to a USB 3.1 Gen 2 port the data transfer speed will be 10Gbps, however when two devices are plugged in to both USB 3.1 Gen 2 ports, this bandwidth will be shared between the ports.

Card Reader

Embedded Multi-In-1 Card Reader

MMC (MultiMedia Card) / RS MMC

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

Communication

Built-In 10/100/1000Mb Base-TX 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 8265 Wireless LAN (802.11ac) + Bluetooth

(Factory Option) Intel® Wireless-AC 3168 Wireless LAN (802.11ac) + Bluetooth

Power

Full Range AC/DC Adapter

AC Input: 100 - 240V, 50 - 60Hz

DC Output: 19V, 2.1A (**40W**)

(Factory Option) Removable 4 Cell Smart Lithium-Ion Battery Pack, 31WH

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

418.5mm (w) * 287mm (d) * 26.4mm (h)

(Height Excluding Battery Area)

2.5kg (Barebone with 31WH 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 white.*
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
2. Multi-in-1 Card Reader

Figure 3
Right Side View

1. Headphone-Out Jack
2. Microphone-In Jack
3. USB 2.0
4. ODD 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. Vent
5. HDMI-Out Port
6. USB 3.0/3.1 Port
7. USB 3.0 (USB 3.1 Gen 1) Type-C Port

LEFT SIDE VIEW



Figure 5
Rear View

1. Battery

REAR VIEW



External Locator - Bottom View

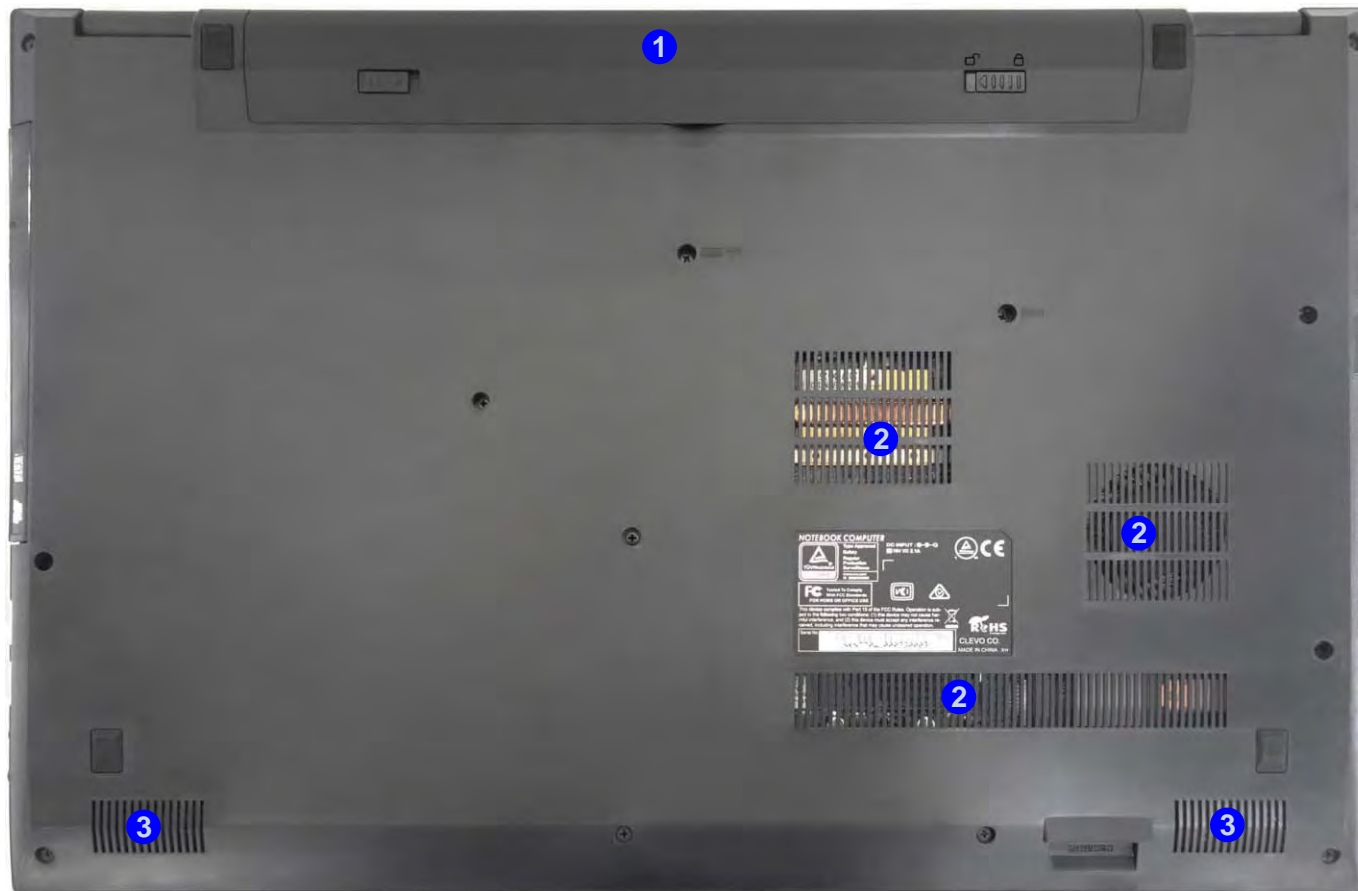


Figure 6
Bottom View

1. Battery
2. Vent
3. Speakers

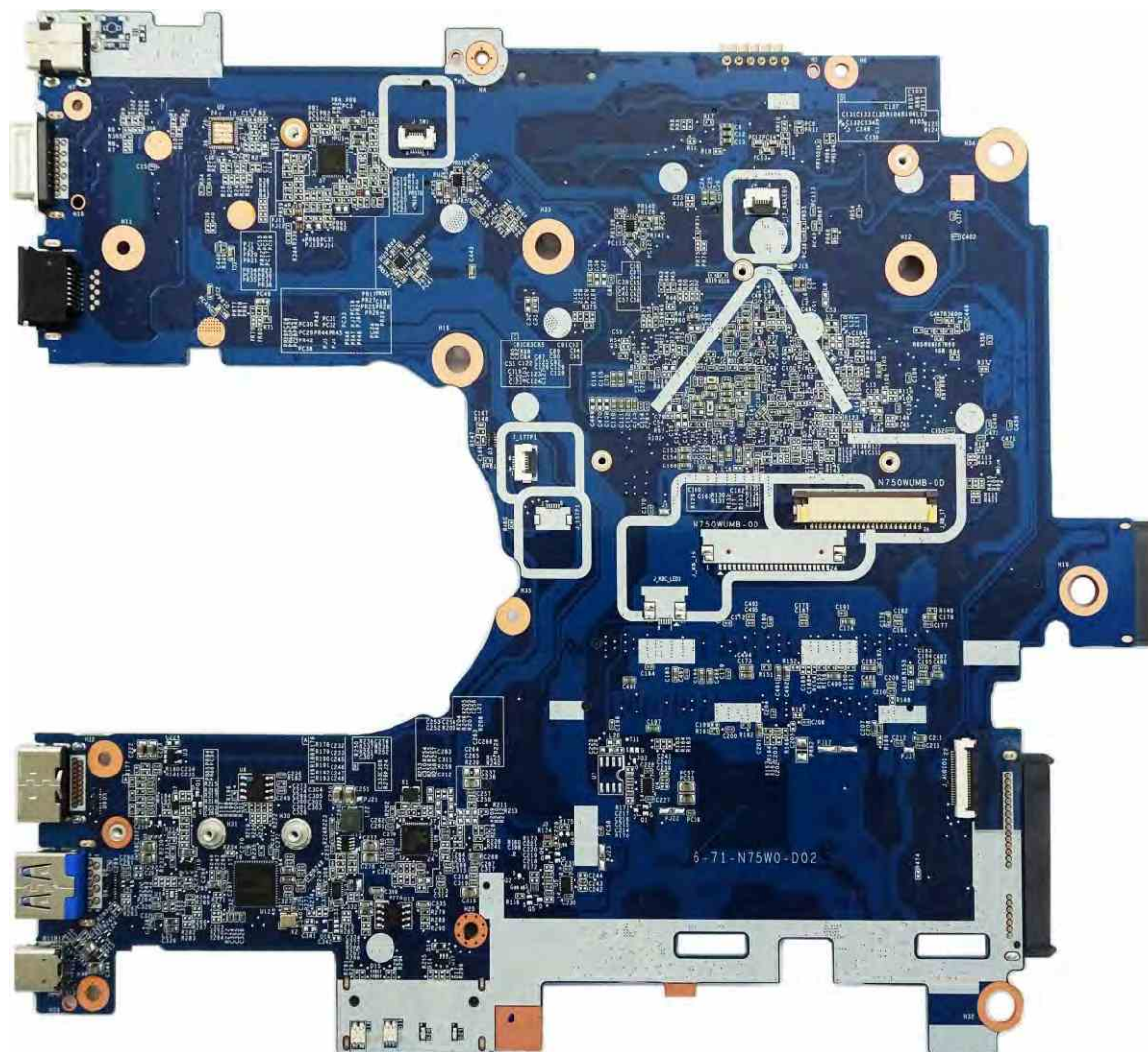


Overheating

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

Figure 7
Mainboard Top
Key Parts

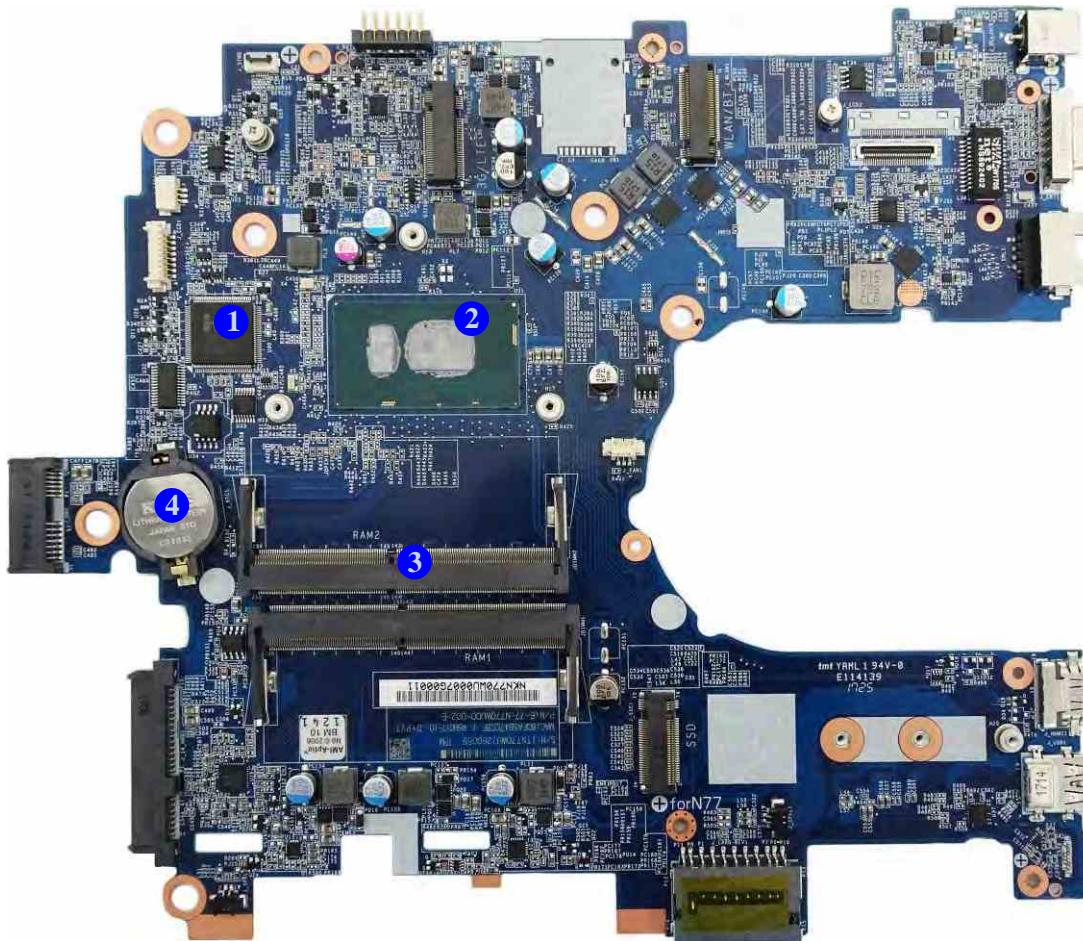
Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

Figure 8
**Mainboard Bottom
Key Parts**

1. KBC-ITE IT8587
2. CPU
3. Memory Slots
DDR4 SO-DIMM
4. CMOS Battery

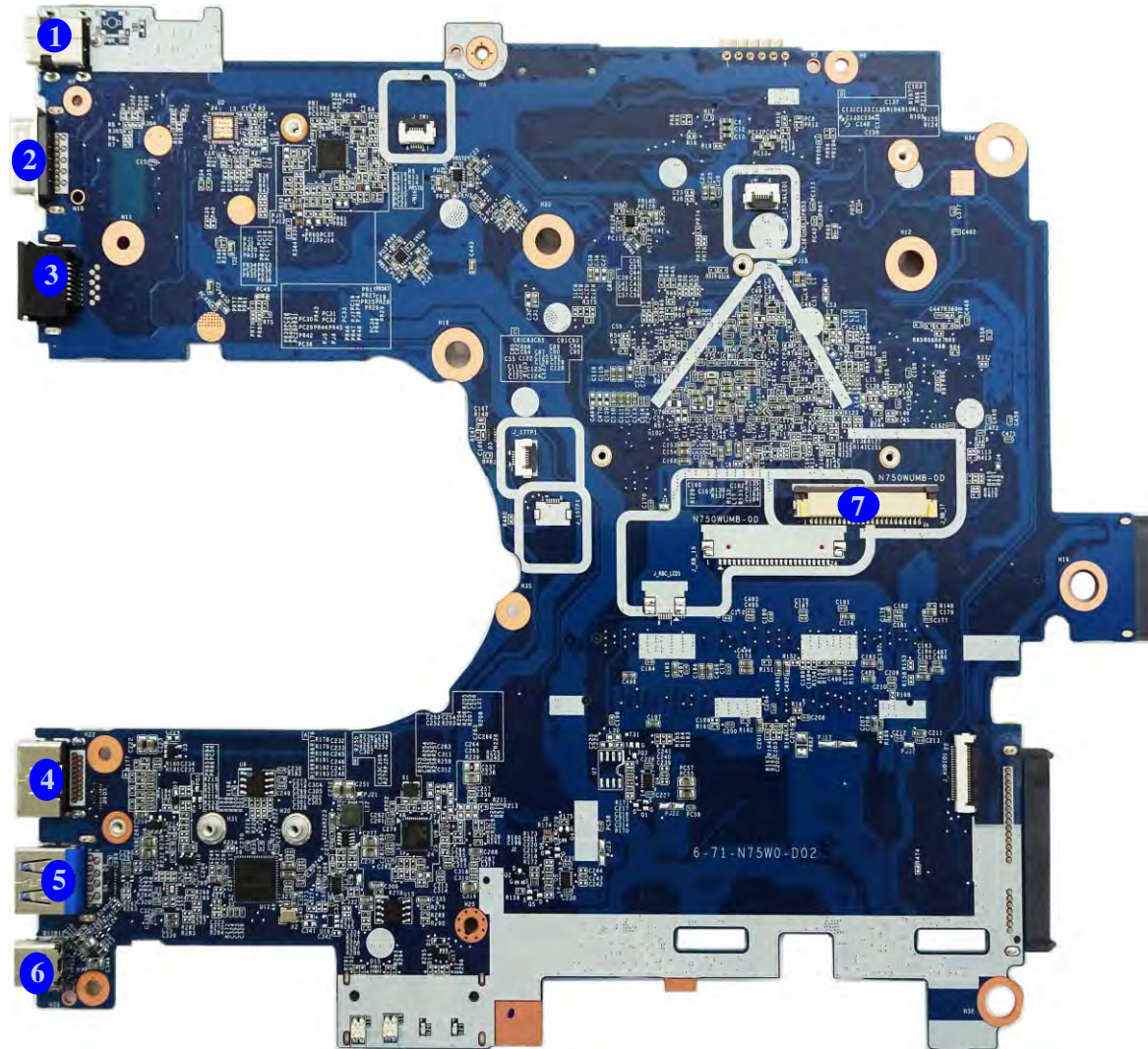


Introduction

Figure 9
**Mainboard Top
Connectors**

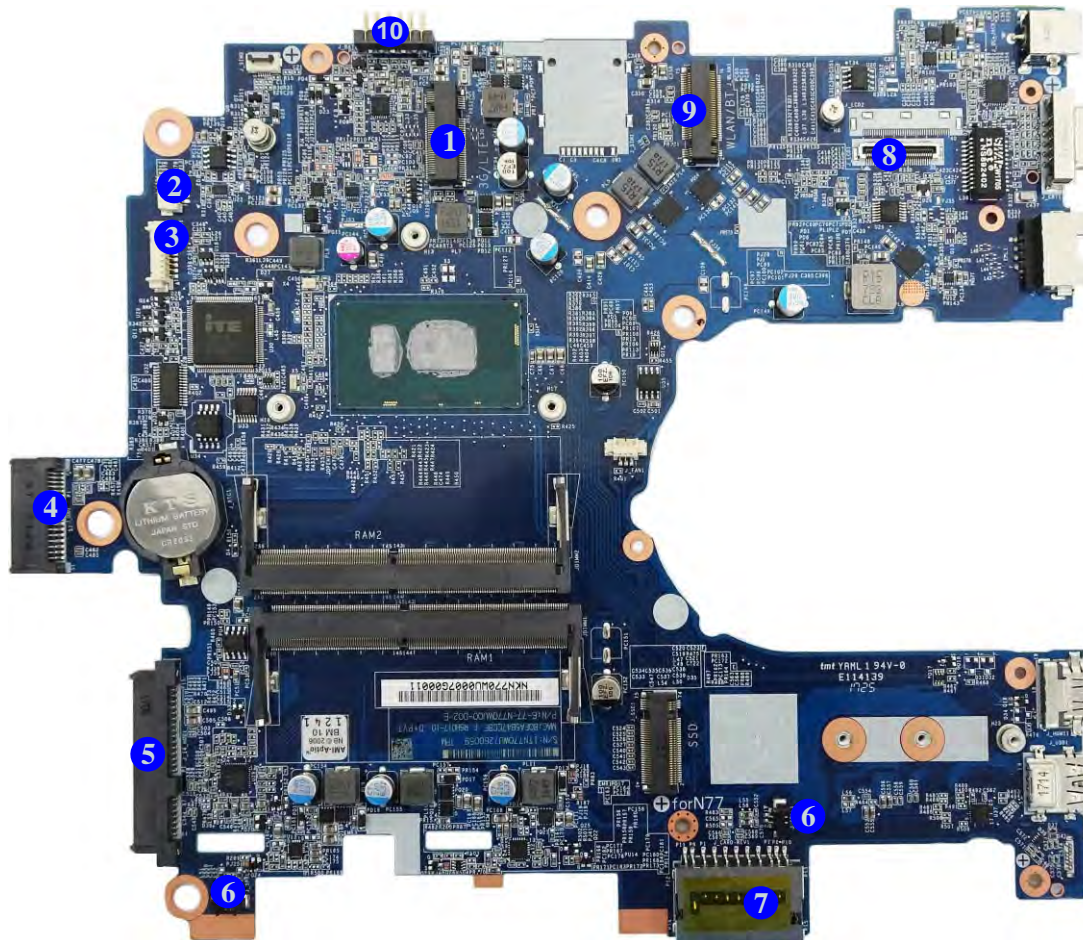
1. DC-In Jack
2. External Monitor Port
3. RJ-45 LAN Jack
4. HDMI-Out Port
5. USB Port 3.0/3.1
6. USB Port 3.0/3.1 Type C Port
7. Keyboard Cable Connector

Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

Figure 10
**Mainboard Bottom
Connectors**



1. 3G/LTE Card Connector
2. LID Connector
3. CCD Connector
4. ODD Connector
5. HDD Connector
6. Speaker Connector
7. Multi-in-1 Card Reader
8. LCD Cable Connector
9. WLAN Connector
10. Battery Connector


Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *N770WU* 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.



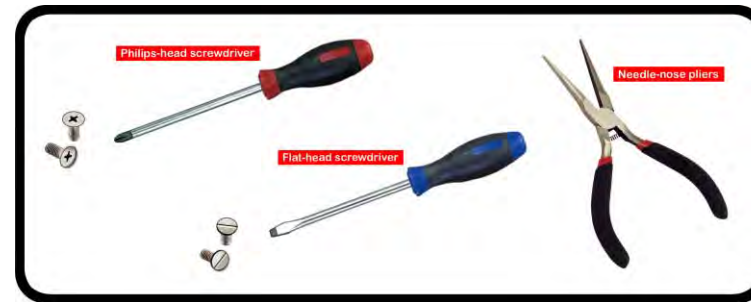
Disassembly

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.

(For Computer Models Supplied with Light Blue Cleaning Cloth) Some computer models in this series come supplied with a light blue cleaning cloth. To clean the computer case with this cloth follow the instructions below.

- Power off the computer and peripherals.
- Disconnect the AC/DC adapter from the computer.
- Use a little water to dampen the cloth slightly.
- Clean the computer case with the cloth.
- Dry the computer with a dry cloth, or allow it time to dry before turning on.
- Reconnect the AC/DC adapter and turn the computer on.



Power Safety Warning

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

Disassembly Steps

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

To remove the Battery:

1. Remove the battery *page 2 - 5*

To remove the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*
3. Remove the HDD *page 2 - 7*

To remove the 2nd HDD:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*
3. Remove the 2nd HDD *page 2 - 9*

To remove the Optical Device:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*
3. Remove the HDD *page 2 - 7*
4. Remove the Optical Device *page 2 - 10*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*
3. Remove the HDD *page 2 - 7*
4. Remove the system memory *page 2 - 11*

To remove the Wireless LAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*
3. Remove the HDD *page 2 - 7*
4. Remove the WLAN *page 2 - 13*

To remove the 3G:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*
3. Remove the HDD *page 2 - 7*
4. Remove the 3G *page 2 - 15*

To remove the M.2 SSD:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*
3. Remove the HDD *page 2 - 7*
4. Remove the SSD *page 2 - 16*
5. Install the SSD *page 2 - 17*

To remove the CCD Module:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 6*
3. Remove the HDD *page 2 - 7*
4. Remove the CCD module *page 2 - 18*

Removing the Battery

1. Turn **off** the computer, turn it over.
2. Slide the latch **1** in the direction of the arrow (*Figure 1a*).
3. Slide the latch **2** in the direction of the arrow, and hold it in place (*Figure 1b*).
4. Turn the battery **3** in the direction of the arrow **4** and lift it out (*Figure 1c*).
5. Insert a new battery **3** by aligning the battery to the pins **5** & **6** (*Figure 1d*).
6. Turn the battery **3** in the direction of the arrow **7** (*Figure 1e*).
7. Slide the latch **8** in the direction of the arrow to lock it in place (*Figure 1f*).

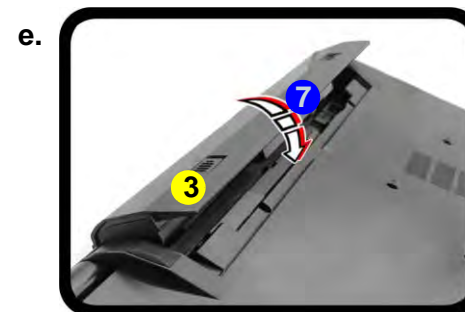
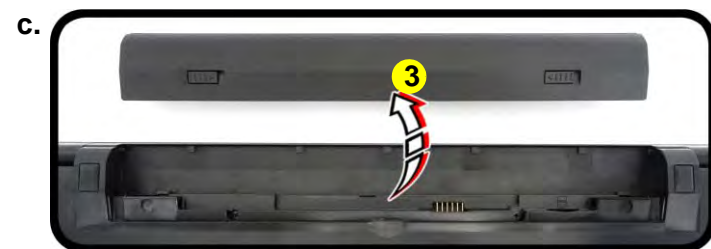
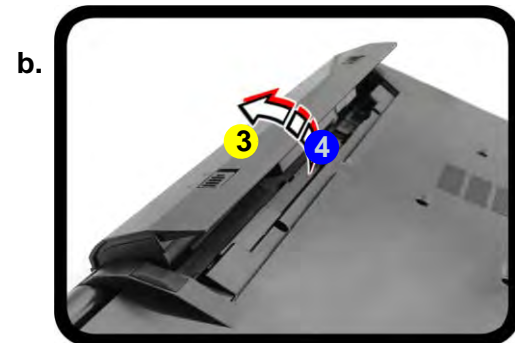
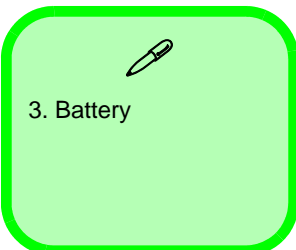


Figure 1
Battery Removal

- a. Slide the latch and hold it in place.
- b. Turn the battery in the direction of the arrow.
- c. Lift the battery out.
- d. Insert a new battery by aligning it to the pins.
- e. Turn the battery in the direction of the arrow.
- f. Lock the latch in place.



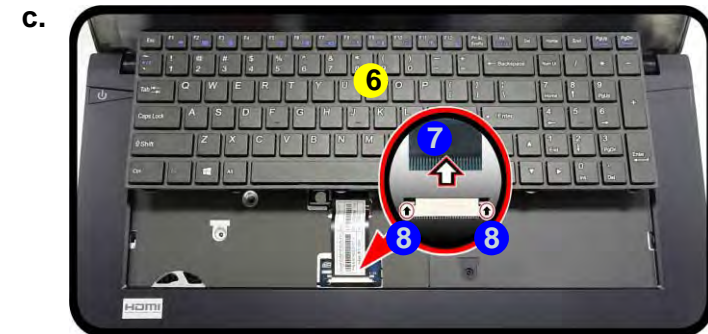
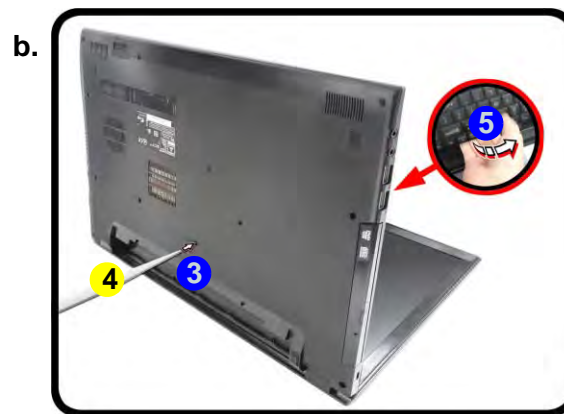
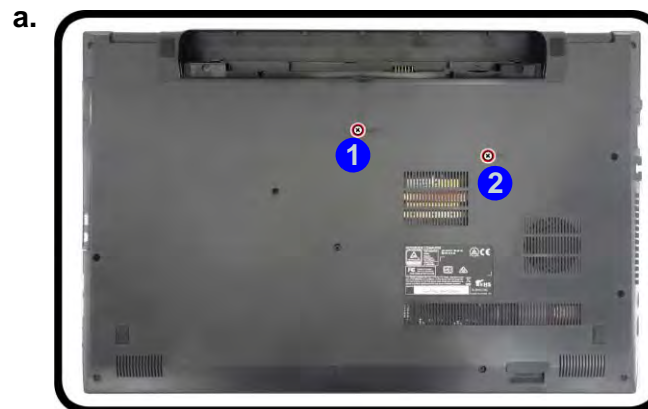
Disassembly

Figure 2
Keyboard Removal

- Remove the screws.
- Release the keyboard by pressing at point ③.
- Disconnect the keyboard ribbon cable from the locking collar socket.
- Remove the keyboard.

Removing the Keyboard

- Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
- Remove screws ① - ② from the bottom case ([Figure 2a](#)).
- Open it up with the LCD on a flat surface before pressing at point ③ to release the keyboard module (use the special eject stick ④ to do this) while releasing the keyboard in the direction of the arrow ⑤ as shown ([Figure 2c](#)).
- Carefully lift the keyboard ⑥ up, being careful not to bend the keyboard ribbon cable ⑦. Disconnect the keyboard ribbon cable from the locking collar socket ⑧ ([Figure 2d](#)).
- Carefully lift up the keyboard ⑥ off the computer ([Figure 2e](#)).
- Reverse the process to install the keyboard (do not forget to replace all the screws).



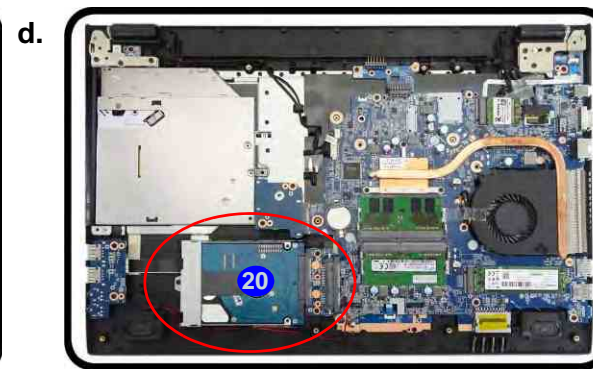
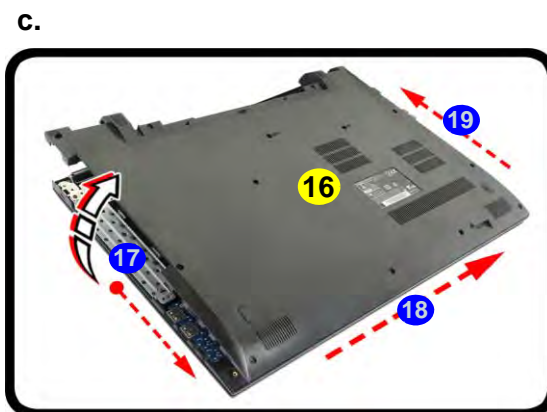
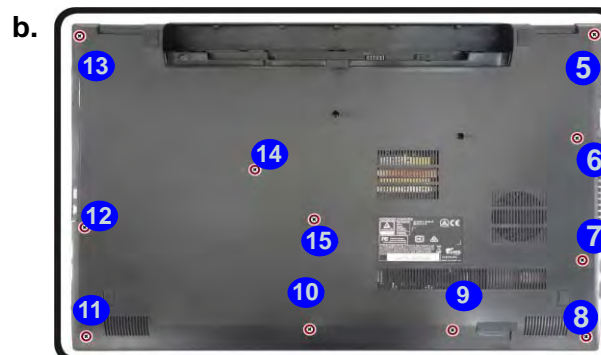
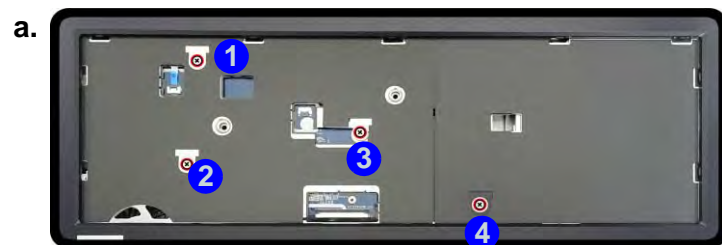
- Eject Stick
 - Keyboard
- 2 Screws

Removing the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 7.0mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

Hard Disk Upgrade Process

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)) and keyboard ([page 2 - 6](#)).
2. Remove screws **1** - **4** underneath the keyboard ([Figure 3a](#)).
3. Remove screws **5** - **15** ([Figure 3b](#)).
4. Lift the bottom cover **14** up from point **17**, **18** and **19** ([Figure 3c](#)).
5. The hard disk drive will be visible at point **20** ([Figure 3d](#)).



