

SERVICE MANUAL

notebook

NV41PZ / NV45PZ



Notebook Computer

NV41PZ / NV45PZ

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 *NV41PZ* / *NV45PZ* series notebook PC.

The following information is included:

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

Appendix A, Part Lists

Appendix B, Schematic Diagrams

Preface

IMPORTANT SAFETY INSTRUCTIONS

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

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 4.74A (**90** Watts) minimum AC/DC Adapter.

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

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

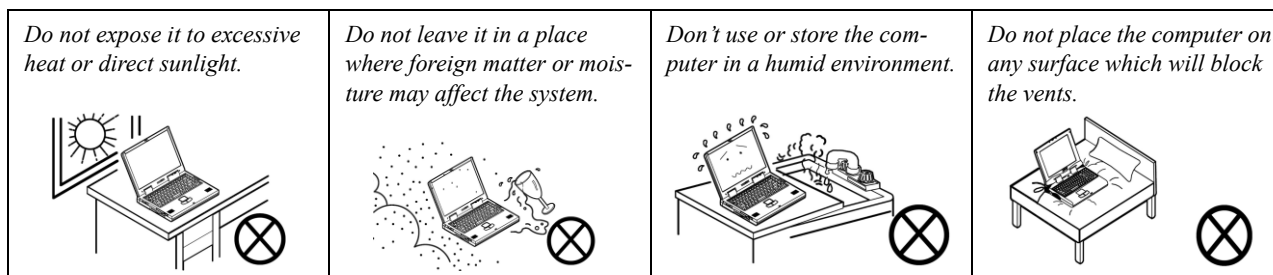
Instructions for Care and Operation

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

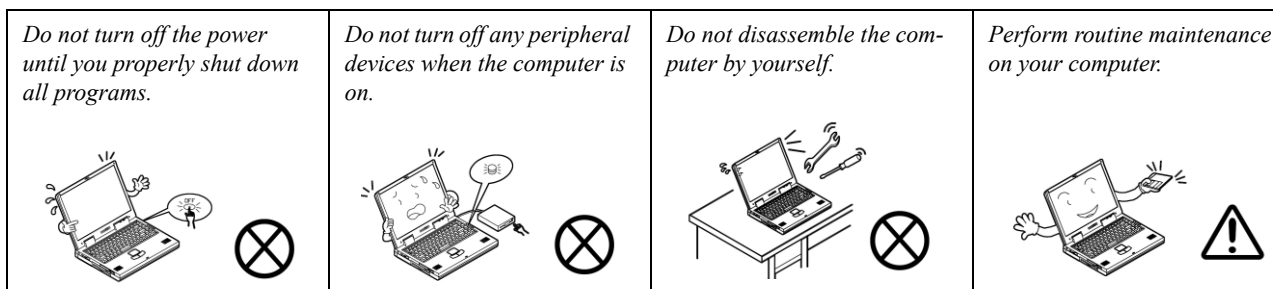
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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

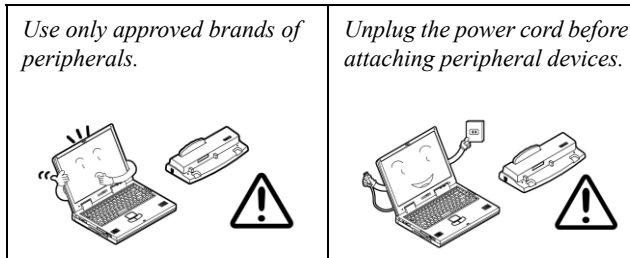


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

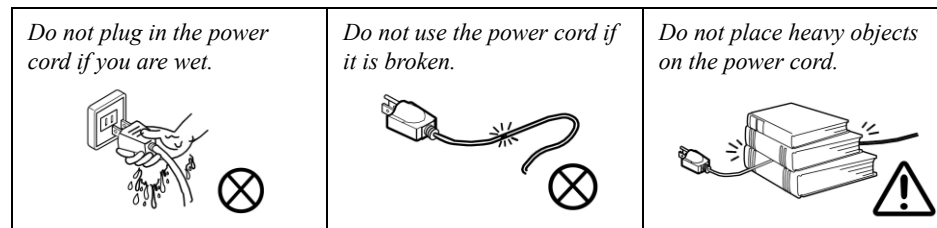
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



Power Safety

The computer has specific power requirements:

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



Power Safety Warning

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

Battery Precautions

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

Battery Guidelines

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

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



Battery Disposal

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

Caution

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

Battery Level

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

Preface

Related Documents

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

User's Manual on CD/DVD

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

System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
4. **When first setting up the computer use the following procedure** (as to safeguard the computer during shipping, the battery will be locked to not power the system until first connected to the AC/DC adapter and initially set up as below):
 - Attach the AC/DC adapter cord to the DC-In jack on the right 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 180 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 on the left side of the computer to turn the computer "on" (note that the lid/LCD must be open for the power button to function).



Powering the Computer On

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

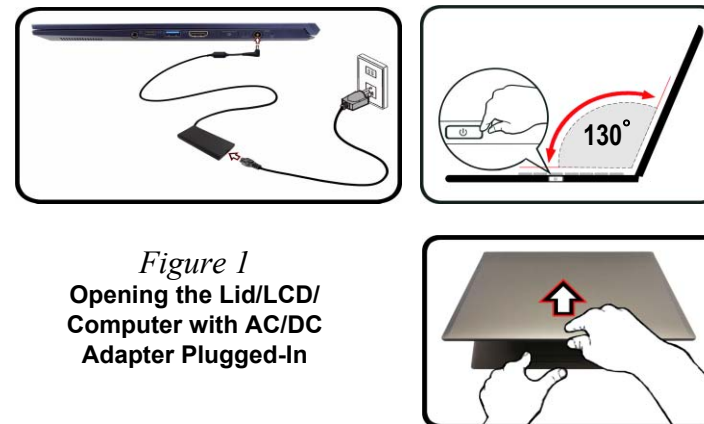


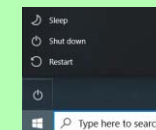
Figure 1
**Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In**



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 **NV41PZ / NV45PZ** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in the *User's Manual*. The manual is shipped with the computer.

Operating systems (e.g. *Window 10*, etc.) have their own manuals as do application softwares (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The **NV41PZ / NV45PZ** series notebook is designed to be upgradeable. See [Disassembly on page 2 - 1](#) for a detailed description of the upgrade procedures for each specific component. Please take note of the warning and safety information indicated by the “” symbol.

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

Introduction

Specifications



Latest Specification Information

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



CPU

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

Processor Options

Intel® Core™ i7 Processor

i7-1260P (2.10GHz)

Intel® Core™ i5 Processor

i5-1240P (1.70GHz)

Intel® Core™ i3 Processor

i3-1220P (1.50GHz)

BIOS

256Mb SPI Flash ROM

Insyde BIOS

Memory

Dual Channel DDR4

Two 260 Pin SO-DIMM Sockets

Supporting up to **3200MHz DDR4** Memory

Expandable Memory up to **64GB**

Compatible with 8GB,16GB or 32GB Modules

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

LCD Options

LCD, 14" (35.56cm), 16:9

FHD (1920x1080)

Card Reader

Embedded Multi-In-1 Push-Push Card Reader

MMC (MultiMedia Card)/RS MMC

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

Storage

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

Microsoft Hybrid Graphics Mode

Supports up to 3 Active Displays

Intel Iris™ Xe Graphics (i7-1260P / i5-1240P)

Intel Xe Micro Architecture

HDR Support

Intel UHD Graphics (i3-1220P)

HDR Support

Microsoft DirectX® 12 Compatible

Pointing Device

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

Keyboard

Keyboard

Or

(Factory Option) **White-LED** Keyboard

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Array Microphone

M.2 Slots

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

Slot 2 for **PCIe Gen4 x4 SSD**

Communication

Built-In 10/100/1000Mb Base-TX Ethernet LAN
1.0M HD Webcam

Or

(Factory Option) Windows Hello Camera Module

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

Interface

One Thunderbolt 4 Port with Power Delivery (DC-In)

One USB 3.2 Gen 2 Type-C Port*

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

Two USB 3.2 Gen 1 Type-A Ports (Including one AC/DC
Powered USB Port)

One HDMI-Out Port

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

One RJ-45 LAN Jack

One DC-in Jack

Power

Embedded 4 Cell Smart Lithium-Ion Battery Pack, 53.35Wh

Full Range AC/DC Adapter

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

DC Output: 19V, 4.74A (**90W**)

Environmental Spec**Temperature**

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Dimensions & Weight

324.9mm (w) * 225mm (d) * 17.6mm (h)

1.35kg (Barebone and 53.35Wh Battery)

Or

324.9mm (w) * 225mm (d) * 18.2mm (h)

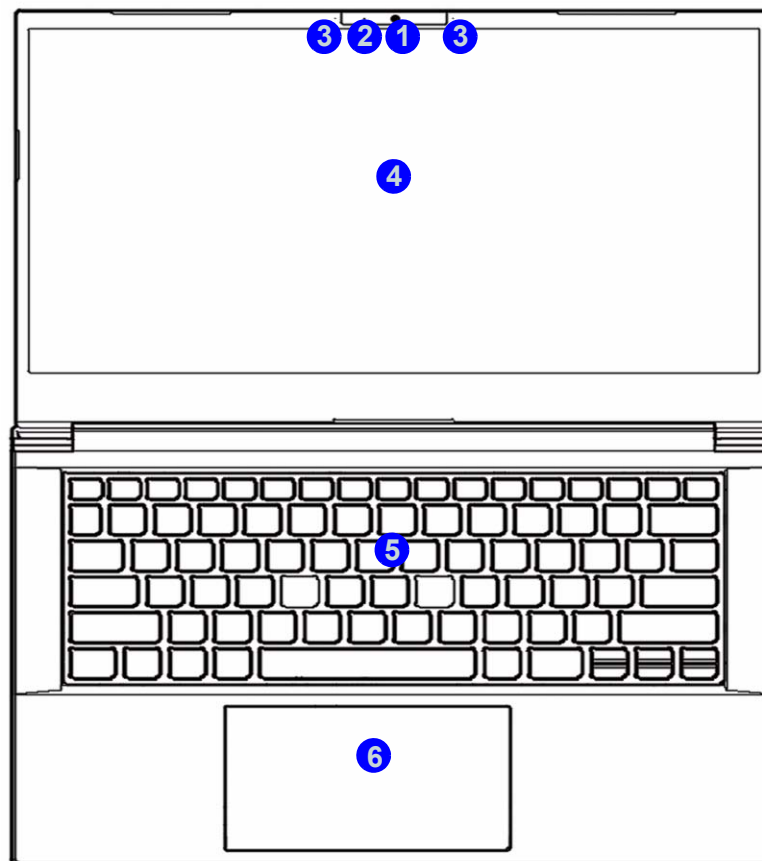
1.45kg (Barebone and 53.35Wh Battery)

Introduction

Figure 1
Top View

External Locator - Top View with LCD Panel Open

1. Webcam
Or
(**Factory Option**)
Windows Hello
Camera
2. *Camera LED
**When the PC
camera is in use,
the LED will be
illuminated in
white.*
3. Built-In Array
Microphone
4. Display
5. Keyboard
6. Touchpad &
Buttons



External Locator - Front & Right Side Views

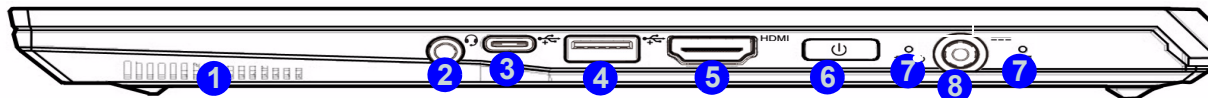
Figure 2
Front View

FRONT VIEW



Figure 3
Right Side View

RIGHT SIDE VIEW



1. Speaker
2. 2-In-1 Audio Jack (Headphone / Microphone)
3. USB 3.2 Gen 2 Type-C Port
4. USB 3.2 Gen 1 Type-A Port
5. HDMI-Out Port
6. Power Button
7. LED Indicators
8. DC-In Jack

Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. Security Lock Slot
2. RJ-45 LAN Jack
3. USB 3.2 Gen 1 Type-A Port
4. Multi-in-1 Card Reader
5. Thunderbolt 4 Port with Power Delivery (DC-In)
6. Speaker

LEFT SIDE VIEW

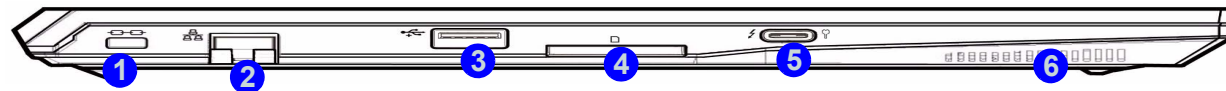


Figure 5
Rear View

1. Vent

REAR VIEW



External Locator - Bottom View

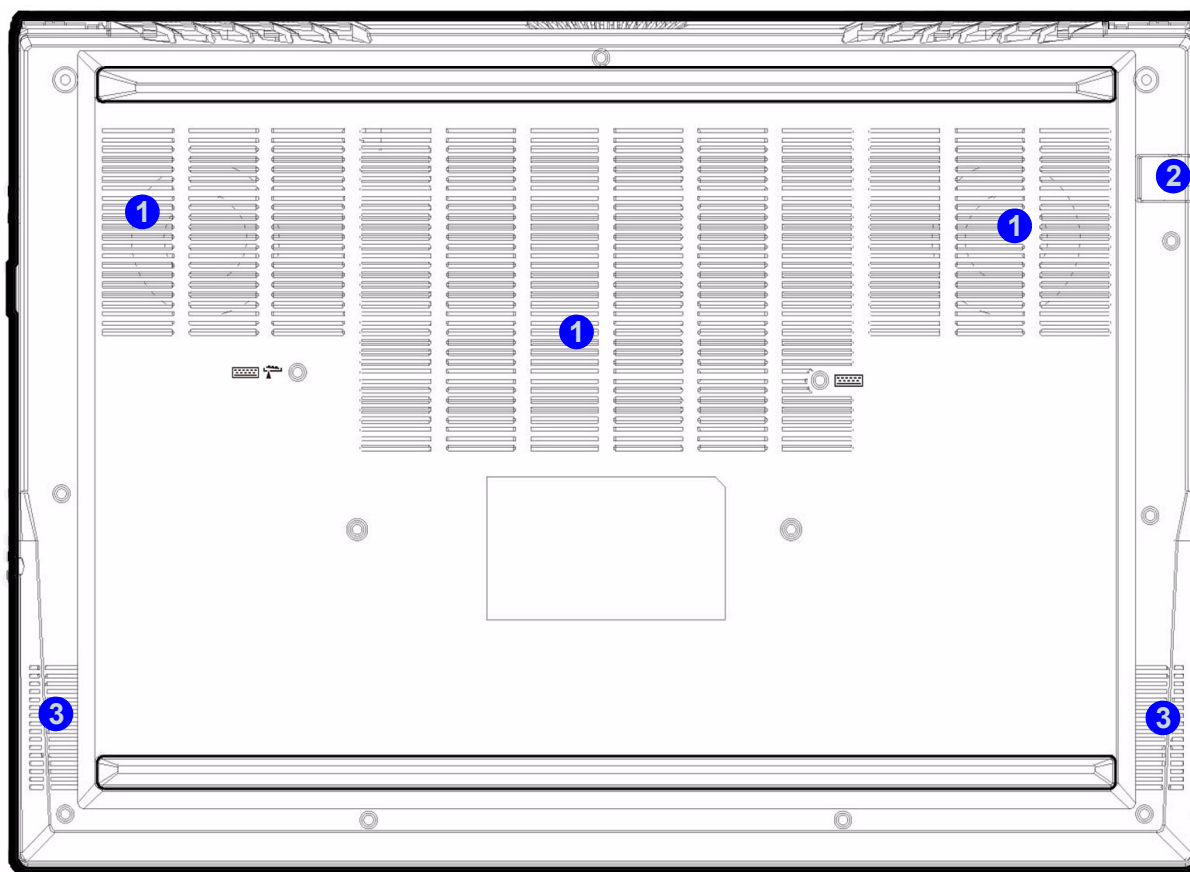


Figure 6
Bottom View

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



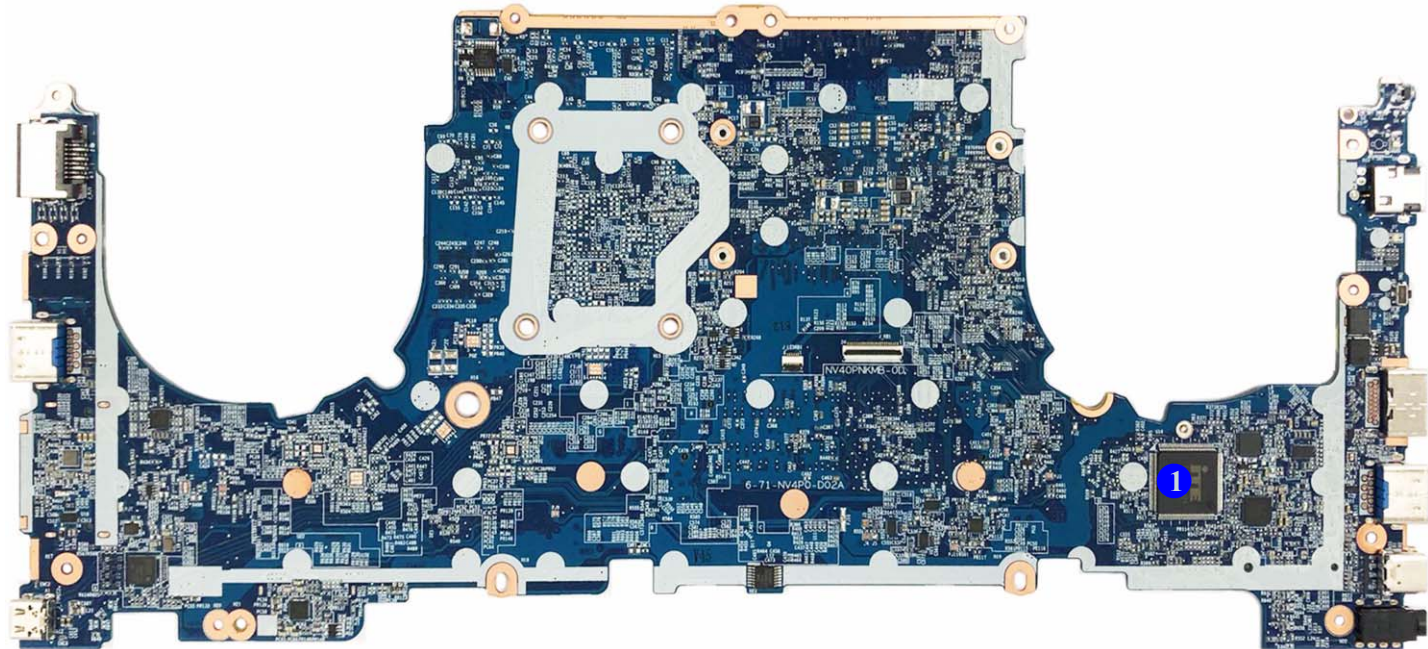
Overheating

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

Figure 7
**Mainboard Top
Key Parts**

1. KBC-ITE IT5570

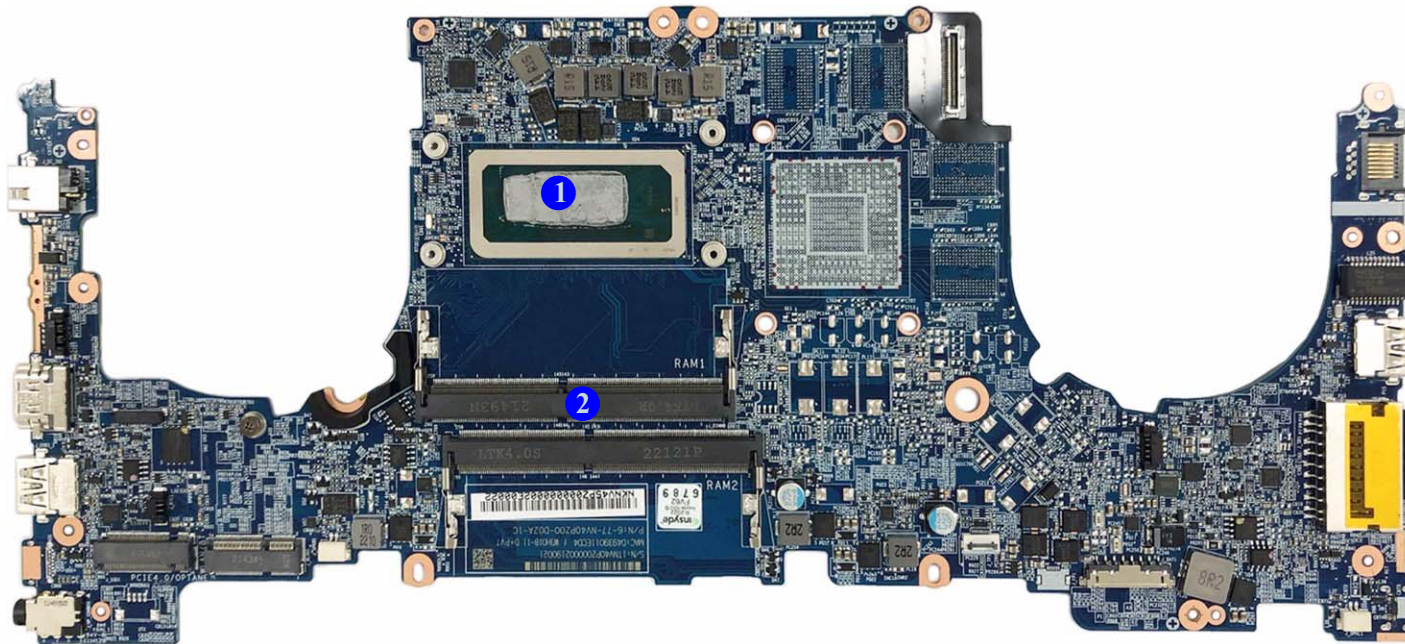
Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

Figure 8
**Mainboard Bottom
Key Parts**

1. CPU
2. Memory Slots
DDR4 SO-DIMM

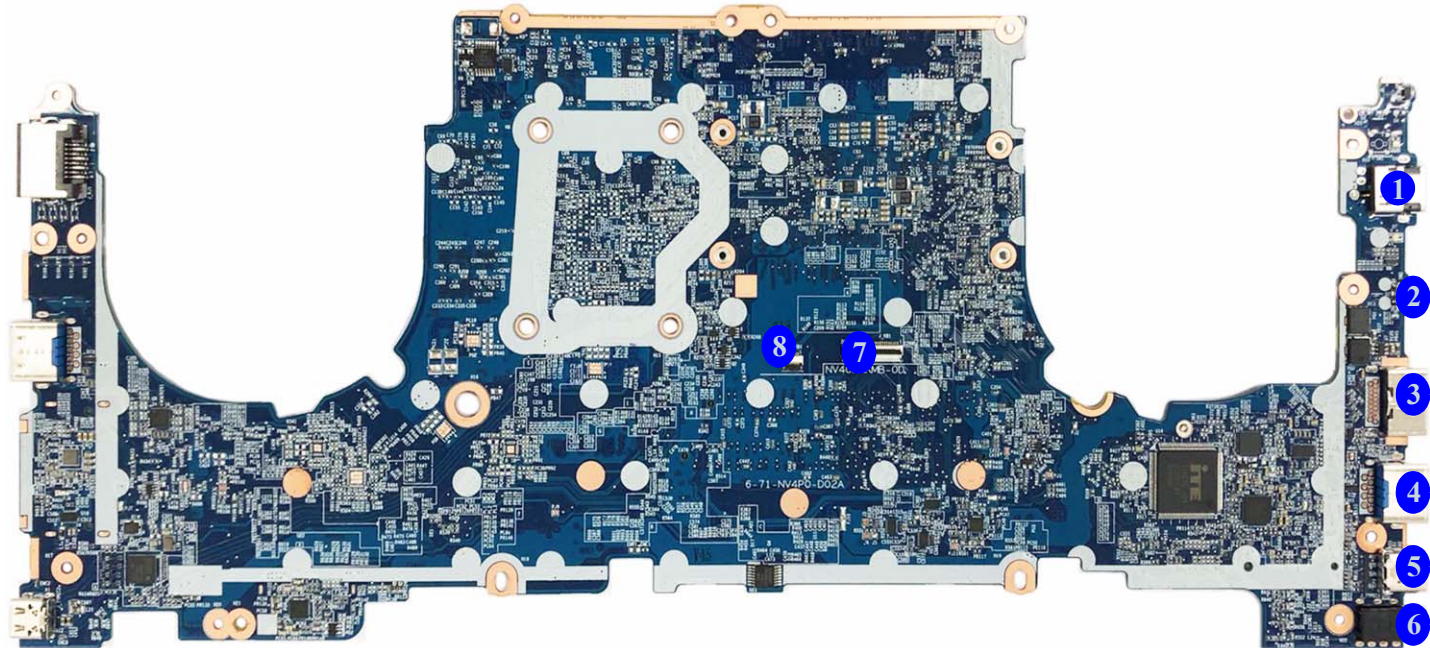


Introduction

Figure 9
**Mainboard Top
Connectors**

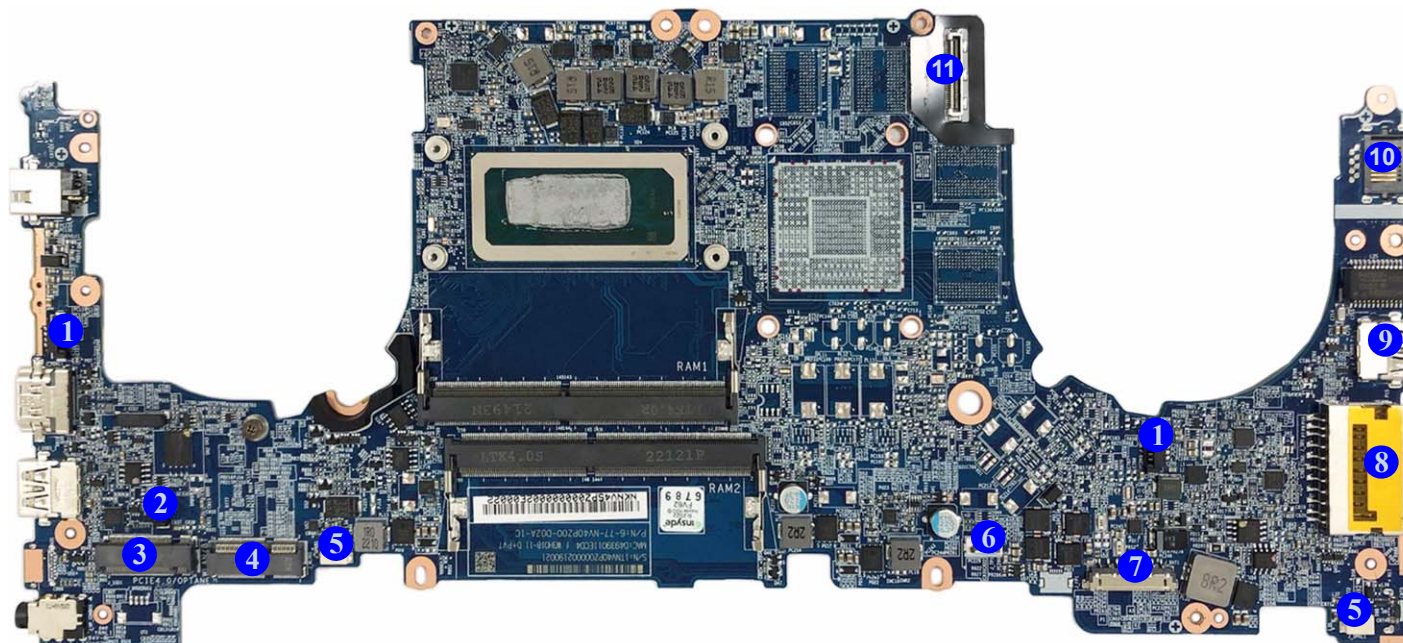
1. DC-In Jack
2. Power Button
3. HDMI-Out Port
4. USB 3.2 Gen 1 Type-A Port
5. USB 3.2 Gen 2 Type-C Port
6. 2-In-1 Audio Jack (Headphone / Microphone)
7. Keyboard Connector
8. LED KB Connector

Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

Figure 10
**Mainboard Bottom
Connectors**



1. Fan Connector
2. CMOS Battery Connector
3. M.2 Card Connector
4. WLAN/BT Connector
5. Speaker Connector
6. Touchpad Connector
7. Battery Connector
8. Card Reader
9. USB 3.2 Gen 1 Type-A Port
10. RJ-45 LAN Jack
11. LCD Cable Connector

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *NV41PZ / NV45PZ* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

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

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

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

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

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



Disassembly

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

Maintenance Tools

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

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



Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors

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

Pressure sockets for multi-wire connectors

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

Pressure sockets for ribbon connectors

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

Board-to-board or multi-pin sockets

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

Maintenance Precautions

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

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

Cleaning

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

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

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

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



Power Safety Warning

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

Disassembly Steps

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

To remove the Battery:

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

To remove the Keyboard:

- 1. Remove the battery [page 2 - 5](#)
- 2. Remove the keyboard [page 2 - 6](#)

To remove the System Memory:

- 1. Remove the battery [page 2 - 5](#)
- 2. Remove the system memory [page 2 - 7](#)

To remove the Wireless LAN Module:

- 1. Remove the battery [page 2 - 5](#)
- 2. Remove the WLAN [page 2 - 9](#)

To remove and install the M.2 SSD Module:

- 1. Remove the battery [page 2 - 5](#)
- 2. Remove the SSD-1 module [page 2 - 11](#)

To remove the CCD Module:

- 1. Remove the battery [page 2 - 5](#)
- 2. Remove the CCD module [page 2 - 12](#)

Removing the Battery

1. Turn **off** the computer, turn it over.
2. Remove screws **1** - **14** on the bottom case (**Figure 1a**).
3. Carefully lift the bottom case **15** up from point **16** (**Figure 1b**).
4. The battery will be visible at point **17** on the computer (**Figure 1c**).
5. Carefully disconnect the cable **18**, then remove screws **19** - **23** (**Figure 1d**).
6. Lift the battery **24** off the computer (**Figure 1e**).
7. Reverse the process to install a new battery (do not forget to replace all the screws and bottom cover).

