

SERVICE MANUAL

NH50AC / NH55ACQ / NH57AC / NH58AC

notebook



Notebook Computer

NH50AC / NH55ACQ / NH57AC / NH58AC

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 *NH50AC* / *NH55ACQ* / *NH57AC* / *NH58AC* series notebook PC.

The following information is included:

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

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

Appendix A, Part Lists

Appendix B, Schematic Diagrams

IMPORTANT SAFETY INSTRUCTIONS

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

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit as follows:
 - AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19.5V, 9.23A (**180** 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.

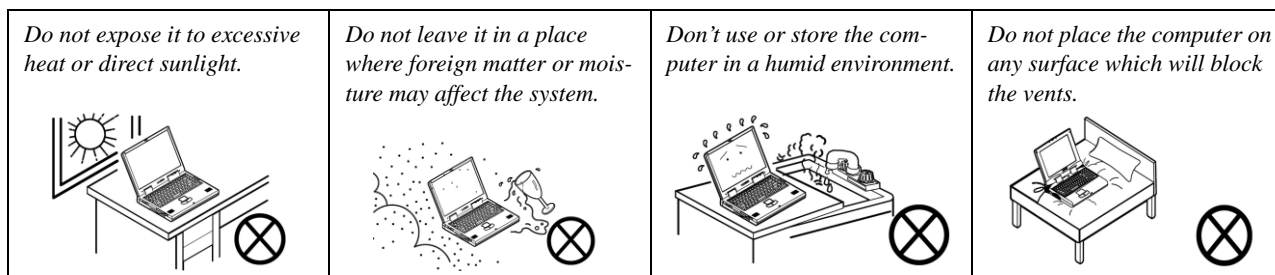
Instructions for Care and Operation

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.



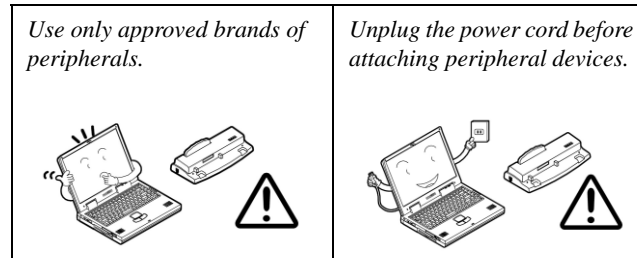
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



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.



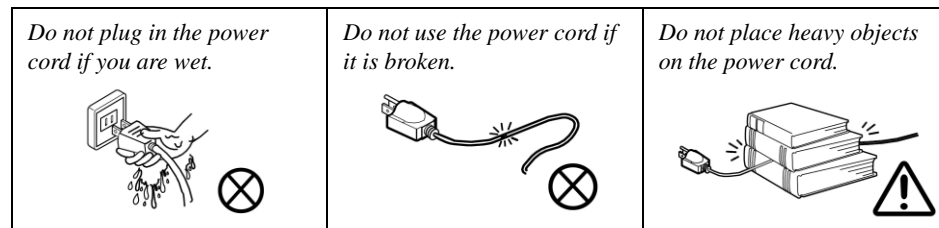
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Battery Precautions

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

Battery Guidelines

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

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




Battery Disposal

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

Caution

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

Battery Level

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

Related Documents

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

User's Manual on CD/DVD

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

System Startup

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

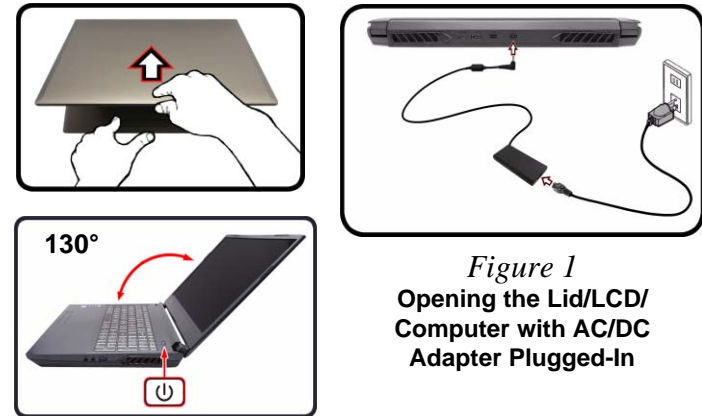



Figure 1
**Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In**


Shut Down

Note that you should always shut your computer down by choosing the **Shut down** command in **Windows** (see below). This will help prevent hard disk or system problems.

Click the icon  in the **Start Screen** and choose **Shut down** from the menu.



Or

Right-click the **Start button**  at the bottom of the **Start Screen** or the **Desktop** and choose **Shut down or sign out** > **Shut down** from the context menu.

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the *NH50AC / NH55ACQ / NH57AC / NH58AC* series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in the *User's Manual*. The manual is shipped with the computer.

Operating systems (e.g. *Windows 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 *NH50AC / NH55ACQ / NH57AC / NH58AC* 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.

AMD & Intel CPU Differences

Note that there are differences between the AMD and Intel CPUs in the RTC CMOS data storage location:

- Intel RTC CMOS data is stored in the PCH.
- AMD RTC CMOS data is stored in the CPU.

Note therefore that every time the CPU is replaced, the CMOS must be reset, and the first boot time after replacing the CPU will be longer (press power on, and the screen will light up after 1 minute).

Processor Options

AMD Ryzen™ 9 Desktop Processor

3900 (3.10GHz)

64MB Smart Cache, 7nm, DDR4-3200MHz, TDP 65W

AMD Ryzen™ 7 Desktop Processor

3700 (3.60GHz)

32MB Smart Cache, 7nm, DDR4-3200MHz, TDP 65W

AMD Ryzen™ 5 Desktop Processor

3600 (3.60GHz)

32MB Smart Cache, 7nm, DDR4-3200MHz, TDP 65W

Core Logic

AMD B450 Chipset

BIOS

128Mb SPI Flash ROM

INSYDE BIOS

LCD Options

15.6" (39.62cm), 16:9, FHD (1920x1080)

Memory

Dual Channel DDR4

Two 260 Pin SO-DIMM Sockets

Supporting **DDR4 2666MHz/3200MHz** Memory Modules

Memory Expandable from **8GB (minimum)** up to **64GB (maximum)**

Compatible with 8GB, 16GB or 32GB Modules

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

Storage

One changeable 2.5" (6cm) **7.0mm (h) SATA** (Serial) Hard Disk Drive/Solid State Drive (SSD)

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

(Factory Option) One M.2 **PCIe Gen2 x4**

Audio

High Definition Audio Compliant Interface

Sound Blaster™ Cinema 6

Built-In Array Microphone

Two Speakers

Video Adapter

NVIDIA® Discrete GPU

NVIDIA® GeForce GTX 1660Ti

6GB GDDR6 Video RAM on board

Microsoft DirectX® 12 Compatible

Security

Security (Kensington® Type) Lock Slot

BIOS Password

(Factory Option) TPM 2.0

(Factory Option) Fingerprint Sensor

Keyboard

Full-size **Multi-Color** LED Keyboard (with Numeric Keypad)

Pointing Device

Built-In Touchpad (with Microsoft PTP Multi Gesture & Scrolling Functionality)

Or

(Factory Option) Built-in Secure Pad (with Microsoft PTP Multi Gesture & Scrolling Functionality)

Card Reader

MicroSD Card Reader

M.2 Slots

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

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

Slot 3 for **PCIe Gen2 x4 SSD**

Interface

One USB 2.0 Port

Two USB 3.2 Gen 2 Type-A Ports

One DisplayPort 1.4 over USB 3.2 Gen 2 Type-C Port

One Mini DisplayPort 1.4

One HDMI-Out Port

One 2- In-1 Audio Jack (Headphone and Microphone)

One Microphone-In 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.

Communication

Built-In 10/100/1000Mb Base-TX Ethernet LAN

1.0M HD PC Camera Module

WLAN/ Bluetooth M.2 Modules:

(**Factory Option**) Intel® Dual Band Wireless-AC 9260 Wireless LAN (**802.11ac**) + Bluetooth

(**Factory Option**) Intel® Dual Band Wi-Fi 6 AX200 Wireless LAN (**802.11ax**) + Bluetooth

(**Factory Option**) Qualcomm® Rivet Killer™ Wireless-AC 1650x Dual Band Wireless LAN (**802.11ac**) + Bluetooth

Environmental Spec**Temperature**

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Power

Removable 6 Cell Smart Lithium-Ion Battery Pack, 62WH

Full Range AC/DC Adapter

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

DC Output: 19.5V, 9.23A (**180W**)

Dimensions & Weight

361mm (w) * 258mm (d) * 32.5mm (h)

2.7kg (Barebone with 62WH 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.*
3. Built-In Array Microphone
4. LCD
5. Power Button
6. Keyboard
7. Touchpad & Buttons

External Locator - Top View with LCD Panel Open



External Locator - Front & Right Side Views

FRONT VIEW



Figure 2
Front View

1. LED Indicators

RIGHT SIDE VIEW



Figure 3
Right Side View

1. 2-In-1 Audio Jack (Headphone and Microphone)
2. Microphone-In Jack
3. USB 2.0 Port
4. Vent

Introduction

External Locator - Left Side & Rear View

Figure 4

Left Side View

1. Security Lock Slot
2. RJ-45 LAN Jack
3. USB 3.2 Gen 2 Type-A Ports
4. MicroSD Card Reader



Figure 5

Rear View

1. Vent
2. DisplayPort 1.4 over USB 3.2 Gen 2 Type-C Port
3. HDMI-Out Port
4. Mini Display Port 1.4
5. DC-In Jack



External Locator - Bottom View

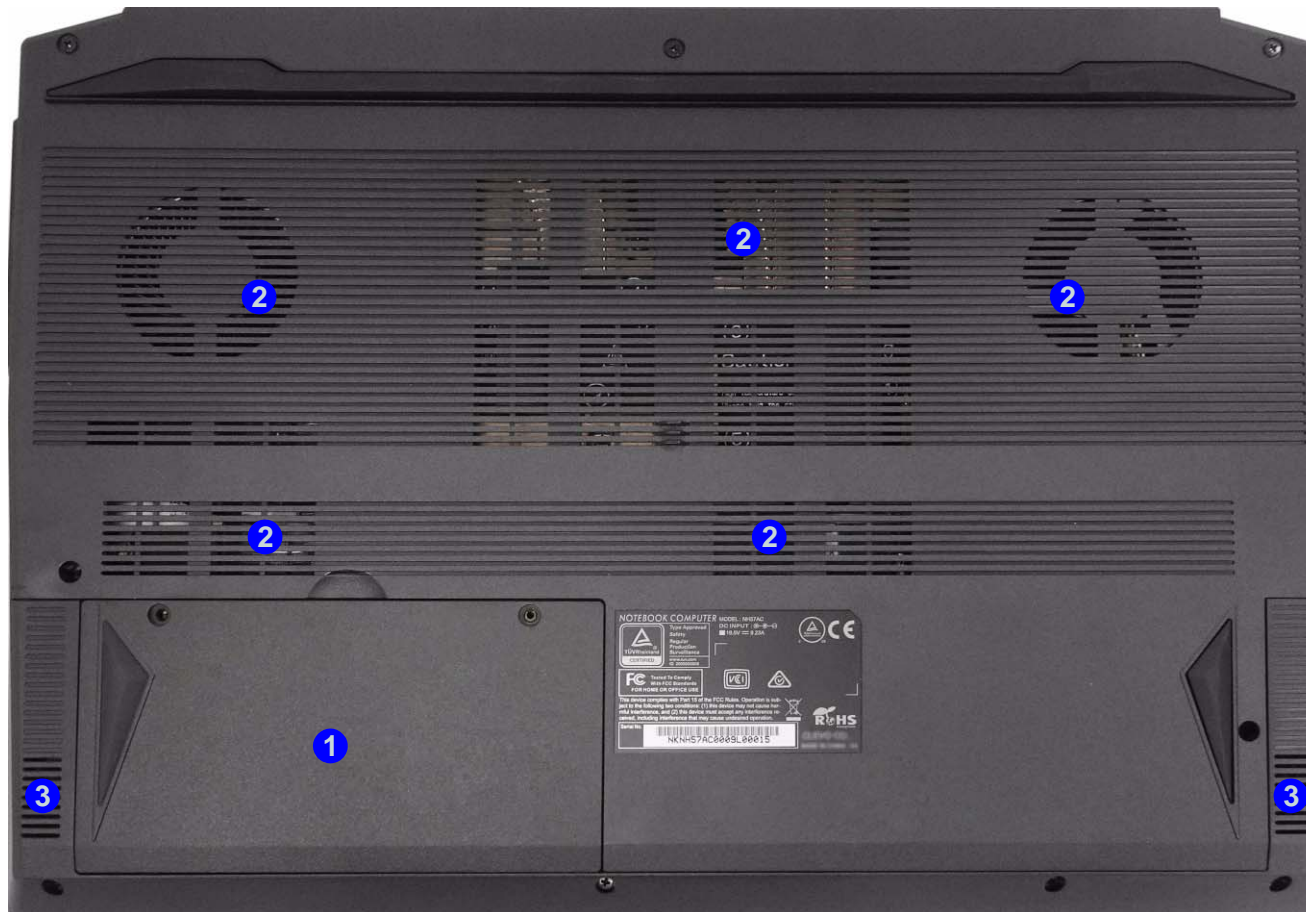


Figure 6
Bottom View

1. Battery
2. Vent
3. Speakers


Overheating

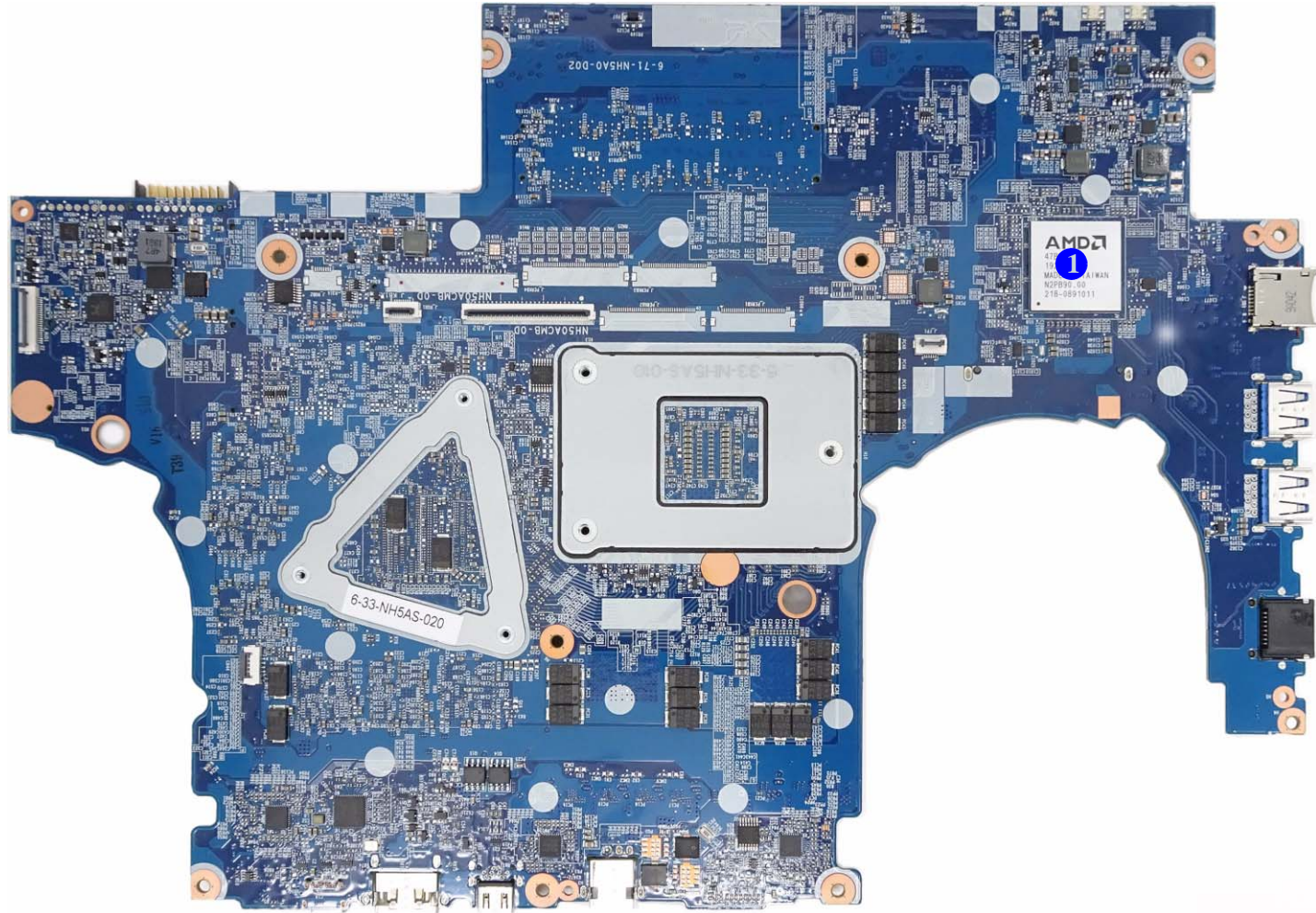
To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

Introduction

Figure 7
Mainboard Top
Key Parts

1. AMD Southbridge

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

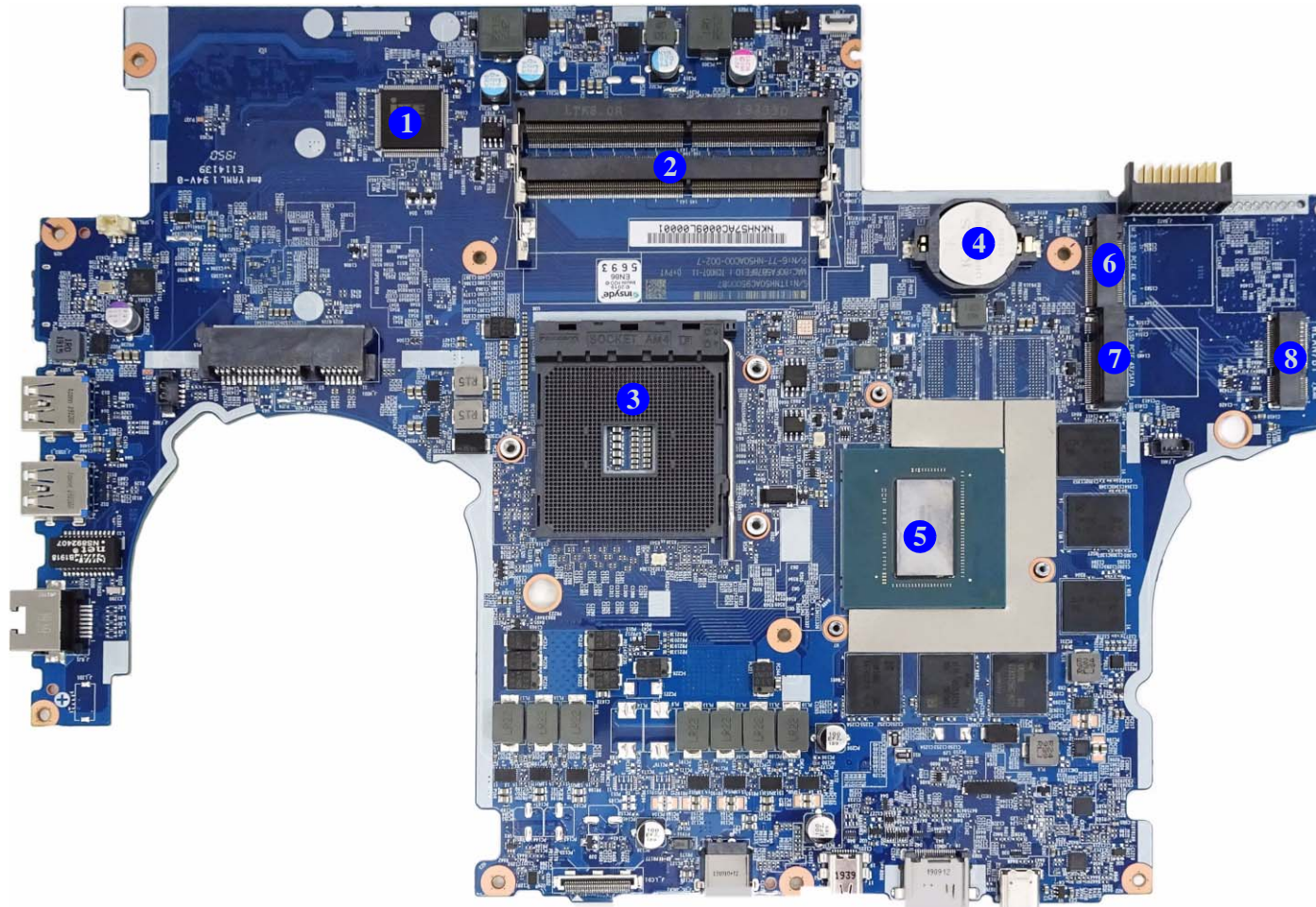


Figure 8
**Mainboard Bottom
Key Parts**

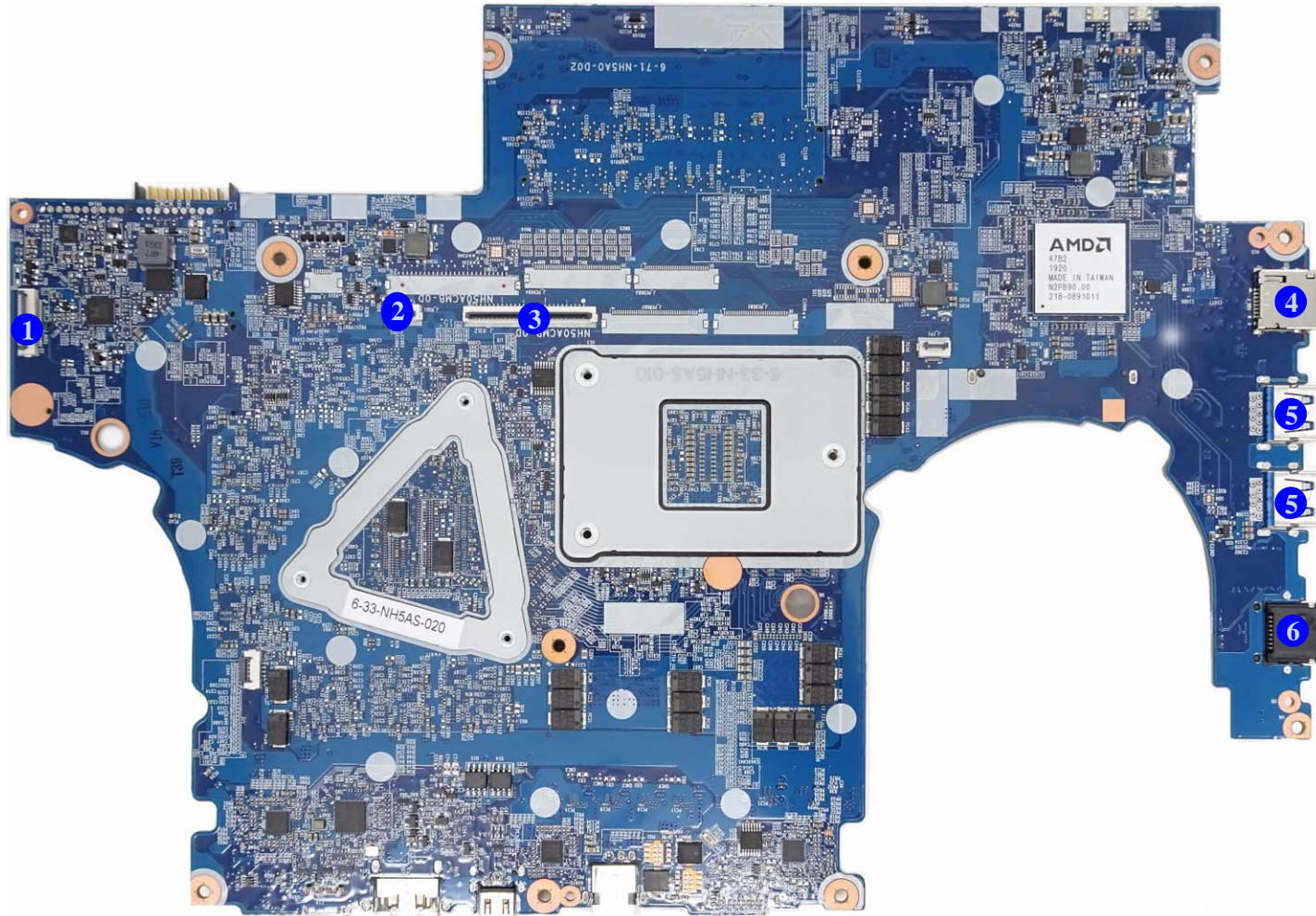
1. KBC-ITE IT5570 [EC]
2. Memory Slots
DDR4 SO-DIMM
3. CPU Socket
4. CMOS Battery
5. GPU
6. M.2-Card
Connector (SSD
PCIE Module)
7. M.2-Card
Connector (SSD
PCIE/SATA
Module)
8. Mini-Card
Connector (WLAN/
BT Module)

Introduction

Figure 9
**Mainboard Top
Connectors**

1. Audio Connector
2. KB LED Connector
3. Keyboard Cable Connector
4. MicroSD Card Reader
5. USB 3.2 Gen 2 Type-A Ports
6. RJ-45 LAN Jack

Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

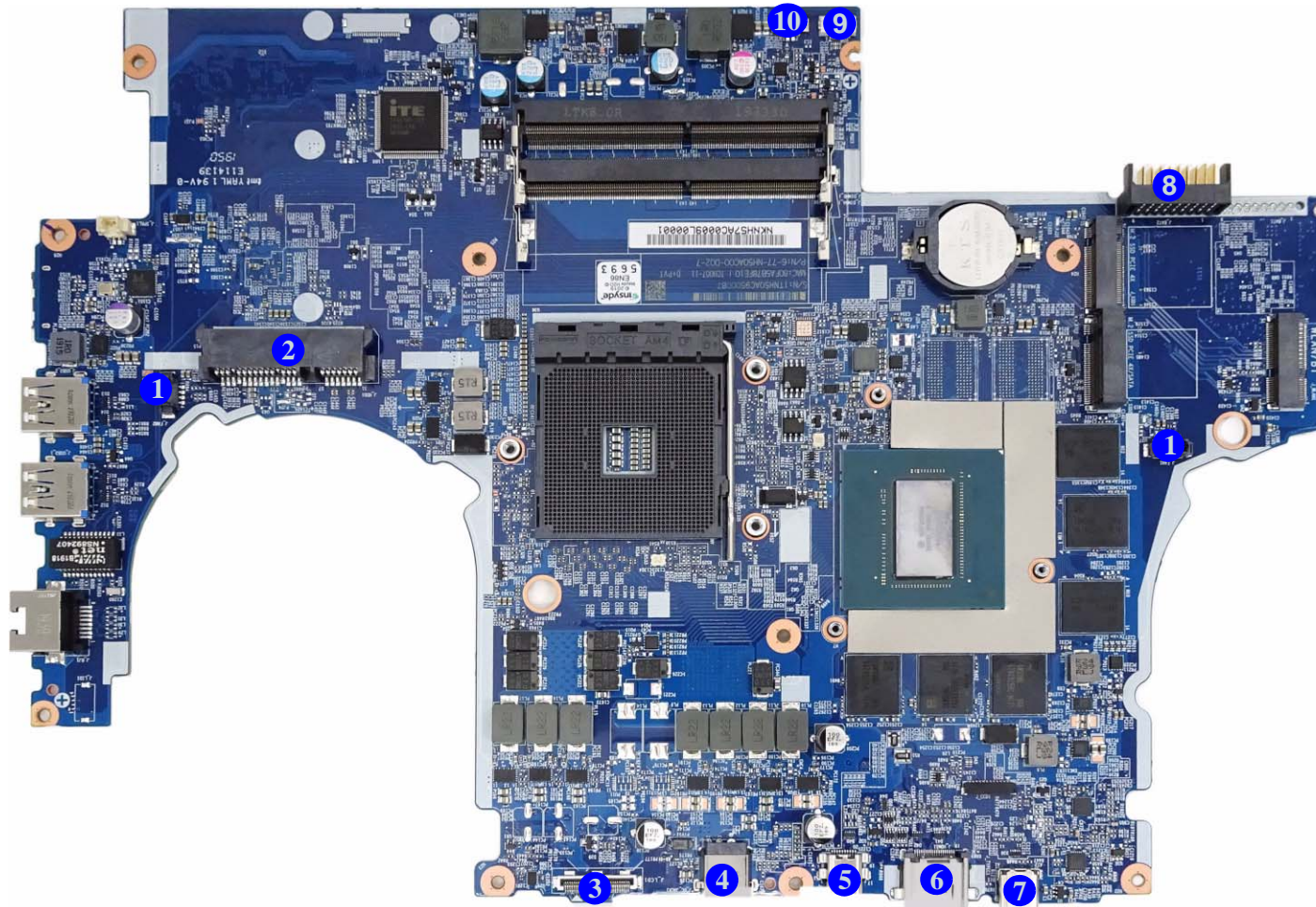


Figure 10
**Mainboard Bottom
Connectors**

1. Fan Connector
2. HDD Connector
3. LCD Connector
4. DC-In Jack
5. Mini Display Port 1.4
6. HDMI Connector
7. DisplayPort 1.4 over USB 3.2 Gen 2 Type-C Port
8. Battery Connector
9. Touchpad Connector
10. Speaker Connector


Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *NH50AC / NH55ACQ / NH57AC / NH58AC* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

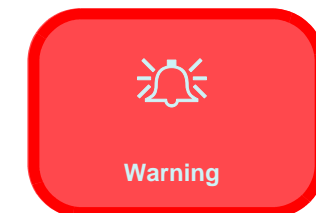
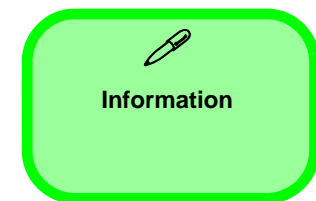
We suggest you completely review any procedure before you take the computer apart.

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 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 and install the Processor:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the processor [page 2 - 10](#)
4. Install the processor [page 2 - 12](#)

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 - 13](#)

To remove the M.2 SSD:

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

To remove the Wireless LAN Module:

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

To remove the CCD Module:

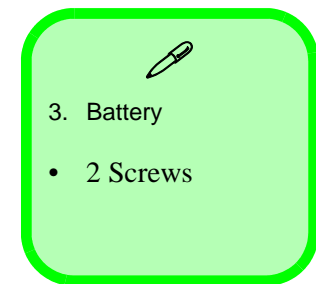
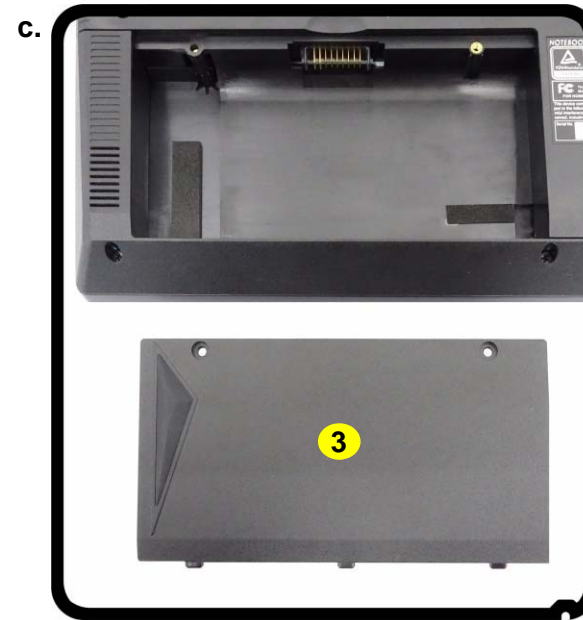
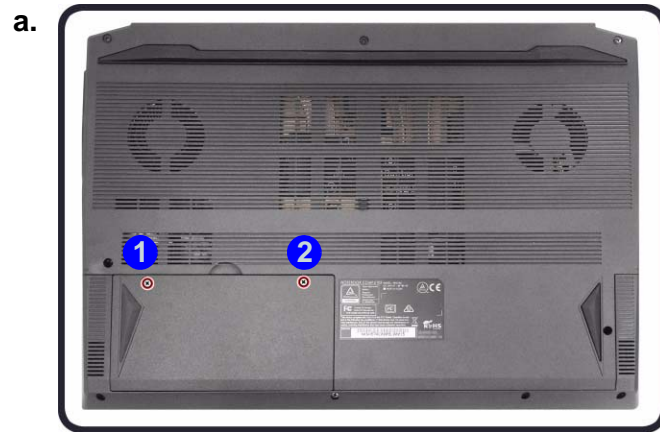
1. Remove the battery [page 2 - 5](#)
2. Remove the CCD module [page 2 - 18](#)

Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Remove the screws **1** - **2** (*Figure 1a*).
3. Carefully lift the battery **3** in the direction of the arrow (*Figure 1b*).
4. Remove the battery **3** out of the compartment (*Figure 1c*).

Figure 1
Battery Removal

- a. Remove the screws.
- b. Lift the battery.
- c. Remove the battery.



Disassembly

Figure 2
**HDD Assembly
Removal**

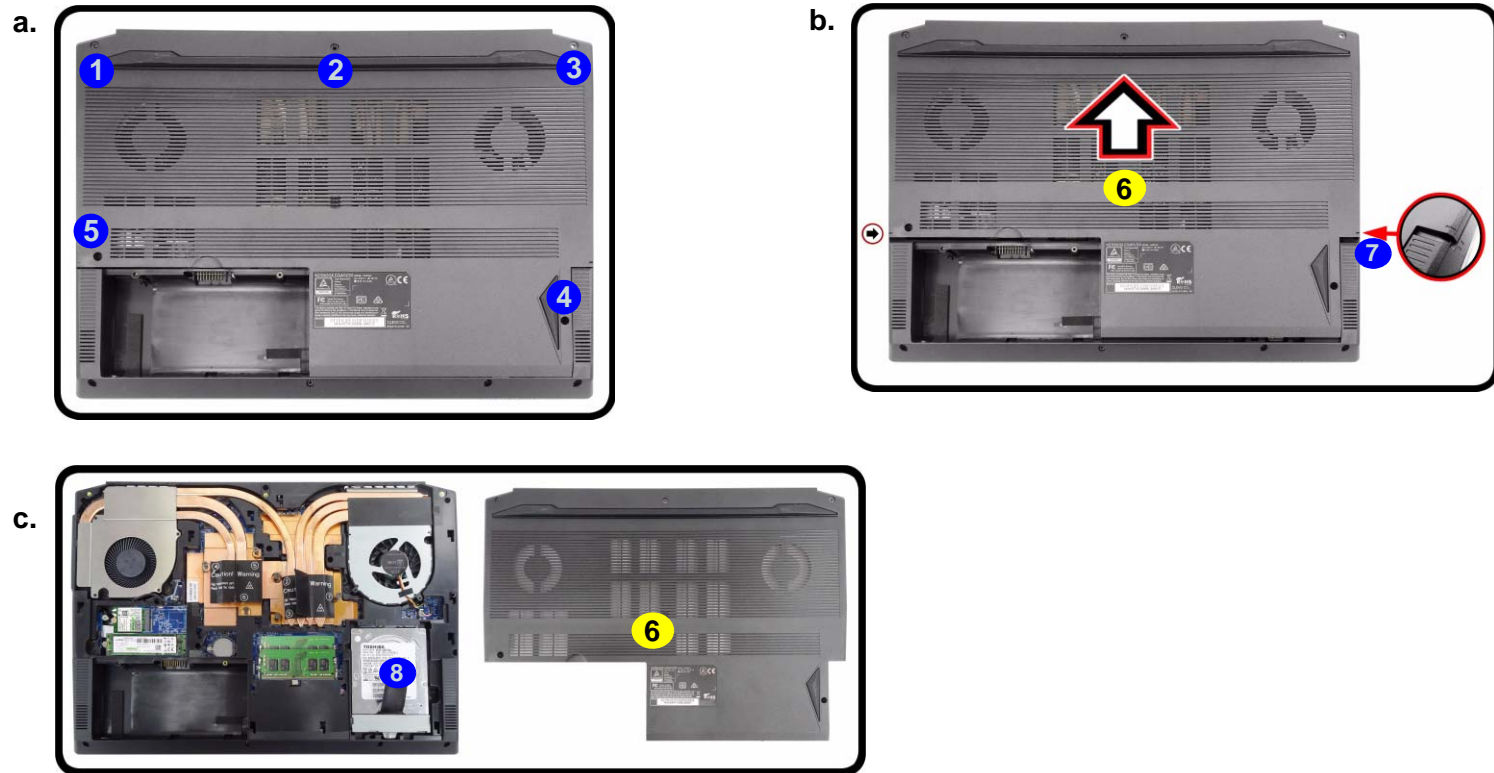
- Remove the screws.
- Slide the bottom case out and remove it.
- Locate the HDD.

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). 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 Disassembly Process

- Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
- Remove the screws **1 - 5** ([Figure 2a](#)).
- Carefully slide the bottom case **6** as shown **7** and lift it off ([Figure 2b](#)).
- The HDD will be visible at point **8** on the mainboard ([Figure 2c](#)).



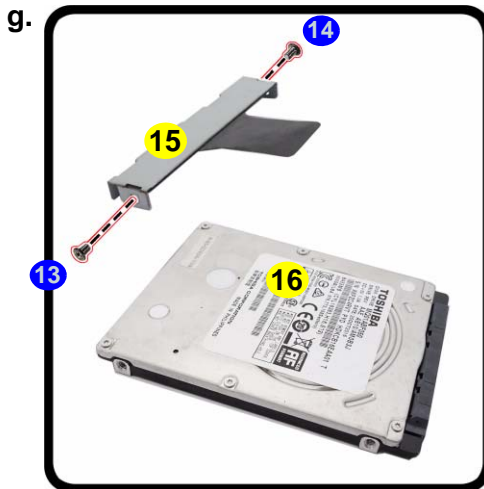
6. Bottom Case


- 5 Screws

5. Remove screws **9** from the HDD assembly (*Figure 3b*).
6. Slightly lift and pull the hard disk assembly in the direction of arrow **10** (*Figure 3c*).
7. Lift the hard disk assembly **11** out of the bay **12** (*Figure 3d*).
8. Remove screws **13** - **14** and bracket **15** from the hard disk **16** (*Figure 3e*).
9. Reverse the process to install a new hard disk (do not forget to replace the screws).

Figure 3
HDD Assembly Removal (cont'd.)

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






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.



11. HDD Assembly
 15. Bracket
 16. HDD

- 3 Screws

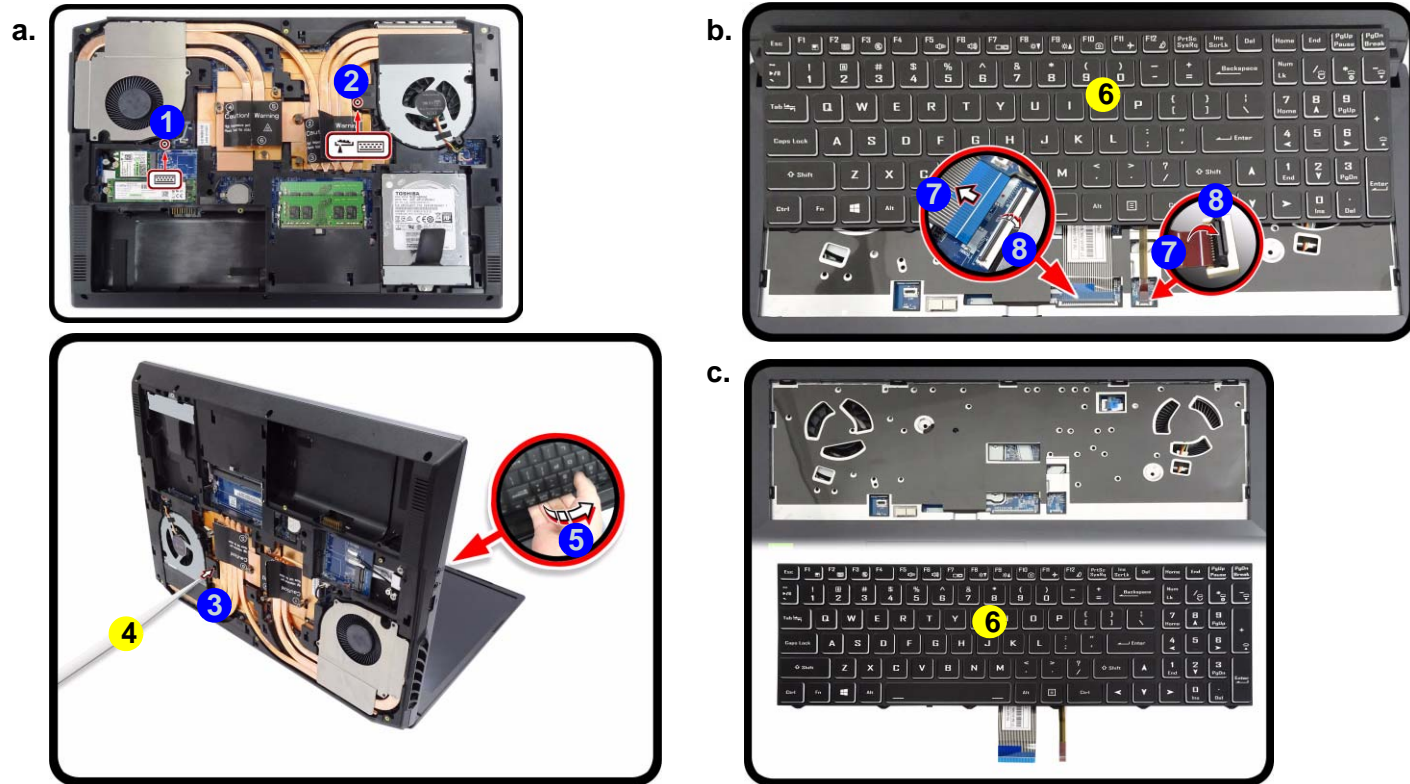
Disassembly

Figure 4
Keyboard-1 Removal

Removing the Keyboard

Keyboard-1 Removal Procedure

- a. Remove the screws from the bottom of the computer and then eject the keyboard using a special eject stick to push the keyboard out while releasing the keyboard as shown.
 - b. Lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket. Remove the keyboard.
 - c. Remove the keyboard.
1. Turn **off** the computer, remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
 2. Remove screws **1** - **2** from the bottom of the computer.
 3. 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 4a](#)).
 4. Carefully lift the keyboard **6** up, being careful not to bend the keyboard ribbon cable **7**. Disconnect the keyboard ribbon cable **7** from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins **8** away from the base ([Figure 4b](#)).
 5. Carefully lift the keyboard **6** off the computer ([Figure 4c](#)).