14. Bottom Cover

- 15 Screws

Screw Size

Note that the size of screw **13** is M2 x 5L.

Figure 3
HDD Assembly Removal

- a. Remove the screws.
- b. Remove the screws.
- c. Remove the bottom cover.
- d. Locate the HDD assembly.



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.

Disassembly

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

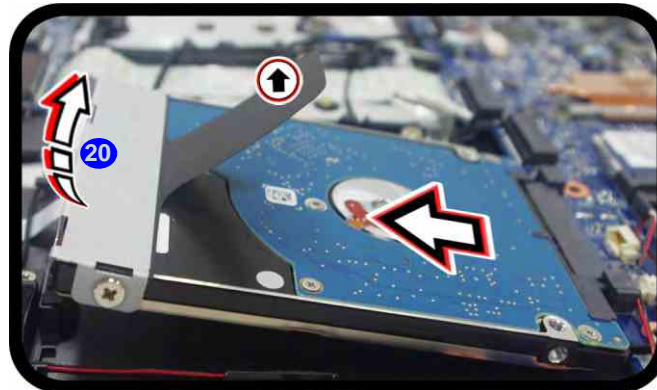
- e. Remove the screw.
- f. Slightly lift and pull the HDD assembly in the direction of the arrow.
- g. Lift the HDD assembly out of the bay.
- h. Remove the screws and HDD bracket.

- 6. Remove the screw 19 from the hard disk assembly (Figure 4e).
- 7. Slightly lift and pull the hard disk assembly in the direction of arrow 20 (Figure 4f).
- 8. Lift the hard disk assembly 21 out of the bay 22 (Figure 4g).
- 9. Remove the screws 23 - 24 and the HDD bracket 25 from the hard disk 26 (Figure 4h).
- 10. Reverse the process to install a new hard disk (do not forget to replace all the screws and bottom cover).

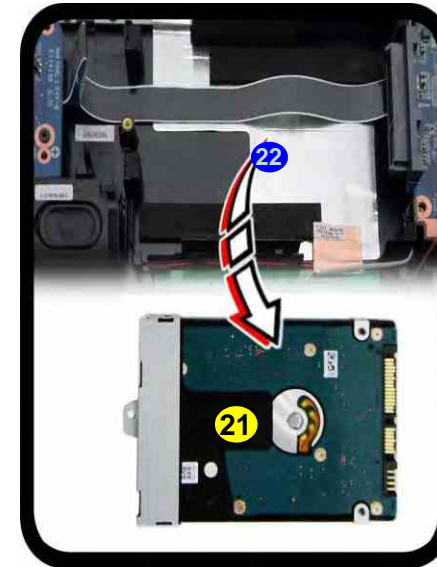
e.



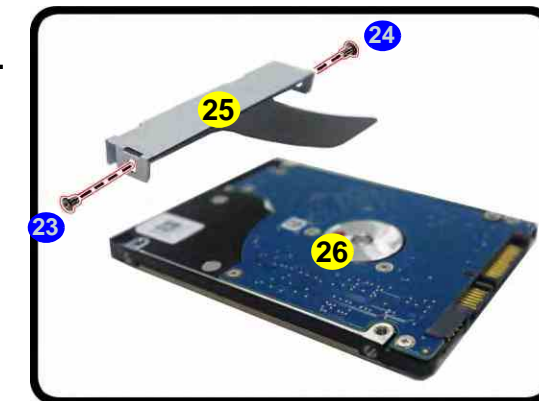
f.



g.



h.



21. HDD Assembly
25. HDD Bracket
26. HDD

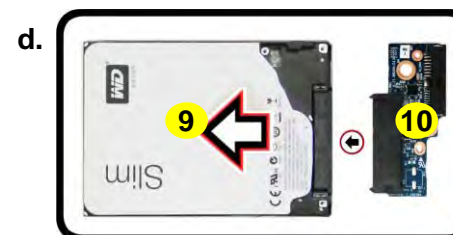
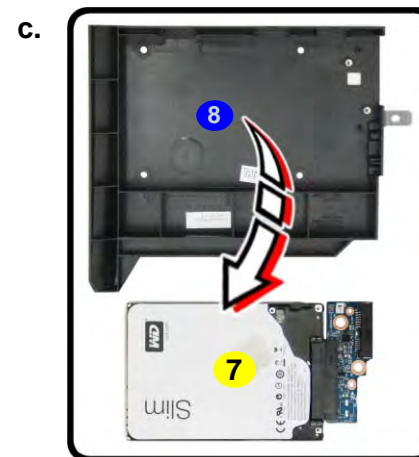
- 3 Screws


Removing the 2nd Hard Disk from Caddy Bay

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)), and bottom case ([page 2 - 7](#)).
2. Carefully push out the caddy bay **1** out in the direction of the arrow **2** ([Figure 5a](#)).
3. Remove screws **3** - **4** (will depends on the HDD type) from the bottom of the caddy bay.
4. Remove screws **5** - **6** to release the hard disk assembly ([Figure 5b](#)).
5. Lift the hard disk assembly **7** out of the caddy bay **8** ([Figure 5c](#)).
6. Separate the hard disk **9** and connector board **10** ([Figure 5d](#)).
7. Reverse the process to install a new hard disk.
8. Restart the computer to allow it to automatically detect the new device.

Figure 5
2nd HDD Removal

- a. Push the caddy bay out off the computer.
- b. Remove the screws.
- c. Lift the hard disk assembly out of the caddy bay
- d. Separate the hard disk and connector.



- 
1. Dummy Bay
 7. HDD Assembly
 9. Hard Disk
 10. Connector Board
- 4 Screws

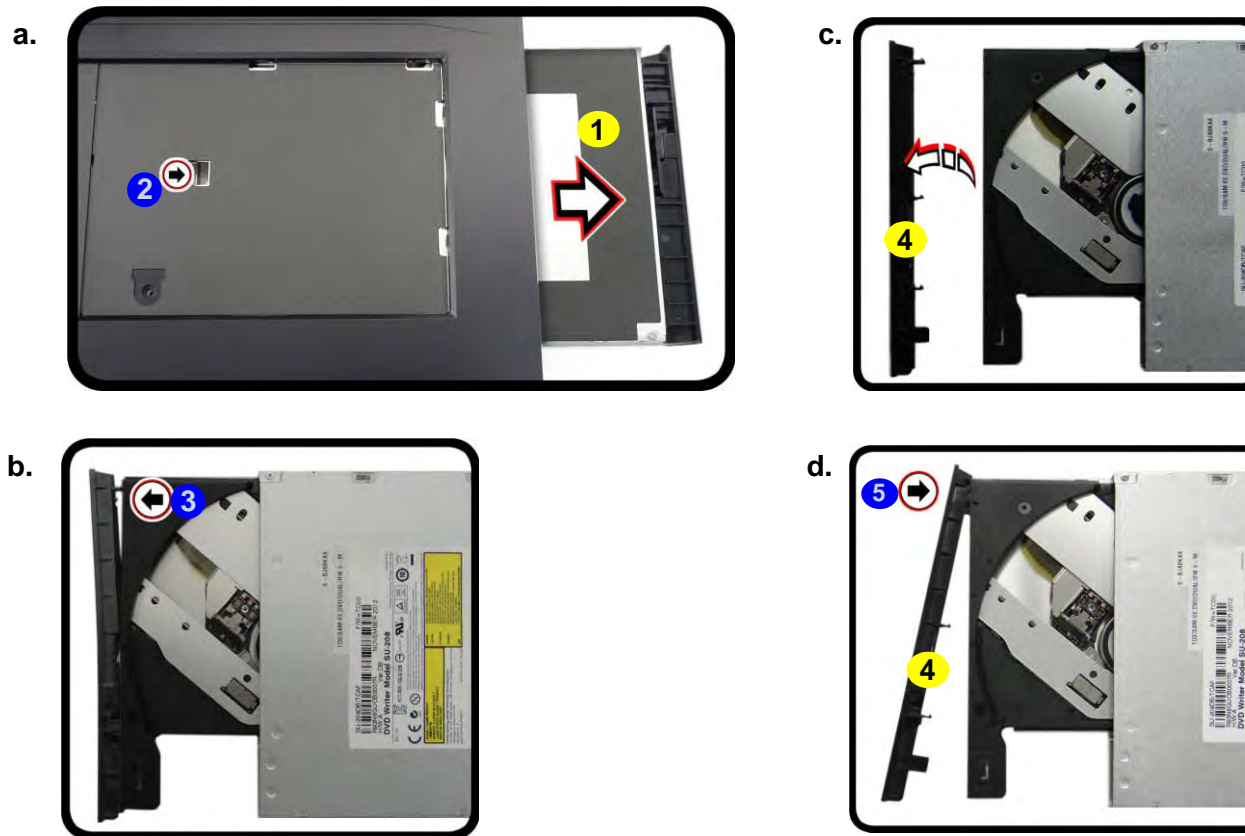
Disassembly

Figure 6
**Optical Device
Removal**

- a. Push the optical device out off the computer.
- b. Pry the bezel off the optical device.
- c. Separate the bezel and optical device
- d. Install the front bezel.

Removing the Optical (CD/DVD) Device

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)), and bottom case ([page 2 - 7](#)).
2. Carefully push out the optical device **1** out of the bay in the direction of the arrow **2** ([Figure 6a](#)).
3. Carefully pry the bezel **4** off the optical device at point **3** ([Figure 6b](#)).
4. Separate the bezel **4** and the optical device ([Figure 6d](#)).
5. Reverse the process to attach the front bezel **4** with the new optical device at point **5** ([Figure 6d](#)).
6. 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). Replace the bottom cover and tighten the screws.
7. Restart the computer to allow it to automatically detect the new device.



1. Optical Device
4. Bezel Cover

Removing the System Memory (RAM)

The computer has two memory sockets for 260 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR4 Up to 2400 MHz. The main memory can be expanded up to 32GB. The total memory size is automatically detected by the POST routine once you turn on your computer.

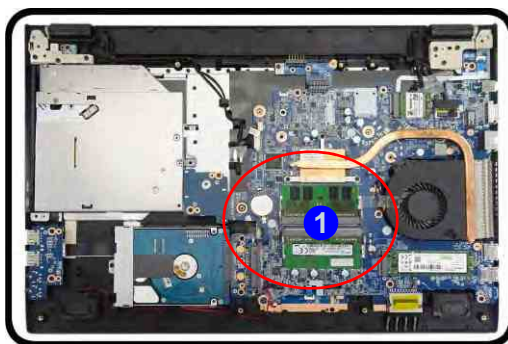
Memory Upgrade Process

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 7](#)).
2. The RAM modules will be visible at point **1** on the mainboard ([Figure 7b](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 7b](#)).
4. The RAM module **4** will pop-up ([Figure 7c](#)), and you can then remove it.

Figure 7
RAM Module Removal

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

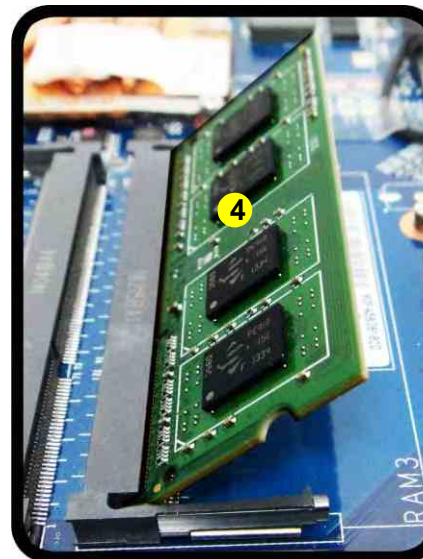
a.



b.



c.



Single Memory Module Installation

If your computer has a single memory module, then insert the module into the Channel 0 (JDIMM1 / RAM1) socket.



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

5. Pull the latches to release the second module if necessary.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. 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.
8. Replace the bottom case and the screws (see [page 2 - 7](#)).
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, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 7](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard ([Figure 8a](#)).
3. Carefully disconnect the cables **2** & **3**, and then remove the screw **4** ([Figure 8b](#))
4. The Wireless LAN module **5** ([Figure 8c](#)) will pop-up, and you can remove it from the computer.

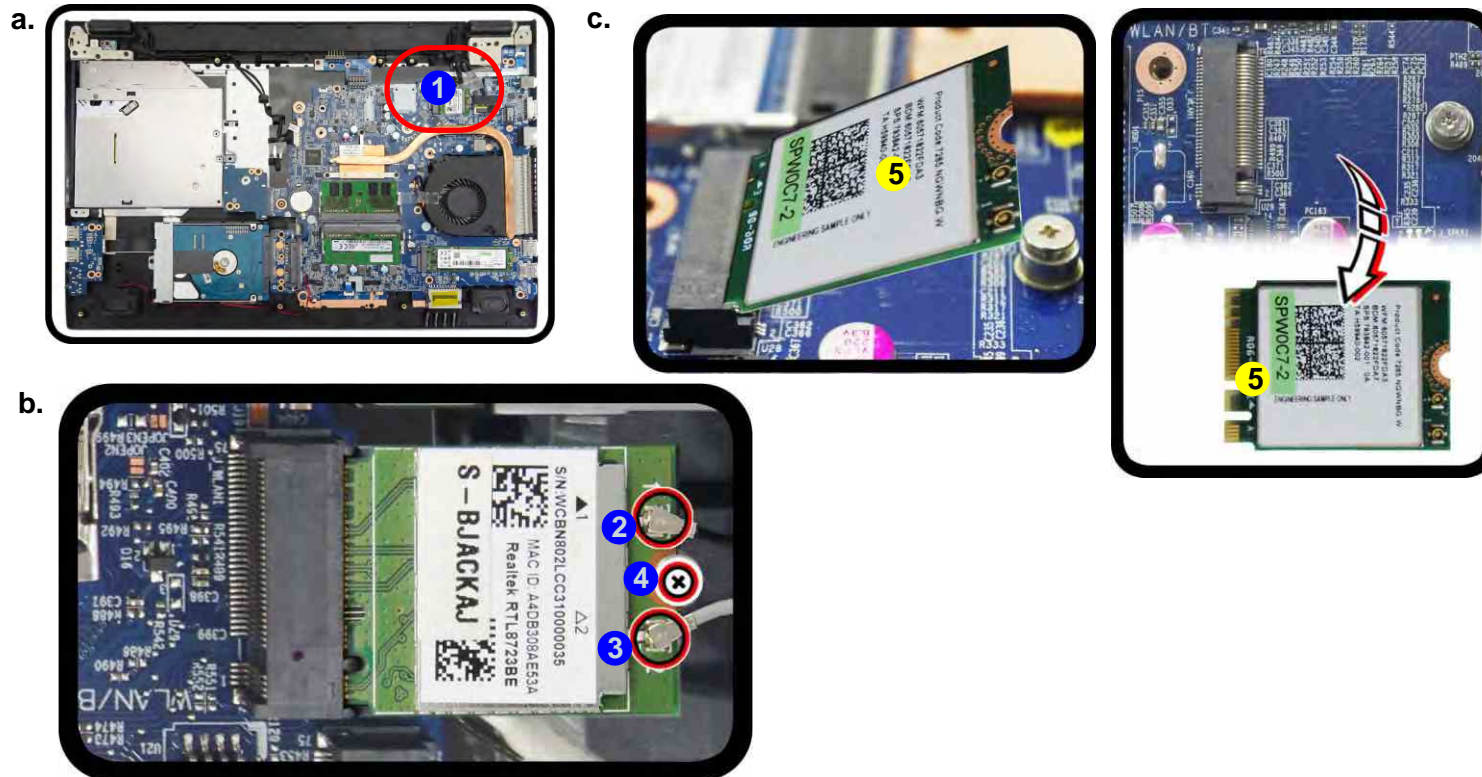


Figure 8
WLAN Module Removal

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

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket ([Figure 8b](#)).



5. Wireless LAN Module

- 1 Screw

Disassembly

Wireless LAN, Combo, 3G & LTE 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	Black	White
LTE Broadband	LTE 1	Black	Black
	LTE 2	Black	Blue

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

Removing the 3G Module

3G Module Removal Procedure

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

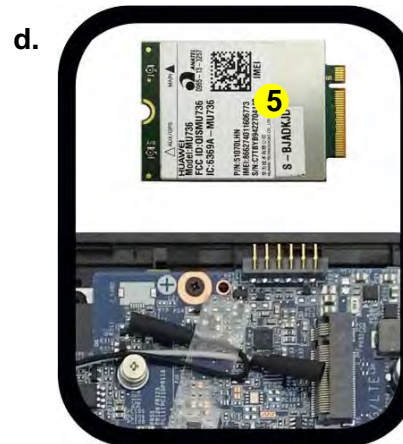
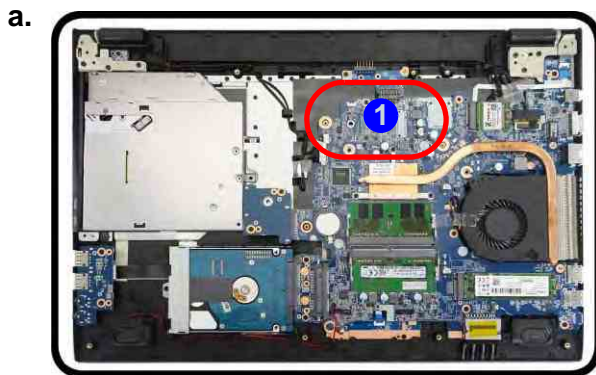


Figure 9
3G Module Removal

- a. Locate the module.
- b. Disconnect the cables and remove the screw.
- c. The module will pop up.
- d. Lift the module up and off the socket



3.M2 SATA-1 Module

- 1 Screw

Disassembly

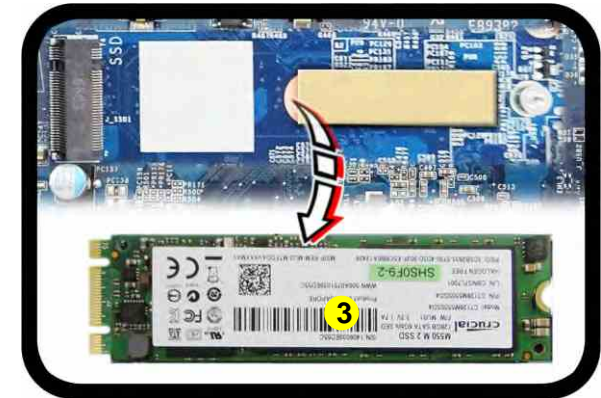
Figure 10
M.2 SSD Module Removal

- a. Locate the M.2 SSD.
- b. Remove the screw.
- c. The M.2 SSD module will pop up.

Removing and Installing the M.2 SSD Module

m.2 SSD Removal Procedure

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 7](#)).
2. The M.2 SSD module will be visible at point **1** on the mainboard ([Figure 10a](#)).
3. Remove the screw **2** ([Figure 10b](#)).
4. The M.2 SSD module **3** ([Figure 10c](#)) will pop-up, and you can remove it from the computer.



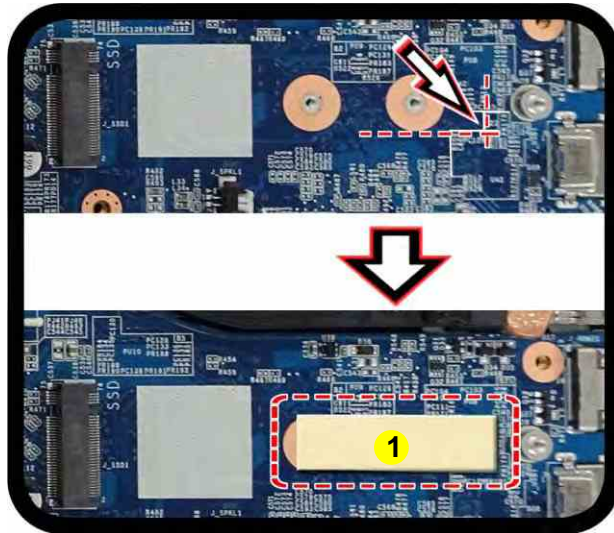
3.M2 SATA-1 Module

- 1 Screw

M.2 SSD Installation Procedure

1. Place the thermal pad **1** on the bottom case as shown (**Figure 11a**).
2. Insert the module **2** in the computer (**Figure 11b**).
3. Tighten the screw **3** to secure it in place (**Figure 11c**).

a.



b.



c.



Figure 11
M.2 SSD Module Installation

- a. Place the thermal pad.
- b. Insert the module.
- c. Tighten the screw.



Thermal Pad

Be sure to place the thermal pad's adhesive side down onto the mainboard surface.

The thermal pad's thickness differ for different M.2 SSD module:

- For module with chip, use 2.5mm thick thermal pad.
- For module without chip, use 3.5mm thick thermal pad.



1. Thermal Pad
2. M.2 SSD Module

- 1 Screw

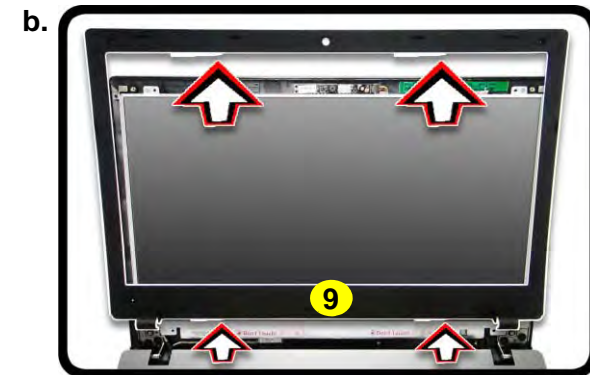
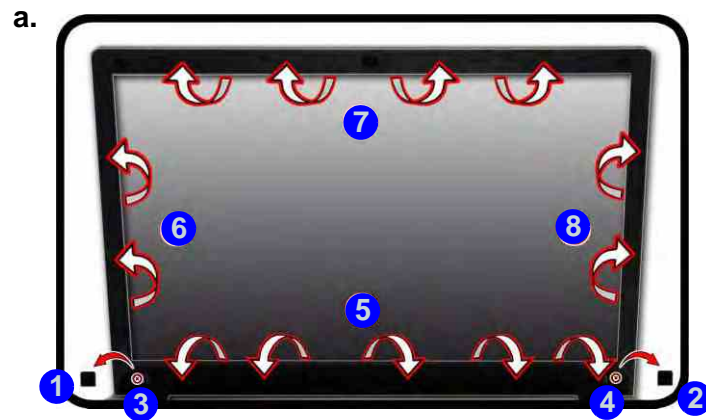
Disassembly

Figure 12
CCD Removal

- Remove cover and screws. Then run your fingers around the inner frame of the LCD panel at the points indicated by the arrows.
- Push the LCD front panel upwards before carefully lifting it up.
- Remove the LCD front cover.

Removing the CCD

- Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
- Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Carefully remove the rubber covers **1** - **2** and screws **3** - **4**.
- Run your fingers around the inner frame of the LCD panel at the points as indicated by the arrows **5** - **8** ([Figure 12a](#)).
- Push the LCD front cover **9** upwards before carefully lifting it up ([Figure 12b](#)).
- Remove the LCD front cover **9** ([Figure 12c](#)).



9. LCD Front Cover

- 2 Screws

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

d.



e.

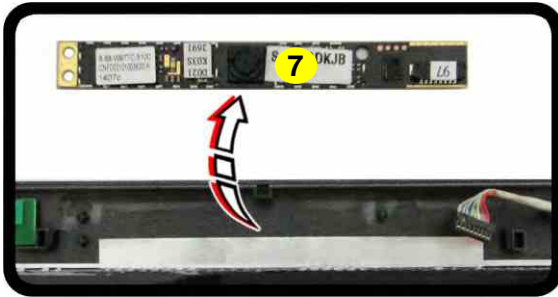


Figure 13
CCD Removal
(cont'd)

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



7. CCD Module

Appendix A:Part Lists

This appendix breaks down the *N770WU* series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

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

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

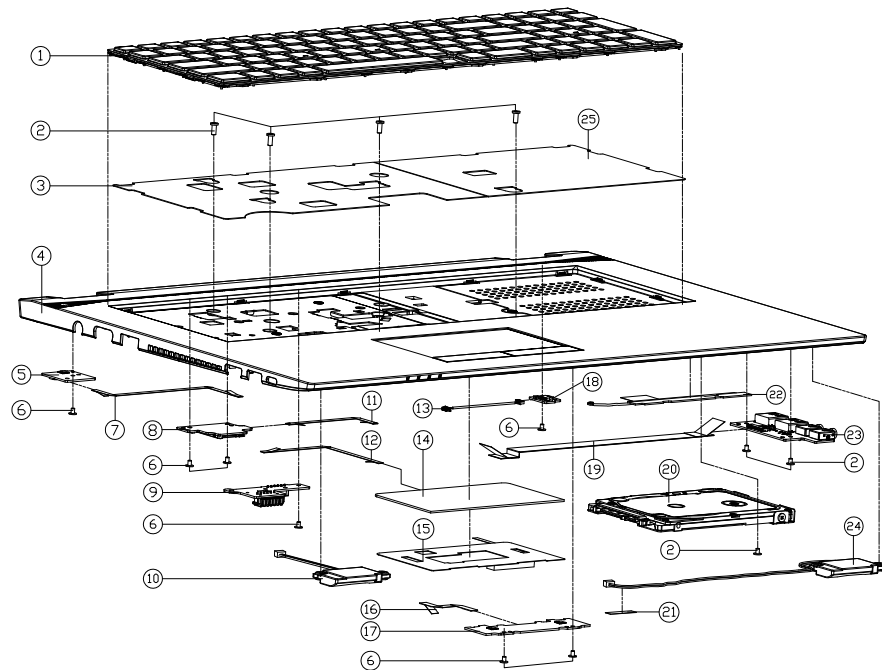
Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

Part List Illustration Location

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

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

Part	
Top	<i>page A - 3</i>
Bottom	<i>page A - 4</i>
LCD	<i>page A - 5</i>
HDD	<i>page A - 6</i>
HDD Caddy	<i>page A - 7</i>
DVD	<i>page A - 8</i>
MB	<i>page A - 9</i>

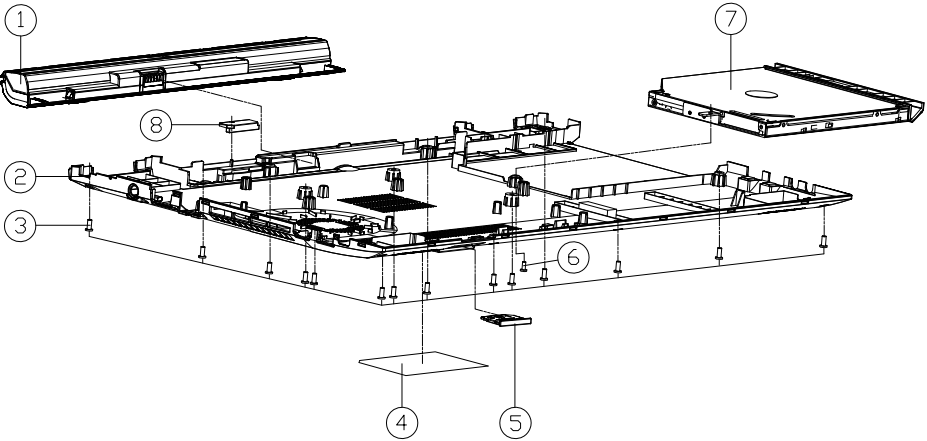


ITEM	PART	NAME	PART	NO	REMARK
1	W/O	K/B USALOG/ACC FRAME/US MODULE FOR N750U	6-79-N750BUOK-010-W		
2	W/O	1/8" O.D. CONSP/CRACK/BLACK BUSH/CLUTCH W/O KEY & KEY FRAME	6-80-N7500-012-I		
3	SCREW	M2.5x6L K BZ ICT NY	6-35-B2125-6RA		
4	W/O	BL KB MYLAR L PC N770WU	6-40-N7702-022		FOR W/O BL KB
5	TOP	CASE MODULE N770WU	6-39-N7702-012		
6	POWER	SWITCH BOARD V3.0 N770WU	6-77-N770S-D03		
7	SCREW	M2x3L K1 BZ ICT NY (OD=04.5,DT=0.4)	6-35-B6120-3RD		
8	POWER	TO MB FCC CABLE SV 6P PITCH=0.5MM L=100MM QD0 N770WU	6-43-N7700-041		
9	3G	SIM CARD BOARD V3.0 N770WU	6-77-N770G-D03		
10	BATTERY	TRANSFER V2.0 N770WU	6-77-N770Q-D02		
11	SPK/CBL	L 2044 15W 4P 25MM L25K00P QVD N250U AND R0000	6-23-5N250-1L2		
12	LITE	TO MB FCC CABLE SV 6P PITCH=0.5MM L=70MM QD0 N770WU	6-43-N7700-011		
13	TP	TO MB FCC CABLE 3.3V 6P PITCH=0.5MM L=100MM QD0	6-43-N7700-021		
14	WIRE	CABLE FOR HALL SENSOR TO MB 220MM SV 3P/4W QD0 N770WU (4P)	6-43-N7700-051		
15	TOUCH	PAD SYNAPTICS PTP 1P-0089-002 C00050M V550C	6-49-W65D3-010		
16	TP	ISOLATION MLAR PET N770WU	6-40-N7702-031		
17	CLICK	TO TP FCC CABLE SV 6P PITCH=1.0MM L=65MM QD0 N750BU	6-43-N7502-011-I		
18	CLICK	BOARD V4.0 N750WU	6-77-N75W2-D04		
19	LID	SWITCH BOARD V3.0 N750WU	6-77-N75W6-D03		
20	AUDIO	TO MB FCC CABLE SV 22P PITCH=0.5MM L=190MM QD0 N770WU	6-43-N7700-032		
21	W/O	HDD ASS'Y N770WU	6-79-N770WUJ3-J010		
22	W/O	HDD ASS'Y N770WU	6-79-N770WUJ3-020		
23	TAPE	MYLAR C.C.MYLAR M550J	6-40-M55J2-030		
24	W/O	MPK 4-BYTE 4P LITE 4P 20 USALOG/ACC/BLACK BUSH/CLUTCH W/O KEY & KEY FRAME	6-23-7W355-020		
25	AUDIO	BOARD V4.0 N770WU	6-77-N7708-D04		
26	SPK/CBL	L 2044 15W 4P 25MM L25K00P QVD N250U AND R0000	6-23-5N250-1R2		
27	W/O	BL KB MYLAR R PC N770WU	6-40-N7702-011		FOR W/O BL KB