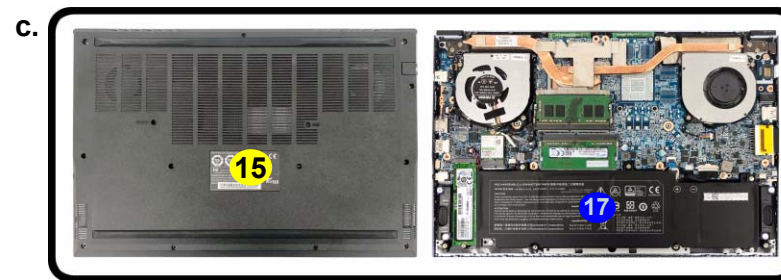
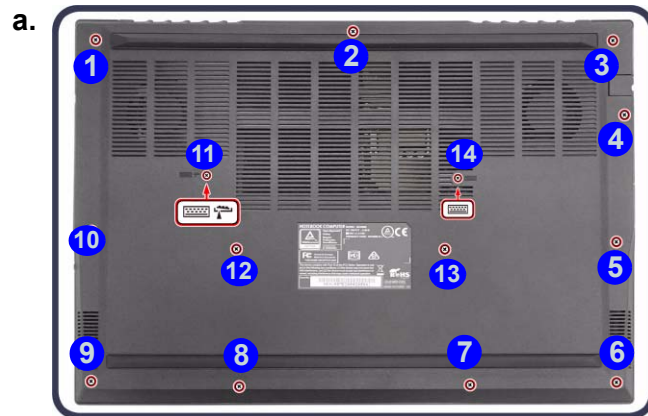


Figure 1
Battery Removal

- a. Remove the screws.
- b. Remove the bottom case.
- c. Locate the battery.
- d. Disconnect the cable and remove the screws.
- e. Lift the battery off the computer.



Powering the Computer On

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



15. Bottom Case
24. Battery

- 19 Screws

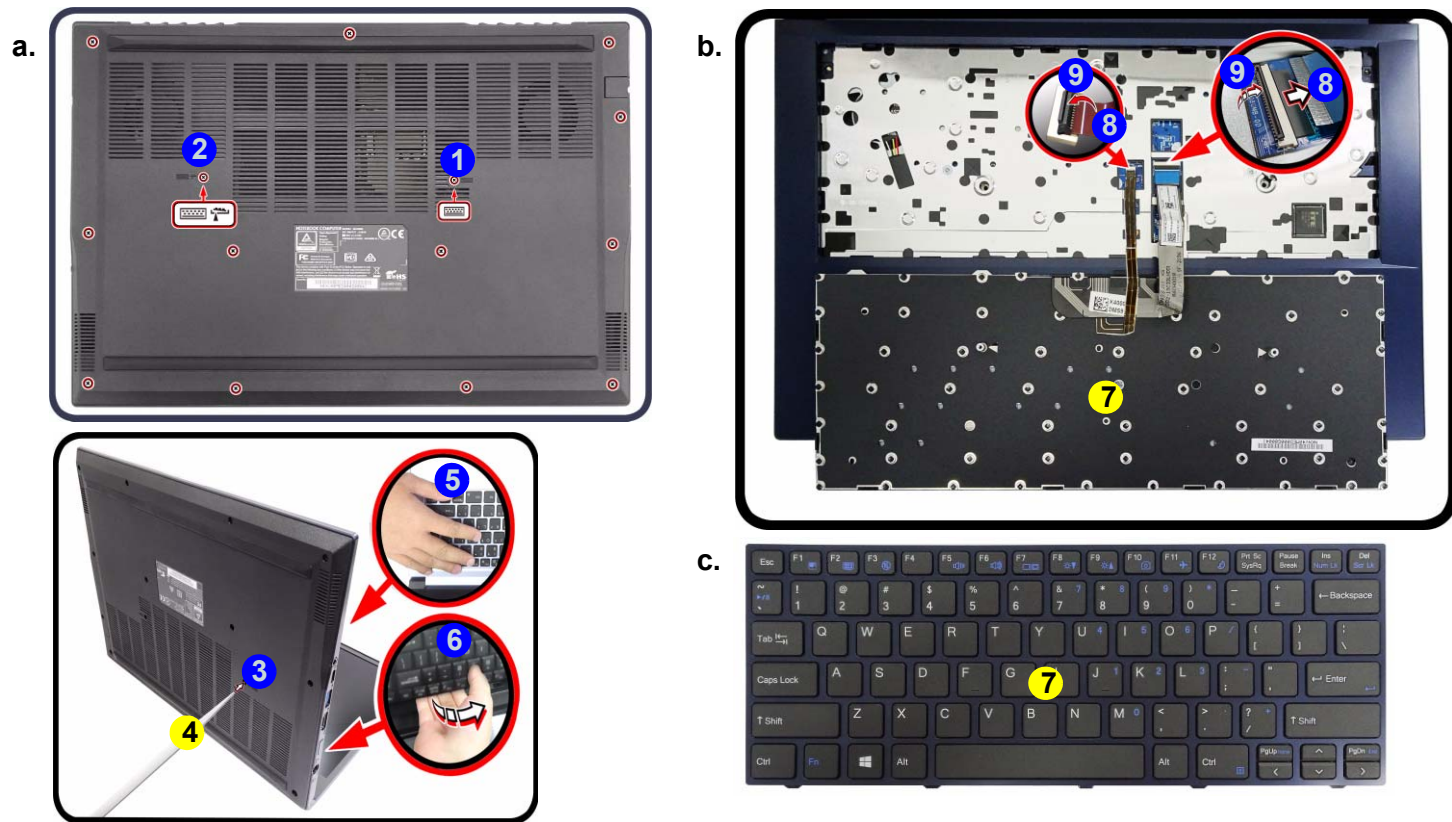
Disassembly

Figure 2
Keyboard Removal

- Remove the screws and press at point **3** to un-snap keyboard from the bottom of the computer .
- Lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins **9** (*Figure 2b*).
- Remove the keyboard.

Removing the Keyboard

- Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*).
- Remove screws **1** - **2** from the bottom of the computer
- Open it up with the LCD on a flat surface before pressing at point **3** to release the keyboard module (use a special eject stick **4** size - $\phi 2.0\text{mm}$ to do this, do not exert too much pressure to avoid damaging the keyboard) while supporting **5** the keyboard and then releasing the keyboard in the direction of the arrow **6** as shown (*Figure 2a*)
- Carefully lift the keyboard **7** up, being careful not to bend the keyboard ribbon cable **8**. Disconnect the keyboard ribbon cable **8** from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins **9** (*Figure 2b*).
- Carefully lift the keyboard **6** off the computer (*Figure 2c*).



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.

- Eject Stick
- Keyboard

- 2 Screws

Removing the System Memory (RAM)

The computer has two memory sockets for 260 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR4 3200MHz. 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 to remove the battery ([page 2 - 5](#)).
2. The RAM modules will be visible at point **1** on the mainboard ([Figure 3b](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 3b](#)).
4. The RAM module **4** will pop-up ([Figure 3c](#)), and you can then remove it.

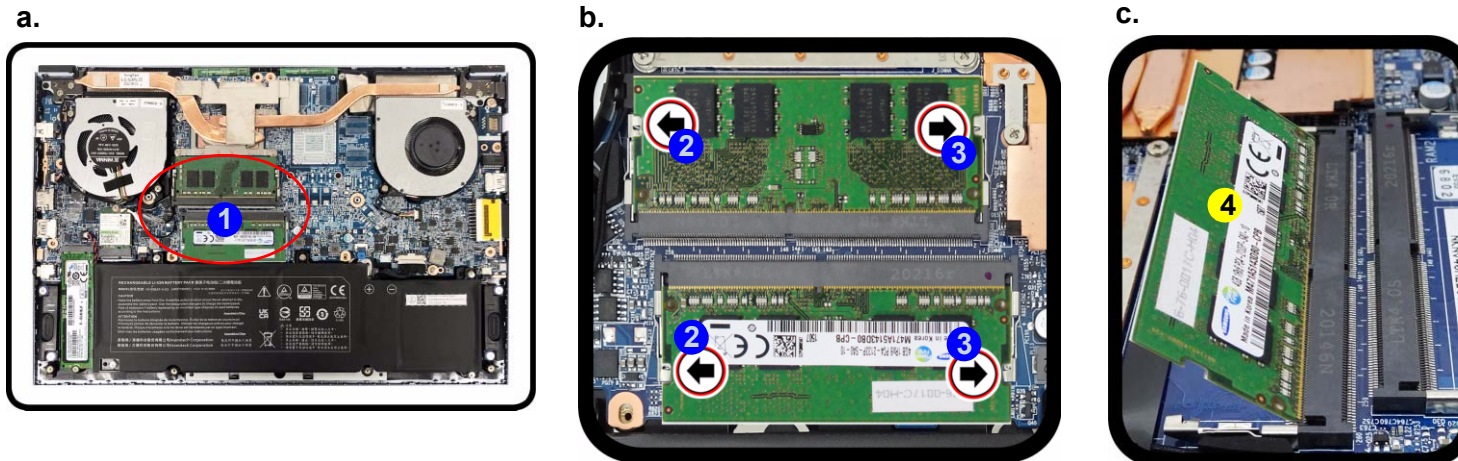


Figure 3
RAM Module Removal

- 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

5. Pull the latches to release the second module if necessary.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. The module will only fit one way as defined by its pin alignment. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE IT; it should fit without much pressure.
8. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
9. Replace the bottom case and the screws (see [page 2 - 5](#)).
10. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Removing the Wireless LAN Module

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

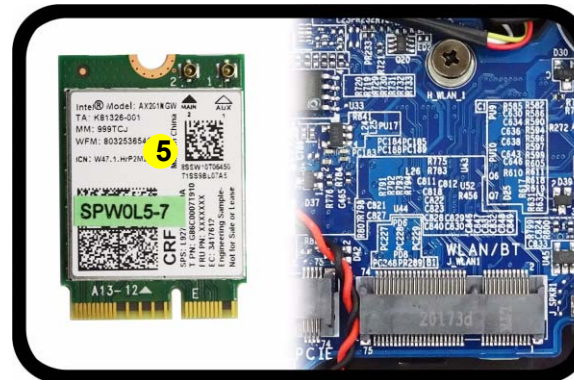
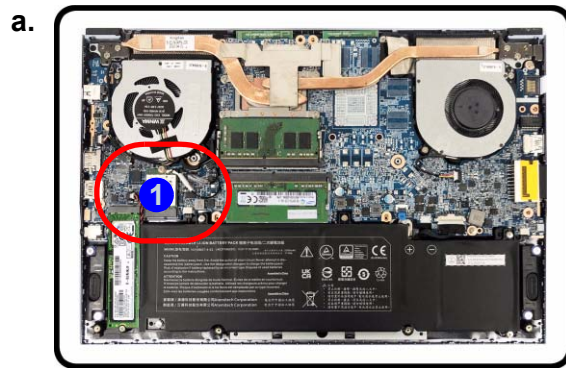


Figure 4
**Wireless LAN
Module Removal**

- Locate the WLAN.
- Disconnect the cable and remove the screw.
- 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 4b](#)).



5. Wireless LAN Module

- 1 Screw

Disassembly

Wireless LAN, and Combo Module Cables

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo, 3G and LTE modules are not labelled. The cables/covers (each cable will have either a black or transparent cable cover) are color coded for identification as outlined in the table below.

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

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

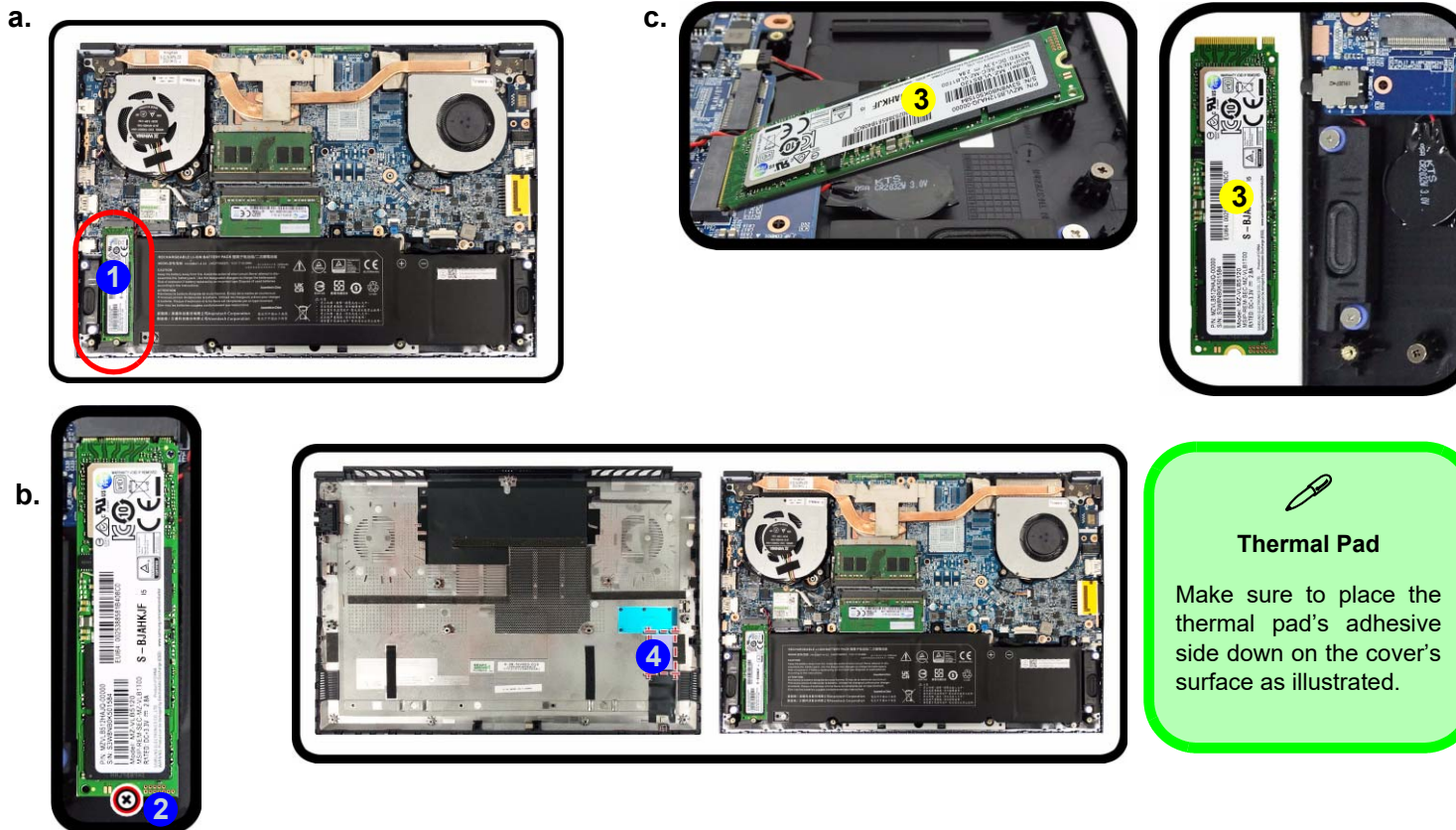
Removing and Installing the M.2 SSD Module

M.2 SSD Removal Procedure

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
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 thermal pad **4** (as shown below), screws and bottom cover).

Figure 5
M.2 SSD Module Removal

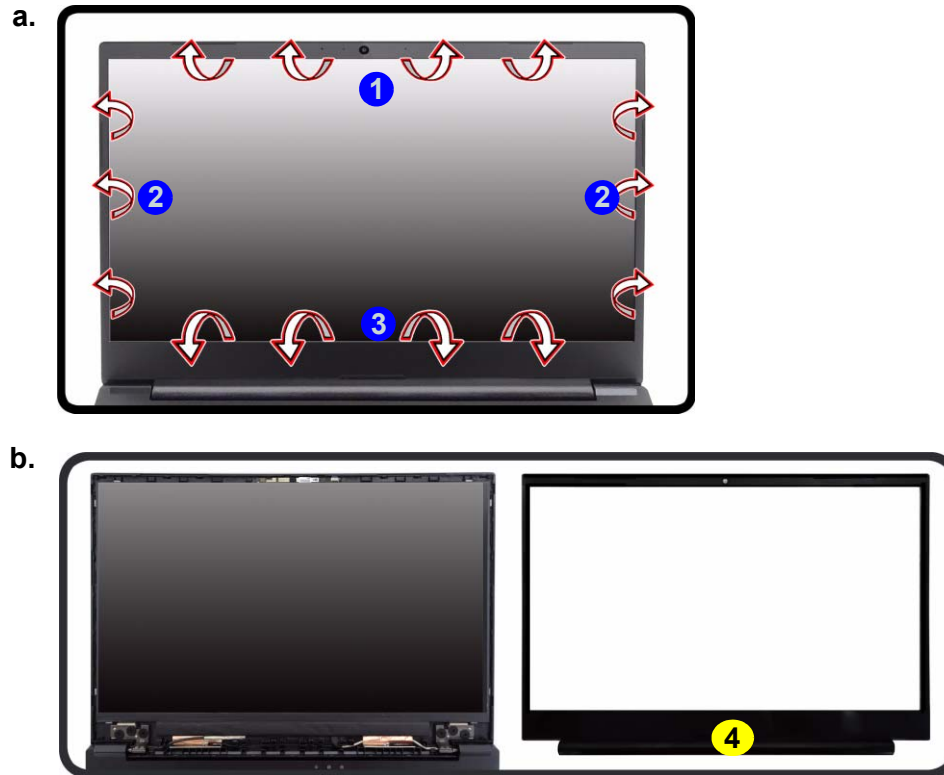
- a. Locate the M.2 SSD.
- b. Remove the screw.
- c. The M.2 SSD module will pop up.



Disassembly

Figure 6
CCD Removal

- a. Run your fingers around the inner frame of the LCD panel at the points indicated by the arrows.
 - b. Lay the computer down on a flat surface with the top case up forming a 130 degree angle. Lift the LCD front panel upwards.
1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
 2. Lift up the inner frame and run your fingers around the inner frame of the LCD panel at the points as indicated by the arrows **1** - **3** ([Figure 6a](#)).
 3. Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Carefully lift and remove the LCD front cover **4** upwards ([Figure 6b](#)).



4. LCD Front Cover

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



Figure 7
CCD Removal
(cont'd.)

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



6. CCD Module

Appendix A: Part Lists

This appendix breaks down the *NV41PZ/NV45PZ* 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

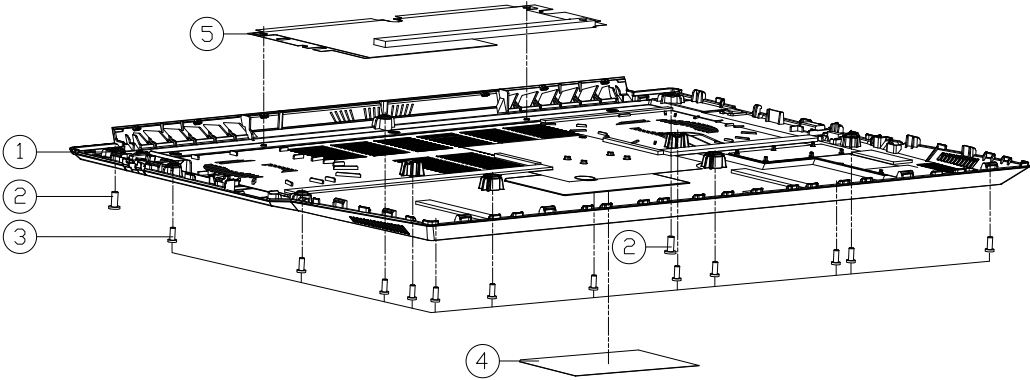
The following table indicates where to find the appropriate part list illustration.

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

Part	NV41PZ	NV45PZ
Top	<i>page A - 3</i>	
Bottom	<i>page A - 4</i>	
LCD	<i>page A - 5</i>	<i>page A - 6</i>
MB	<i>page A - 7</i>	

Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	BOTTOM CASE MODULE NV40MK	6-39-NV4K3-010	
2	SCREW M2.5x6L K BZ ICT NY	6-35-B2125-6RA	
3	SCREW M3xL K10H8 3-40 W/2 ICT W	6-35-B6120-SR0	
4	PRODUCT LABEL FOR NV40MK	6-45-NV40MK03-000	
4	PRODUCT LABEL FOR NV41MK	6-45-NV41MK03-000	
4	PRODUCT LABEL FOR NV41MKJ	6-45-NV41MKJ03-000	
4	PRODUCT LABEL FOR NV40MJ	6-45-NV40MJ03-000	
4	PRODUCT LABEL FOR NV40MH	6-45-NV40MH03-000	
4	PRODUCT LABEL FOR NV41MH	6-45-NV41MH03-000	
4	PRODUCT LABEL FOR NV41MH-D	6-45-NV41MH03-000	
4	PRODUCT LABEL FOR NV40MH-D	6-45-NV40MH03-000	
4	PRODUCT LABEL FOR NV40MJ-D	6-45-NV40MJ03-000	
4	PRODUCT LABEL FOR NV41MJ-D	6-45-NV41MJ03-000	
4	PRODUCT LABEL FOR NV41MK-D	6-45-NV41MK03-000	
4	PRODUCT LABEL FOR NV40MK-D	6-45-NV40MK03-000	
4	PRODUCT LABEL FOR NV41PZ	6-45-NV41PZ03-000	
4	PRODUCT LABEL FOR NV41PNK	6-45-NV41PNK03-000	
4	PRODUCT LABEL FOR NV41PNJ	6-45-NV41PNJ03-000	
4	PRODUCT LABEL FOR NV41PNH	6-45-NV41PNH03-000	
4	PRODUCT LABEL FOR NV41PNK-D	6-45-NV41PNK03-000	
4	PRODUCT LABEL FOR NV41PNJ-D	6-45-NV41PNJ03-000	
4	PRODUCT LABEL FOR NV41PNH-D	6-45-NV41PNH03-000	
4	PRODUCT LABEL FOR NV45PNK	6-45-NV45PNK03-000	
4	PRODUCT LABEL FOR NV45PNJ	6-45-NV45PNJ03-000	
4	PRODUCT LABEL FOR NV45PNH	6-45-NV45PNH03-000	
4	PRODUCT LABEL FOR NV45PZ	6-45-NV45PZ03-000	
4	PRODUCT LABEL FOR NV45PNK-D	6-45-NV45PNK03-000	
4	PRODUCT LABEL FOR NV45PNJ-D	6-45-NV45PNJ03-000	
4	PRODUCT LABEL FOR NV45PNH-D	6-45-NV45PNH03-000	
5	BOTTOM CASE CU FOIL NV40MK	6-40-NV4K3-011	

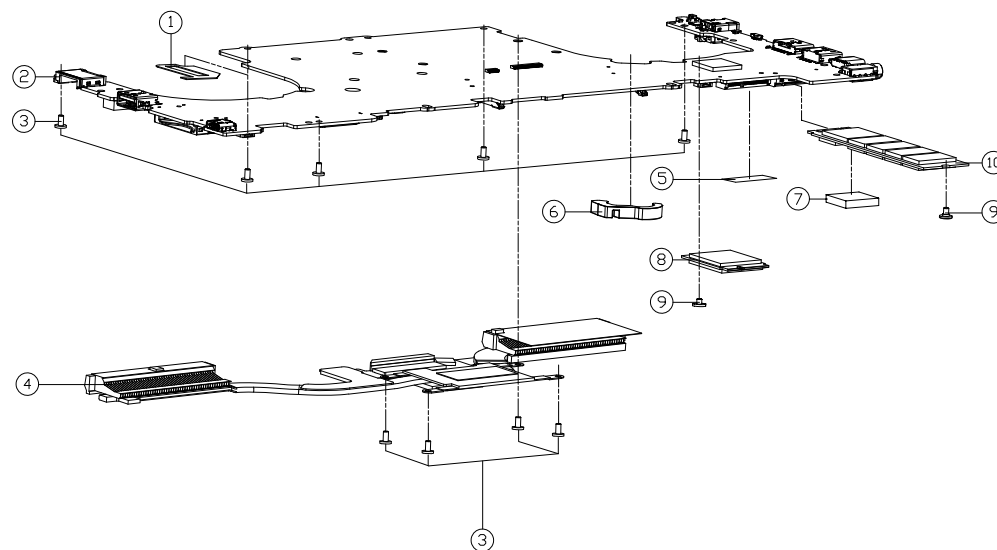


LCD (NV41PZ) A - 5

A.Part Lists

A - 6 LCD (NV45PZ)