Re-inserting the Keyboard

When re-inserting the keyboard firstly, align the keyboard tabs at the bottom of the keyboard with the slots in the case.

- 4. Eject Stick
- 6. Keyboard-1

- 2 Screws

Keyboard-2 Removal Procedure

1. Turn off the computer, remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
2. Remove screws ① - ② from the bottom of the computer.
3. 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 4a](#)).
4. Carefully lift the keyboard ⑥ up, being careful not to bend the keyboard ribbon cable ⑦. Disconnect the keyboard ribbon cable ⑦ from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins ⑧ away from the base ([Figure 4b](#)).
5. Carefully lift the keyboard ⑥ off the computer ([Figure 4c](#)).

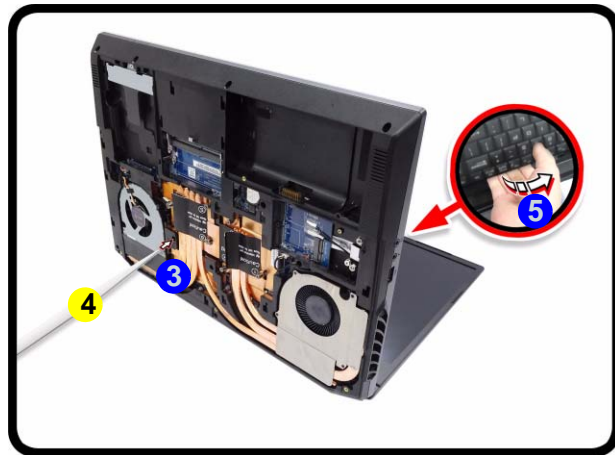
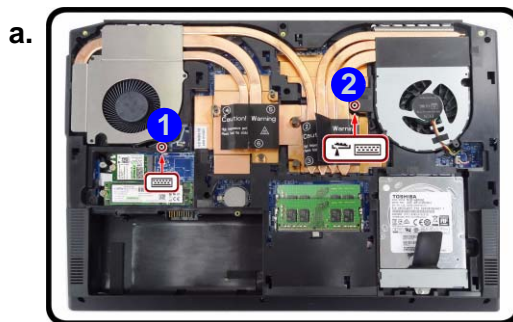




Figure 5
Keyboard-2 Removal

- a. Remove the screws from the bottom of the computer and then eject the keyboard using a special eject stick to push the keyboard out while releasing the keyboard as shown.
- b. Lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket.
- c. Remove the keyboard.


Re-inserting the Keyboard

When re-inserting the keyboard firstly, align the keyboard tabs at the bottom of the keyboard with the slots in the case.


4. Eject Stick
6. Keyboard-2

- 2 Screws

Disassembly

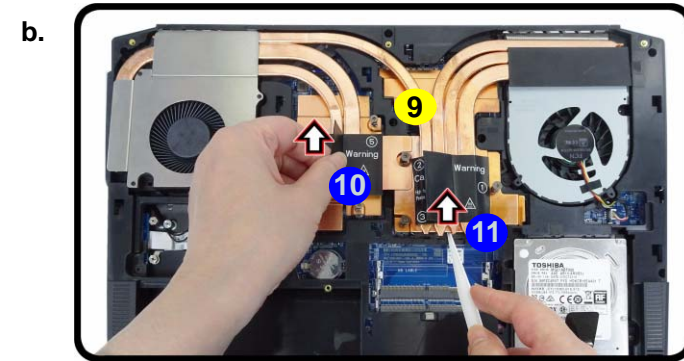
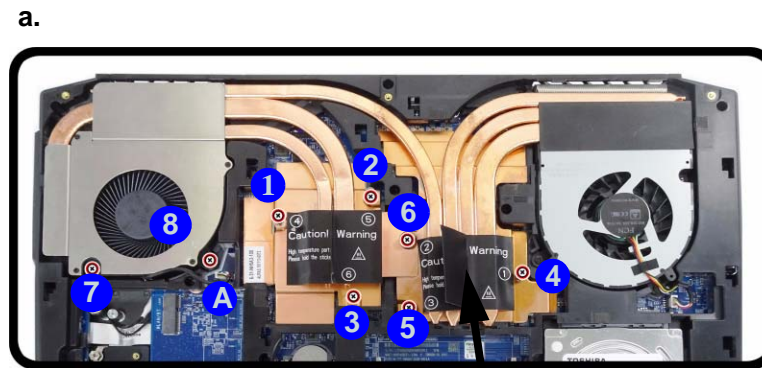
Figure 6
**Processor
 Removal
 Procedure**

- a. Disconnect the cable and remove the screws in the correct order.
- b. Carefully remove the heat sink unit.

Removing and Installing the Processor

Processor Removal Procedure

1. Turn off the computer, remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
2. Disconnect cable **A** and remove screws **1 - 8** from the heat sink unit in the order indicated on the label (i.e screw **8** first through to screw **1** last [Figure 6a](#)).
3. Carefully (it may be hot) remove the heat sink unit **9** at point **10** while using a tool to lever the heatsink up at point **11**. Then lift the heat sink up at an angle as shown ([Figure 6b](#)).



Note:

Loosen the screws in the reverse order 8-7-6-5-4-3-2-1 as indicated.



9. Heat Sink Unit

- 8 Screws

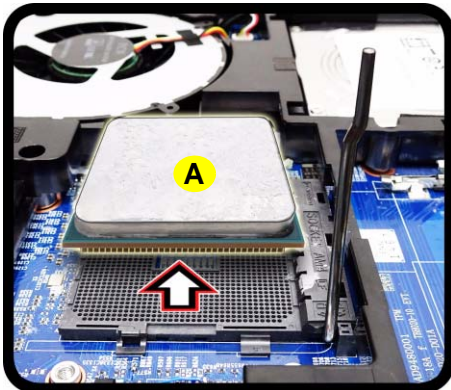
4. Press down and hold the latch **12** (with the latch held down you will be able to release it).
5. Move the latch **12** fully in the direction indicated to unlock the CPU (**Figure 7c**).
6. Carefully (it may be hot) lift the CPU **A** up out of the socket (**Figure 7d**).
7. See **page 2 - 12** for information on inserting a new CPU.
8. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

c.



Unlock

d.



Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

AMD & Intel CPU Differences

Note that there are differences between the AMD and Intel CPUs in the RTC CMOS data storage location:

- Intel RTC CMOS data is stored in the PCH.
- AMD RTC CMOS data is stored in the CPU.

Note therefore that every time the CPU is replaced, the CMOS must be reset, and the first boot time after replacing the CPU will be longer (press power on, and the screen will light up after 1 minute).

Figure 7

Processor Removal (cont'd)

- c. Move the latch fully in the direction indicated to unlock the CPU.
- d. Lift the CPU out of the socket.



A. CPU

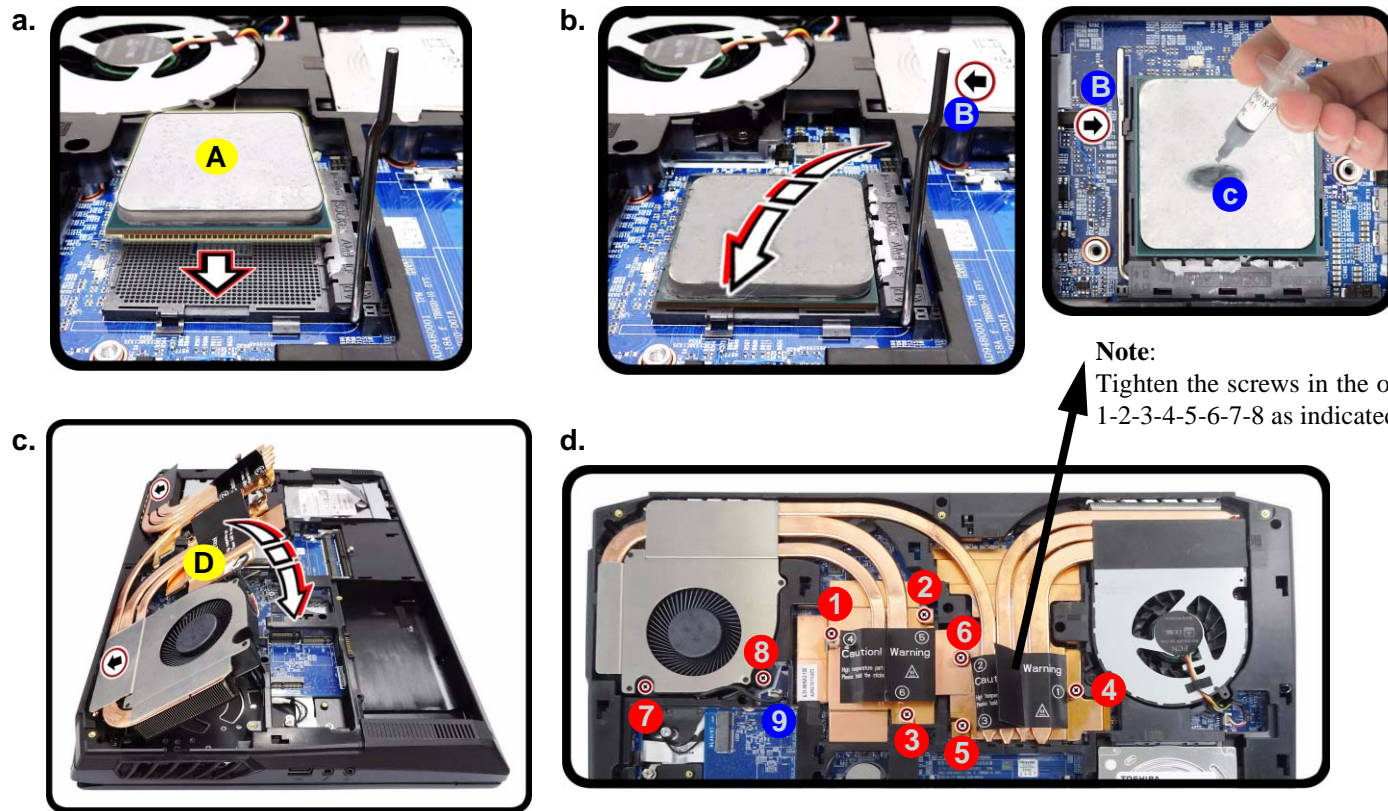
Disassembly

Figure 8
Processor Installation

- Insert the CPU.
- Move the latch fully in the direction indicated to lock the CPU. Apply thermal grease.
- Insert the heat sink.
- Tighten the screws.

Processor Installation Procedure

- Insert the CPU **A**; pay careful attention to the pin alignment (*Figure 8a*), it will fit only one way (DO NOT FORCE IT!).
- Move the latch **B** fully in the direction indicated to lock the CPU.
- Apply the whole tube of the thermal grease **C** to the center of the CPU as shown (*Figure 8b*).
- Insert the heat sink unit **D** in an angle as indicated in *Figure 8c*.
- Tighten the CPU heat sink screws in the order **1** - **8** (the order as indicated on the label) and reconnect the cable **9** (*Figure 8d*).
- Replace the video card heat sink, component bay cover and tighten the screws (*page 2 - 10*).



Note:
Tighten the screws in the order
1-2-3-4-5-6-7-8 as indicated.



A. CPU
D. Heat Sink

- 8 Screws

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 2666/3200 MHz. The main memory can be expanded up to 64GB. 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, remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
2. The RAM modules will be visible at point **1** on the mainboard ([Figure 9a](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 9b](#)). The RAM module **4** will pop-up ([Figure 9c](#)), and you can then remove it.
4. Pull the latches to release the second module if necessary.
5. Insert a new module (**for only one module** - insert module in the top slot) by 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 cover and the screws (see [page 2 - 6](#)).
9. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

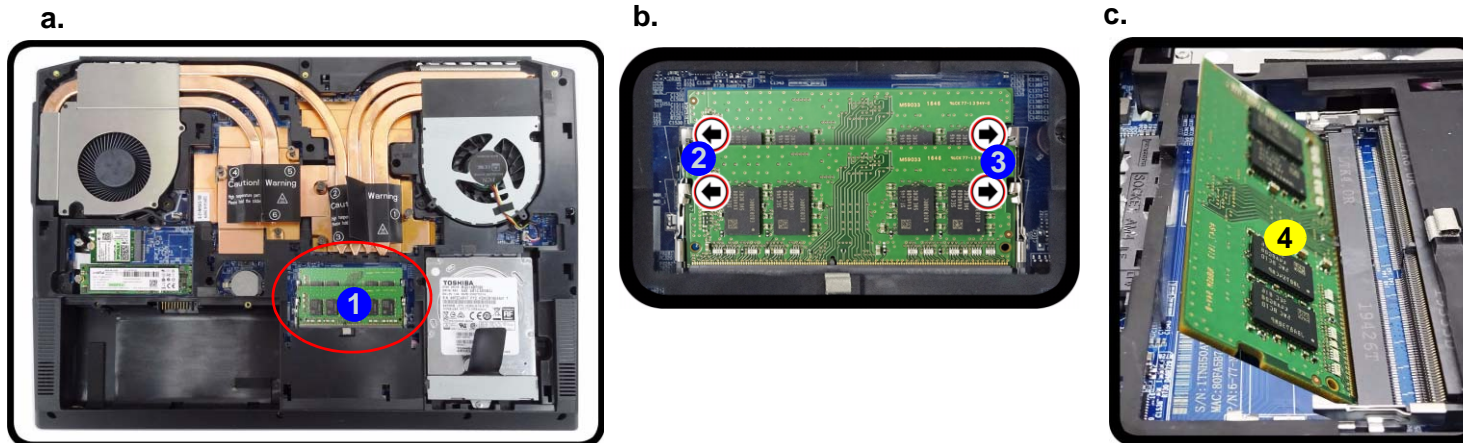


Figure 9
RAM Module Removal

- a. The RAM module(s) 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

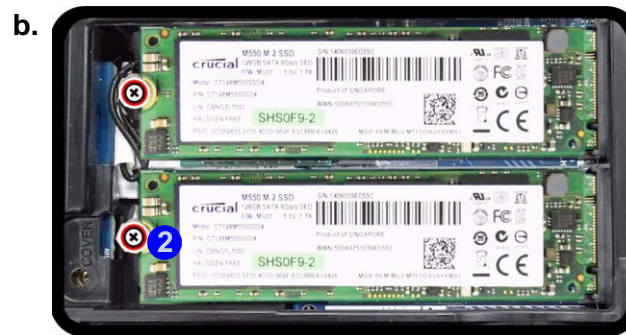
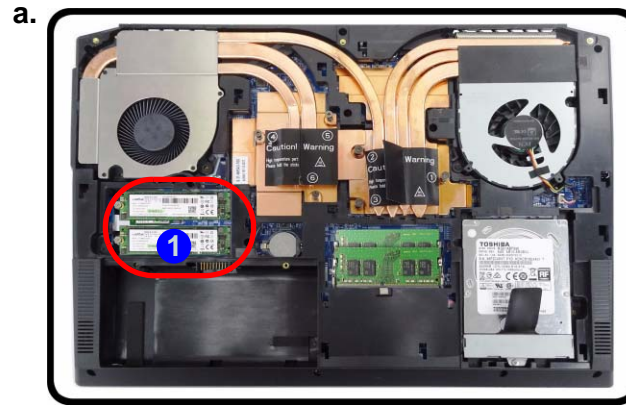
Figure 10
M.2 SSD-1 Module
Removal

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

Removing the M.2 SSD Module

M.2 SSD-1 Module Removal Procedure

- Turn off the computer, turn it over, remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
- The M.2 SSD module will be visible at point **1** on the mainboard ([Figure 10a](#)).
- Remove the screw **2** ([Figure 10b](#)).
- The M.2 SSD module **3** ([Figure 10c](#)) will pop-up, and you can remove it from the computer.



PCIe SSD only



3.M2 SSD PCIE Module

- 1 Screw


M.2 SSD-2 Module Removal Procedure

1. Turn off the computer, turn it over, remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
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.



Figure 11
M.2 SSD-2 Module Removal

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



3.M2 SSD SATA/PCIE Module

- 1 Screw

Disassembly

Figure 12
**Wireless LAN
Module Removal**

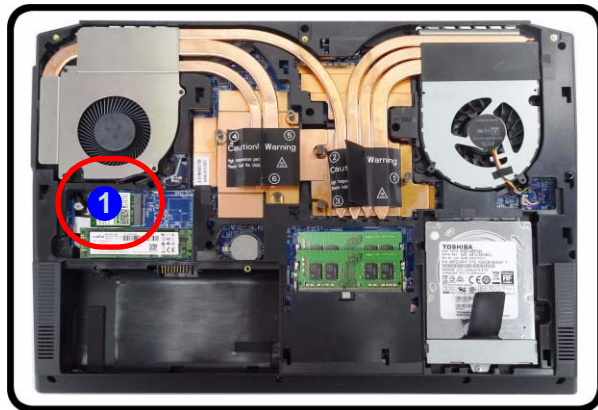
- Locate the WLAN.
- Disconnect the cables **2** & **3**, and remove the screw **4**.
- The WLAN module will pop up.

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket (*Figure 12b*).

Removing the Wireless LAN Module

- Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*), bottom cover (*page 2 - 6*) and SSD-2 (*page 2 - 15*).
- The Wireless LAN module will be visible at point **1** on the mainboard (*Figure 12a*).
- Carefully disconnect the cables **2** & **3**, and then remove the screw **4** (*Figure 12b*).
- The Wireless LAN module **5** (*Figure 12c*) will pop-up, and you can remove it from the computer.
- Reverse the process to install a new module (do not forget to replace the mylar and screws while making sure that the cables are properly inserted as shown in *Figure 12c*).

a.



b.



c.



5. Wireless LAN Module

- 1 Screw

Wireless LAN, Combo Module Cables

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

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

Cable 1 is usually connected to antenna 1 on the module, and cable 2 to antenna 2.

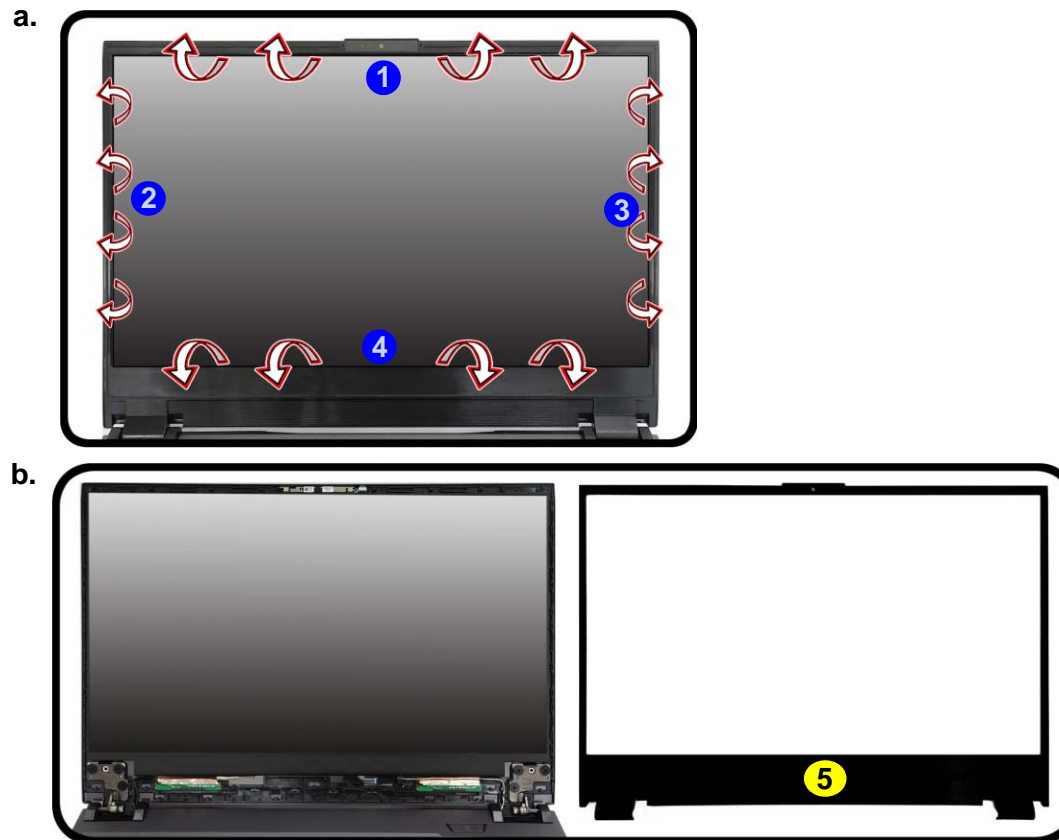
Disassembly

Figure 13
CCD Removal

- a. Carefully release the inner frame of the LCD panel at the points indicated by the arrows.
- b. Remove the LCD front cover.

Removing the CCD

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
2. Lay the computer down on a flat surface with the top case up forming a 90 degree angle.
3. Carefully run your fingers around the inner frame of the LCD panel to lift at points **1** - **4** as indicated by the arrows ([Figure 13a](#)).
4. Remove the LCD front cover **5** ([Figure 13b](#)).



5. LCD Front Cover

- Disconnect the cable **6** from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins **7** away from the base (**Figure 14c**).
- Remove the CCD module **8** (**Figure 14d**).
- Reverse the process to install a new CCD module.

c.



d.



Figure 14
CCD Removal
(cont'd)

- Disconnect the cable from the locking collar socket.
- Remove the CCD module.



8. CCD Module

Appendix A:Part Lists

This appendix breaks down the *NH50AC / NH55ACQ / NH57AC / NH58AC* 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.

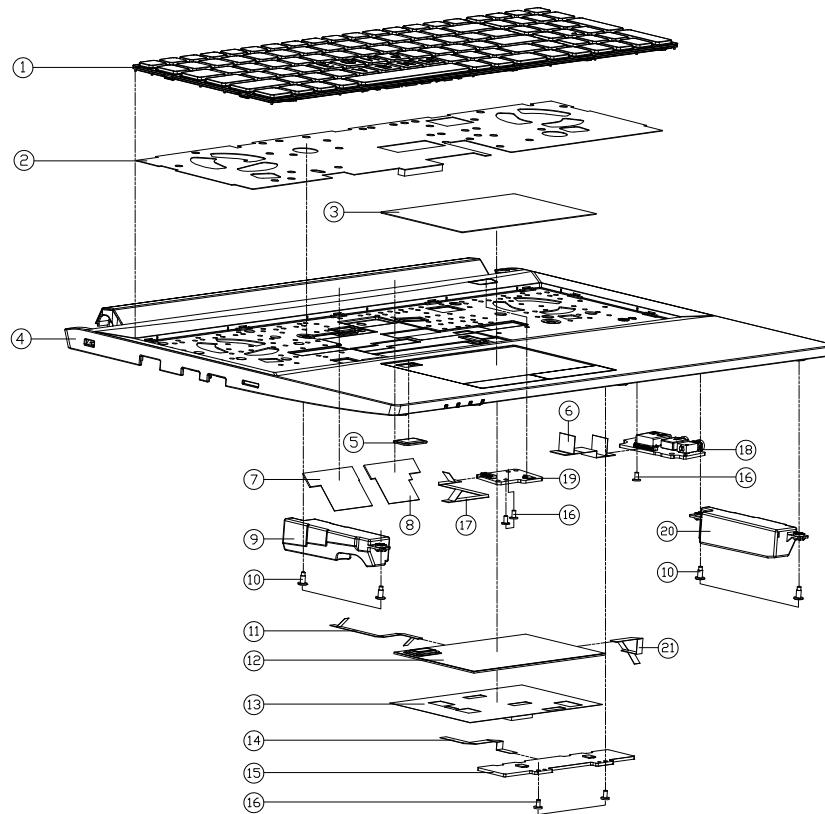
Part List Illustration Location

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

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

| Part | NH50AC | NH58AC | NH55ACQ | NH57AC |
|------------|-------------------|--------------------|--------------------|--------------------|
| Top | <i>page A - 3</i> | | <i>page A - 4</i> | <i>page A - 5</i> |
| Bottom | <i>page A - 6</i> | | | |
| Main Board | <i>page A - 7</i> | | | |
| HDD | <i>page A - 8</i> | | | |
| LCD | <i>page A - 9</i> | <i>page A - 10</i> | <i>page A - 11</i> | <i>page A - 12</i> |

Top (NH50AC / NH58AC)



| ITEM | PART NAME | PART NO | REMARK |
|------|--|-------------------|---|
| 1 | R. TO 100 CUMBERBERRY KEYS BLK W/TE SILV KEY LONG PRINTING SOLUTION WITH VIBRO KEY CO22500 | 6-80-N15Z0-19D-1 | KB FOR MULTI ISC BL KB SERIES |
| 1 | R. TO 100 JAMBUKE CUMBERBERRY KEYS BLK W/TE SILV KEY LONG PRINTING SOLUTION WITH VIBRO KEY CO22500 | 6-80-N15Z0-21D-1 | KB FOR MULTI ISC BL KB SERIES |
| 1 | R. TO 100 JAMBUKE CUMBERBERRY KEYS BLK W/TE SILV KEY LONG PRINTING SOLUTION WITH VIBRO KEY CO22500 | 6-80-N15Z0-33E-1 | KB FOR MULTI ISC BL KB SERIES |
| 1 | R. TO 100 CUMBERBERRY KEYS BLK W/TE SILV KEY LONG PRINTING SOLUTION WITH VIBRO KEY CO22500 | 6-80-N15Z0-01D-1 | KB FOR MULTI ISC BL KB SERIES |
| 1 | LED KEY MAT R. TO CUMBERBERRY KEYS BLK W/TE SILV KEY LONG PRINTING SOLUTION WITH VIBRO KEY CO22500 (100) | 6-80-NH5A0-010-1 | KB FOR LED FOR KEY MATS KB SERIES |
| 1 | R. TO 100 JAMBUKE CUMBERBERRY KEYS BLK W/TE SILV KEY LONG PRINTING SOLUTION WITH VIBRO KEY CO22500 (100) | 6-80-N15Z0-21D-1M | FOR MULTI ISC BL KB JP SERIES KB FOR MCJ |
| 2 | W/D BACKLIT KB MYLAR PET NH50AC | 6-40-NH5A2-010 | FOR MULTI ISC BL KB JP SERIES KB FOR MCJ |
| 2 | MULTI 15C BL KB MYLAR PET NH50AC | 6-40-NH5A2-011 | KB FOR MULTI ISC BL KB SERIES |
| 3 | W/D FP TP MYLAR AG32 NH50AC | 6-40-NH5A2-040 | ONLY FOR W/D FP |
| 3 | W/FP TP MYLAR AG32 NH50AC | 6-40-NH5A2-050 | ONLY FOR W/FP |
| 4 | TOP CASE MODULE NH50AC | 6-39-NH5A2-012 | |
| 5 | TP W/D FP RUBBER (17.9*11.2*1.2T) SILICONE | 6-47-N15Z2-090 | |
| 6 | FFC CABLE AUDIO TO MB L=54MM 5V 22PIN (CNUS) NH50AC | 6-43-NH5A0-010 | |
| 7 | ANTENNA TP2X4 W/AN JEM W/2 PCB CL 400MM 2X6/5G W/2-30MM W/SHED | 6-23-7NH50-040 | |
| 8 | ANTENNA TP2X4 W/AN JEM W/1 PCB CL 400MM 2X6/5G W/2-30MM W/SHED | 6-23-7NH50-030 | |
| 9 | SPEAKER CABLE 25*4*4.7MM 2V 4P 50MM 2P CL-1950-R (UNGATED) NH50AC | 6-23-5NH5A-0L0 | |
| 10 | .SCREW M2*6.2L NI ICT NY FOR SPEAKER | 6-35-Z1120-6R2 | |
| 11 | FFC CABLE FP TO MB L=69MM 5V 6PIN (CNUS) NH50AC | 6-43-NH5A0-071 | |
| 12 | TOUCH PAD SYNAPTICS PTP TM-P3429 (100*60MM (WHGL) NH50ZU | 6-49-N15Z3-011 | ONLY FOR W/D FP |
| 12 | TOUCH PAD SYNAPTICS PTP TM-P3429 (100*60MM (WHGL) NH50ZU | 6-49-N15Z3-021 | ONLY FOR W/FP |
| 13 | TP MYLAR PET NH50AC | 6-40-NH5A2-020 | |
| 14 | FFC CABLE CLICK TO TP L=61MM 3V 4PIN (C0X) NH50ED | 6-43-NH500-051 | |
| 15 | CLICK BOARD V2.0 NH50AC | 6-77-NH5A2-D02 | |
| 16 | SCREW M2*4L KI NI ICT NY (OD=04.5,DT=0.8) | 6-35-B1120-4RC | |
| 17 | FFC CABLE POWER TO MB L=85MM 3V 4PIN (CNUS) NH50AC | 6-43-NH5A0-030 | |
| 18 | AUDIO BOARD FOR USB V2.0 NH50AC | 6-77-NH5A6-D02 | |
| 19 | POWER SW BOARD V2.0 NH50AC | 6-77-NH5A5-D02 | |
| 20 | SPEAKER CABLE 25*4*4.7MM 2V 4P 50MM 2P CL-1950-R (UNGATED) NH50AC | 6-23-5NH5A-0R0 | |
| 21 | FFC CABLE TP TO MB L=45MM 3V 8PIN (CNUS) NH50AC | 6-43-NH5A0-020 | |

Figure A - 1
Top (NH50AC) /
NH58AC

Top (NH55ACQ)

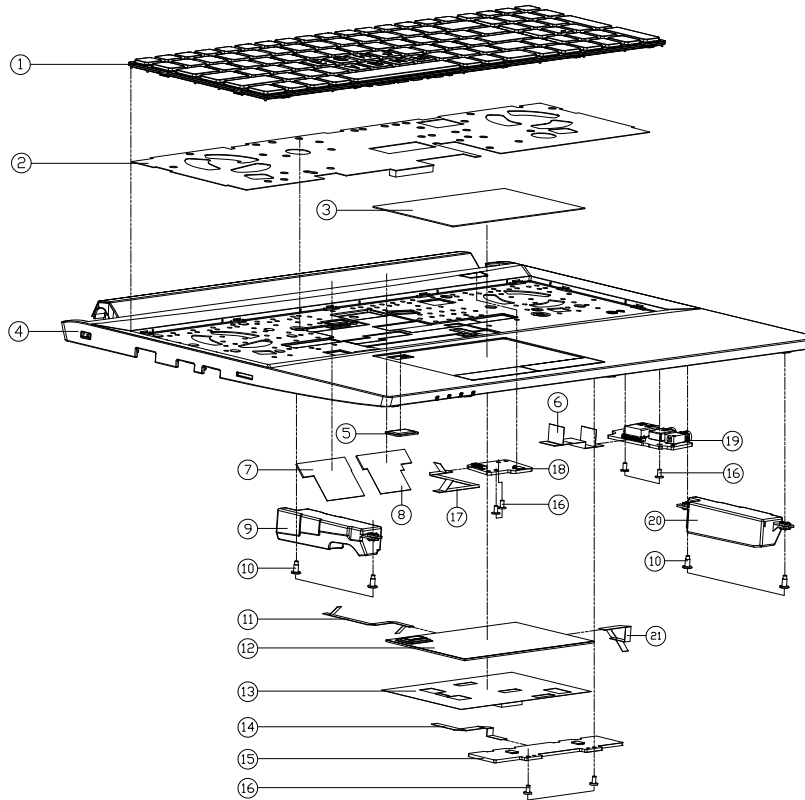
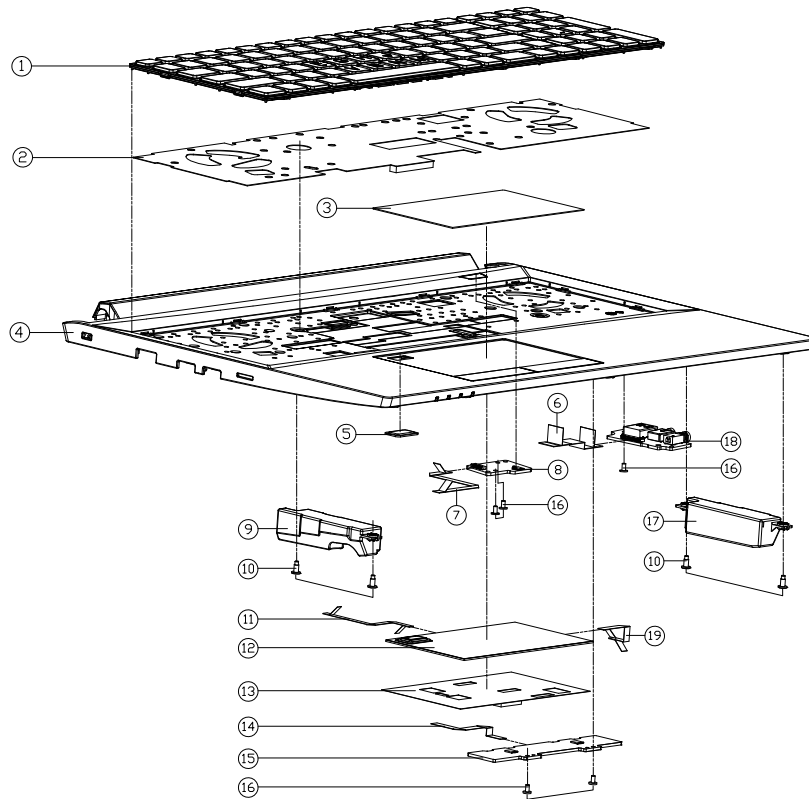


Figure 2
Top (NH55ACQ)

A.Part Lists

| ITEM | PART NAME | PART NO | REMARK |
|------|---|-------------------|---|
| 1 | R. TO CAR COMPRESSOR HEAD BLACK WHITE SILVER LONG PRINTING ISOLATION WITH VARIO KEY CO225MM | 6-80-N15Z0-19D-1 | KB FOR MULTI 15C BL KB SERIES |
| 1 | R. TO JAWICE CYBERPOLYMER HEAD BLACK WHITE SILVER LONG PRINTING ISOLATION WITH VARIO KEY CO225MM | 6-80-N15Z0-21D-1 | KB FOR MULTI 15C BL KB SERIES |
| 1 | R. TO MULTI CAR COMPRESSOR HEAD BLACK WHITE SILVER LONG PRINTING ISOLATION WITH VARIO KEY CO225MM | 6-80-N15Z0-33E-1 | KB FOR MULTI 15C BL KB SERIES |
| 1 | R. TO CAR COMPRESSOR HEAD BLACK WHITE SILVER LONG PRINTING ISOLATION WITH VARIO KEY CO225MM | 6-80-N15Z0-01D-1 | KB FOR MULTI 15C BL KB SERIES |
| 1 | R. TO JAWICE CYBERPOLYMER HEAD BLACK WHITE SILVER LONG PRINTING ISOLATION WITH VARIO KEY CO225MM FOR U.I. | 6-80-N15Z0-21D-1M | FOR MULTI 15C BL KB JP SERIES KB FOR MCJ |
| 2 | W/O BACKLIT KB MYLAR PET NH50AC | 6-40-NH5A2-010 | KB FOR MULTI 15C BL KB JP |
| 2 | MULTI 15C BL KB MYLAR PET NH50AC | 6-40-NH5A2-011 | FOR MULTI 15C BL KB |
| 3 | W/O FP TP MYLAR AG32 NH55EDQ | 6-40-NH552-052 | ONLY FOR W/O FP |
| 3 | W/FP TP MYLAR AG32 NH55EDQ | 6-40-NH552-042 | ONLY FOR W/FP |
| 4 | TOP CASE MODULE NH55ACQ | 6-39-NH552-C13 | |
| 5 | TP W/O FP RUBBER (17.9*11.2*1.2T) SILICONE | 6-47-N15Z2-090 | |
| 6 | FFC CABLE AUDIO TO MB L=54MM 5V 22PIN (CNJUS) NH50AC | 6-43-NH5A0-010 | |
| 7 | ANTENNA IPEX4 WLAN GEN W/L PCB CL. 40X39MM 2.6G/5G W/L: 300MM NH50ED | 6-23-7NH50-040 | |
| 8 | ANTENNA IPEX4 WLAN GEN W/L PCB CL. 40X39MM 2.6G/5G W/L: 250MM NH50ED | 6-23-7NH50-030 | |
| 9 | SPEAKER+CABLE 25X44X7MM 2W 40T 50MM ZP CL. 19X50-L (UNITECH) NH50AC | 6-23-5NH5A-0L0 | |
| 10 | SCREW M2*6.2L NI ICT NY FOR SPEAKER | 6-35-Z1120-6R2 | |
| 11 | FFC CABLE FP TO MB L=69MM 5V 6PIN (CNJUS) NH50AC | 6-43-NH5A0-071 | |
| 12 | TOUCH PAD SYNAPTICS PTP TM-P3429 (080*61MM) (WHGL) NH50ZU | 6-49-N15Z3-011 | ONLY FOR W/O FP |
| 12 | TOUCH PAD SYNAPTICS PTP TM-P3429 (080*61MM) (WHGL) NH50ZU | 6-49-N15Z3-021 | ONLY FOR W/FP |
| 13 | TP MYLAR PET NH50AC | 6-40-NH5A2-020 | |
| 14 | FFC CABLE CLICK TO TP L=61MM 3V 4PIN (GX) NH50ED | 6-43-NH500-051 | |
| 15 | CLICK BOARD V2.0 NH50AC | 6-77-NH5A2-D02 | |
| 16 | SCREW M2*4L KI NI ICT NY (DD=04.5,DT=0.8) | 6-35-B1120-4RC | |
| 17 | FFC CABLE POWER TO MB L=85MM 3V 4PIN (CNJUS) NH50AC | 6-43-NH5A0-030 | |
| 18 | POWER SW BOARD V2.0 NH50AC | 6-77-NH5AS-D02 | |
| 19 | AUDIO BOARD FOR USB V2.0 NH50AC | 6-77-NH5A6-D02 | |
| 20 | SPEAKER+CABLE 25X44X7MM 2W 40T 200MM ZP CL. 19X50-R (UNITECH) NH50AC | 6-23-5NH5A-0R0 | |
| 21 | FFC CABLE TP TO MB L=45MM 3V 8PIN (CNJUS) NH50AC | 6-43-NH5A0-020 | |

Top (NH57AC)



| ITEM | PART NAME | PART NO | REMARK |
|------|--|-------------------|--|
| 1 | BL. QW. COMPROMISED HEAD BLACK WHITE SILVER LONG-PRINTING ISOLATION WITH VIBRO KEY (C02590) | 6-80-N15Z0-19D-1 | KB FOR MULTI 15C BL KB SERIES |
| 1 | BL. QW. JAPANESE COMPROMISED HEAD BLACK WHITE SILVER LONG-PRINTING ISOLATION WITH VIBRO KEY (C02590) | 6-80-N15Z0-21D-1 | KB FOR MULTI 15C BL KB SERIES |
| 1 | BL. QW. BRAZILIAN COMPROMISED HEAD BLACK WHITE SILVER LONG-PRINTING ISOLATION WITH VIBRO KEY (C02590) | 6-80-N15Z0-33E-1 | KB FOR MULTI 15C BL KB SERIES |
| 1 | BL. QW. USA COMPROMISED HEAD BLACK WHITE SILVER LONG-PRINTING ISOLATION WITH VIBRO KEY (C02590) | 6-80-N15Z0-01D-1 | KB FOR MULTI 15C BL KB SERIES |
| 1 | TP FOR W/D OR W/FP MYLAR PET BLACK WHITE SILVER LONG-PRINTING ISOLATION WITH VIBRO KEY (C02590) FOR JPN | 6-80-NH5A0-010-1 | KB FOR LED PER KEY HONO KB SERIES |
| 1 | BL. QW. JAPANESE COMPROMISED HEAD BLACK WHITE SILVER LONG-PRINTING ISOLATION WITH VIBRO KEY (C02590) FOR JPN | 6-80-N15Z0-21D-1M | FOR MULTI 15C BL KB JP. SERIES KB FOR MCJ |
| 2 | W/D BACKLIT KB MYLAR PET NH50AC | 6-40-NH5A2-010 | FOR MULTI 15C BL KB JP. SERIES KB FOR MCJ |
| 2 | MULTI 15C BL KB MYLAR PET NH50AC | 6-40-NH5A2-011 | KB FOR MULTI 15C BL KB SERIES |
| 3 | W/D FP TP MYLAR AG32 NH50AC | 6-40-NH5A2-040 | ONLY FOR W/D FP |
| 3 | W/FP TP MYLAR AG32 NH50AC | 6-40-NH5A2-050 | ONLY FOR W/FP |
| 4 | TOP CASE MODULE NH50AC | 6-39-NH5A2-012 | |
| 5 | TP W/D FP RUBBER (17.9*11.2*1.2T) SILICONE | 6-47-N15Z2-090 | |
| 6 | FFC CABLE AUDIO TO MB L-54MM 5V 22PIN (CNJUS) NH50AC | 6-43-NH5A0-010 | |
| 7 | FFC CABLE POWER TO MB L-85MM 3V 4PIN (CNJUS) NH50AC | 6-43-NH5A0-030 | |
| 8 | POWER SW BOARD V2.0 NH50AC | 6-77-NH5AS-D02 | |
| 9 | SPEAKER CABLE 25*4*44.7MM 2V 4D 50MM 2P CL-1980-L (CONNECTED) NH50AC | 6-23-5NH5A-0L0 | |
| 10 | SCREW M2*6.2L NI ICT NY FOR SPEAKER | 6-35-Z1120-6R2 | |
| 11 | FFC CABLE FP TO MB L-69MM 5V 6PIN (CNJUS) NH50AC | 6-43-NH5A0-071 | |
| 12 | TOUCH PAD SYNAPTICS PTP-TM-P3429 (108*61MM) (WHAL) NH50ZU | 6-49-N15Z3-011 | ONLY FOR W/D FP |
| 13 | TOUCH PAD SYNAPTICS PTP-TM-P3429 (108*61MM) (WHAL) NH50ZU | 6-49-N15Z3-021 | ONLY FOR W/FP |
| 14 | TP MYLAR PET NH50AC | 6-40-NH5A2-020 | |
| 15 | FFC CABLE CLICK TO TP L-61MM 3V 4PIN (GX) NH50ED | 6-43-NH500-051 | |
| 16 | CLICK BOARD V2.0 NH50AC | 6-77-NH5A2-D02 | |
| 17 | SCREW M2*4L KI NI ICT NY (DD=04.5,DT=0.8) | 6-35-B1120-4RC | |
| 18 | SPEAKER CABLE 25*4*44.7MM 2V 4D 20MM 2P CL-1980-R (CONNECTED) NH50AC | 6-23-5NH5A-0R0 | |
| 19 | AUDIO BOARD FOR USB V2.0 NH50AC | 6-77-NH5A6-D02 | |
| 19 | FFC CABLE TP TO MB L-45MM 3V 8PIN (CNJUS) NH50AC | 6-43-NH5A0-020 | |

