

SERVICE MANUAL

notebook

V170RNCQ / V175RNCQ /
V170RNDQ / V175RNDQ /
V170RNEQ / V175RNEQ



Notebook Computer

**V170RNCQ / V175RNCQ / V170RNDQ /
V175RNDQ / V170RNEQ / V175RNEQ**

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 *V170RNCQ* / *V175RNCQ* / *V170RNDQ* / *V175RNDQ* / *V170RNEQ* / *V175RNEQ* 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 20V, 11.5A (**230** Watts) or 20V, 9A (**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:

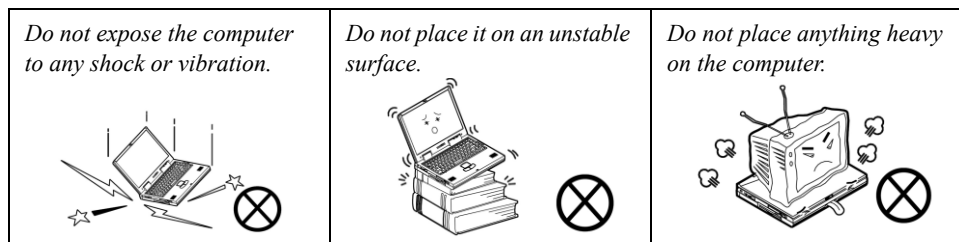
This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

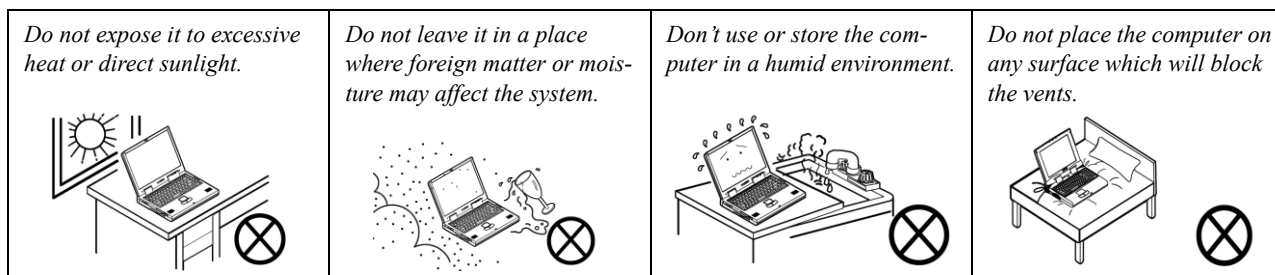
Instructions for Care and Operation

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

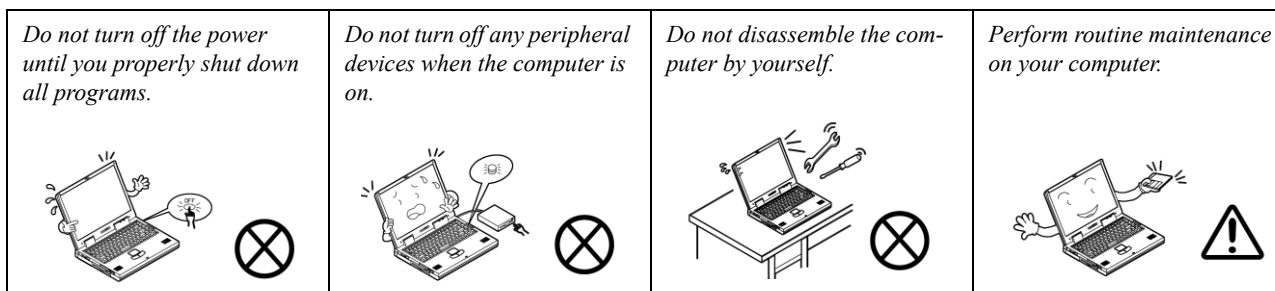
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



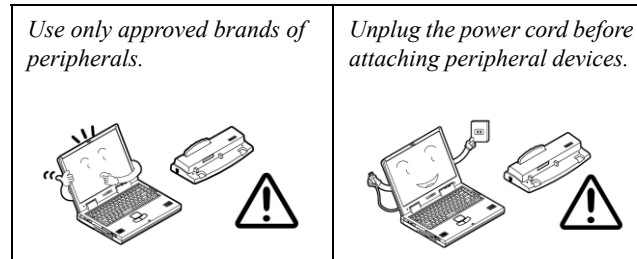
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



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.



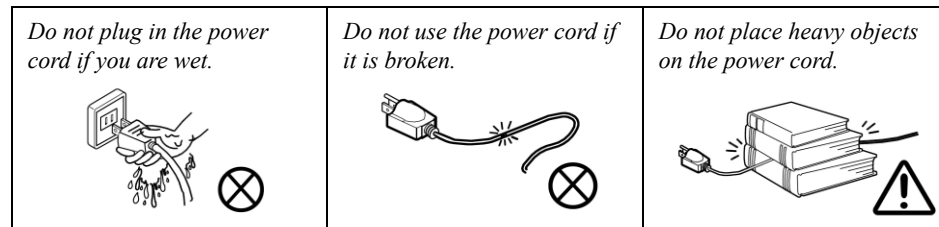
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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. 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".

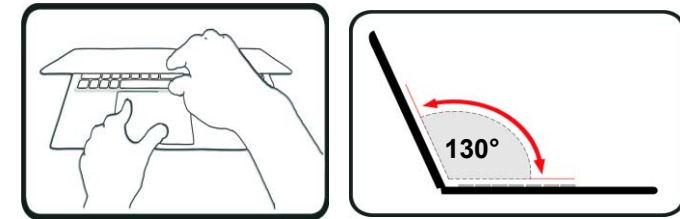




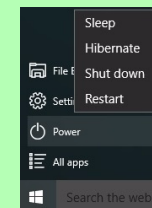
Figure 1
**Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In**



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 *V170RNCQ / V175RNCQ / V170RNDQ / V175RNDQ / V170RNEQ / V175RNEQ* 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 11*, 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 *V170RNCQ / V175RNCQ / V170RNDQ / V175RNDQ / V170RNEQ / V175RNEQ* series notebook is designed to be upgradeable. See [Disassembly on page 2 - 1](#) for a detailed description of the upgrade procedures for each specific component. Please take note of the warning and safety information indicated by the “” symbol.

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

Specifications



Latest Specification Information

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



CPU 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

- i9-13900H (2.60GHz)**, TDP 45W
- i7-13700H (2.40GHz)**, TDP 45W
- i5-13500H (2.60GHz)**, TDP 45W

LCD Options

LCD, 17.3" (43.94cm), 16:9, QHD (2560x1440)/FHD (1920x1080)

BIOS

INSYDE BIOS (256Mb SPI Flash ROM)

Memory

- Dual Channel DDR4
- Two 262 Pin SO-DIMM Sockets
- Supporting up to **5600MHz DDR5** 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 changeable 2.5" (6cm) 7.0mm (h) **SATA** (Serial) Hard Disk Drive/Solid State Drive (SSD)
- One M.2 **PCIe Gen4 x4** Solid State Drive (SSD)

Security

- Security (Kensington® Type) Lock Slot
- BIOS Password
- Intel® PTT for Systems Without TPM Hardware
- (**Factory Option**) TPM 2.0

Video Adapter Options

- NVIDIA® Advanced Optimus Capable (Switchable Display) Technology (V17xRNX)
- NVIDIA® Advanced Optimus (Dynamic Display switching) mode (V17xRNX-G)
- Supports up to 4 Active Displays

Intel Integrated GPU

Intel® Iris Xe Graphics

- Intel Xe Micro Architecture
- Microsoft DirectX®12 Compatible
- Variable Rate Shading
- Intel® DLBoost: DP4A

NVIDIA® Discrete GPU

NVIDIA® GeForce RTX4050 (V17xRNC)

- 6GB** GDDR6 Video RAM
- Microsoft DirectX®12 Compatible
- Supports PCIe Gen4
- GeForce CUDA™ technology
- Dynamic Boost 2.0

NVIDIA® GeForce RTX4060 (V17xRND)

- 8GB** GDDR6 Video RAM
- Microsoft DirectX®12 Compatible
- Supports PCIe Gen4
- GeForce CUDA™ technology
- Dynamic Boost 2.0

NVIDIA® PhysX® physics Engine

NVIDIA® GeForce RTX4070 (V17xRNE)

- 8GB** GDDR6 Video RAM
- Microsoft DirectX®12 Compatible
- Supports PCIe Gen4
- GeForce CUDA™ technology
- Dynamic Boost 2.0
- NVIDIA® PhysX® physics Engine

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 Studio

Built-In Array Microphone

Two Speakers

Communication

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

1.0M HD Webcam

Or

(Factory Option) 2.0M FHD Webcam with TNR

WLAN/ Bluetooth M.2 Modules:

(Factory Option) Intel® Dual Band Wi-Fi 6E AX211, 2x2 AX Wireless LAN + Bluetooth

(Factory Option) Intel® Dual Band Wi-Fi 6E AX210, 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

M.2 Slots

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

Slot 2 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-A Port

One DisplayPort 1.4a over 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 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, 53.35Wh

Full Range AC/DC Adapter

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

DC Output: 20V, 11.5A (**230W**)*

Or

DC Output: 20V, 9A (**180W**)*

**Depending on GPU Type*

Dimensions & Weight

396.9mm (w) * 262.9mm (d) * 28.8mm (h)

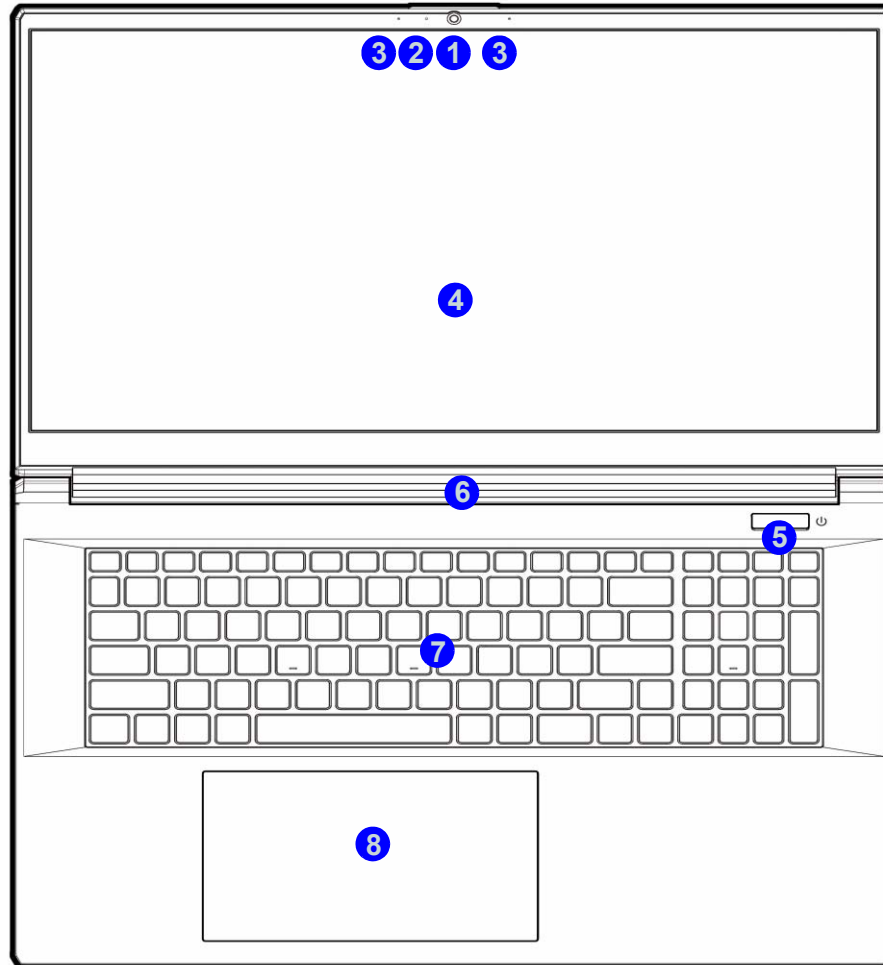
2.8kg (Barebone with 53.35Wh Battery)

Introduction

External Locator - Top View with LCD Panel Open

Figure 1
Top View

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

FRONT VIEW



Figure 2
Front View
1. LED Indicators

RIGHT SIDE VIEW



Figure 3
Right Side View
1. Speaker
2. USB 3.2 Gen 2
Type-A Port
3. RJ-45 LAN Jack
4. Vent

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

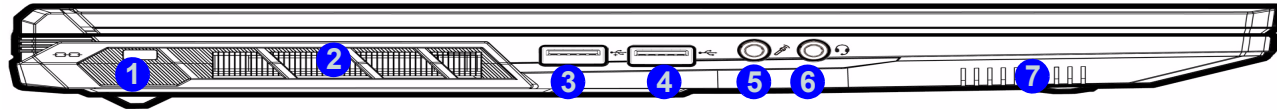


Figure 5
Rear View

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

REAR VIEW



External Locator - Bottom View

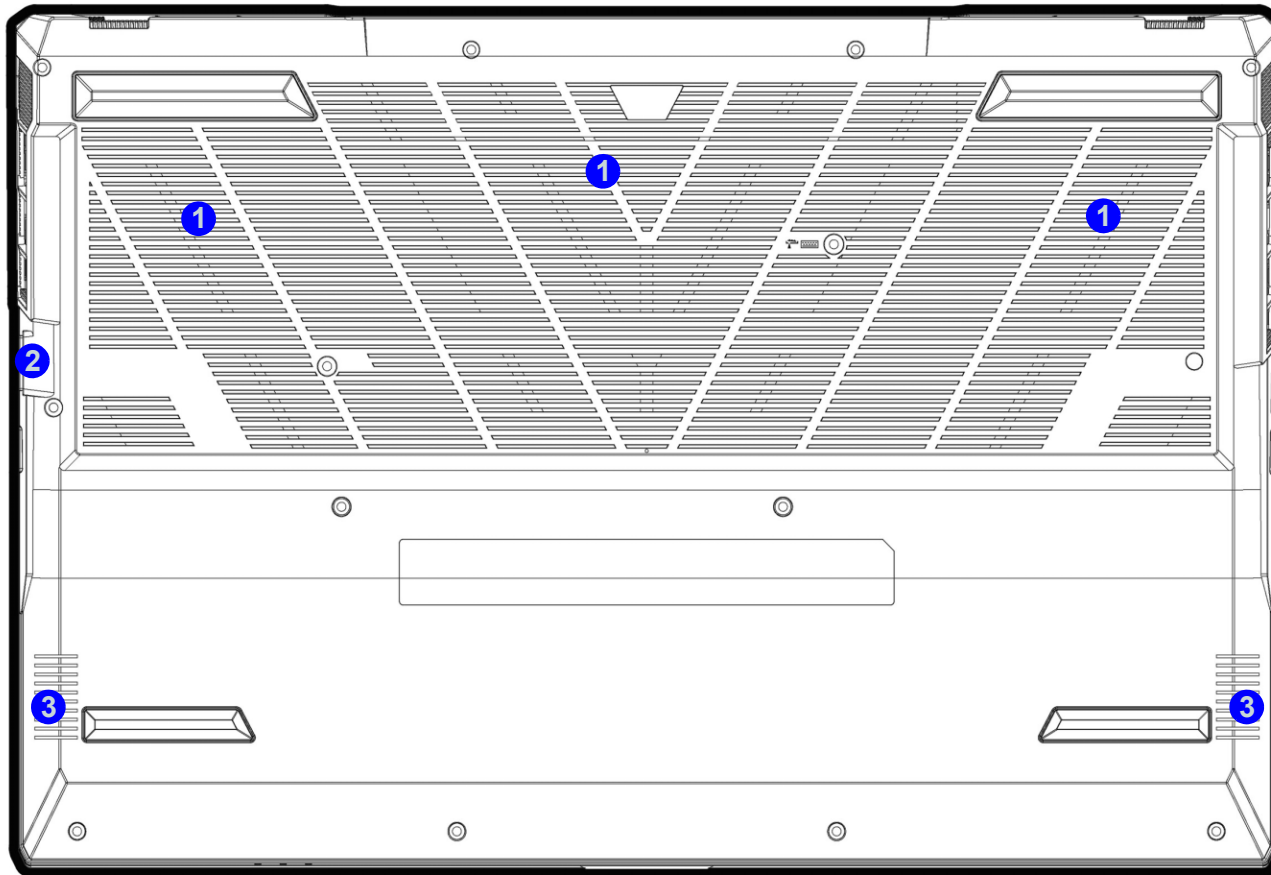


Figure 6
Bottom View

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

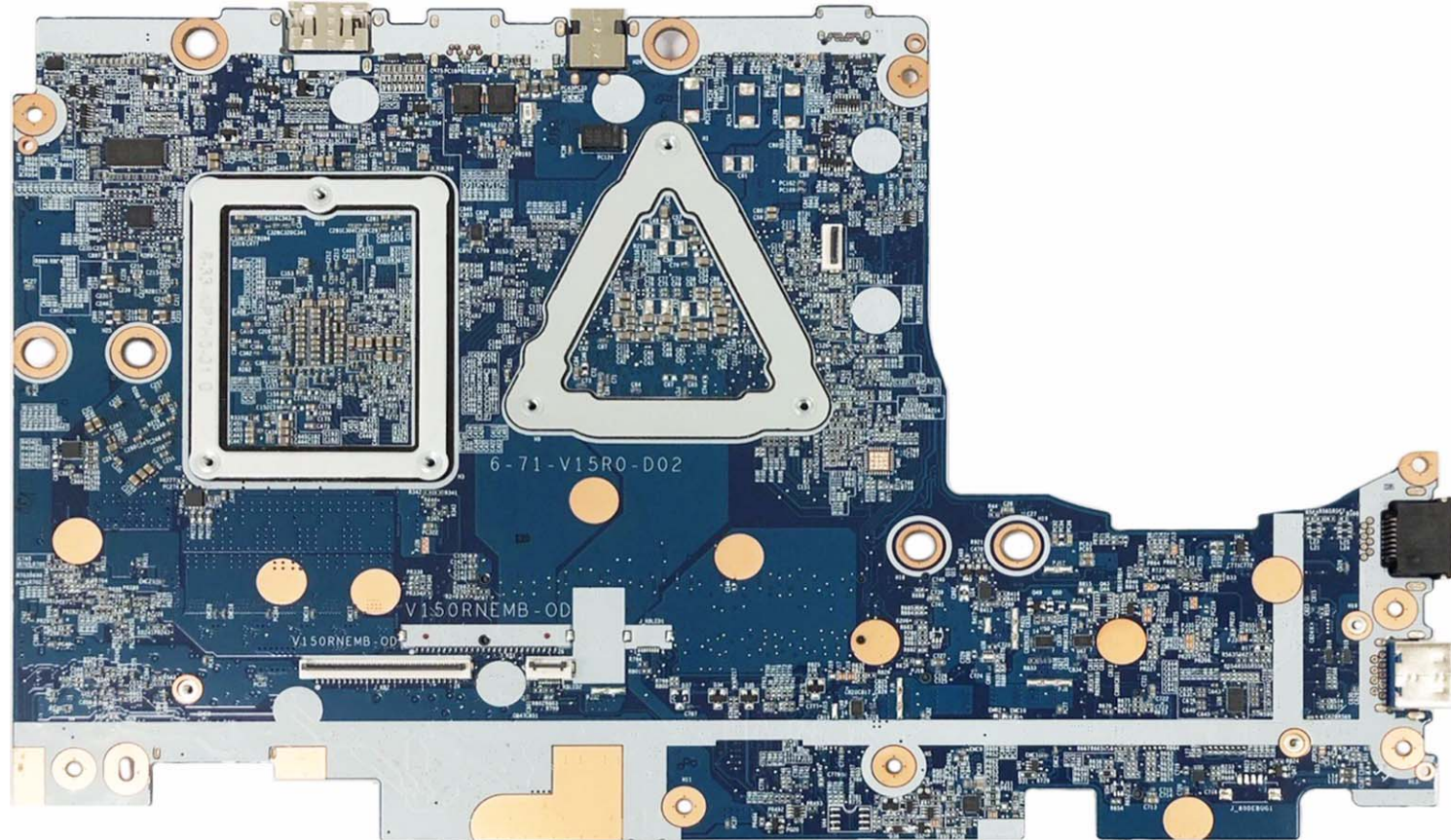


Overheating

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

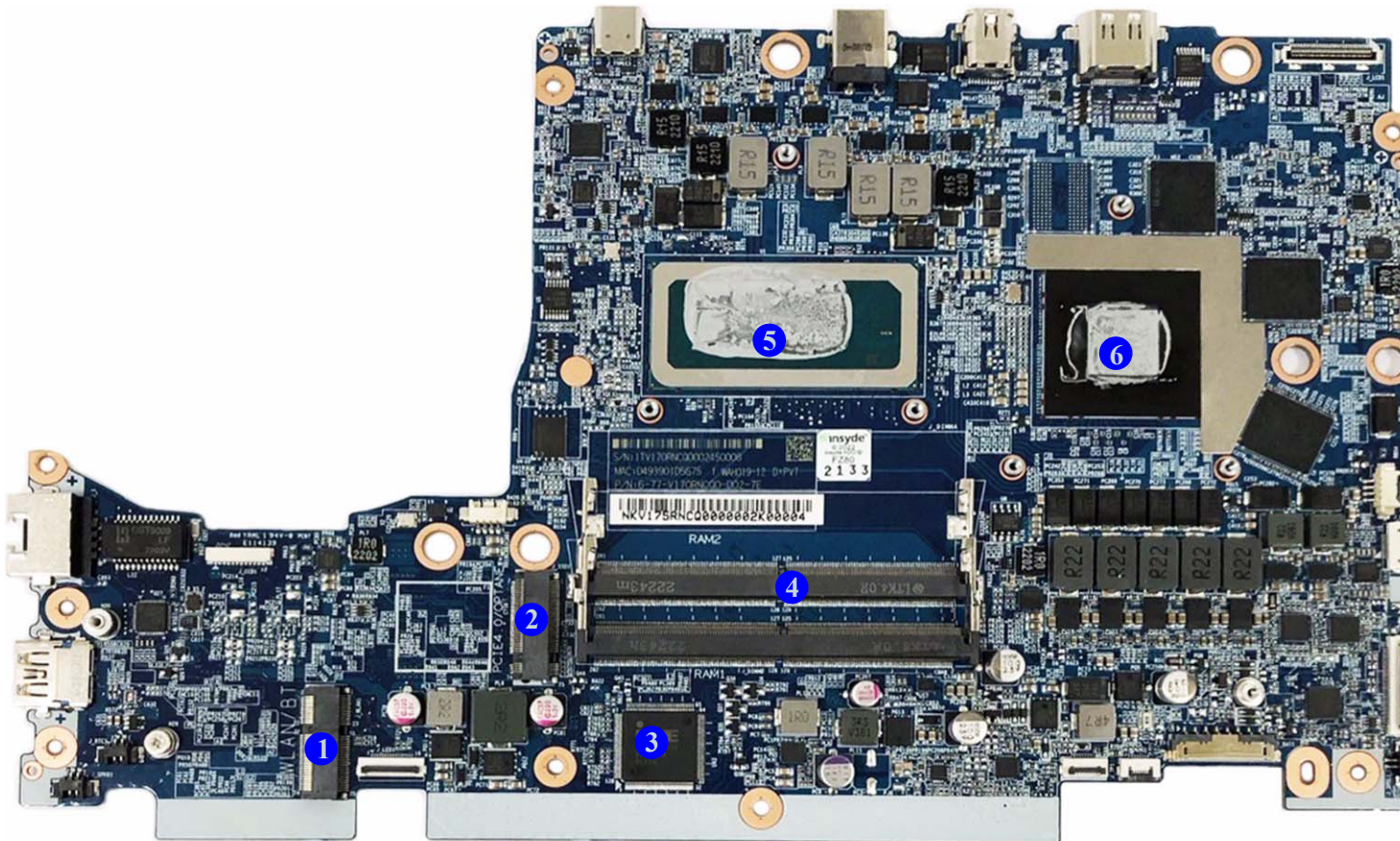
Figure 7
Mainboard Top
Key Parts

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

Figure 8
Mainboard Bottom
Key Parts



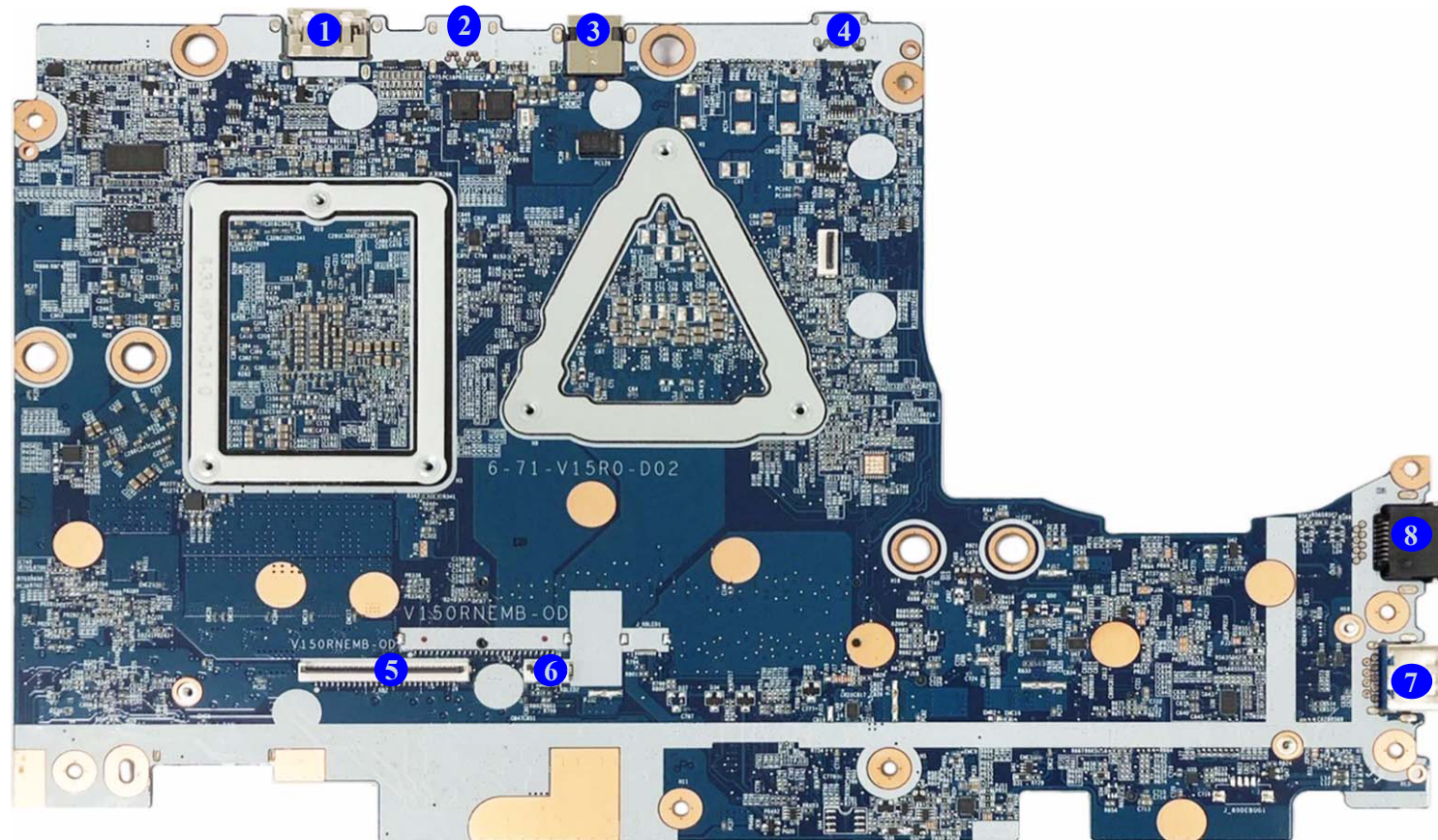
1. Mini-Card Connector (WLAN Module)
2. Mini-Card Connector (M.2 SSD Module)
3. KBC-ITE IT5570
4. Memory Slots (DDR5 SO-DIMM)
5. CPU
6. GPU

Introduction

Figure 9
**Mainboard Top
Connectors**

Mainboard Overview - Top (Connectors)

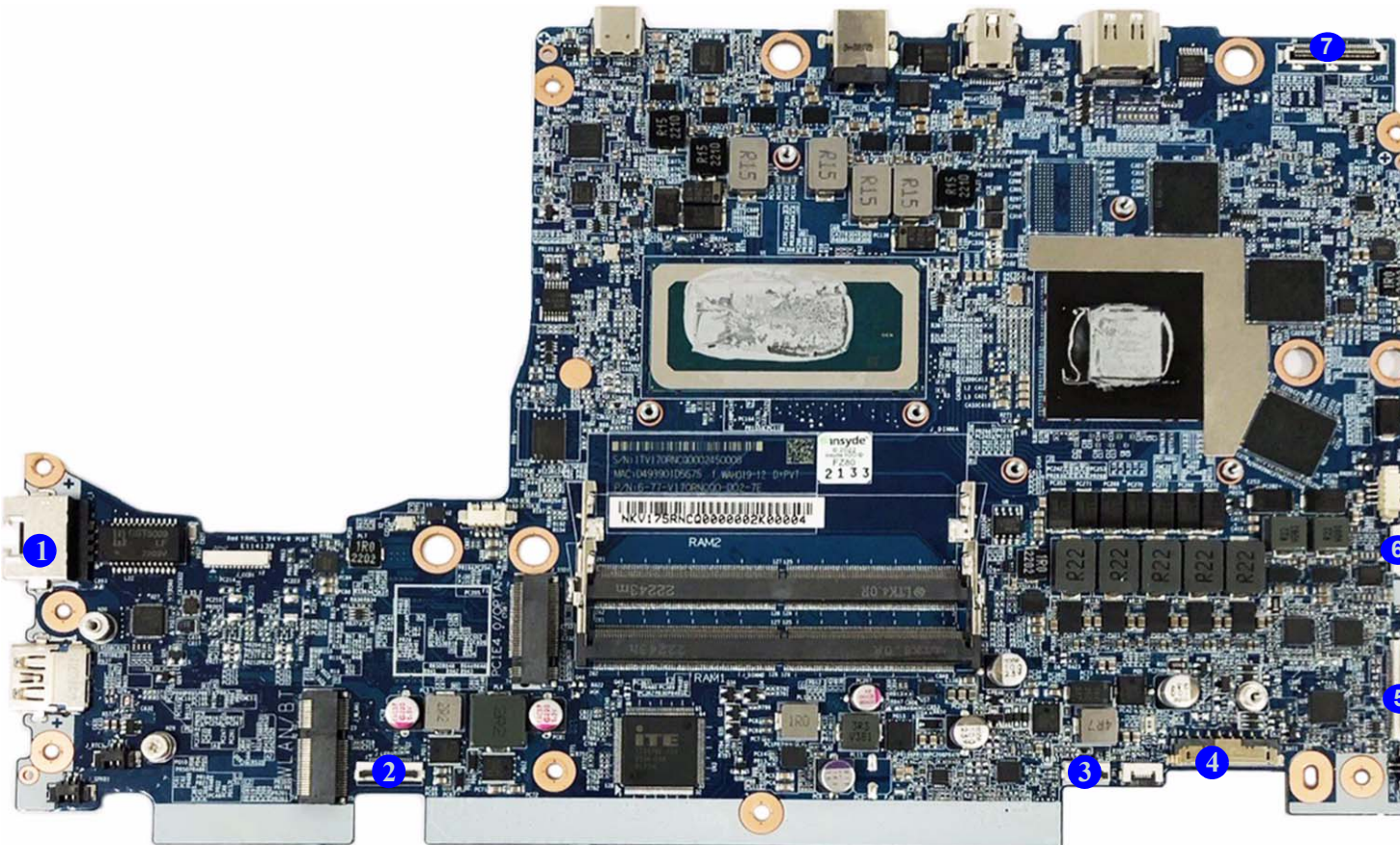
1. HDMI Port
2. Mini Display Port
3. DC-In Jack
4. Display Port 1.4a over USB 3.2 Gen 2 Type-C Port
5. Keyboard Cable Connector
6. LED KB Connector
7. USB 3.2 Gen 2 Type-A Port
8. RJ-45 LAN Jack



Mainboard Overview - Bottom (Connectors)

Figure 10
**Mainboard Bottom
Connectors**

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




Chapter 2: Disassembly



Overview

This chapter provides step-by-step instructions for disassembling the *V170RNCQ / V175RNCQ / V170RNDQ / V175RNDQ / V170RNEQ / V175RNEQ* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

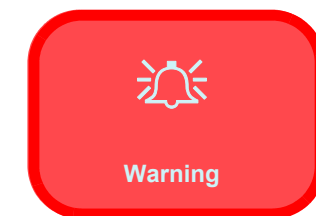
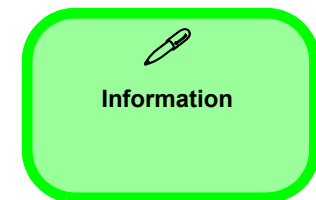
We suggest you completely review any procedure before you take the computer apart.

Procedures such as upgrading/replacing the RAM, optical device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a  lists the relevant parts you will have after the disassembly process is complete. **Note:** The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a  will also provide any possible helpful information. A box with a  contains warnings.

An example of these types of boxes are shown in the sidebar.



Disassembly

NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap



Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors

To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.

Pressure sockets for multi-wire connectors

To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.

Pressure sockets for ribbon connectors

To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.

Board-to-board or multi-pin sockets

To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it.** Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it.** Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference.** Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry.** This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power.** Avoid accidental shocks, discharges or explosions.
 - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
 - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge.** ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion.** As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean.** Tobacco smoke, dust or other air-borne particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components.** When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.

Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

(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 *page 2 - 10*
- 3.

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 11*

To remove the Wireless LAN Module:

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

To remove the CCD Module:

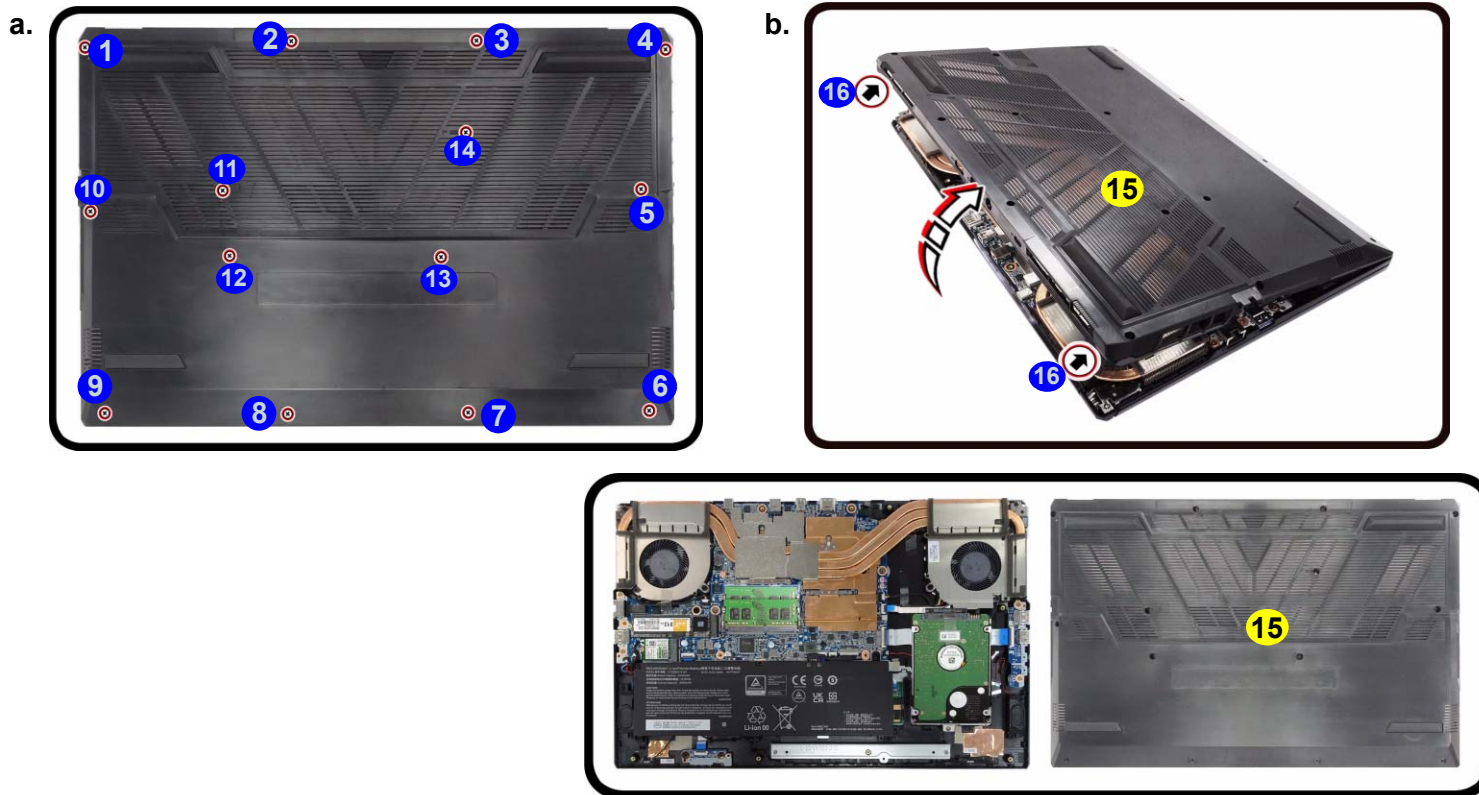
1. Remove the battery *page 2 - 5*
2. Remove the CCD module *page 2 - 14*


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. Lift the battery **25** off the computer (*Figure 2e*).
6. Reverse the process to install a new battery (do not forget to replace all the screws and the bottom cover).



25. Battery

- 6 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](#)).

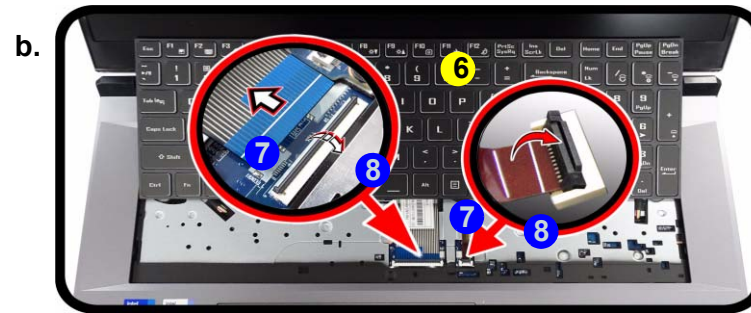
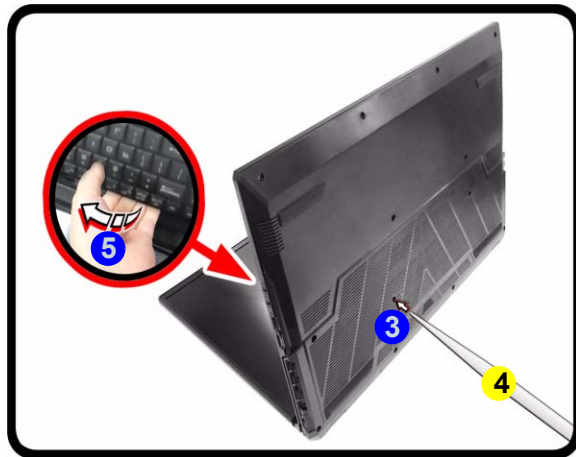
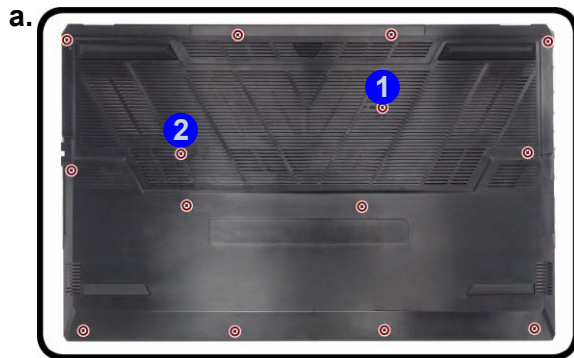


Figure 3
Keyboard Removal

- 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

Figure 4
**HDD Assembly
Removal**

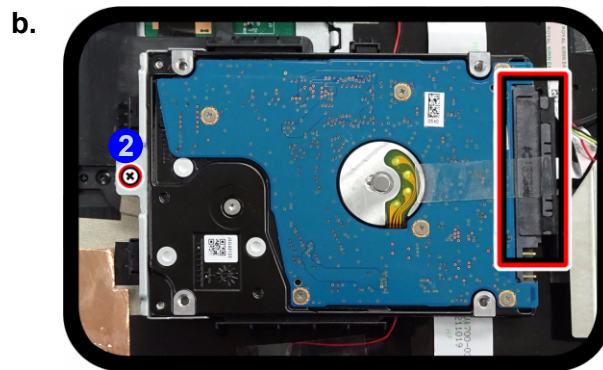
- Locate the HDD.
- Remove the screw.