MB



ITEM	PART NAME	PART NO	REMARK
1	AVOID SHORT MYLAR PET+TESA965 (294235463) NV40PN	6-40-NV4P1-010	
2	MAIN BOARD/CPU/I7-1260P/21G V2.0A (C3PXA/TPM) NV40PZ	6-77-NV40P200-D02A-B	
2	MAIN BOARD/CPU/I5-1240P/17G V2.0A (C3PXA/TPM) NV40PZ	6-77-NV40P200-D02A-1C	
2	MAIN BOARD/CPU/I3-1220P/15G V2.0A (C3PXA/D) TPM NV40PZ	6-77-NV40P200-D02A-2B	
2	MAIN BOARD/CPU/I5-1240P/17G V2.0A (C3PXA/TPM) NV40PZ	6-77-NV40P200-D02A-C	
2	MAIN BOARD/CPU/I3-1220P/15G V2.0A (C3PXA/TPM) NV40PZ	6-77-NV40P200-D02A-D	
2	MAIN BOARD/CPU/I7-1260P/21G V2.0A (C3PXA/TPM) NV40PZ	6-77-NV40P200-D02A-1B	
2	MAIN BOARD/CPU/I3-1220P/15G V2.0A (C3PXA/TPM) NV40PZ	6-77-NV40P200-D02A-1D	
2	MAIN BOARD/CPU/I7-1260P/21G V2.0A (C3PXA/D) TPM NV40PZ	6-77-NV40P200-D02A-2B	
2	MAIN BOARD/CPU/I5-1240P/17G V2.0A (C3PXA/D) TPM NV40PZ	6-77-NV40P200-D02A-2C	
3	SCREW M2*4L KI NI ICT NY (DD-845,DT-08)	6-35-B1120-4RC	
4	HEATSINK MODULE NV40PZ	6-31-NV4PN-201	
5	TAPE MYLAR (C),MYLAR M550J	6-40-M55J2-030	
6	RUBBER FDR MB NV40ME	6-47-NV402-051	
7	THERMAL PAD FDR M2 SSD M5500 300X38 TL00M NV40ME	6-48-NV408-010	
8	WAVE SOLDERING PAD FDR M2 SSD M5500 300X38 TL00M NV40ME	6-88-N24GF-4200	OPTION
8	WAVE SOLDERING PAD FDR M2 SSD M5500 300X38 TL00M NV40ME	6-88-NV40F-4210	OPTION
8	WAVE SOLDERING PAD FDR M2 SSD M5500 300X38 TL00M NV40ME	6-88-X17KF-4210	OPTION
8	WAVE SOLDERING PAD FDR M2 SSD M5500 300X38 TL00M NV40ME	6-88-X270F-4210	OPTION
9	SCREW M2*3.2L BNI ICT NY FDR M2	6-35-Z9120-3R2	
10	SSD M2 2280 1TB DRIVING REVOLUTION+100% PERFORM FCE 64M 3D TLC % LAMERS	6-85-D511T-S04	OPTION
10	SSD M2 2280 1TB W/ SUPPLY+100% CONTCO FCE 64M 3D TLC % LAMERS	6-85-D511T-W01	OPTION
10	SSD M2 2280 512GB DRIVING REVOLUTION+100% PERFORM FCE 64M 3D TLC % LAMERS	6-85-D515B-S04	OPTION
10	SSD M2 2280 512GB DRIVING REVOLUTION+100% PERFORM FCE 64M 3D TLC % LAMERS	6-85-D515B-S0C	OPTION
10	SSD M2 2280 256GB W/ SUPPLY+100% CONTCO FCE 64M 3D TLC % LAMERS	6-85-D51R6-W02	OPTION

Figure A - 5
MB

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *NV41PZ / NV45PZ* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	VGA Frame Buffer A - Page B - 23	Type-C Con - Page B - 44
Processor 1/13 - Page B - 3	VGA Frame Buffer B - Page B - 24	Fan, CCD, TP, White KB - Page B - 45
Processor 2/13 - Page B - 4	VGA Frame Buffer B - Page B - 25	AC-In - Page B - 46
Processor 3/13 - Page B - 5	VGA NVVDD Coupling - Page B - 26	LED, LID, PWR SW - Page B - 47
Processor 4/13 - Page B - 6	Straps, XTAL - Page B - 27	MP2964 Controller - Page B - 48
Processor 5/13 - Page B - 7	IFP I/O Interface - Page B - 28	VCore - Page B - 49
Processor 6/13 - Page B - 8	Misc - GPIO, I2C, ROM - Page B - 29	VCCGT - Page B - 50
Processor 7/13 - Page B - 9	NVIDIA Power Sequence - Page B - 30	VCCIN AUX - Page B - 51
Processor 8/13 - Page B - 10	GPU NVVDD, FBVDDQ - Page B - 31	1.8VA, 1.8VS - Page B - 52
Processor 9/13 - Page B - 11	GPU GND - Page B - 32	3.3V, 5V, 3VS, 5VS, CTL - Page B - 53
Processor 10/13 - Page B - 12	Audio Codec - Page B - 33	VDD3, VDD5 - Page B - 54
Processor 11/13 - Page B - 13	M Key PCIE SSD - Page B - 34	VDDQ, VDDQ_VTT - Page B - 55
Processor 12/13 - Page B - 14	USB Charger, TPM - Page B - 35	2.5V, VCCST, VCC1P8 - Page B - 56
Processor 13/13 - Page B - 15	USB w/ith Redriver - Page B - 36	Charger, AC-In - Page B - 57
DDR4 SO-DIMM A - Page B - 16	IT5570 - Page B - 37	3.3VA, NV3V3 - Page B - 58
DDR4 SO-DIMM B - Page B - 17	LAN RTL8111G - Page B - 38	NVVDD1 - Page B - 59
Panel - Page B - 18	WLAN/BT - Page B - 39	NVVDD2 - Page B - 60
HDMI - Page B - 19	OZ711LV2 - Page B - 40	PEX_VDD - Page B - 61
VGA PCI Express - Page B - 20	Type-C USB3.0 - Page B - 41	FBVDDQ - Page B - 62
GPU Frame Partition - Page B - 21	Retimer 1/2 - Page B - 42	OVR-M - Page B - 63
VGA Frame Buffer A - Page B - 22	Retimer 2/2 - Page B - 43	IV8_AON/RUN - Page B - 64

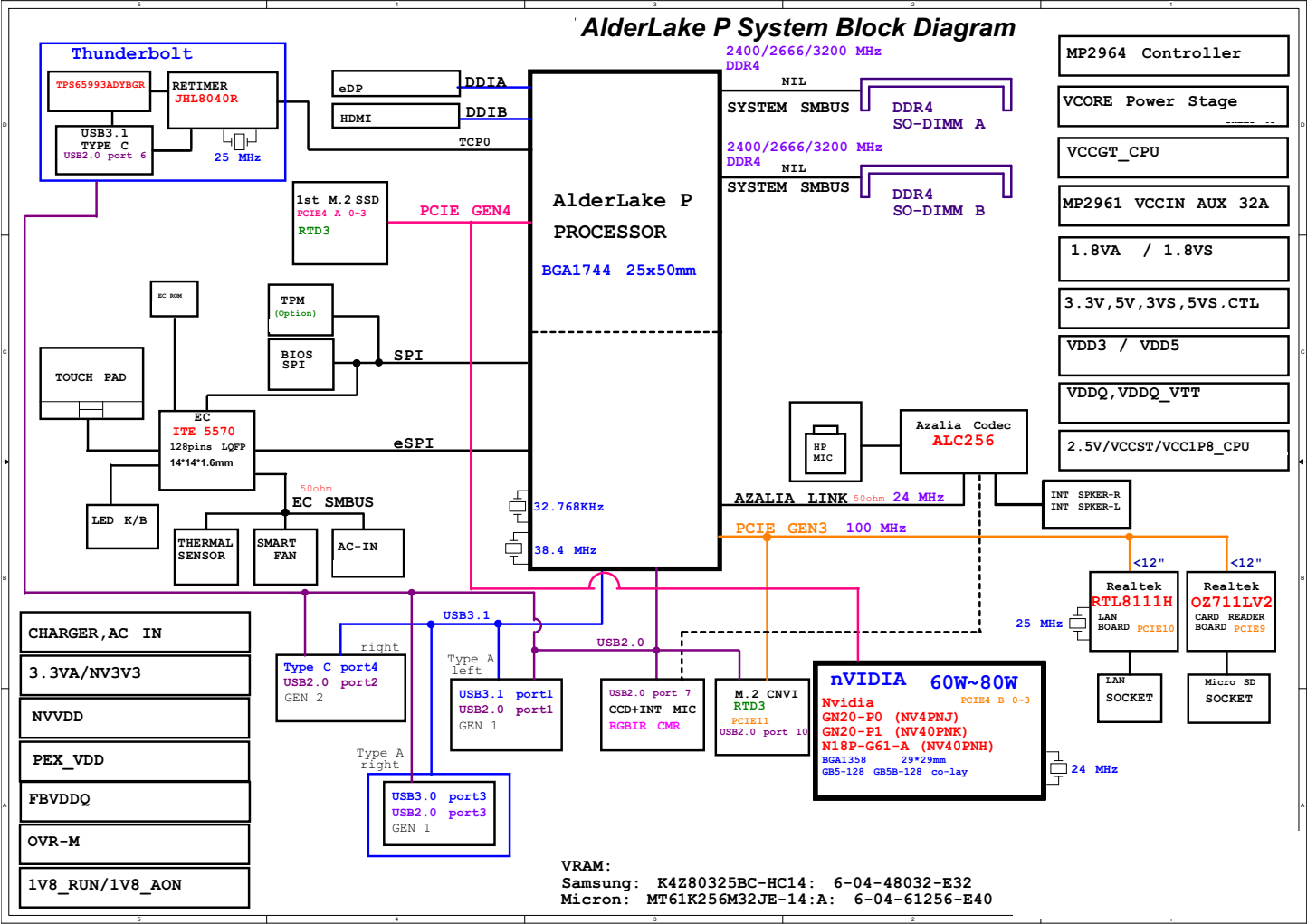
Table B - 1
**SCHEMATIC
DIAGRAMS**



Version Note

The schematic diagrams in this chapter are based upon version 6-71-NV4P0-D02A. 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 63
System Block
Diagram