Figure 3
Top (NH57AC)

Bottom

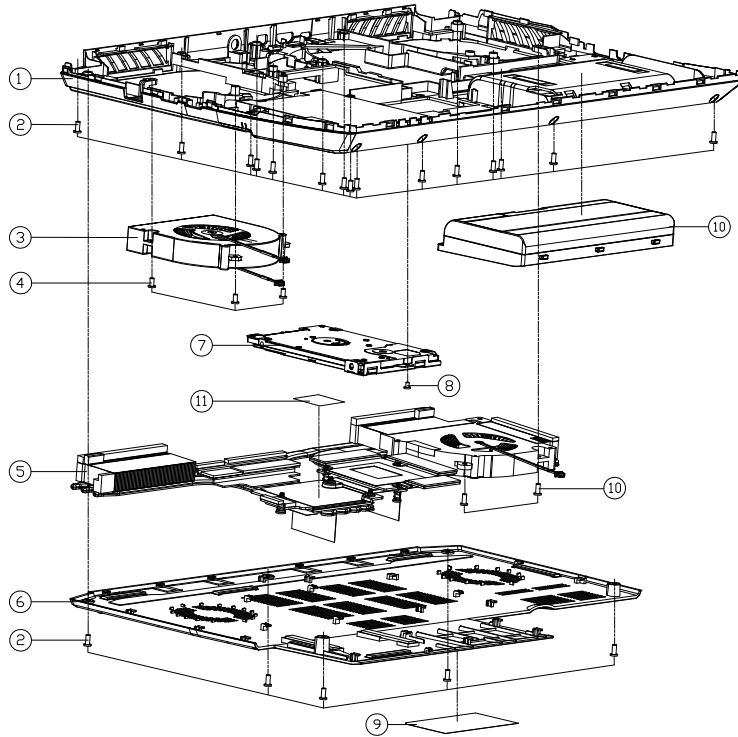
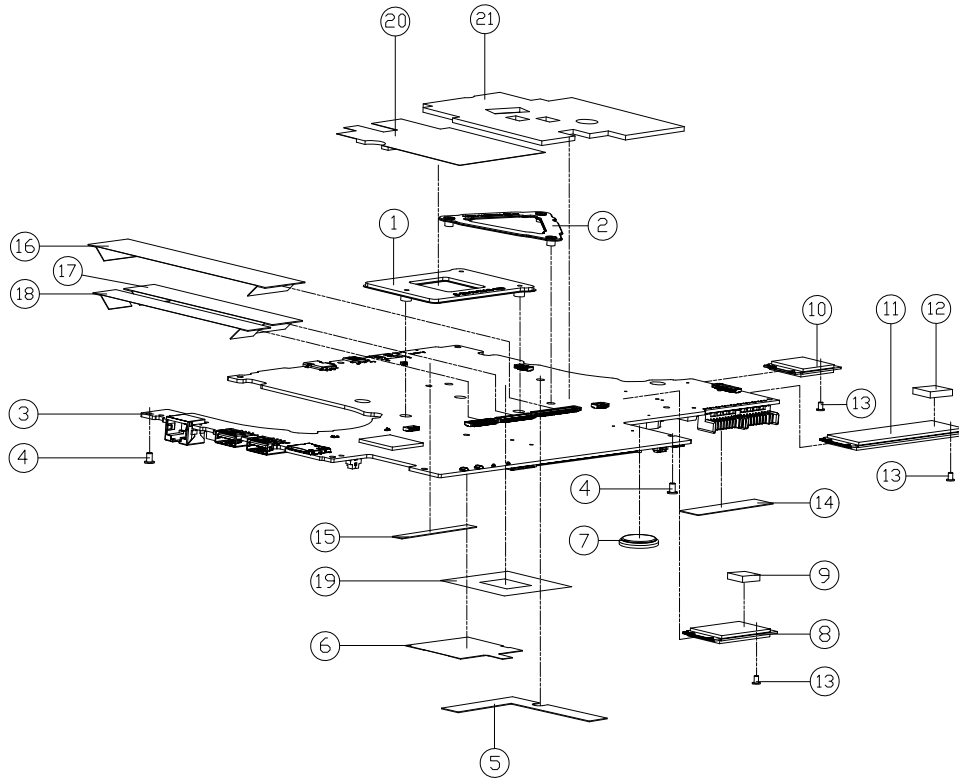


Figure A - 4
Bottom

| ITEM | PART NAME | PART NO | REMARK |
|------|---|-------------------|--------|
| 1 | BOTTOM CASE MODULE NH50AC | 6-39-NH5A3-013 | |
| 2 | .SCREW M2.5*8L KI BK/Z NY ICT | 6-35-B6125-8R0 | |
| 3 | 12V FAN MODULE PWM (FCN) NH50AC | 6-31-NH5A3-201 | |
| 4 | .SCREW M2.5*6L K BZ ICT NY | 6-35-82125-6RA | |
| 5 | HEATSINK MODULE NH50AF1 | 6-31-NH5A3-DA1 | |
| 6 | CPU COVER MODULE NH50AC | 6-42-NH5A3-103 | |
| 7 | W/O HDD ASS'Y NH50ED | 6-79-NH50ED0J-010 | |
| 7 | W/HDD ASS'Y NH50ED | 6-79-NH50ED0J-020 | |
| 8 | SCREW M2*4L KI NI ICT NY (DD=04.5,DT=0.8) | 6-35-B1120-4RC | |
| 9 | PRODUCT LABEL FOR NH50AF1 | 6-45-NH50AF13-010 | |
| 9 | PRODUCT LABEL FOR NH55AFW | 6-45-NH55AFW3-010 | |
| 9 | PRODUCT LABEL FOR NH57AF1 | 6-45-NH57AF13-010 | |
| 9 | PRODUCT LABEL FOR NH58AF1 | 6-45-NH58AF13-010 | |
| 9 | PRODUCT LABEL FOR NH50AC | 6-45-NH50AC03-010 | |
| 9 | PRODUCT LABEL FOR NH55ACQ | 6-45-NH55ACQ3-010 | |
| 9 | PRODUCT LABEL FOR NH57AC | 6-45-NH57AC03-010 | |
| 9 | PRODUCT LABEL FOR NH58AC | 6-45-NH58AC03-010 | |
| 10 | IMP S LI BUSH/SHAWZHM SCP IMP.LIC. COE. QWATEO 9902229HED 500MM (TEXTURE) P/BK/EF | 6-87-PB50S-61D12 | |
| 11 | GREASE GA-690(0.6G) P157SM | 6-47-P1578-020 | |

Main Board



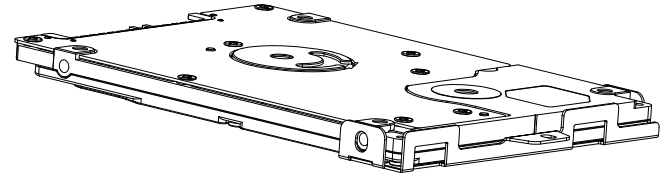
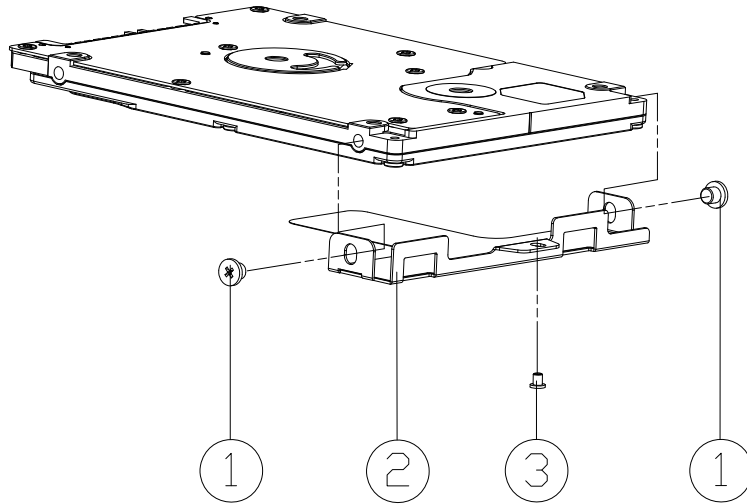
| ITEM | PART NAME | PART NO | REMARK |
|------|--|---------------------|--|
| 1 | CPU SUPPORT AMD AM4 SECC T=15 NH50AC | 6-33-NH5AS-011 | |
| 2 | VGA SUPPORT AMD SECC T=0.5T NH50AC | 6-33-NH5AS-021 | |
| 3 | MAIN BOARD V20 (CEP/PA/RT) ESC BL K00V/TP/PA/VO USB CHARGED M50AC | 6-77-NH50AC00-D02 | |
| 3 | MAIN BOARD V20 (CEP/PA/RT) ESC BL K00V/TP/PA/VO USB CHARGED M50AC | 6-77-NH50AC00-D02-3 | |
| 3 | MAIN BOARD V20 (CEP/PA/RT) ESC BL K00V/TP/PA/VO USB CHARGED M50AC | 6-77-NH50AF10-D02 | |
| 3 | MAIN BOARD V20 (CEP/PA/RT) ESC BL K00V/TP/PA/VO USB CHARGED M50AC | 6-77-NH50AF10-D02-3 | |
| 3 | MAIN BOARD V20 (CEP/PA/RT) ESC BL K00V/TP/PA/VO USB CHARGED M50AF1 | 6-77-NH50AF10-D02-7 | |
| 4 | SCREW M2.5x4L (D=4.6,T=0.8) KI NI ICT NY | 6-35-B1125-4RA | |
| 5 | VGA ABSORBER-1 (60x48x0.35) NH50AC | 6-47-NH5AS-021 | |
| 6 | AMD CPU SOCKET MYLAR (51x43x0.2T) NH50AC | 6-40-NH5AS-010 | |
| 7 | BATTERY 3V 220MA BBBCR2032B (KTS) | 6-23-6A2B2-030 | |
| 8 | SSD M2 2280 256G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS (VARIANT) | 6-85-D51R6-H04 | OPTION |
| 8 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D51R6-K00 | OPTION |
| 8 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D51R6-101 | OPTION |
| 8 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D515B-B00 | OPTION |
| 8 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D515B-K00 | OPTION |
| 8 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D515B-S0B | OPTION |
| 8 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D511T-S05 | OPTION |
| 8 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D515B-102 | OPTION |
| 9 | THERMAL PAD 14.7x14.7x7.0MM (M4500) W650DC | 6-48-W65D3-030 | FDR W/ 2ND M2 SSD |
| 10 | HEAT CONDUCTIVE THERMAL PAD 2.50MM Wx4.0MM Hx0.15MM HX 2280 P1001 | 6-88-P75FF-4210 | |
| 10 | HEAT CONDUCTIVE THERMAL PAD 2.50MM Wx4.0MM Hx0.15MM HX 2280 P1001 | 6-88-N15CF-4210 | |
| 10 | HEAT CONDUCTIVE THERMAL PAD 2.50MM Wx4.0MM Hx0.15MM HX 2280 P1001 | 6-88-N15CF-0C00 | |
| 11 | SSD M2 2280 256G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D51R6-K00 | OPTION |
| 11 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D515B-S0B | OPTION |
| 11 | SSD M2 2280 512G P1001 COMPACT-20 CPU 20MM HEIGHT 20 TLE 64 LAYERS | 6-85-D511T-S05 | OPTION |
| 12 | THERMAL PAD M4500 (17.3x17.3x2.75TMM) N750BU | 6-48-N7503-010 | FDR W/ 1ST M2 SSD |
| 13 | SCREW M2x2L KI NI ICT NY (D=0.9 ,T=0.8) | 6-35-B1120-2RA | |
| 14 | TAPE MYLAR (C),MYLAR M550J | 6-40-M55J2-030 | |
| 15 | TAPE MYLAR (B),MYLAR M550J | 6-40-M55J2-020 | |
| 16 | FFC CABLE KB TO MB L=102MM 5V 28PIN (CNLS) NH50AC | 6-43-NH5A0-050 | FDR M2 SSD FOR LED PER KEY BOARD KB SCREENS |
| 17 | FFC CABLE KB BK 4HP TO MB L=102MM 5V 40PIN (CNLS) NH50AC | 6-43-NH5A0-060 | FDR M2 SSD FOR LED PER KEY BOARD KB SCREENS |
| 18 | FFC CABLE KB BK 30P TO MB L=102MM 5V 30PIN (CNLS) NH50AC | 6-43-NH5A0-040 | FDR M2 SSD FOR LED PER KEY BOARD KB SCREENS |
| 19 | N86 G0 CHIP MYLAR PET (37.5x37.5x0.2) P950ED | 6-40-P95NS-D20 | FDR NH5XAC |
| 19 | N86 G1 G2 CHIP MYLAR PET (37.5x37.5x0.2) P775TM | 6-40-P77F3-010 | FDR NH5XAF1 |
| 20 | MB MYLAR FDR NOISE NH50AC | 6-40-NH5AS-020 | |
| 21 | MB CR SPONGE (100x5x8x215T) FDR NOISE NH50AC | 6-47-0019A-A15 | |

Figure A - 5
Main Board

A.Part Lists

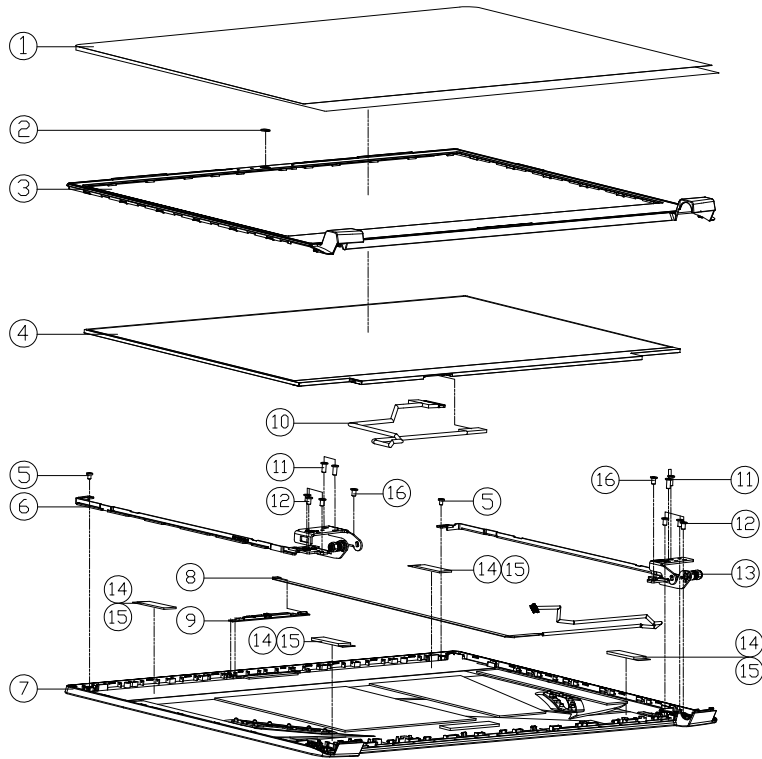
HDD

Figure A - 6
HDD



| ITEM | PART NAME | PART NO | REMARK |
|------|---|----------------|--------|
| 1 | SCREW M3*3.0L KI NI ICT NY | 6-35-B1130-3R5 | |
| 2 | HDD BKT 7MM SECC T=0.5 N250LU | 6-33-N250J-011 | |
| 3 | SCREW M2*4L KI NI ICT NY (DD=Ø4.5,DT=0.8) | 6-35-B1120-4RC | |

LCD (NH50AC)



| ITEM | PART NAME | PART NO | REMARK |
|------|--|-------------------|---------------------|
| 1 | LCD PROTECT MYLAR BOPP N150ZU | 6-40-N15Z8-010 | |
| 2 | CCD LENS PMMA (DIAMETER 3.6MM) (MP1) P970EN | 6-42-P97N1-011-1 | |
| 3 | LCD FRONT COVER MODULE NH50ED | 6-39-NH501-013 | |
| 4 | LCD NH56F FHD/VVA/N7/NEN GT/ETP INNO-LIX NH56ACE-ENI QLED 2.6MM | 6-50-LBB26-V020 | |
| 4 | LCD NH56F FHD/VVA/N7/NEN GT/ETP LG LPS5AFC-SPR2 QLED 2.6MM | 6-50-LBB26-L121 | |
| 4 | LCD NH56F FHD/VVA/V2/2H2/M/NEN GT/ETP PANDA LMIS4LQ.L LED 3.2MM | 6-50-LBB32-Y150 | |
| 4 | LCD NH56F FHD/VVA/V2/2H2/M/NEN GT/ETP LG LPS5AFC-SPR3 LED 3.2MM | 6-50-LBB32-L015 | |
| 5 | SCREW M2*3L KI BZ ICT NY (DD=0.45,DT=0.4) | 6-35-B6120-3RD | |
| 6 | HINGE L (SK7+SGCC) NH50AC | 6-33-NH5A1-0L0 | |
| 7 | LCD BACK COVER MODULE NH50ED | 6-39-NH501-022 | |
| 8 | CCD CABLE L=550MM 30V 8PIN (HT) NH50ED NH50ED | 6-43-NH50T-011-1 | |
| 9 | OPC CABLE FOR EDP (OPTIONAL) IN DISK READ/FLASH WRITE LED VCR MEMORY INDEX WITH HD | 6-88-N15ZC-5100 | OPTION |
| 9 | OPC CABLE FOR EDP (OPTIONAL) IN DISK READ/FLASH WRITE LED VCR MEMORY INDEX WITH HD | 6-88-N15ZC-4900 | OPTION |
| 10 | WIRE CABLE FOR EDP 300MM 30V 1 30 PIN (HT/LV COM/V) 430LPROSD PIS0ET | 6-43-PB501-032-2N | |
| 10 | WIRE CABLE FOR EDP 300MM (D 19V 30PIN (COM/ALS COM/LV)430LPROSD-HF) N050AJ | 6-43-N85H1-010-2S | |
| 11 | .SCREW M2.5*6L K BZ ICT NY | 6-35-82125-6RA | |
| 12 | .SCREW M2.5*4L KI NI ICT NY | 6-35-21125-4R0 | |
| 13 | HINGE R (SK7+SGCC) NH50AC | 6-33-NH5A1-0R0 | |
| 14 | PANEL LA LA ADHESIVE(35*10*1) NH50ED | 6-47-NH501-080-1 | FOR 6-50-LBB32-Y150 |
| 15 | LA LA ADHESIVE (35*10*1.6T) NH50ED | 6-47-NH501-0A0-1 | 6-50-LBB32-L015 |
| 16 | SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY | 6-35-B1125-4RA | |

Figure A - 7
LCD (NH50AC)

LCD (NH58AC)

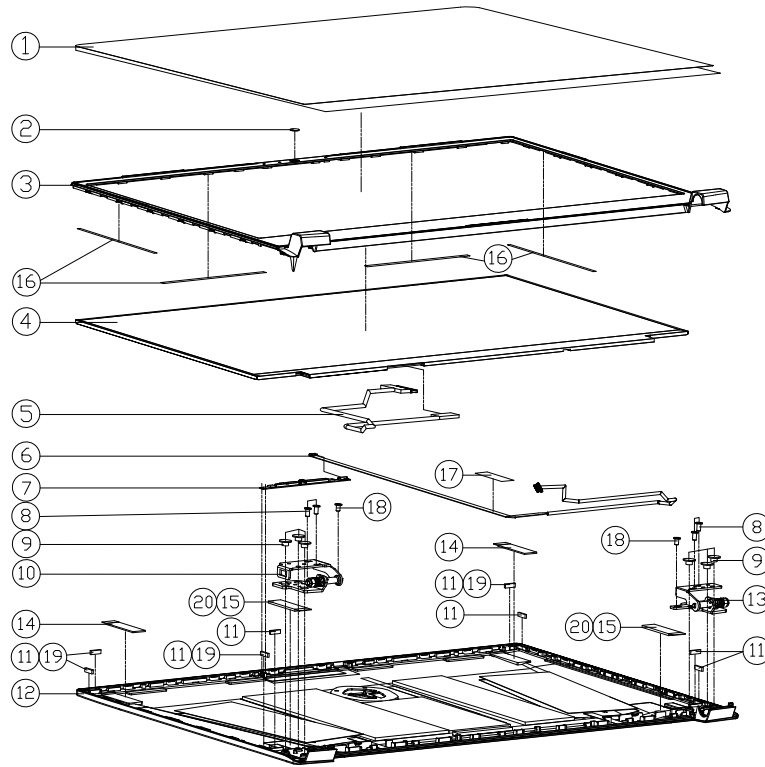
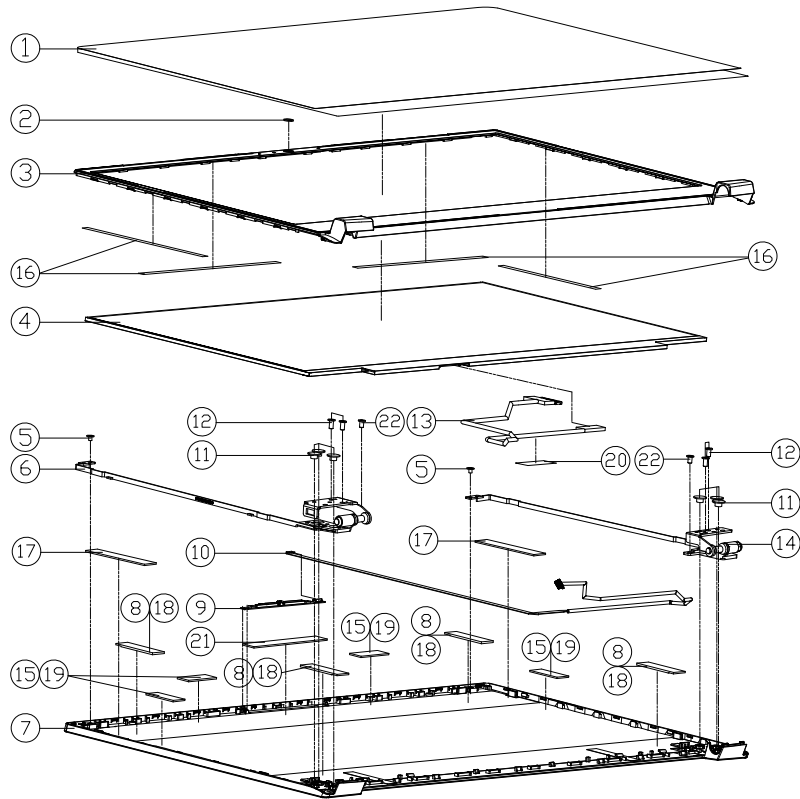


Figure A - 8
LCD (NH58AC)

A.Part Lists

| ITEM | PART NAME | PART NO | REMARK |
|------|--|-------------------|--|
| 1 | LCD PROTECT MYLAR BOPP N150ZU | 6-40-N15Z8-010 | |
| 2 | CCD LENS PMMA (DIAMETER 3.6MM) (MPI) P970EN | 6-42-P97N1-011-1 | |
| 3 | LCD FRONT COVER MODULE NH50ED | 6-39-NH501-013 | |
| 4 | LCD N56' FHD/IPS/VAH2/SV G-SYNC/AM/NDN GT/EDP LG LP156WFC-SPR2 LED 2.6MM | 6-50-LBB26-L121 | |
| 4 | LCD N56' FHD/VA/VA7/NDN GT/EDP INNOXLX N56HCE-ENI LED 2.6MM | 6-50-LBB26-V020 | |
| 4 | LCD N56' FHD/VA/20H2/AM/NDN GT/EDP PANDA LMS6LFL LED 3.2MM | 6-50-LBB32-Y150 | |
| 4 | LCD N56' FHD/IPS/AM/NDN GT/EDP LG LP156WFC-SP13 LED 3.2MM | 6-50-LBB32-L015 | |
| 5 | WIRE CABLE FOR EDP 300MM 30V 1 30 PIN (HT/LW CON/LV-ACOLPSS) PIS0ET | 6-43-PB501-032-2N | FDR 6-50-LBB26-V020 6-50-LBB32-L015 |
| 5 | WIRE CABLE FOR EDP 4K 300MM (D 19V 30PIN CON/ALS CON/LJ0P02-1F) N50HJ | 6-43-NB5H1-010-2S | FDR 6-50-LBB26-L121 6-50-LBB32-Y150 |
| 6 | CCD CABLE L=550MM 30V 8PIN (HT) NH50ED NH50ED | 6-43-NH50T-011-1 | |
| 7 | HC COVER CAM FRONT (150X100X1.5) IN 10 DOTS 18001 FROM WHITE-LED V02-NDN0000 0002 V01HTD | 6-88-N15ZC-5100 | OPTION |
| 7 | HC COVER CAM FRONT (150X100X1.5) IN 10 DOTS 18001 FROM WHITE-LED V02-NDN0000 0002 V01HTD | 6-88-N15ZC-4900 | OPTION |
| 8 | SCREW M2.5*6L K BZ ICT NY | 6-35-B2125-6RA | |
| 9 | SCREW M2.5*2.5L KI BK/Z ICT NY(08,T=0.6) | 6-35-B6125-2R5 | |
| 10 | HINGE L MODULE NH58EDQ | 6-33-NH581-L01 | |
| 11 | LCD RUBBER (3*2.5*1.45T) SLICDN BLACK NH58EDQ | 6-47-NH581-041 | FDR 6-50-LBB32-Y150 6-50-LBB32-L015 |
| 12 | LCD BACK COVER MODULE NH58EDQ | 6-39-NH581-023 | |
| 13 | HINGE R MODULE NH58EDQ | 6-33-NH581-R01 | |
| 14 | LCD LALA SPRING (35*10*1.35T) FM92822K+CR4832 NH58EDQ | 6-47-0019A-35P | |
| 15 | LCD LALA SPRING (35*10*2.0T) FM92822K+CR4832 NH58EDQ | 6-47-0019A-35Q | FDR 6-50-LBB26-V020 6-50-LBB26-L121 |
| 16 | FRONT COVER GLUE U6D (NITTO 5000 135*3*0.15) FOR W655S2 | 6-40-W6551-040 | |
| 17 | TDP CASE MYLAR FR83 25*7*0.05 P180HM | 6-40-P1802-030 | |
| 18 | SCREW M2.5*4L CD=4.6,T=0.8) KI NI ICT NY | 6-35-B1125-4RA | |
| 19 | LCD RUBBER (3*2.5*1.45T) SLICDN BLACK NH58EDQ | 6-47-NH581-041 | FDR 6-50-LBB26-V020 6-50-LBB26-L121 |
| 20 | LCD LALA SPRING (35*10*0.75T) FM92822K+CR4832 NH58EDQ | 6-47-0019A-35R-1 | FDR 6-50-LBB32-Y150 6-50-LBB32-L015 |

LCD (NH55ACQ)

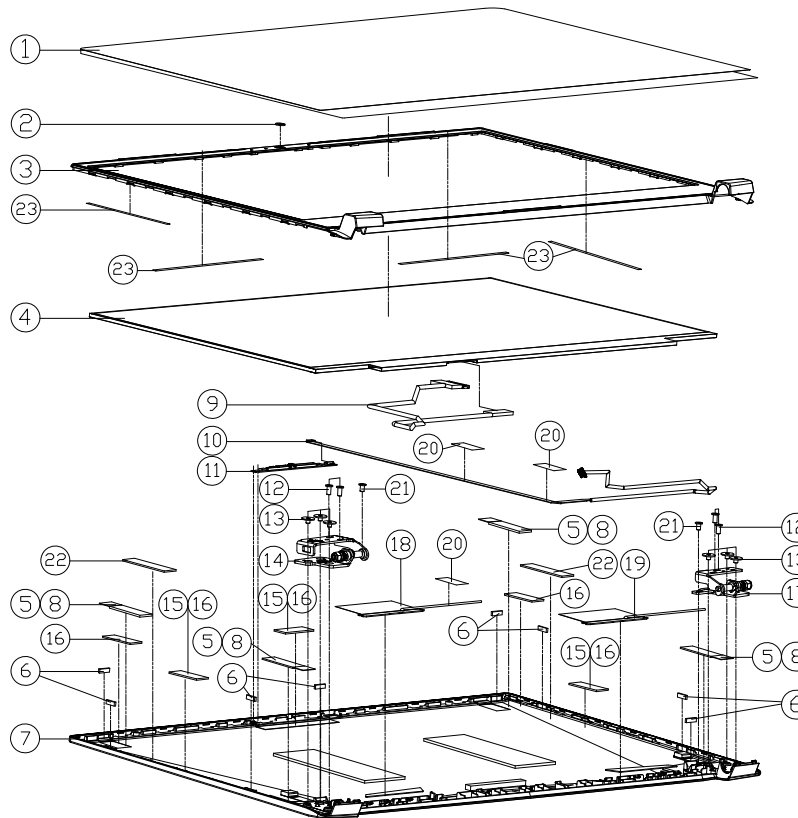


| ITEM | PART NAME | PART NO | REMARK |
|------|---|-------------------|--|
| 1 | LCD PROTECT CLOTH NH55EDQ | 6-44-NH558-010 | |
| 2 | CCD LENS PMMA (DIAMETER 36MM) (MPI) P970EN | 6-42-P97N1-011-1 | |
| 3 | LCD FRONT COVER MODULE NH50ED | 6-39-NH501-014 | |
| 4 | LCD NH56' FHD/VVA/N7/ANEN GT/EEP INNOVUX NES8KE-EM (LED) 28MM | 6-50-LBB26-V020 | |
| 4 | LCD NH56' FHD/PS/MA/N7/ANEN GT/EEP LG LP55WFG-SPR2 (LED) 28MM | 6-50-LBB26-L121 | |
| 4 | LCD NH56' FHD/VVA/2B/24/ANEN GT/EEP PANDA LMSLFLQL (LED) 32MM | 6-50-LBB32-Y150 | |
| 4 | LCD NH56' FHD/PS/MA/N7/ANEN GT/EEP LG LP55WFC-SPR3 (LED) 32MM | 6-50-LBB32-L015 | |
| 5 | SCREW M2*3L K1 BZ ICT NY (DD=#4.5,DT=0.4) | 6-35-B6120-3RD | |
| 6 | HINGE L (SK7) NH55EDQ | 6-33-NH551-0L1 | |
| 7 | LCD BACK COVER MODULE NH55EDQ | 6-39-NH551-023 | |
| 8 | LCD BACK SPONGE DOWN (30*10*1.5) (CS-10-H3043824-FMS92220) NH55EDQ | 6-47-0019A-C01-1 | FDR 6-50-LBB32-Y150 6-50-LBB32-L015 |
| 9 | UV CURABLE CLEAR FILM (0.25*10*1.5) (CS-10-H3043824-FMS92220) NH55EDQ | 6-88-N15ZC-5100 | OPTION |
| 9 | UV CURABLE CLEAR FILM (0.25*10*1.5) (CS-10-H3043824-FMS92220) NH55EDQ | 6-88-N15ZC-4900 | OPTION |
| 10 | CCD CABLE L=550MM 30V 8PIN (GHT) NH50ED NH50ED | 6-43-NH50T-011-1 | |
| 11 | SCREW M2.5*2.5L K1 BK/Z ICT NY(Ø8,T=0.6) | 6-35-B6125-2R5 | |
| 12 | SCREW M2.5*6L K BZ ICT NY | 6-35-82125-6RA | |
| 13 | WIRE CABLE FOR EDP 300MM 30V 1 30 PIN (HTLV CON/LV)-A04LPS00 PRESET | 6-43-PB501-032-2N | |
| 14 | WIRE CABLE FOR EDP 4K 300MM (Q) 10V 30PIN (CM/LV)-A04LPS00-1F7 NESUJ | 6-43-N85H1-010-2S | |
| 14 | HINGE R (SK7) NH55EDQ | 6-33-NH551-0R1 | |
| 15 | LCD SPONGE (SM55 25*10*1T) NH55EDQ | 6-47-0019A-25R | FDR 6-50-LBB32-Y150 6-50-LBB32-L015 |
| 16 | FRONT COVER GLUE ULD ONTTO 5000 (25*3*0.15) FDR W6SSSZ | 6-40-W6551-040 | |
| 17 | LCD SPONGE (60*10*1.5T) SM55 P970EN | 6-47-0019A-60U | FDR 6-50-LBB26-V020 6-50-LBB26-L121 |
| 18 | LALATAPE FDR 026 PANEL (40*10*1.2T) N232WU | 6-47-N23U1-010 | FDR 6-50-LBB26-V020 6-50-LBB26-L121 |
| 19 | LCD SPONGE (SM55 25*10*1-5T) NH55EDQ | 6-47-0019A-25Q | FDR 6-50-LBB26-V020 6-50-LBB26-L121 |
| 20 | TOP CASE MYLAR FR83 25*7*0.05 P180HM | 6-40-P1802-030 | |
| 21 | LCD SPONGE (60*10*1.5T) SM55 P970EN | 6-47-0019A-60U | |
| 22 | SCREW M2.5*4L (D=4.6,T=0.8) K1 NI ICT NY | 6-35-B1125-4RA | |

Figure A - 9
LCD (NH55ACQ)

LCD (NH57AC)

Figure A - 10
LCD (NH57AC)



| ITEM | PART NAME | PART NO | REMARK |
|------|--|-------------------|--|
| 1 | LCD PROTECT MYLAR BOPP N150ZU | 6-40-N15Z8-010 | |
| 2 | CCD LENS PMMA (DIAMETER 3.6MM) (MPI) P970EN | 6-42-P97N1-011-1 | |
| 3 | LCD FRONT COVER MODULE NH50ED | 6-39-NH501-013 | |
| 4 | LCD NIS6' FHD/VVA/N7/NDN GT/EP DINKLUX NIS6AE-ENT LED 28MM | 6-50-LBB26-V020 | |
| 4 | LCD NIS6' FHD/VPS/MA/NSV G-SIN/NI/NDN GT/EP LG LPS6WFC-SPR2 LED 28MM | 6-50-LBB26-L121 | |
| 4 | LCD NIS6' FHD/VVA/20H/NA/NDN GT/EP PANDA LMS6LFL LED 32MM | 6-50-LBB32-Y150 | |
| 4 | LCD NIS6' FHD/VPS/MA/NDN GT/EP LG LPS6WFC-SPD3 LED 32MM | 6-50-LBB32-L015 | |
| 5 | TAPE FOR FIX 1.35MM PANEL FM2822K+CR4832 P950EN | 6-40-P95N1-011 | FOR 6-50-LBB32-Y150 6-50-LBB32-L015 |
| 6 | LCD RUBBER (3#2.5*1.45T) SILICON BLACK NH58EDQ | 6-47-NH581-041 | FOR 6-50-LBB26-V020 6-50-LBB26-L121 |
| 7 | BACK COVER MODULE NH57ED | 6-39-NH571-023 | |
| 8 | LALATAPE FOR 026 PANEL (40*10*1.8T) N140WU | 6-47-N1401-010 | FOR 6-50-LBB26-V020 6-50-LBB26-L121 |
| 9 | WIRE CABLE FOR EIP 300MM 30V 1.3A PIN 6H/A/V CON/V/D-430LPROD PISRET | 6-43-PB501-032-2N | |
| 9 | WIRE CABLE FOR EIP 4K 300MM (D 19V 30PIN CON/ALS CON/L0902-FF) N630U | 6-43-N85H1-010-2S | |
| 10 | CCD CABLE L=550MM 30V 8PIN (4T) NH50ED | 6-43-NH50T-011-1 | |
| 11 | MC CAMERA FRONT (20MP) 1/4" 1.5UM PIXEL FROM VITE-ED VLS-RECAMERA-DIGI-VIS-110 | 6-88-N15ZC-5100 | OPTION |
| 11 | MC CAMERA FRONT (20MP) 1/4" 1.5UM PIXEL FROM VITE-ED VLS-RECAMERA-DIGI-VIS-110 | 6-88-N15ZC-4900 | OPTION |
| 12 | SCREW M2.5*6L K BZ ICT NY | 6-35-82125-6RA | |
| 13 | SCREW M2.5*2.5L KI BK/Z ICT NY(Ø8,T=0.6) | 6-35-B6125-2R5 | |
| 14 | HINGE L SK7 NH57AC | 6-33-NH5A1-7L0 | |
| 15 | LCD SPONGE (SM55 25*10*1T) NH55EDQ | 6-47-0019A-25R | FOR 6-50-LBB32-L015 6-50-LBB32-Y150 |
| 16 | LCD SPONGE (SM55 25*10*1.5T) NH55EDQ | 6-47-0019A-25Q | FOR 6-50-LBB26-V020 6-50-LBB26-L121 |
| 17 | HINGE R SK7 NH57AC | 6-33-NH5A1-7R0 | |
| 18 | ANTENNA (SLOT) IPX4 WLAN VGT WL2 PCB DL 24G/5G 450MM NH57ED | 6-23-7NH57-020 | |
| 19 | ANTENNA (SLOT) IPX4 WLAN VGT WL1 PCB DL 24G/5G 250MM NH57ED | 6-23-7NH57-010 | |
| 20 | TAPE MYLAR TRANSPARENT (20*10*0.05) P180HM | 6-40-P1803-020 | |
| 21 | SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY | 6-35-B1125-4RA | |
| 22 | LCD SPONGE (60*10*1.5T) SM55 P970EN | 6-47-0019A-60U | FOR 6-50-LBB32-L015 6-50-LBB32-Y150 |
| 23 | FRONT COVER GLUE (LD INTTD 5000 135*3#0.15) FOR W655SZ | 6-40-W6551-040 | |

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *NH50AC / NH55ACQ / NH57AC / NH58AC* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

| Diagram - Page | Diagram - Page | Diagram - Page |
|--|---|---------------------------------------|
| System Block Diagram - Page B - 2 | GPU Decoupling 2 - Page B - 26 | Audio Codec - Page B - 50 |
| Processor 1/8 - Page B - 3 | Straps and XTAL - Page B - 27 | KBC-ITE IT5570 - Page B - 51 |
| Processor 2/8 - Page B - 4 | IFP I/O Interface - Page B - 28 | RGB KB, Fan - Page B - 52 |
| Processor 3/8 - Page B - 5 | Misc - GPIO, I2C and ROM - Page B - 29 | PER KEY LED KB - Page B - 53 |
| Processor 4/8 - Page B - 6 | NVIDIA Power Sequence - Page B - 30 | 5V, 5VS, 3.3V, 3.3VS - Page B - 54 |
| Processor 5/8 - Page B - 7 | GPU NVVDD, FBVDDQ - Page B - 31 | VDD3, VDD5 - Page B - 55 |
| Processor 6/8 - Page B - 8 | GPU GND - Page B - 32 | 1.05VA, 1.05VS, 1.5VA - Page B - 56 |
| Processor 7/8 - Page B - 9 | Panel, Inverter - Page B - 33 | VDDQ, VTT_MEM, 2.5V - Page B - 57 |
| Processor 8/8 - Page B - 10 | Mini DP - Page B - 34 | MP2855GU, VCore - Page B - 58 |
| DDR4 CHA SO-DIMM - Page B - 11 | HDMI - Page B - 35 | VDD_RUN, VDDCR_SOC - Page B - 59 |
| DDR4 CHB SO-DIMM - Page B - 12 | PCH 1/5 - Page B - 36 | VDDCR_SOC_S5, VDDCR_ALW - Page B - 60 |
| Output Power - Page B - 13 | PCH 2/5 - Page B - 37 | 1.8VA, NV3V3, 3.3VA - Page B - 61 |
| VGA PCI Express - Page B - 14 | PCH 3/5 - Page B - 38 | PEX_VDD, IV8, AON/RUN - Page B - 62 |
| GPU Frame Buffer Partition - Page B - 15 | PCH 4/5 - Page B - 39 | NVVDD1 - Page B - 63 |
| Frame Buffer A - Page B - 16 | PCH 5/5 - Page B - 40 | NVVDD2 - Page B - 64 |
| Frame Buffer A - Page B - 17 | M.2 WLAN+BT - Page B - 41 | FBVDD - Page B - 65 |
| Frame Buffer B - Page B - 18 | M.2 Card - Page B - 42 | FBVDD - Page B - 66 |
| Frame Buffer B - Page B - 19 | USB Charger - Page B - 43 | AC_In, Charger - Page B - 67 |
| Frame Buffer C/D - Page B - 20 | PD Controller ANX7411 - Page B - 44 | 2.5VS, VDDP_RUN - Page B - 68 |
| Frame Buffer C - Page B - 21 | USB Type-C, ANX7440 Retimer - Page B - 45 | VDDP_ALW - Page B - 69 |
| Frame Buffer C - Page B - 22 | DP + USB Type-C - Page B - 46 | Audio Board - Page B - 70 |
| Frame Buffer D - Page B - 23 | Card Reader / LAN RTL8411B - Page B - 47 | PW Board - Page B - 71 |
| Frame Buffer D - Page B - 24 | HDD, Click TP, Audio, Hall Con. - Page B - 48 | Click Board - Page B - 72 |
| GPU Decoupling 1 - Page B - 25 | LED, CCD, TPM, Power SW Con. - Page B - 49 | PW Board - Page B - 73 |

