

SERVICE MANUAL

NP70HP

notebook



Notebook Computer

NP70HP

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 *NP70HP* 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

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 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.

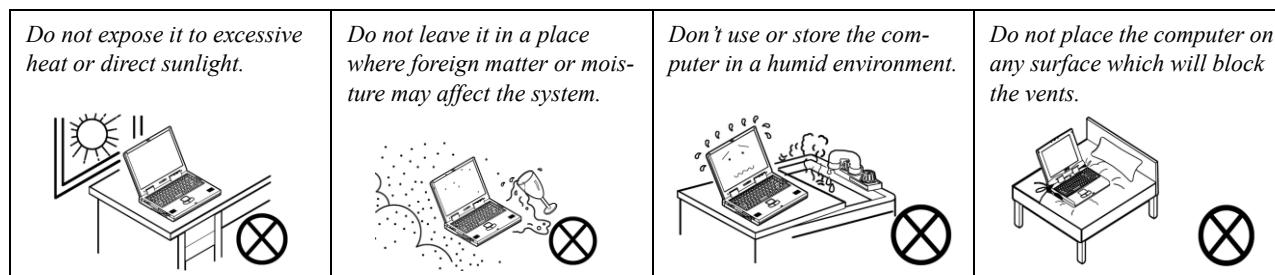
Instructions for Care and Operation

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

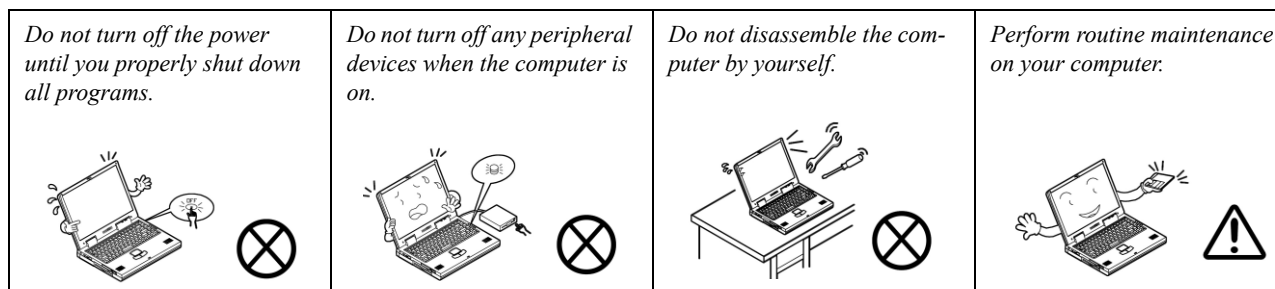
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

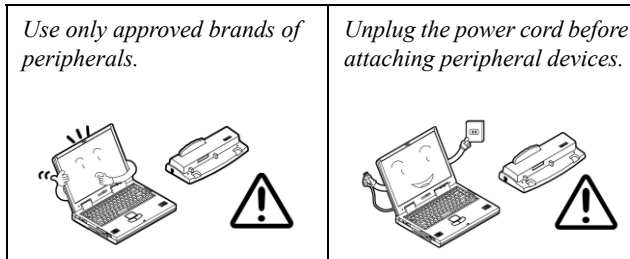


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

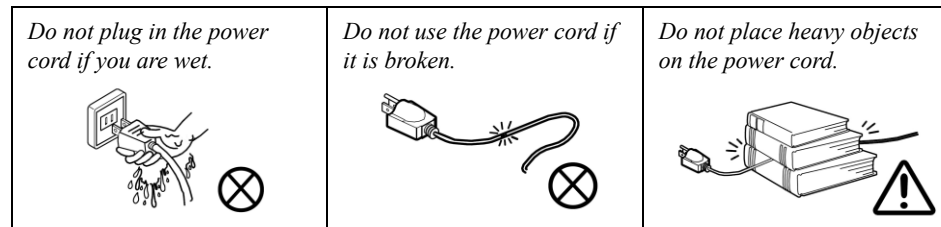
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



Power Safety

The computer has specific power requirements:

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



Power Safety Warning

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

Battery Precautions

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

Battery Guidelines

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

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



Battery Disposal

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

Caution

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

Battery Level

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

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. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
4. **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.
5. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 130 degrees); use the other hand (as illustrated in Figure 1) to support the base of the computer (**Note: Never** lift the computer by the lid/LCD).
6. Press the power button to turn the computer "on".

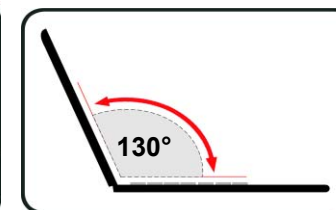
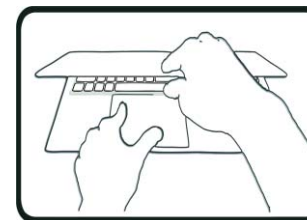


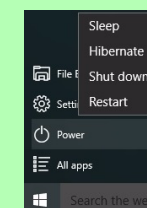
Figure 1
**Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In**



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.

1. Click the Start Menu icon .
2. Click the **Power** item .
3. Choose **Shut Down** from the menu.



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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **NP70HP** 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 **NP70HP** 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 Speed & Computer in DC Mode

Note that when the computer is in DC mode (powered by the battery only) the CPU may not run at full speed. This is a design feature implemented in order to protect the battery.

Processor Options

i7-11800H (2.30GHz), TDP 45W

i7-11600H (2.90GHz), TDP 45W

i5-11400H (2.70GHz), TDP 45W

i5-11260H (2.60GHz), TDP 45W

Core Logic

Mobile Intel® HM570 Express Chipset

LCD Options

LCD, 17.3" (43.94cm), 16:9, FHD (1920x1080)

BIOS

INSYDE BIOS (256Mb SPI Flash ROM)

Memory

Dual Channel DDR4

Two 260 Pin SO-DIMM Sockets

Supporting up to **3200MHz DDR4** Memory

Memory Expandable up to **64GB**

Compatible with 8GB,16GB or 32GB Modules

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

Storage

One M.2 **PCIe Gen4 x4** Solid State Drive (SSD)*

Or

(**Factory Option**) One changeable 2.5" (6cm) 7.0mm (h)

SATA (Serial) Hard Disk Drive/Solid State Drive (SSD)

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

*Supporting RAID Level 0/1 with two PCIe SSDs (**PCIe Gen3 x4**)

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Intel® PTT for Systems Without TPM Hardware

(**Factory Option**) TPM 2.0

Video Adapter Options

Microsoft Hybrid Graphics Mode

Supports up to 4 Active Displays

Intel Integrated GPU

Intel® UHD Graphics

Dynamic Frequency

Intel Dynamic Video Memory Technology

Microsoft DirectX®12 Compatible

NVIDIA® Discrete GPU

NVIDIA® GeForce RTX3060

6GB GDDR5 Video RAM

Microsoft DirectX®12 Compatible

Supports PCIe x4

Pointing Device

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

Keyboard

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

Audio

High Definition Audio Compliant Interface

Sound Blaster Cinema 6

Built-In Array Microphone

Two Speakers

Communication

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

1.0M HD Webcam

WLAN/ Bluetooth M.2 Modules:

(**Factory Option**) Intel® Dual Band Wi-Fi 6 AX200, 2x2 AX Wireless LAN + Bluetooth

(**Factory Option**) Intel® Dual Band Wi-Fi 6 AX201, 2x2 AX Wireless LAN + Bluetooth

(**Factory Option**) Intel® Dual Band Wi-Fi 5 Wireless-AC 9462, 1x1 AC Wireless LAN + Bluetooth

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 Gen4 x4 SSD**

Interface

One USB 2.0 Port

One USB 3.2 Gen 1 Type-A Port

One USB 3.2 Gen 2 Type-C Port*

**The maximum amount of current supplied by USB Type-C ports is 500mA (USB 2.0)/900mA (USB3.2).*

One Thunderbolt 4**

***The power output of the Thunderbolt 4 port is 5V/3A in AC mode or 5V/1.5A in DC mode.*

One Mini DisplayPort 1.4

One HDMI-Out Port

One Microphone-In Jack

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

One RJ-45 LAN Jack

One DC-In Jack

Environmental Spec**Temperature**

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Power

Embedded 4 Cell Polymer Battery Pack, 49WH

Full Range AC/DC Adapter

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

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

Dimensions & Weight

396.9mm (w) * 262mm (d) * 25mm (h)

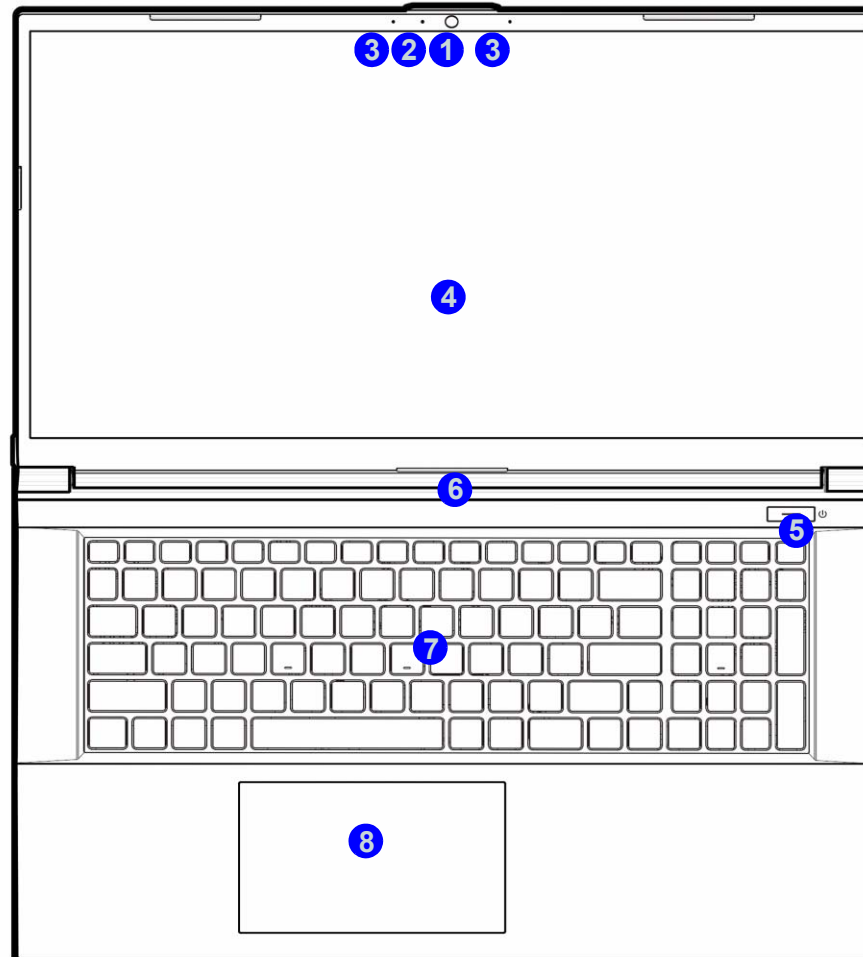
2.49kg (Barebone with 49WH Battery)

Introduction

Figure 1
Top View

External Locator - Top View with LCD Panel Open

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



External Locator - Front & Right Side Views

Figure 2
Front View

1. LED Indicators

FRONT VIEW

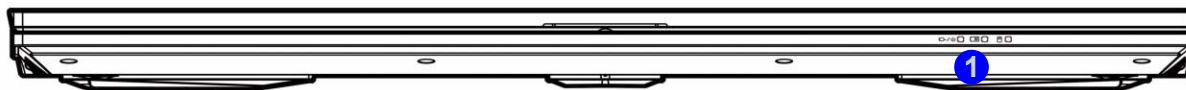
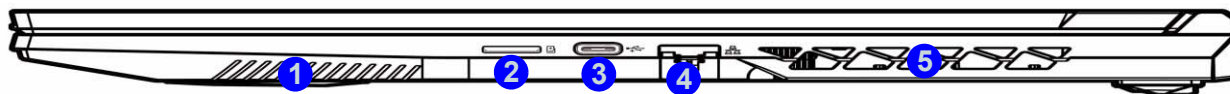


Figure 3
Right Side View

1. Speaker
2. MicroSD Card Reader
3. USB 3.2 Gen 2 Type-C Port
4. RJ-45 LAN Jack
5. Vent

RIGHT SIDE VIEW



Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. Security Lock Slot
2. Vent
3. USB 3.2 Gen 1 Type-A Port
4. USB 2.0 Port
5. Microphone-In Jack
6. 2-In-1 Audio Jack (Headphone and Microphone)
7. Speaker

LEFT SIDE VIEW

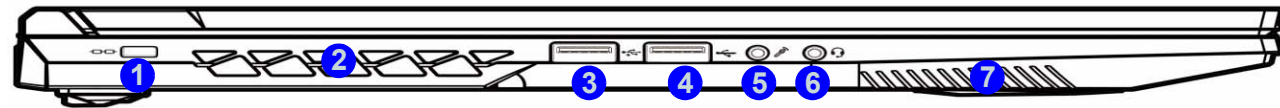
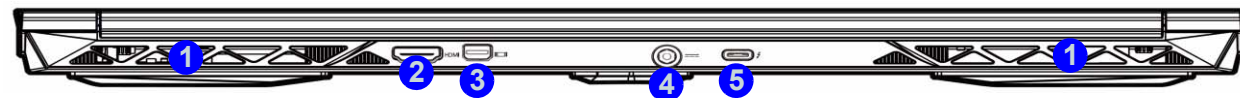


Figure 5
Rear View

1. Vent
2. HDMI-Out Port
3. Mini DisplayPort 1.4
4. DC-In Jack
5. Thunderbolt 4 Port

REAR VIEW



External Locator - Bottom View

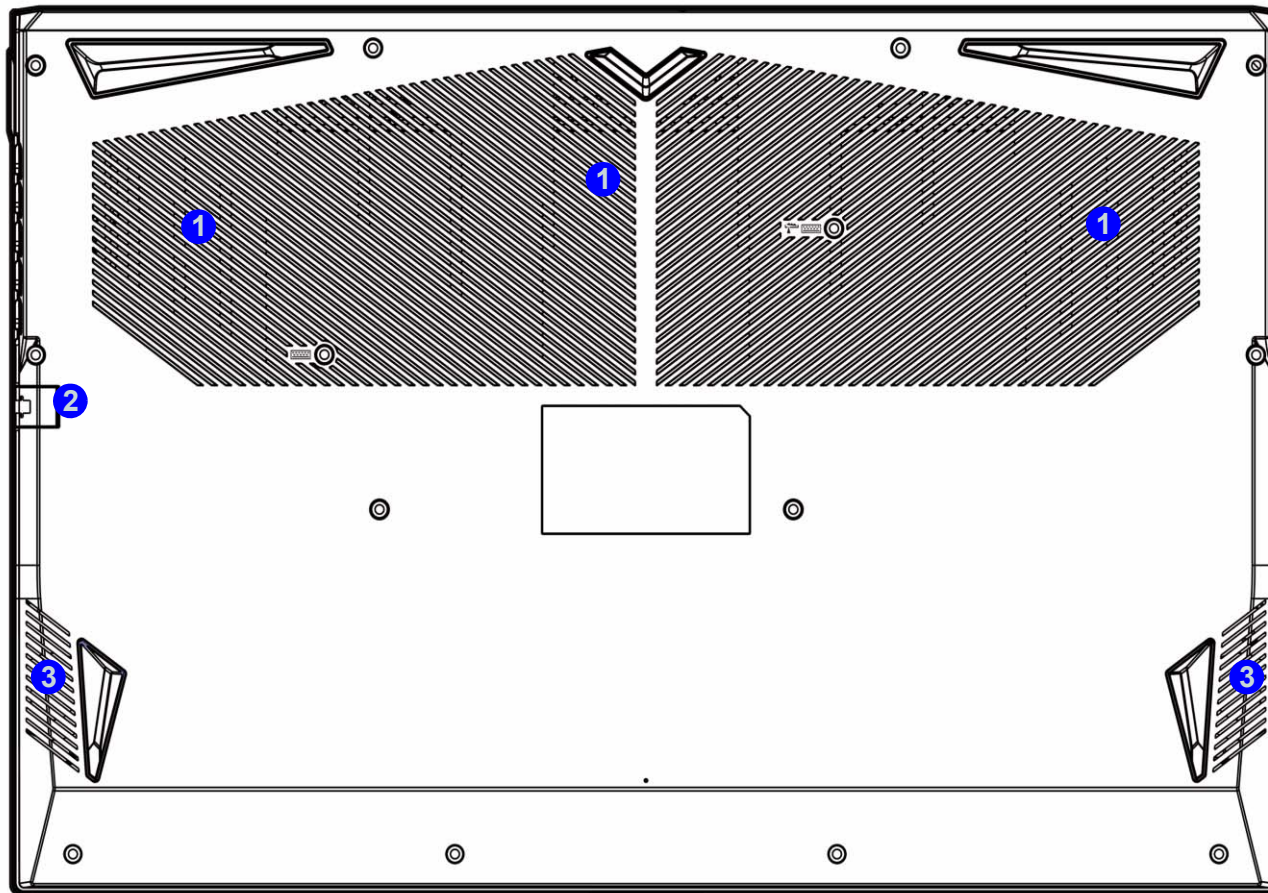


Figure 6
Bottom View

1. Vent
2. RJ-45 LAN Jack
3. Speakers

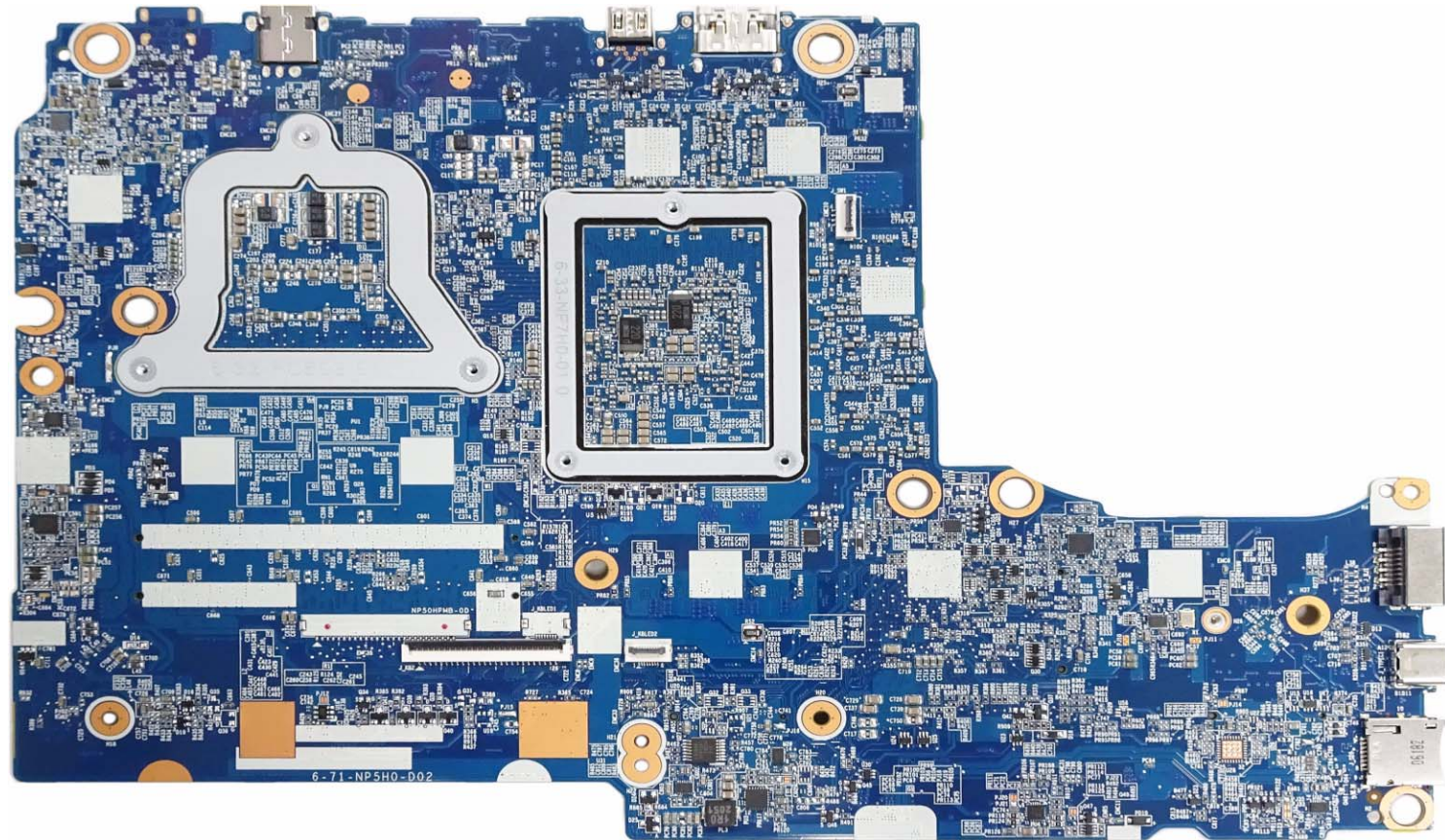


Overheating

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

Figure 7
Mainboard Top
Key Parts

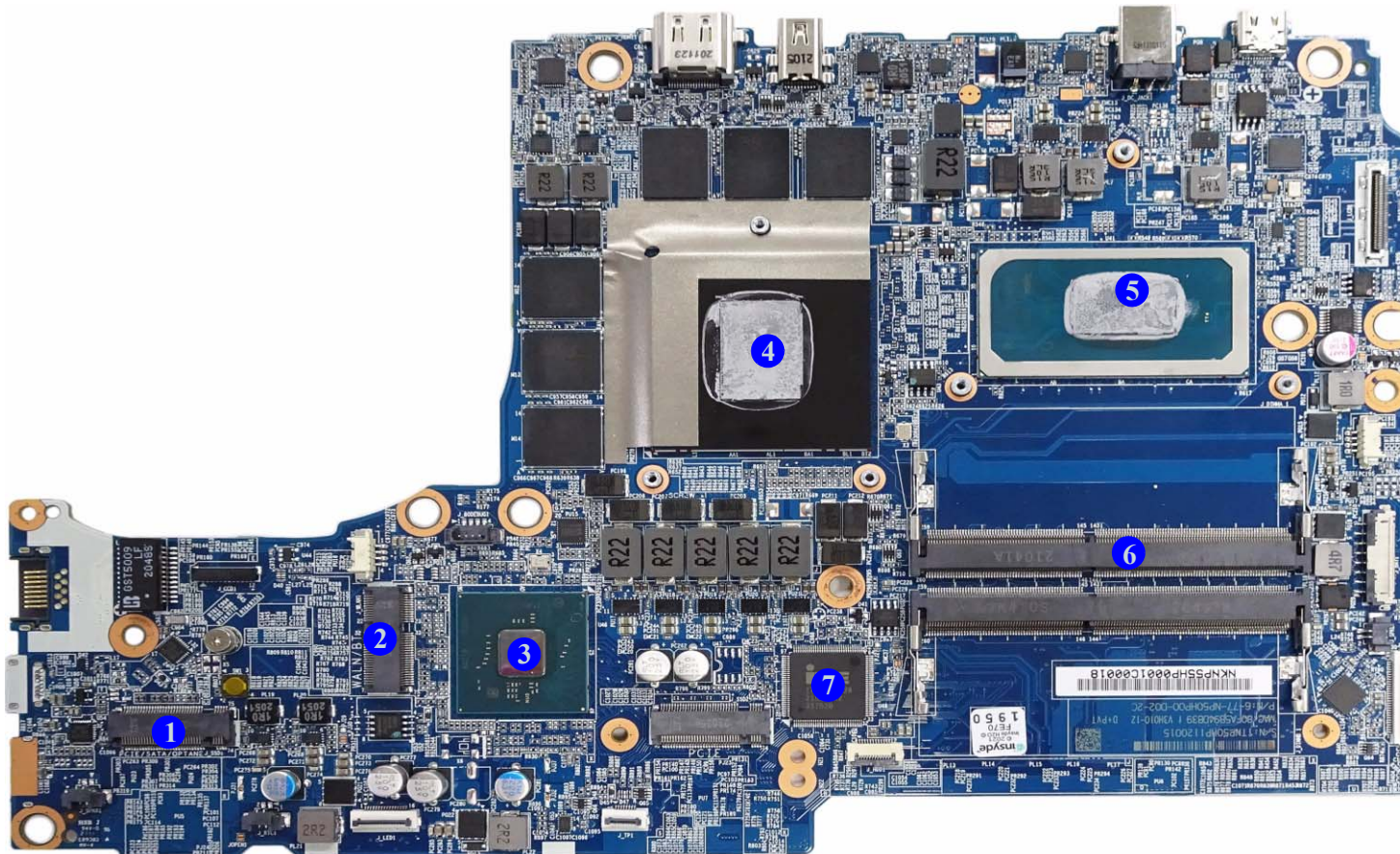
Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

Figure 8
**Mainboard Bottom
Key Parts**

1. Mini-Card Connector (M.2 SSD Module)
2. Mini-Card Connector (WLAN Module)
3. PCH
4. GPU
5. CPU
6. Memory Slots DDR4 SO-DIMM
7. KBC-ITE IT5570

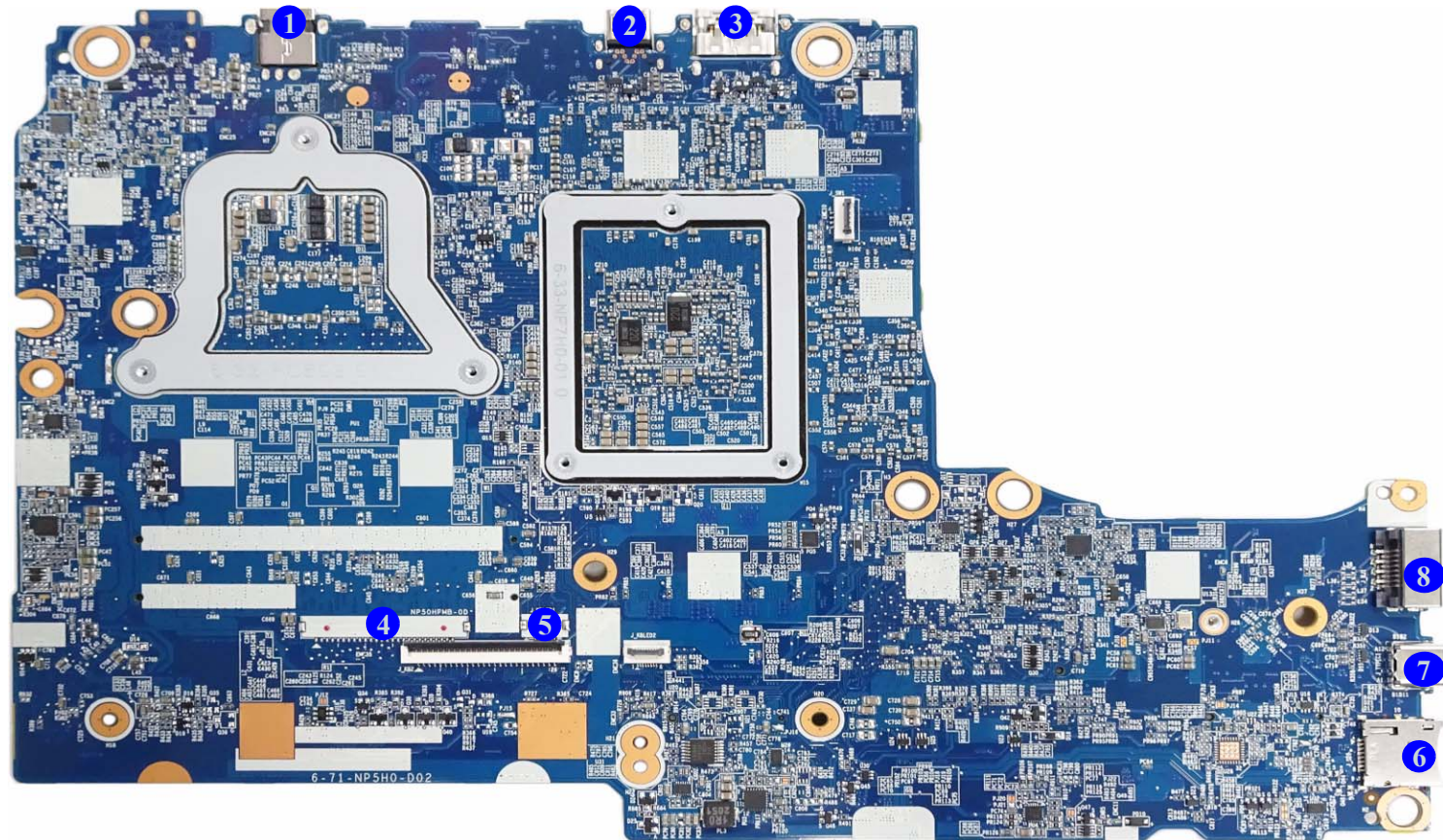


Introduction

Figure 9
**Mainboard Top
Connectors**

1. DC-In Jack
2. Mini Display Port
3. HDMI Port
4. Keyboard Cable Connector
5. LED KB Connector
6. MicroSD Card Reader
7. USB 3.2 Gen 2 Type-C Port
8. RJ-45 LAN Jack

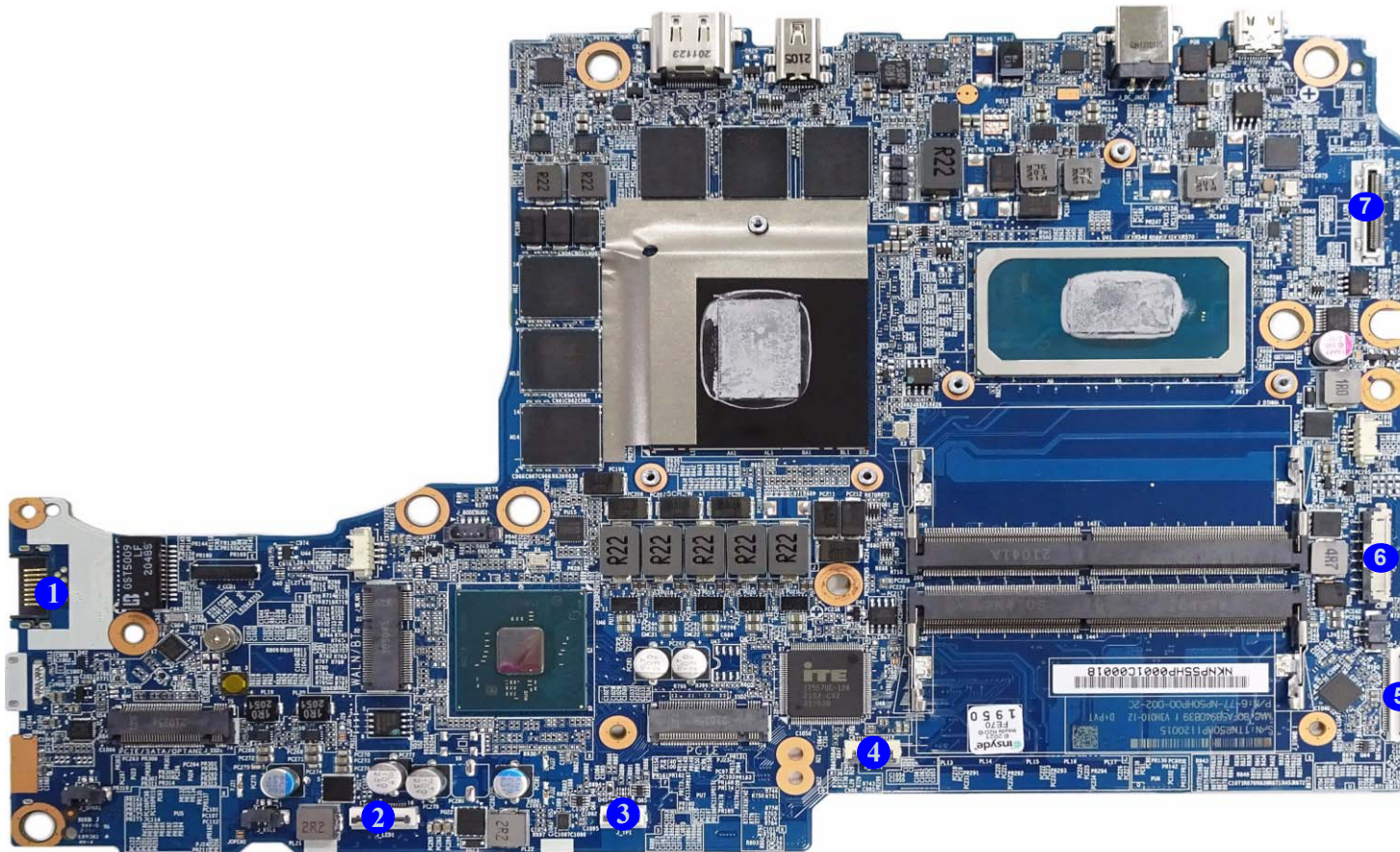
Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

Figure 10
**Mainboard Bottom
Connectors**

1. RJ-45 LAN Jack
2. LED Connector
3. Clickpad Cable Connector
4. HDD Cable Connector
5. Audio Connector
6. Battery Connector
7. LCD Connector



Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *NP50D5* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

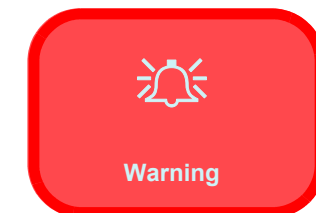
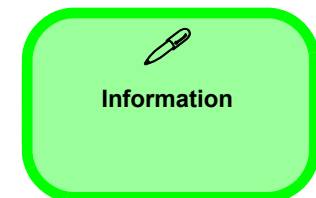
We suggest you completely review any procedure before you take the computer apart.

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.



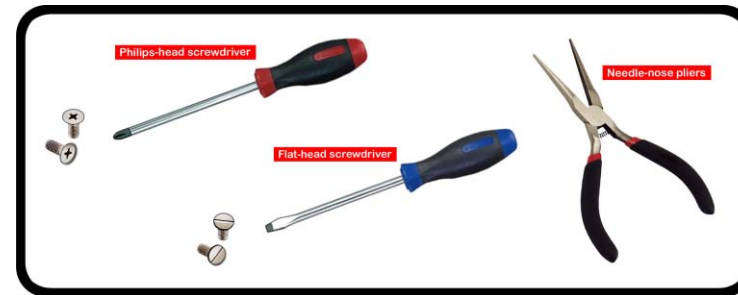
Disassembly

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 - 7*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 8*

To remove and install the M.2 SSD:

1. Remove the battery *page 2 - 5*
2. Remove the M.2 SSD-1 *page 2 - 10*
3. Remove the M.2 SSD-2 *page 2 - 11*
4. Remove the HDD *page 2 - 8*
5. Install the M.2 SSD-2 *page 2 - 12*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 13*

To remove the Wireless LAN Module:

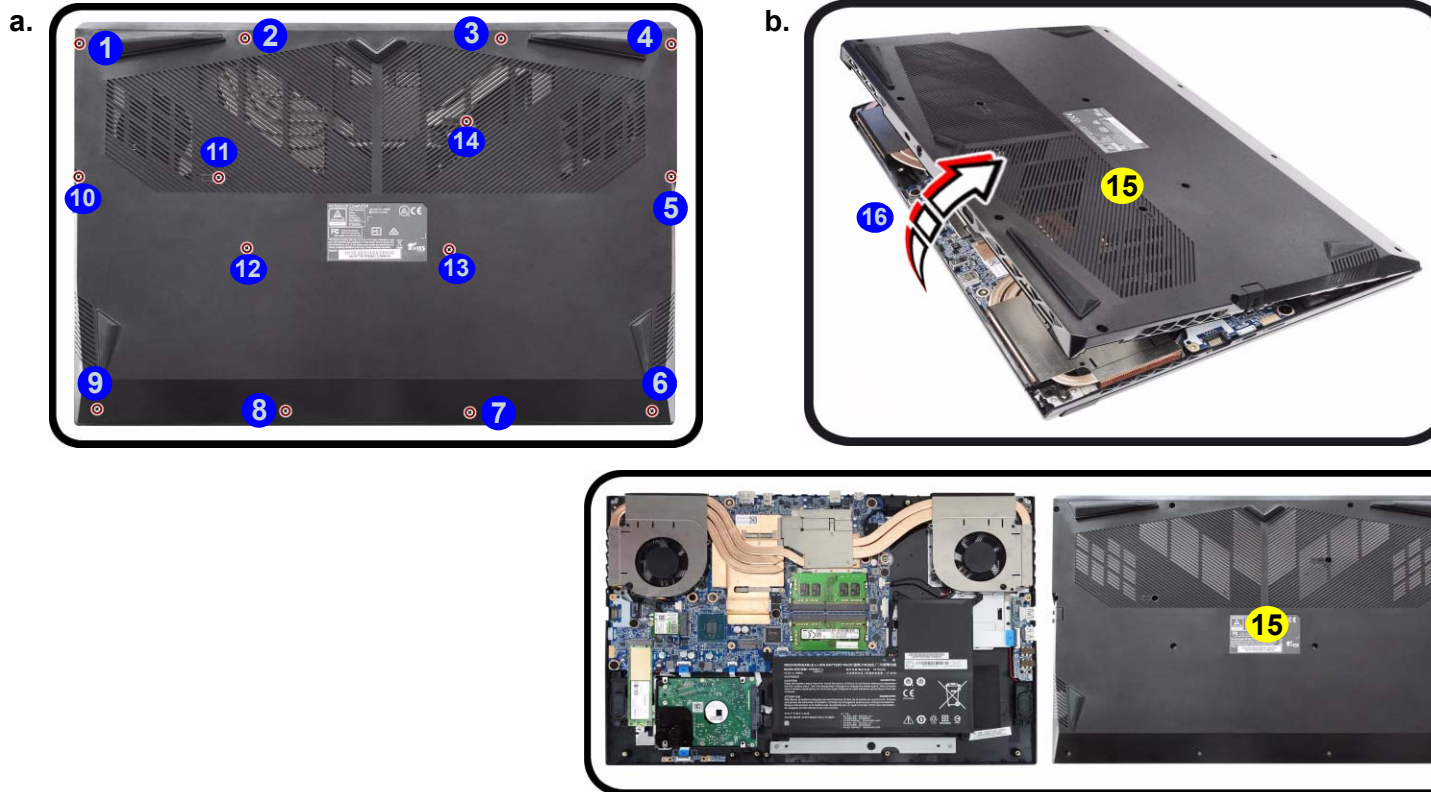
1. Remove the battery *page 2 - 5*
2. Remove the WLAN *page 2 - 14*

Removing the Battery

1. Turn **off** the computer, turn it over.
2. Remove screws **1** - **14** from the bottom case (**Figure 1a**).
3. Carefully lift the bottom case **15** up in the direction of the arrow at point **16** and remove it (**Figure 1b**).

