SERVICE MANUAL

V255RNB2 / V255RNC2 / V255RND2

notebook

Notebook Computer

V255RNB2 / V255RNC2 / V255RND2

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 ***V255RNB2 / V255RNC2 / V255RND2*** 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, 9A (**180** Watts) minimum AC/DC Adapter.

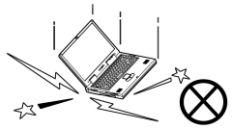
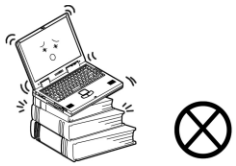
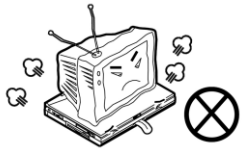
FCC Statement

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.

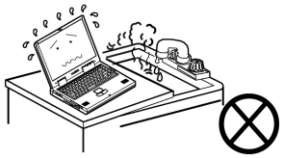
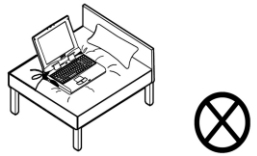
Instructions for Care and Operation

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

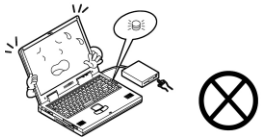
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

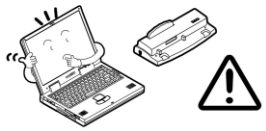
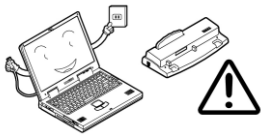
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface which will block the vents.*
			

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.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*
			

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**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

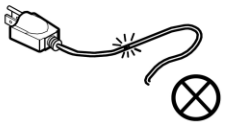
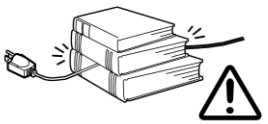
Power Safety

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.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

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".

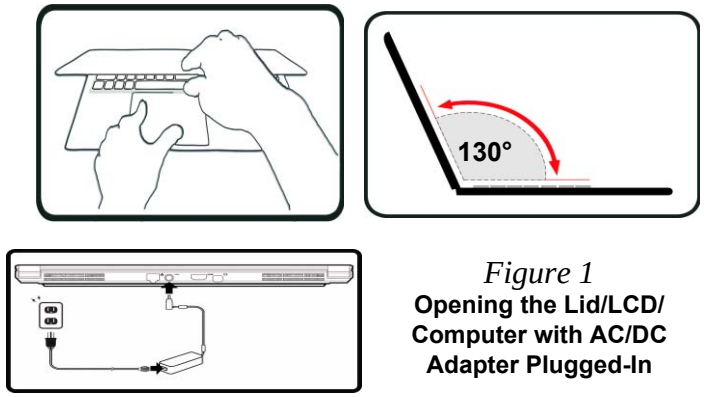
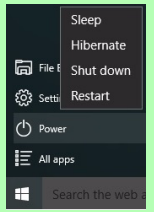


Figure 1
Opening the Lid/LCD/ Computer with AC/DC Adapter Plugged-In

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.



Contents

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the ***V255RNB2 / V255RNC2 / V255RND2*** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about dri-vers (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 ***V255RNB2 / V255RNC2 / V255RND2*** 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

i7-13900H (2.60GHz), TDP 45W
i7-13620H (2.40GHz), TDP 45W
i7-12650H (2.30GHz), TDP 45W
i5-12450H (2.00GHz), TDP 45W

LCD Options

LCD, 15.6" (39.62cm), 16:9, QHD (2560x1440)/FHD (1920x1080)

BIOS

INSYDE BIOS (256Mb SPI Flash ROM)

Memory

Dual Channel DDR5
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

Two M.2 2280 **PCIe Gen4 x4** SSDs

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
Supports up to 4 Active Displays

Intel Integrated GPU

Intel® Iris Xe Graphics (i7-13900H)
Intel Xe Micro Architecture
HDR support
Variable Rate Shading
Microsoft DirectX®12 Compatible
Rec. 2020

Intel® UHD Graphics (i7-13620H, i7-12650H, i5-12450H)
HDR support
Microsoft DirectX®12 Compatible
Rec. 2020

NVIDIA® Discrete GPU

NVIDIA® GeForce RTX3050 (V250RNB2)
6GB GDDR6 Video RAM
Microsoft DirectX®12 Compatible
Supports PCIe Gen4
GeForce CUDA™ technology
Dynamic Boost 2.0

NVIDIA® GeForce RTX4050 (V250RNC2)
6GB GDDR6 Video RAM
Microsoft DirectX®12 Compatible
Supports PCIe Gen4
GeForce CUDA™ technology
Dynamic Boost 2.0

NVIDIA® GeForce RTX4060 (V250RND2)
8GB GDDR6 Video RAM
Microsoft DirectX®12 Compatible
Supports PCIe Gen4
GeForce CUDA™ technology
Dynamic Boost 2.0

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

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 6 AX101, 1x1 AX Wireless LAN + Bluetooth

M.2 Slots

Slot 1 for **Combo WLAN and Bluetooth** Module
Slot 2 for **PCIe Gen4 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-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 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

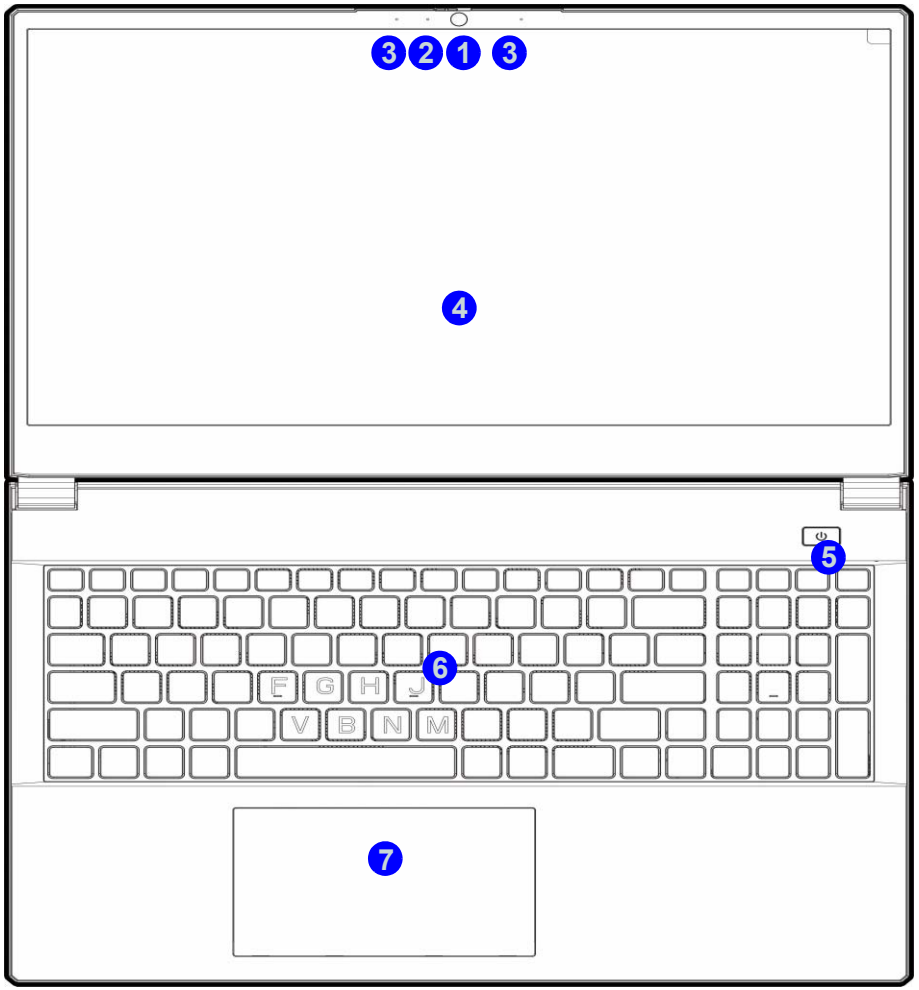
Full Range AC/DC Adapter
AC Input: 100 - 240V, 50 - 60Hz
DC Output: 20V, 9A (**180W**)

Dimensions & Weight

361mm (w) * 247mm (d) * 24.5mm (h)
2.25kg (Barebone with 53.35Wh Battery)

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. Keyboard
7. Touchpad & Buttons

External Locator - Front & Right Side Views

FRONT VIEW

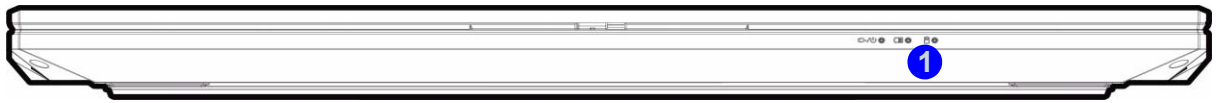


Figure 2
Front View

1. LED Indicators

RIGHT SIDE VIEW

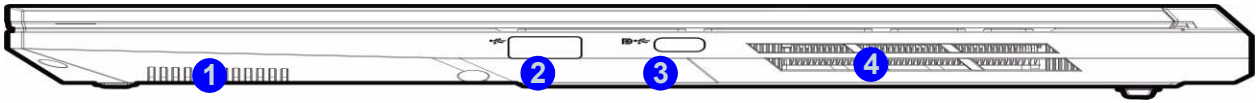


Figure 3
Right Side View

1. Speaker
2. USB 3.2 Gen 2 Type-A Port
3. Display Port 1.4 over USB 3.2 Gen 2 Type-C Port
4. Vent

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. 2-In-1 Audio Jack (Headphone and Microphone)
6. Speaker

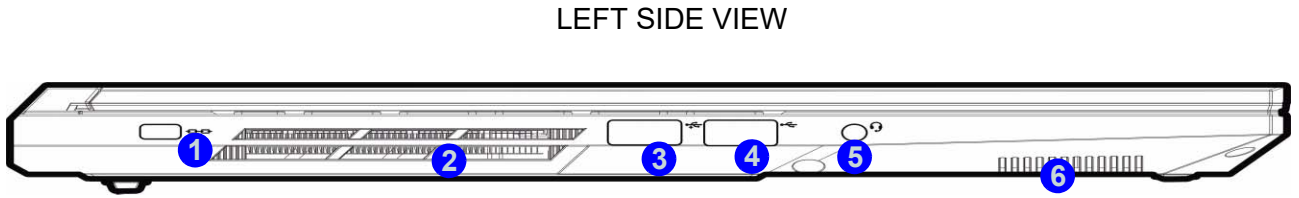
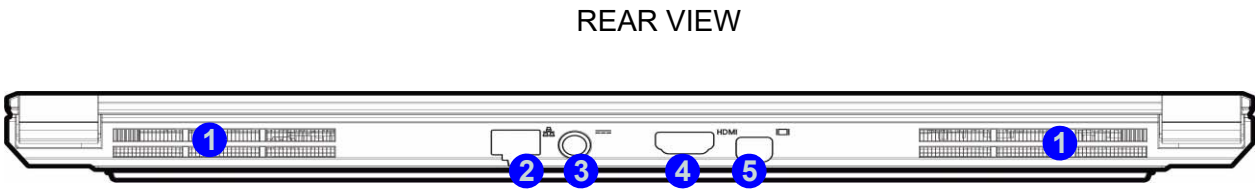


Figure 5
Rear View

1. Vent
2. RJ-45 LAN Jack
3. AC-In Jack
4. HDMI-Out Port
5. Mini Display Port 1.4



External Locator - Bottom View

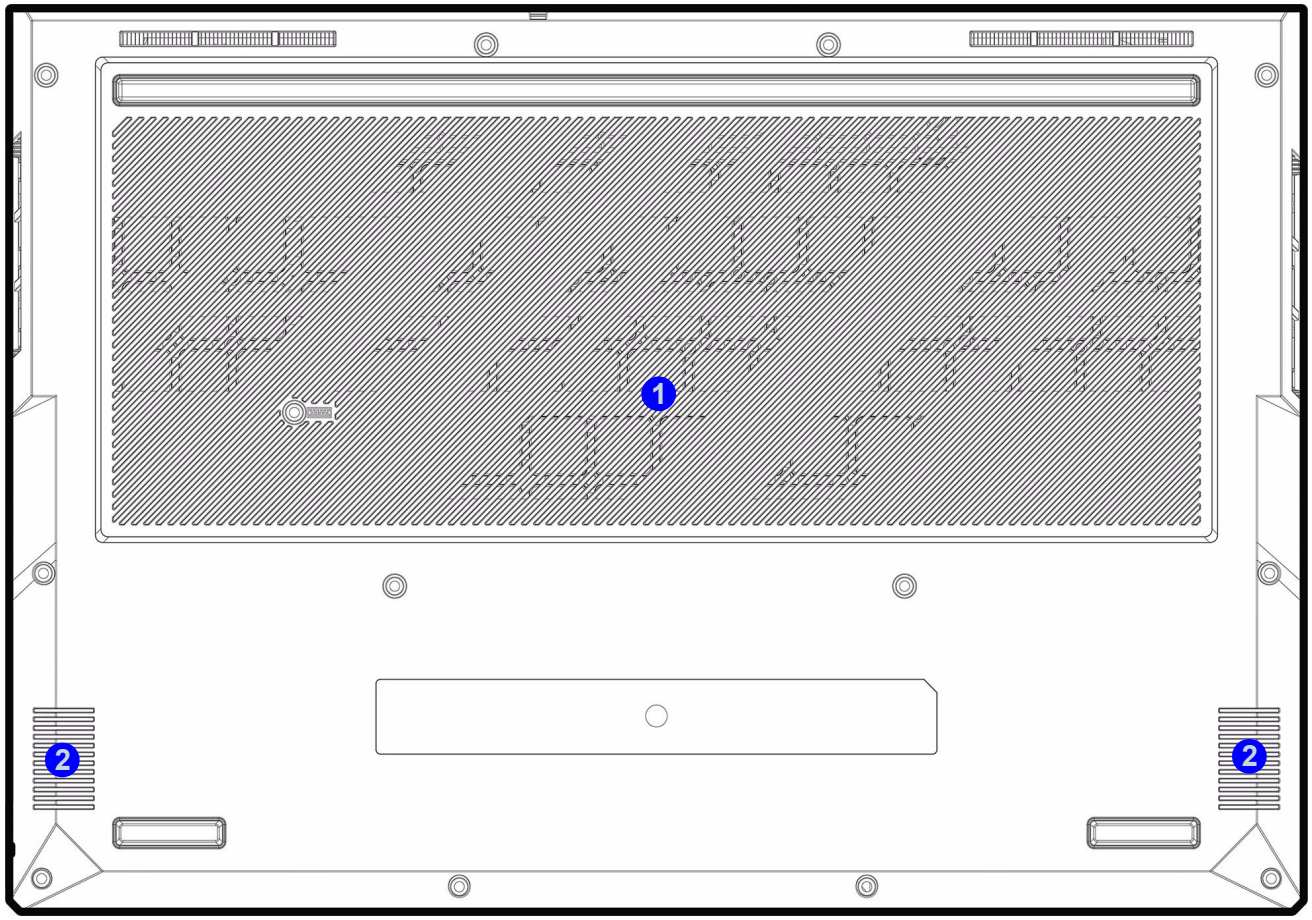


Figure 6
Bottom View

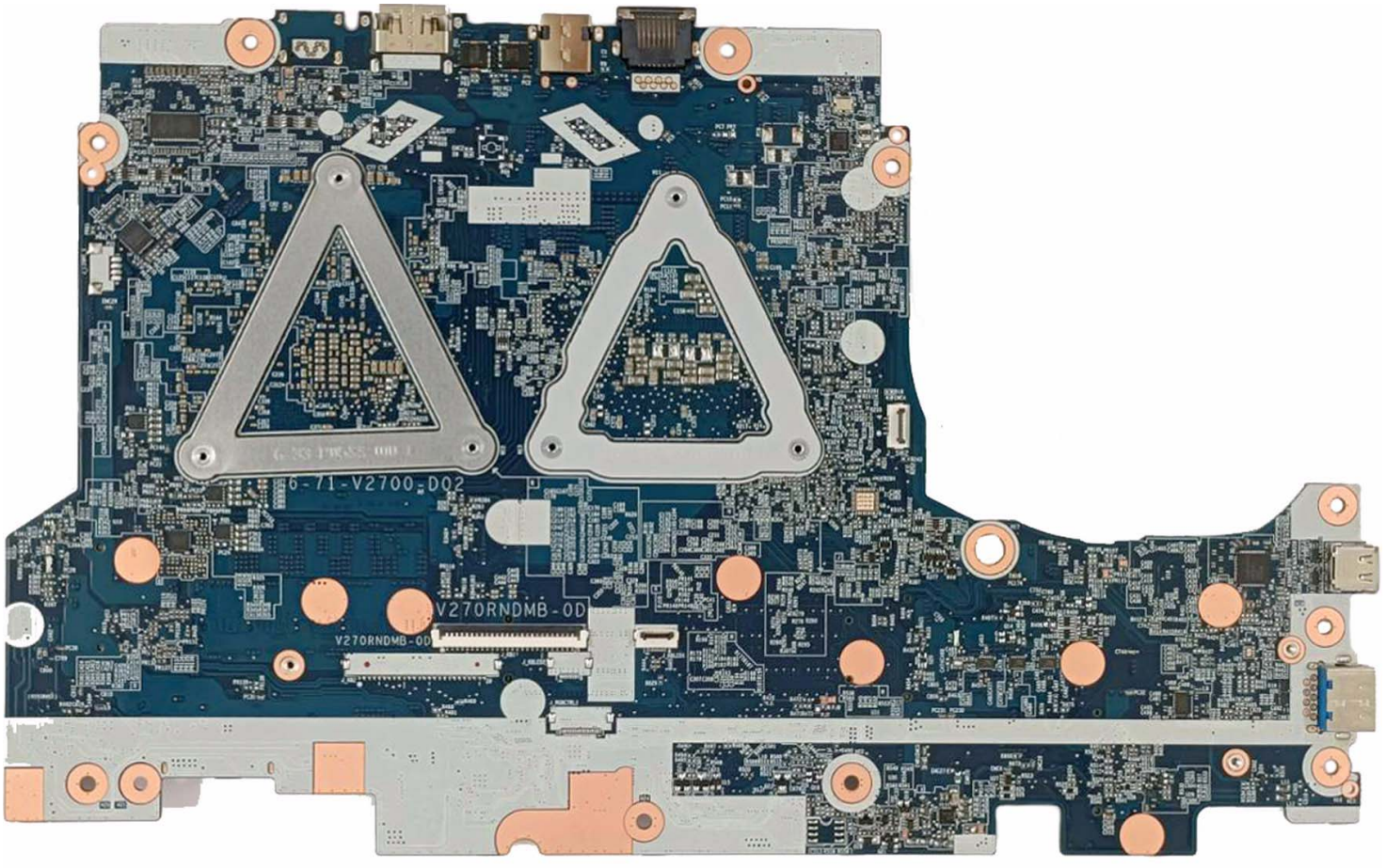
1. Vent
2. Speakers

Overheating

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

Mainboard Overview - Top (Key Parts)

Figure 7
Mainboard Top Key Parts



Mainboard Overview - Bottom (Key Parts)

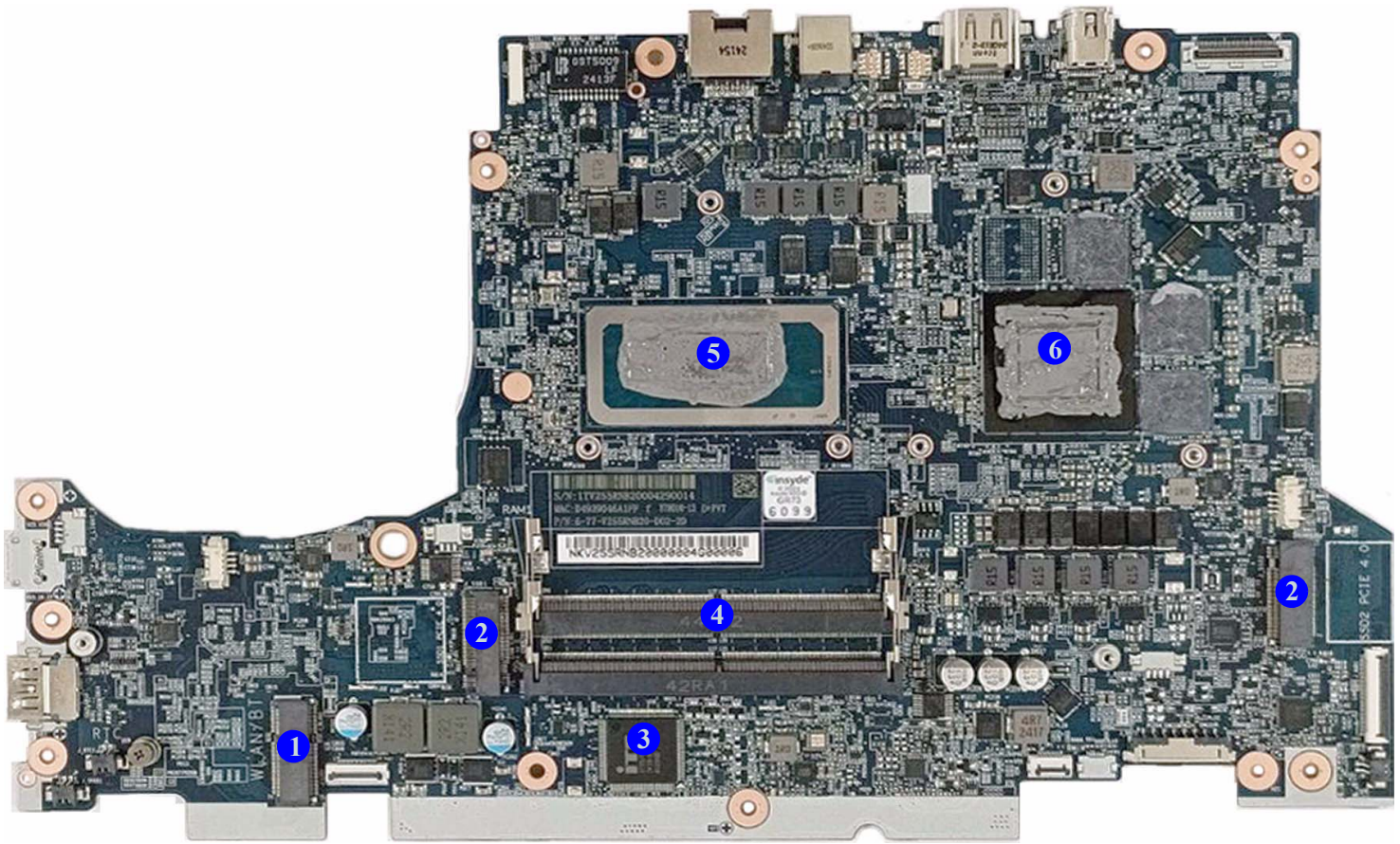


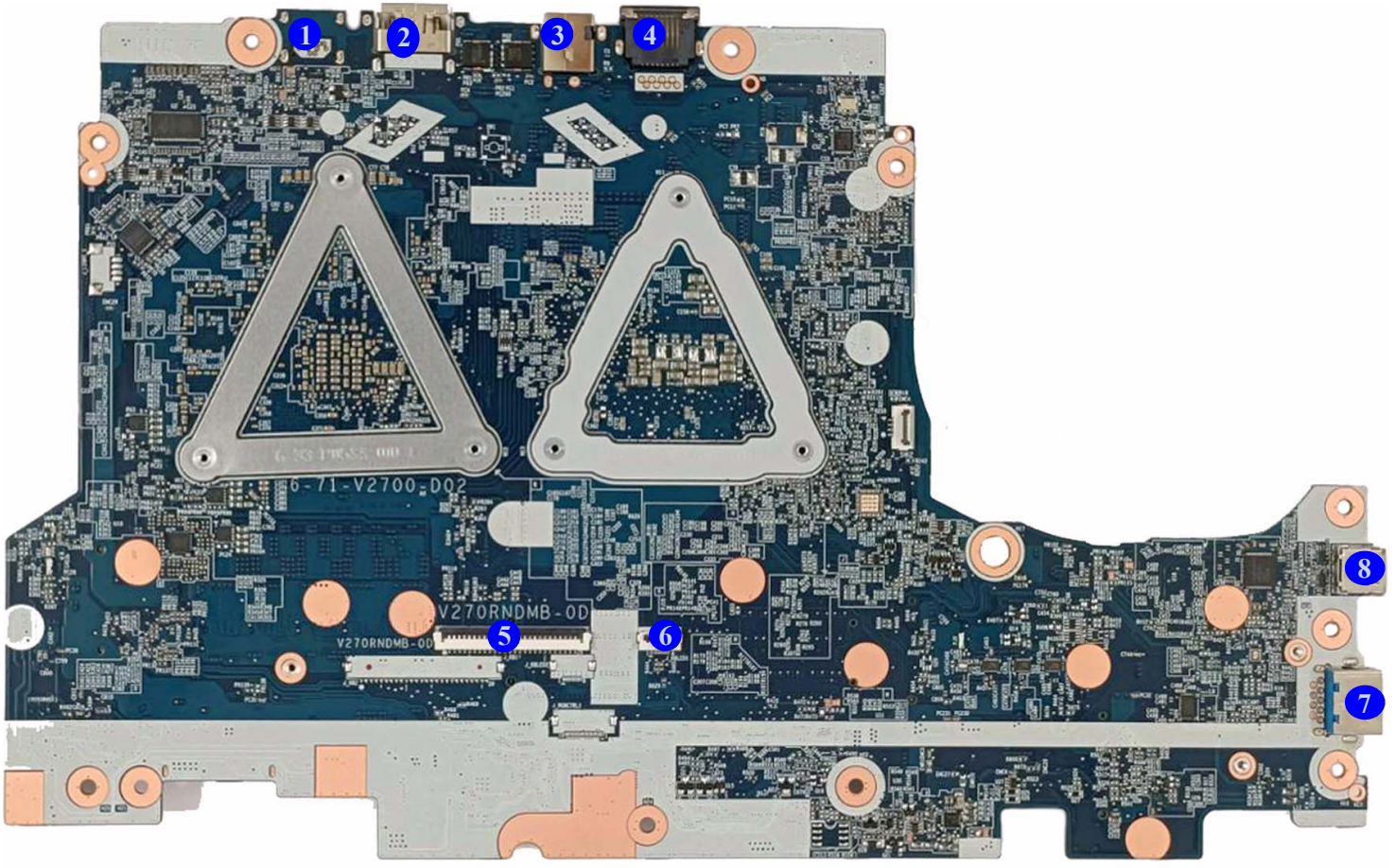
Figure 8
Mainboard Bottom Key Parts

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

Mainboard Overview - Top (Connectors)

Figure 9
Mainboard Top Connectors

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



Mainboard Overview - Bottom (Connectors)

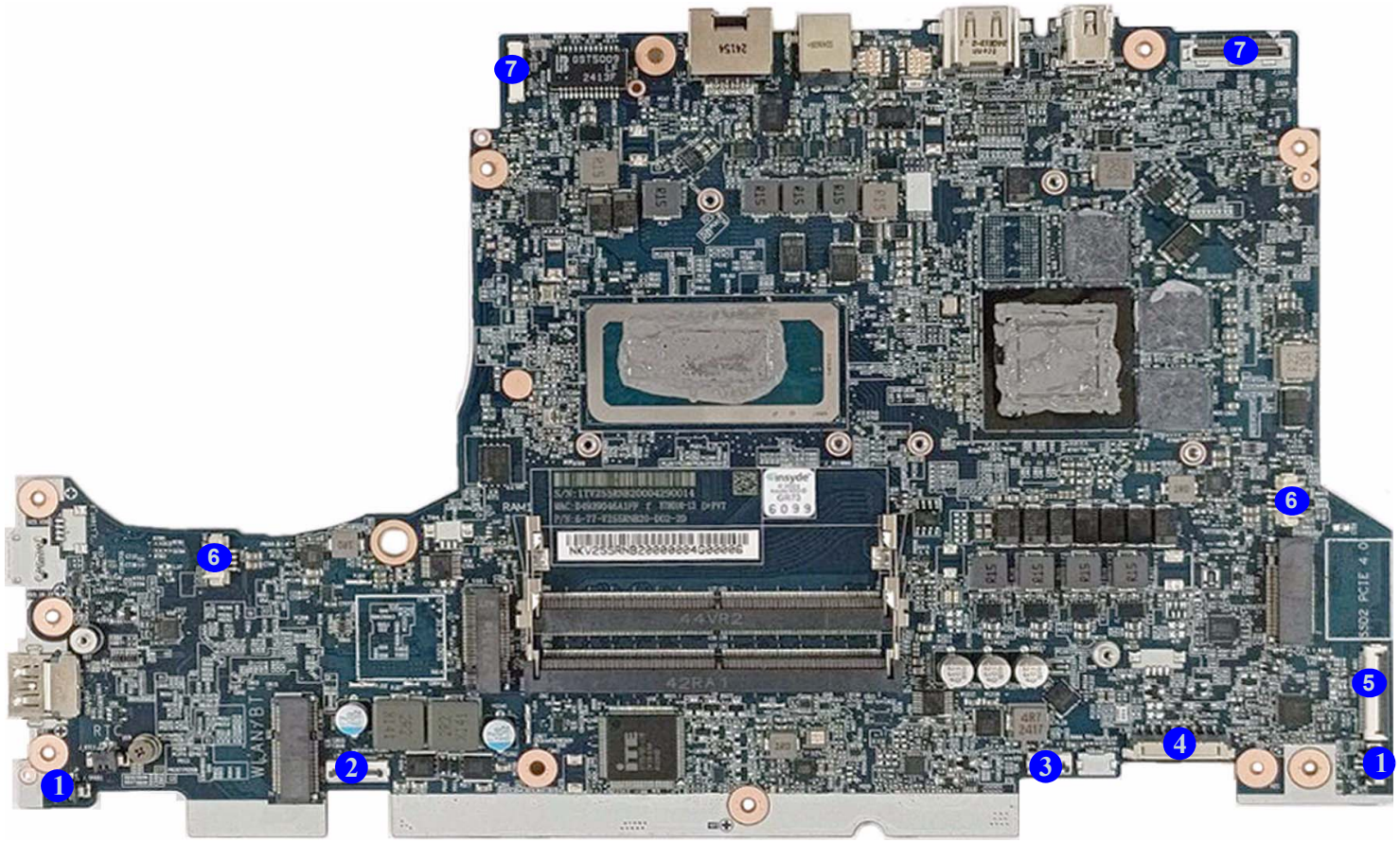


Figure 10
Mainboard Bottom Connectors

1. Speaker Connector
2. LED Connector
3. Touchpad Cable Connector
4. Battery Connector
5. Audio Connector
6. Fan Connector
7. LCD Connector
8. CCD Connector

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***V255RNB2 / V255RNC2 / V255RND2*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

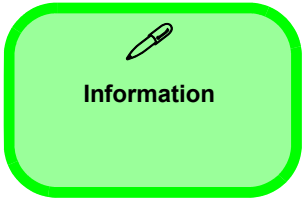
We suggest you completely review any procedure before you take the computer apart.

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.

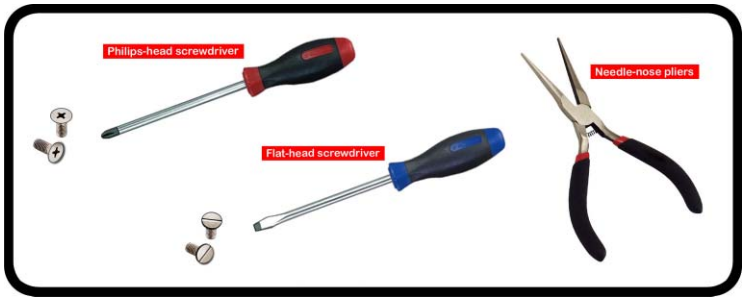


NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

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.

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.

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.

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 M.2 SSD:

1. Remove the battery *page 2 - 5*
2. Remove the M.2 SSD-1 *page 2 - 9*
3. Remove the M.2 SSD-2 *page 2 - 10*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 12*

To remove the Wireless LAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the WLAN *page 2 - 13*

To remove the CCD Module:

1. Remove the battery *page 2 - 5*
2. Remove the CCD module *page 2 - 15*

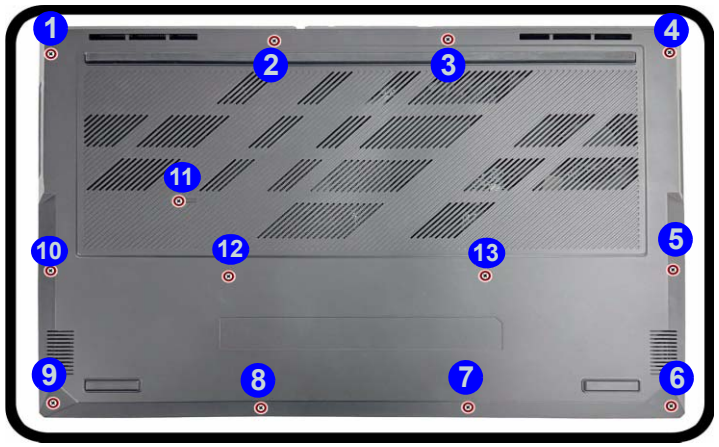
Removing the Battery

1. Turn **off** the computer, turn it over.
2. Remove screws 1 - 13 (*Figure 1a*).
3. Carefully lift the bottom case 14 up in the direction of the arrow at points 15 - 16 (*Figure 1b*).
4. The battery will be visible at point 17 on the computer (*Figure 1c*).

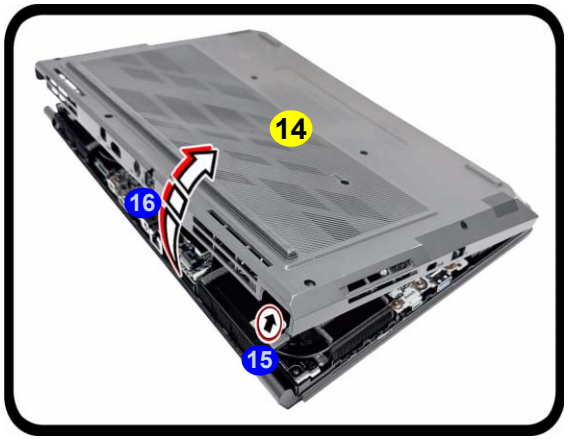
Figure 1
Battery Removal

a. Remove the screws.
b. Remove the bottom case.
c. Locate the battery.

a.



b.



c.

14. Bottom Case

- 13 Screws

Figure 2
Battery Removal (cont'd.)

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

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 bottom cover).

d.

e.

24. Battery

- 5 Screws

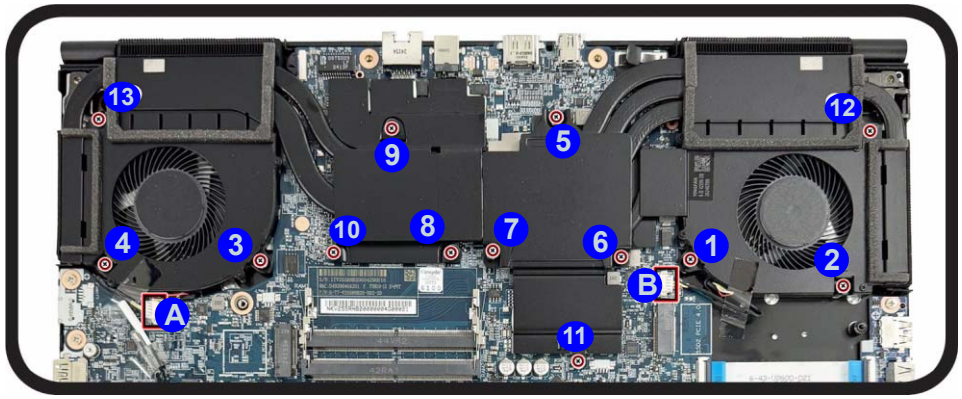
Removing the Keyboard

1. Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*).
2. Disconnect cables A - B and remove screws 1 - 13 from the heatsink unit in the order indicated (i.e screw 13 first through to screw 1 last *Figure 3a*).
3. Carefully (it may be hot) remove the heatsink unit 14 using a tool to lever the heatsink up.
4. The keyboard adhesive mylar will be visible at point 15 on the computer. Pull the adhesive mylar 16 out to reveal the keyboard access point. (*Figure 3b*).

Figure 3
Keyboard Removal

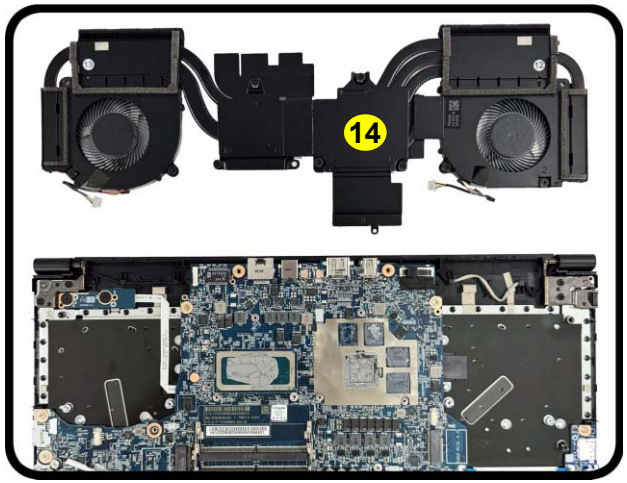
a. Disconnect the cable and remove the screws in the correct order.
b. Carefully remove the heat sink unit and remove the adhesive mylar from the keyboard.

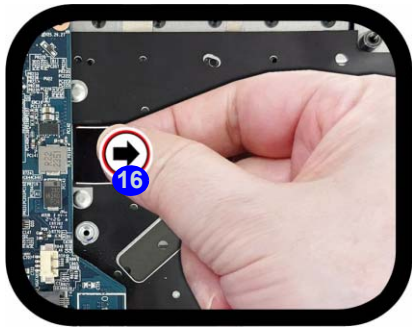
a.



Note:
Loosen the screws in the reverse order 13-12-11-10-9-8-7-6-5-4-3-2-1 as indicated.

b.





14. Heat SInk Unit

- 13 Screws

Figure 4
Keyboard Removal (cont'd.)

c. Eject the keyboard using a special eject stick to push the keyboard out while releasing the keyboard as shown.
d. Lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket.
e. Remove the keyboard.

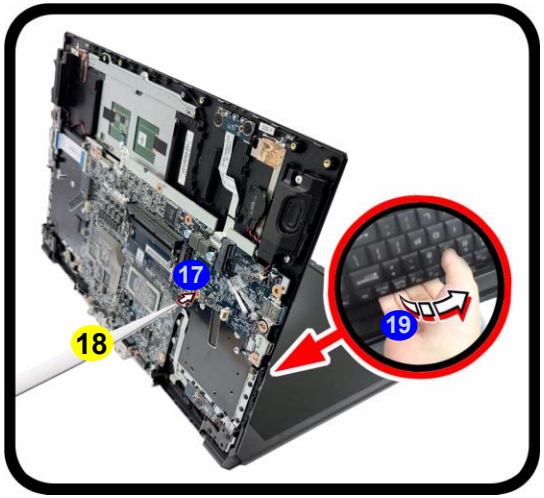
Re-inserting the Keyboard

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

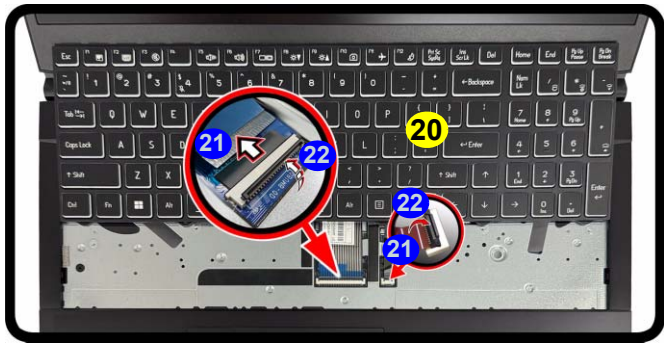
4. Eject Stick
6. Keyboard

5. Open it up with the LCD on a flat surface before pressing at point 17 to release the keyboard module (use the special eject stick 18 to do this) while releasing the keyboard in the direction of the arrow 19 as shown (***Figure 4c***).
6. Carefully lift the keyboard 20 up, being careful not to bend the keyboard ribbon cable 21. Disconnect the keyboard ribbon cable 21 from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins 22 away from the base (***Figure 4d***).
7. Carefully lift the keyboard 20 off the computer (***Figure 4e***).

c.



d.



e.

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 5a*).
3. Remove the screw 2 (*Figure 5b*).
4. The M.2 SSD module 3 (*Figure 5c*) 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 screws and make sure that the thermal pad 4 is attached).