Figure A - 1
Top

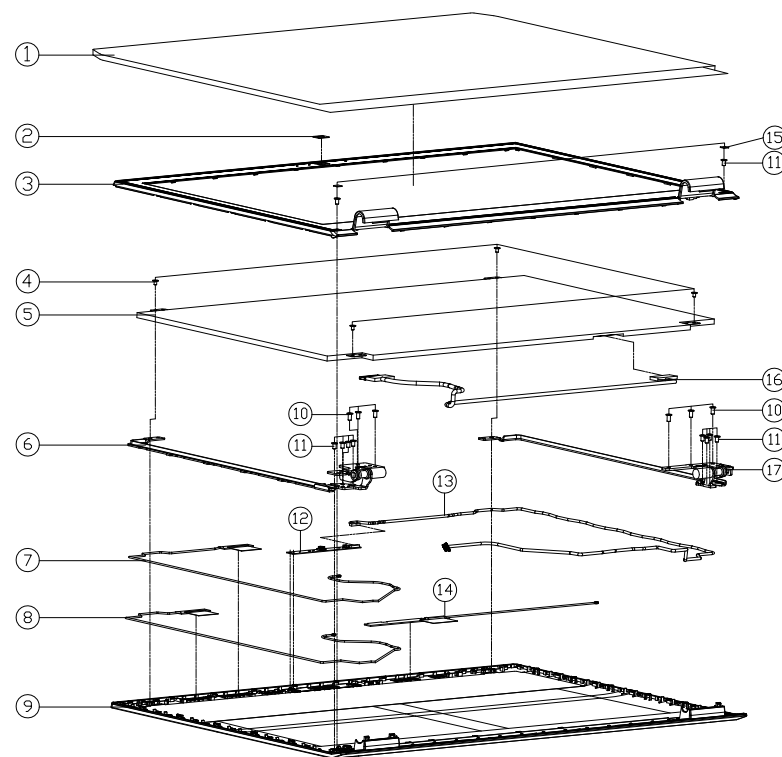
Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	IMP S.U. HAWK/200/1000 KIP IMP/1000 IMP/1000 IMP/1000 IMP/1000	6-87-N750S-3CF2	
1	IMP S.U. HAWK/200/1000 KIP IMP/1000 IMP/1000 IMP/1000 IMP/1000	6-87-N750S-31C00	
1	IMP S.U. HAWK/200/1000 KIP IMP/1000 IMP/1000 IMP/1000 IMP/1000	6-87-N750S-4EB2	
1	IMP S.U. HAWK/200/1000 KIP IMP/1000 IMP/1000 IMP/1000 IMP/1000	6-87-N750S-41C00	
2	BOTTOM CASE MODULE N770WU	6-39-N7703-012	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	PRODUCT LABEL FOR N770WU	6-45-N770WU03-010	
5	DUMMY SIM CARD PUSH TYPE PC+ABS (C7220P-7000) W57000W	6-42-W9708-030	
6	SCREW M2*5L KICT-08 D=4.0 BK/Z ICT NY	6-35-B6120-5R0	
7	W/D ODD ASS'Y N770WU	6-79-N770WU02-000	
7	SATA DVD SUPER MULTI BX ASS'Y N770WU	6-79-N770WU02-001	
7	DUMMY ODD ASS'Y N770WU	6-79-N770WU02-001	
7	2ND HDD CADDY ASS'Y W/D HDD N770WU	6-79-N770WU03-030	
7	2ND HDD CADDY ASS'Y W/HDD N770WU	6-79-N770WU03-040	
8	DUMMY SIM CARD RUBBER SILICON RUBBER+G9000 N770WU	6-47-N770Y-010	

LCD

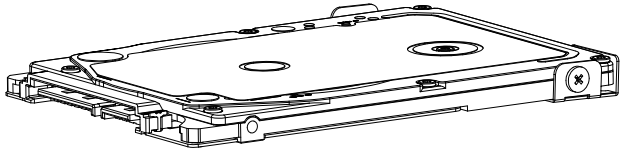
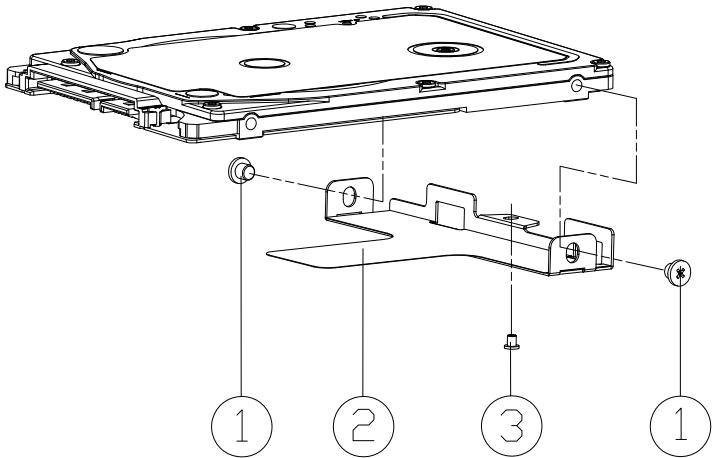


ITEM	PART NAME	PART NO	REMARK
1	BCPP MYLAR 278X440X1=0.05 FOR P670RS-GM	6-40-P67S1-010-M	
2	CCD LENS PMMA N750BU	6-42-N7501-010	
3	FRONT COVER MODULE N770WU	6-39-N7701-012	
4	SCREW M2*3L KI BZ ICT NY (DD=04.5,DT=0.4)	6-35-B6120-3RD	
5	LCD 17.3" HD+/ EDP AU B173RTN02.1 (LED) 4.0MM	6-50-NA140-G00	
5	LCD 17.3" FHD/ AAS / N7/EEP INNOLOK N173KCE-E30 (LED) 4.0 MM	6-50-NB240-V00	
5	LCD 17.3" FHD / IPS 15W 6-SYNCHRON G/ EDP LG L170TM4-S9S VED0650 LED 4.0MM	6-50-NBB40-L081	
6	HINGE L (SK7+SGCC) N770WU	6-33-N7701-0L2	
7	ANTENNA IPXA WLAN WGT WL-2 PCB AL 24G/5G WL-2: 500MM P640RE	6-23-7P640-020	
8	ANTENNA IPXA WLAN WGT WL-1 PCB AL 24G/5G WL-1: 500MM P640RE	6-23-7P640-010	
9	BACK COVER MODULE N770WU	6-39-N7701-022	
10	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
11	SCREW M2.5*4L KI NI ICT NY	6-35-21125-4R0	
12	AVC CAMERA CORDON FOR DIFFERENT MODELS IN HD DVI27M K30PU FIBER WHITE-LED W/2-MIC	6-88-W51PC-S100	OPTION
12	AVC CAMERA CORDON FOR DIFFERENT MODELS IN HD DVI27M K30PU FIBER WHITE-LED W/2-MIC	6-88-W51PC-S110	OPTION
12	AVC CAMERA CORD FIBER/HD DVI27M K30PU FIBER WHITE-LED W/2-MIC	6-88-N770C-4900	OPTION
12	AVC CAMERA CORD FIBER/HD DVI27M K30PU FIBER WHITE-LED W/2-MIC	6-88-N770C-4910	OPTION
13	WIRE CABLE FOR CCD D-MIC 700MM 3.3V BP (HT) N870HC	6-43-N870T-010-2	
14	ANTENNA IPXA LTE WGT WL1 PCB BR 0.76/0.65/0.55/0.55/0.55/0.55 (LTE-S) N770WU	6-23-7N770-010	
15	FRONT COVER SCREW MYLAR(PC+SMA660)5X5(0.35T) N150SD	6-40-N1501-010	
16	WIRE CABLE FOR EDP 400MM 15V 30PIN (DVI/LC COM) N770WU	6-43-N7701-011-L	
17	HINGE R (SK7+SGCC) N770WU	6-33-N7701-0R2	

Figure A - 3
LCD

HDD

Figure A - 4
HDD



ITEM	PART NAME	PART NO	REMARK
1	SCREW M3*2.5L KI NI ICT NY	6-35-B1130-2R5	
2	HDD BKT 7MM SECC T=0.5 N250LU	6-33-N250J-011	
3	SCREW M2*3L KI BZ ICT NY (DD=Ø4.5,DT=0.4)	6-35-B6120-3RD	

HDD Caddy

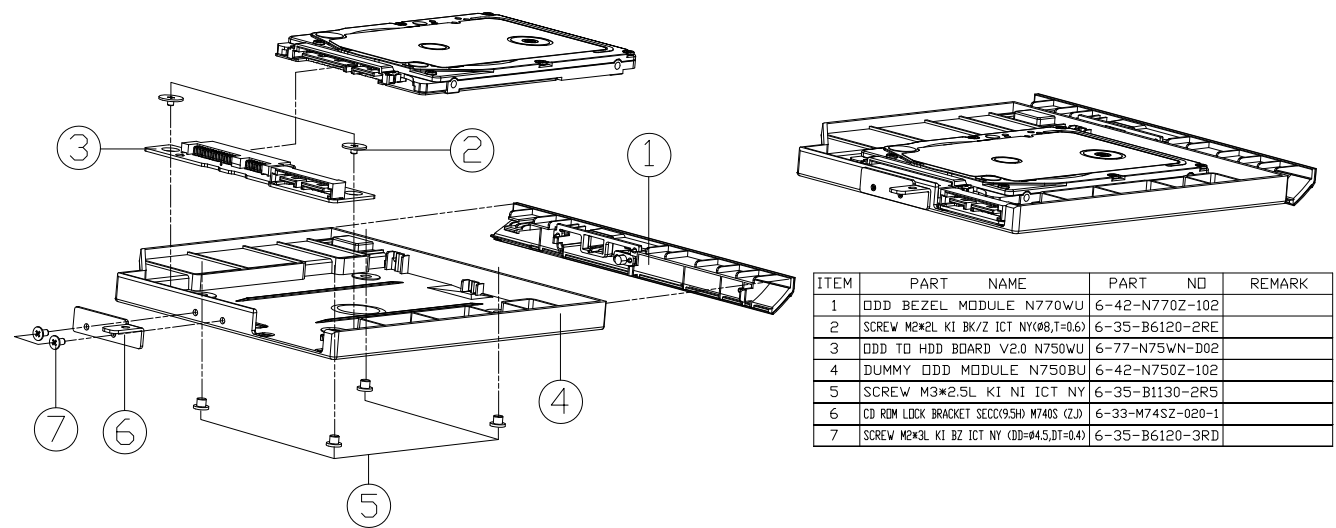
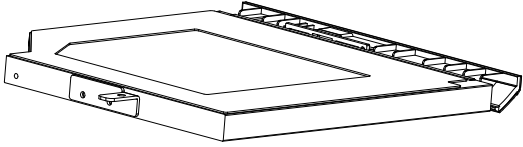
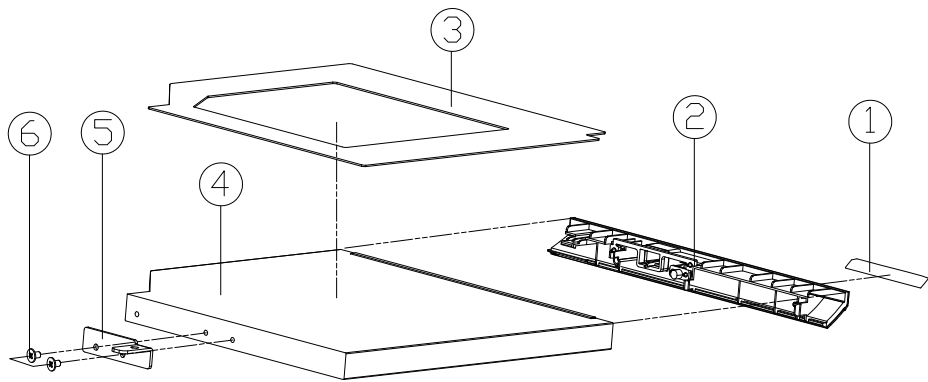


Figure A - 5
HDD Caddy

DVD

Figure A - 6
DVD



ITEM	PART NAME	PART NO	REMARK
1	SUPER MULTI ODD BEZEL LABEL N650DU	6-45-N650Q-020	
2	ODD BEZEL MODULE N770WU	6-42-N770Z-102	
3	ODD PC MYLAR 0.5T N750HU	6-40-N75H2-031	FOR 9.0MM ODD
4	SATA DVD WRITER 5 1/4" 8X 9.0MM GUEIN ROM VER 1.00 QUN 10 HLDS	6-85-A088X-504	FOR HLDS
4	SATA DVD WRITER 5 1/4" 8X 9.0MM DA-BEESH 0.5T/0.6T/0.7T/0.8T/0.9T/1.0T/1.1T/1.2T/1.3T/1.4T/1.5T/1.6T/1.7T/1.8T/1.9T/2.0T/2.1T/2.2T/2.3T/2.4T/2.5T/2.6T/2.7T/2.8T/2.9T/3.0T/3.1T/3.2T/3.3T/3.4T/3.5T/3.6T/3.7T/3.8T/3.9T/4.0T/4.1T/4.2T/4.3T/4.4T/4.5T/4.6T/4.7T/4.8T/4.9T/5.0T/5.1T/5.2T/5.3T/5.4T/5.5T/5.6T/5.7T/5.8T/5.9T/6.0T/6.1T/6.2T/6.3T/6.4T/6.5T/6.6T/6.7T/6.8T/6.9T/7.0T/7.1T/7.2T/7.3T/7.4T/7.5T/7.6T/7.7T/7.8T/7.9T/8.0T/8.1T/8.2T/8.3T/8.4T/8.5T/8.6T/8.7T/8.8T/8.9T/9.0T/9.1T/9.2T/9.3T/9.4T/9.5T/9.6T/9.7T/9.8T/9.9T/10.0T/10.1T/10.2T/10.3T/10.4T/10.5T/10.6T/10.7T/10.8T/10.9T/11.0T/11.1T/11.2T/11.3T/11.4T/11.5T/11.6T/11.7T/11.8T/11.9T/12.0T/12.1T/12.2T/12.3T/12.4T/12.5T/12.6T/12.7T/12.8T/12.9T/13.0T/13.1T/13.2T/13.3T/13.4T/13.5T/13.6T/13.7T/13.8T/13.9T/14.0T/14.1T/14.2T/14.3T/14.4T/14.5T/14.6T/14.7T/14.8T/14.9T/15.0T/15.1T/15.2T/15.3T/15.4T/15.5T/15.6T/15.7T/15.8T/15.9T/16.0T/16.1T/16.2T/16.3T/16.4T/16.5T/16.6T/16.7T/16.8T/16.9T/17.0T/17.1T/17.2T/17.3T/17.4T/17.5T/17.6T/17.7T/17.8T/17.9T/18.0T/18.1T/18.2T/18.3T/18.4T/18.5T/18.6T/18.7T/18.8T/18.9T/19.0T/19.1T/19.2T/19.3T/19.4T/19.5T/19.6T/19.7T/19.8T/19.9T/20.0T/20.1T/20.2T/20.3T/20.4T/20.5T/20.6T/20.7T/20.8T/20.9T/21.0T/21.1T/21.2T/21.3T/21.4T/21.5T/21.6T/21.7T/21.8T/21.9T/22.0T/22.1T/22.2T/22.3T/22.4T/22.5T/22.6T/22.7T/22.8T/22.9T/23.0T/23.1T/23.2T/23.3T/23.4T/23.5T/23.6T/23.7T/23.8T/23.9T/24.0T/24.1T/24.2T/24.3T/24.4T/24.5T/24.6T/24.7T/24.8T/24.9T/25.0T/25.1T/25.2T/25.3T/25.4T/25.5T/25.6T/25.7T/25.8T/25.9T/26.0T/26.1T/26.2T/26.3T/26.4T/26.5T/26.6T/26.7T/26.8T/26.9T/27.0T/27.1T/27.2T/27.3T/27.4T/27.5T/27.6T/27.7T/27.8T/27.9T/28.0T/28.1T/28.2T/28.3T/28.4T/28.5T/28.6T/28.7T/28.8T/28.9T/29.0T/29.1T/29.2T/29.3T/29.4T/29.5T/29.6T/29.7T/29.8T/29.9T/30.0T/30.1T/30.2T/30.3T/30.4T/30.5T/30.6T/30.7T/30.8T/30.9T/31.0T/31.1T/31.2T/31.3T/31.4T/31.5T/31.6T/31.7T/31.8T/31.9T/32.0T/32.1T/32.2T/32.3T/32.4T/32.5T/32.6T/32.7T/32.8T/32.9T/33.0T/33.1T/33.2T/33.3T/33.4T/33.5T/33.6T/33.7T/33.8T/33.9T/34.0T/34.1T/34.2T/34.3T/34.4T/34.5T/34.6T/34.7T/34.8T/34.9T/35.0T/35.1T/35.2T/35.3T/35.4T/35.5T/35.6T/35.7T/35.8T/35.9T/36.0T/36.1T/36.2T/36.3T/36.4T/36.5T/36.6T/36.7T/36.8T/36.9T/37.0T/37.1T/37.2T/37.3T/37.4T/37.5T/37.6T/37.7T/37.8T/37.9T/38.0T/38.1T/38.2T/38.3T/38.4T/38.5T/38.6T/38.7T/38.8T/38.9T/39.0T/39.1T/39.2T/39.3T/39.4T/39.5T/39.6T/39.7T/39.8T/39.9T/40.0T/40.1T/40.2T/40.3T/40.4T/40.5T/40.6T/40.7T/40.8T/40.9T/41.0T/41.1T/41.2T/41.3T/41.4T/41.5T/41.6T/41.7T/41.8T/41.9T/42.0T/42.1T/42.2T/42.3T/42.4T/42.5T/42.6T/42.7T/42.8T/42.9T/43.0T/43.1T/43.2T/43.3T/43.4T/43.5T/43.6T/43.7T/43.8T/43.9T/44.0T/44.1T/44.2T/44.3T/44.4T/44.5T/44.6T/44.7T/44.8T/44.9T/45.0T/45.1T/45.2T/45.3T/45.4T/45.5T/45.6T/45.7T/45.8T/45.9T/46.0T/46.1T/46.2T/46.3T/46.4T/46.5T/46.6T/46.7T/46.8T/46.9T/47.0T/47.1T/47.2T/47.3T/47.4T/47.5T/47.6T/47.7T/47.8T/47.9T/48.0T/48.1T/48.2T/48.3T/48.4T/48.5T/48.6T/48.7T/48.8T/48.9T/49.0T/49.1T/49.2T/49.3T/49.4T/49.5T/49.6T/49.7T/49.8T/49.9T/50.0T/50.1T/50.2T/50.3T/50.4T/50.5T/50.6T/50.7T/50.8T/50.9T/51.0T/51.1T/51.2T/51.3T/51.4T/51.5T/51.6T/51.7T/51.8T/51.9T/52.0T/52.1T/52.2T/52.3T/52.4T/52.5T/52.6T/52.7T/52.8T/52.9T/53.0T/53.1T/53.2T/53.3T/53.4T/53.5T/53.6T/53.7T/53.8T/53.9T/54.0T/54.1T/54.2T/54.3T/54.4T/54.5T/54.6T/54.7T/54.8T/54.9T/55.0T/55.1T/55.2T/55.3T/55.4T/55.5T/55.6T/55.7T/55.8T/55.9T/56.0T/56.1T/56.2T/56.3T/56.4T/56.5T/56.6T/56.7T/56.8T/56.9T/57.0T/57.1T/57.2T/57.3T/57.4T/57.5T/57.6T/57.7T/57.8T/57.9T/58.0T/58.1T/58.2T/58.3T/58.4T/58.5T/58.6T/58.7T/58.8T/58.9T/59.0T/59.1T/59.2T/59.3T/59.4T/59.5T/59.6T/59.7T/59.8T/59.9T/60.0T/60.1T/60.2T/60.3T/60.4T/60.5T/60.6T/60.7T/60.8T/60.9T/61.0T/61.1T/61.2T/61.3T/61.4T/61.5T/61.6T/61.7T/61.8T/61.9T/62.0T/62.1T/62.2T/62.3T/62.4T/62.5T/62.6T/62.7T/62.8T/62.9T/63.0T/63.1T/63.2T/63.3T/63.4T/63.5T/63.6T/63.7T/63.8T/63.9T/64.0T/64.1T/64.2T/64.3T/64.4T/64.5T/64.6T/64.7T/64.8T/64.9T/65.0T/65.1T/65.2T/65.3T/65.4T/65.5T/65.6T/65.7T/65.8T/65.9T/66.0T/66.1T/66.2T/66.3T/66.4T/66.5T/66.6T/66.7T/66.8T/66.9T/67.0T/67.1T/67.2T/67.3T/67.4T/67.5T/67.6T/67.7T/67.8T/67.9T/68.0T/68.1T/68.2T/68.3T/68.4T/68.5T/68.6T/68.7T/68.8T/68.9T/69.0T/69.1T/69.2T/69.3T/69.4T/69.5T/69.6T/69.7T/69.8T/69.9T/70.0T/70.1T/70.2T/70.3T/70.4T/70.5T/70.6T/70.7T/70.8T/70.9T/71.0T/71.1T/71.2T/71.3T/71.4T/71.5T/71.6T/71.7T/71.8T/71.9T/72.0T/72.1T/72.2T/72.3T/72.4T/72.5T/72.6T/72.7T/72.8T/72.9T/73.0T/73.1T/73.2T/73.3T/73.4T/73.5T/73.6T/73.7T/73.8T/73.9T/74.0T/74.1T/74.2T/74.3T/74.4T/74.5T/74.6T/74.7T/74.8T/74.9T/75.0T/75.1T/75.2T/75.3T/75.4T/75.5T/75.6T/75.7T/75.8T/75.9T/76.0T/76.1T/76.2T/76.3T/76.4T/76.5T/76.6T/76.7T/76.8T/76.9T/77.0T/77.1T/77.2T/77.3T/77.4T/77.5T/77.6T/77.7T/77.8T/77.9T/78.0T/78.1T/78.2T/78.3T/78.4T/78.5T/78.6T/78.7T/78.8T/78.9T/79.0T/79.1T/79.2T/79.3T/79.4T/79.5T/79.6T/79.7T/79.8T/79.9T/80.0T/80.1T/80.2T/80.3T/80.4T/80.5T/80.6T/80.7T/80.8T/80.9T/81.0T/81.1T/81.2T/81.3T/81.4T/81.5T/81.6T/81.7T/81.8T/81.9T/82.0T/82.1T/82.2T/82.3T/82.4T/82.5T/82.6T/82.7T/82.8T/82.9T/83.0T/83.1T/83.2T/83.3T/83.4T/83.5T/83.6T/83.7T/83.8T/83.9T/84.0T/84.1T/84.2T/84.3T/84.4T/84.5T/84.6T/84.7T/84.8T/84.9T/85.0T/85.1T/85.2T/85.3T/8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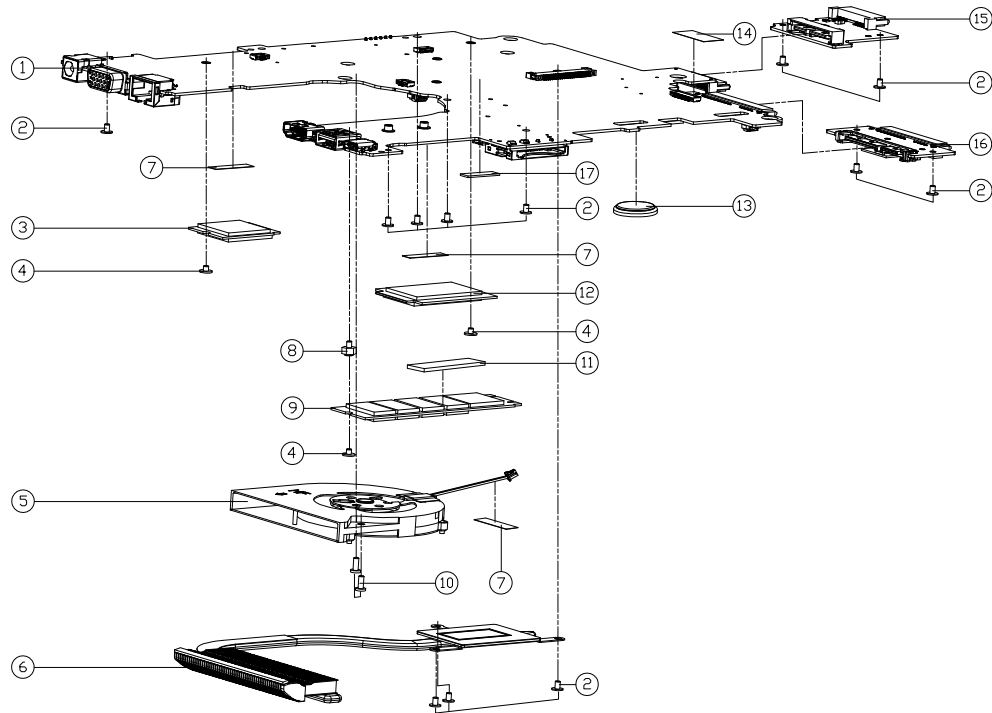
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Figure A - 7
HDD

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *N770WU* 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>PCH 4/9 - Page B - 18</i>	<i>CCD, MIC, LID, I/O Connector - Page B - 34</i>
<i>Processor 1/6 - Page B - 3</i>	<i>PCH 5/9 - Page B - 19</i>	<i>KBC ITE IT8587 - Page B - 35</i>
<i>Processor 2/6 - Page B - 4</i>	<i>PCH 6/9 - Page B - 20</i>	<i>5V, 5VS, 3.3V, 3.3VS, 3.3VA - Page B - 36</i>
<i>Processor 3/6 - Page B - 5</i>	<i>PCH 7/9 - Page B - 21</i>	<i>VDD3, VDD5 - Page B - 37</i>
<i>Processor 4/6 - Page B - 6</i>	<i>PCH 8/9 - Page B - 22</i>	<i>DDR 1.2V/0.62VS, 2.5V - Page B - 38</i>
<i>Processor 5/6 - Page B - 7</i>	<i>PCH 9/9 - Page B - 23</i>	<i>VCC_CORE, VCCGT - Page B - 39</i>
<i>Processor 6/6 - Page B - 8</i>	<i>M.2 (WLAN, 3G, SSD) - Page B - 24</i>	<i>VCORE, VCCGT Output Stage - Page B - 40</i>
<i>DDR4 CHA SO_DIMM_0 - Page B - 9</i>	<i>Audio Codec - Page B - 25</i>	<i>VCCSA - Page B - 41</i>
<i>DDR4 CHB SO_DIMM_0 - Page B - 10</i>	<i>PS8330B - Page B - 26</i>	<i>VCCIO - Page B - 42</i>
<i>Panel, Inverter - Page B - 11</i>	<i>AR_TBT - Page B - 27</i>	<i>1.0DX_VCCSTG/VCCSFR_OC, 3.3VA - Page B - 43</i>
<i>VGA RTD2168 - Page B - 12</i>	<i>AR_Power - Page B - 28</i>	<i>Charger, AC-In - Page B - 44</i>
<i>Card Reader & LAN RTL8411B - Page B - 13</i>	<i>ASM1543 - Page B - 29</i>	<i>Audio Board - Page B - 45</i>
<i>HDMI, RJ45, Fan, TPM - Page B - 14</i>	<i>TPS65982 - Page B - 30</i>	<i>Click Board - Page B - 46</i>
<i>PCH 1/9 - Page B - 15</i>	<i>Type C - Page B - 31</i>	<i>LID SW Board - Page B - 47</i>
<i>PCH 2/9 - Page B - 16</i>	<i>USB - Page B - 32</i>	<i>Caddy Bay Board - Page B - 48</i>
<i>PCH 3/9 - Page B - 17</i>	<i>HDD, ODD, LED - Page B - 33</i>	<i>Power Seq. - Page B - 49</i>