Figure 1
Battery Removal

- a. Remove the screws.
- b. Remove the bottom case.



15. Bottom Case

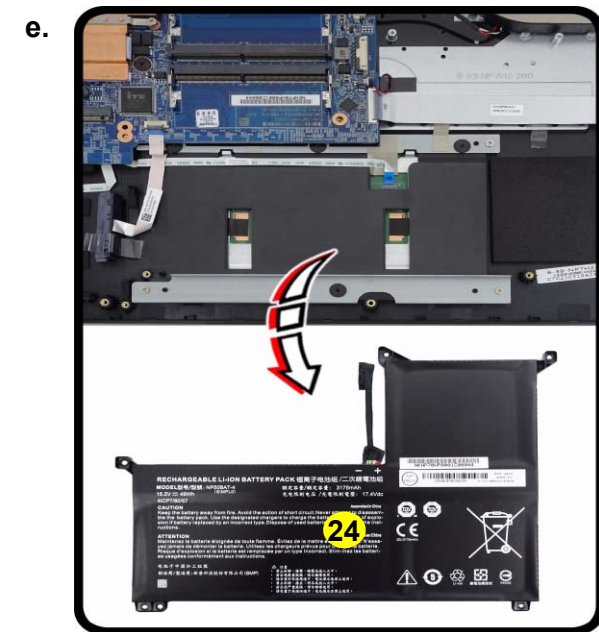
- 14 Screws

Disassembly

Figure 2
Battery Removal
(cont'd.)

- c. Locate the battery.
- d. Disconnect the cable and remove the screws.
- e. Lift the battery off the computer.

4. The battery will be visible at point **17** on the computer (*Figure 2c*).
5. Carefully disconnect the cable **18**, then remove screws **19** - **23** (*Figure 2d*).
6. Lift the battery **24** off the computer (*Figure 2e*).
7. Reverse the process to install a new battery (do not forget to replace all the screws and the bottom cover).



24. Battery

- 5 Screws

Removing the Keyboard

1. Turn **off** the computer, turn it over and remove the battery ([page 2 - 5](#)).
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 3a](#)).
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 3b](#)).
5. Carefully lift the keyboard **6** off the computer ([Figure 3c](#)).

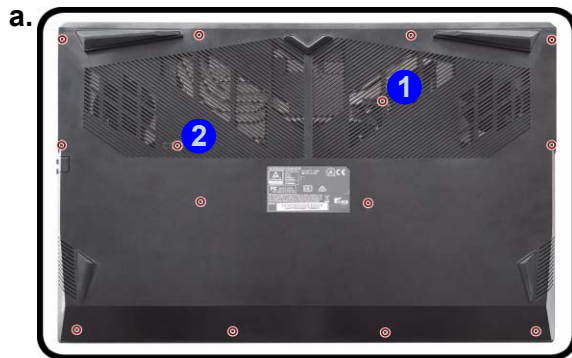


Figure 3
Keyboard Removal

- 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 Screws

Disassembly

Figure 4
HDD Assembly Removal

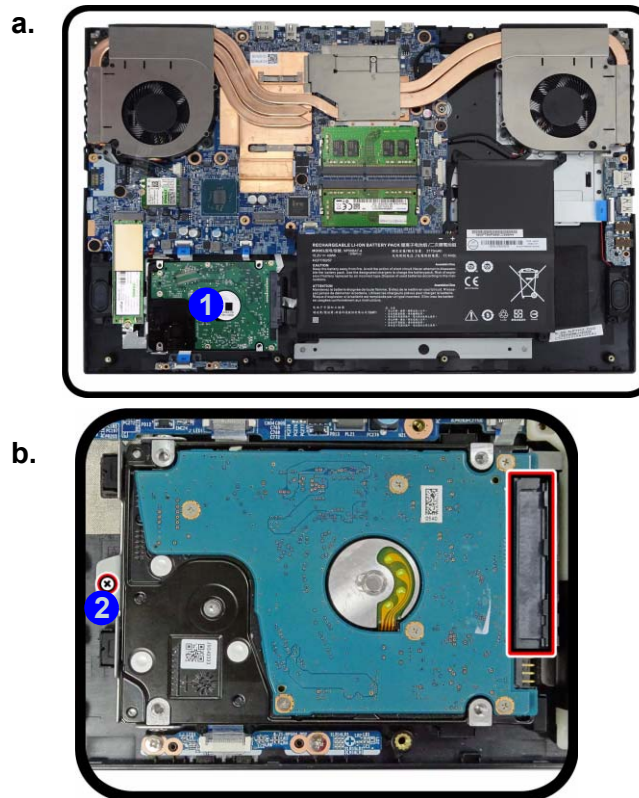
- Locate the HDD.
- Remove the screw.

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](#)) and SSD ([page 2 - 10](#)).
- The HDD will be visible at point **1** on the mainboard ([Figure 4a](#)).
- Remove screws **2** from the HDD assembly ([Figure 4b](#)).



6. Hard Disk

- 1 Screw



HDD System Warning

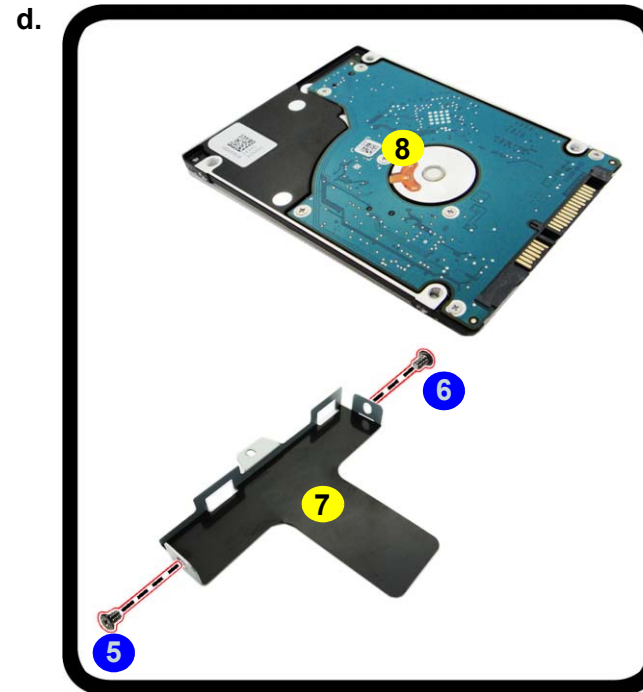
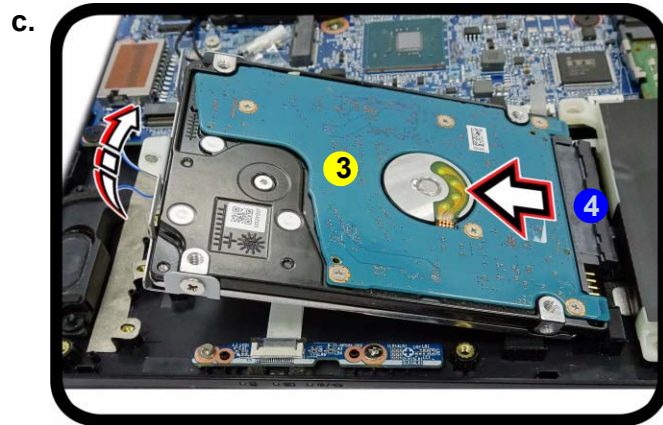
New HDD's are blank. Before you begin make sure:

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

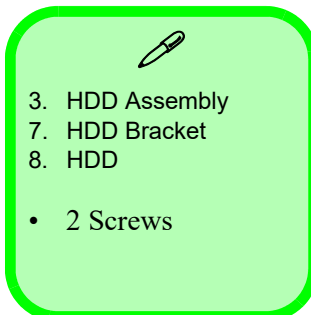
You have all the CD-ROMs and FDDs required to install your operating system and programs.

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.

4. Carefully lift and slightly slide the hard disk up.
5. Disconnect the hard disk assembly **3** from the connector **4** (*Figure 5c*).
6. Remove screws **5** - **6** and bracket **7** from the hard disk **8** (*Figure 5d*).
7. Reverse the process to install a new hard disk (do not forget to replace the screws).



- c. Slide and lift the HDD assembly to disconnect from the connector.
- d. Remove the screws and bracket from the HDD.



Disassembly

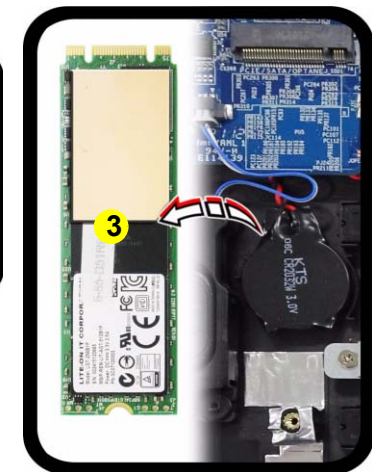
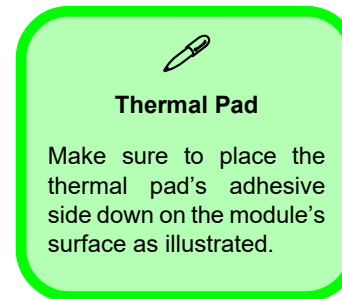
Figure 6
M.2 SSD-1 Module Removal

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

Removing the M.2 SSD Module

M.2 SSD-1 Removal Procedure

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)).
2. The M.2 SSD module will be visible at point **1** on the mainboard ([Figure 6a](#)).
3. Remove the screw **2** ([Figure 6b](#)).
4. The M.2 SSD module **3** ([Figure 6c](#)) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new module (do not forget to replace the thermal pad, screws and bottom cover).



3.M2 SSD Module
SATA/PCIE

- 1 Screw

M.2 SSD-2 Removal Procedure

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)).
2. The M.2 SSD module will be visible at point **1** on the mainboard ([Figure 7a](#)).
3. Remove the screw **2** ([Figure 7b](#)).
4. The M.2 SSD module **3** ([Figure 7c](#)) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new module (do not forget to replace the thermal pad, screws and bottom cover).

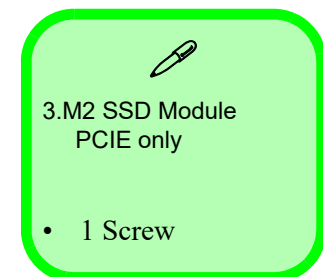
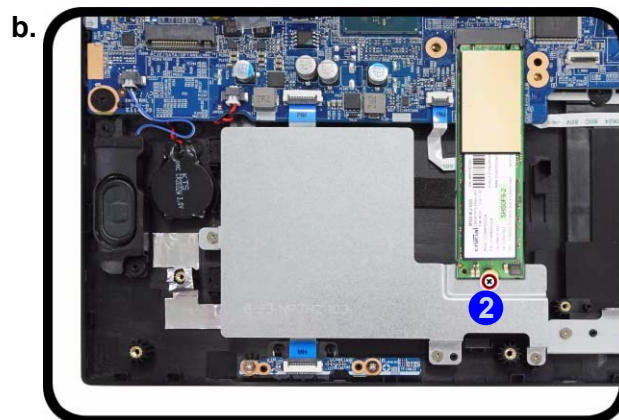
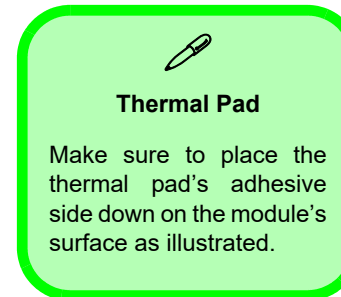


Figure 7
**M.2 SSD-2 Module
Removal**

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

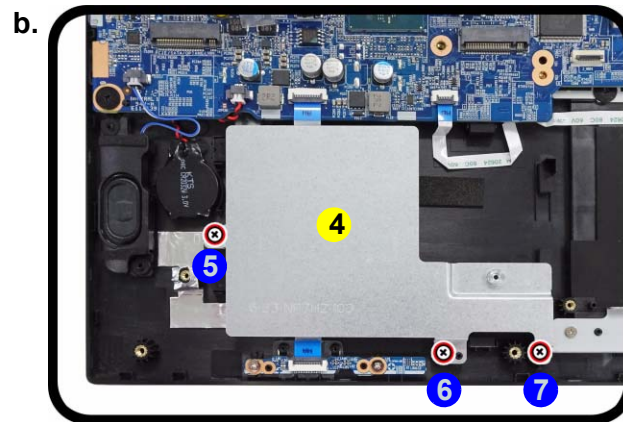
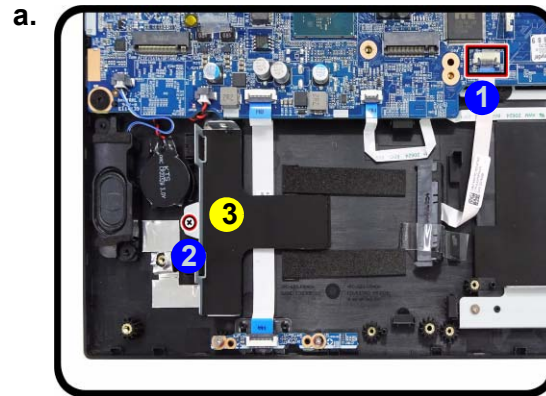
Disassembly

Figure 8 M.2 SSD-2 Module Installation

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

M.2 SSD-2 Installation Procedure

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)) and hard disk ([page 2 - 8](#)).
2. Disconnect the HDD connector cable **1**, (remove the screw **2** and HDD bracket **3**, if available) ([Figure 8a](#)).
3. Insert the SSD bracket **4** in place and tighten screws **5** - **7** ([Figure 8b](#)).
4. Insert the M.2 SSD module **8** ([Figure 6c](#)), and tighten the screw **9** ([Figure 8c](#)).



3.HDD Bracket
4.SSD Bracket

- 5 Screws

Removing the System Memory (RAM)

The computer has four memory sockets for 260 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR4 Up to 3200 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, remove the battery ([page 2 - 5](#)).
2. The RAM-2 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 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 - 5](#)).
9. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

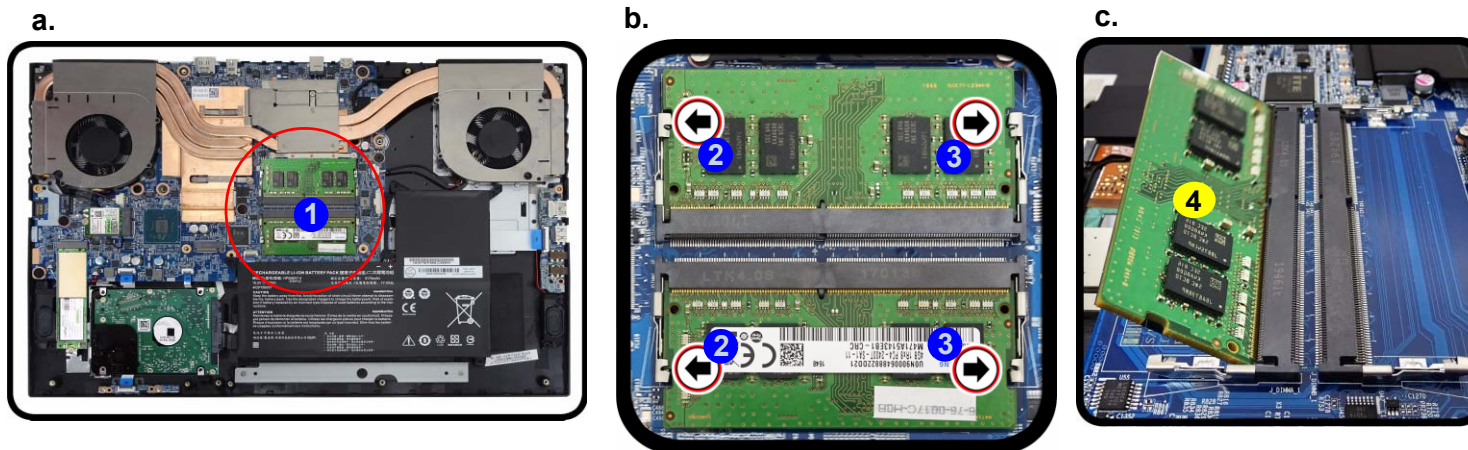


Figure 9
RAM Module Removal

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



Contact Warning

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



4. RAM Module

Disassembly

Figure 10
**Wireless LAN
Module Removal**

- Locate the WLAN.
- Disconnect the cables and remove the screw.
- The WLAN module will pop up.

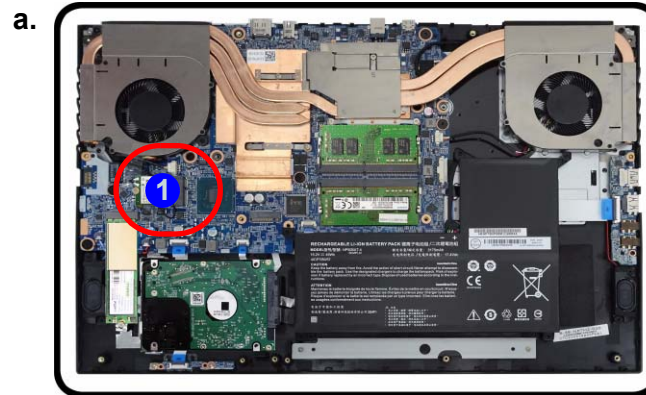
Note: Make sure you reconnect the antenna cable to the “1 + 2” socket (Figure 10b).

5. Wireless LAN Module

- 1 Screw

Removing the Wireless LAN Module

- Turn **off** the computer, turn it over, remove the battery (page 2 - 5).
- The Wireless LAN module will be visible at point **1** on the mainboard (Figure 10a).
- Carefully disconnect the cables **2** & **3**, and then remove the screw **4** (Figure 10b).
- The Wireless LAN module **5** (Figure 10c) will pop-up, and you can remove it from the computer.



Wireless LAN, Combo Module Cables

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo, 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	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.

Appendix A: Part Lists

This appendix breaks down the *NP70HP* 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.

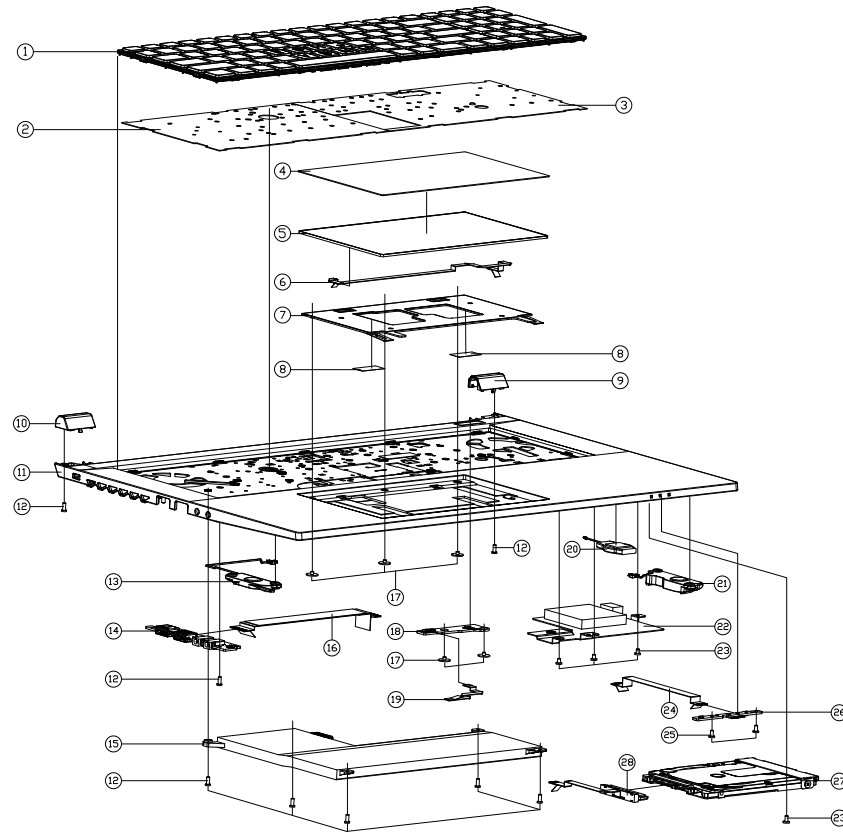
Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

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>
Main Board	<i>page A - 5</i>
HDD	<i>page A - 6</i>
LCD	<i>page A - 7</i>

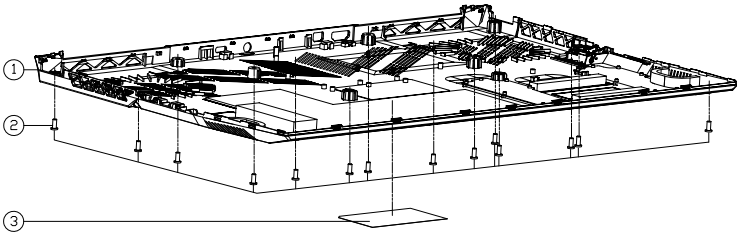


ITEM	PART	NAME	PART	Nº	REMARK
1	KB FOR MULTI ISC BL	KB US SERIES N.50CU	6-NL50CU-KB-MCL-US		KB FOR MULTI ISC BL KB SER
1	KD JPMVC CRYSTAL-PCB M50 BLACK SOLUTION WITH VDDIO GDS90P (FOR NC)		6-80-NISZ0-21D-1M		KB FOR NON BL KB JP SERC
1	KD JPMVC CRYSTAL-PCB M50 BLACK SOLUTION WITH VDDIO GDS90P (FOR NC)		6-80-NISZ0-21D-1M		KB FOR NON BL KB JP SERC
2	WD BL KB MYLAR L P(ET+DM-F53CCW) S22AS04H4G5A(437) NP70HP		6-40-NP7H2-040		KB FOR NON BL KB JP SERC
3	WD BL KB MYLAR R P(ET+DM-F53CCW) S22AS04H4G5A(437) NP70HP		6-40-NP7H2-030		KB FOR NON BL KB JP SERC
4	CLICK PAD FLYLER (AG32S-DIT1-L3N0XUS0B9A04S01) NP70HP		6-40-NP7H2-060		
5	CLIP PAD MIXATED CIE POP + P2 T INTRAPAK FVAC030AH00 NS10U		6-49-NS703-012		
6	FFC CABLE TP TO MB L-I-2ICPSMM 60V 8PIN QXO NP70HP		6-43-NP7H0-021		
7	CLICK PAD BKT SGCC NS70MU		6-33-NS702-080		
8	TOP CASE GASKET 1 (20x10x0.15) PES0SE		6-47-00190-209		
9	TOP HINGE COVER R SLIDE (CONVESTRO FR300B) NP70HP		6-42-NP7H2-012		
10	TOP HINGE COVER L SLIDE (CONVESTRO FR300B) NP70HP		6-42-NP7H2-022		
11	TOP CASE MODULE NP70HP		6-39-NP7H2-012		
12	SCREW M2xSL KITCT=0.8 D=3.5 BK/Z ICT NY		6-35-B6120-S0R		
13	SPE-CABLE L 1.65x5x0.85 2W @ 120MM VS25SH40 HP7BK		6-23-NSPW70-0LC		
14	AUDIO BOARD V2.0 NP50HP		6-77-NP5H8-D02		
15	MAT.SLV ISEN20X29MM HPQ SUPPLIES QUADRO EASYDRIVE CSDMM MP0HP		6-87-NP50S-43G01		
15	MAT.SLV ISEN20X29MM HPQ SUPPLIES QUADRO EASYDRIVE CSDMM MP0HP		6-87-NP50S-41B12		
16	FFC CABLE AUDIO TO MB L-I-29MM 60V 30PIN QXO NP70HP		6-43-NP7H0-011		
17	SCREW M2x2L KI BK/Z ICT NY(O8,T-0.6)		6-35-B6120-2RE		
18	POWER SW BOARD V1.0 NP50HP		6-77-NP5HS-D01		
19	FFC CABLE POWER TO MB L-70MM 60V 4PIN QXO NP50DB		6-43-NP500-021		
20	BAT. 20MM SV 220MMI W/CABLE 55MM BC02BC26XS5MM GHINDO		6-23-22015-TE0		
21	SPE-CABLE R 1.44x23 2W @ 130MM VS25SH40-B4 NL50CU		6-23-NSL5C-0R0		
22	MESSID BRACKET MODULE NP70HP		6-33-NP7H2-101		
23	SCREW M2x3L KI NI ICT NY (CD=Ø4.0,DT=0.8)		6-35-B1120-3RD		
24	FFC CABLE HALL TO MB L-I-ICPSMM 60V 16PIN QXO NP70HP		6-43-NP7H0-031		
25	SCREW M2x4L KI NI ICT NY (CD=Ø4.5,DT=0.8)		6-35-B1120-4RC		
26	LED BOARD V1.0 NP50HP		6-77-NP5H4-D01		
27	W/O HDD ASS'Y NP70HP		6-79-NP70HP0J-010		
27	W/HDD ASS'Y NP70HP		6-79-NP70HP0J-020		
28	HOT CONDUCTIVE TAPE 10MM X 20MM X 0.1MM CITE FFC CABLE 75MM DP WPMP		6-23-FNP7H-011		

Figure A - 1
Top

Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	BOTTOM CASE MODULE NP70HP	6-39-NP7H3-012	
2	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
3	PRODUCT LABEL FOR NP70HP	6-45-NP70HP03-010	

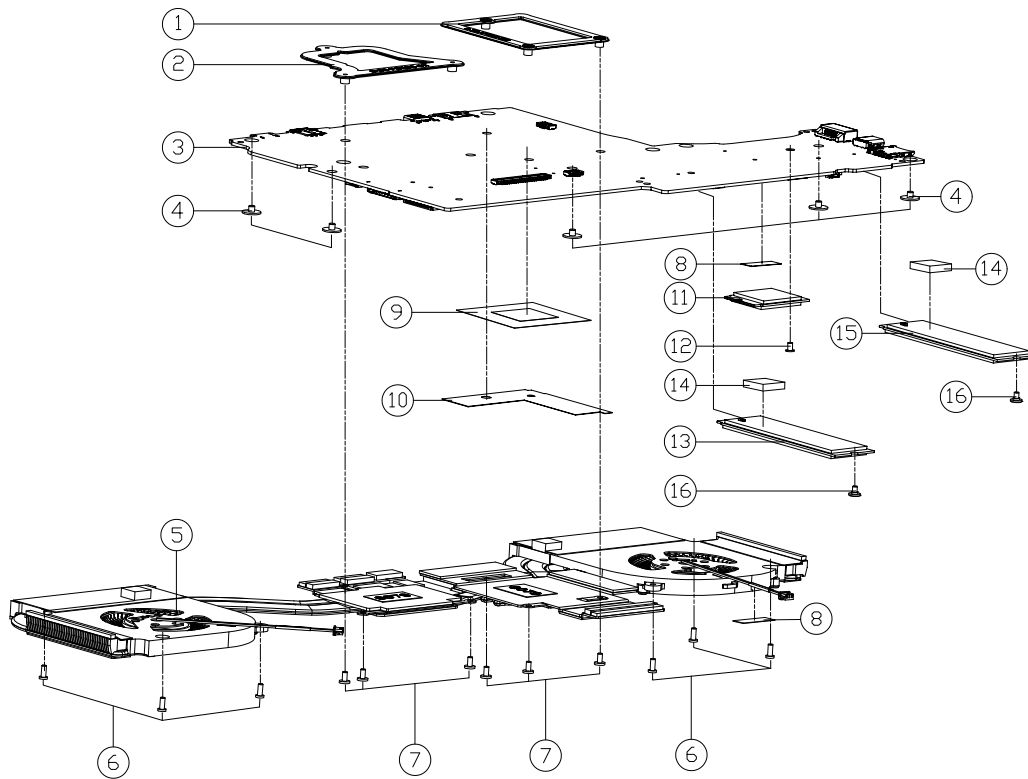
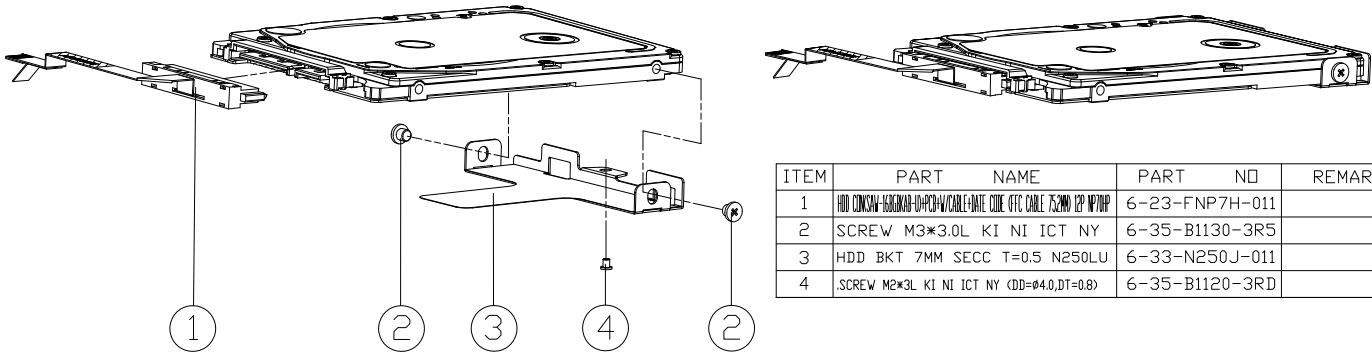
[illegible]

Figure A - 3
Main Board

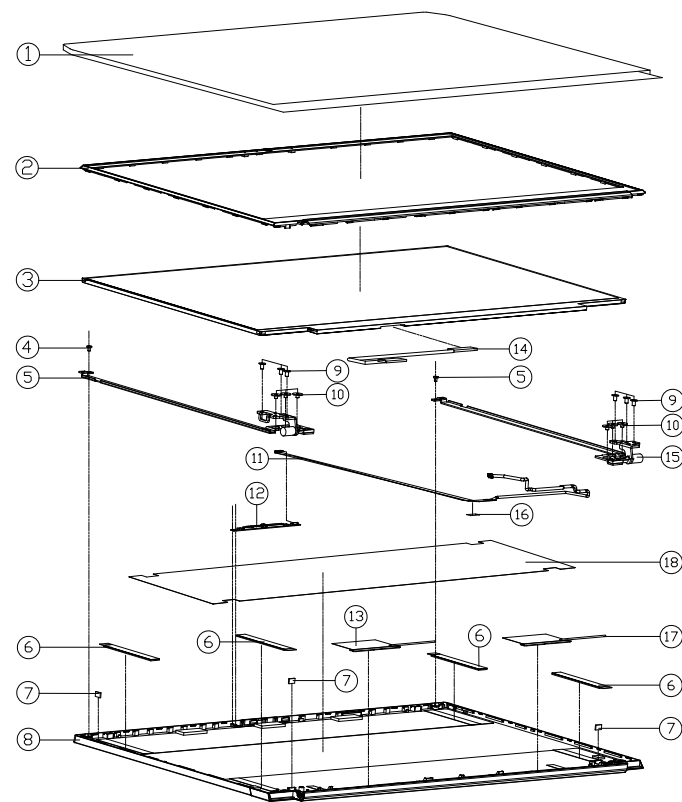
HDD

Figure A - 4
HDD



ITEM	PART NAME	PART NO	REMARK
1	HDD CONSUMABLES (CABLE+DATE CODE) (CABLE 752MM) (2P) (M7HDP)	6-23-FNP7H-011	
2	SCREW M3*3.0L KI NI ICT NY	6-35-B1130-3R5	
3	HDD BKT 7MM SECC T=0.5 N250LU	6-33-N250J-011	
4	SCREW M2*3L KI NI ICT NY (DD=Ø4.0,DT=0.8)	6-35-B1120-3RD	

LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT MYLAR BOPP NB70TJ1	6-40-NB708-010	
2	LCD FRONT COVER MODULE NP70HP	6-39-NP7H1-012	
3	LCD N17.3" FHD/VVA/144HZ/SW G-SYNC/N7/NEN GT/ETP LG LP173WFG-SPB3 3.5MM	6-50-NBB35-L124	
3	LCD N17.3" FHD/VVA/144HZ/N4/NEN GT/ETP PANDA LM173L.F1F 01 3.5MM	6-50-NBB35-Y170	
3	LCD N17.3" FHD/VVA/300HZ/SW G-SYNC/N7/NEN GT/ETP AU B173HAWESL 3.5MM	6-50-NBB35-G190	
4	SCREW M2*3L KI NI ICT NY (DD=Ø4.0,DT=0.8)	6-35-B1120-3RD	
5	HINGE L <SK7>NP70HP	6-33-NP7H1-0L1	
6	LALATAPE SPONGE (9*60*1.0T)	6-47-0019L-003	
7	RUBBER FOR LCD PANEL(6*4*0.8T) NP70HP	6-47-NP7H1-031	
8	BACK COVER MODULE NP70HP	6-39-NP7H1-022	
9	SCREW M2.5*5L KI BK/Z ICT NY	6-35-B6125-5RA	
10	SCREW M2.5*2.5L KI BK/Z ICT NY(Ø8,T=0.6)	6-35-B6125-2R5	
11	CCD CABLE L=550MM 30V 8PIN (HL) ADD MARK LABELE NH50ED	6-43-NH50T-011	
12	UVC CAMERA CHROMY F1400Z CYRHO200C00LH IN HD V12H-MC 480Z 1049724 N5001 F40279 WHITE-LED	6-88-N15ZC-5102	
12	UVC CAMERA N50N F1400Z D4H0V0-AM IN HD D4974 N5001 F40279 WHITE-LED W42H-MC000000000000 WITH FED	6-88-N15ZC-4900	
13	ANTENNA IPEX4 WLAN VGT WL2 PCB DL 50K5.8MM 24G/5G/60HZ WL2=400MM NP70HP	6-23-7NP7H-020	
14	COAXIAL CABLE FOR ETP 300MM 30V 1 40 PIN (HT/LW CON.VD-K30LPM3G) P870CE	6-43-PB701-011-1N	
14	COAXIAL CABLE FOR ETP 300MM 1 30V 40PIN (SHRP 156 240Z) (HT/LW CON-LV630P-224) P860C	6-43-PB501-R10-1N	
15	HINGE R <SK7> NP70HP	6-33-NP7H1-0R1	
16	TAPE MYLAR TRANSPARENT (20*10*0.05) P180HM	6-40-P1803-020	
17	ANTENNA IPEX4 WLAN VGT WL1 PCB DL 50K5.8MM 24G/5G/60HZ WL1=250MM NP70HP	6-23-7NP7H-010	
18	EMI AL FOIL AU0K(388X118X0.15T) NP70HP	6-47-NP7H1-060	FOR 6-50-NBB35-G190