Table B - 1
SCHEMATIC
DIAGRAMS

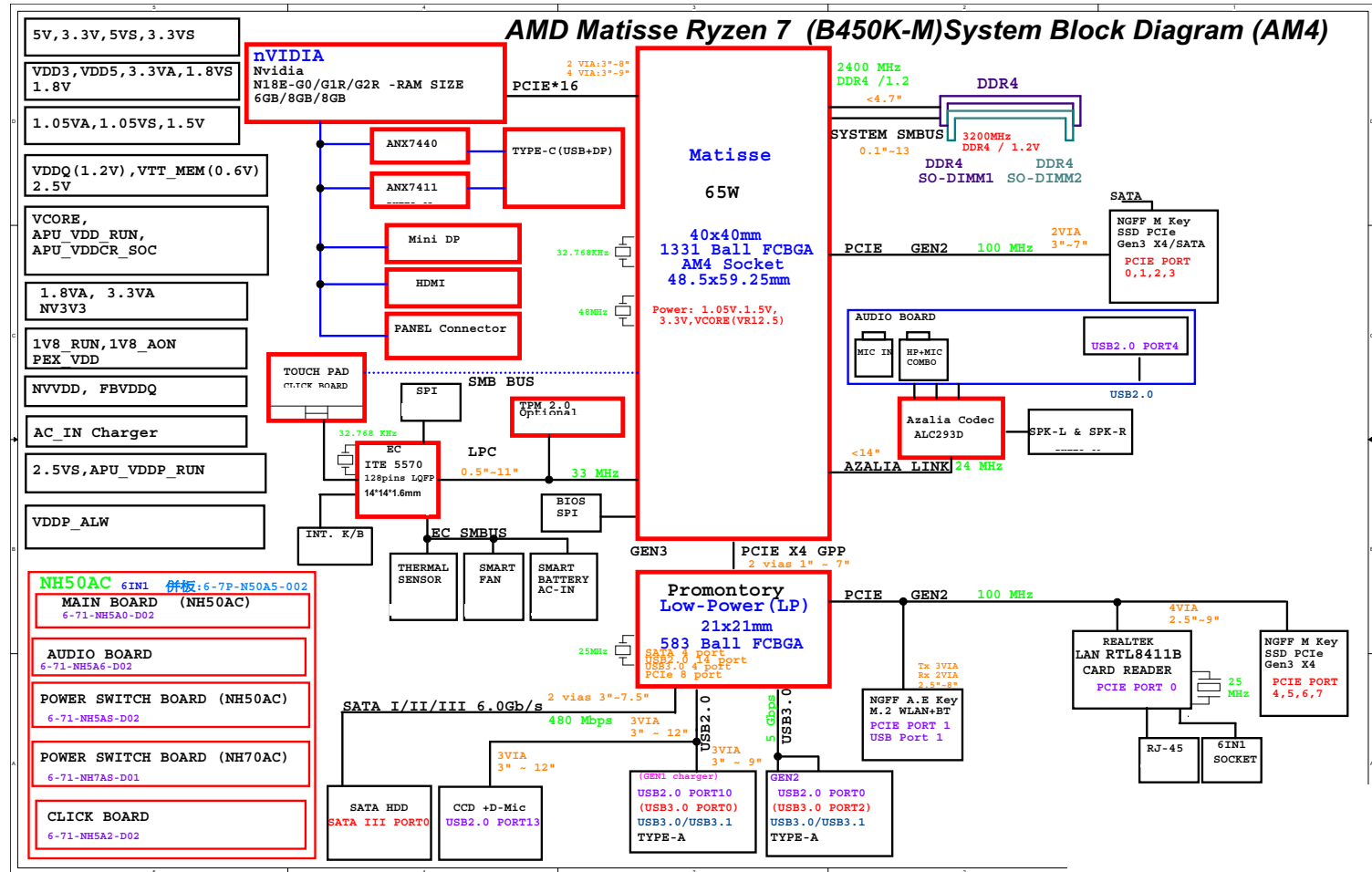


Version Note

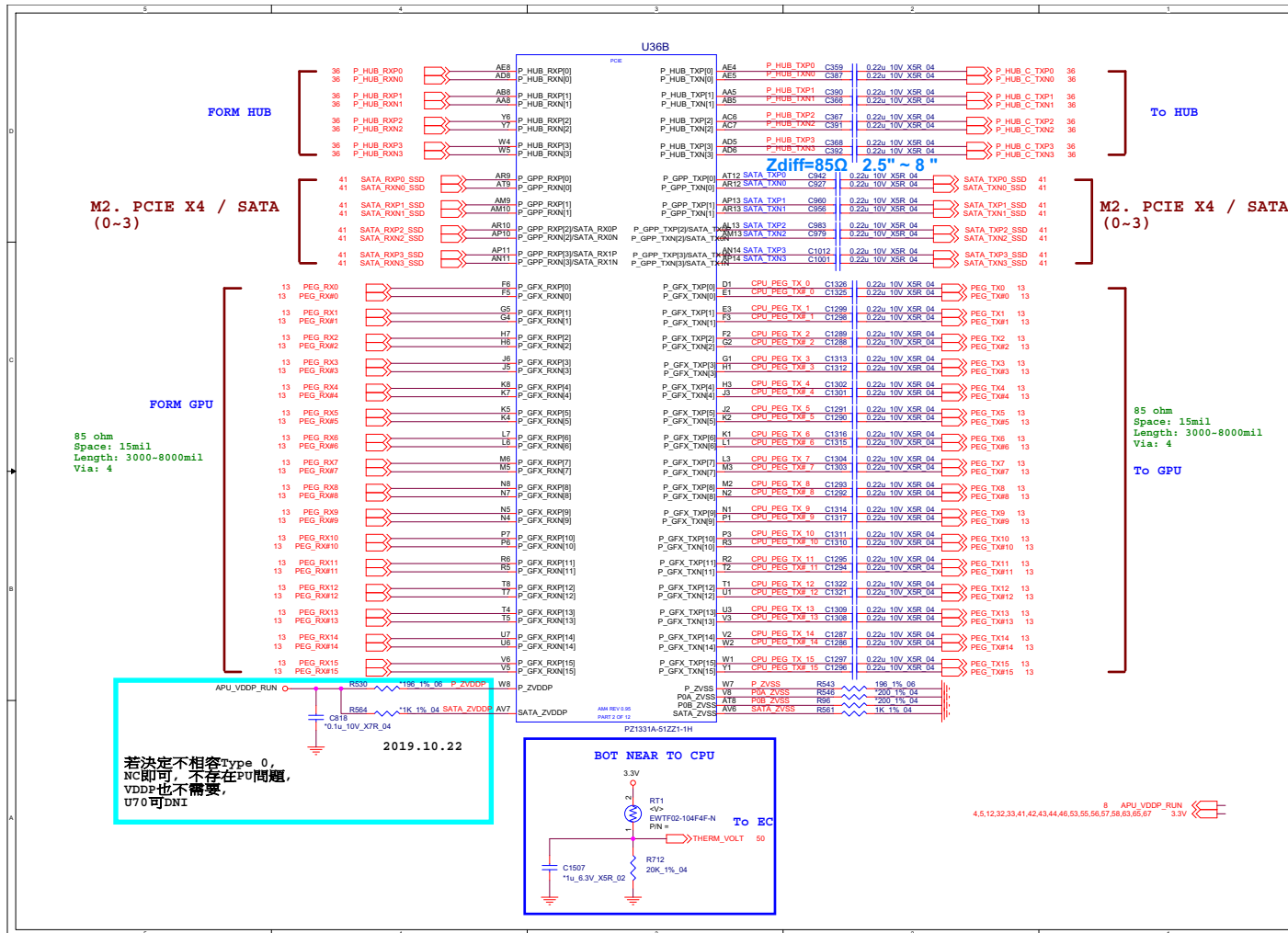
The schematic diagrams in this chapter are based upon version 6-7P-NH5A5-002. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 73
System Block
Diagram