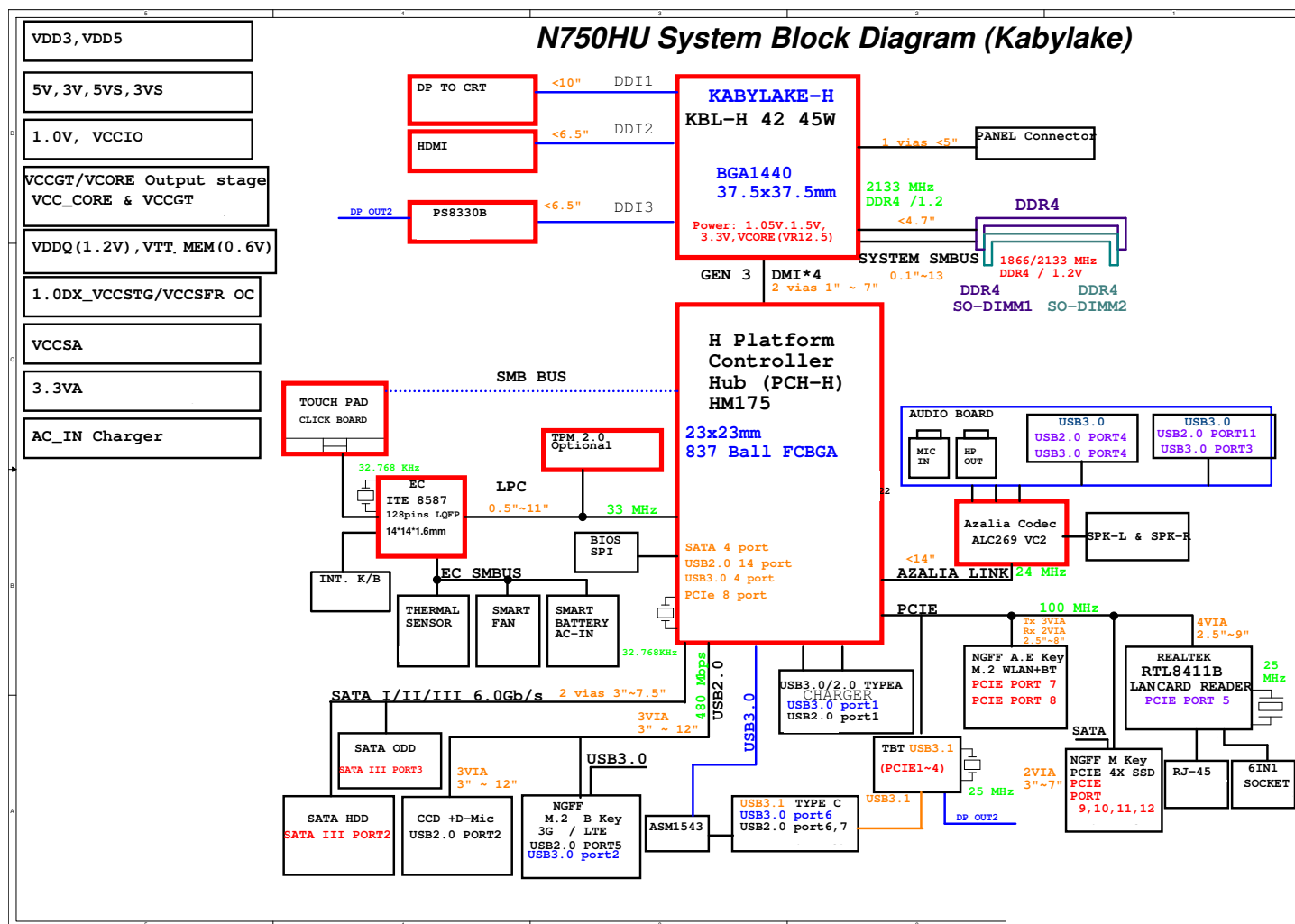
Table B - 1
**SCHEMATIC
DIAGRAMS**



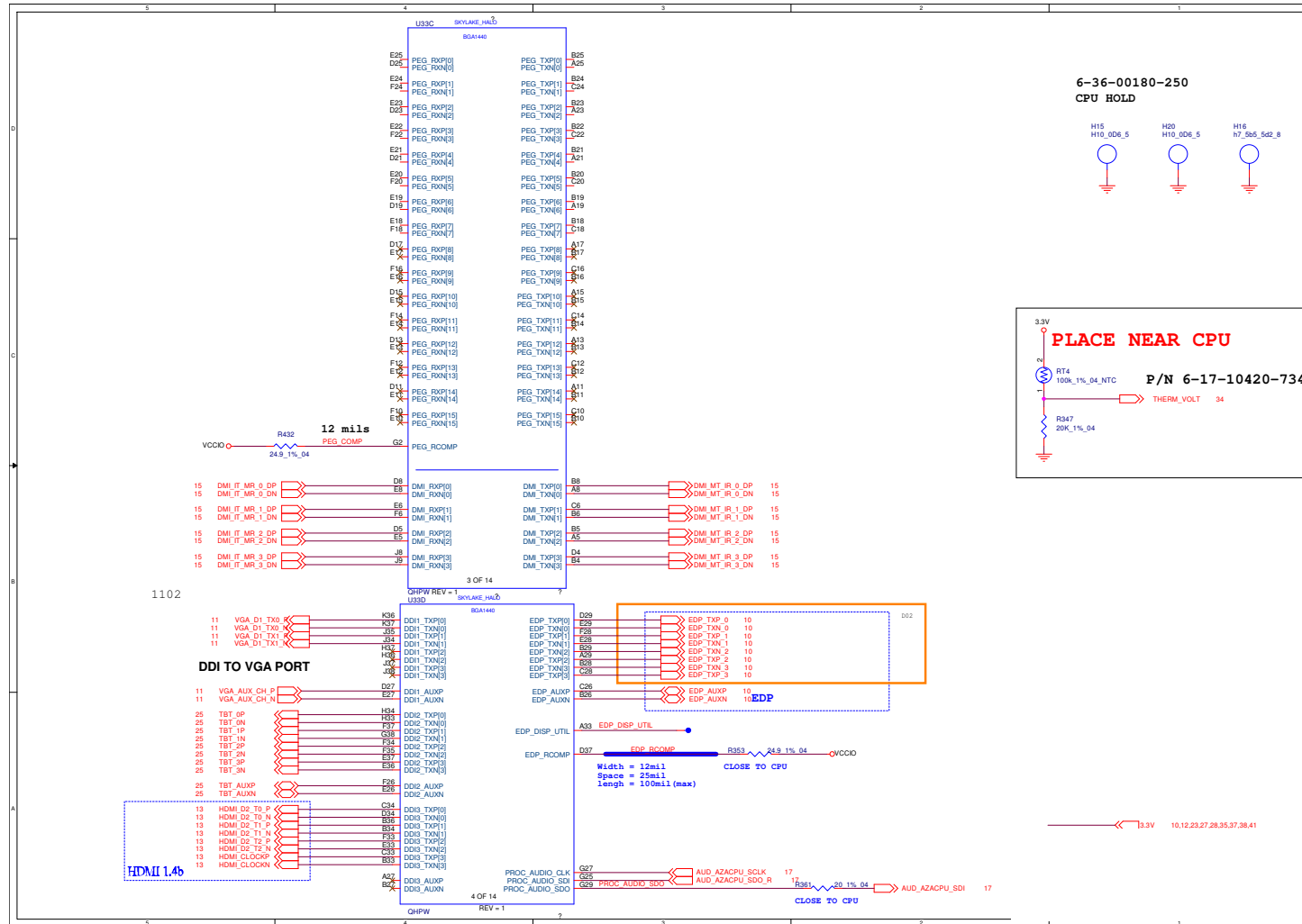
Version Note

The schematic diagrams in this chapter are based upon version 6-7P-N75W8-003. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

Sheet 1 of 48
System Block
Diagram



Processor 1/6

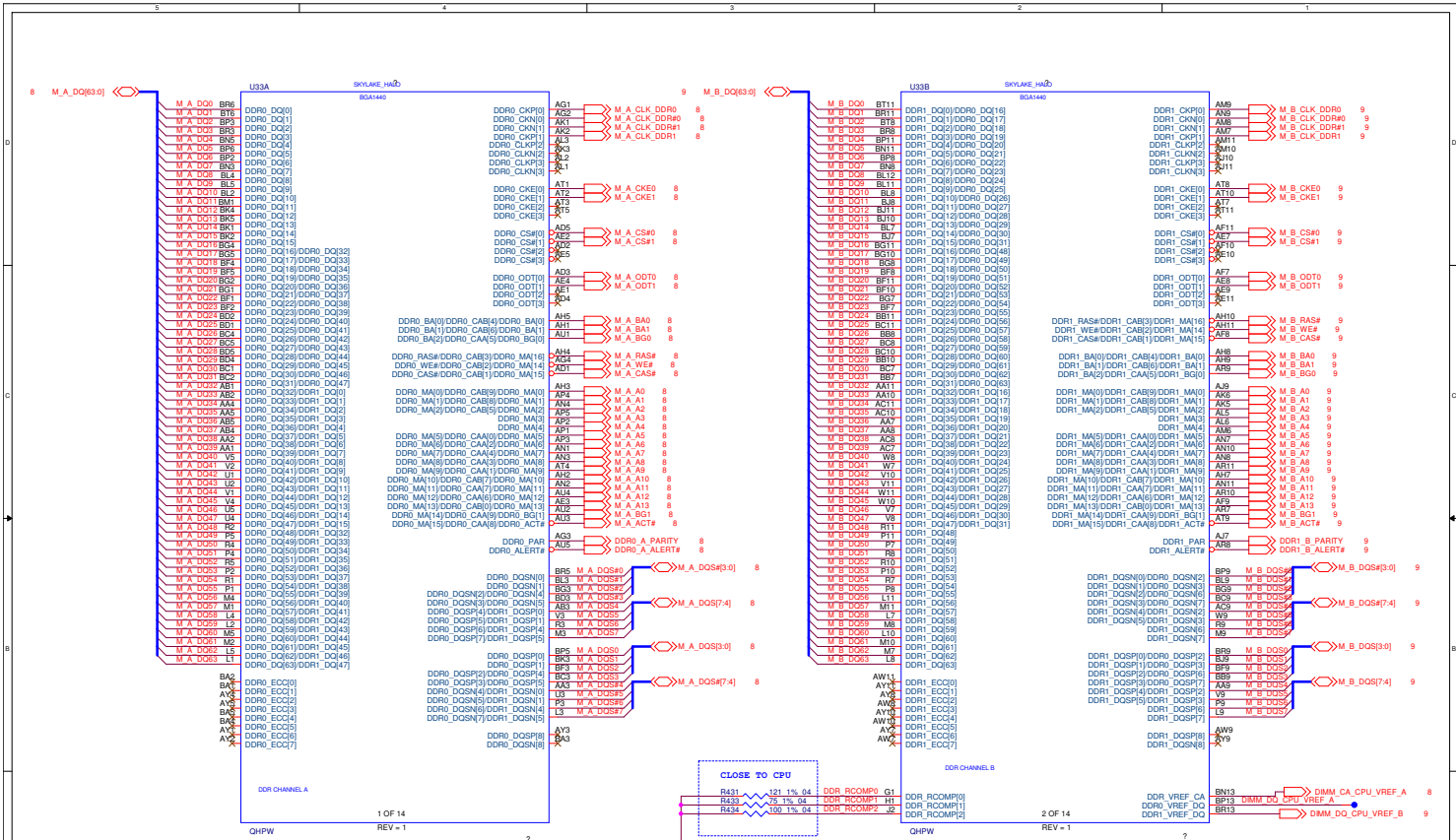


Sheet 2 of 48
Processor 1/6

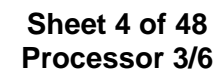
Processor 2/6

3. Schematic Diagrams

Sheet 3 of 48
Processor 2/6



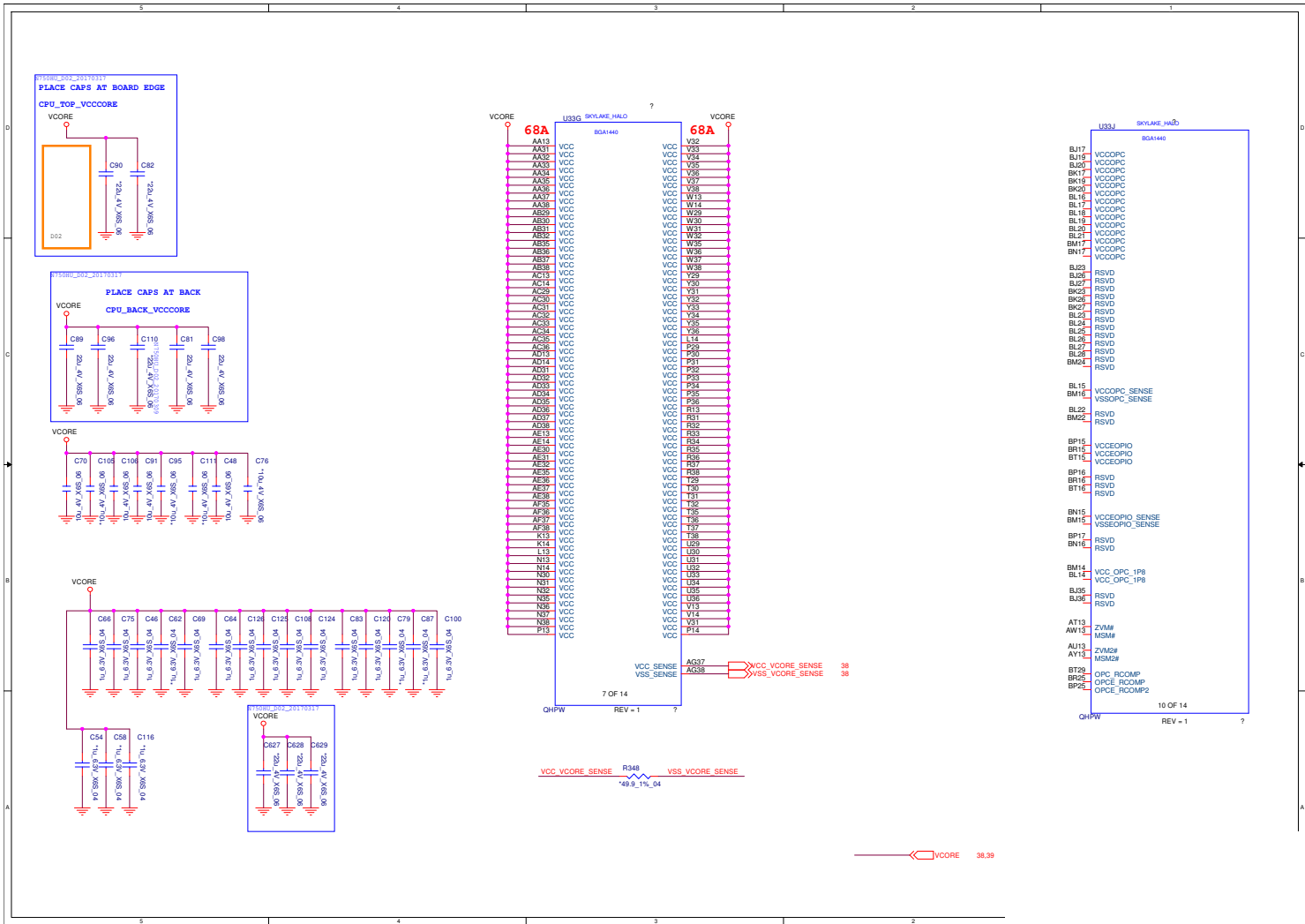
Processor 3/6 B - 5



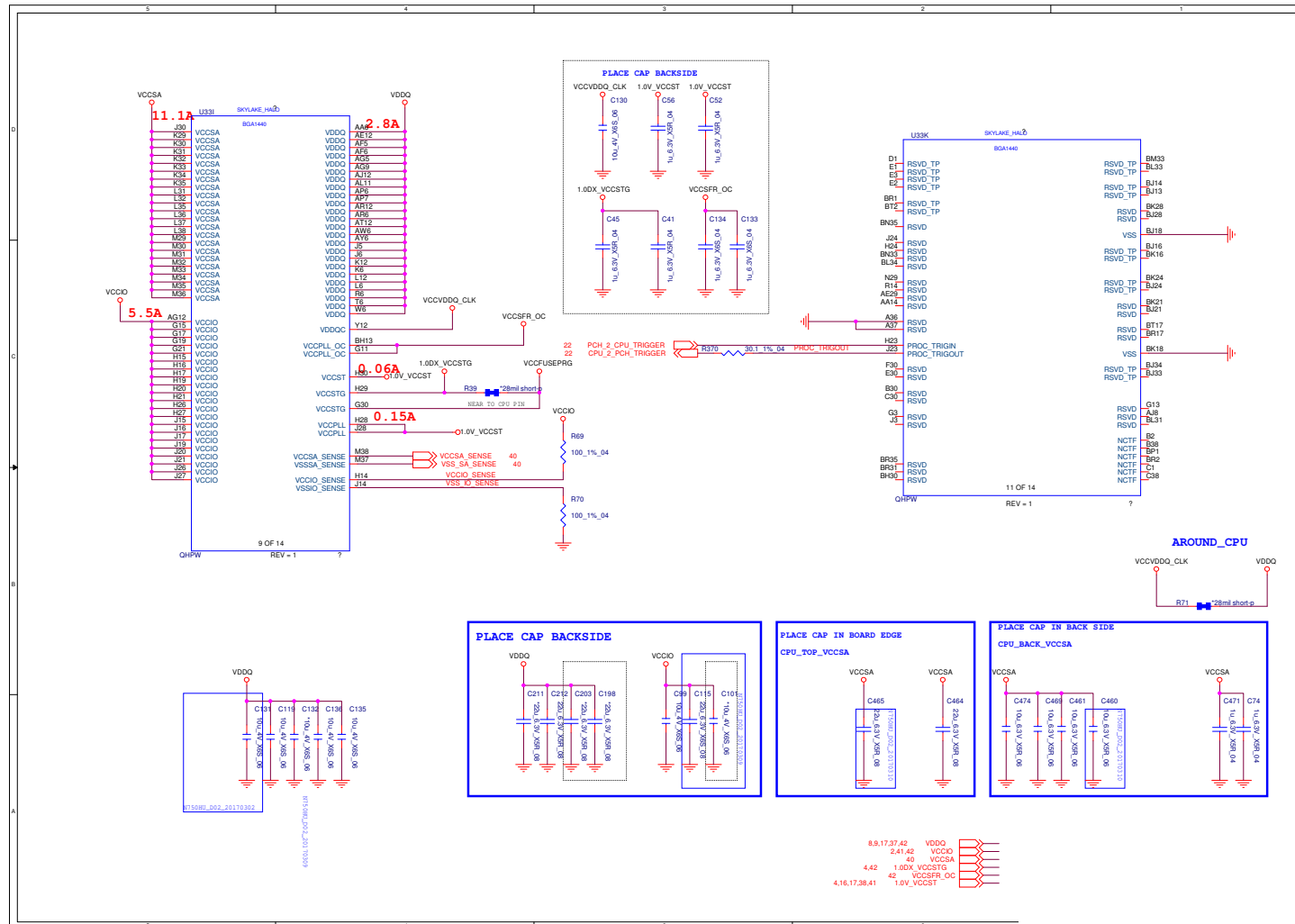
Processor 4/6

B. Schematic Diagrams

Sheet 5 of 48
Processor 4/6

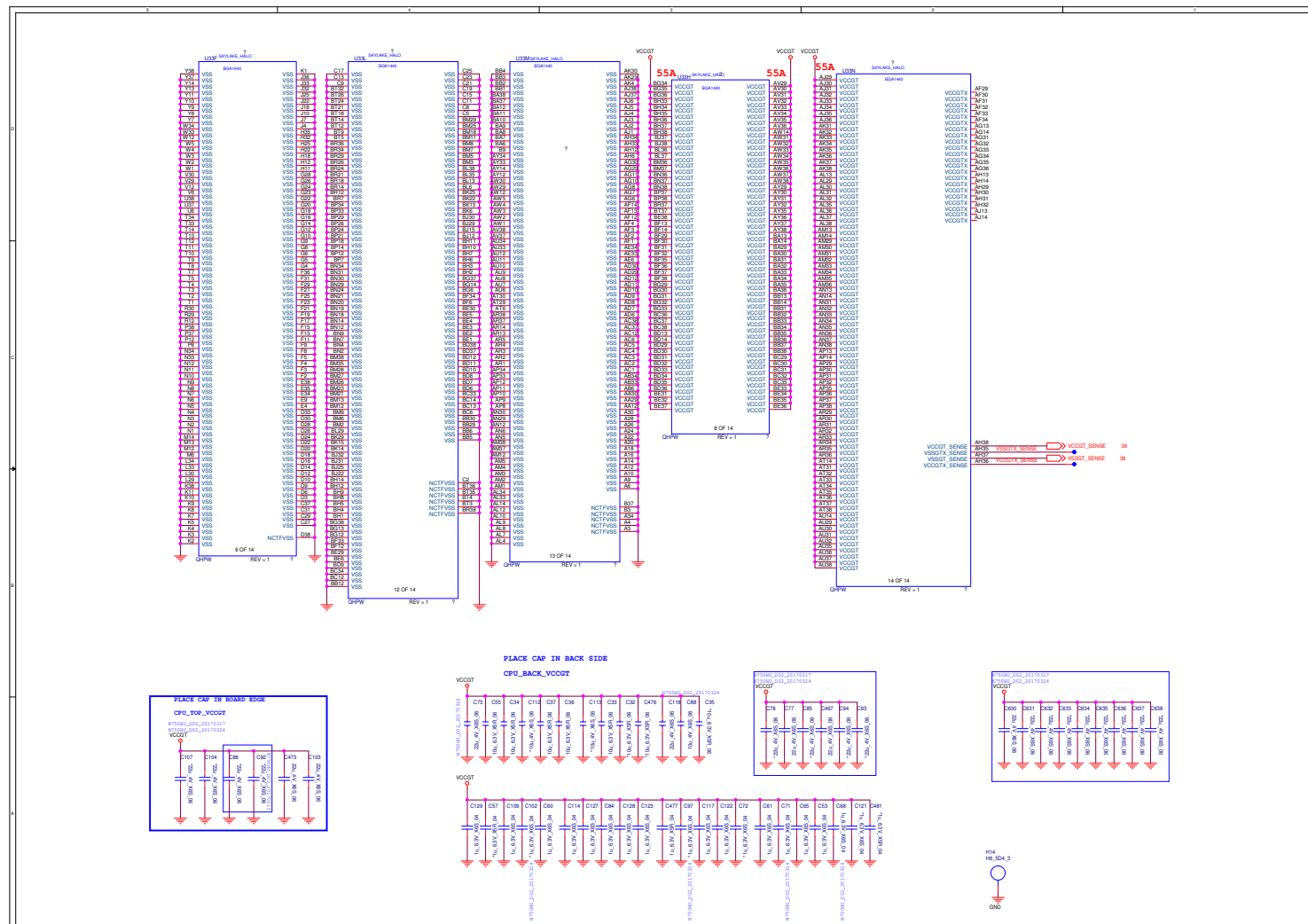


Processor 5/6 B - 7



Processor 6/6

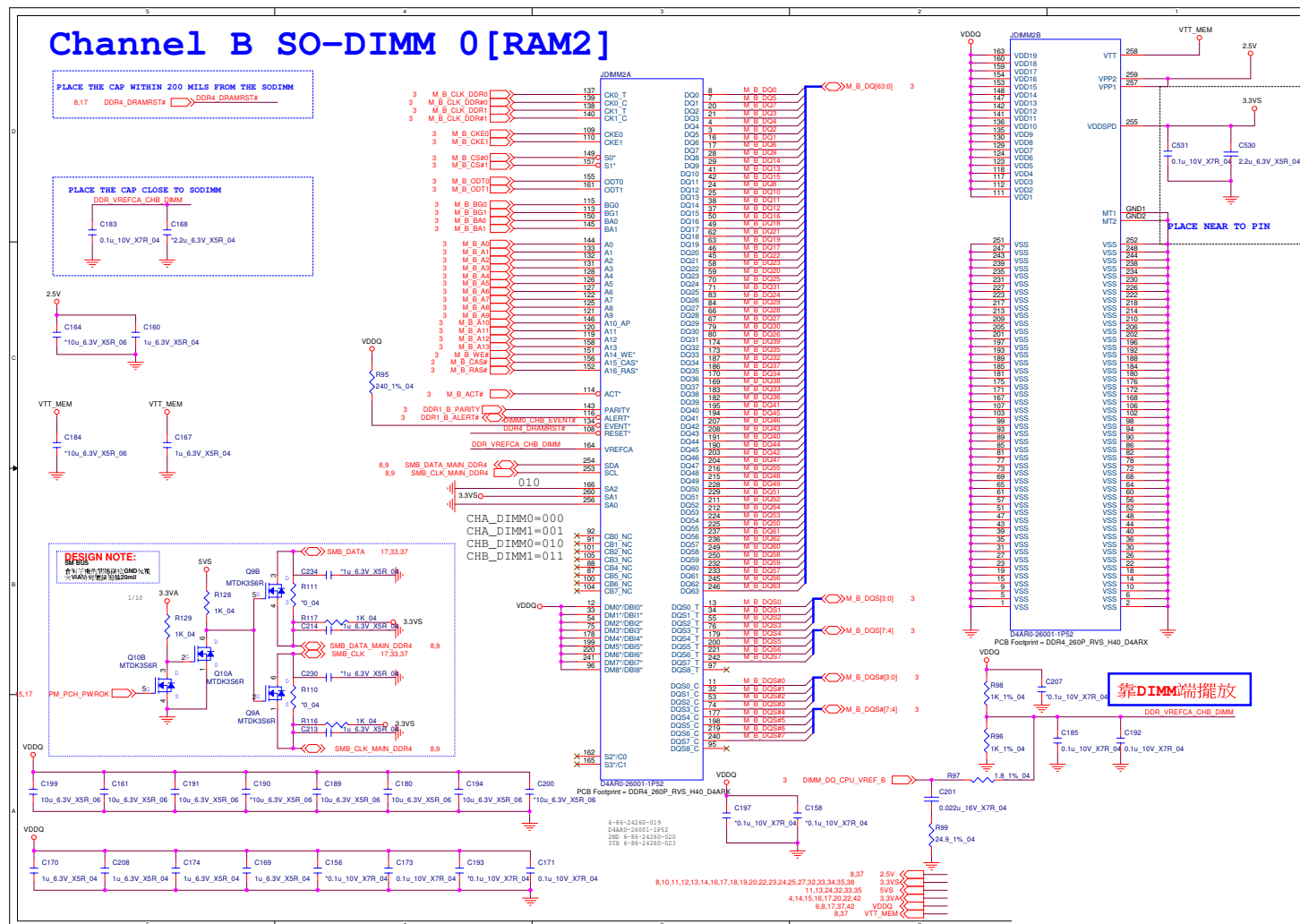
Sheet 7 of 48
Processor 6/6



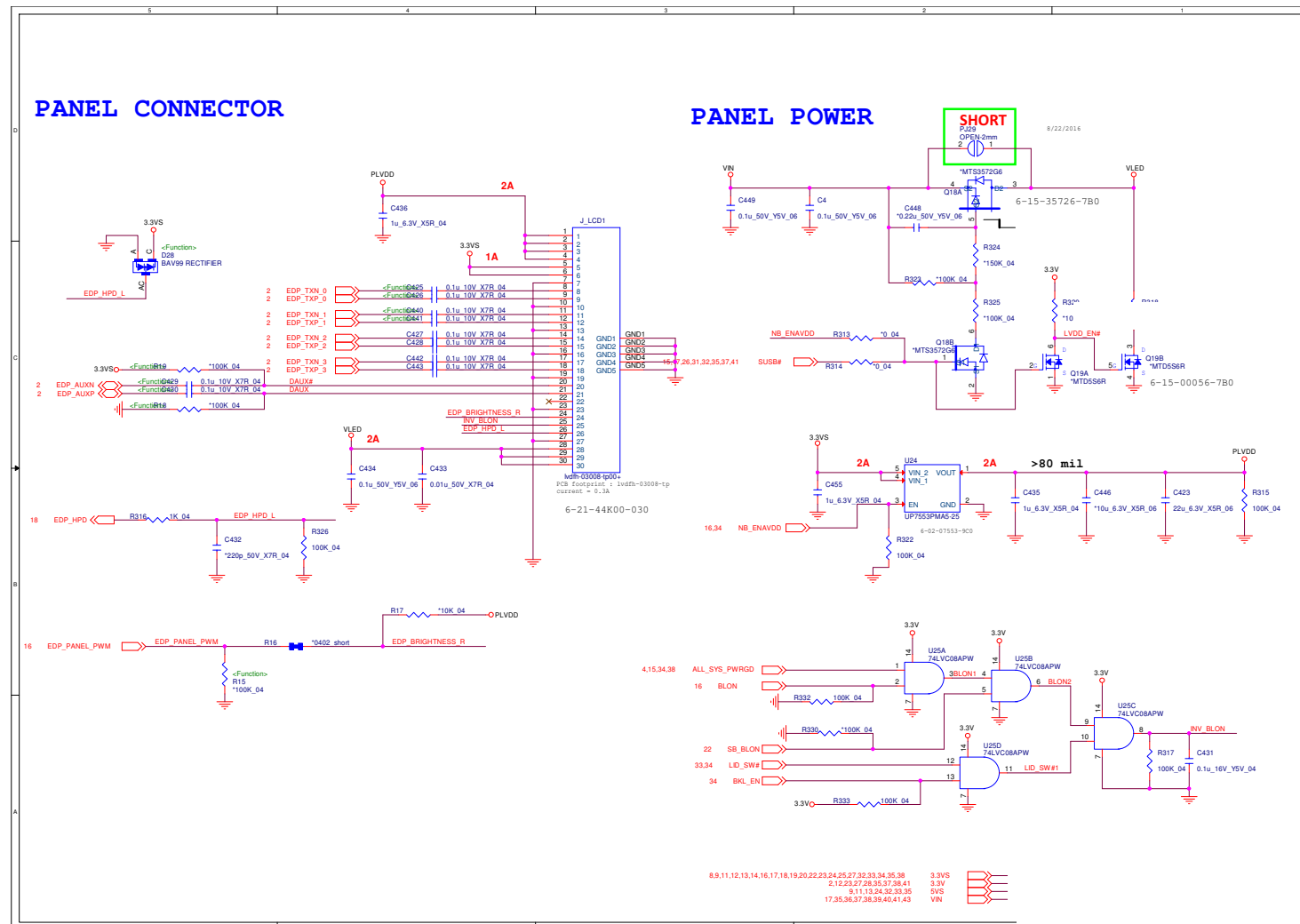
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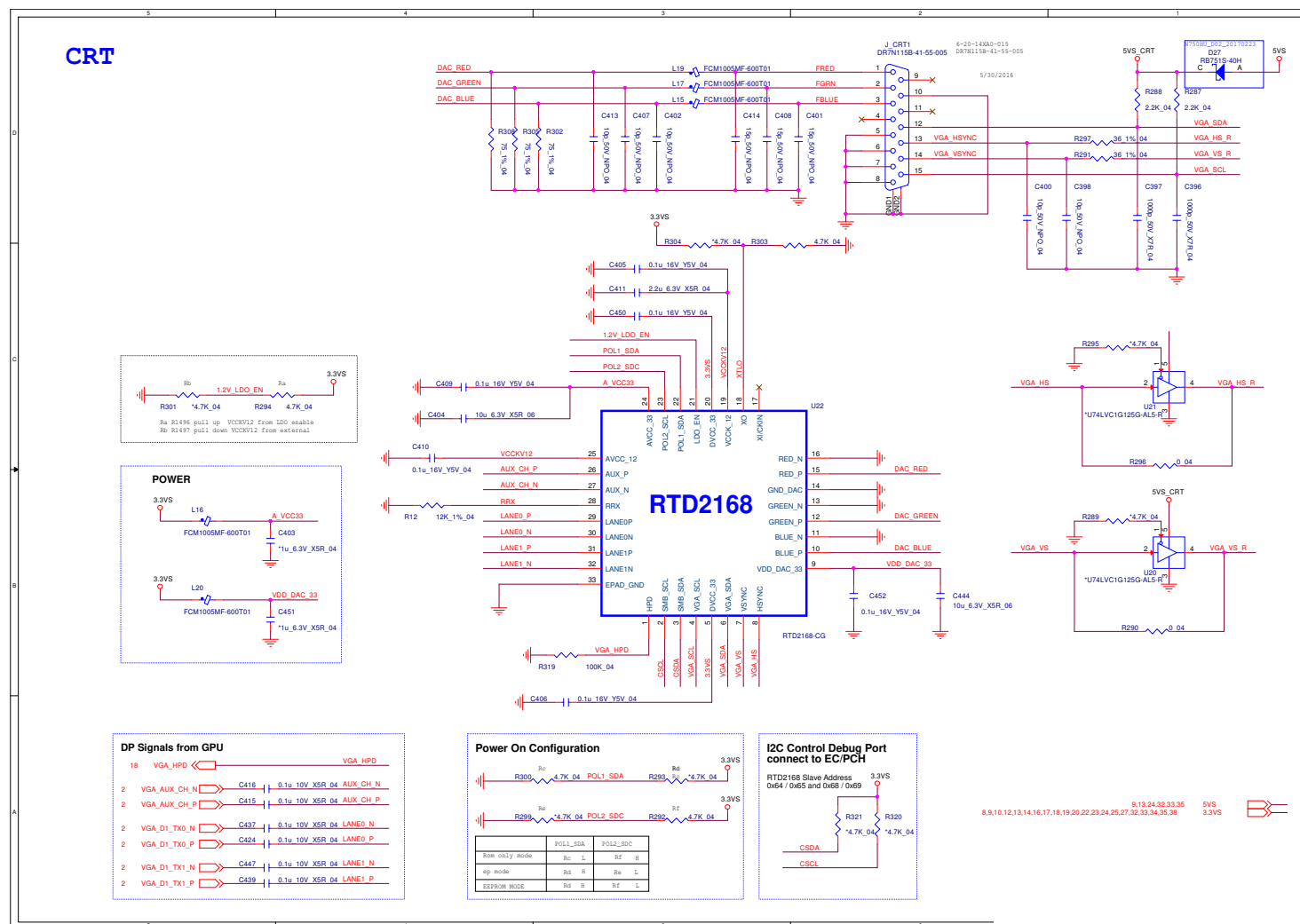
DDR4 CHB SO_DIMM_0