B.Schematic Diagrams

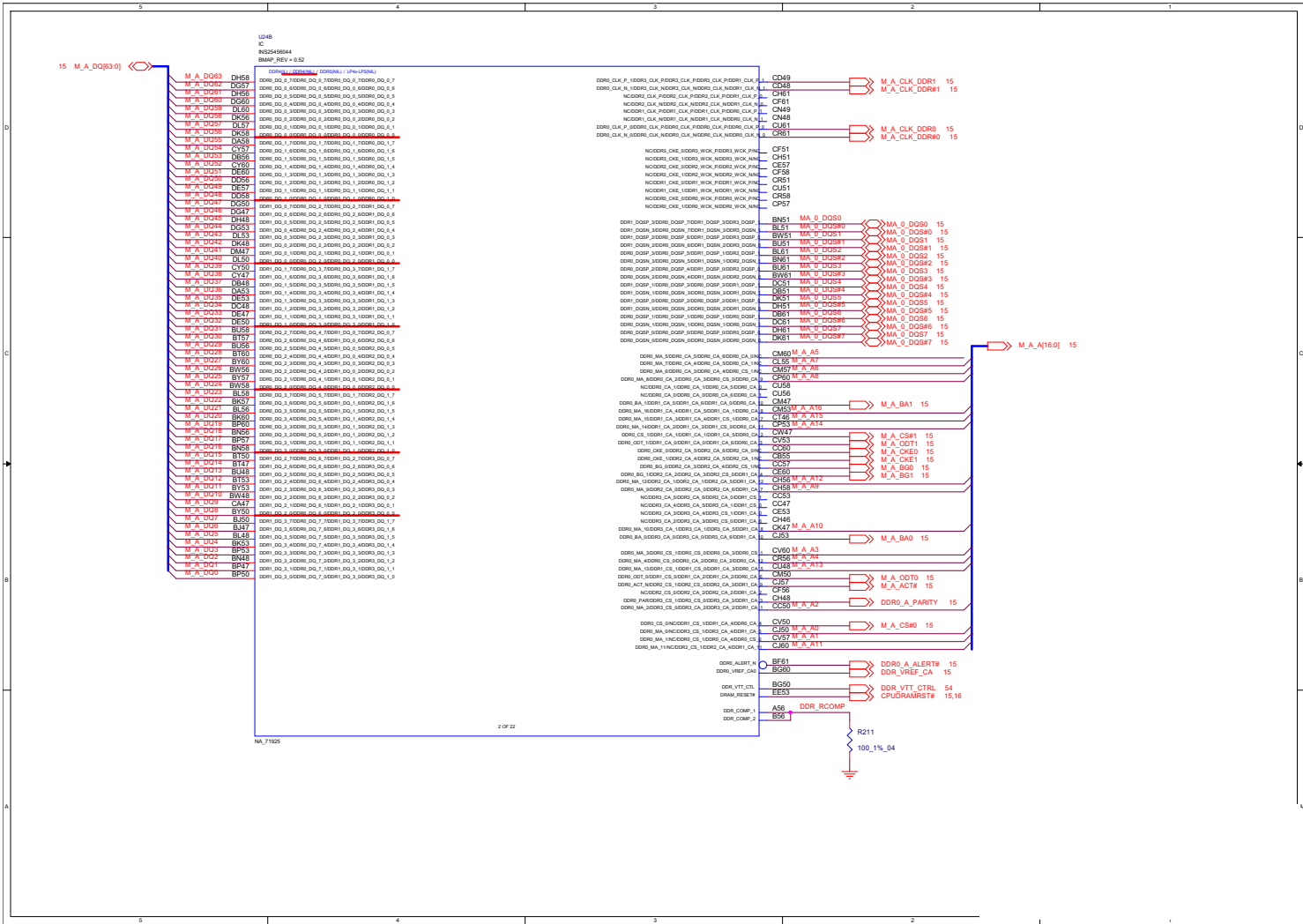
Processor 1/13 B - 3

B.Schematic Diagrams



EVT 經 Thermal 量測儀確定 PCB 最溫度，不應該放置CB最高溫度處

Processor 2/13



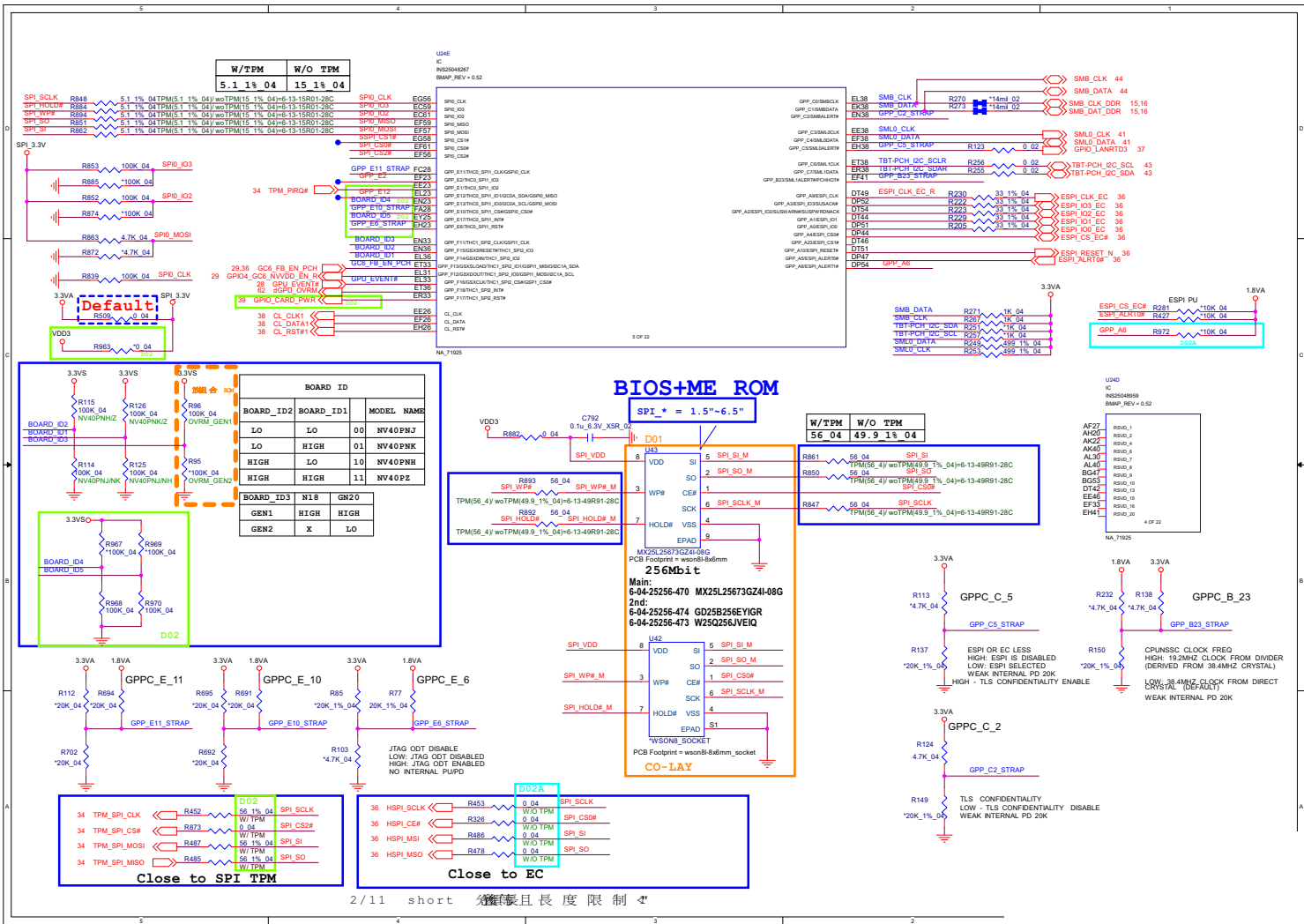
B.Schematic Diagrams



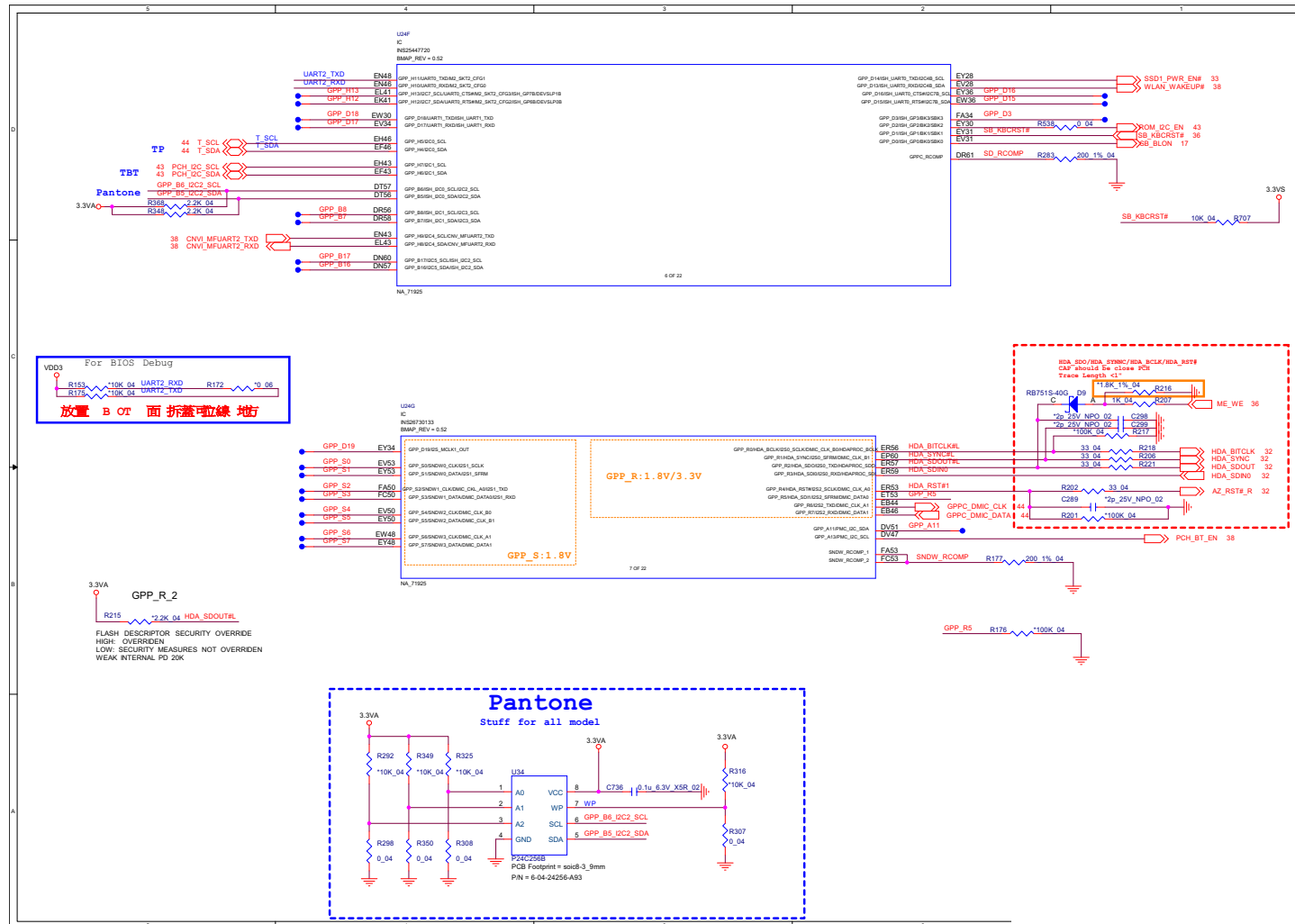
Schematic Diagrams

Processor 4/13

Sheet 5 of 63
Processor 4/13



Processor 5/13 B - 7

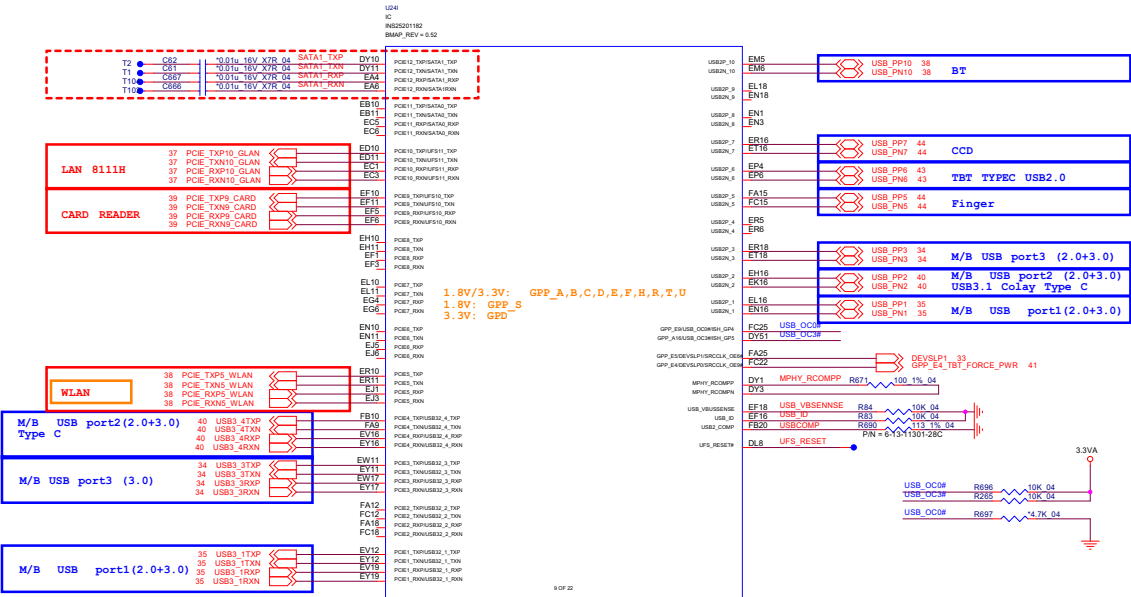


Processor 6/13

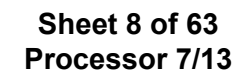
Sheet 7 of 63
Processor 6/13

USB	
#1	USB TYPEA
#2	TYPEC PORT2
#3	USB TYPEA
#4	N/A
#5	FINGER
#6	TBT TYPEC
#7	CCD
#8	N/A
#9	N/A
#10	BT

PCIE	
#1	USB TYPEA
#2	N/A
#3	USB TYPEA
#4	USB TYPEC
#5	WLAN
#6	N/A
#7	N/A
#8	N/A
#9	CR
#10	GLAN
#11	N/A
#12	N/A



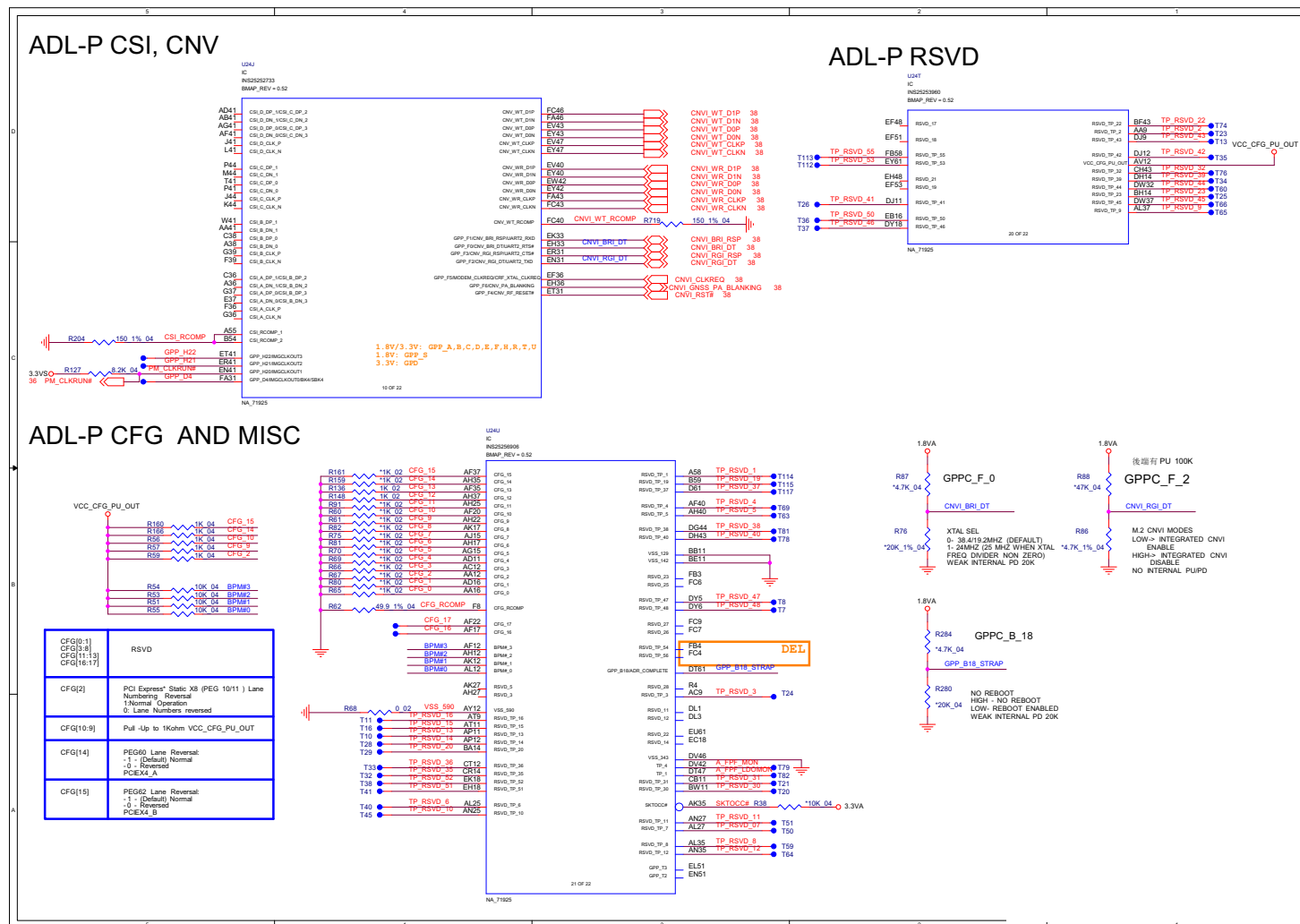
Processor 7/13 B - 9



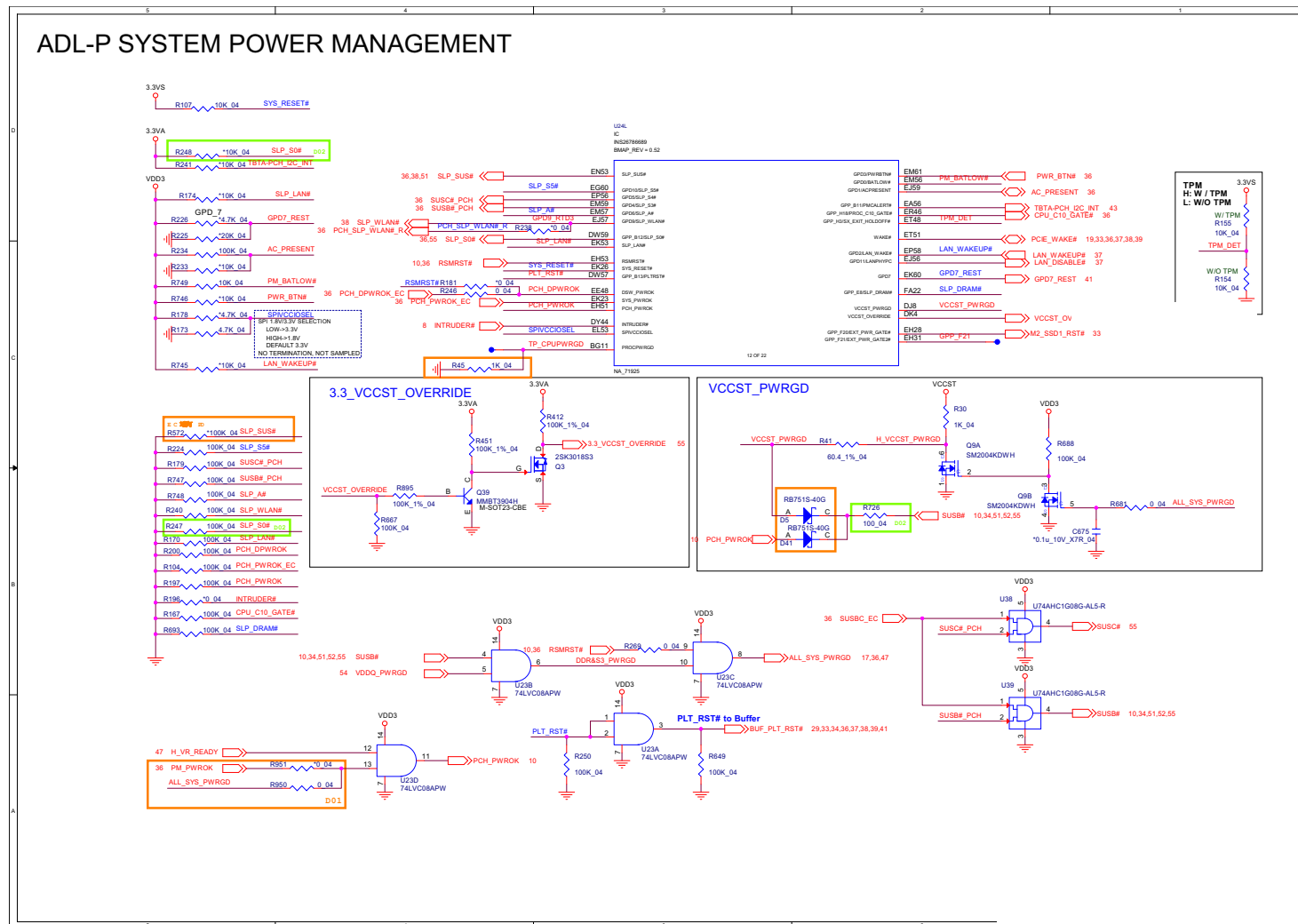
Processor 8/13

B.Schematic Diagrams

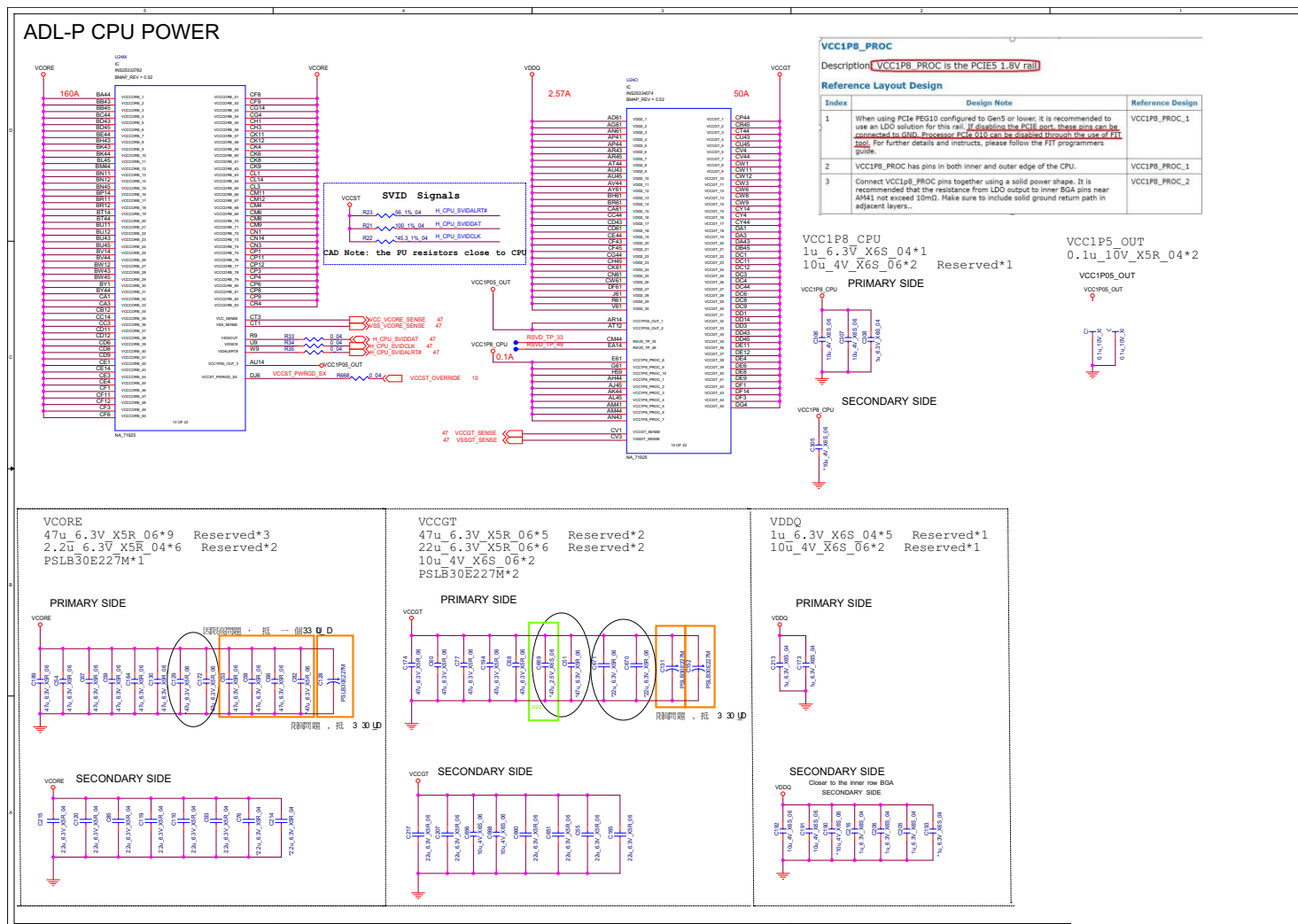
Sheet 9 of 63
Processor 8/13



Processor 9/13 B - 11



B - 12 Processor 10/13

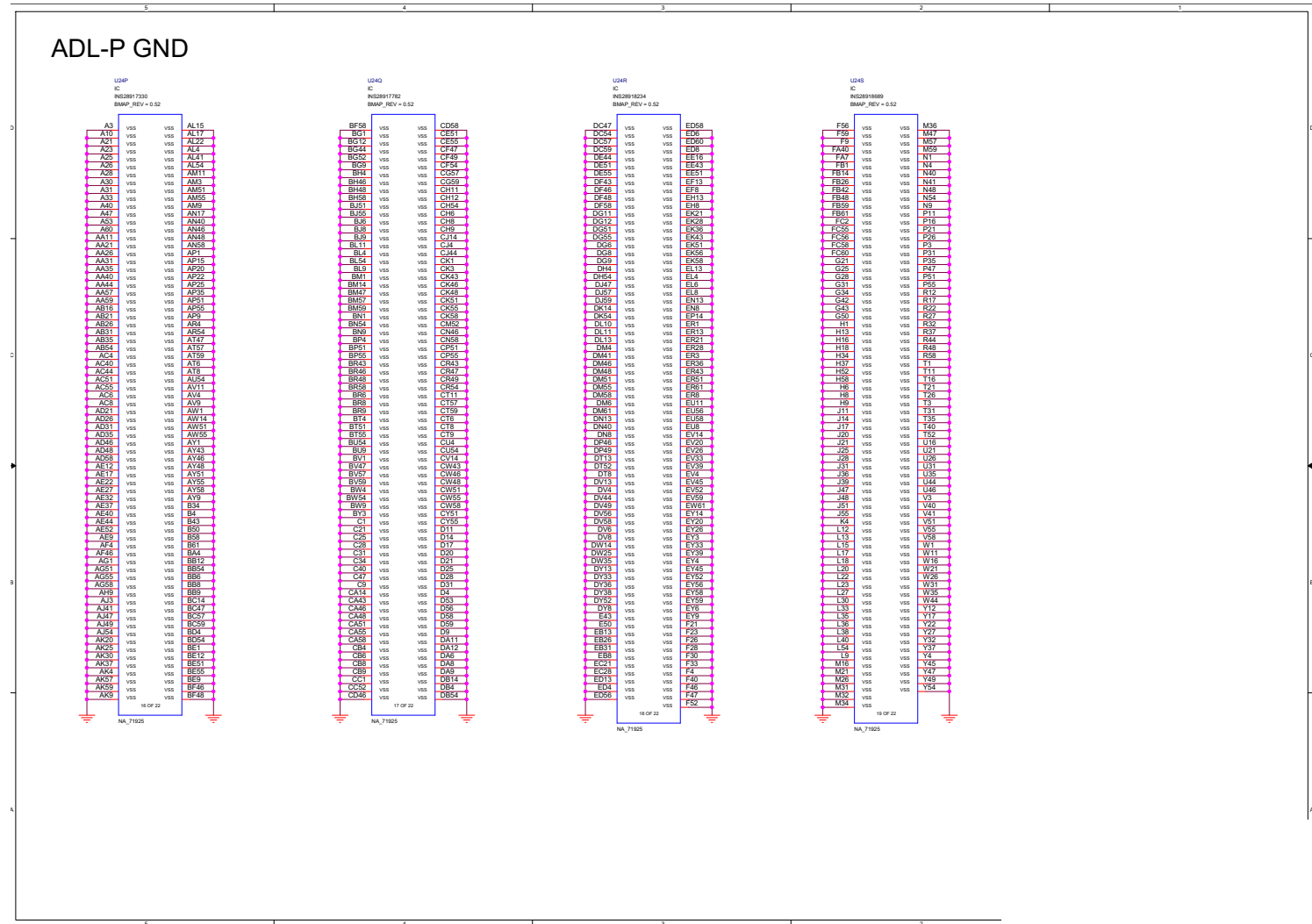


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Sheet 12 of 63
Processor 11/13