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

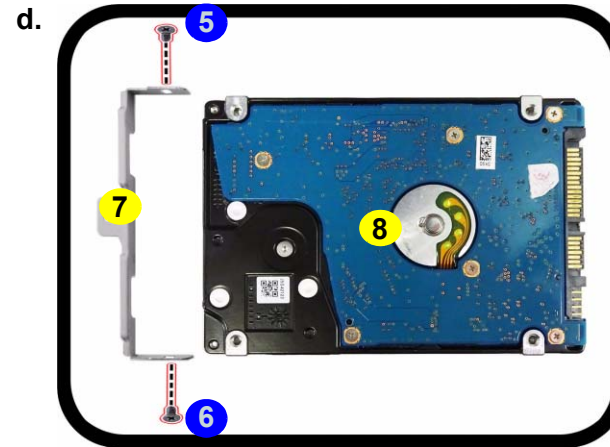
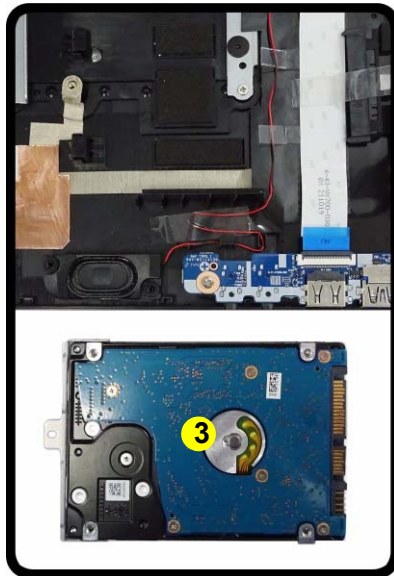
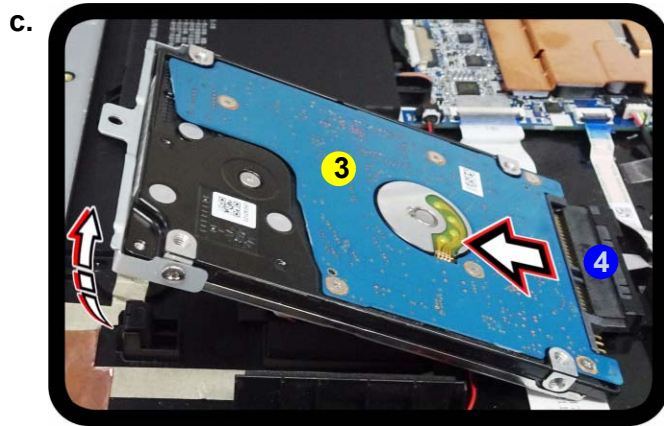
New HDD's are blank. Before you begin make sure:

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

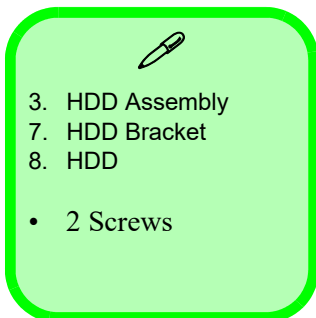
You have all the CD-ROMs and FDDs required to install your operating system and programs.

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.

- Carefully lift and slightly slide the hard disk up.
- Disconnect the hard disk assembly **3** from the connector **4** (*Figure 5c*).
- Remove screws **5** - **6** and bracket **7** from the hard disk **8** (*Figure 5d*).
- 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

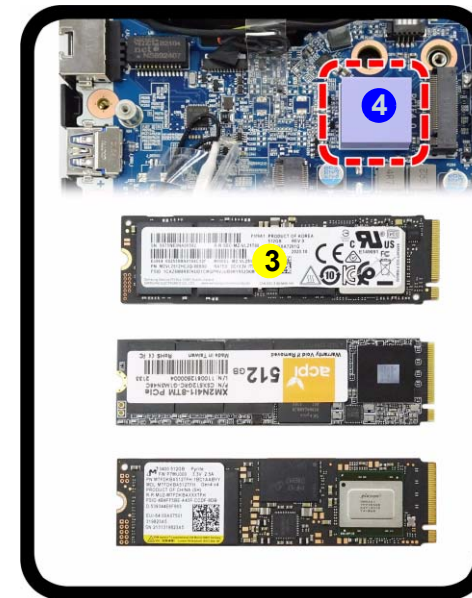
Figure 6
M.2 SSD Module Removal

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

Removing the M.2 SSD Module

M.2 SSD Removal Procedure

- Turn off the computer, turn it over, remove the battery ([page 2 - 5](#)).
- The M.2 SSD module will be visible at point **1** on the mainboard. Remove the screw **2** ([Figure 6a](#)).
- The M.2 SSD module **3** ([Figure 6b](#)) 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 screws and make sure that the thermal pad **4** is attached).



Thermal Pad

Make sure to place the thermal pad's adhesive side down on the mainboard's surface as illustrated.



3.M2 SSD Module SATA/PCIE

- 1 Screw

Removing the System Memory (RAM)

The computer has four memory sockets for 262 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR4 Up to 5600 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](#)).
2. The RAM-2 modules will be visible at point **1** on the mainboard ([Figure 7a](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 7b](#)). The RAM module **4** will pop-up ([Figure 7c](#)), 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.

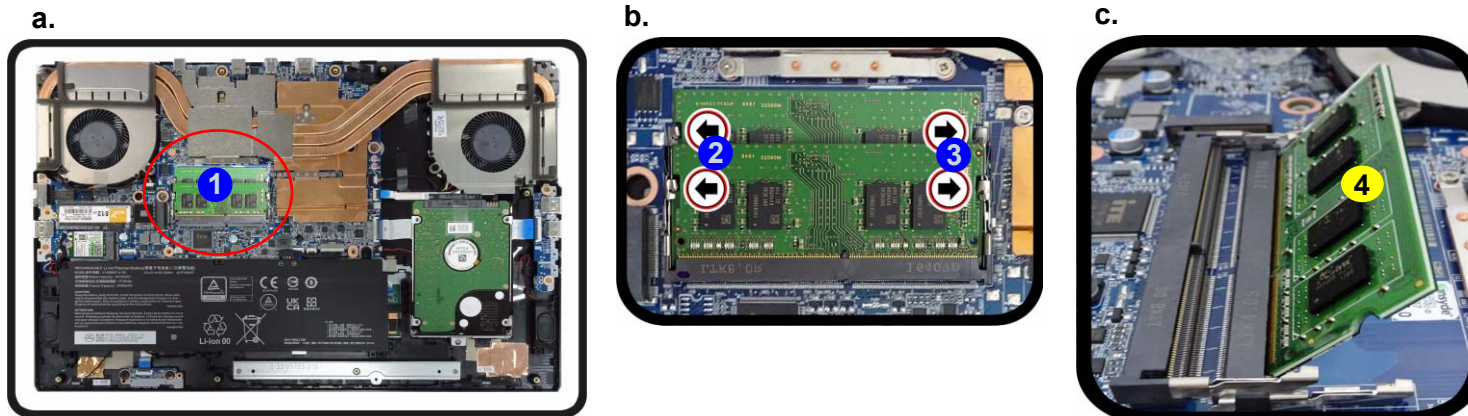


Figure 7
RAM Module Removal

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



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 8
**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 8b*).

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 8a*).
- Carefully disconnect the cables **2** & **3**, and then remove the screw **4** (*Figure 8b*).
- The Wireless LAN module **5** (*Figure 8c*) will pop-up, and you can remove it from the computer.



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, 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.

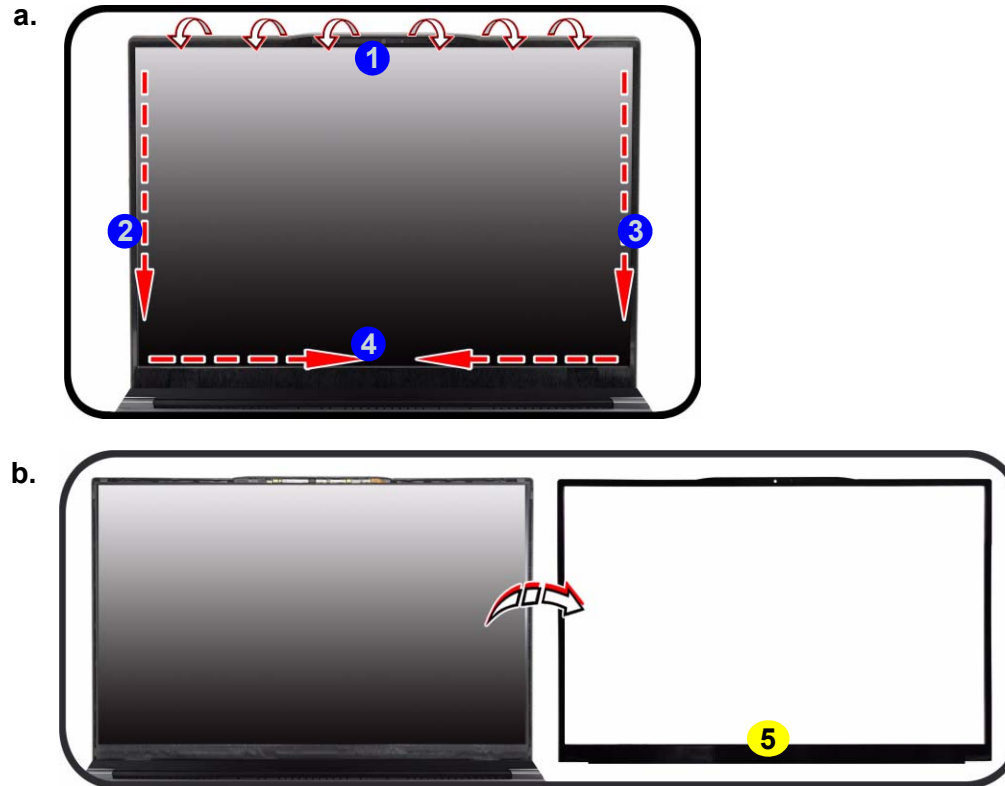
Disassembly

Figure 9
CCD Removal

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

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 130 degree angle.
3. Carefully run your fingers around the inner frame of the LCD mylar to lift at points **1** - **4** as indicated by the arrows ([Figure 9a](#)).
4. Remove the LCD front cover **5** ([Figure 9b](#)).



5. 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 10c*).
6. Remove the CCD module **8** (*Figure 10d*).
7. Reverse the process to install a new CCD module.

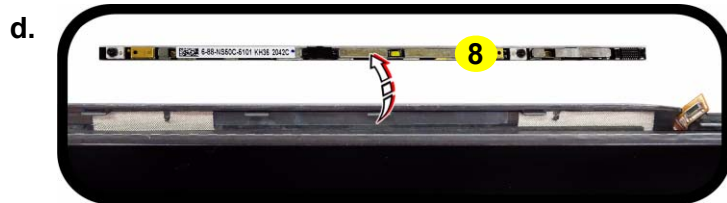
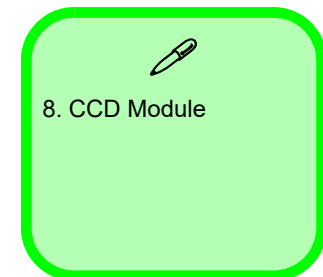


Figure 10
CCD Removal
(cont'd)

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



Appendix A: Part Lists

This appendix breaks down the *V170RNCQ / V175RNCQ / V170RNDQ / V175RNDQ / V170RNEQ / V175RNEQ* 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.

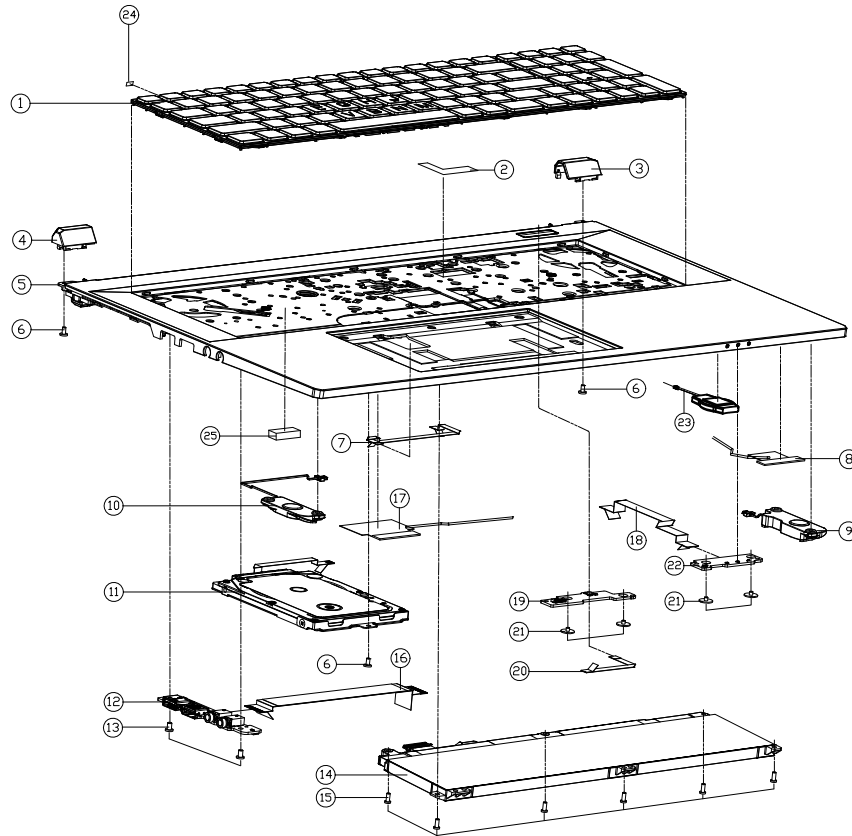
Part List Illustration Location

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

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

Part	V170RNCQ / V170RNDQ / V170RNEQ	V175RNCQ / V175RNDQ / V175RNEQ
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>	<i>page A - 8</i>

Top

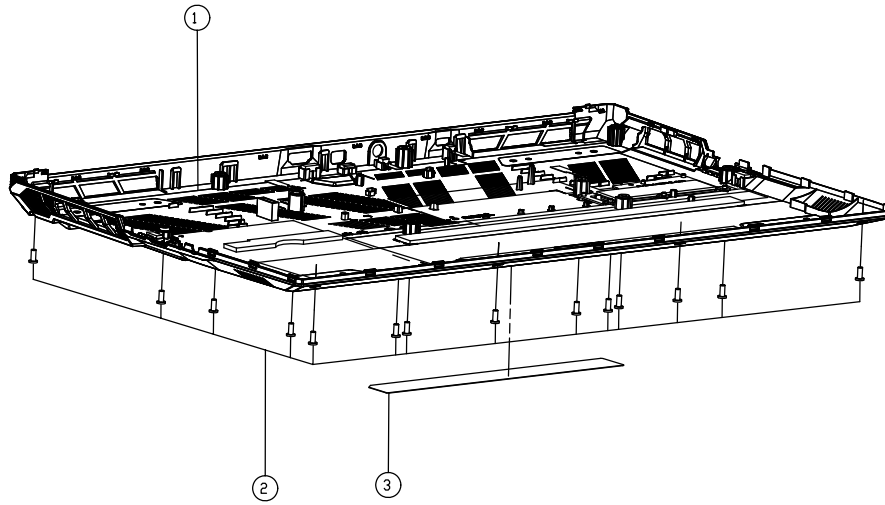


ITEM	PART NAME	PART NO	REMARK
1	KB FOR MULTI 15C BL KB US SERIES V170RNEQ	6-V170RNEQ-KB-MCL-US	KB FOR MULTI 15C BL KB SERIES
1	BLK APPLIC UNIT KIT COMBINATION KEYBOARD WITH SILVER LENS PRINTING SOLUTION (CR2500) (TP-MC)	6-80-NI510-21A-1M	KB FOR MULTI 15C BL KB JP SERIES
2	MYLAR KB (28*24*0.25T)V170PNPQ	6-40-V1702-040	
3	HINGE COVER R (PC+ABS FR302I) V170PNPQ	6-42-V1702-022	
4	HINGE COVER L (PC+ABS FR302I) V170PNPQ	6-42-V1702-012	
5	(PRE-PROCESS) TOP CASE MODULE V170RNEQ	6-78-V170RNEQ2-010	
5	(PRE-PROCESS) TOP CASE MODULE V175RNEQ	6-78-V175RNEQ2-010	
6	SCREW M2*4L KI NI ICT NY (DD=04.5,DT=0.8)	6-35-B1120-4RC	
7	FFC CABLE TP TO MB L=109.25MM 60V 8PIN (OX) V170PNPQ	6-43-V1700-041	
8	ANTENNA PEYA W/LAN JEM M1 PCB AR 30X15MM 2.6X5.0X6 W/2-50MM V150RNEQ	6-23-7V150-010	
9	SPK+CABLE R L44*23 2W 4? L50MM V15251410-04 NL50CU	6-23-5NL5C-0R0	
10	SPK+CABLE L L42.45*15.85 2W 4? L200MM V15251410-03 NP70HK	6-23-5NP70-0L1	
11	W/O HDD ASS'Y V170PNPQ	6-79-V170PNPQJ-010	
11	W/HDD ASS'Y V170PNPQ	6-79-V170PNPQJ-020	
12	AUDIO BOARD (REDRIVER) V2.0 V150RNEQ	6-77-V15R8-D12	
13	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
14	IN FFC CABLE V15251410-04 16PIN (OX) V170PNPQ	6-87-V150S-51C01	
14	IN FFC CABLE V15251410-04 16PIN (OX) V170PNPQ	6-87-V150S-53G01	
15	SCREW M2*5L KI CT=0.8 D=3.5 BK/Z ICT NY	6-35-B6120-5RC	
16	FFC CABLE AUDIO TO MB L=129MM 60V 30PIN (OX) NP70HP	6-43-NP7H0-011	
17	ANTENNA PEYA W/LAN JEM M2 PCB AR 30X15MM 2.6X5.0X6 W/2-50MM V170PNPQ	6-23-7V17K-020	
18	FFC CABLE HALL TO MB L=122.65MM 60V 16PIN (OX) V170PNPQ	6-43-V1700-011	
19	POWER SW BOARD V1.0 V170RNEQ	6-77-V17RS-D01	
20	FFC CABLE POWER TO MB L=60MM 60V 4PIN (OX) V170PNPQ	6-43-V1700-021	
21	SCREW M2*2L KI BK/Z ICT NY(08,T=0.6)	6-35-B6120-2RE	
22	LED HALL SENSOR BOARD V1.0 V170RNEQ	6-77-V17R4-D01	
23	BAT. 20MM 3V 220MAH W/CABLE 55MM BCR2030HS1MHLUB (SHIMED)	6-23-22015-TE0	
24	MYLAR(7*6*0.3MM,BLACK) FDR NH57AC	6-40-NH571-050	
25	SPONGE 18*5*5.6T CR4382 NBS0TA	6-47-0019A-18K	

Figure A - 1
Top

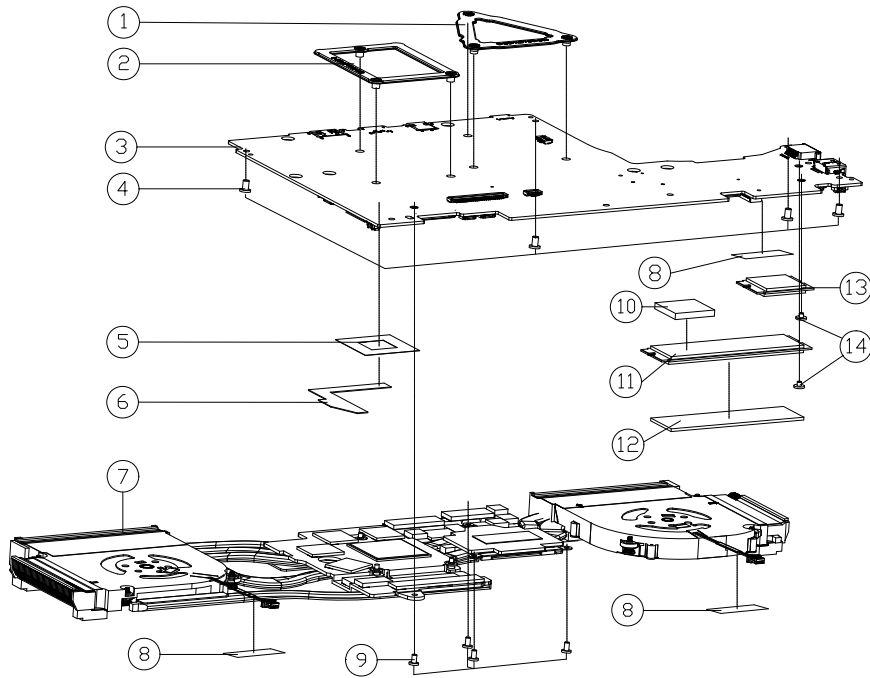
Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	BOTTOM CASE MODULE V170RNEQ	6-39-V17R3-012	
2	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
3	PRODUCT LABEL FOR V175RNCQ	6-45-V175RNCQ-010	
3	PRODUCT LABEL FOR V175RNEQ	6-45-V175RNEQ-010	
3	PRODUCT LABEL FOR V175RNDQ	6-45-V175RNDQ-010	
3	PRODUCT LABEL FOR V170RNCQ	6-45-V170RNCQ-010	
3	PRODUCT LABEL FOR V170RNEQ	6-45-V170RNEQ-010	
3	PRODUCT LABEL FOR V170RNDQ	6-45-V170RNDQ-010	
3	PRODUCT LABEL FOR V170RNEQ-G	6-45-V170RNEQG-010	
3	PRODUCT LABEL FOR V170RNCQ-G	6-45-V170RNCQG-010	
3	PRODUCT LABEL FOR V170RNDQ-G	6-45-V170RNDQG-010	
3	PRODUCT LABEL FOR V170RNCQ-M	6-45-V170RNCQM-010	

Main Board

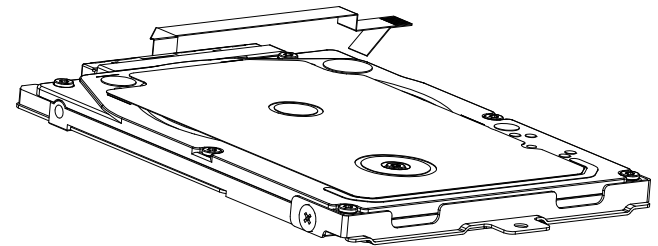
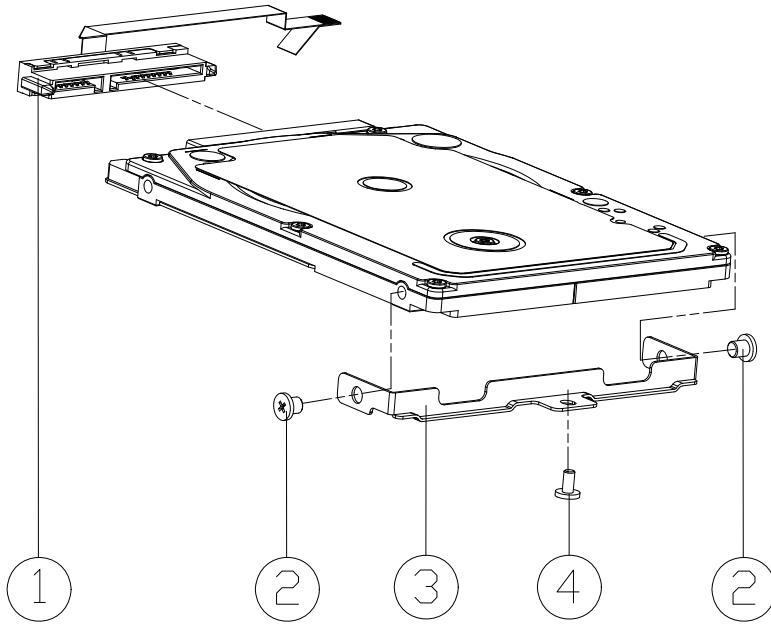


ITEM	PART NAME	PART NO	REMARK
1	VGA SUPPORT AMD SECC T=0.5T NH50AC	6-33-NH5AS-021	
2	VGA SUPPORTOR SECC(T=0.8)*PET MYLAR(T=0.1)*3M467(T=0.1) NP70HP	6-33-NP7H0-010	
3	MAIN BOARD(CPU/15-1362H/24G V2.0 GYNIX VRANKER/PAW/D TPO V170RNDQ	6-77-V170RNC00-D02-7E	
3	MAIN BOARD(CPU/17-1370H/24G V2.0 GYNIX VRANKER/PAW/TPO V170RNDQ	6-77-V170RNE00-D02-5B	
3	MAIN BOARD(CPU/17-1362H/24G V2.0 GYNIX VRANKER/PAW/TPO V170RNDQ	6-77-V170RND00-D02-1C	
3	MAIN BOARD(CPU/15-1362H/24G V2.0 GYNIX VRANKER/PAW/TPO V170RNDQ	6-77-V170RNE00-D02-4A	
3	MAIN BOARD(CPU/17-1362H/24G V2.0 GYNIX VRANKER/PAW/TPO V170RNDQ	6-77-V170RNC00-D02-5C	
3	MAIN BOARD(CPU/17-1370H/24G V2.0 GYNIX VRANKER/PAW/D TPO V170RNDQ	6-77-V170RND00-D02-3B	
4	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
5	GN21 X2X4 MYLAR (29*29*0.1) PD50SNE-G	6-40-PD5SS-010	FDR V17XRNCQ/RNDQ/-G
5	GN21 X6 MYLAR (29*29*0.1) PD50SNE-G	6-40-PD5SS-020	FDR V17XRNEQ/-G
6	VGA ABSORBER HAST-12020*3M 467 6.87*44.71*0.35T VISIORNE	6-47-V15RS-030	
7	V170RNEQ THERMAL MODULE_FDR MP	6-31-V17RN-101	
8	TAPE MYLAR (C),MYLAR M550J	6-40-M55J2-030	
9	SCREW M2*4L KI NI ICT NY (DD=0.45,DT=0.8)	6-35-B1120-4RC	
10	THERMAL PAD MA500T(17.3*17.3*5.25T)MM X170SM	6-48-X17S8-010	
11	SSI R2 Z20 S2C0 SAMSUNG MVAL2320C-A-XXXX (P960) PCIE G4M 30 TLC 128 LAMBDS	6-85-D515B-S0C	OPTION
12	THERMAL PAD SR-1000-A530BS-UH1(65*18*1.25T)MM PD70SNE-G	6-48-PD7S1-011	
13	MAIN BOARD DAL AND INTEL VTI 6E GATED FEM 2 INCLGALAN AMRPHS10-W-400-PCZ-WH1-K52-R2-Z20-KRTH	6-88-X270F-4210	OPTION
13	MAIN BOARD DAL AND INTEL VTI 6E TYPICAL FEM 2 INCLGALAN AMRPHS10-W-400-PCZ-WH1-K52-R2-Z20	6-88-X17KF-4210	OPTION
13	MAIN BOARD DAL AND INTEL HANSON FEM 2 NEW TOP PACKAGING W-400-PCZ-WH1-K52-R2-Z20	6-88-NV40F-4210	OPTION
13	MAIN BOARD DAL AND INTEL JEFFERSON FEM 1 PACKING W-400-PCZ-WH1-K52-R2-Z20	6-88-N24GF-4200	OPTION
14	SCREW M2*2L KI NI ICT NY (DD=0.5 ,T=0.8)	6-35-B1120-2RA	

Figure A - 3
Main Board

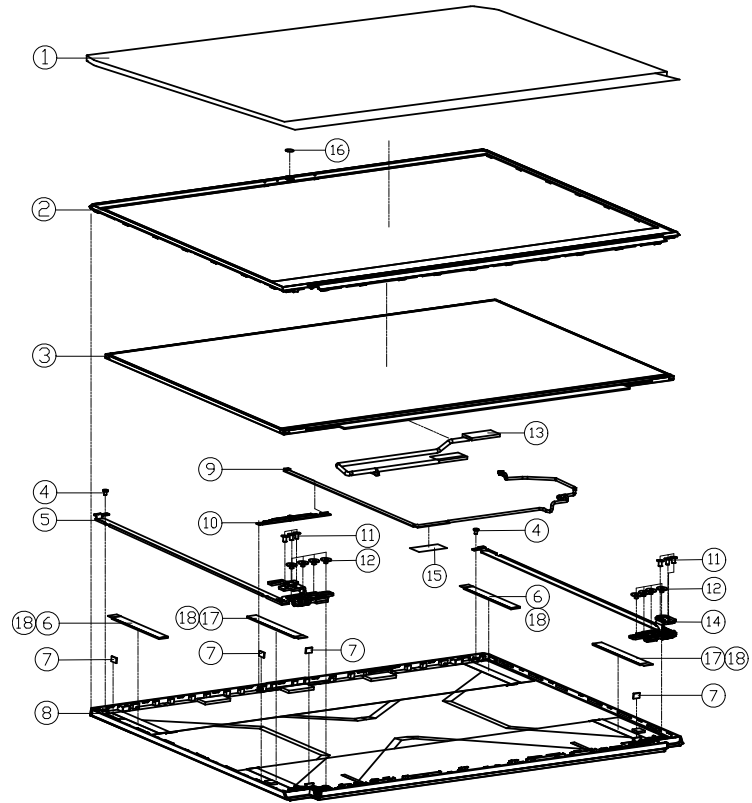
HDD

Figure A - 4
HDD



ITEM	PART NAME	PART NO	REMARK
1	取消後蓋背網	6-23-FV170-011	
2	SCREW M3*3.0L KI NI ICT NY	6-35-B1130-3R5	
3	HDD BKT SECC T=0.5 N230WU	6-33-N2302-020	
4	SCREW M2*4L KI NI ICT NY (DD=#4.5,DT=0.8)	6-35-B1120-4RC	

LCD (V170RNCQ / V170RNDQ / V170RNEQ)



ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT NON WOVEN NH77DCQ	6-44-NH774-010	
2	LCD FRONT COVER MODULE V170PNPQ	6-39-V1701-012	
3	LCD N173" FHD/WVA/65HZ/70S G-SYNC/DCI P3 100%DCI G1/ERP BDE NE17304-N13 35M	6-50-N6B35-Z220	
3	LCD N173" FHD/WVA/44HZ/70/NDN G1/ERP INNEXLX N17302E-633 LED 35M	6-50-NBB35-V130	
3	LCD N173" FHD/WVA/44HZ/70/NDN G1/ERP BDE NV17314-N12 35MSRSG0002	6-50-NBB35-Z132	
4	SCREW M2*3L KI NI ICT NY (DD=Ø4.0,DT=0.8)	6-35-B1120-3RD	
5	HINGE L (SK7) V170PNPQ	6-33-V1701-0L1	
6	LALATAPE SPONGE (9*60*1.0T)	6-47-0019L-003	FDR 6-50-NBB35-V130 6-50-NBB35-Z132
7	RUBBER FOR LCD PANEL(6*4*0.8T) NP70HP	6-47-NP7H1-031	
8	BACK COVER MODULE V170PNPQ	6-39-V1701-023	
9	CCD CABLE L=550MM 30V 8PIN (HT) NH50ED NH50ED	6-43-NH50T-011-1	
10	UV CAMERA COVER COVER CRYSTAL/2000000000 IN HD V20-402 4072 D1574 W200 142720 V-WHITE-LED	6-88-N15ZC-5102	
10	UV CAMERA BORN COVER 2000000000 IN HD D1574 W200 142720 V-WHITE-LED W/PROXIMITY SENSER WITH FTD	6-88-N15ZC-4900	
10	UV CAMERA BORN COVER 2000000000 IN HD V20-402 4072 SONY 280 1020UM 142720 V-WHITE-LED	6-88-X17JC-4900	
11	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
12	SCREW M2.5*2.5L KI BK/Z ICT NY(Ø8,T=0.6)	6-35-B6125-2R5	
13	CONTROL CABLE FOR DC EXP TO PR 300M 30V Ø1.40 TO 30PIN 65PITCH 015 PITCH RELAY CONTROL/200 170RNCQ	6-43-V17R1-010-N	
13	CONTROL CABLE FOR EXP 300MM 30V I 40 PIN 65PITCH 015 PITCH RELAY CONTROL/200 170RNDQ	6-43-PB701-011-1N	
14	HINGE R (SK7) V170PNPQ	6-33-V1701-0R1	
15	TOP CASE MYLAR FR83 25*7*0.05 P180HM	6-40-P1802-030	
16	CCD LENS PMMA (DIAMETER 3.6MM) (MPI) P970EN	6-42-P97N1-011-1	
17	LALATAPE SPONGE (35*9*1.0T)FDR V170PNPQ	6-47-V1701-050	FDR 6-50-NBB35-V130 6-50-NBB35-Z132
18	LALATAPE SPONGE (9*60*0.8T)	6-47-0019L-046	FDR 6-50-N6B35-Z220

Figure A - 5
LCD (V170RNCQ /
V170RNDQ /
V170RNEQ)

LCD (V175RNCQ / V175RNDQ / V175RNEQ)

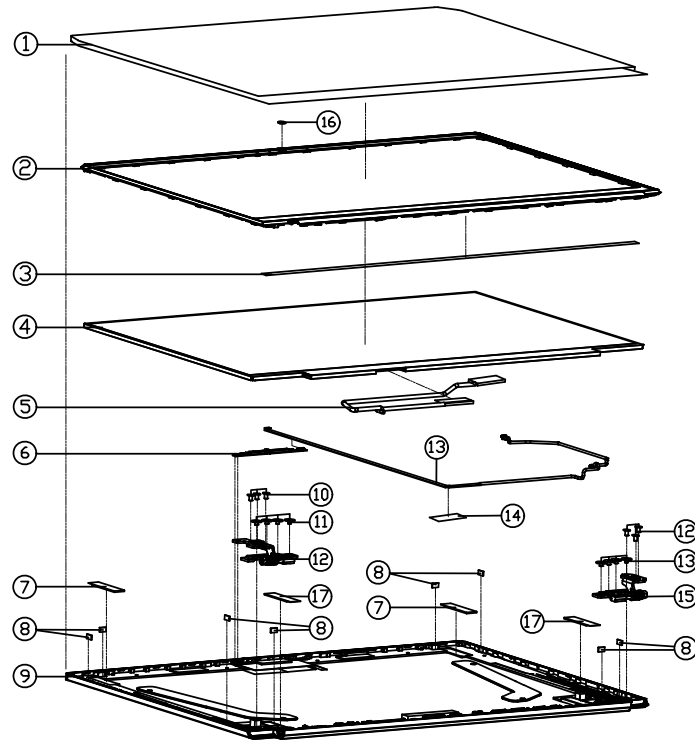


Figure A - 6
LCD (V175RNCQ /
V175RNDQ /
V175RNEQ)

ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT NON WOVEN NH77DCQ	6-44-NH774-010	
2	LCD FRONT COVER MODULE V175PNPQ	6-39-V1751-012	
3	ADHESIVE NITTO 5000NS (380*2*0.15)MM NS70MU	6-40-NS701-040	
4	LCD IN73" FHD/WVA/44HZ/70/NDK G1/ EIP DMDLUX IN73RCE-633 LED 3.5M	6-50-NBB35-V130	
4	LCD IN73" FHD/WVA/44HZ/70/NDK G1/EIP DDC IN173RHM-NY2 3.5MNSR6800C	6-50-NBB35-Z132	
5	COAXIAL CABLE FOR EIP 300MM 30V 1 40 PIN (HT/LW COAXIAL) V0-KSULP93SD P970EF	6-43-PB701-011-1N	
6	DVC CAMERA CCM20 F1000D CCM20C2000000 IN HD V20-40C 40*12 D1979A W800 F1029 V100E-LED	6-88-N15ZC-5102	
6	DVC CAMERA W800 F1000D D1979A IN HD D1979 W800 F1029 V100E-LED	6-88-N15ZC-4900	
6	DVC CAMERA W800 F1000D D1979A IN HD D1979 W800 F1029 V100E-LED	6-88-X17JC-4900	
7	BACK SPONGE REMOVE ADHESIVE DP95T NP50DB	6-47-NP501-030	
8	LCD RUBBER (6*3.5*0.8T) NH55EDQ	6-47-NH551-020	
9	BACK COVER MODULE V175PNPQ	6-39-V1751-023	
10	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
11	SCREW M2.5*2.5L KI BK/Z ICT NY(Ø8,T=0.6)	6-35-B6125-2R5	
12	HINGE L (SK7) V175PNPQ	6-33-V1751-0L1	
13	CCD CABLE L=550MM 30V 8PIN (HT) NH50ED NH50ED	6-43-NH50T-011-1	
14	TOP CASE MYLAR FR83 25*7*0.05 P180HM	6-40-P1802-030	
15	HINGE R (SK7) V175PNPQ	6-33-V1751-0R1	
16	CCD LENS PMMA (DIAMETER 3.6MM) (MP1) P970EN	6-42-P97N1-011-1	
17	LCD BACK SPONGE DOWN (30*10*1.2) OS-10+CR4382+FR928220 NH55EDQ	6-47-0019A-C02-1	

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *V170RNCQ* / *V175RNCQ* / *V170RNDQ* / *V175RNDQ* / *V170RNEQ* / *V175RNEQ* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

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Processor 1/13 - Page B - 3	Misc - GPIO, I2C, VBIOS - Page B - 27	VCore Power Stage - Page B - 51
Processor 2/13 - Page B - 4	NVIDIA Power Sequence - Page B - 28	VCCGT - Page B - 52
Processor 3/13 - Page B - 5	NVVDD, FBVDDQ - Page B - 29	VCCIN AUX - Page B - 53
Processor 4/13 - Page B - 6	GPU GND - Page B - 30	VDD2, 1.8VS - Page B - 54
Processor 5/13 - Page B - 7	PS8461 SW - Page B - 31	VNN / V1.05A - Page B - 55
Processor 6/13 - Page B - 8	Panel, Inverter - Page B - 32	NVVDD1 - Page B - 56
Processor 7/13 - Page B - 9	mDP - Page B - 33	NVVDD2 - Page B - 57
Processor 8/13 - Page B - 10	HDMI - Page B - 34	FBVDDQ - Page B - 58
Processor 9/13 - Page B - 11	Audio Codec - Page B - 35	PEX_VDD - Page B - 59
Processor 10/13 - Page B - 12	LAN i219V - Page B - 36	OVR-M - Page B - 60
Processor 11/13 - Page B - 13	USB Gen2 Type-A - Page B - 37	V15 Power SW Board - Page B - 61
Processor 12/13 - Page B - 14	ANX7443 - Page B - 38	Audio Board - Page B - 62
Processor 13/13 - Page B - 15	PD Controller - Page B - 39	50 LED, Hall Sensor - Page B - 63
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DDR5 CHB SO-DIMM_0 - Page B - 17	HDD, Click TP, Audio, Hall - Page B - 41	V17 Power SW Board - Page B - 65
PCI-E Interface - Page B - 18	LED, CCD, TPM, Power SW - Page B - 42	70 LED, Hall Sensor - Page B - 66
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Frame Buffer A - Page B - 20	RGB KB - Page B - 44	Power Map - Page B - 68
Frame Buffer A - Page B - 21	AC_In, Charger - Page B - 45	
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Straps and XTAL - Page B - 25	VCCST, VCCIP8 - Page B - 49	