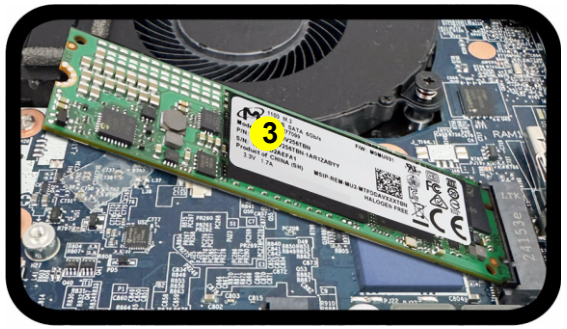
Figure 5
M.2 SSD-1 Module Removal

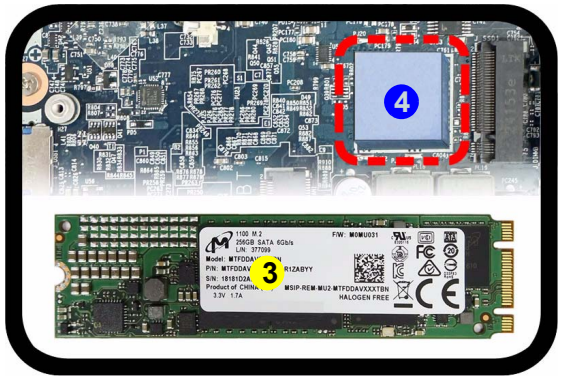
a. Locate the M.2 SSD.
b. Remove the screw.
c. The M.2 SSD module will pop up.

a.

b.

c.





Thermal Pad

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

3.M2 SSD Module
PCIE

- 1 Screw

Figure 6
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.

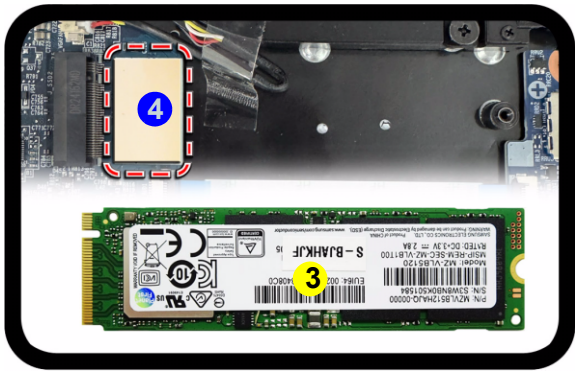
M.2 SSD-2 Removal Procedure

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 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 screws and make sure that the thermal pad 4 is attached).

a.

b.

c.



Thermal Pad

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

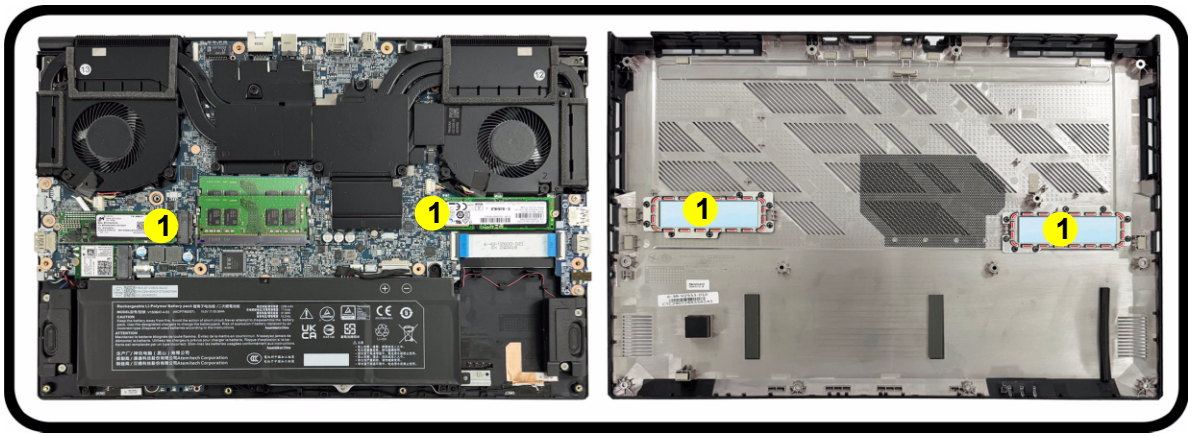
3.M2 SSD Module PCIE

- 1 Screw

M.2 SSD Thermal Pad location

When installing a new module, make sure to place the thermal pad 1 in its proper place. Note that the thermal pad should match the location of the main chip on the SSD module, in order to offer the thermal protection as illustrated.

Figure 7
Thermal Pad Location



1.Thermal Pad

Figure 8
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

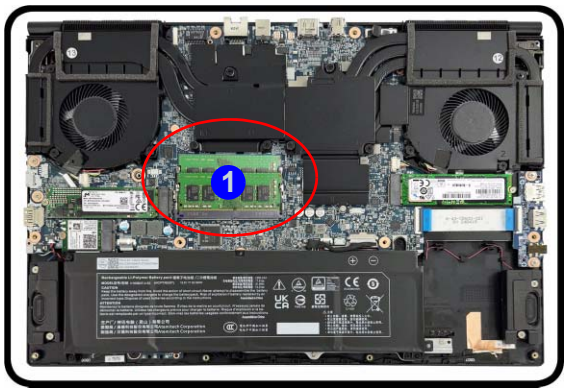
Removing the System Memory (RAM)

The computer has four memory sockets for 262 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR5 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.

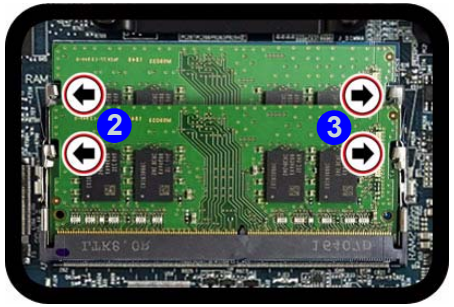
Memory Upgrade Process

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 8a***).
3. Gently pull the two release latches (2 & 3) on the sides of the memory socket in the direction indicated by the arrows (***Figure 8b***). The RAM module 4 will pop-up (***Figure 8c***), 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.

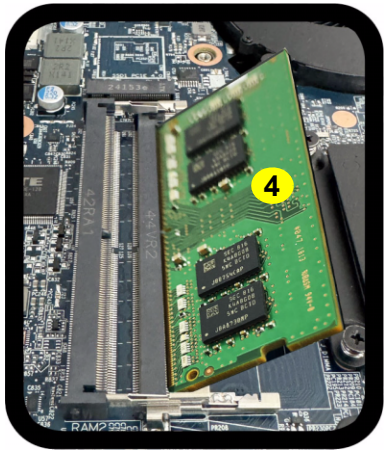
a.



b.



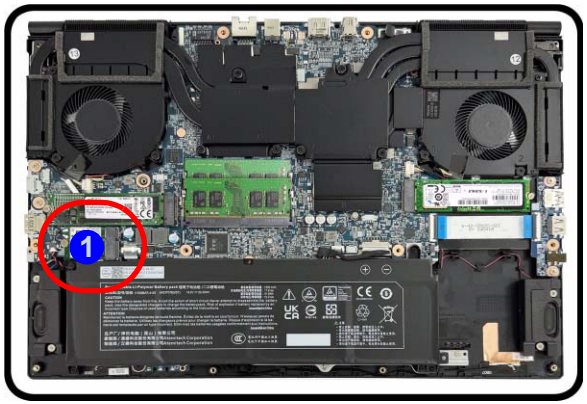
c.



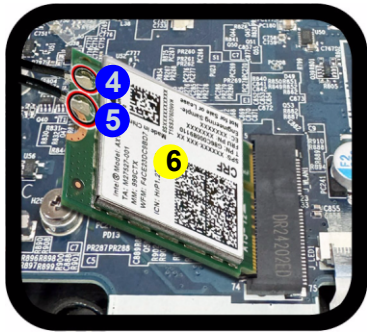
Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*).
2. The Wireless LAN module will be visible at point 1 on the mainboard (*Figure 9a*).
3. Remove the screw 2 and bracket 3 , and then carefully disconnect the cables 4 & 5 (*Figure 9b*)
4. The Wireless LAN module 6 (*Figure 9c*) 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 all the screws and bottom cover).

a.



b.



c.

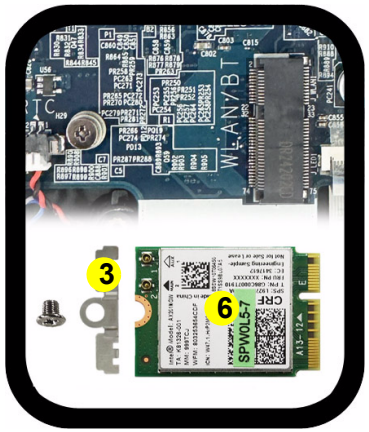


Figure 9
Wireless LAN Module Removal

a. Locate the WLAN.
b. Remove the screw, bracket, and then disconnect the cables.
c. The WLAN module will pop up and lift it out of the computer.

Note: Make sure you reconnect the antenna cable to the "1 + 2" socket (*Figure 9b*).

3. Bracket
6. 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.

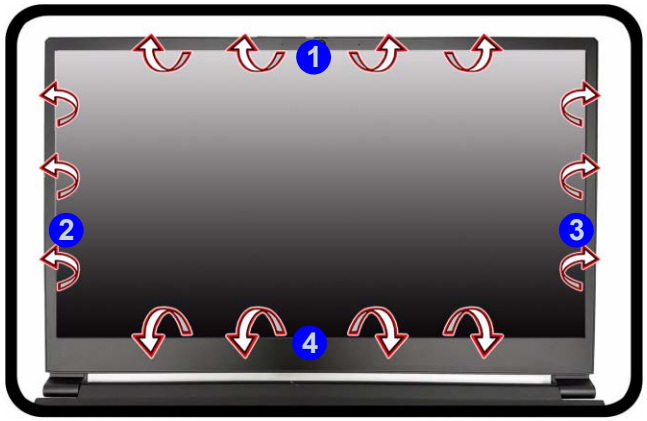
Removing the CCD

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 10a*).
4. Remove the LCD front cover 5 (*Figure 10b*).

Figure 10
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.

a.



b.

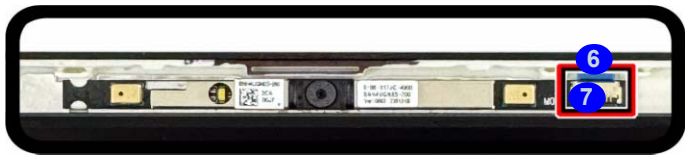
5. LCD Front Mylar

Figure 11
CCD Removal (cont'd)

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

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 11c***).
6. Remove the CCD module 8 (***Figure 11d***).
7. Reverse the process to install a new CCD module.

c.



d.

8. CCD Module

Appendix A: Part Lists

This appendix breaks down the ***V255RNB2 / V255RNC2 / V255RND2*** 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.

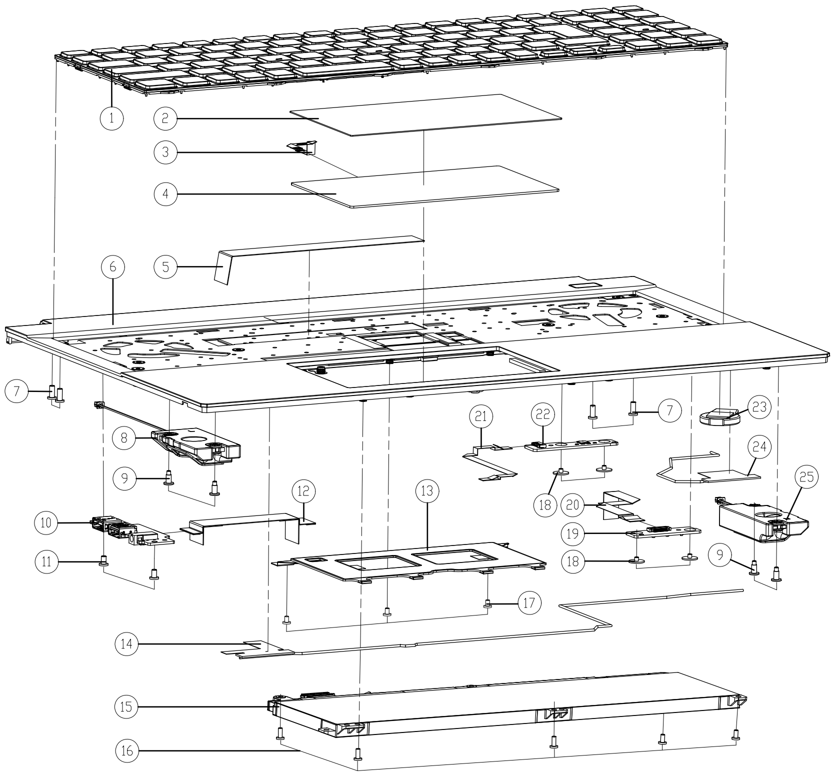
Part List Illustration Location

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

Table A - 1
Part List Illustration Location

Part	
Top	*page A - 3*
Bottom	*page A - 4*
Main Board	*page A - 5*
LCD	*page A - 6*

Top



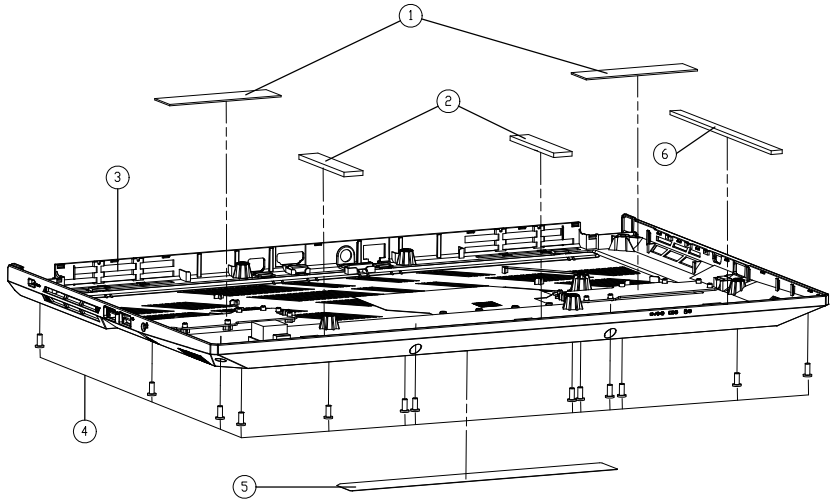
ITEM	PART NAME	PART NO	REMARK
1	KB FOR MULTI 15C BL KB US SERIES V260RNC1	6-V260RNC1-KB-MCL-US	
1	MCJ (OPTION) BOM V255RND2	6-V255RND2-CUSTOM-MCJ	
2	CLICK PAD MYLAR (AG32+DSTT-13N)(120.54*72.74*0.5T) V255RND2	6-40-V2552-010	
3	FFC CABLE TP TO MB L=50.4MM 3.3V 8PIN (QX) V250RND	6-43-V2500-021	
4	CLICK PAD FOCALTECH (IIC PTP + PS2 TP) FMB9713PFC (119.2*71.4MM) NL40GU	6-49-NL403-011	
5	LALATAPE(110X15X0.3T) TKB X370SNW-G	6-47-X3702-040	
6	TOP CASE MODULE V255RND2	6-39-V2552-012	
7	.SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
8	SPK+CABLE L 25*14 2W 4ΩL100MM VTS251412-00 V255RND2	6-23-5V255-0L0	
9	.SCREW M2*6.2L NI ICT NY FOR SPEAKER	6-35-Z1120-6R2	
10	AUDIO BOARD V2.0 V255RND2	6-77-V2558-D02	
11	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
12	FFC CABLE AUDIO TO MB L=77MM 5V 30PIN (QX) V260RND	6-43-V2600-021	
13	CLICK PAD BKT MODULE V255RND2	6-33-V2552-101	
14	ANTENNA IPEX4 WLAN JEM WL2 PCB AR 30X7.5MM 2.4G/5G/6G WL2=400MM V150PNP	6-23-7V150-020	
15	BAT POLYMER 15.4V/3.51AH/53.35WH 4S1P SCUD EBTEB (BQ30Z55) (RH5K37140031) (3410MAH) (W/3C)	6-87-V150S-53G02	
15	BAT POLYMER 15.2V/3510MAH/53.35WH 4S1P ATC GANFENG LIENERGY (SH366006+BQ294708) (541392290002) (3390MAH)	6-87-V350S-54J00	
16	SCREW M2*5L KI(T=0.8 D=4.0) BK/Z ICT NY	6-35-B6120-5R0	
17	.SCREW M2*3L KI NI ICT NY (DD=Ø4.0,DT=0.8)	6-35-B1120-3RD	
18	SCREW M2*2L KI BK/Z ICT NY(Ø8,T=0.6)	6-35-B6120-2RE	
19	LED BOARD V2.0 V255RND2	6-77-V2554-D02	
20	FFC CABLE LED TO MB L=104MM 60V 16PIN (QX) V255RND2	6-43-V2550-011	
21	FFC CABLE POWER TO MB L=102MM 60V 4PIN (QX) V255RND2	6-43-V2550-021	
22	POWER SWITCH BOARD V1.0 V255RND2	6-77-V255S-D01	
23	BAT. 20MM 3V 220MAH W/CABLE 55MM BCR2032H5	6-23-22015-TE0	
24	ANTENNA IPEX4 WLAN JEM WL1 PCB AL 30X7.5MM 2.4G/5G/6G WL1=150MM V150PNP	6-23-7V150-010	
25	SPK+CABLE R L 25*14 2W 4ΩL20MM VTS251412-00 V255RND2	6-23-5V255-0R0	

Figure A - 1
Top

A.Part Lists

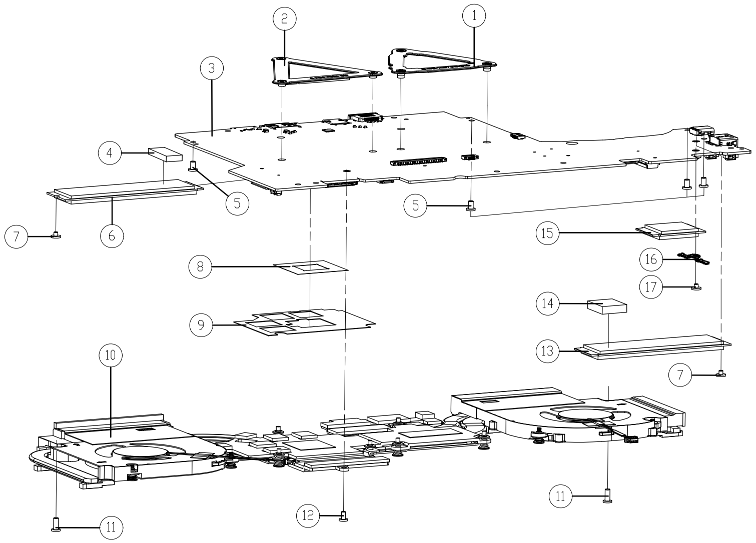
Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	THERMAL PAD SR-1000-AS30BS-UA1(65*18*1.25T)MMCD+P2) PD70SNE-G	6-48-PD7S1-011	
2	PORON GMC G4000 (44*9*2T) V255RND2	6-47-V2553-010	
3	BOTTOM CASE MODULE V255RND2	6-39-V2553-012	
4	.SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
5	PRODUCT LABEL FOR V255RND2	6-45-V255RND2-010	
5	PRODUCT LABEL FOR V255RNC2	6-45-V255RNC2-010	
5	PRODUCT LABEL FOR V255RNB2	6-45-V255RNB2-010	
6	CR4832 SPONGE (63*5*2T) V255RND2	6-47-V2553-030	

Main Board



ITEM	PART NAME	PART NO	REMARK
1	CPU SUPPORT SECC0.5T X270PTA	6-33-X2700-010	
2	VGA SUPPORT BRACKET SGCC (BOYA) PD50SNE-G	6-33-PD5SS-010-1	
3	MAIN BOARD(CPU/I7-13620H/2.4G) V2.0 (HYNIX VRAM)(EDP)(W/O TPM) V255RND2	6-77-V255RND20-D02-5F	
3	MAIN BOARD(CPU/I7-12650H/2.3G) V2.0 (SAMSUNG VRAM)(EDP)(W/O TPM) V255RNC2	6-77-V255RNC20-D02-2D	
3	MAIN BOARD(CPU/I7-12650H/2.3G) V2.0 (SAMSUNG VRAM)(EDP)(W/O TPM) V255RNB2	6-77-V255RNB20-D02-2D	
4	THERMAL PAD RS300 20*12*3.0MM NH70EDQ	6-48-NH702-011	
5	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
6	SSD PCIE G4*4 M.2 2280 2TB SAMSUNG MZVL22T0HBLB-XXXXX (PM9A1) PCIE G4*4 3D TLC 128 LAYERS	6-85-D512T-S00	
7	SCREW M2*2L KI NI ICT NY (DD=Ø5 ,T=0.8)	6-35-B1120-2RA	
8	GN21 X2X4 BLACK PET CY-28 3M467(29.0*29.0*0.1) V270RNC	6-40-V2700-020	FOR V255RNC2 V255RND2
8	GN20 P0-R BLACK PET CY-28 3M467 (29.0*29.0*0.1) V270RNC	6-40-V2700-010	FOR V255RNB2
9	ABSORBER MB VGA (HAST-12020+3M467) V270RNC	6-47-V2700-010	
10	THERMAL MODULE (HEATSINK + FAN PWM 5V) V255RND2	6-31-V255N-102	
11	.SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
12	SCREW M2*4L KI NI ICT NY (DD=Φ4.5,DT=0.8)	6-35-B1120-4RC	
13	SSD M.2 2280 512GB SAMSUNG MZVL2512HCJQ-XXXXX (PM9A1) PCIE G4*4 3D TLC 128 LAYERS	6-85-D515B-S0C	
14	THERMAL PAD MA500 (17.3*17.3*4T)MM X170KM-G	6-48-X17K2-0G0	
15	WLAN+BT COMBO DUAL BAND INTEL HARRISON PEAK 2 NEW OTP AX201.NGWG.NVW (MM#999TD0) NON-VPRO 2X2 AX+BT BT5.0 CNVI M.2 2230	6-88-NV40F-4210	
15	WLAN+BT CNVI M.2 2230, 1X1 AX+BT5.2 DUAL BAND WIFI 6 NON-VPRO, INTEL AX101.NGWG.NV (MM#999CV1)	6-88-V17DQ-001	
15	WLAN+BT COMBO DUAL BAND INTEL WIFI 6E TYPHOON PEAK 2 AX210.NGWG.NV (MM#999M85) NON-VPRO 2X2 AX+BT BT5.2 M.2 2230	6-88-X17KF-4210	
15	WLAN+BT COMBO DUAL BAND INTEL WIFI 6E GARFIELD PEAK 2 AX211.NGWG.NV (MM#999M5J) NO-VPRO 2X2 AX+BT BT5.3 M.2 2230 X270PTA	6-88-X270F-4210	
16	WLAN BRACKET(SUS304) V640AU	6-33-V6403-011	
17	SCREW B M2*3.25L BNI ICT NY	6-35-49120-3R2	

Figure A - 3
Main Board

A.Part Lists

LCD

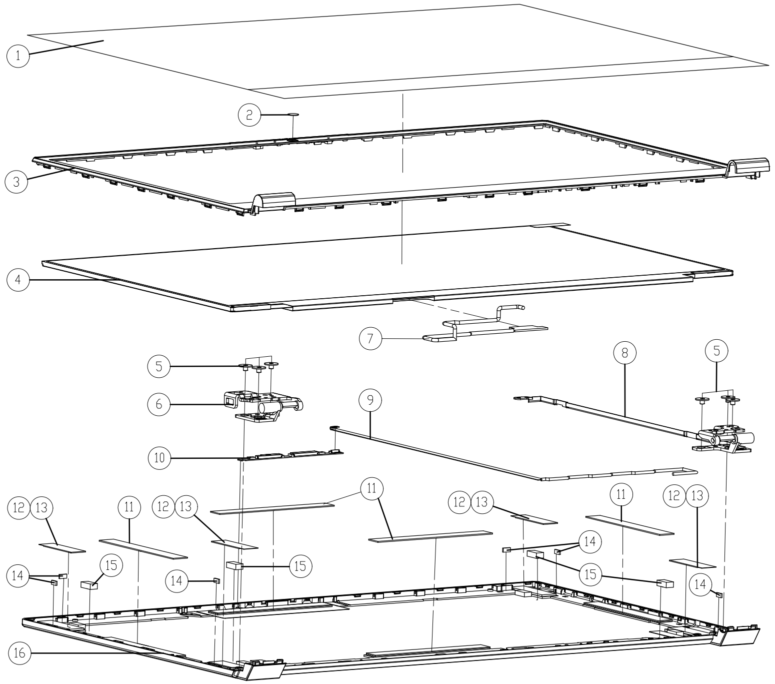


Figure A - 4
LCD

ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT MYLAR BOPP (380X245)V355SNC	6-40-V3558-S10	
2	LCD CCD LENS NL48NU2	6-40-NL481-010	
3	FRONT COVER MODULE V255RND2	6-39-V2551-012	
4	LCD N15.6" QHD/WVA/165HZ/N7/NON GT/EDP INNOLUX N156KME-GNA REV:C2 EDID:9A 2.6MM(SRGB100%)	6-50-L6B26-V212	
4	LCD N15.6" FHD/WVA/144HZ/N7/NON GT/EDP INNOLUX N156HMA-GA1 3.2MM(SRGB100%)	6-50-LBB32-V130	
4	LCD N15.6" FHD/WVA/144HZ/N4/NON GT/EDP INNOLUX N156HRA-EA1 LED 3.2MM	6-50-LBB32-V170	
4	LCD N15.6" FHD/WVA/144HZ/N4/NON GT/EDP LG LP156WFJ-SPB4 3.2MM	6-50-LBB32-L170	
5	SCREW M2.5*2.5L KI BK/Z ICT NY(Ø8,T=0.6)	6-35-B6125-2R5	
6	HINGE L SK7 V255RND2	6-33-V2551-0L1	
7	COAXIAL CABLE FOR EDP 250MM I 30V 40PIN 85Ω±10% (HLV355EDP10) (PITCH 0.5) (HL/LW CON: LV06130-224) V355SNC	6-43-V3551-S11-N	
8	HINGE R SK7 V255RND2	6-33-V2551-0R1	
9	WIRE+FFC CABLE FOR CCD 450MM 12P TO 8P 3.3V (HL) NV40ME	6-43-NV40T-010	
10	UVC CAMERA CHICONY FIX(RGB) C7FKH7221003920LH 1M HD W/2D-MIC 4.0*71.2 OV9734 N150ZU FW2739 W/WHITE-LED	6-88-N15ZC-5102	
10	UVC CAMERA USB 4.0*71.2*3.0MM, 2M FHD W/TNR W/2D-MIC SENSOR GLAXY CORE GC2607, BISON BNH4UDKE5-000 (N/A) (FW0613)	6-88-NJ5PC-4901	
11	LCD SPONGE (80*10*0.6T) SM55+DST-10 V155PNKQ	6-47-V1551-010	FOR 6-50-L6B26-V212
12	PANEL LA LA ADHESIVE(35*10*1T)	6-47-0019L-029	FOR 6-50-L6B26-V212
13	PANEL LA LA ADHESIVE(35*10*0.5T)	6-47-0019L-02C	FOR 6-50-LBB32-V130 6-50-LBB32-V170 6-50-LBB32-L170
14	RUBBER (5*2.4*0.8T) GRAY NS50MU	6-47-NS501-031	
15	GASKET (LZF) (10*5*3.2)	6-47-0019G-011	FOR 6-50-L6B26-V212
16	BACK COVER MODULE V255RND2	6-39-V2551-022	

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the ***V255RNB2 / V255RNC2 / V255RND2*** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

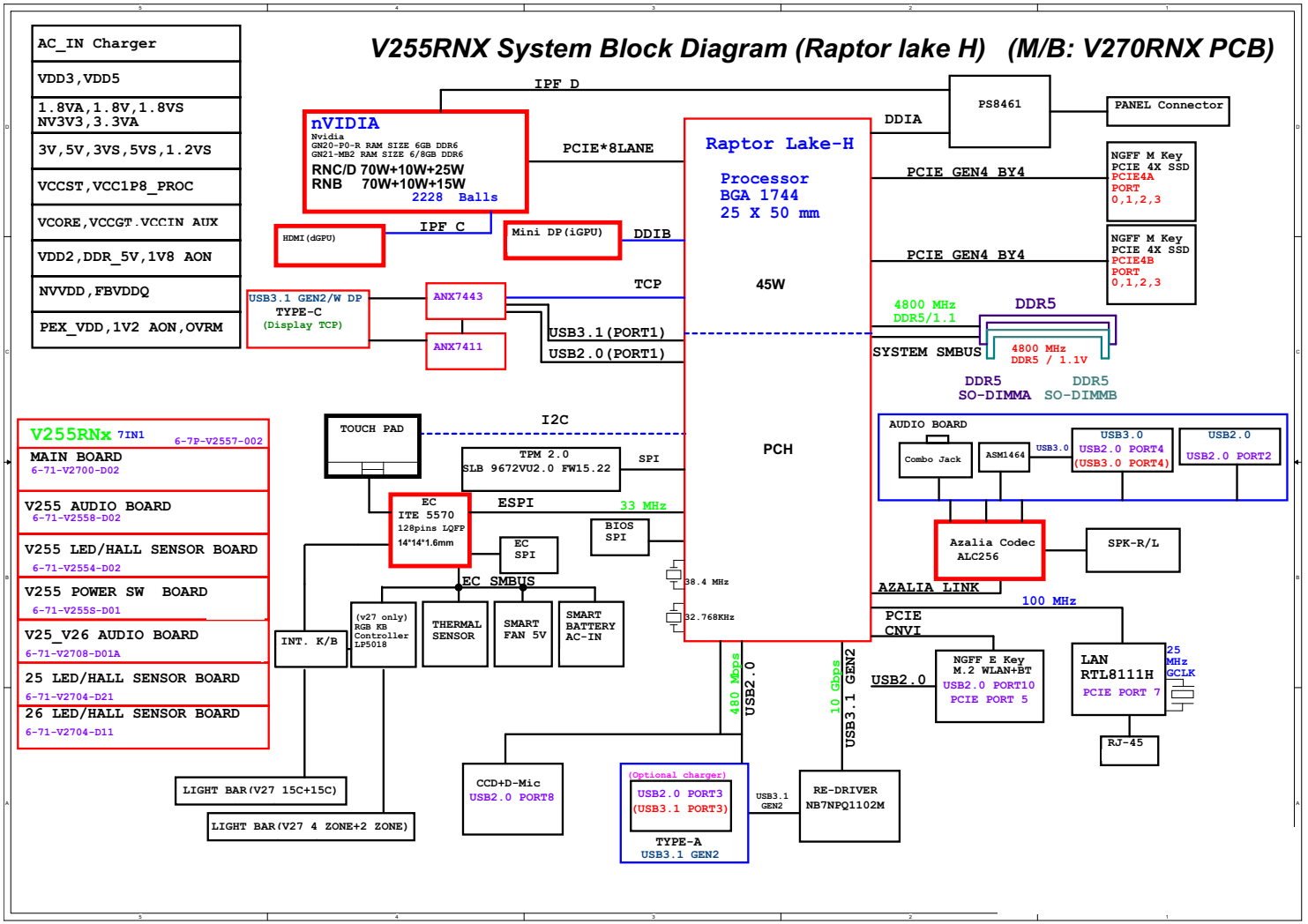
Table B - 1
SCHEMATIC DIAGRAMS

Version Note

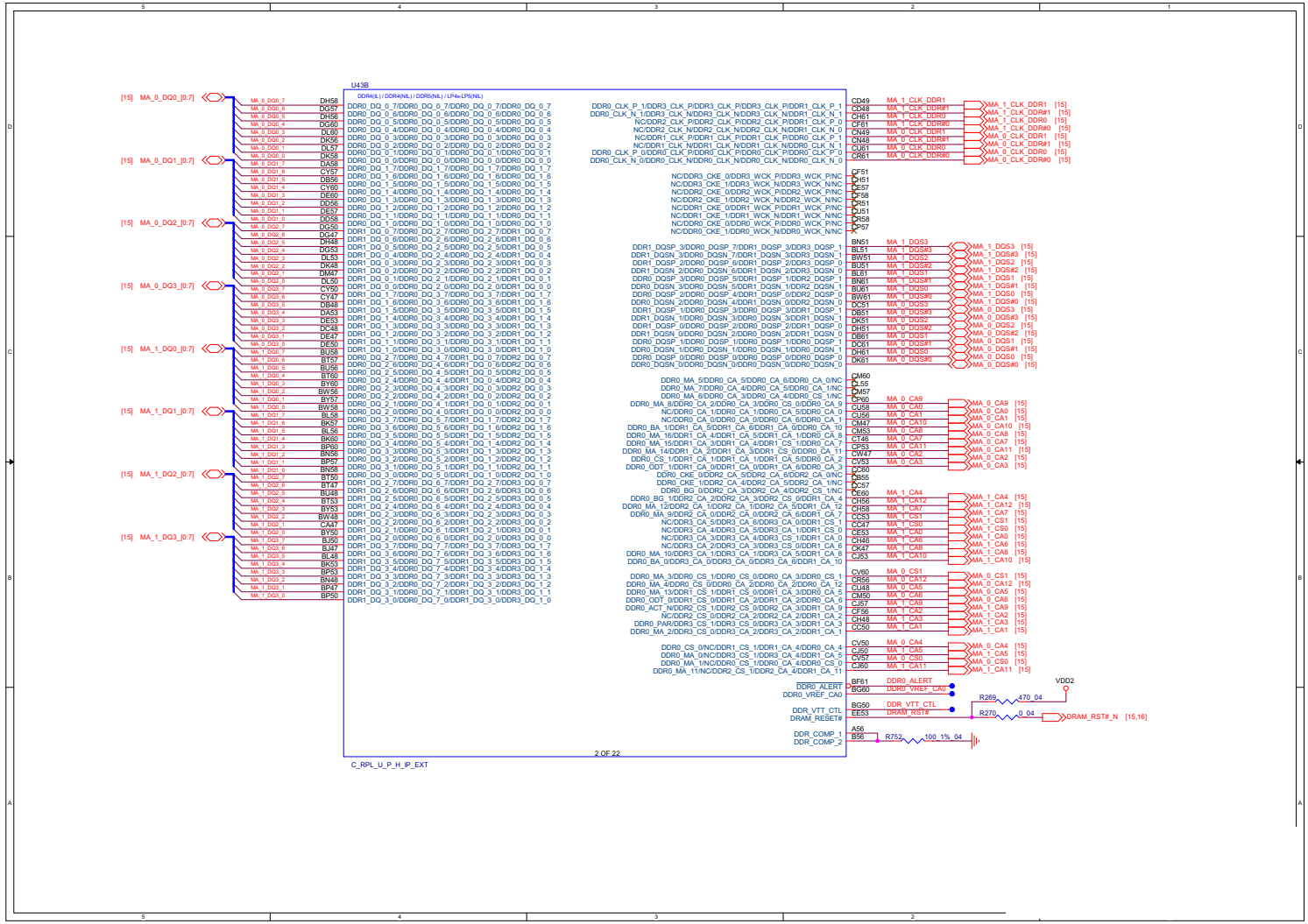
The schematic diagrams in this chapter are based upon version 6-7P-V2557-002. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 67
System Block Diagram