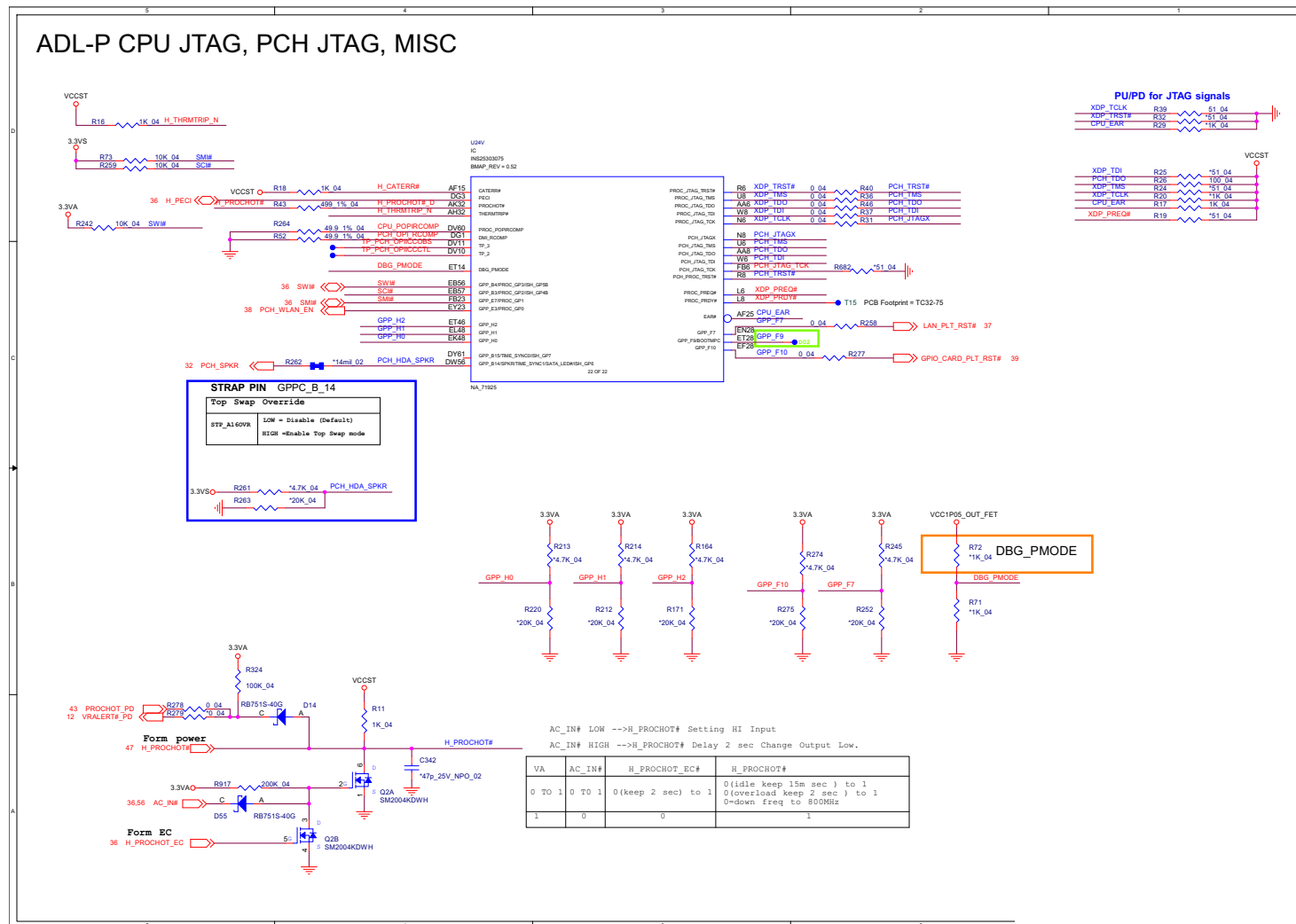
Processor 12/13

Sheet 13 of 63
Processor 12/13



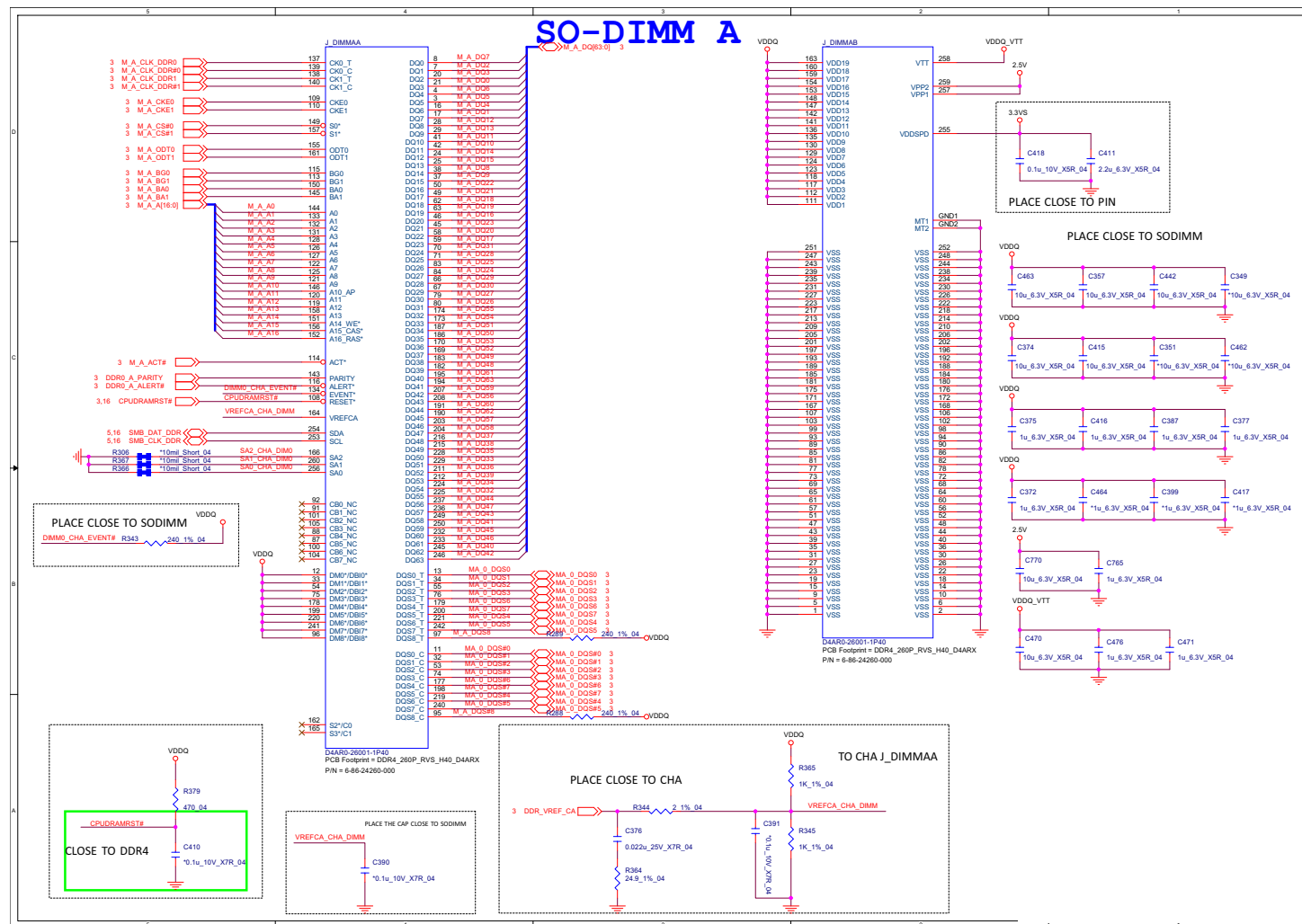
Processor 13/13

Sheet 14 of 63
Processor 13/13



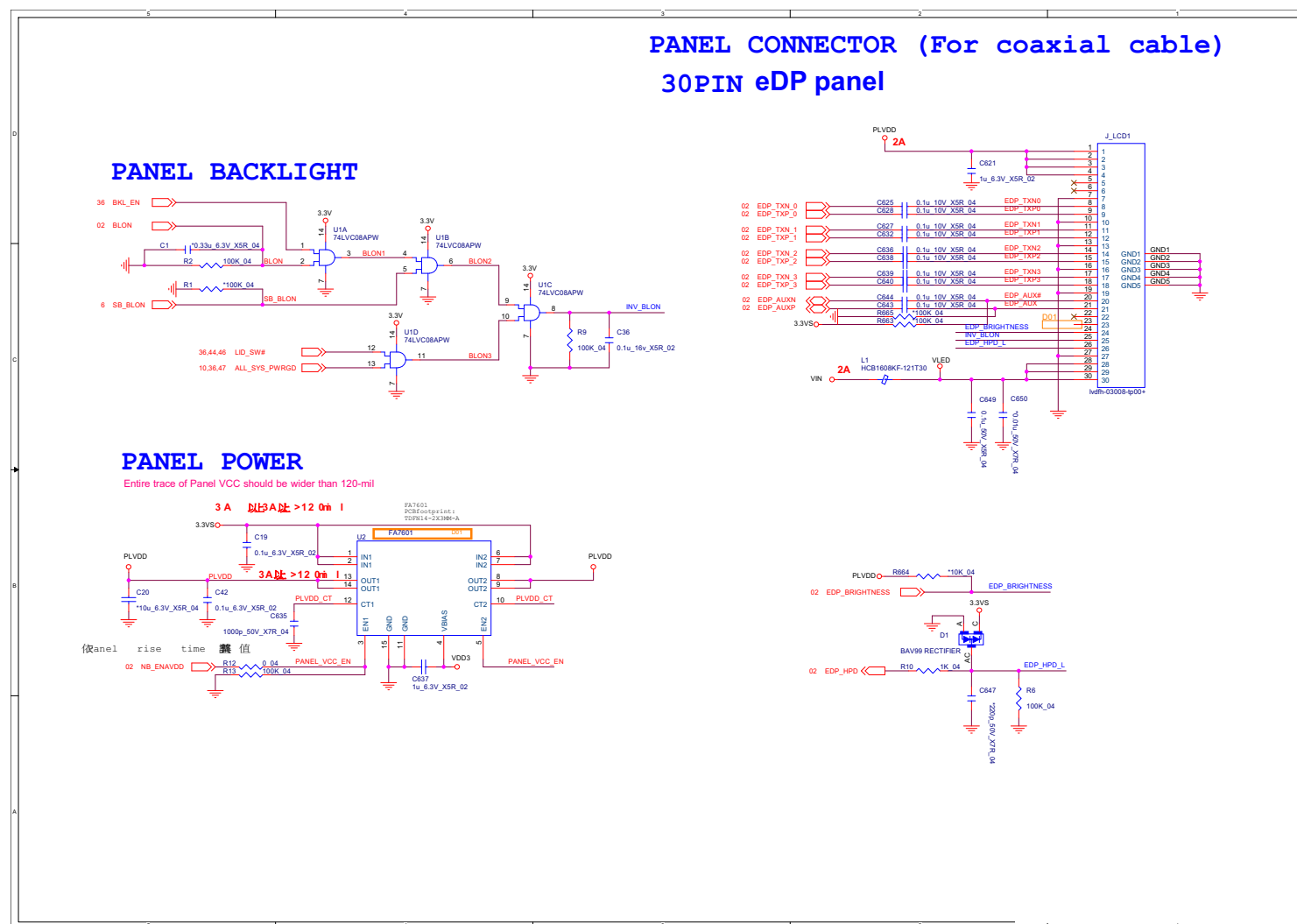
DDR4 SO-DIMM A

Sheet 15 of 63
DDR4 SO-DIMM A

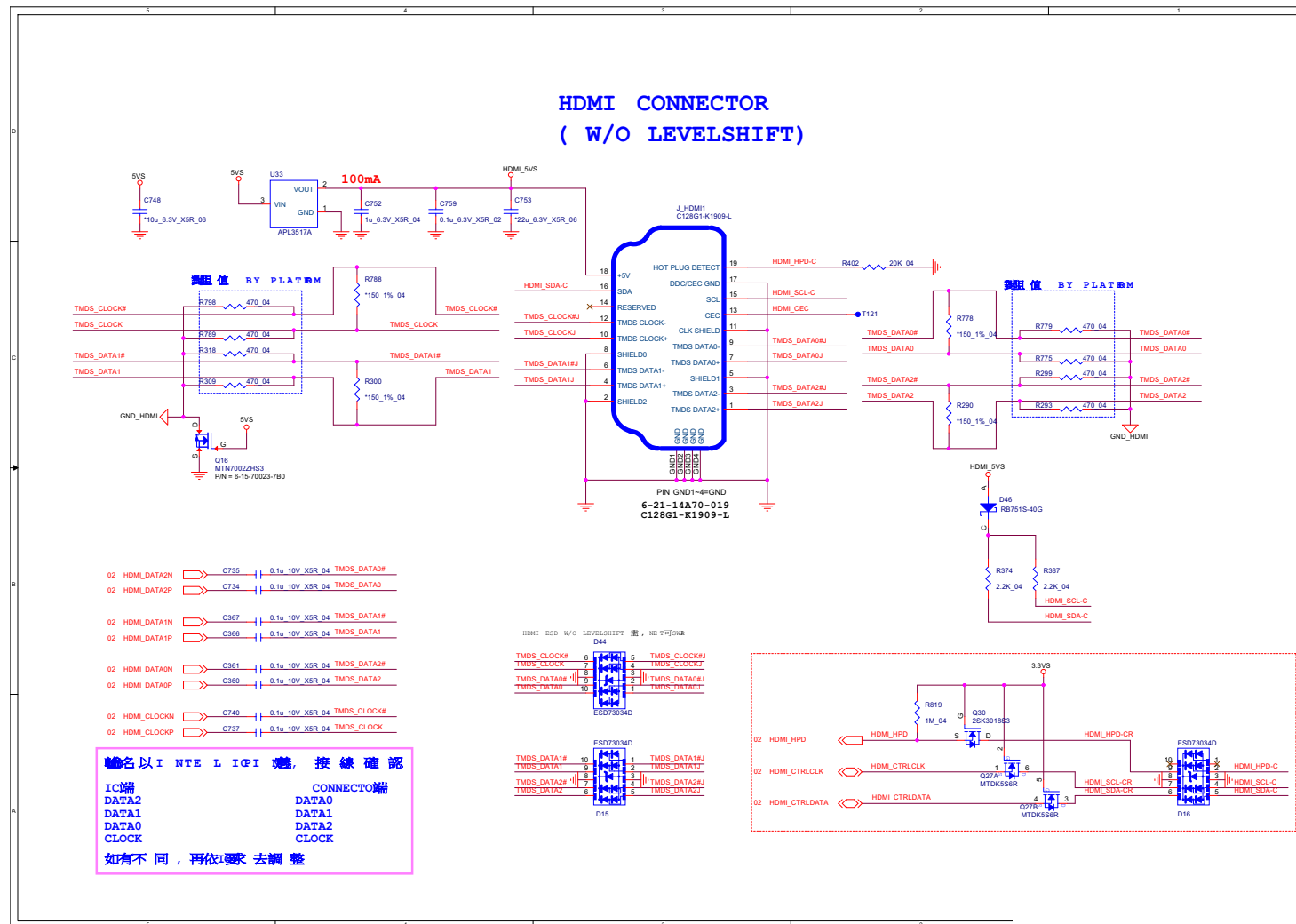


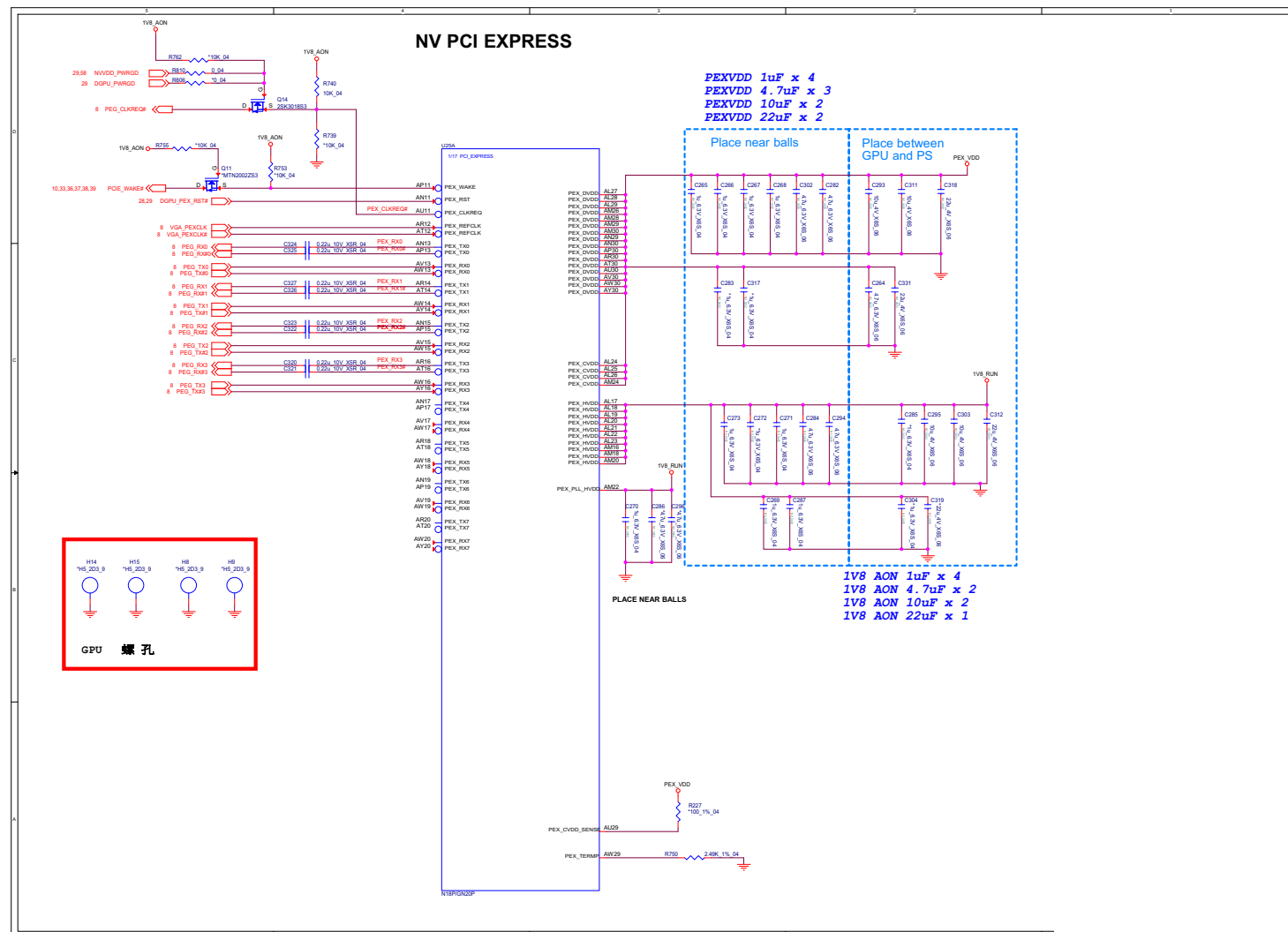
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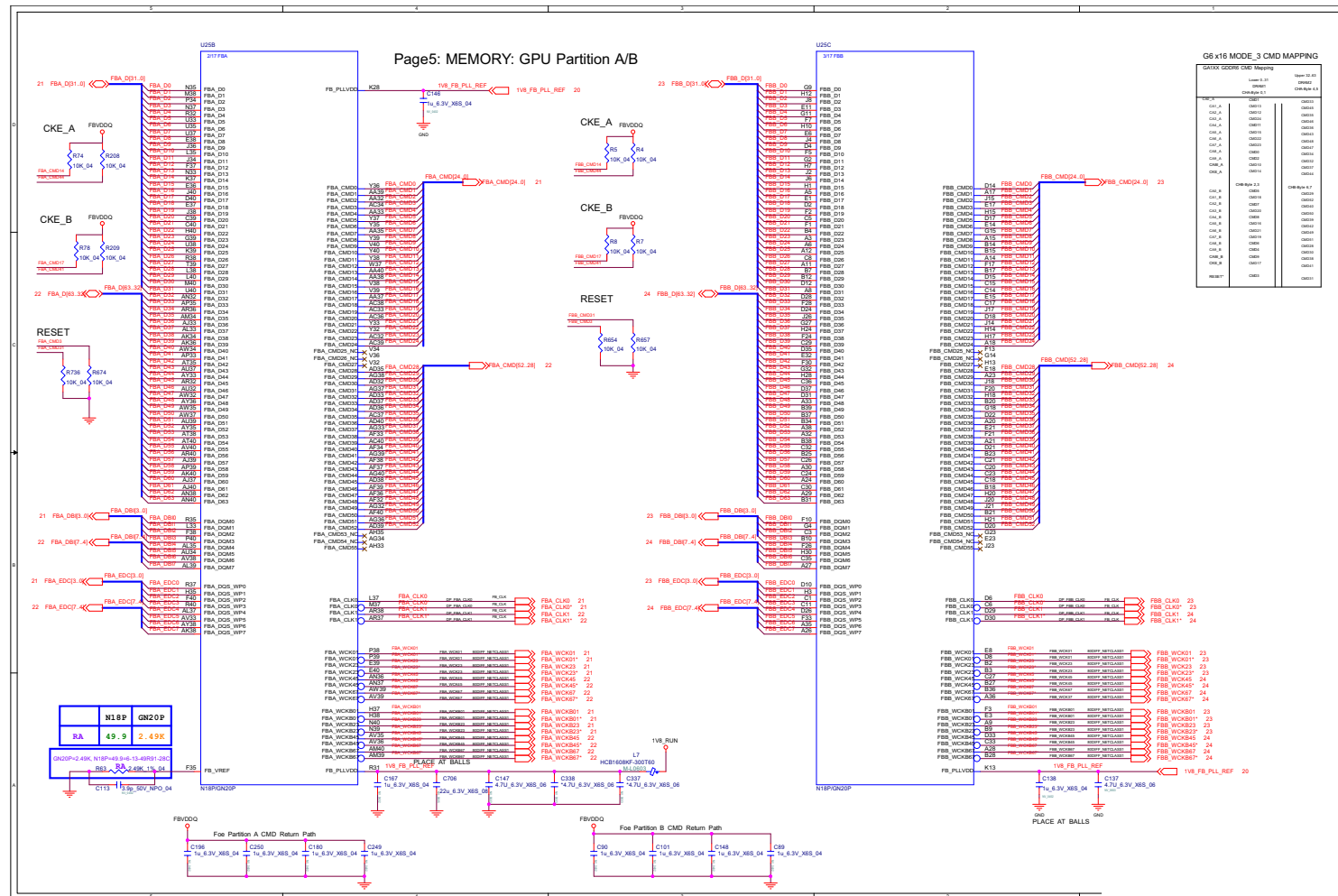
Sheet 17 of 63
Panel