Table B - 1
SCHEMATIC
DIAGRAMS

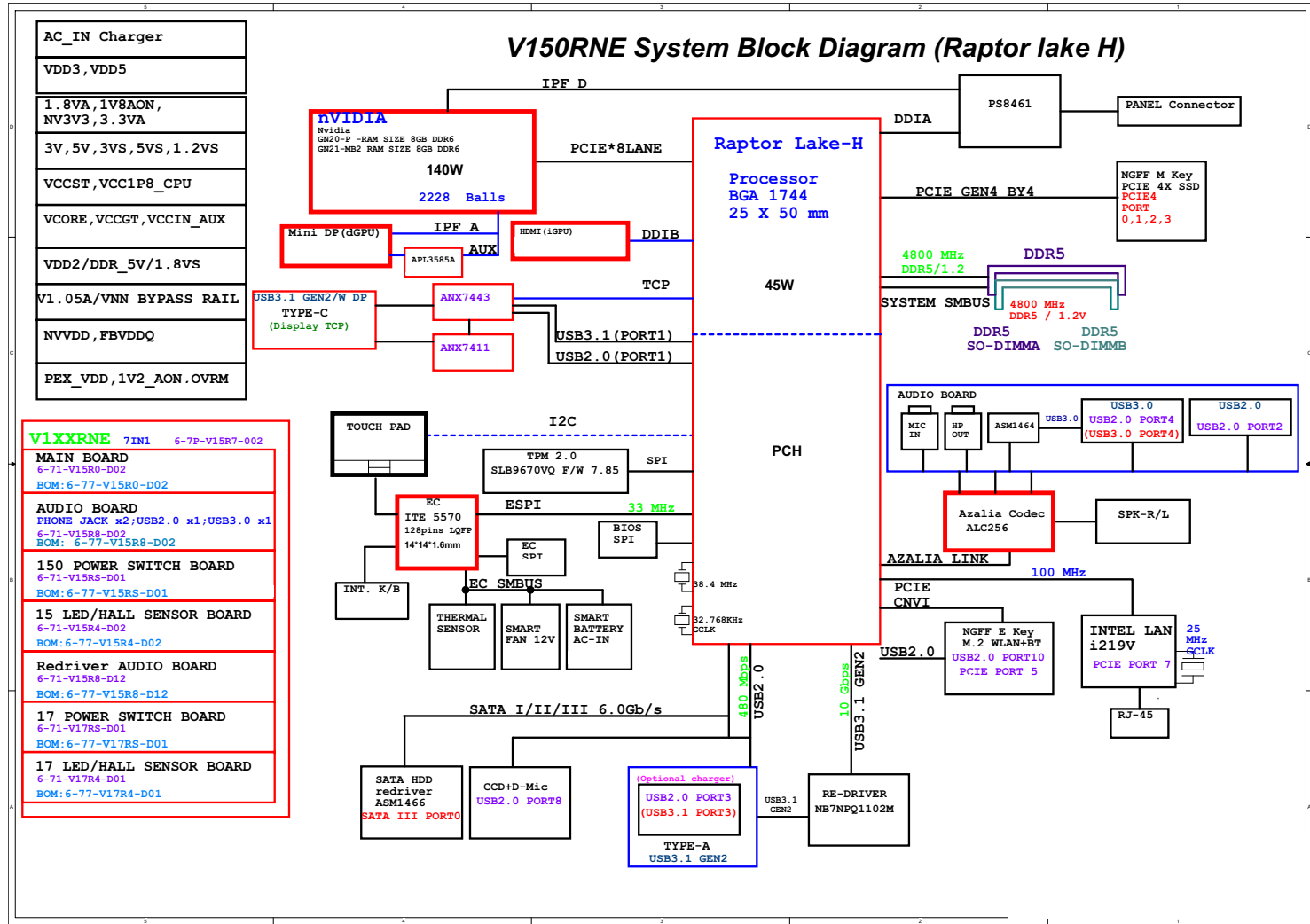


Version Note

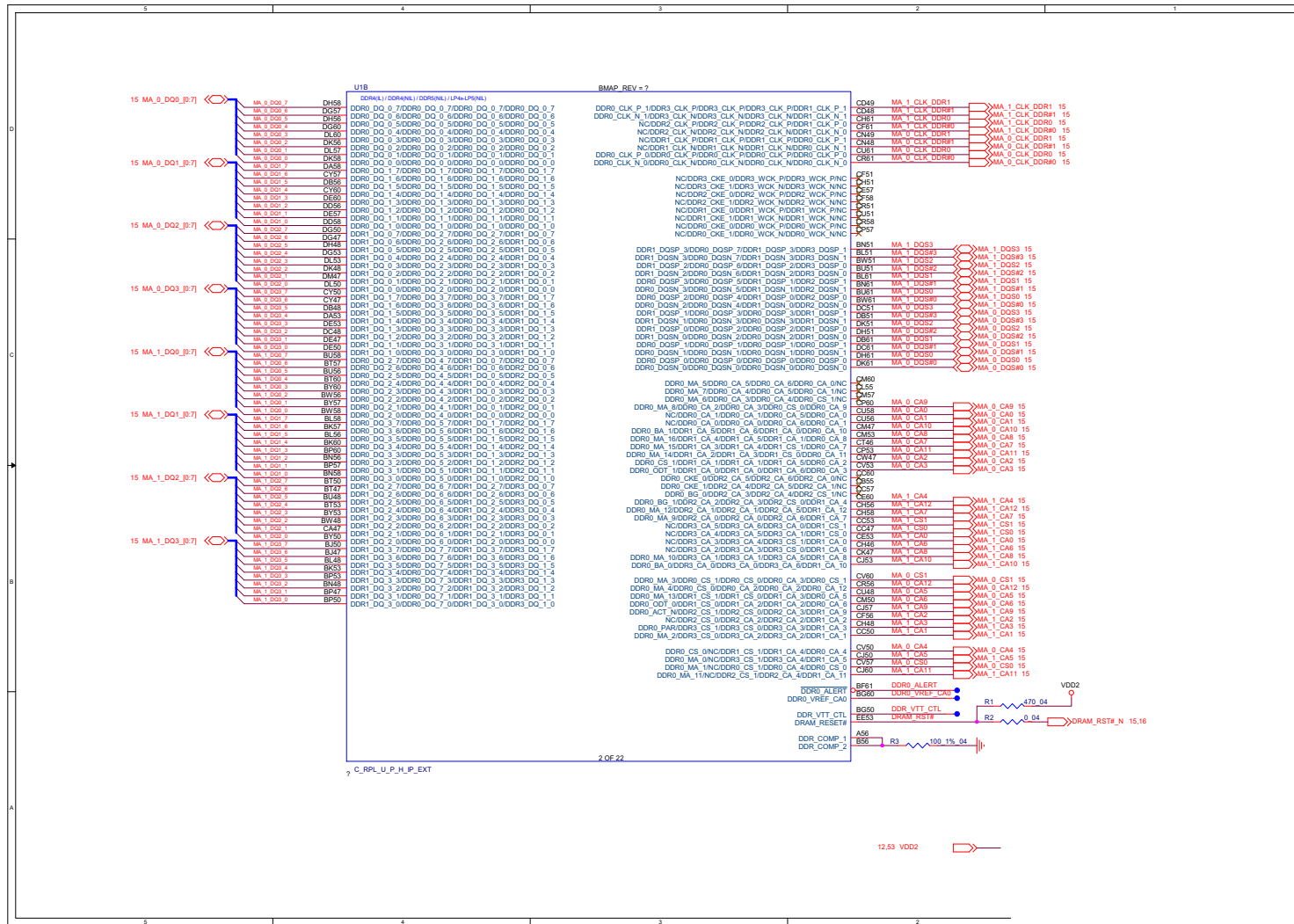
The schematic diagrams in this chapter are based upon version 6-7P-V15R7-002. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 67
System Block
Diagram



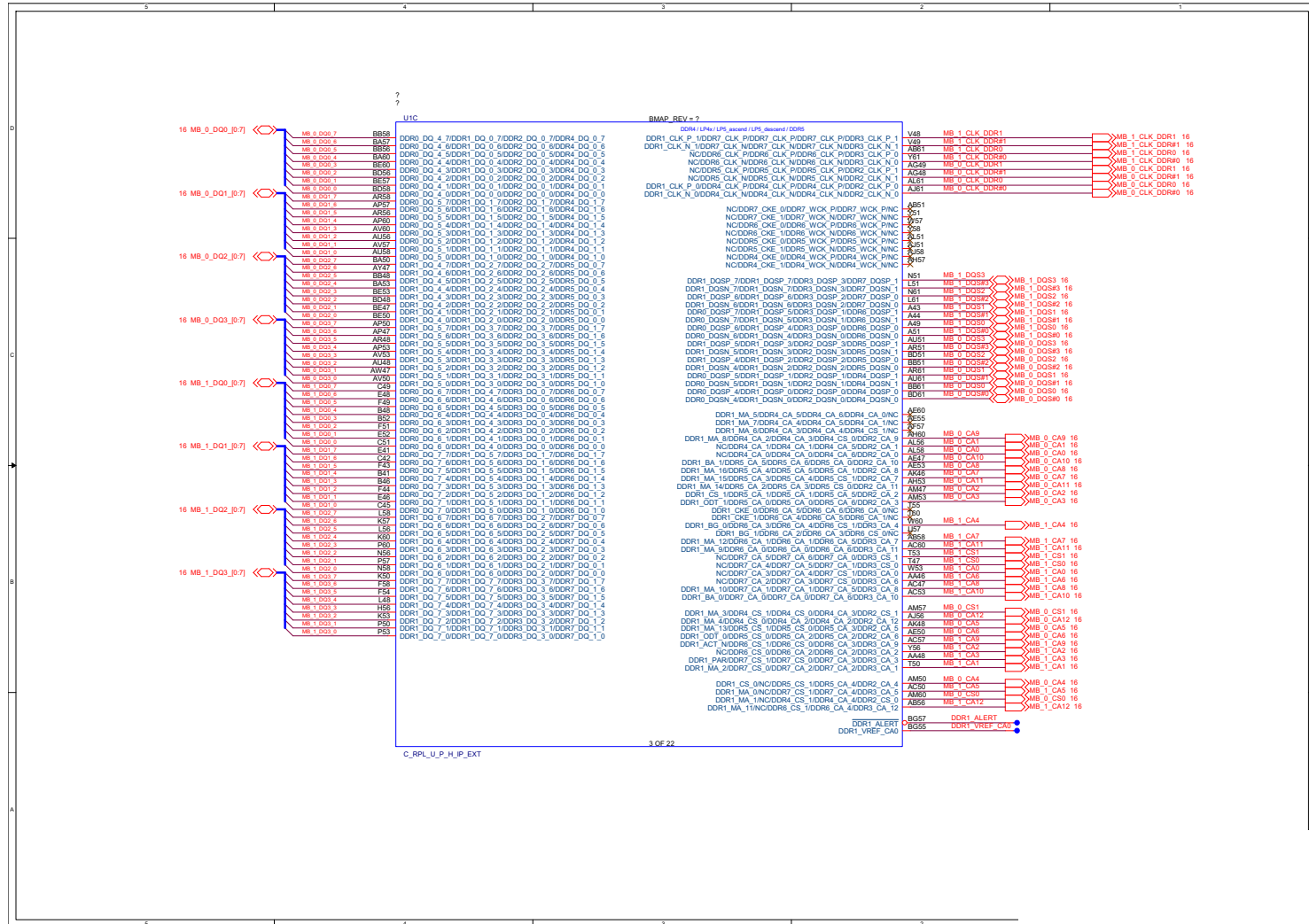
Processor 1/13



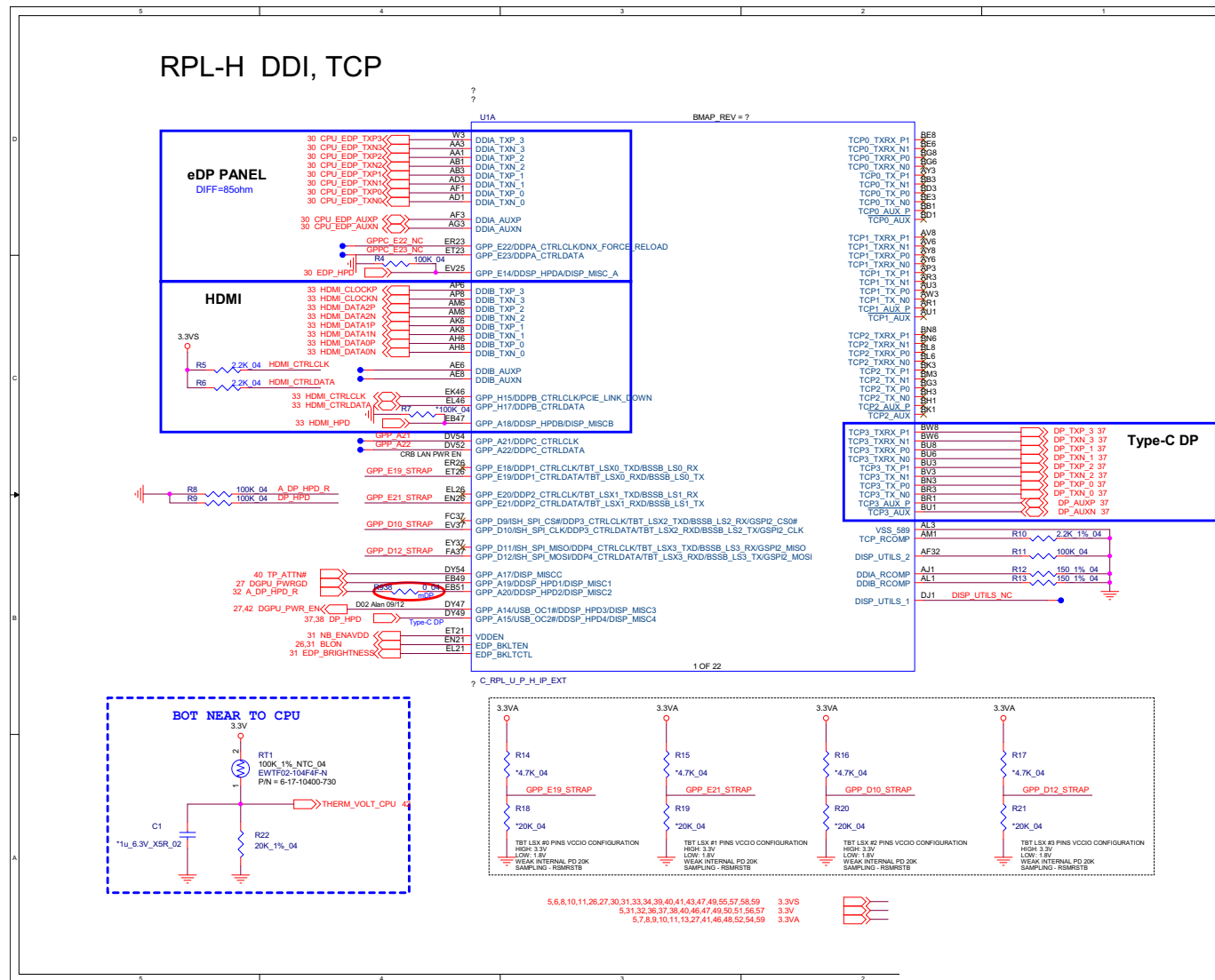
Sheet 2 of 67
Processor 1/13

B.Schematic Diagrams

Processor 2/13



Processor 3/13

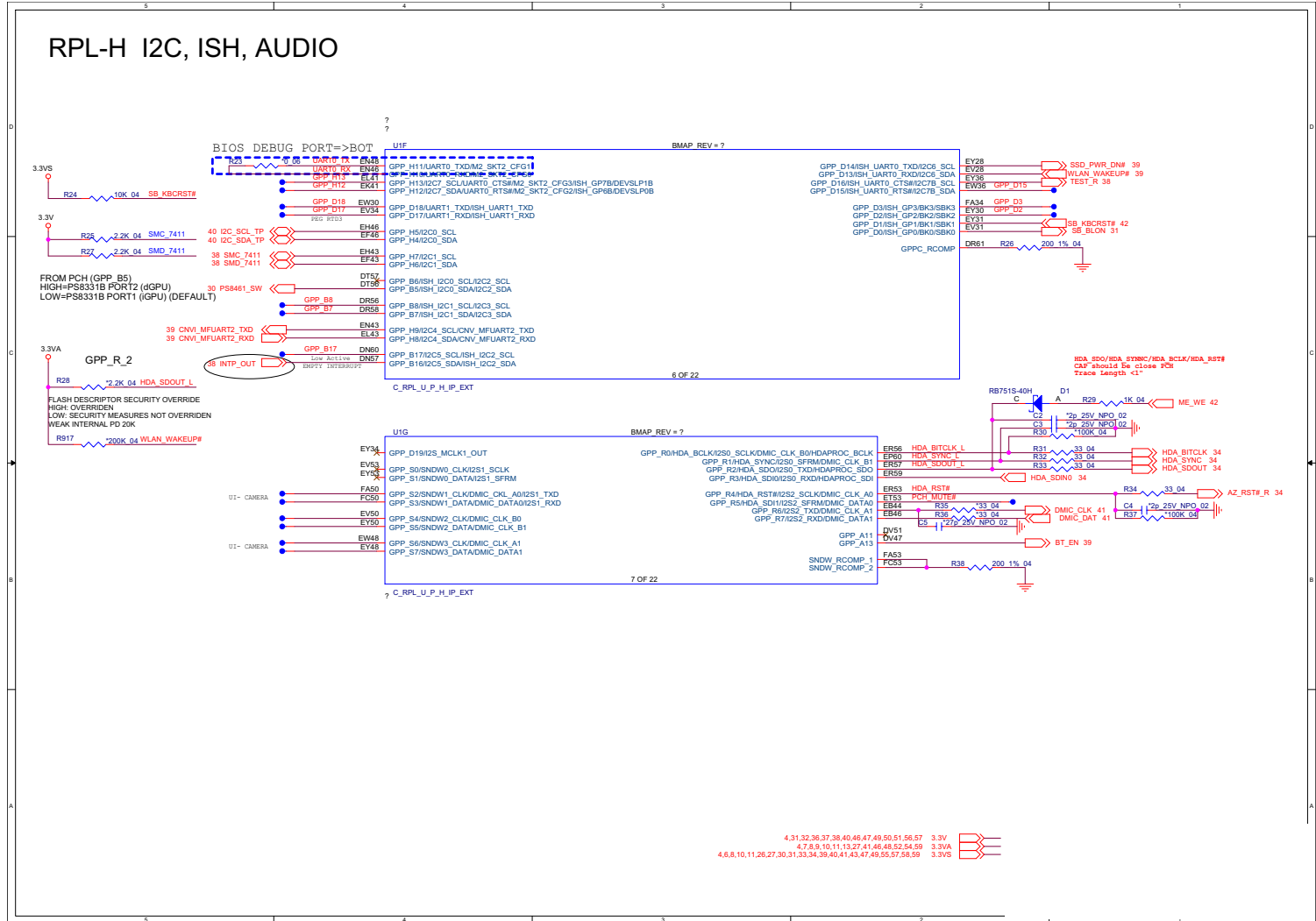


Sheet 4 of 67
Processor 3/13

B.Schematic Diagrams

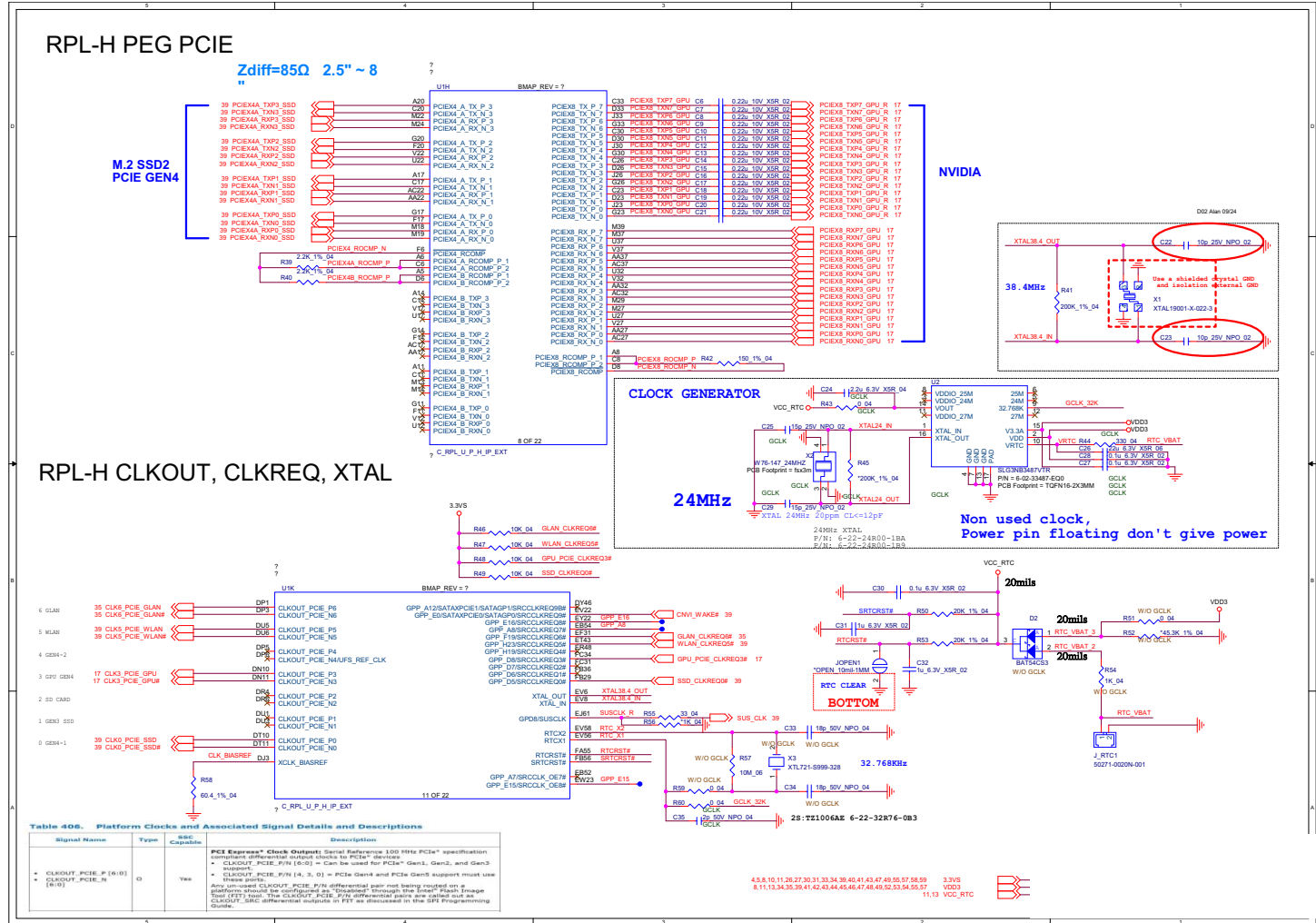
Processor 4/13

Sheet 5 of 67
Processor 4/13



Processor 5/13

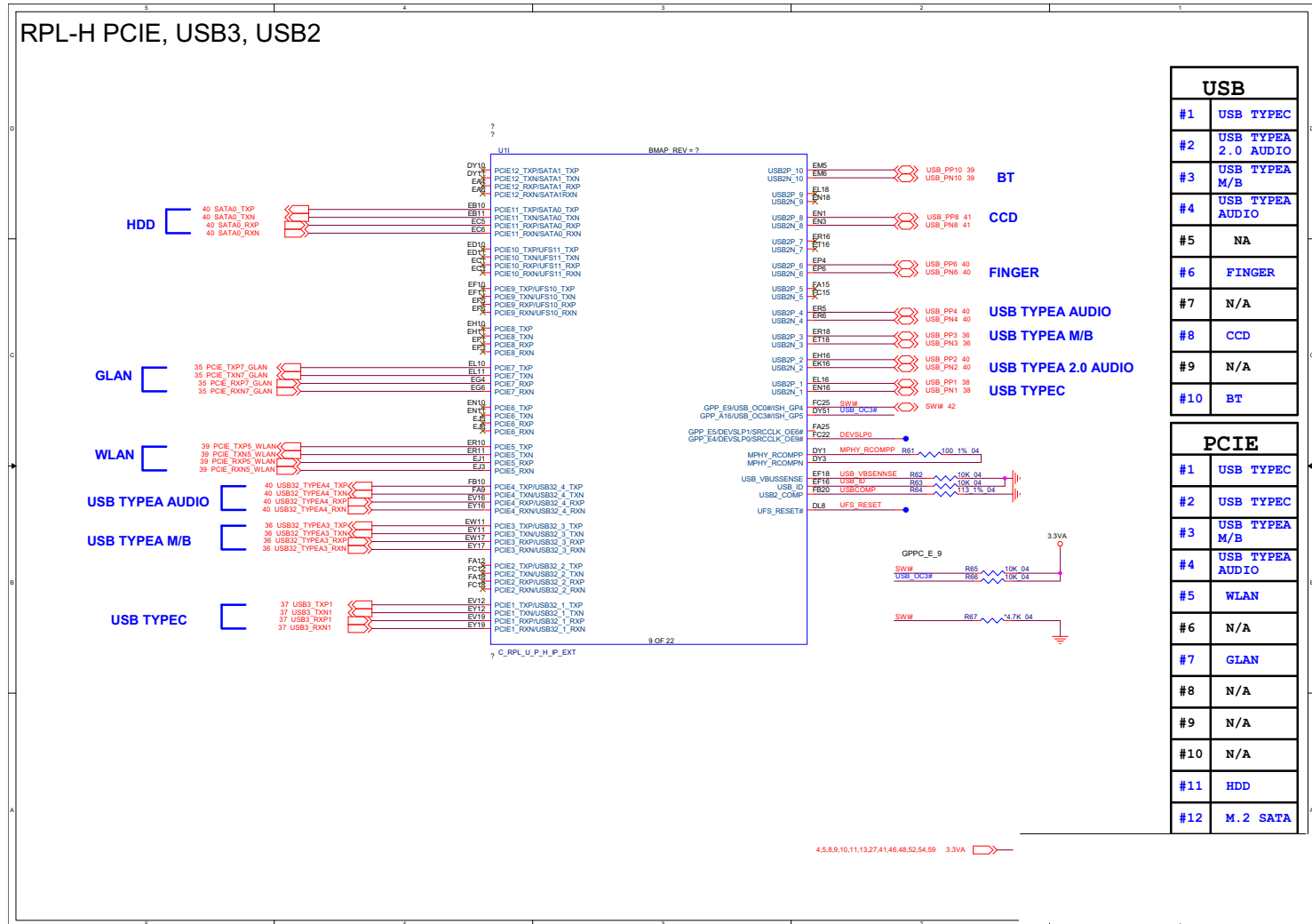
B.Schematic Diagrams



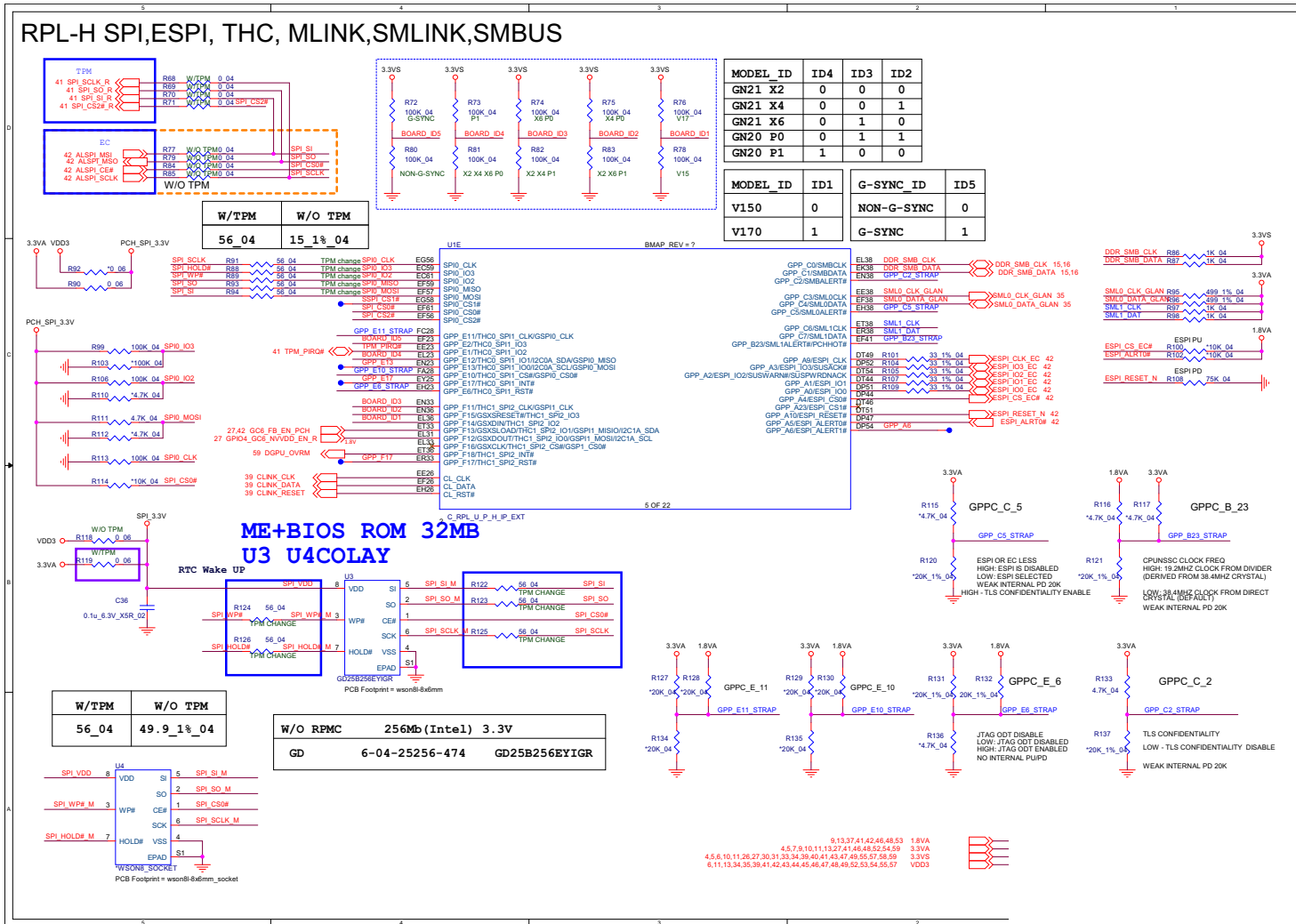
Sheet 6 of 67
Processor 5/13

Processor 6/13

Sheet 7 of 67
Processor 6/13



Processor 7/13

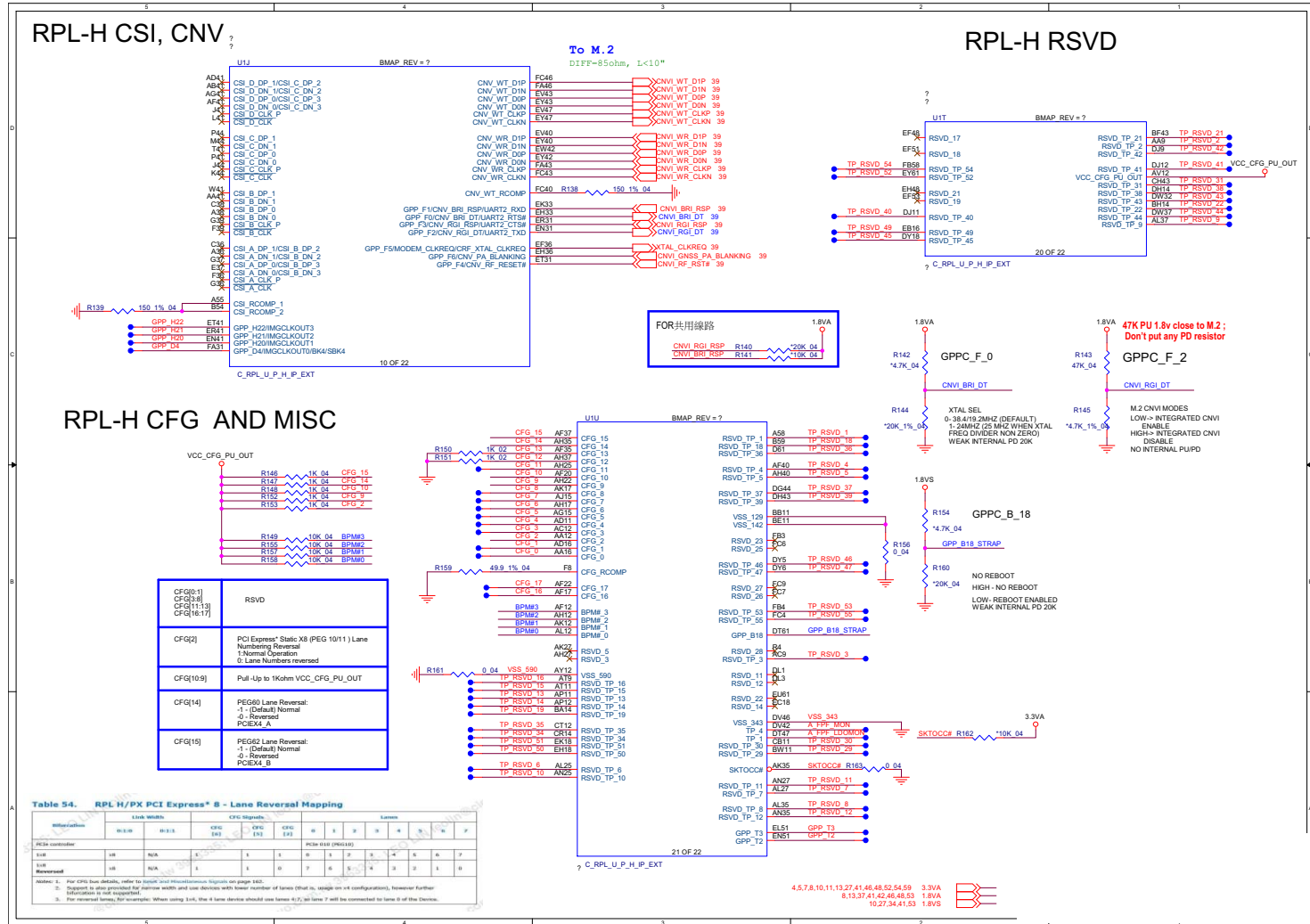


B.Schematic Diagrams

Sheet 8 of 67
Processor 7/13

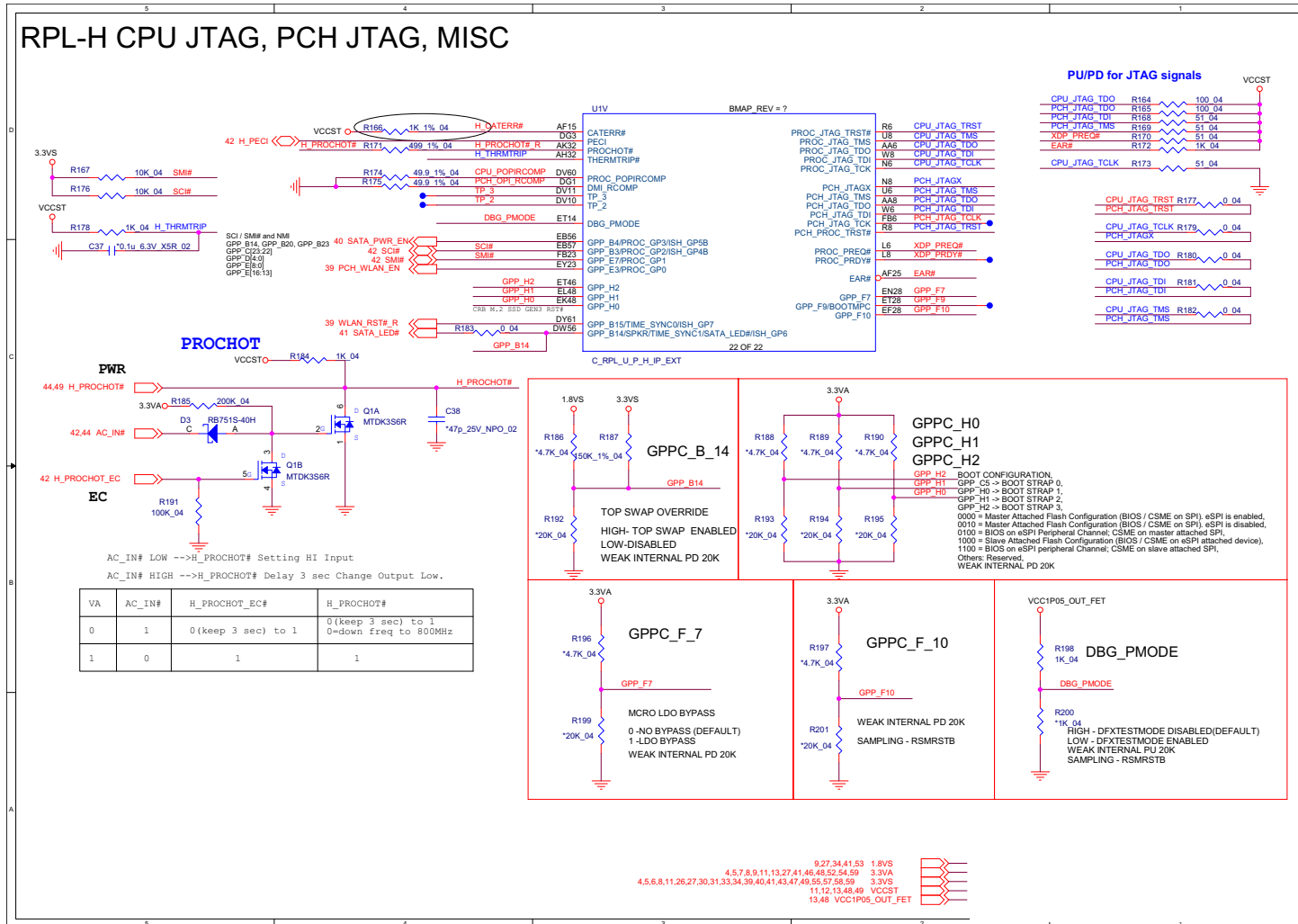
Processor 8/13

Sheet 9 of 67
Processor 8/13

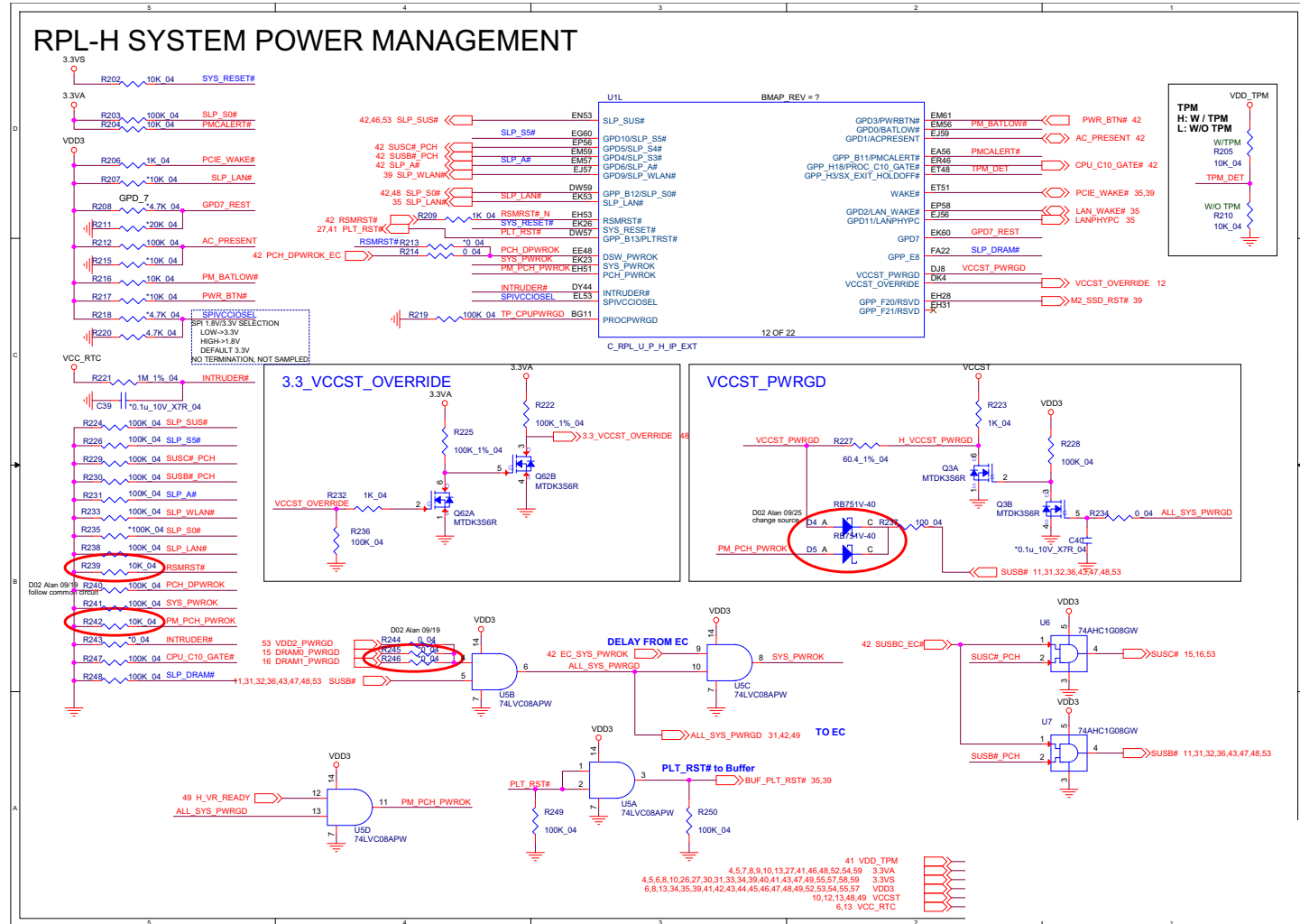


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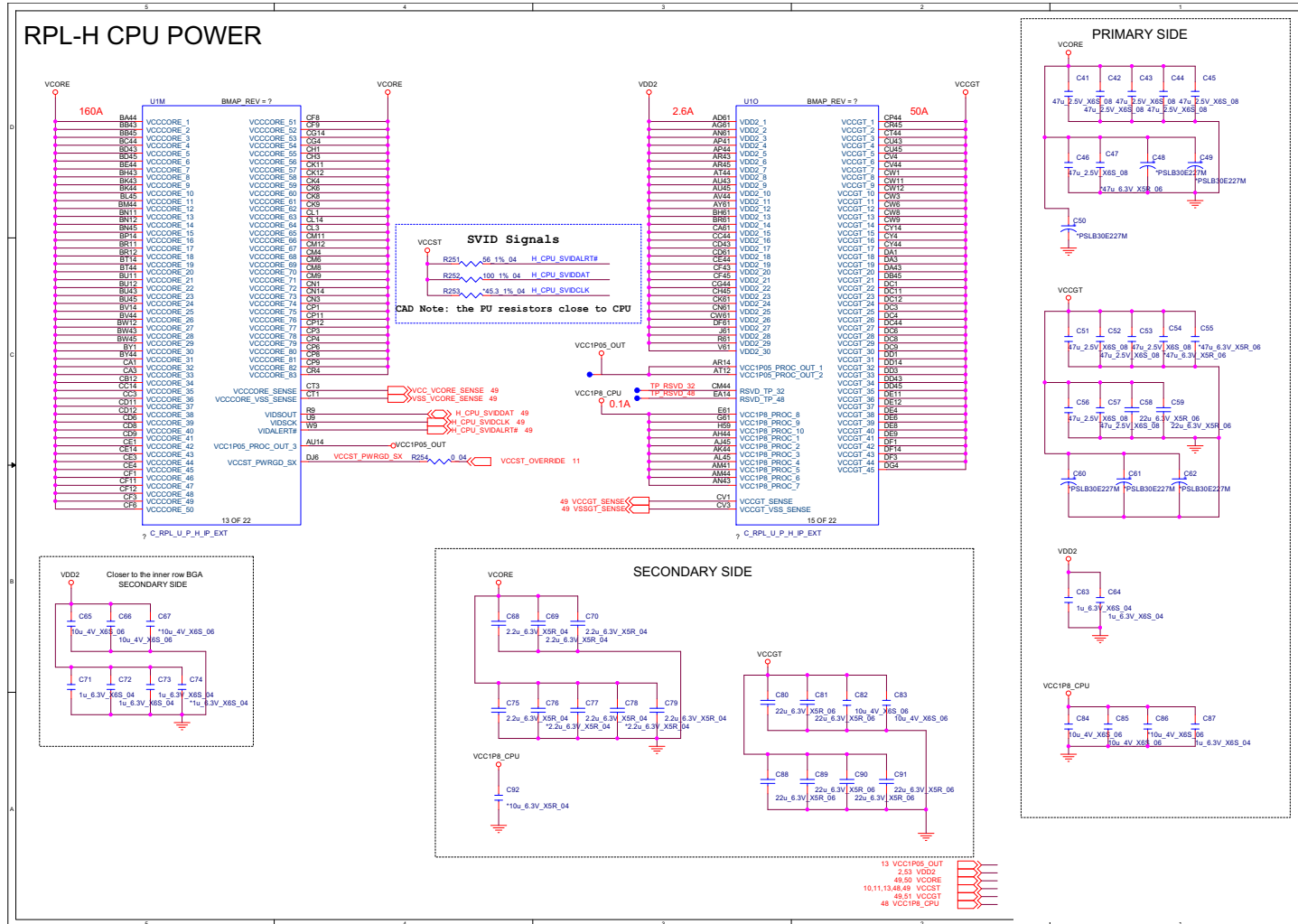
Sheet 10 of 67
Processor 9/13