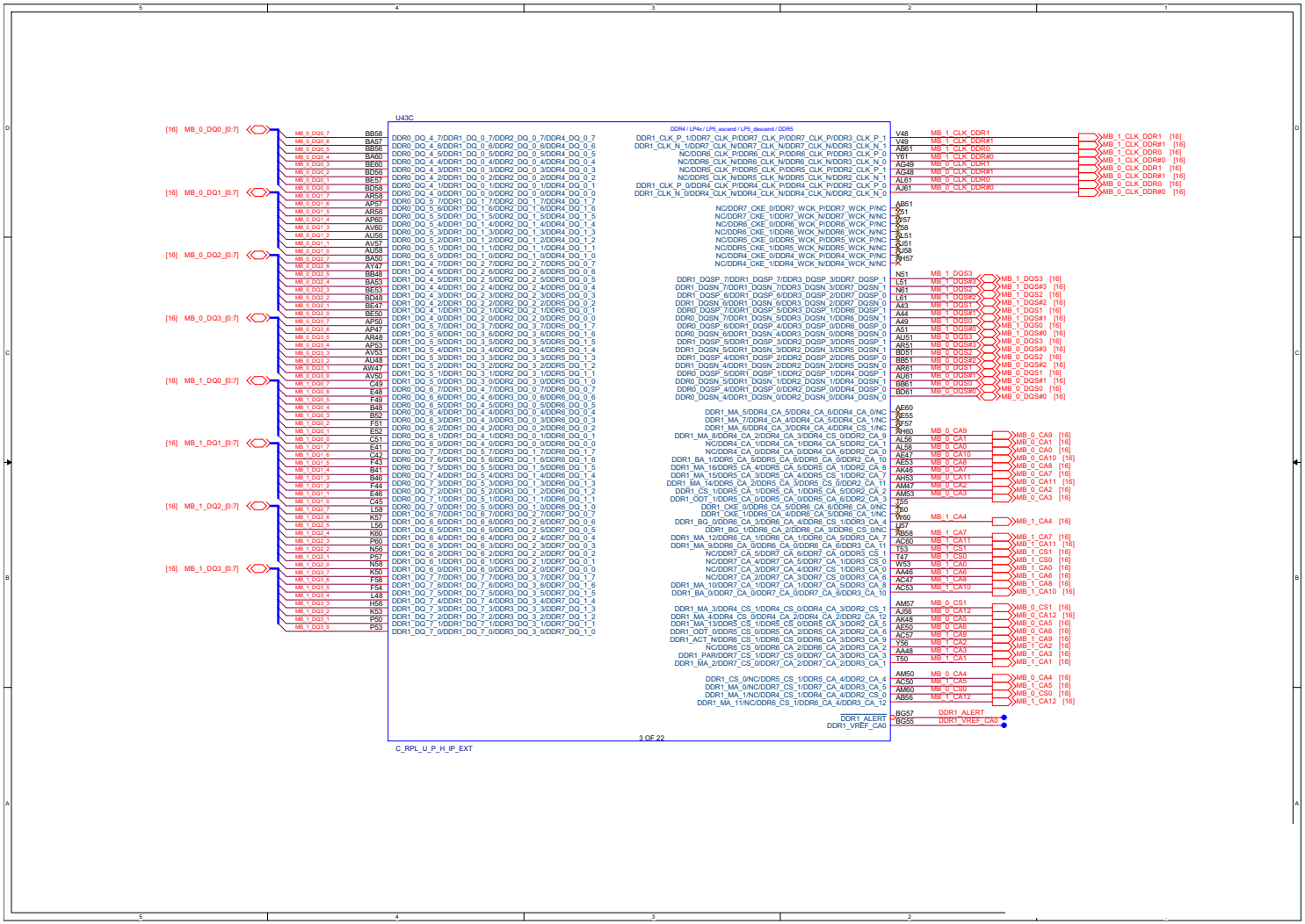
Processor 1/13



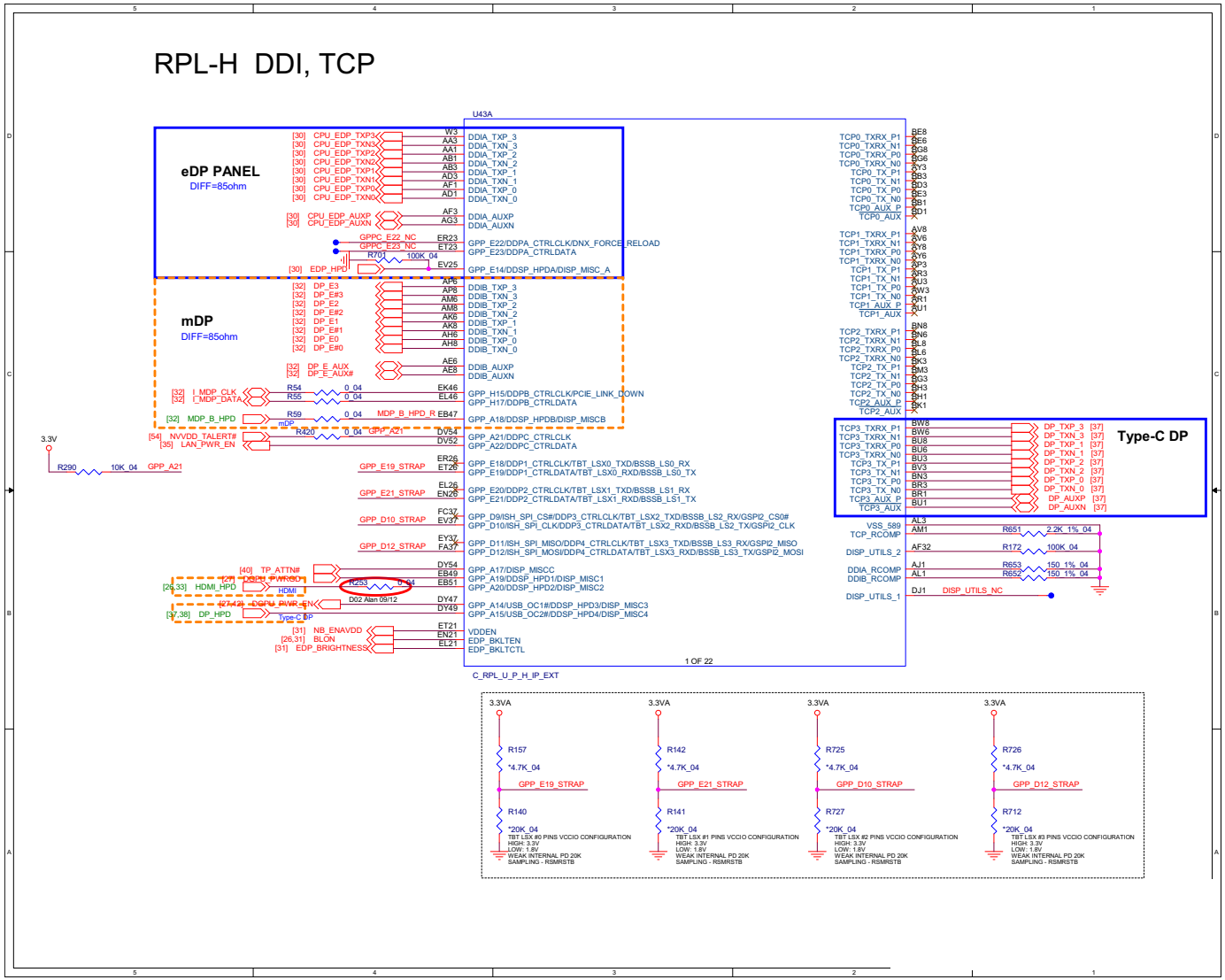
Sheet 2 of 67
Processor 1/13

Processor 2/13

Sheet 3 of 67
Processor 2/13

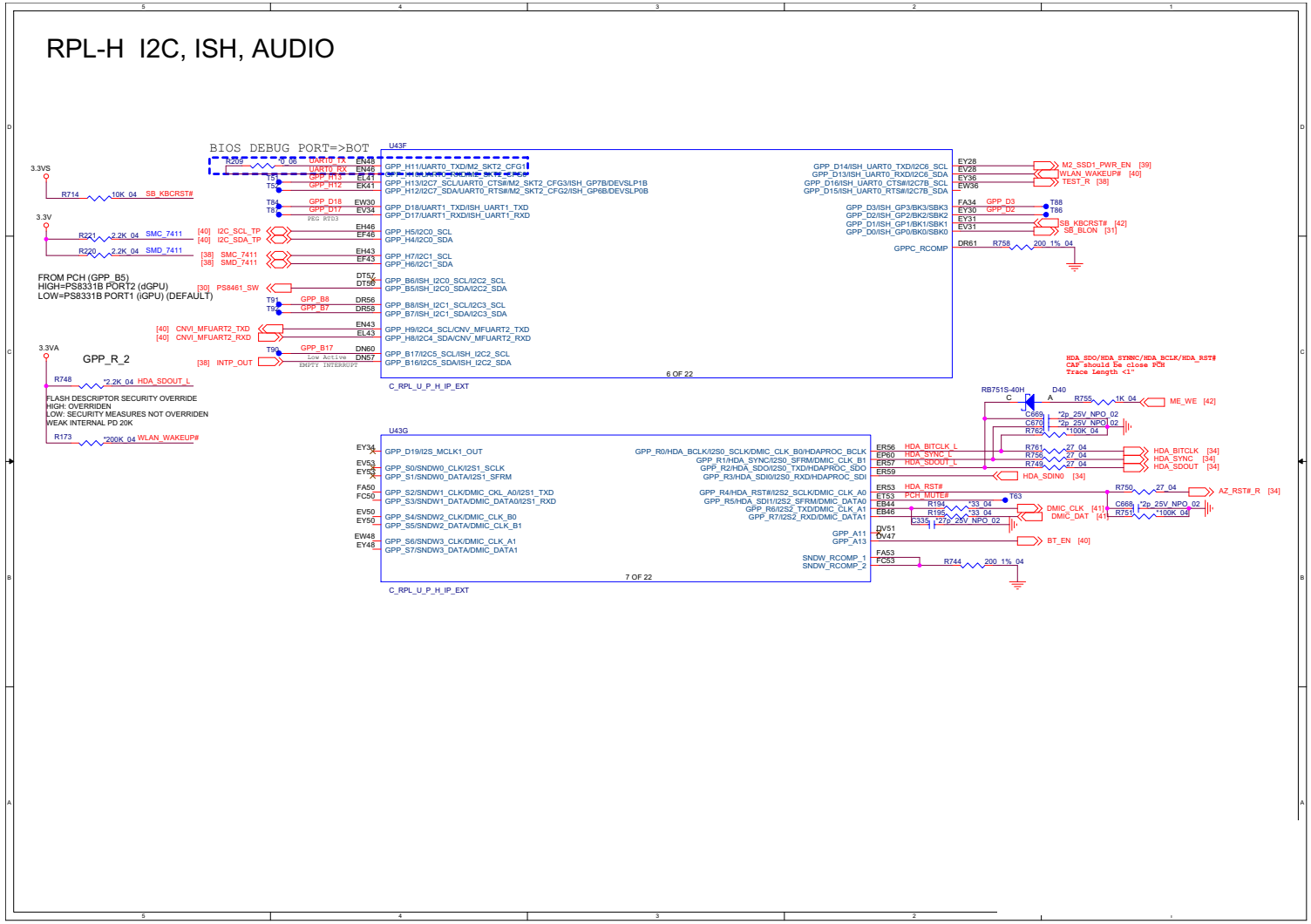


Processor 3/13

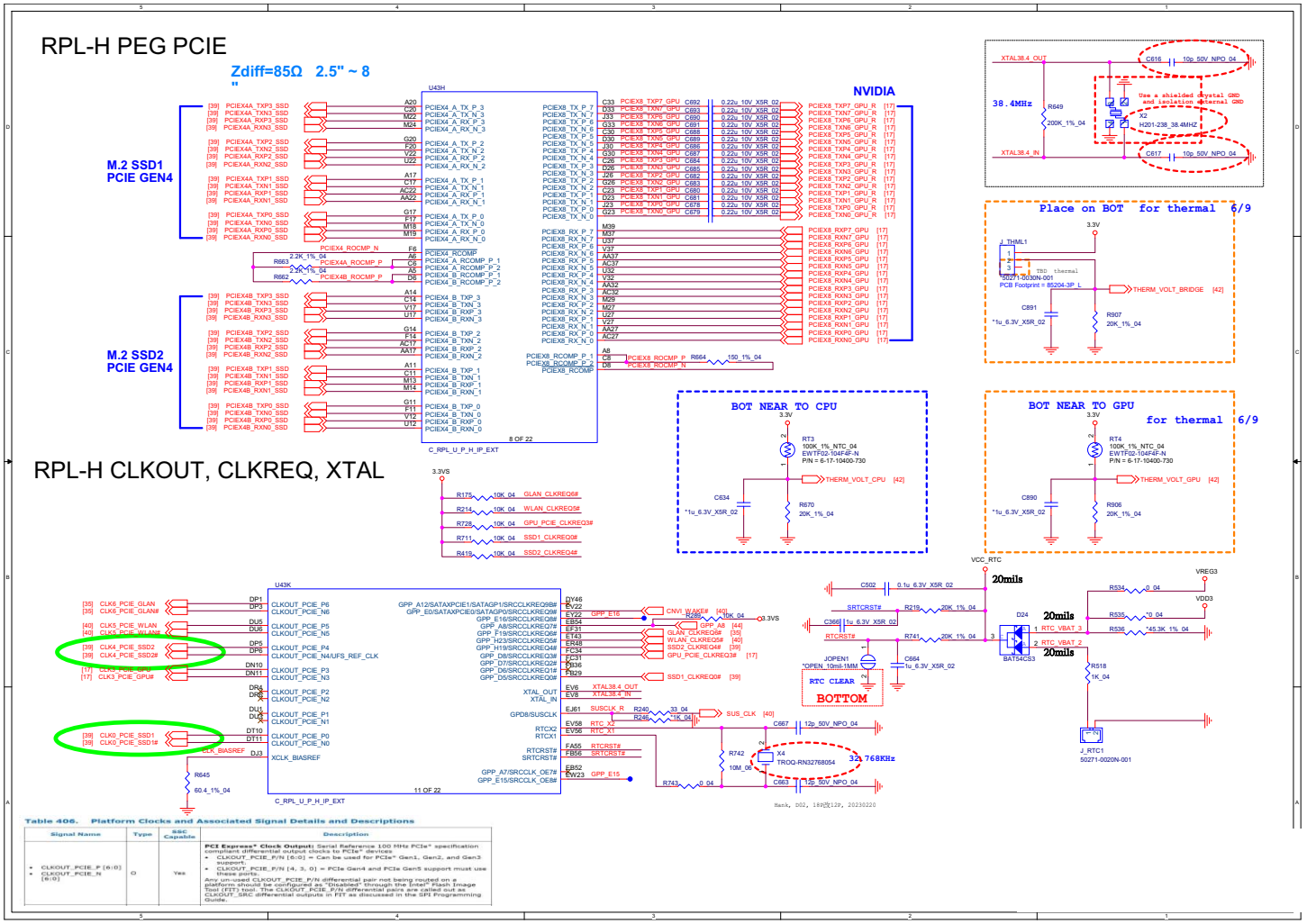


Processor 4/13

Sheet 5 of 67
Processor 4/13



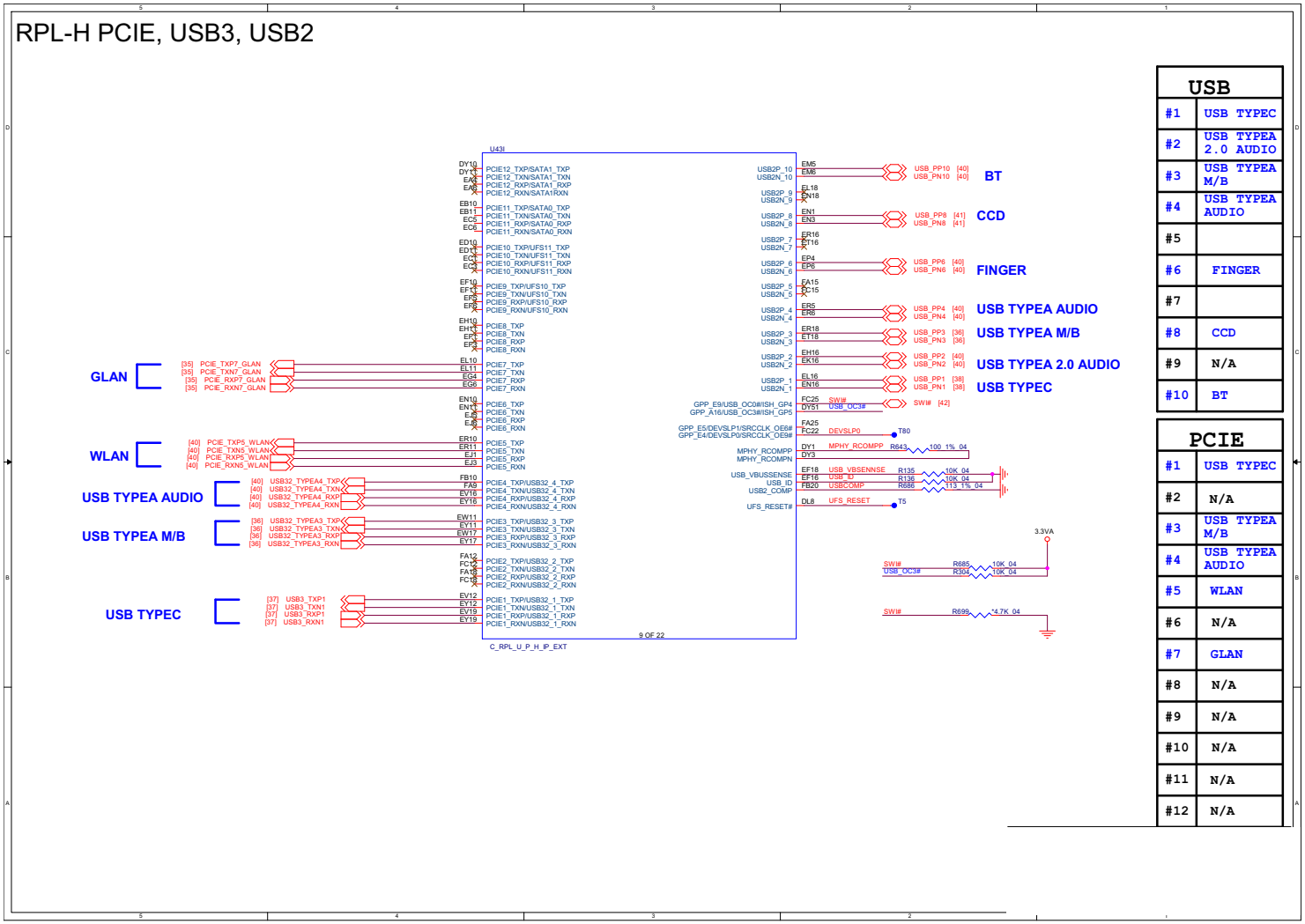
Processor 5/13



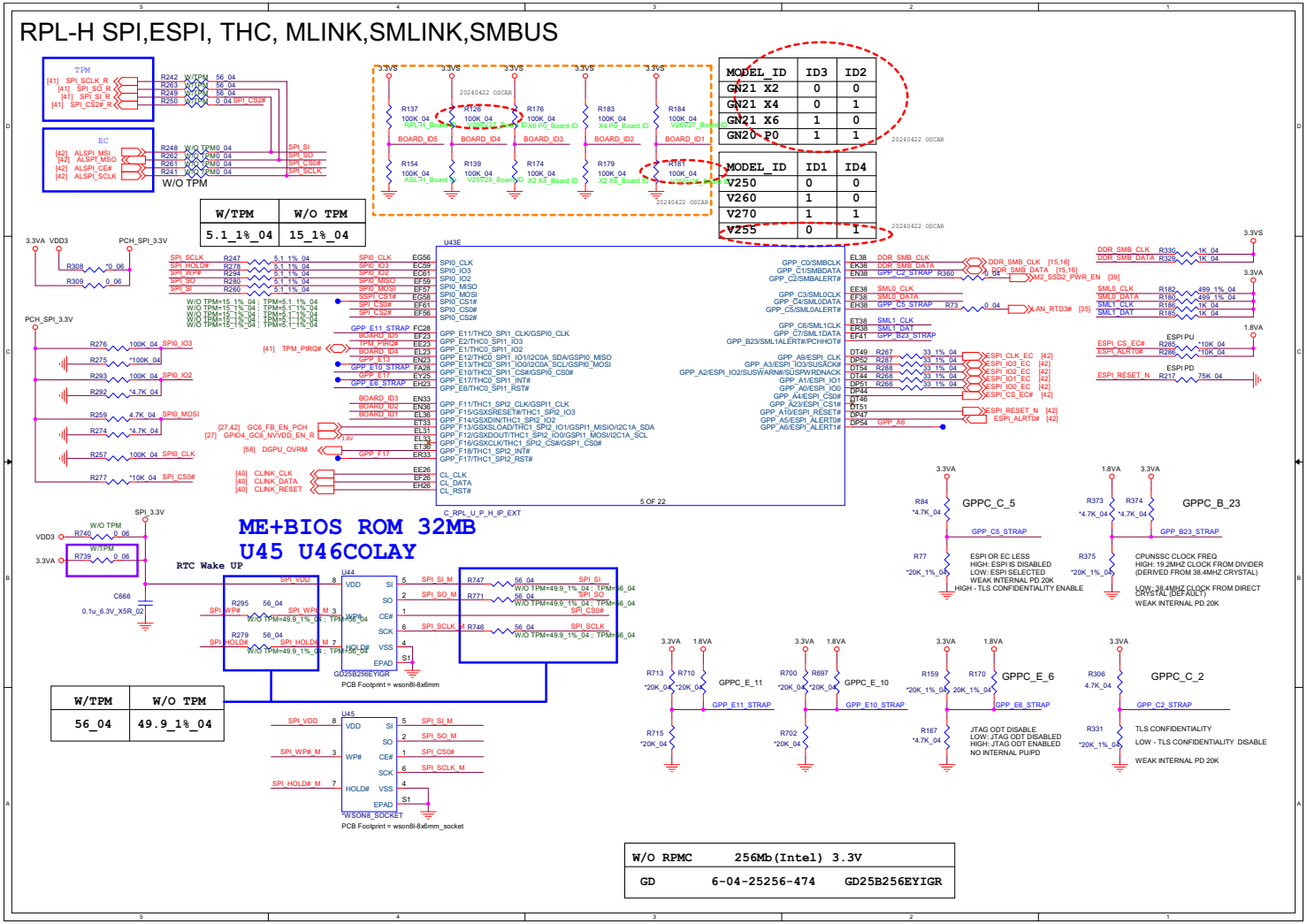
Sheet 6 of 67
Processor 5/13

Processor 6/13

Sheet 7 of 67
Processor 6/13



Processor 7/13



MODEL_ID	ID3	ID2
GN21 X2	0	0
GN21 X4	0	1
GN21 X6	1	0
GN20 P0	1	1

MODEL_ID	ID1	ID4
V250	0	0
V260	1	0
V270	1	1
V255	0	1

W/TPM	W/O TPM
5.1_1%_04	15_1%_04

W/TPM	W/O TPM
56_04	49.9_1%_04

W/O RPMC	256Mb(Intel) 3.3V	
GD	6-04-25256-474	GD25B256EYIGR

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Processor 7/13

Processor 8/13

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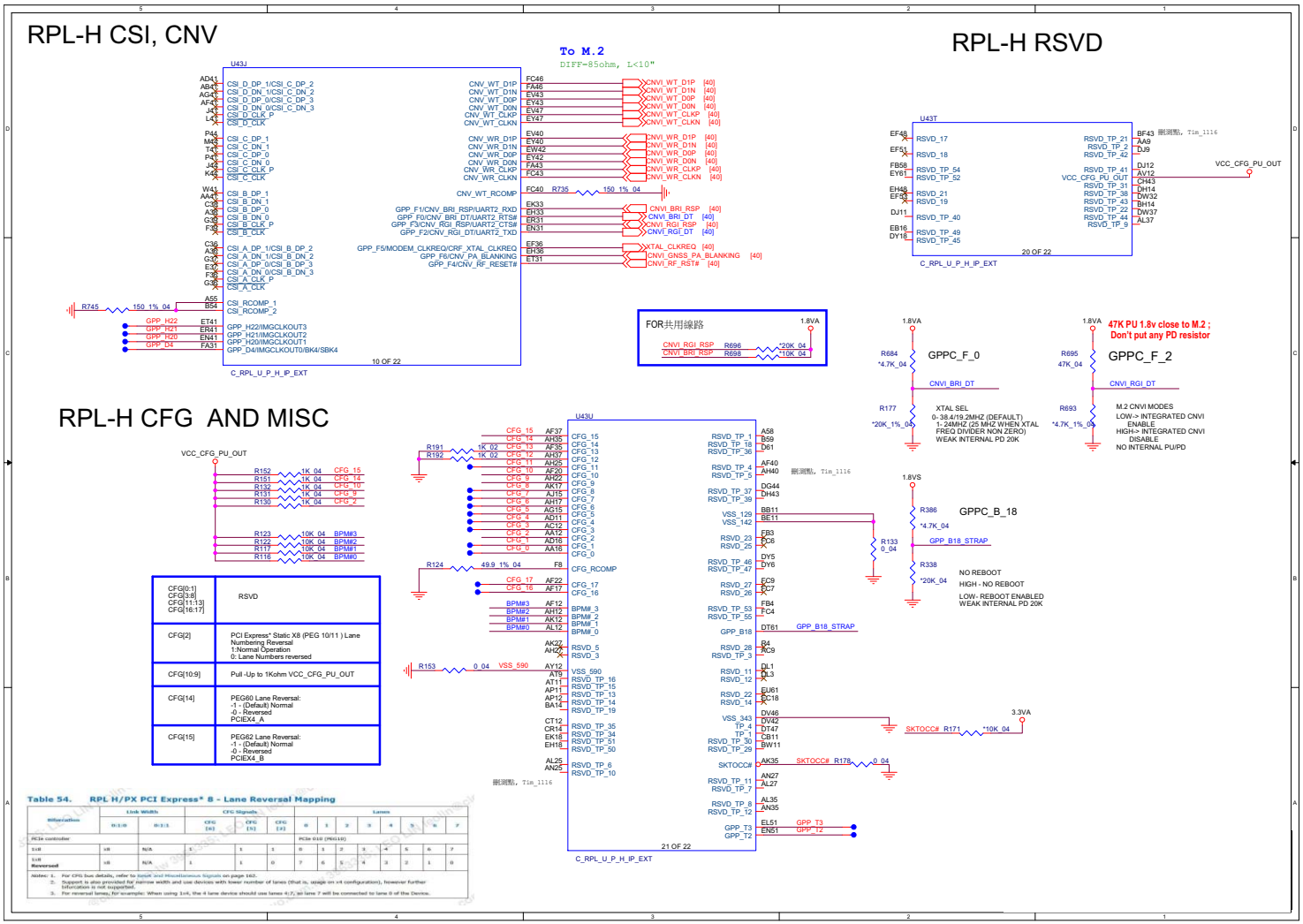
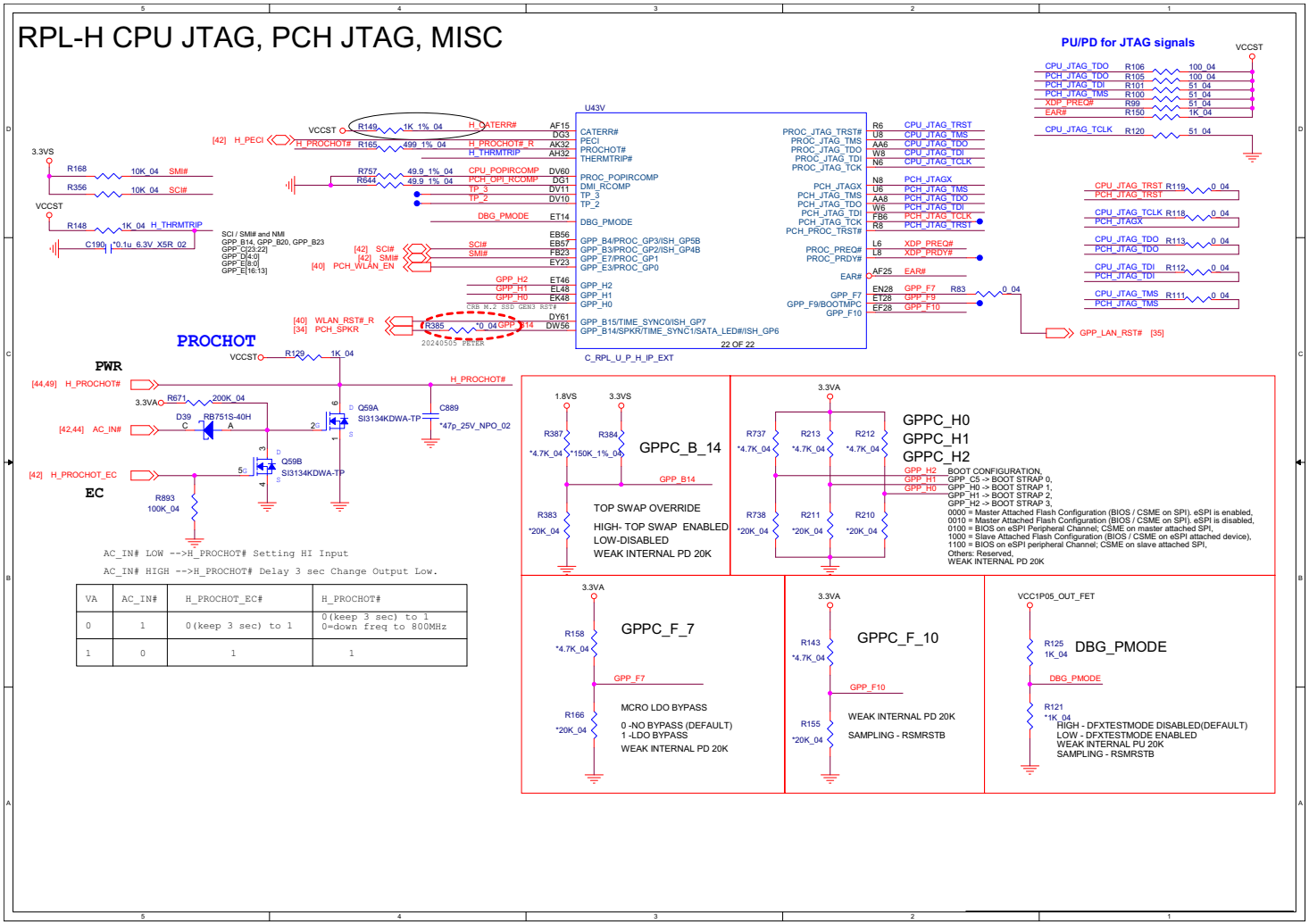
Processor 8/13



Processor 9/13



VA	AC_IN#	H_PROCHOT_EC#	H_PROCHOT#
0	1	0(keep 3 sec) to 1	0(keep 3 sec) to 1 0=down freq to 800MHz
1	0	1	1

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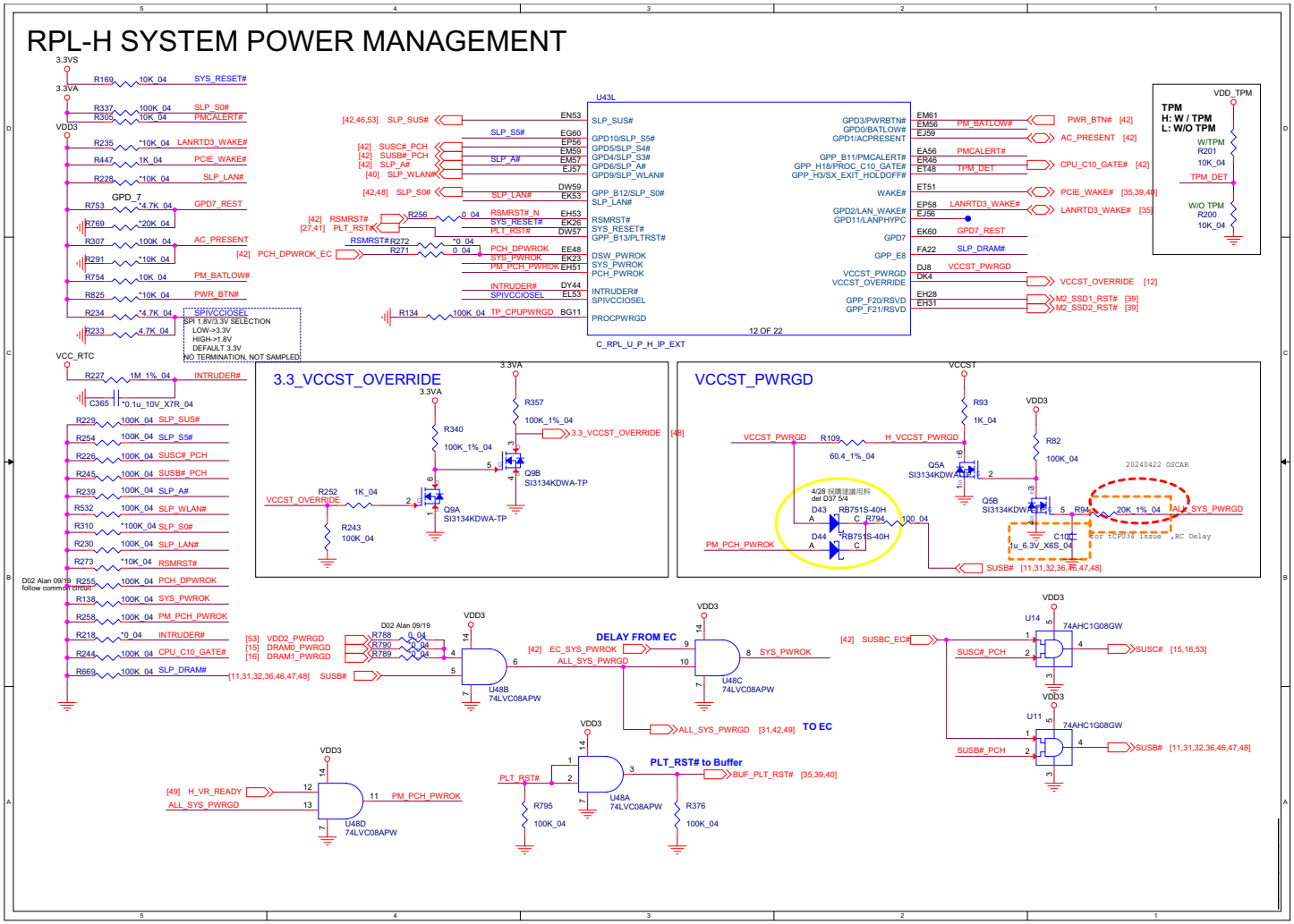
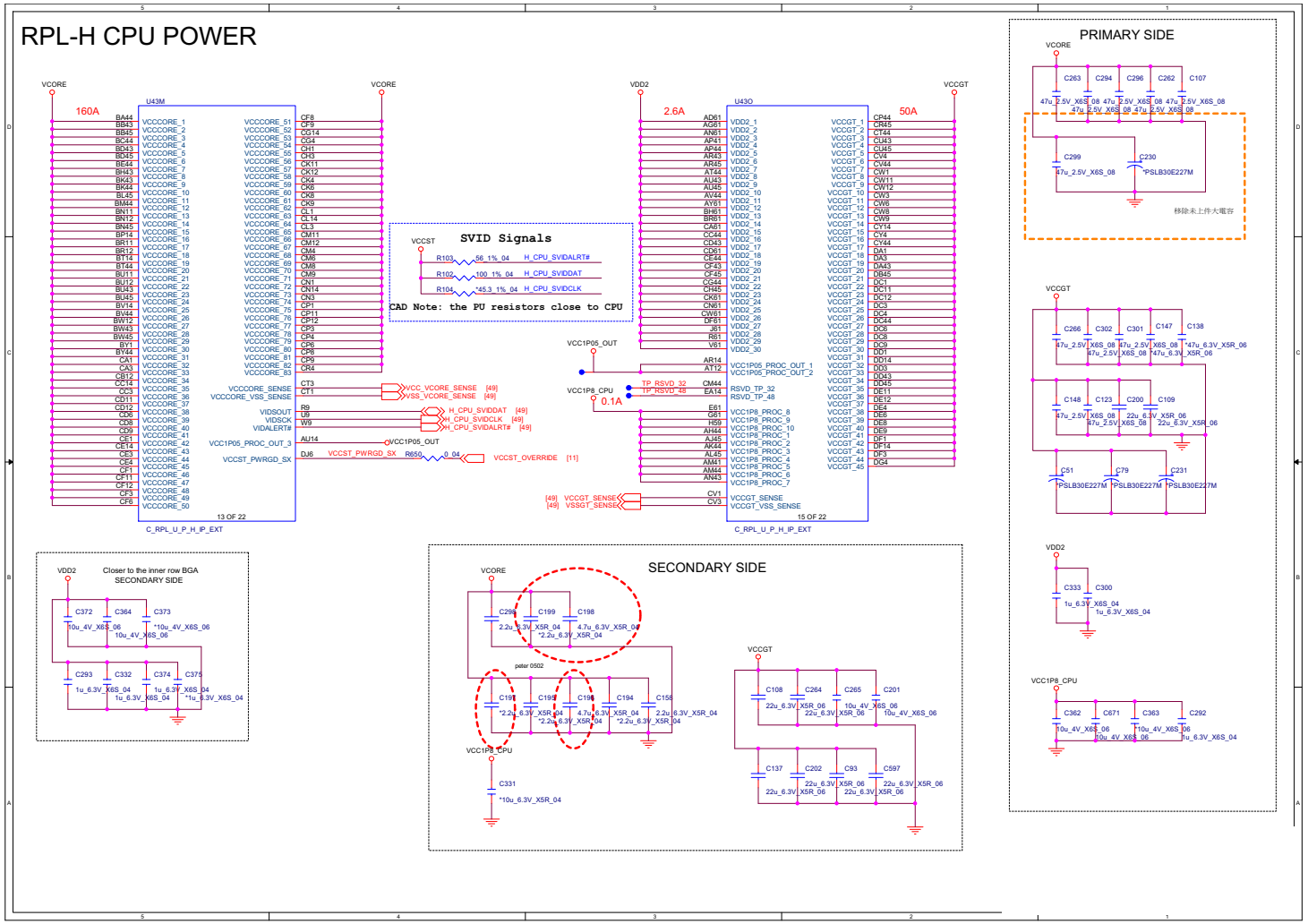
Processor 9/13