HDMI

Sheet 18 of 63
HDMI





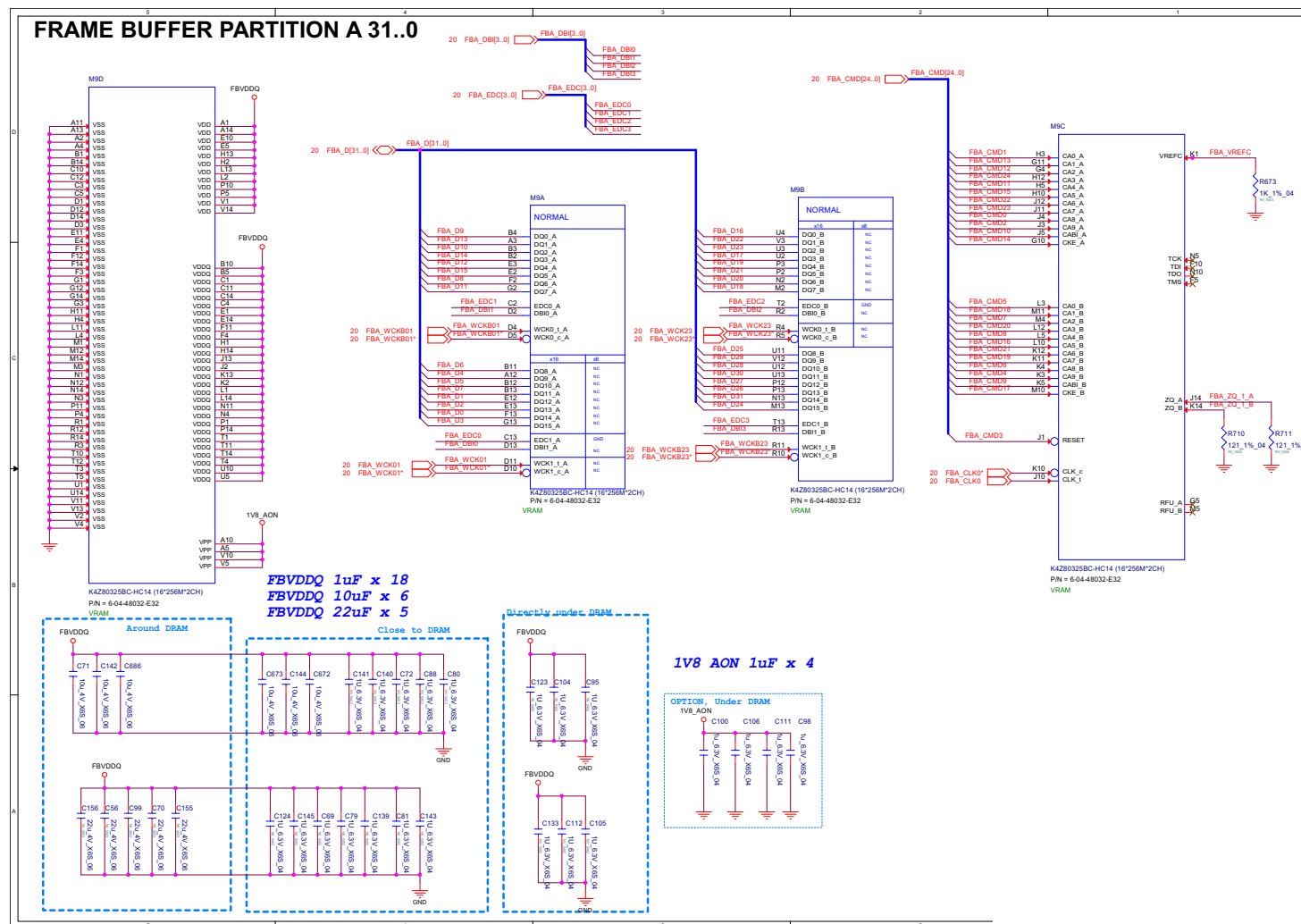
Sheet 20 of 63
GPU Frame
Partition

B.Schematic Diagrams

VGA Frame Buffer A

B. Schematic Diagrams

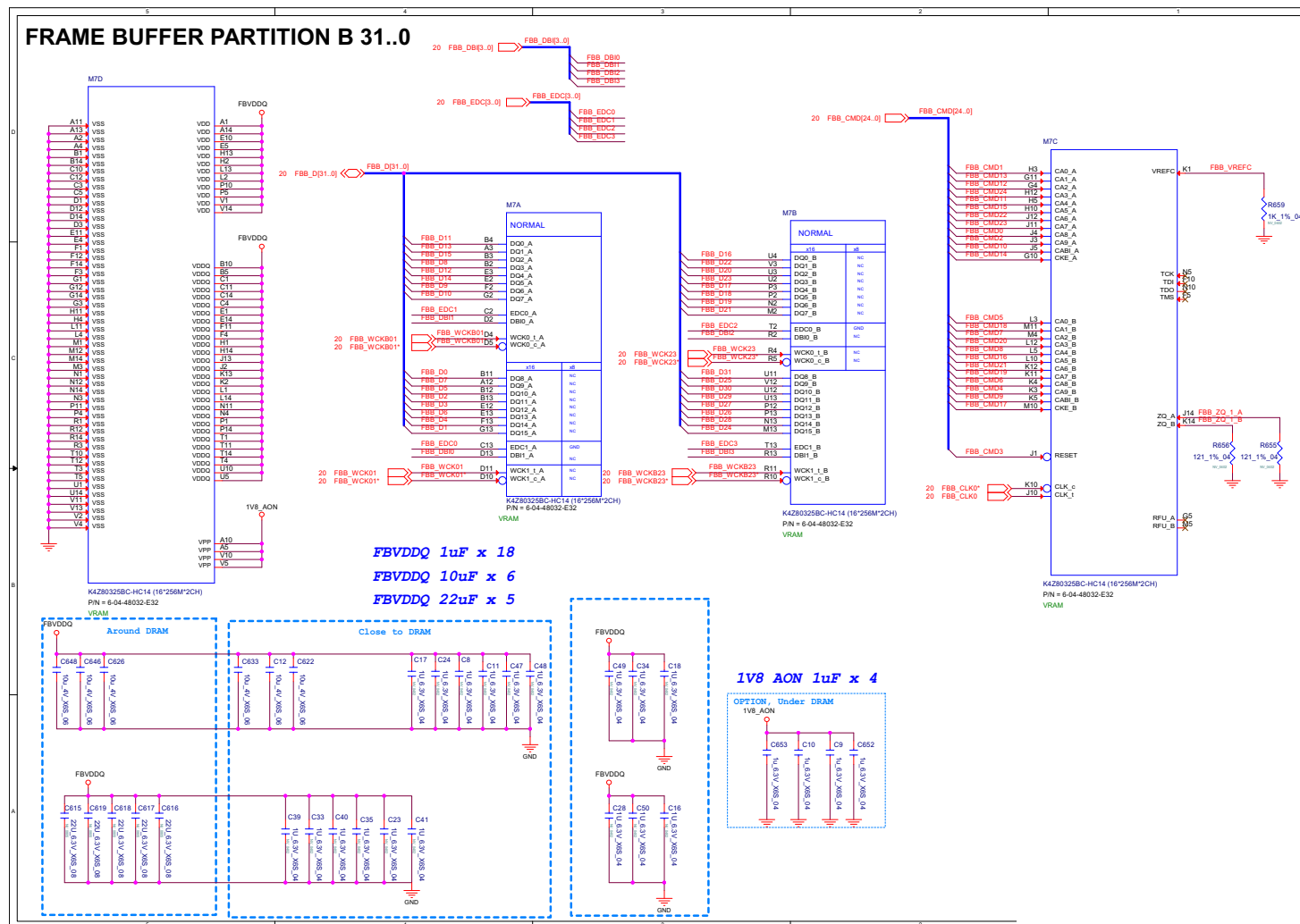
Sheet 21 of 63
VGA Frame Buffer
A



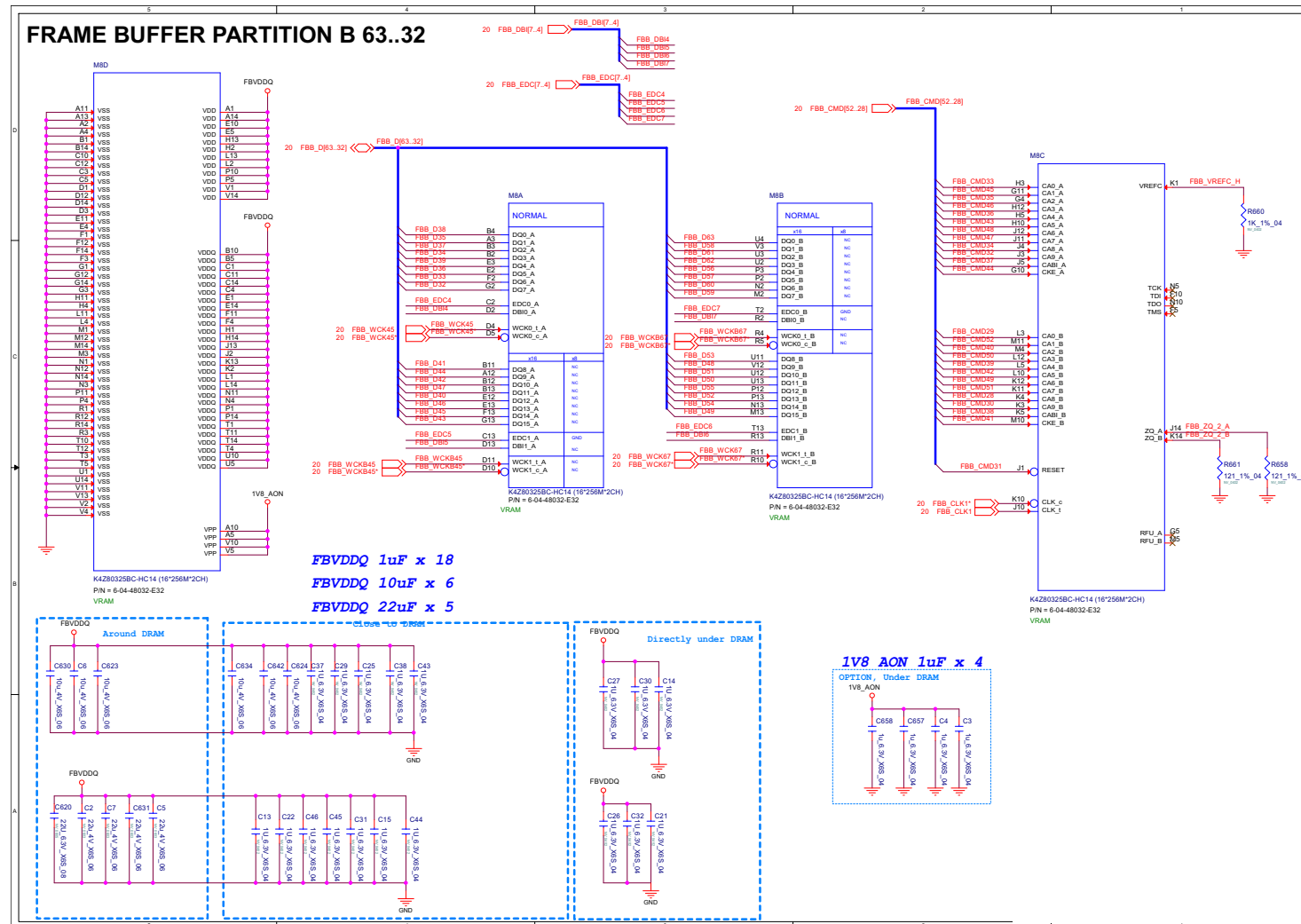
VGA Frame Buffer B

B. Schematic Diagrams

Sheet 23 of 63
VGA Frame Buffer
B



VGA Frame Buffer B

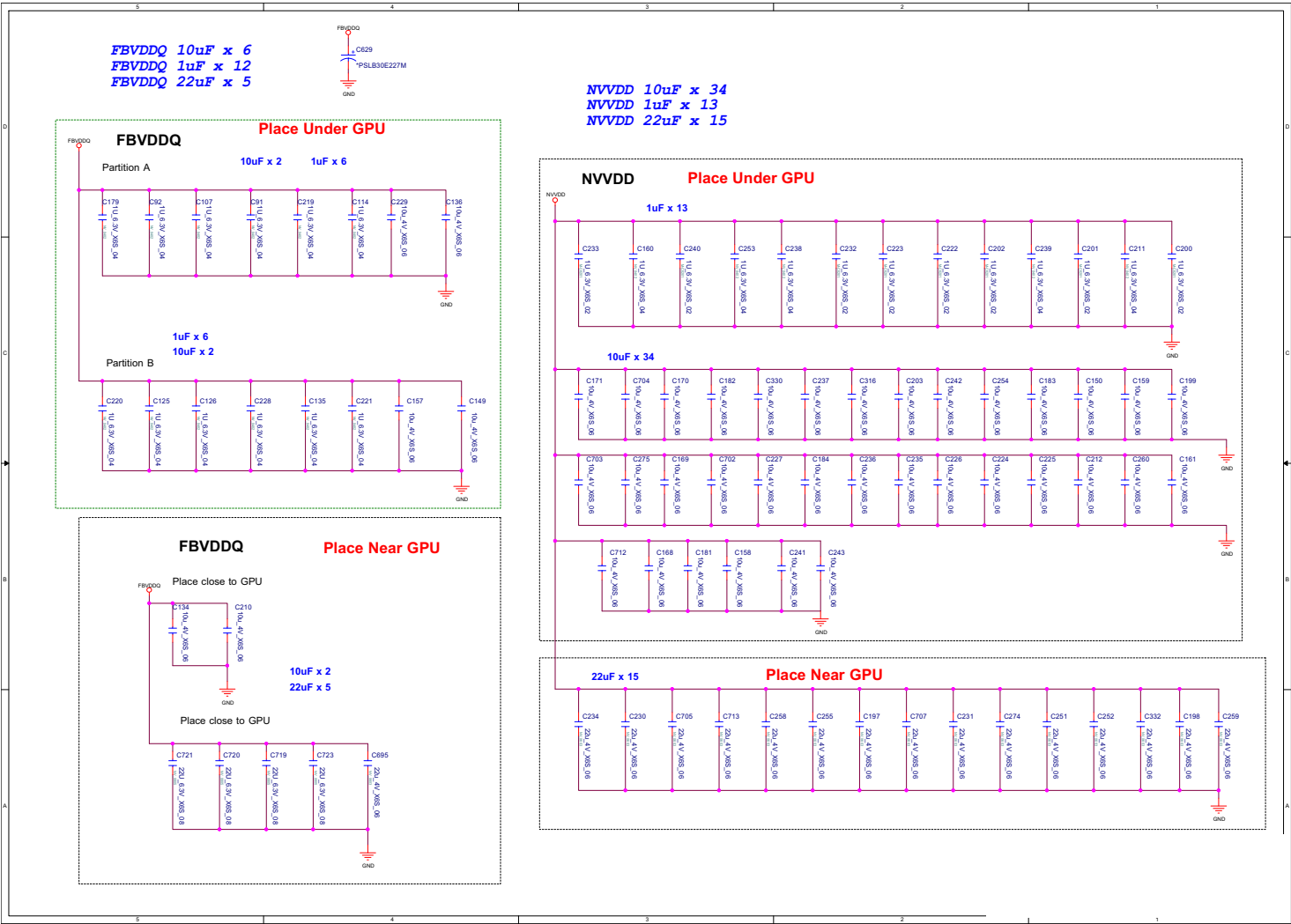


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VGA Frame Buffer
B

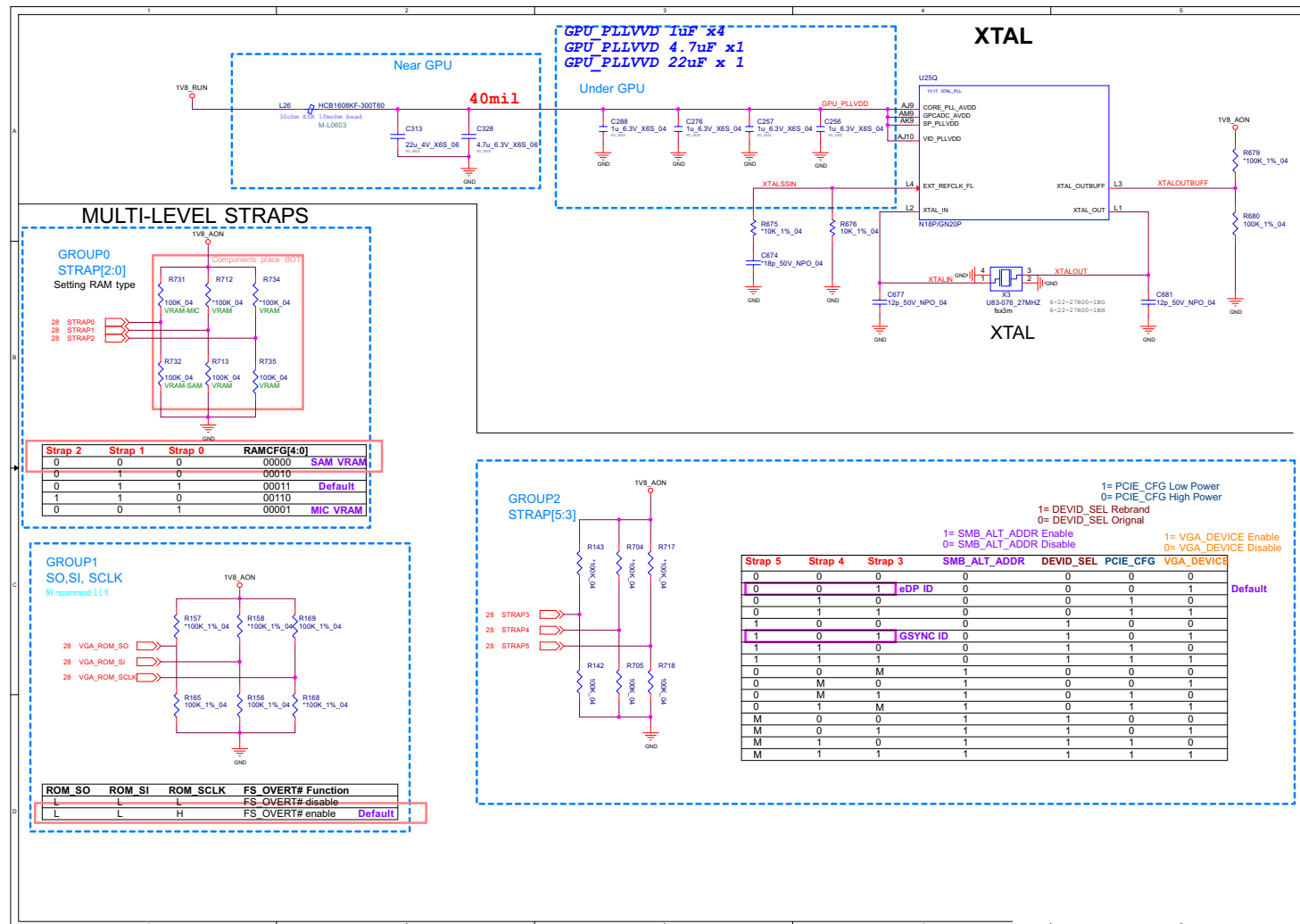
Schematic Diagrams

VGA NVVDD Coupling

Sheet 25 of 63
VGA NVVDD
Coupling



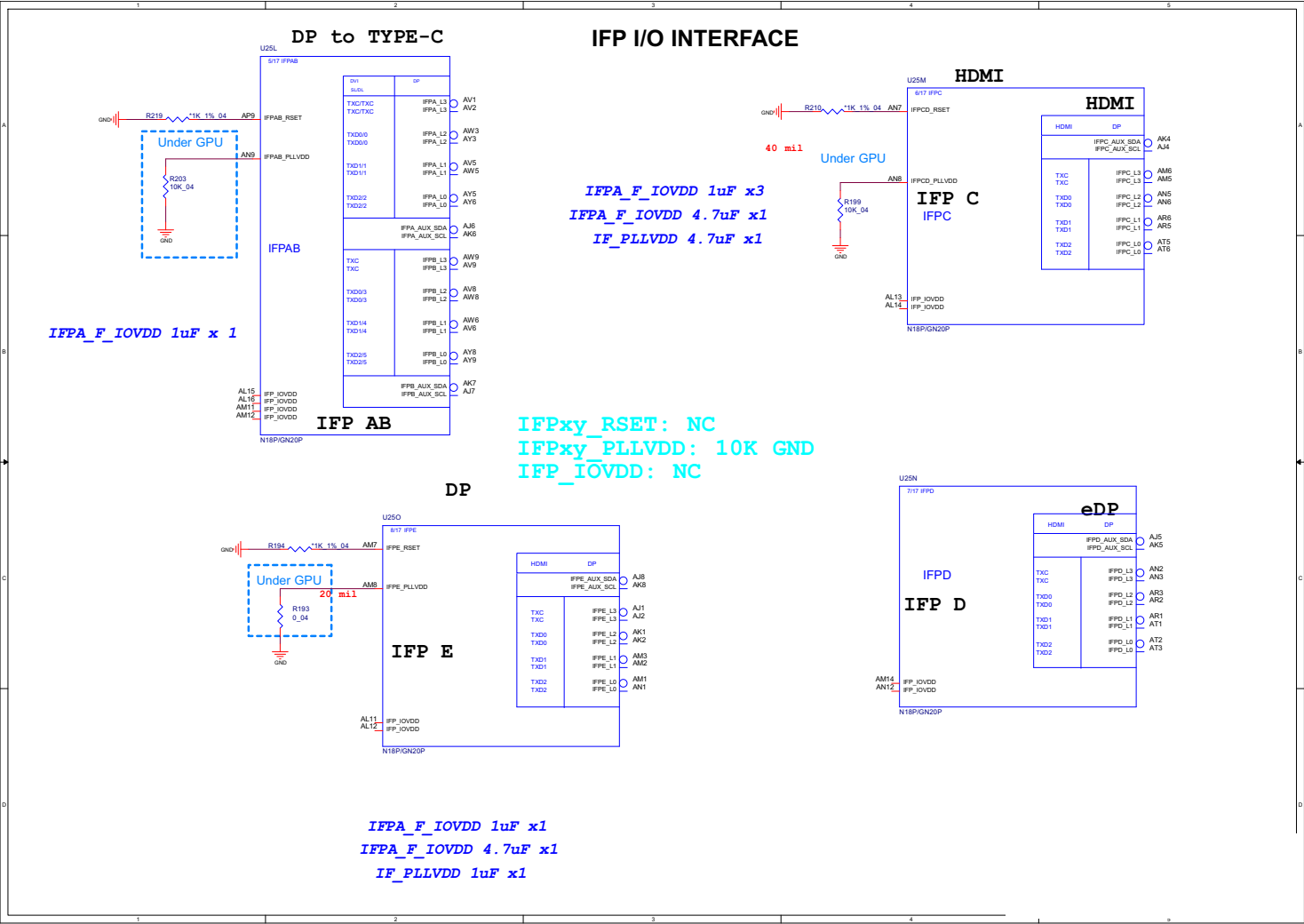
Straps, XTAL B - 27



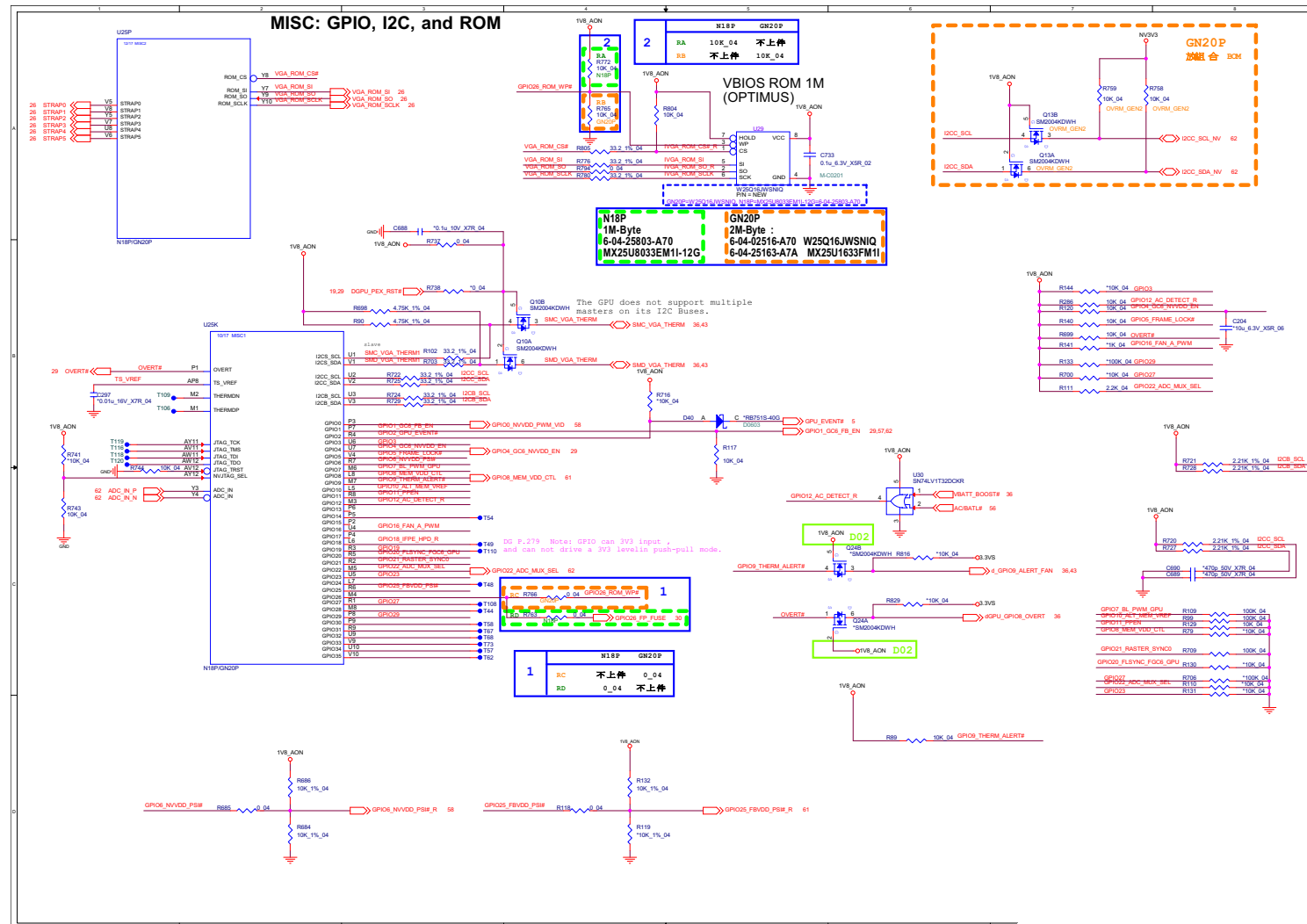
Schematic Diagrams

IFP I/O Interface

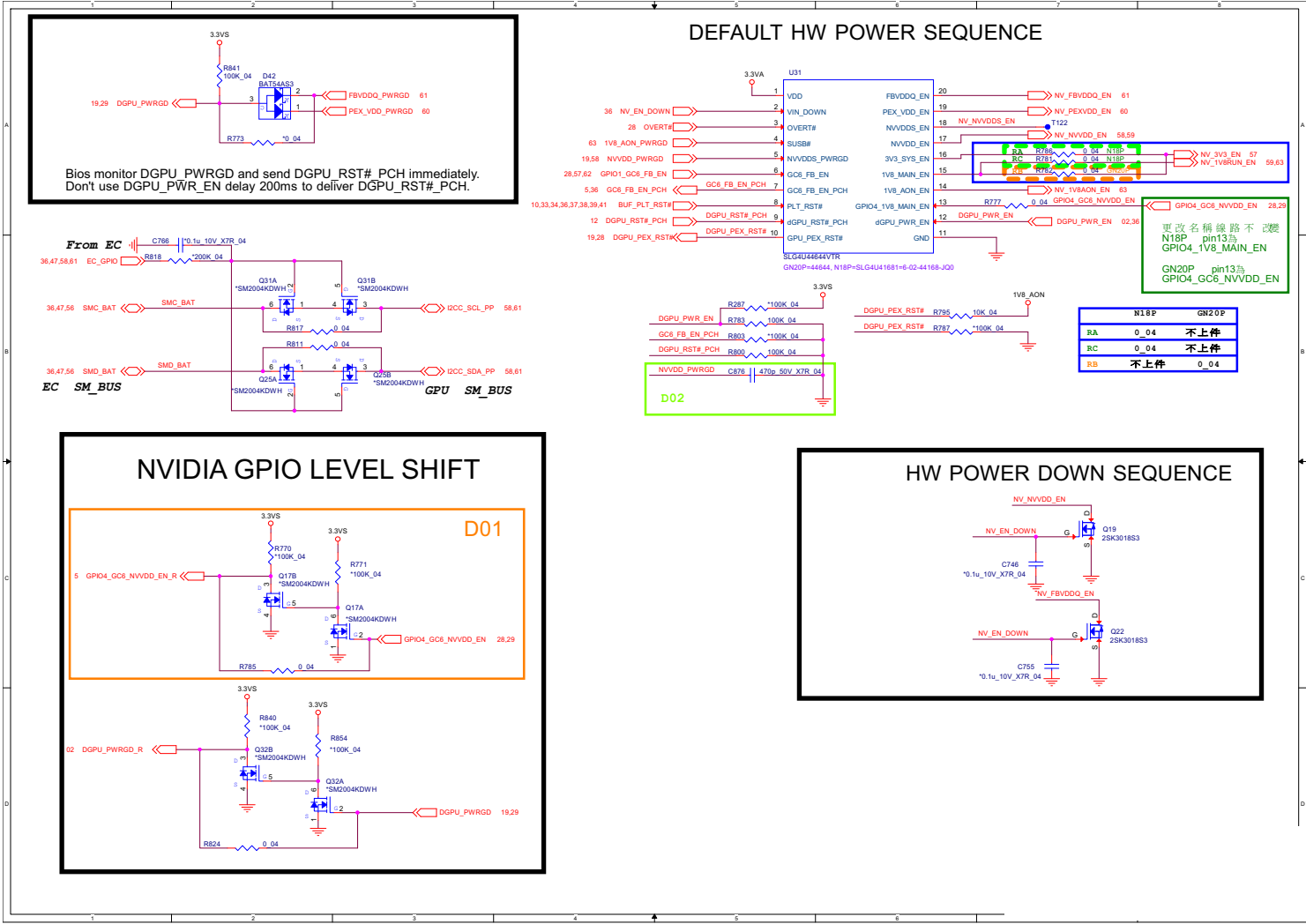
Sheet 27 of 63
IFP I/O Interface



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Misc - GPIO, I2C,
ROM



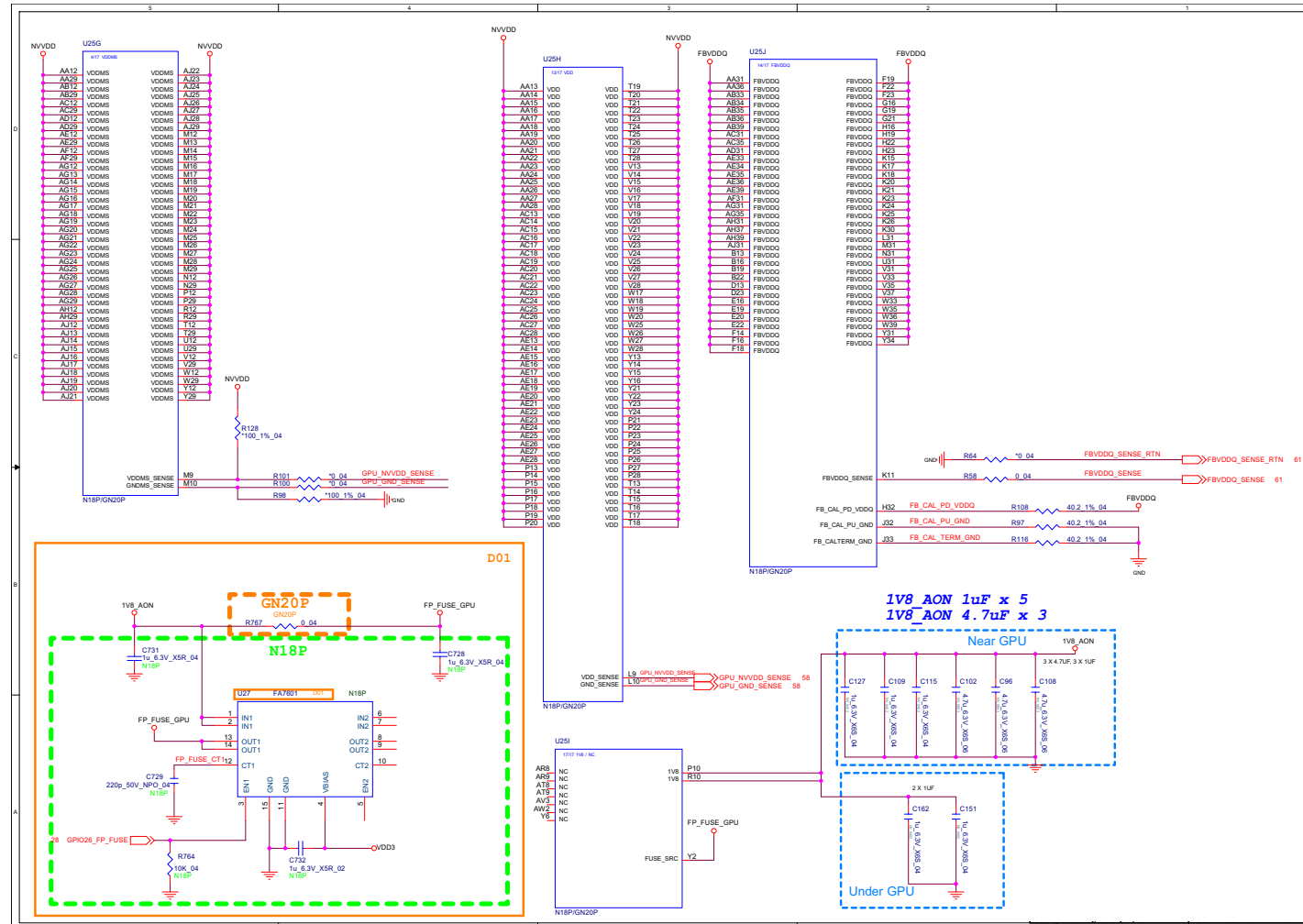
NVIDIA Power Sequence



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NVIDIA Power