Processor 1/8

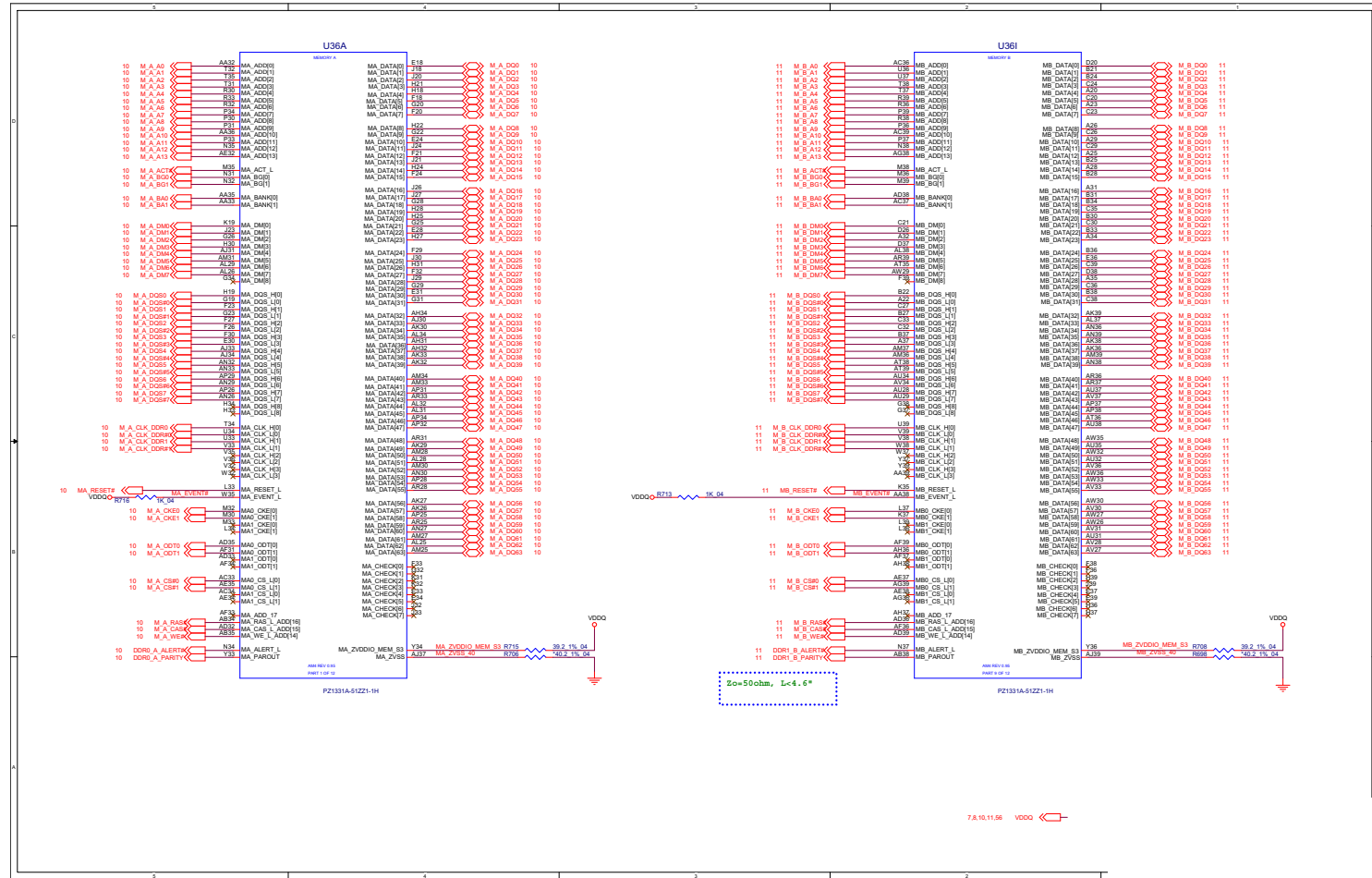


B.Schematic Diagrams

Sheet 2 of 73
Processor 1/8

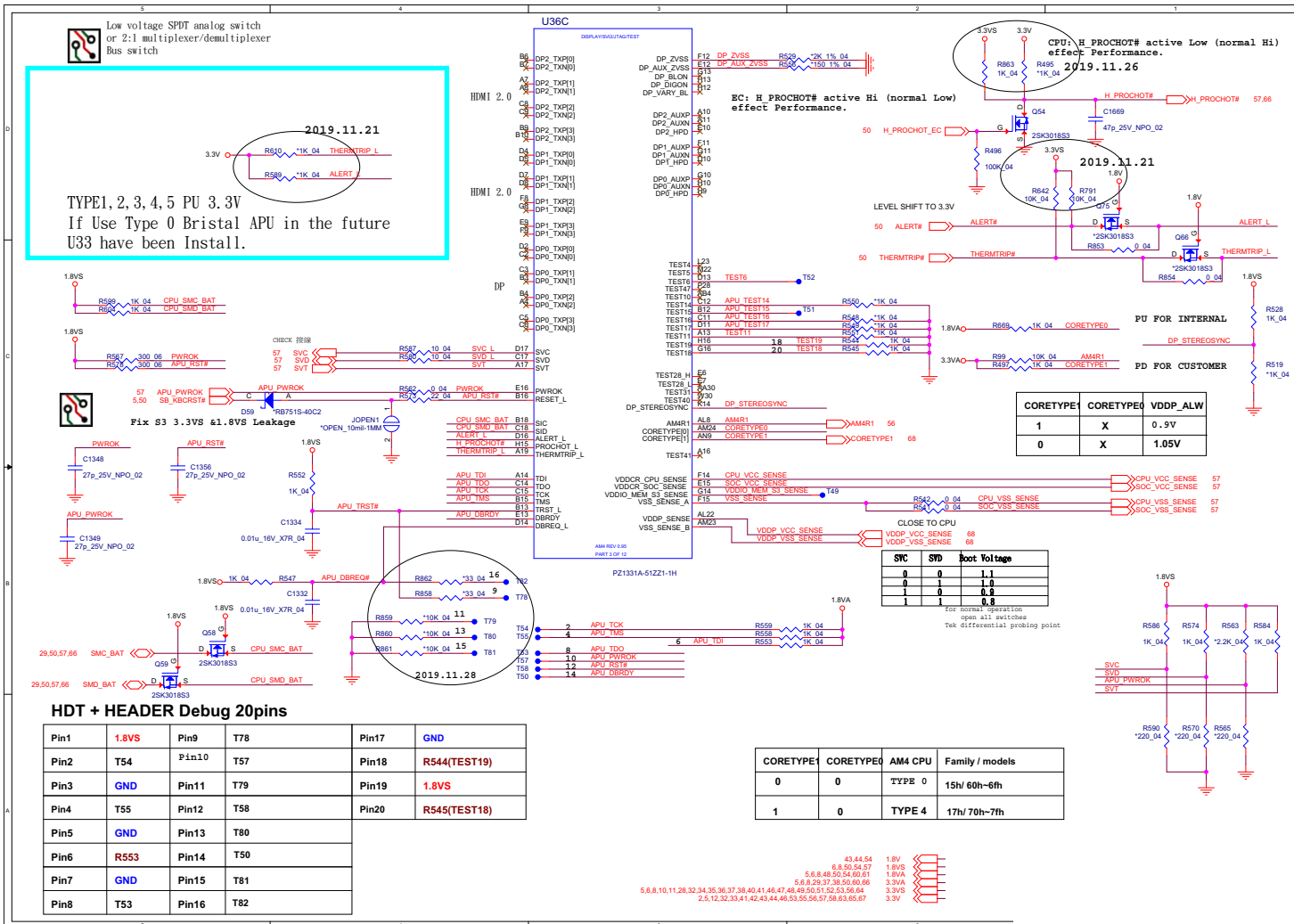
Processor 2/8

Sheet 3 of 73
Processor 2/8



7.8.10.11.56 VDDO

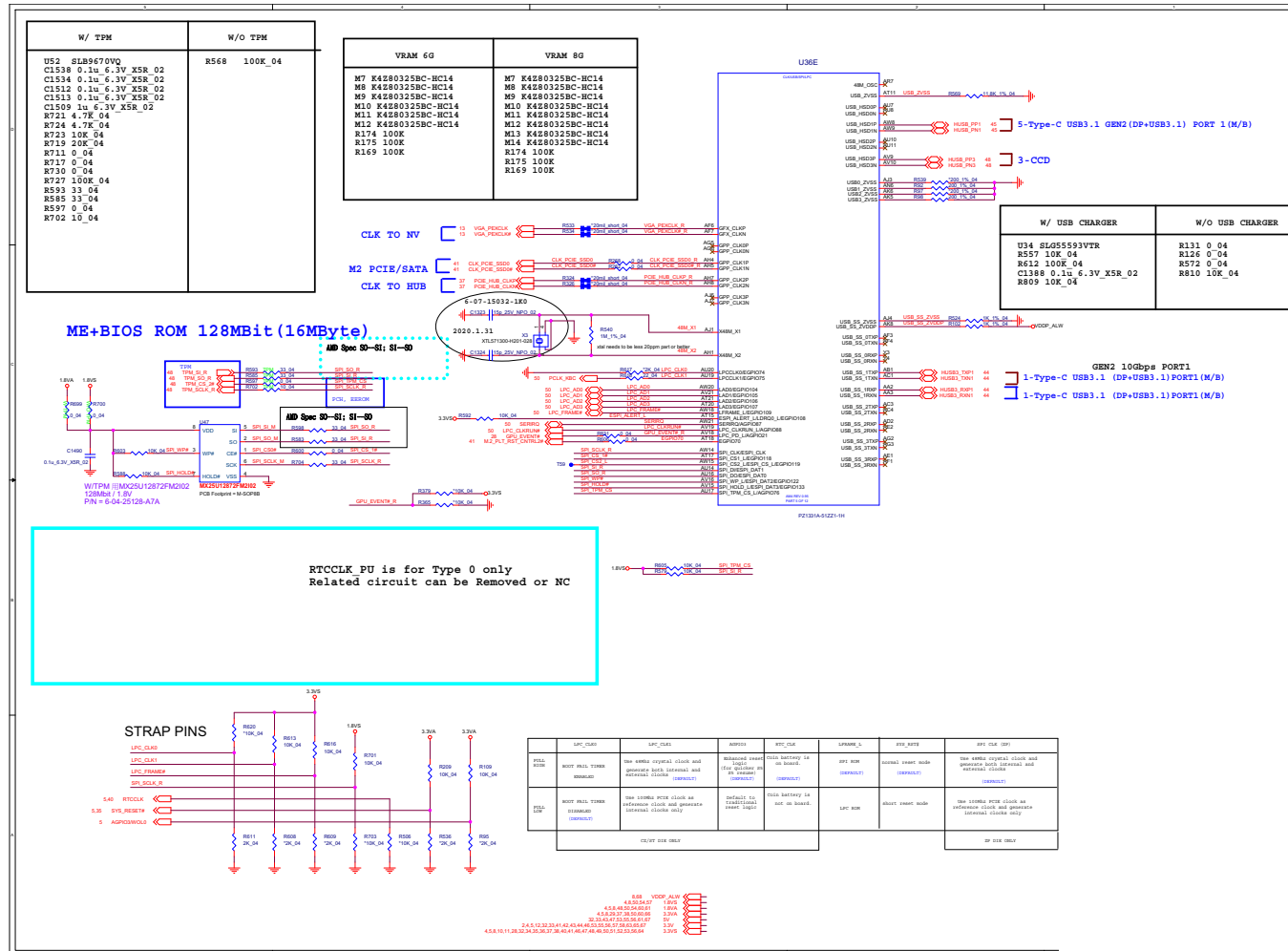
Processor 3/8



B.Schematic Diagrams

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Processor 3/8

Processor 5/8

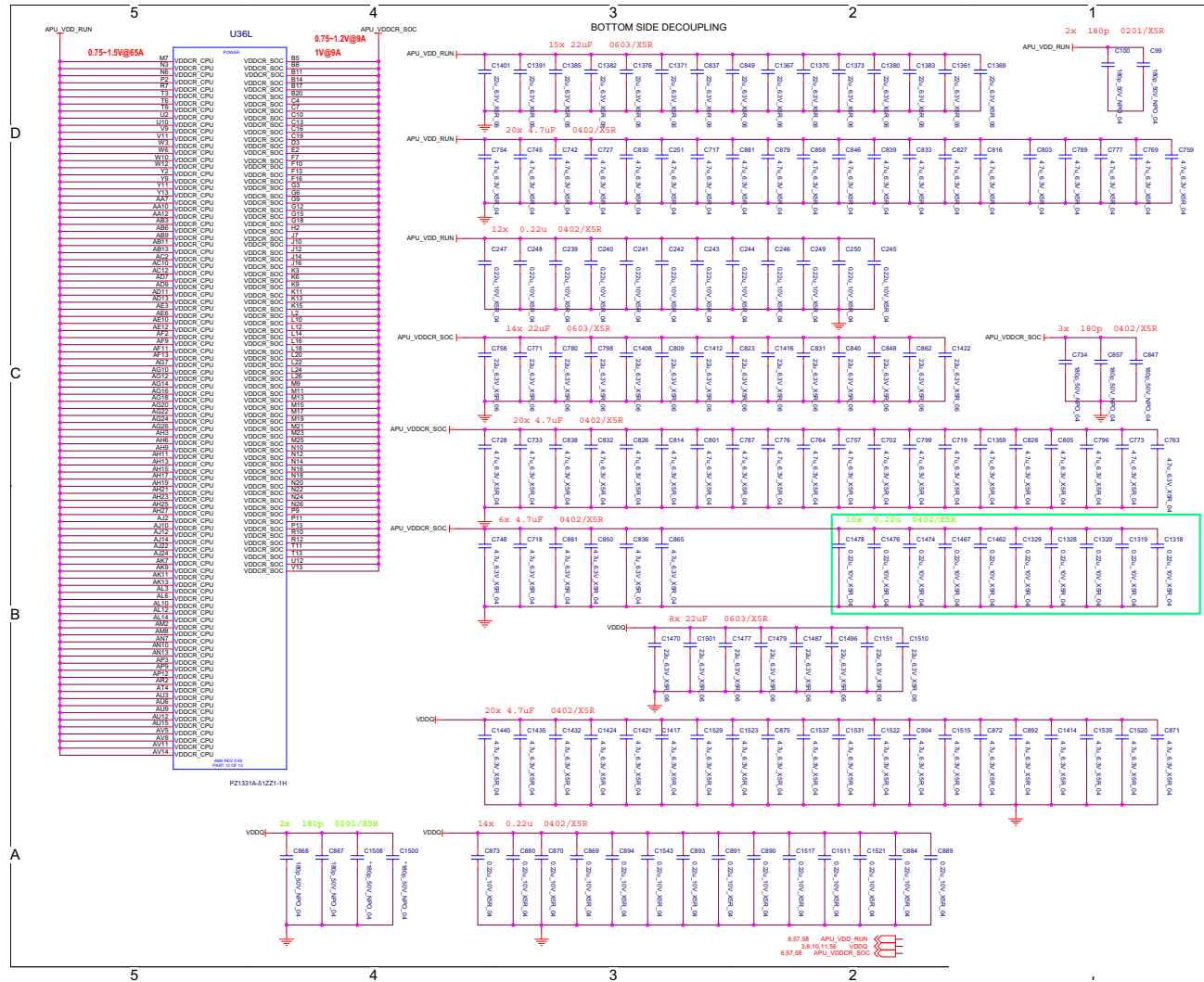


B.Schematic Diagrams

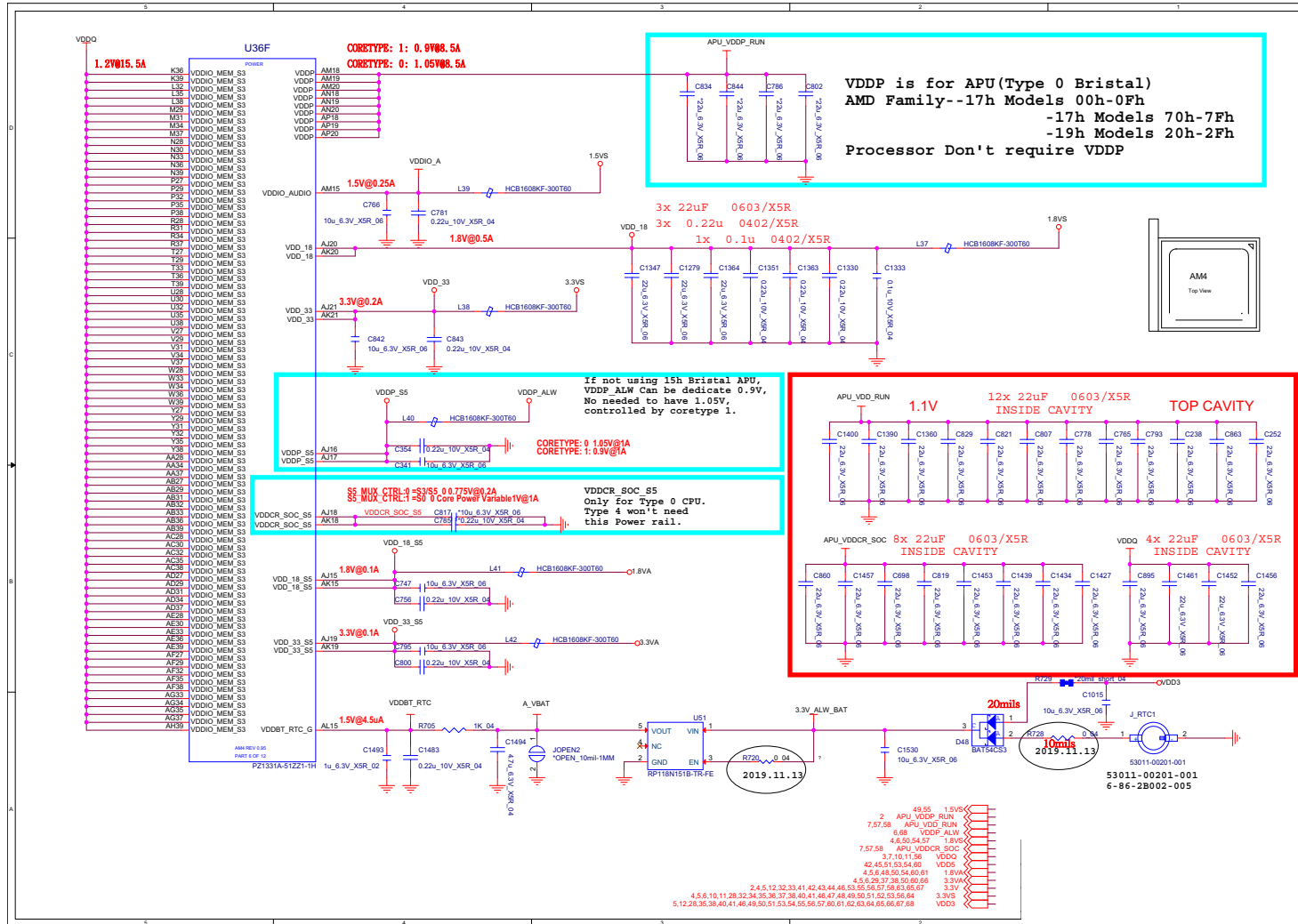
Sheet 6 of 73
Processor 5/8

Processor 6/8

Sheet 7 of 73
Processor 6/8



Processor 7/8



Sheet 8 of 73
 Processor 7/8

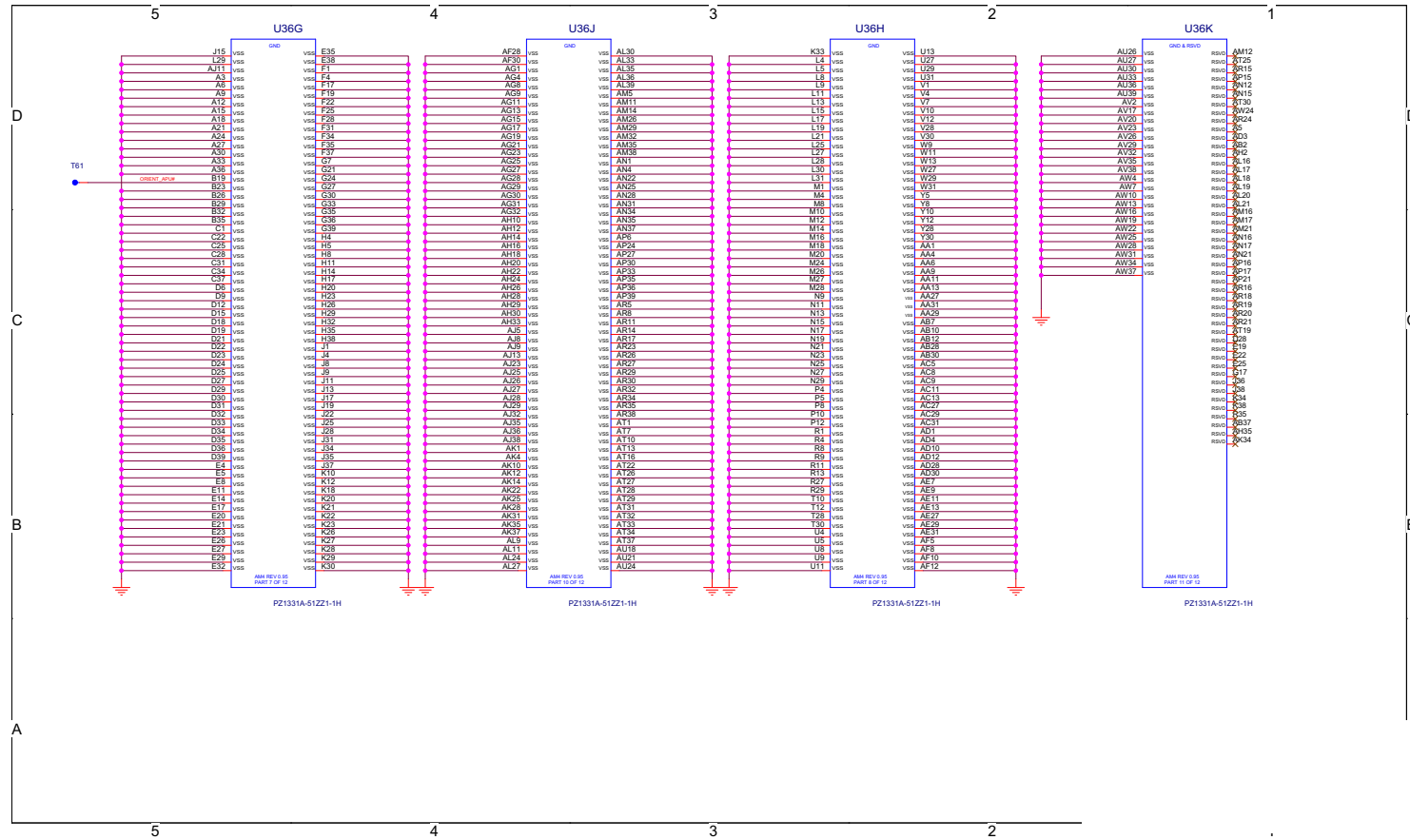
B.Schematic Diagrams

Schematic Diagrams

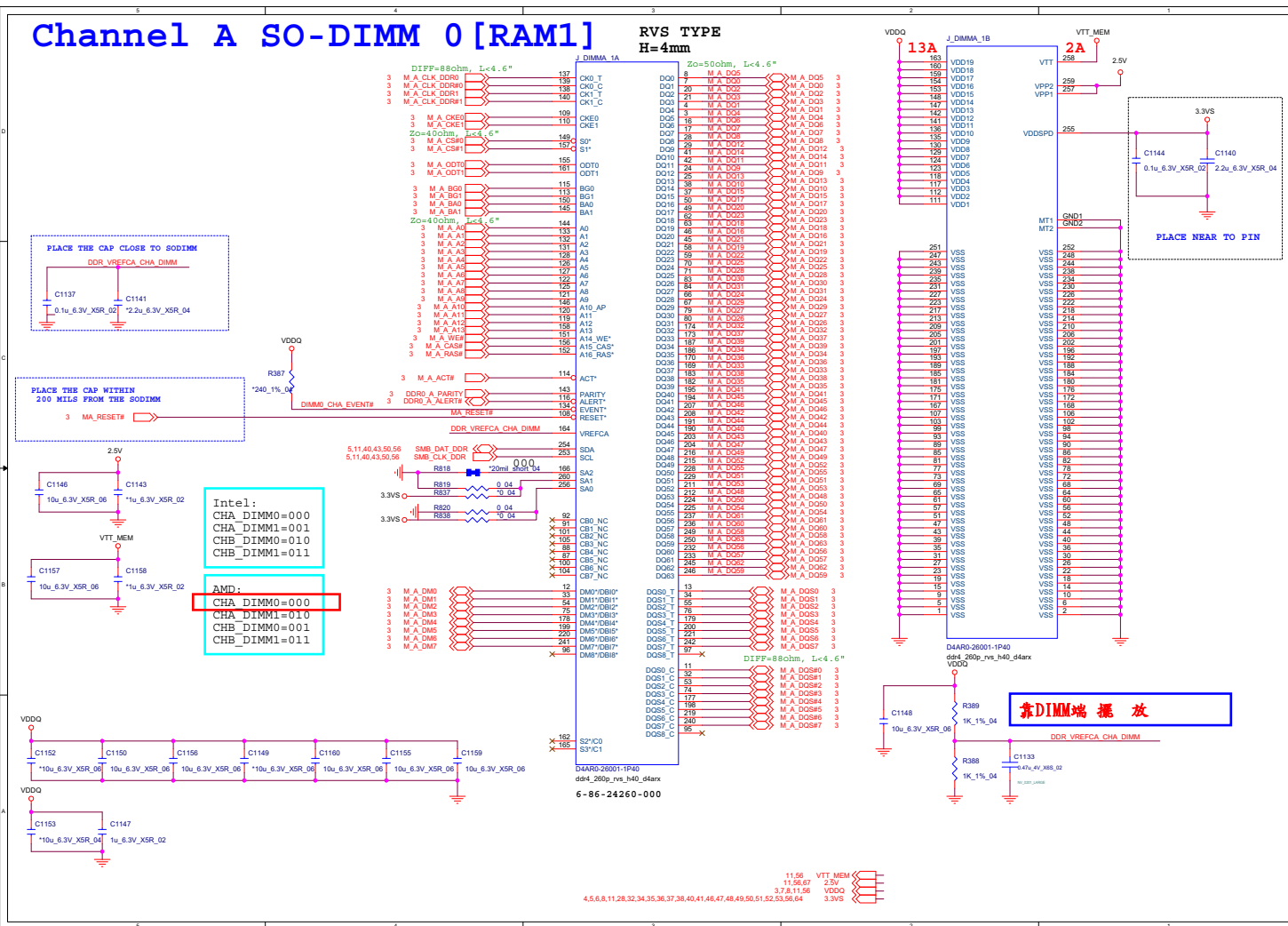
Processor 8/8

B. Schematic Diagrams

Sheet 9 of 73
Processor 8/8



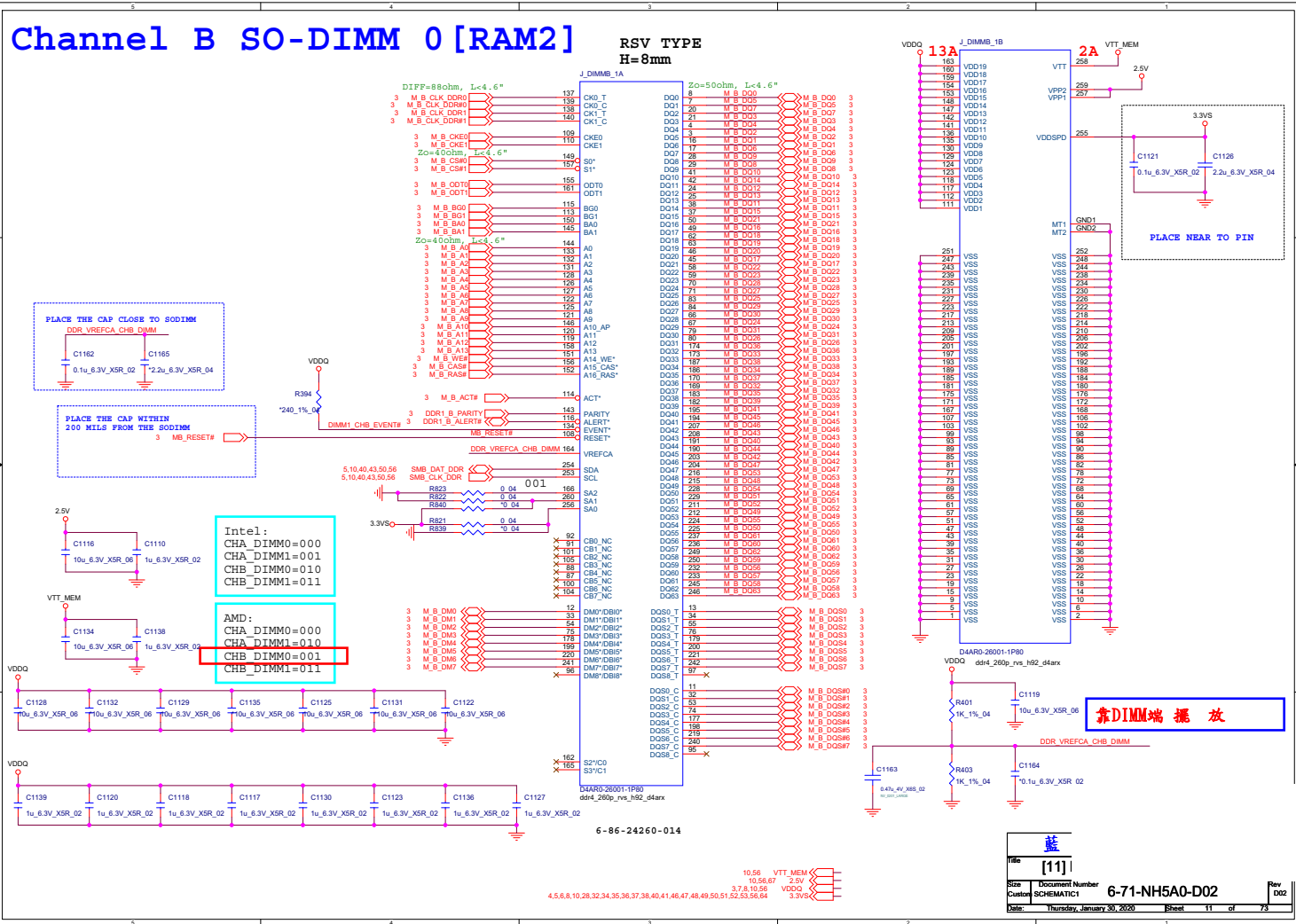
DDR4 CHA SO-DIMM



B.Schematic Diagrams

Sheet 10 of 73
DDR4 CHA SO-DIMM

DDR4 CHB SO-DIMM

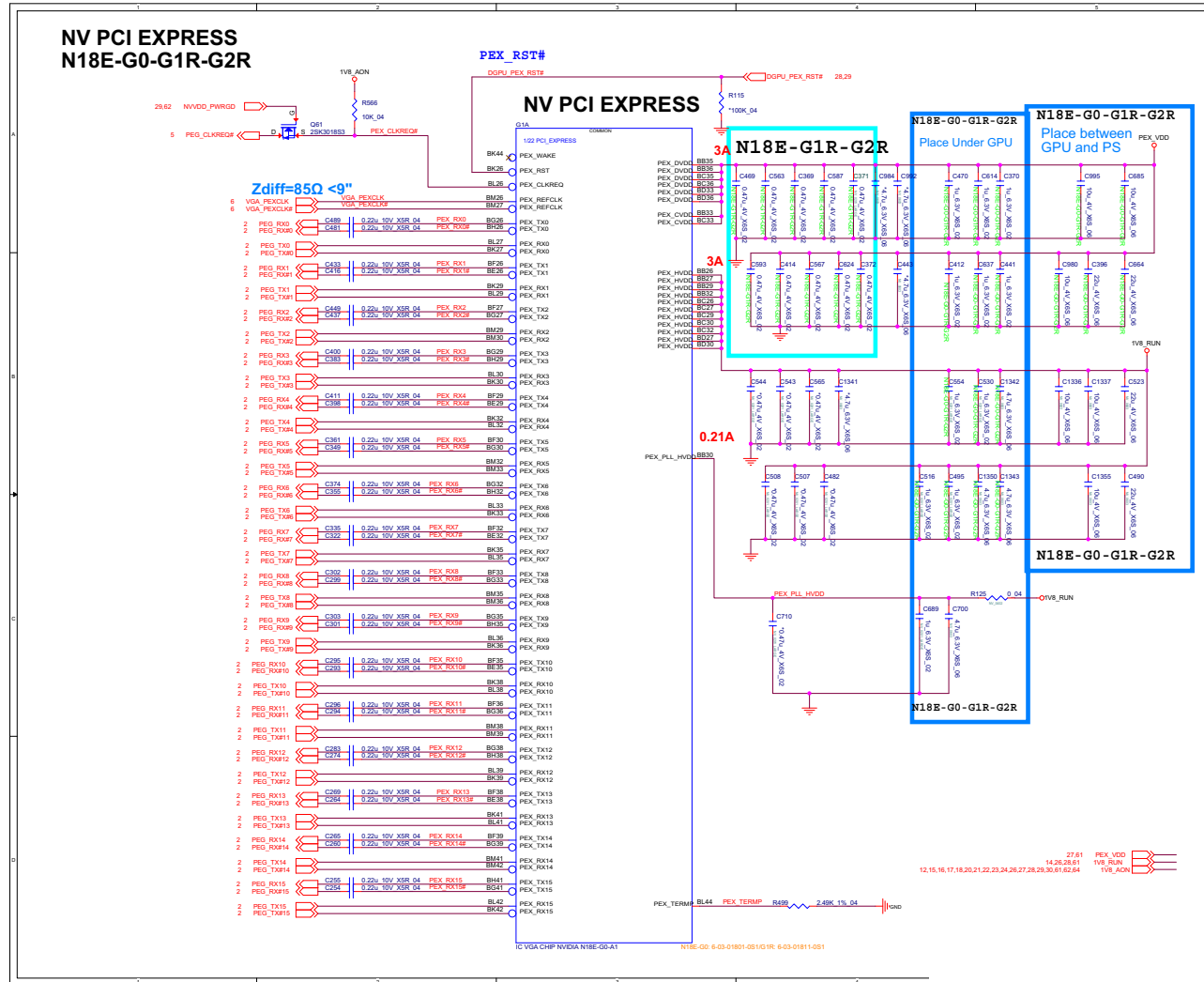


B.Schematic Diagrams

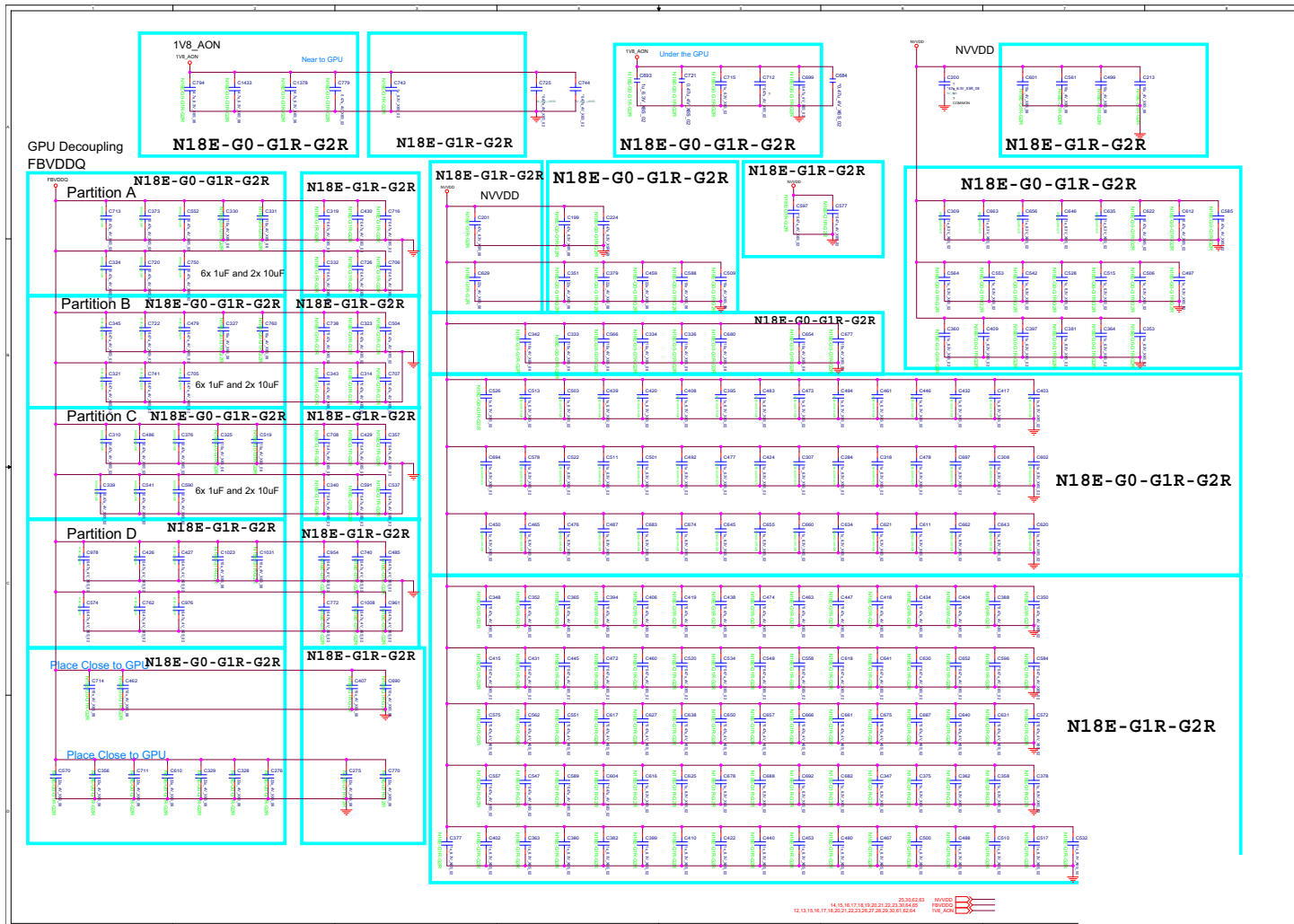
Sheet 11 of 73
 DDR4 CHB SO-DIMM

VGA PCI Express

Sheet 13 of 73
VGA PCI Express



GPU Decoupling 1

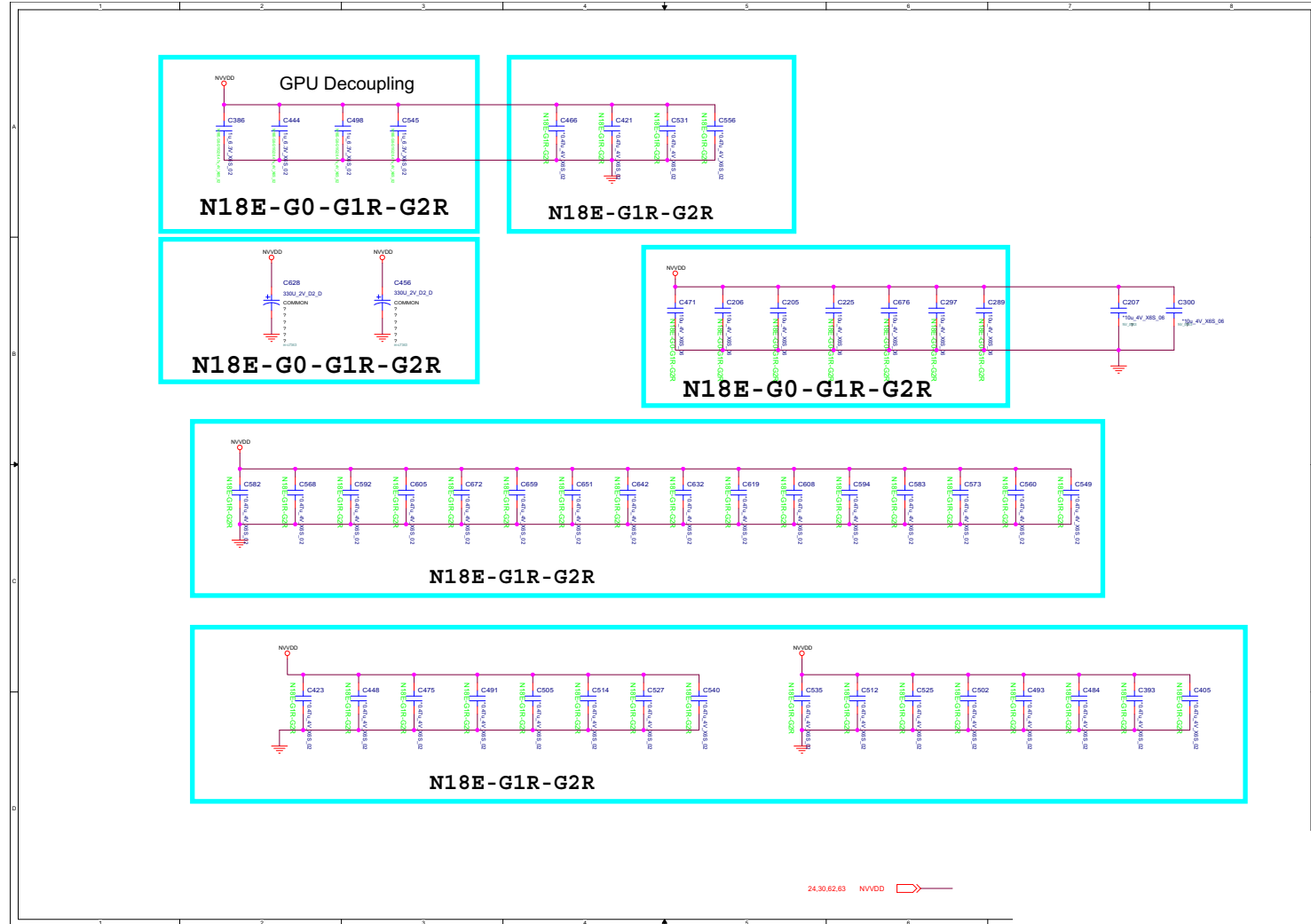


Sheet 24 of 73
GPU Decoupling 1

B.Schematic Diagrams

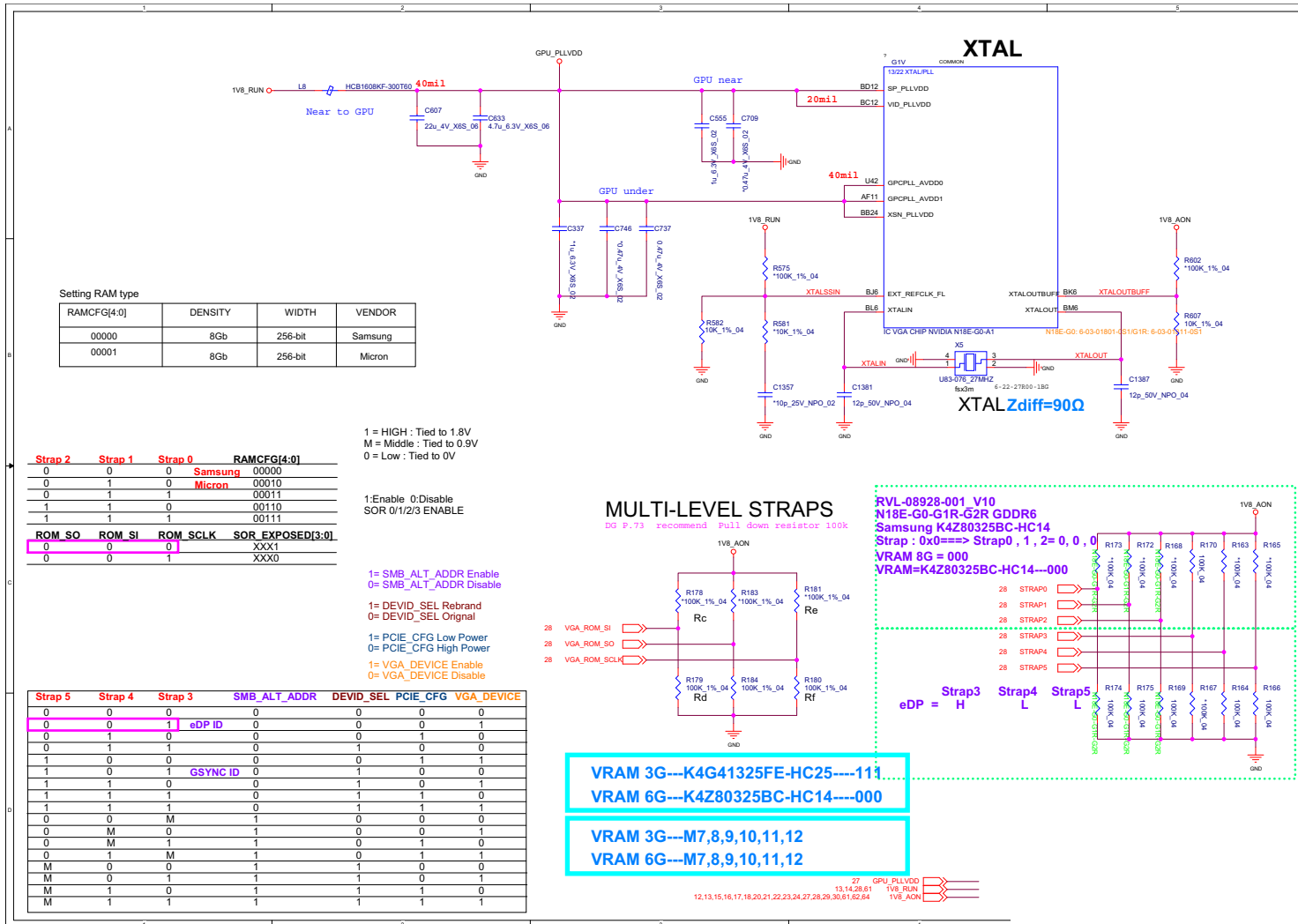
GPU Decoupling 2

Sheet 25 of 73
GPU Decoupling 2

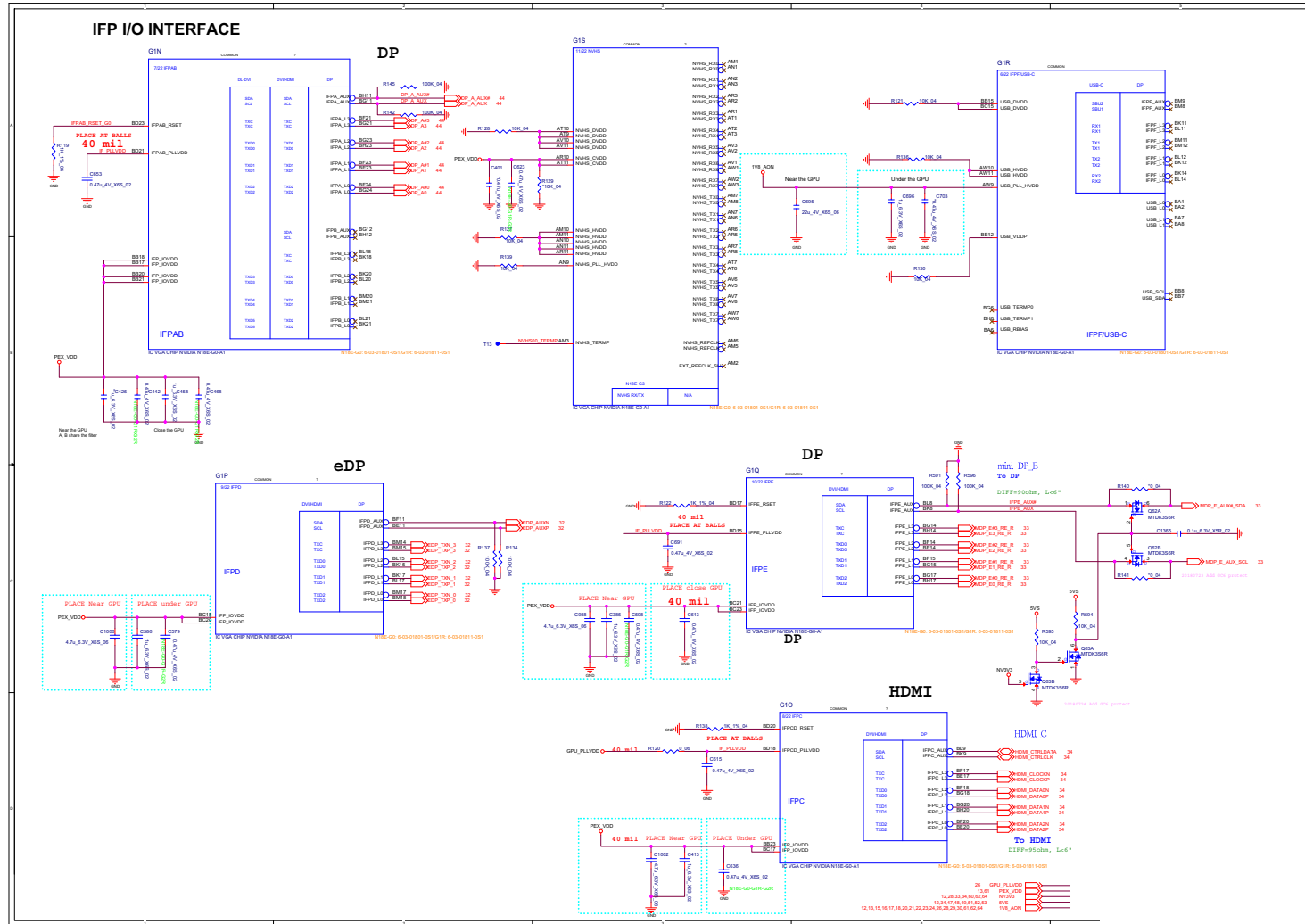


Straps and XTAL

Sheet 26 of 73
Straps and XTAL



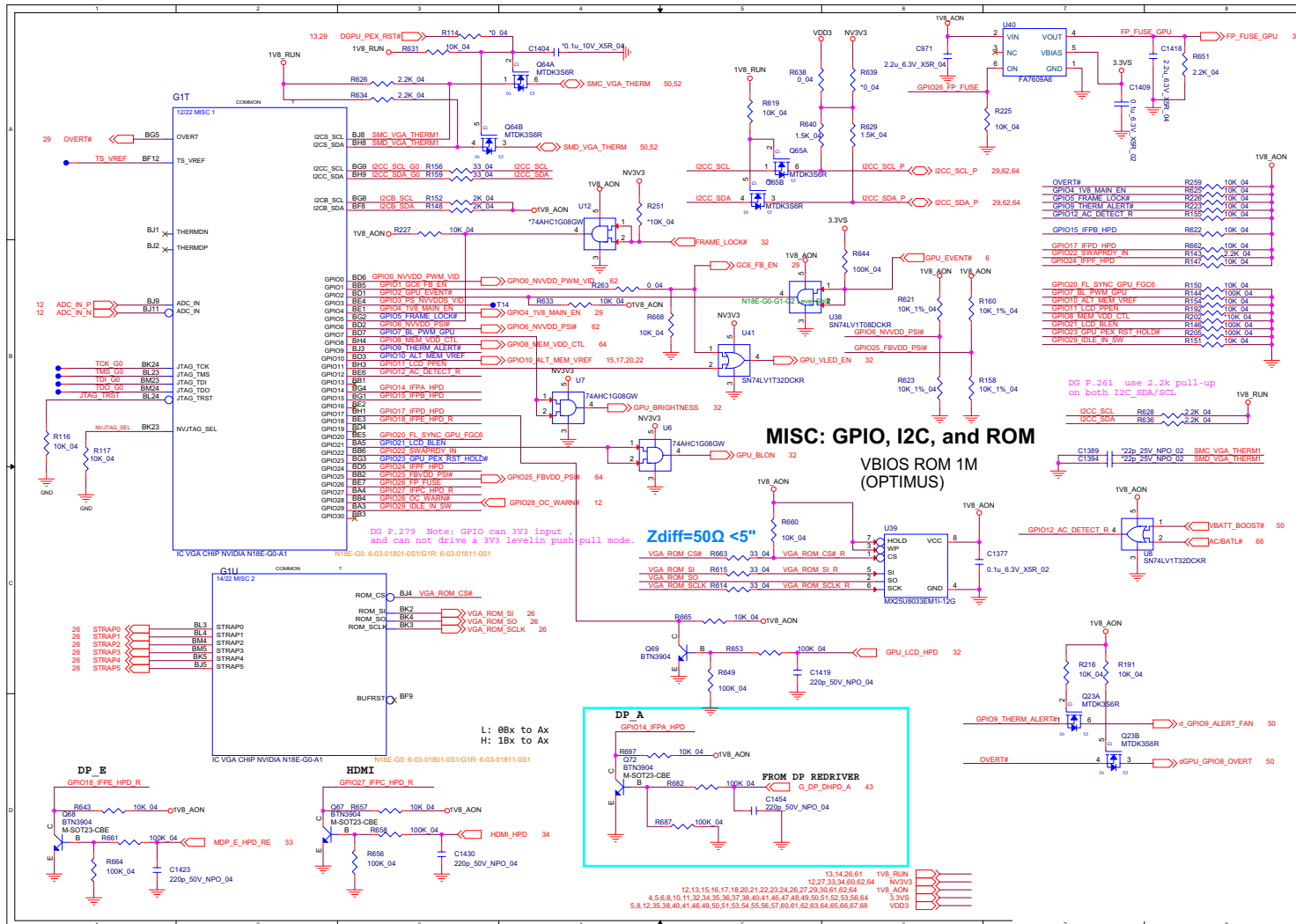
IFP I/O Interface



Sheet 27 of 73
IFP I/O Interface

B.Schematic Diagrams

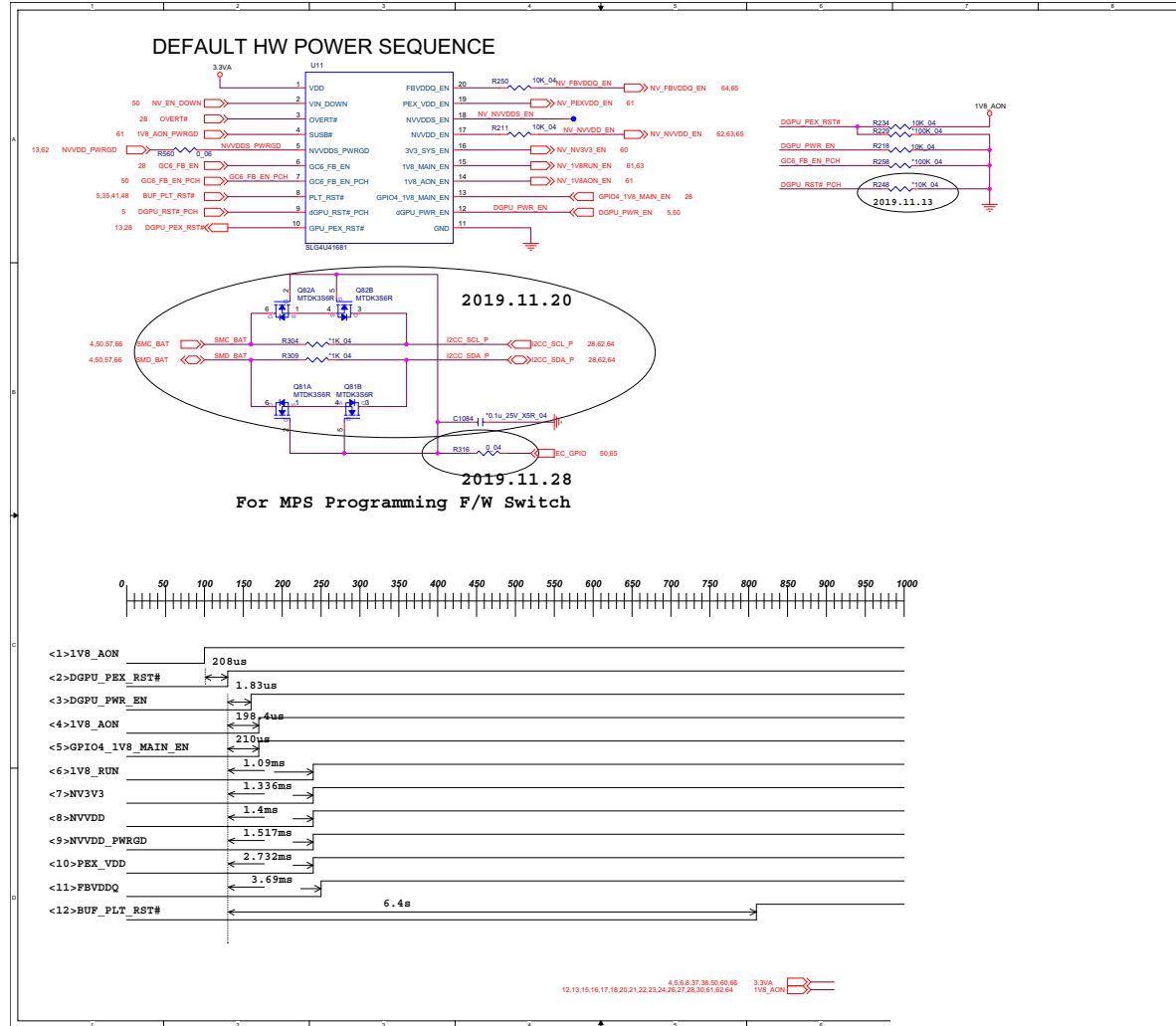
Misc - GPIO, I2C and ROM



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Misc - GPIO, I2C
and ROM

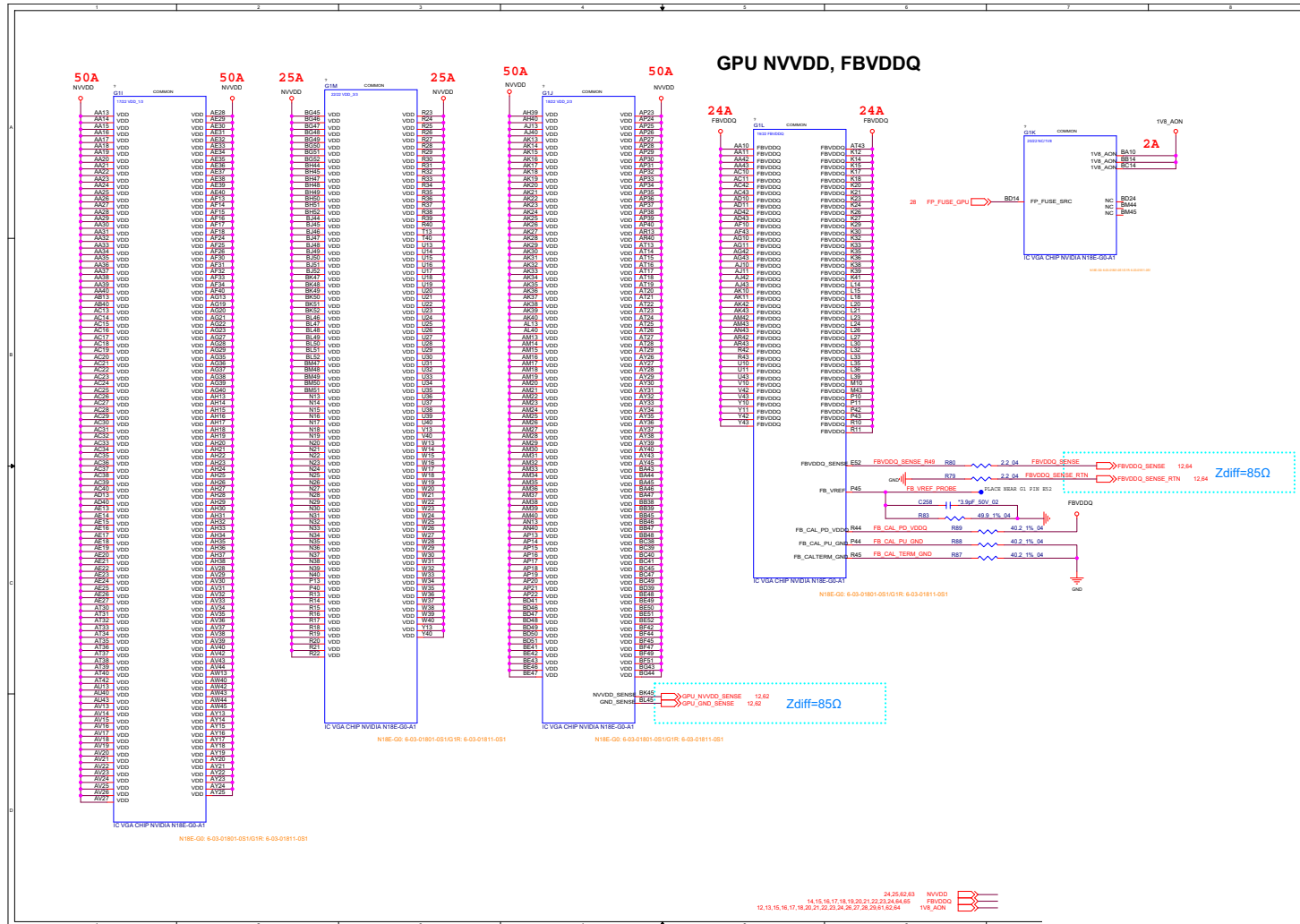
B.Schematic Diagrams

NVIDIA Power Sequence



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NVIDIA Power