Processor 10/13

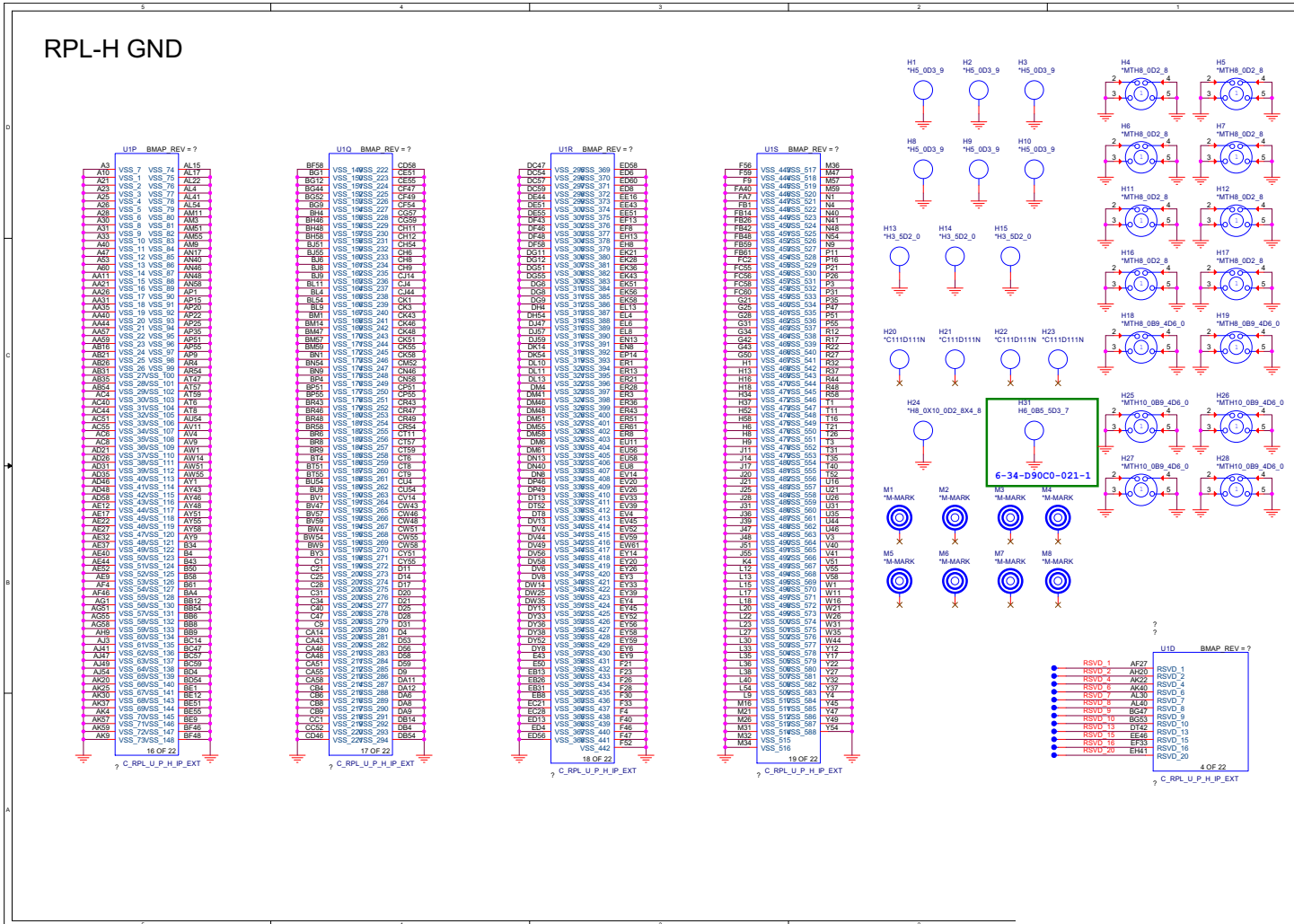


Processor 11/13



Sheet 12 of 67
Processor 11/13

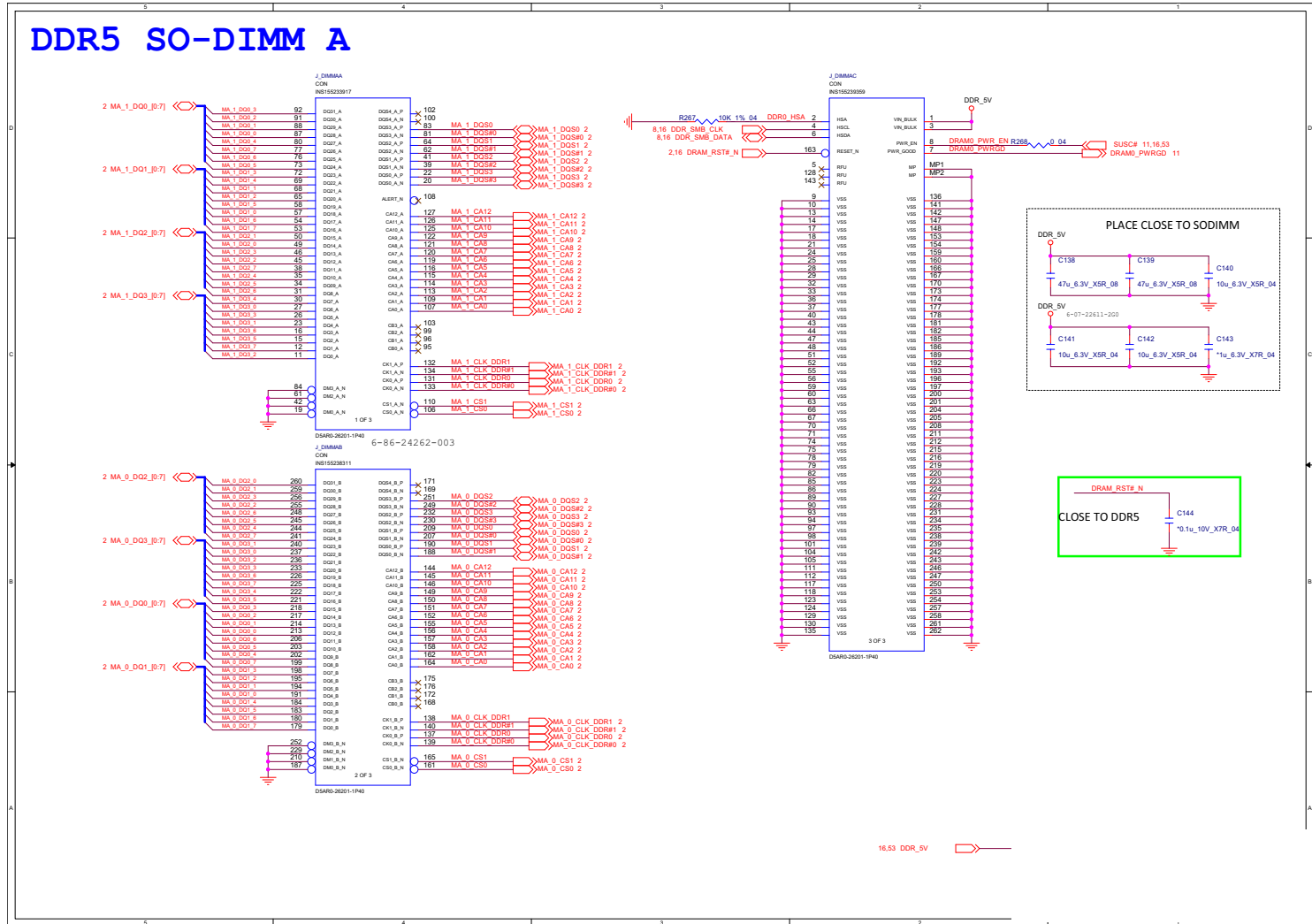
Processor 13/13



Sheet 14 of 67
Processor 13/13

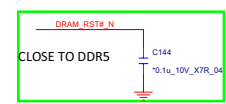
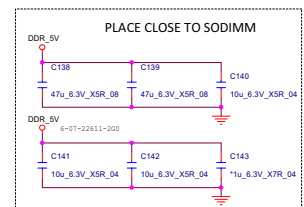
B.Schematic Diagrams