Sequence

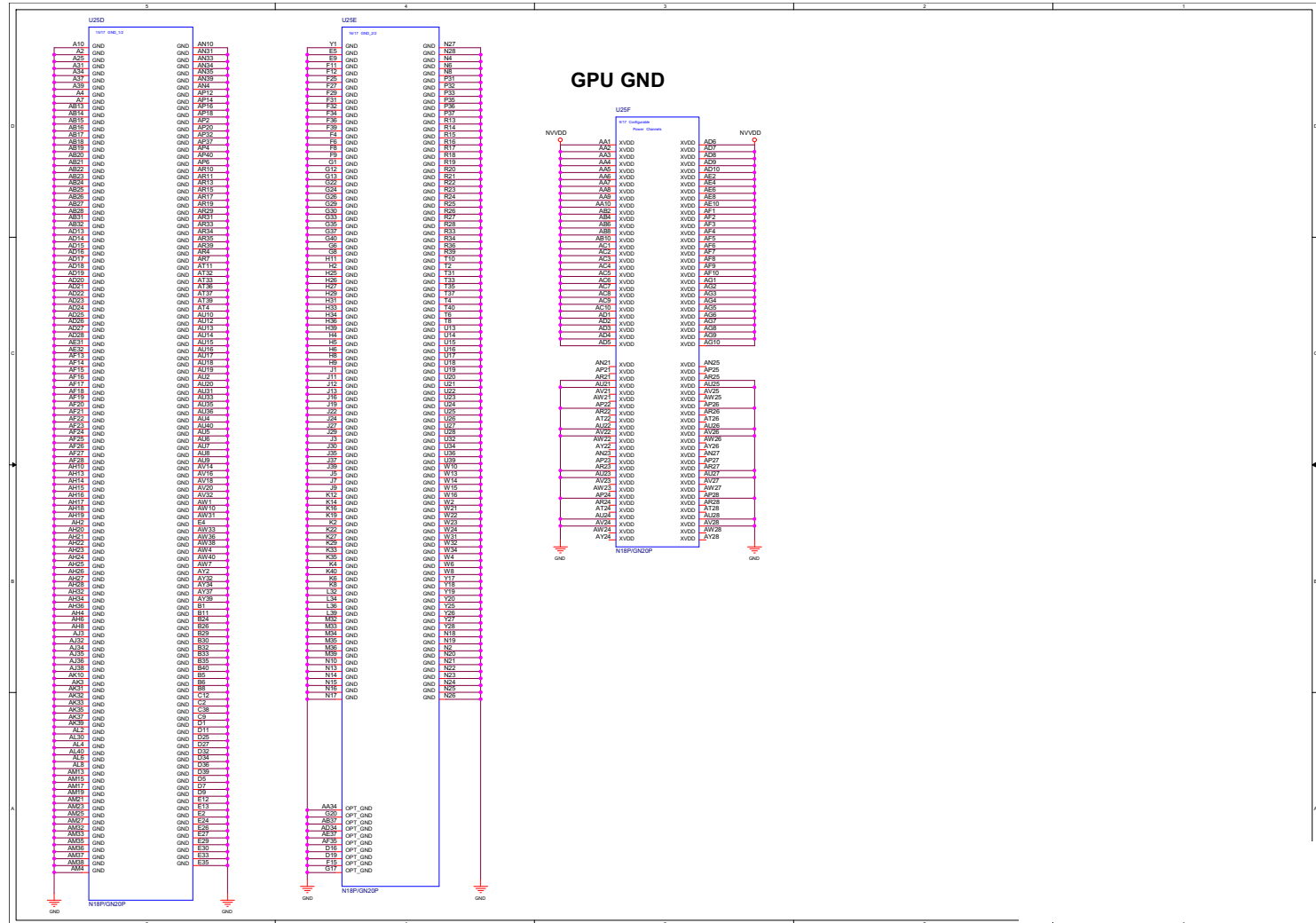
GPU NVVDD, FBVDDQ

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GPU NVVDD,
FBVDDQ

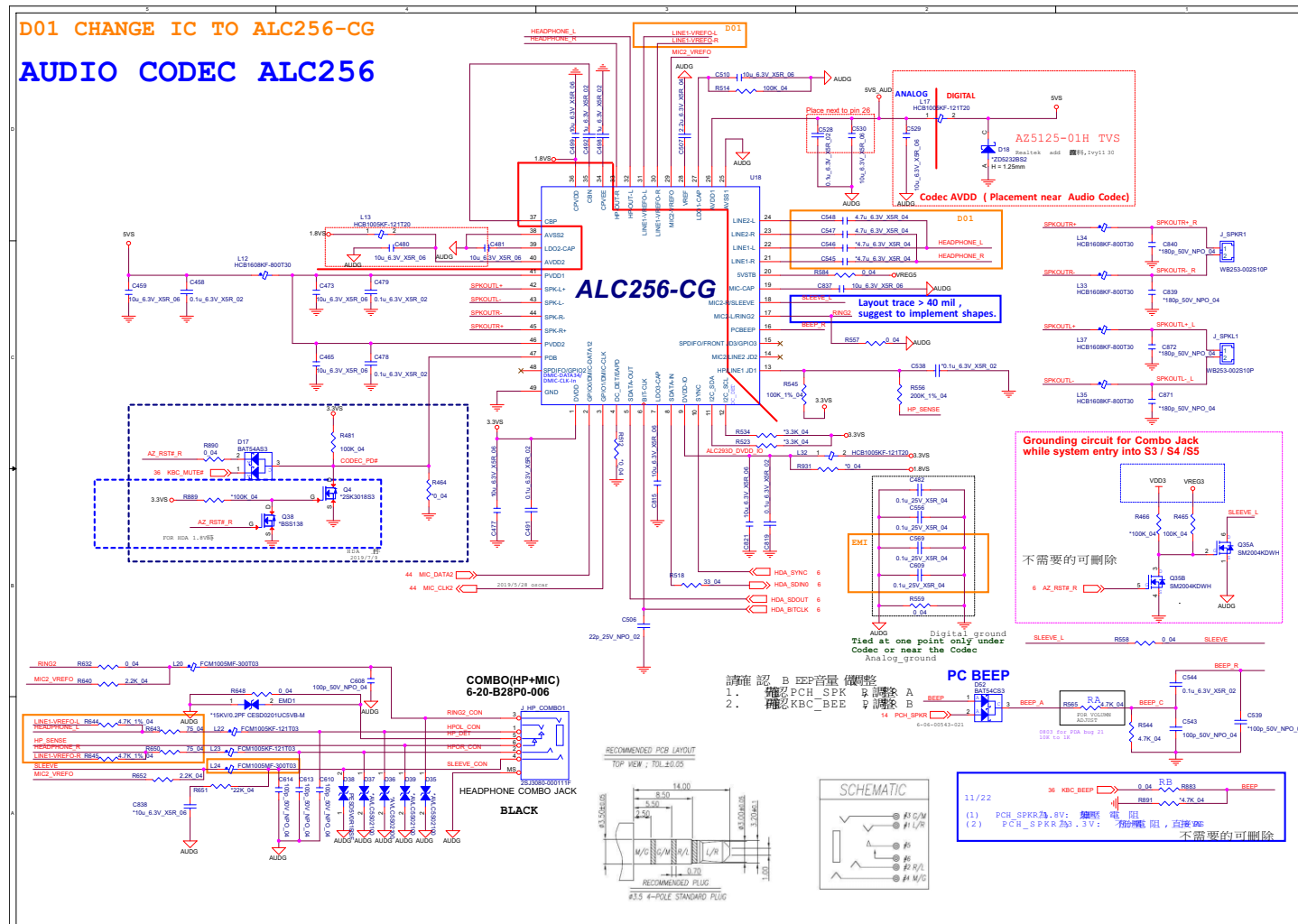


GPU GND

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GPU GND

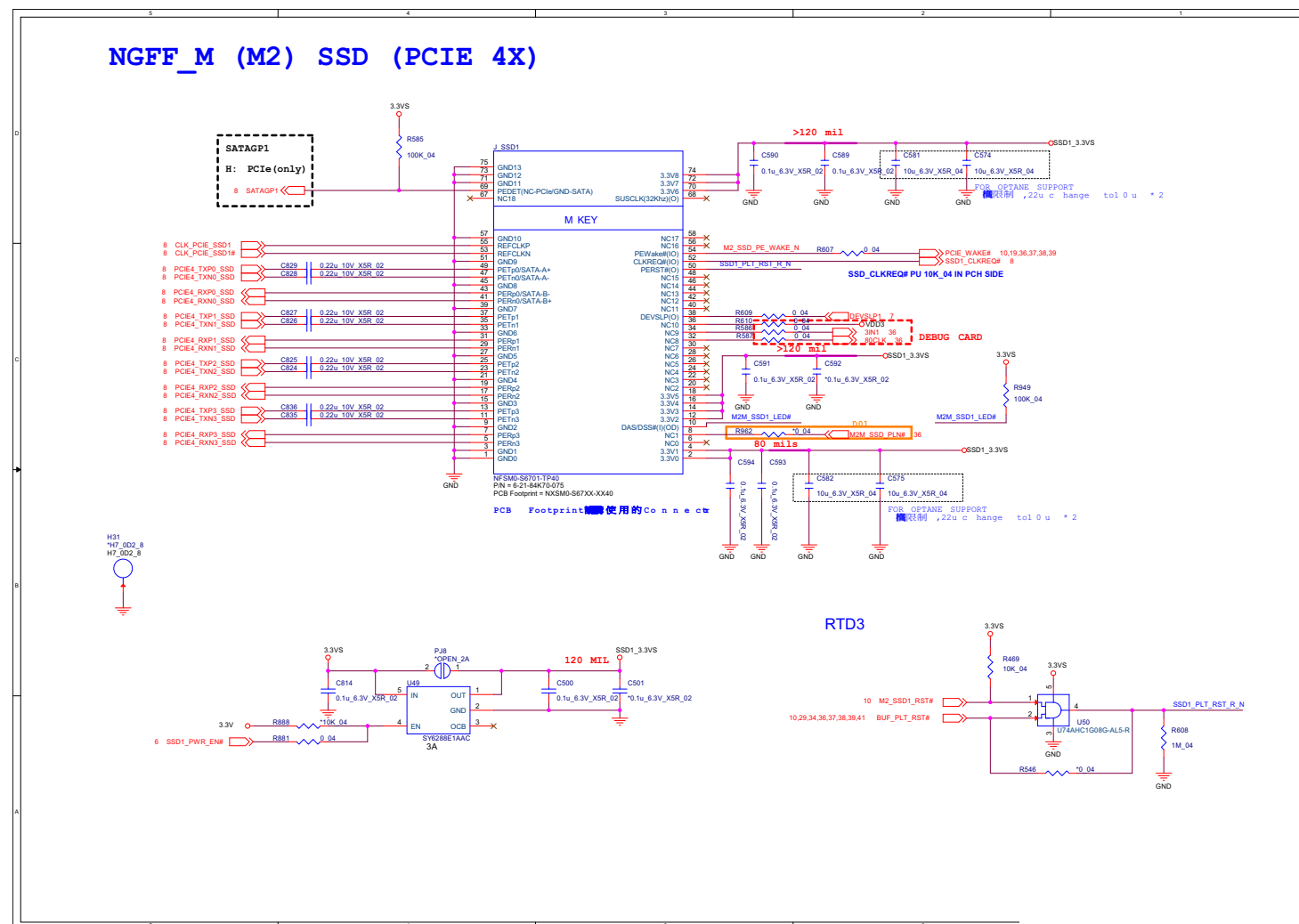


B.Schematic Diagrams

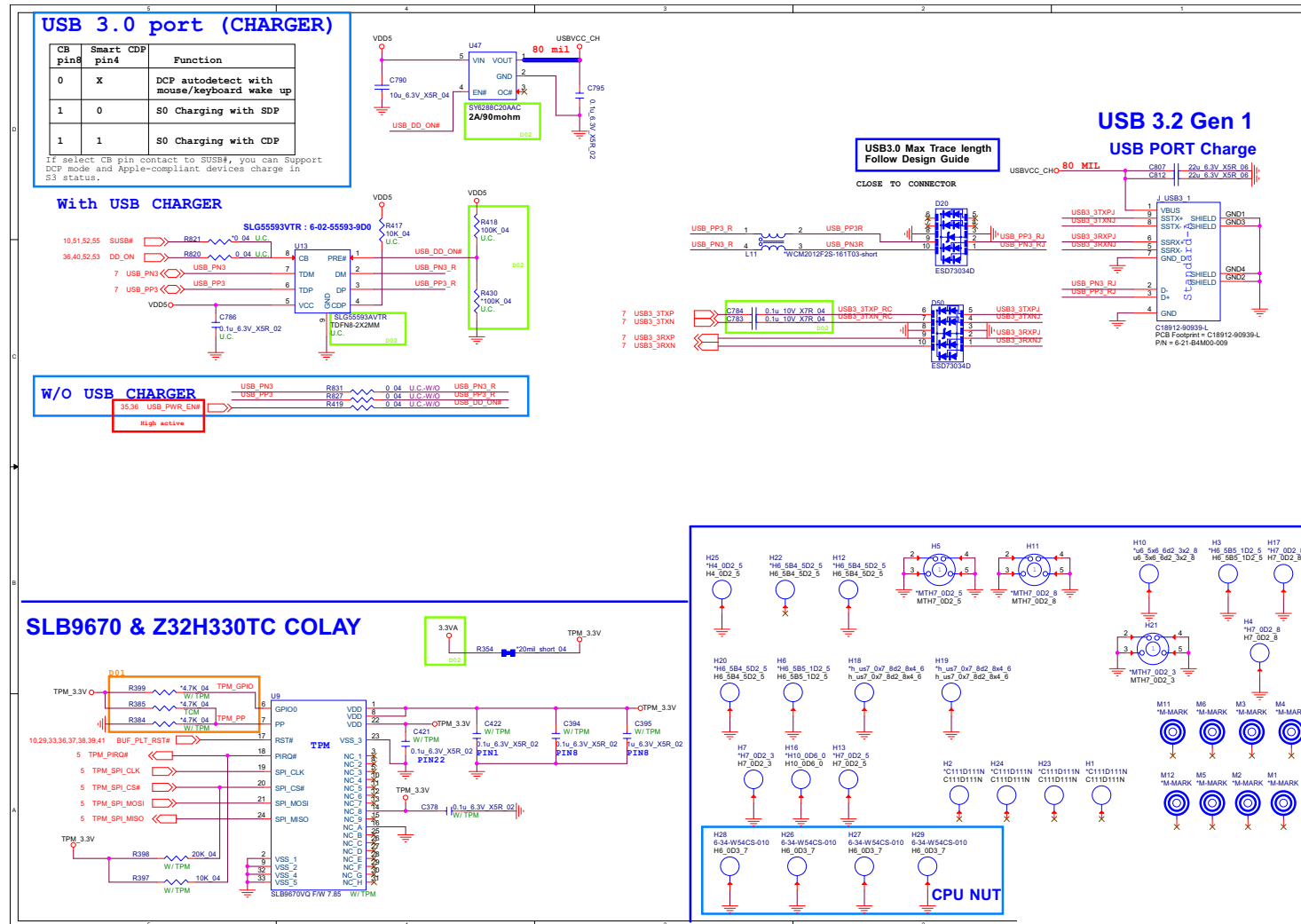


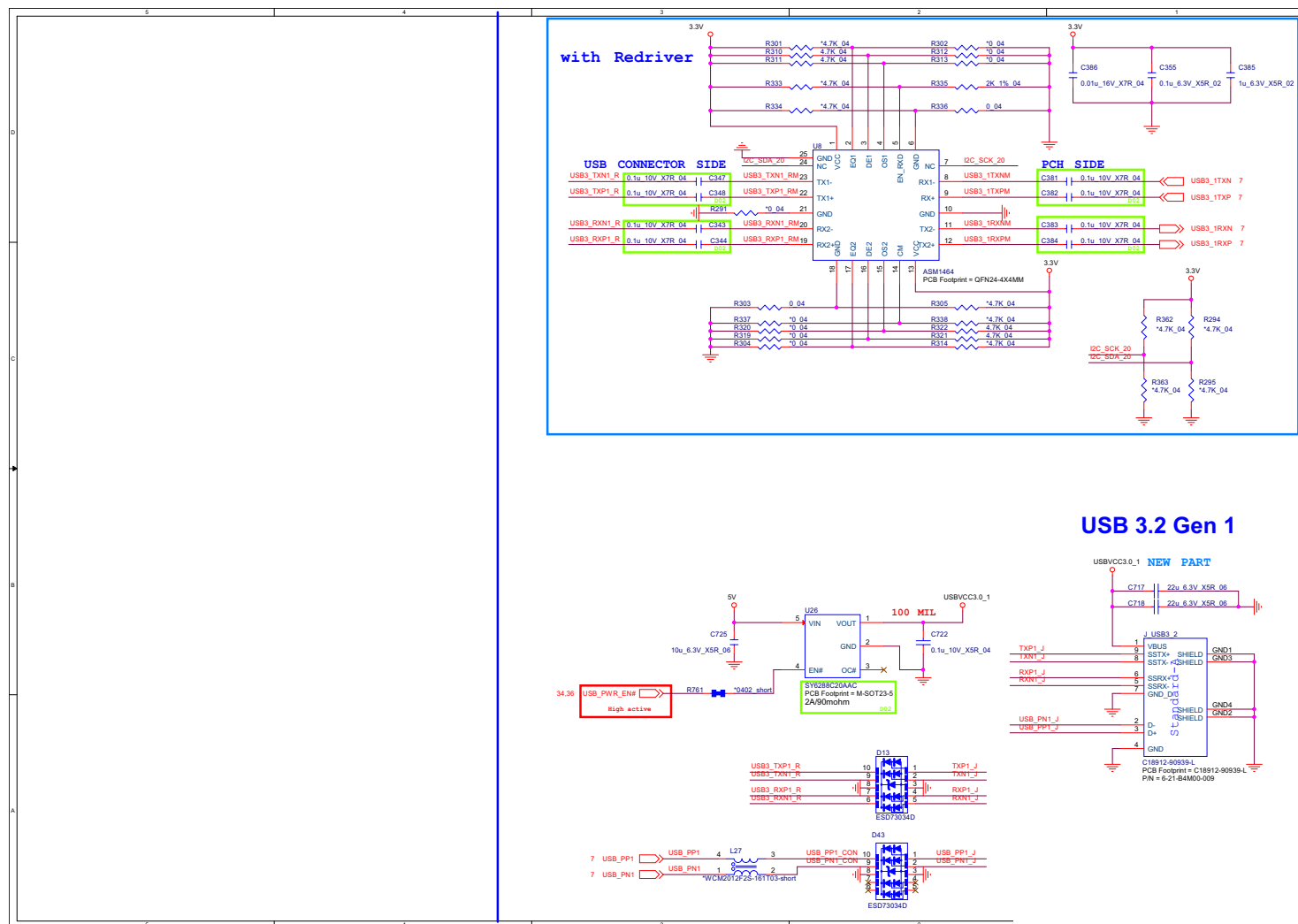
M Key PCIE SSD

Sheet 33 of 63
M Key PCIe SSD

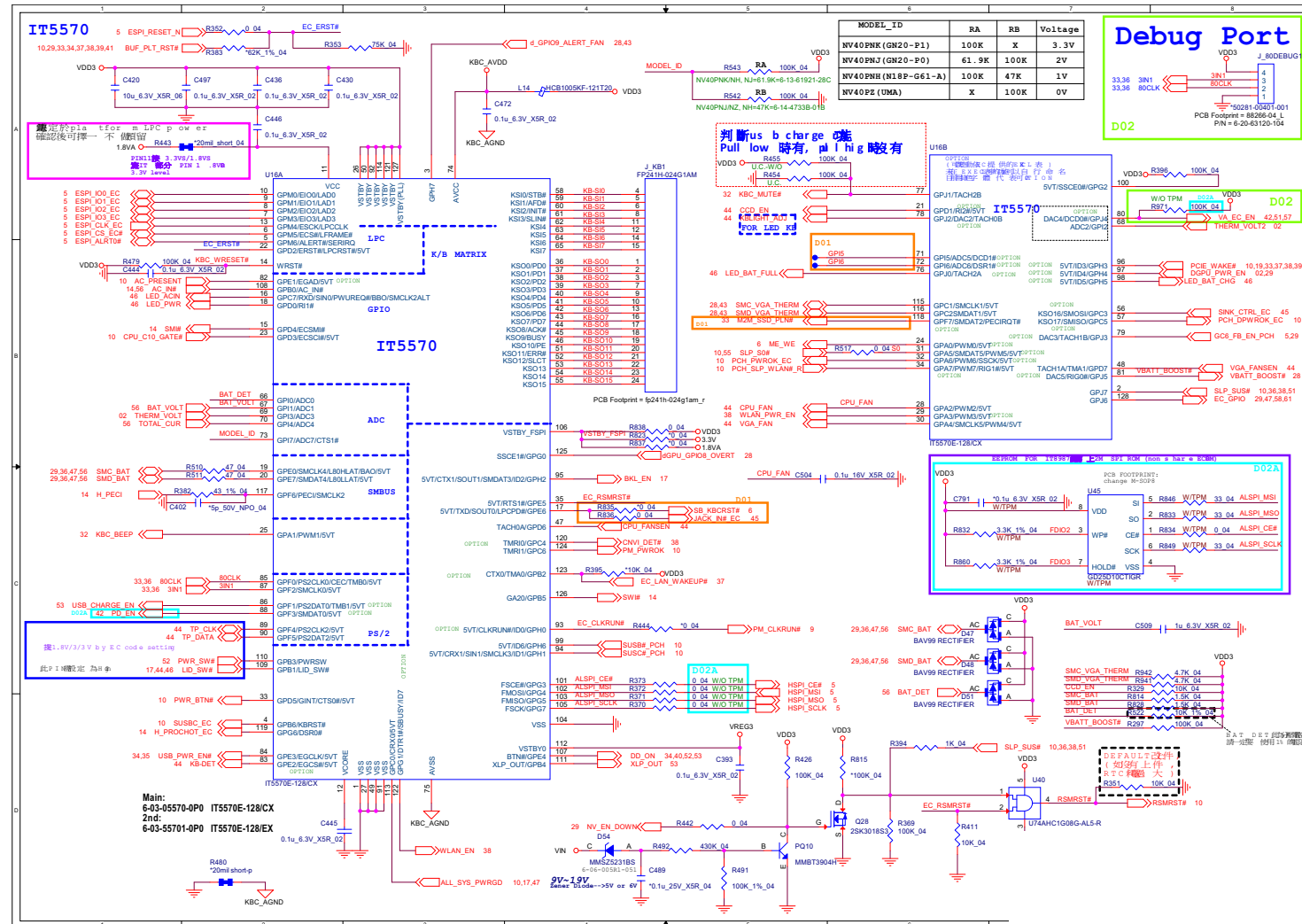


USB Charger, TPM



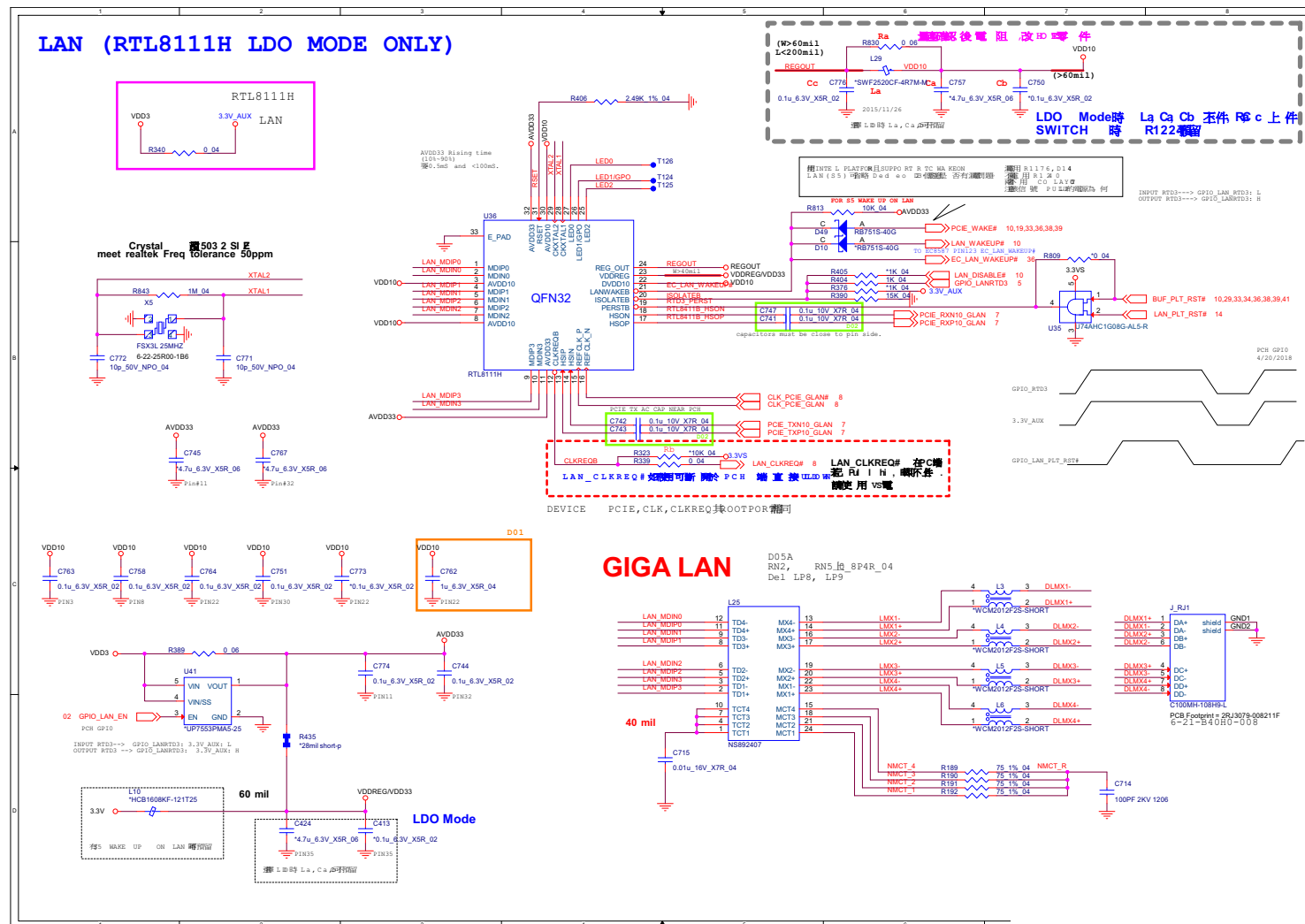


IT5570



LAN RTL8111G

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LAN RTL8111G

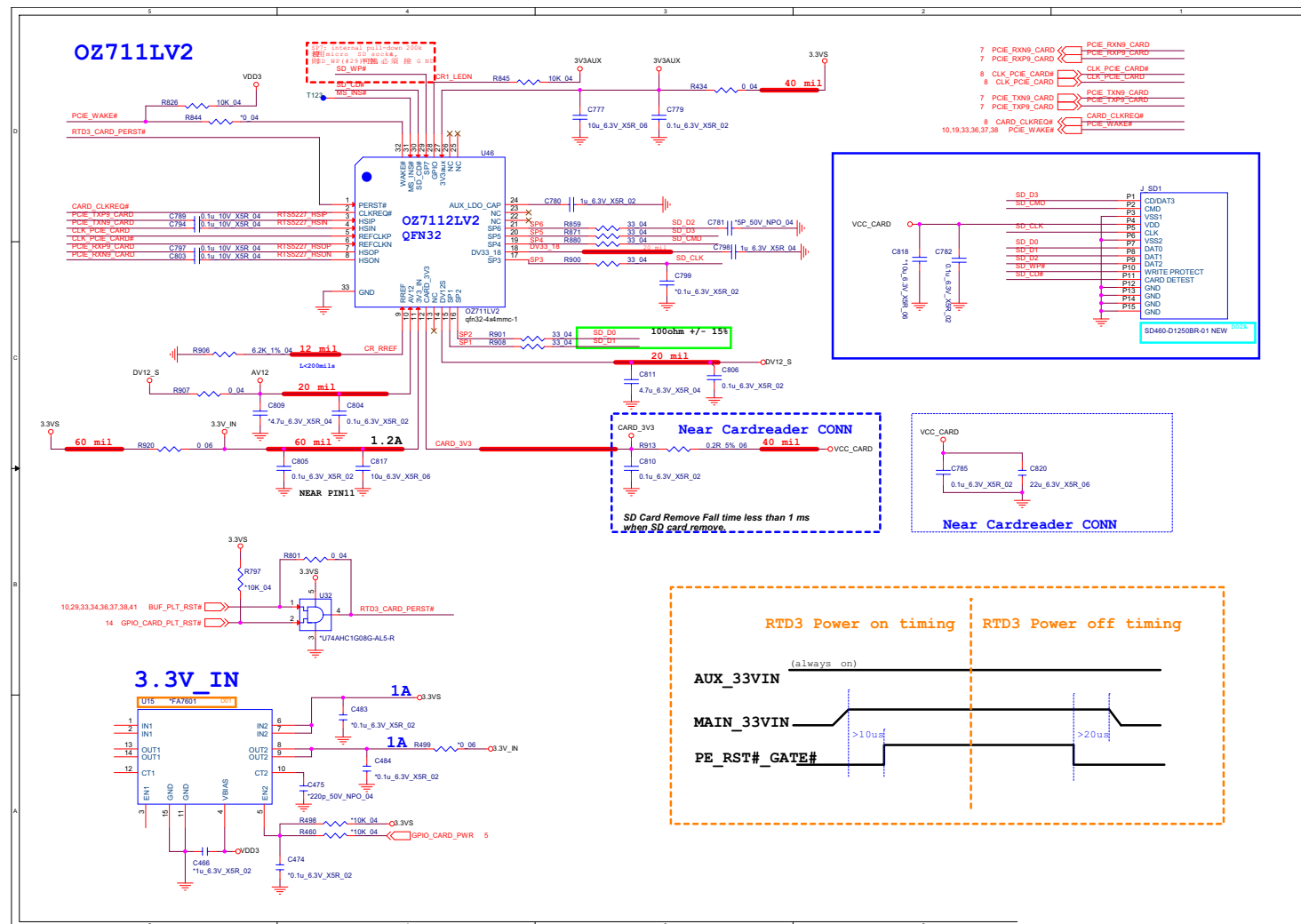


WLAN/BT B - 39

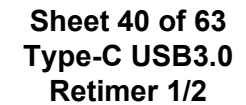


OZ711LV2

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OZ711LV2



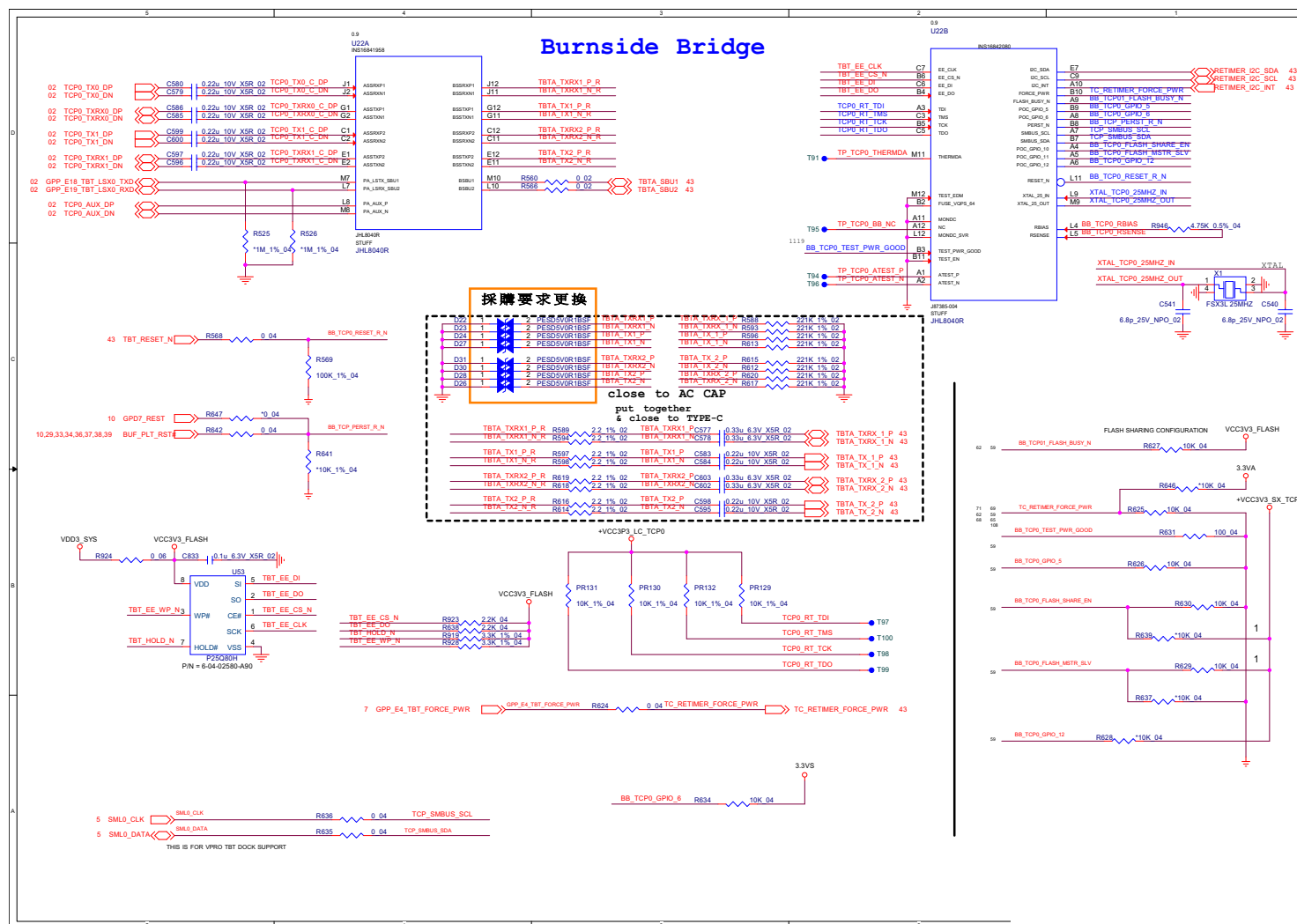
Type-C USB3.0 B - 41



Retimer 1/2

B.Schematic Diagrams

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Retimer 1/2



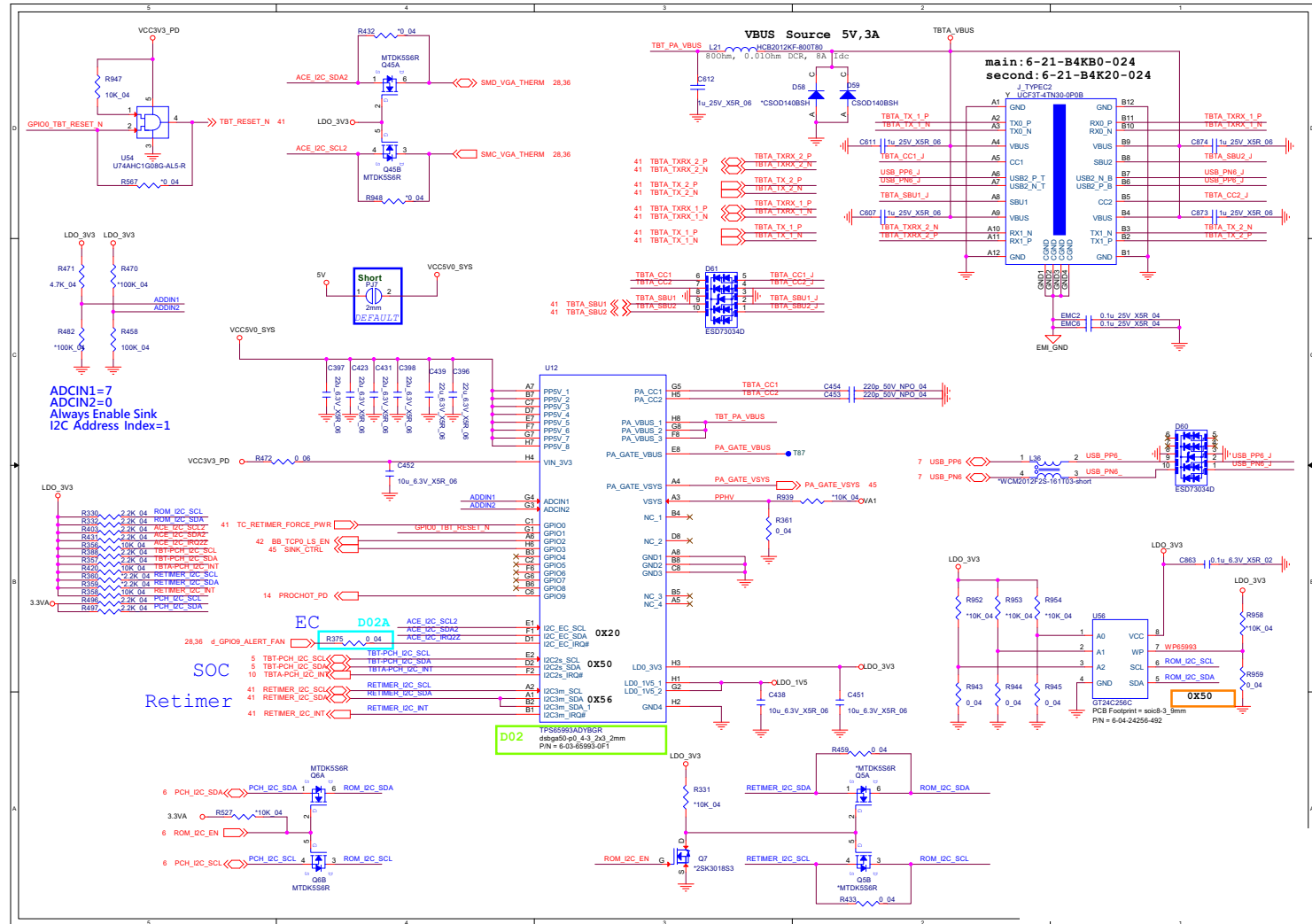