Sheet 9 of 48
DDR4 CHA SO-
DIMM 0

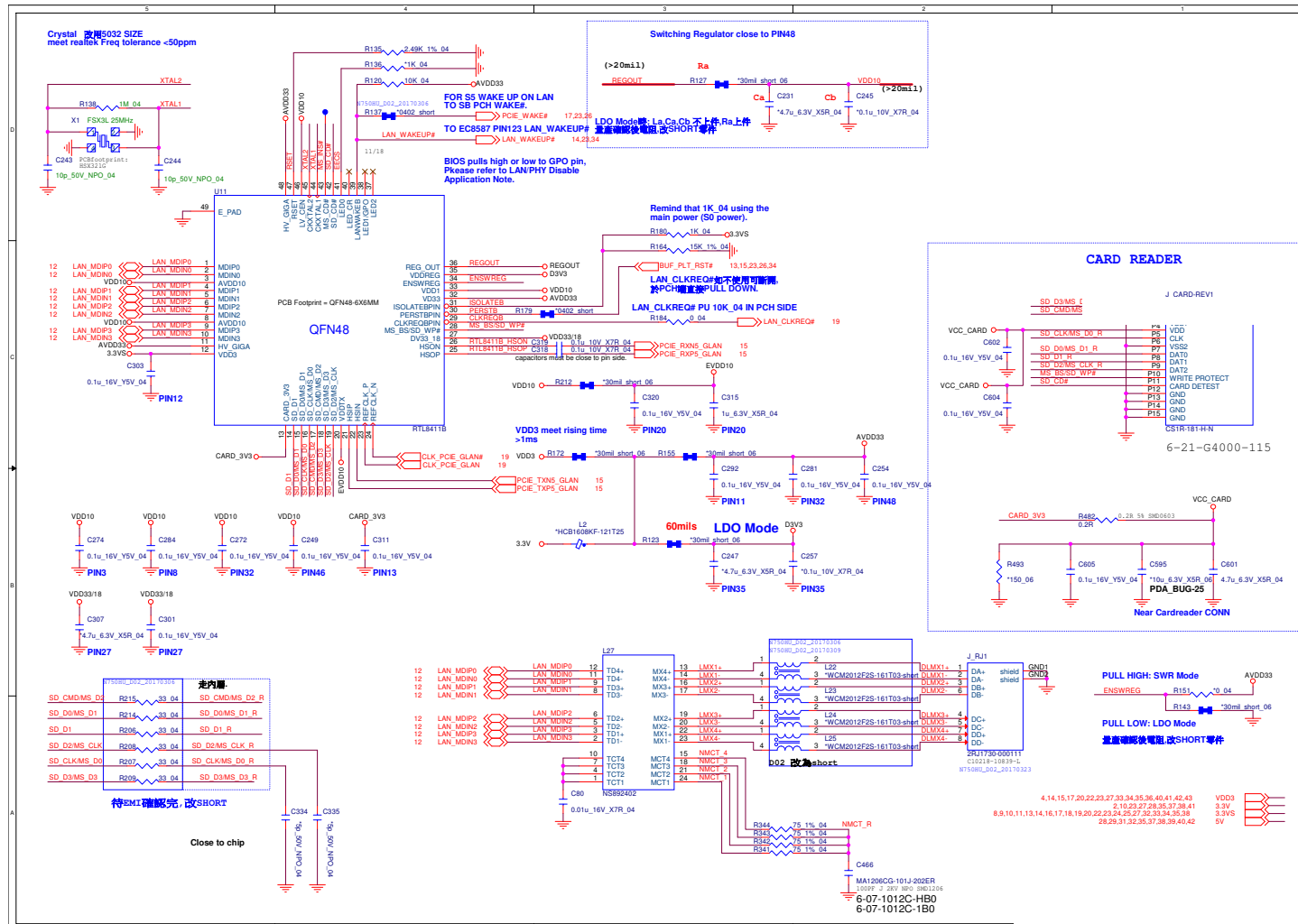


Panel, Inverter B - 11



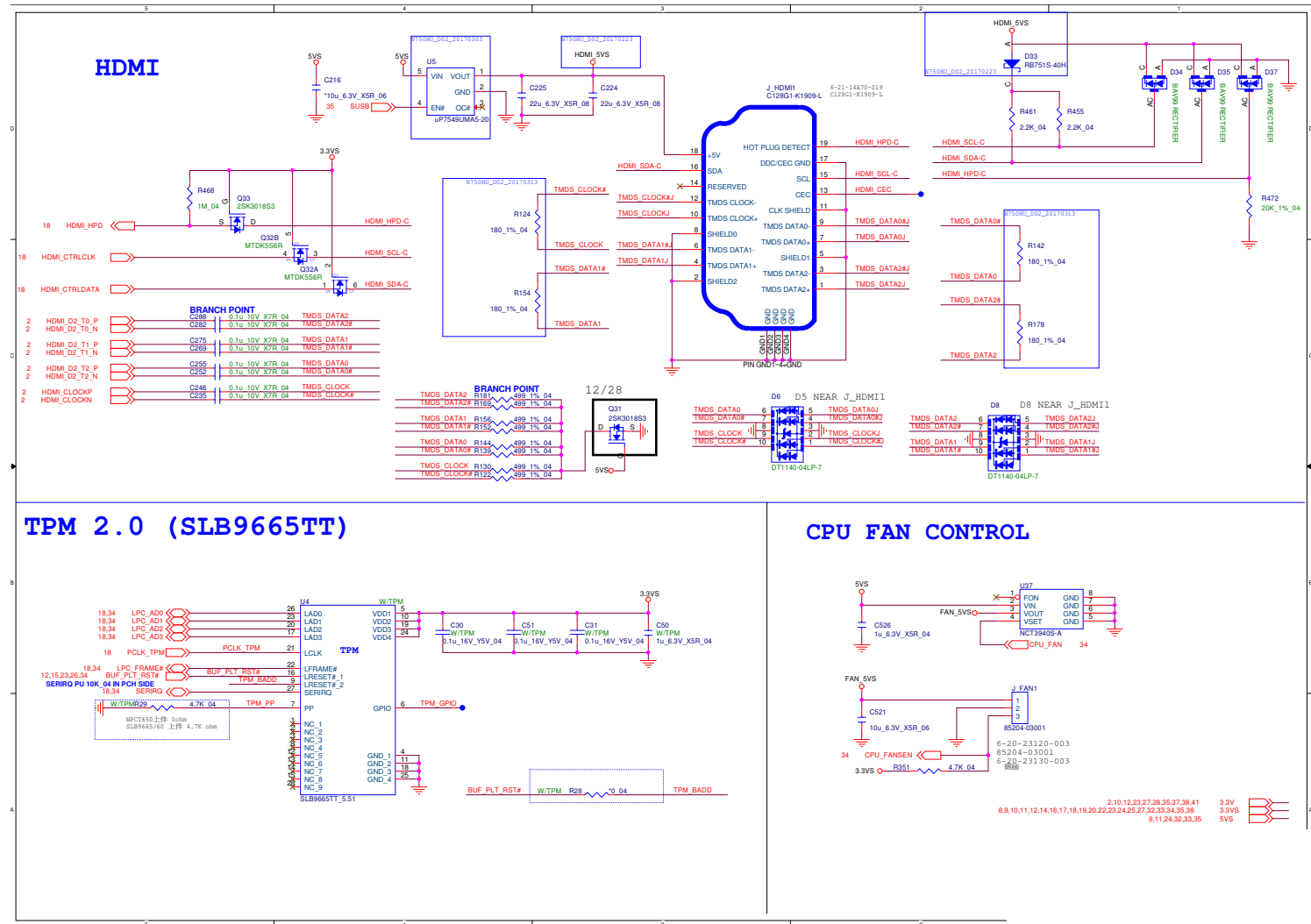


Card Reader & LAN RTL8411B

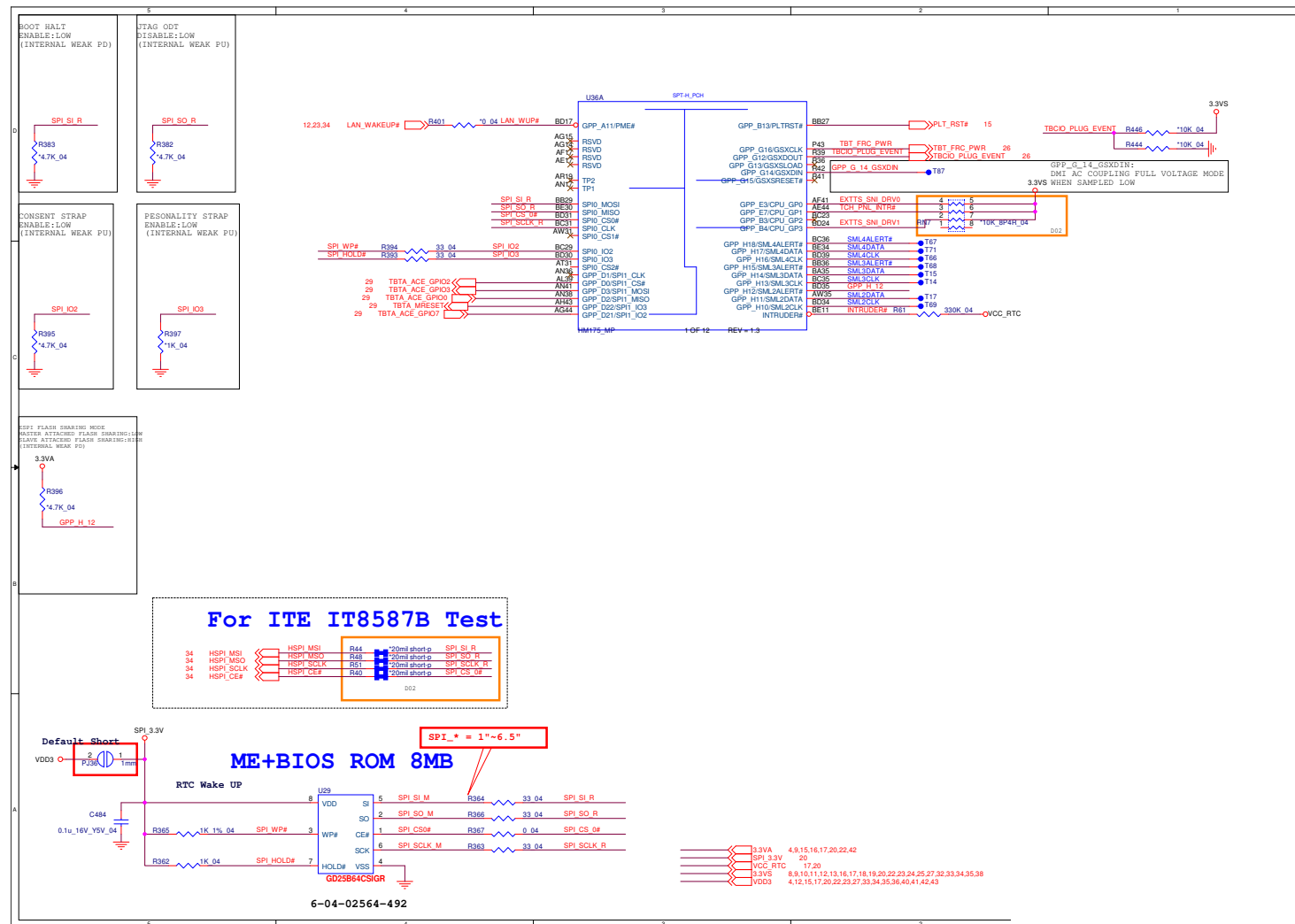
Sheet 12 of 48
Card Reader & LAN
RTL8411B