Processor 10/13

Sheet 11 of 67
Processor 10/13



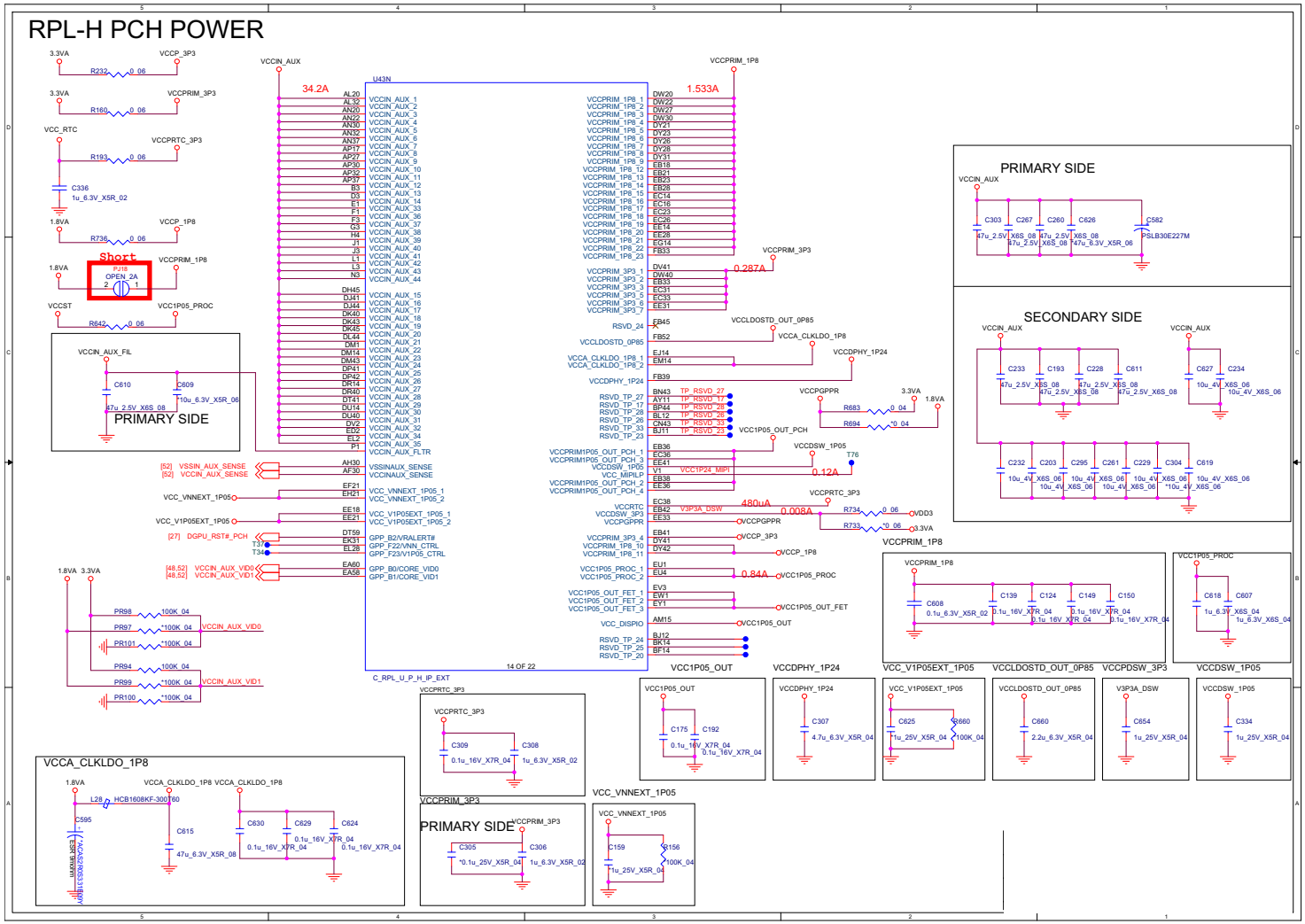
Processor 11/13



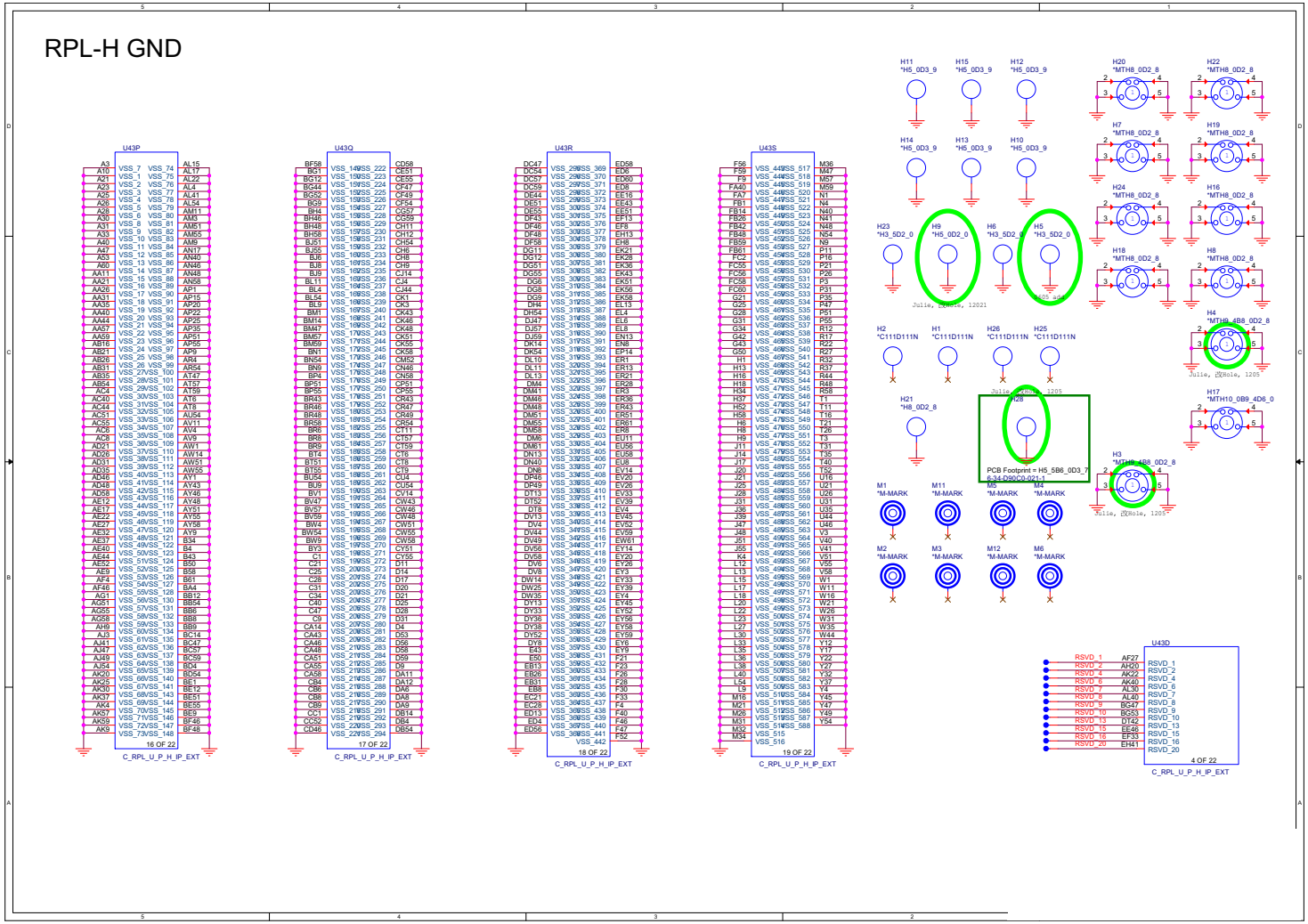
Sheet 12 of 67
Processor 11/13

Processor 12/13

Sheet 13 of 67
Processor 12/13



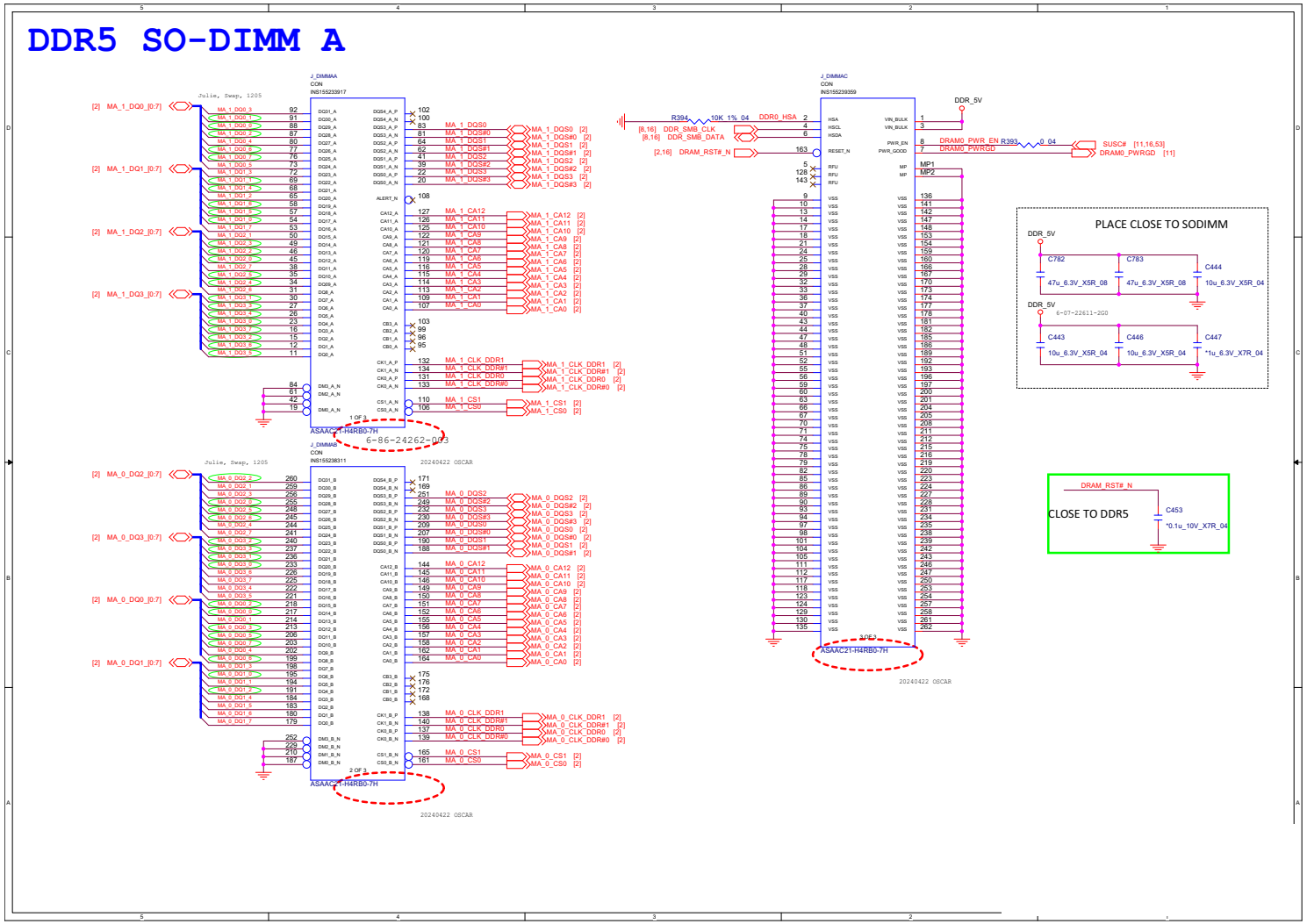
Processor 13/13



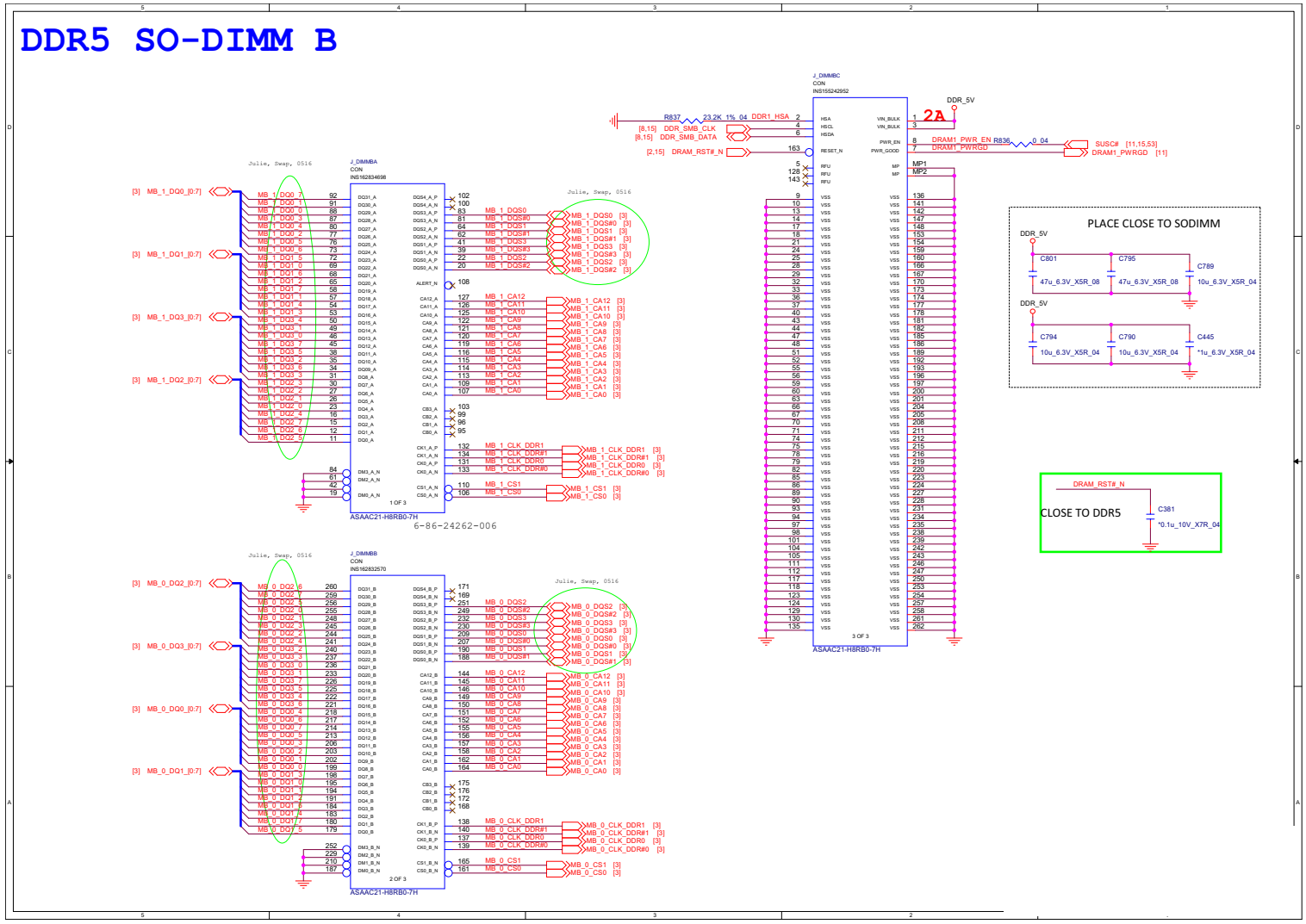
Sheet 14 of 67
Processor 13/13

DDR5 CHA SO-DIMM_0

Sheet 15 of 67
DDR5 CHA SO-DIMM_0



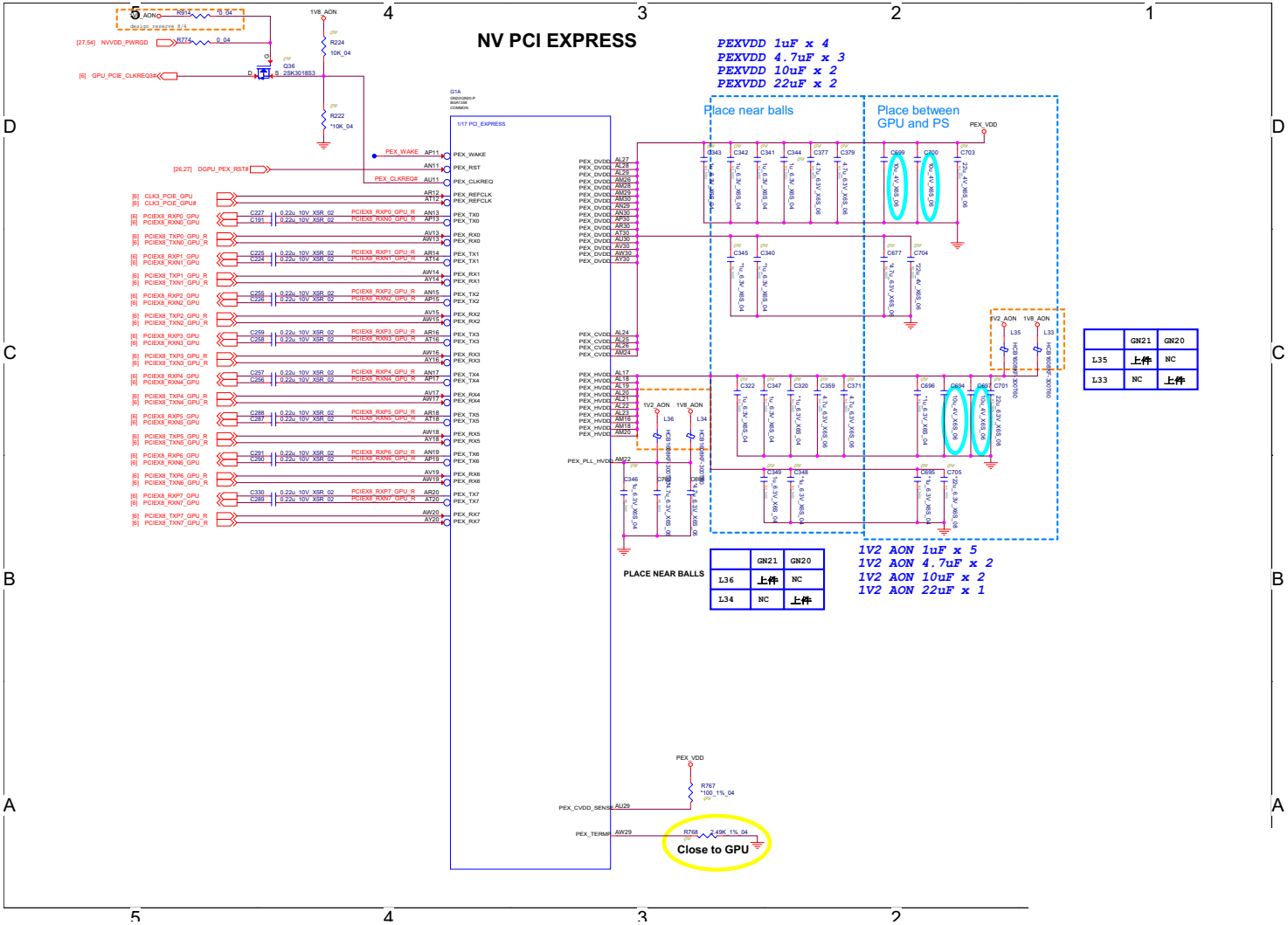
DDR5 CHB SO-DIMM_0



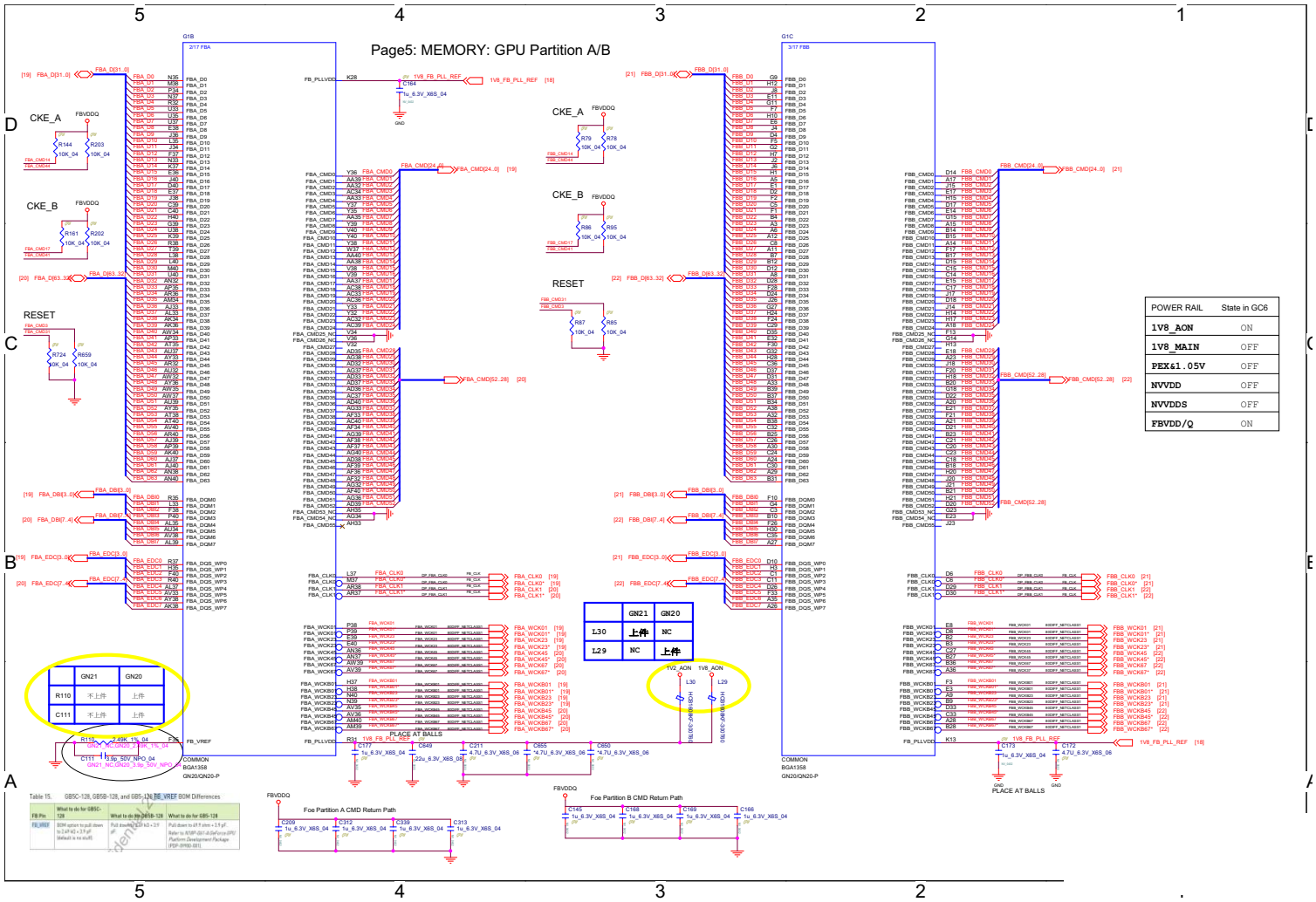
Sheet 16 of 67
DDR5 CHB SO-DIMM_0

PCI-E Interface

Sheet 17 of 67
PCI-E Interface



Frame Buffer Partition A/B

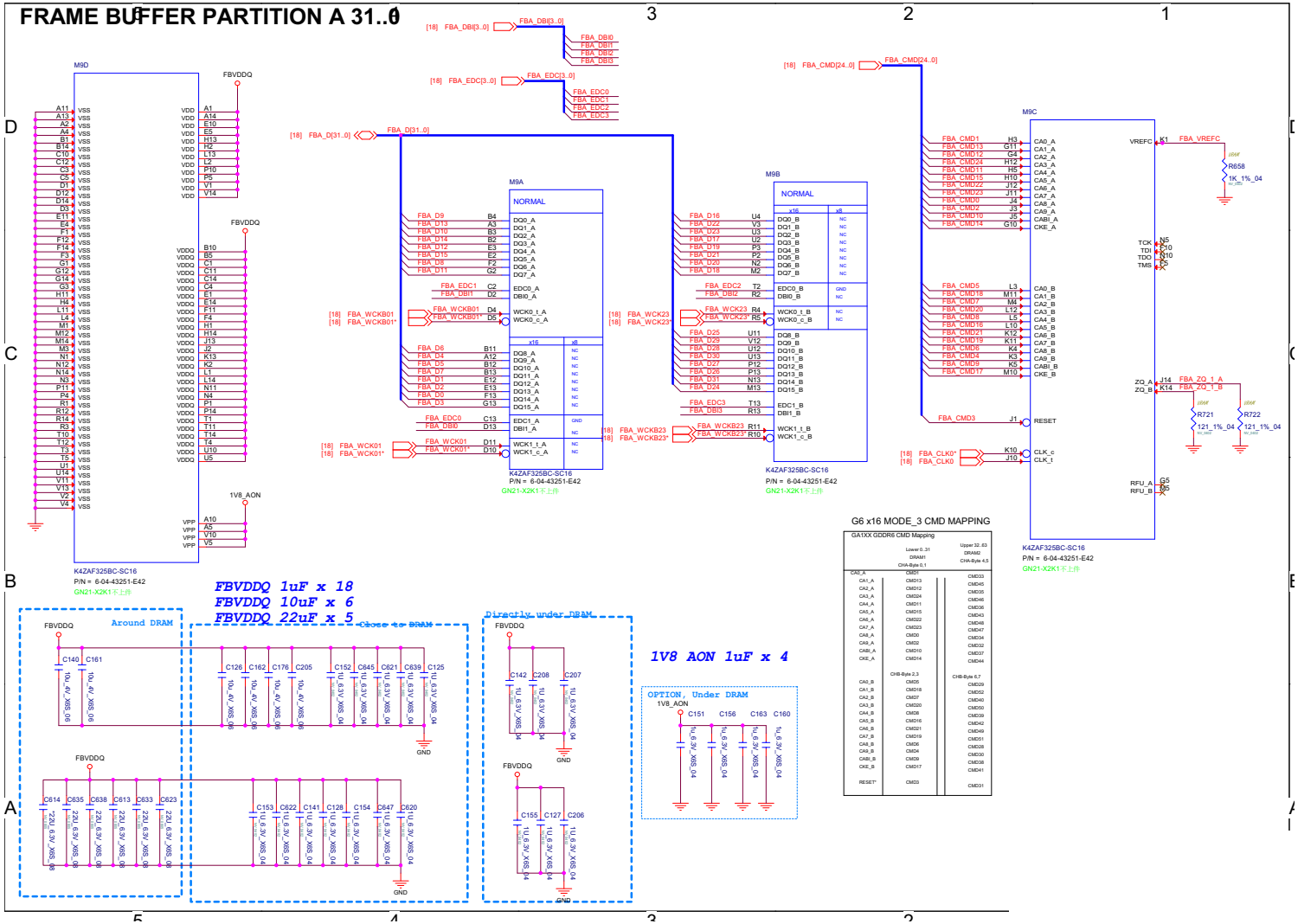


POWER RAIL	State in GC6
1V8_AON	ON
1V8_MAIN	OFF
PEX&1.05V	OFF
NVVDD	OFF
NVVDDS	OFF
FBVDD/Q	ON

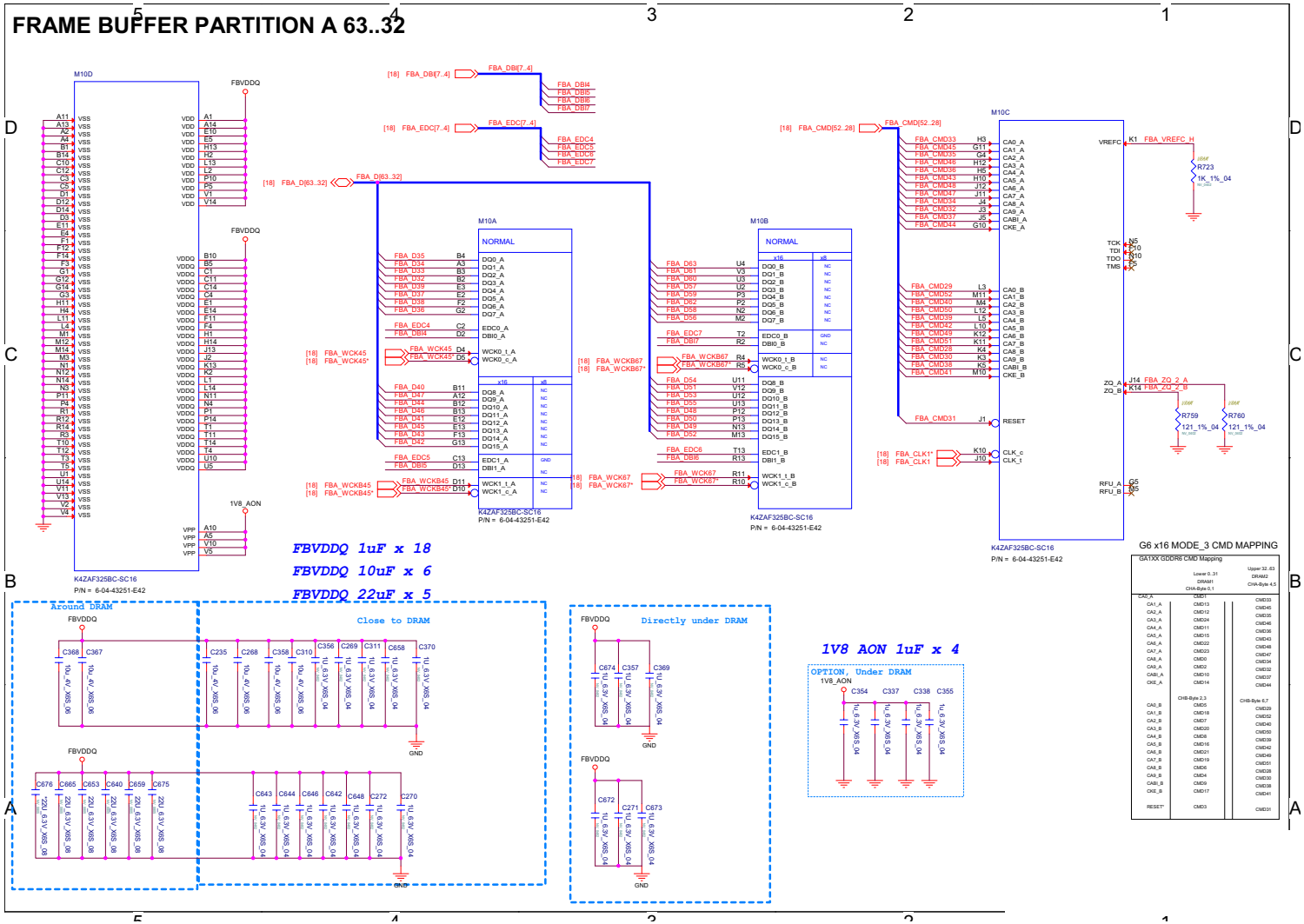
Sheet 18 of 67
Frame Buffer Partition A/B

Frame Buffer A

Sheet 19 of 67
Frame Buffer A



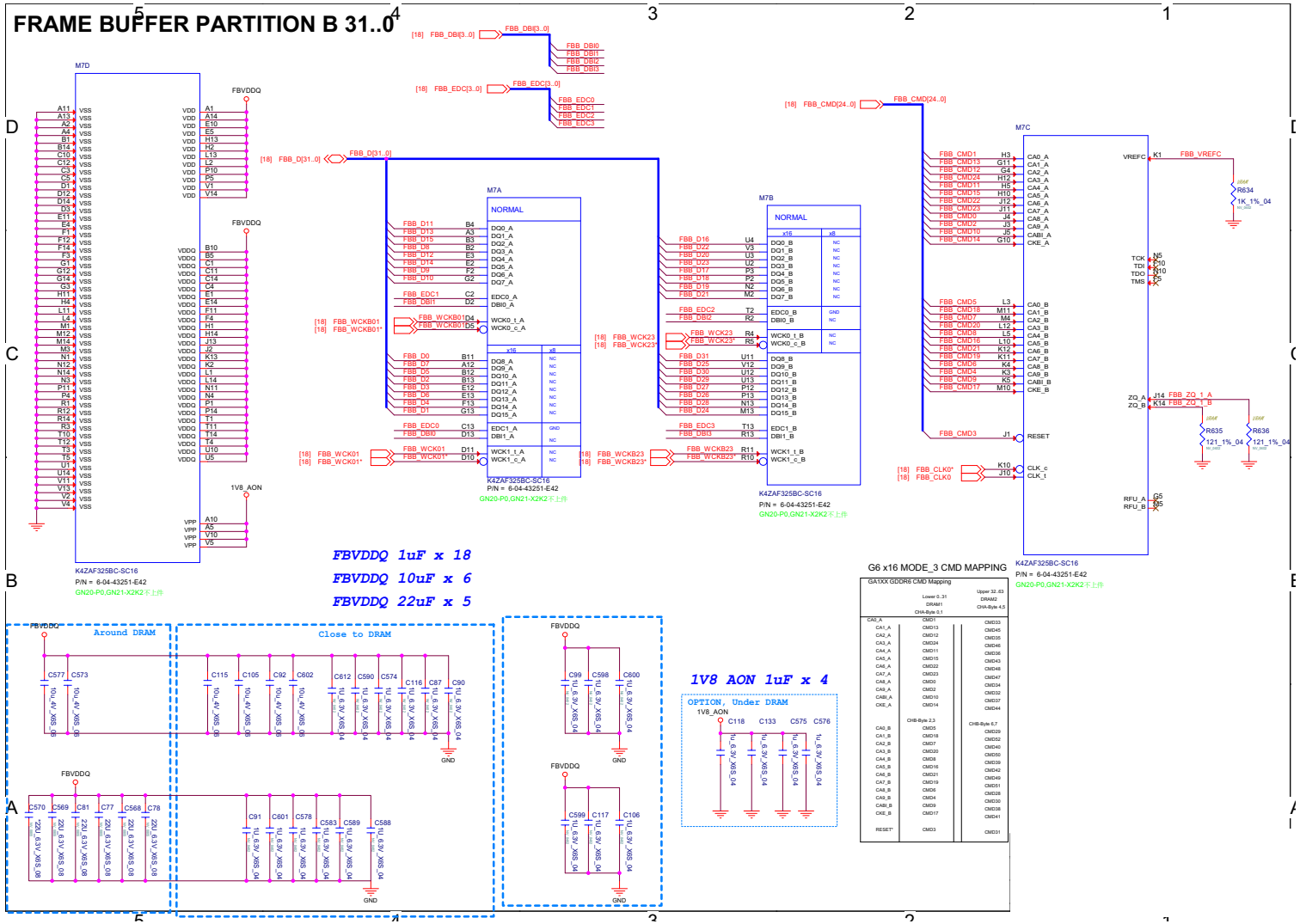
Frame Buffer A



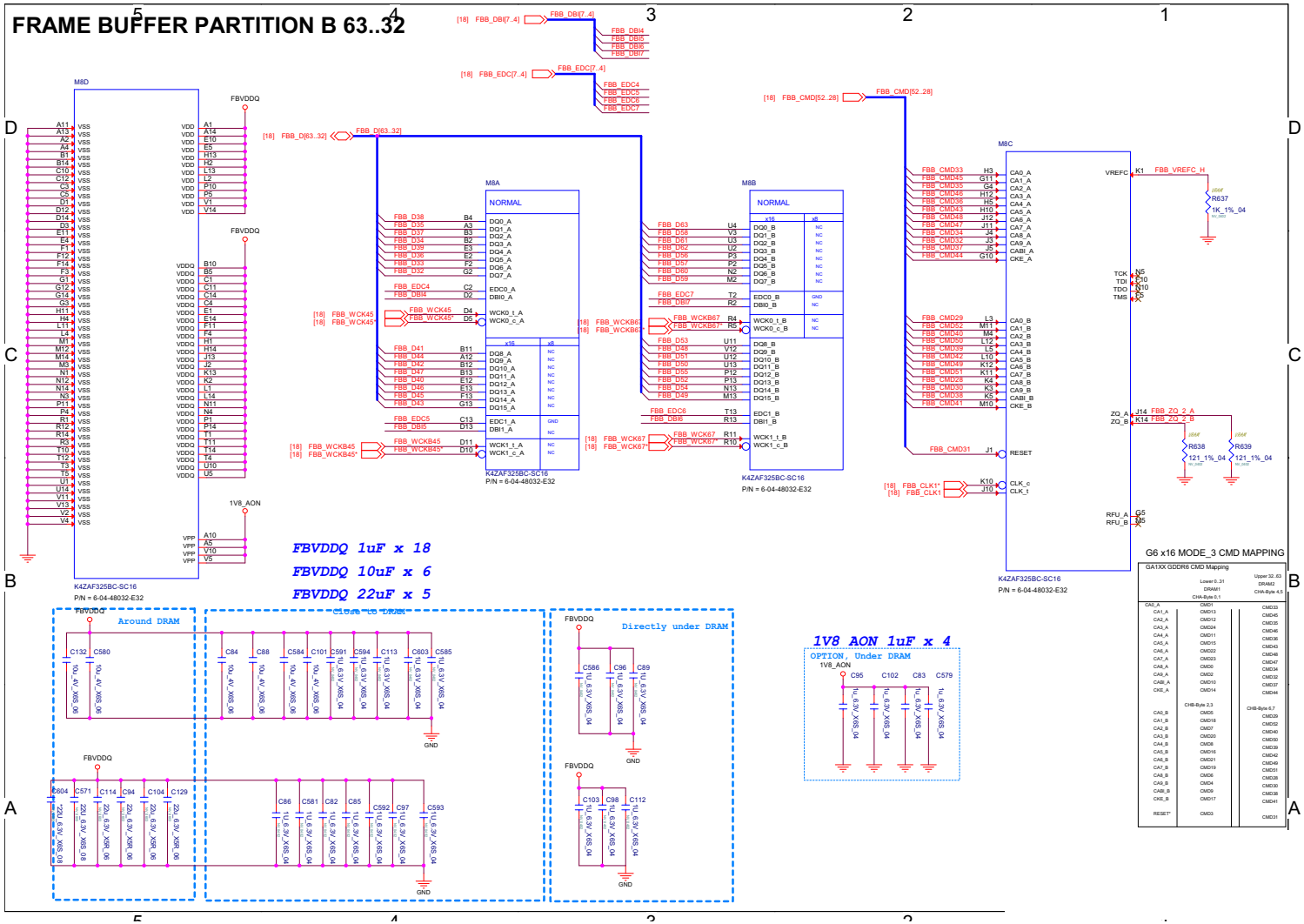
Sheet 20 of 67
Frame Buffer A

Frame Buffer B

Sheet 21 of 67
Frame Buffer B



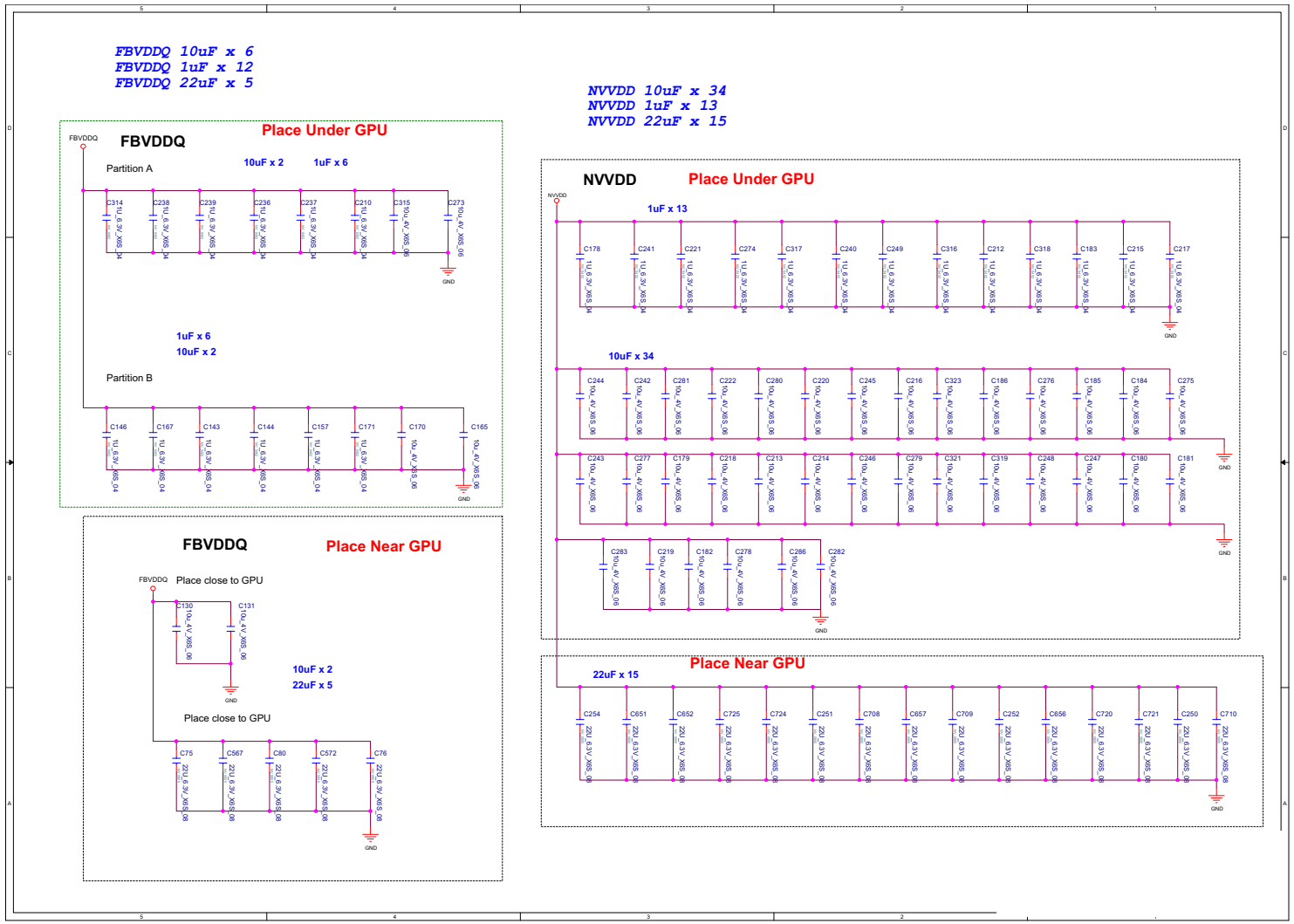
Frame Buffer B



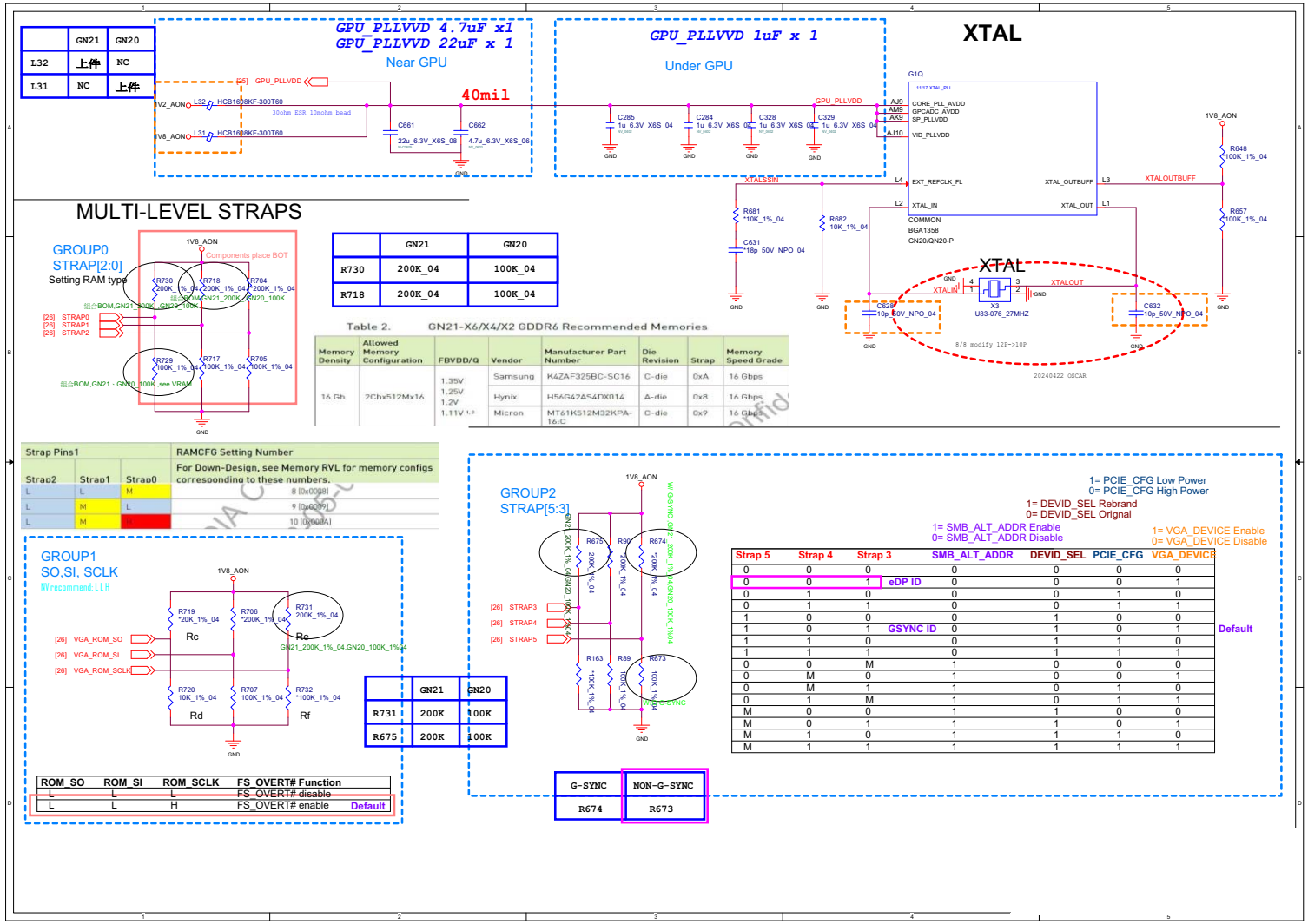
Sheet 22 of 67
Frame Buffer B

NVVDD Coupling

Sheet 23 of 67
NVVDD Coupling



Straps and XTAL



Sheet 24 of 67
Straps and XTAL

IFP I/O Interface

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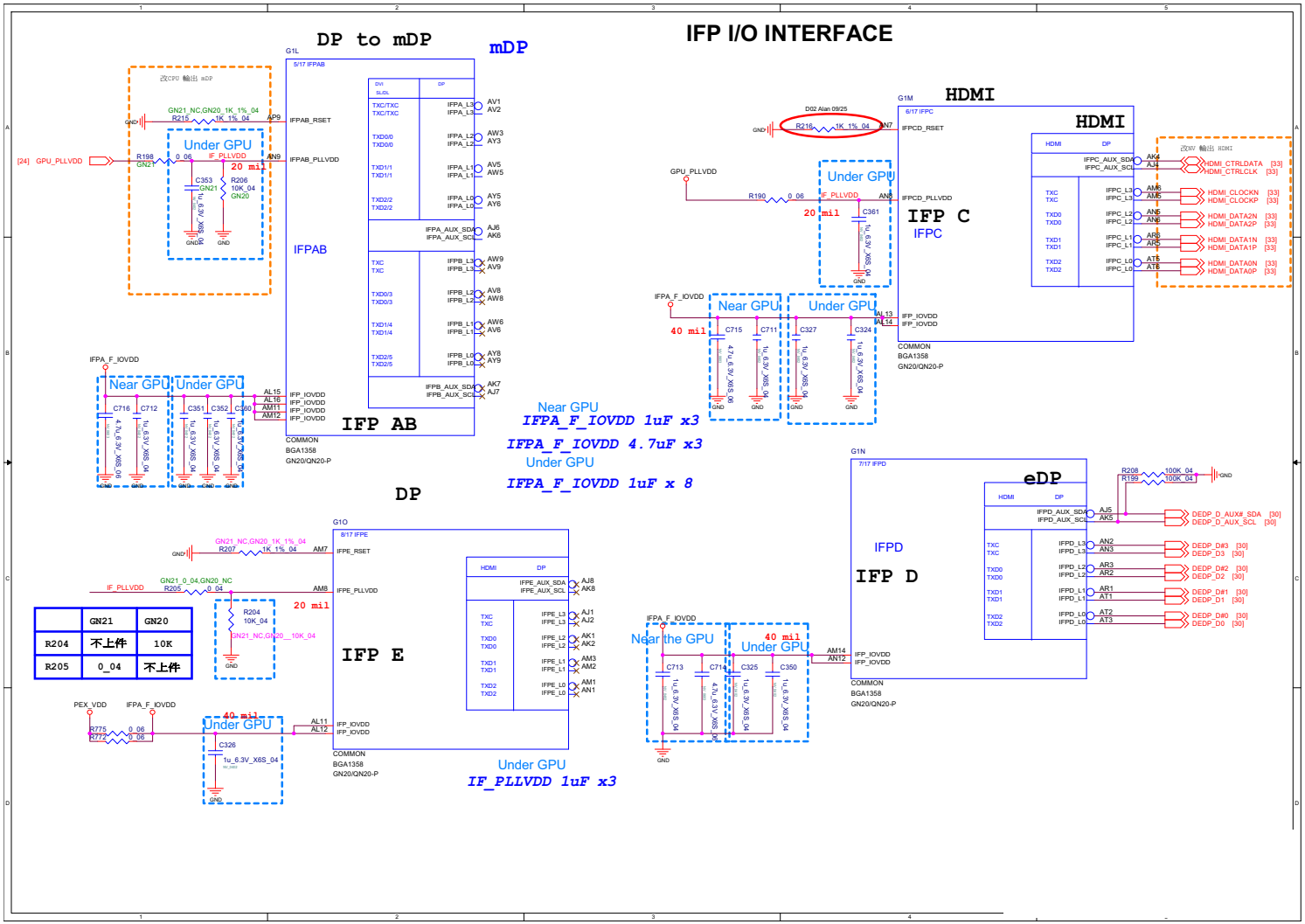
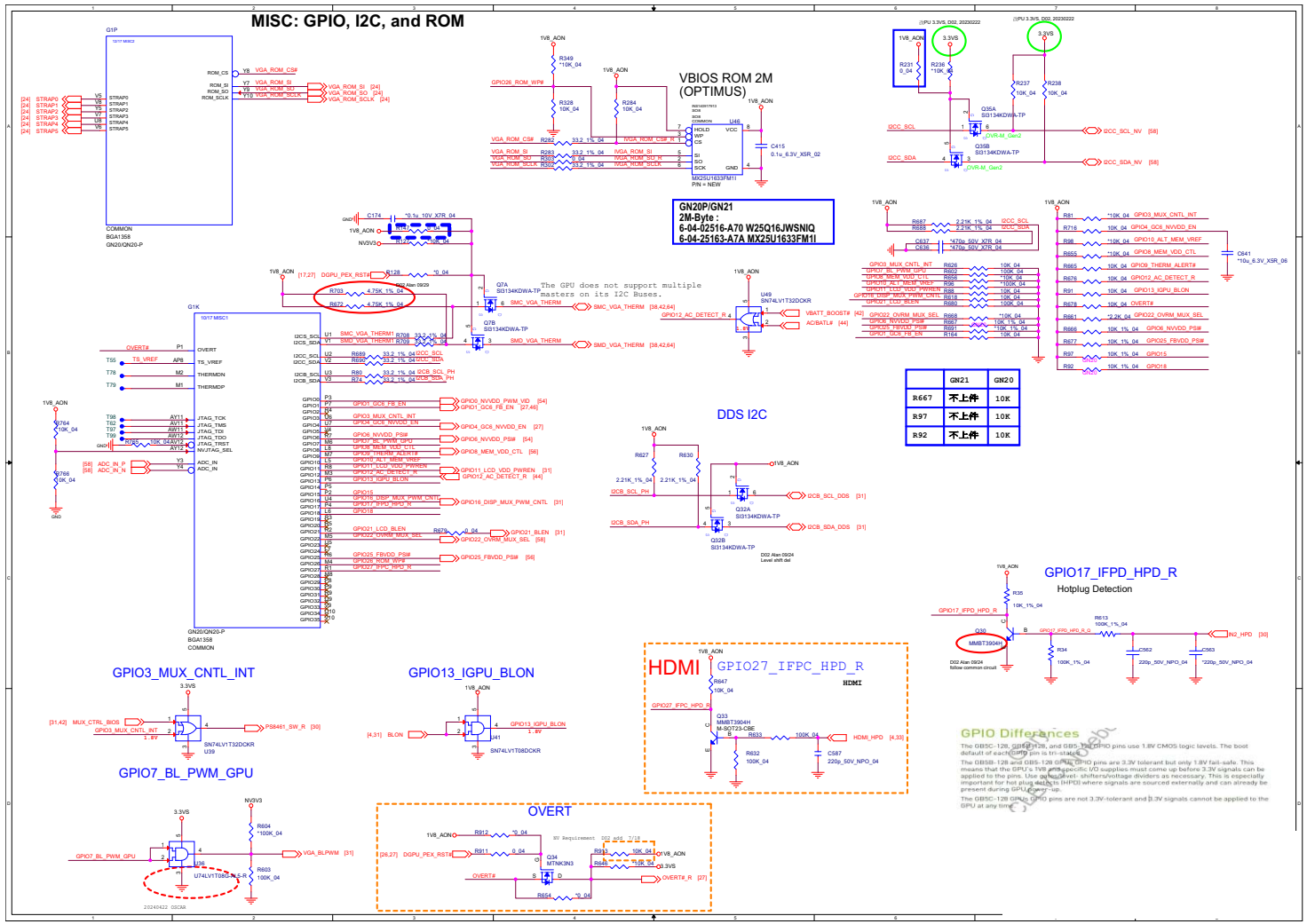
IFP I/O Interface