Sequence

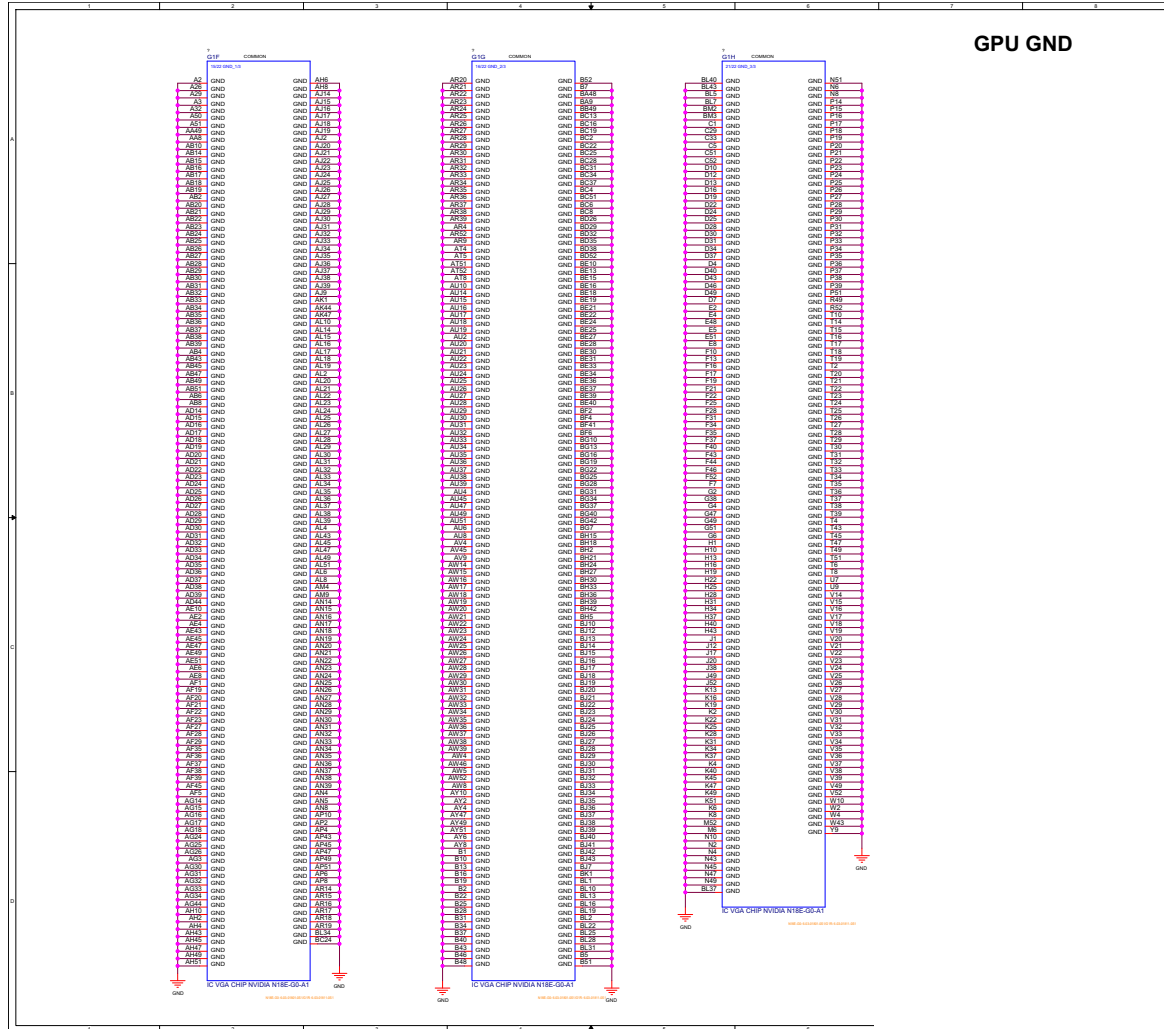
GPU NVVDD, FBVDDQ



Sheet 30 of 73
GPU NVVDD,
FBVDDQ

B.Schematic Diagrams

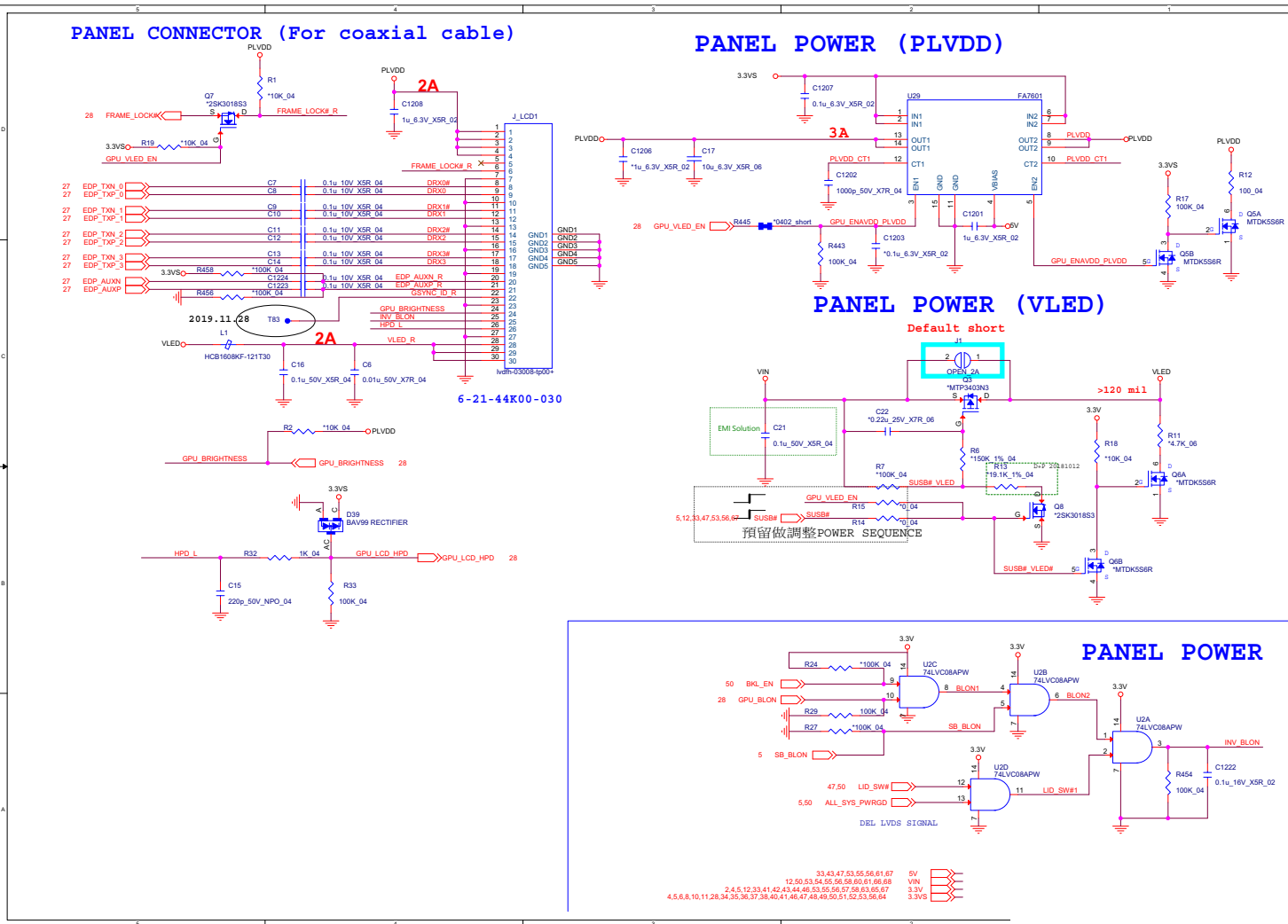
GPU GND



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GPU GND

B.Schematic Diagrams

Panel, Inverter

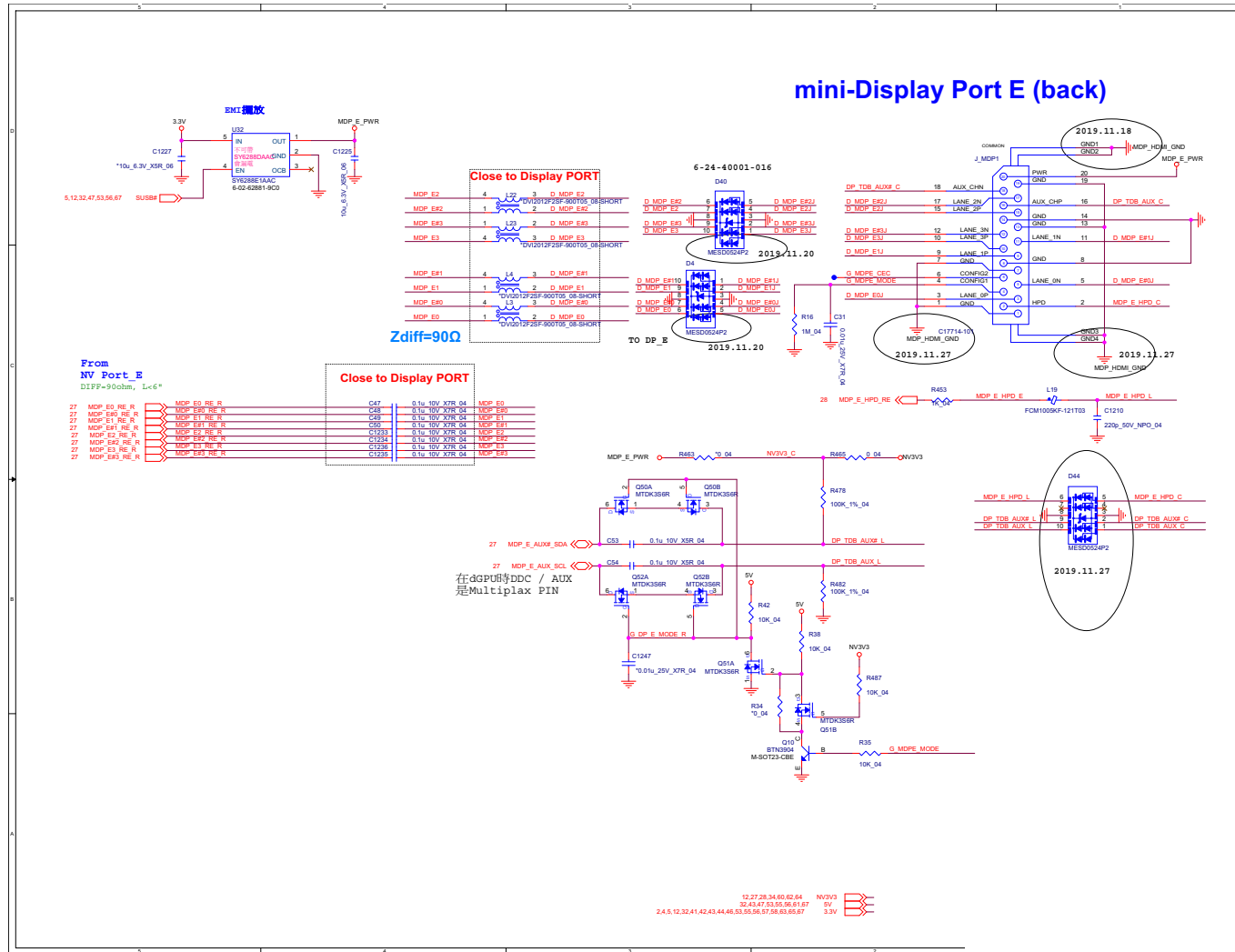


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Panel, Inverter

B.Schematic Diagrams

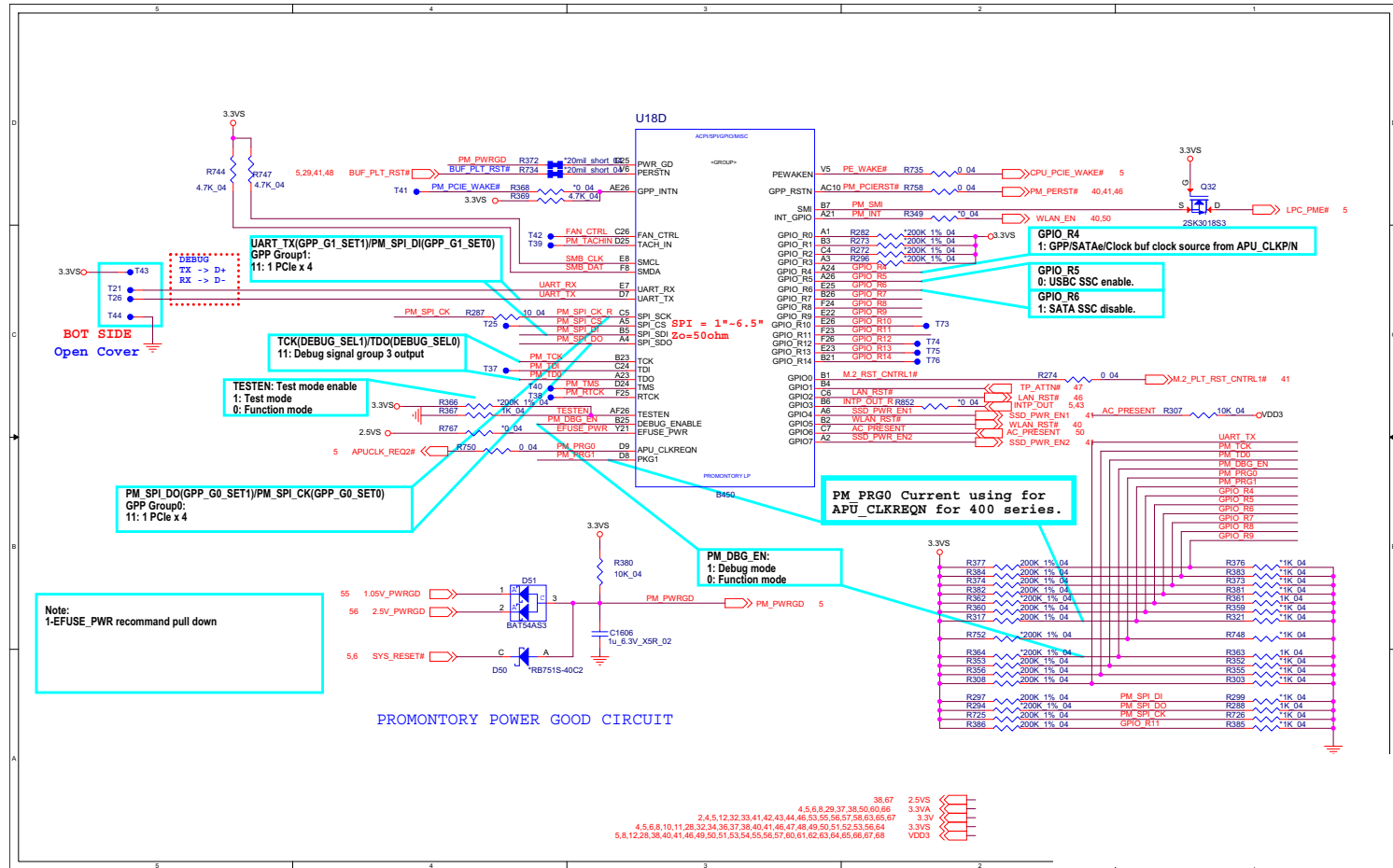
Mini DP

Sheet 33 of 73
Mini DP

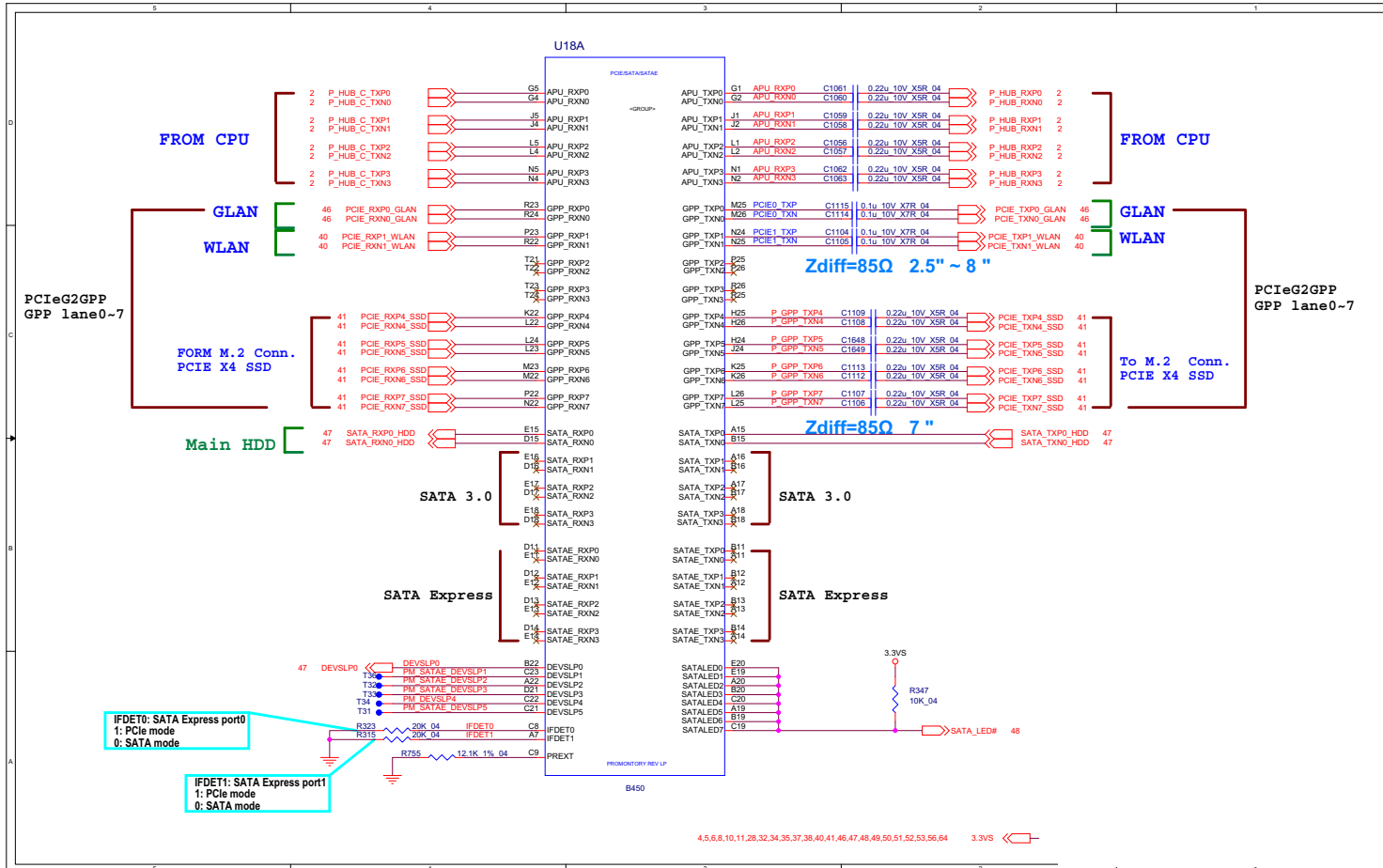


PCH 1/5

Sheet 35 of 73
PCH 1/5



PCH 2/5

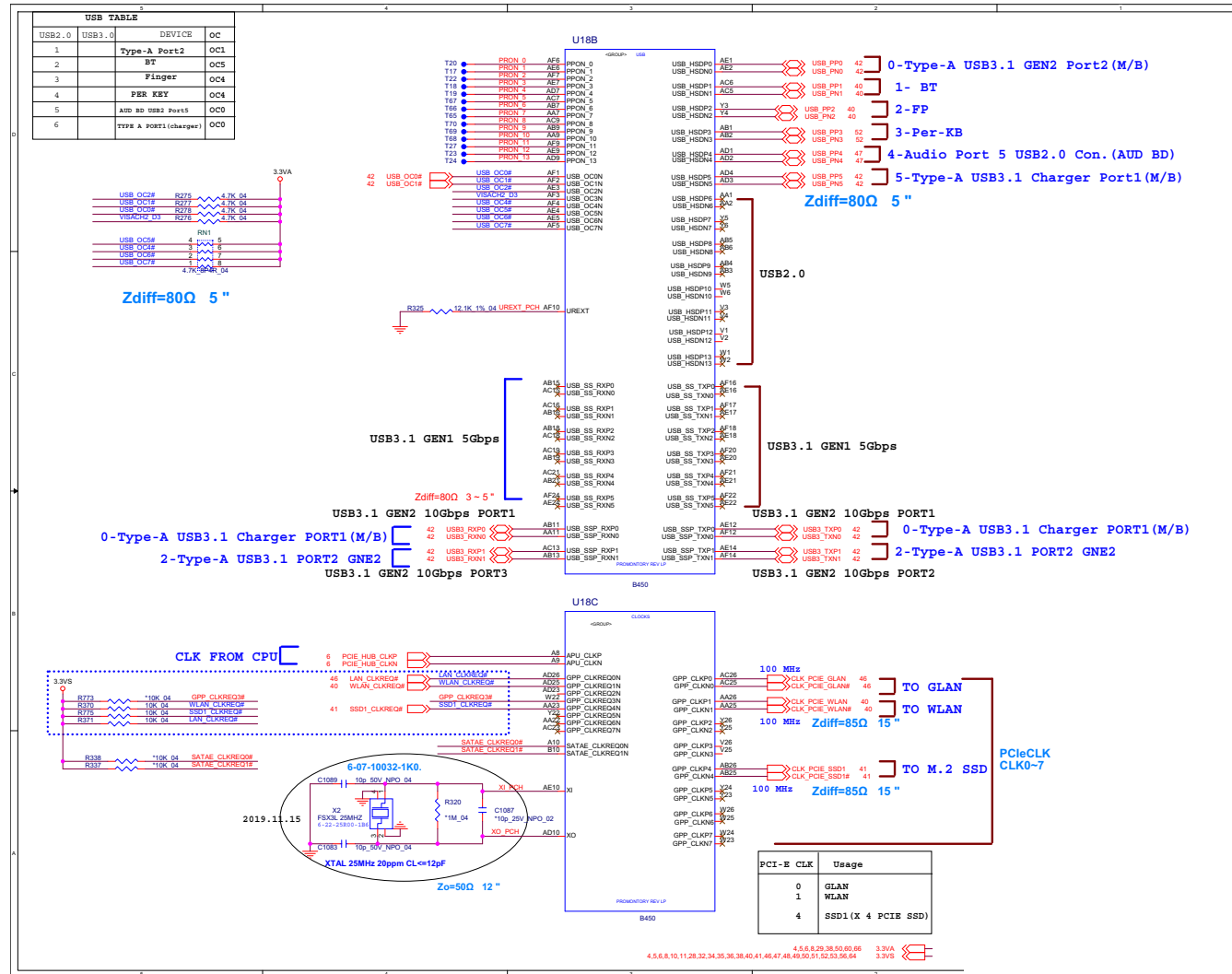


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PCH 2/5

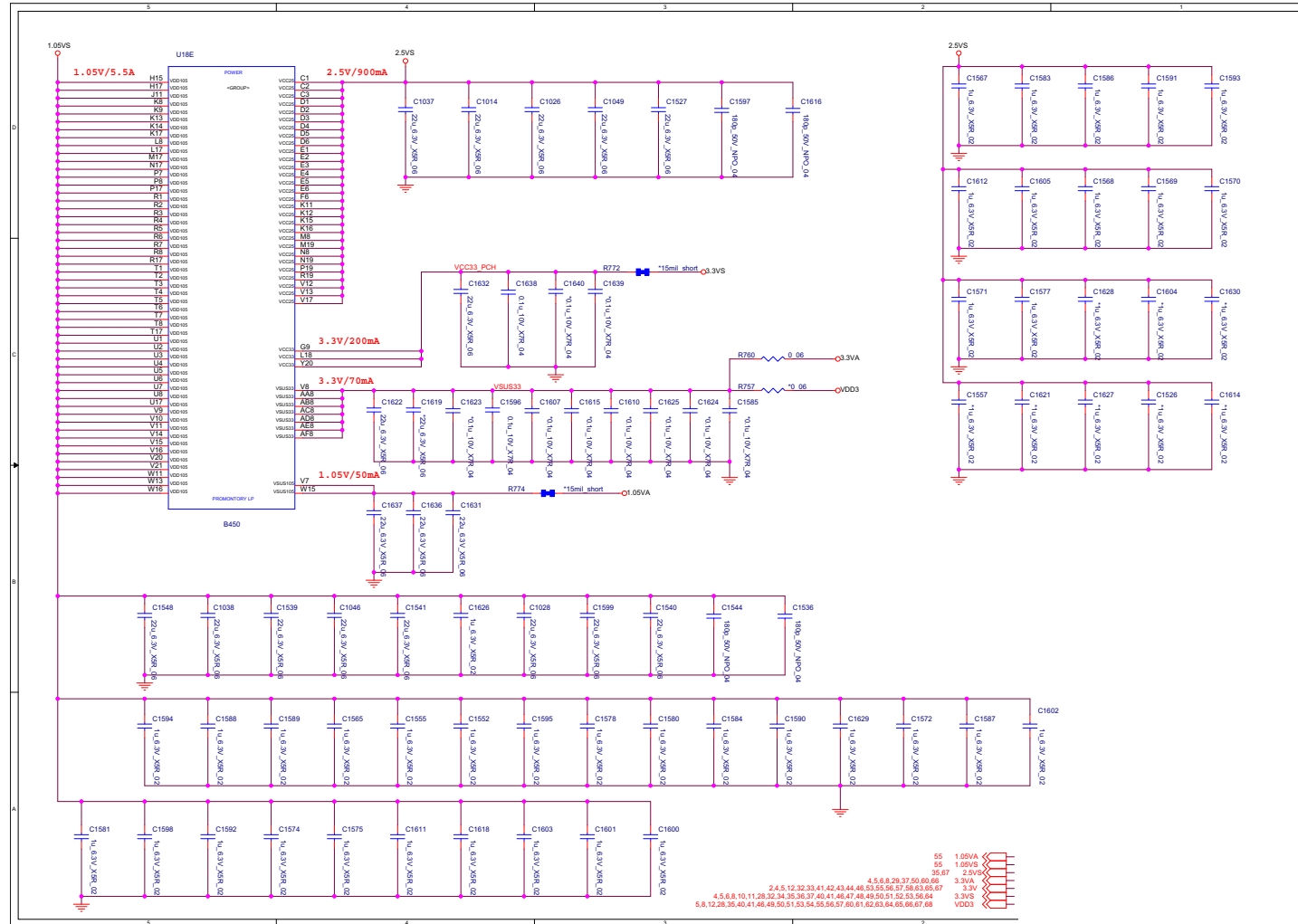
B.Schematic Diagrams

PCH 3/5

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PCH 3/5



PCH 4/5

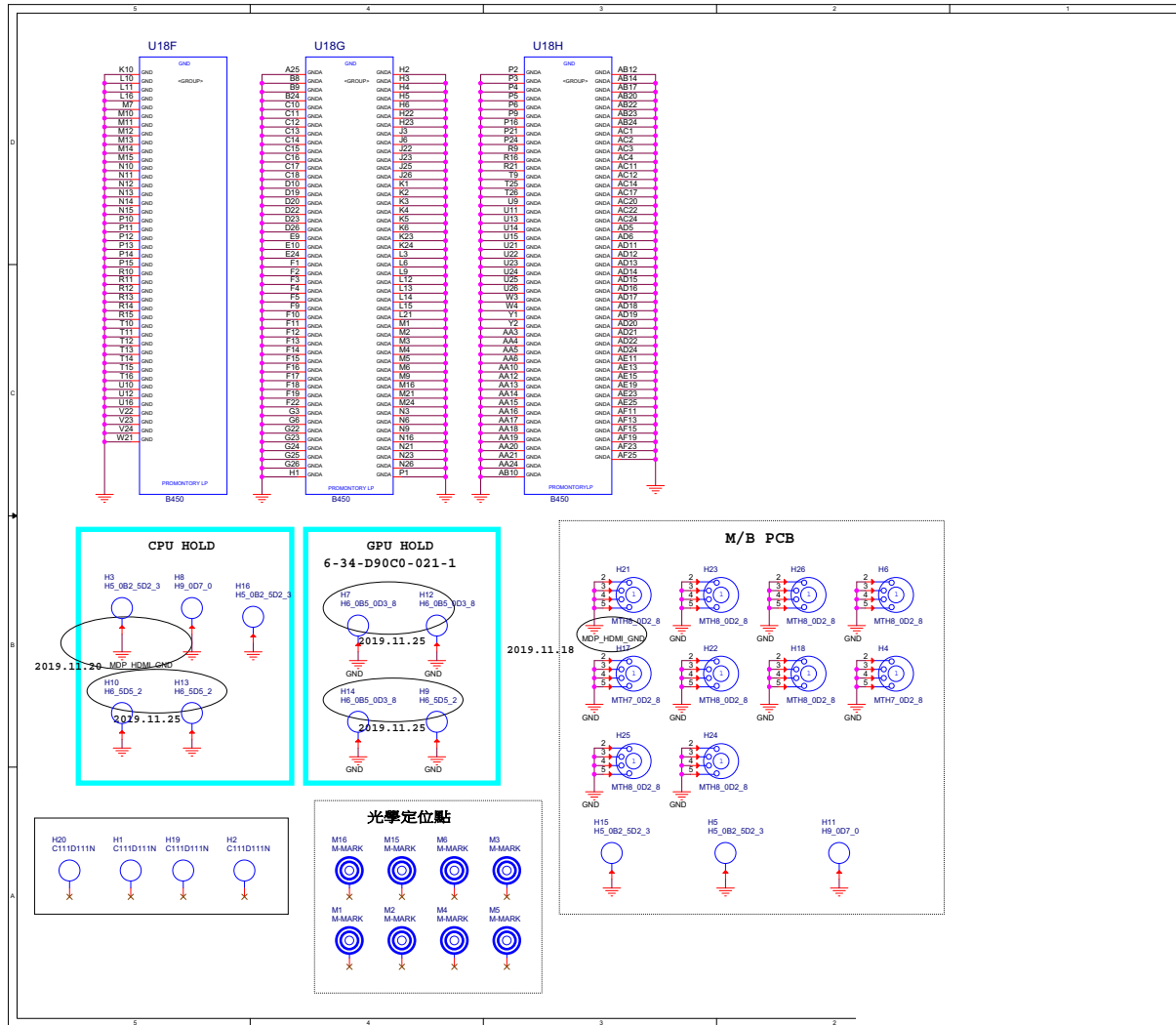


Sheet 38 of 73
PCH 4/5

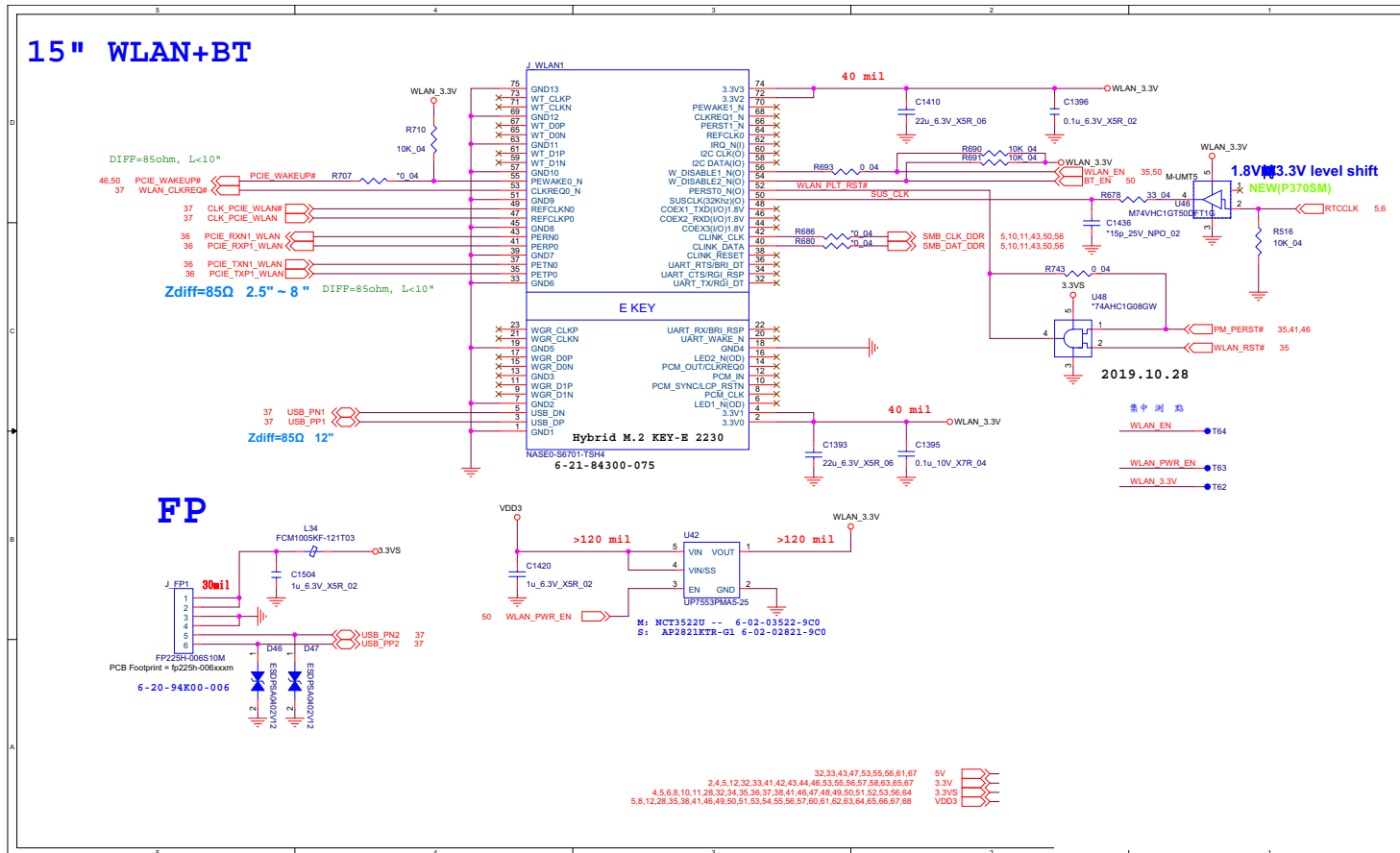
B.Schematic Diagrams

PCH 5/5

Sheet 39 of 73
PCH 5/5

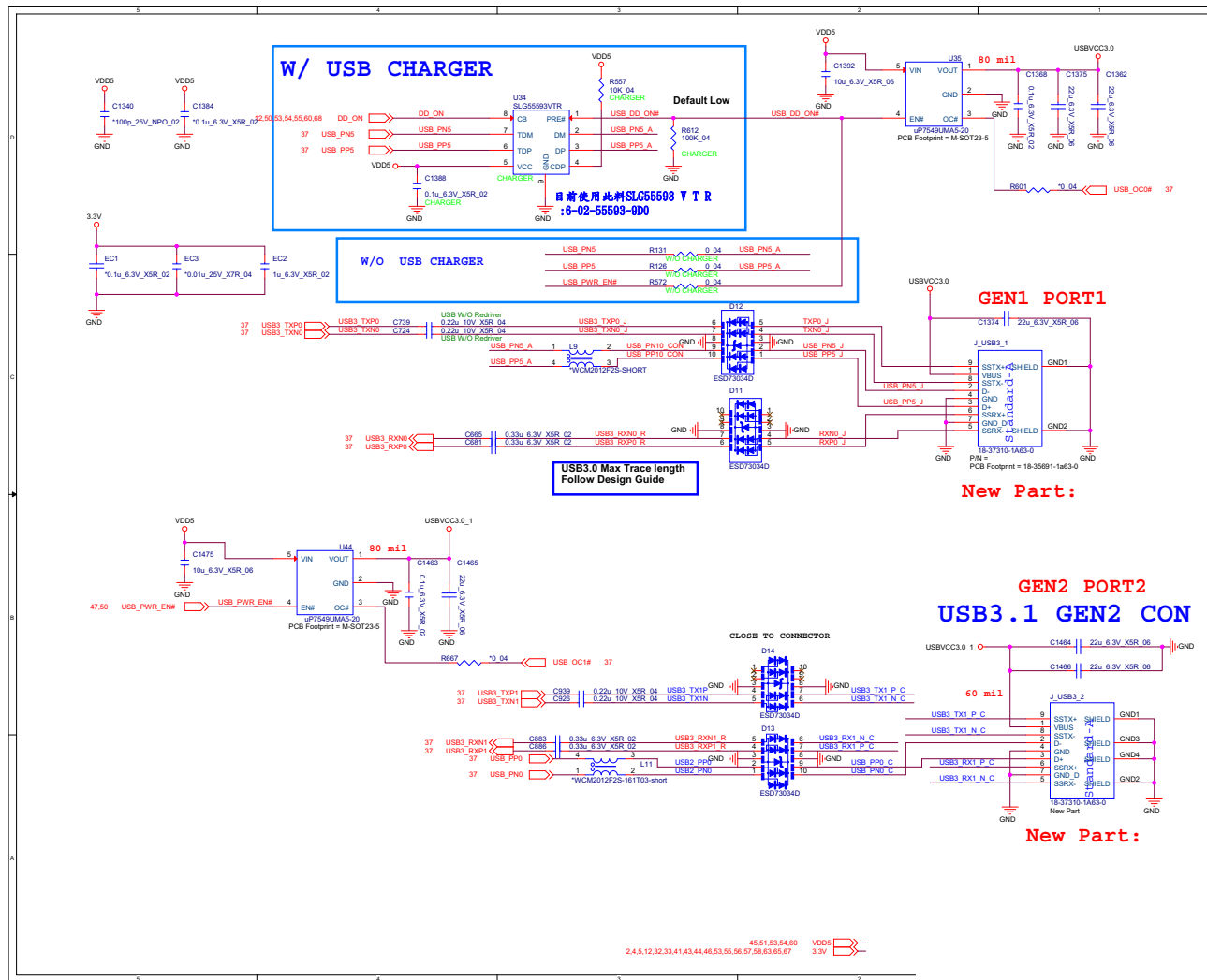


M.2 WLAN+BT



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 M.2 WLAN+BT

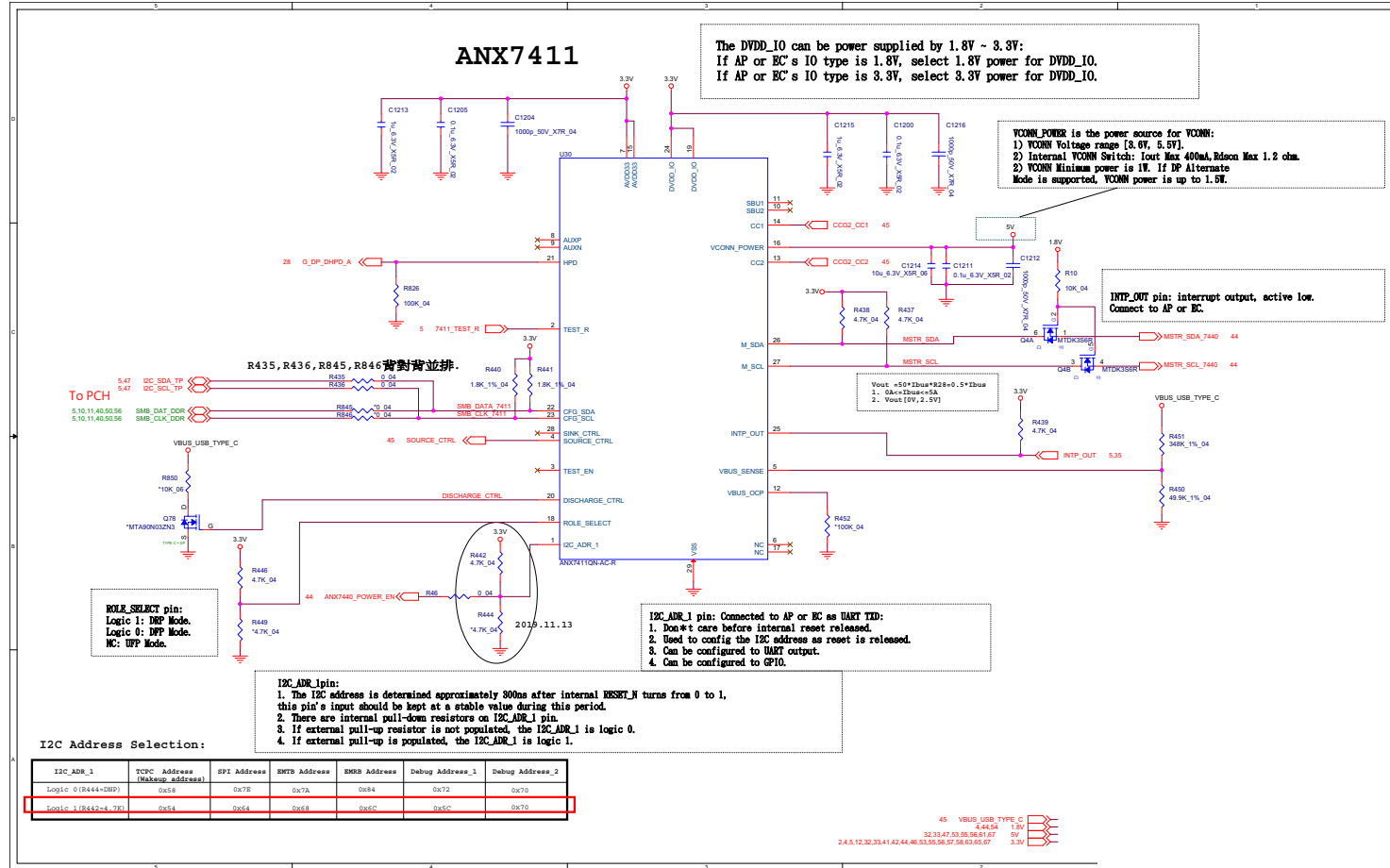
USB Charger



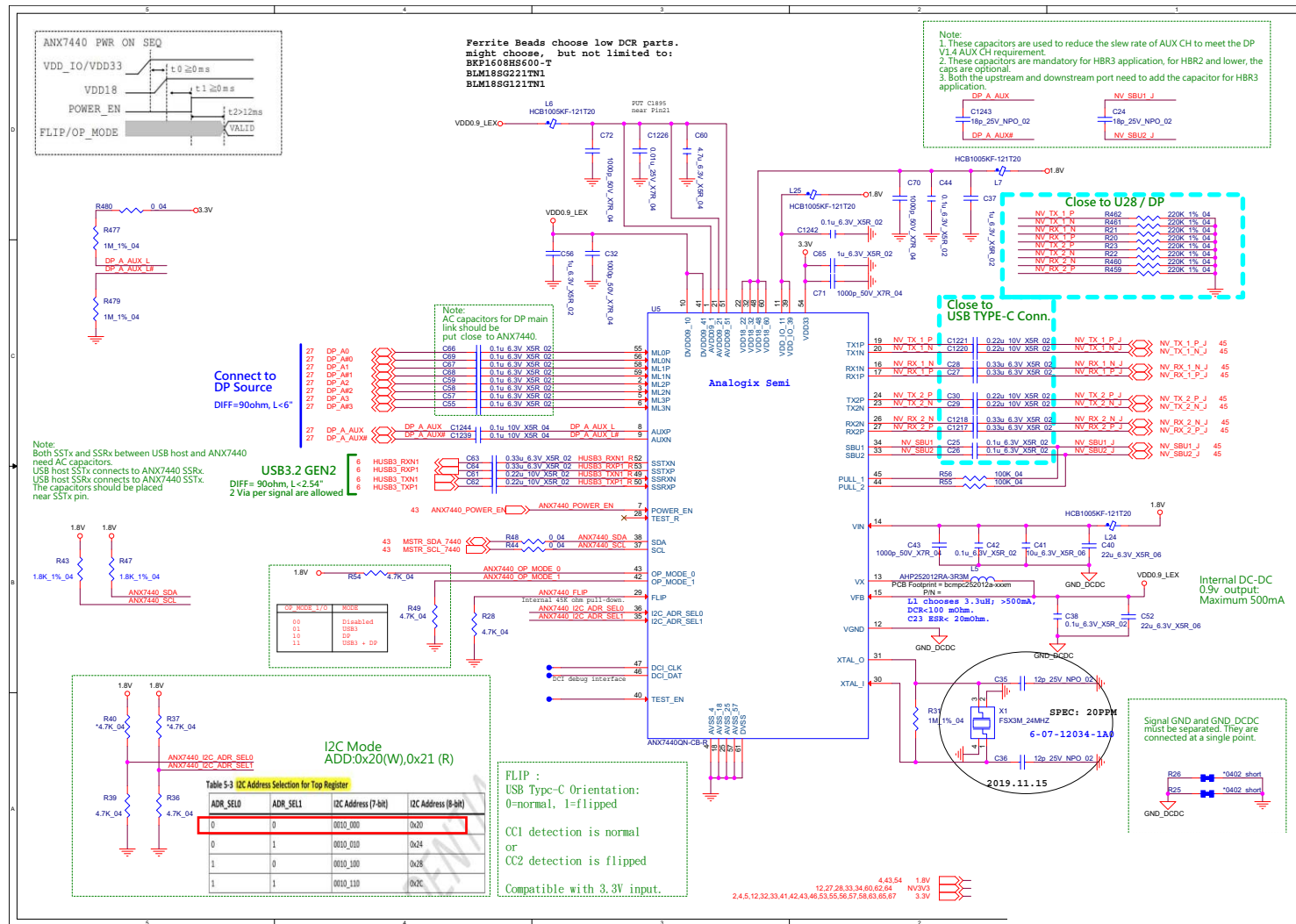
Sheet 42 of 73
USB Charger

PD Controller ANX7411

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PD Controller
ANX7411

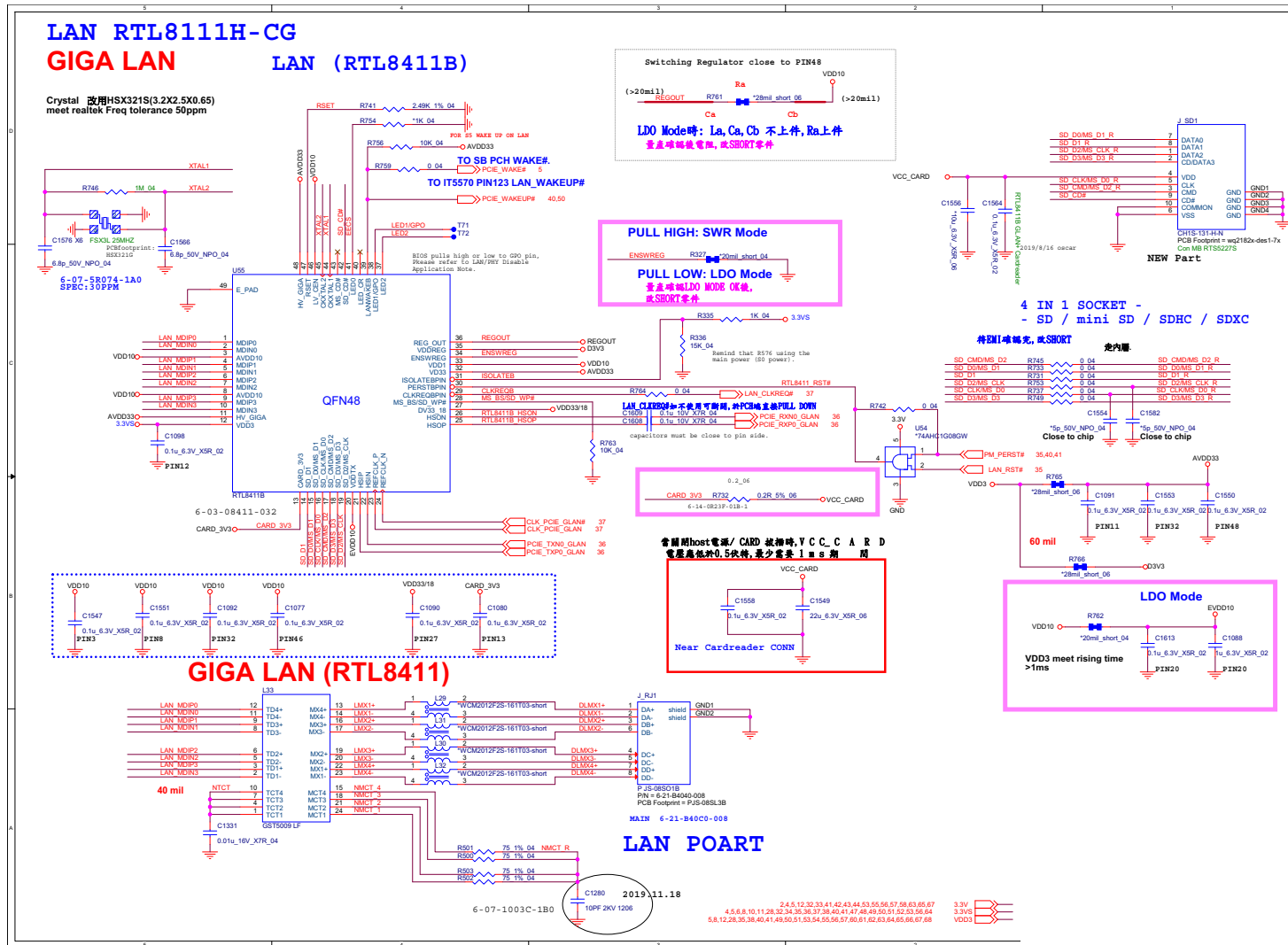


USB Type-C, ANX7440 Retimer



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USB Type-C,
ANX7440 Retimer

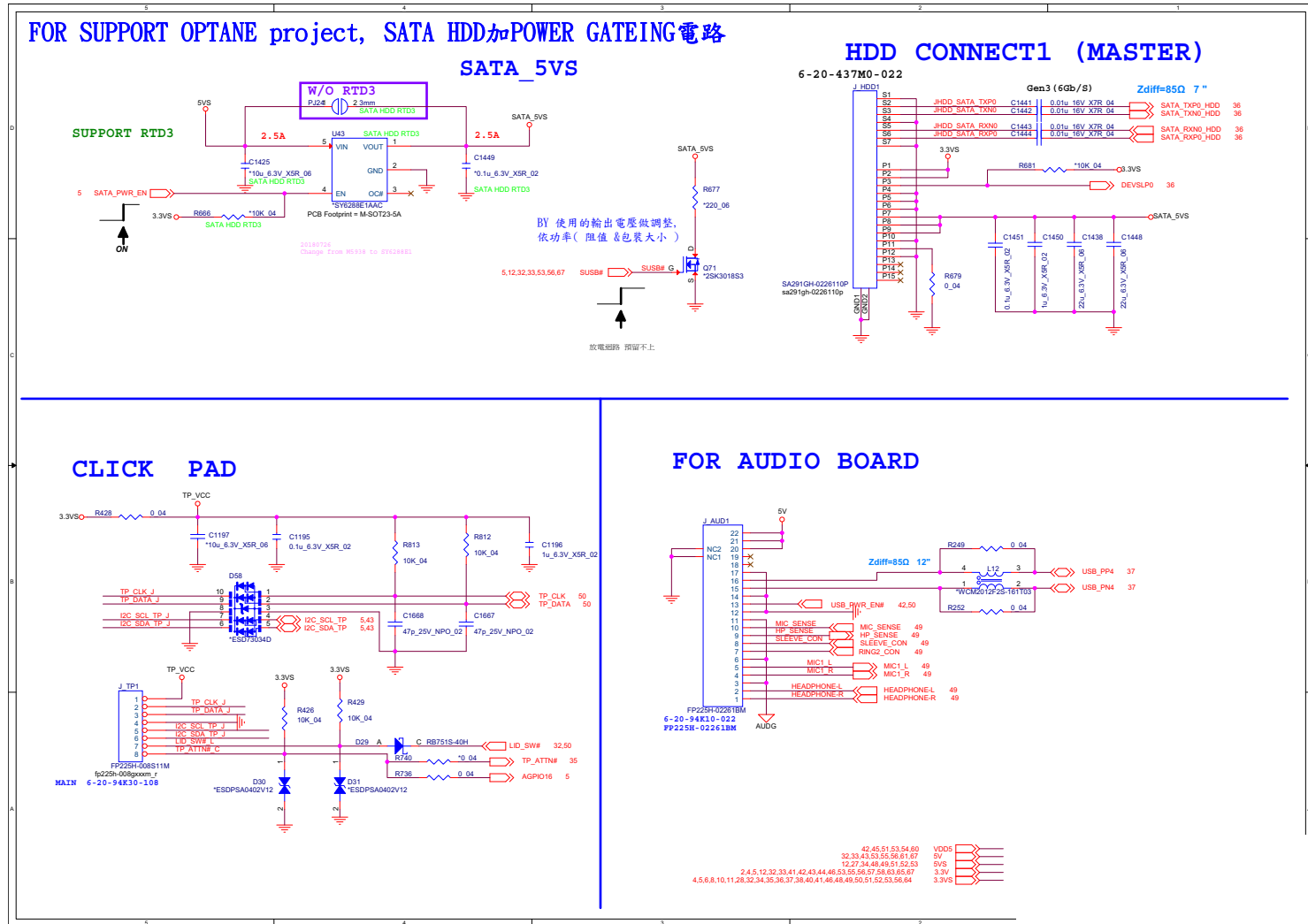
Card Reader / LAN RTL8411B



B.Schematic Diagrams

Sheet 46 of 73
Card Reader /
LAN RTL8411B

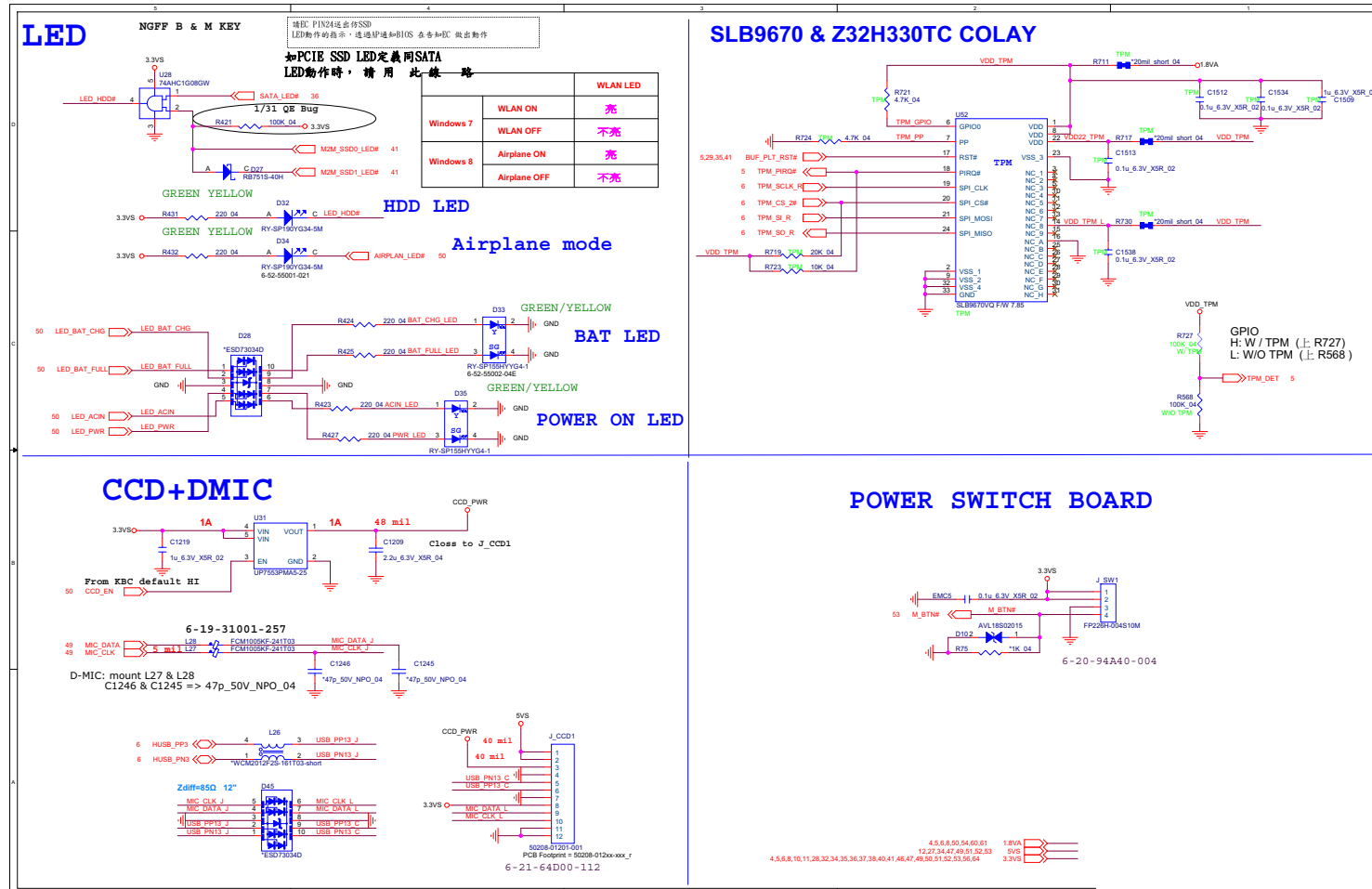
HDD, Click TP, Audio, Hall Con.



B.Schematic Diagrams

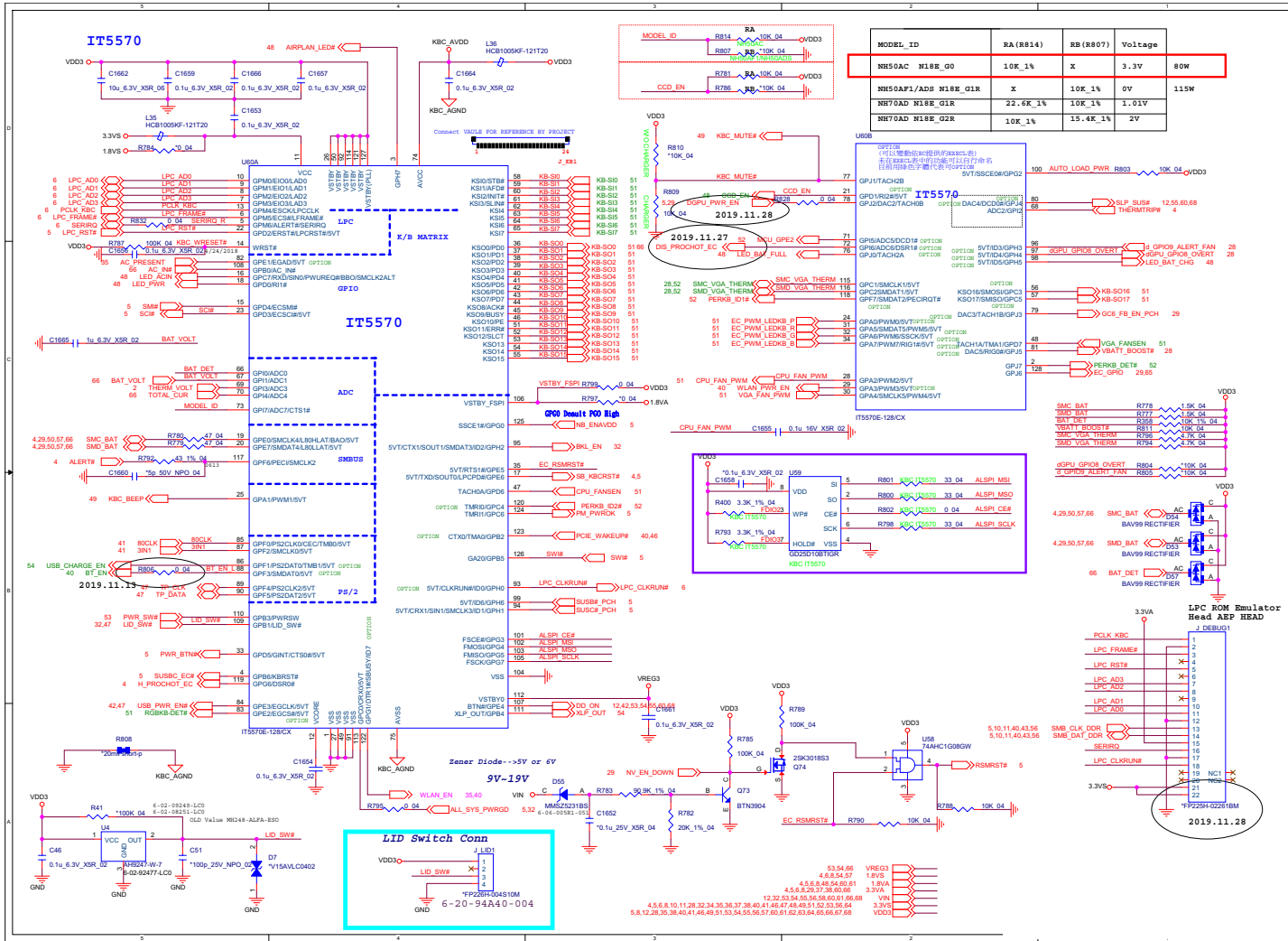
Sheet 47 of 73
HDD, Click TP,
Audio, Hall Con.