HDMI, RJ45, Fan, TPM

Sheet 13 of 48
HDMI, RJ45, Fan, TPM



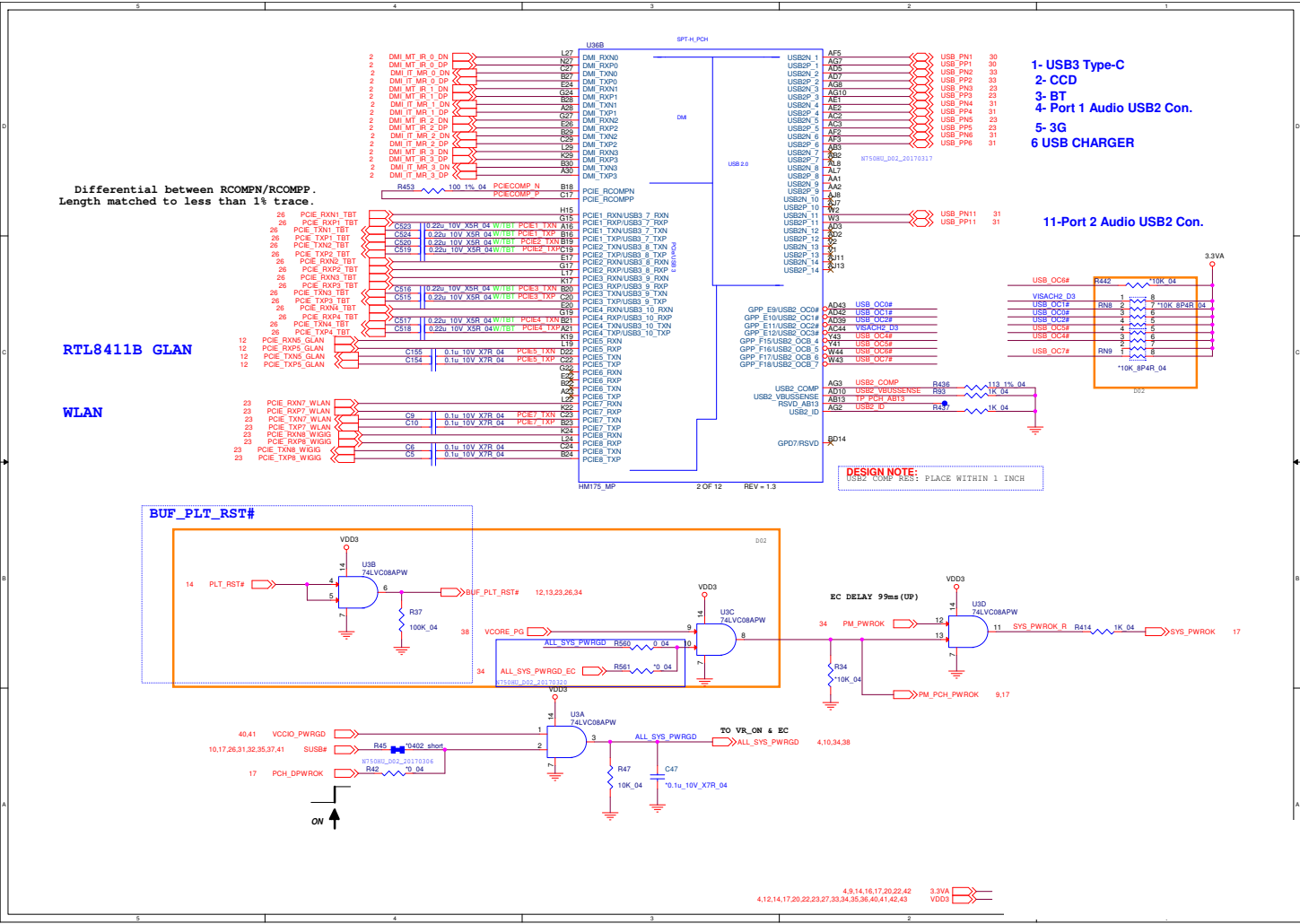
PCH 1/9

Sheet 14 of 48
PCH 1/9

Schematic Diagrams

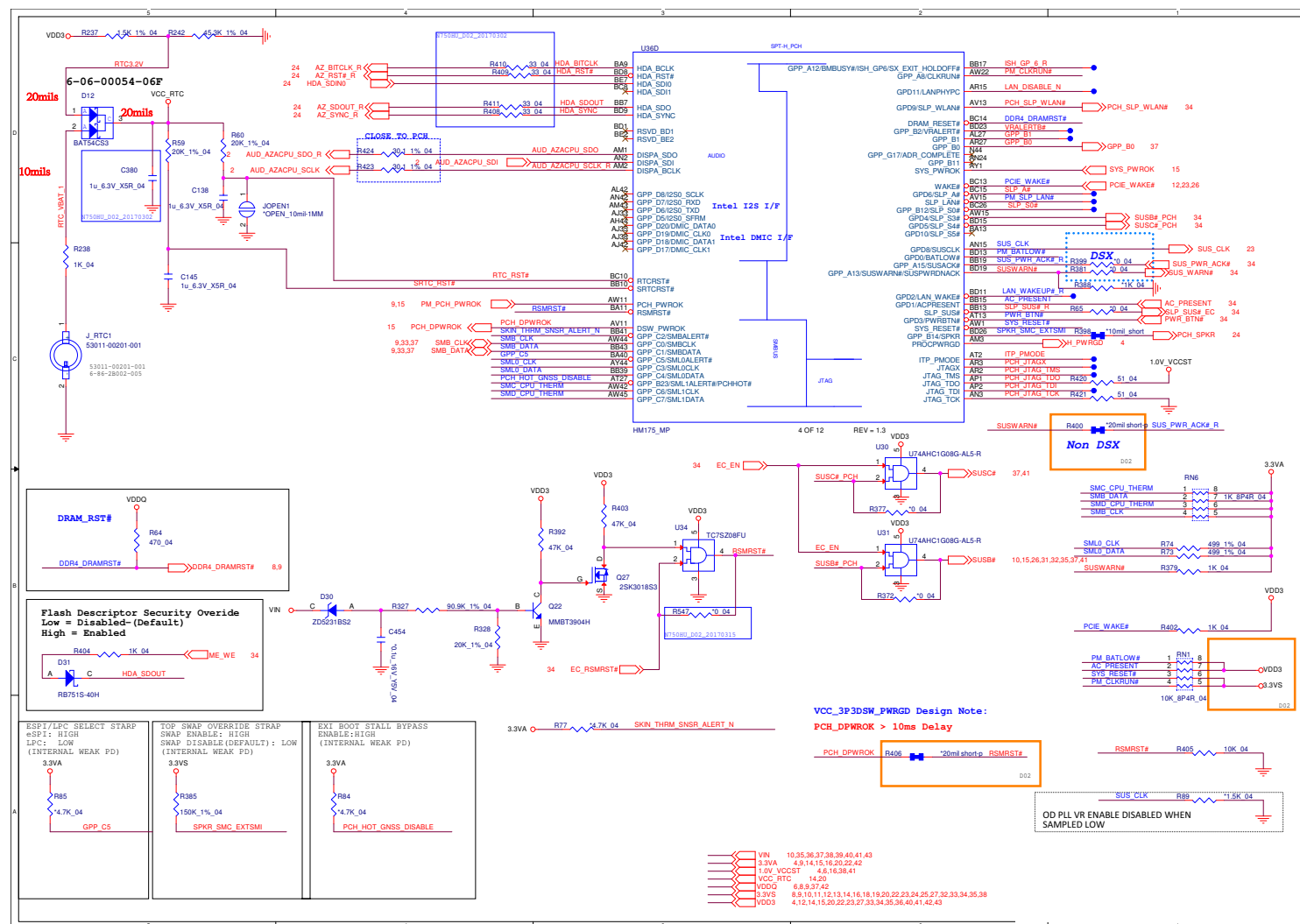
PCH 2/9

Sheet 15 of 48
PCH 2/9

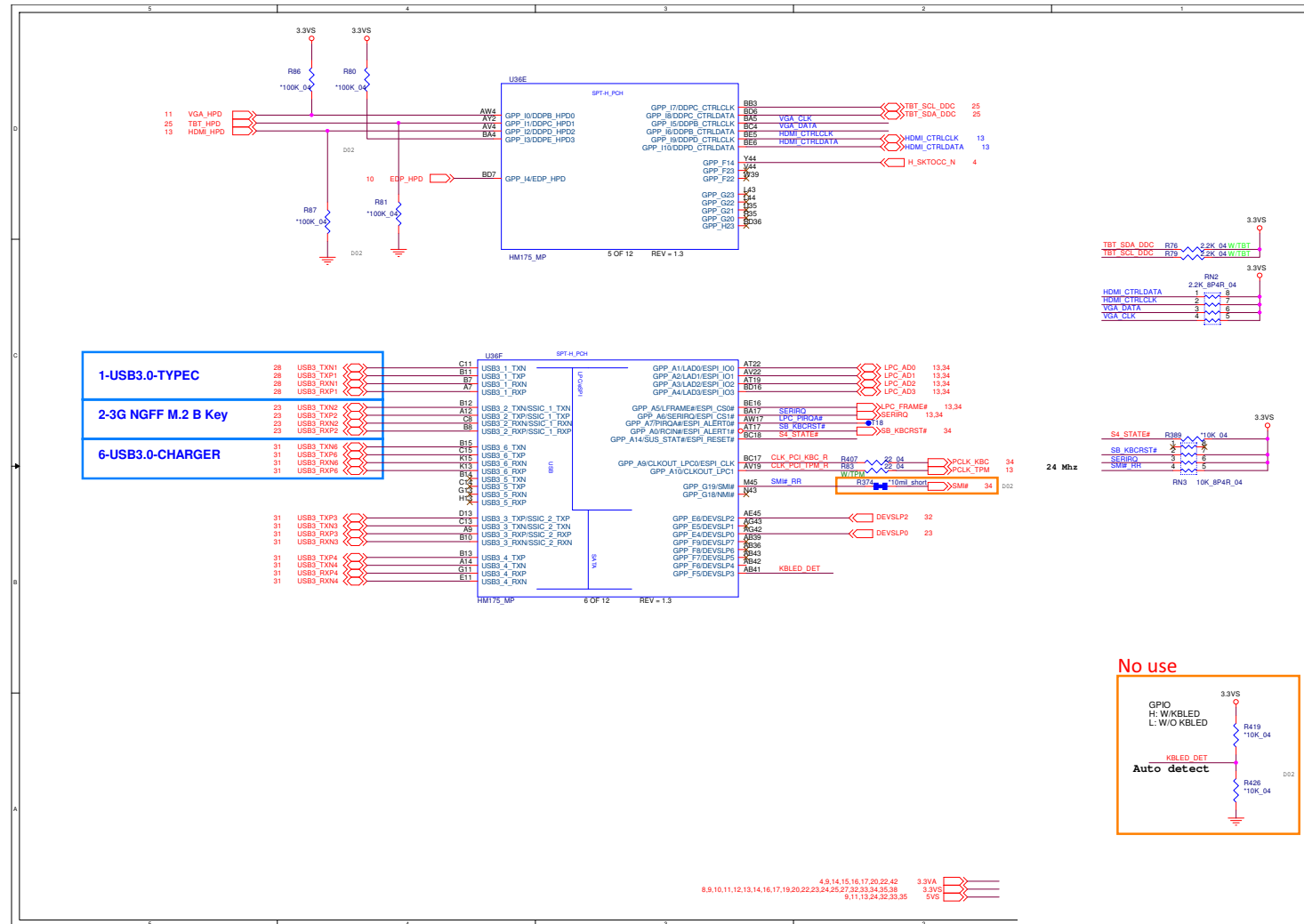


PCH 4/9

Sheet 17 of 48
PCH 4/9

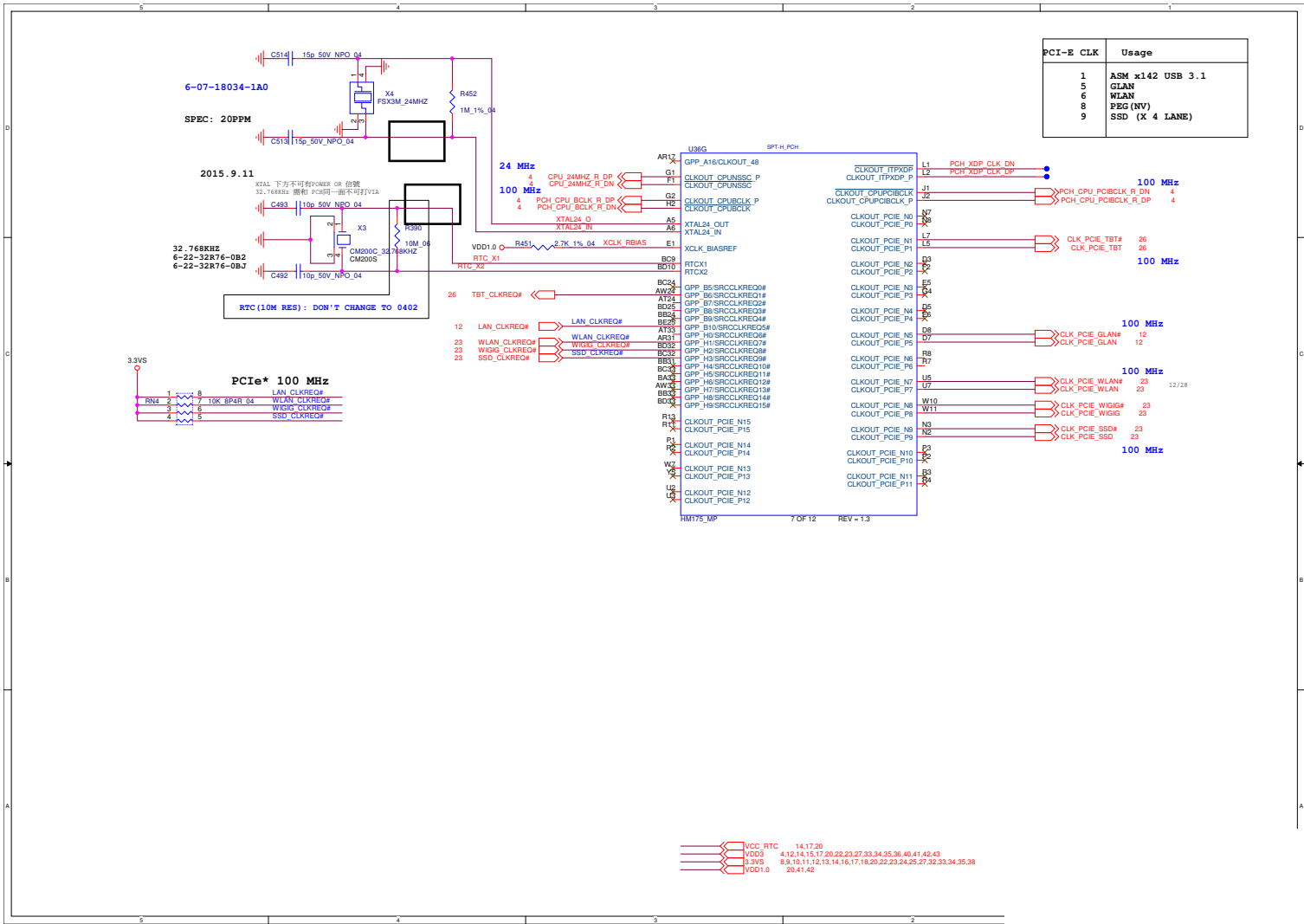


PCH 5/9

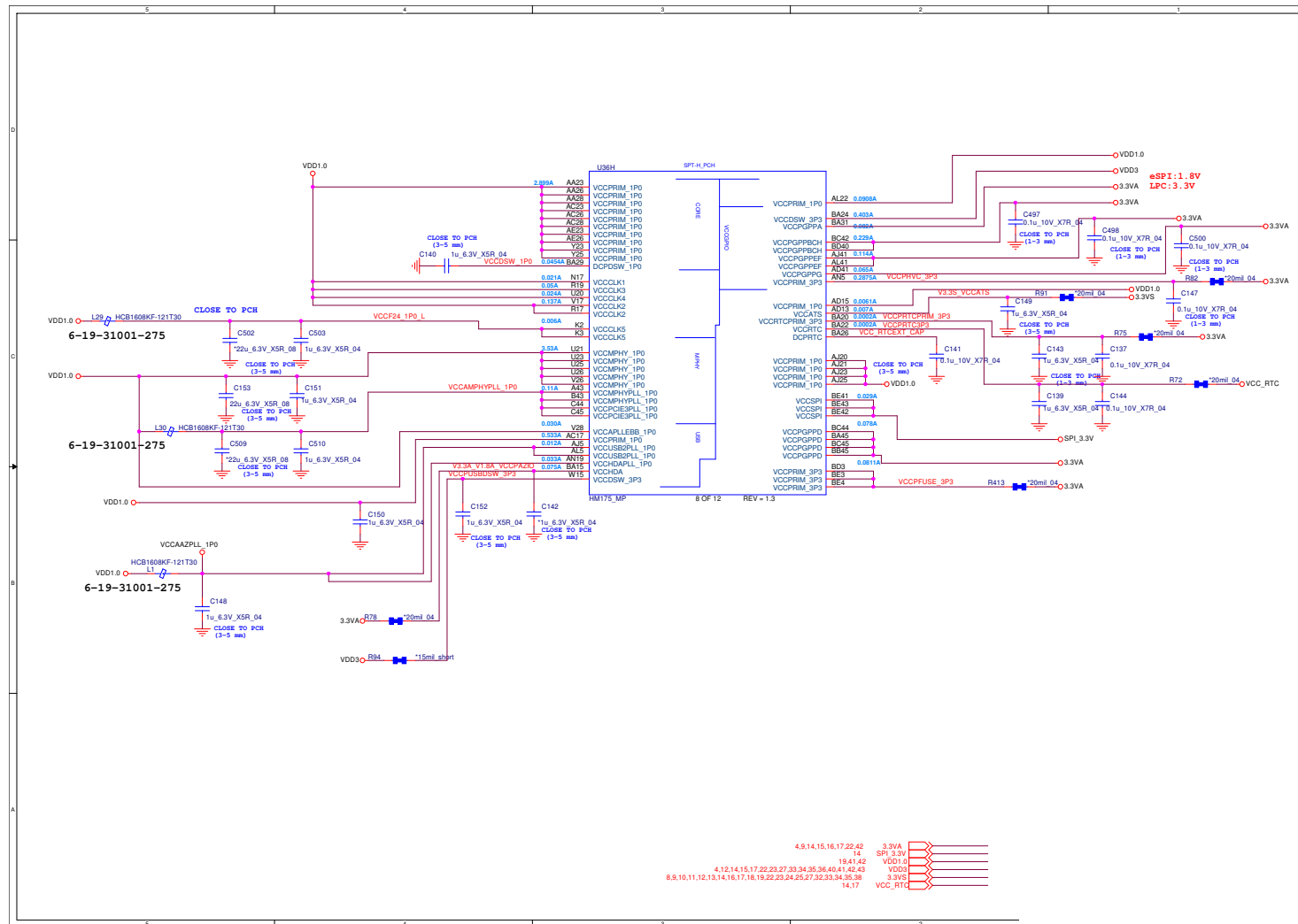


Sheet 18 of 48
PCH 5/9

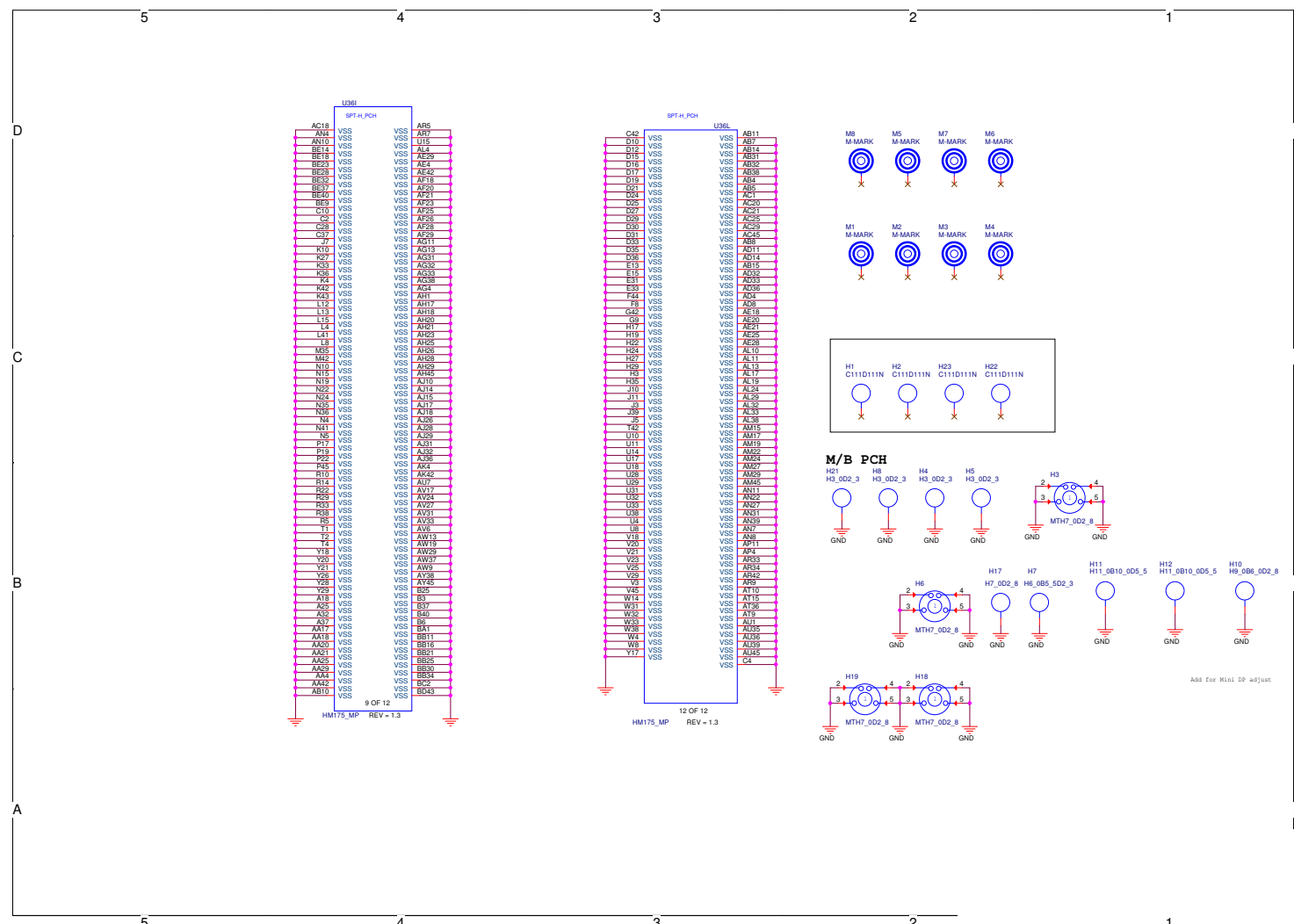
PCH 6/9



PCH 7/9 B - 21



Sheet 21 of 48
PCH 8/9

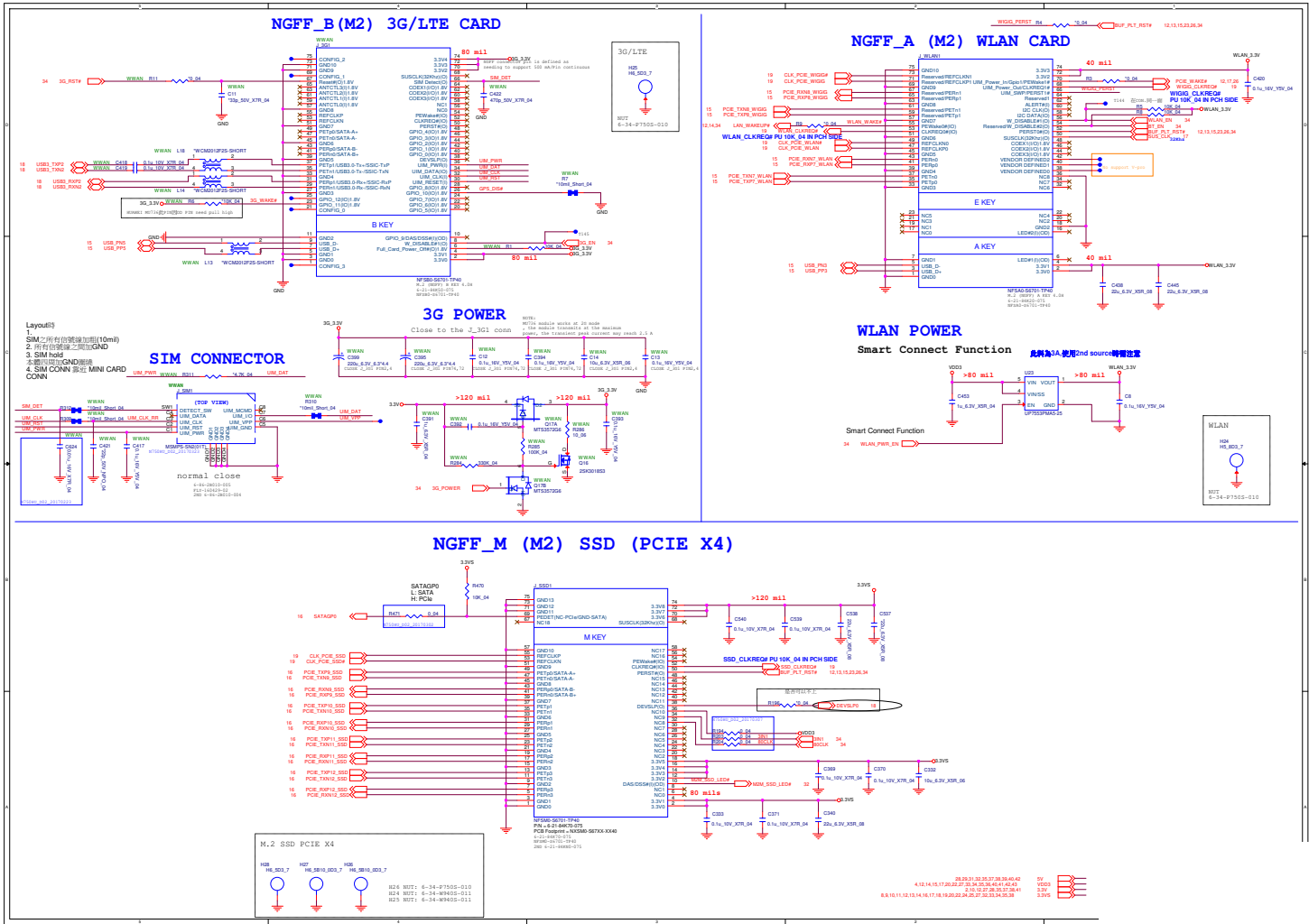


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1	L	0 1	H	1 0
2	H	1 0	L	0 1
3	H	1 0	H	1 0

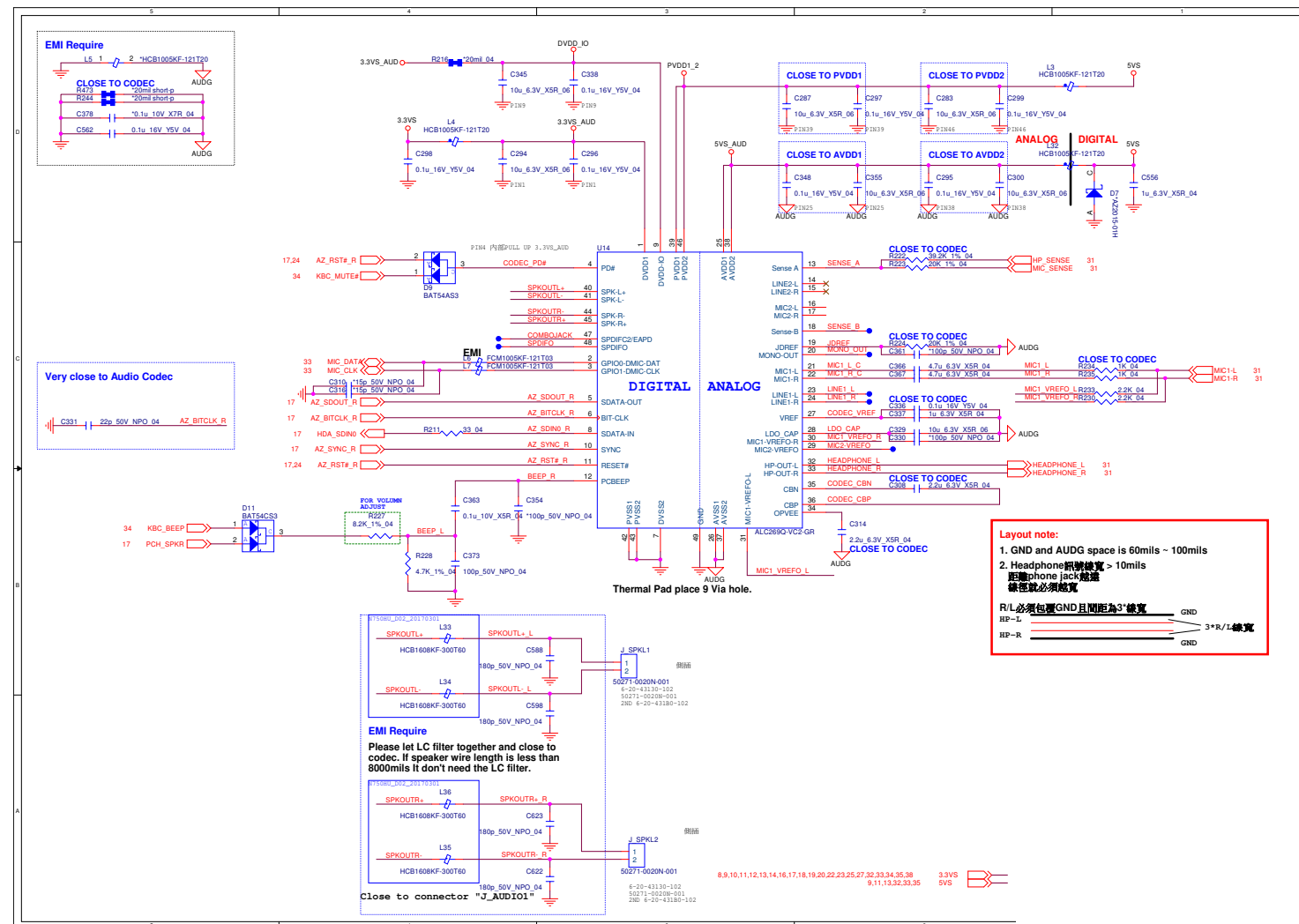
Schematic Diagrams

M.2 (WLAN, 3G, SSD)

Sheet 23 of 48
2 (WLAN, 3G, SSD)