Figure A - 5
LCD

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *NP70HP* 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	Straps and XTAL - Page B - 26	LED, CCD, TPM, Power SW Bd. - Page B - 50
Processor 1/6 - Page B - 3	NVIDIA Power Sequence - Page B - 27	KBC-ITE IT5570 - Page B - 51
Processor 2/6 - Page B - 4	OVR-M - Page B - 28	RGB KB - Page B - 52
Processor 3/6 - Page B - 5	mDP - Page B - 29	5V, 5VS, 3.3V, 3.3VS - Page B - 53
Processor 4/6 - Page B - 6	Panel, Inverter - Page B - 30	VCCST, VCCSTG, VCCSFR - Page B - 54
Processor 5/6 - Page B - 7	HDMI - Page B - 31	VDD3, VDD5 - Page B - 55
Processor 6/6 - Page B - 8	PCH 1/8 - Page B - 32	DDR 1.2V / 0.6VS, 2.5V - Page B - 56
DDR4 CHA SO-DIMM_0 - Page B - 9	PCH 2/8 - Page B - 33	VCCIN - Page B - 57
DDR4 CHB SO-DIMM_0 - Page B - 10	PCH 3/8 - Page B - 34	VCCIN Output - Page B - 58
VGA PCI-E Interface - Page B - 11	PCH 4/8 - Page B - 35	VNN / V1.05A - Page B - 59
Frame Buffer Partition A/B - Page B - 12	PCH 5/8 - Page B - 36	VCCIN AUX - Page B - 60
Frame Buffer A - Page B - 13	PCH 6/8 - Page B - 37	Charger - Page B - 61
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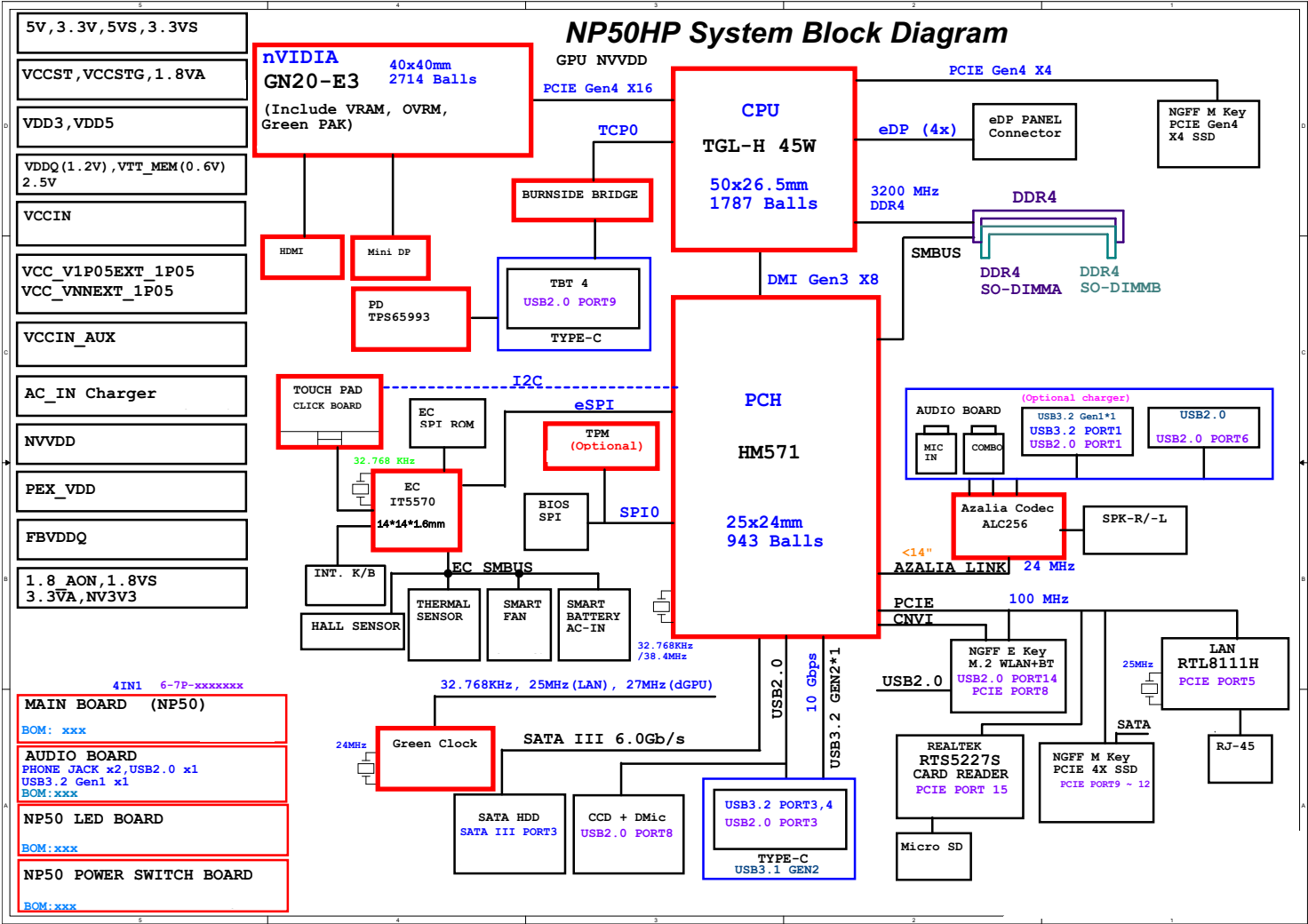


Version Note

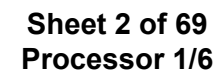
The schematic diagrams in this chapter are based upon version 6-7P-NP5H4-003. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