	GN21	GN20
R204	不上件	10K
R205	0_04	不上件

Misc - GPIO, I2C, VBIOS



	GN21	GN20
R667	不上件	10K
R97	不上件	10K
R92	不上件	10K

Sheet 26 of 67
Misc - GPIO, I2C, VBIOS

NVIDIA Power Sequence

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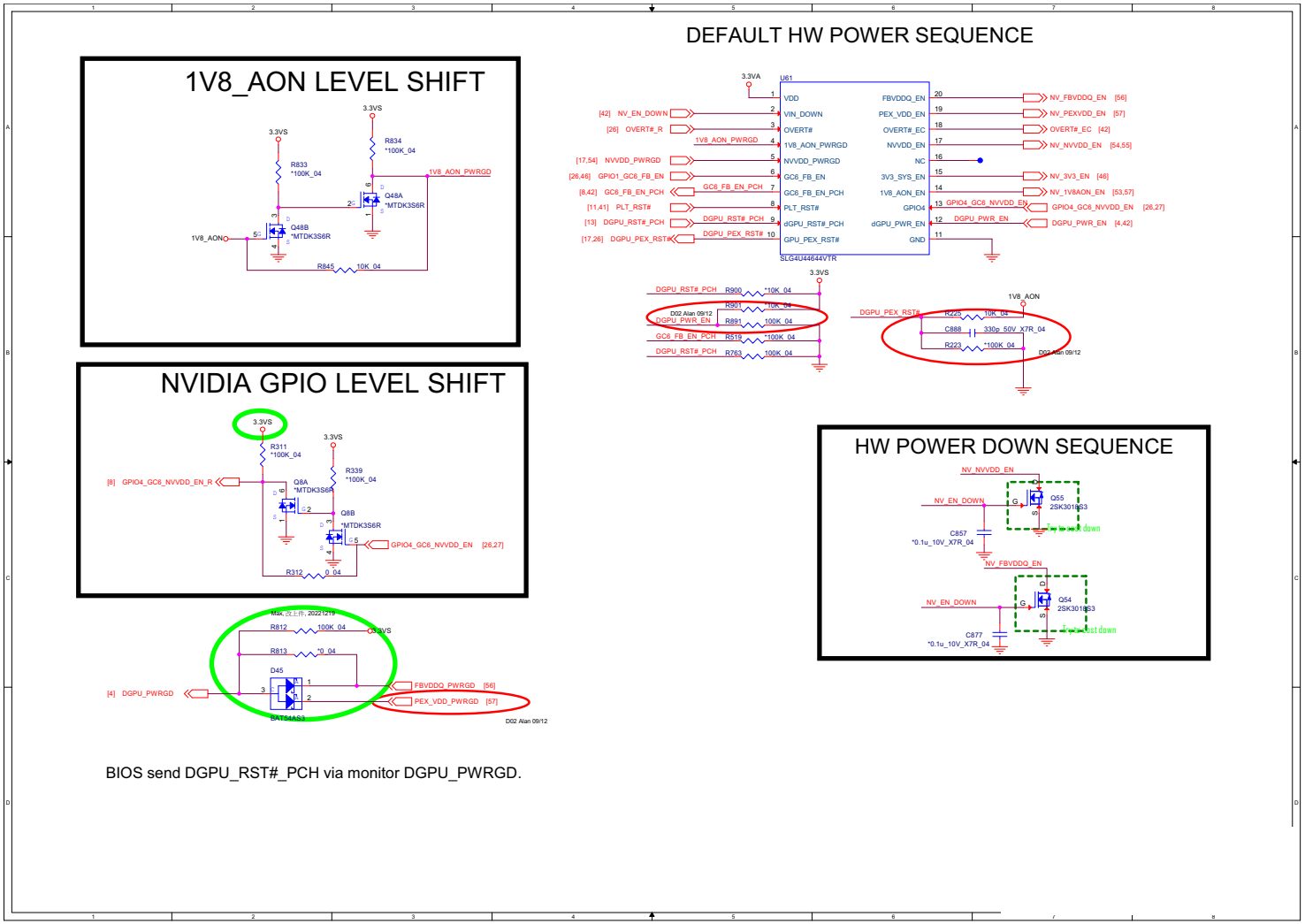
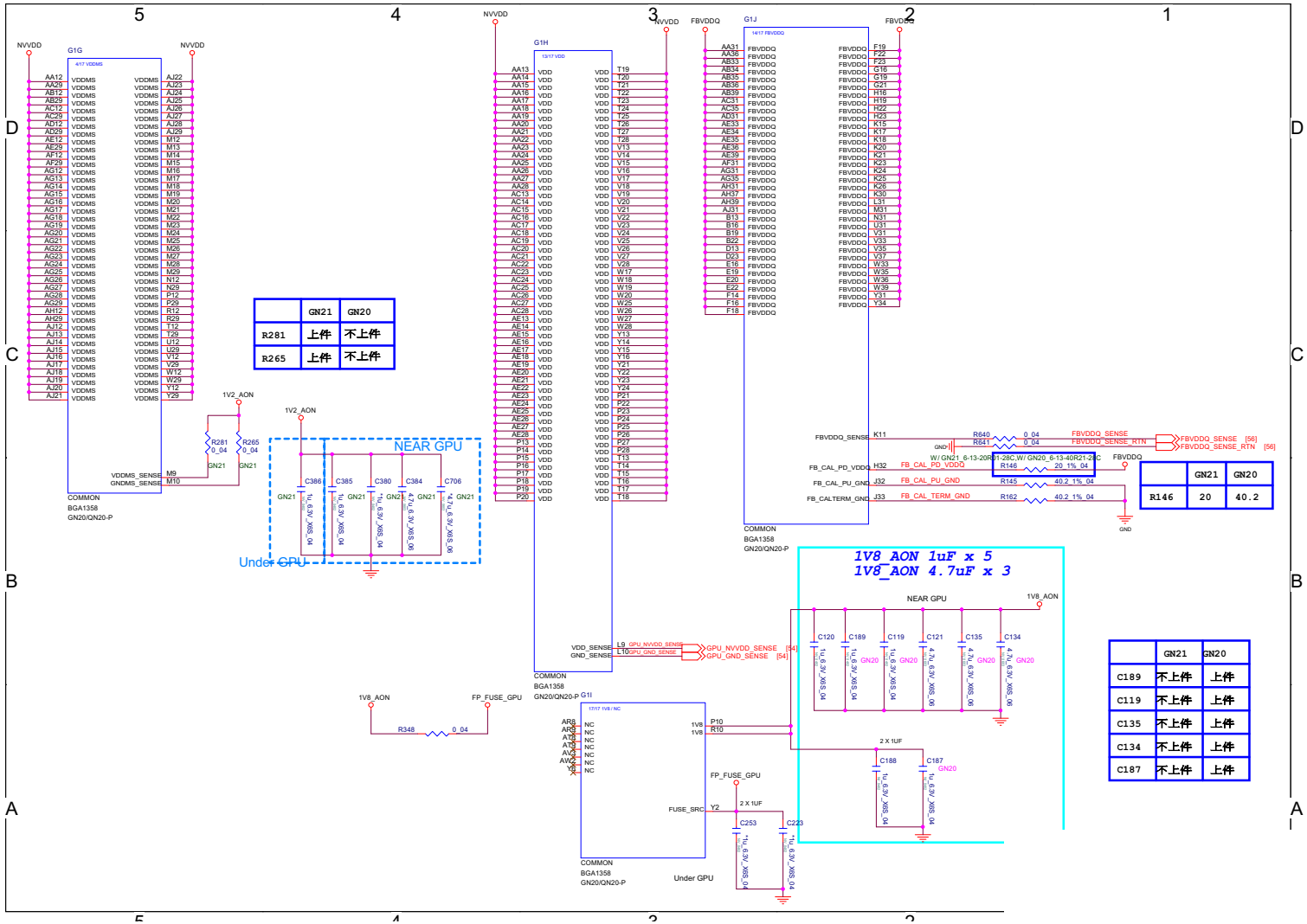
NVIDIA Power Sequence



NVVDD, FBVDDQ



	GN21	GN20
R281	上件	不上件
R265	上件	不上件

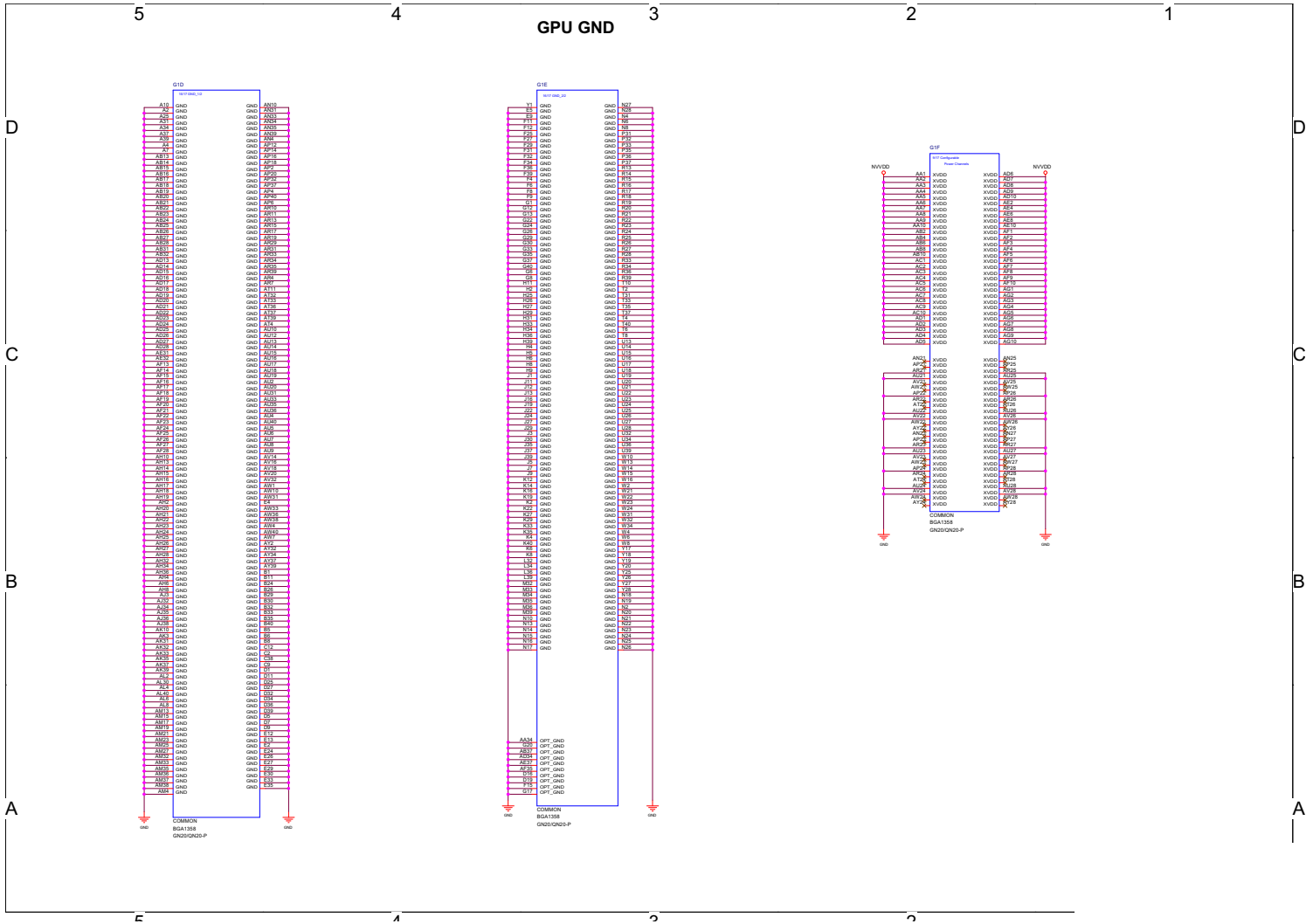
	GN21	GN20
R146	20	40.2

	GN21	GN20
C189	不上件	上件
C119	不上件	上件
C135	不上件	上件
C134	不上件	上件
C187	不上件	上件

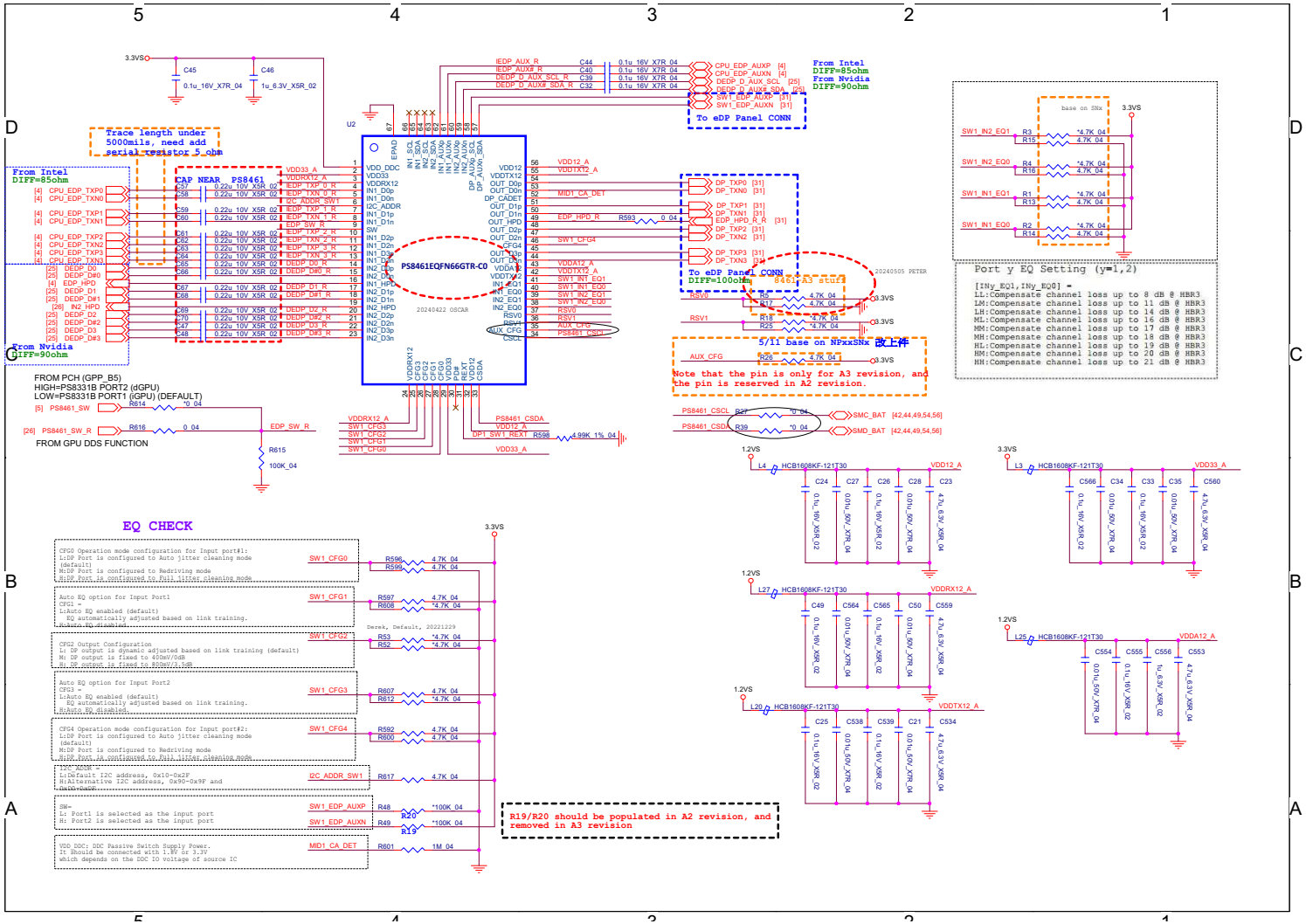
Sheet 28 of 67
NVVDD, FBVDDQ

GPU GND

Sheet 29 of 67
GPU GND



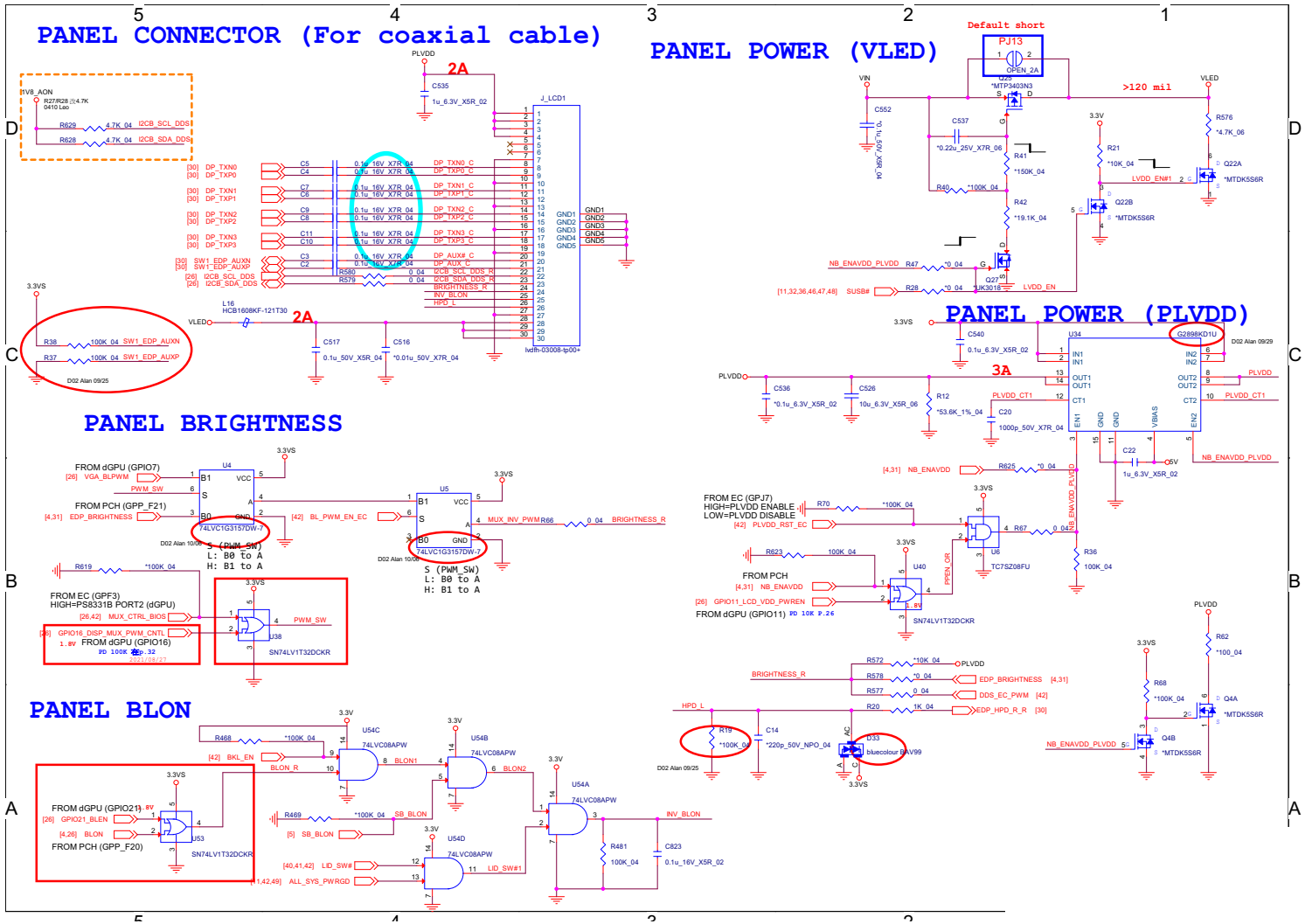
PS8461 SW



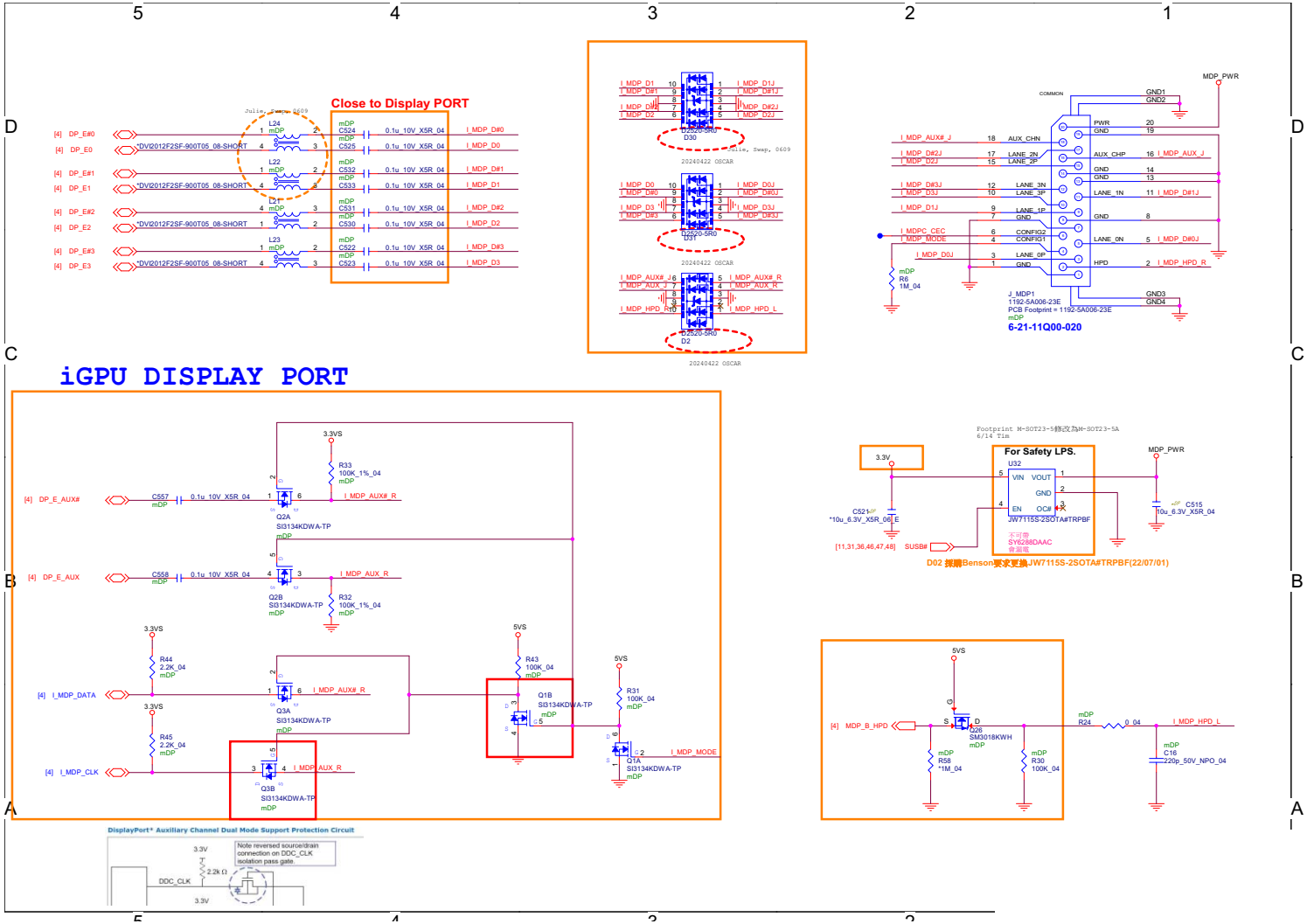
Sheet 30 of 67
PS8461 SW

Panel, Inverter

Sheet 31 of 67
Panel, Inverter



mDP



Sheet 32 of 67
mDP

B.Schematic Diagrams

HDMI

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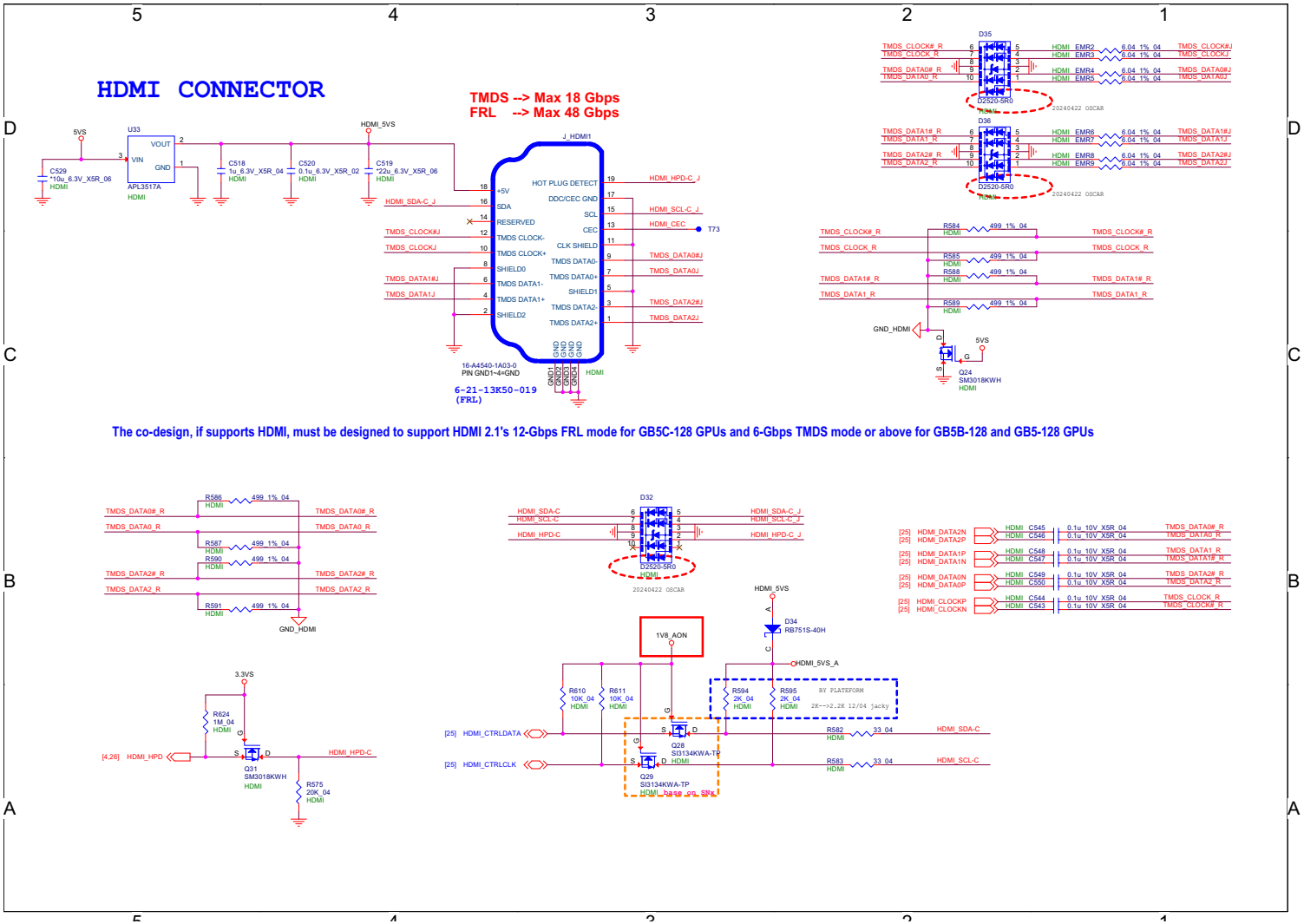
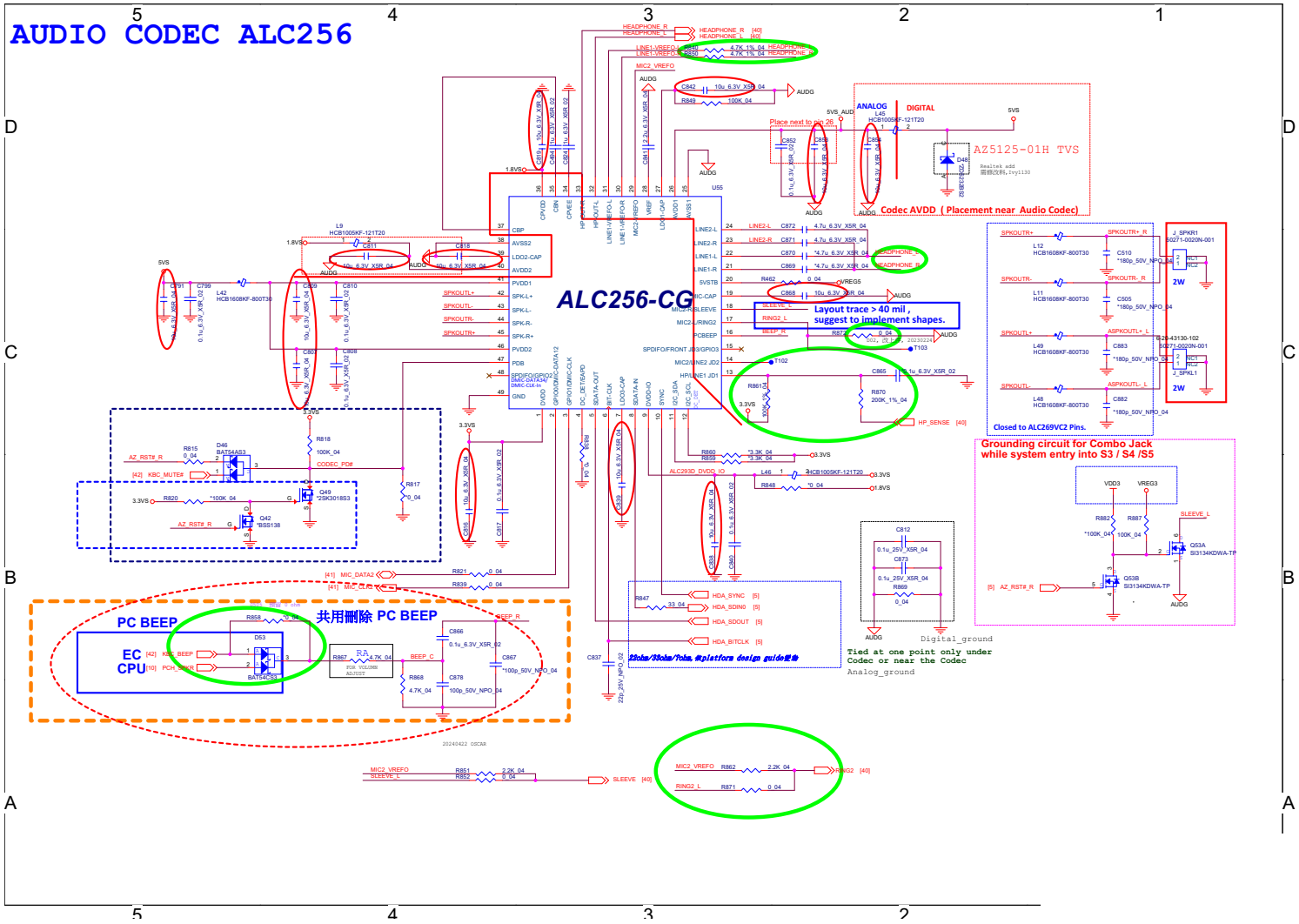
HDMI