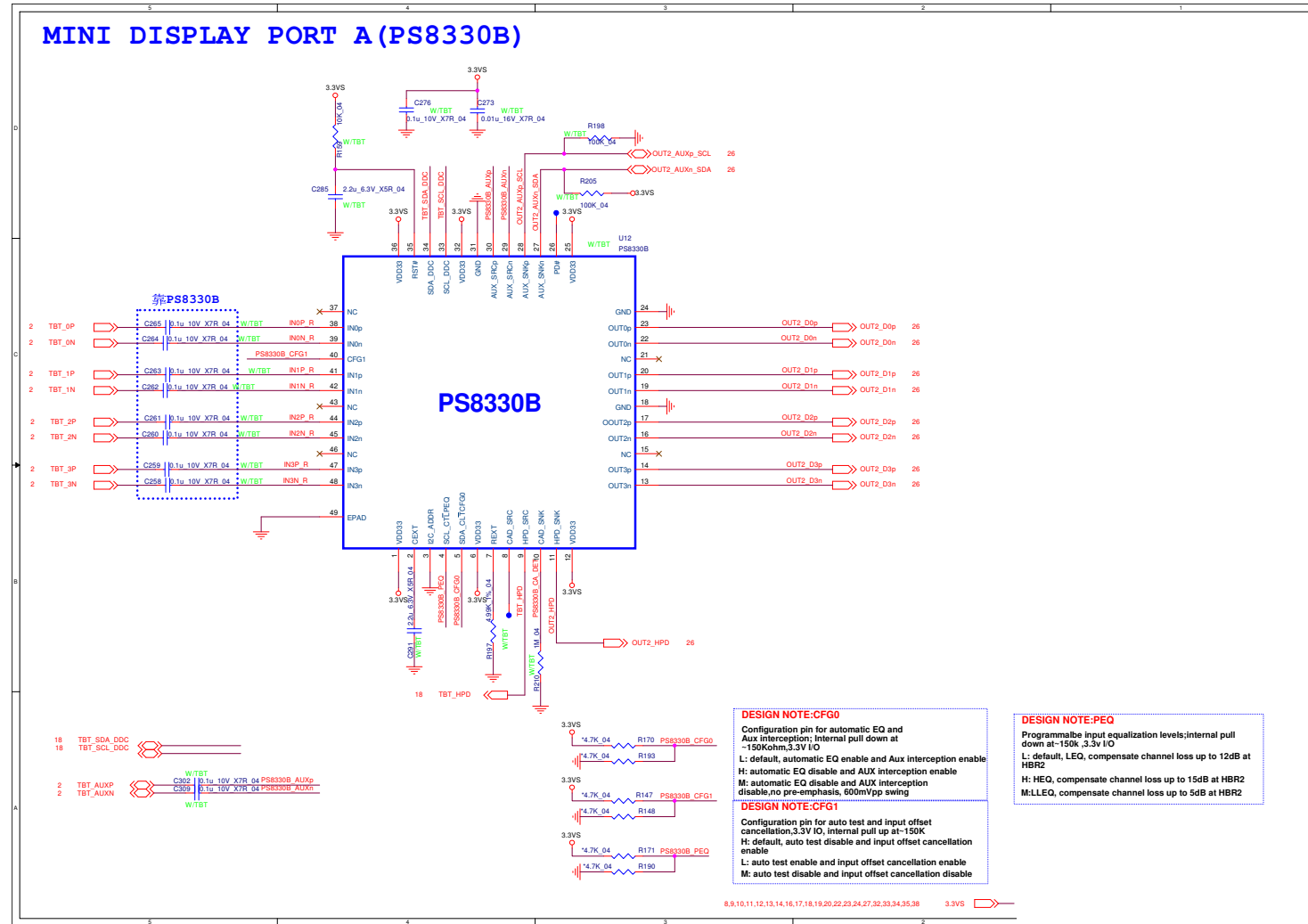
Audio Codec

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Audio Codec

Schematic Diagrams

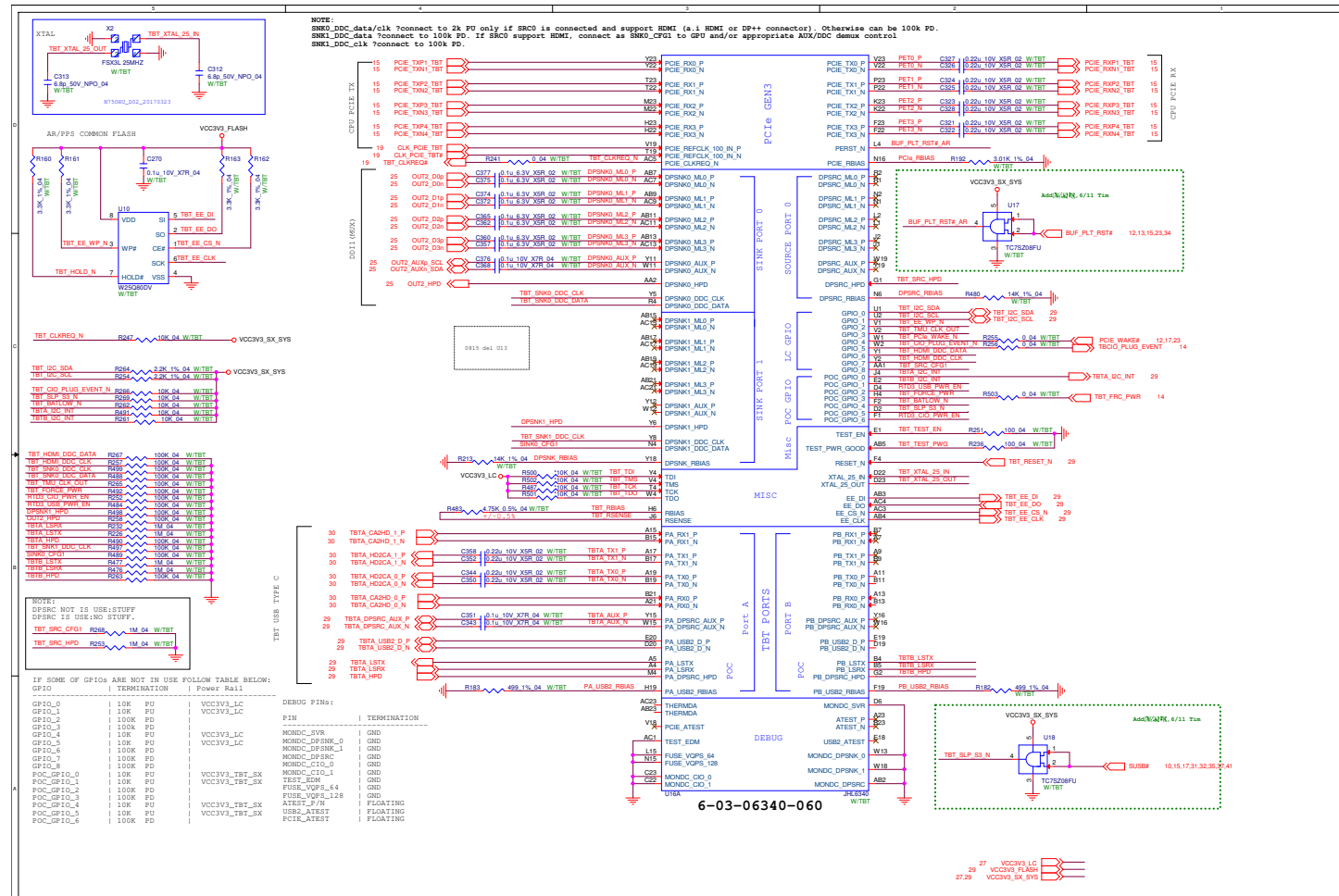
PS8330B

Sheet 25 of 48
PS8330B

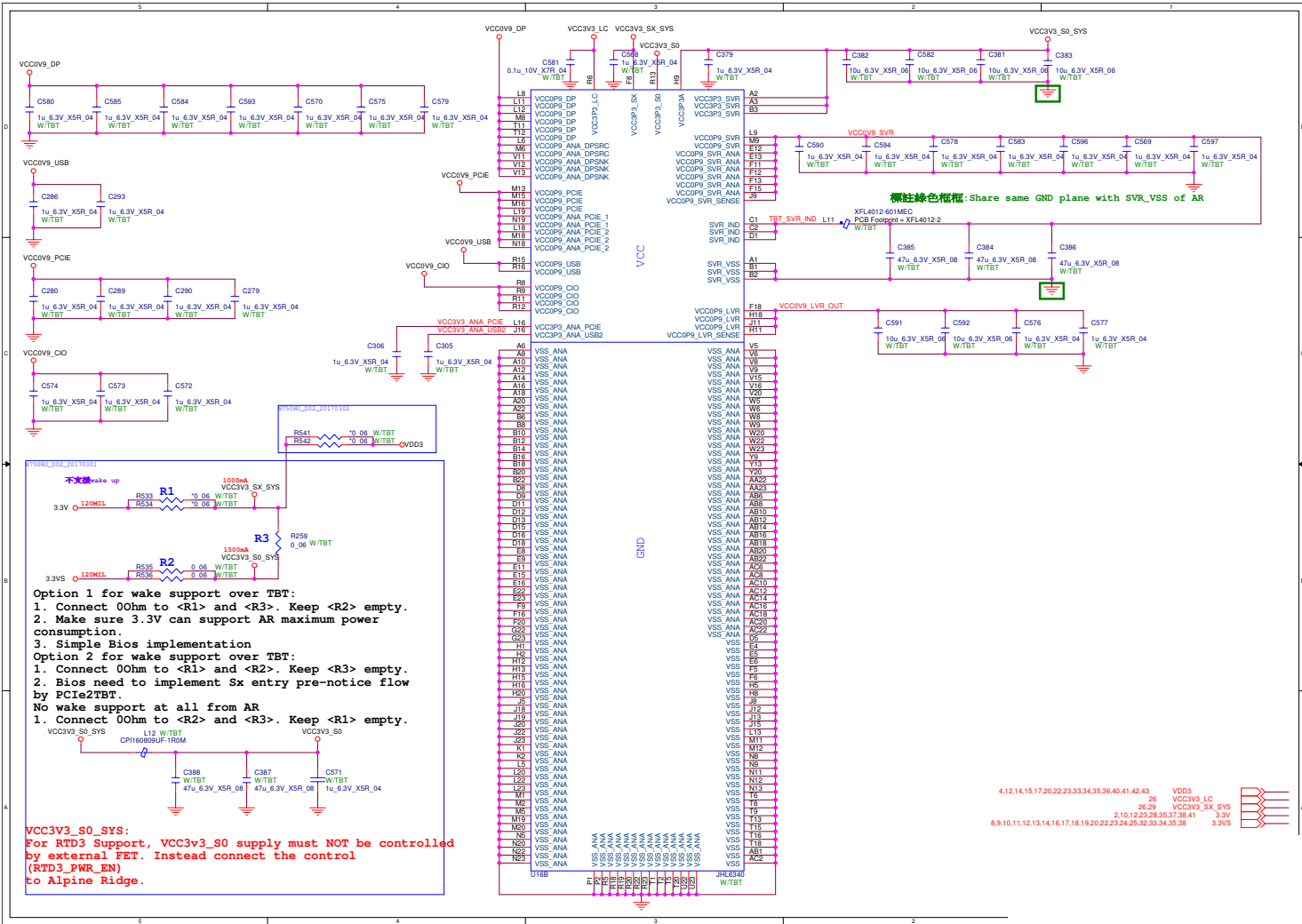


AR_TBT B - 27

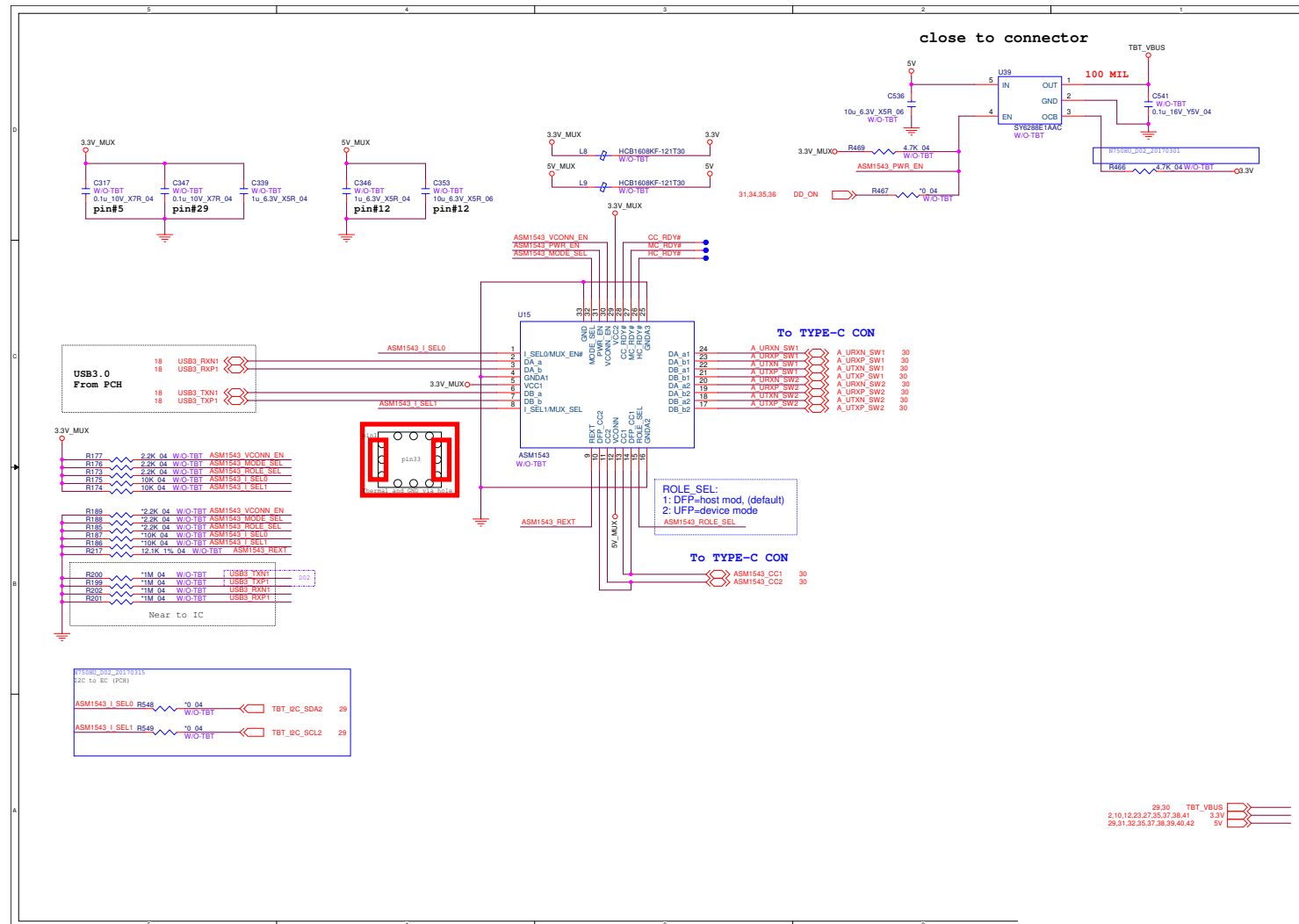
B.Schematic Diagrams



AR_Power



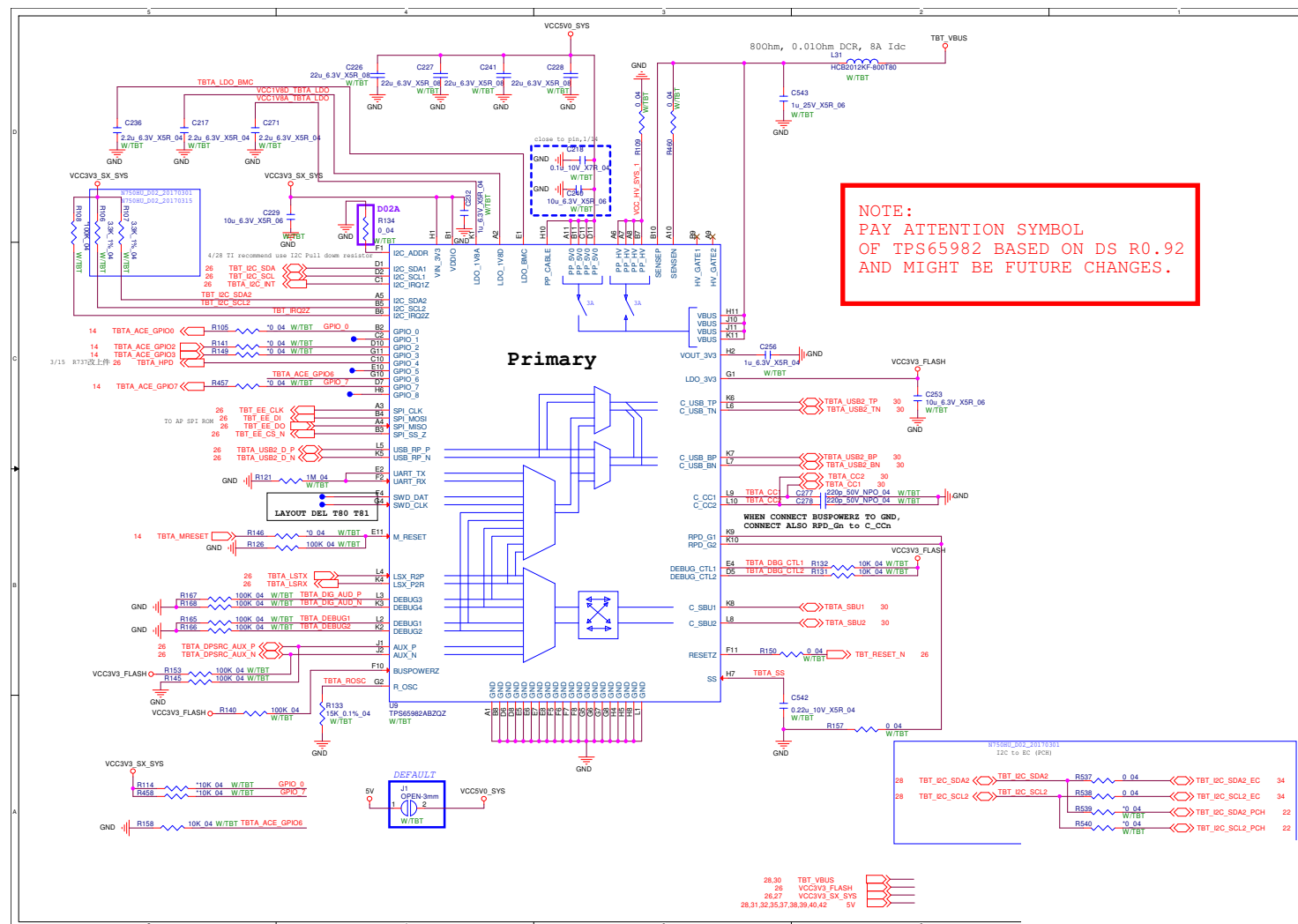
ASM1543



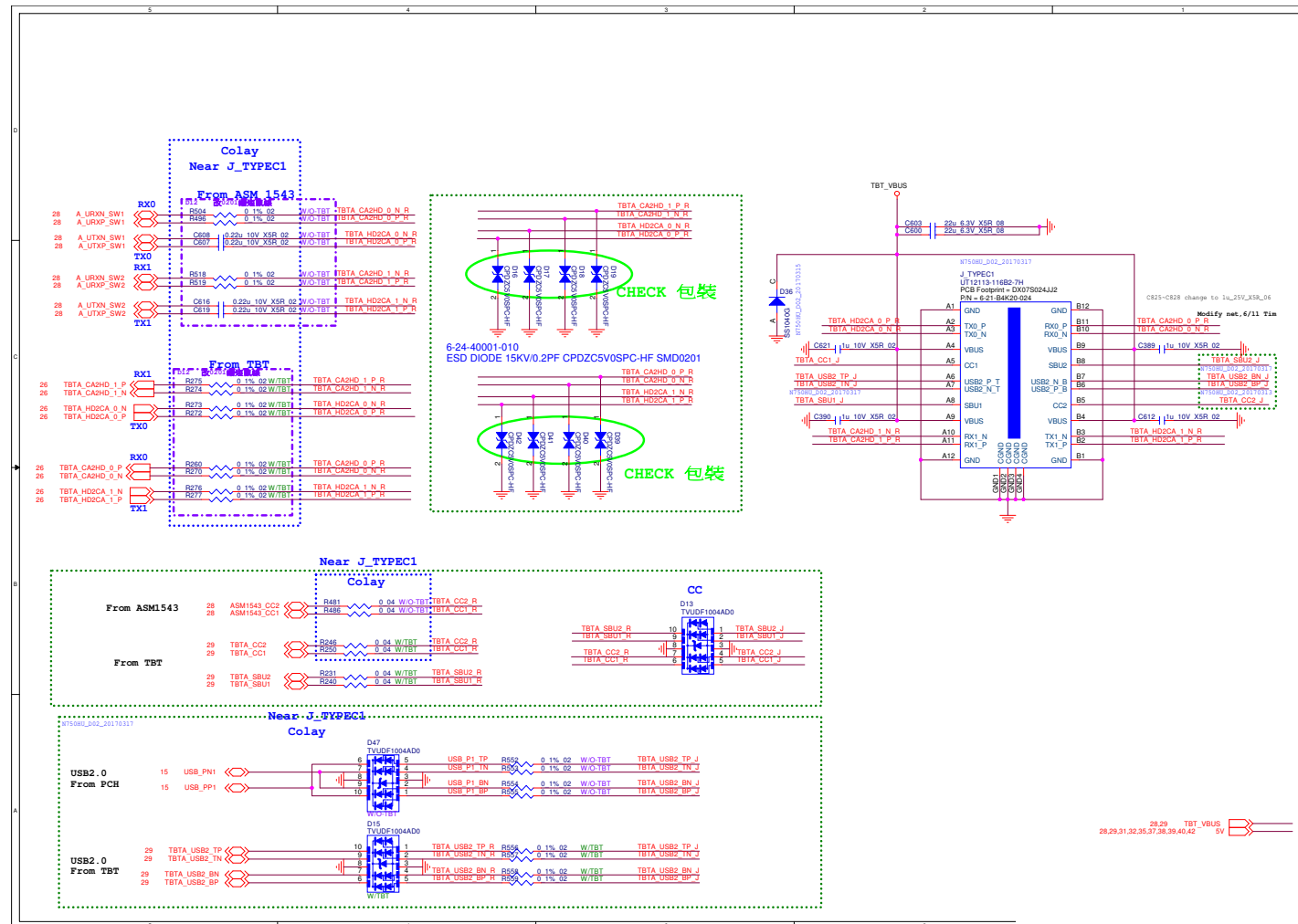
Sheet 28 of 48
ASM1543

TPS65982

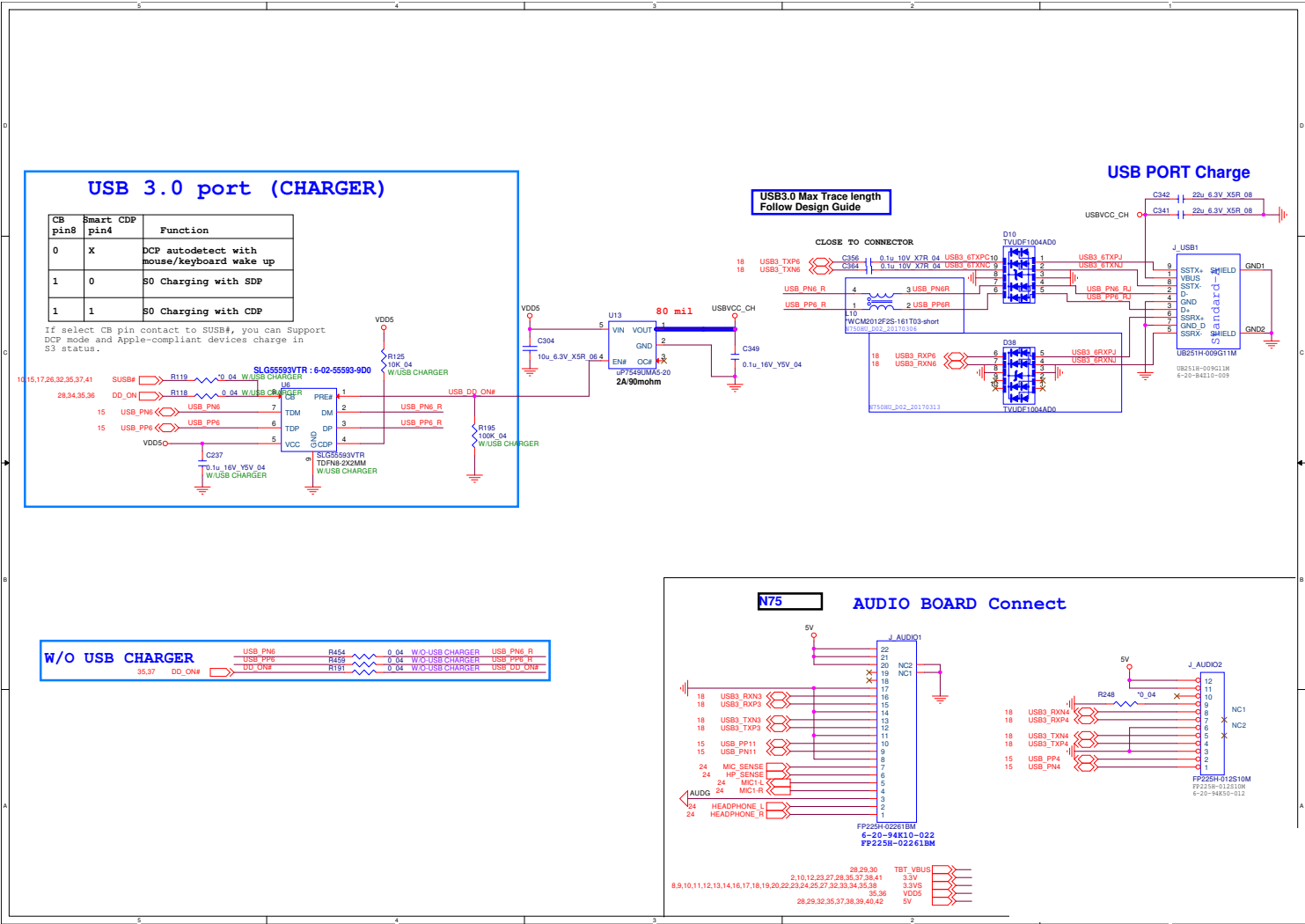
Sheet 29 of 48
TPS65982



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Type C



USB



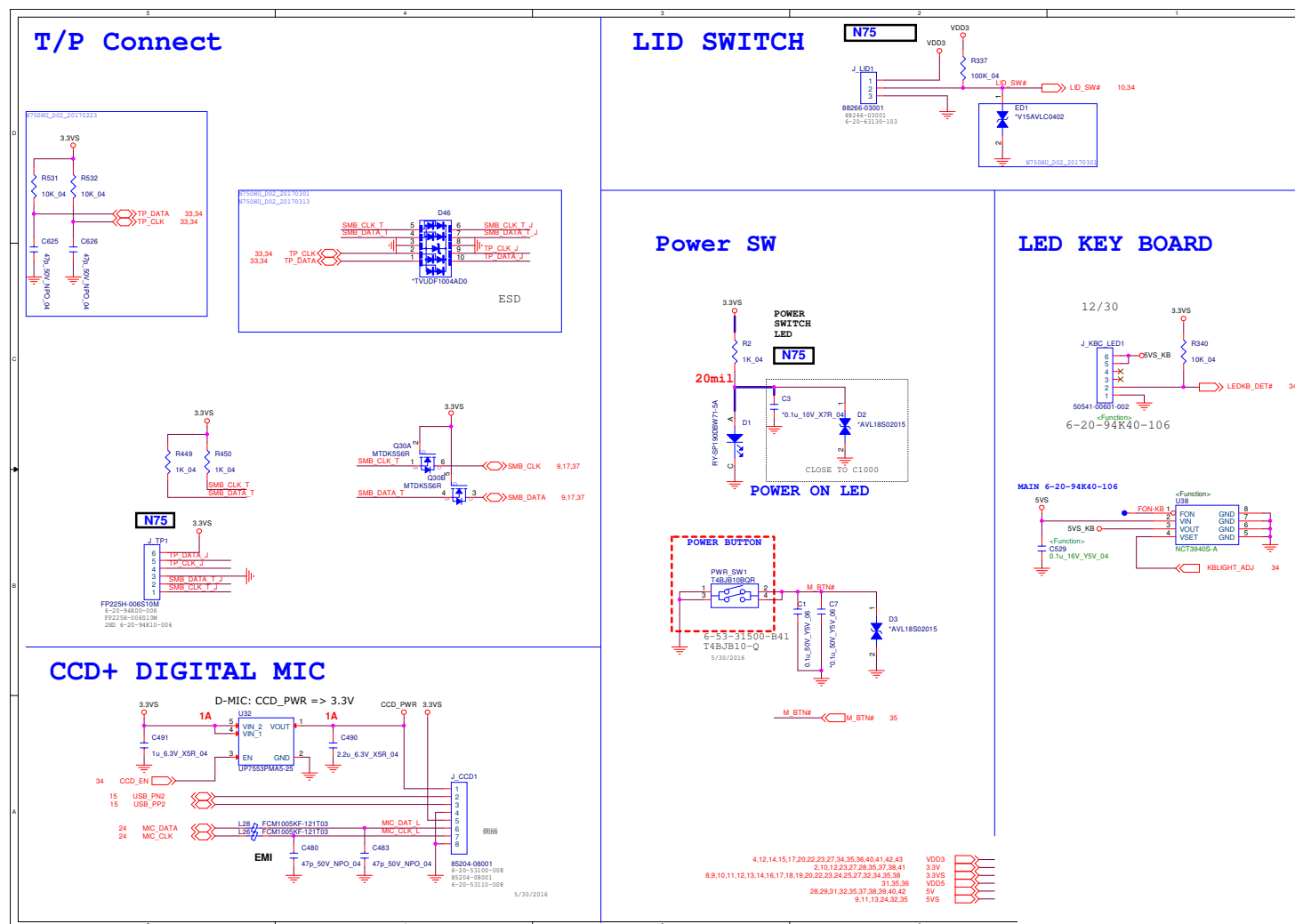
Sheet 31 of 48
USB

Sheet 32 of 48
HDD, ODD, LED



B. Schematic Diagrams

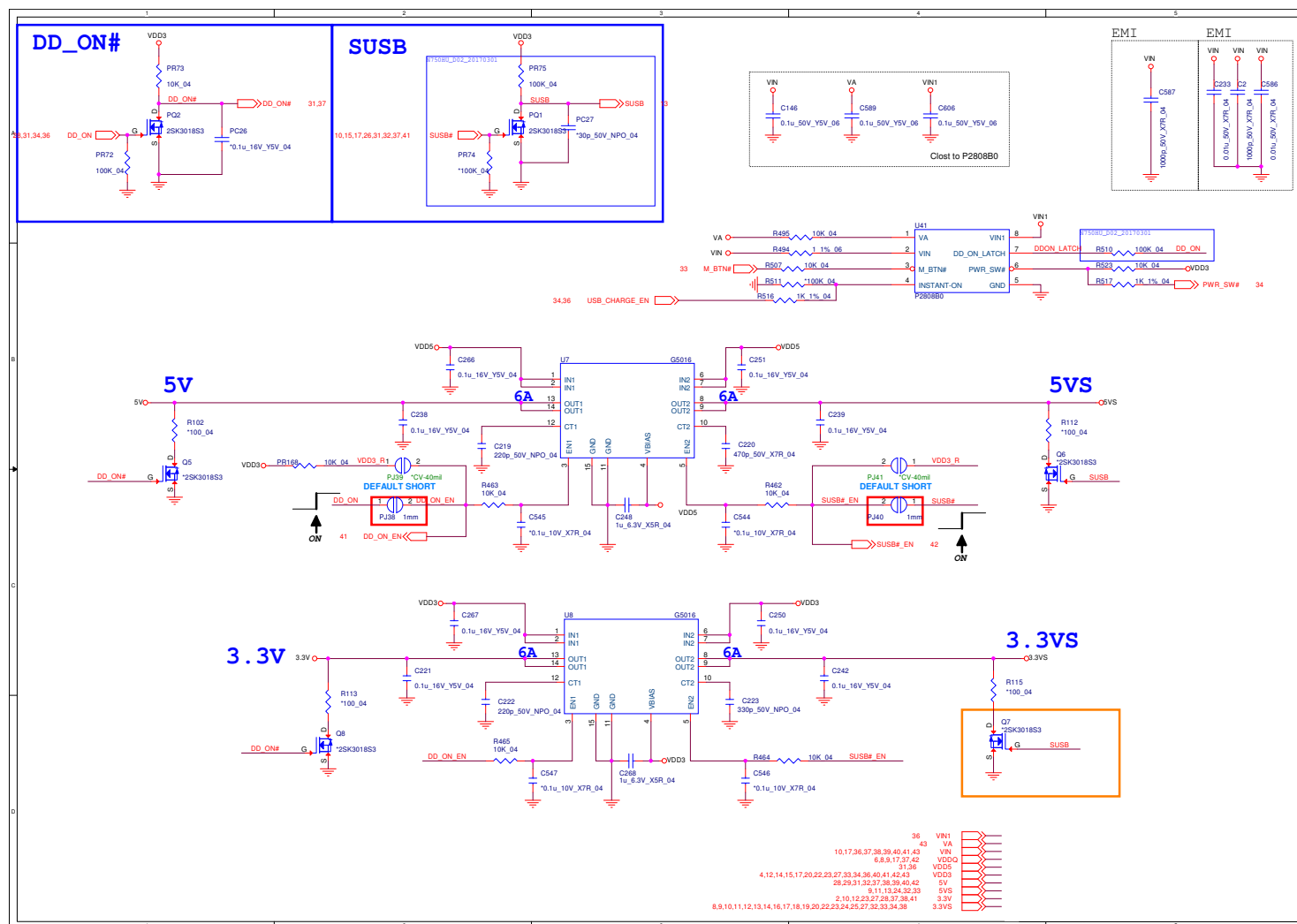
Sheet 33 of 48
CCD, MIC, LID, I/O
Connector