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System Block
Diagram



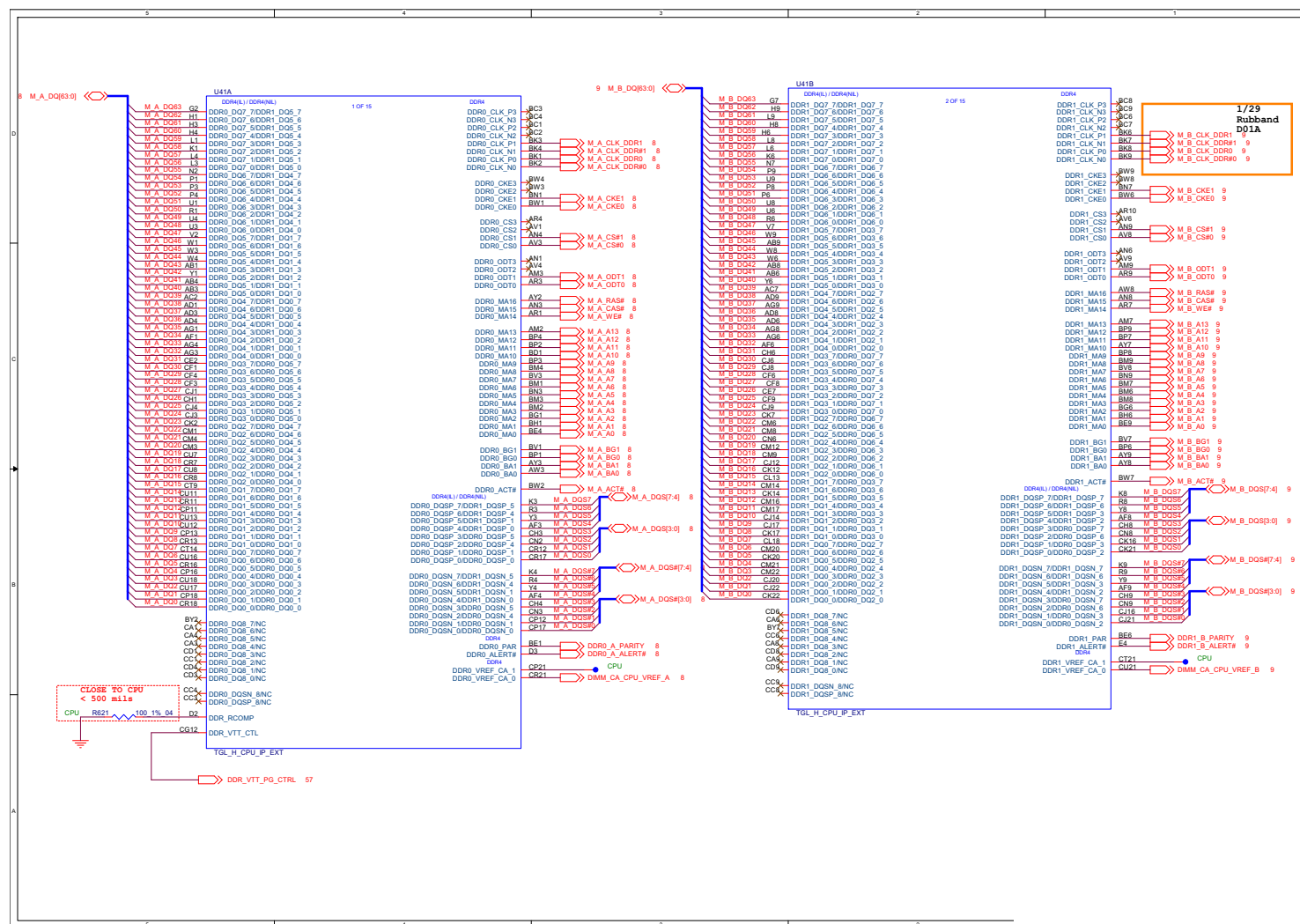
B.Schematic Diagrams



Processor 2/6

B. Schematic Diagrams

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Processor 2/6



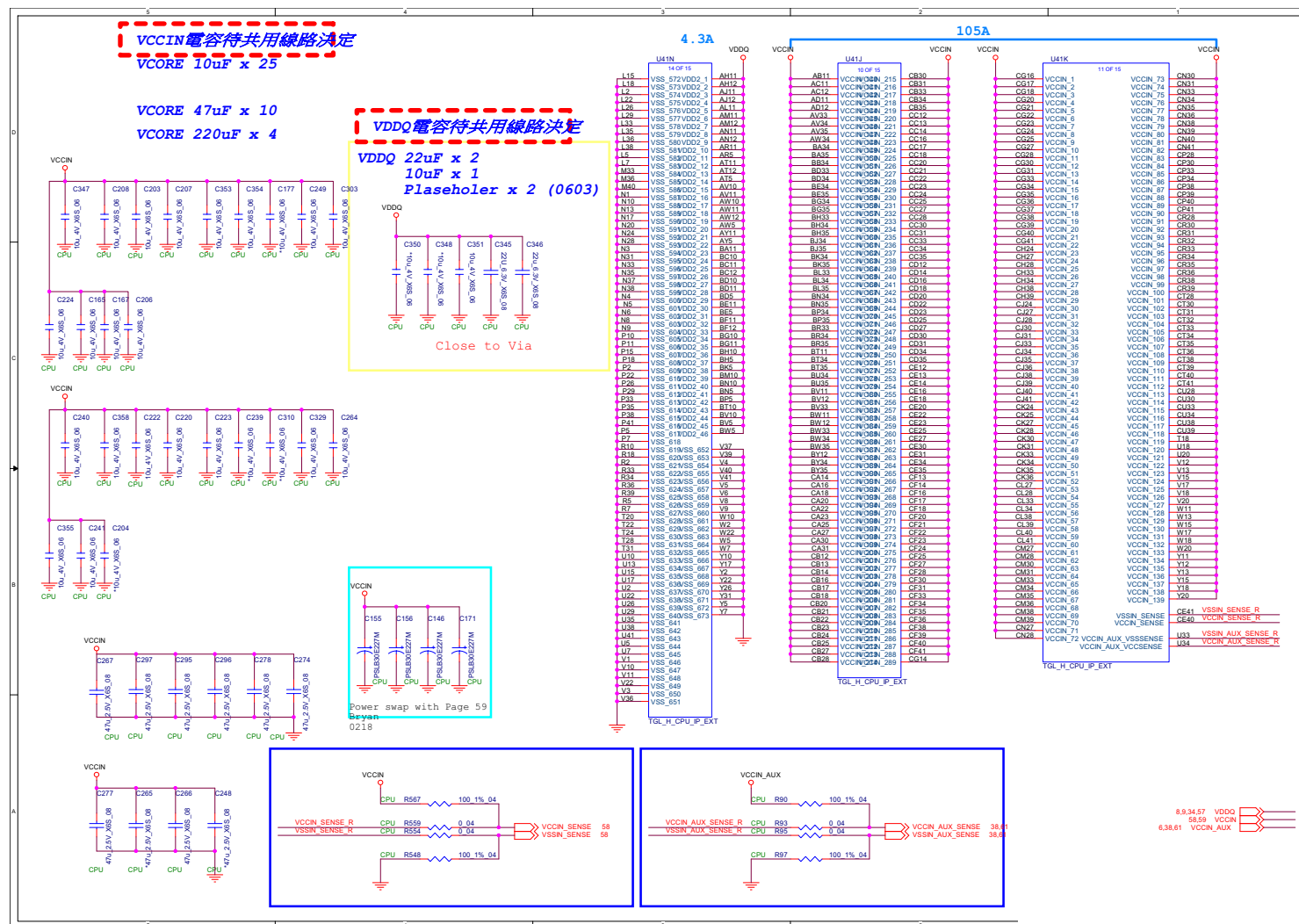
B.Schematic Diagrams

Processor 3/6 B - 5

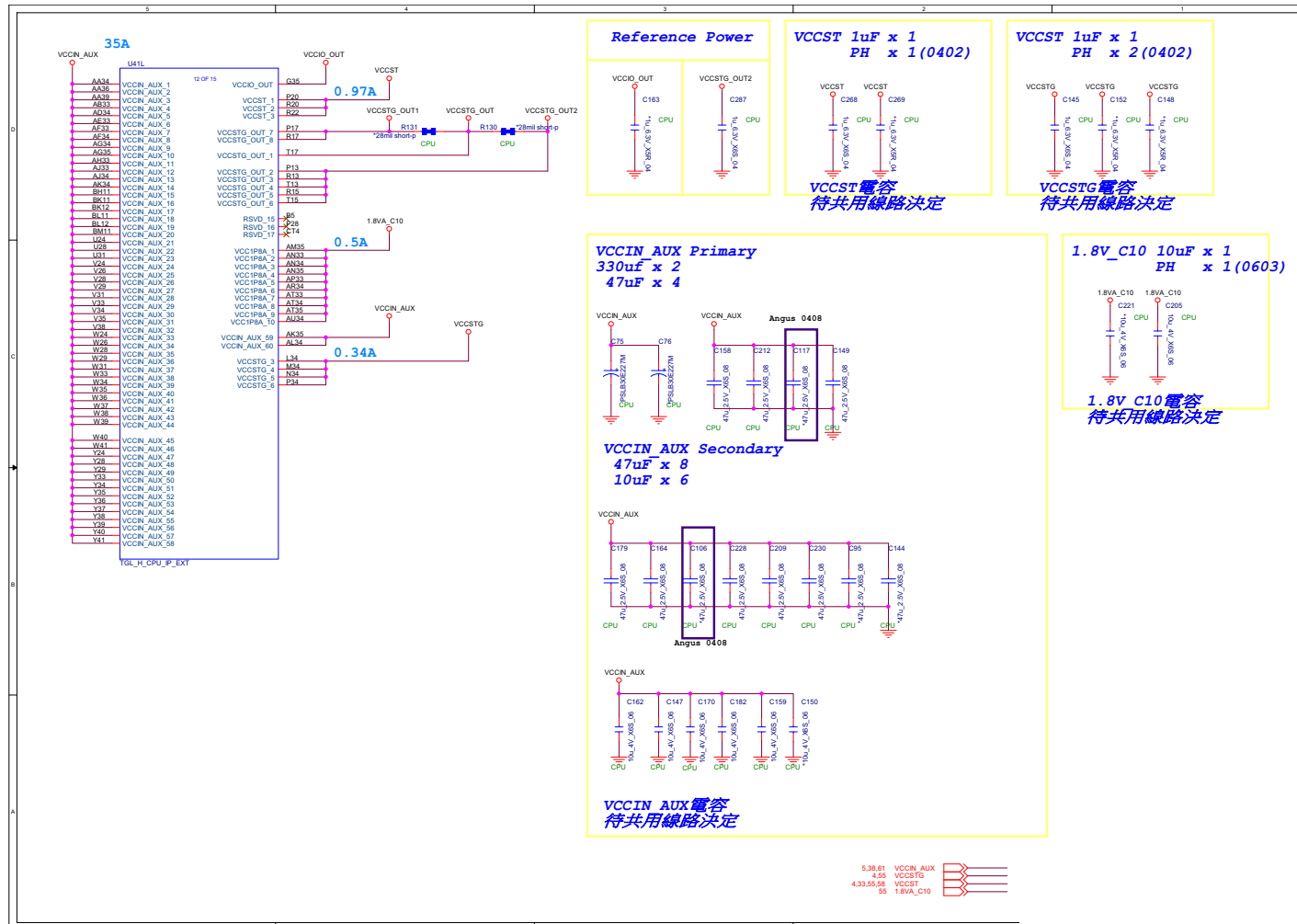
Processor 4/6

B.Schematic Diagrams

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Processor 4/6

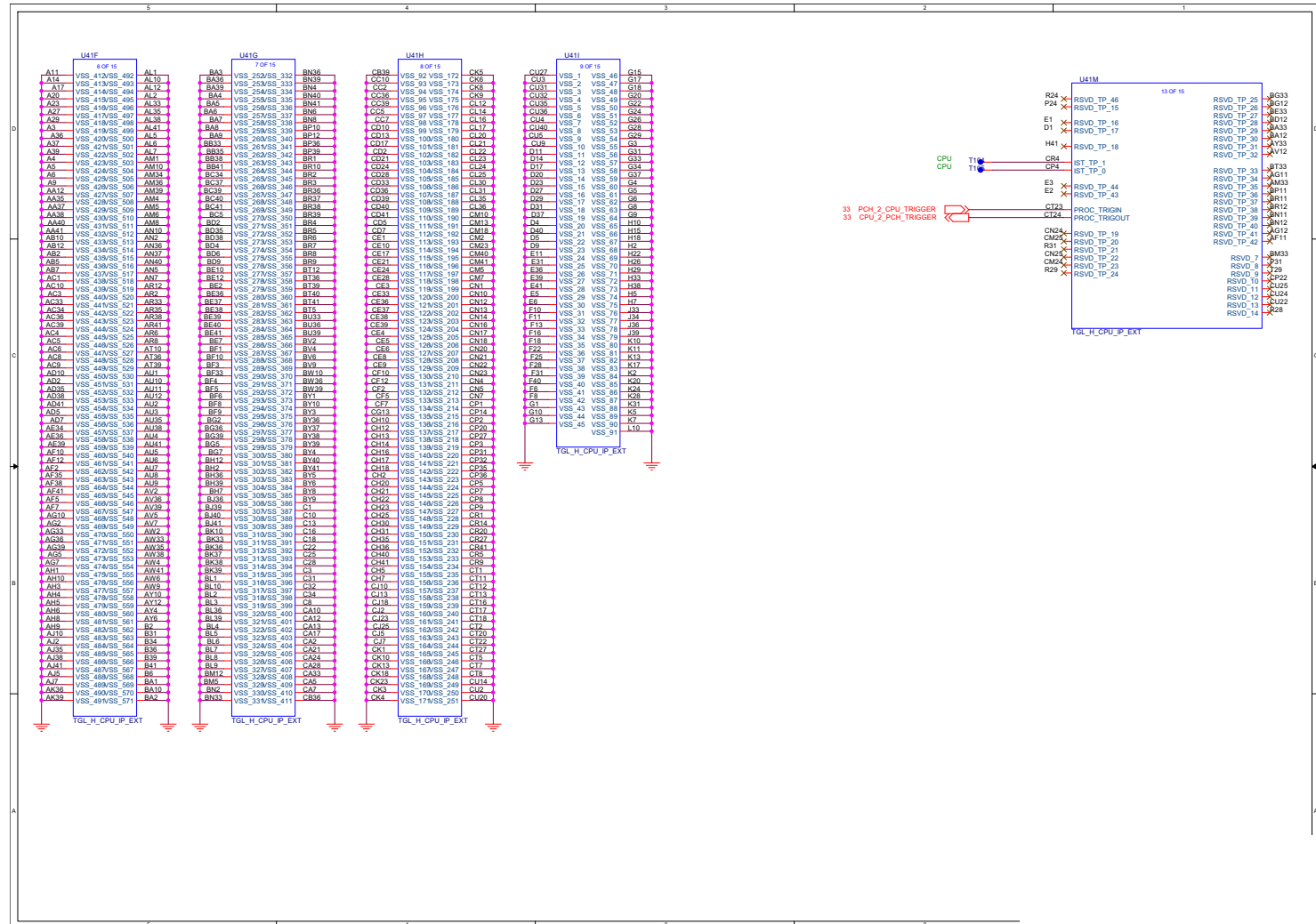


B.Schematic Diagrams



Schematic Diagrams

Processor 6/6



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Processor 6/6

B.Schematic Diagrams

DDR4 CHB SO-DIMM_0

H=4MM DIMM

PLACE THE CAP CLOSE TO SODIMM
FOR V855CA CPU DIMM

PLACE THE CAP CLOSE TO SODIMM
DDR VREFCA CHB DIMM

Rubband
2019/12/27

VDDQ 10uF x 5
VDDQ 1uF x 5

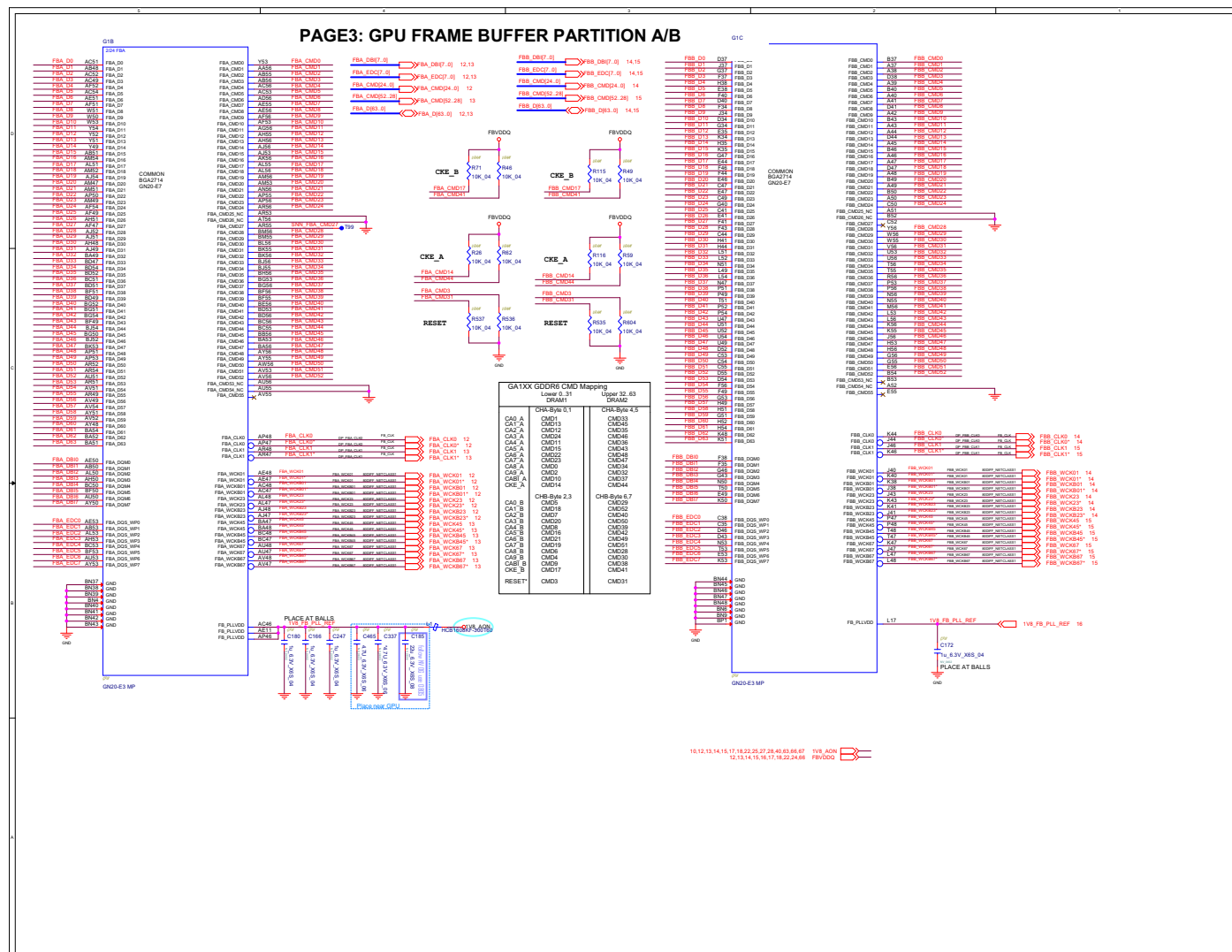
靠DIMM端擺放

Sheet 10 of 69
VGA PCI-E
Interface

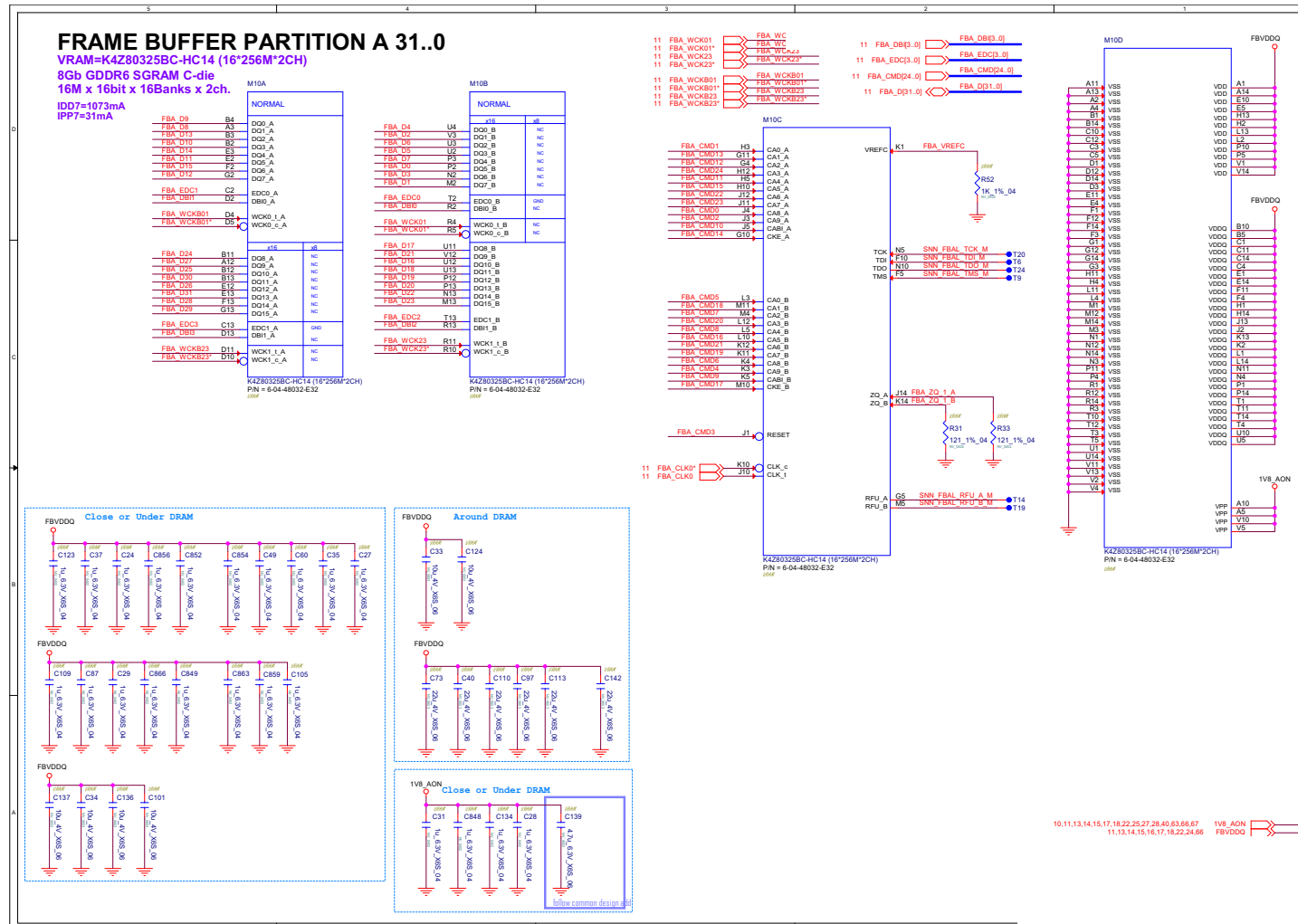


Frame Buffer Partition A/B

Sheet 11 of 69
Frame Buffer
Partition A/B



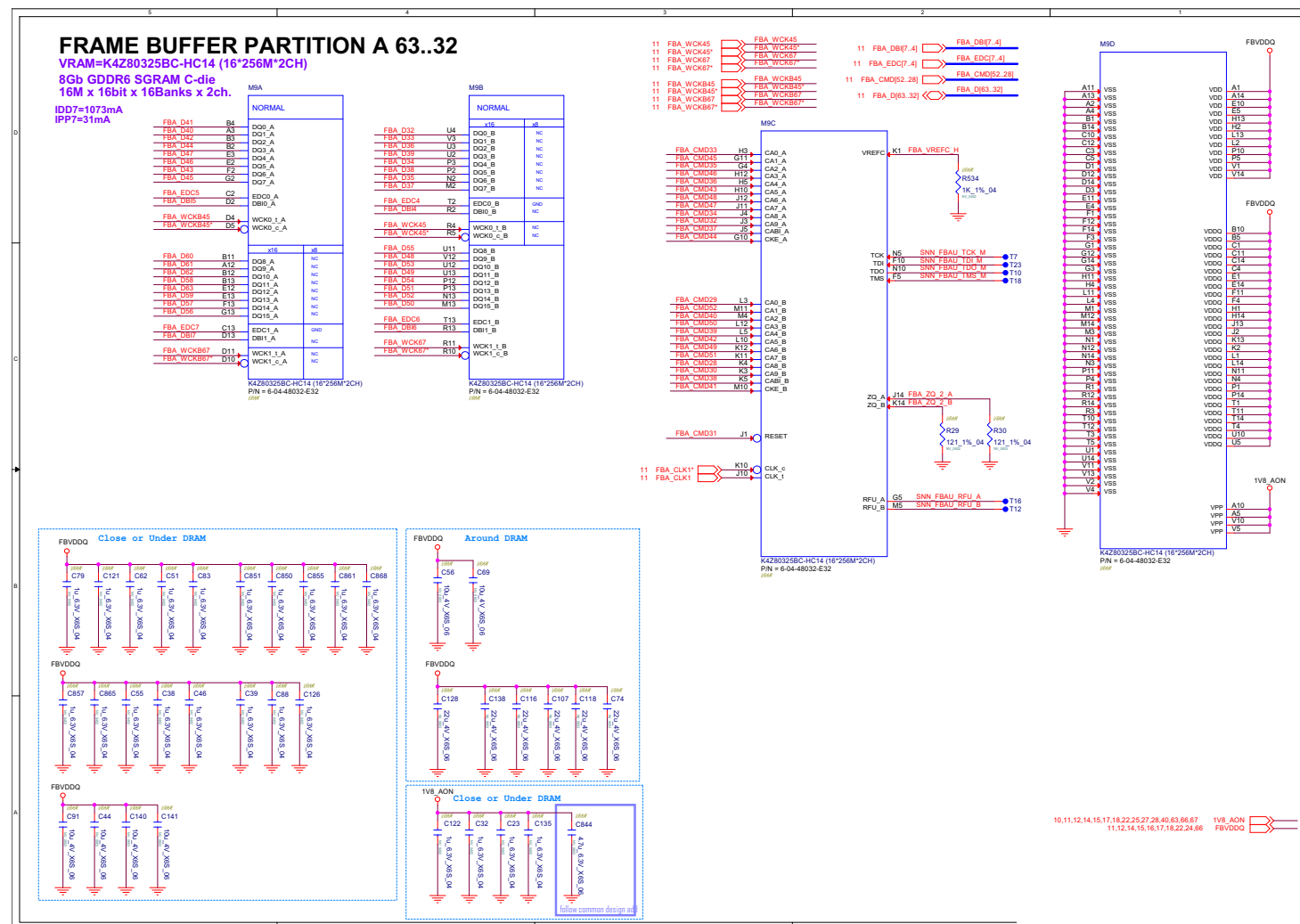
Frame Buffer A B - 13



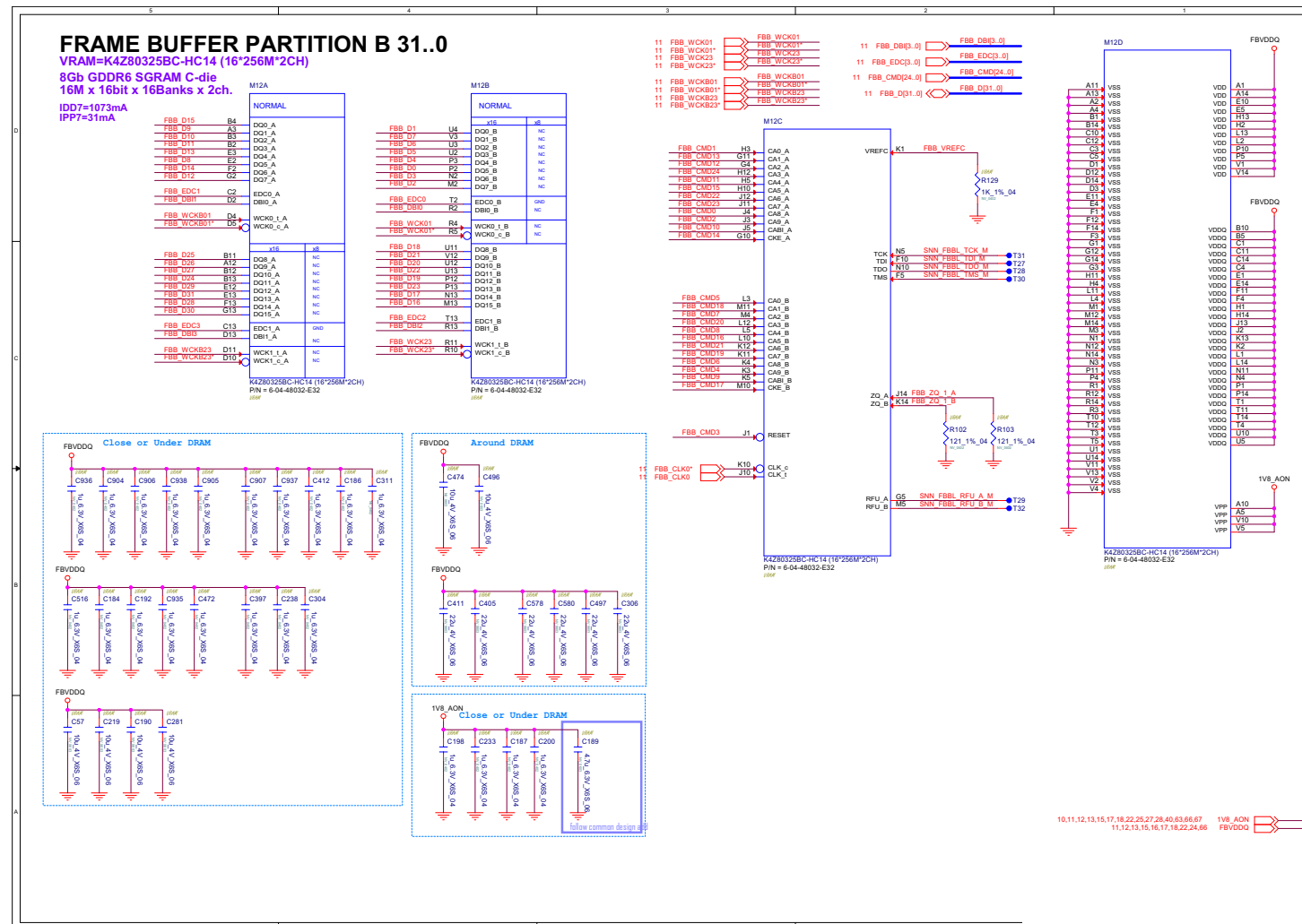
Frame Buffer A

B. Schematic Diagrams

Sheet 13 of 69
Frame Buffer A



Frame Buffer B B - 15



Frame Buffer B

B. Schematic Diagrams

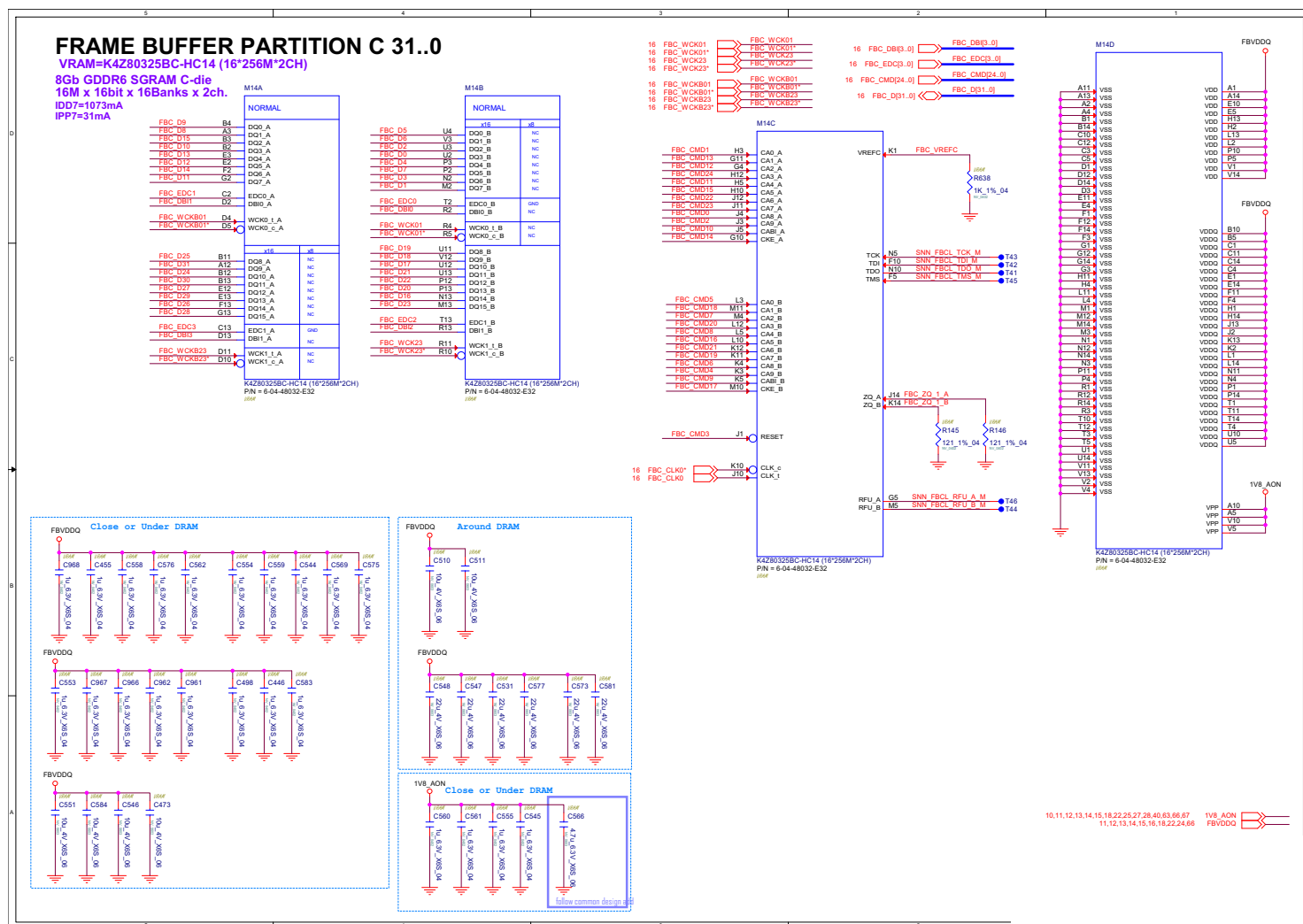
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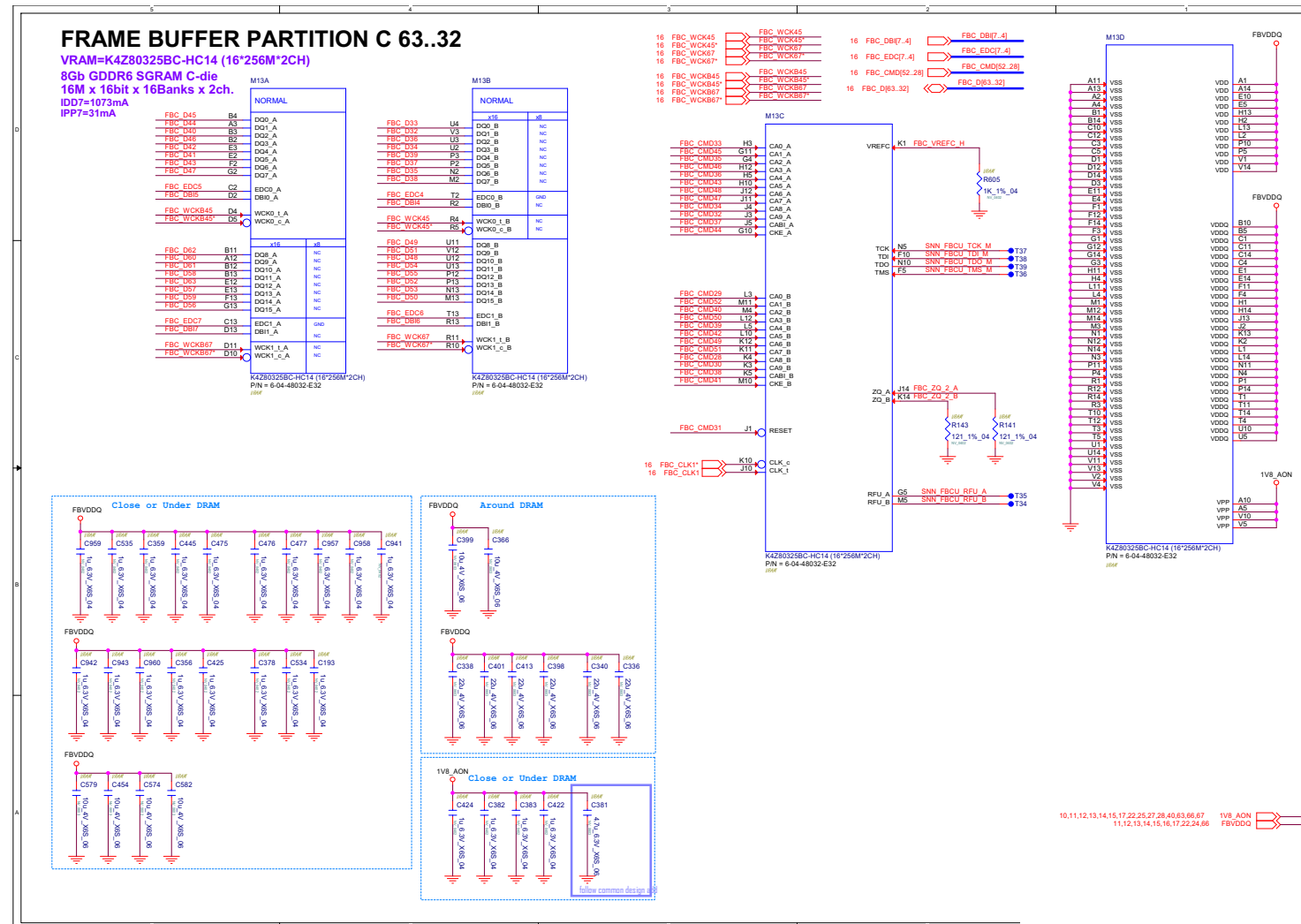
Frame Buffer C

B. Schematic Diagrams

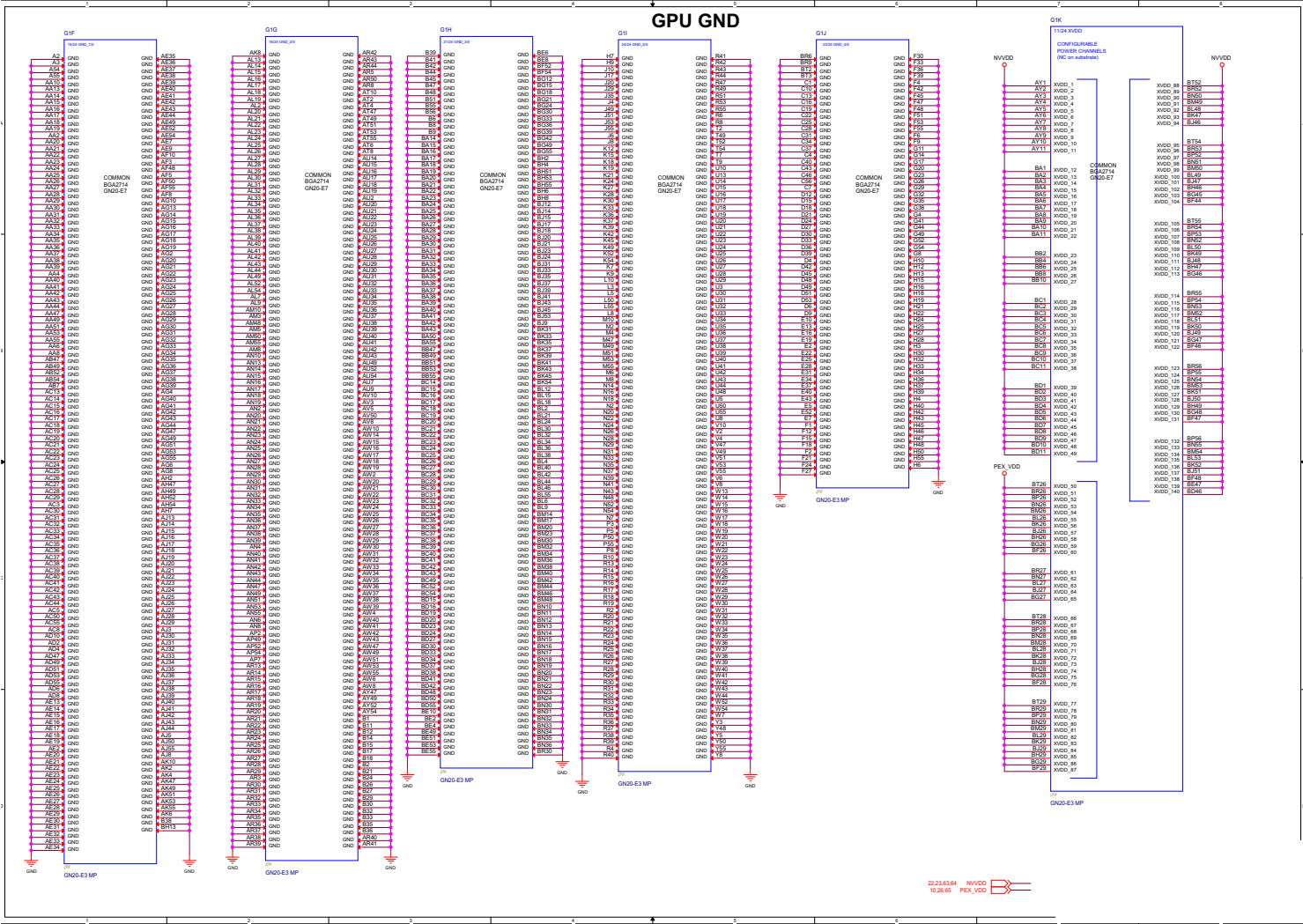
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Frame Buffer C



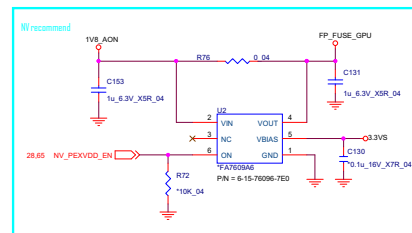
Frame Buffer C B - 19



GPU GND



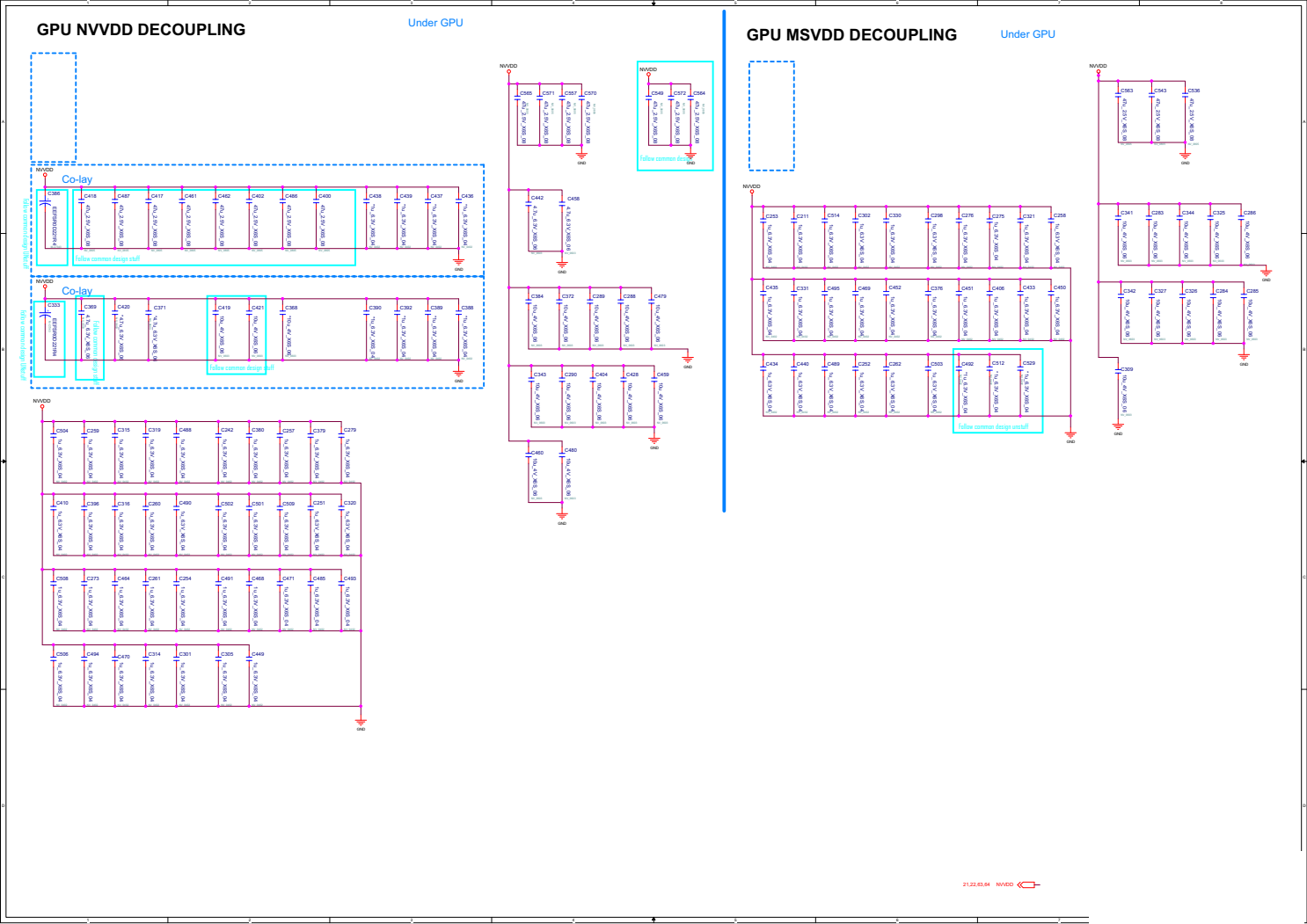
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GPU NVVDD,
FBVDDQ