Audio Codec



Sheet 34 of 67
Audio Codec

LAN RTL8111H

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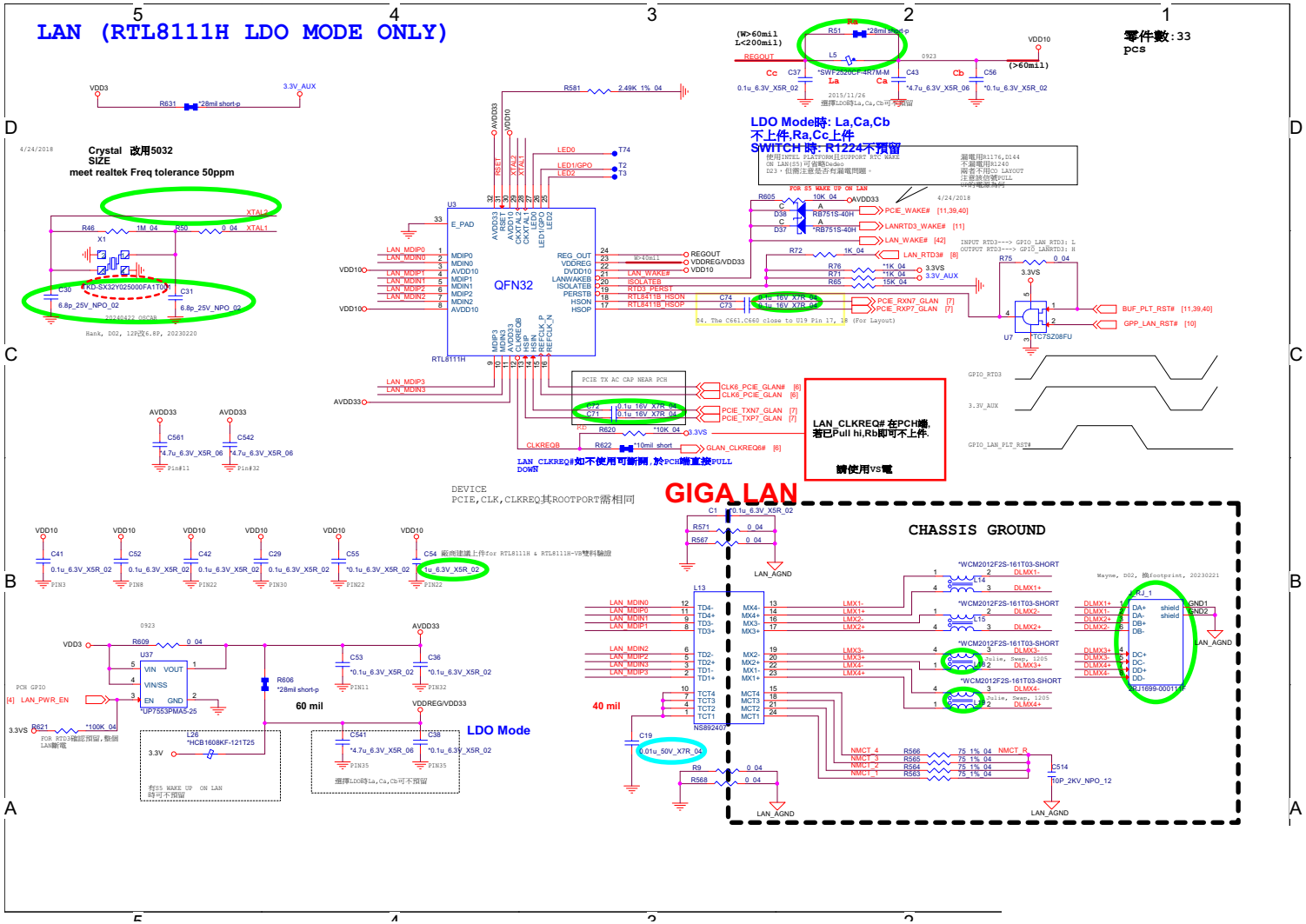
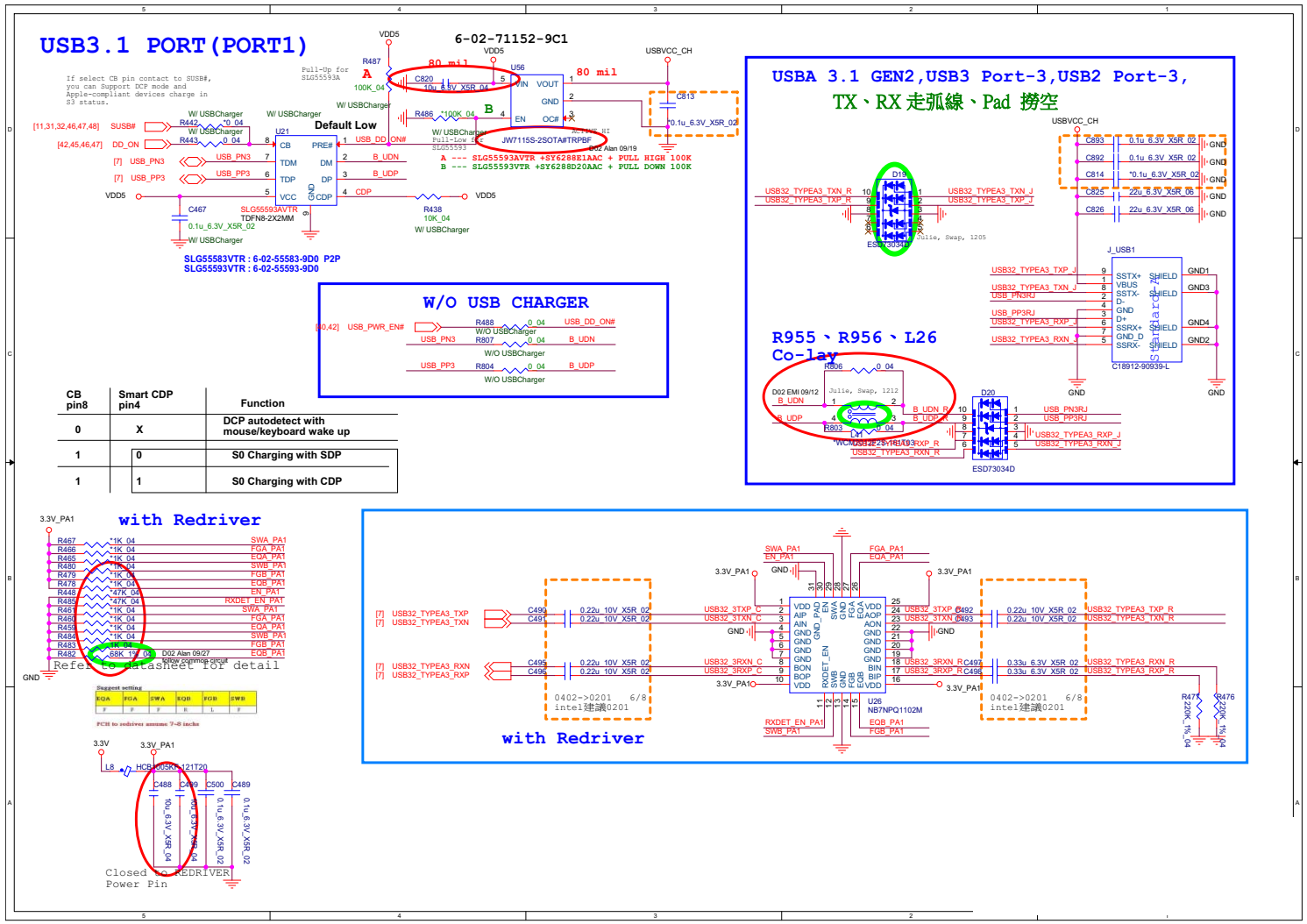
LAN RTL8111H



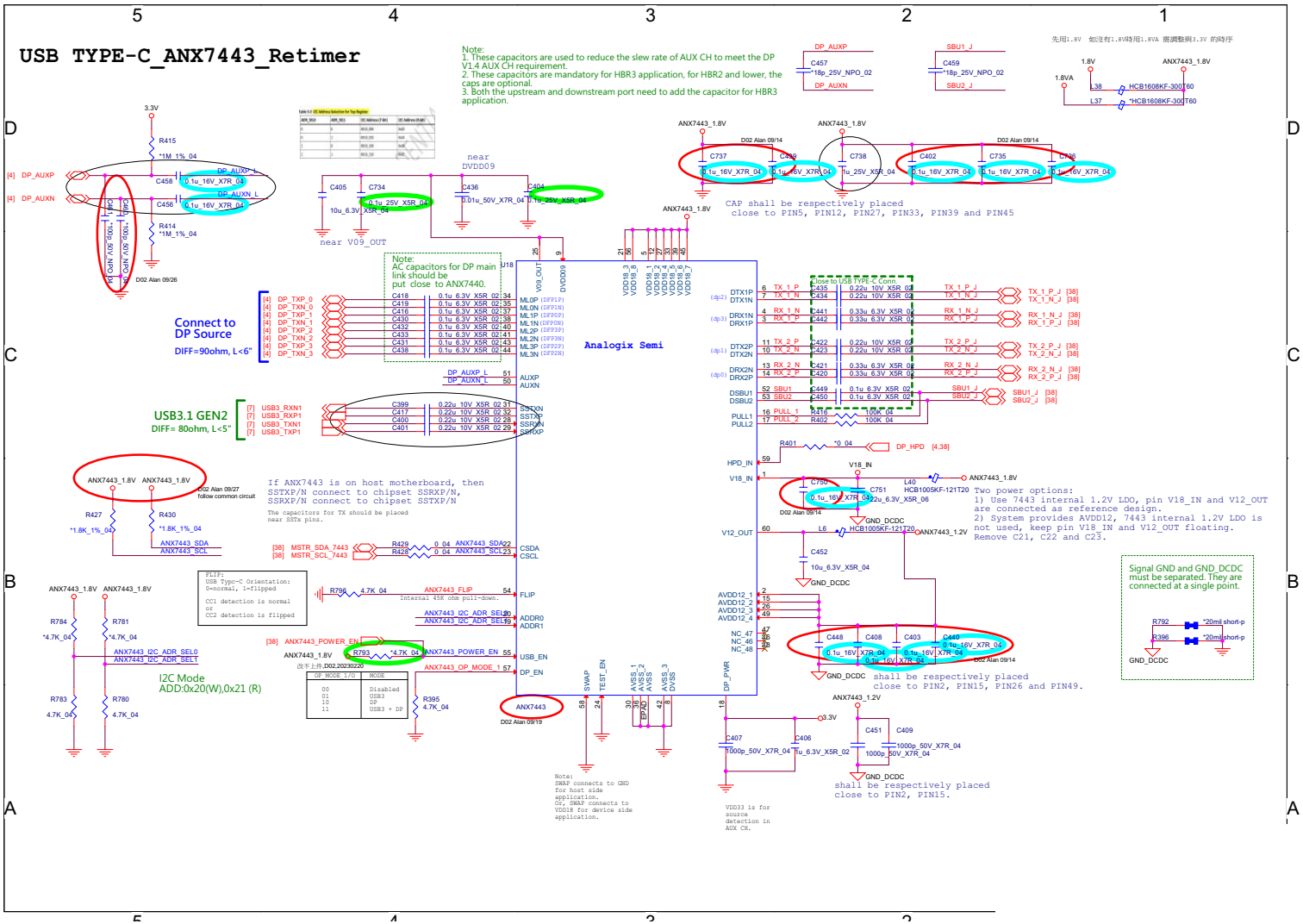
USB Gen2 Type-A



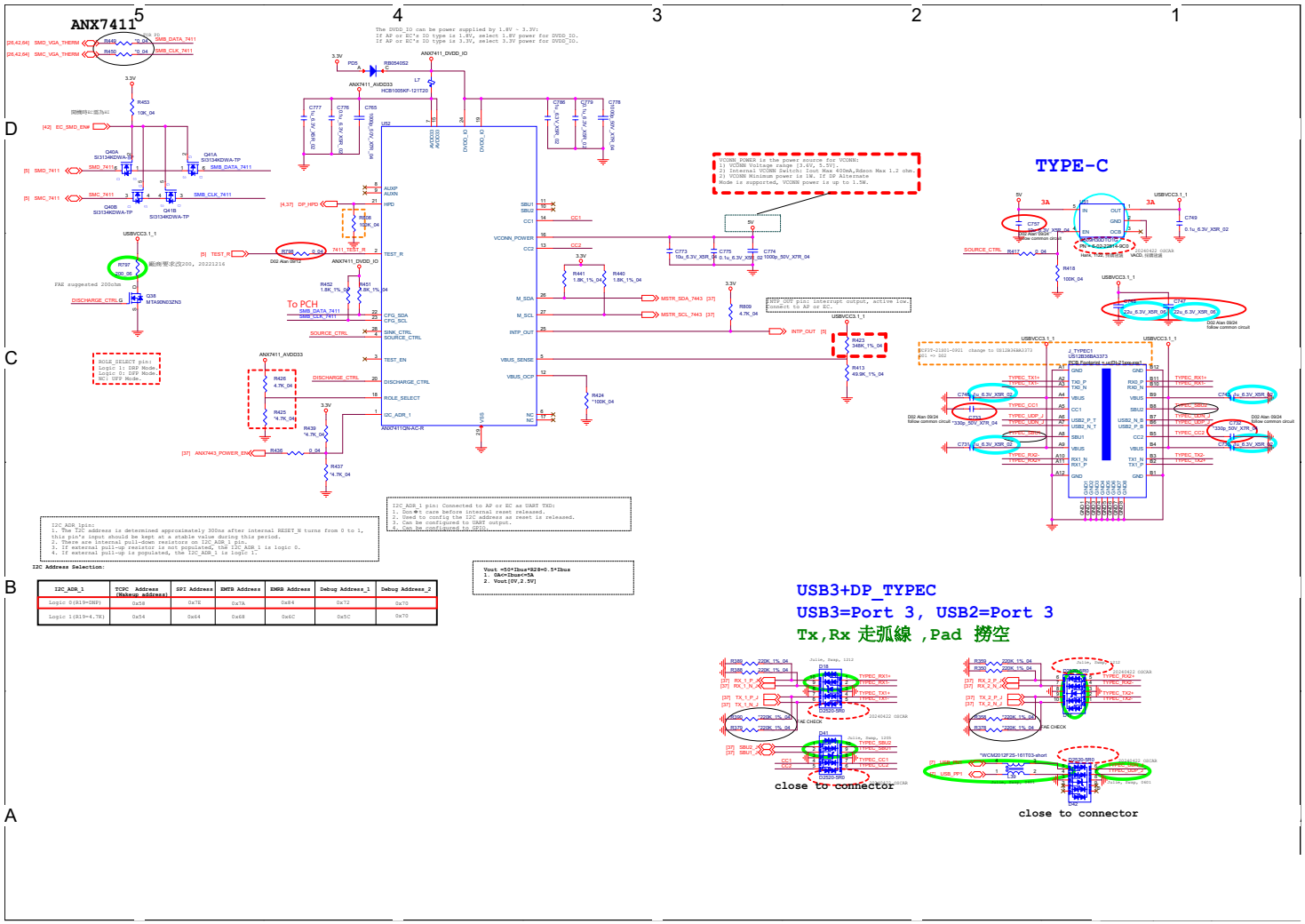
Sheet 36 of 67
USB Gen2 Type-A

ANX7443

Sheet 37 of 67
ANX7443



PD Controller



Sheet 38 of 67
PD Controller

M.2 PCIE 4X SSD

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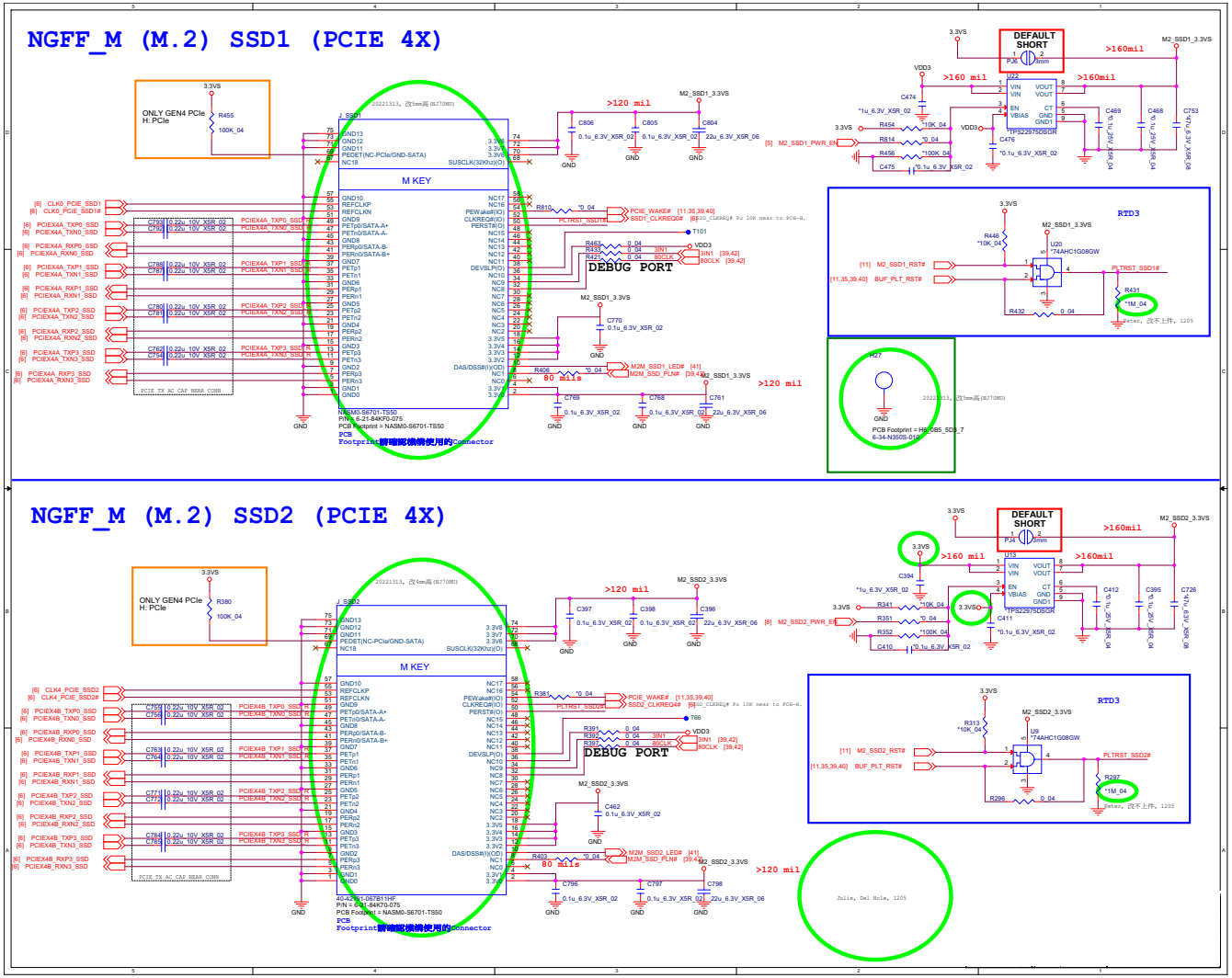
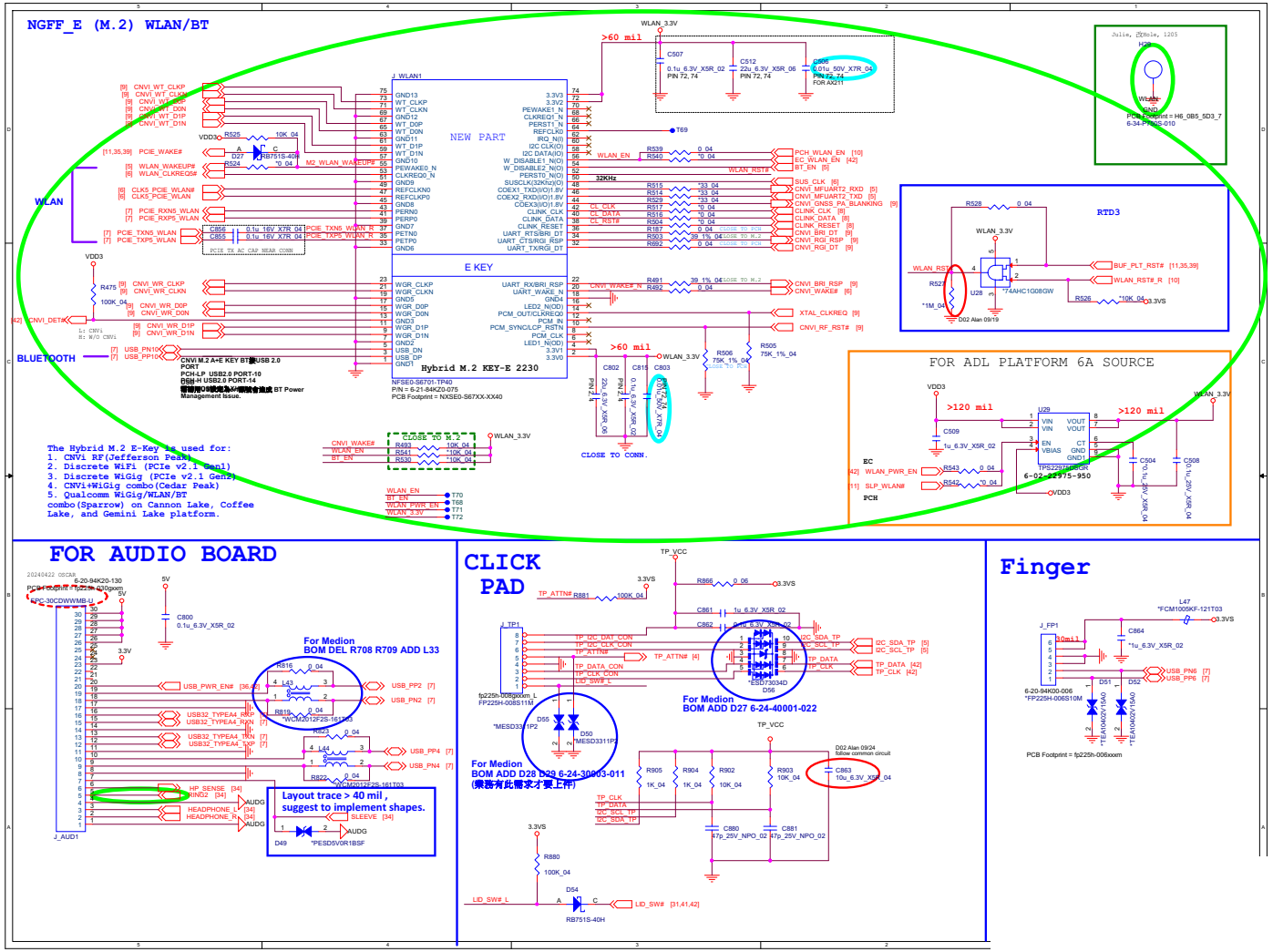
M.2 PCIE 4X SSD



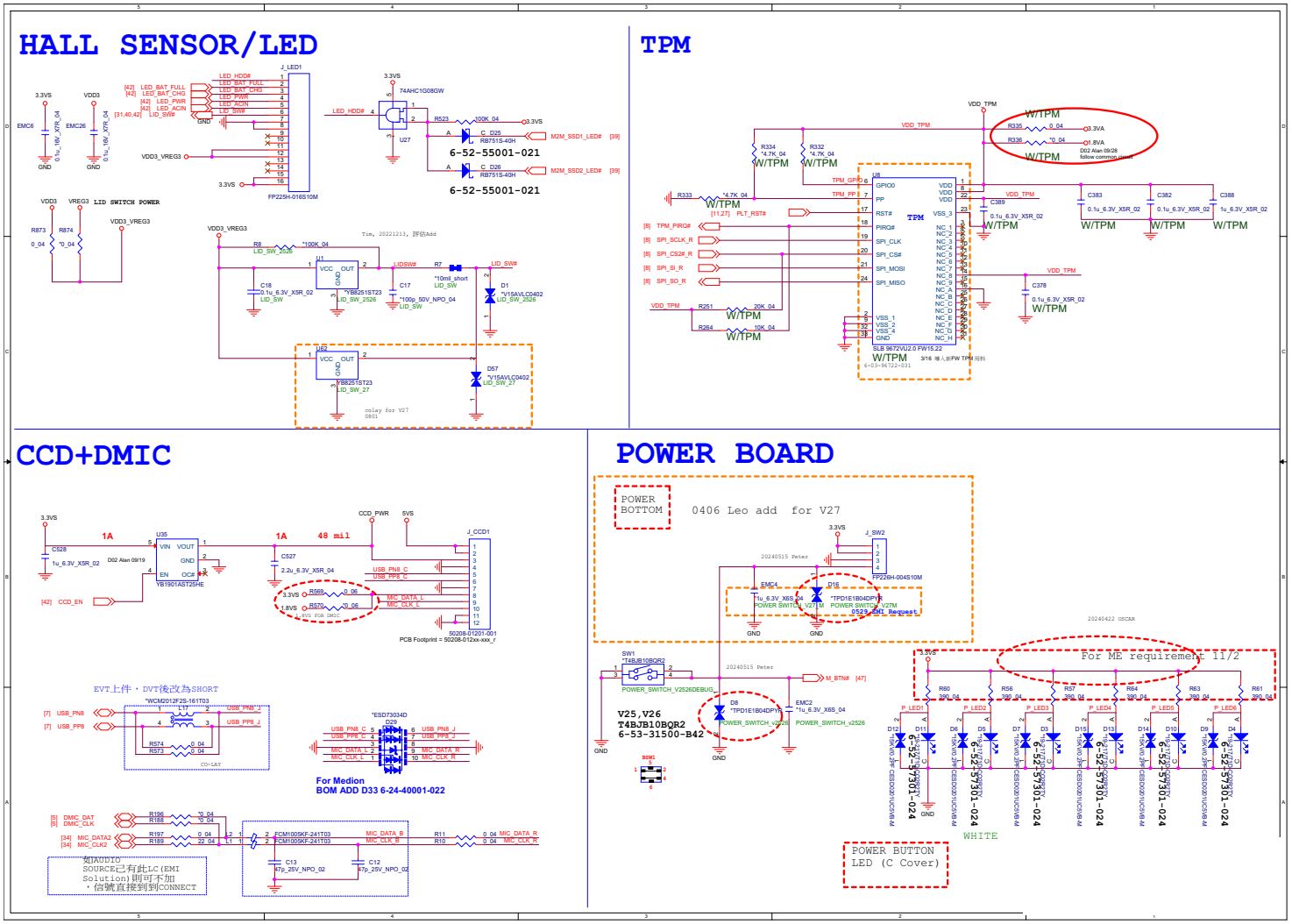
M.2 WLAN, BT, Click TP, Audio, Hall



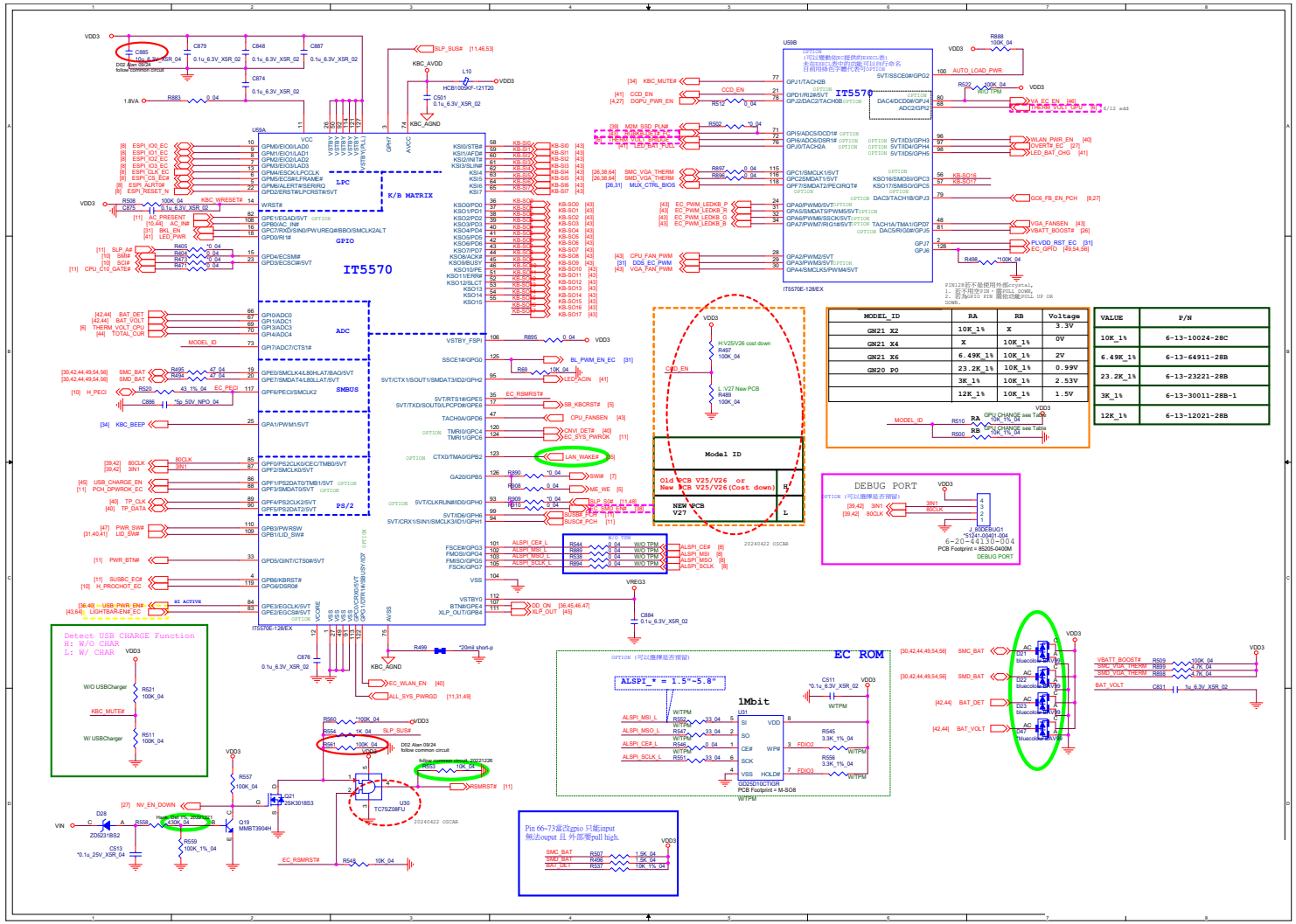
Sheet 40 of 67
M.2 WLAN, BT, Click TP, Audio, Hall

LED, CCD, TPM, Power SW

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



KBC-ITE IT5570



MODEL_ID	RA	RB	Voltage
GN21 X2	10K_1%	X	3.3V
GN21 X4	X	10K_1%	0V
GN21 X6	6.49K_1%	10K_1%	2V
GN20 P0	23.2K_1%	10K_1%	0.99V
	3K_1%	10K_1%	2.53V
	12K_1%	10K_1%	1.5V

VALUE	P/N
10K_1%	6-13-10024-28C
6.49K_1%	6-13-64911-28B
23.2K_1%	6-13-23221-28B
3K_1%	6-13-30011-28B-1
12K_1%	6-13-12021-28B

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KBC-ITE IT5570

RGB KB

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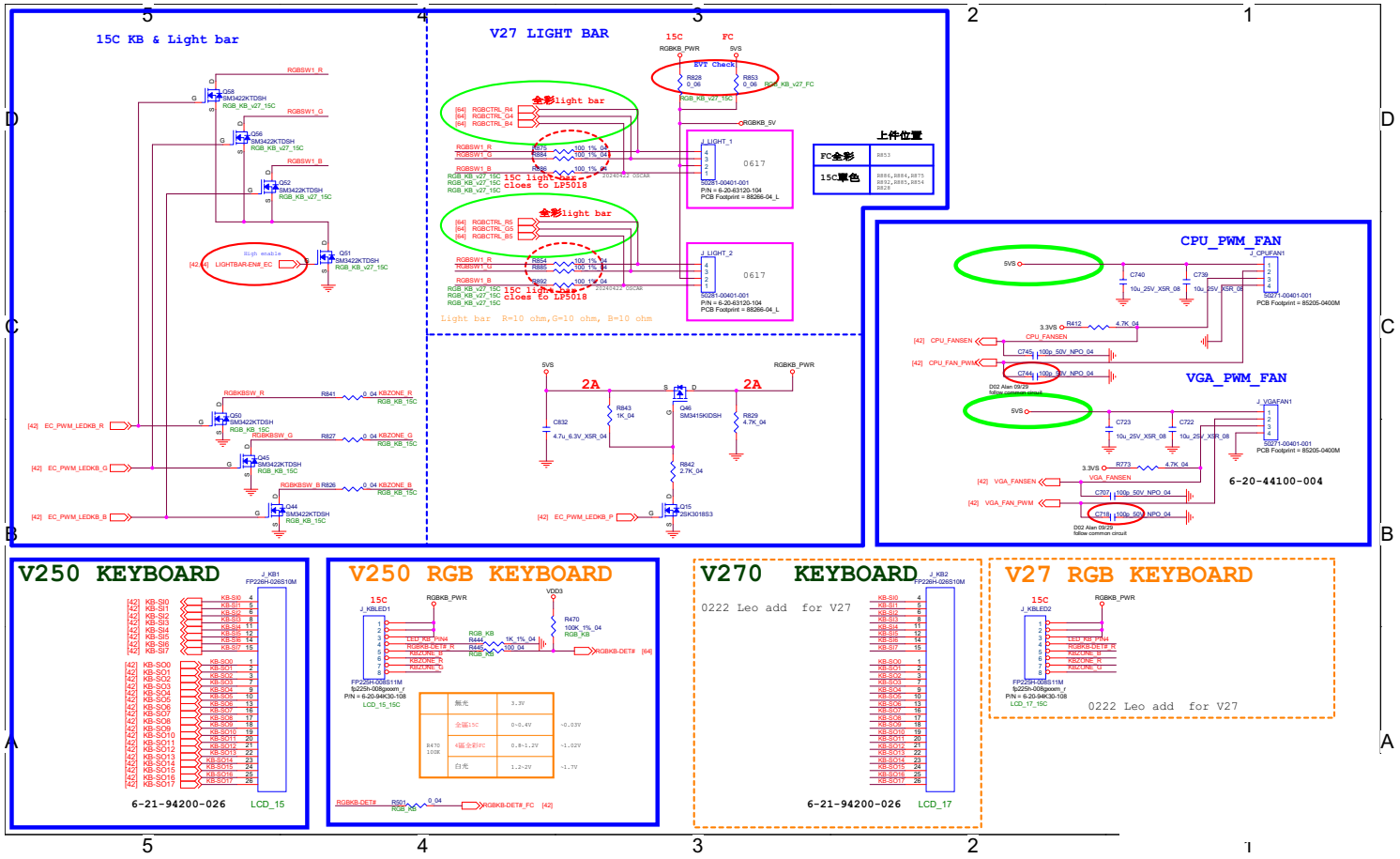
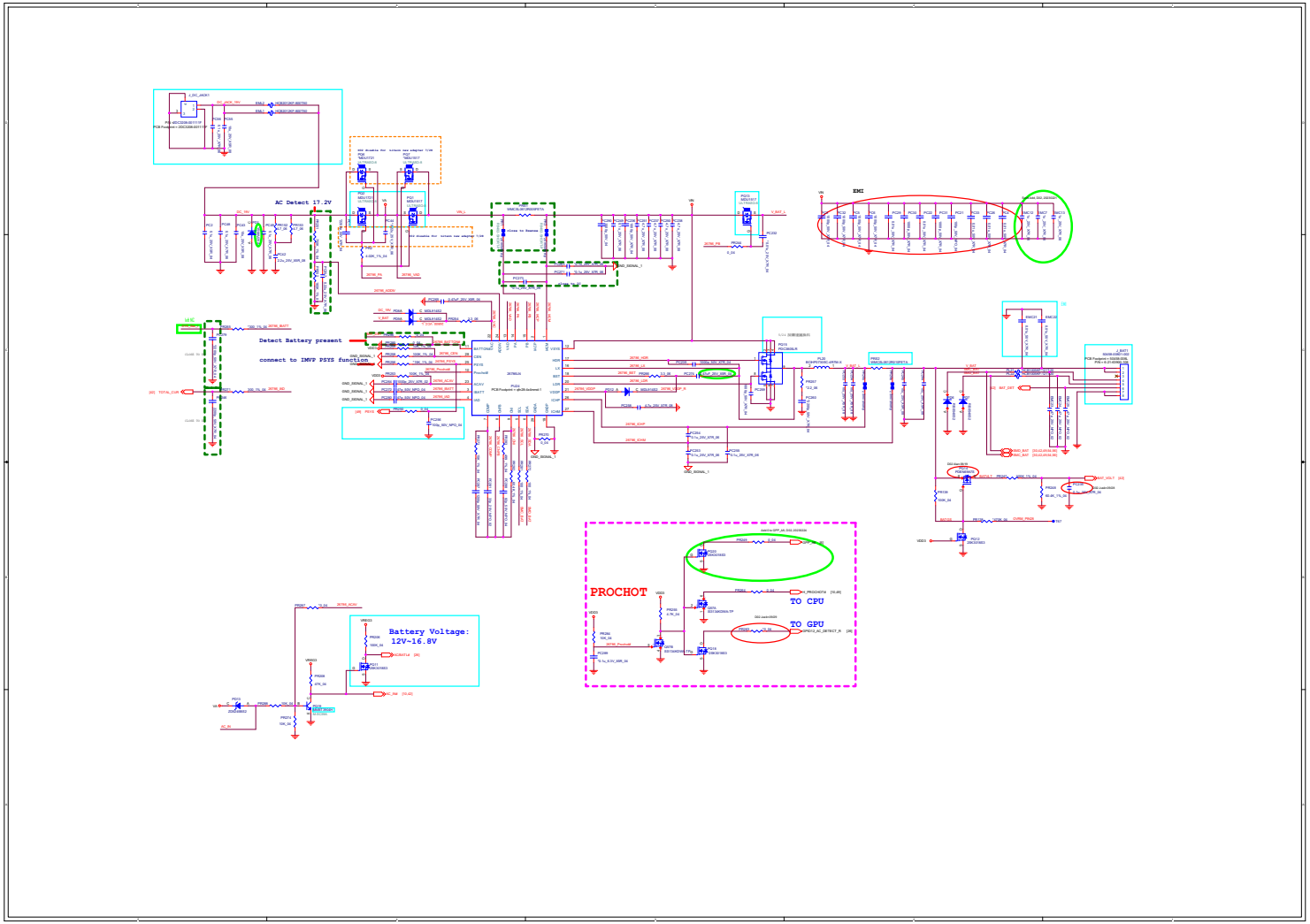
RGB KB



AC_In, Charger



Sheet 44 of 67
AC_In, Charger

VDD3, VDD5

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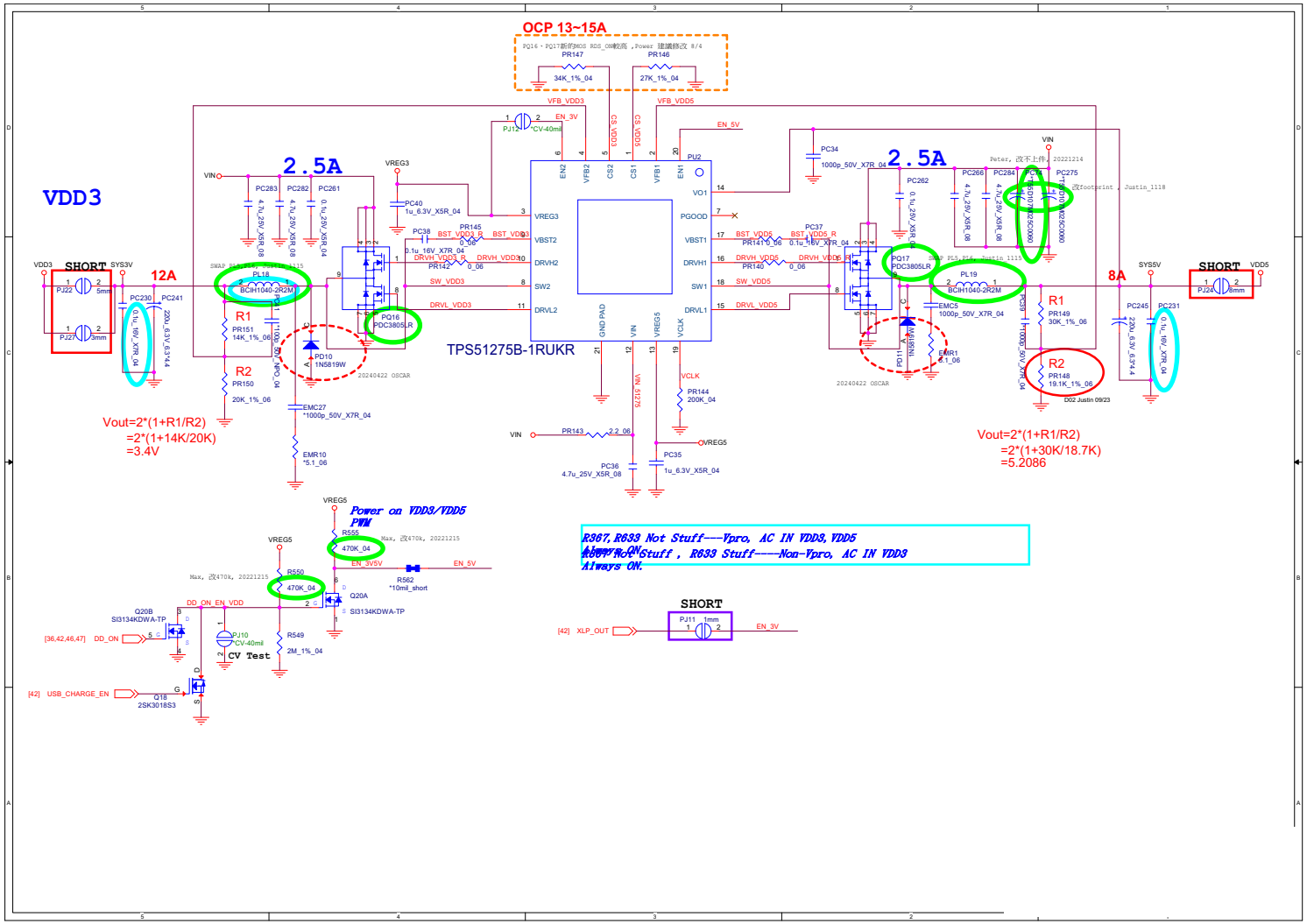
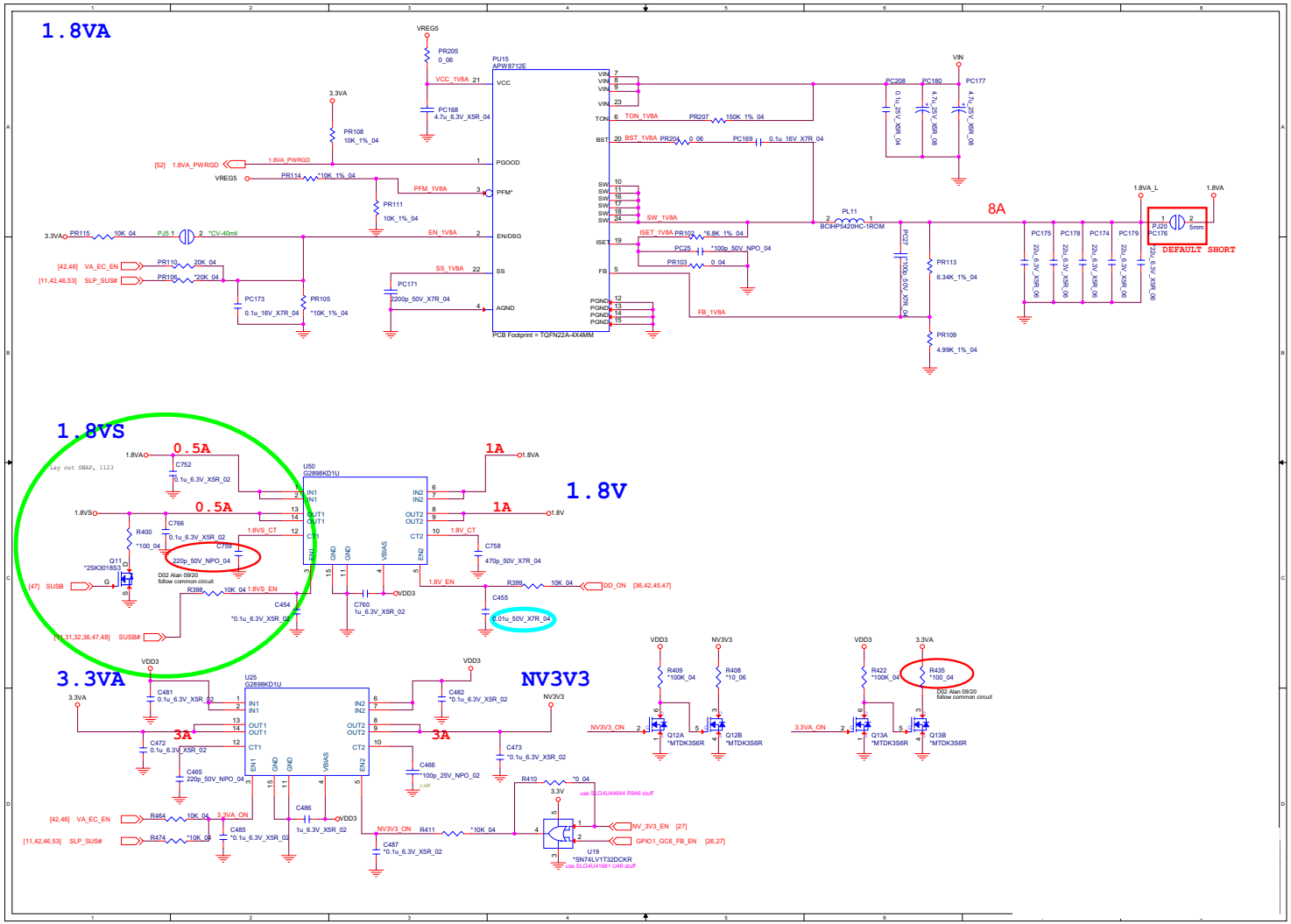
VDD3, VDD5