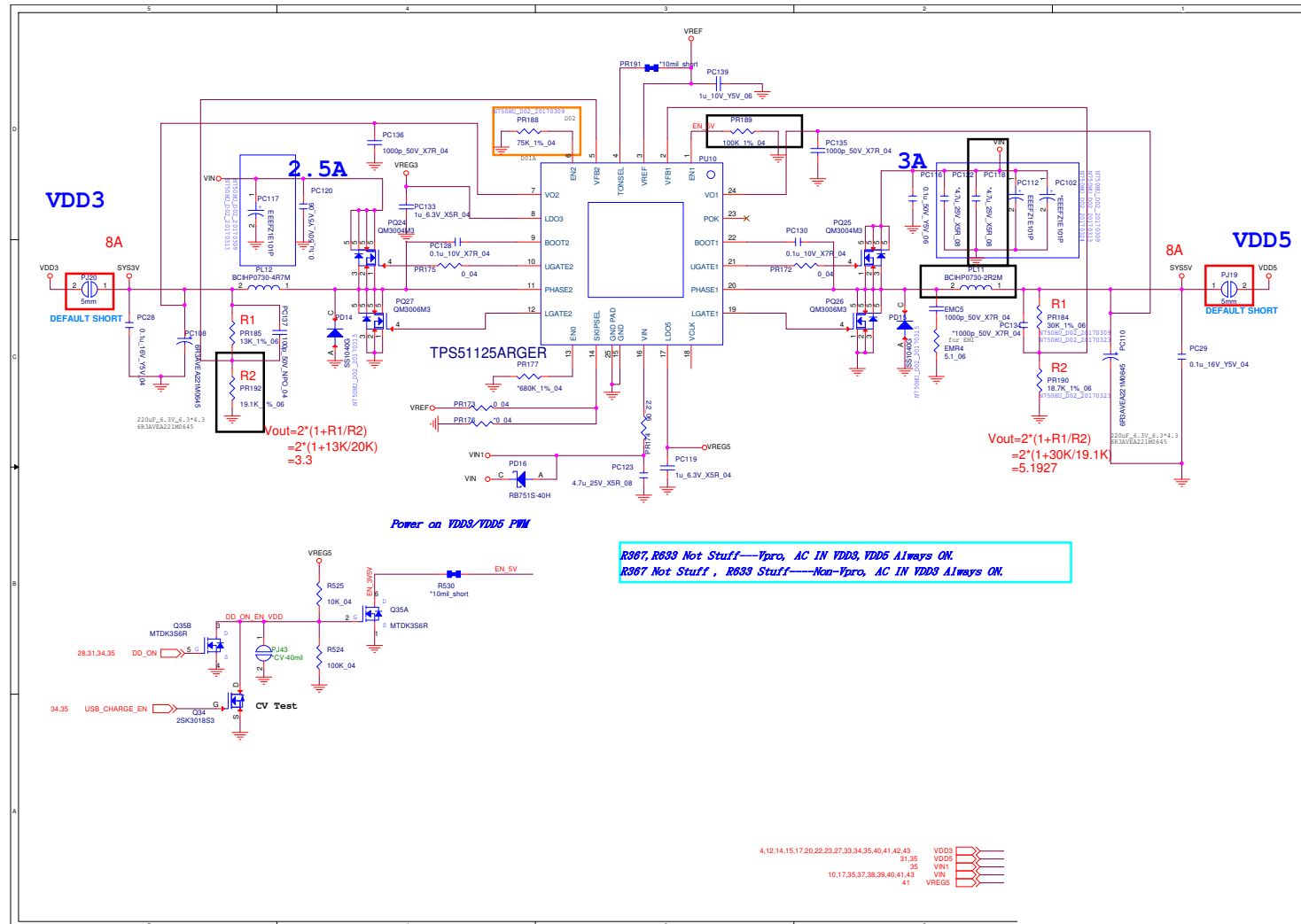
6-03-08587-FX

5V, 5VS, 3.3V, 3.3VS, 3.3VA

Sheet 35 of 48
5V, 5VS, 3.3V,
3.3VS, 3.3VA



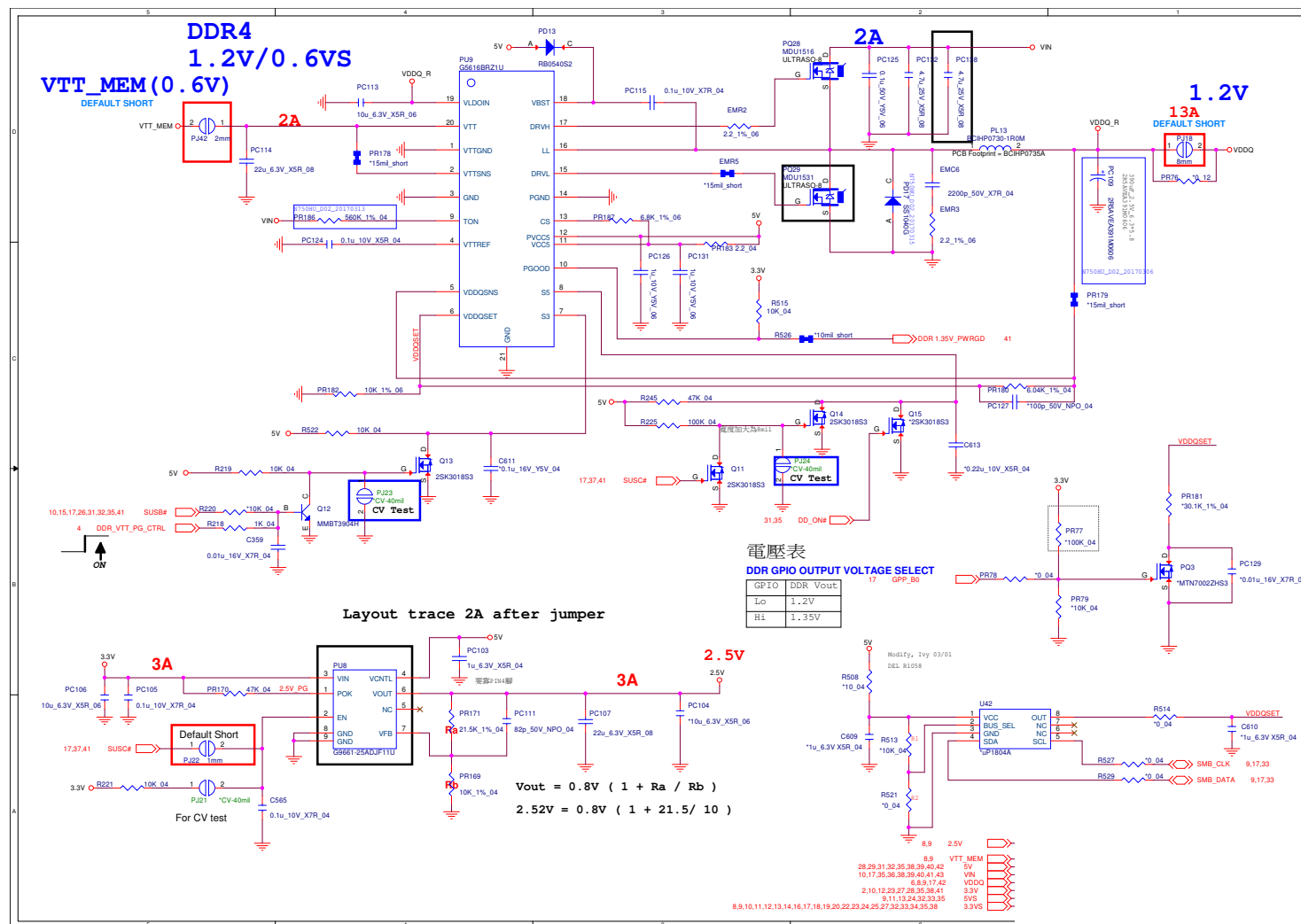
VDD3, VDD5

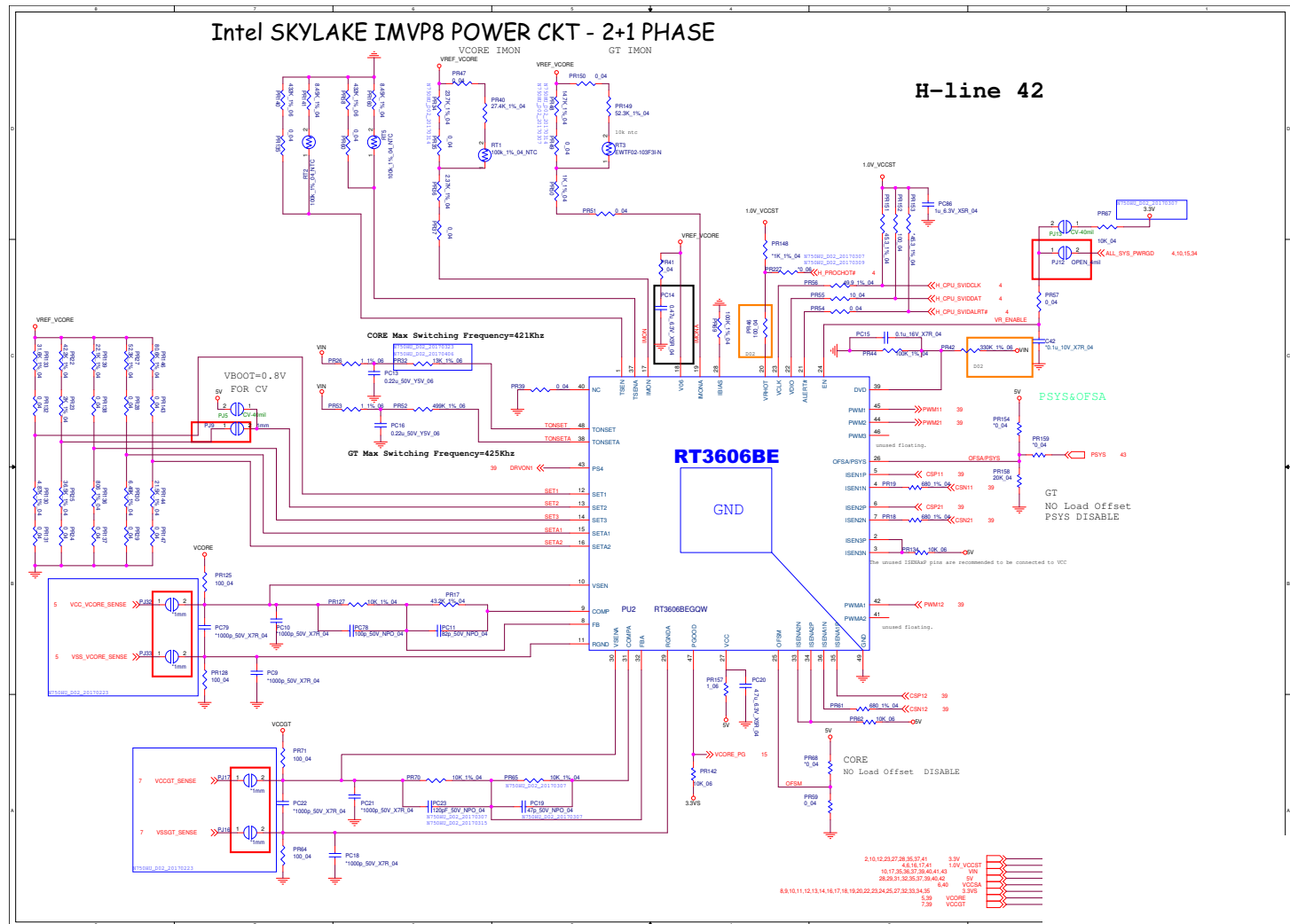


Sheet 36 of 48
VDD3, VDD5

DDR 1.2V/0.62VS, 2.5V

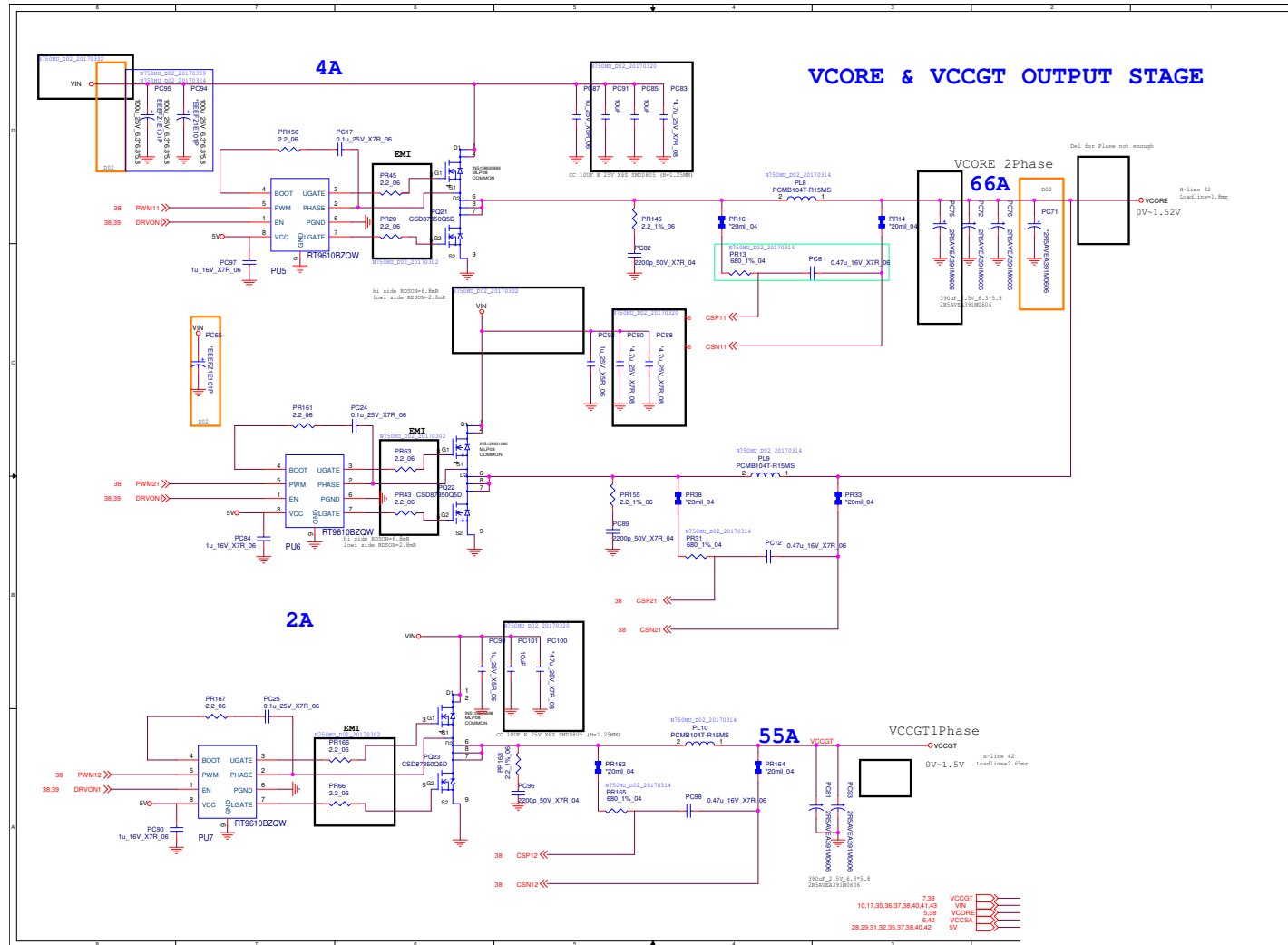
Sheet 37 of 48
DDR 1.2V/0.62VS,
2.5V



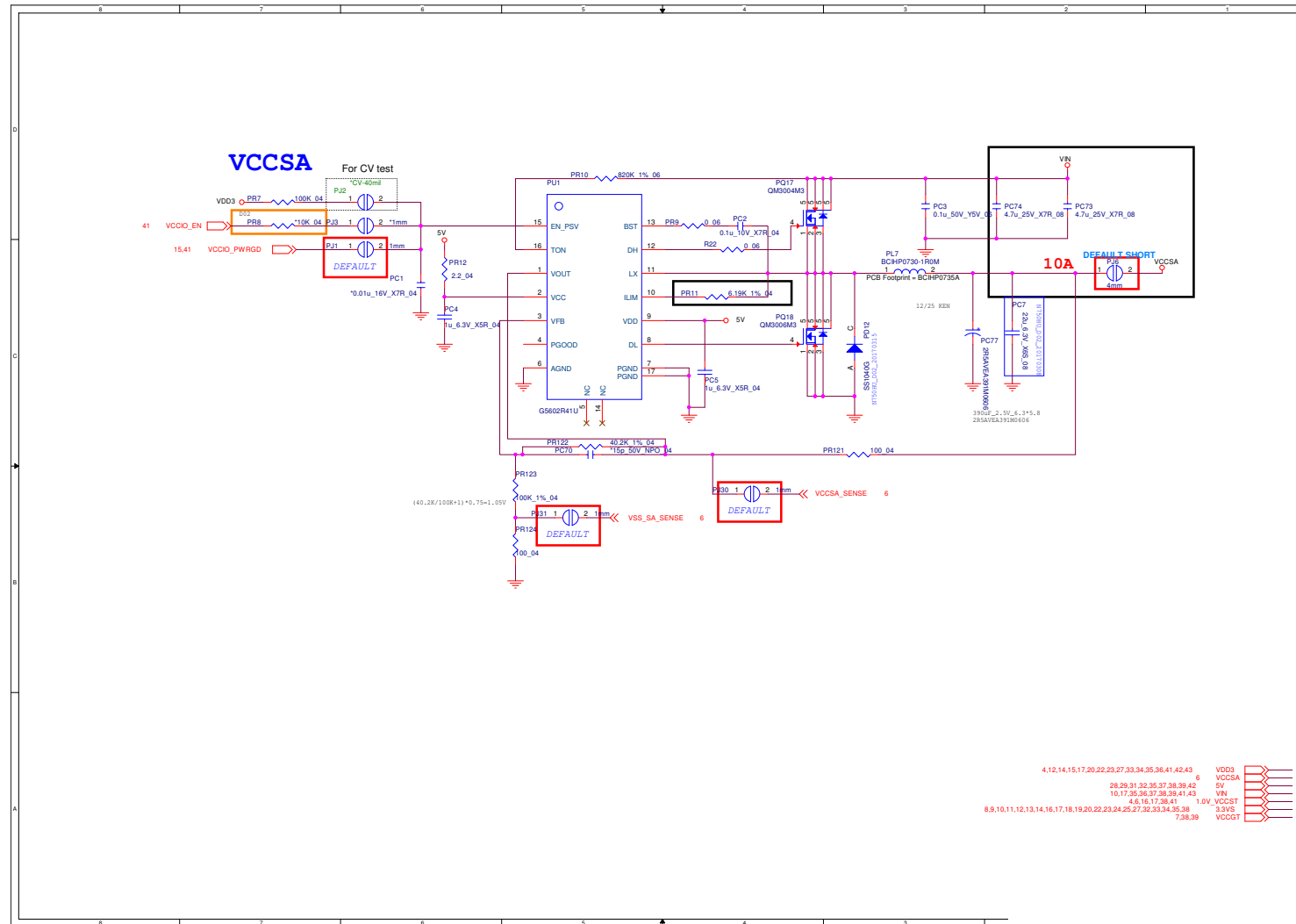


VCORE, VCCGT Output Stage

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VCORE, VCCGT
Output Stage



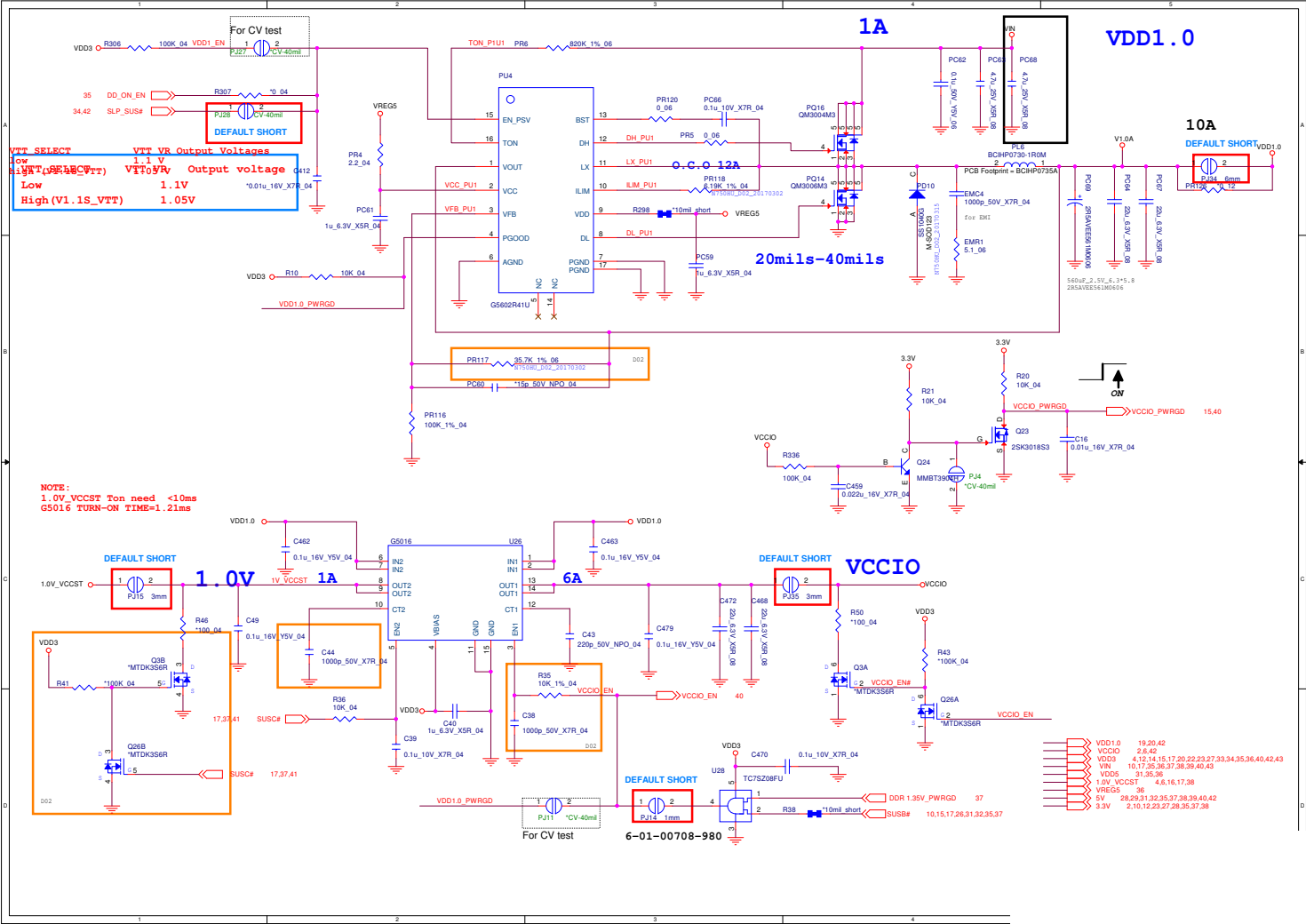
VCCSA



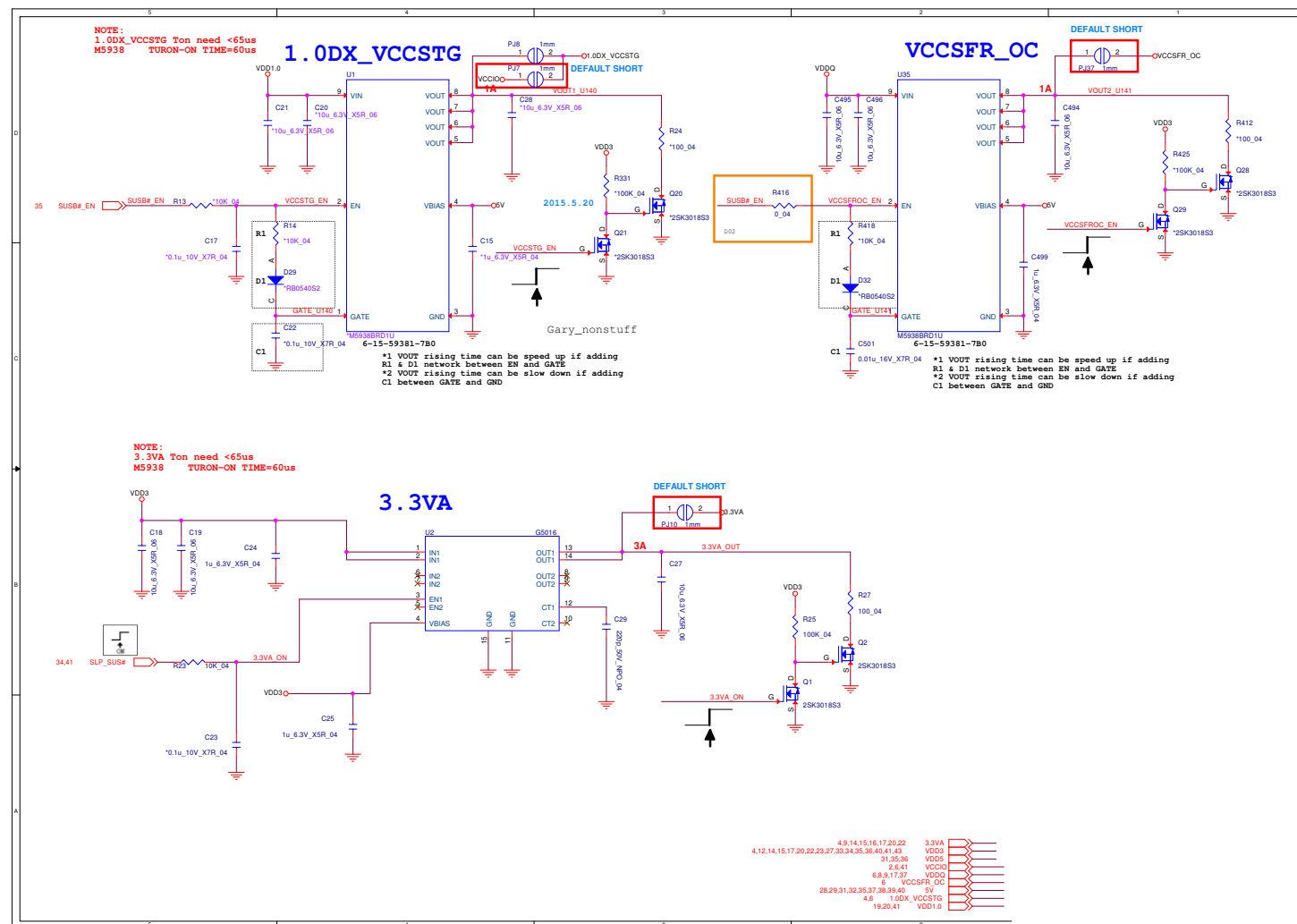
Schematic Diagrams

VCCIO

Sheet 41 of 48
VCCIO



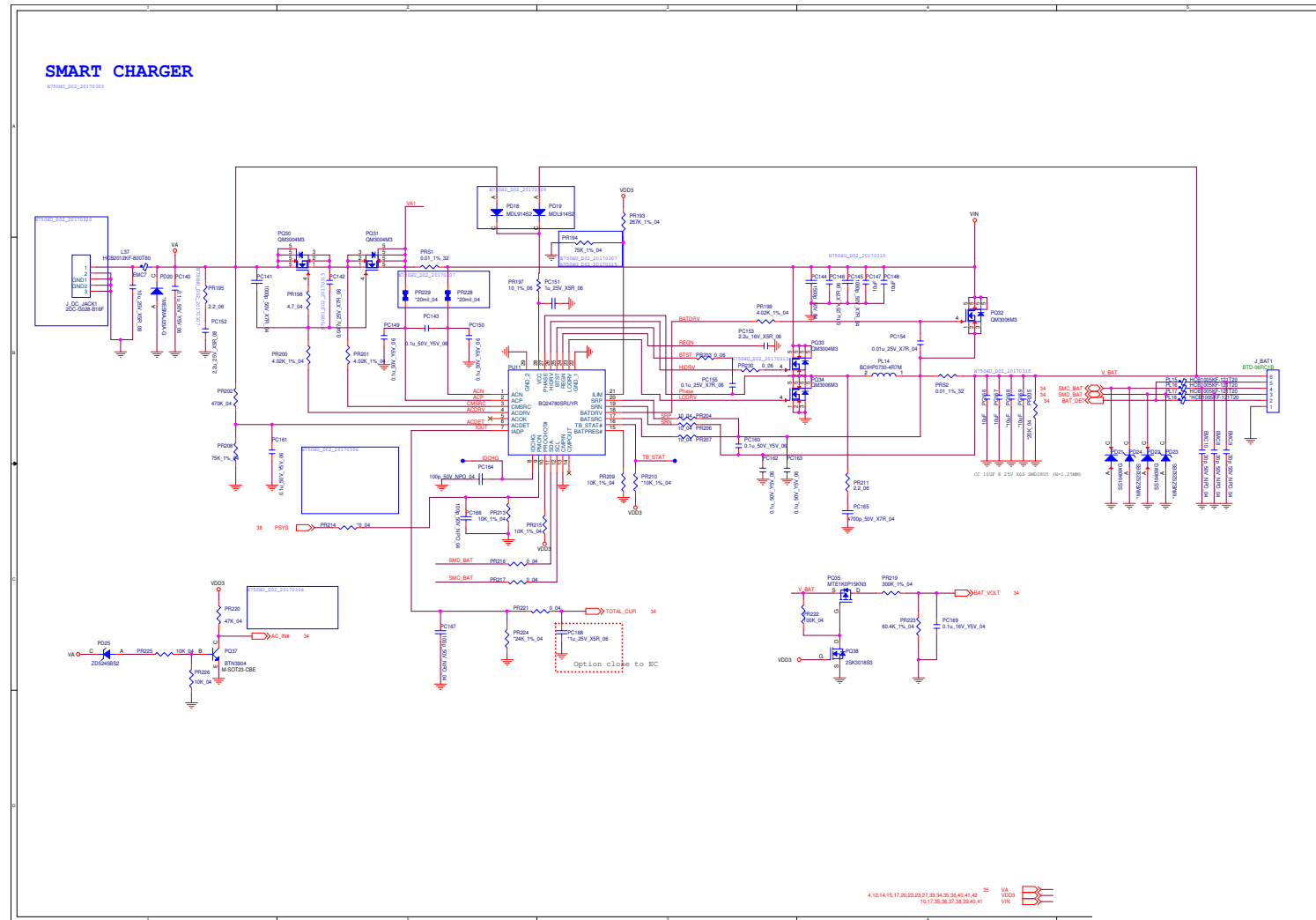
1.0DX_VCCSTG/VCCSFR_OC, 3.3VA



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1.0DX_VCCSTG/
VCCSFR_OC,
3.3VA

Charger, AC-In

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Charger, AC-In

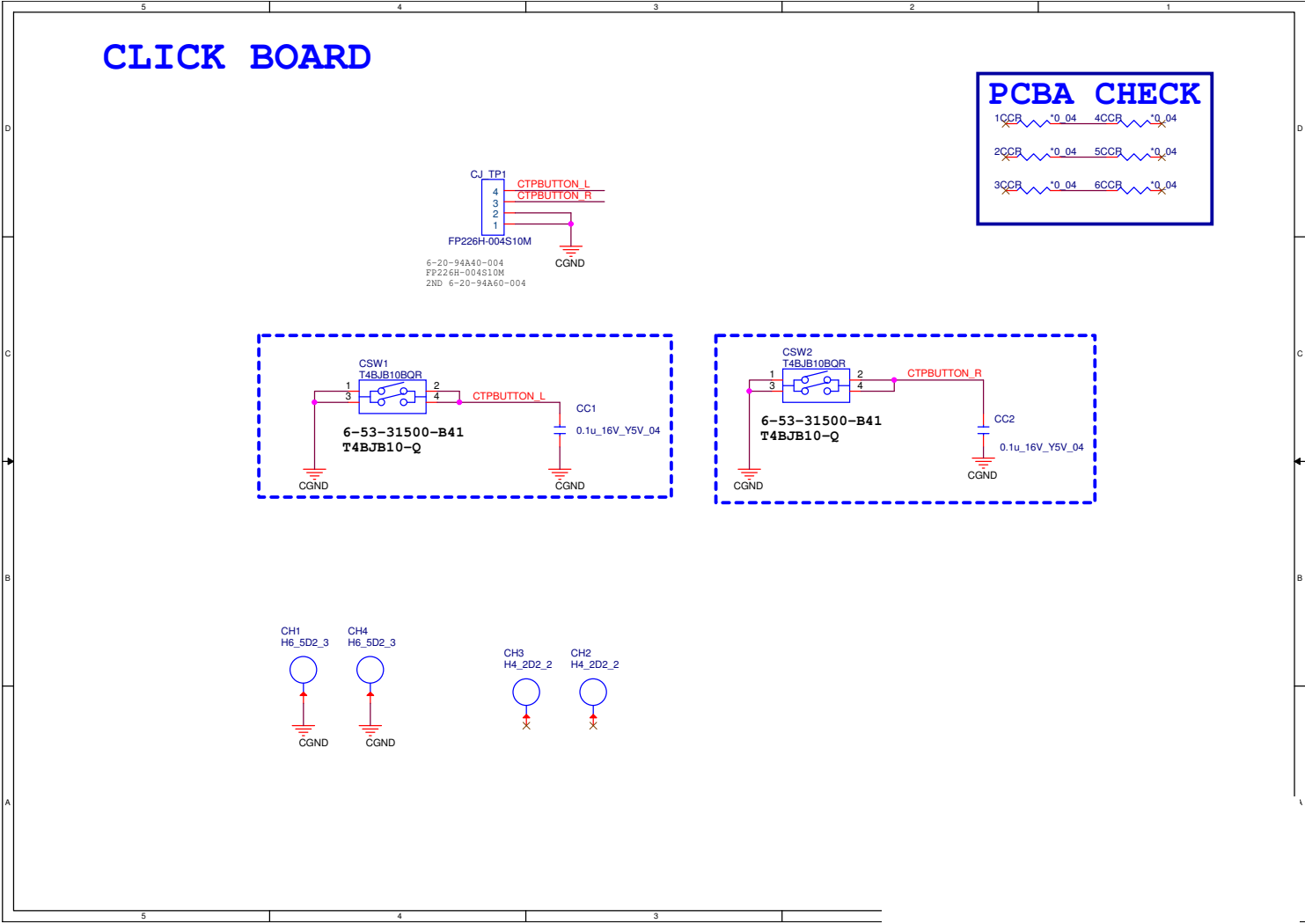


Audio Board B - 45



Click Board

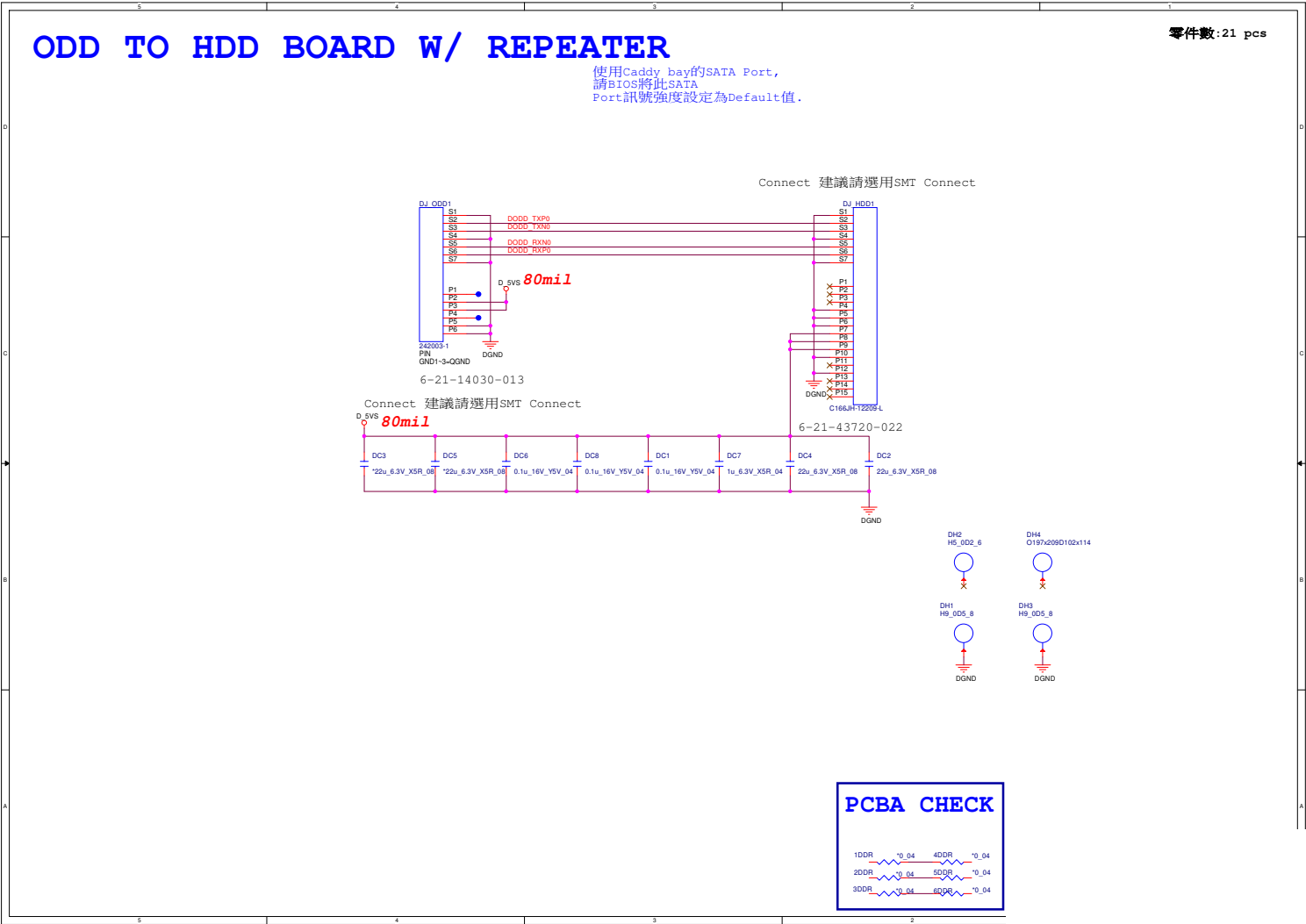
Sheet 45 of 48
Click Board



N750HU LID SWITCH BOARD



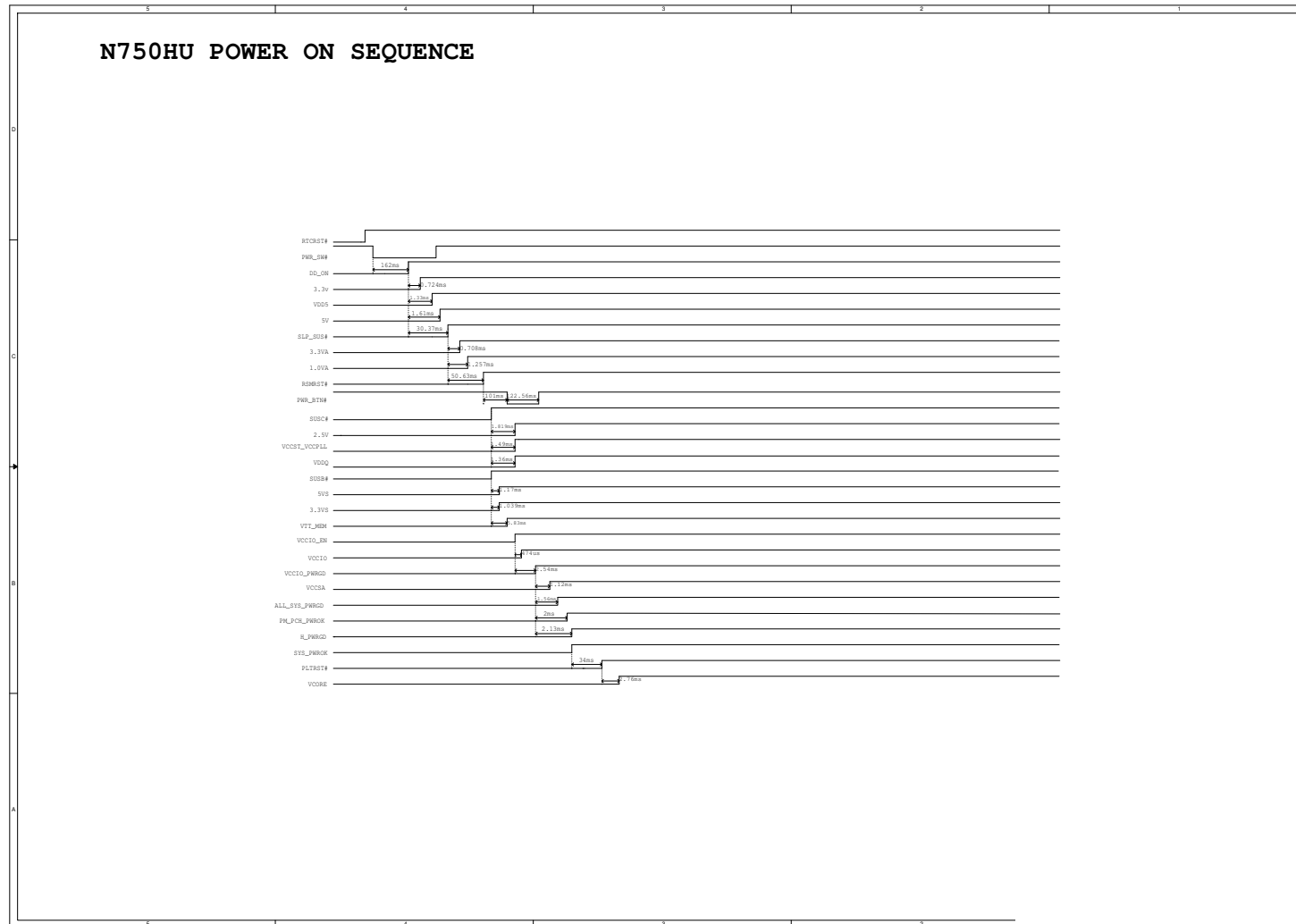
Caddy Bay Board



B.Schematic Diagrams

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Caddy Bay Board

Power Seq.

Sheet 48 of 48
Power Seq.

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 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 V1.0X.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 1.0X.05, you **MAY NOT** then go back and flash the BIOS to ver 1.0X.04).

BIOS Update

Use the flash tools to update the BIOS

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

fsX:\> Flash.nsh

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

Restart the computer (booting from the HDD)

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

Your computer is now running normally with the updated BIOS

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