LED, CCD, TPM, Power SW Con.



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LED, CCD, TPM,
Power SW Con.

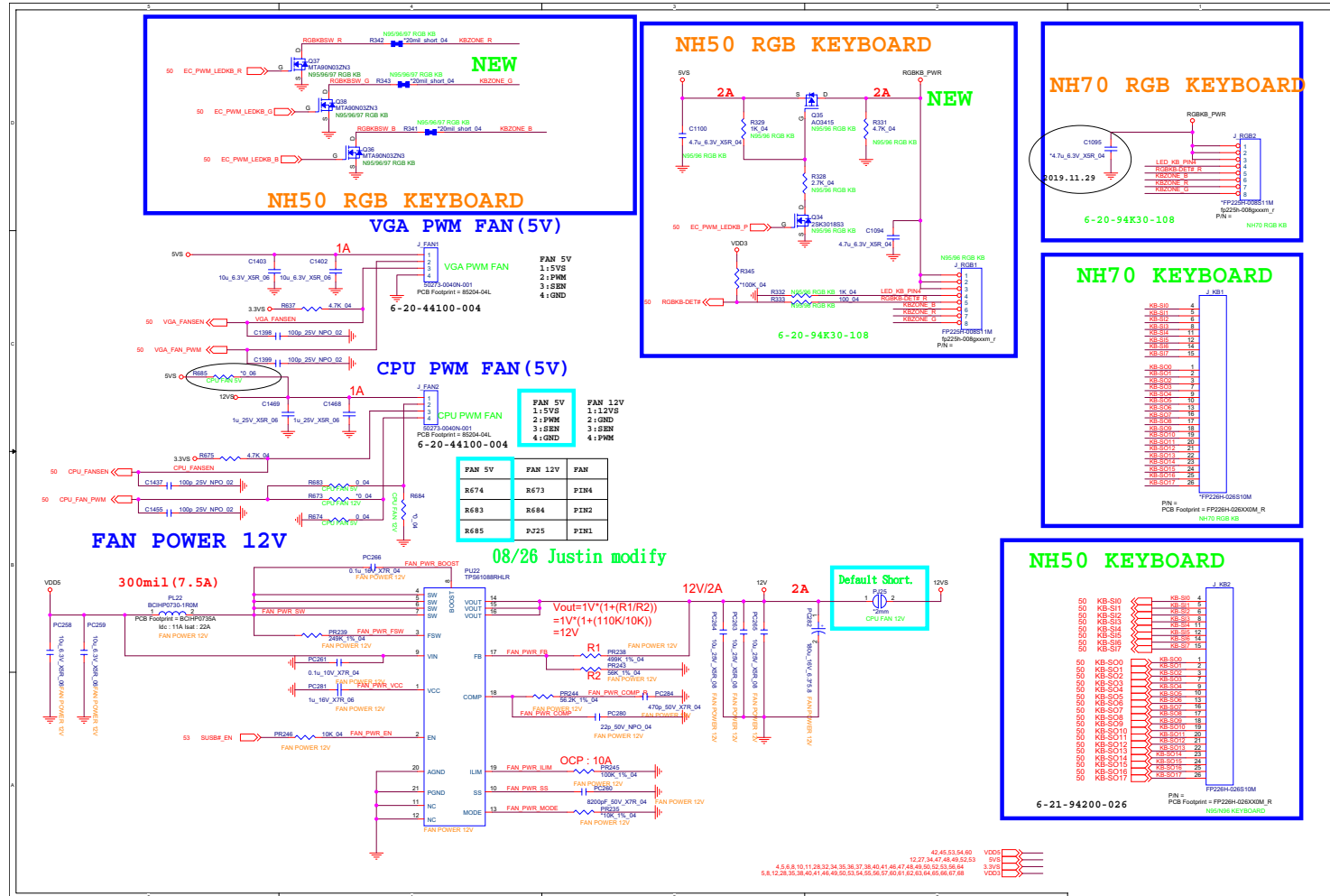
KBC-ITE IT5570



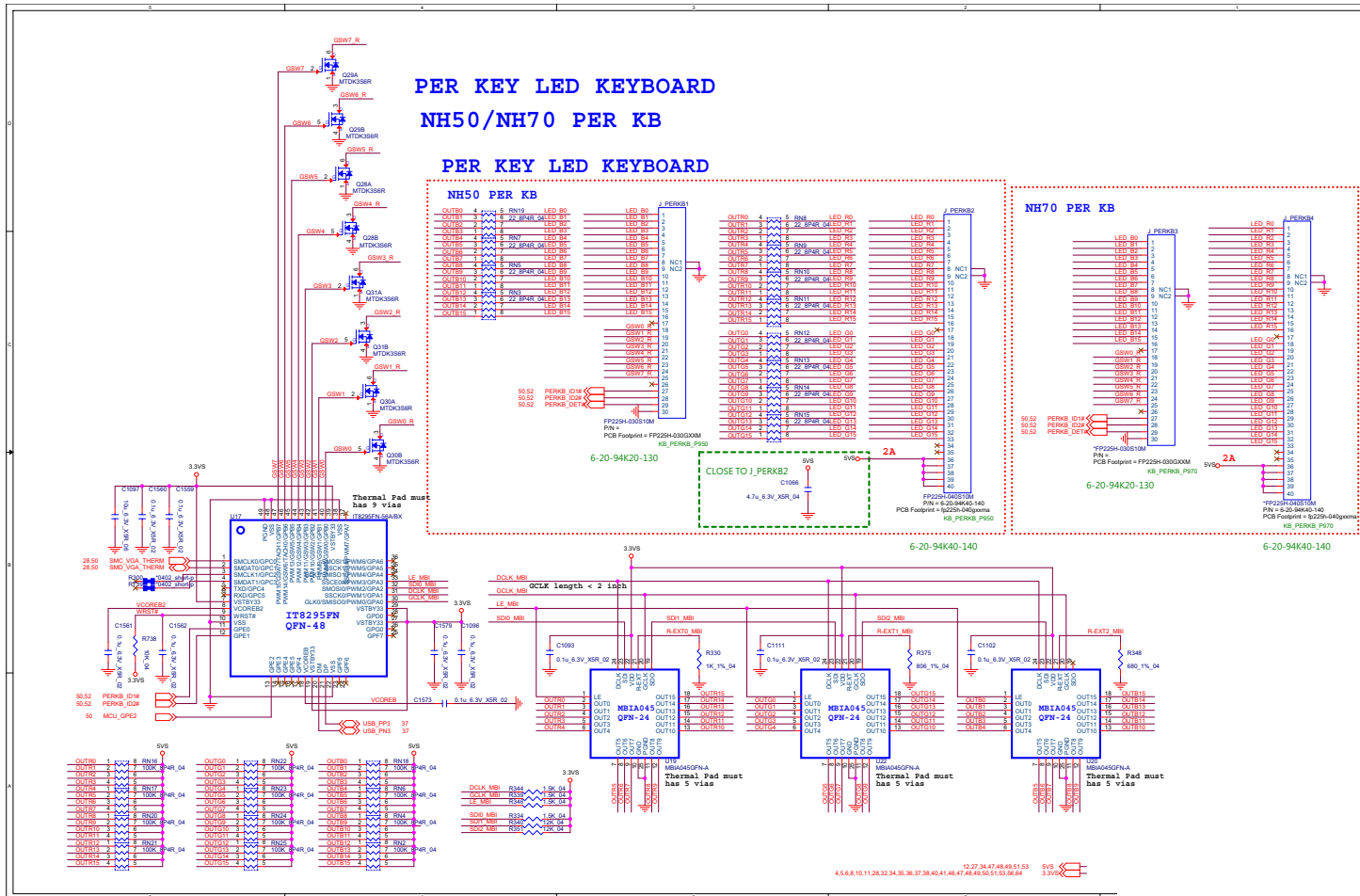
Sheet 50 of 73
KBC-ITE IT5570

RGB KB, Fan

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RGB KB, Fan



PER KEY LED KB

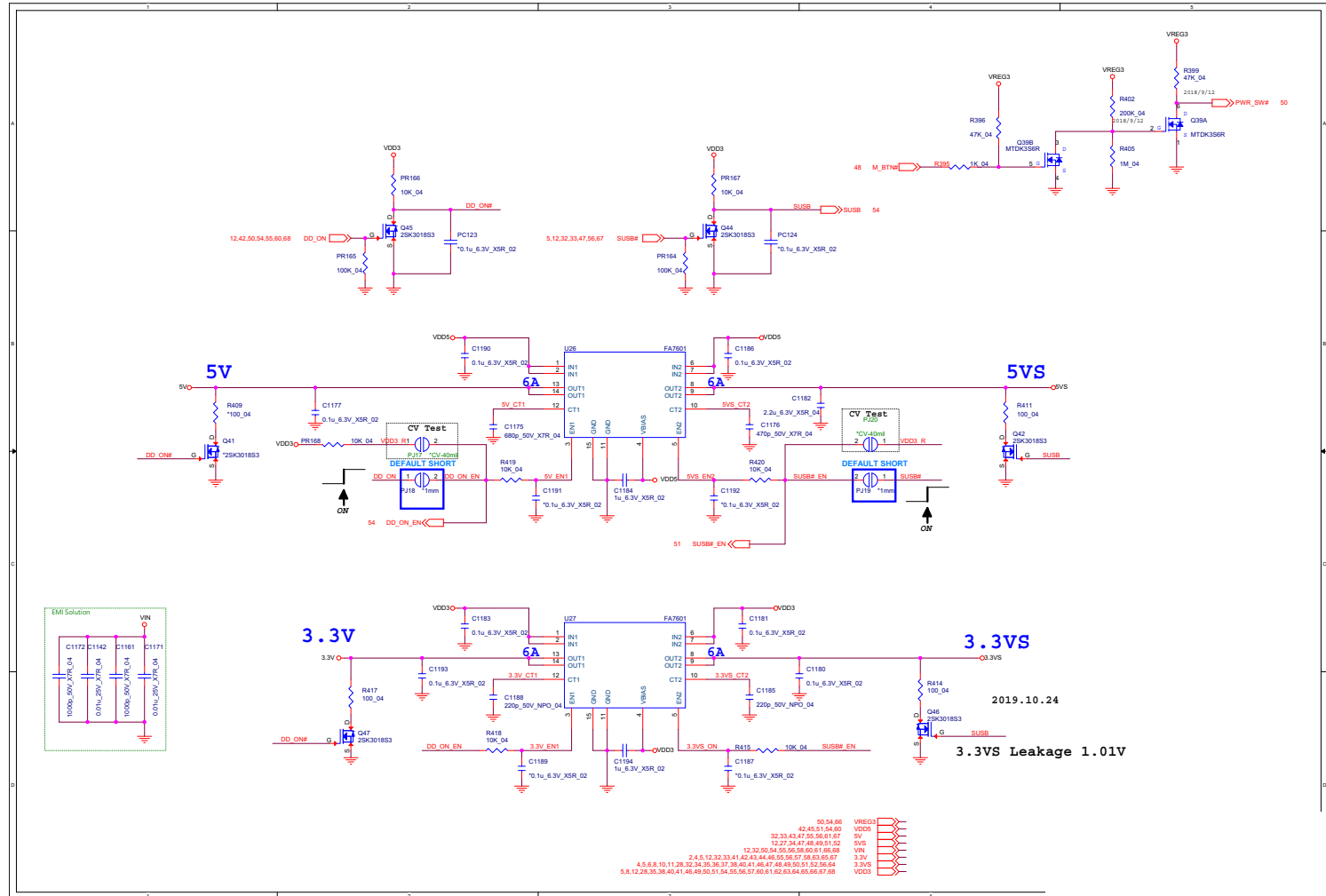


Sheet 52 of 73
PER KEY LED KB

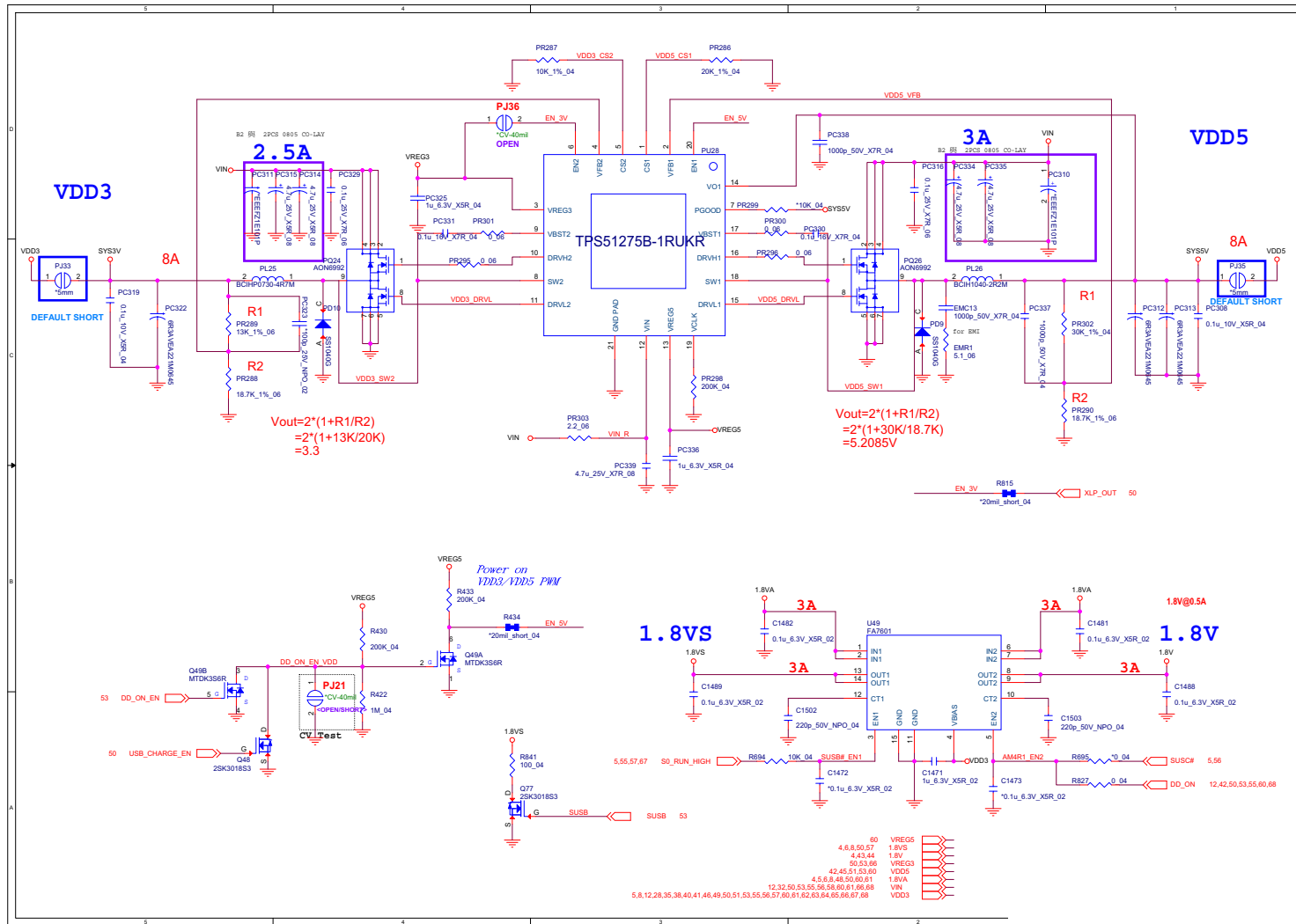
Schematic Diagrams

5V, 5VS, 3.3V, 3.3VS

Sheet 53 of 73
5V, 5VS, 3.3V,
3.3VS



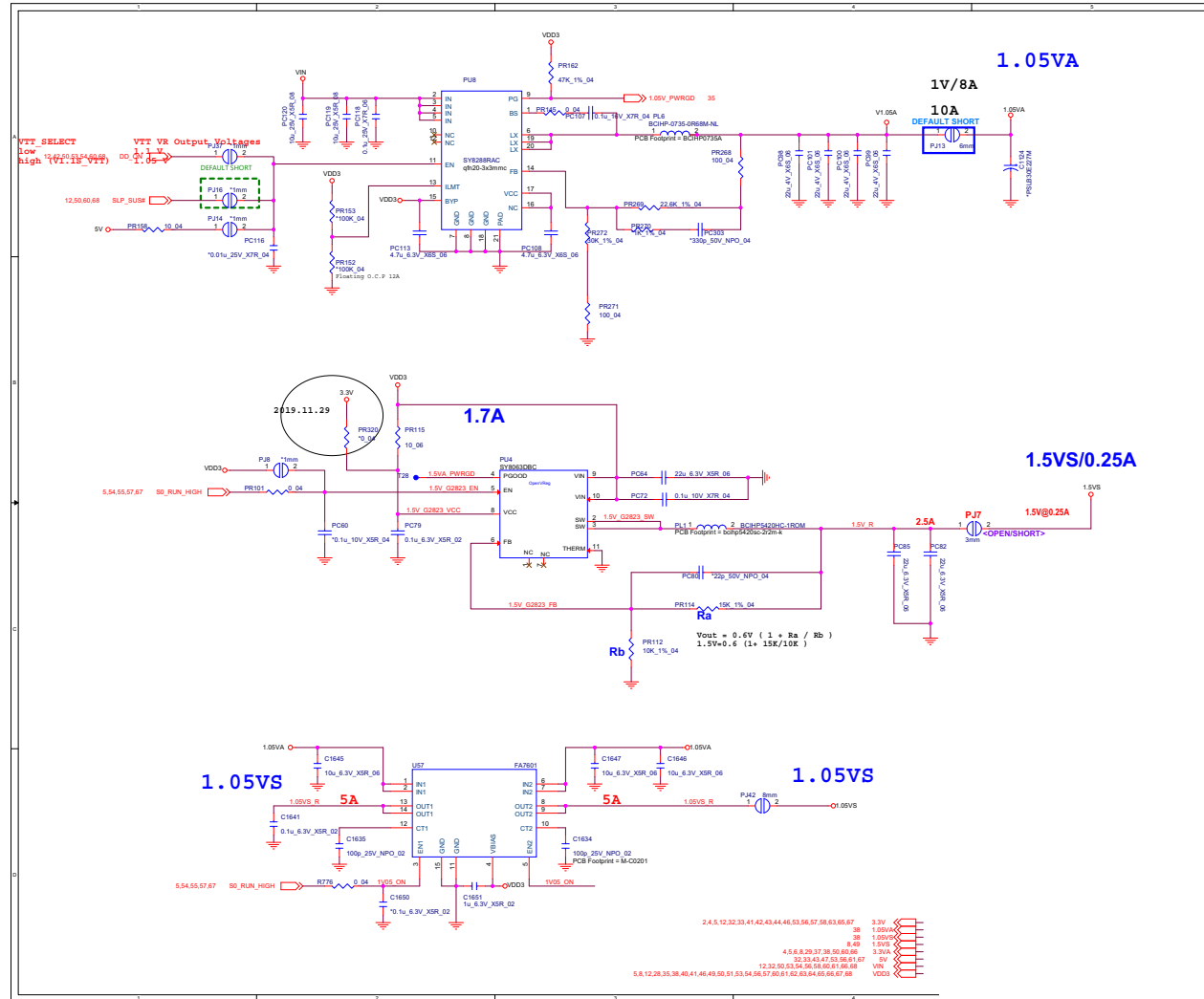
VDD3, VDD5



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VDD3, VDD5

Schematic Diagrams

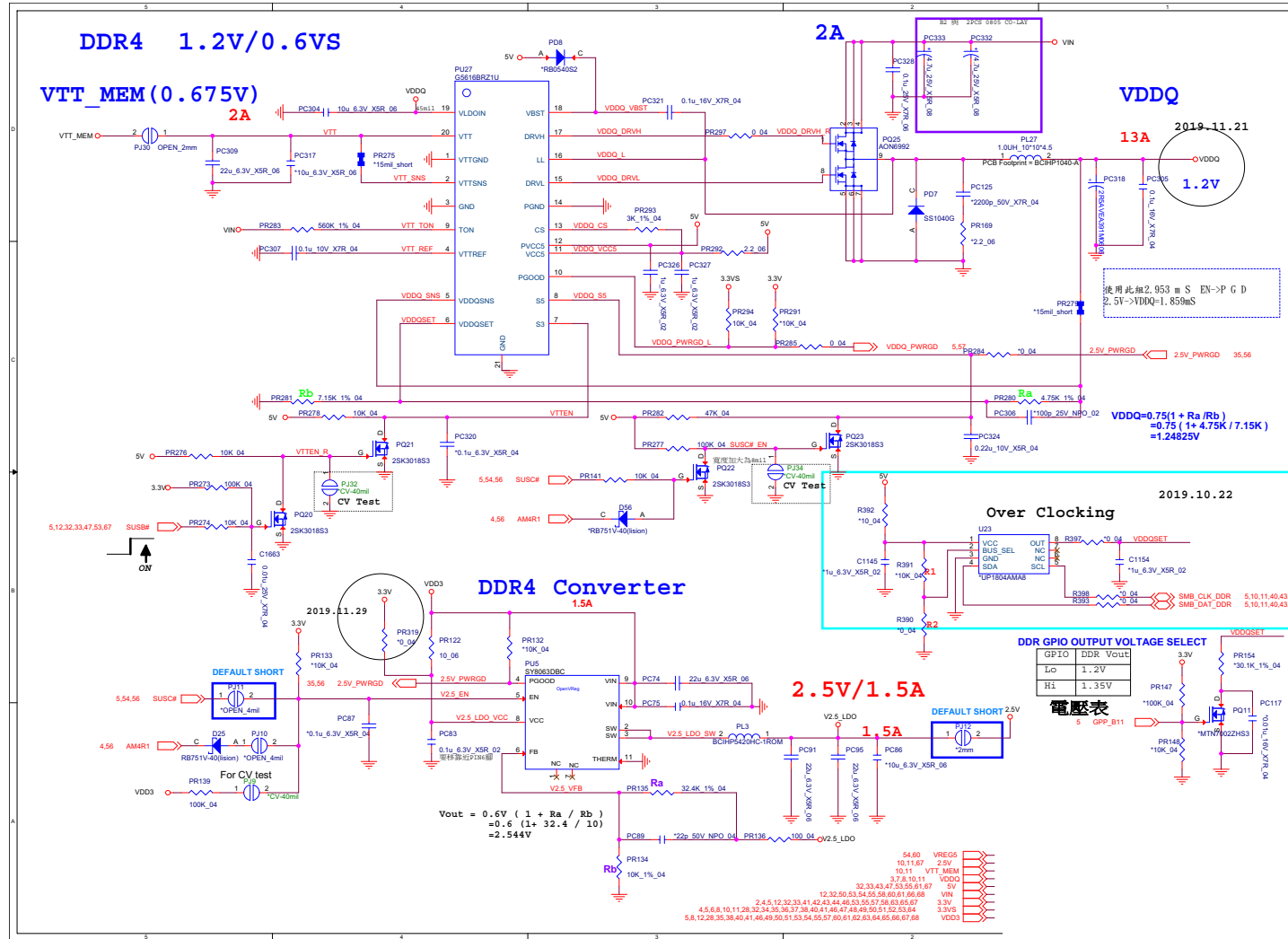
1.05VA, 1.05VS, 1.5VA



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1.05VA, 1.05VS,
1.5VA

B.Schematic Diagrams

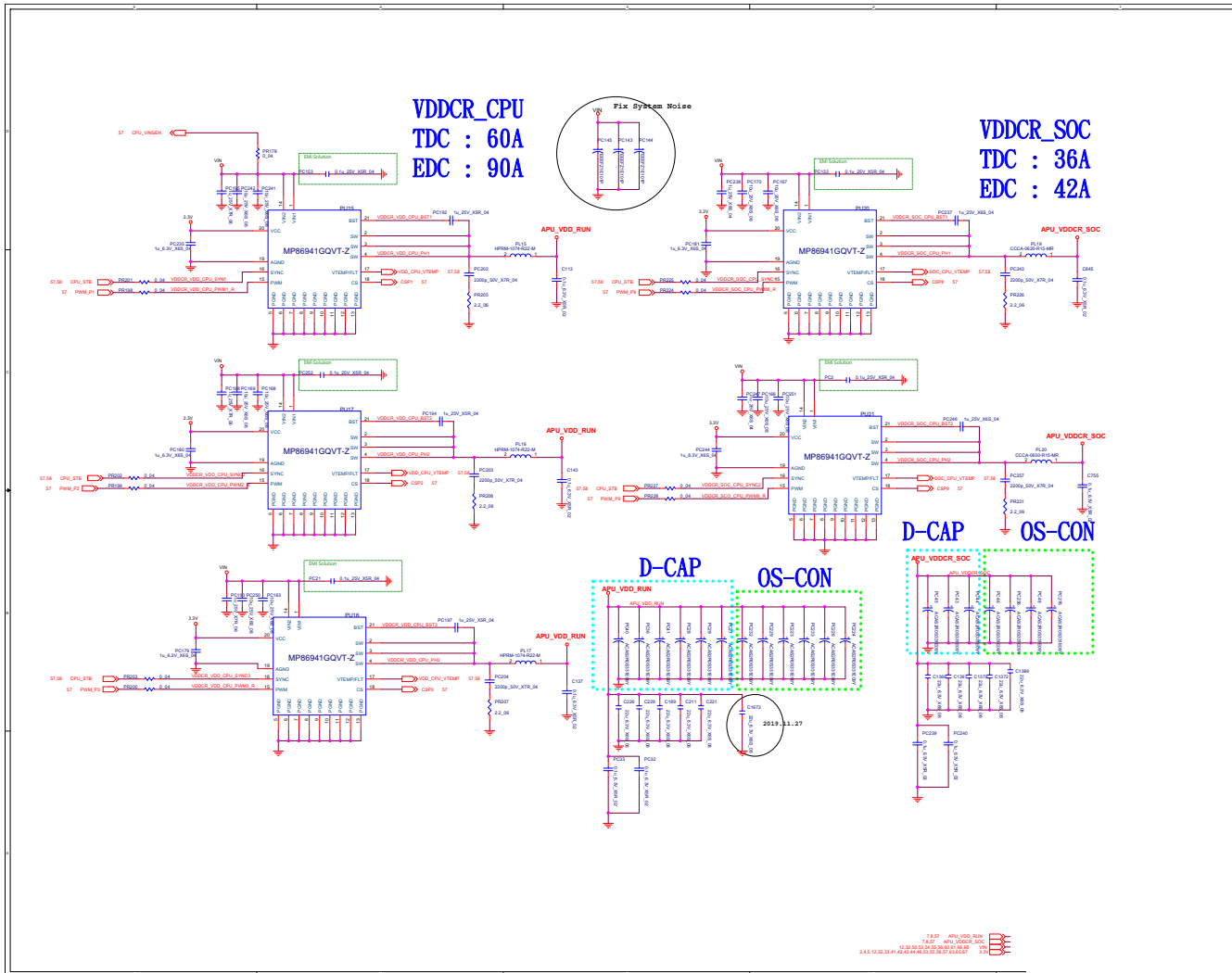
VDDQ, VTT_MEM, 2.5V



B.Schematic Diagrams

Sheet 56 of 73
 VDDQ, VTT_MEM,
 2.5V

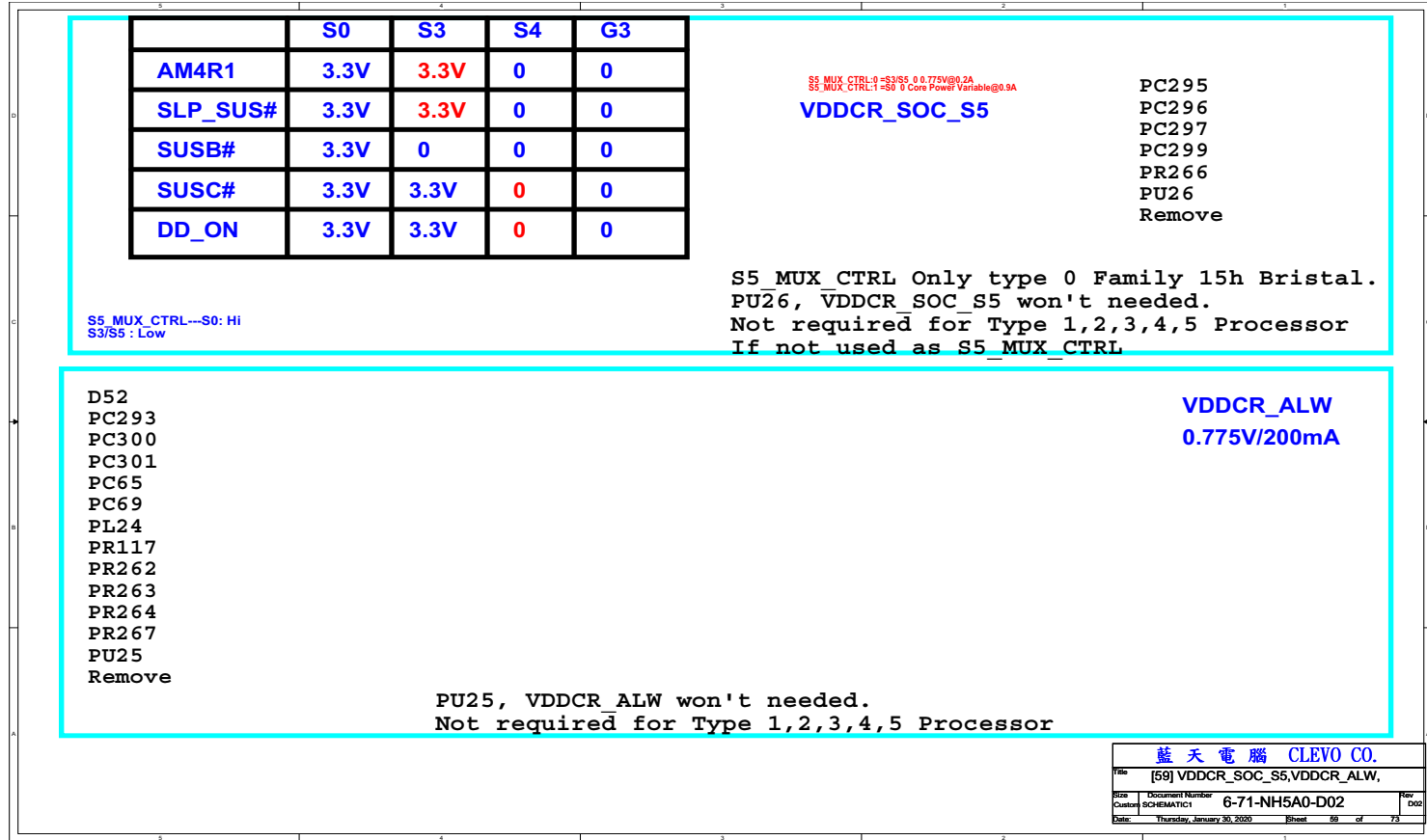
VDD_RUN, VDDCR_SOC



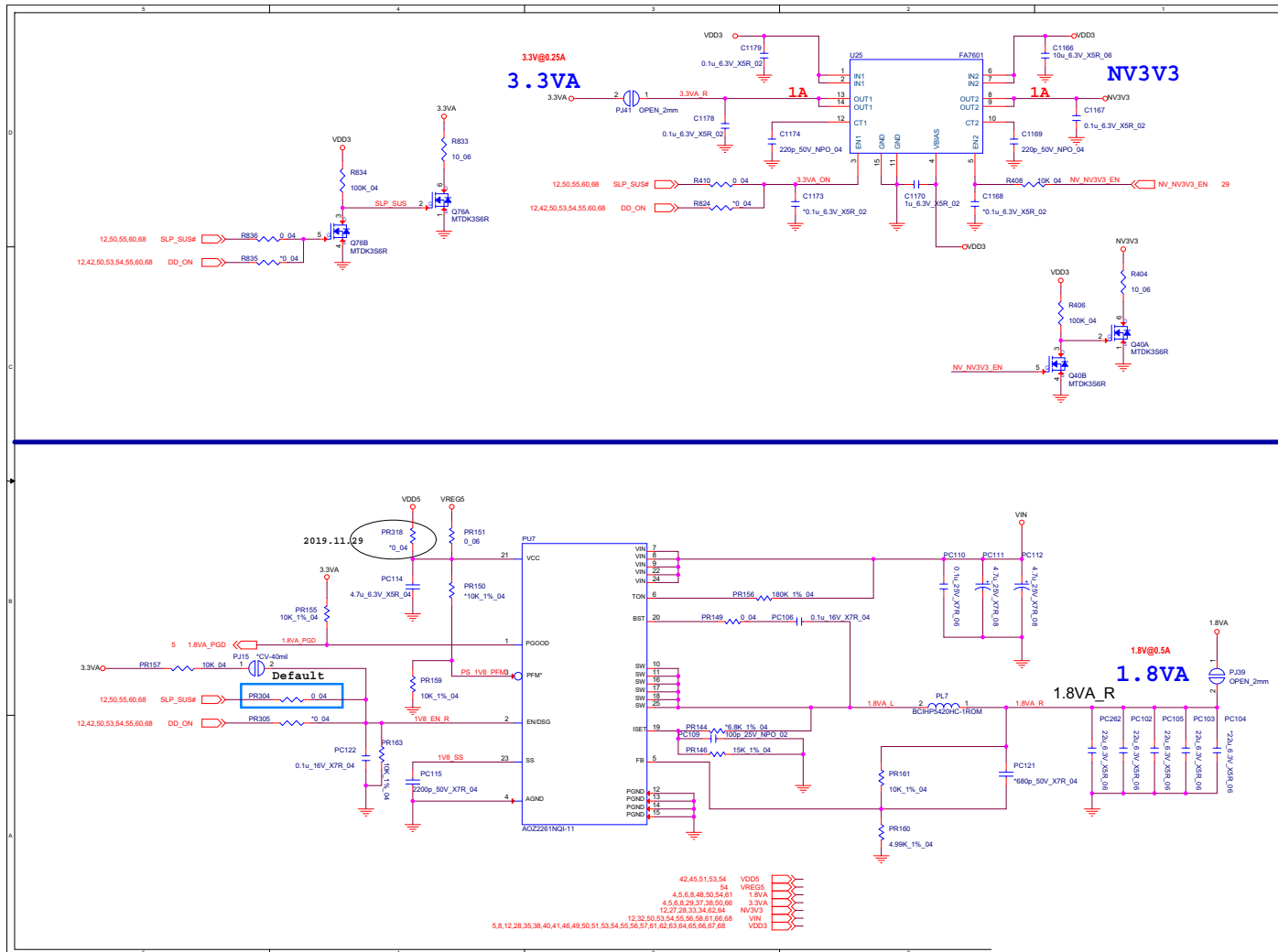
Sheet 58 of 73
VDD_RUN,
VDDCR_SOC

VDDCR_SOC_S5, VDDCR_ALW

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VDDCR_SOC_S5,
VDDCR_ALW



1.8VA, NV3V3, 3.3VA

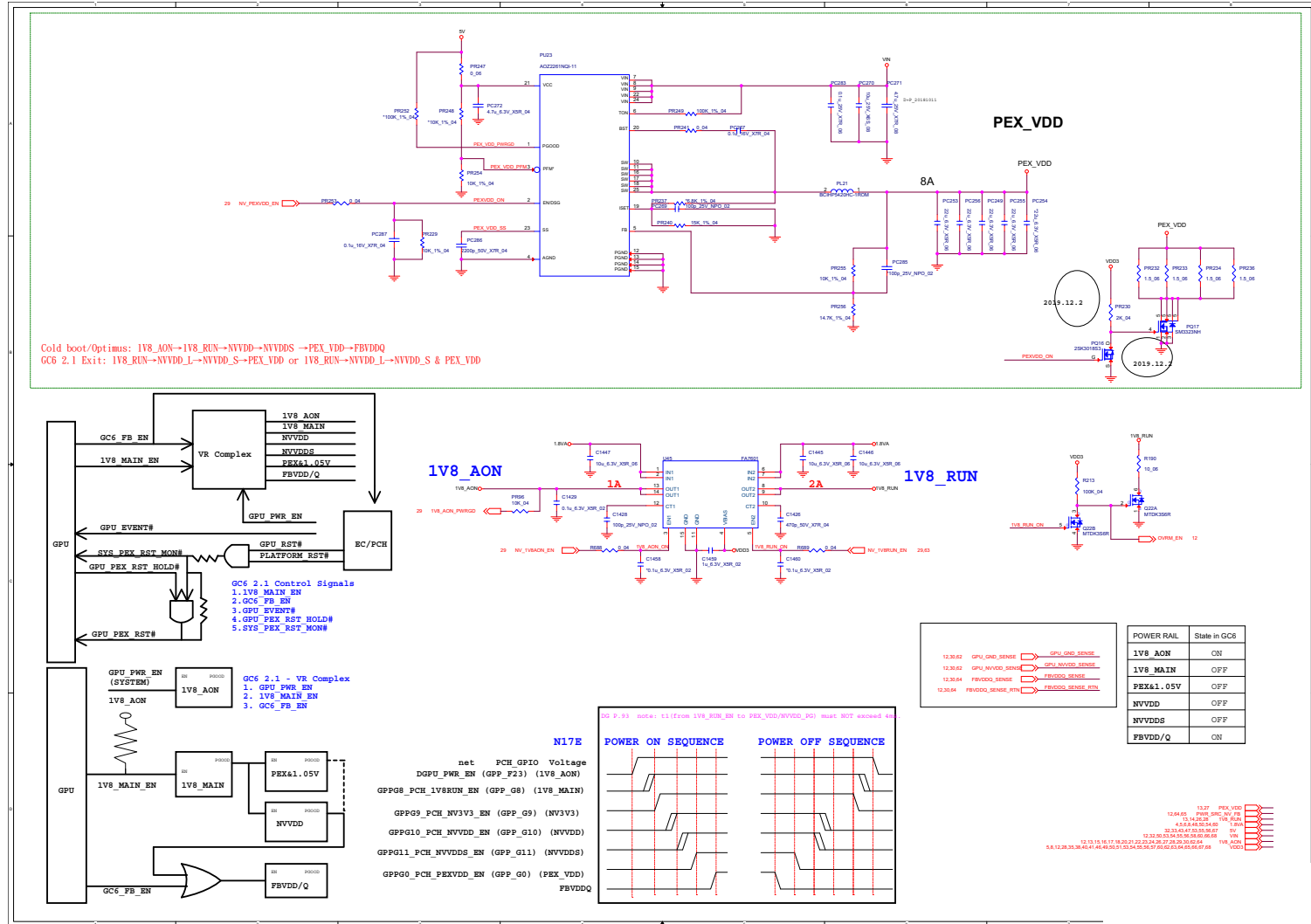


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1.8VA, NV3V3,
3.3VA

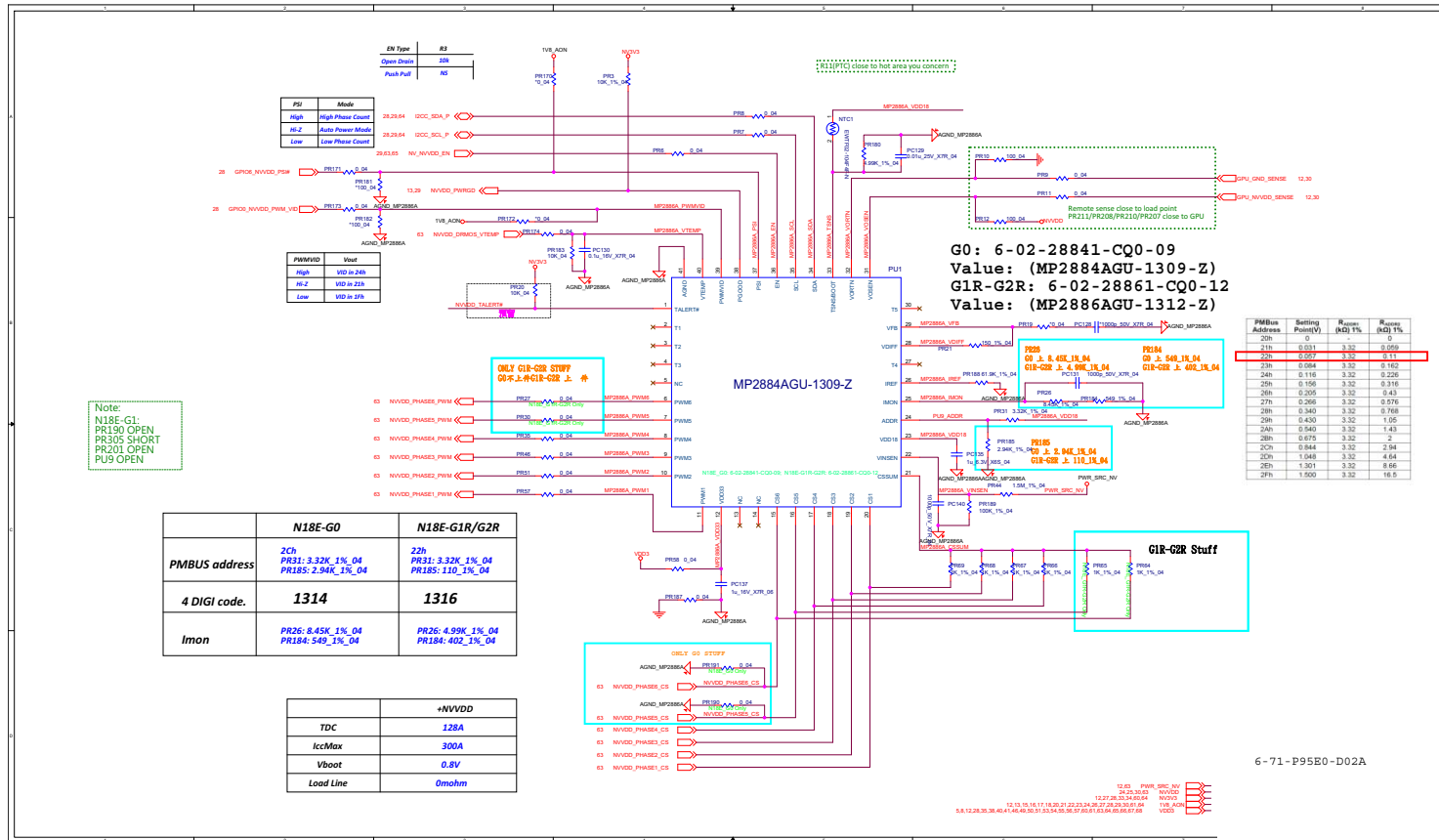