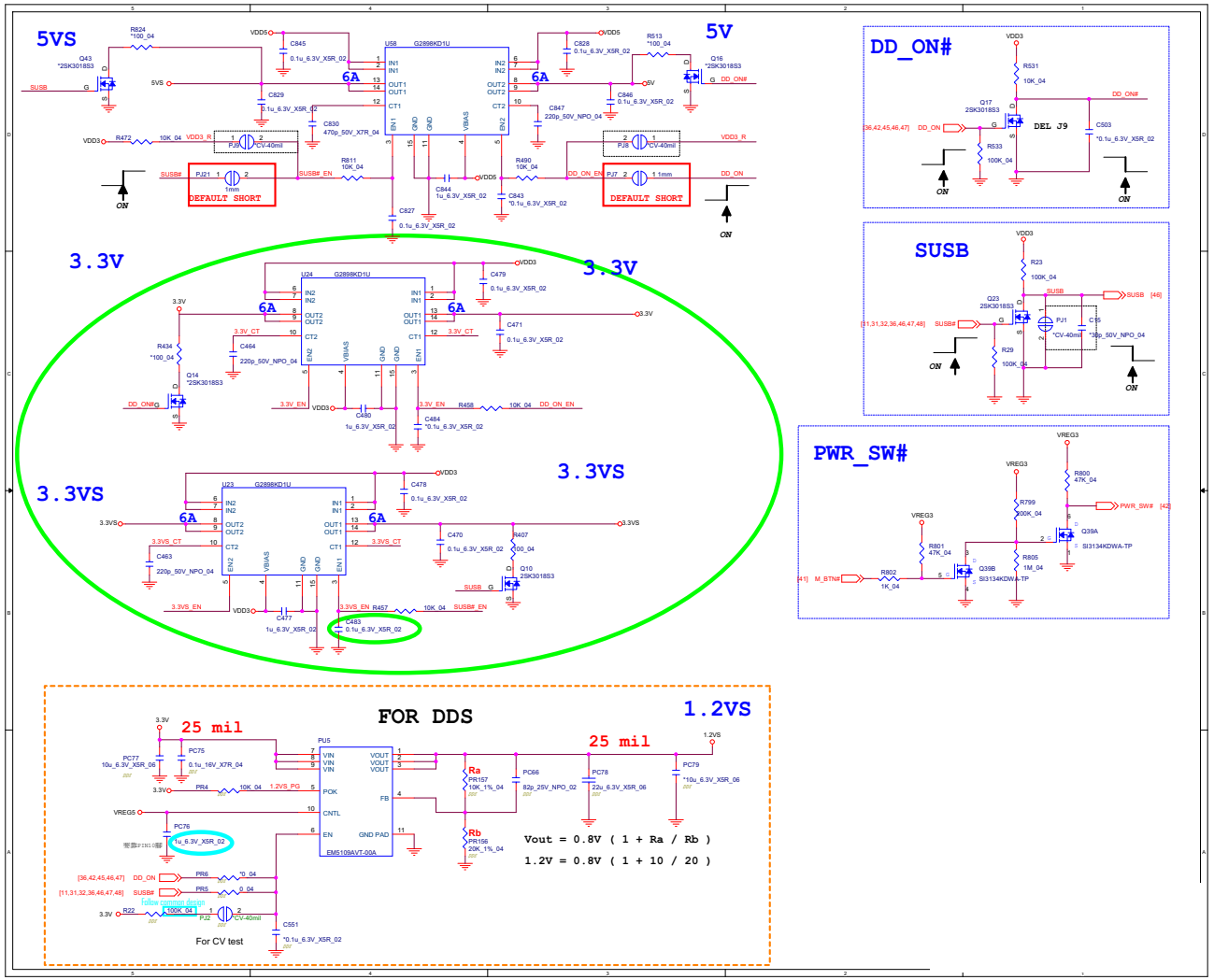
1V8_AON, NV3V3, 3.3VA



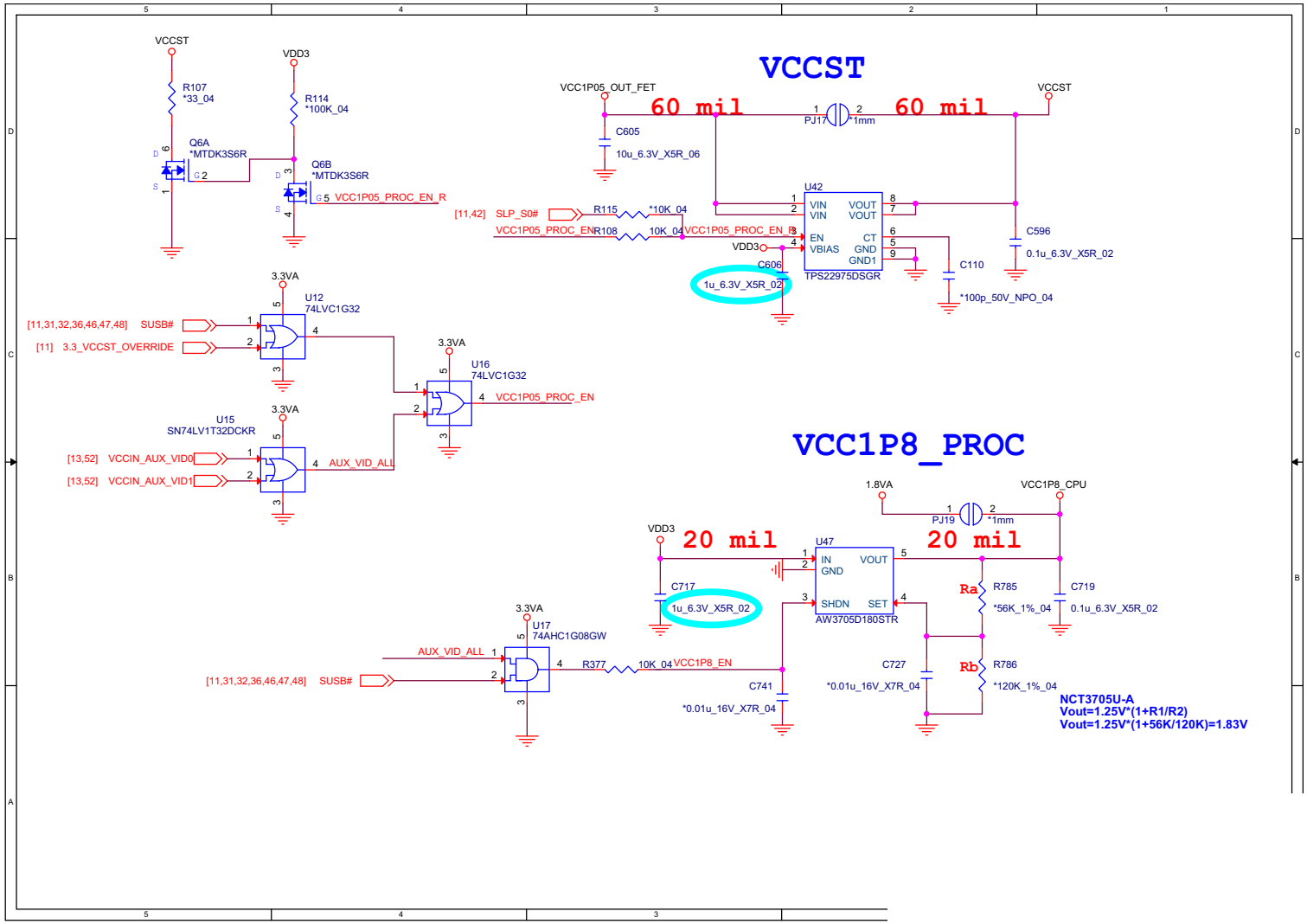
Sheet 46 of 67
1V8_AON, NV3V3, 3.3VA

5V, 5VS, 3V, 3VS, 1.2VS

Sheet 47 of 67
5V, 5VS, 3V, 3VS, 1.2VS



VCCST, VCC1P8



Sheet 48 of 67
VCCST, VCC1P8

MP2964 Controller

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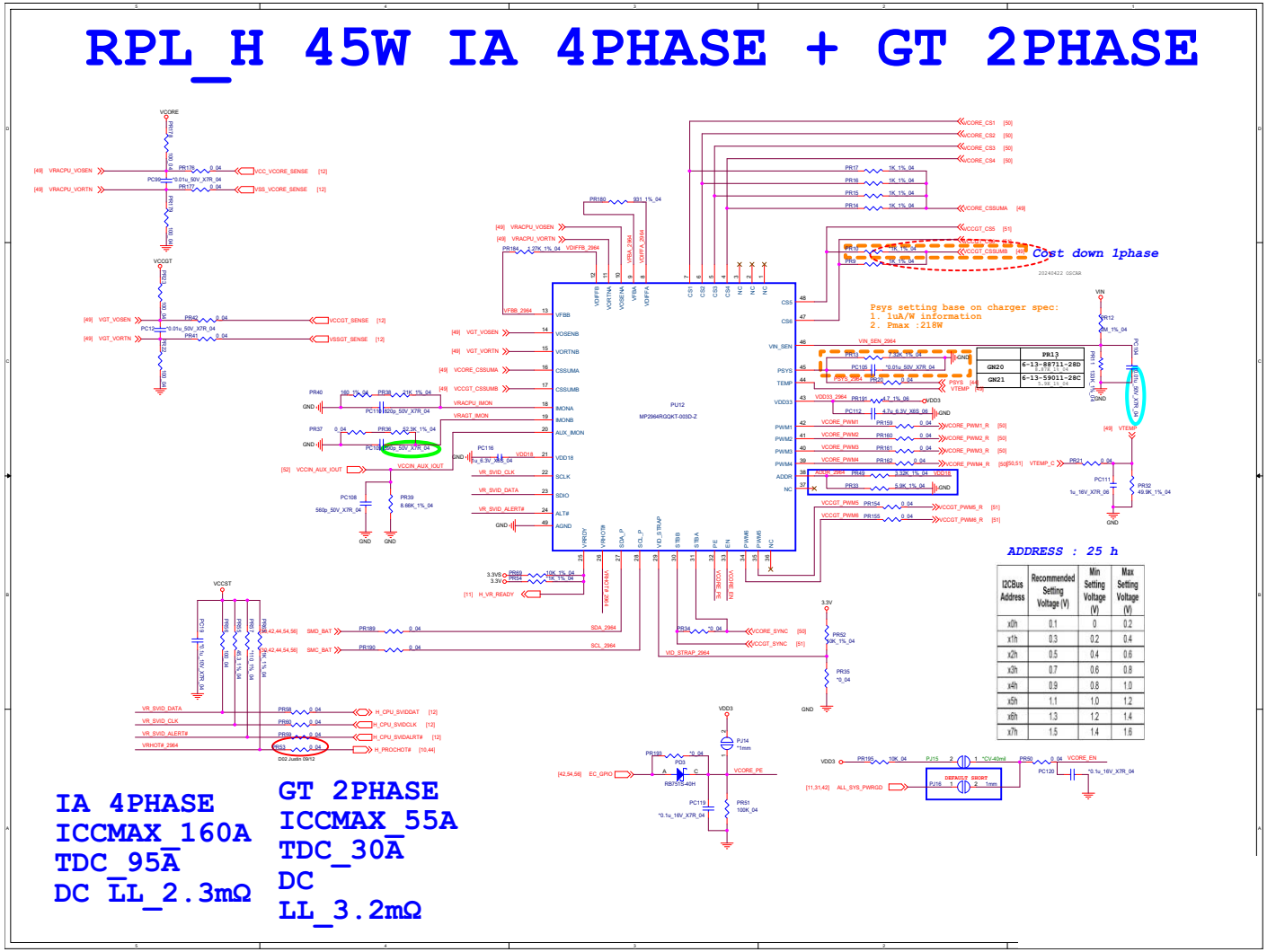
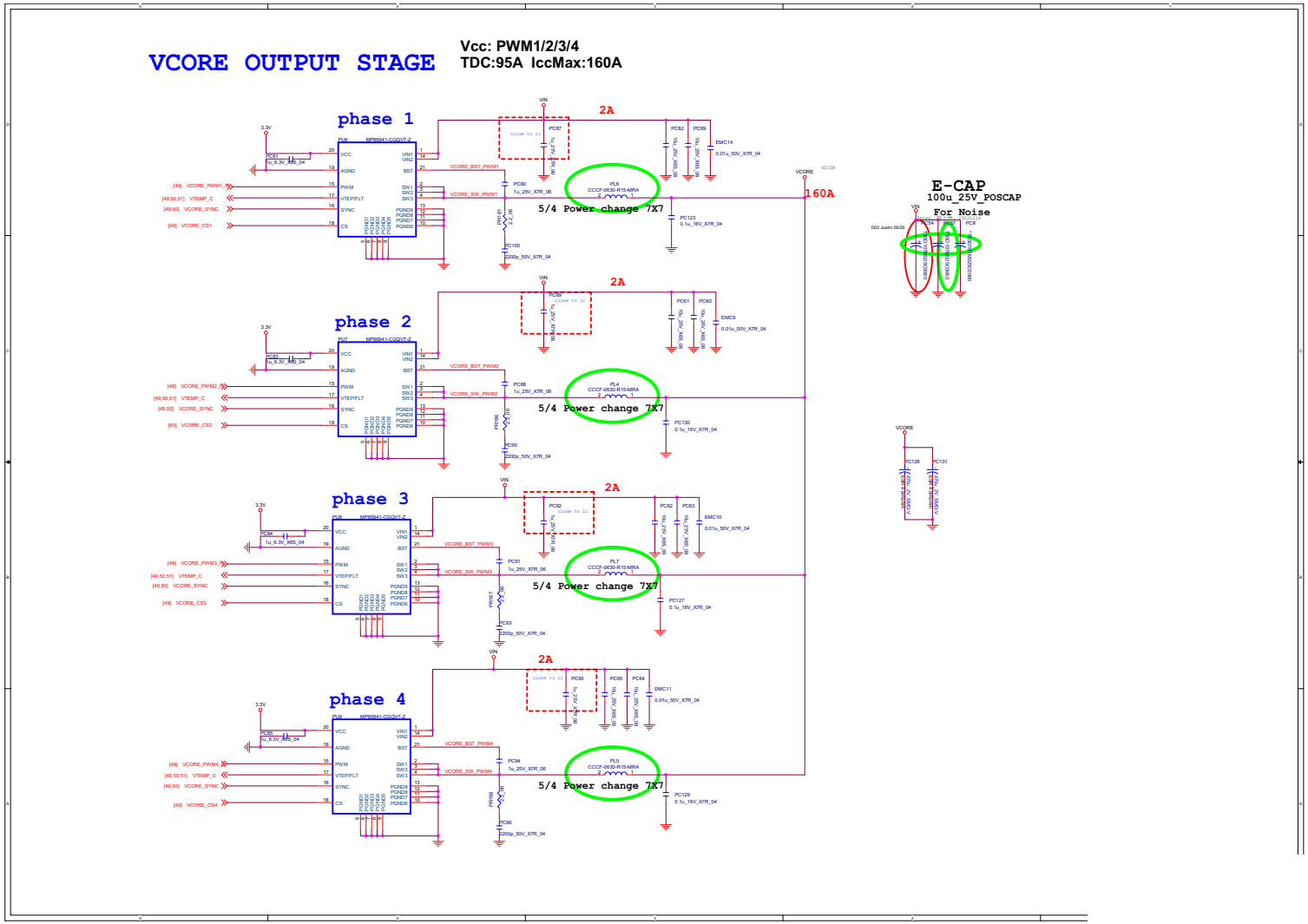
MP2964 Controller



VCore Power Stage



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VCore Power Stage

VCCGT

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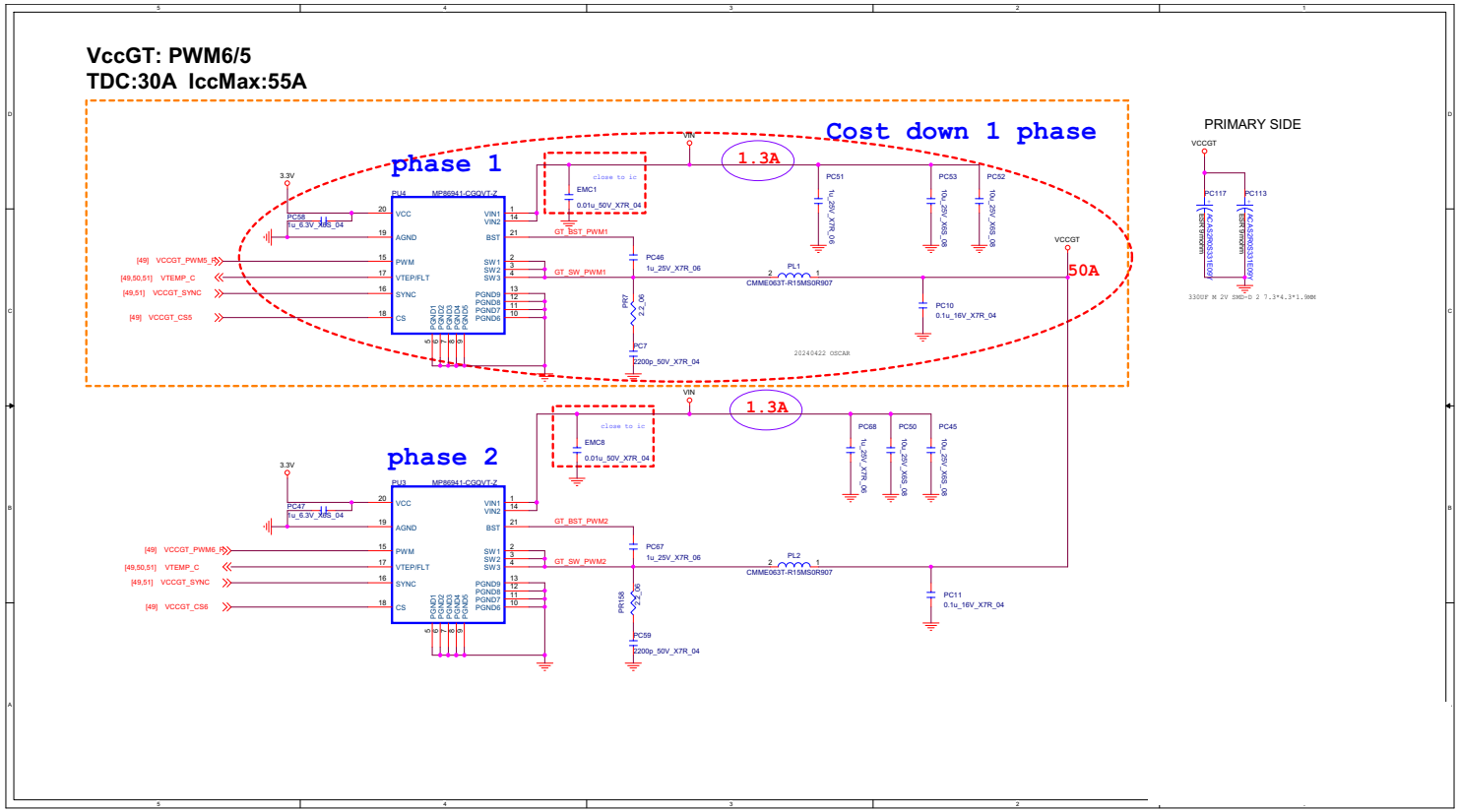
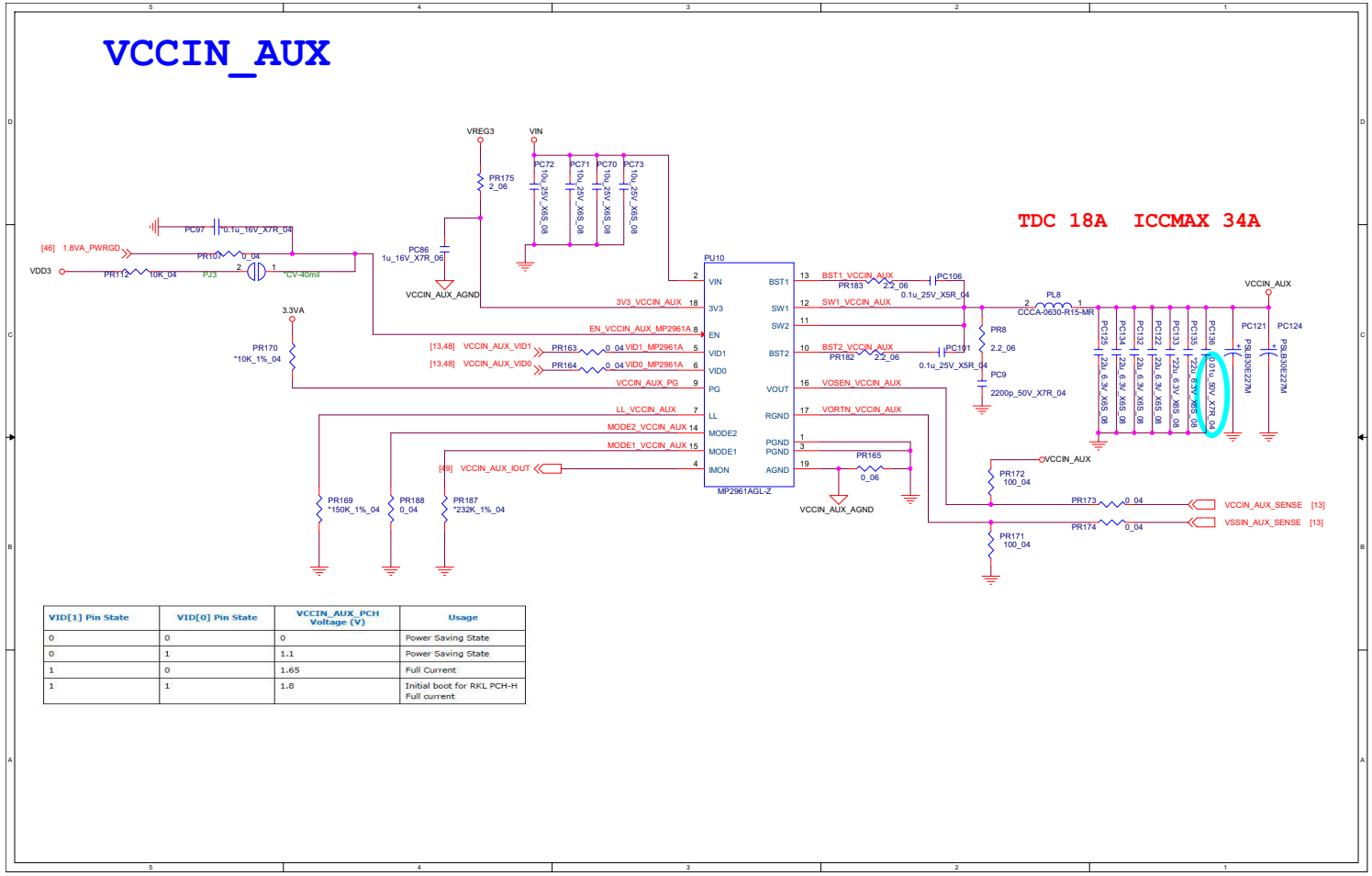
VCCGT



VCCIN AUX



VID[1] Pin State	VID[0] Pin State	VCCIN_AUX_PCH Voltage (V)	Usage
0	0	0	Power Saving State
0	1	1.1	Power Saving State
1	0	1.65	Full Current
1	1	1.8	Initial boot for RKL PCH-H Full current

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VCCIN AUX

VDD2, DDR 5V, 1.8V

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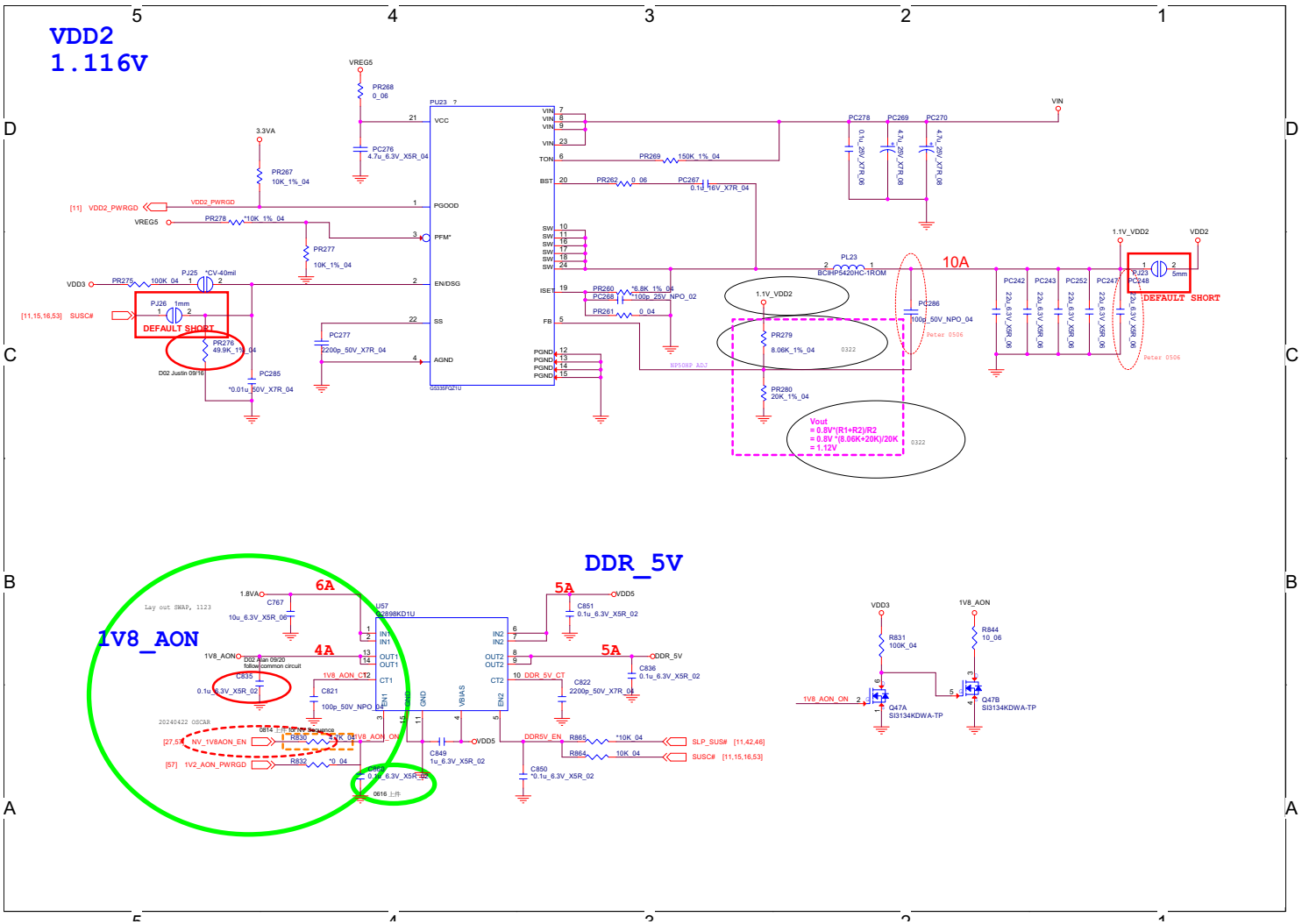
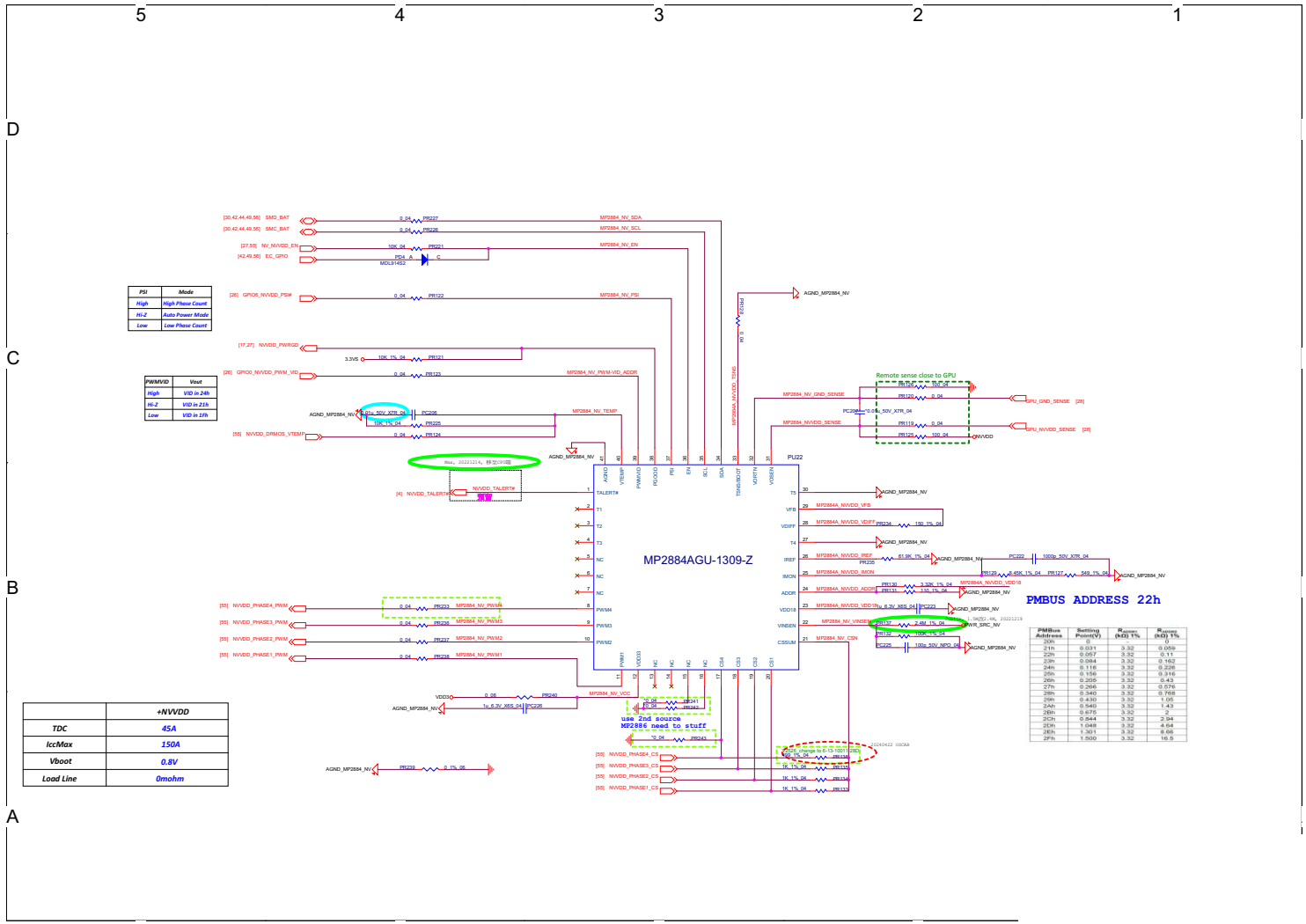
VDD2, DDR 5V, 1.8V



NVVDD1



PSI	Mode
High	High Phase Count
Hi-Z	Auto Power Mode
Low	Low Phase Count

PWMVID	Vout
High	VID in 24h
Hi-Z	VID in 21h
Low	VID in 1Fh

	+NVVDD
TDC	45A
IccMax	150A
Vboot	0.8V
Load Line	0mohm

PMBus Address	Setting Point(V)	R_{power} (kΩ) 1%	$R_{latency}$ (kΩ) 1%
20h	0	3.32	0
21h	0.031	3.32	0.059
22h	0.057	3.32	0.11
23h	0.084	3.32	0.162
24h	0.116	3.32	0.226
25h	0.156	3.32	0.316
26h	0.205	3.32	0.43
27h	0.266	3.32	0.576
28h	0.340	3.32	0.768
29h	0.430	3.32	1.05
2Ah	0.540	3.32	1.43
2Bh	0.675	3.32	2
2Ch	0.844	3.32	2.94
2Dh	1.048	3.32	4.64
2Eh	1.301	3.32	8.66
2Fh	1.500	3.32	16.5

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NVVDD1

NVVDD2

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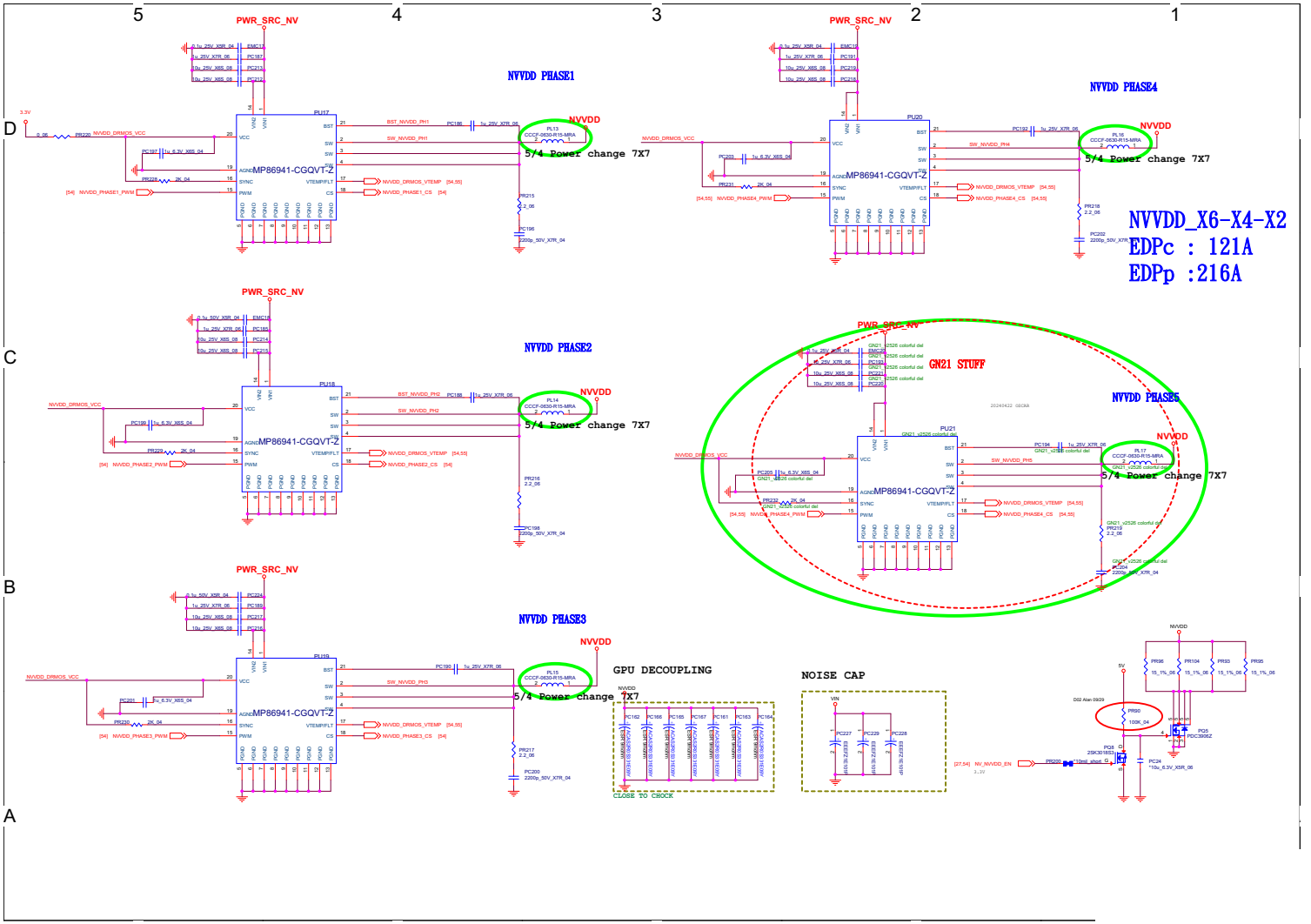
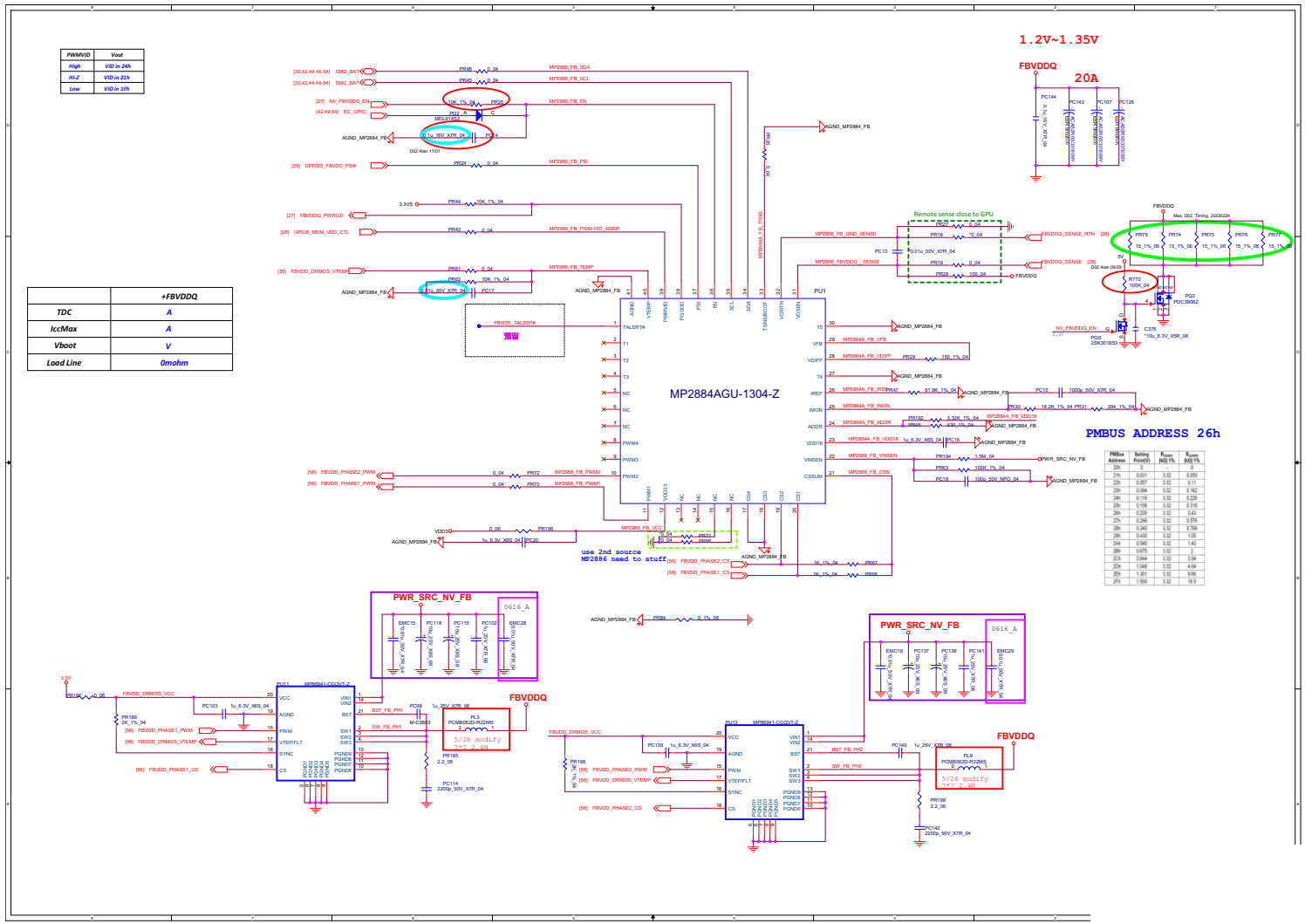
NVVDD2