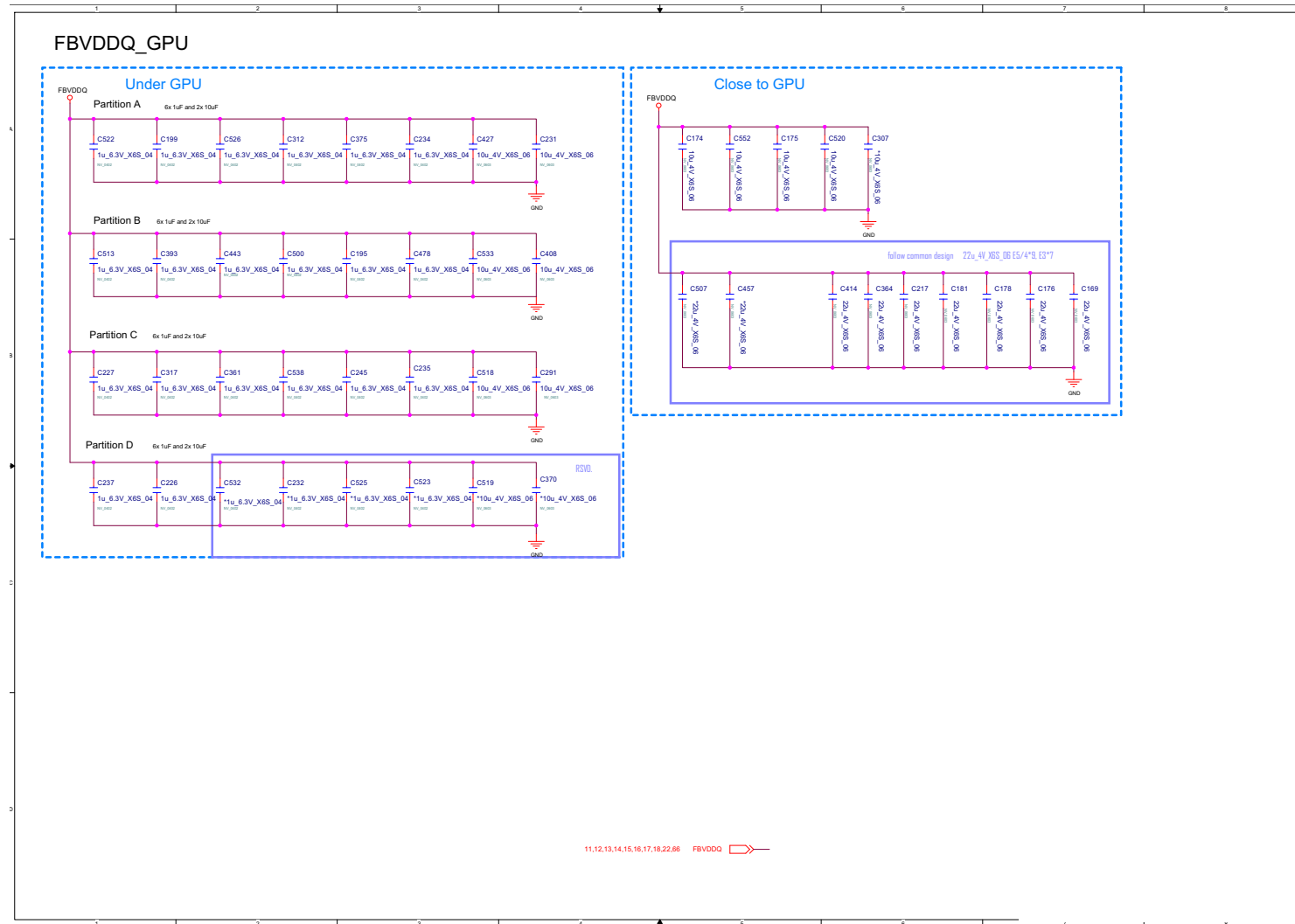
Schematic Diagrams

GPU Decoupling - NVVDD

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GPU Decoupling -
NVVDD



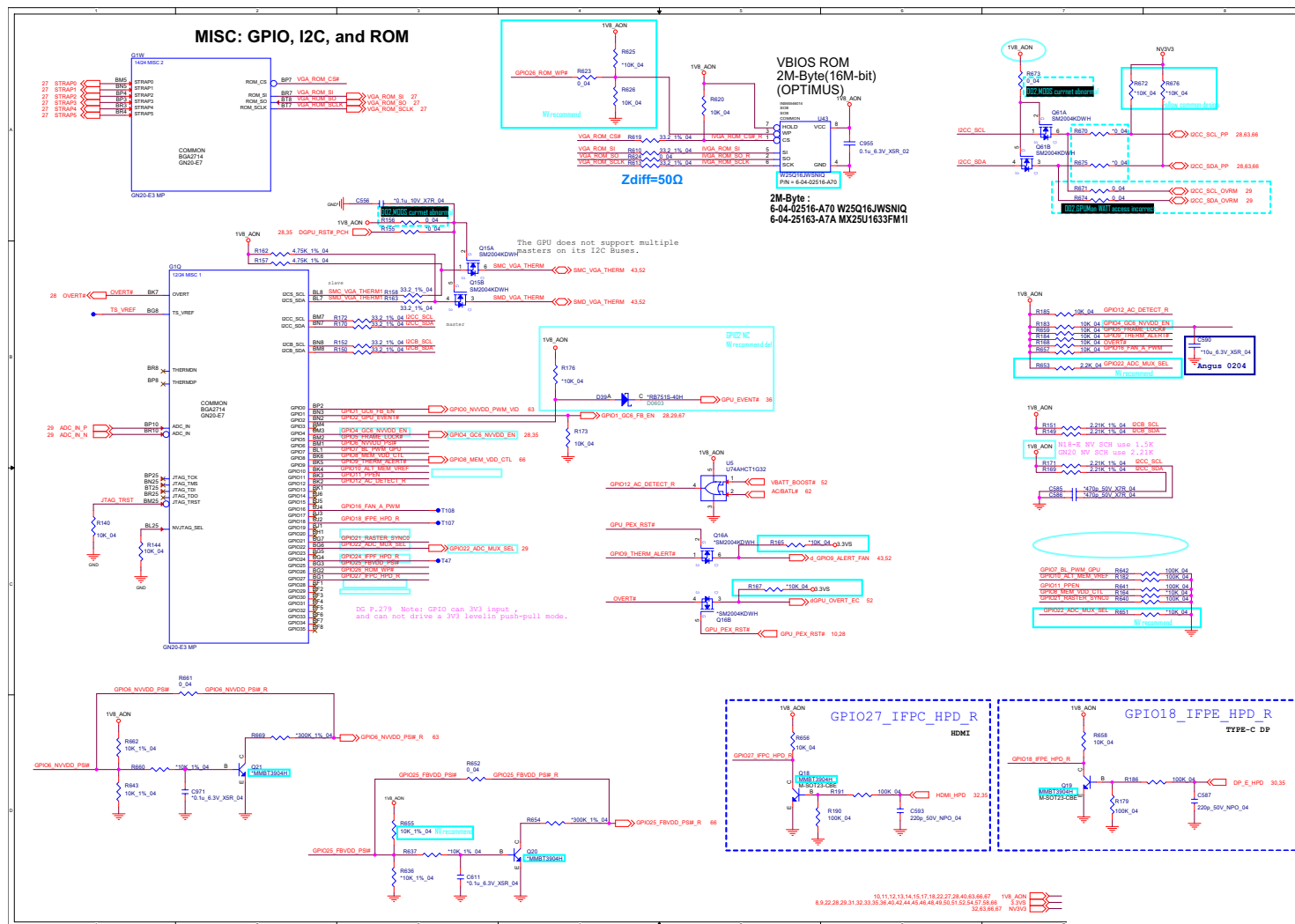
GPU Decoupling - FBVDDQ



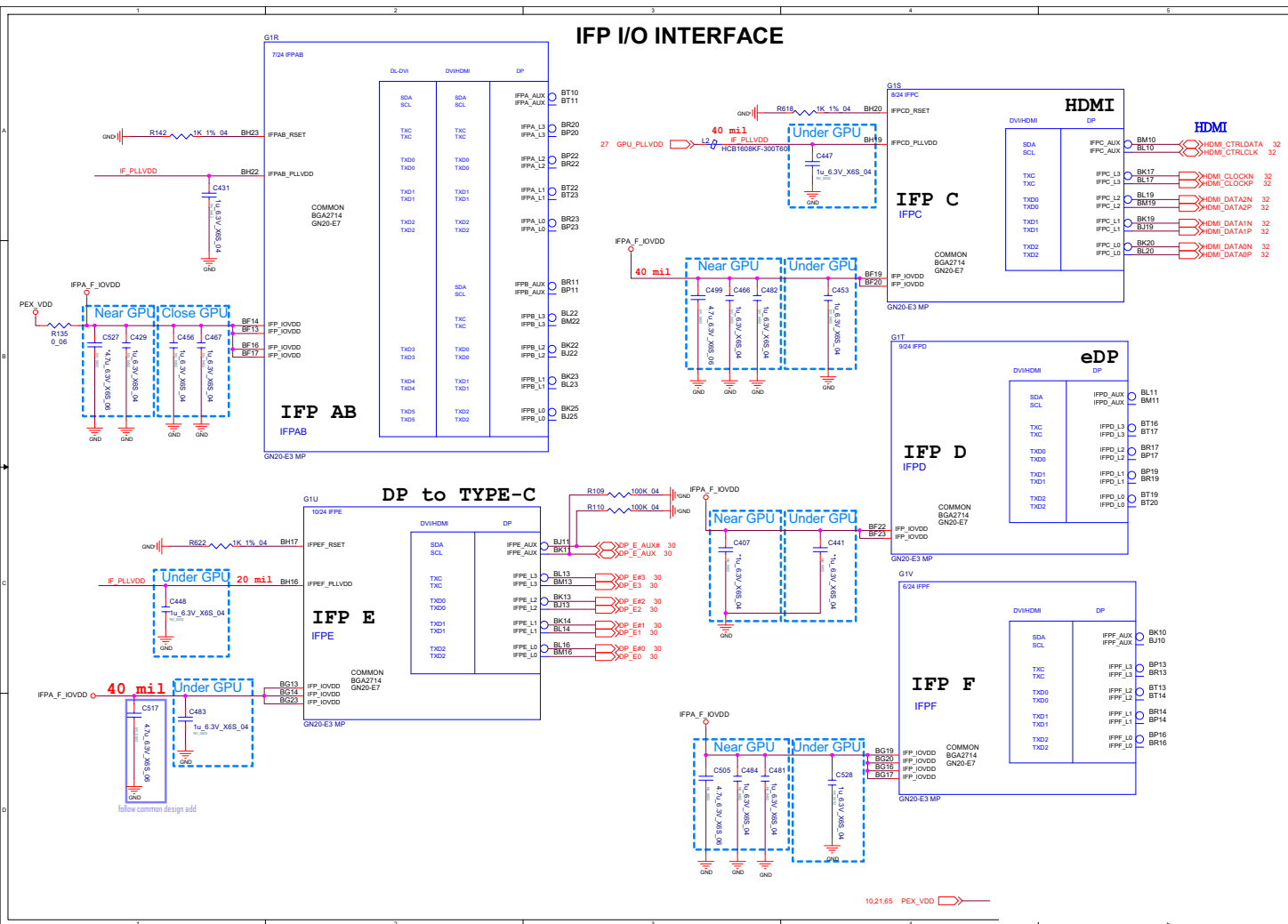
Sheet 22 of 69
GPU Decoupling -
FBVDDQ

Misc - GPIO, I2C, ROM

Sheet 23 of 69
Misc - GPIO, I2C,
ROM

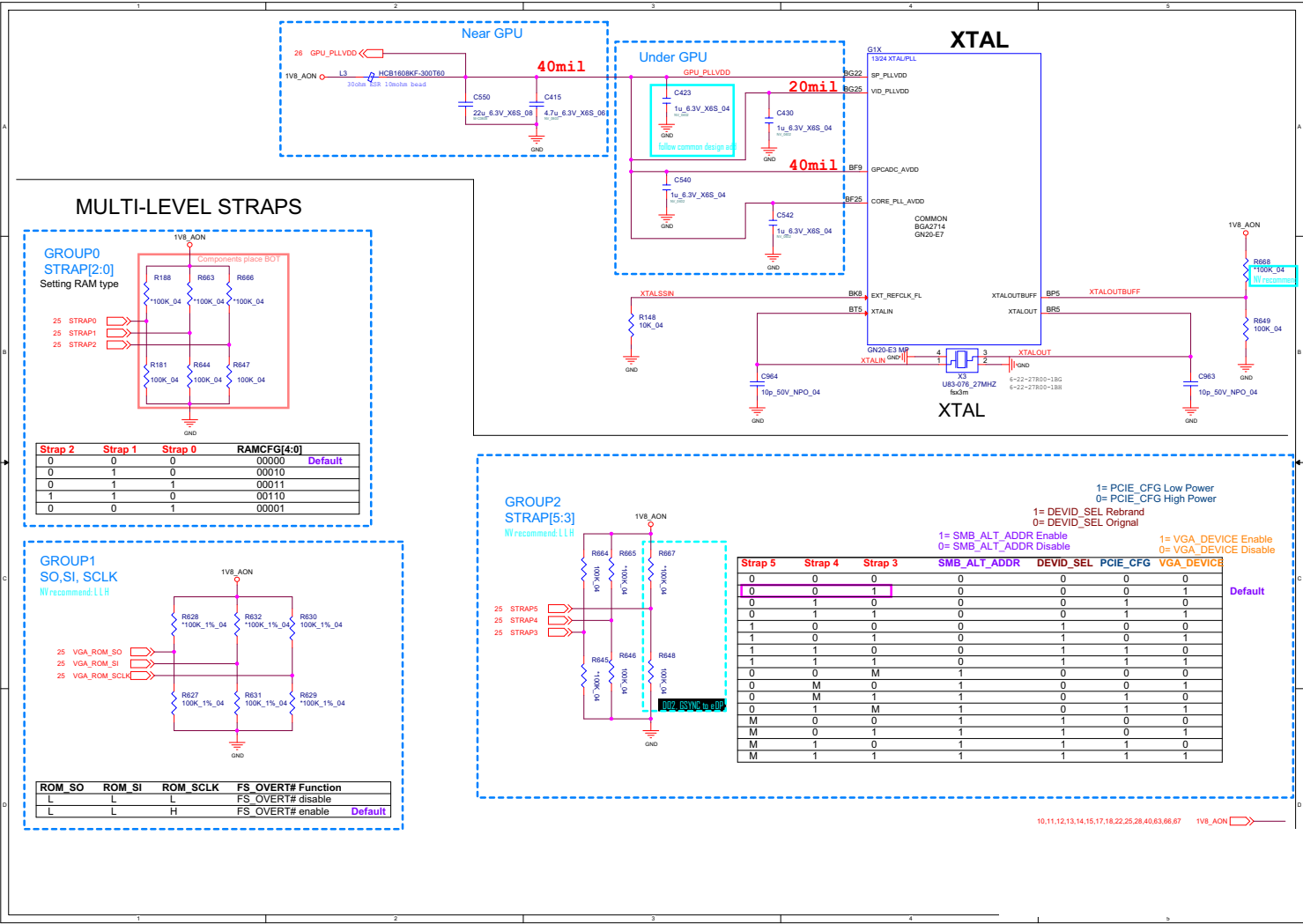


IFP I/O Interface

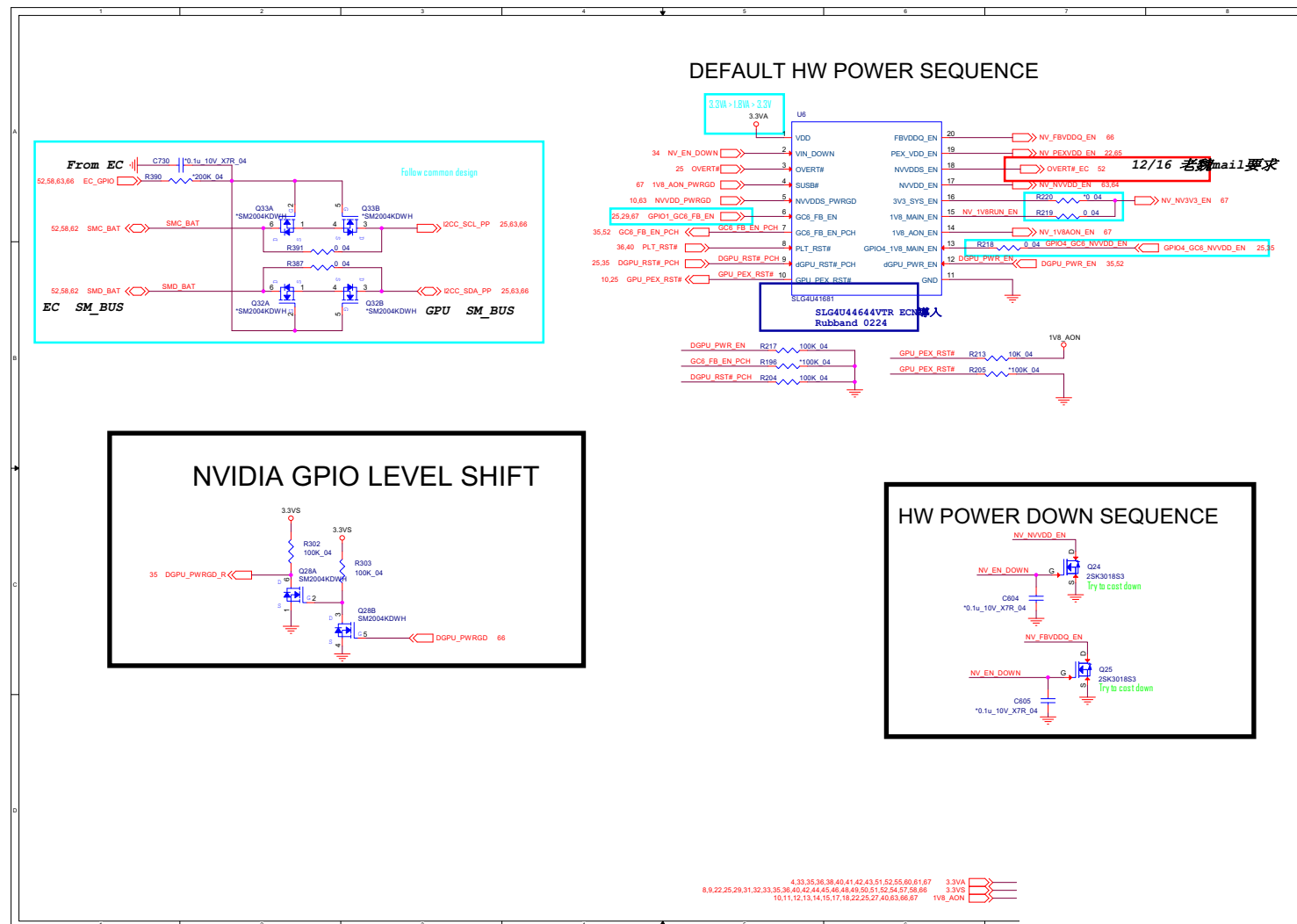


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IFP I/O Interface

Straps and XTAL



NVIDIA Power Sequence

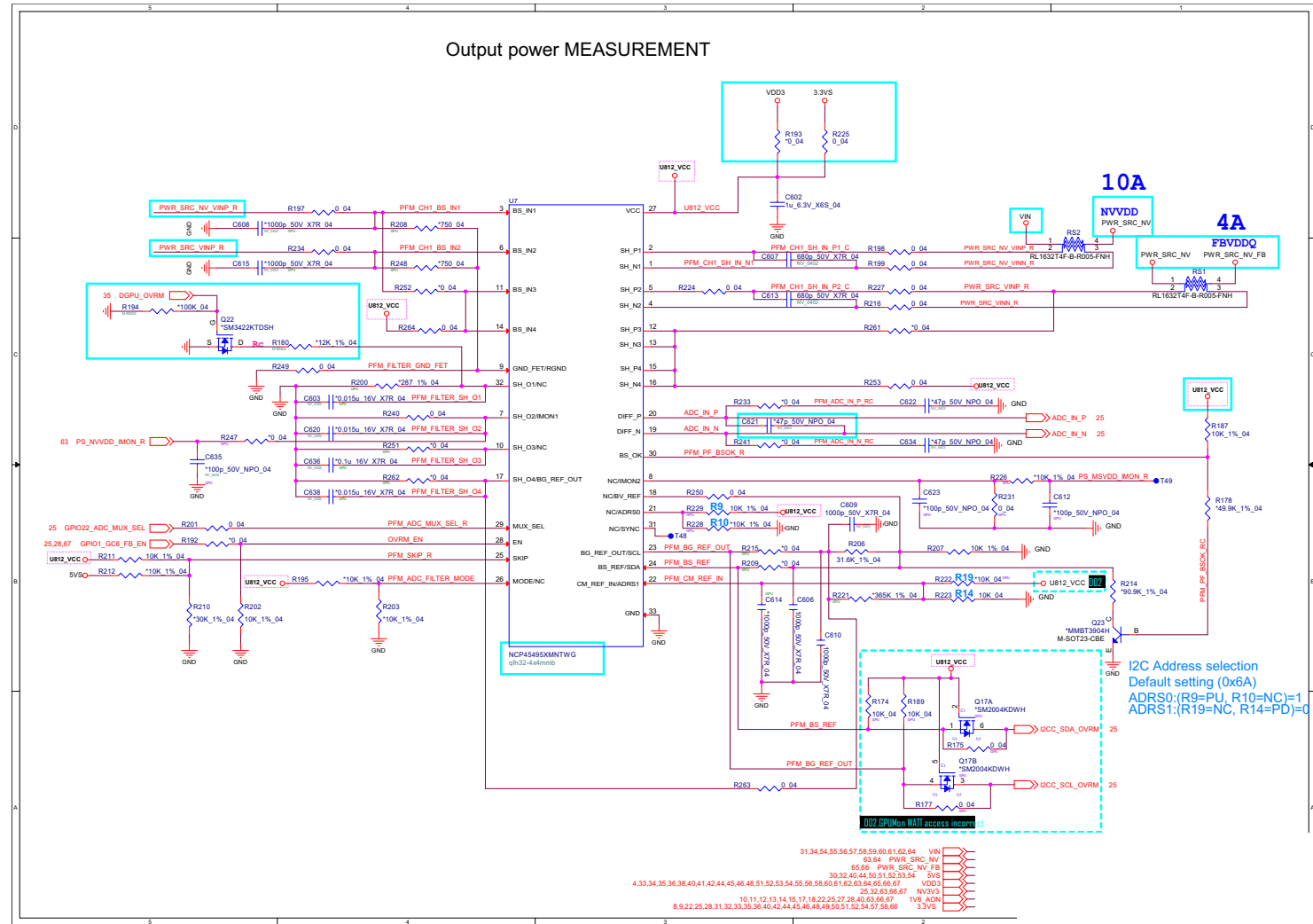


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NVIDIA Power
Sequence

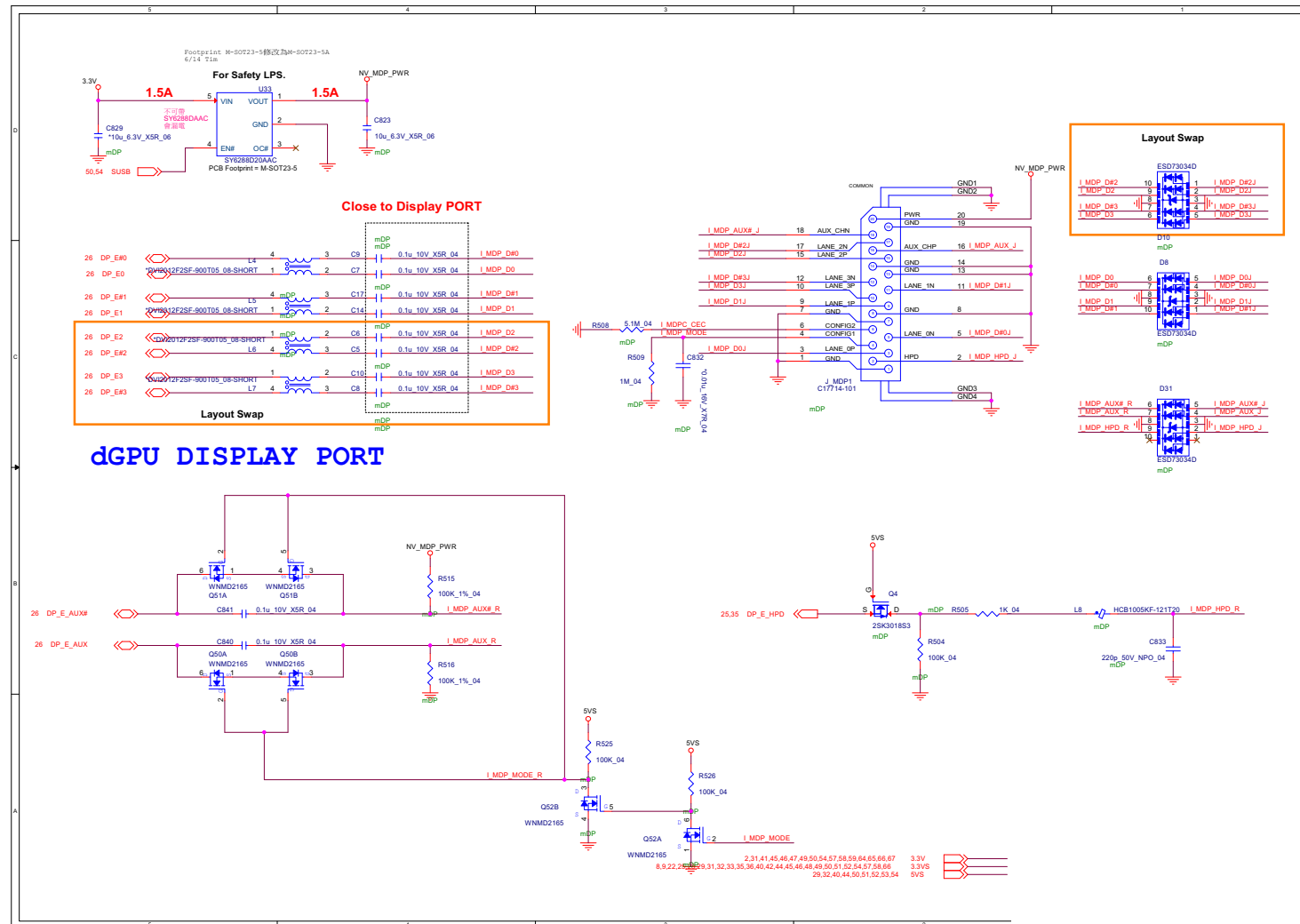
Schematic Diagrams

OVR-M

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OVR-M



mDP

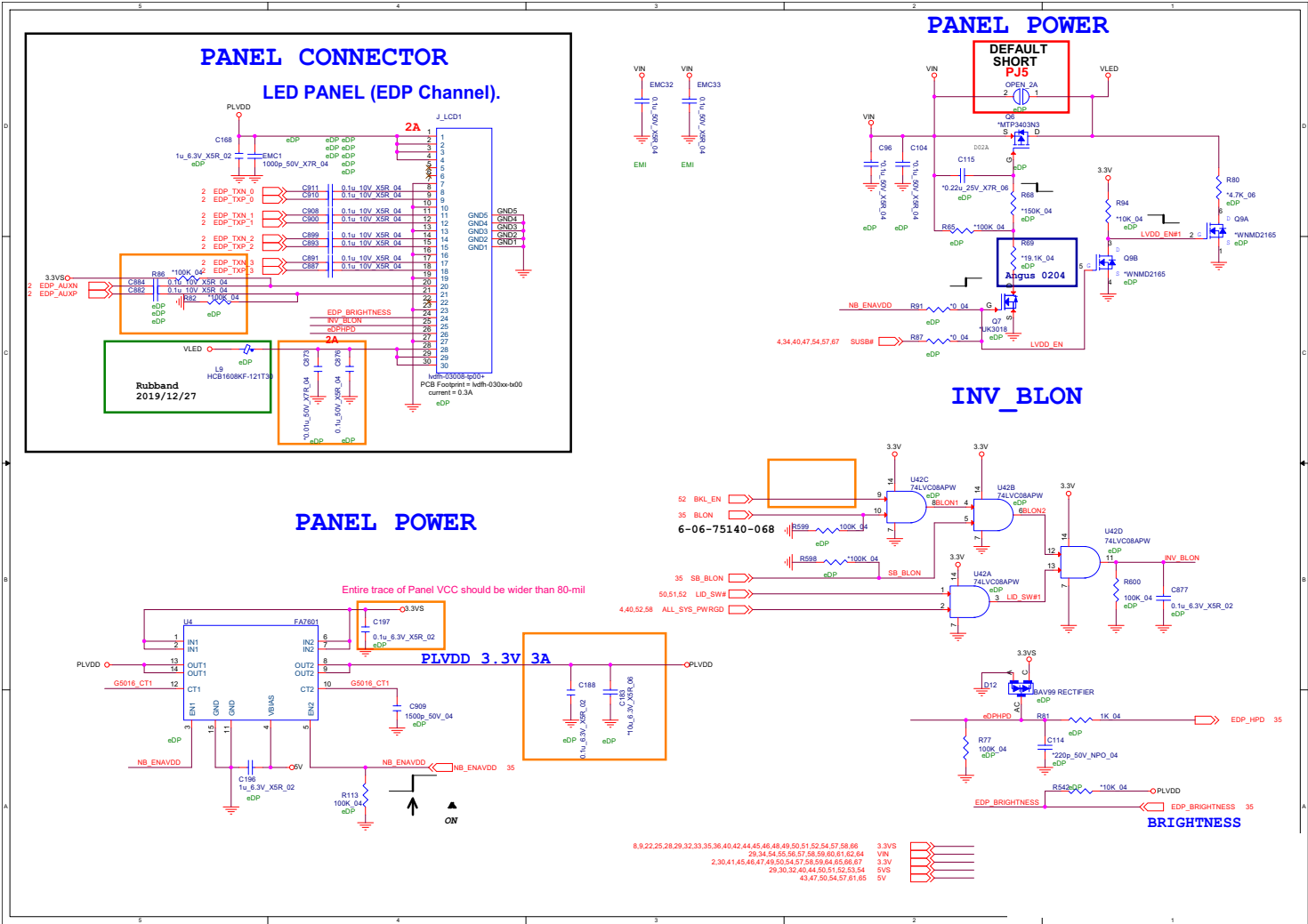


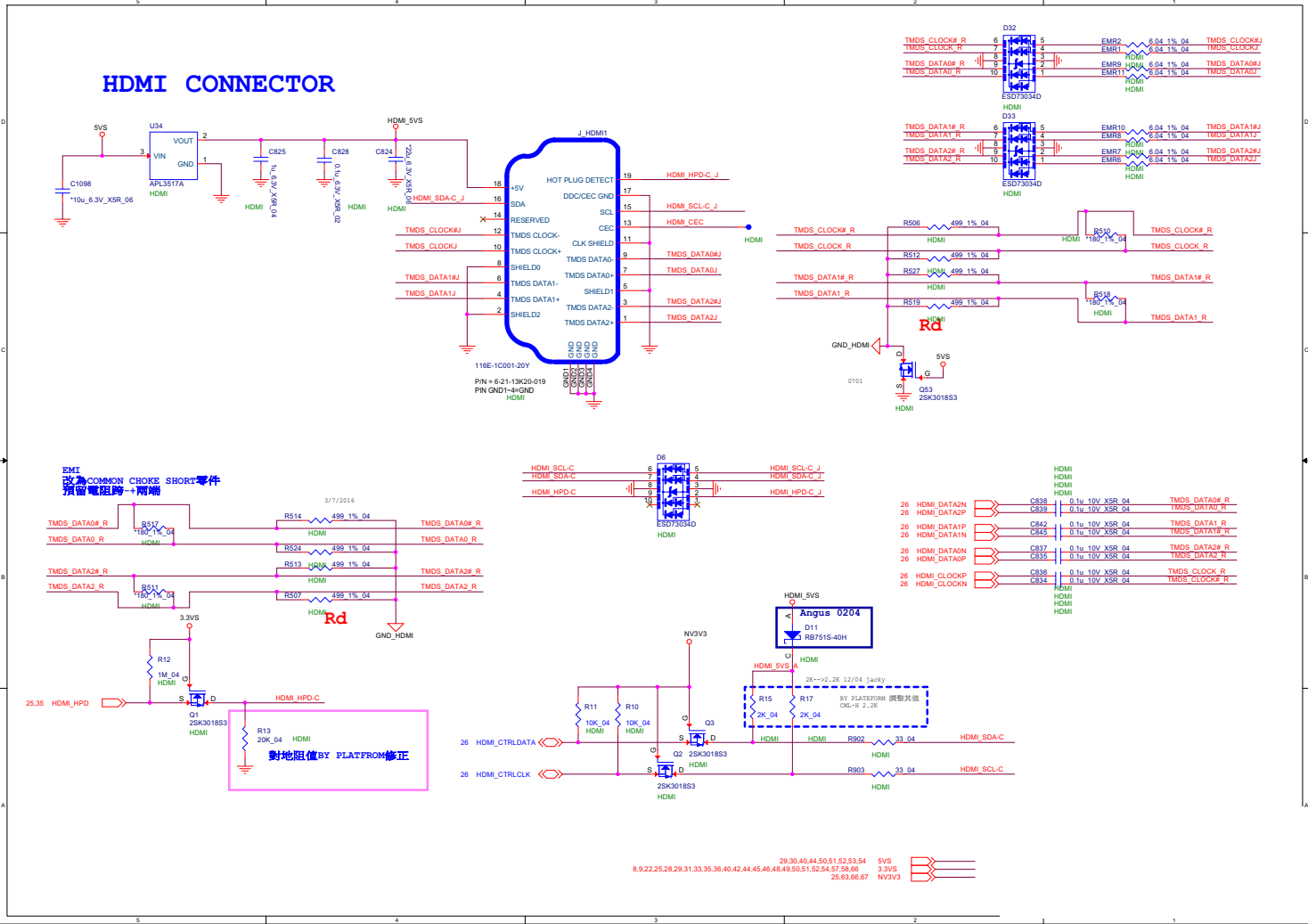
Sheet 28 of 69
mDP

Schematic Diagrams

Panel, Inverter

Sheet 29 of 69
Panel, Inverter





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HDMI

B.Schematic Diagrams

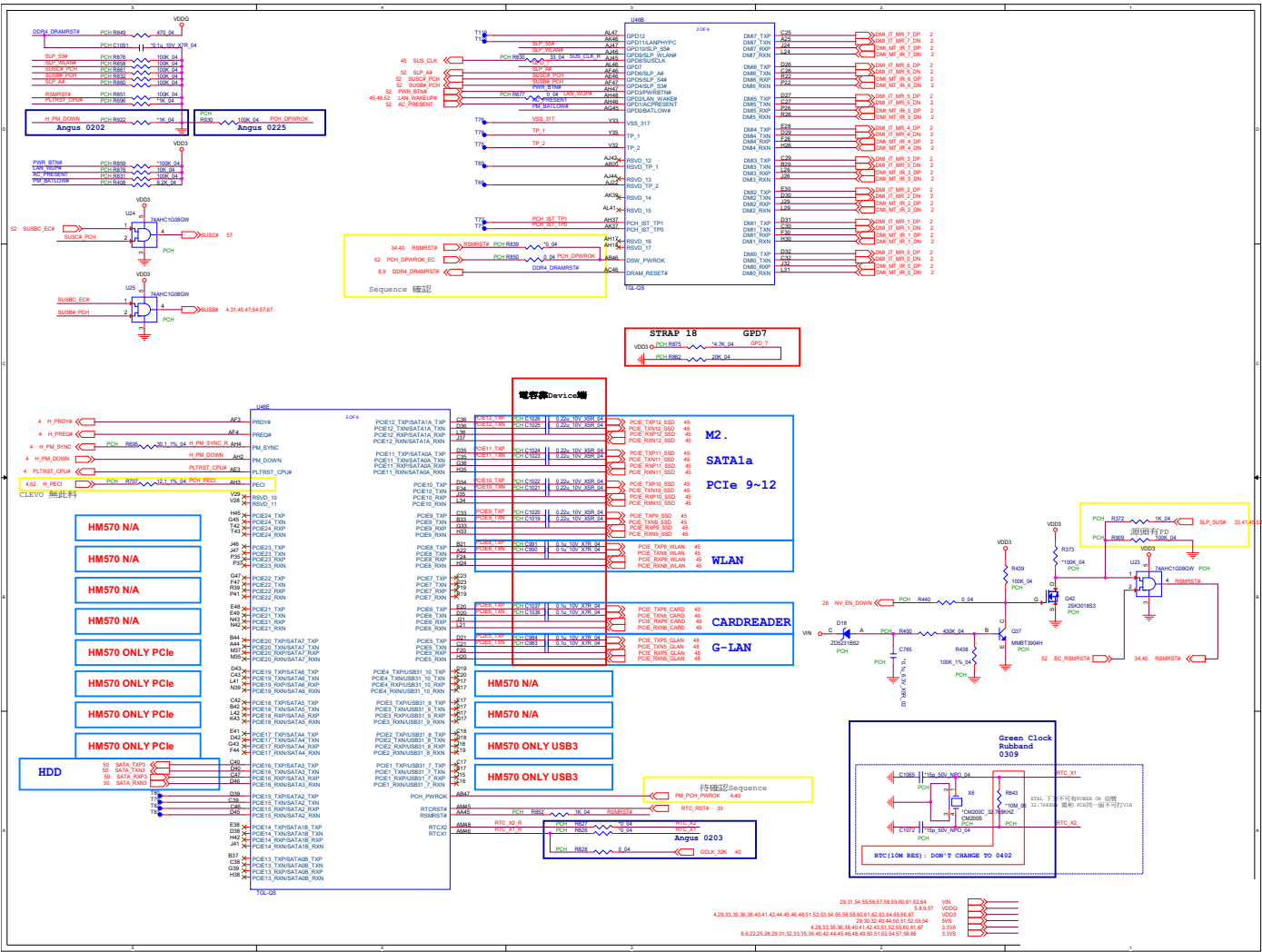
PCH 1/8

B. Schematic Diagrams



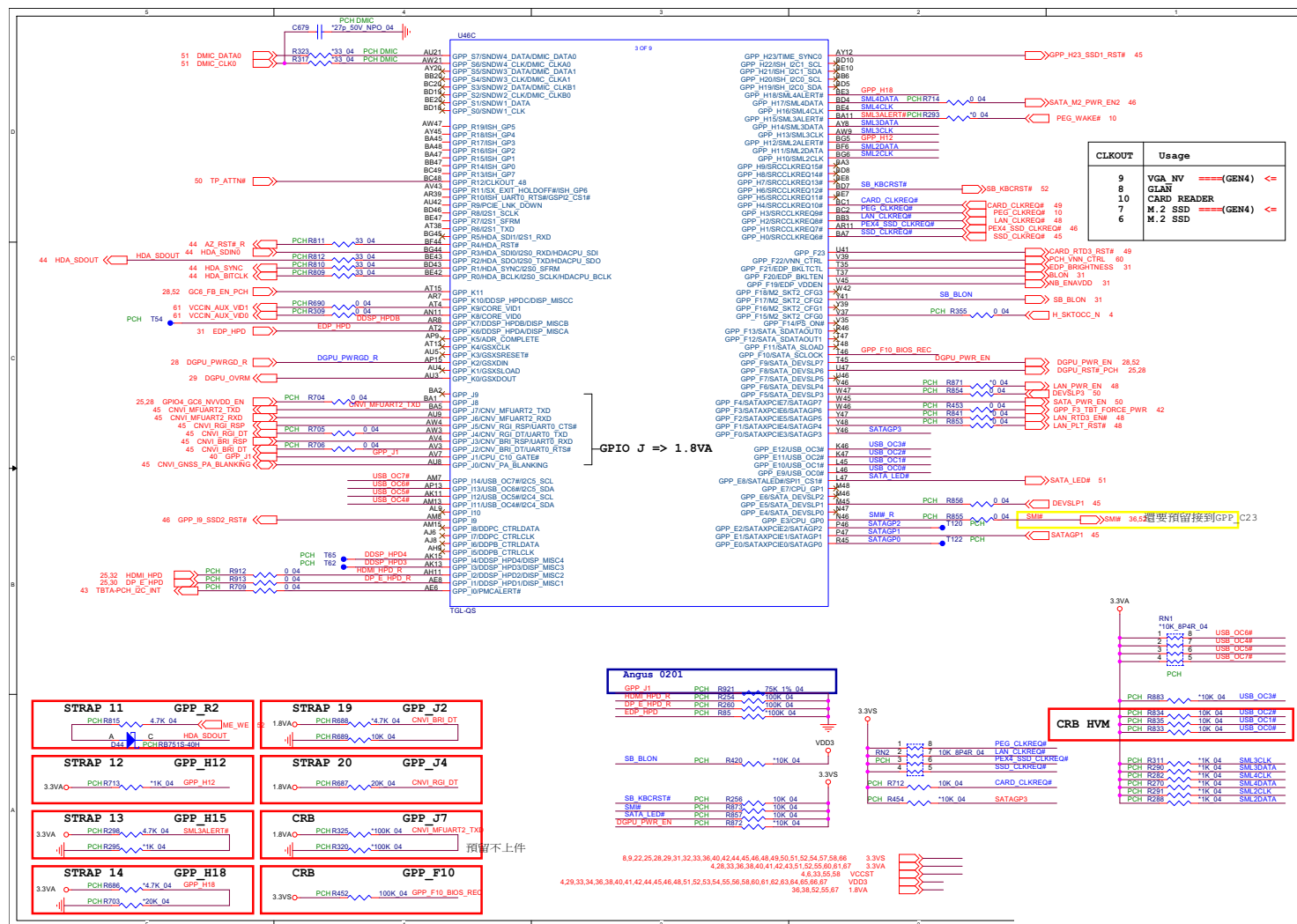
PCH 2/8

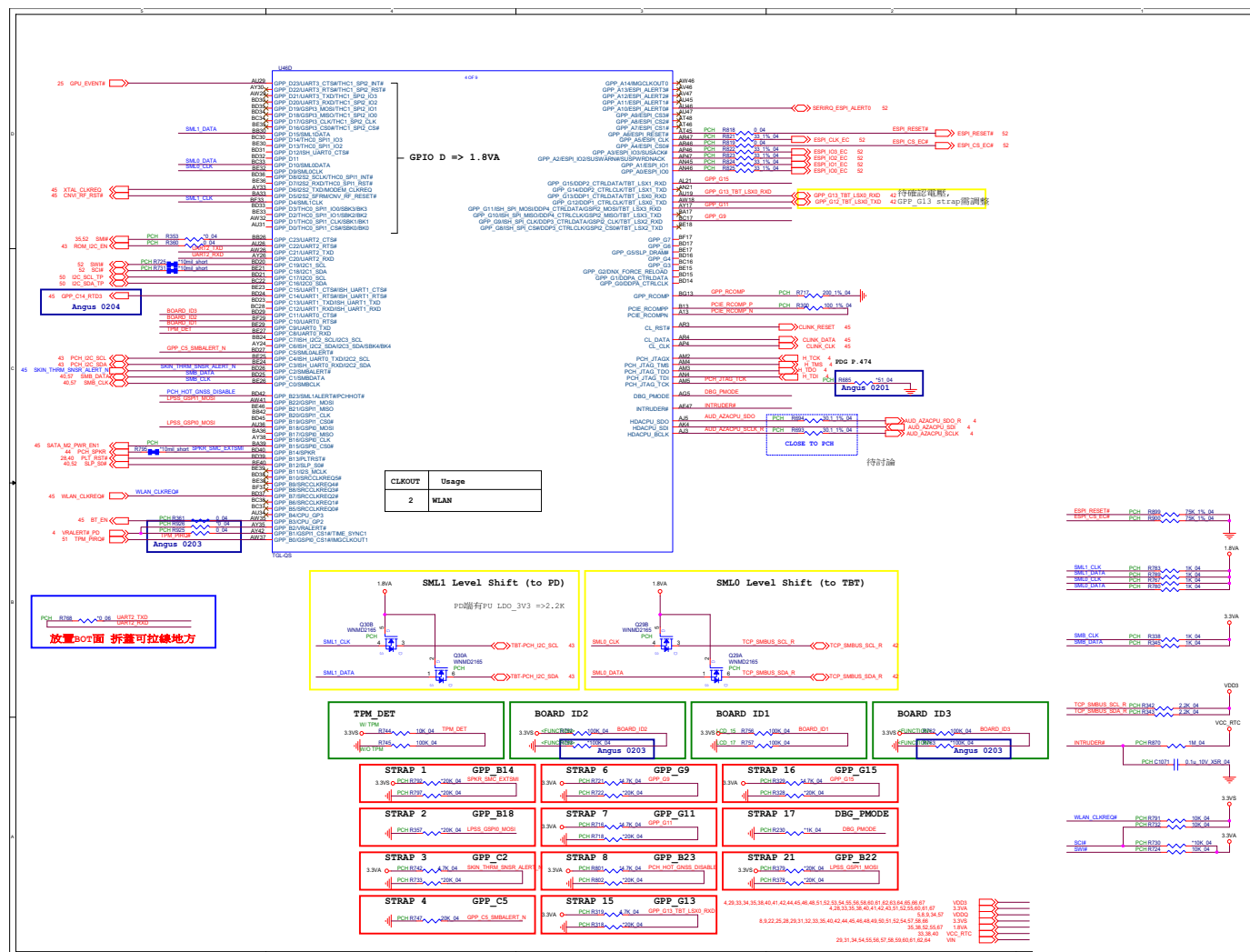
Sheet 32 of 69
PCH 2/8



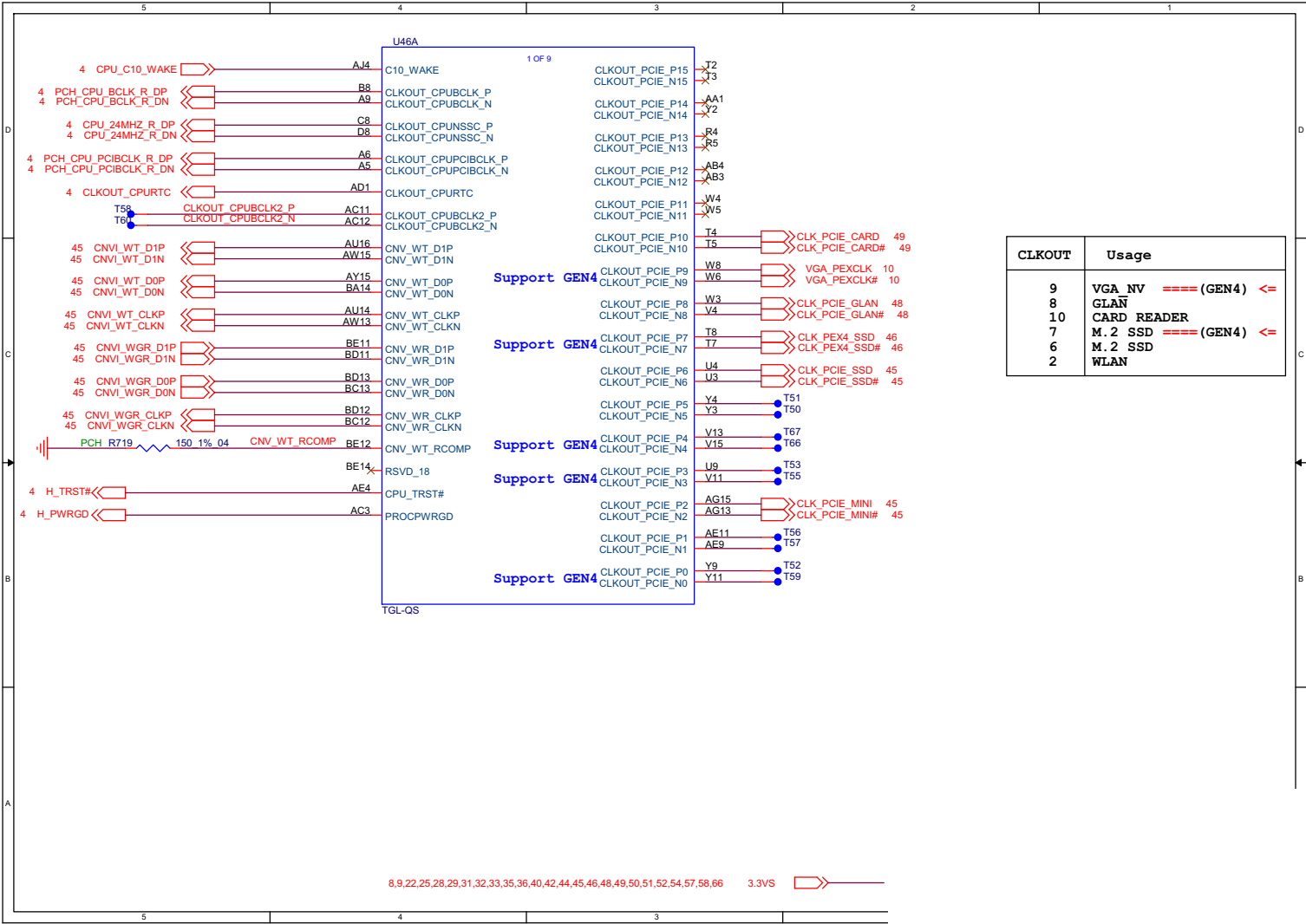
PCH 3/8

B.Schematic Diagrams





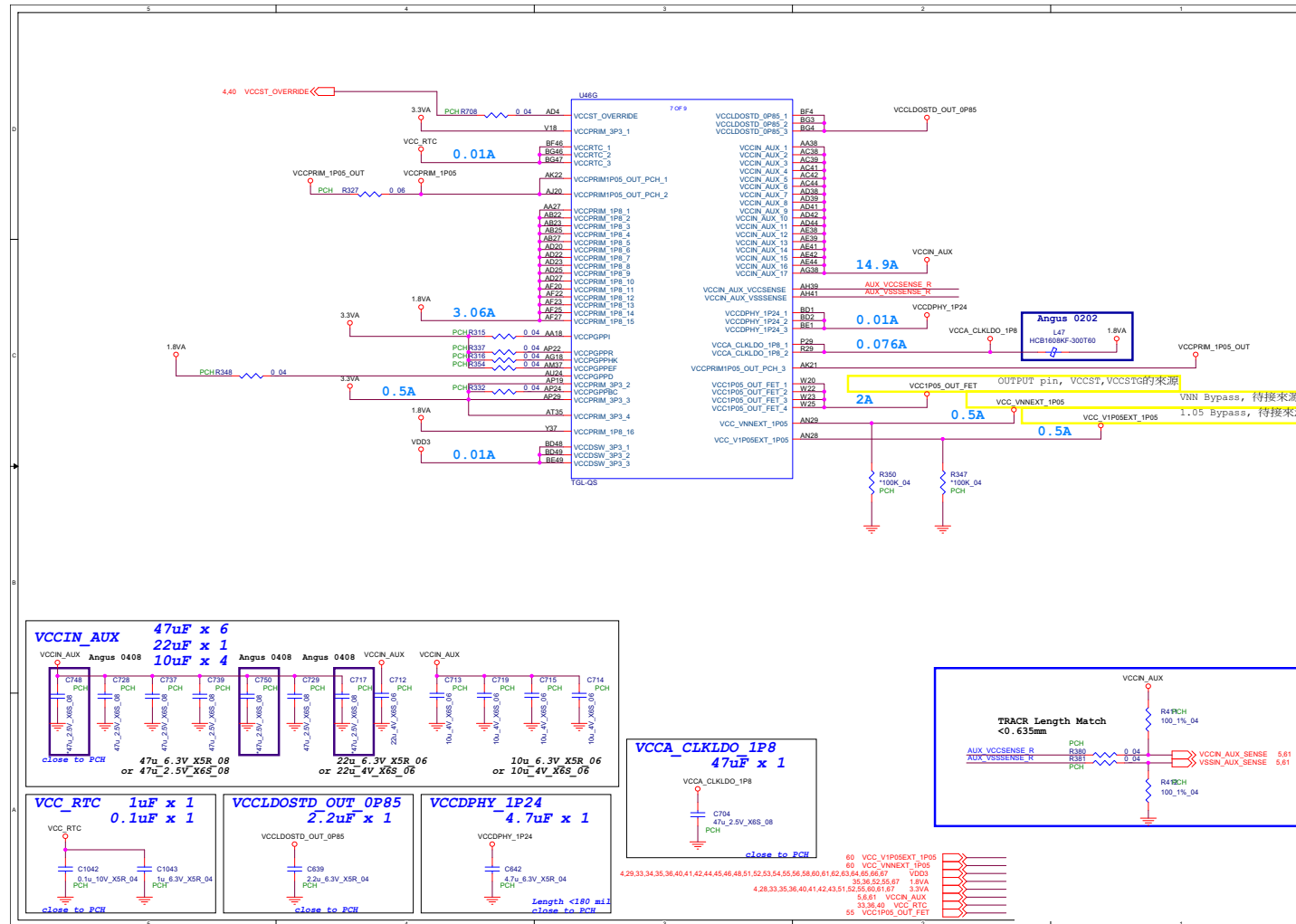
PCH 5/8



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PCH 5/8

B.Schematic Diagrams

PCH 6/8

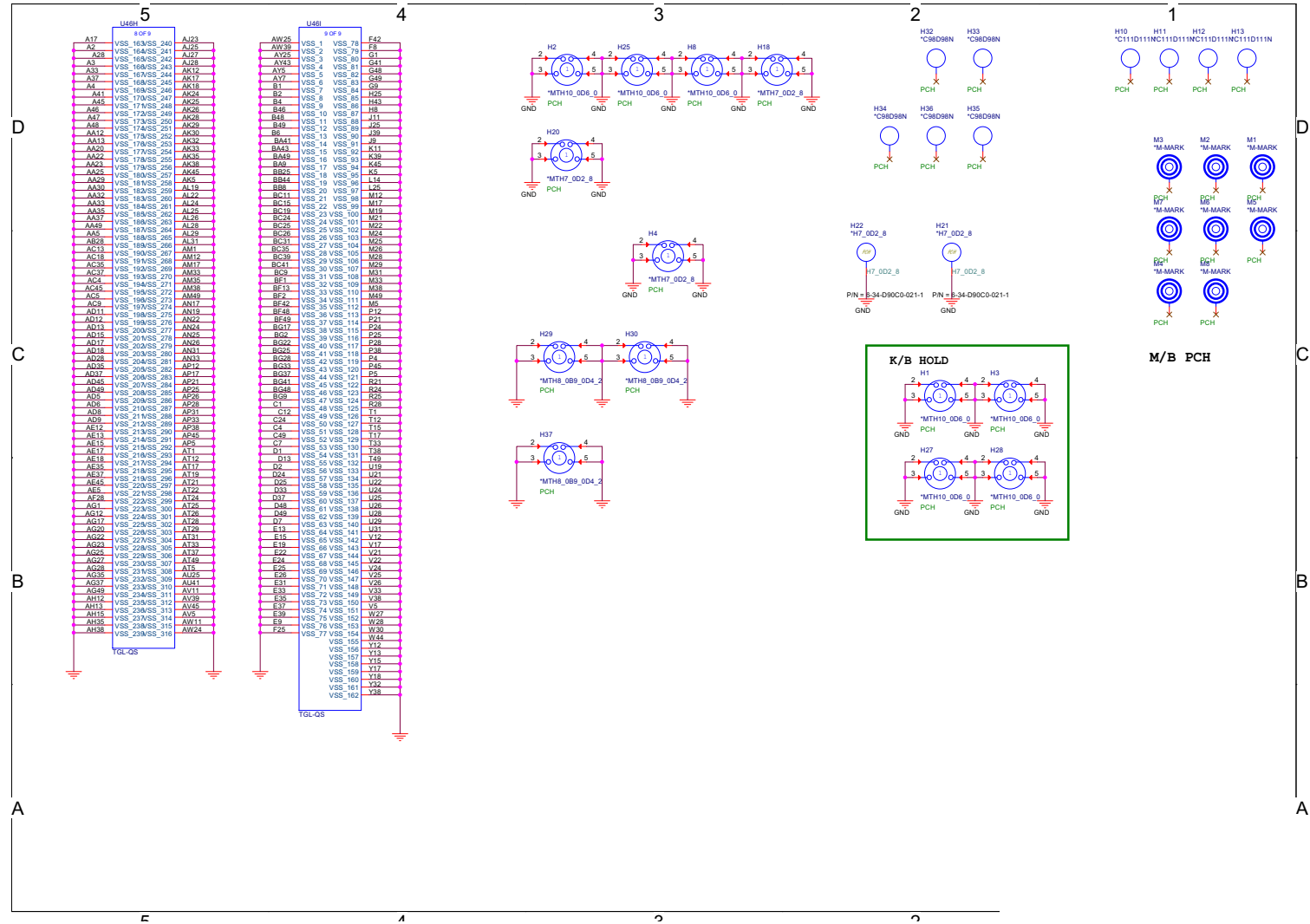


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PCH 6/8

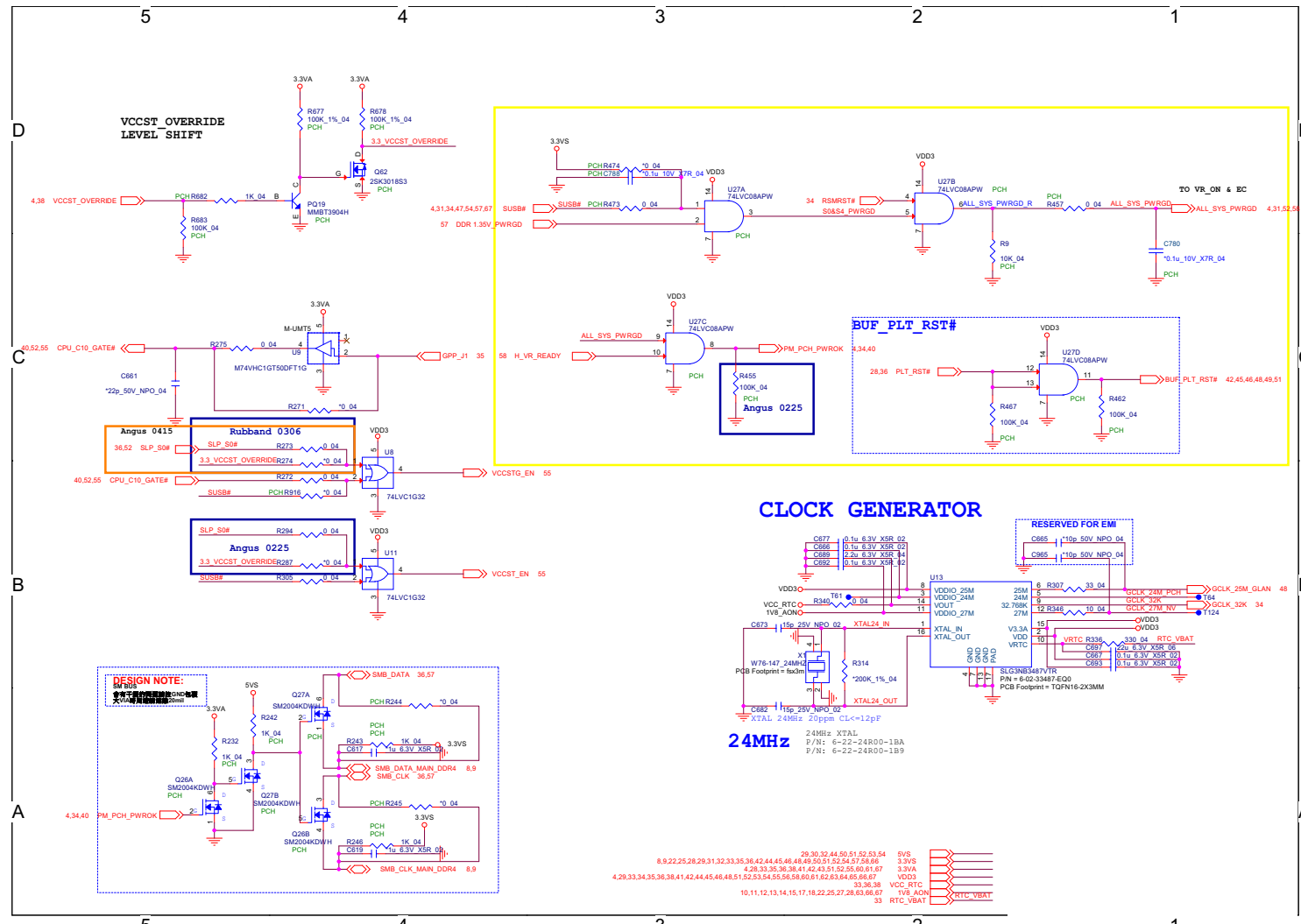
B.Schematic Diagrams

PCH 7/8

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PCH 7/8

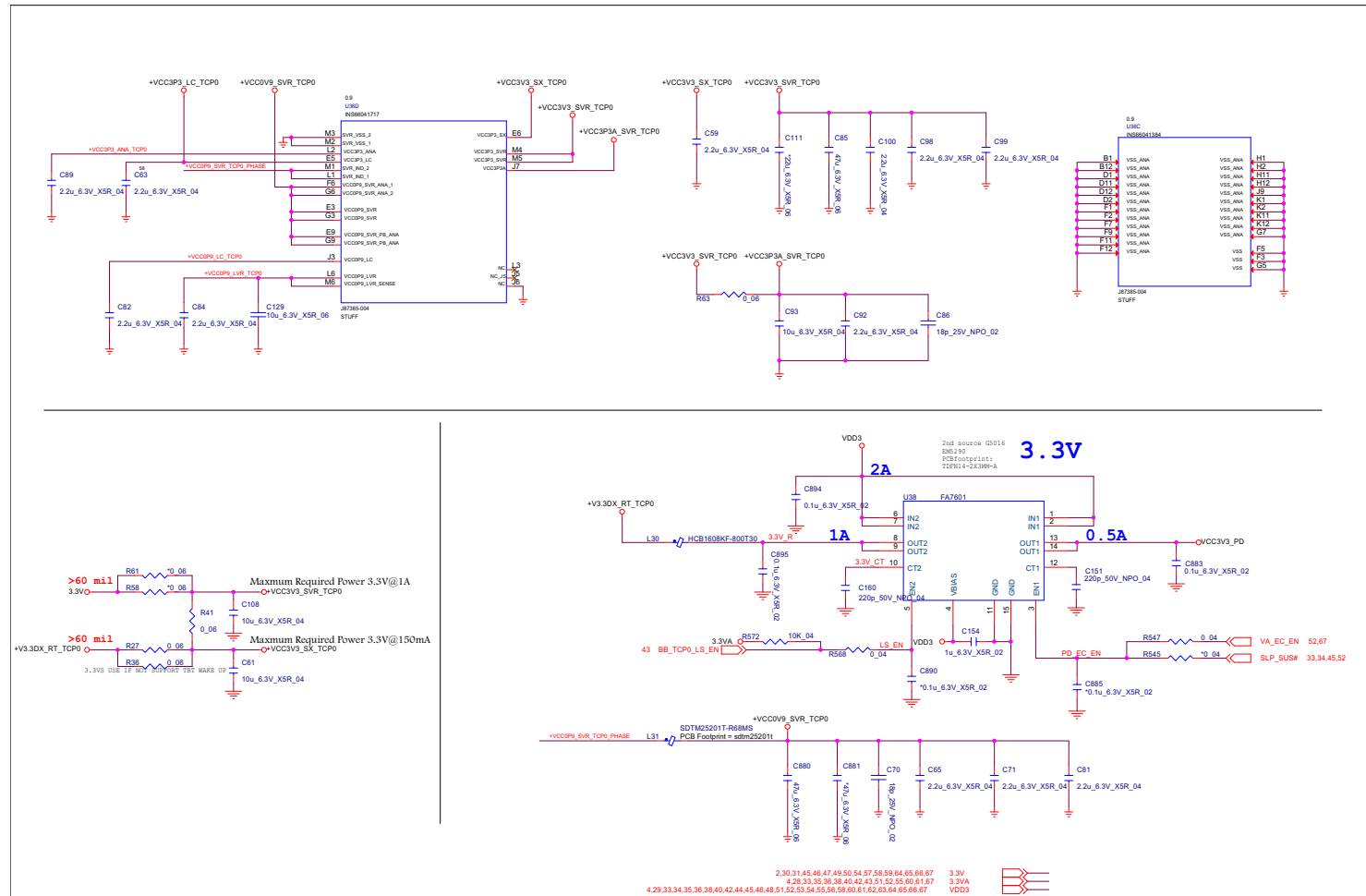


PCH 8/8 B - 39



Retimer 1/2

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Retimer 1/2



B.Schematic Diagrams

The diagram is a complex schematic for the TI9250 evaluation board. It shows the following components and connections:

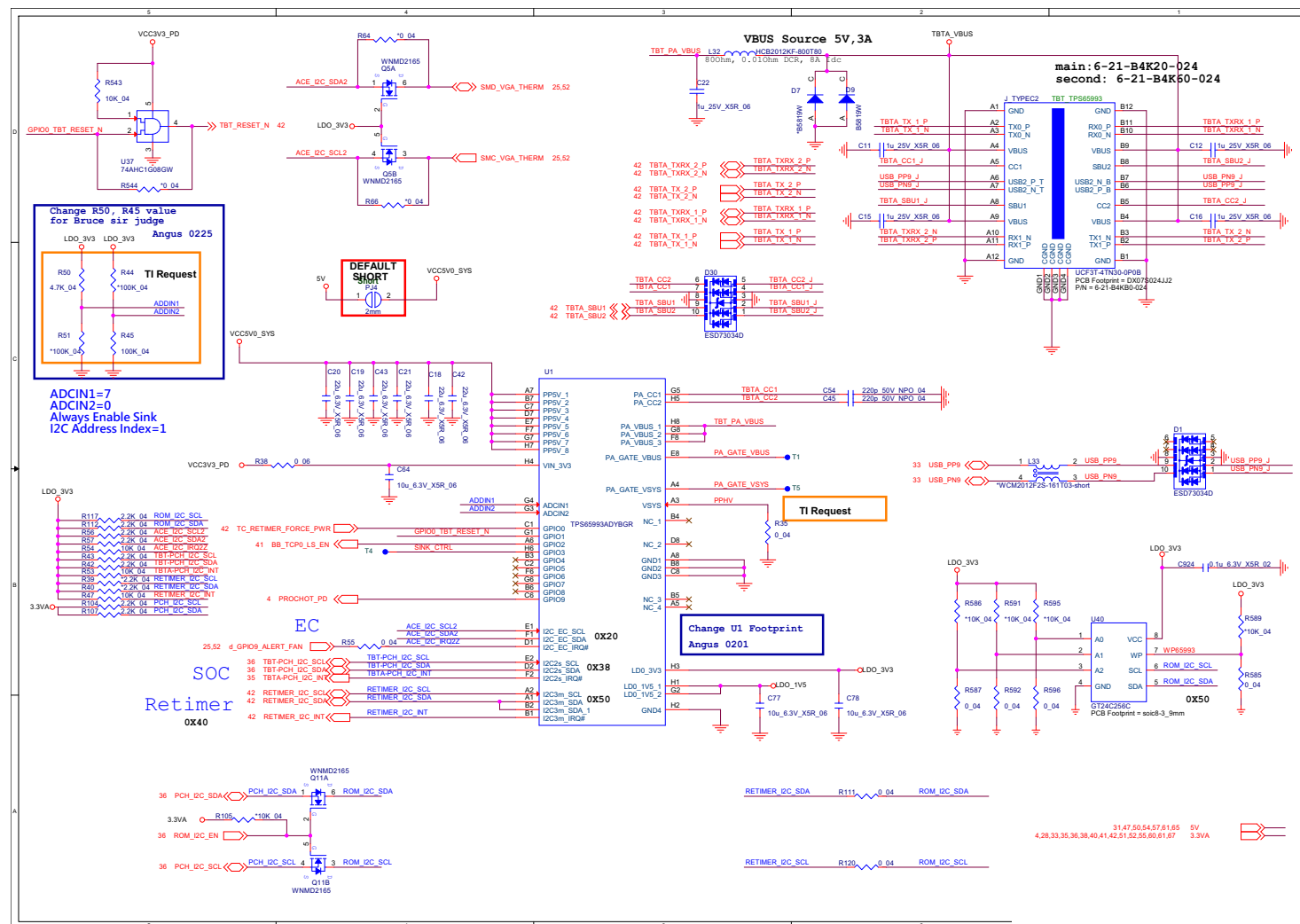
- Top Left:** Power and ground connections for various pins (e.g., TCPO_TX0_DP, TCPO_TX0_DN, TCPO_TX0_C_DP, TCPO_TX0_C_DN). It includes resistors like R278, R279, R282, R283, R287, R288 and capacitors like C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C153, C154, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199, C200, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C248, C249, C250, C251, C252, C253, C254, C255, C256, C257, C258, C259, C260, C261, C262, C263, C264, C265, C266, C267, C268, C269, C270, C271, C272, C273, C274, C275, C276, C277, C278, C279, C280, C281, C282, C283, C284, C285, C286, C287, C288, C289, C290, C291, C292, C293, C294, C295, C296, C297, C298, C299, C300, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C327, C328, C329, C330, C331, C332, C333, C334, C335, C336, C337, C338, C339, C340, C341, C342, C343, C344, C345, C346, C347, C348, C349, C350, C351, C352, C353, C354, C355, C356, C357, C358, C359, C360, C361, C362, C363, C364, C365, C366, C367, C368, C369, C370, C371, C372, C373, C374, C375, C376, C377, C378, C379, C380, C381, C382, C383, C384, C385, C386, C387, C388, C389, C390, C391, C392, C393, C394, C395, C396, C397, C