B.Schematic Diagrams

PEX_VDD, 1V8, AON/RUN

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PEX_VDD,
1V8_AON/RUN



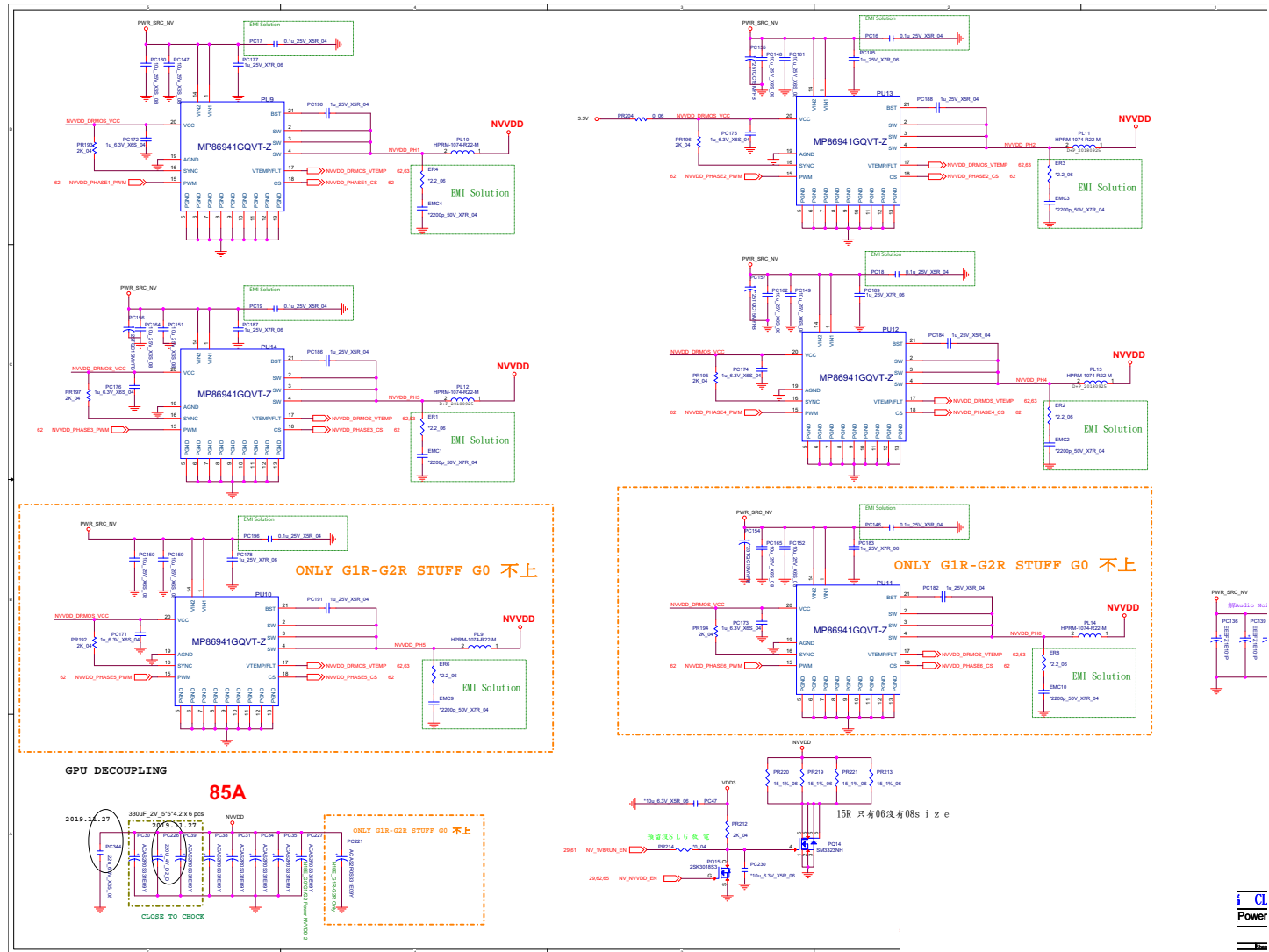
NVVDD1



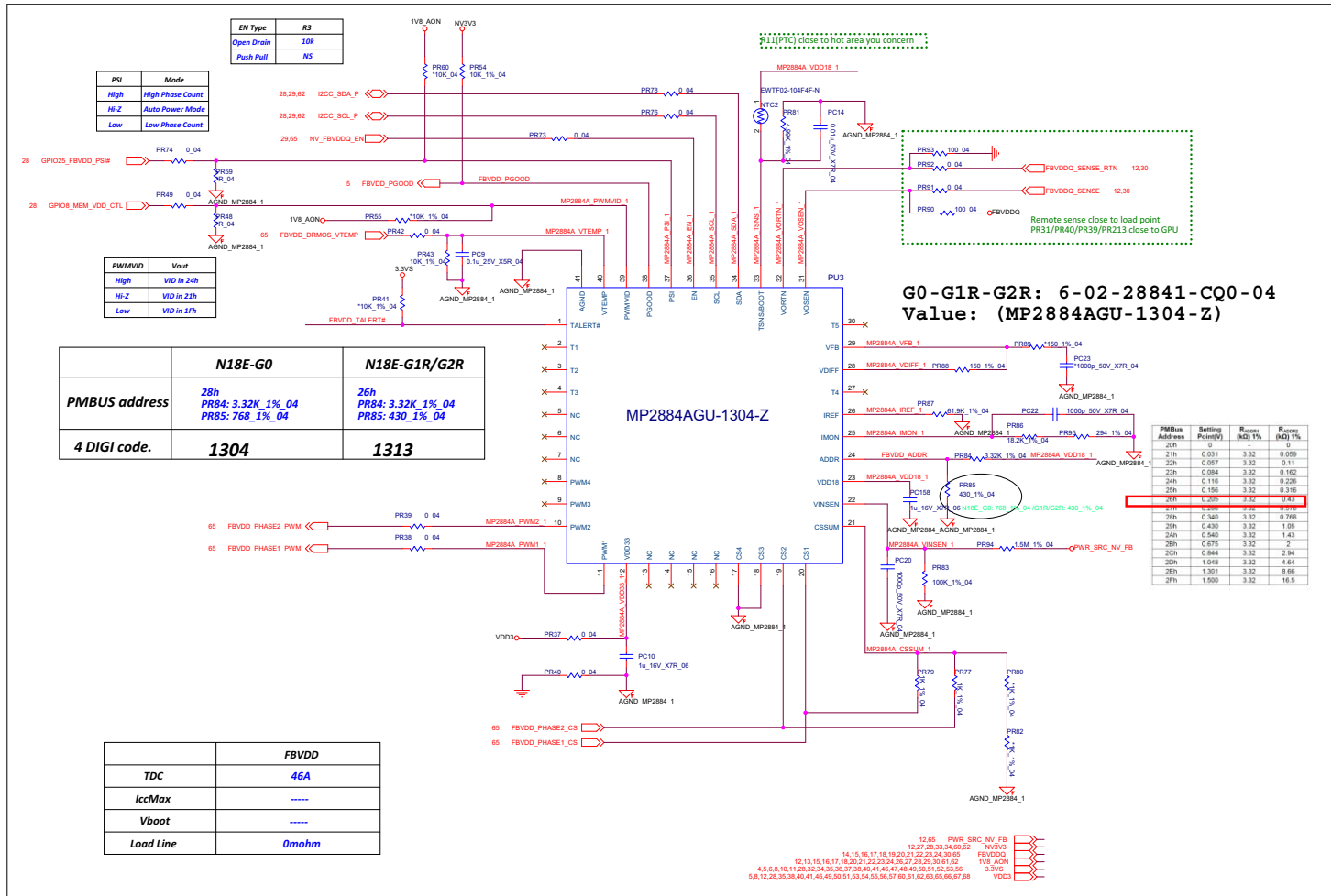
Sheet 62 of 73
NVVDD1

NVDD2

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NVDD2



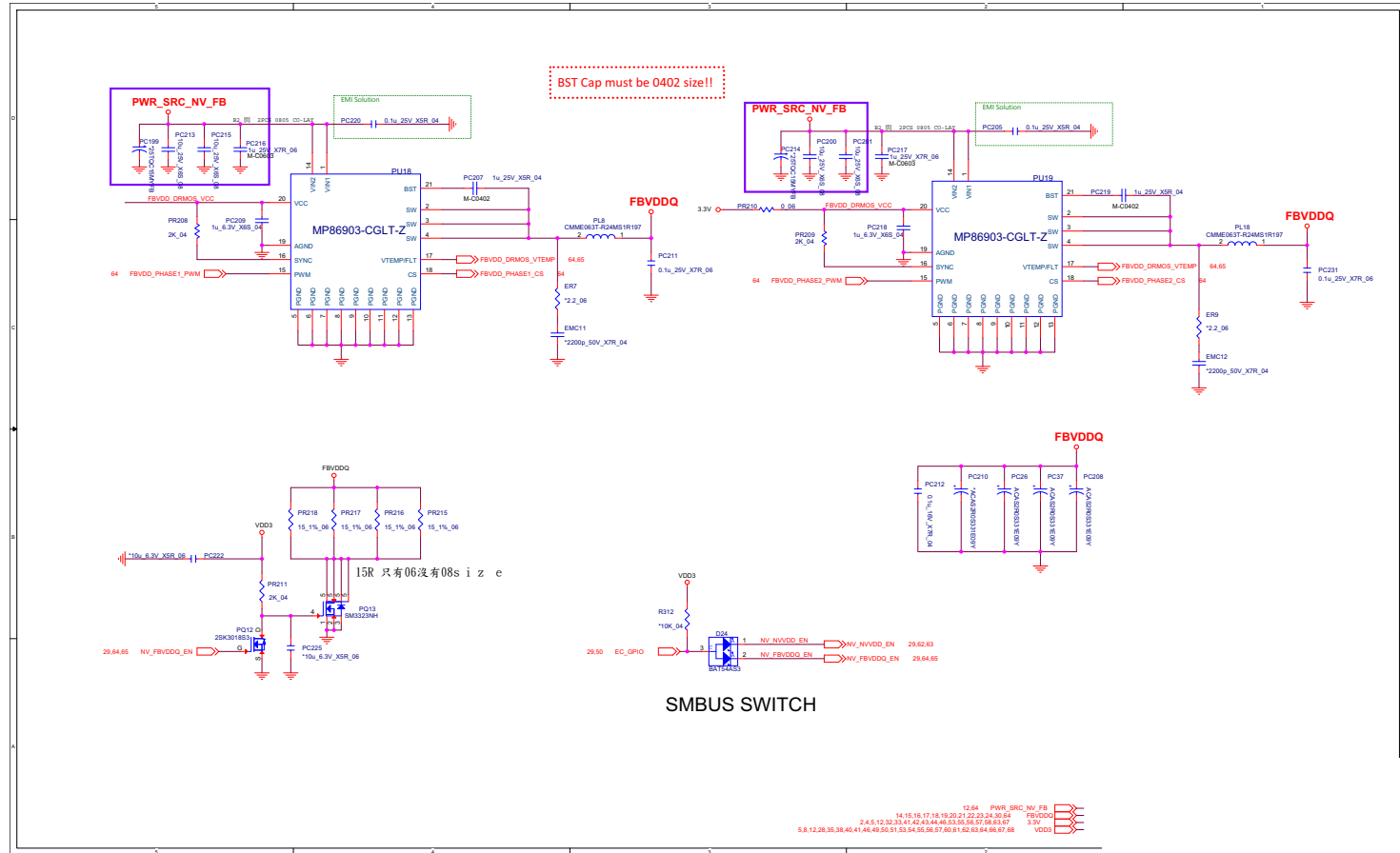
FBVDD



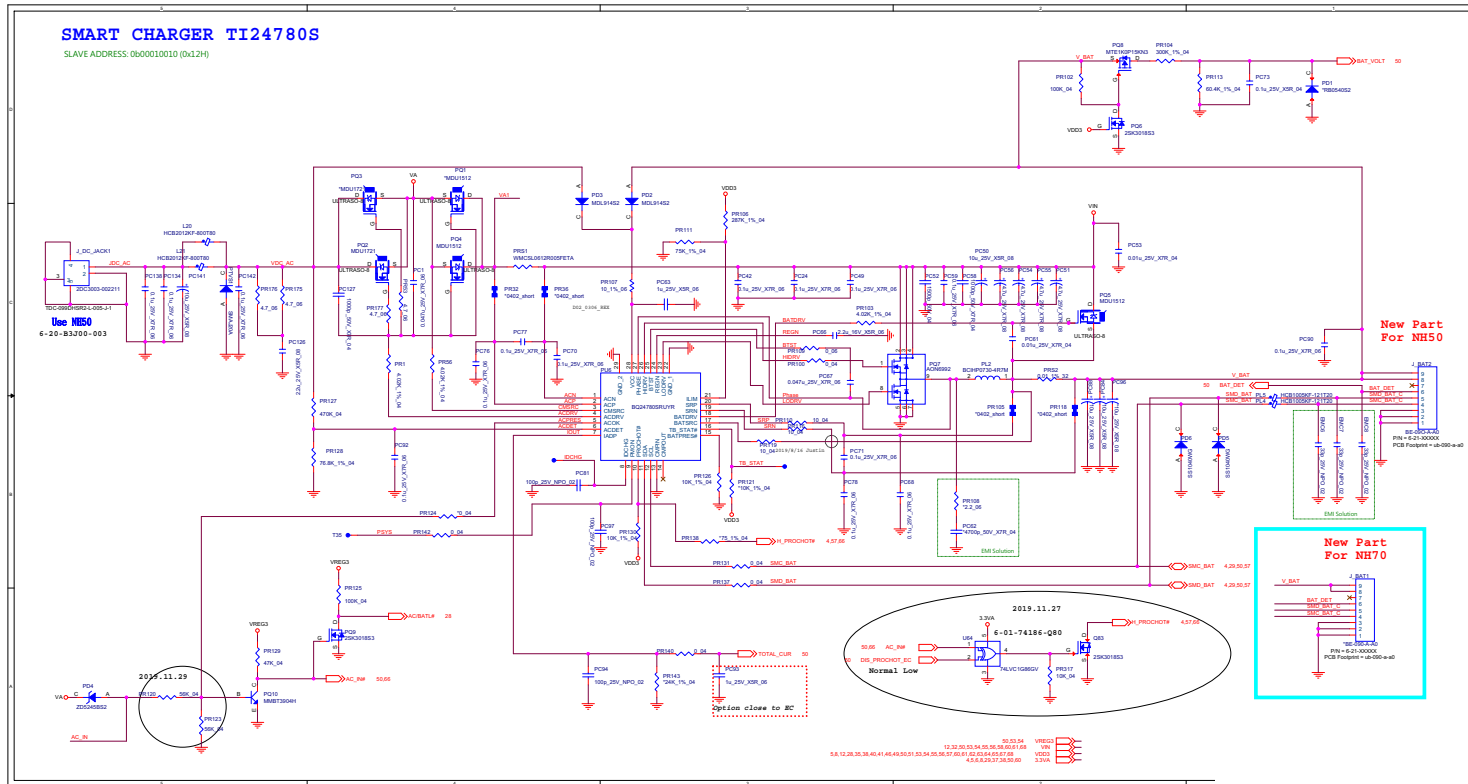
Sheet 64 of 73
FBVDD

FBVDD

Sheet 65 of 73
FBVDD



AC_In, Charger

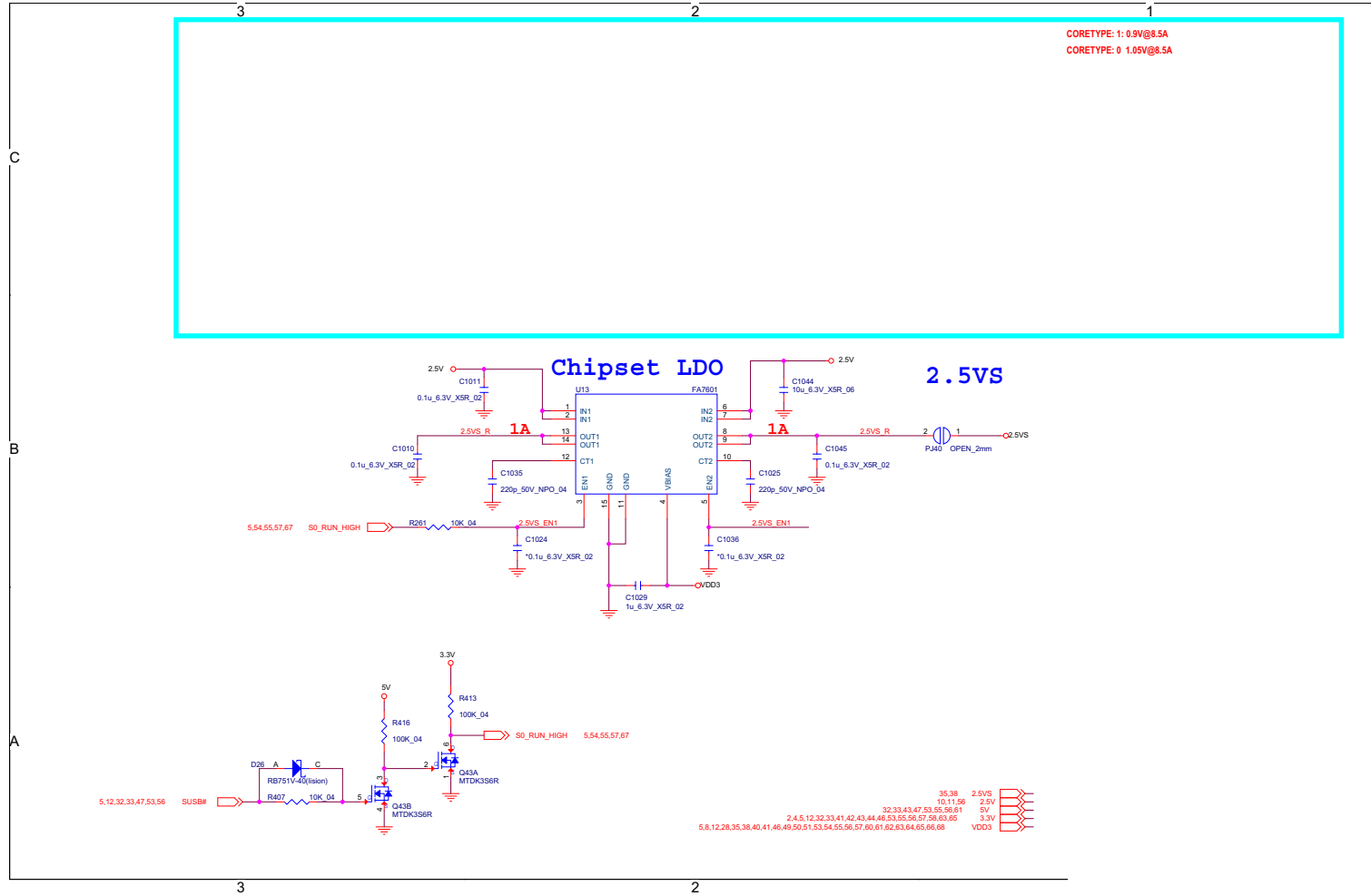


Sheet 66 of 73
AC_In, Charger

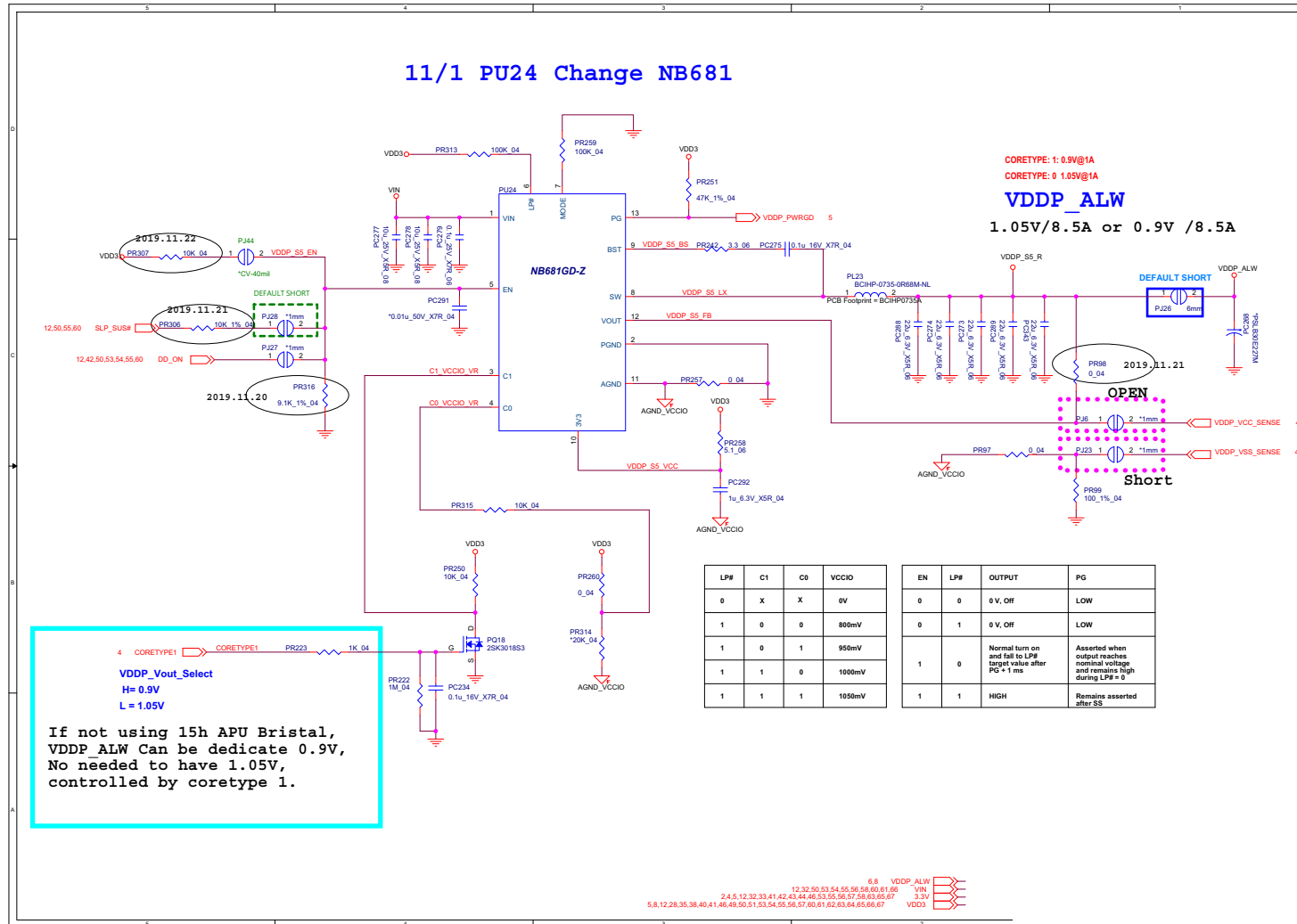
B.Schematic Diagrams

2.5VS, VDDP_RUN

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2.5VS, VDDP_RUN

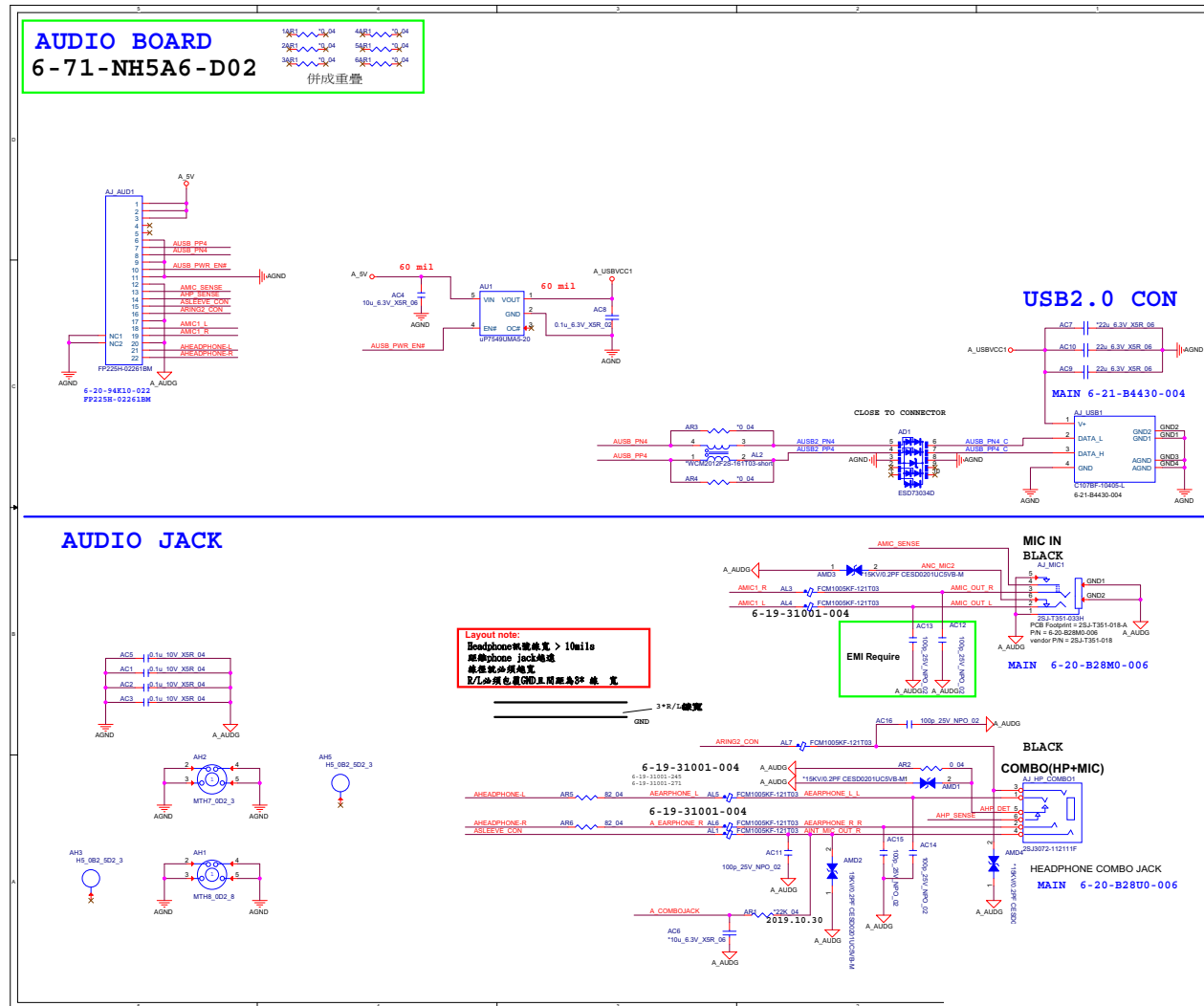


VDDP_ALW

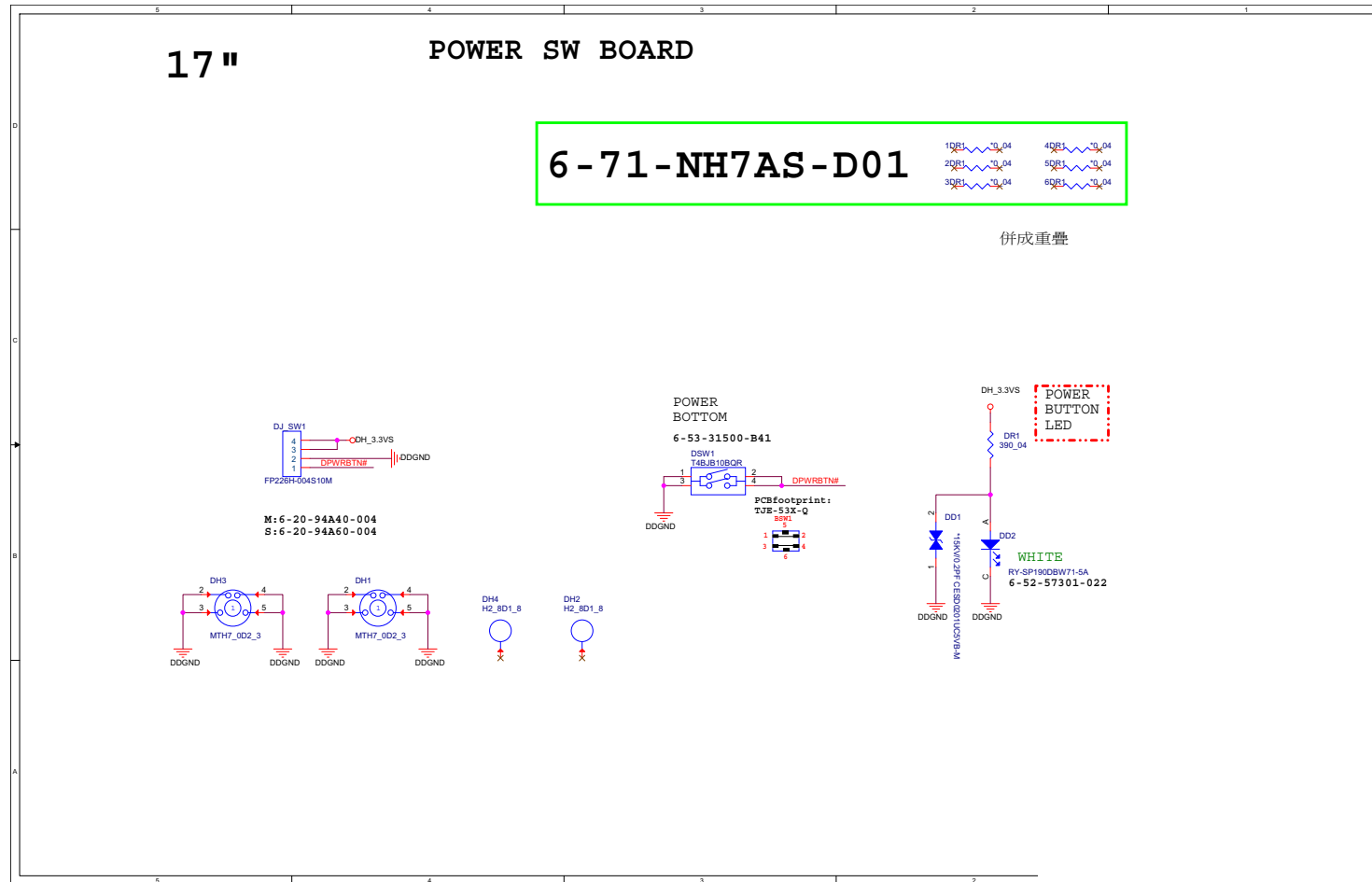


Audio Board

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Audio Board



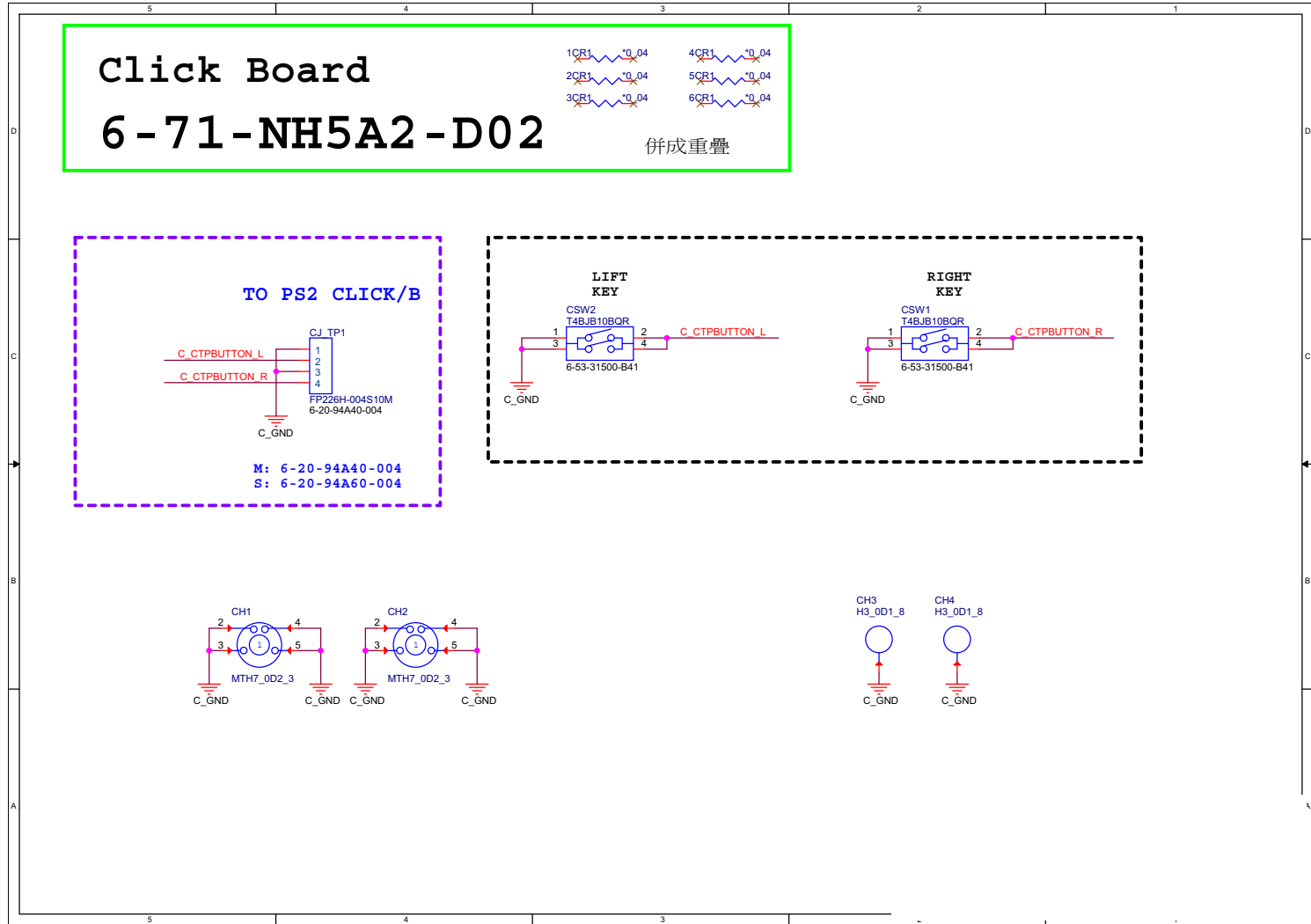
PW Board



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PW Board

B.Schematic Diagrams

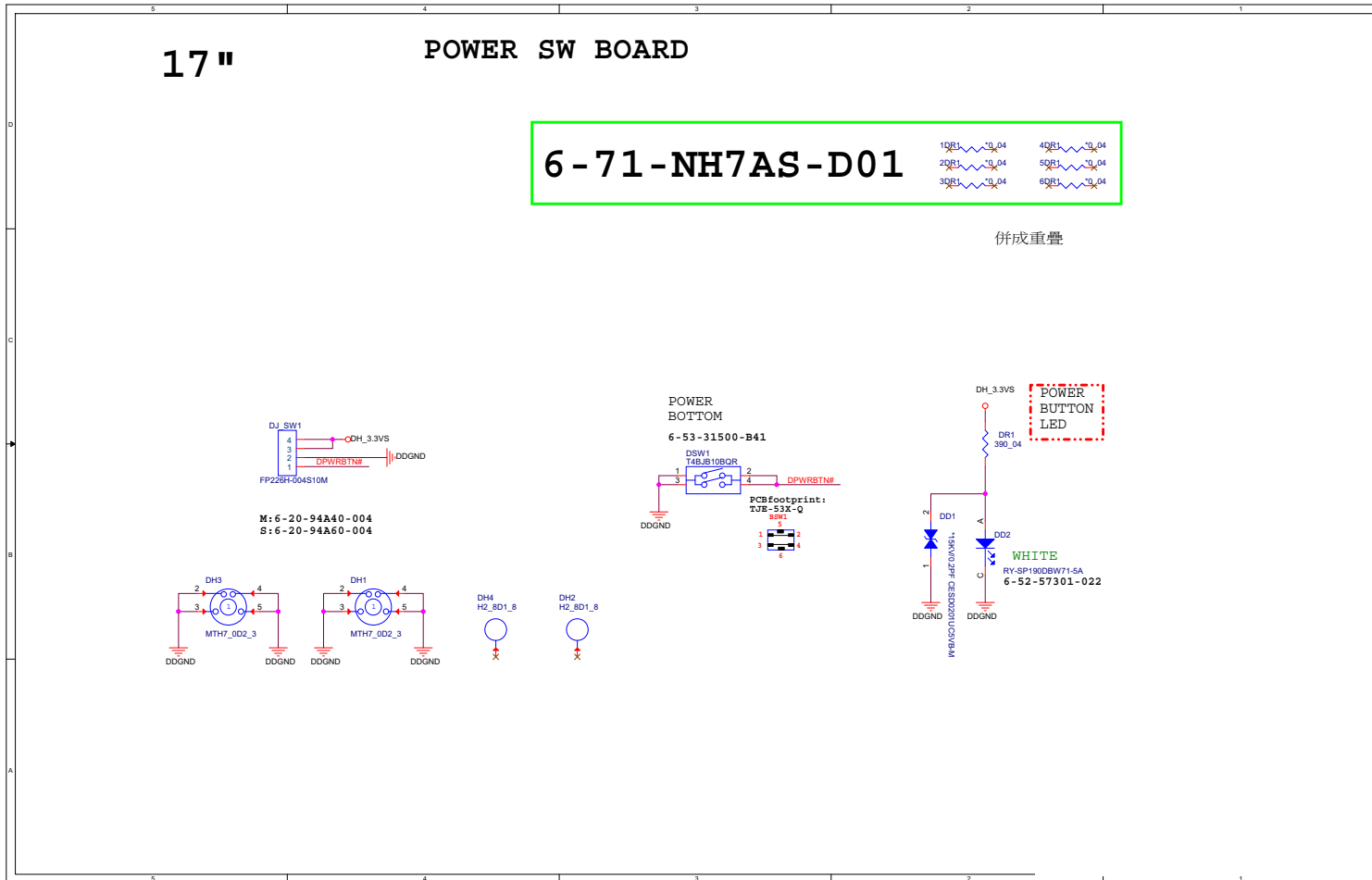
Click Board



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Click Board

B.Schematic Diagrams

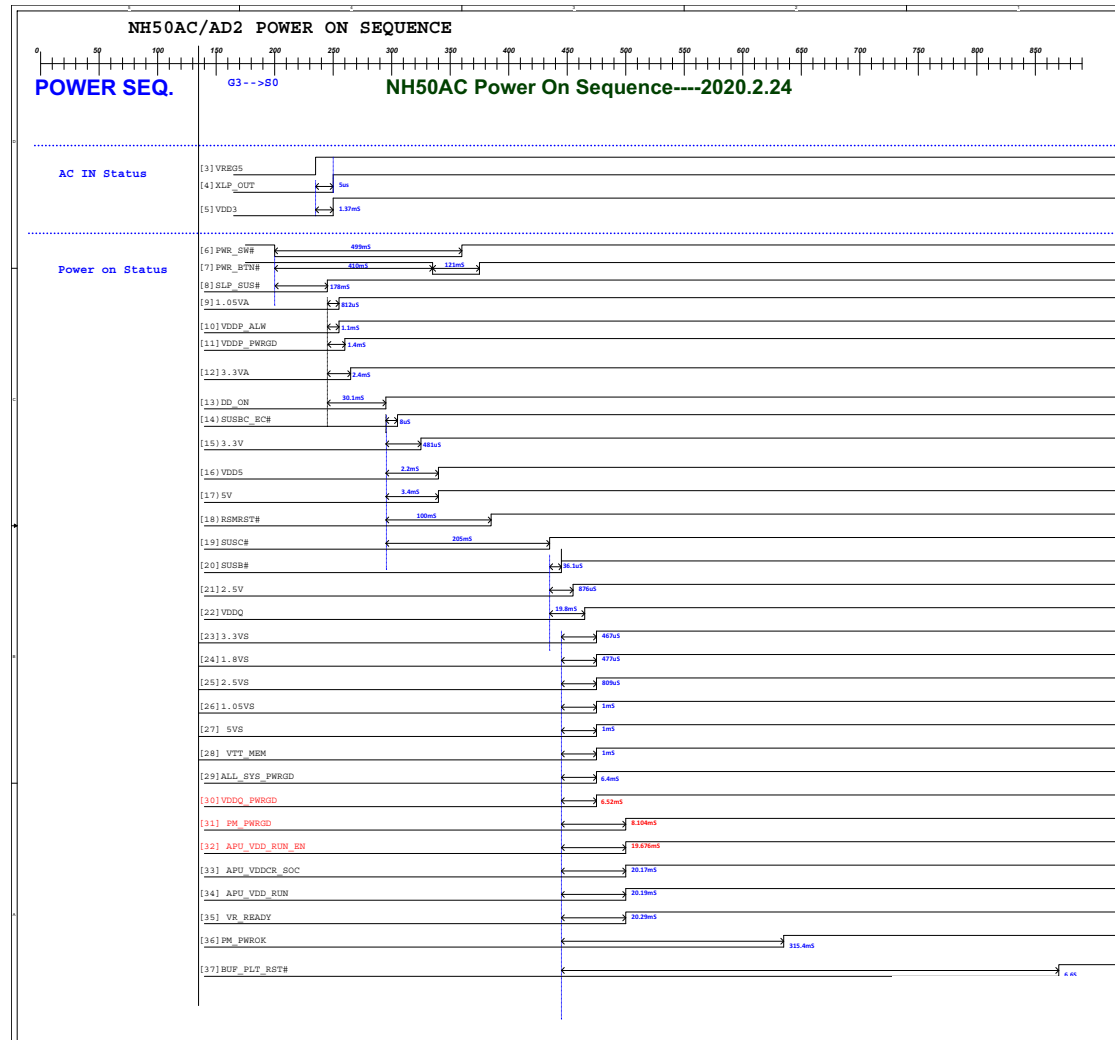
PW Board



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PW Board

B.Schematic Diagrams

Power Sequence



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Power Sequence