FBVDDQ



PWMVID	Vout
High	VID in 24h
Hi-Z	VID in 22h
Low	VID in 1Fh

	+FBVDDQ
TDC	A
IccMax	A
Vboot	V
Load Line	0mohm

PEX_VDD

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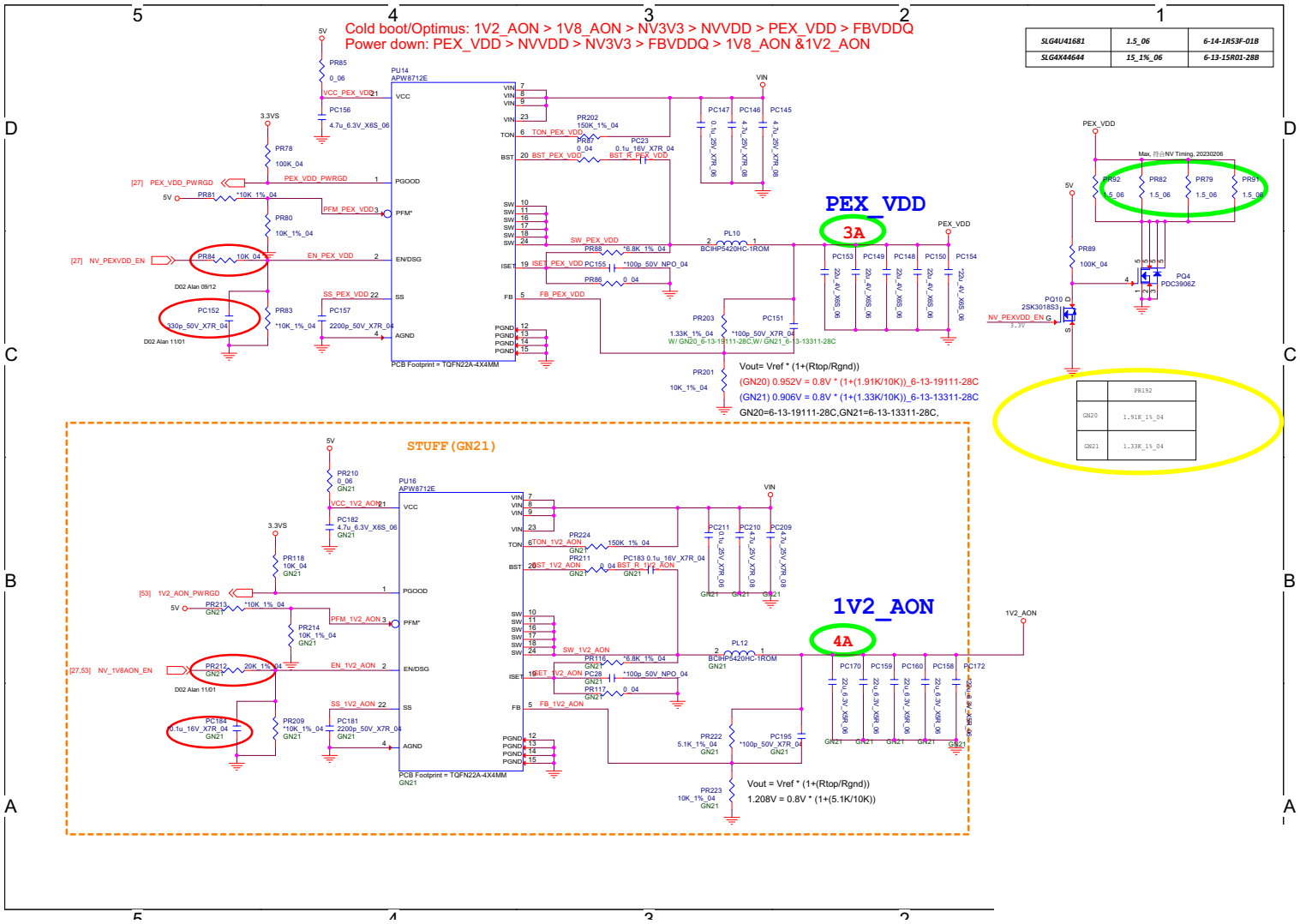
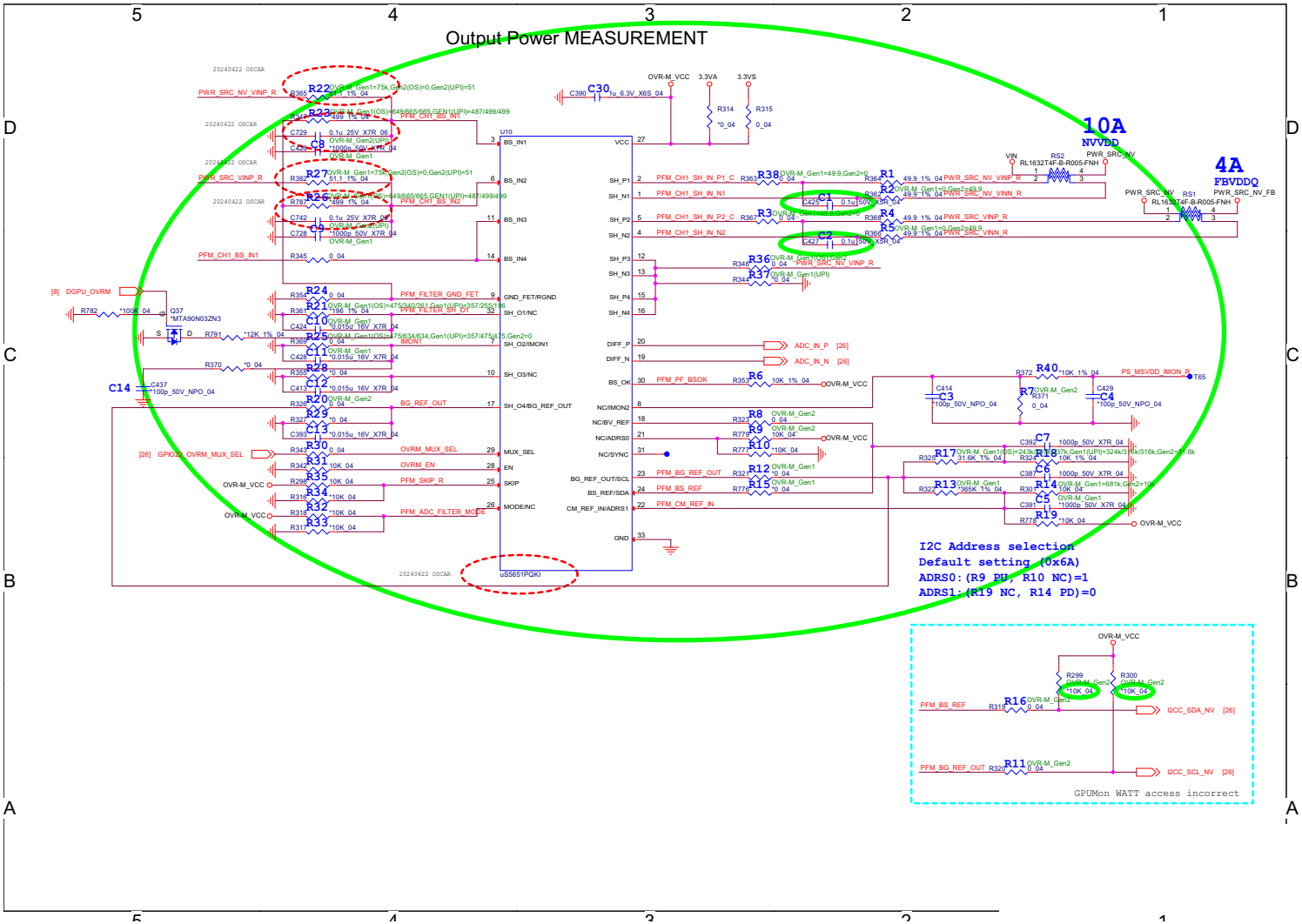
PEX_VDD



OVR-M



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OVR-M

V25/V26 Audio Board + Redriver

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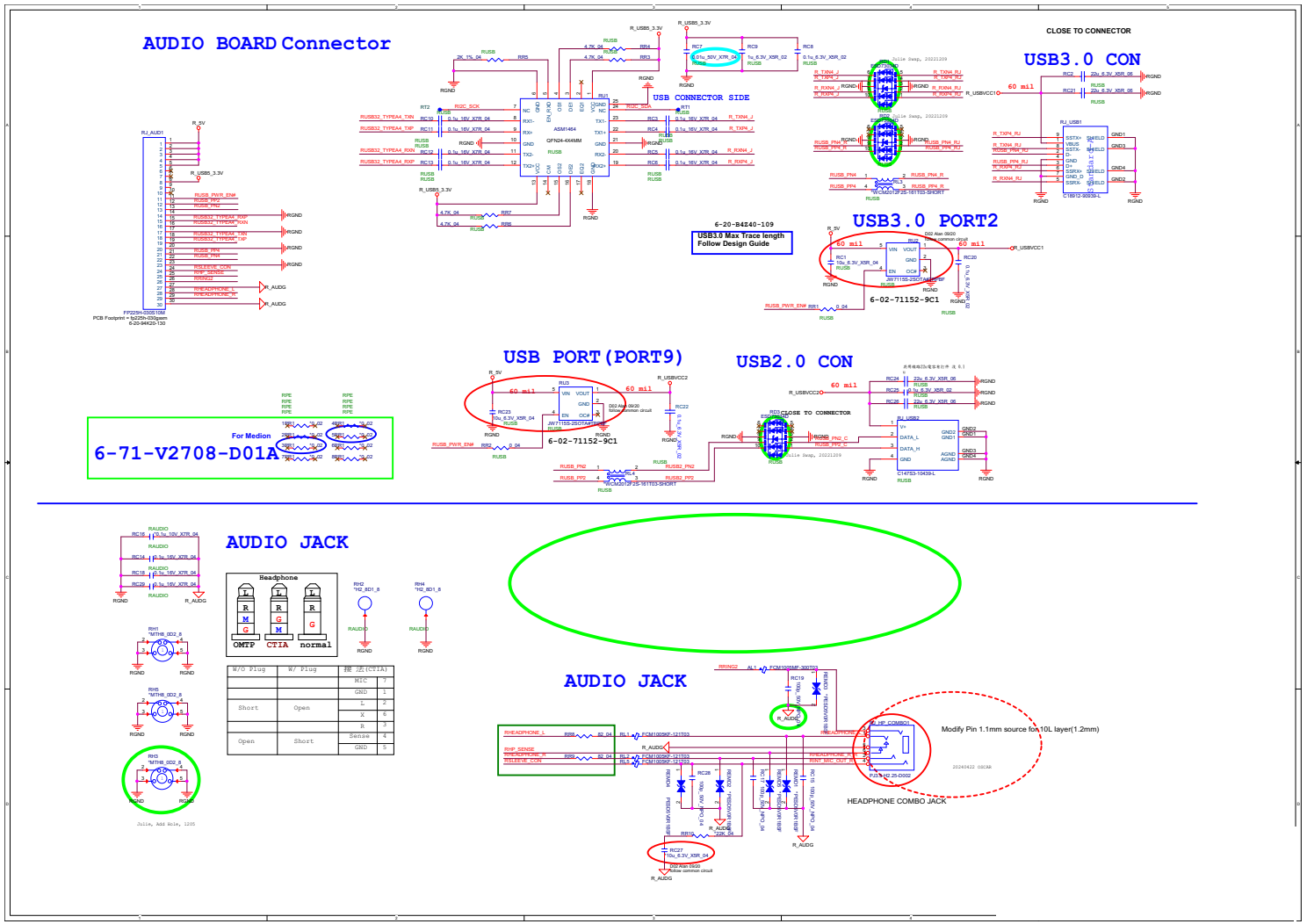
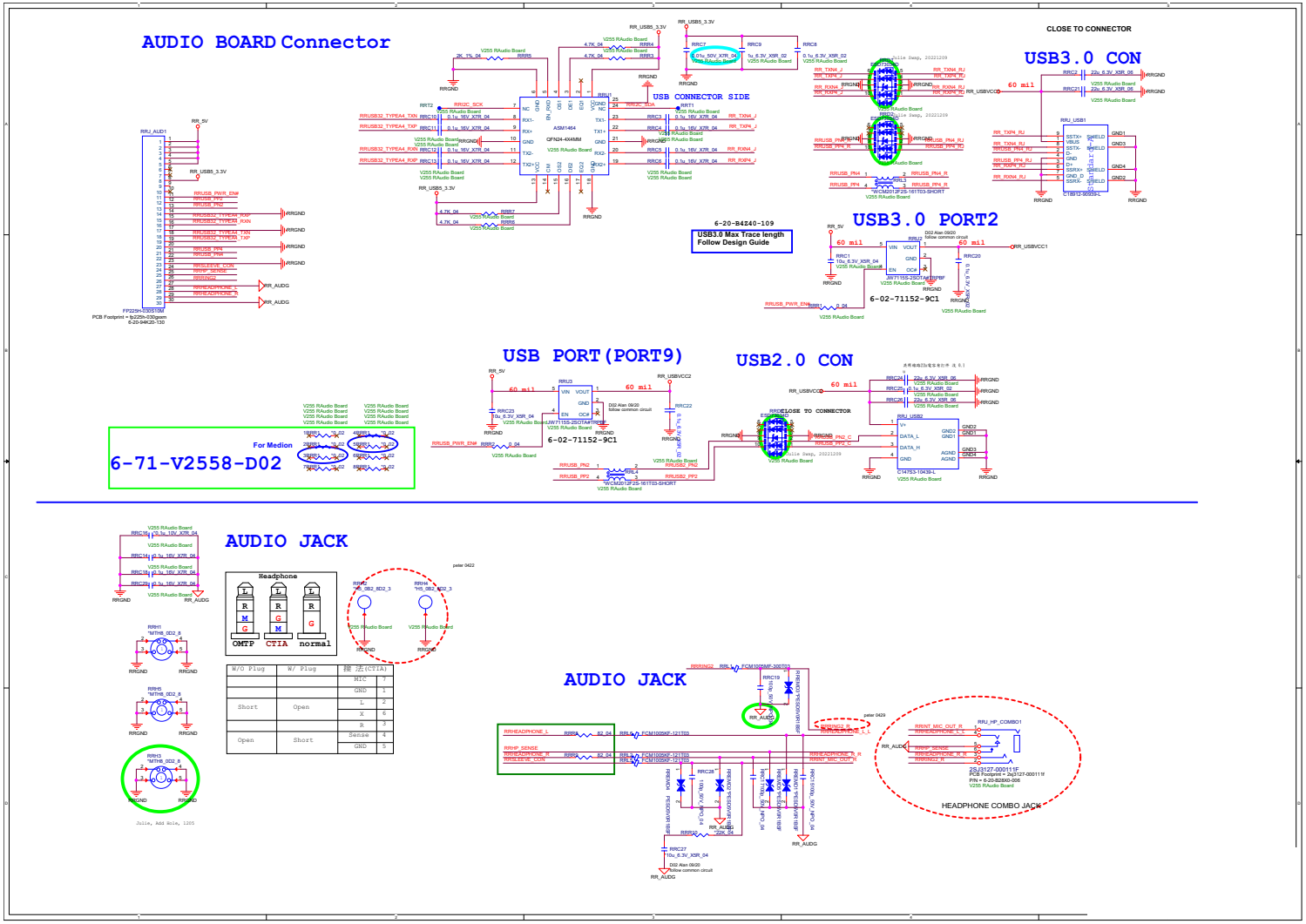
V25/V26 Audio
Board + Redriver



V255 Audio Board



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V255 Audio Board

B.Schematic Diagrams

V25 LED Board

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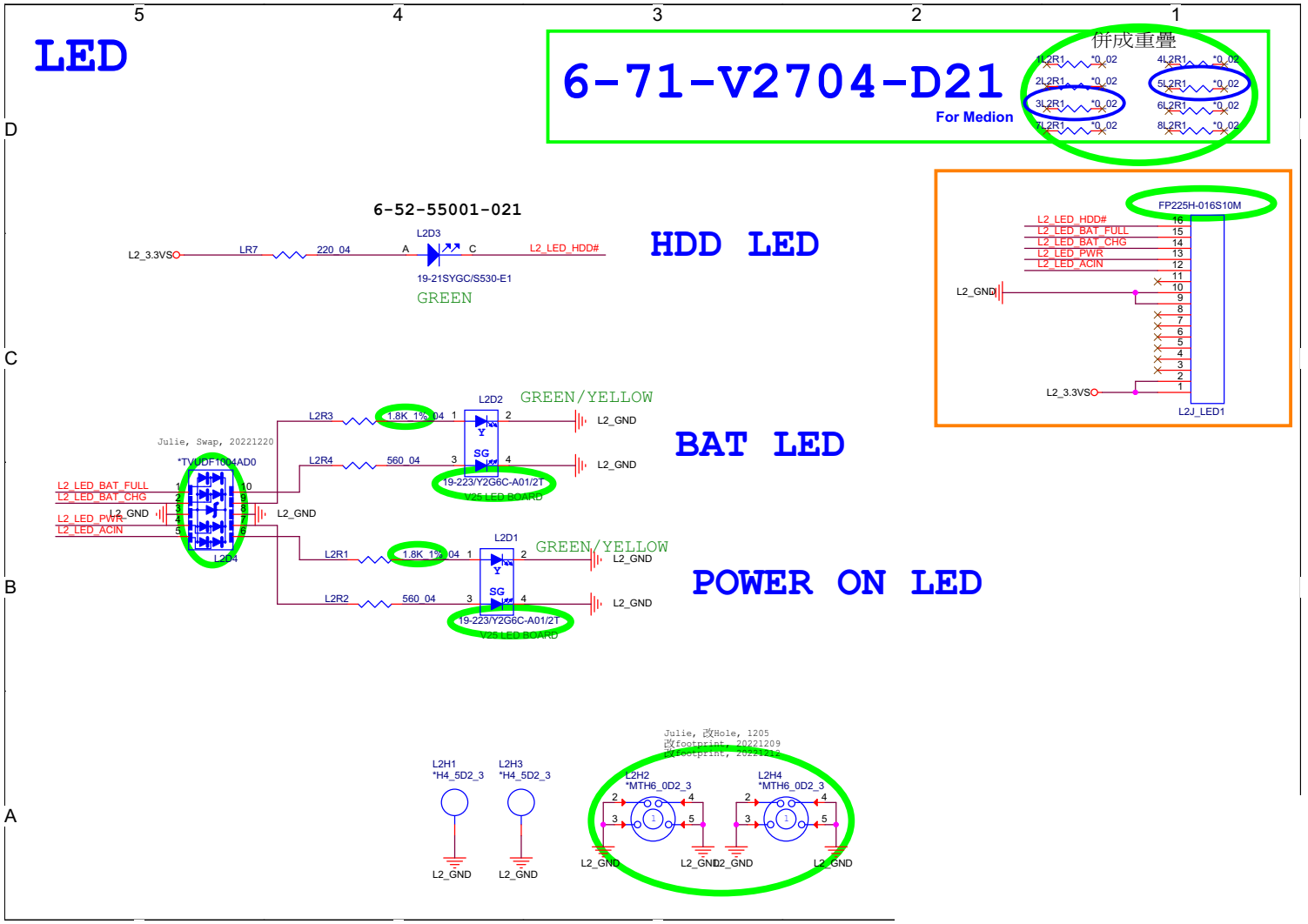
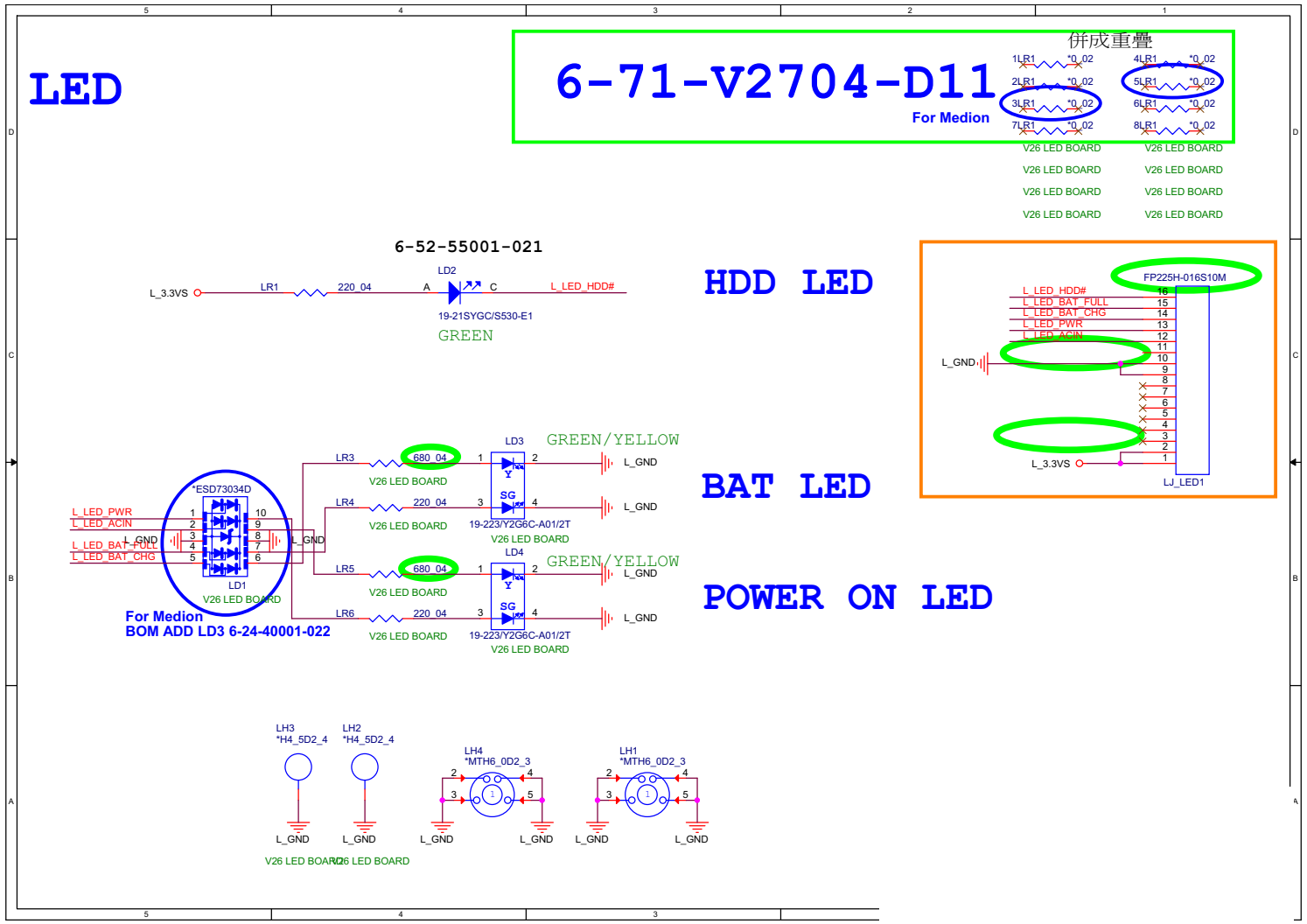
V25 LED Board



V26 LED Board



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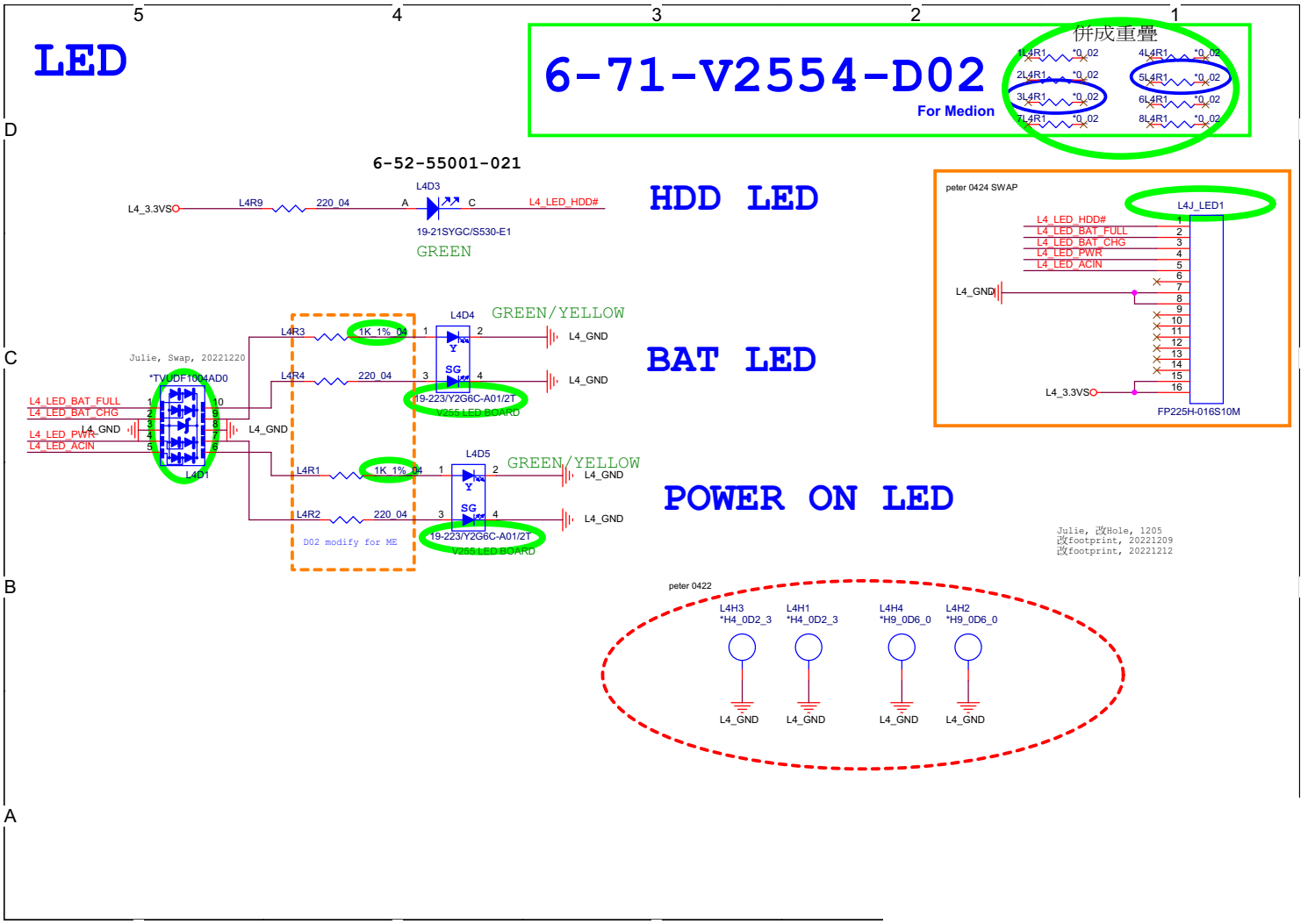
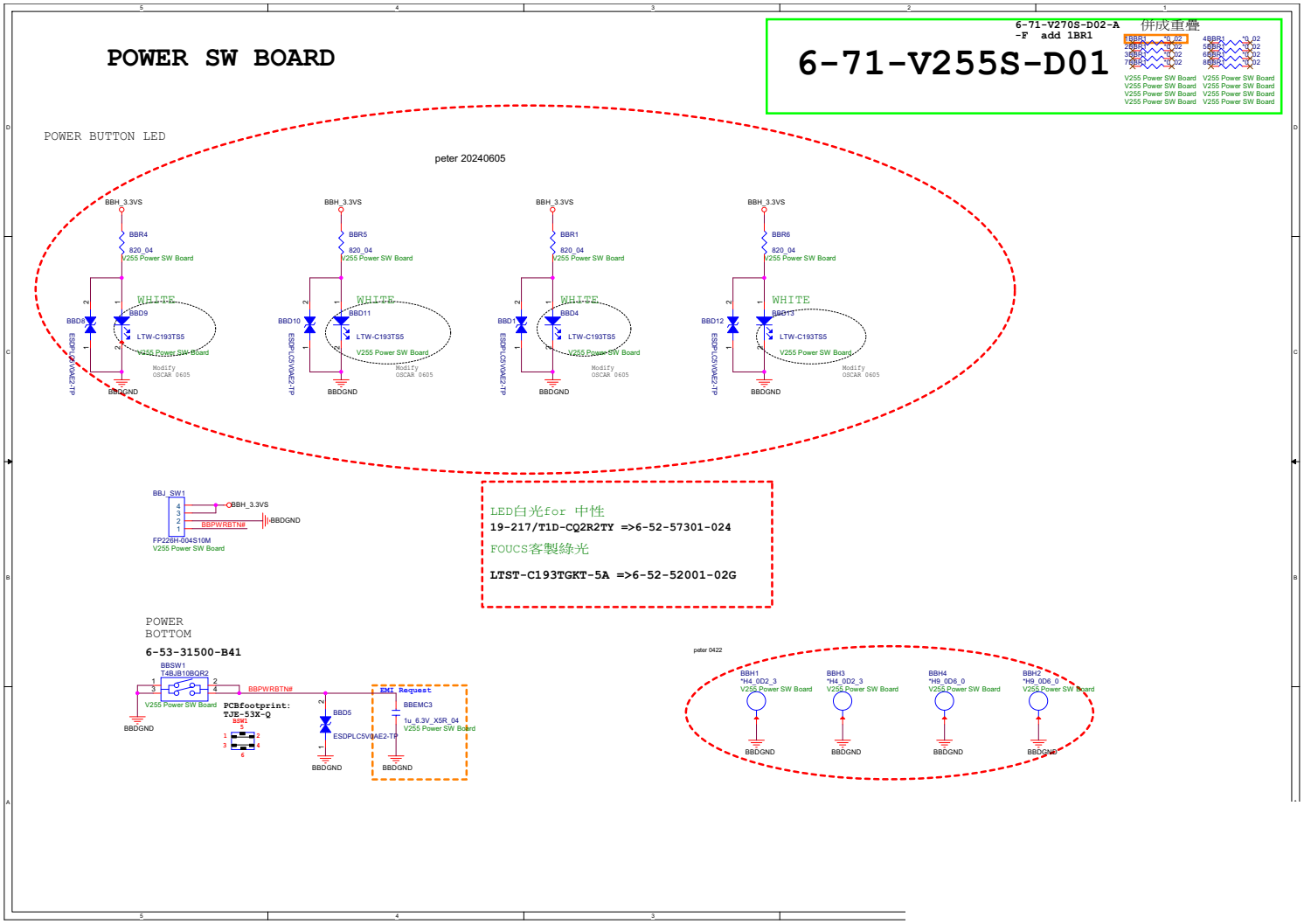
V26 LED Board

V255 LED Board

Sheet 63 of 67
V255 LED Board



V255 Power SW Board



Sheet 64 of 67
V255 Power SW Board

RGB KB Controller

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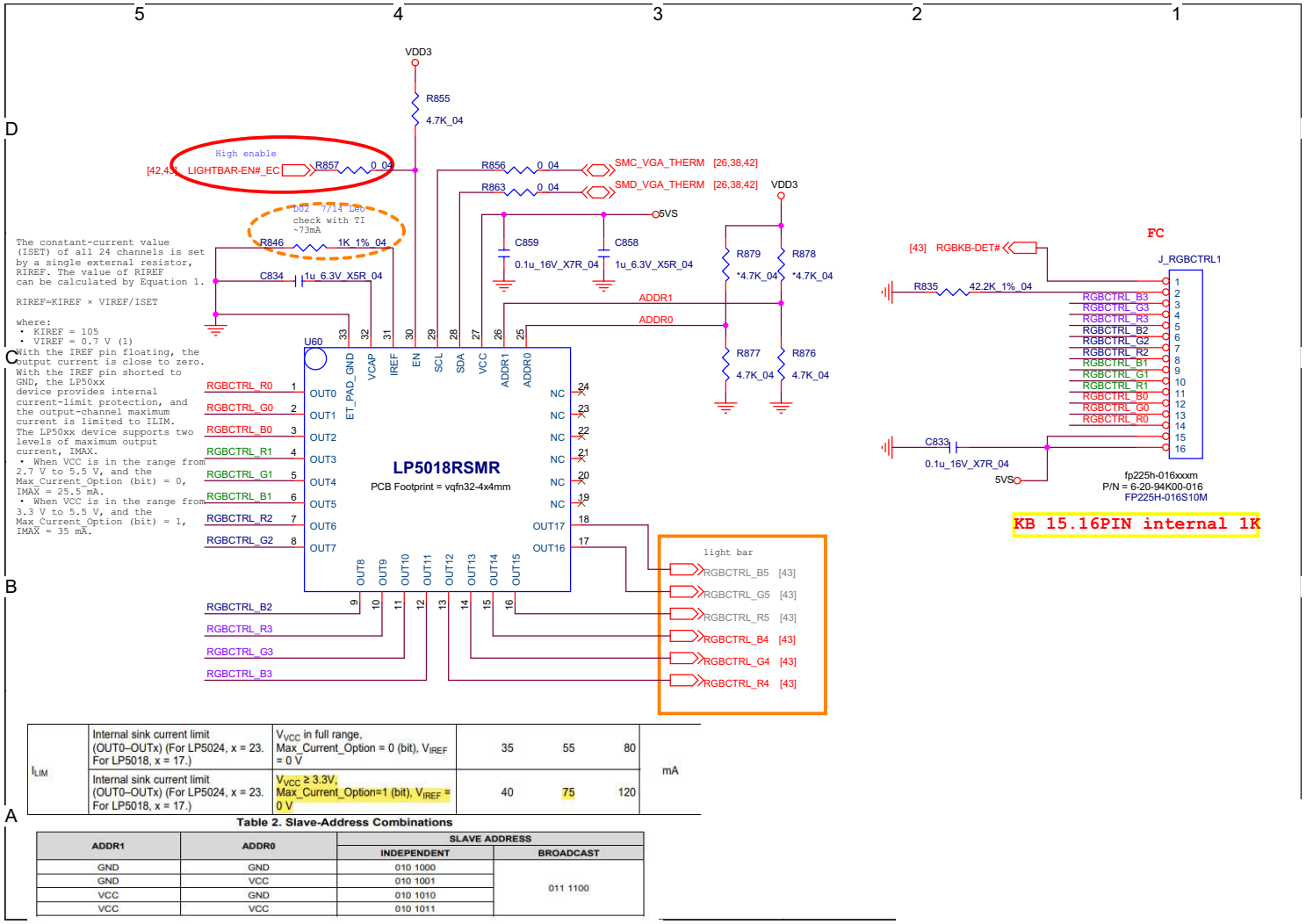
RGB KB Controller



The constant-current value (ISET) of all 24 channels is set by a single external resistor, RIREF. The value of RIREF can be calculated by Equation 1.

RIREF=KIREF × VIREF/ISET

where:
- KIREF = 105
- VIREF = 0.7 V (1)

With the IREF pin floating, the output current is close to zero. With the IREF pin shorted to GND, the LP50xx device provides internal current-limit protection, and the output-channel maximum current is limited to ILIM. The LP50xx device supports two levels of maximum output current, IMAX.

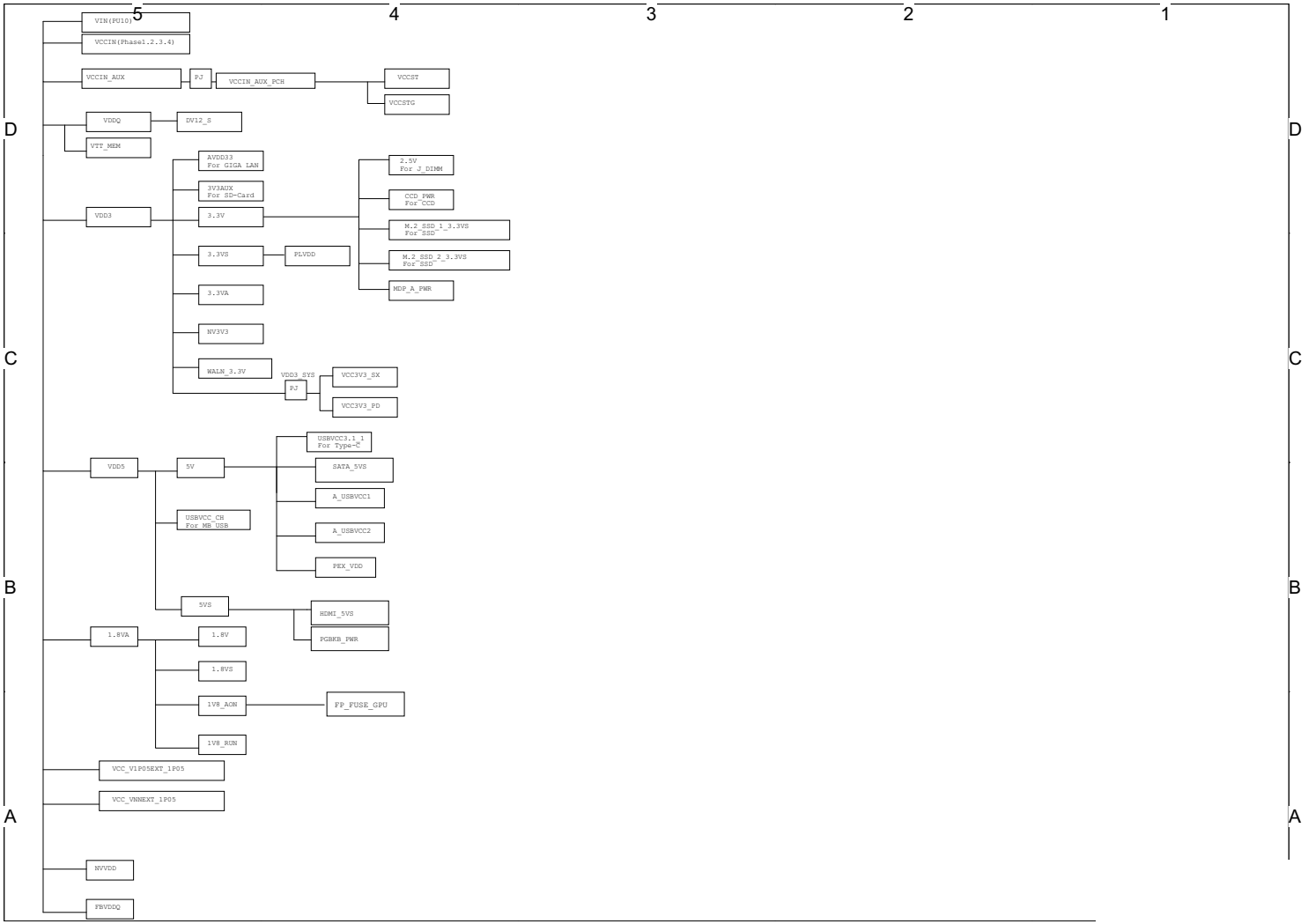
- When VCC is in the range from 2.7 V to 5.5 V, and the Max_Current_Option (bit) = 0, IMAX = 25.5 mA.
- When VCC is in the range from 3.3 V to 5.5 V, and the Max_Current_Option (bit) = 1, IMAX = 35 mA.

I_{LIM}	Internal sink current limit (OUT0–OUTx) (For LP5024, x = 23. For LP5018, x = 17.)	V_{CC} in full range, Max_Current_Option = 0 (bit), V_{IREF} = 0 V	35	55	80	mA
	Internal sink current limit (OUT0–OUTx) (For LP5024, x = 23. For LP5018, x = 17.)	V_{CC} ≥ 3.3V, Max_Current_Option=1 (bit), V_{IREF} = 0 V	40	75	120	

Table 2. Slave-Address Combinations

ADDR1	ADDR0	SLAVE ADDRESS	
		INDEPENDENT	BROADCAST
GND	GND	010 1000	011 1100
GND	VCC	010 1001	
VCC	GND	010 1010	
VCC	VCC	010 1011	

Power Map



Sheet 66 of 67
Power Map

Power Sequence

Sheet 67 of 67
Power Sequence