398, C399, C400, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C414, C415, C416, C417, C418, C419, C420, C421, C422, C423, C424, C425, C426, C427, C428, C429, C430, C431, C432, C433, C434, C435, C436, C437, C438, C439, C440, C441, C442, C443, C444, C445, C446, C447, C448, C449, C450, C451, C452, C453, C454, C455, C456, C457, C458, C459, C460, C461, C462, C463, C464, C465, C466, C467, C468, C469, C470, C471, C472, C473, C474, C475, C476, C477, C478, C479, C480, C481, C482, C483, C484, C485, C486, C487, C488, C489, C490, C491, C492, C493, C494, C495, C496, C497, C498, C499, C500, C501, C502, C503, C504, C505, C506, C507, C508, C509, C510, C511, C512, C513, C514, C515, C516, C517, C518, C519, C520, C521, C522, C523, C524, C525, C526, C527, C528, C529, C530, C531, C532, C533, C534, C535, C536, C537, C538, C539, C540, C541, C542, C543, C544, C545, C546, C547, C548, C549, C550, C551, C552, C553, C554, C555, C556, C557, C558, C559, C560, C561, C562, C563, C564, C565, C566, C567, C568, C569, C570, C571, C572, C573, C574, C575, C576, C577, C578, C579, C580, C581, C582, C583, C584, C585, C586, C587, C588, C589, C590, C591, C592, C593, C594, C595, C596, C597, C598, C599, C600, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C613, C614, C615, C616, C617, C618, C619, C620, C621, C622, C623, C624, C625, C626, C627, C628, C629, C630, C631, C632, C633, C634, C635, C636, C637, C638, C639, C640, C641, C642, C643, C644, C645, C646, C647, C648, C649, C650, C651, C652, C653, C654, C655, C656, C657, C658, C659, C660, C661, C662, C663, C664, C665, C666, C667, C668, C669, C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, C680, C681, C682, C683, C684, C685, C686, C687, C688, C689, C690, C691, C692, C693, C694, C695, C696, C697, C698, C699, C700, C701, C702, C703, C704, C705, C706, C707, C708, C709, C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C720, C721, C722, C723, C724, C725, C726, C727, C728, C729, C730, C731, C732, C733, C734, C735, C736, C737, C738, C739, C740, C741, C742, C743, C744, C745, C746, C747, C748, C749, C750, C751, C752, C753, C754, C755, C756, C757, C758, C759, C760, C761, C762, C763, C764, C765, C766, C767, C768, C769, C770, C771, C772, C773, C774, C775, C776, C777, C778, C779, C780, C781, C782, C783, C784, C785, C786, C787, C788, C789, C790, C791, C792, C793, C

Retimer 2/2 B - 41

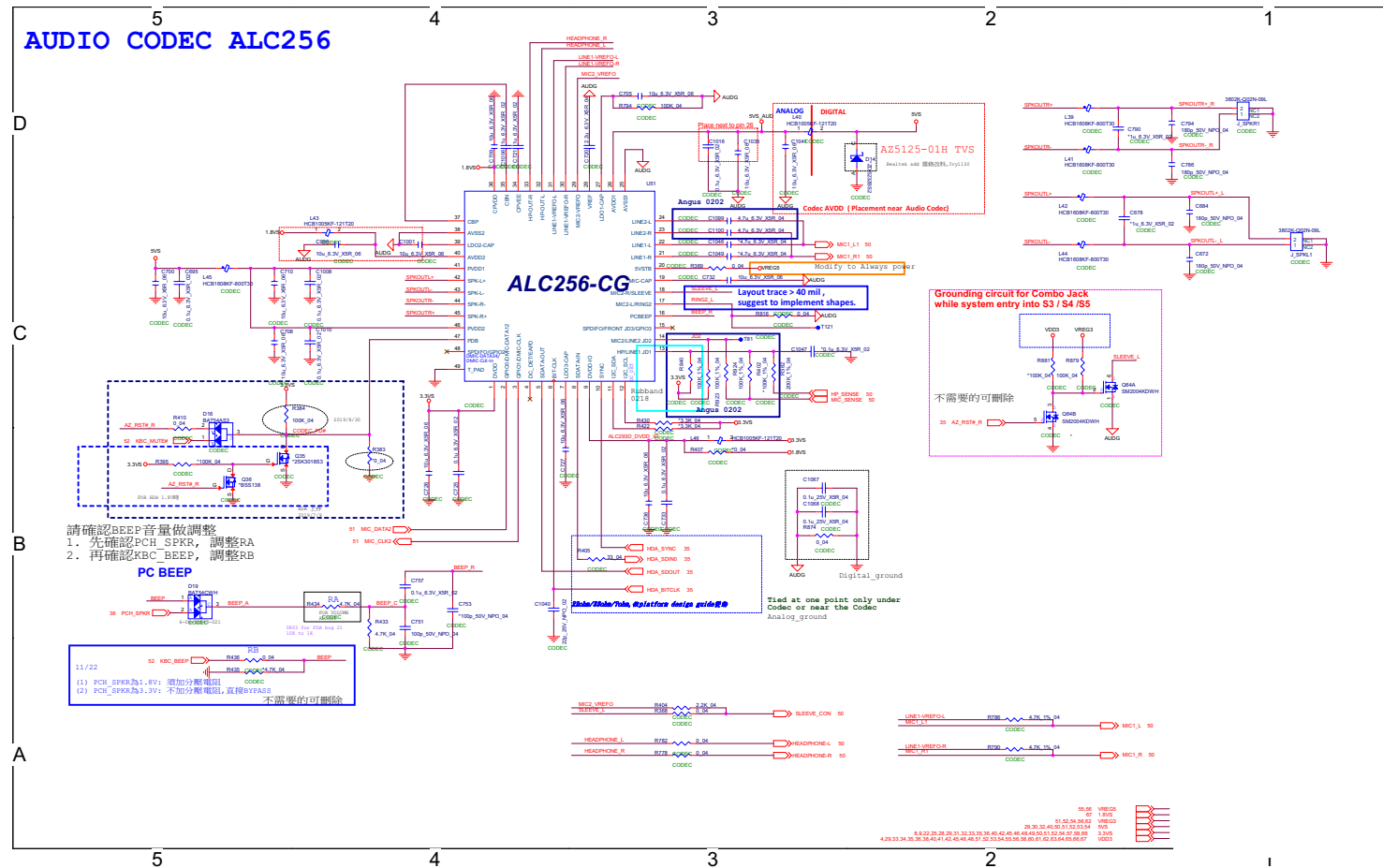
PD65993, Type-C

B. Schematic Diagrams

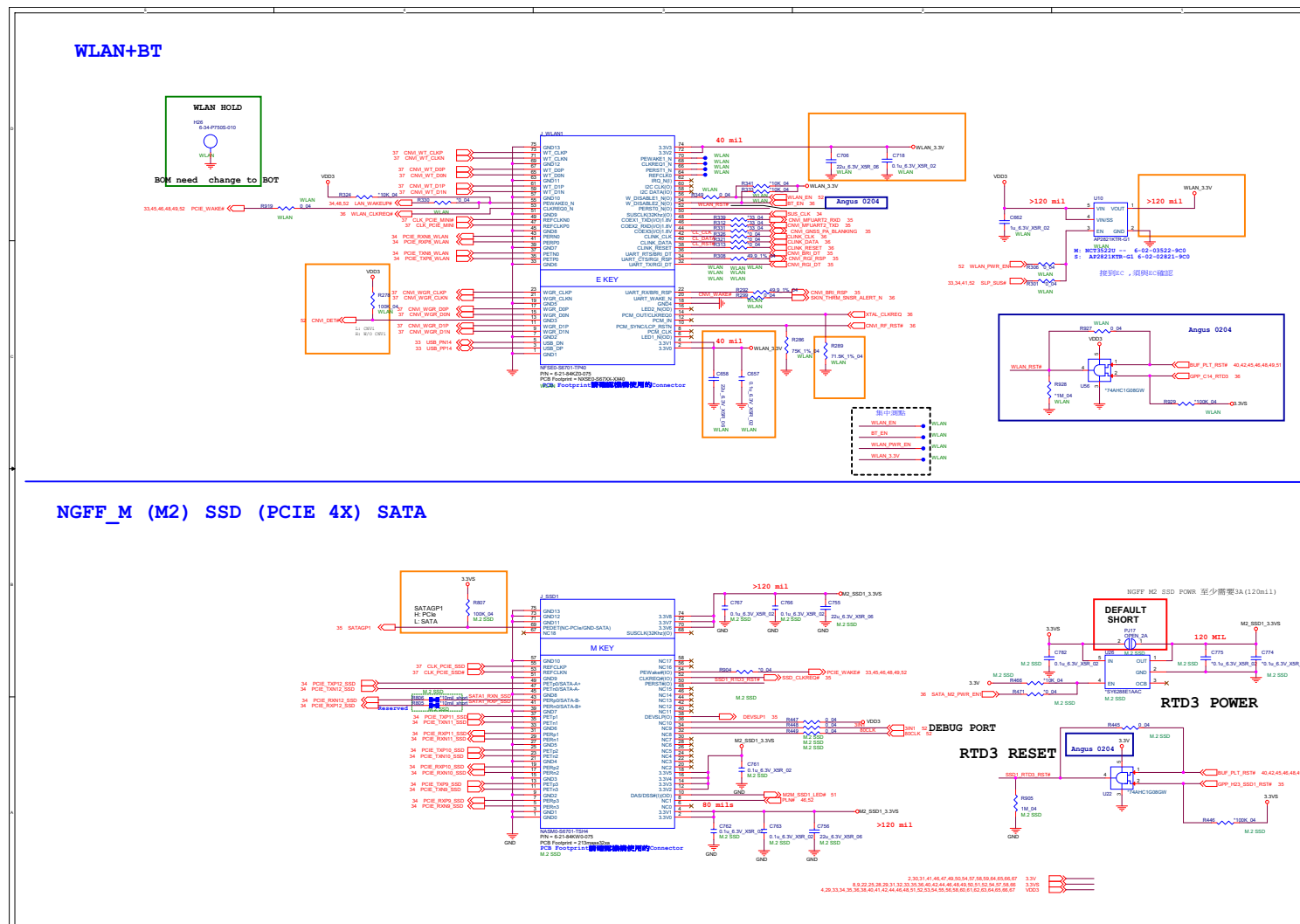
Sheet 41 of 69
PD65993, Type-C



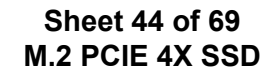
Audio Codec B - 43



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M.2 WLAN+BT,
PCIE 4X SSD



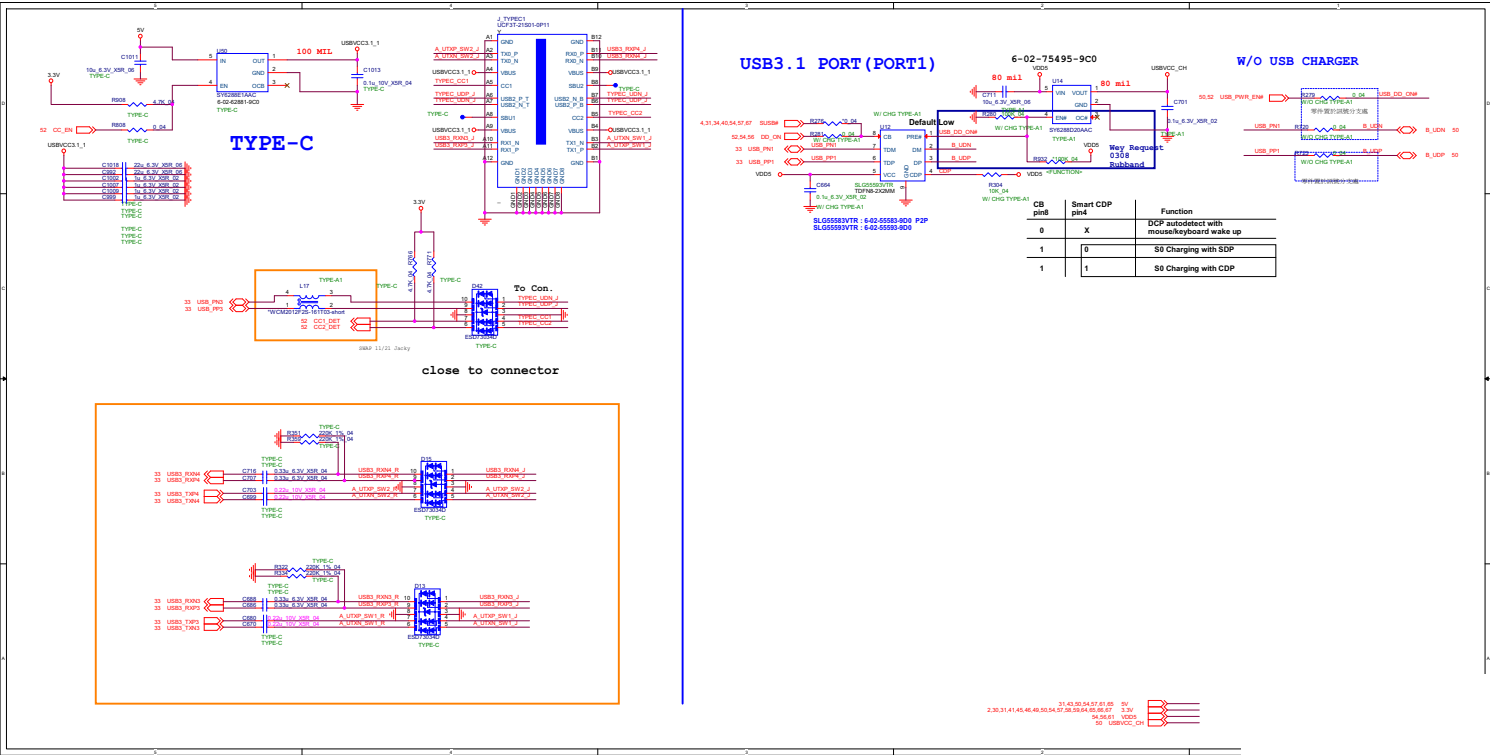
M.2 PCIE 4X SSD B - 45



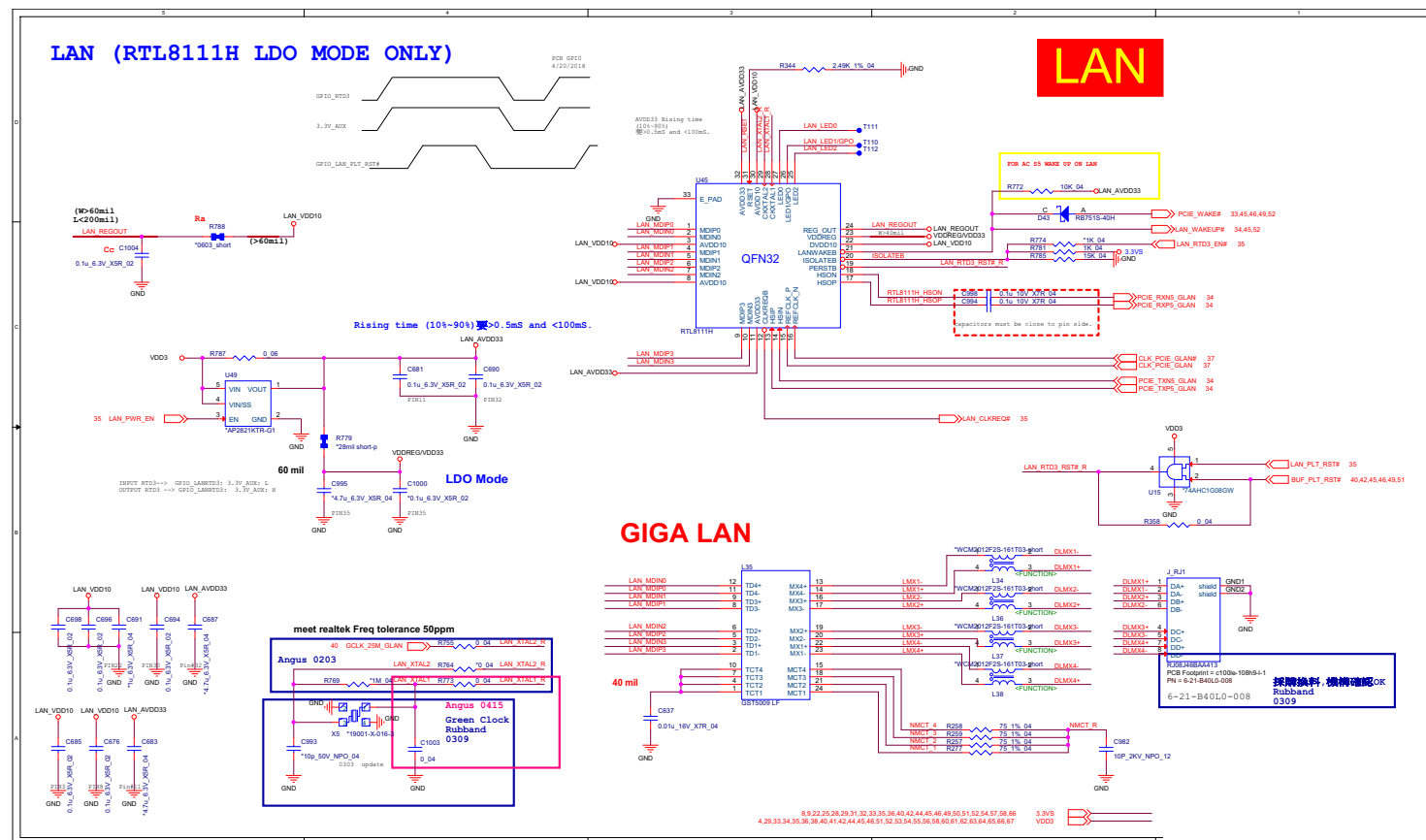
Schematic Diagrams

Type-C & A

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Type-C & A



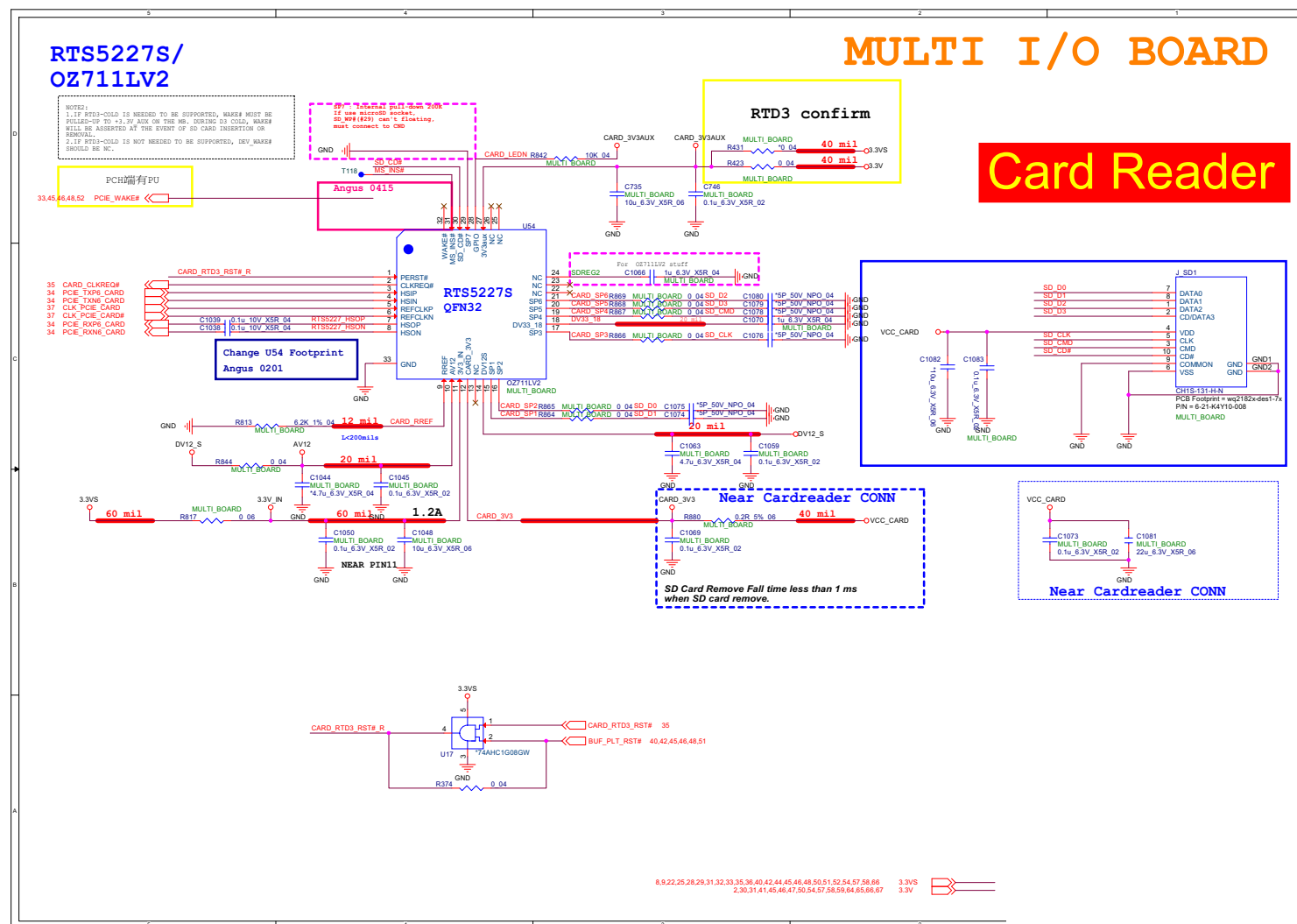
LAN RTL8111H



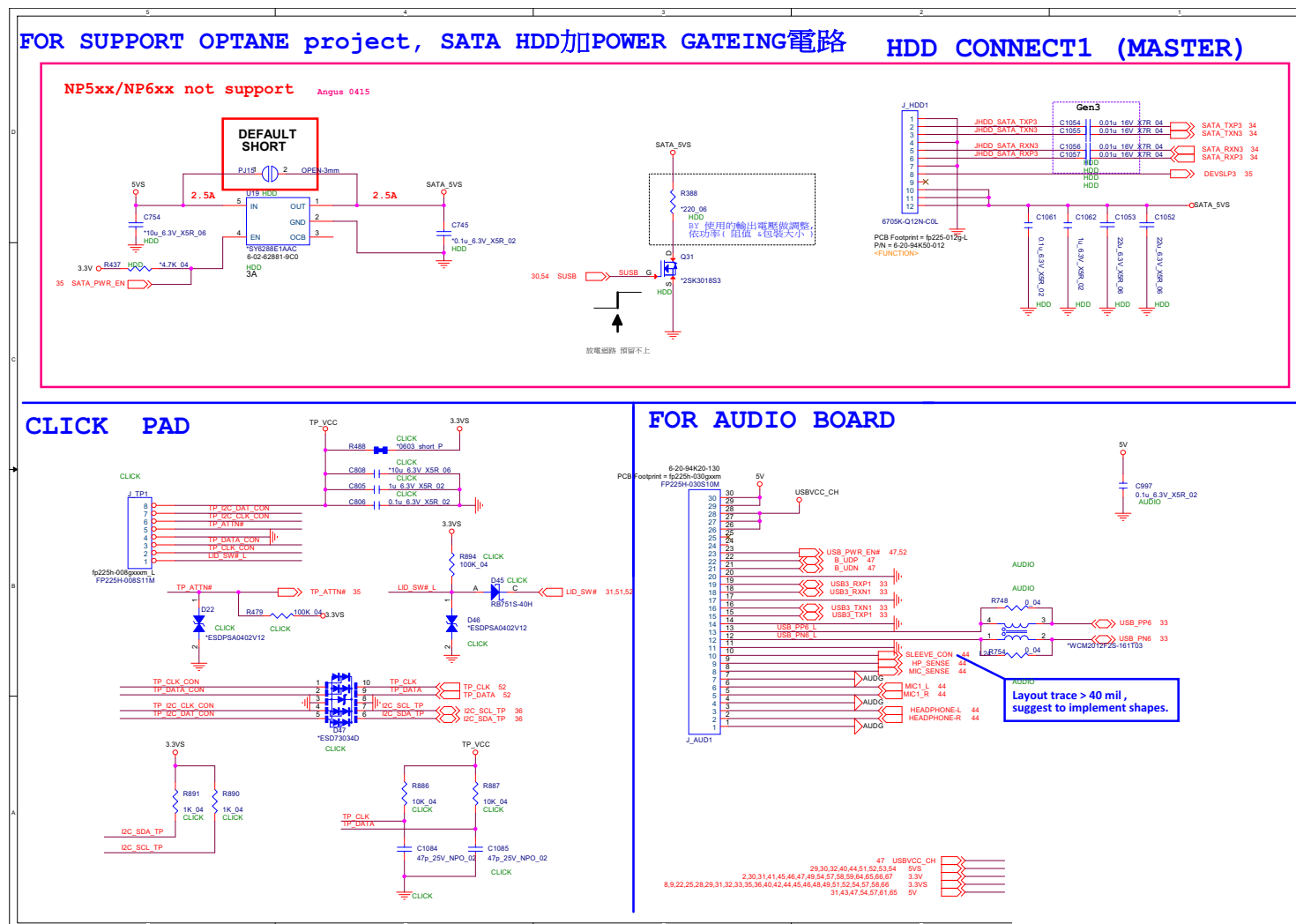
Sheet 46 of 69
LAN RTL8111H

Card Reader

Sheet 47 of 69
Card Reader



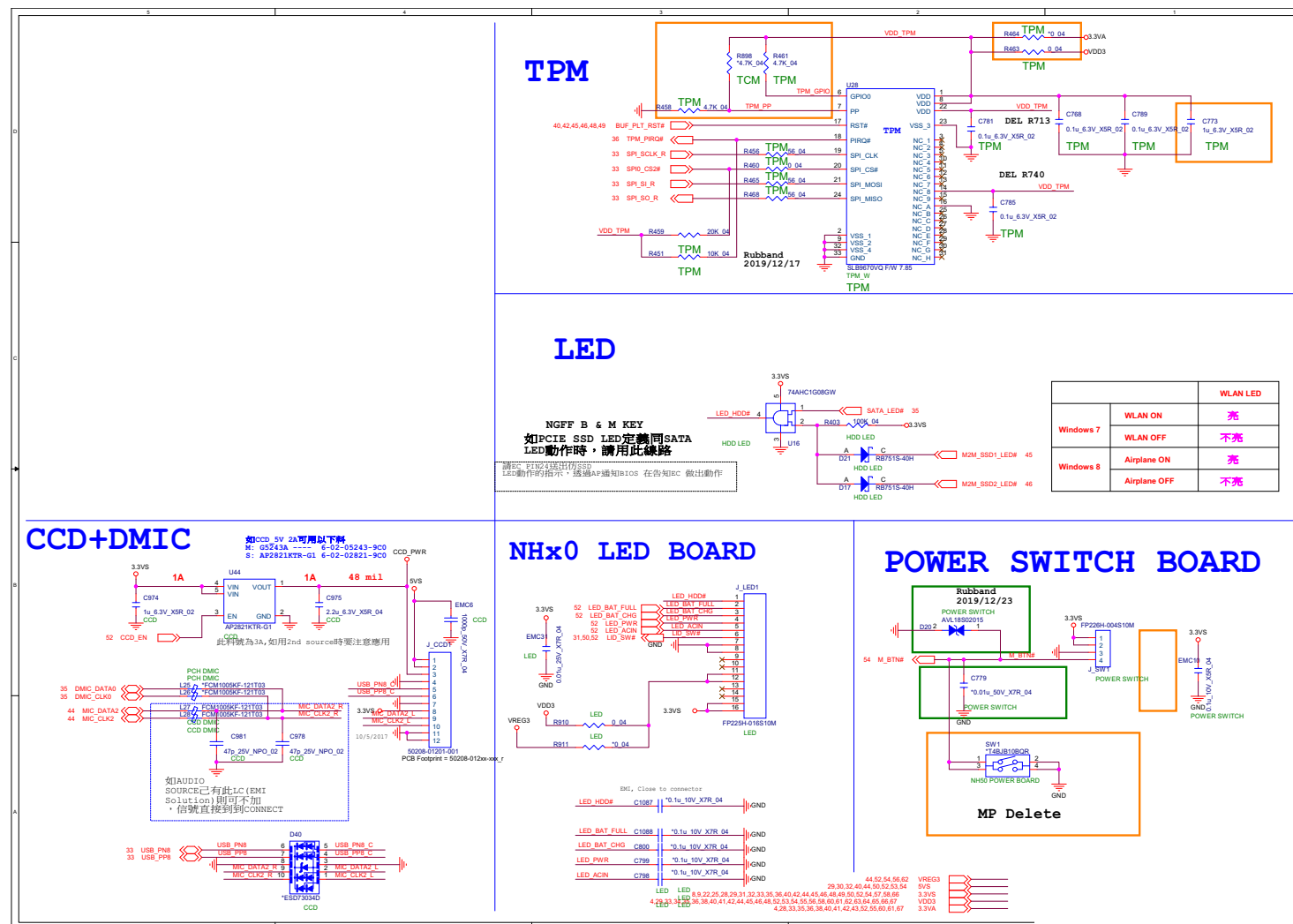
HDD, Click TP, Audio



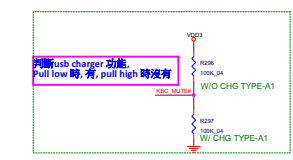
Sheet 48 of 69
HDD, Click TP,
Audio

B. Schematic Diagrams

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LED, CCD, TPM,
Power SW Bd.