DDR5 CHA SO-DIMM_0

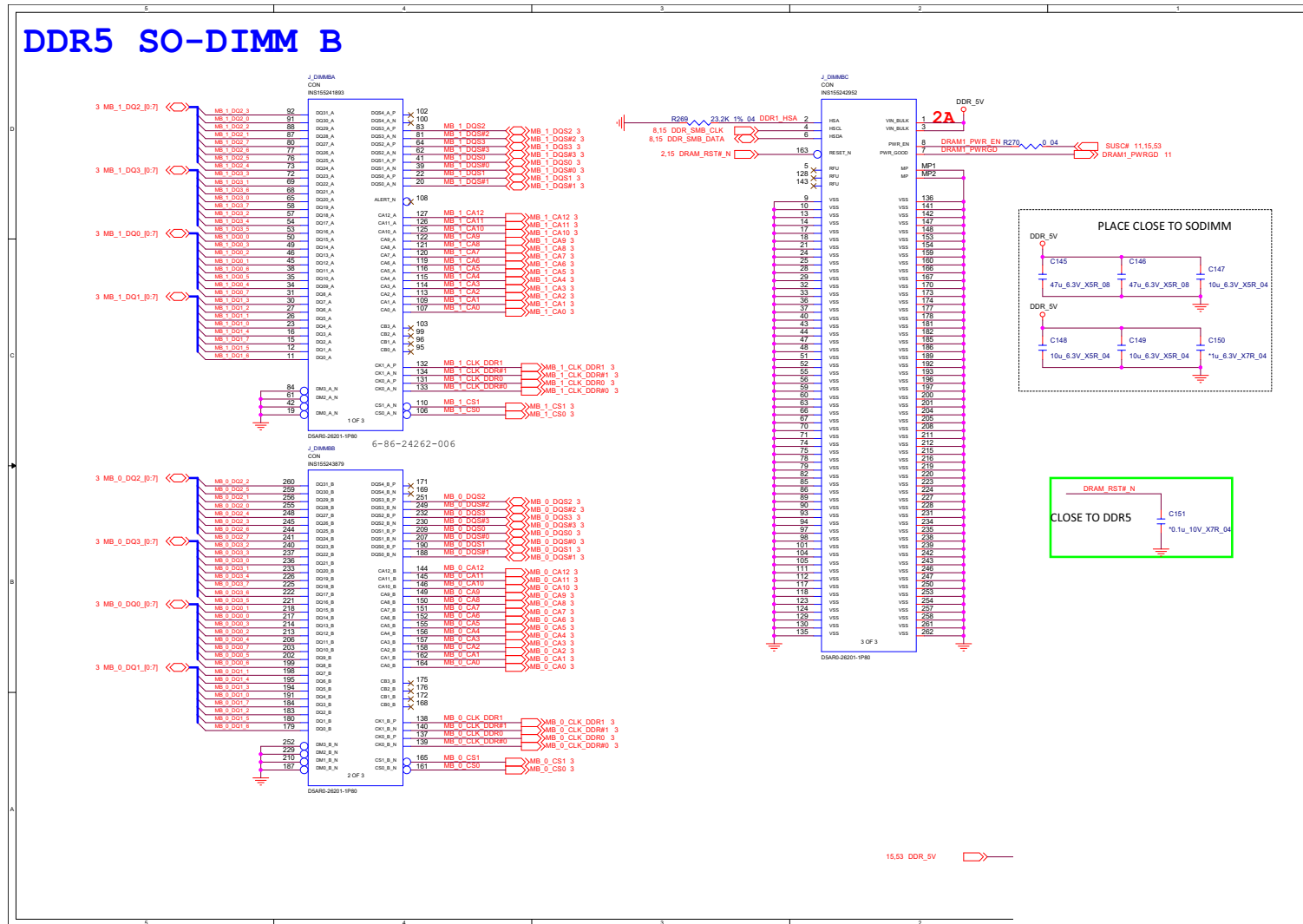


Sheet 15 of 67
DDR5 CHA SO-DIMM_0

B.Schematic Diagrams



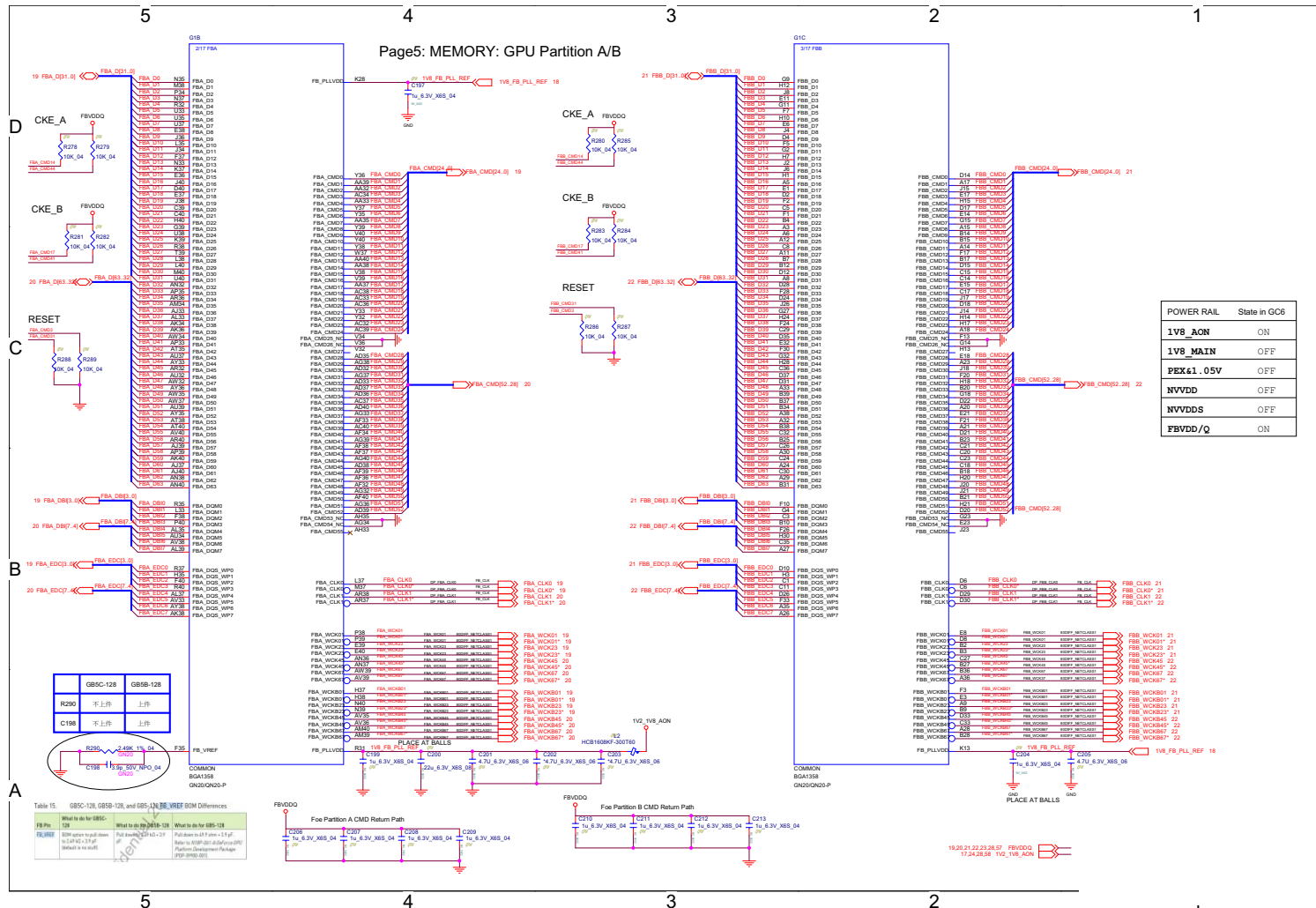
DDR5 CHB SO-DIMM_0



Sheet 16 of 67
DDR5 CHB SO-DIMM_0

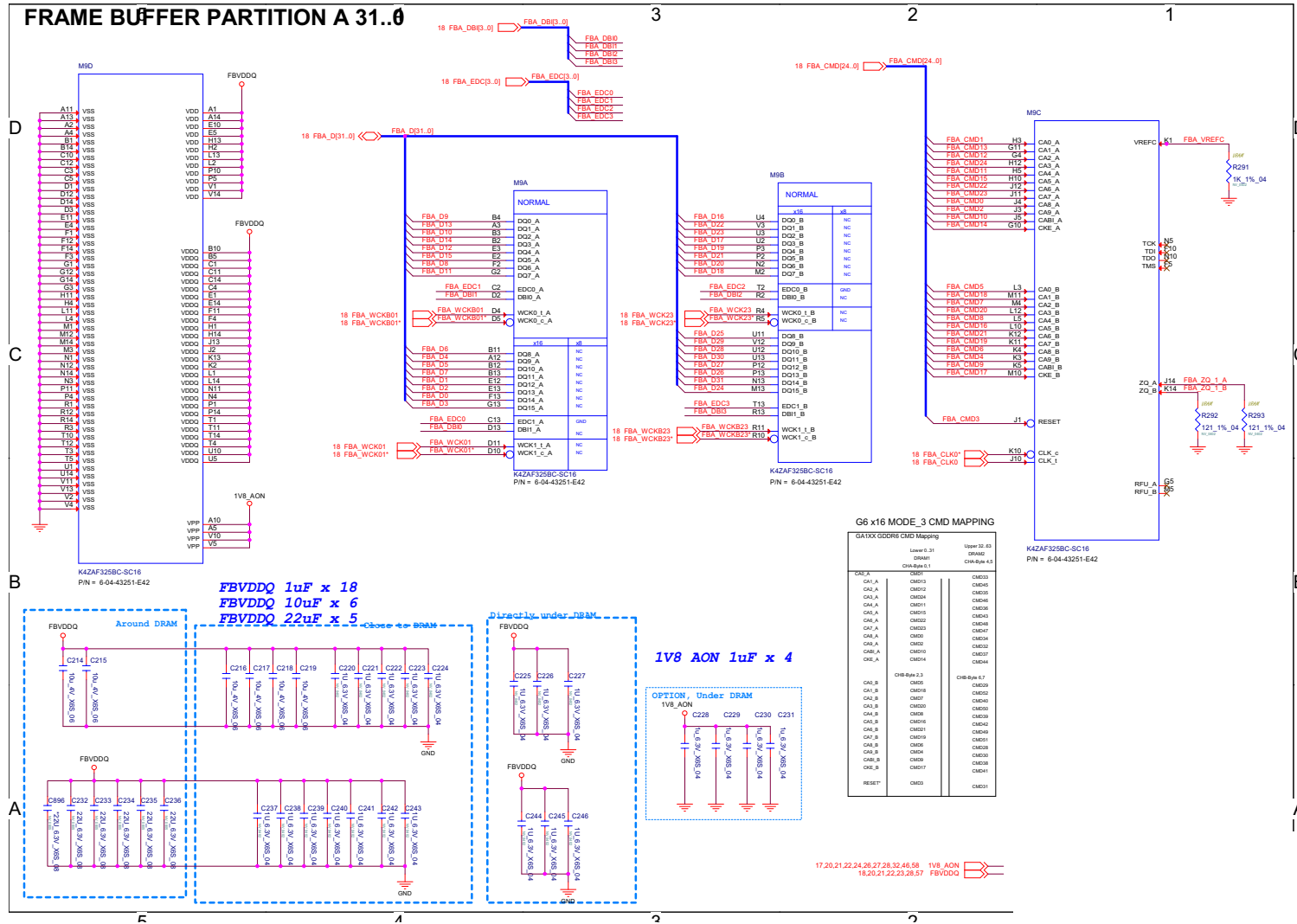
B.Schematic Diagrams

Frame Buffer Partition A/B

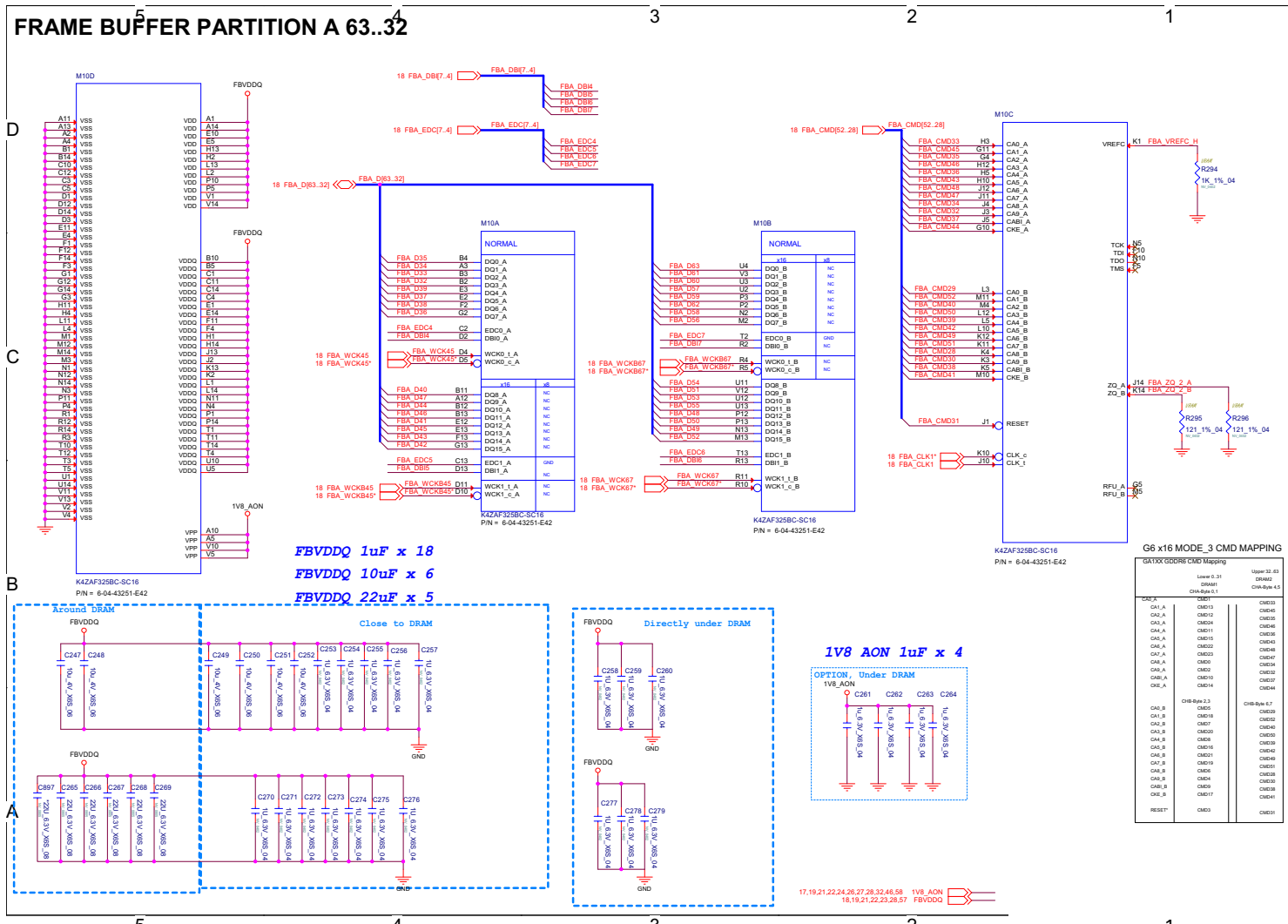


Schematic Diagrams

Frame Buffer A



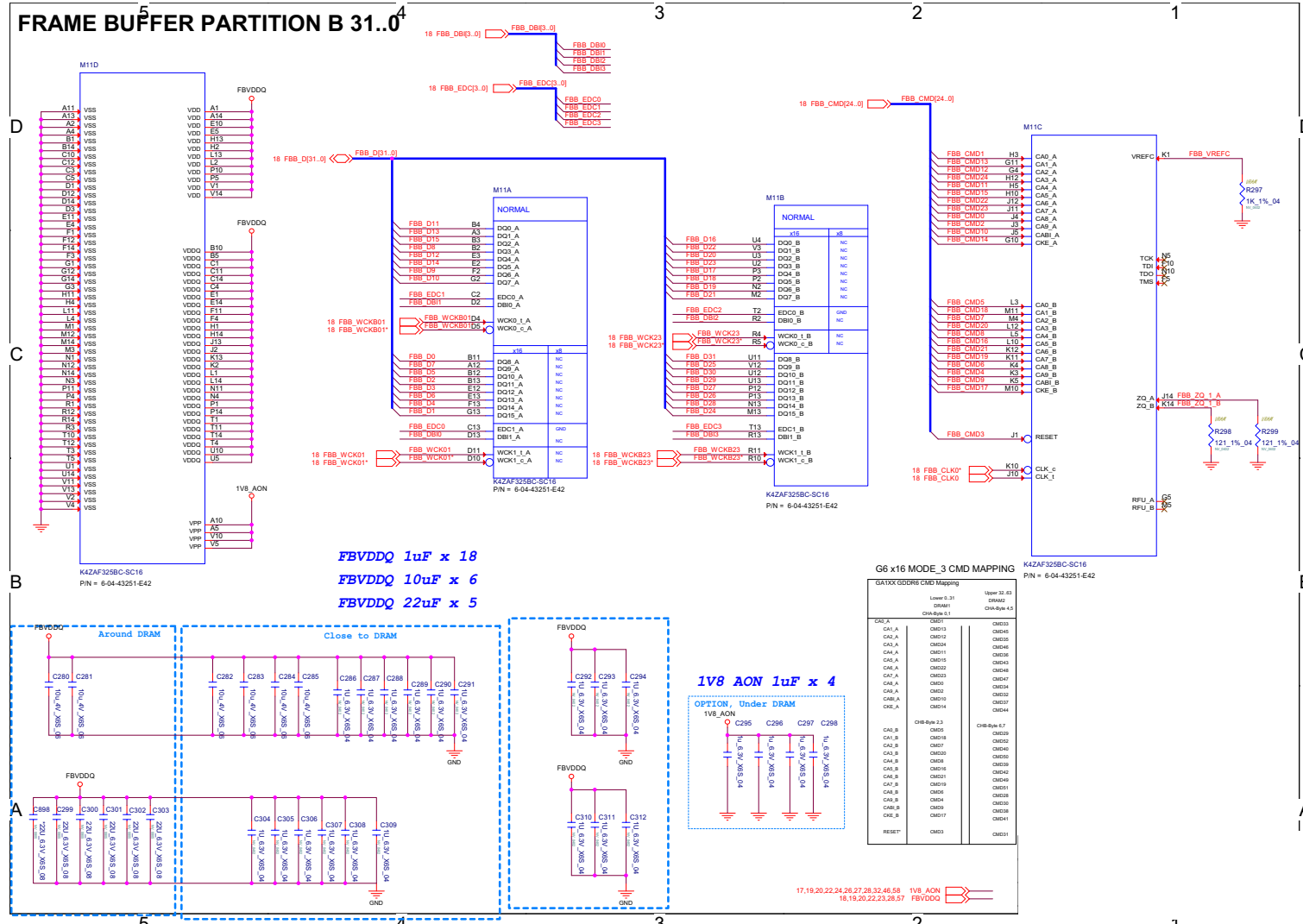
Frame Buffer A



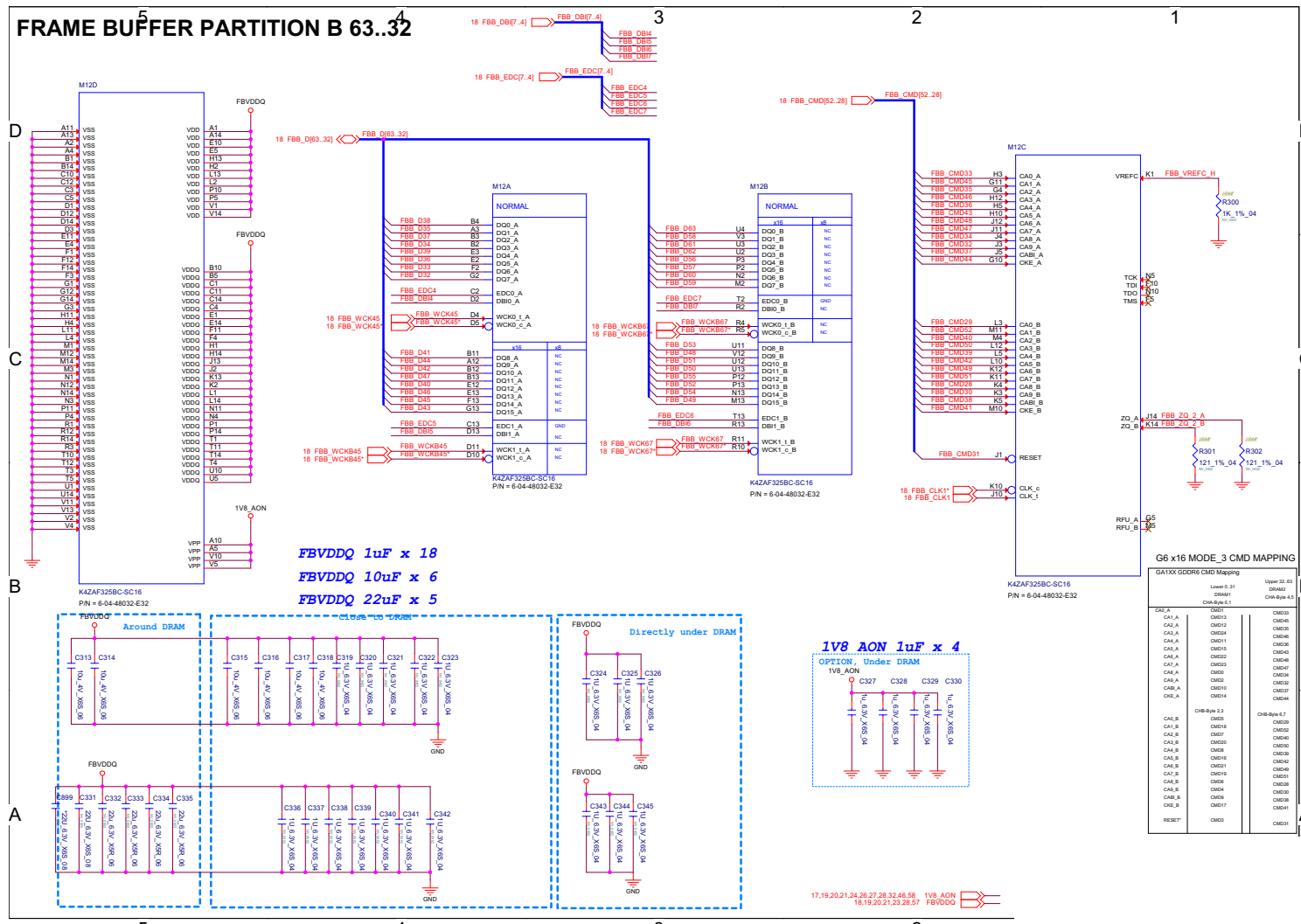
Sheet 20 of 67
 Frame Buffer A

Frame Buffer B

Sheet 21 of 67
Frame Buffer B



Frame Buffer B

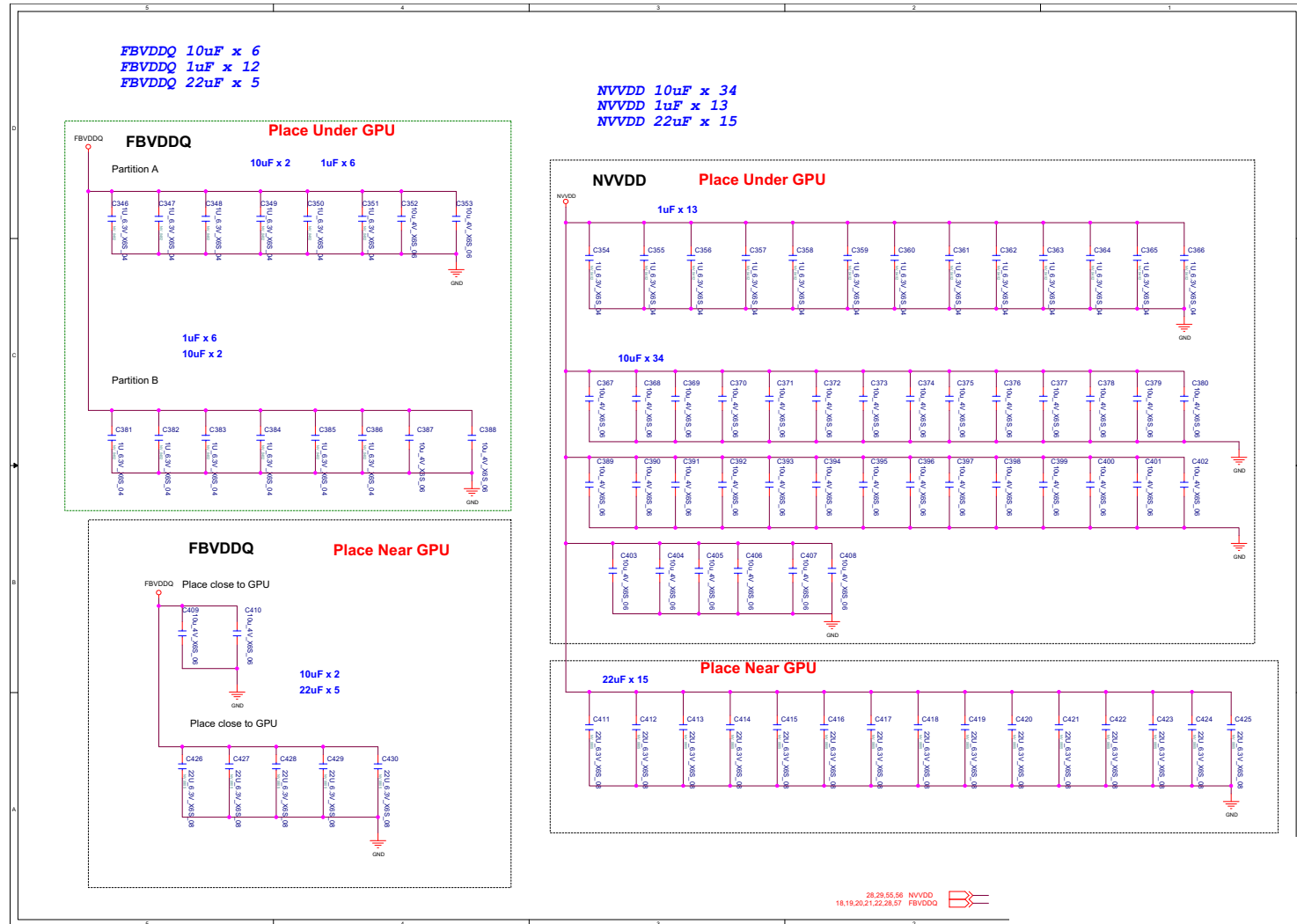


Sheet 22 of 67
Frame Buffer B

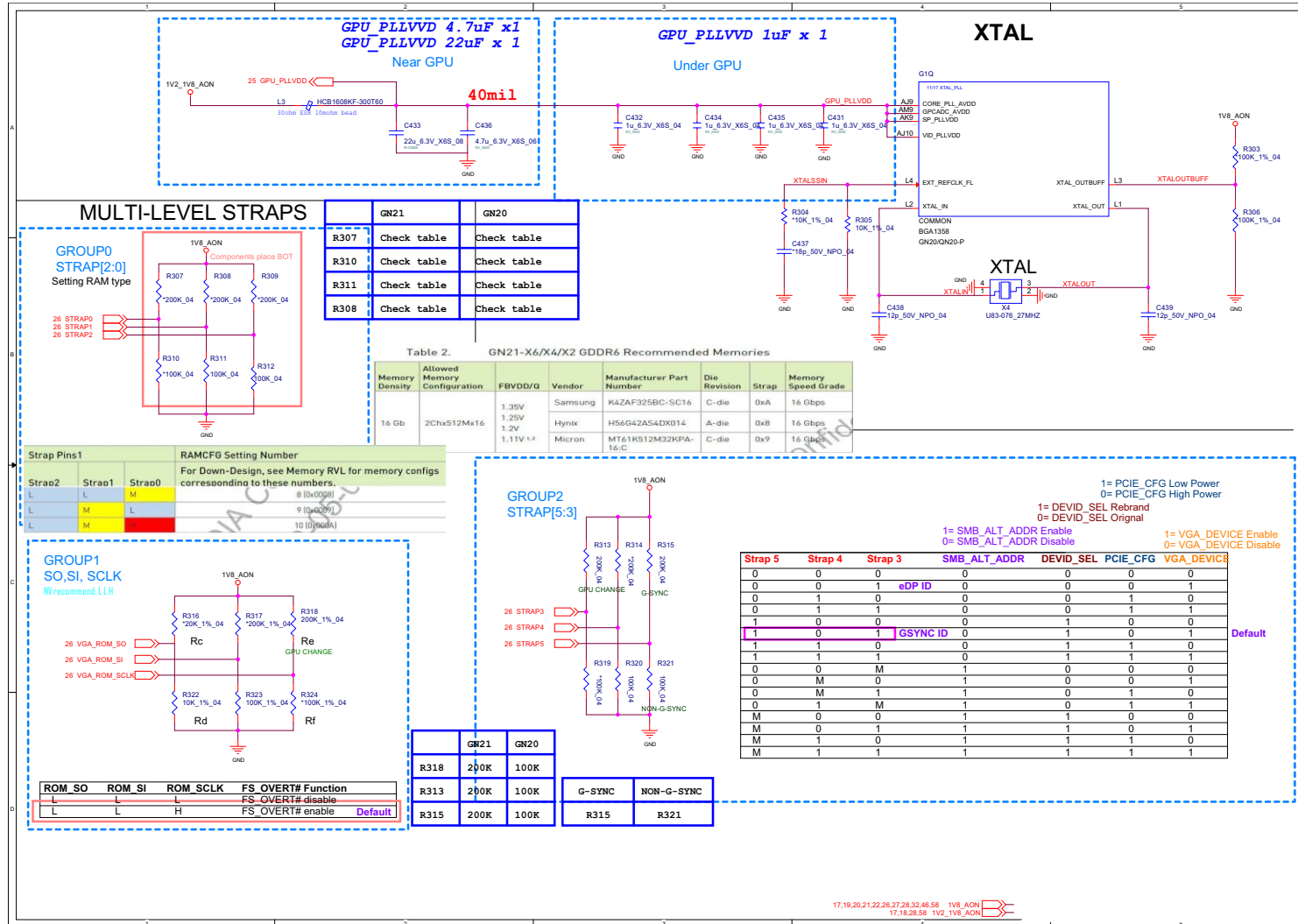
B.Schematic Diagrams

NVDD Coupling

Sheet 23 of 67
NVDD Coupling



Straps and XTAL

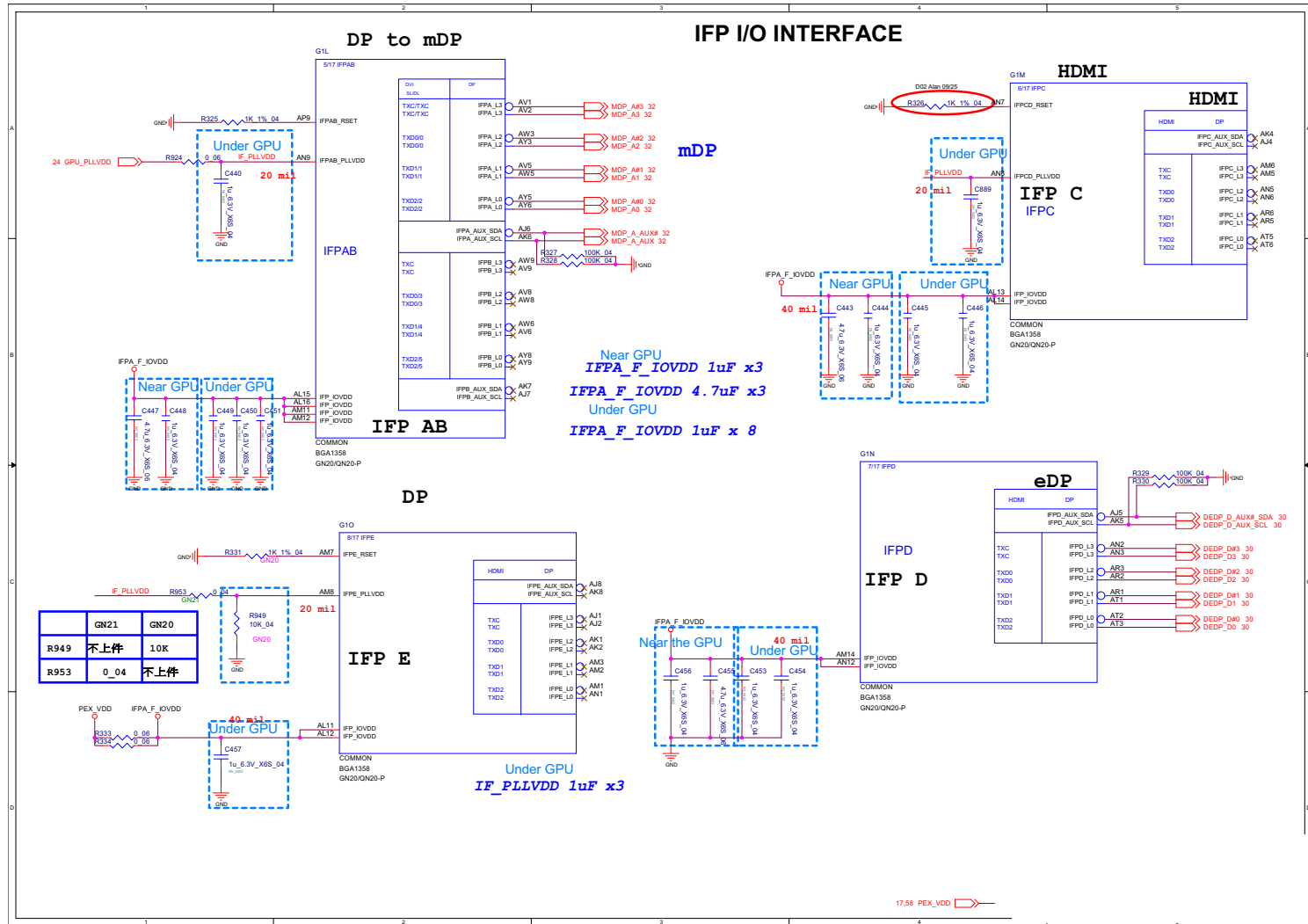


B.Schematic Diagrams

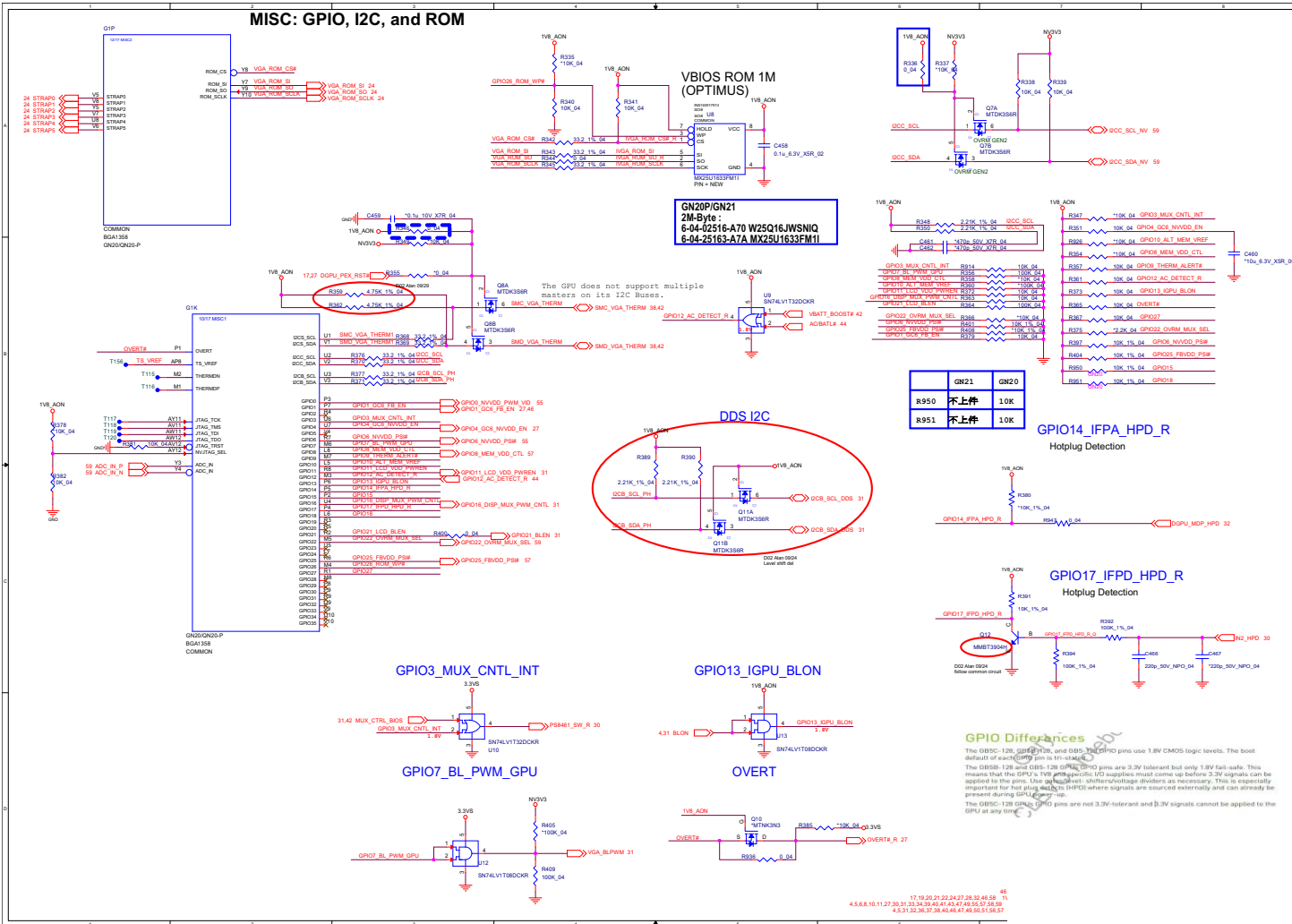
Sheet 24 of 67
 Straps and XTAL

IFP I/O Interface

Sheet 25 of 67
IFP I/O Interface



Misc - GPIO, I2C, VBIOS

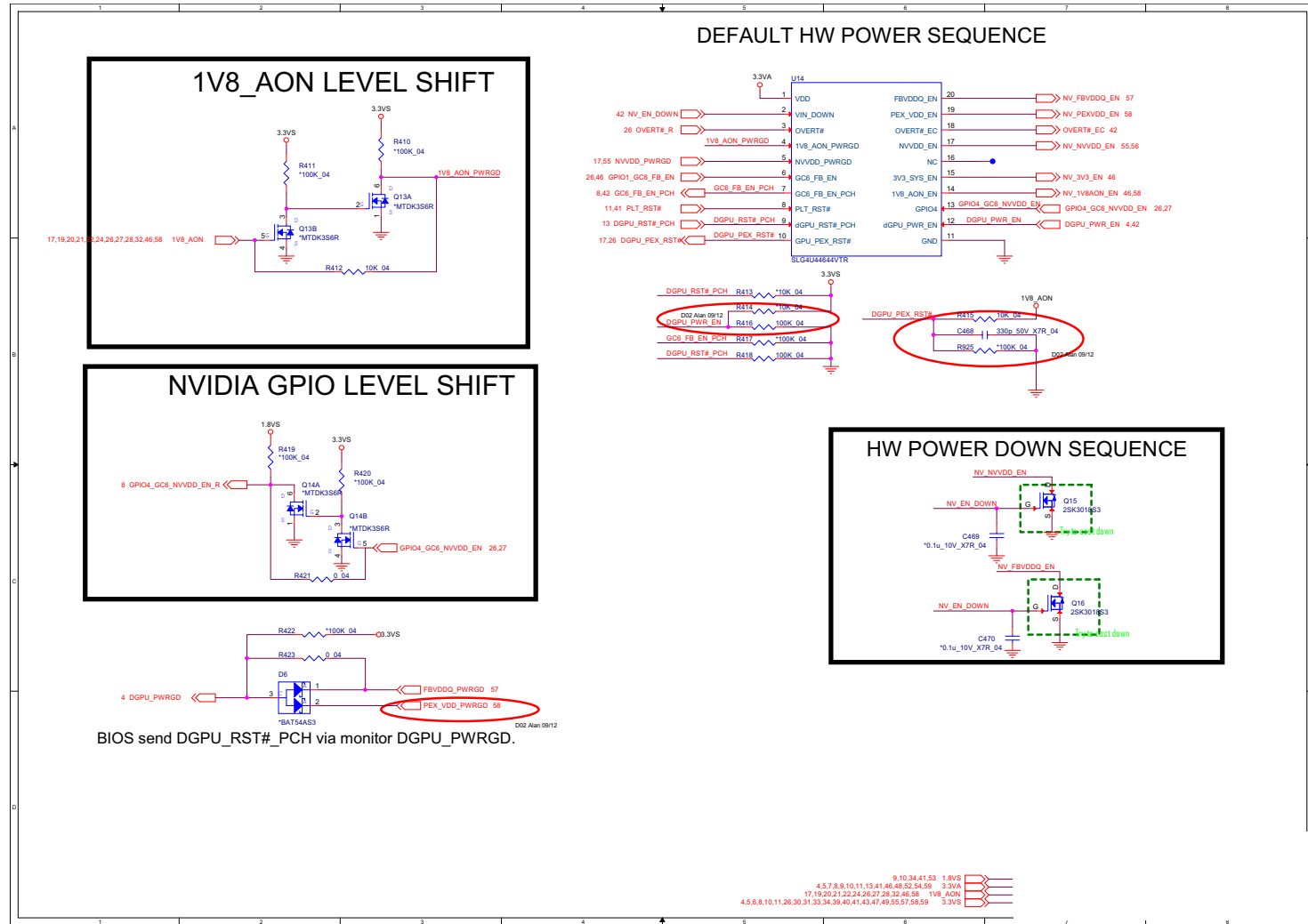


Sheet 26 of 67
 Misc - GPIO, I2C,
 VBIOS

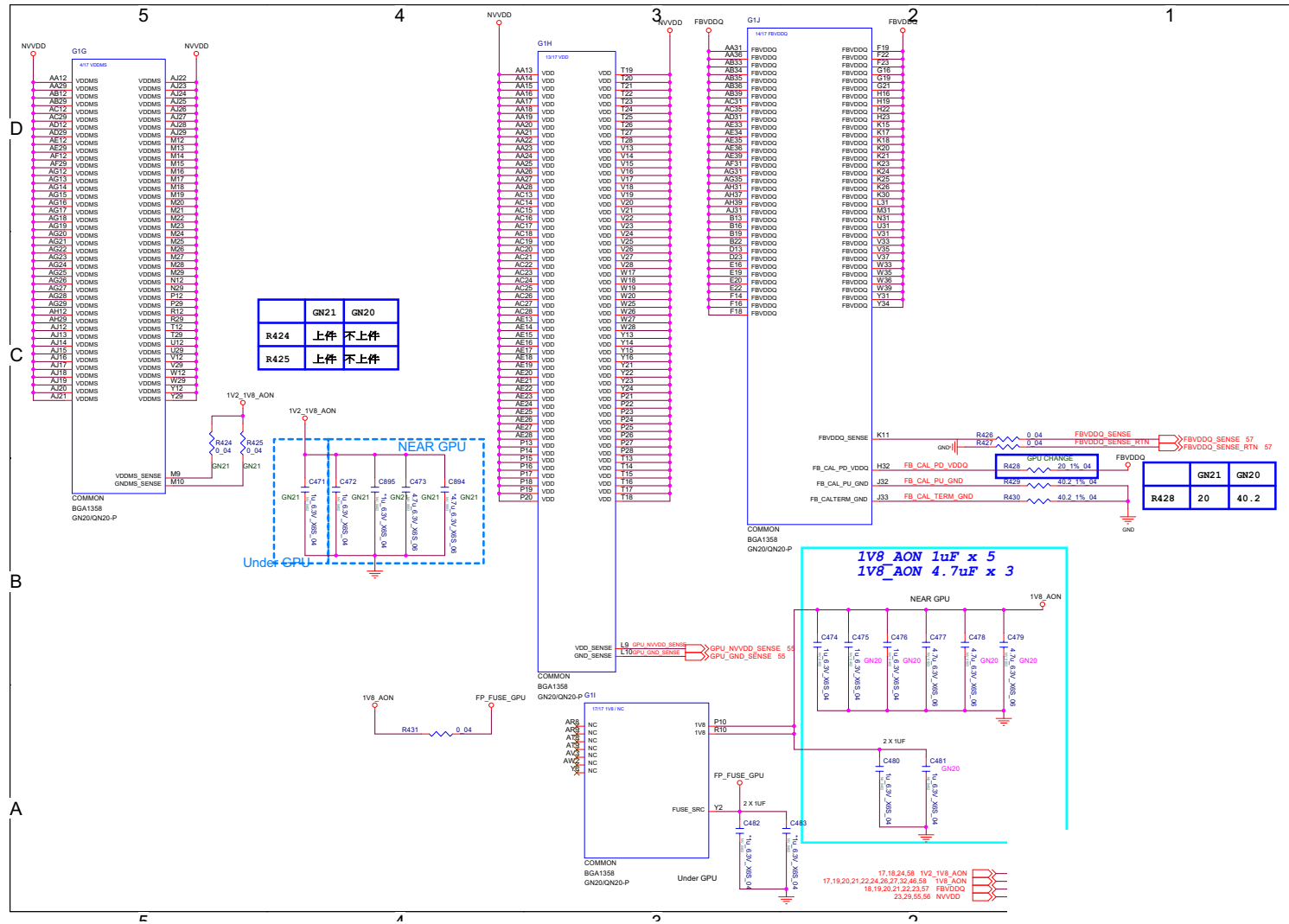
B.Schematic Diagrams

NVIDIA Power Sequence

Sheet 27 of 67
NVIDIA Power Sequence

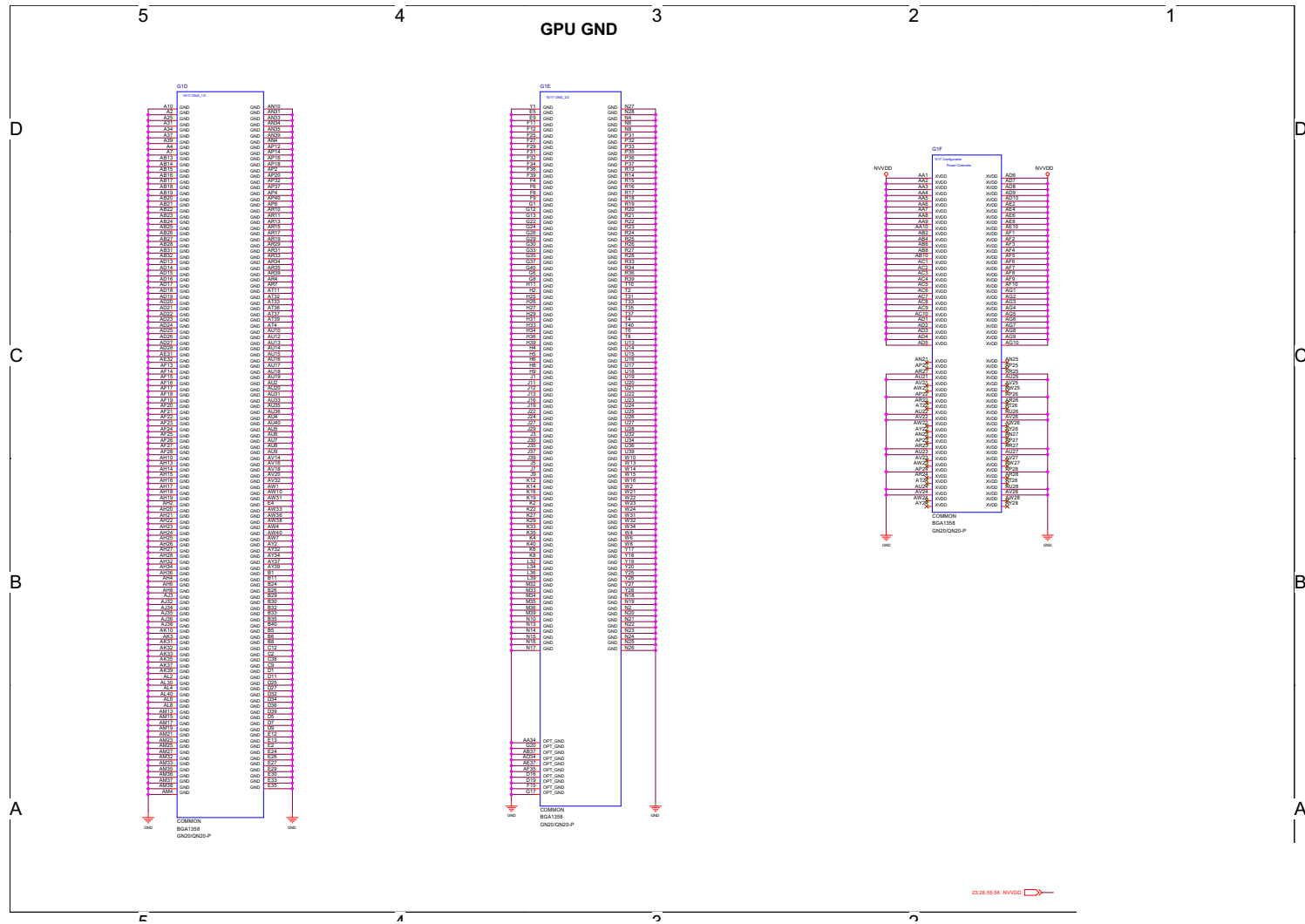


NVVDD, FBVDDQ



Sheet 28 of 67
NVVDD, FBVDDQ

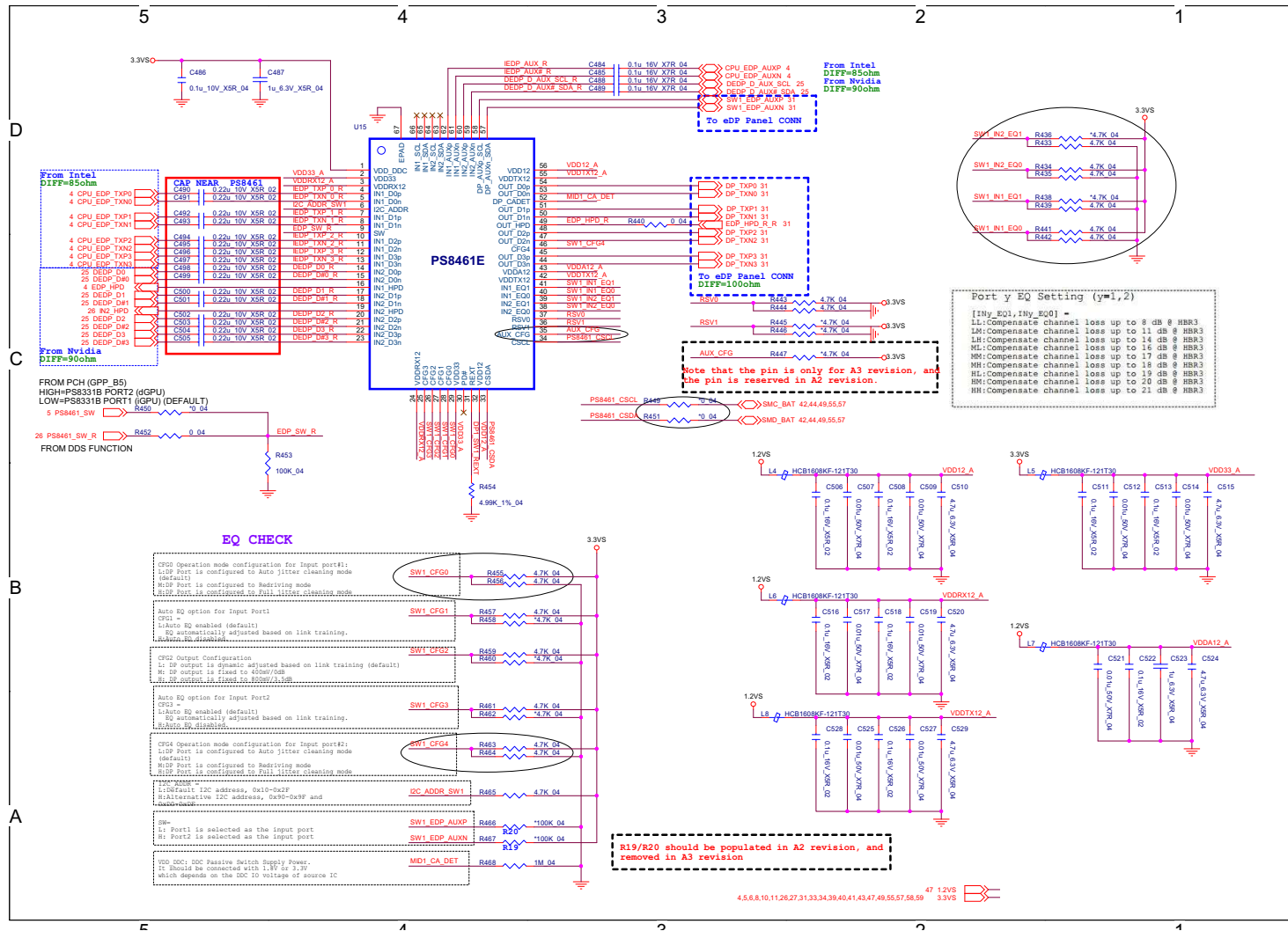
GPU GND



Sheet 29 of 67
GPU GND

B.Schematic Diagrams

PS8461 SW

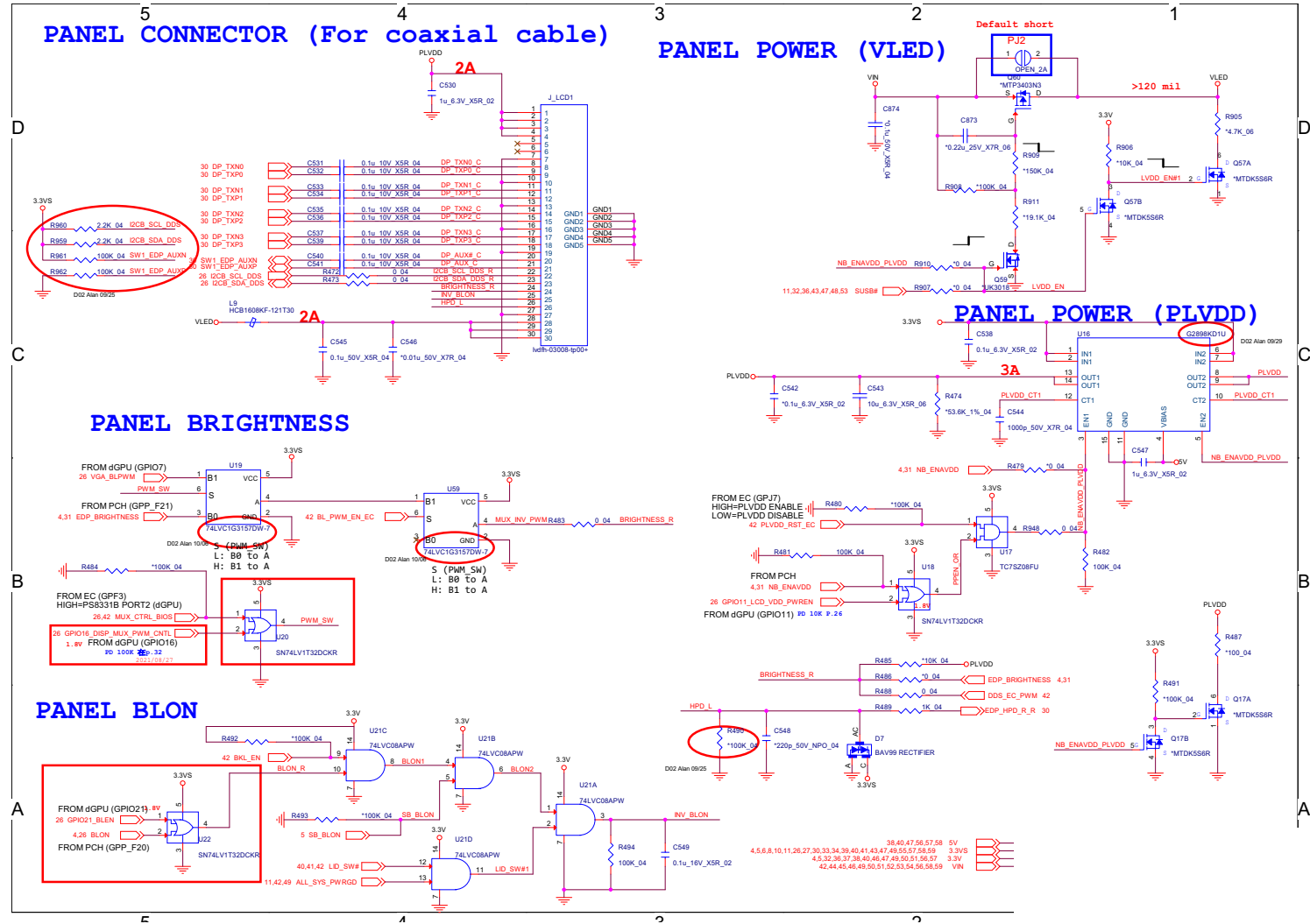


Sheet 30 of 67
PS8461 SW

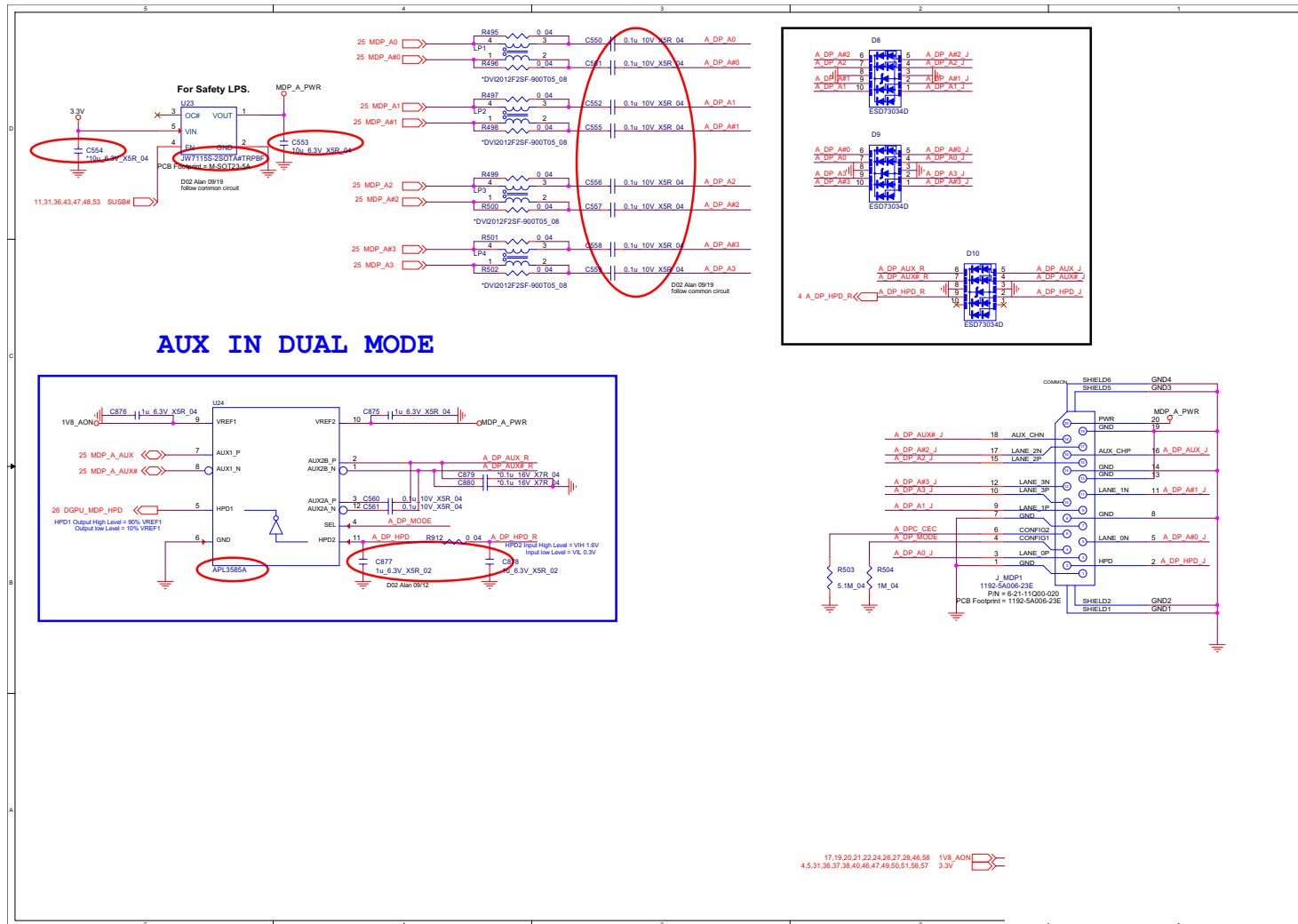
B.Schematic Diagrams

Panel, Inverter

Sheet 31 of 67
Panel, Inverter



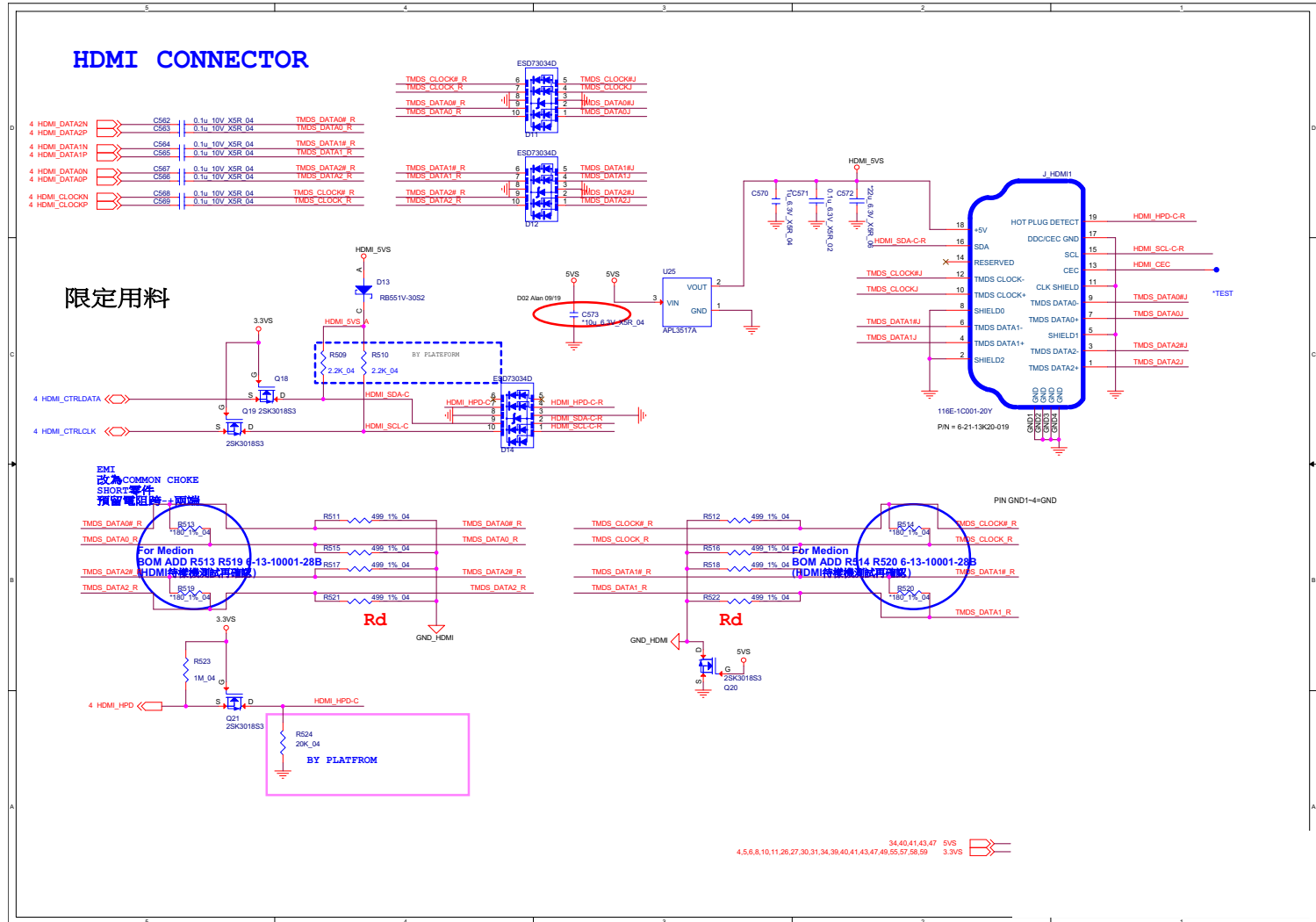
mDP



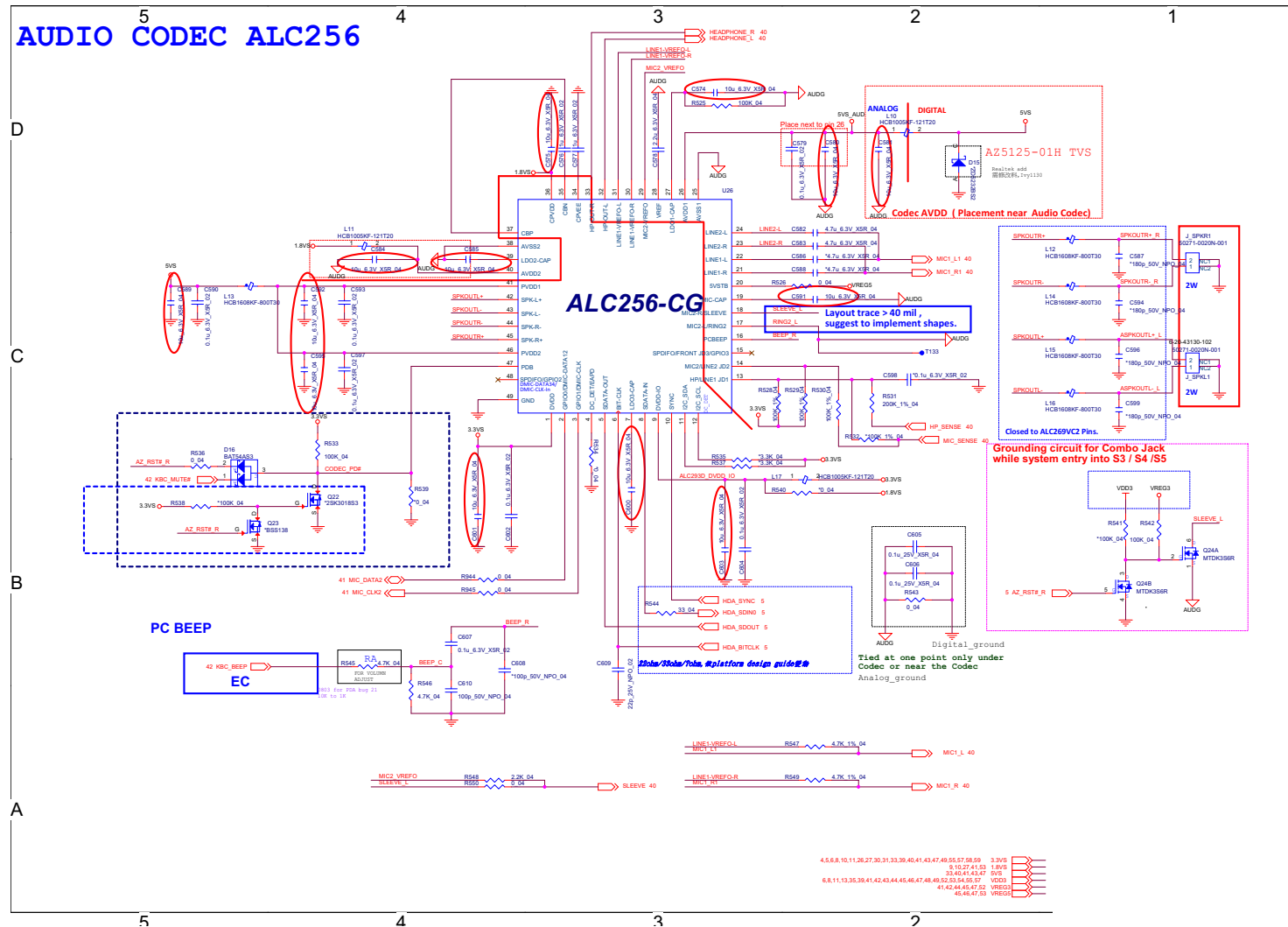
Sheet 32 of 67
mDP

HDMI

Sheet 33 of 67
HDMI



Audio Codec

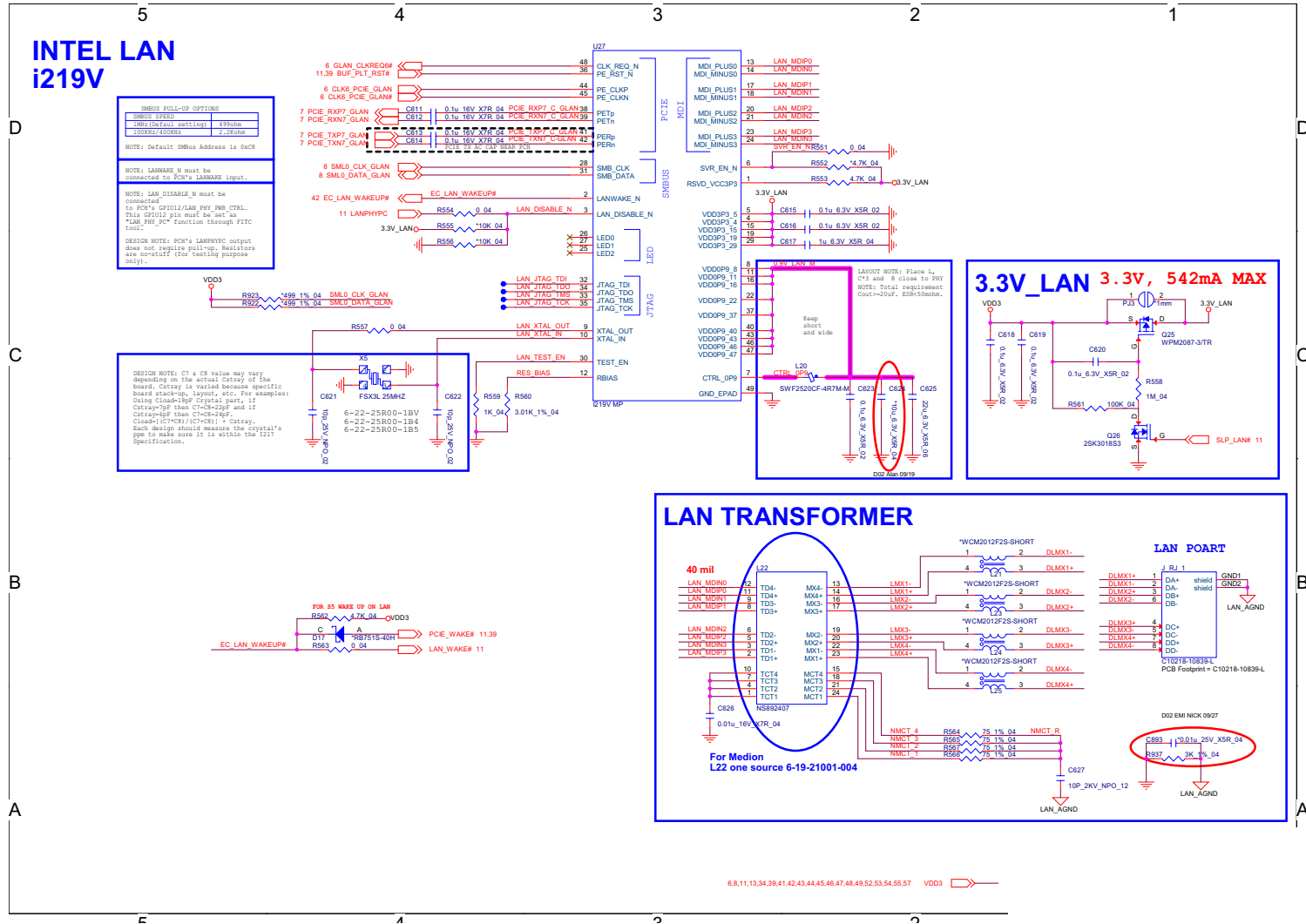


Sheet 34 of 67
Audio Codec

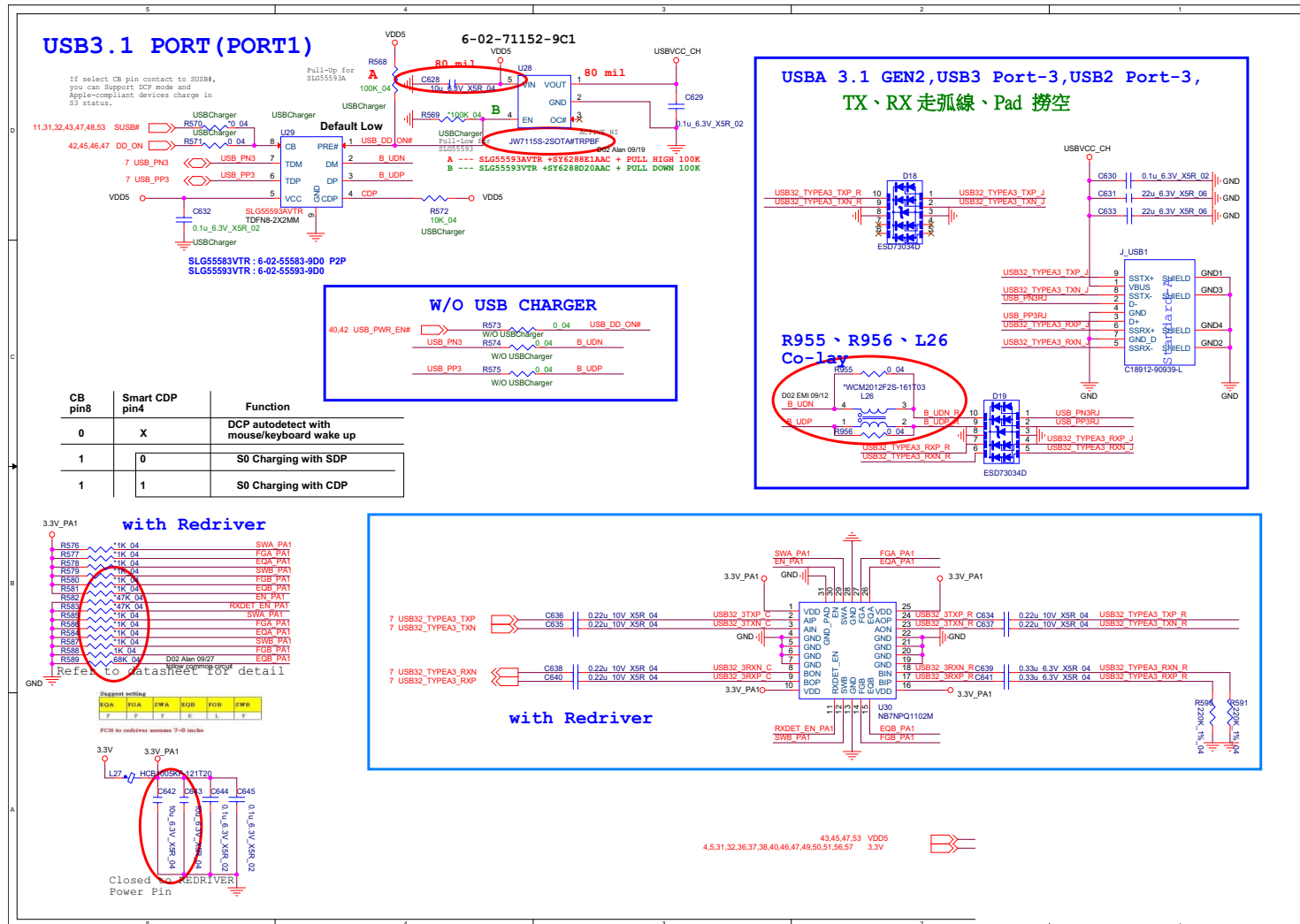
B.Schematic Diagrams

LAN i219V

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LAN i219V



USB Gen2 Type-A

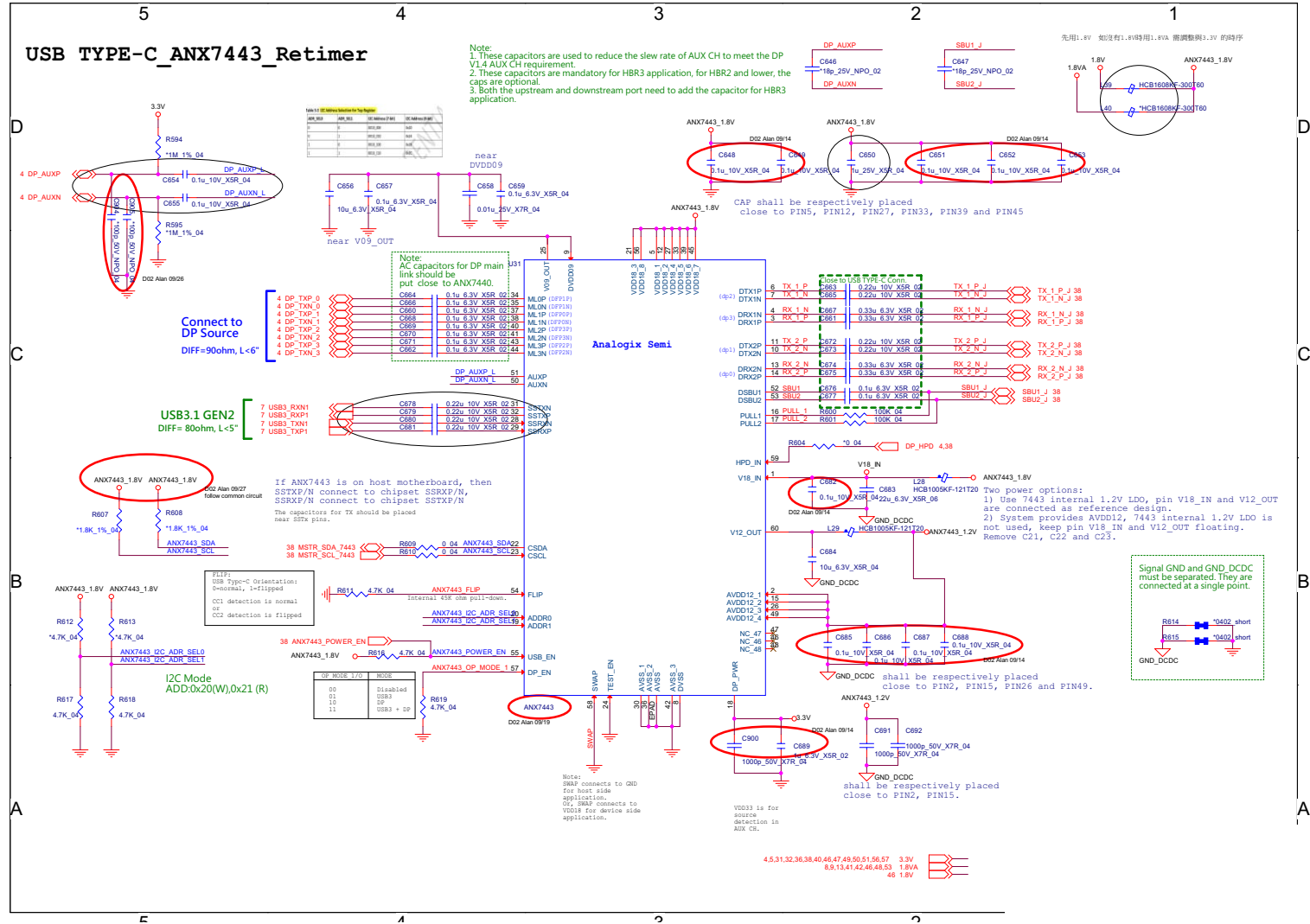


Sheet 36 of 67
USB Gen2 Type-A

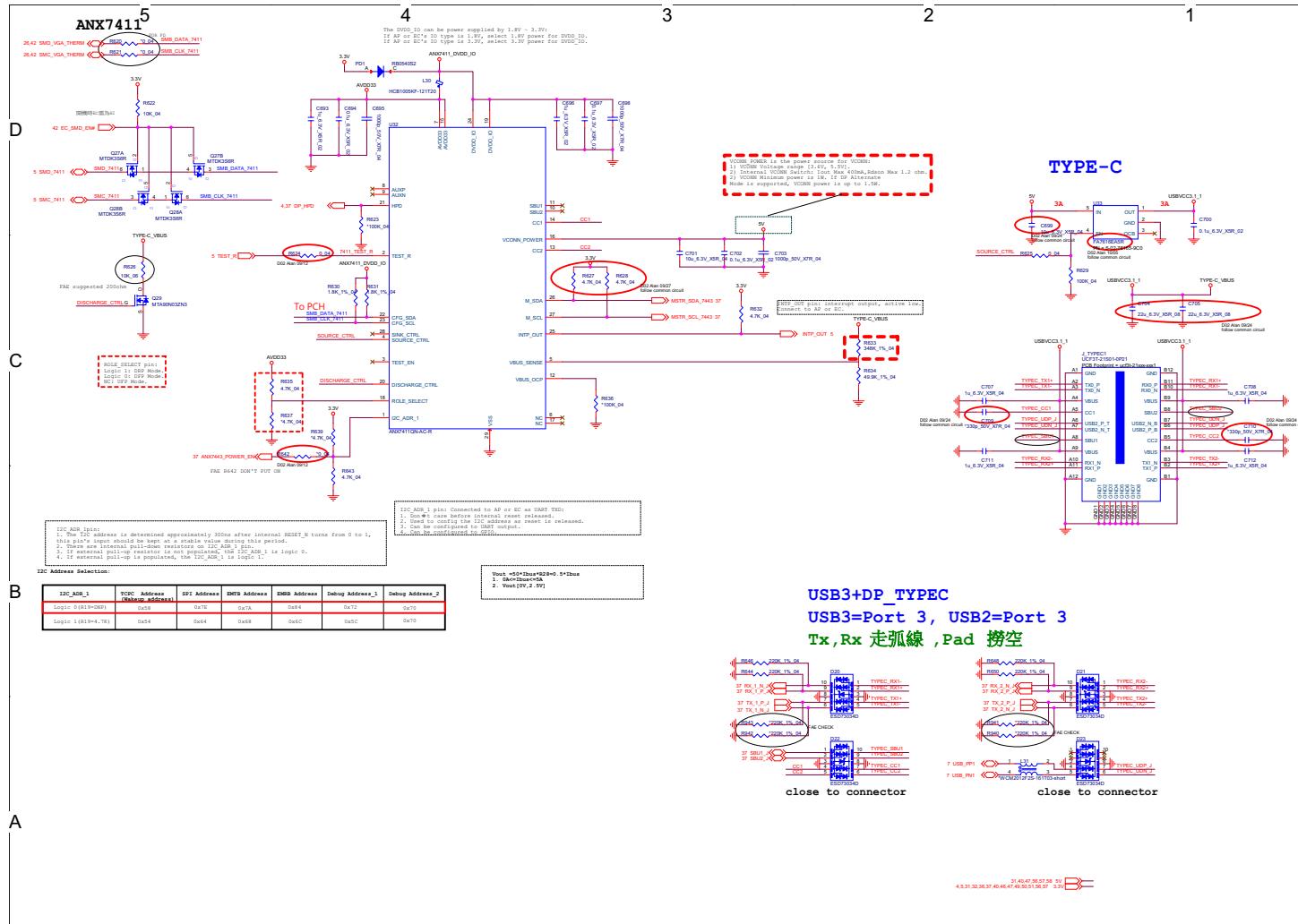
B.Schematic Diagrams

ANX7443

Sheet 37 of 67
ANX7443



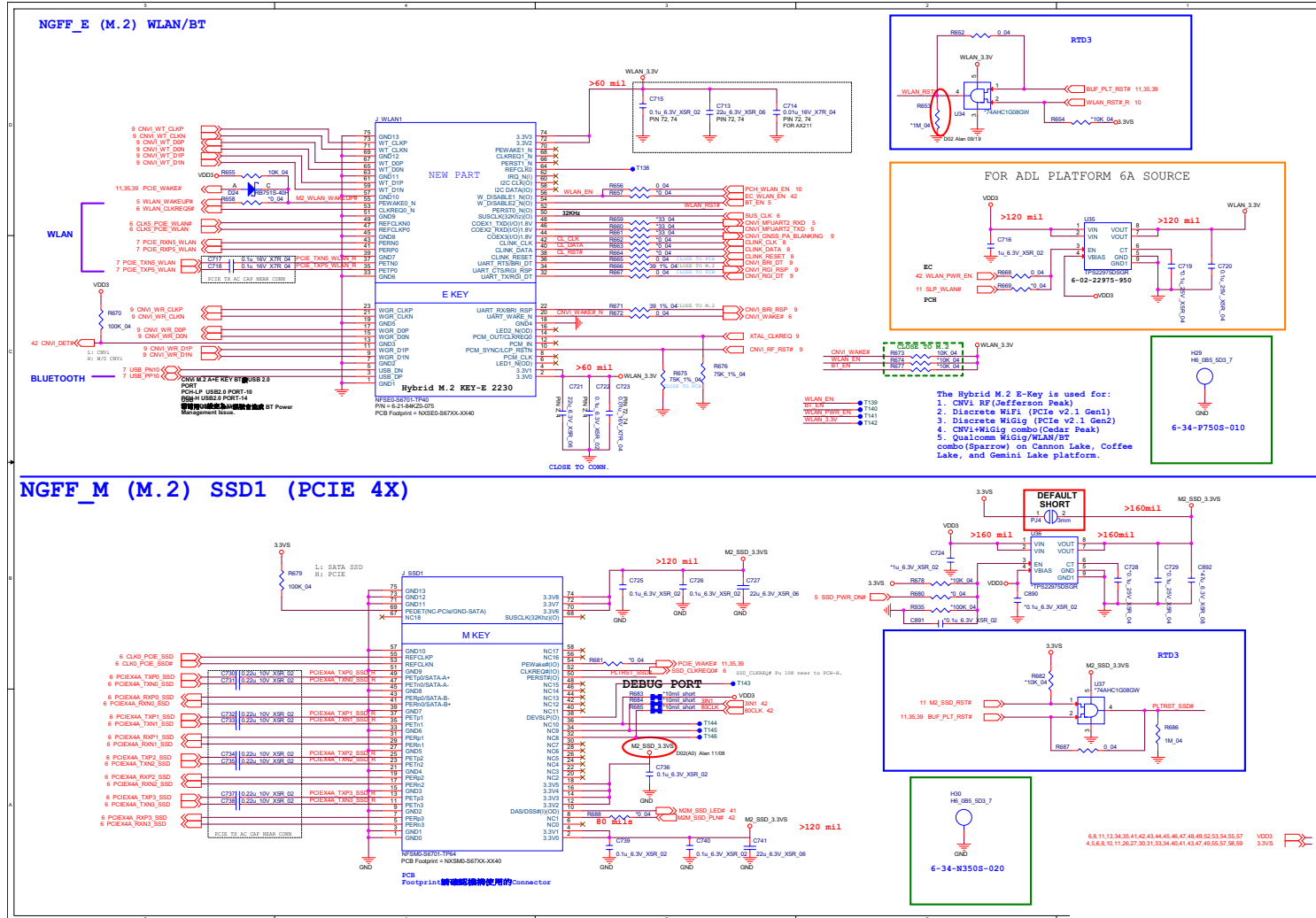
PD Controller



Sheet 38 of 67
PD Controller

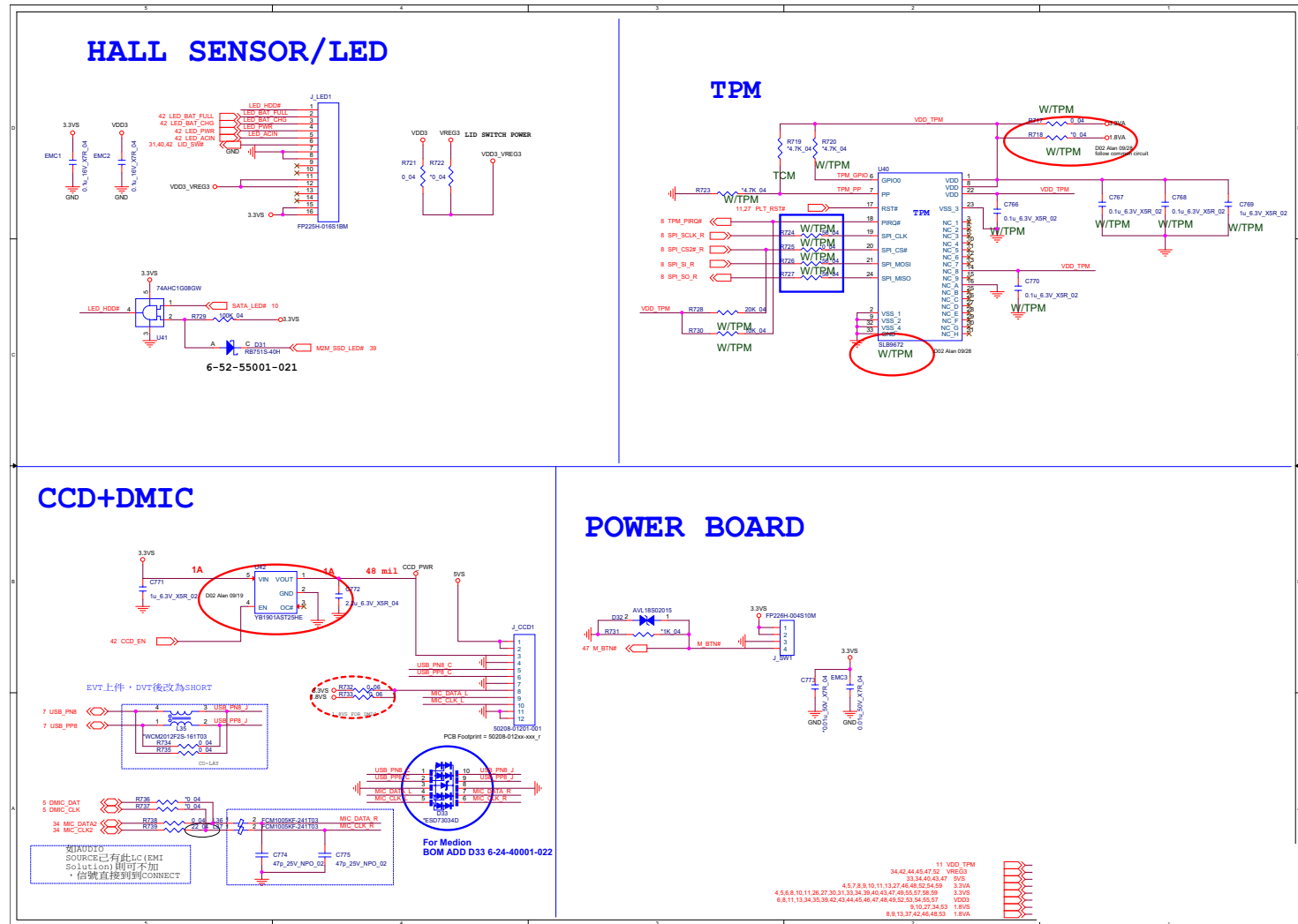
M.2 WLAN, BT, PCIE 4X SSD

Sheet 39 of 67
M.2 WLAN, BT,
PCIE 4X SSD

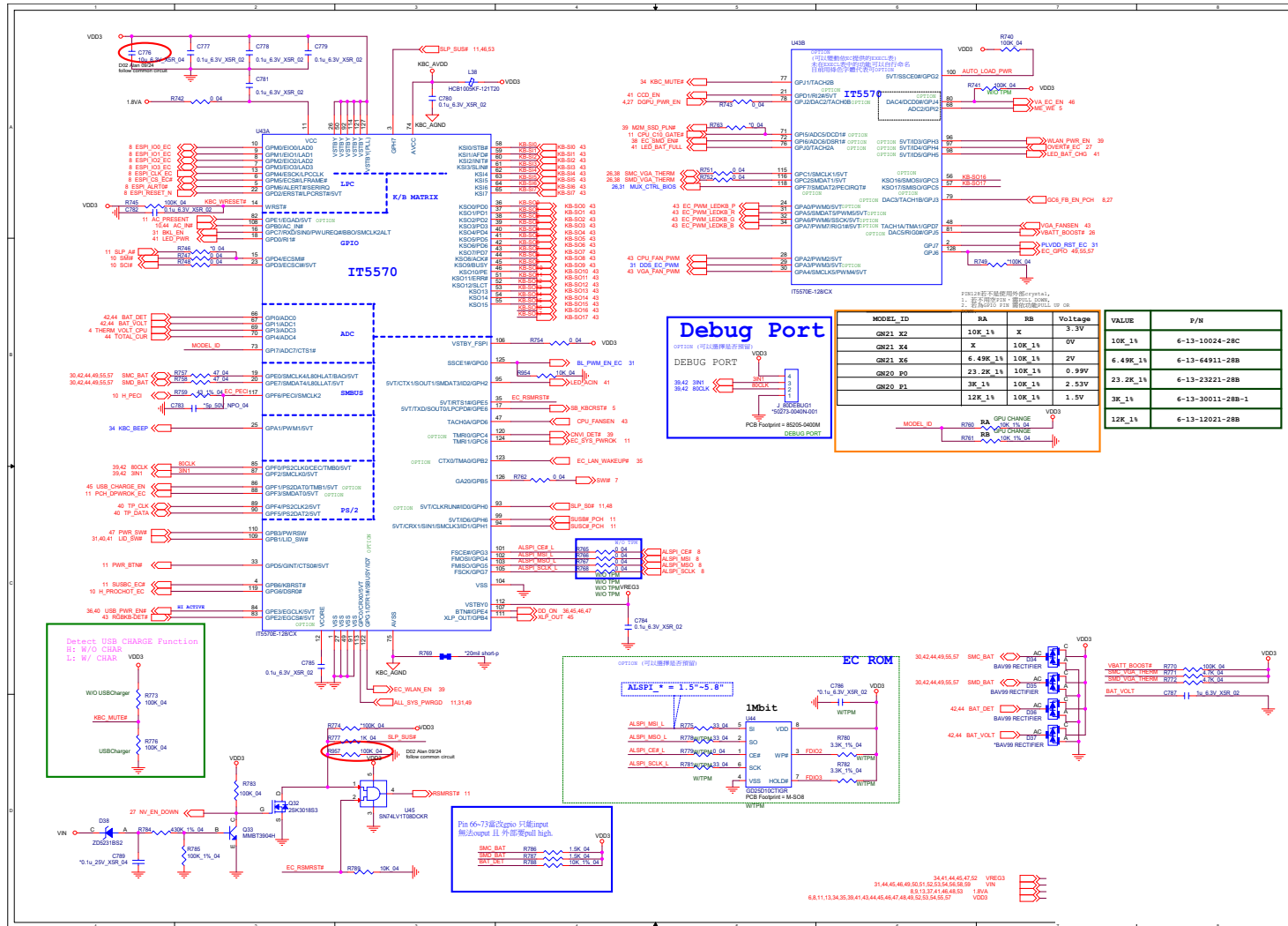


LED, CCD, TPM, Power SW

Sheet 41 of 67
LED, CCD, TPM,
Power SW



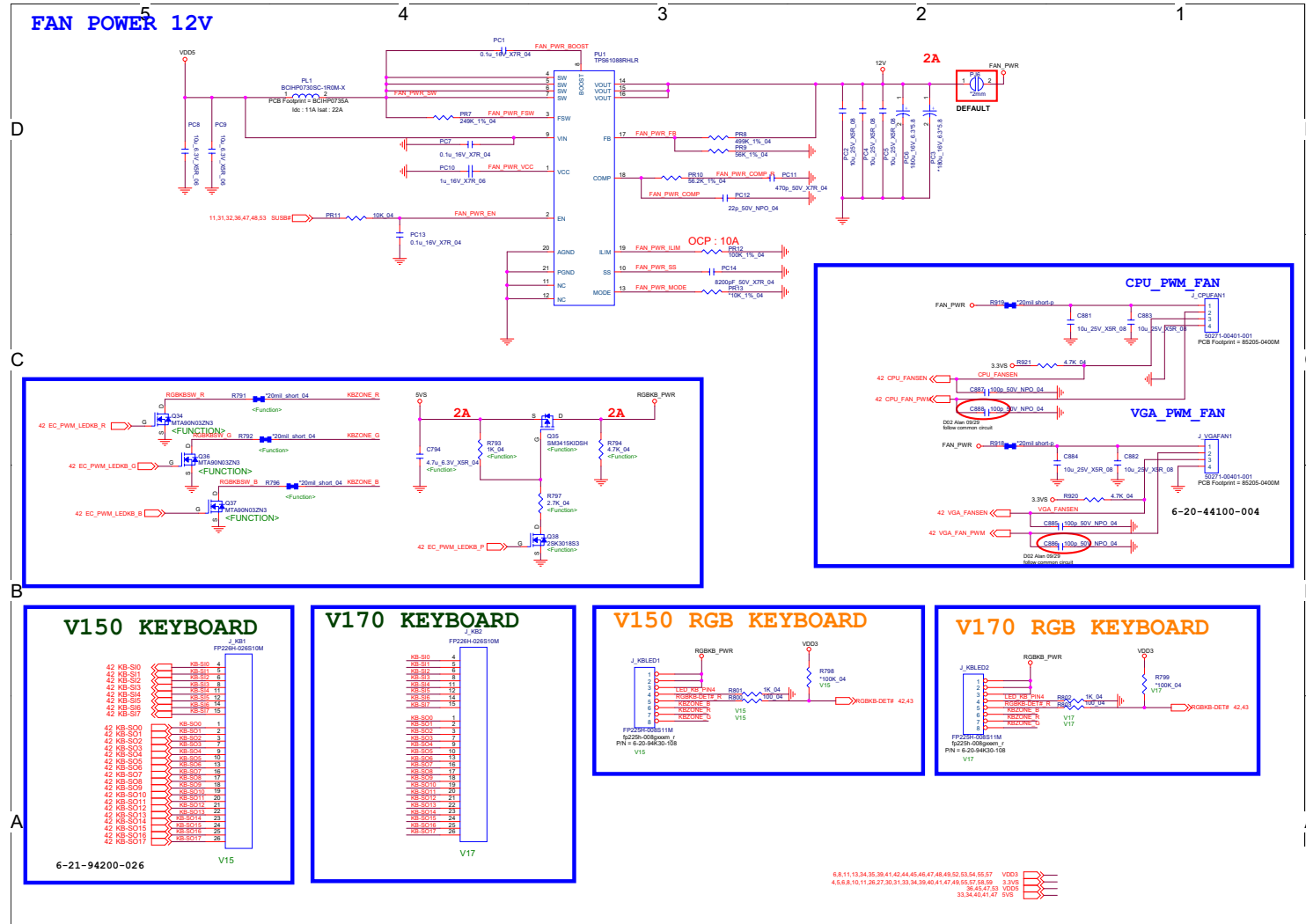
KBC-ITE IT5570



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KBC-ITE IT5570

B.Schematic Diagrams

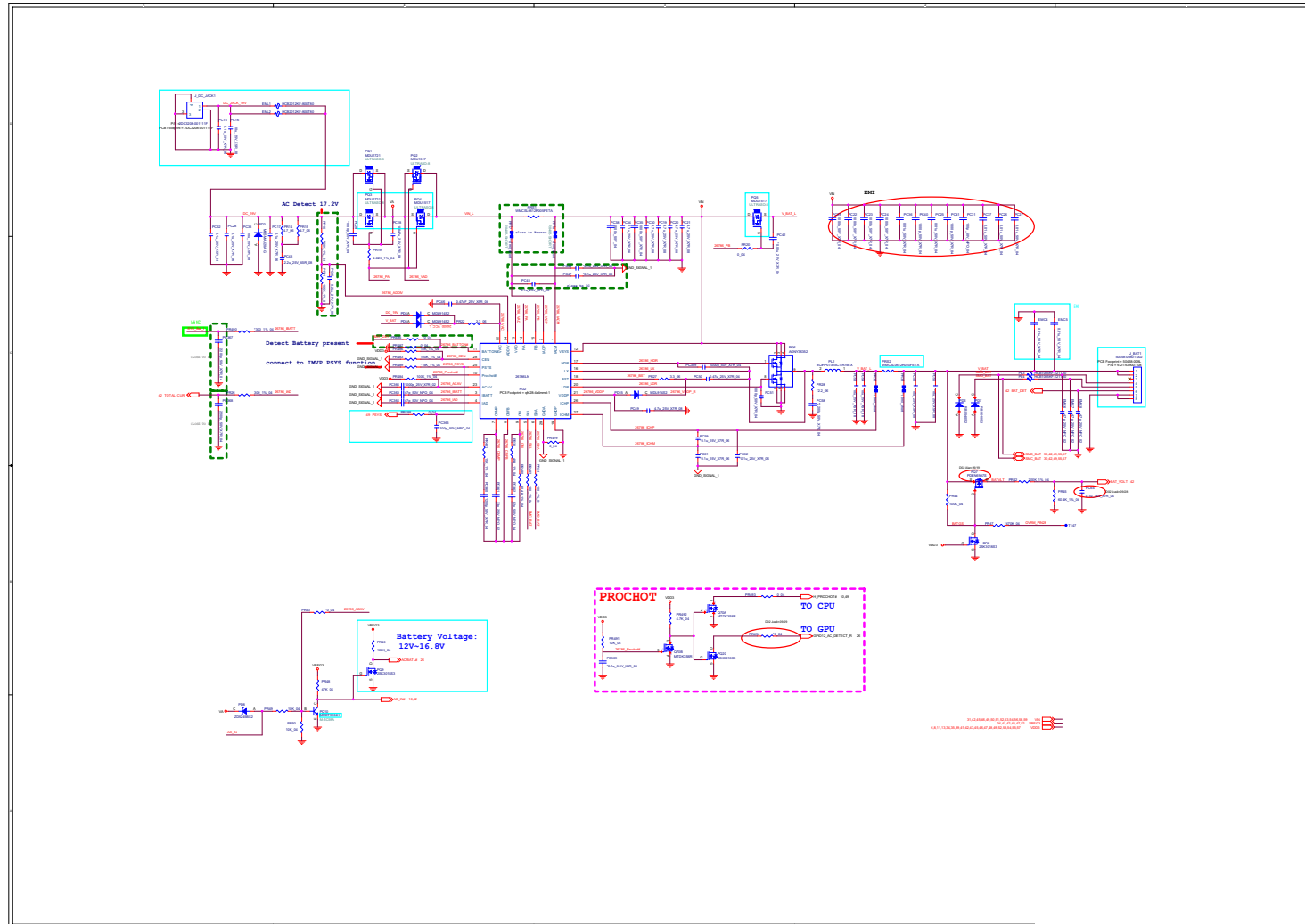
RGB KB



Sheet 43 of 67
RGB KB

B.Schematic Diagrams

AC_In, Charger



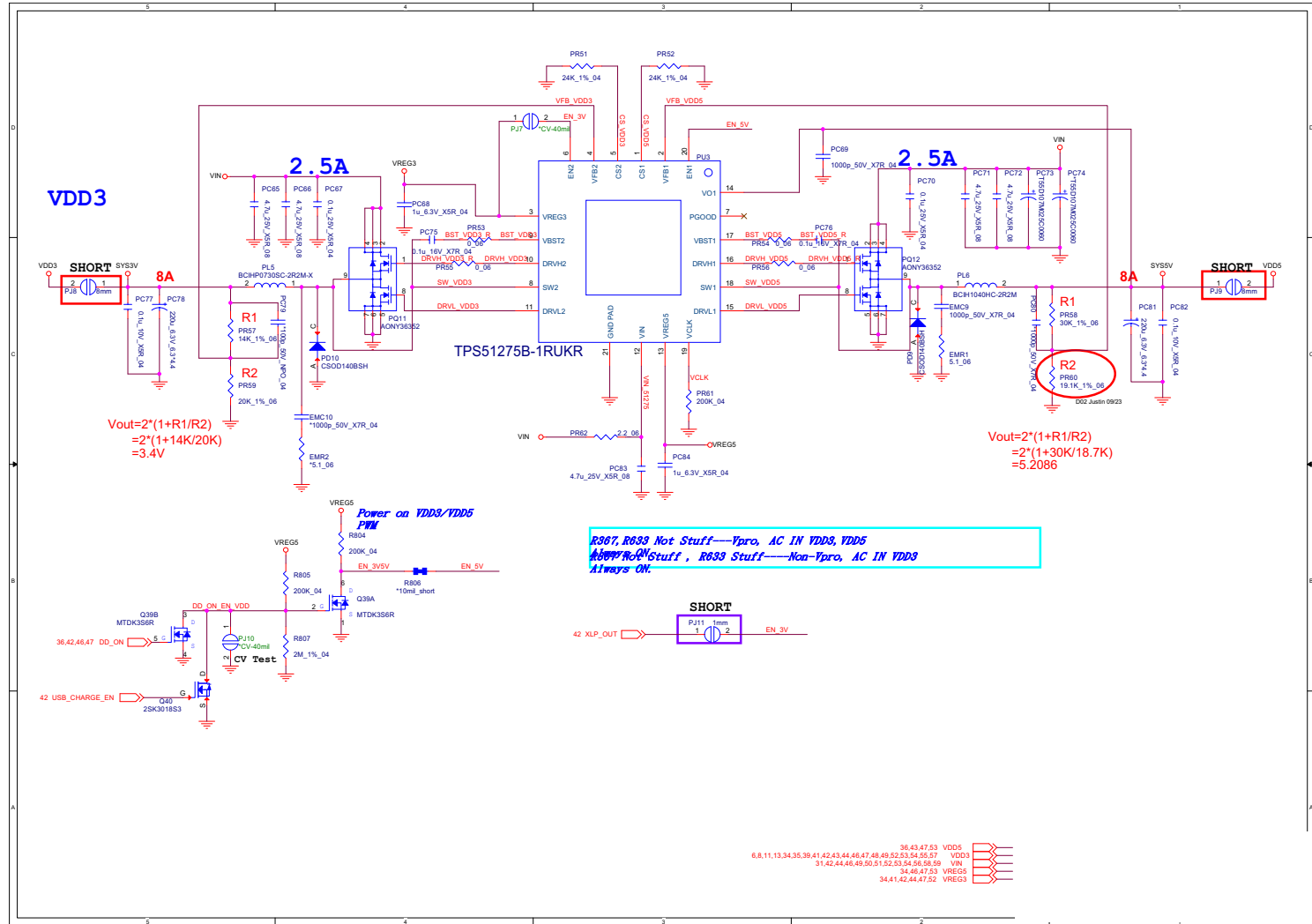