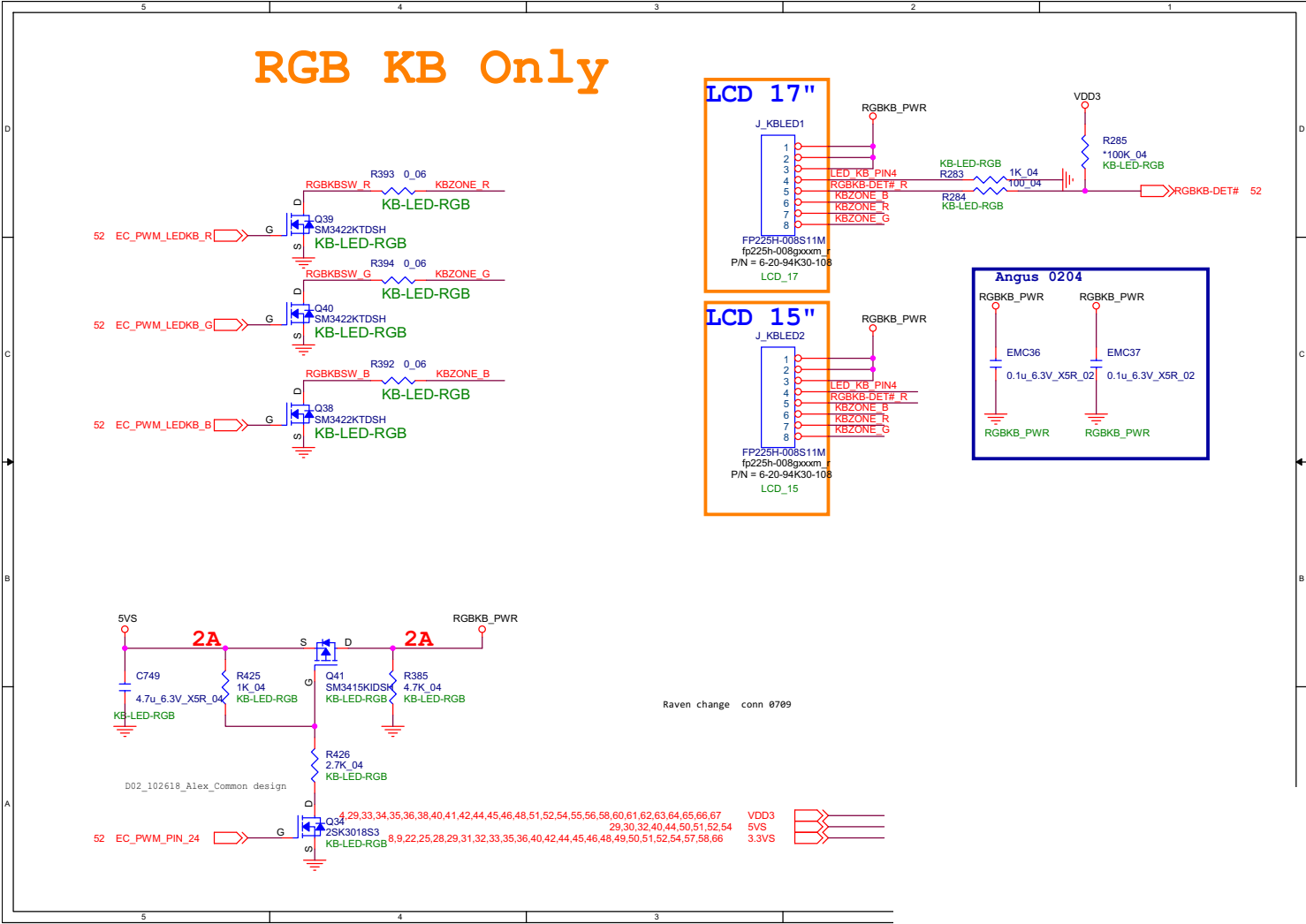


B.Schematic Diagrams

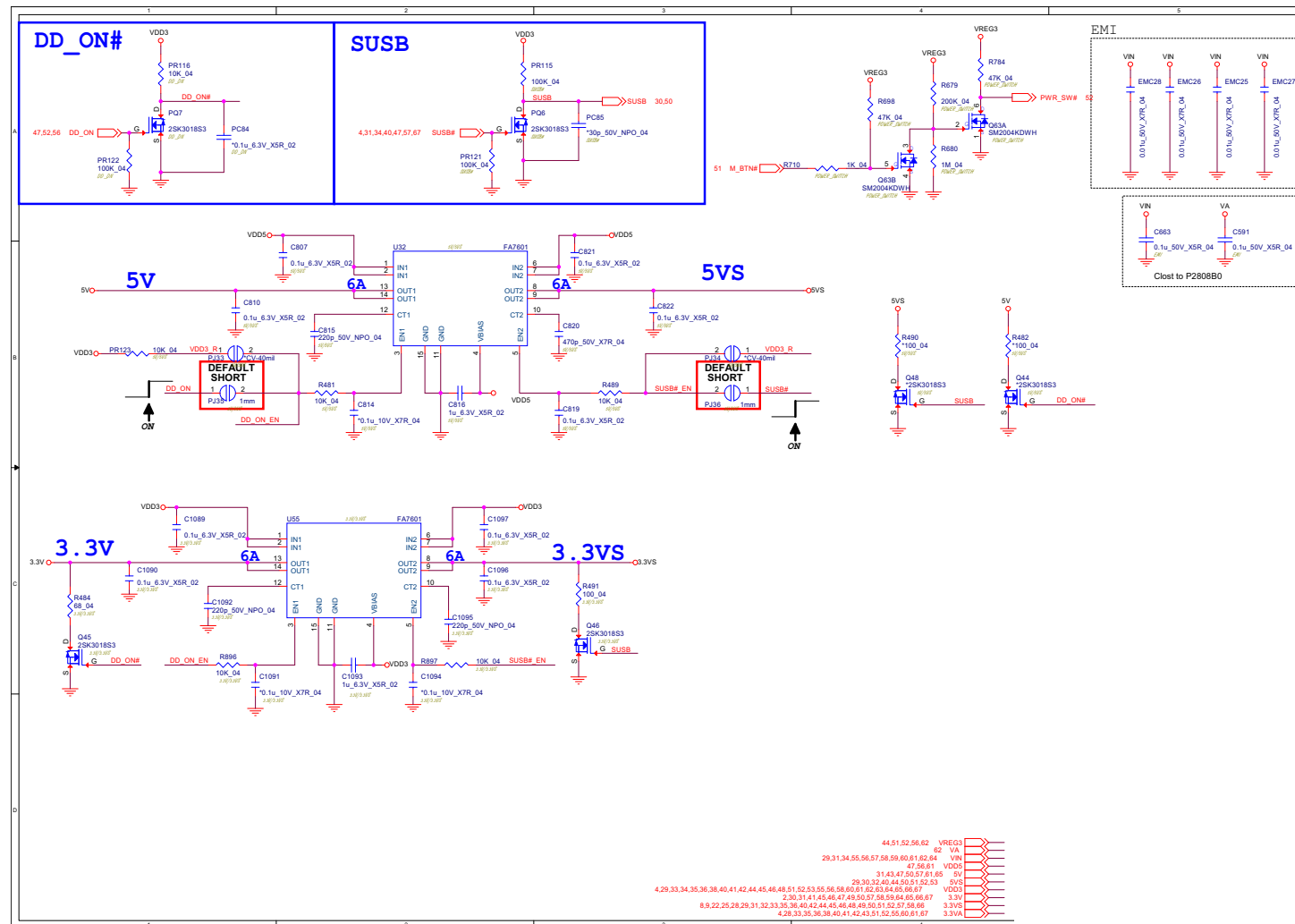


RGB KB

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RGB KB



5V, 5VS, 3.3V, 3.3VS

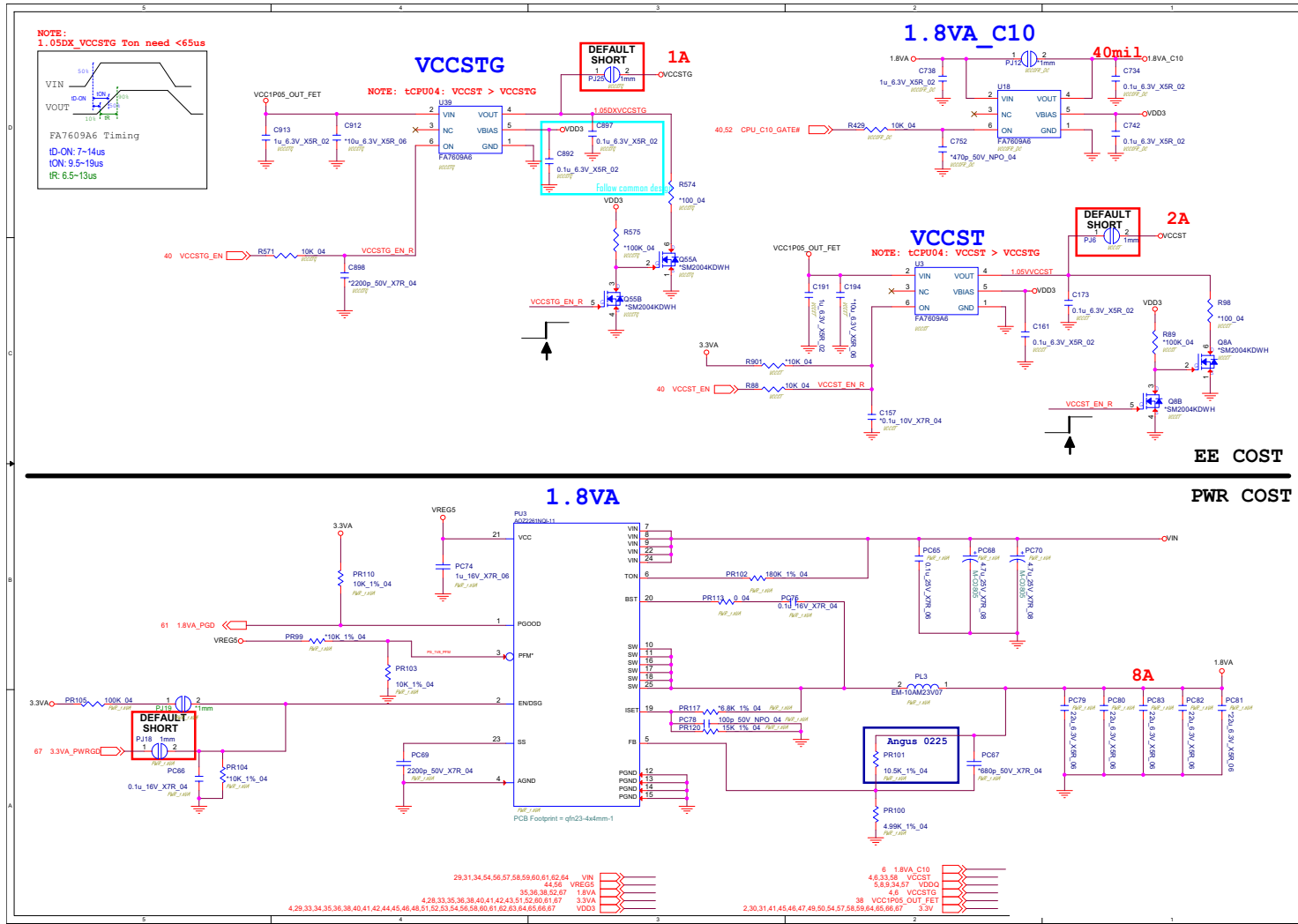


Sheet 52 of 69
5V, 5VS, 3.3V,
3.3VS

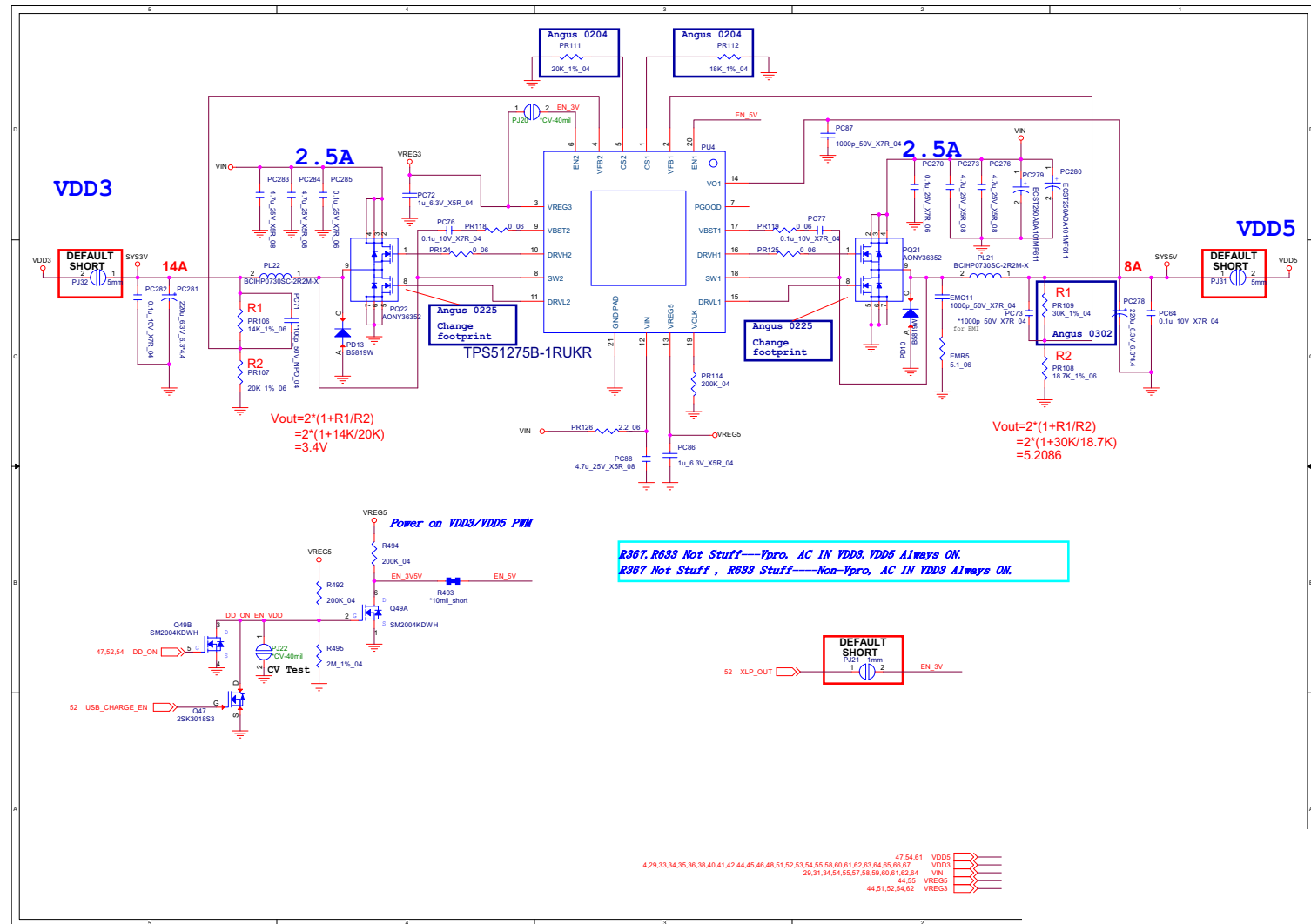
Schematic Diagrams

VCCST, VCCSTG, VCCSFR

Sheet 53 of 69
VCCST, VCCSTG,
VCCSFR



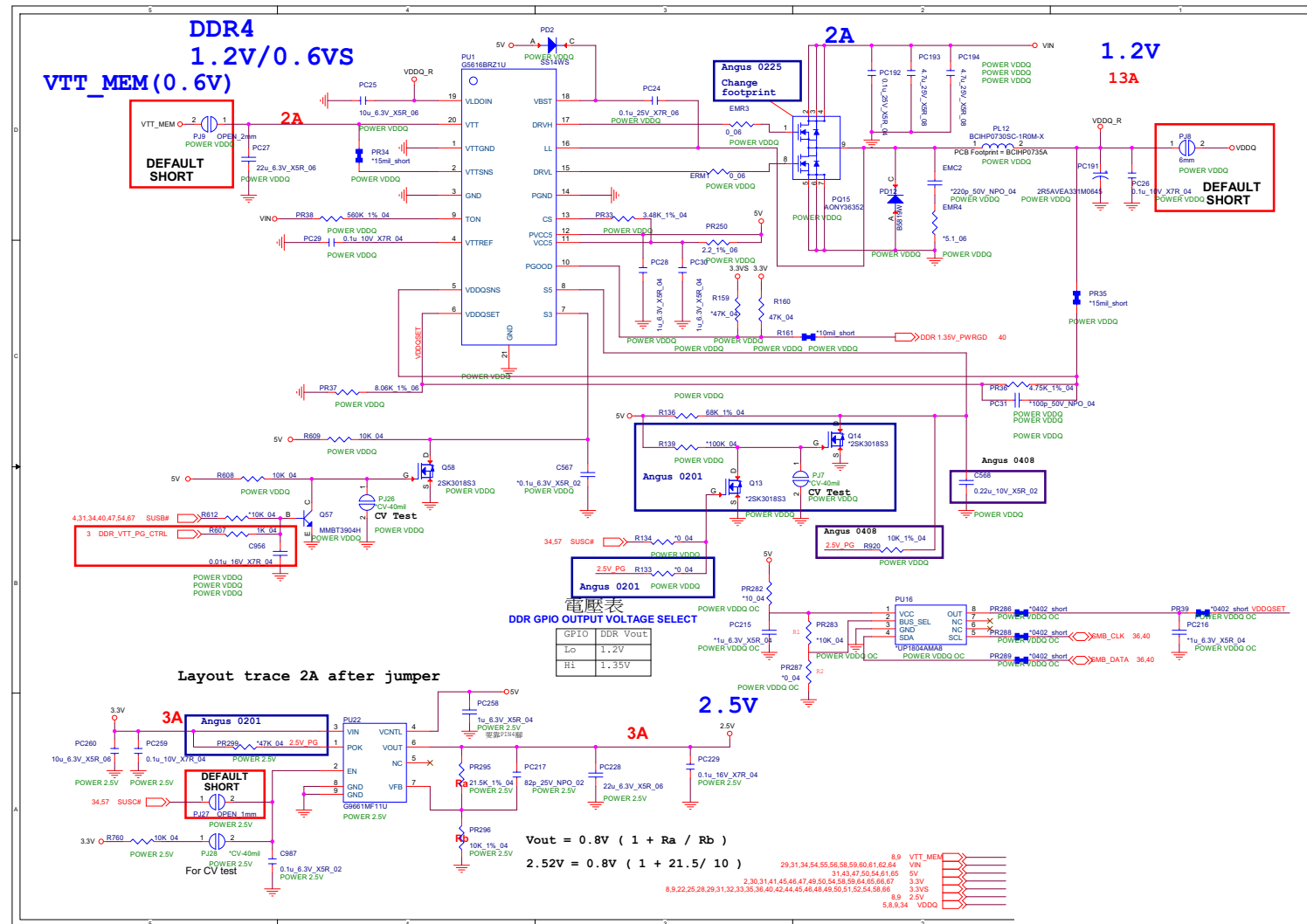
VDD3, VDD5

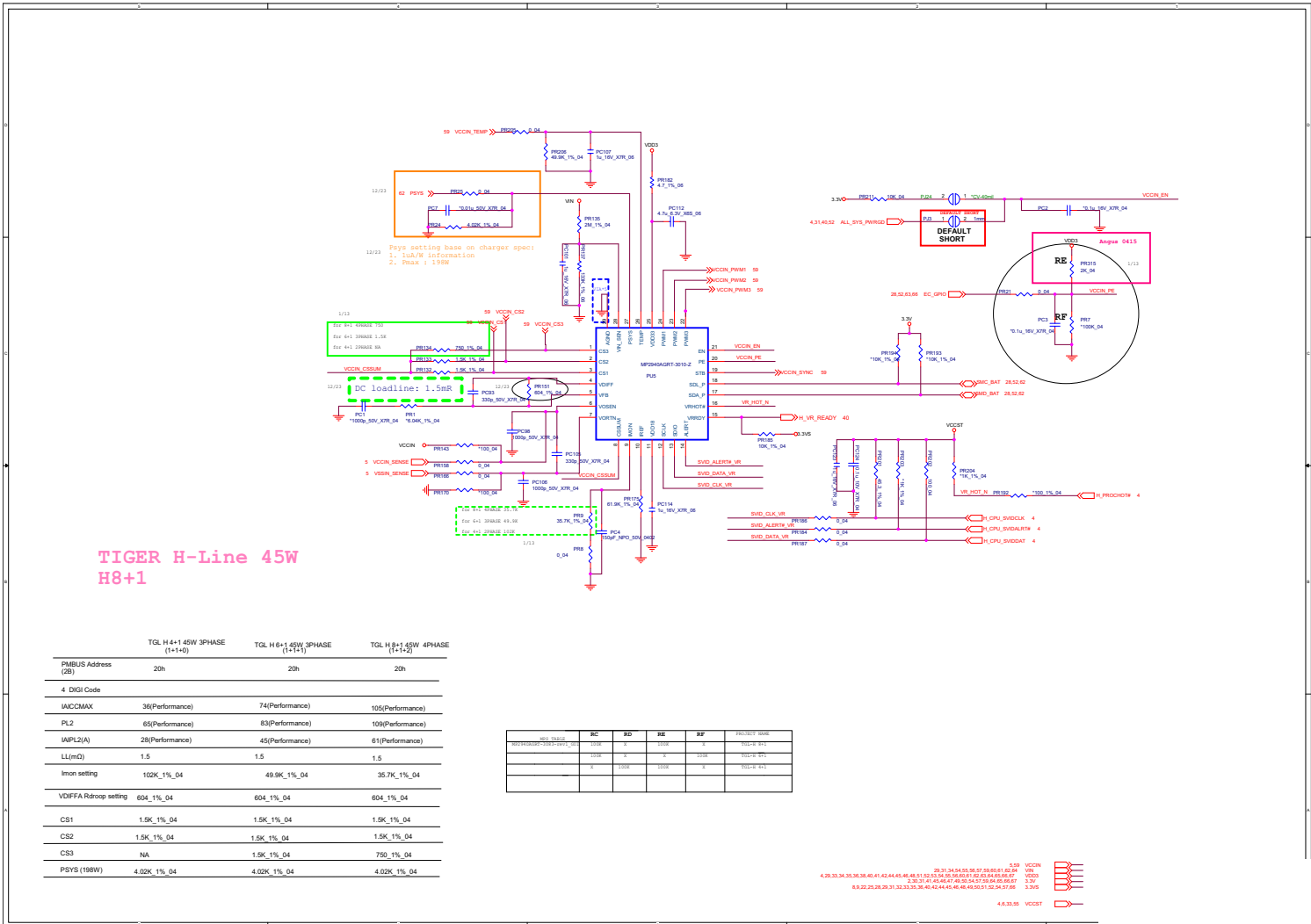


Schematic Diagrams

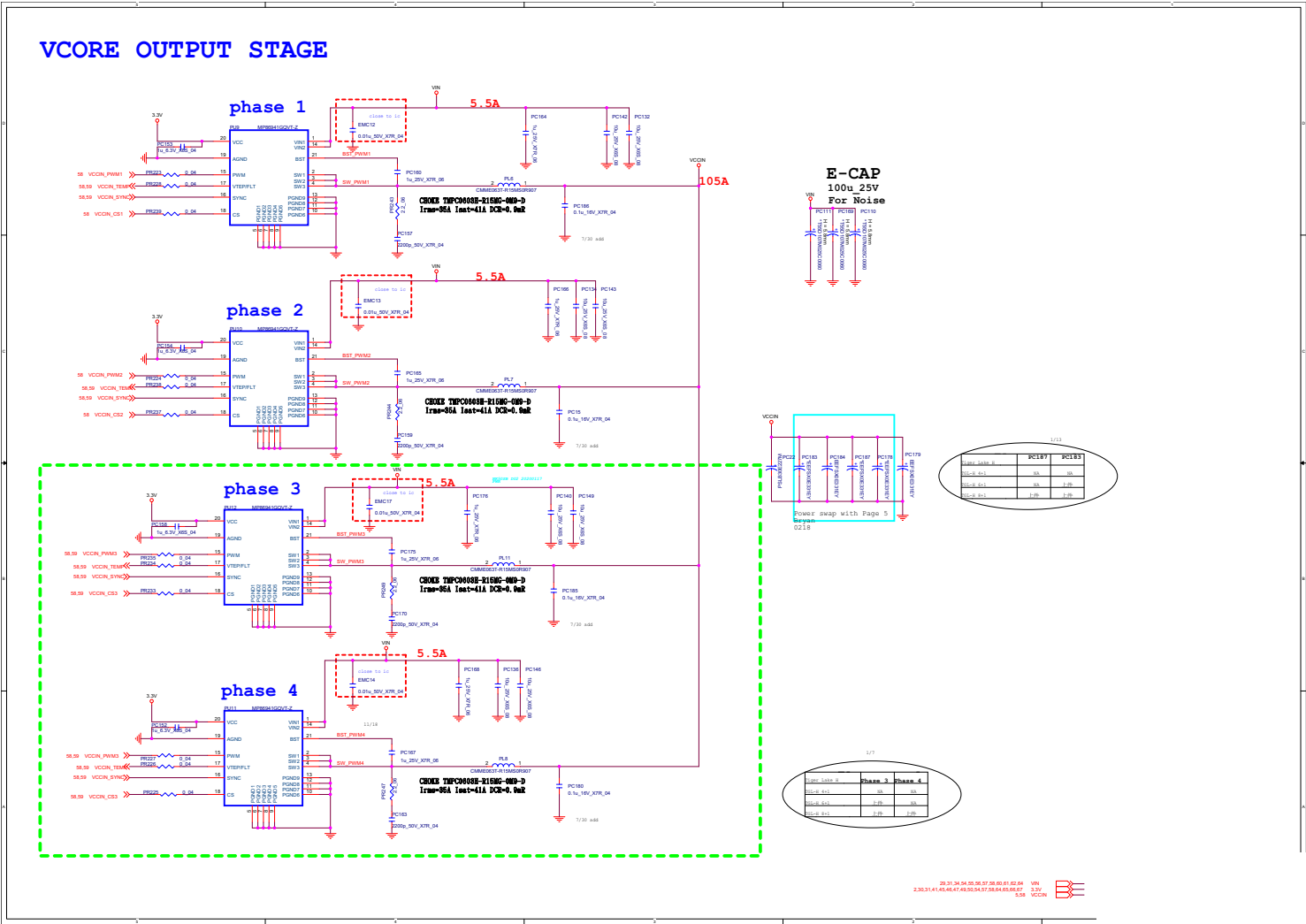
DDR 1.2V / 0.6VS, 2.5V

Sheet 55 of 69
DDR 1.2V / 0.6VS,
2.5V

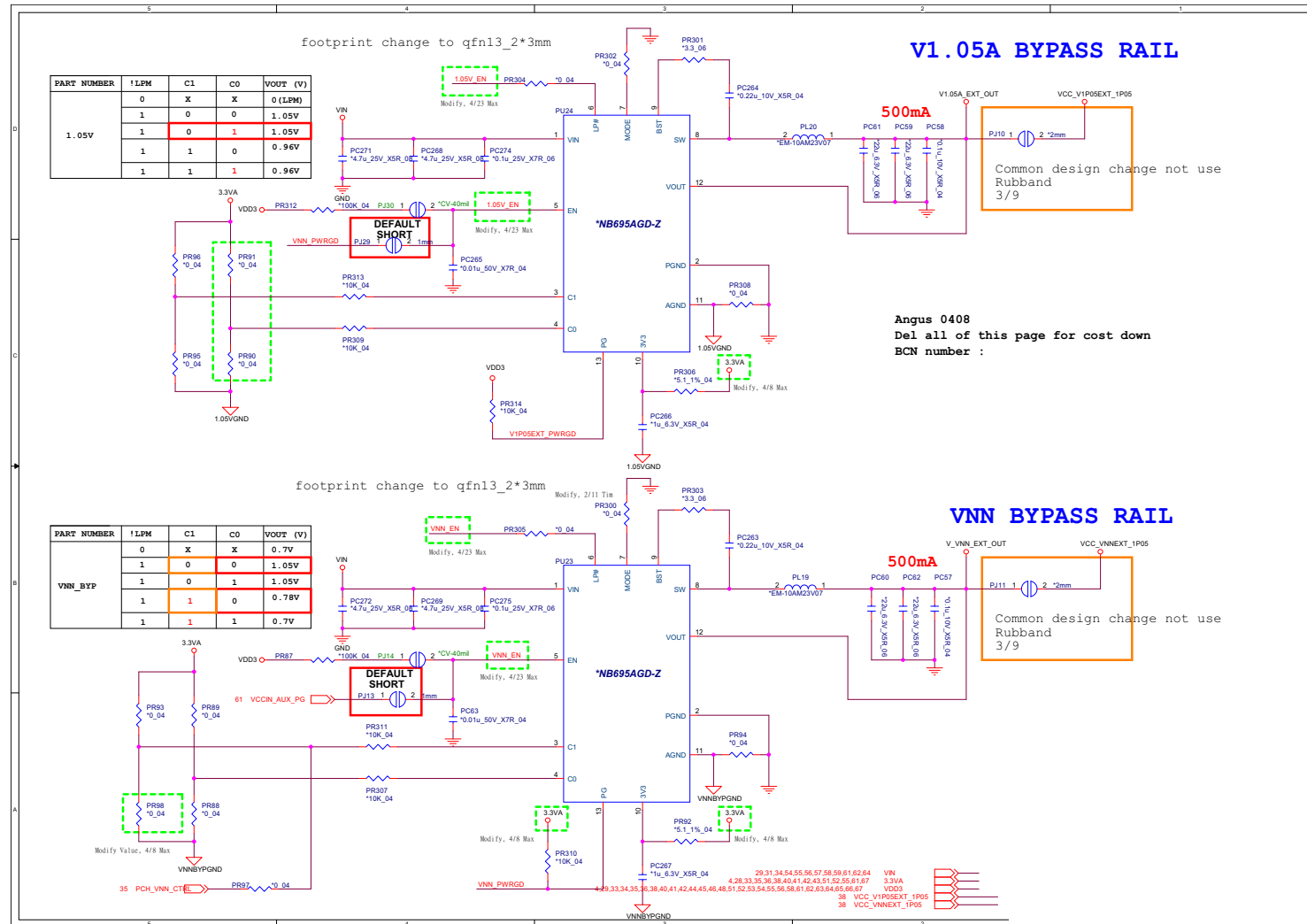




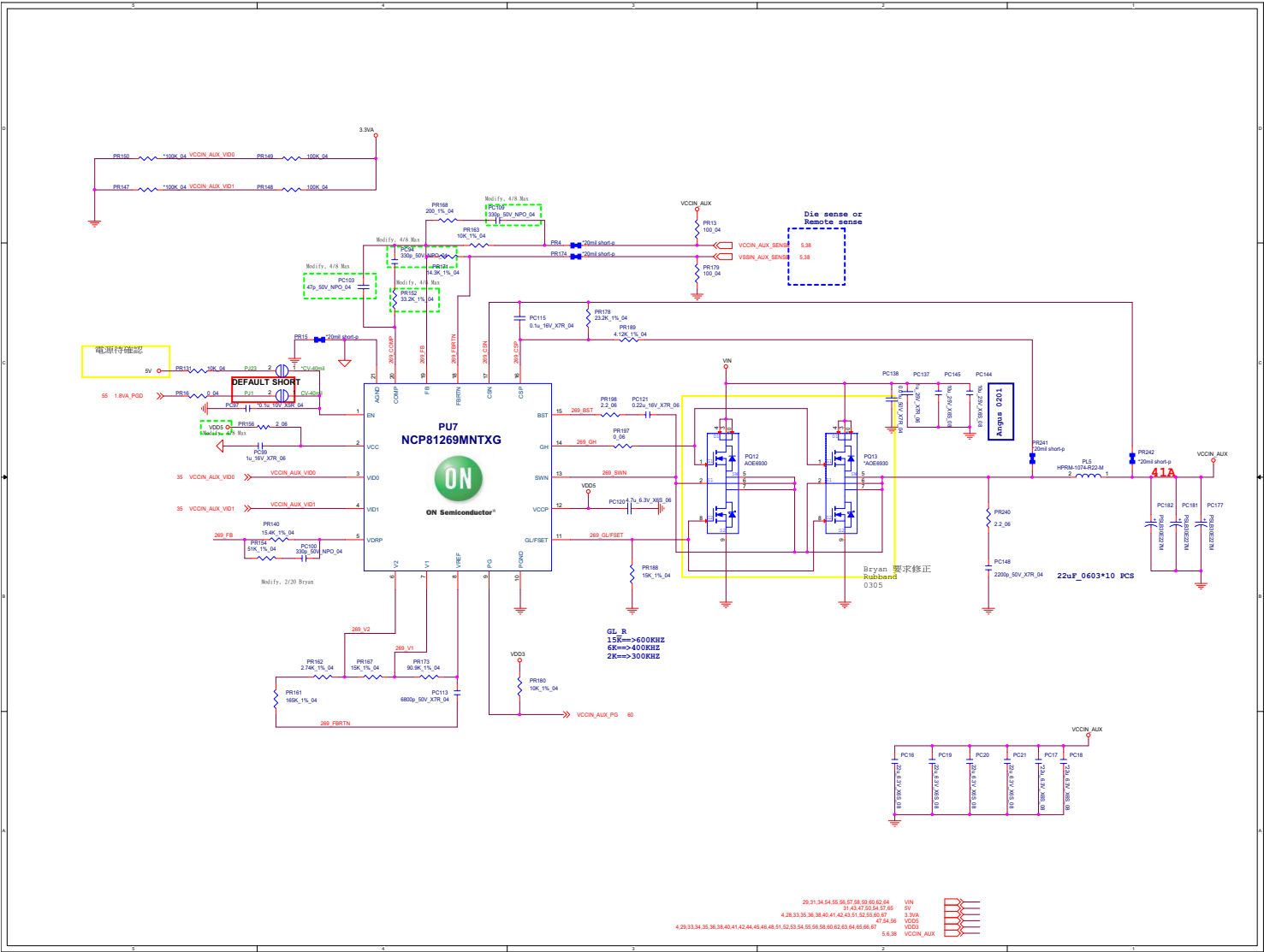
VCCIN Output



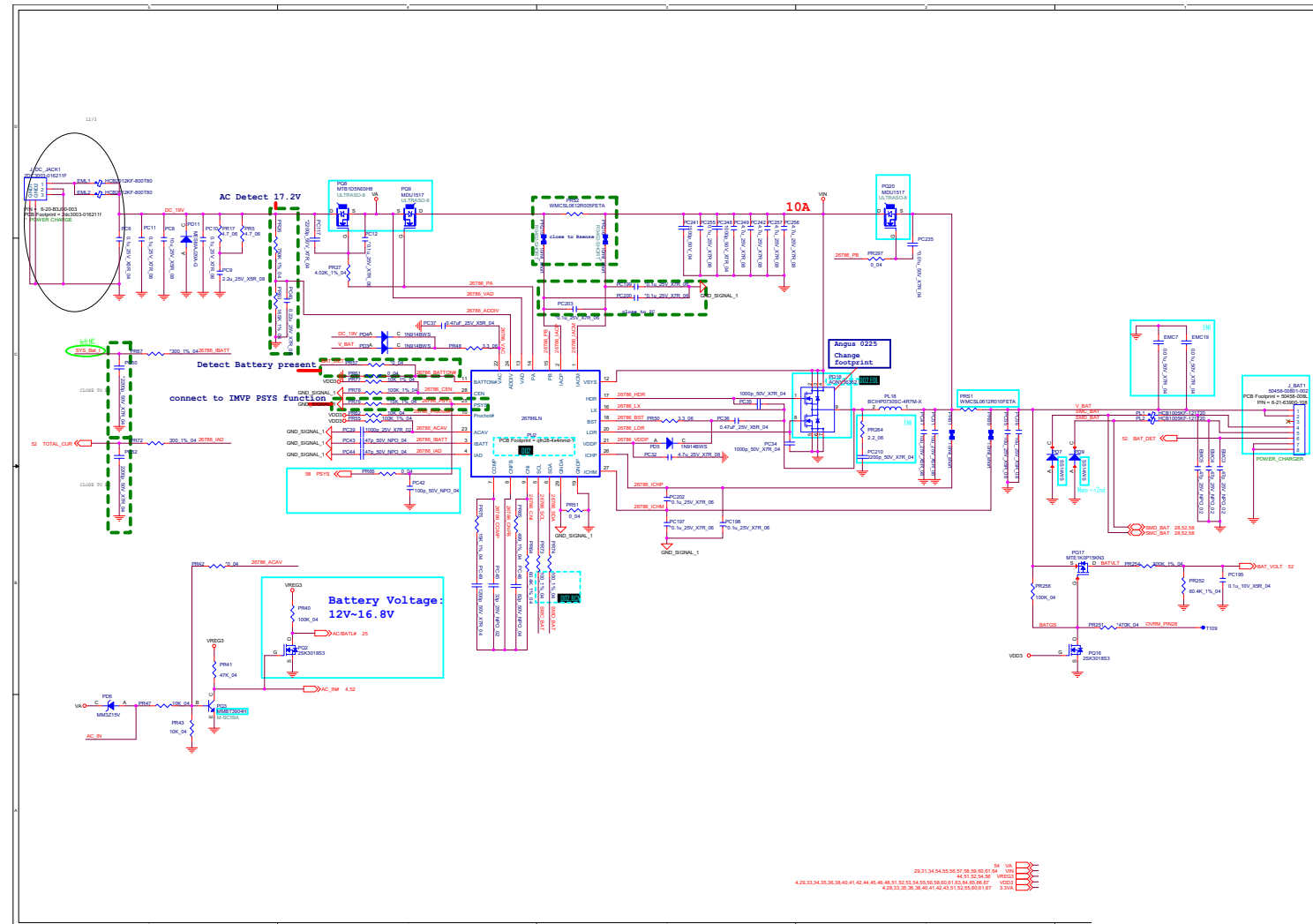
VNN / V1.05A



VCCIN AUX



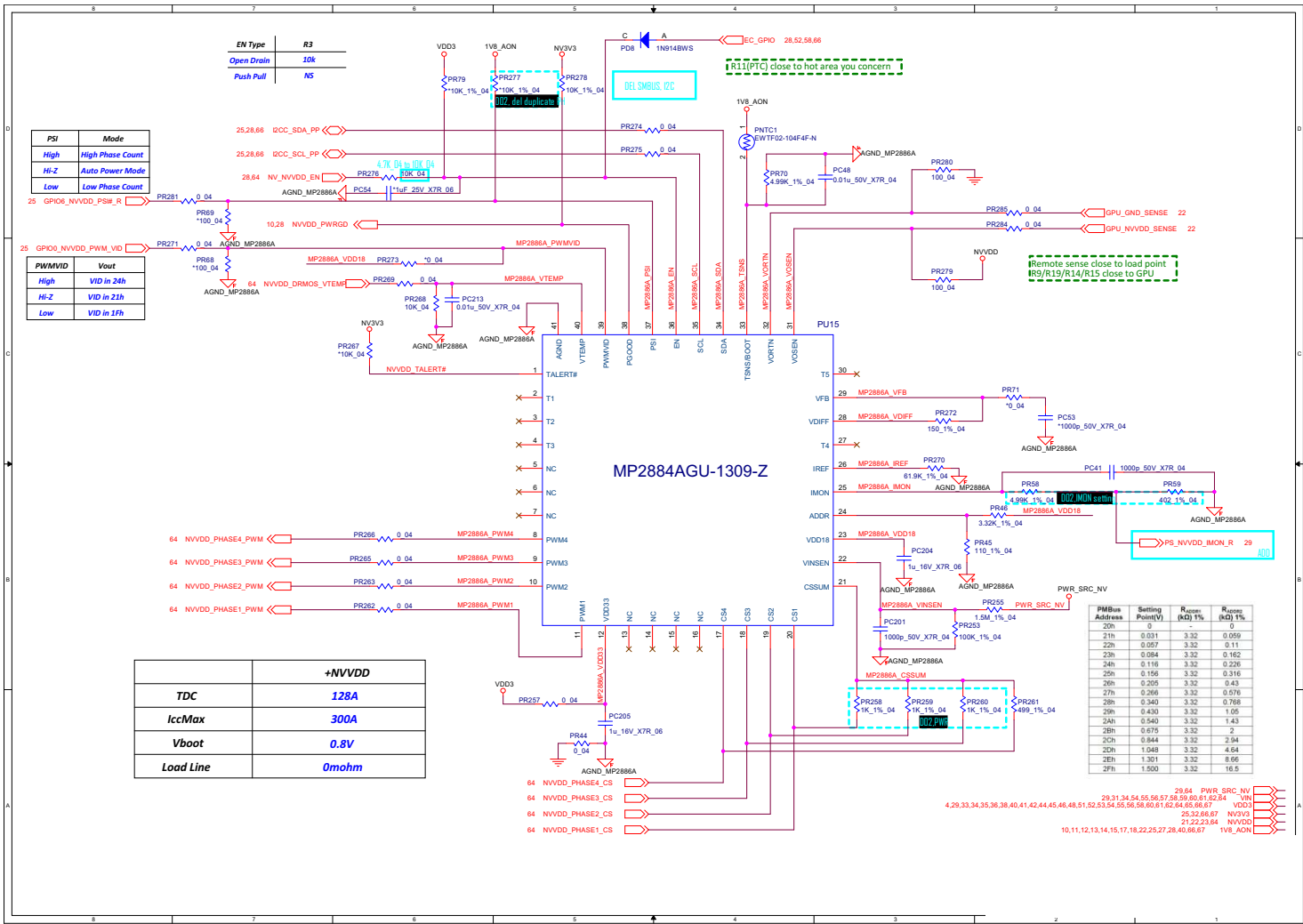
Charger



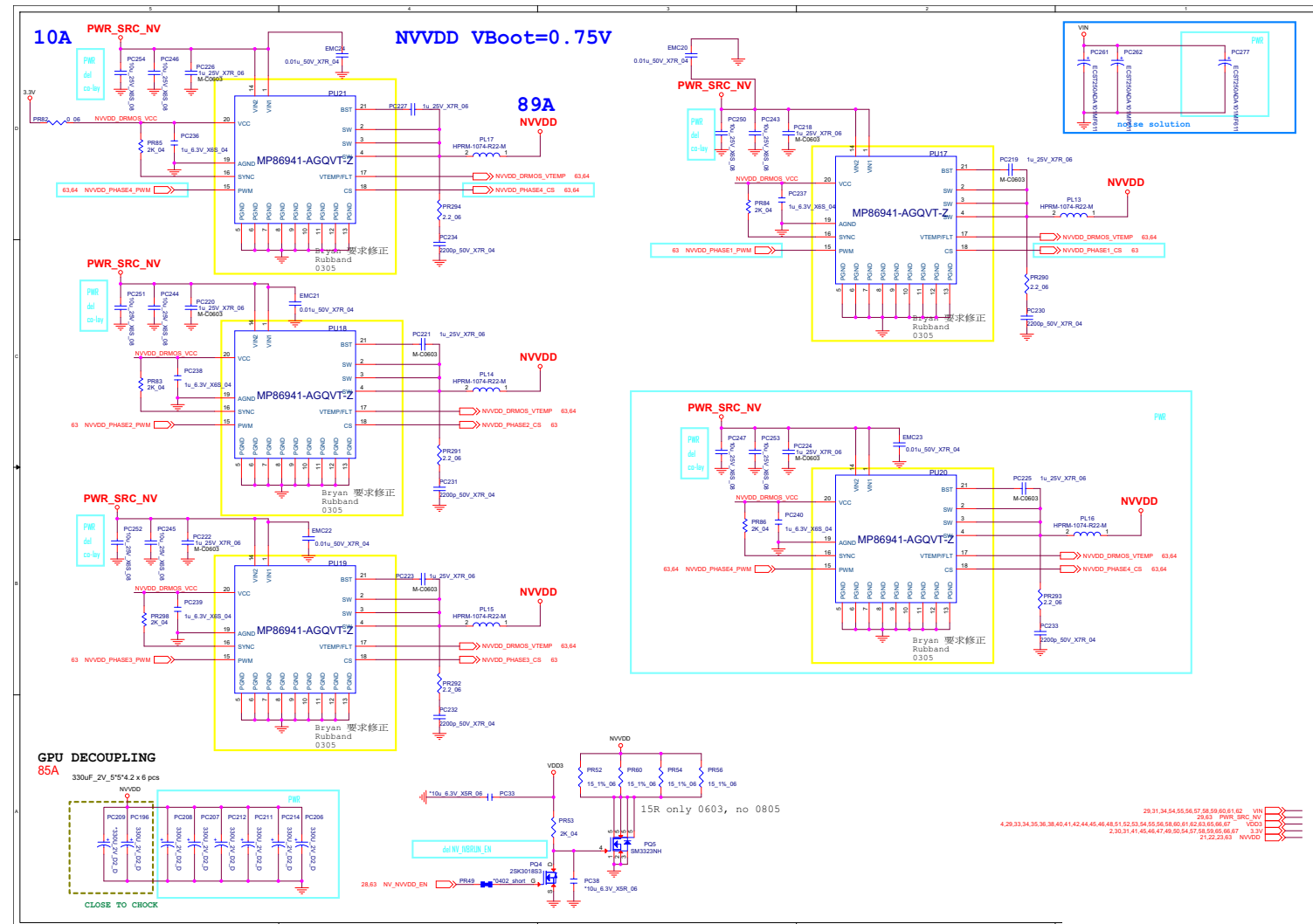
Schematic Diagrams

NVVDD1

Sheet 61 of 69
NVVDD1

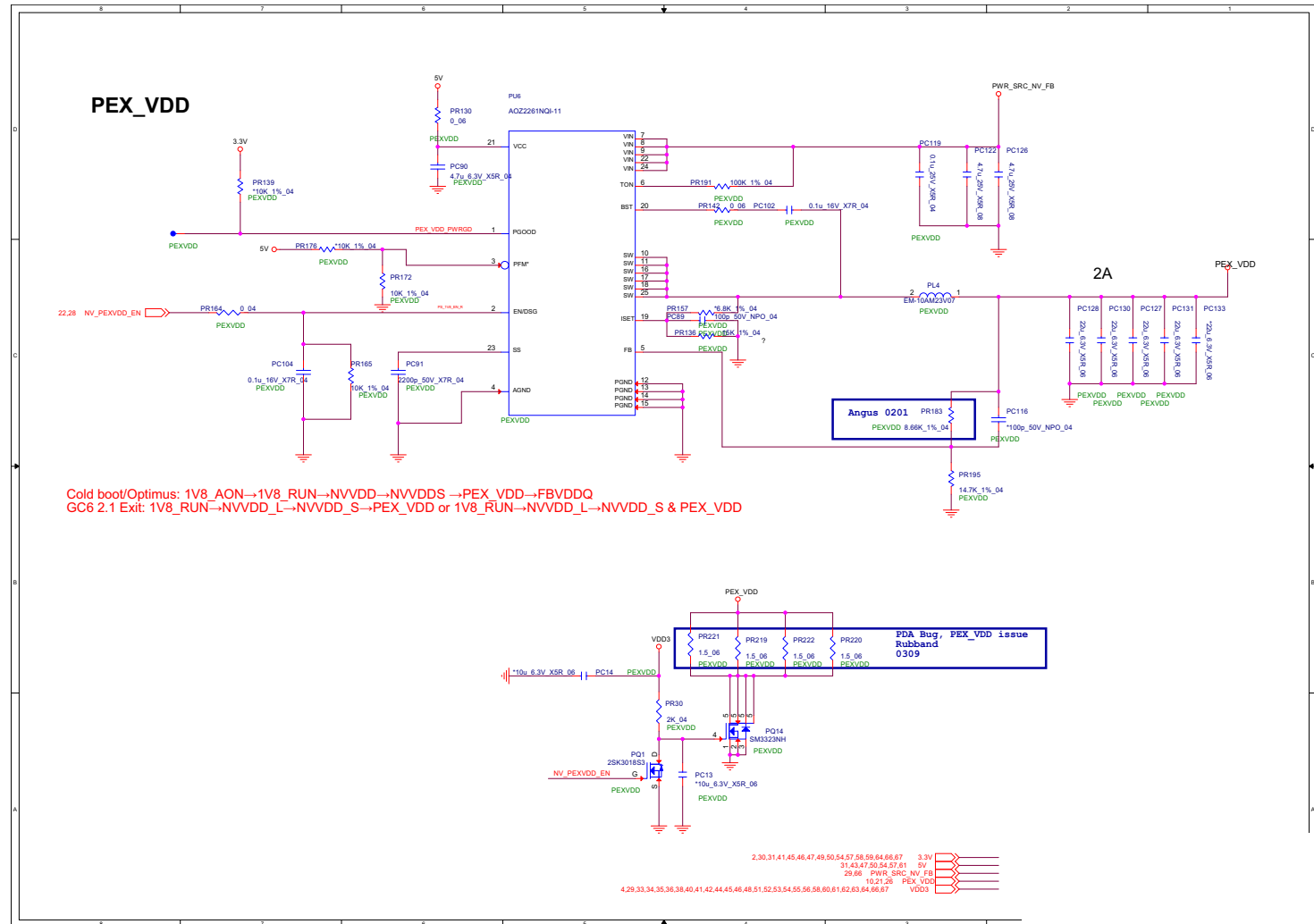


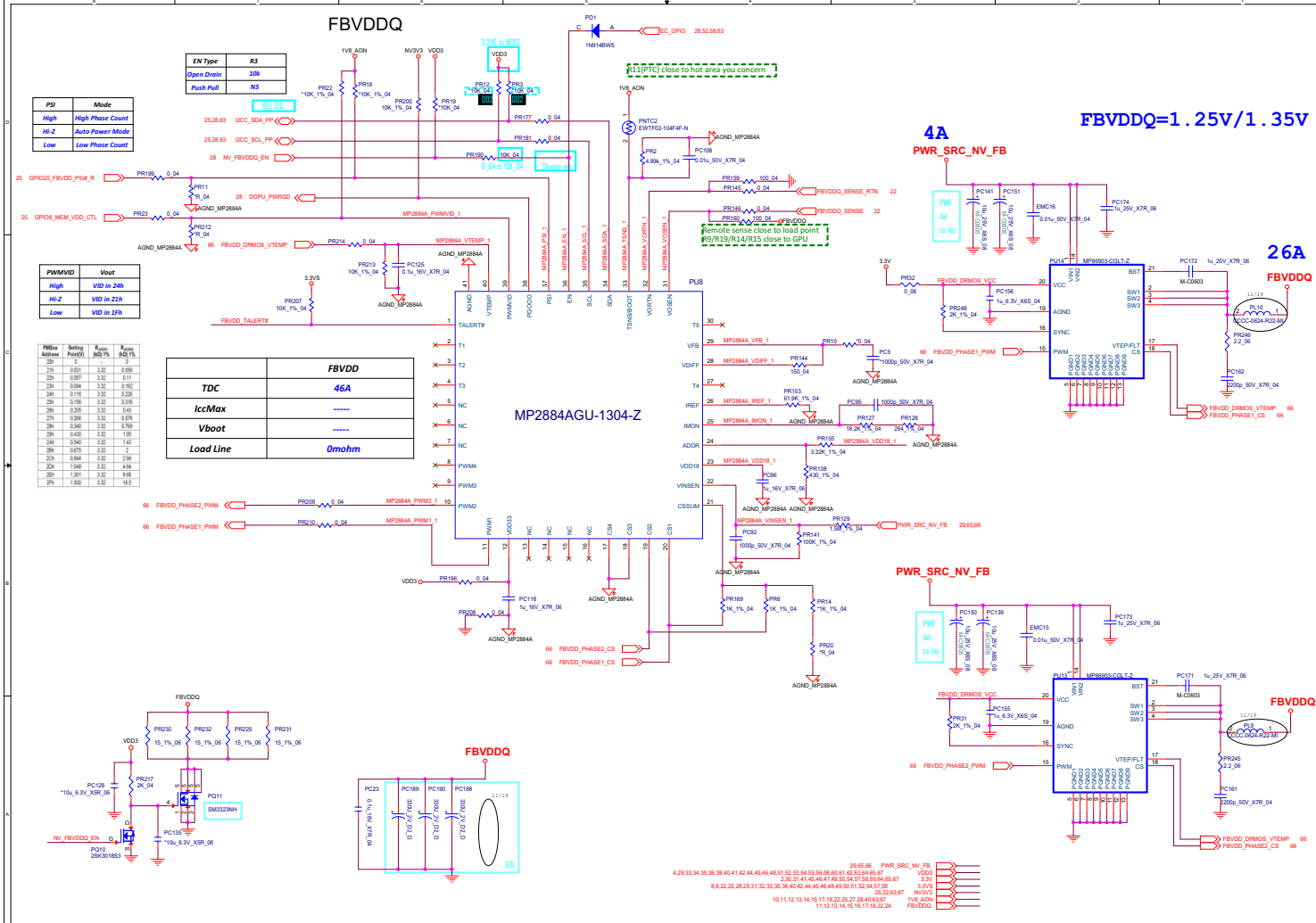
B.Schematic Diagrams



PEX_VDD

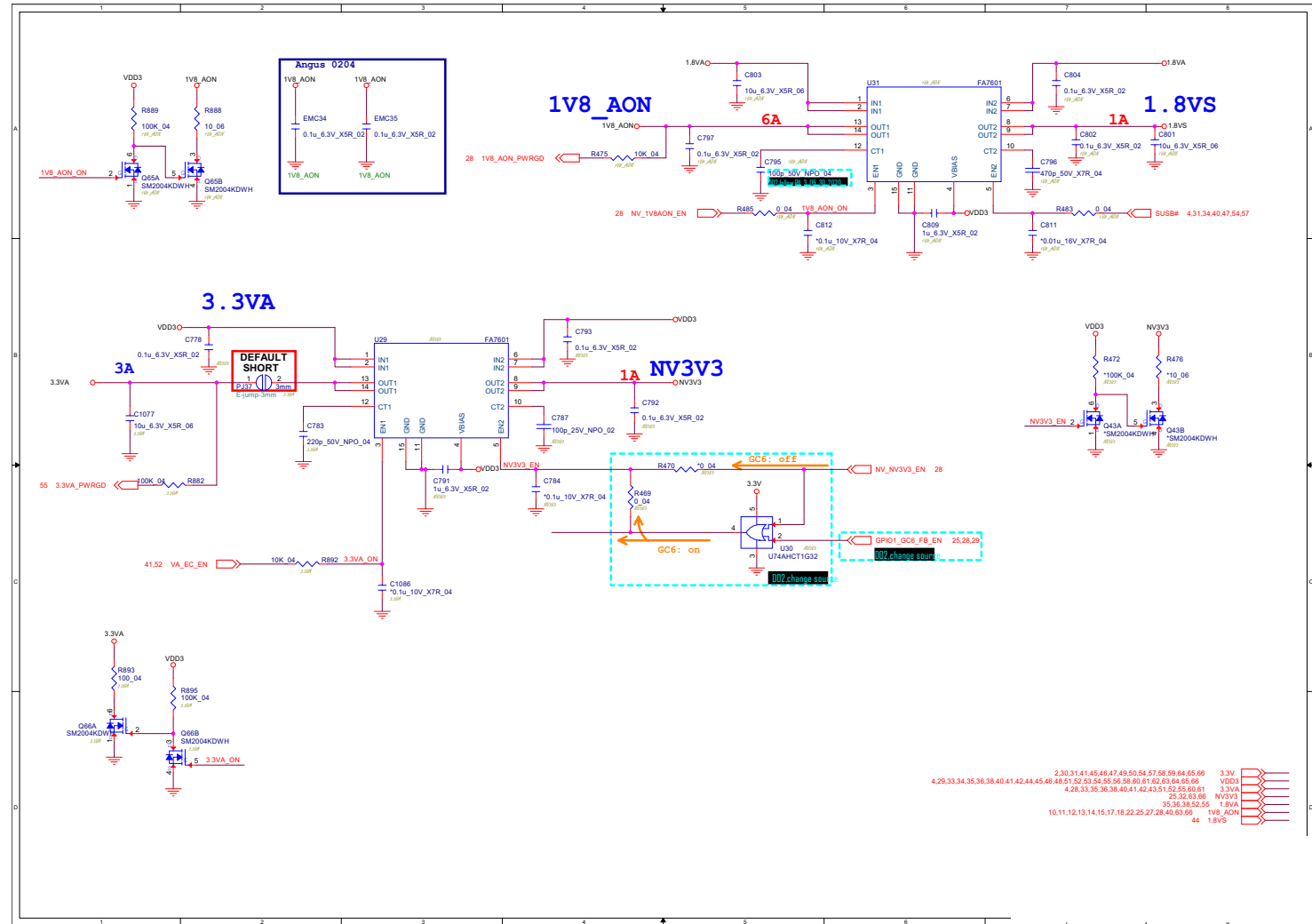
Sheet 63 of 69
PEX_VDD





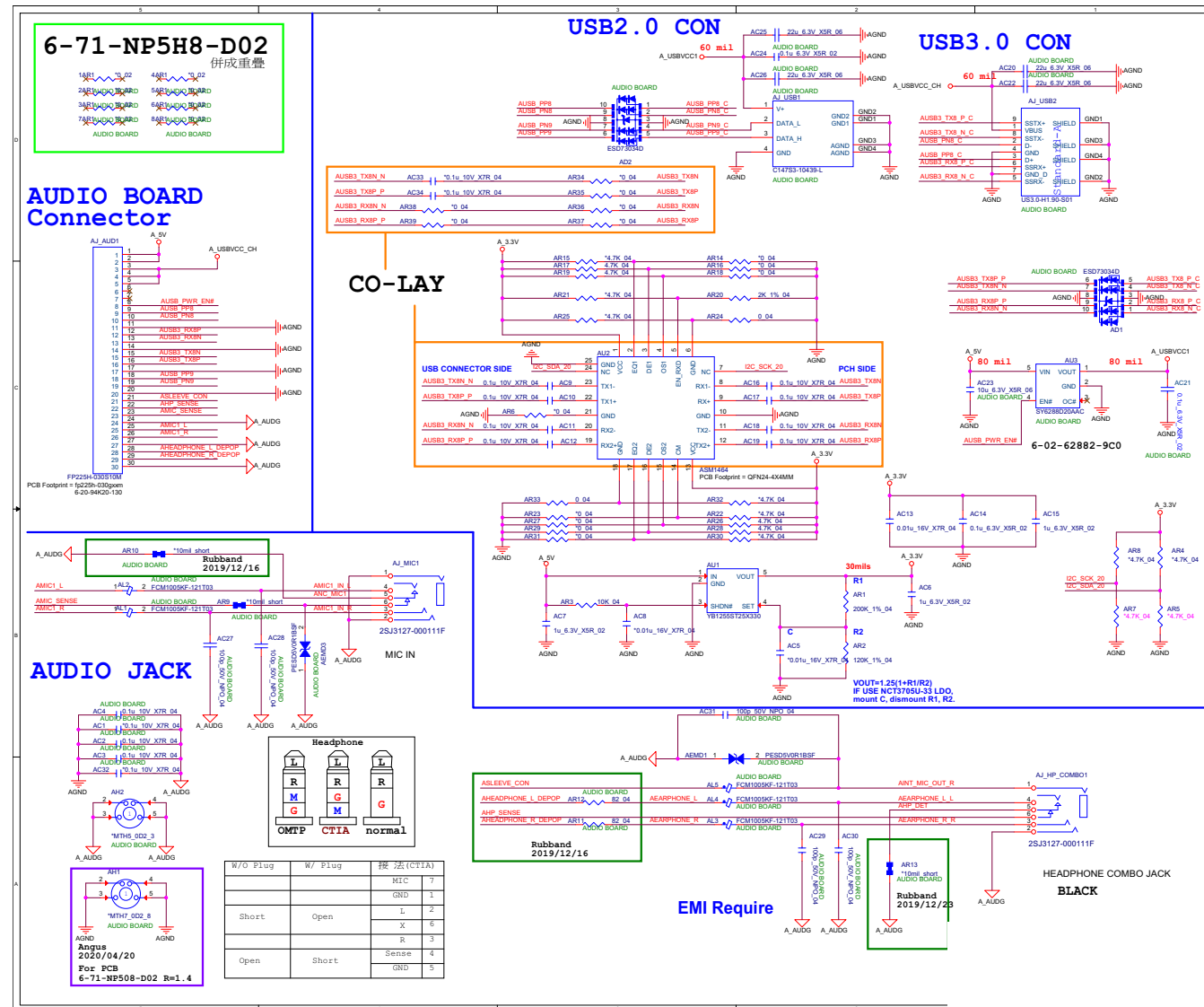
Schematic Diagrams

1V8_AON, NV3V3, 3.3VA



Sheet 65 of 69
1V8_AON, NV3V3,
3.3VA

Audio Board + Redriver



LED

併成重疊

1L R1 0.02
2L R1 0.02
3L R1 0.02
7L R1 0.02

4L R1 0.0
5L R1 0.0
6L R1 0.0
8L R1 0.0

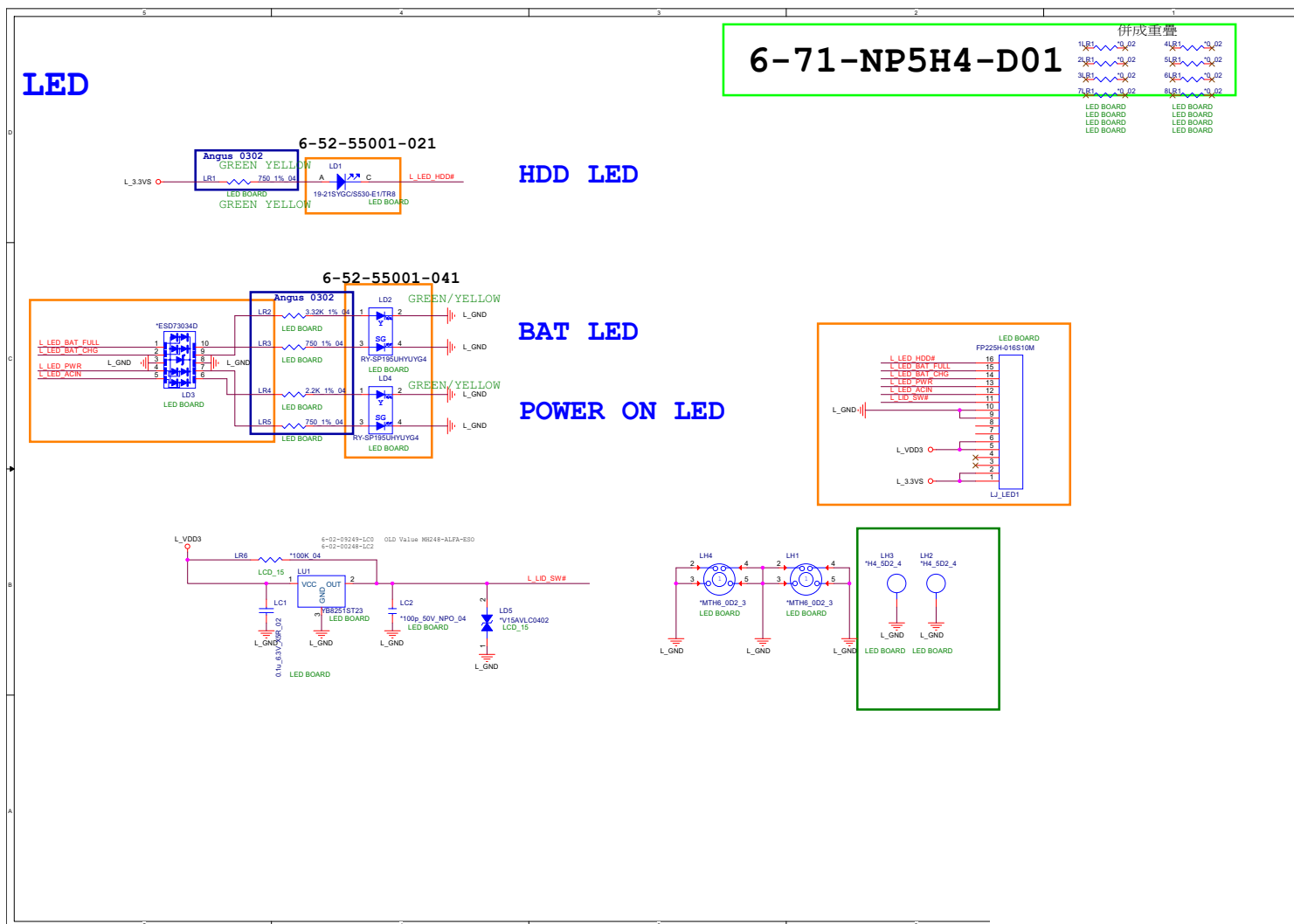
LED BOARD
LED BOARD
LED BOARD
LED BOARD

LED BOARD
LED BOARD
LED BOARD
LED BOARD

BAT LED

POWER ON LED

Sheet 67 of 69
LED Board



POWER SW BOARD

6-71-NP5HS-D01

併成重疊

18R1 28R1 38R1 78R1 48R1 58R1 68R1 88R1

POWER BOARD
POWER BOARD
POWER BOARD
POWER BOARD

POWER BOARD
POWER BOARD
POWER BOARD
POWER BOARD

For N850

BJ SW1

1 2 3 4

BH_3.3VS

BPWRBTN#

FP226H-004S10M

POWER BOARD

POWER BOTTOM

6-53-31500-B41

BSW1 T4BJB10BQR

1 2 3 4

BPWRBTN#

PCB footprint: TJE-53X-Q

BSW1

1 2 3 4 5 6

Rubband
2019/12/16

POWER BUTTON LED

BH_3.3VS

BR1 390_06

6-13-82001-2AB

POWER BOARD

BD1

PESD5V0R1BSF

WHITE

19-217/T1D-CQ2R2TY3T

6-52-57301-022

POWER BOARD

BDGND

WHITE

BH_3.3VS

BR2 390_06

6-13-82001-2AB

POWER BOARD

BD3

PESD5V0R1BSF

WHITE

19-217/T1D-CQ2R2TY3T

6-52-57301-022

POWER BOARD

BDGND

BH1 *H3_0D2_4

BH2 *H9_0B7_0D5_4

BH4 *H9_0B11_0D5_4

BH3 *H3_0D2_4

POWER BOARD

BDGND

POWER BOARD

BDGND

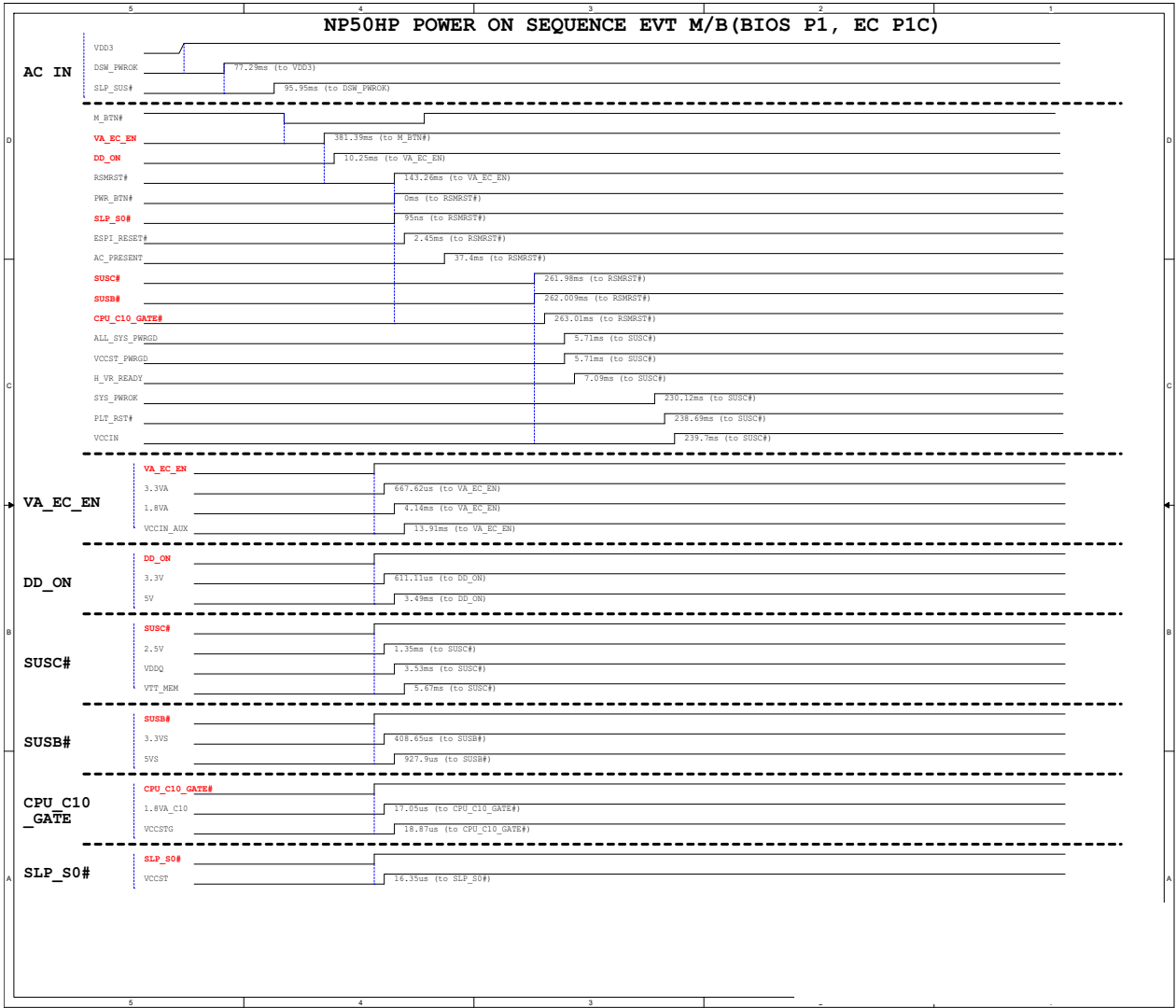
POWER BOARD

BDGND

POWER BOARD

BDGND

Power Sequence



Sheet 69 of 69
Power Sequence