Sheet 44 of 67
AC_In, Charger

B.Schematic Diagrams

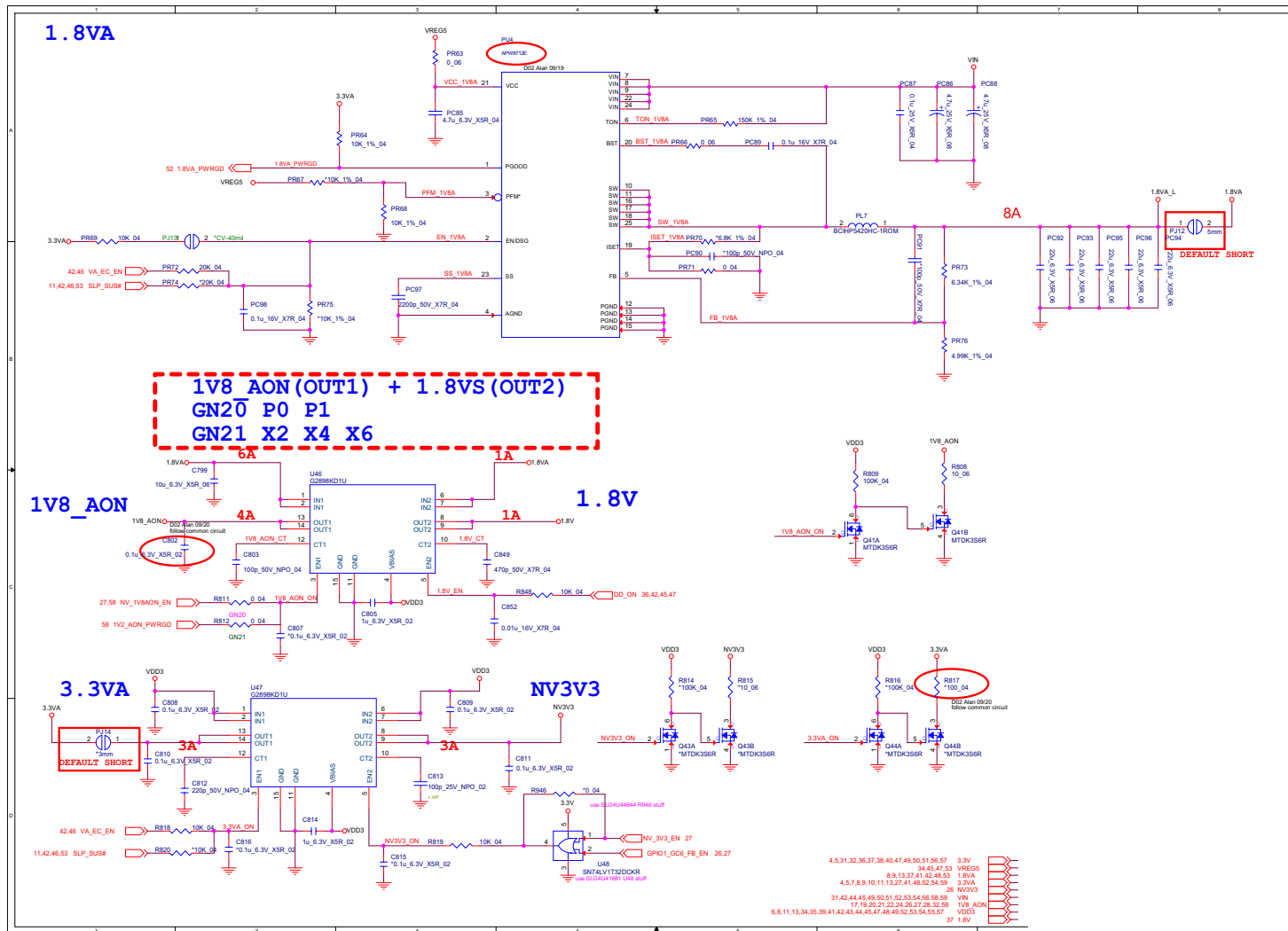
Schematic Diagrams

VDD3, VDD5

Sheet 45 of 67
VDD3, VDD5



1V8_AON, NV3V3, 3.3VA

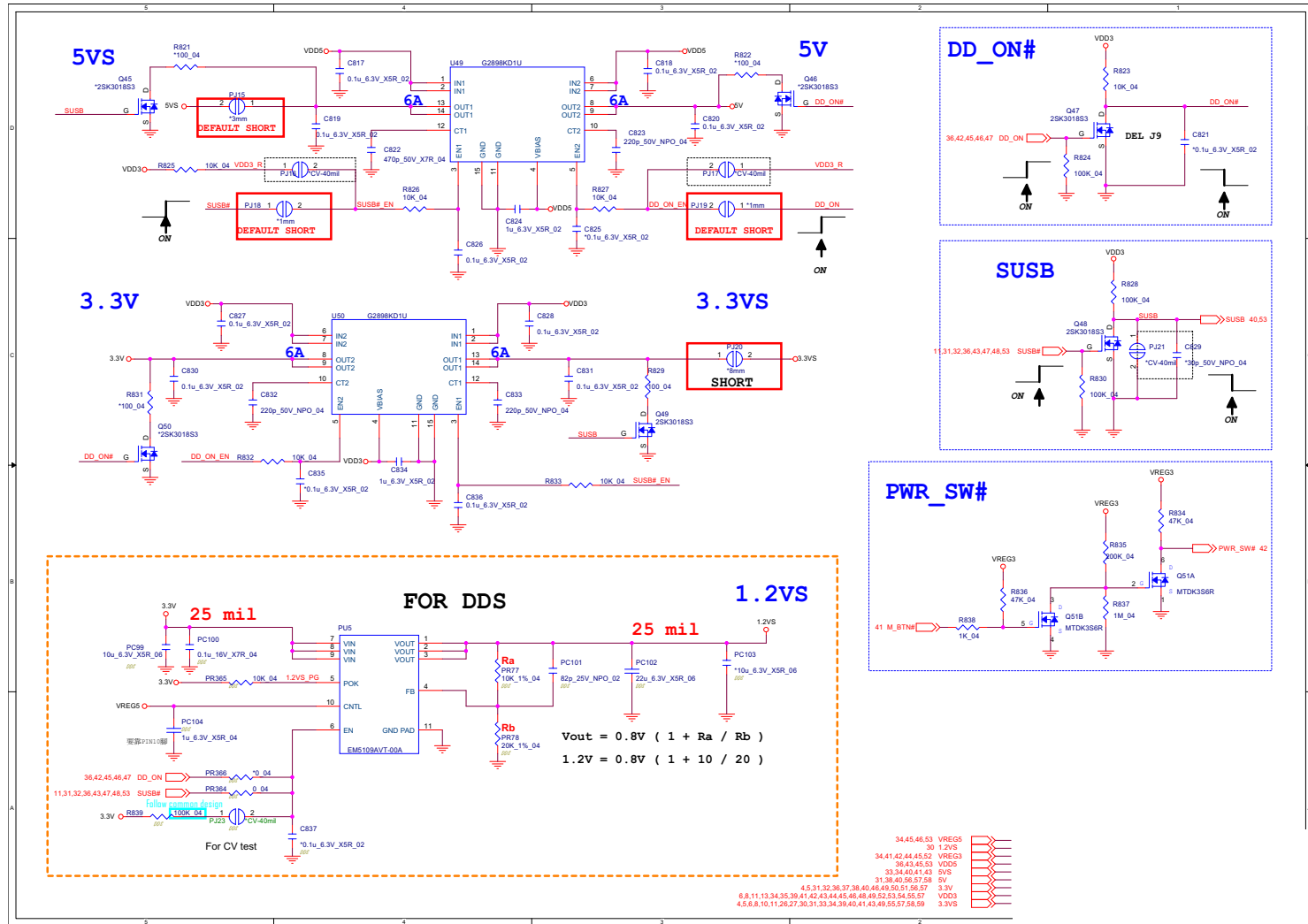


Sheet 46 of 67
1V8_AON, NV3V3,
3.3VA

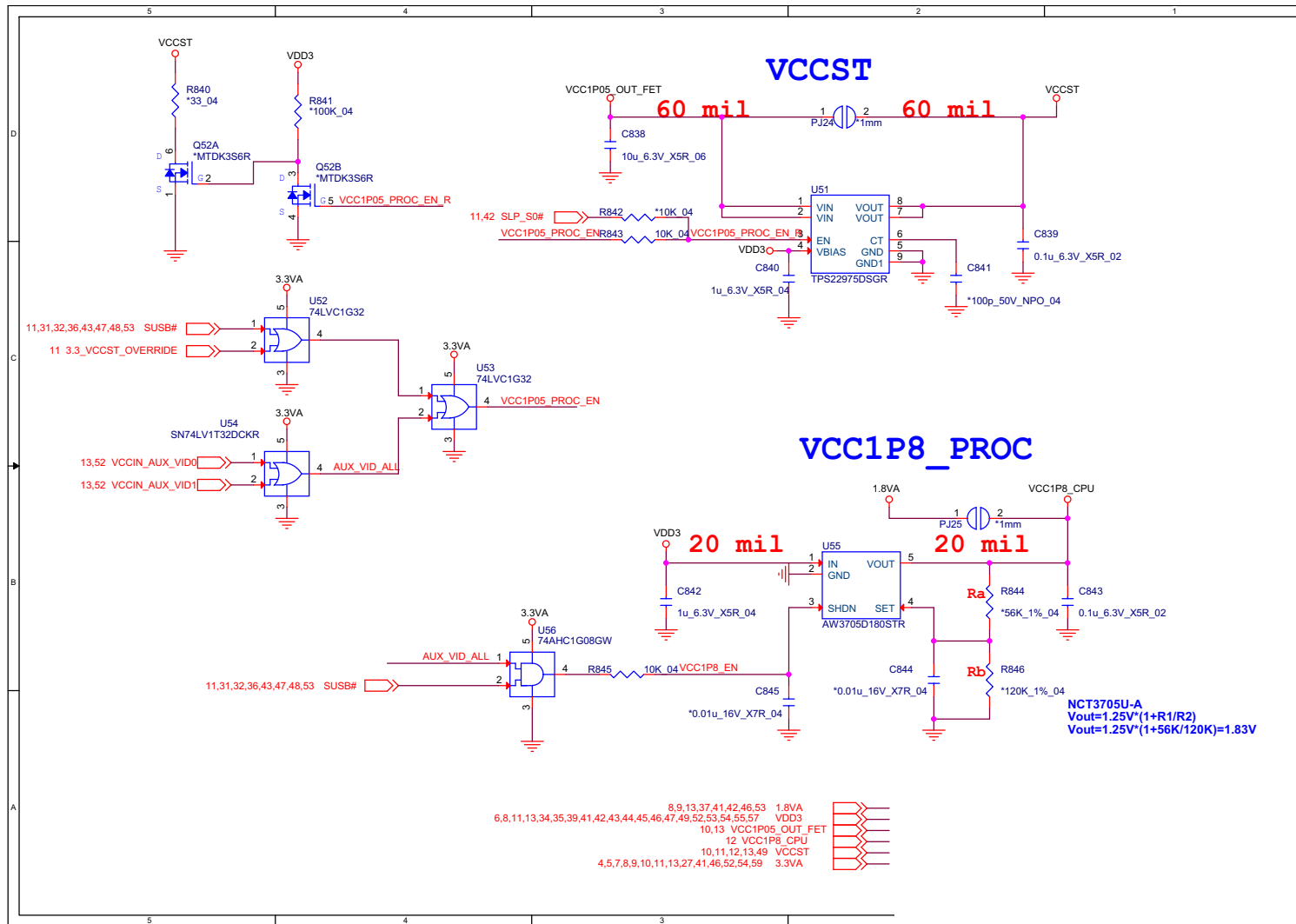
Schematic Diagrams

5V, 5VS, 3.3V, 3.3VS

Sheet 47 of 67
5V, 5VS, 3.3V,
3.3VS



VCCST, VCC1P8

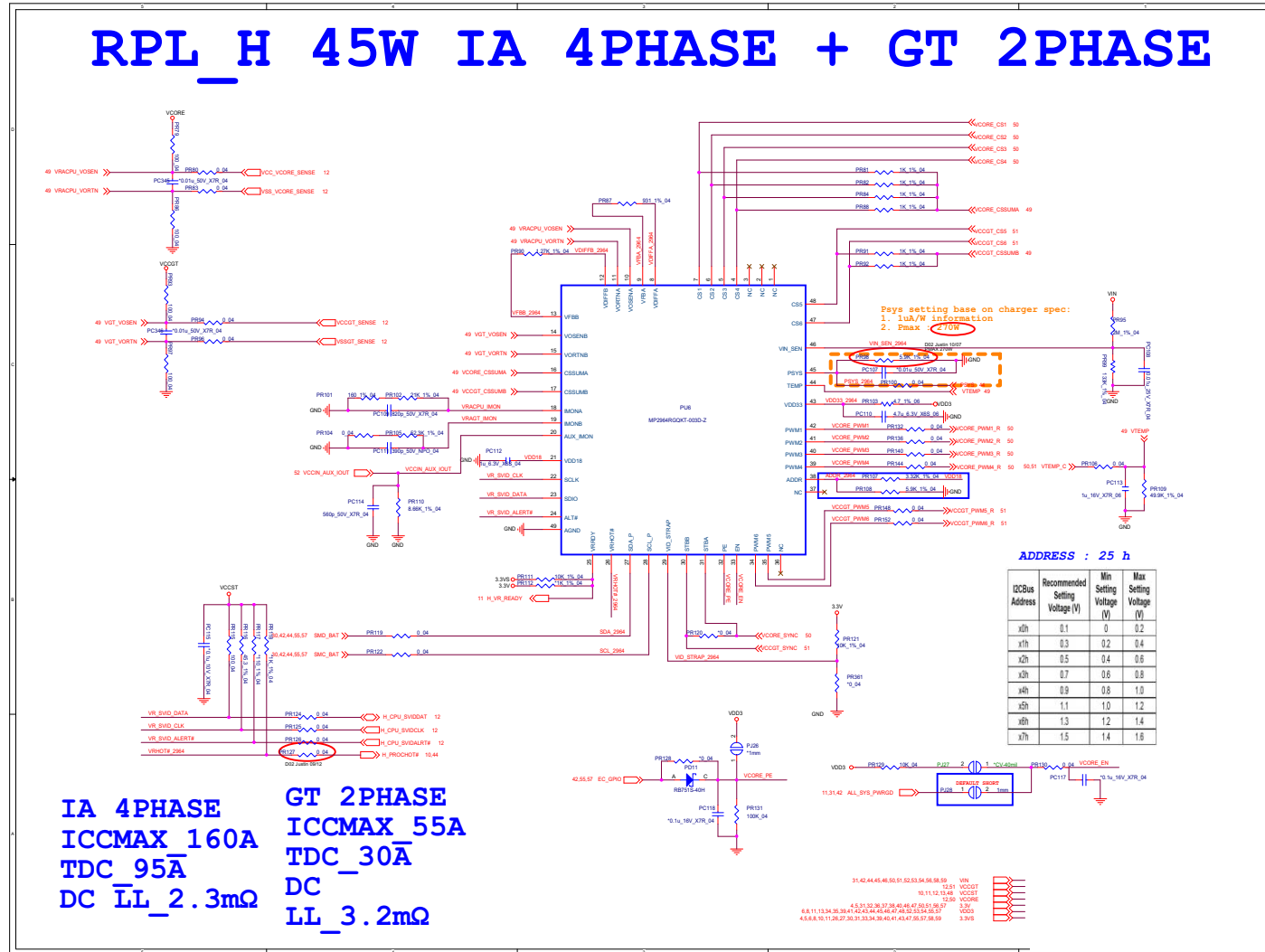


Sheet 48 of 67
 VCCST, VCC1P8

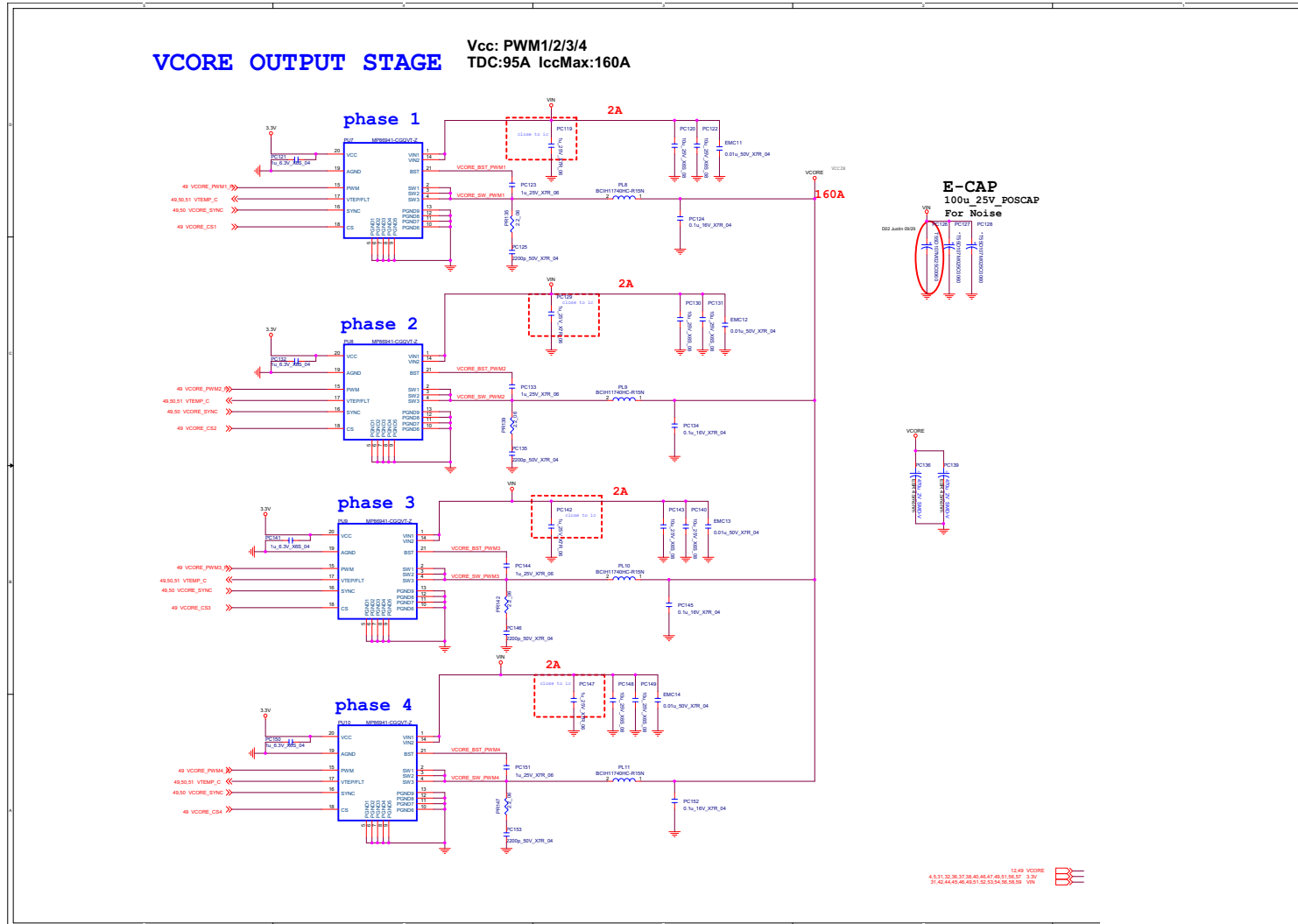
B.Schematic Diagrams

MP2964 Controller

Sheet 49 of 67
MP2964 Controller



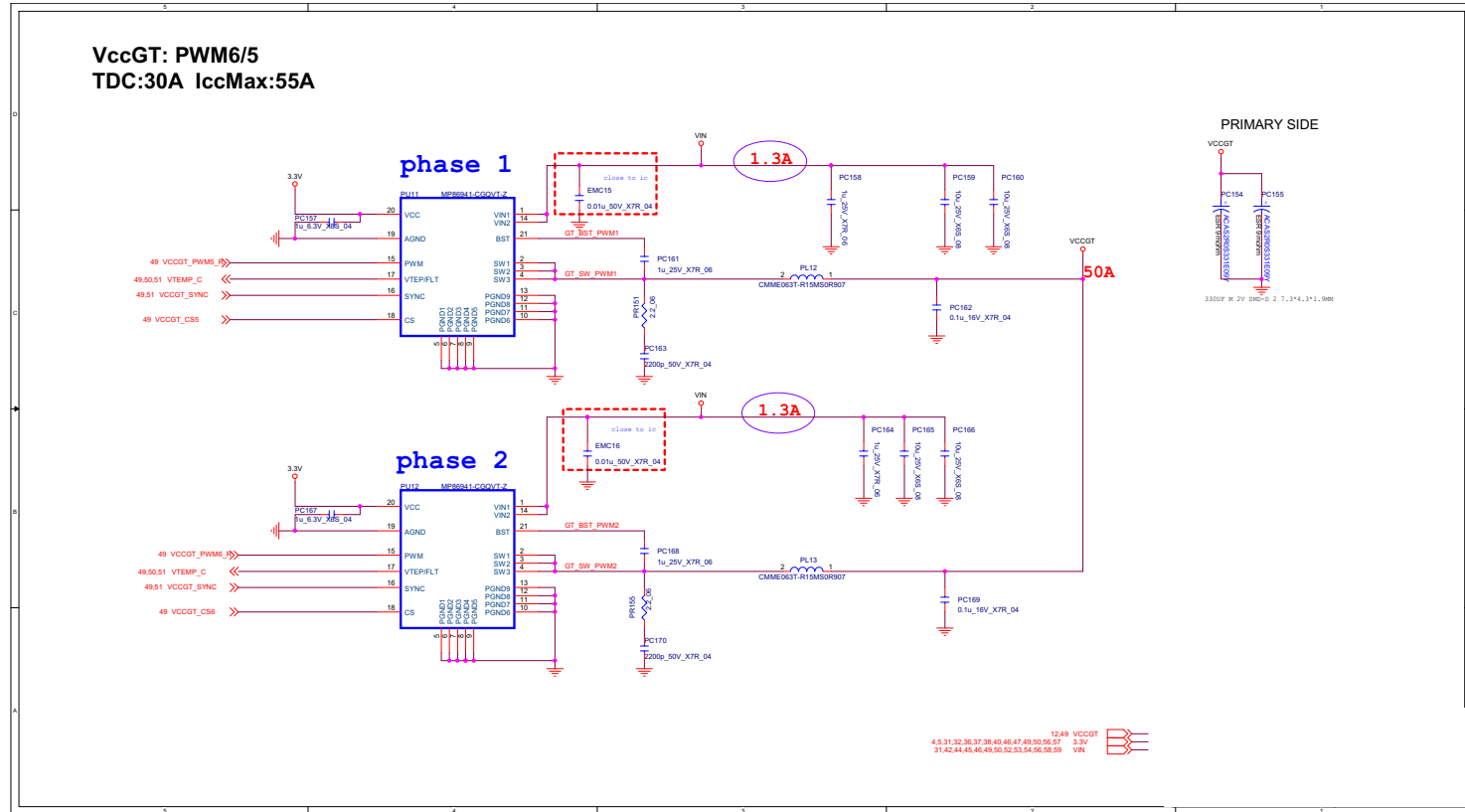
VCore Power Stage



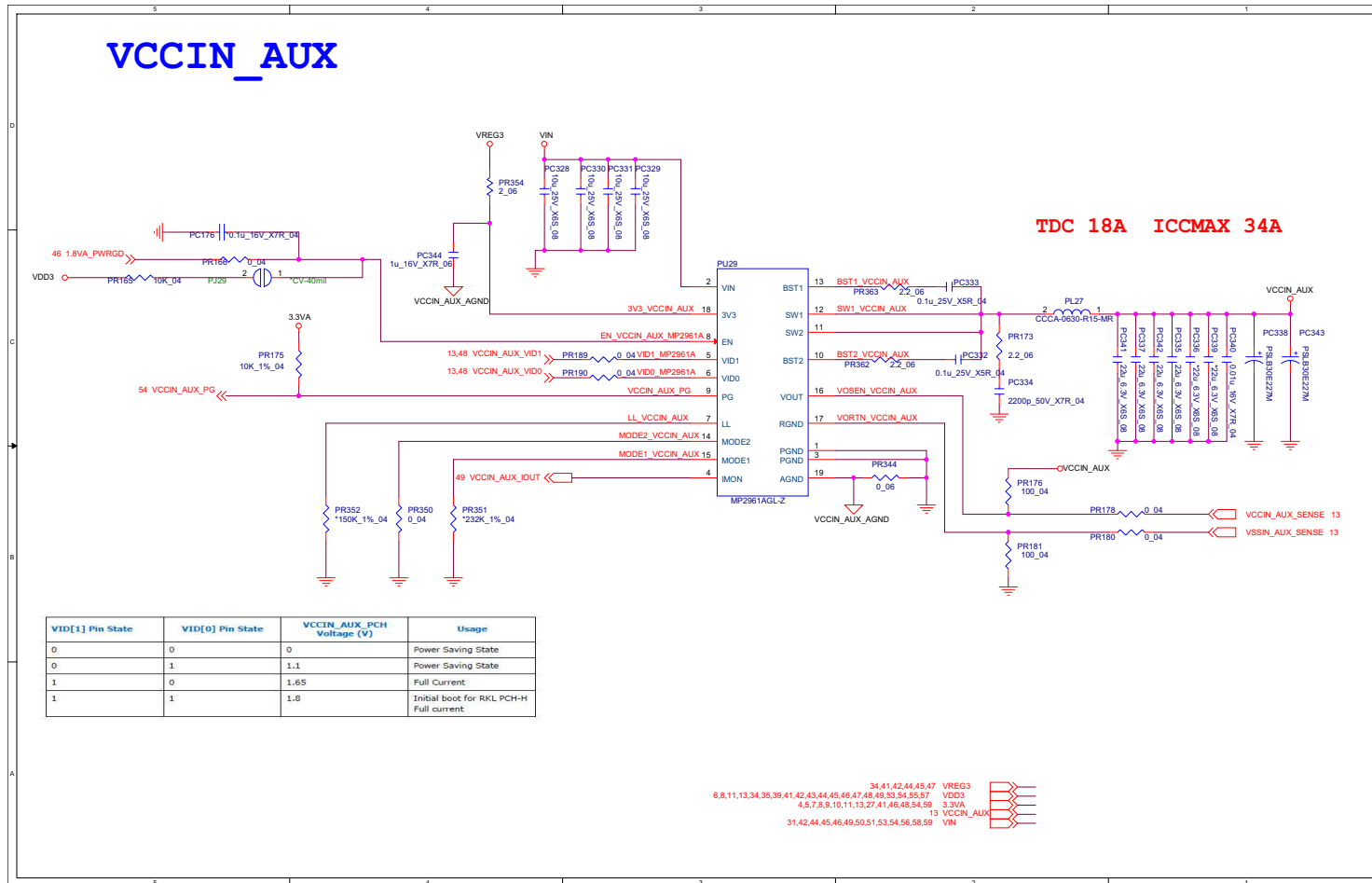
Sheet 50 of 67
VCore Power Stage

Schematic Diagrams

VCCGT



VCCIN_AUX

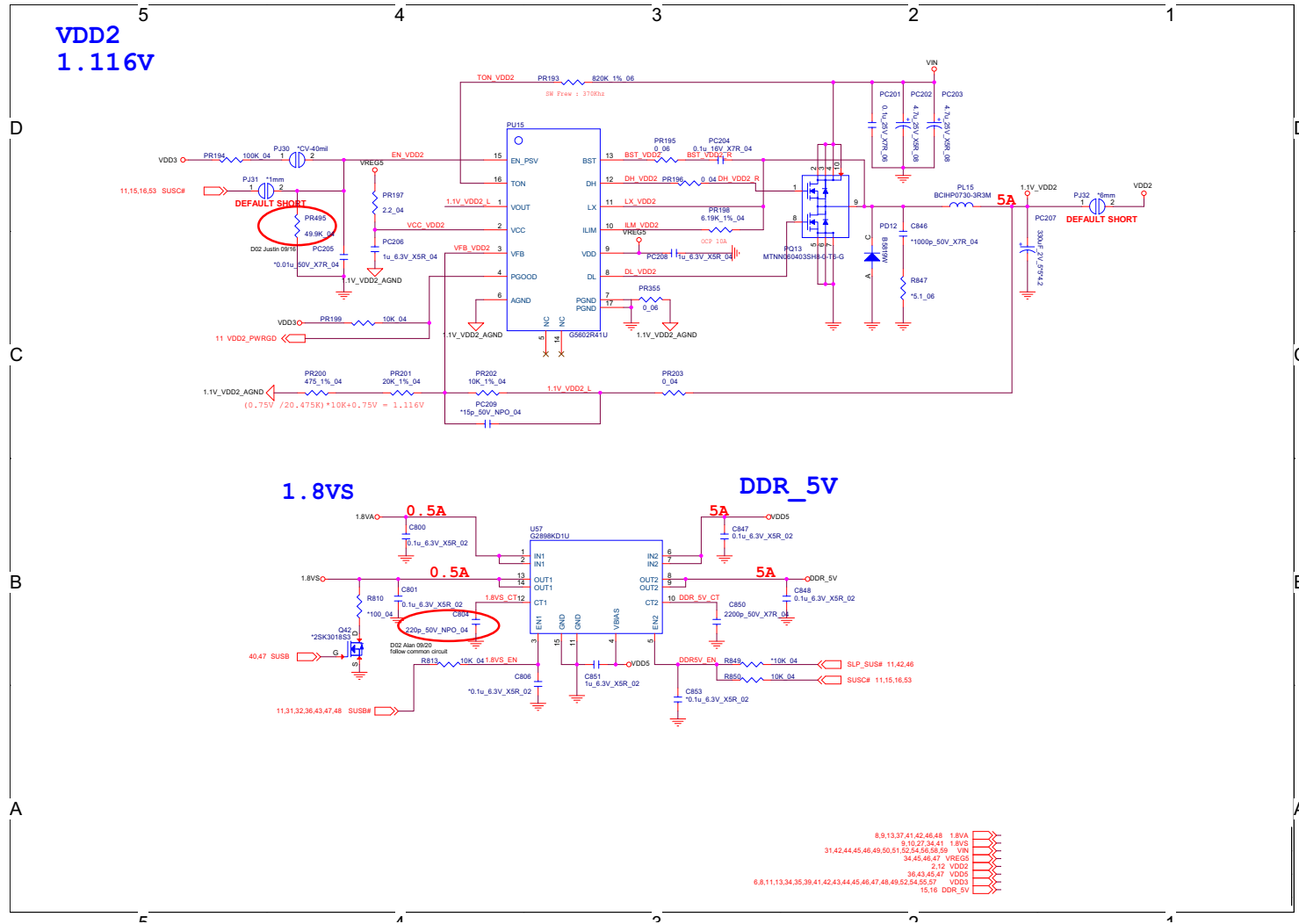


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VCCIN_AUX

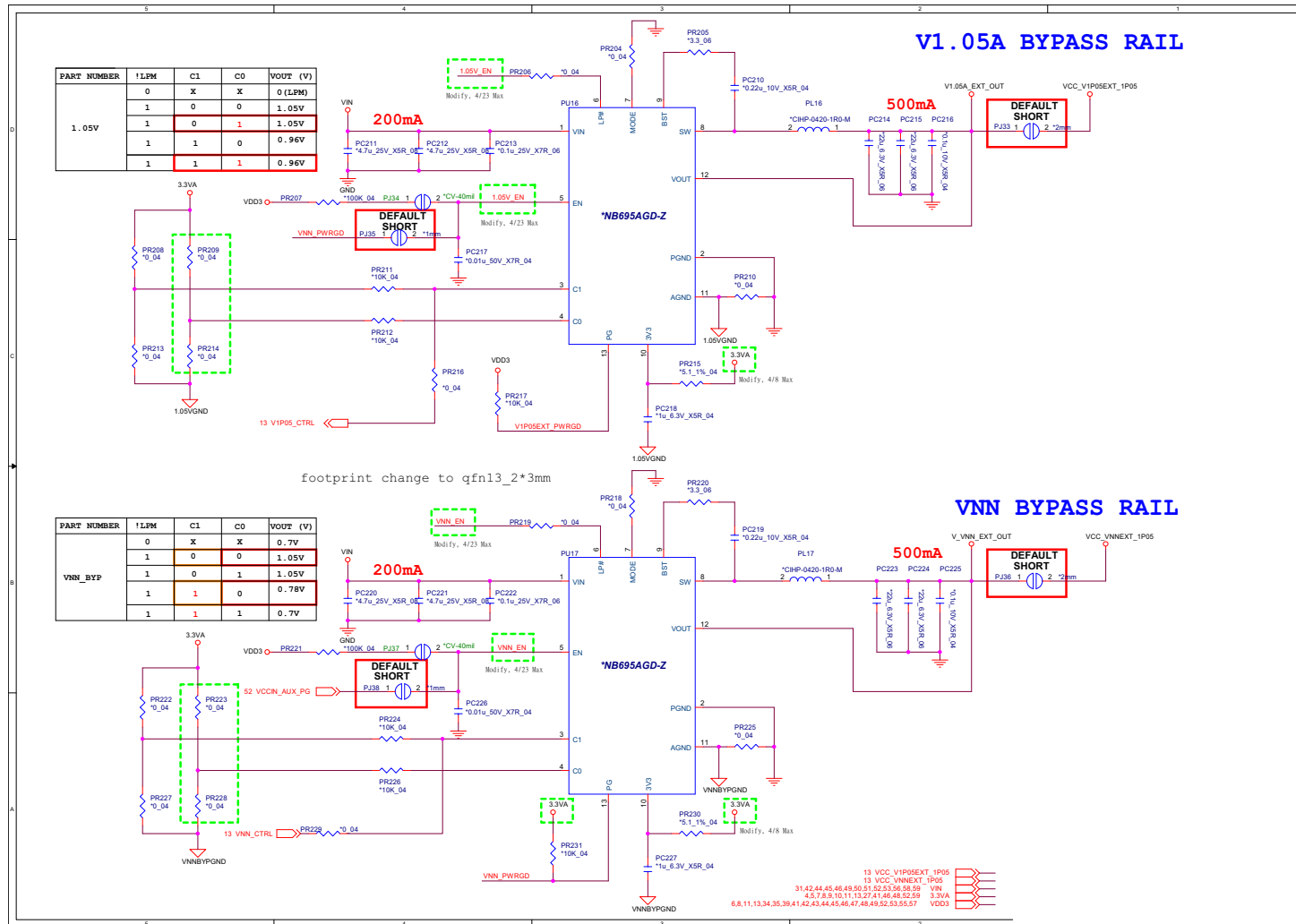
Schematic Diagrams

VDD2, 1.8VS

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VDD2, 1.8VS

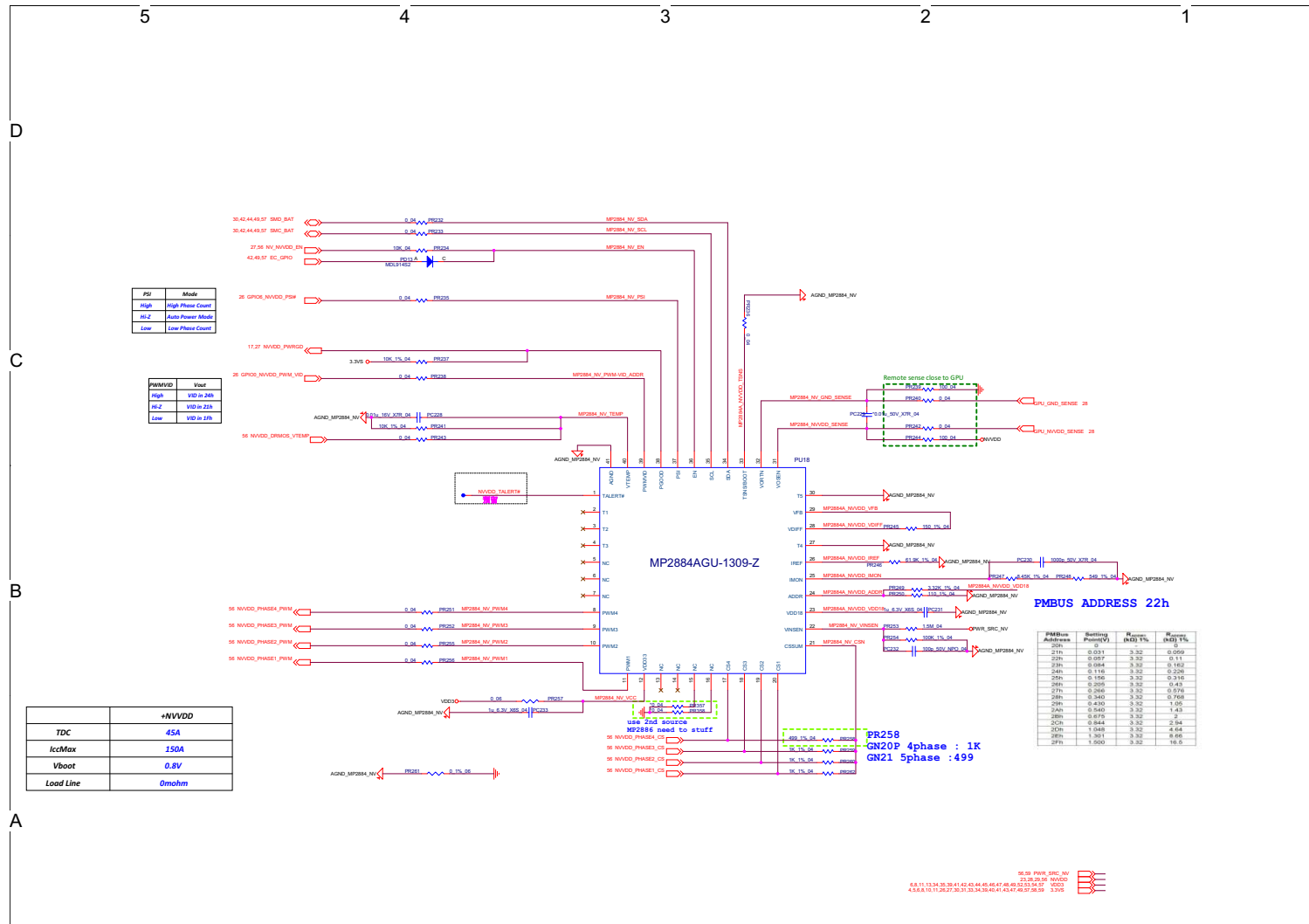


VNN / V1.05A

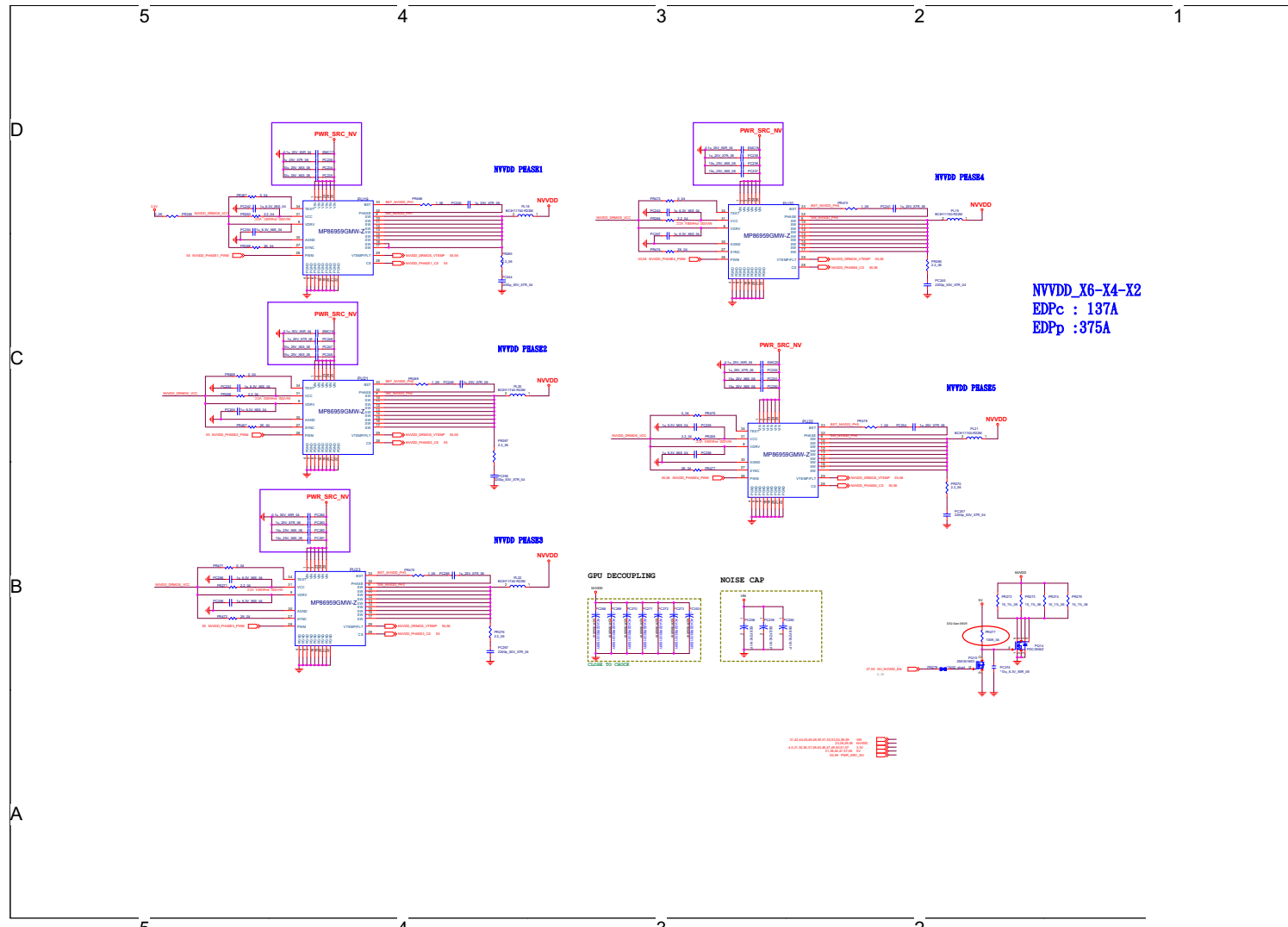


NVVDD1

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NVVDD1



NVVDD2



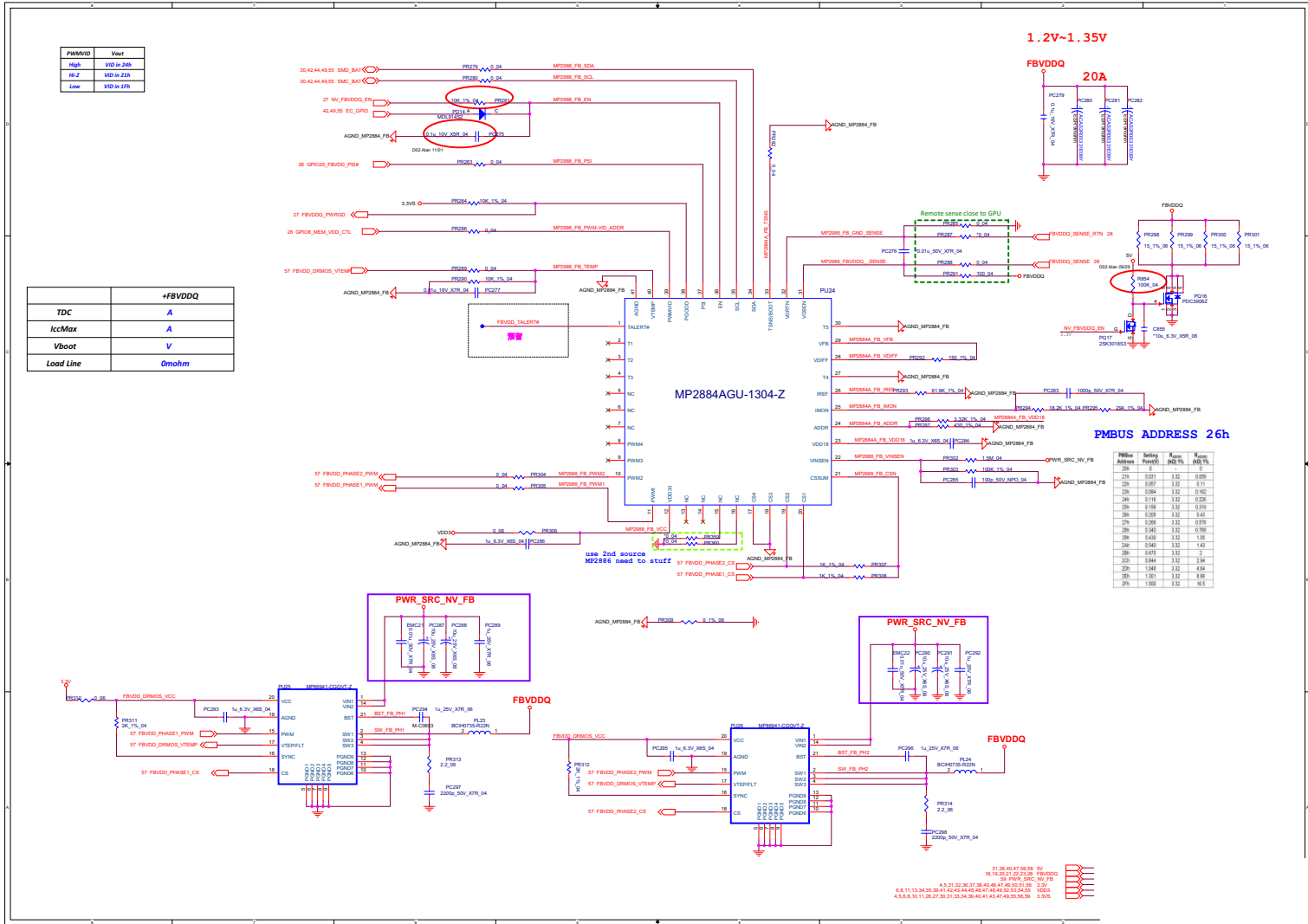
Sheet 56 of 67
NVVDD2

B.Schematic Diagrams

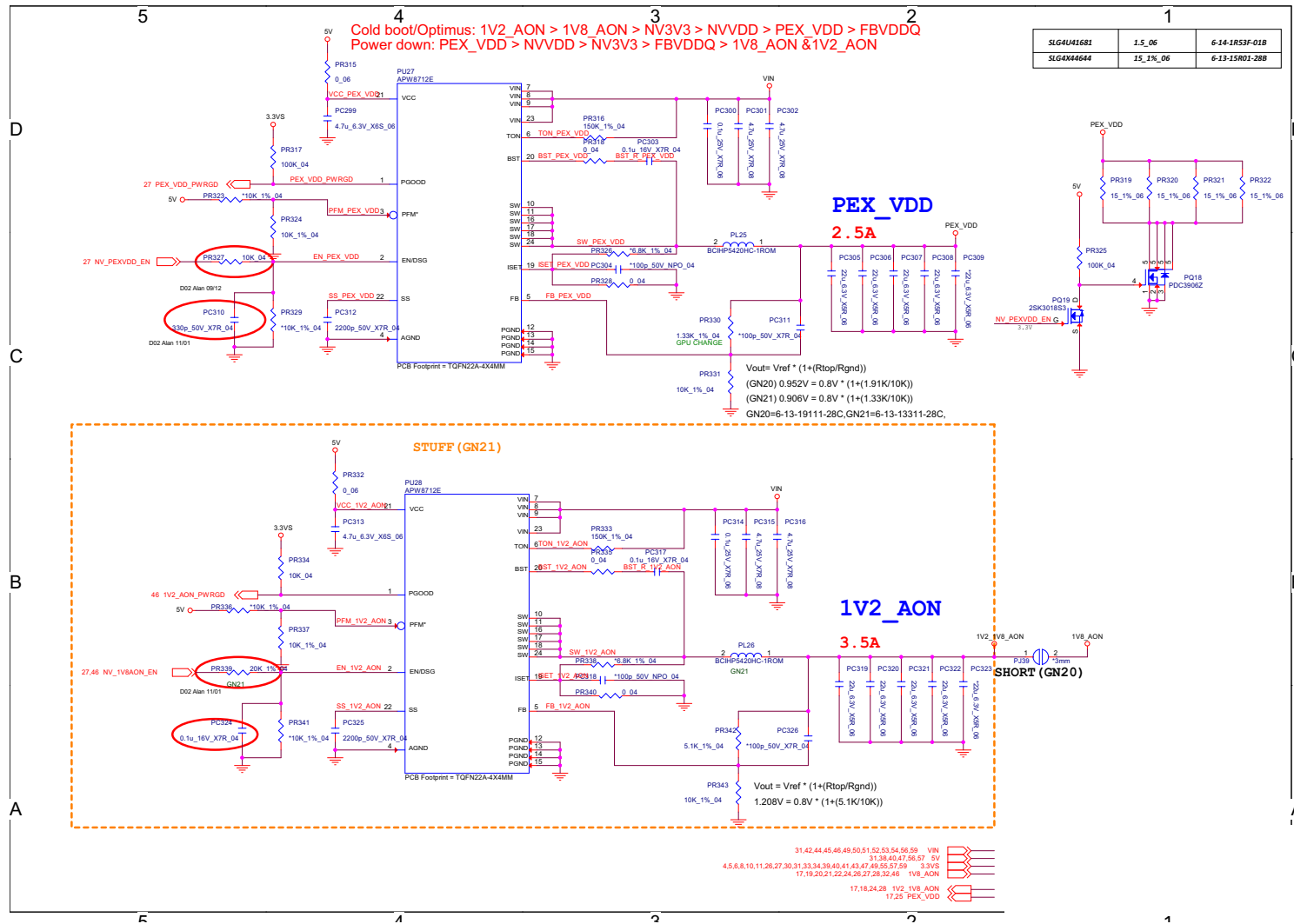
Schematic Diagrams

FBVDDQ

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FBVDDQ



PEX_VDD

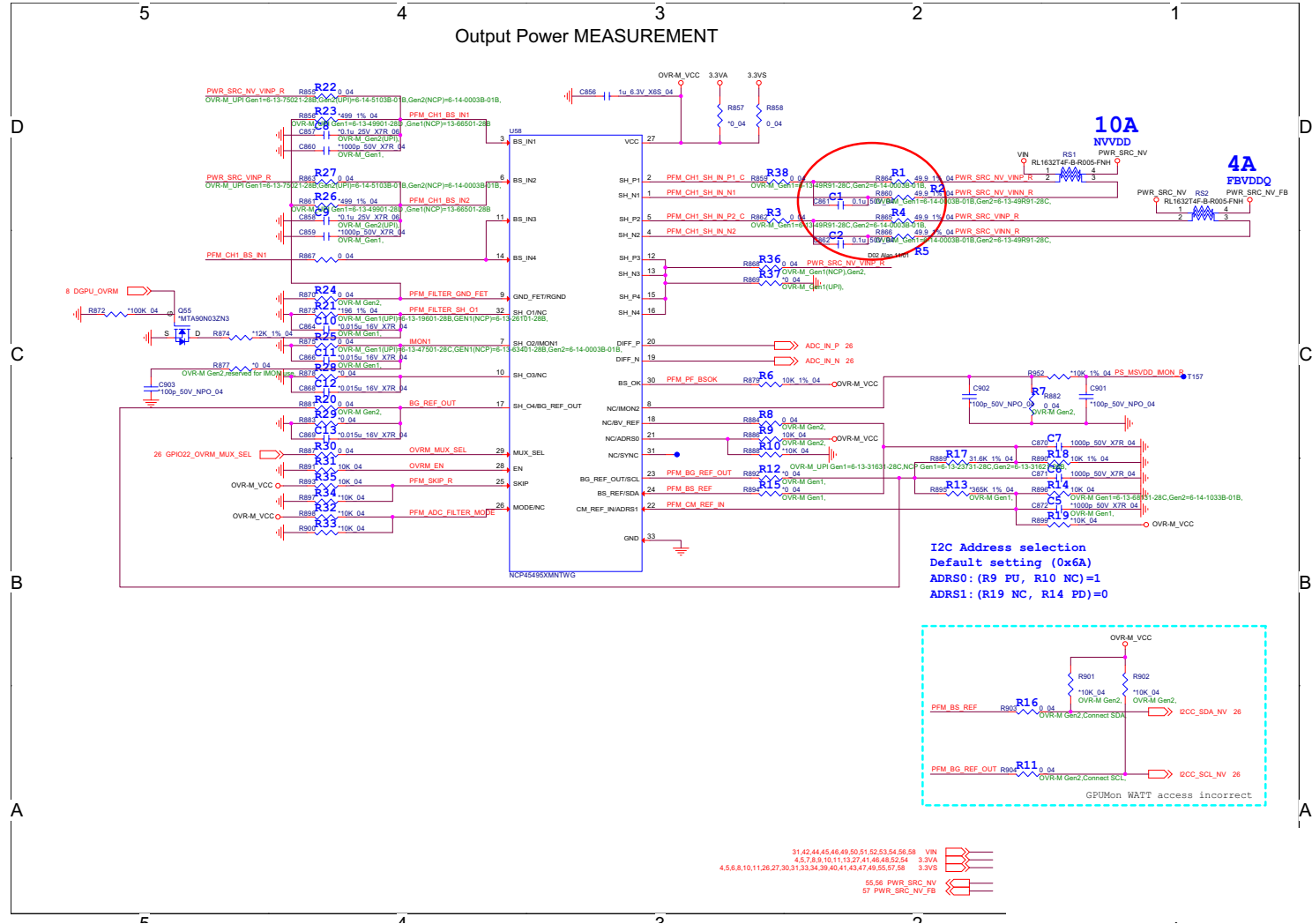


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PEX_VDD

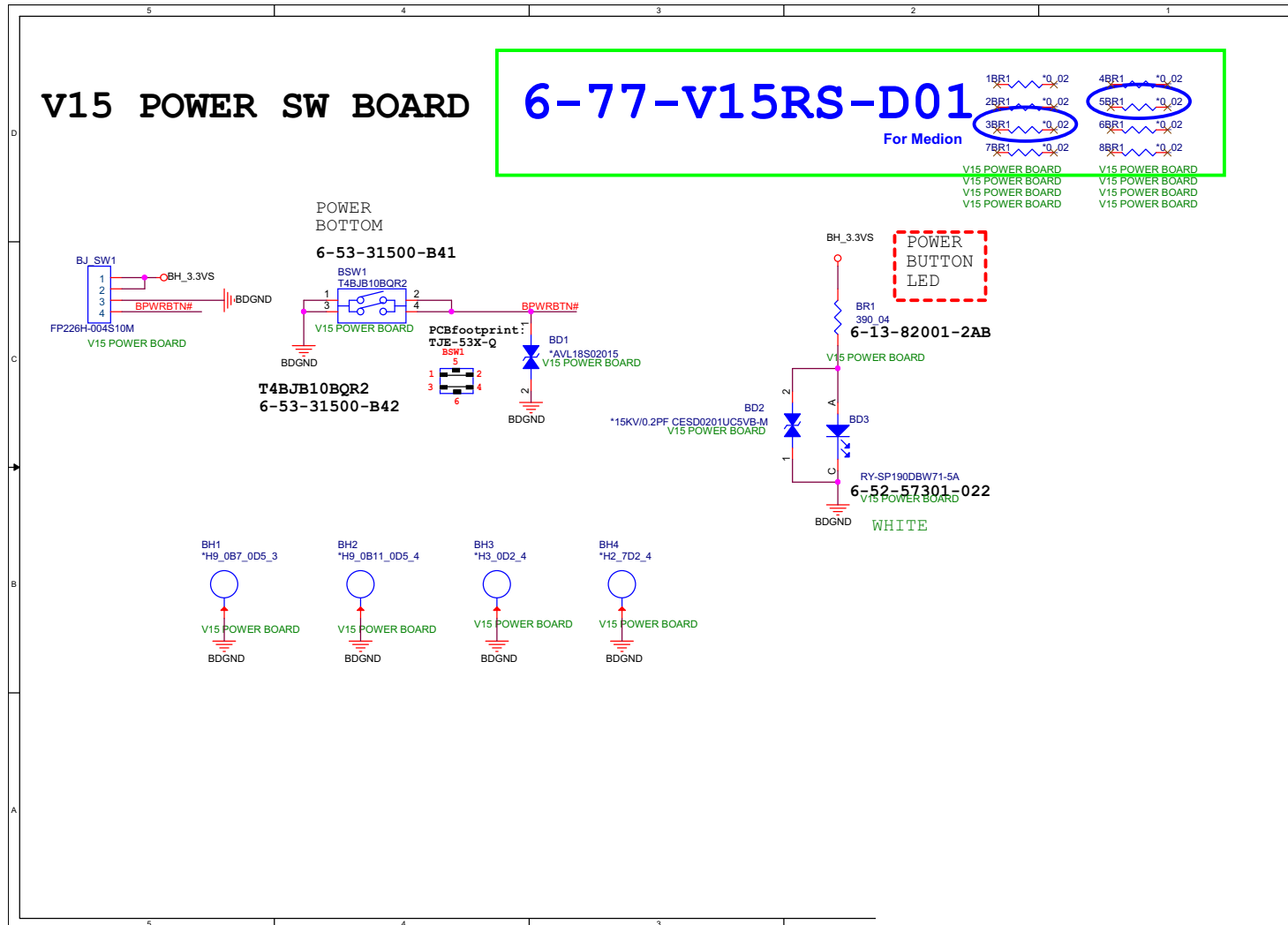
B.Schematic Diagrams

OVR-M

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OVR-M



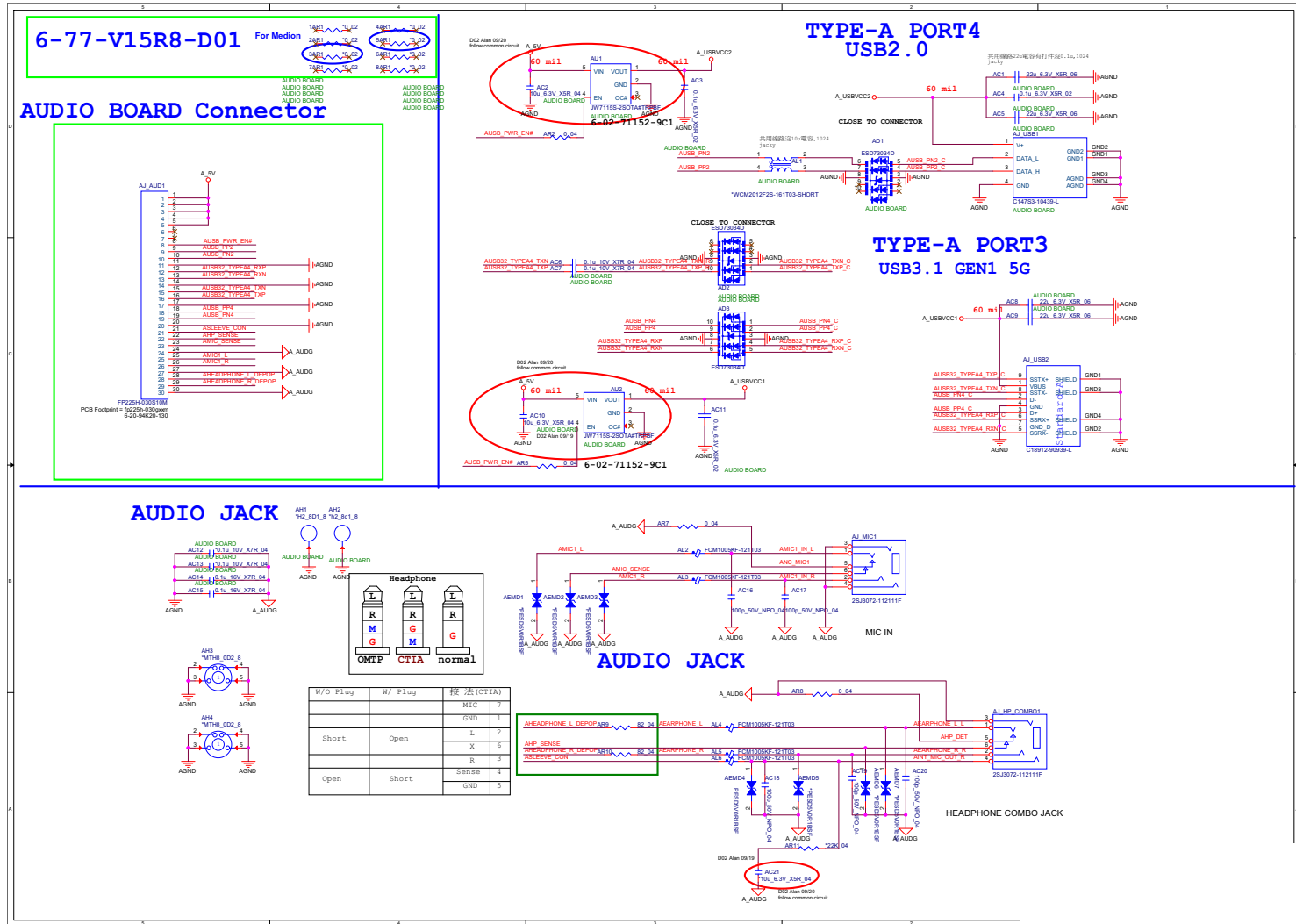
V15 Power SW Board



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V15 Power SW Board

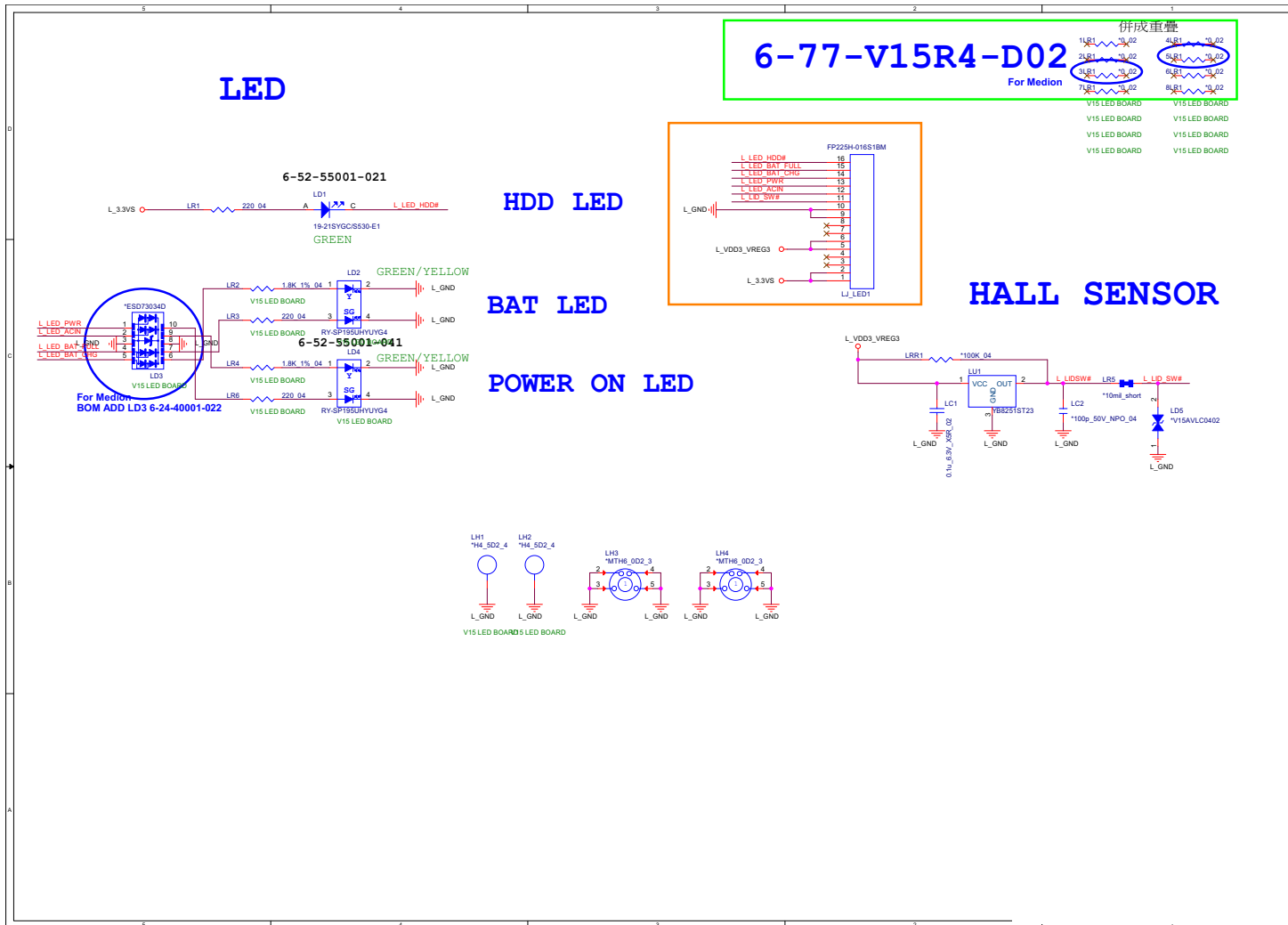
B.Schematic Diagrams

Audio Board



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Audio Board

50 LED, Hall Sensor

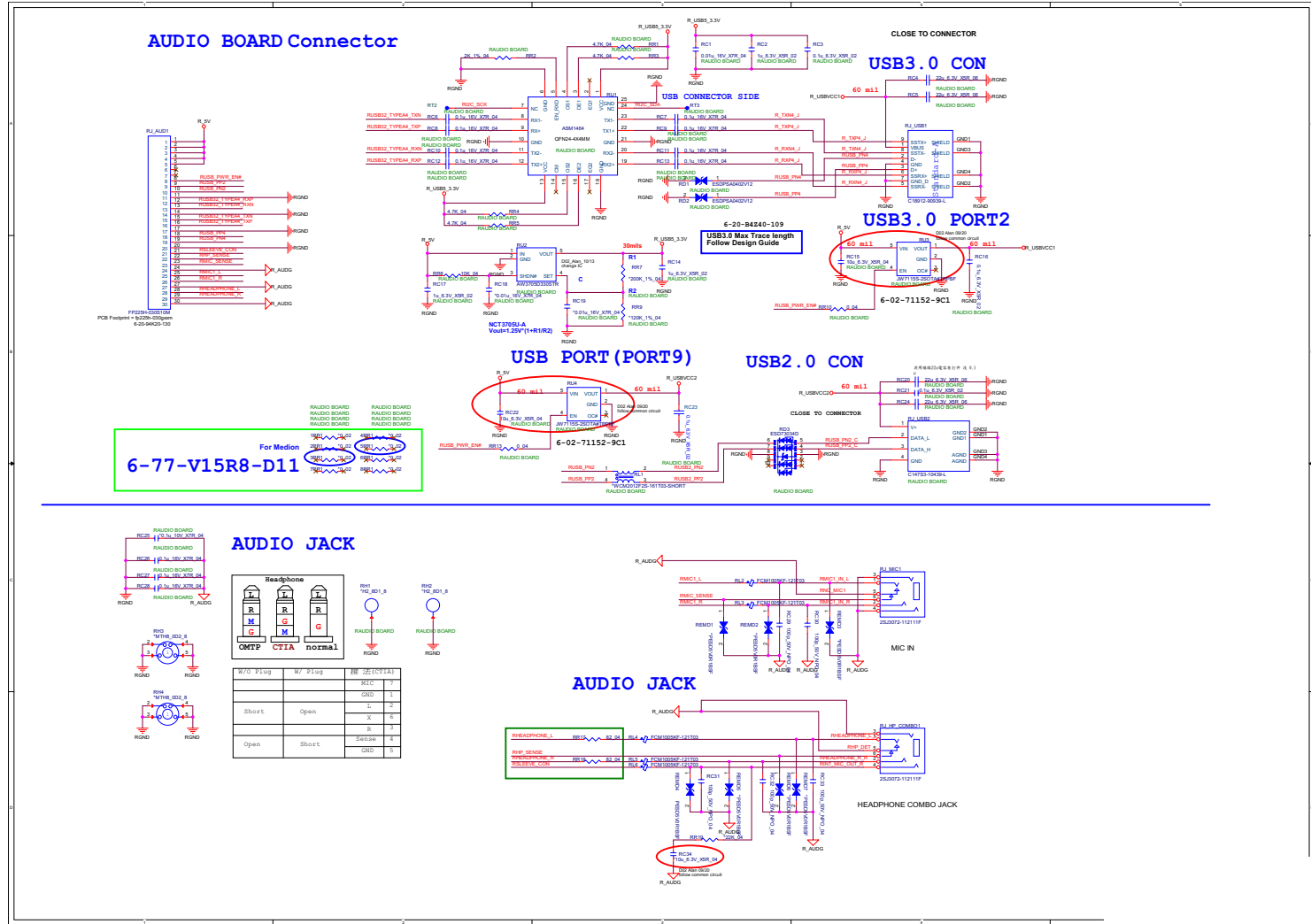


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50 LED, Hall Sensor

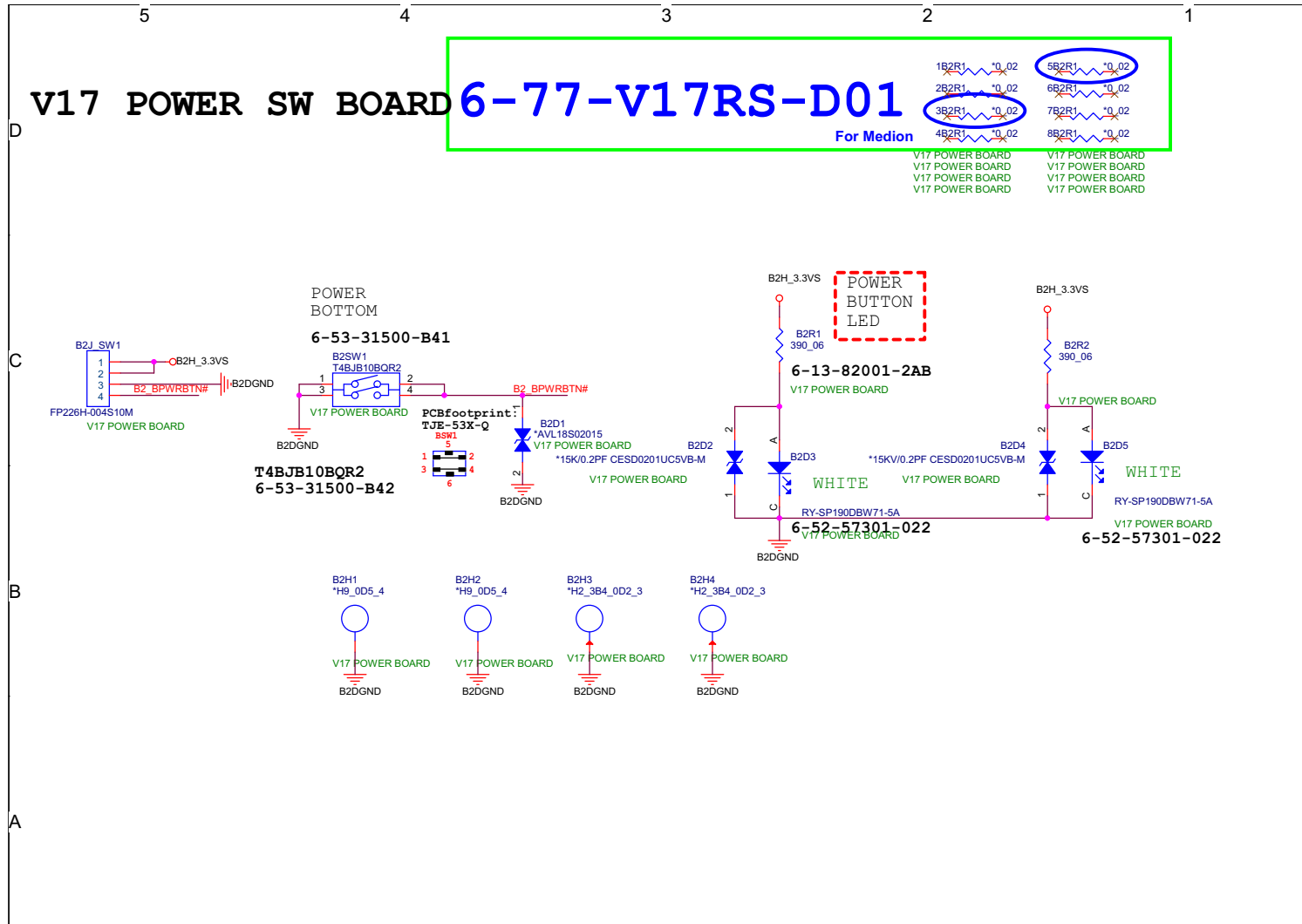
B.Schematic Diagrams

Audio Board + Redriver

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Audio Board +
Redriver



V17 Power SW Board



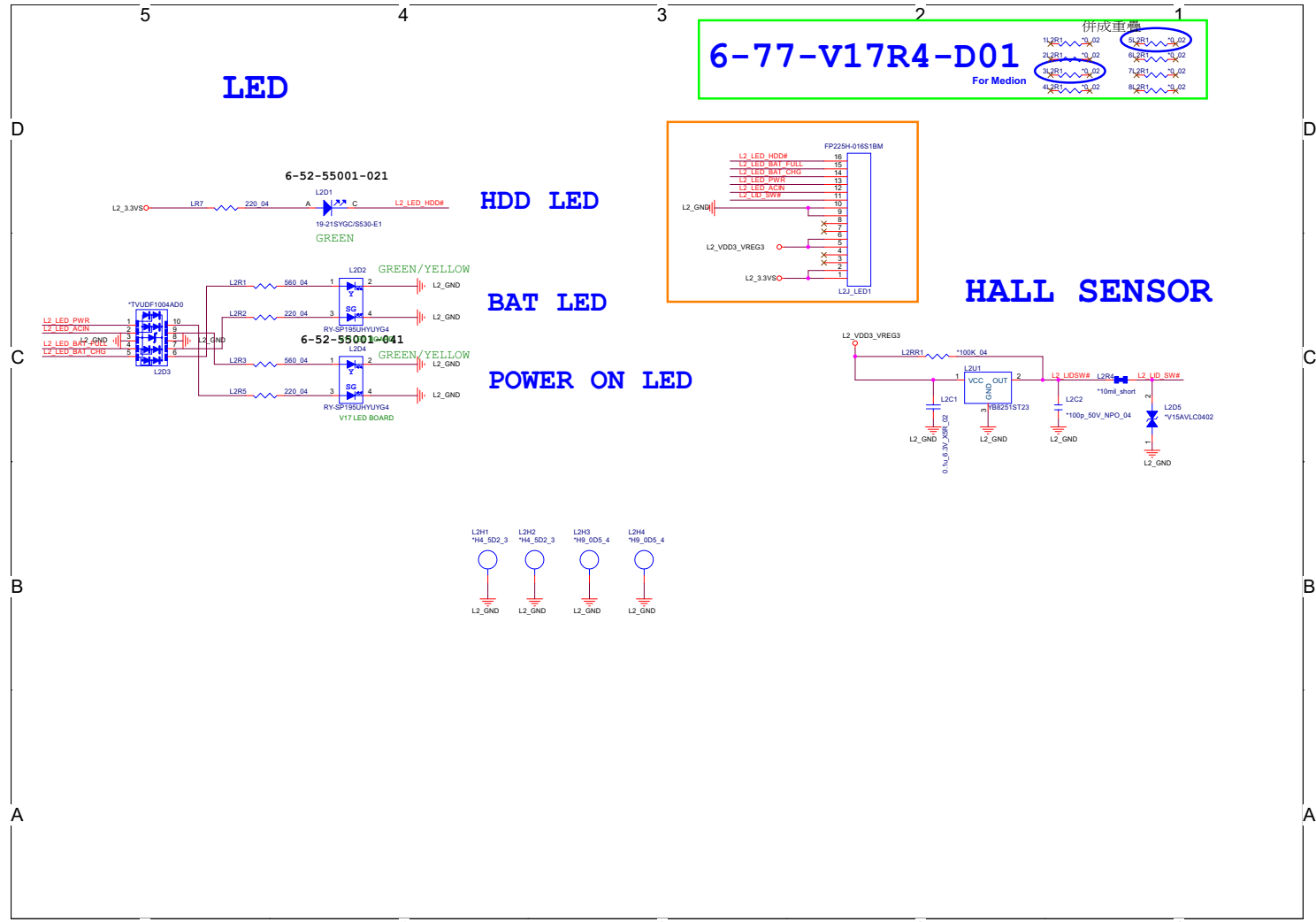
Sheet 64 of 67
V17 Power SW Board

Schematic Diagrams

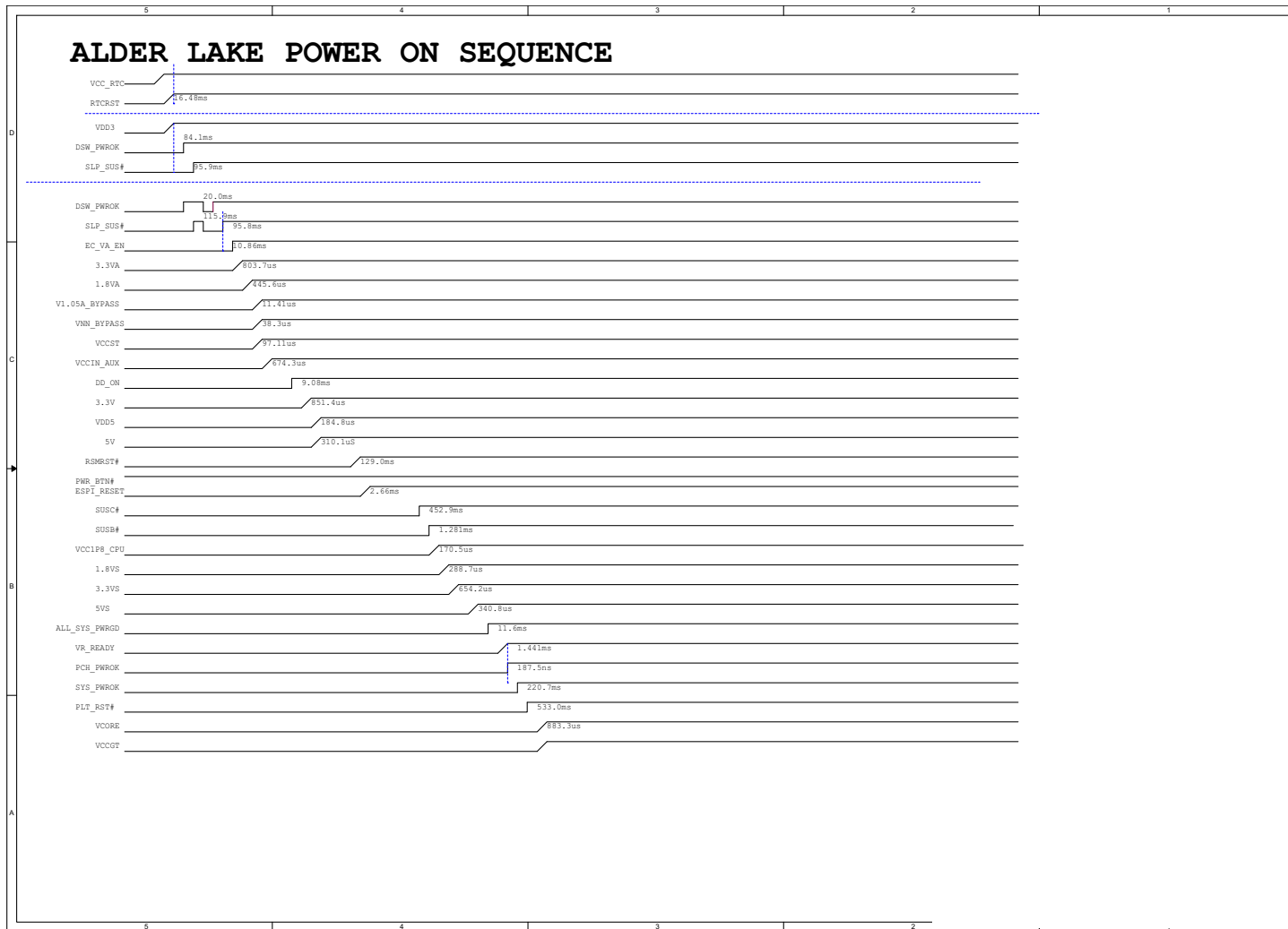
70 LED, Hall Sensor

B.Schematic Diagrams

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70 LED, Hall Sensor

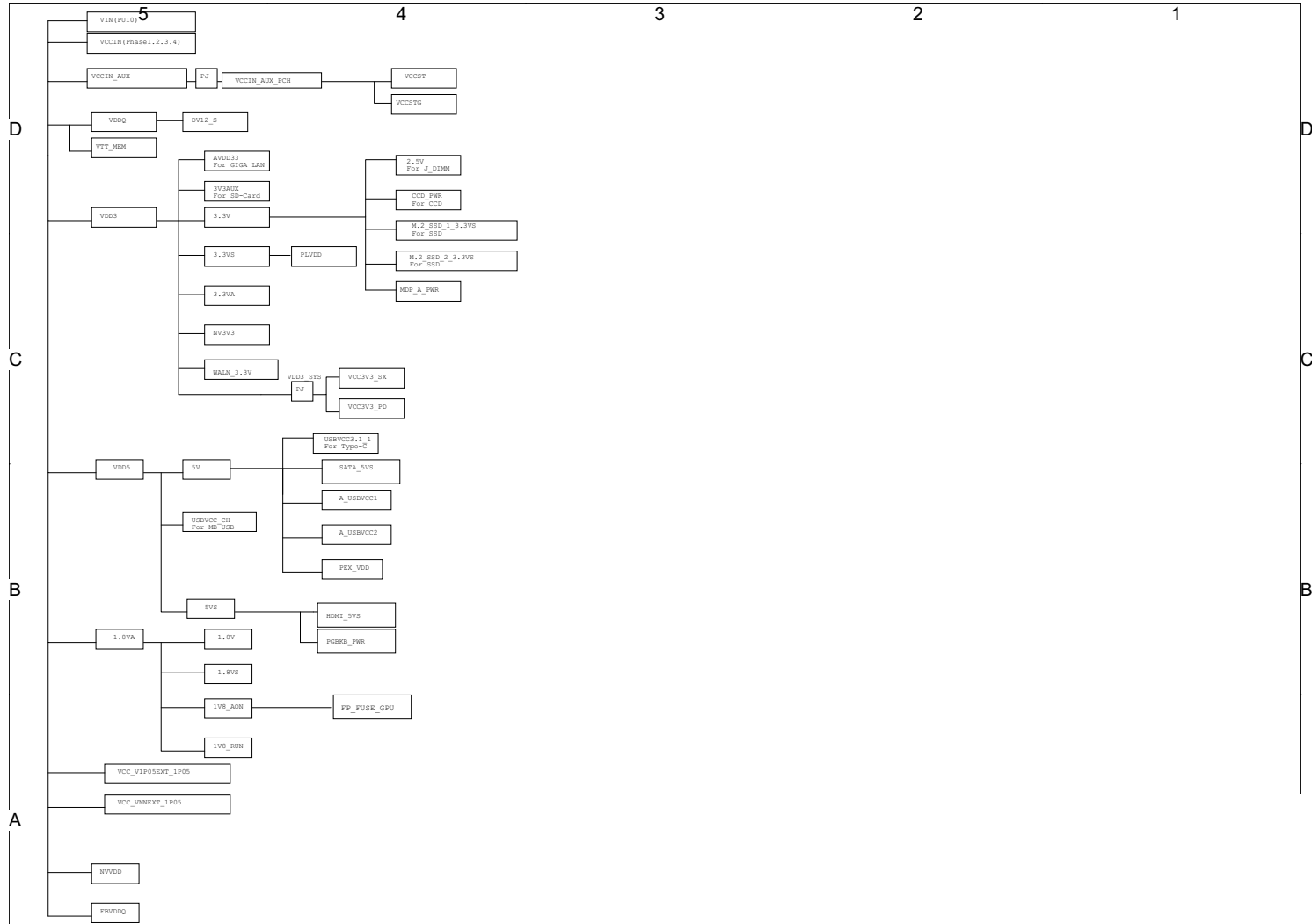


Power Sequence



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Power Sequence

Power Map



Sheet 67 of 67
Power Map

B. Schematic Diagrams

Schematic Diagrams