Sheet 42 of 63
Retimer 2/2



Schematic Diagrams

Type-C Con

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Type-C Con

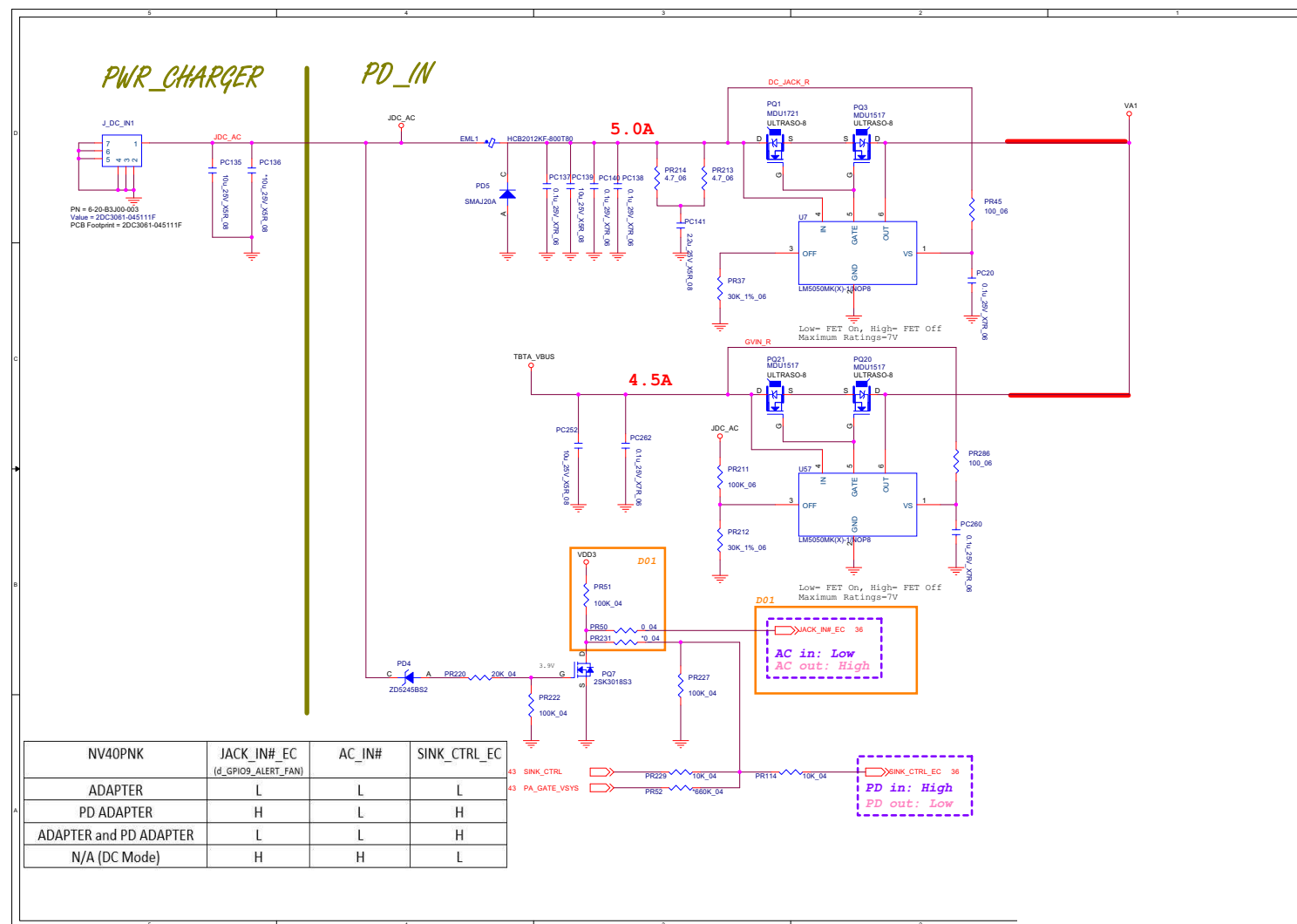


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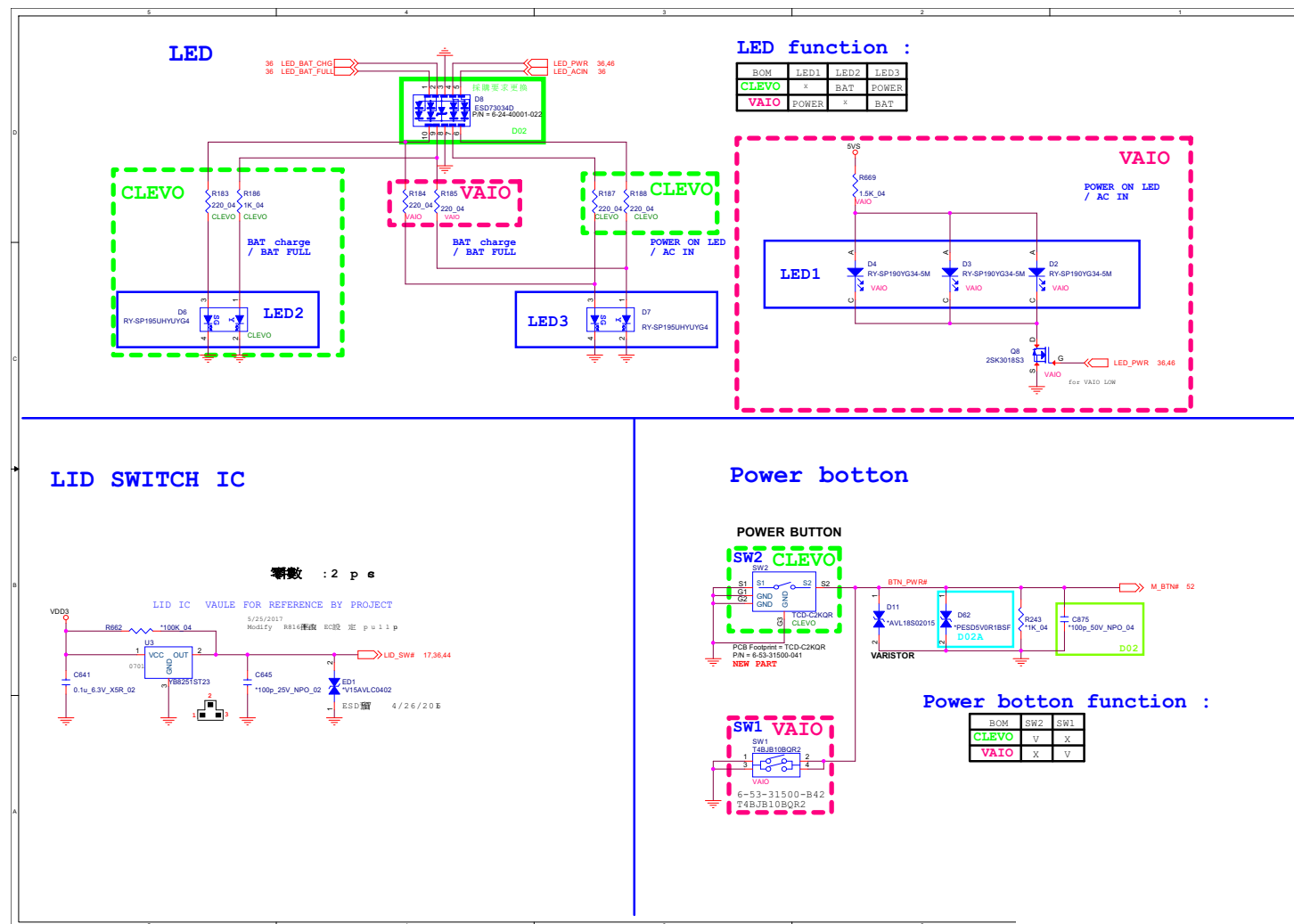
B.Schematic Diagrams

AC-In

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AC-In



LED, LID, PWR SW

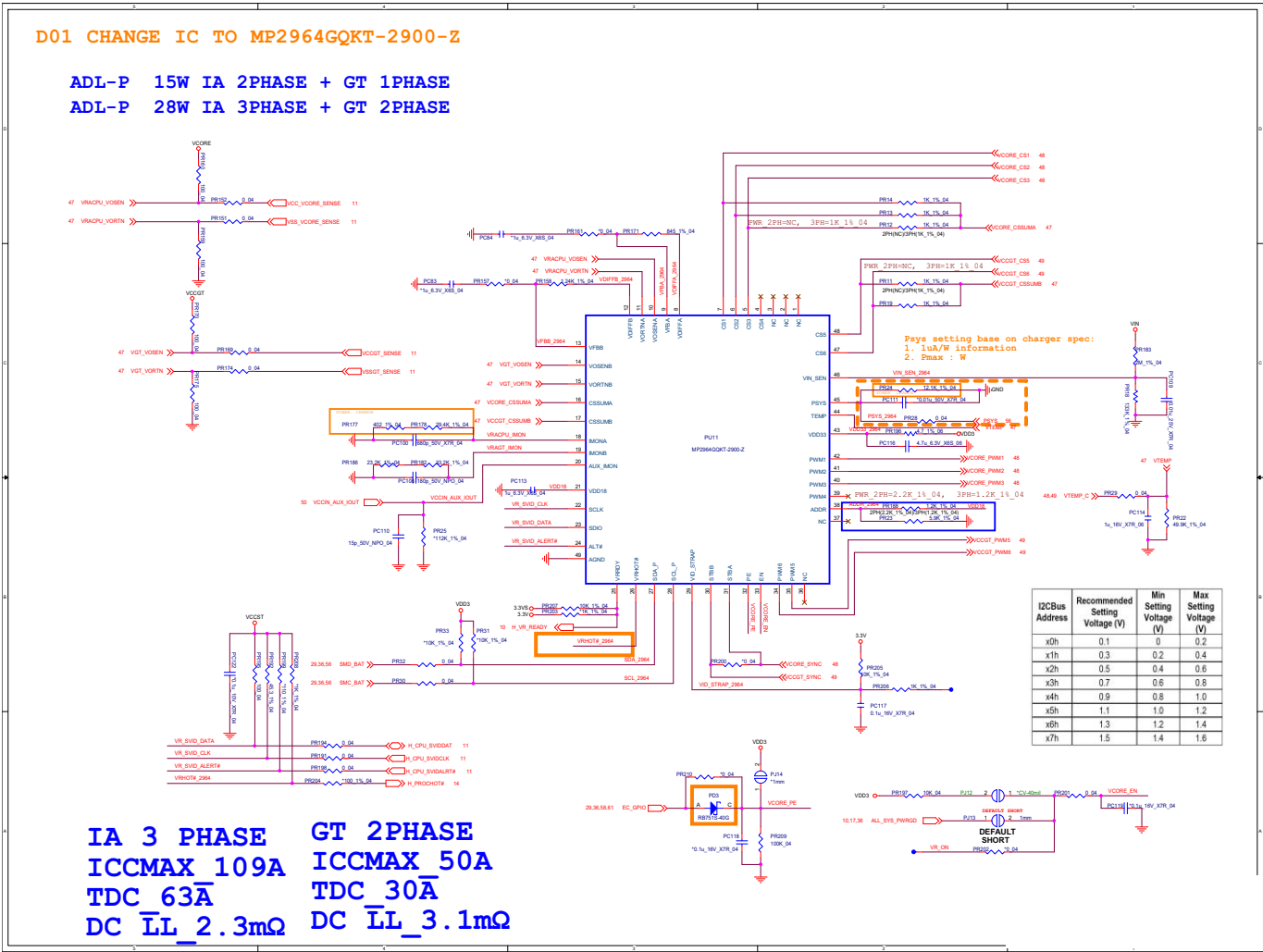


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LED, LID, PWR SW

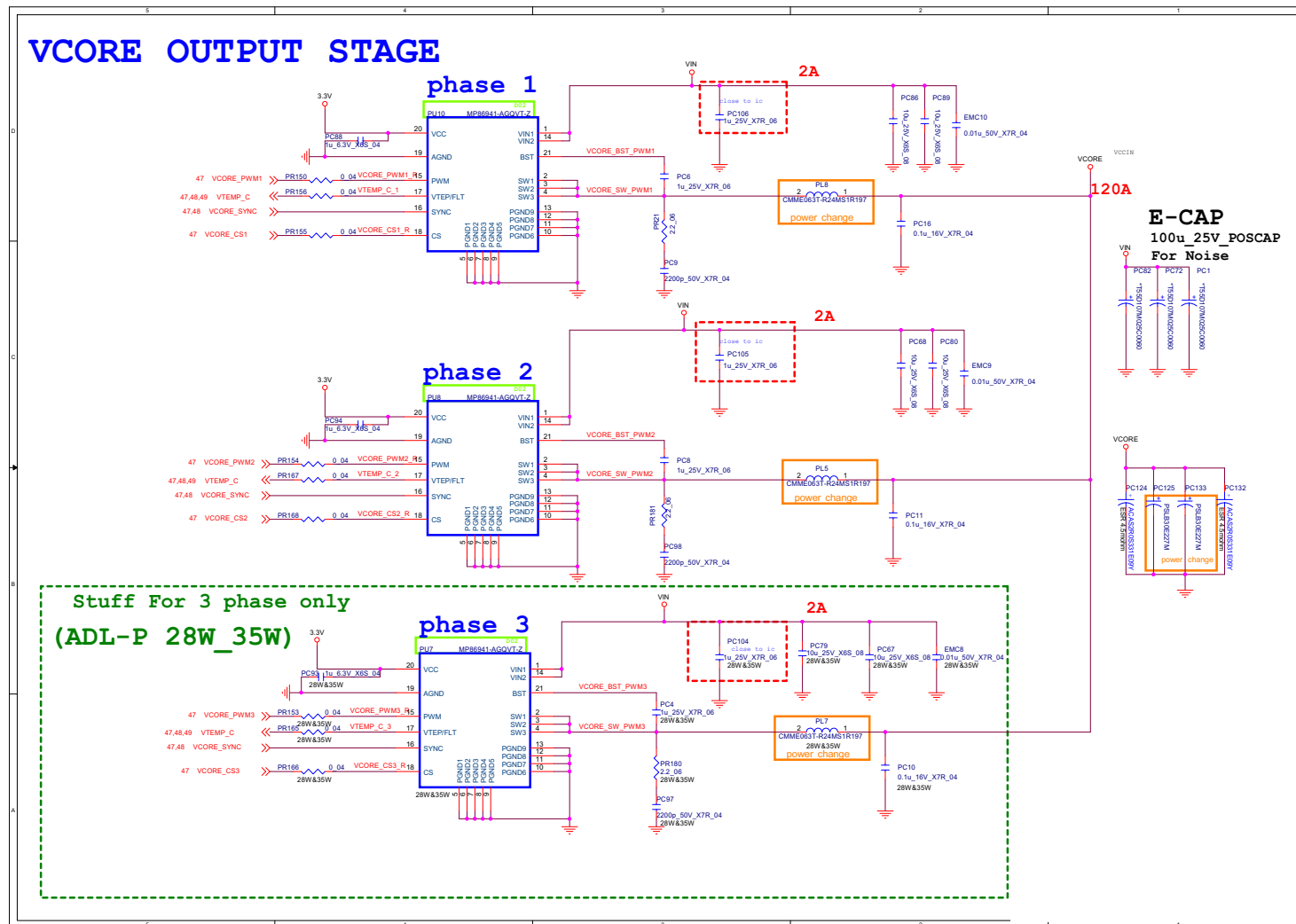
Schematic Diagrams

MP2964 Controller

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MP2964 Controller



VCore

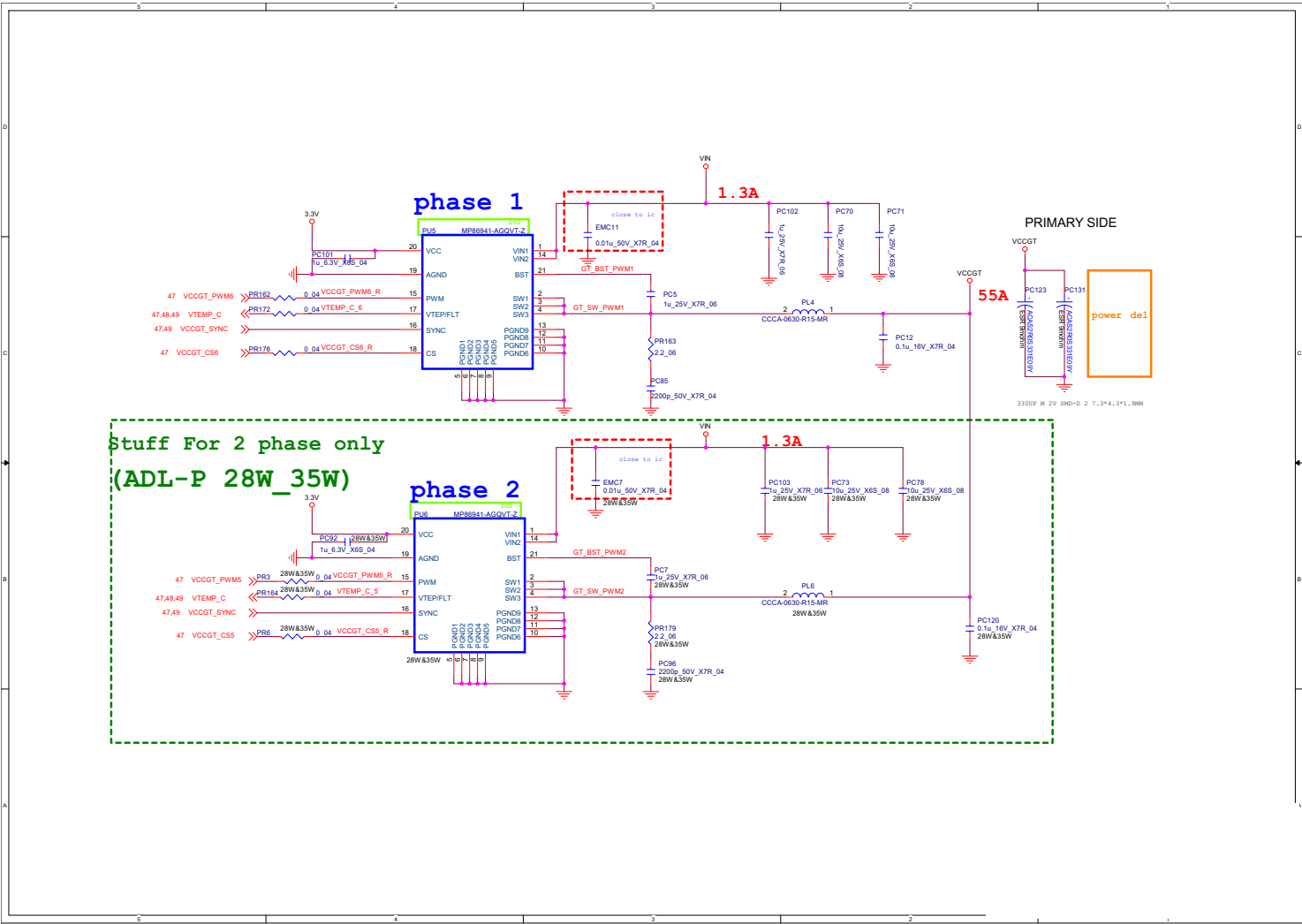


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VCore

Schematic Diagrams

VCCGT

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VCCGT

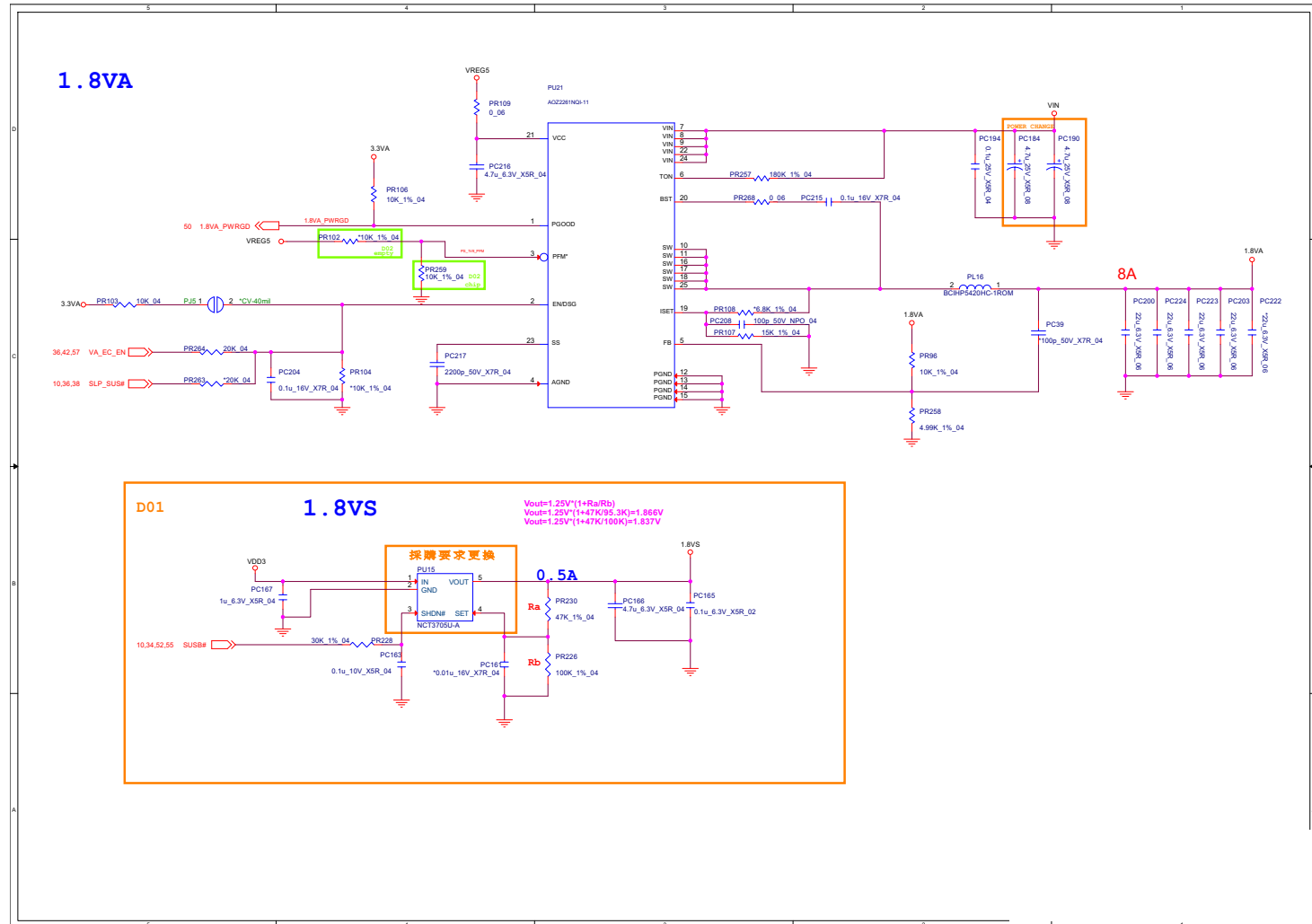


VCCIN AUX B - 51

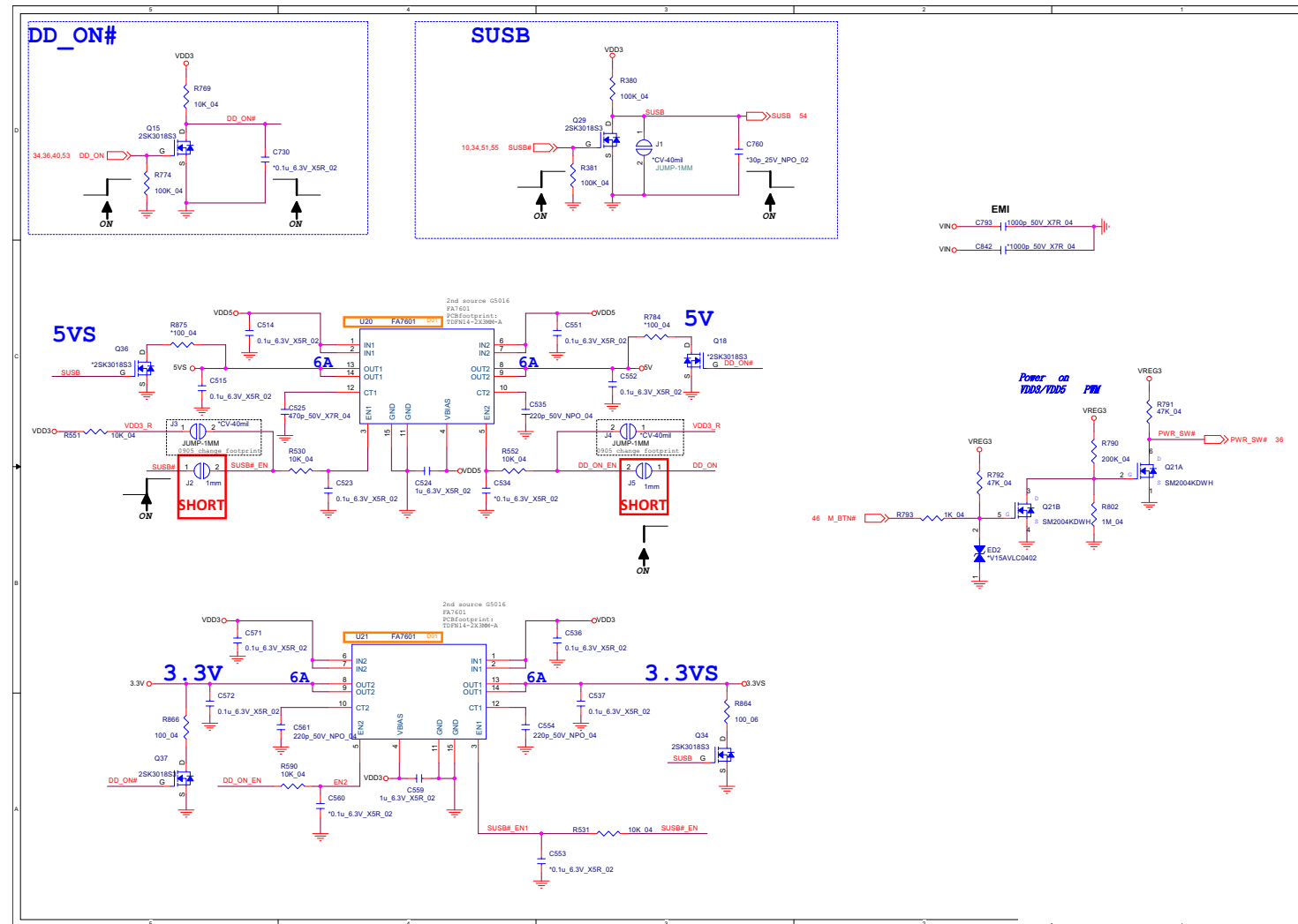
Schematic Diagrams

1.8VA, 1.8VS

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1.8VA, 1.8VS



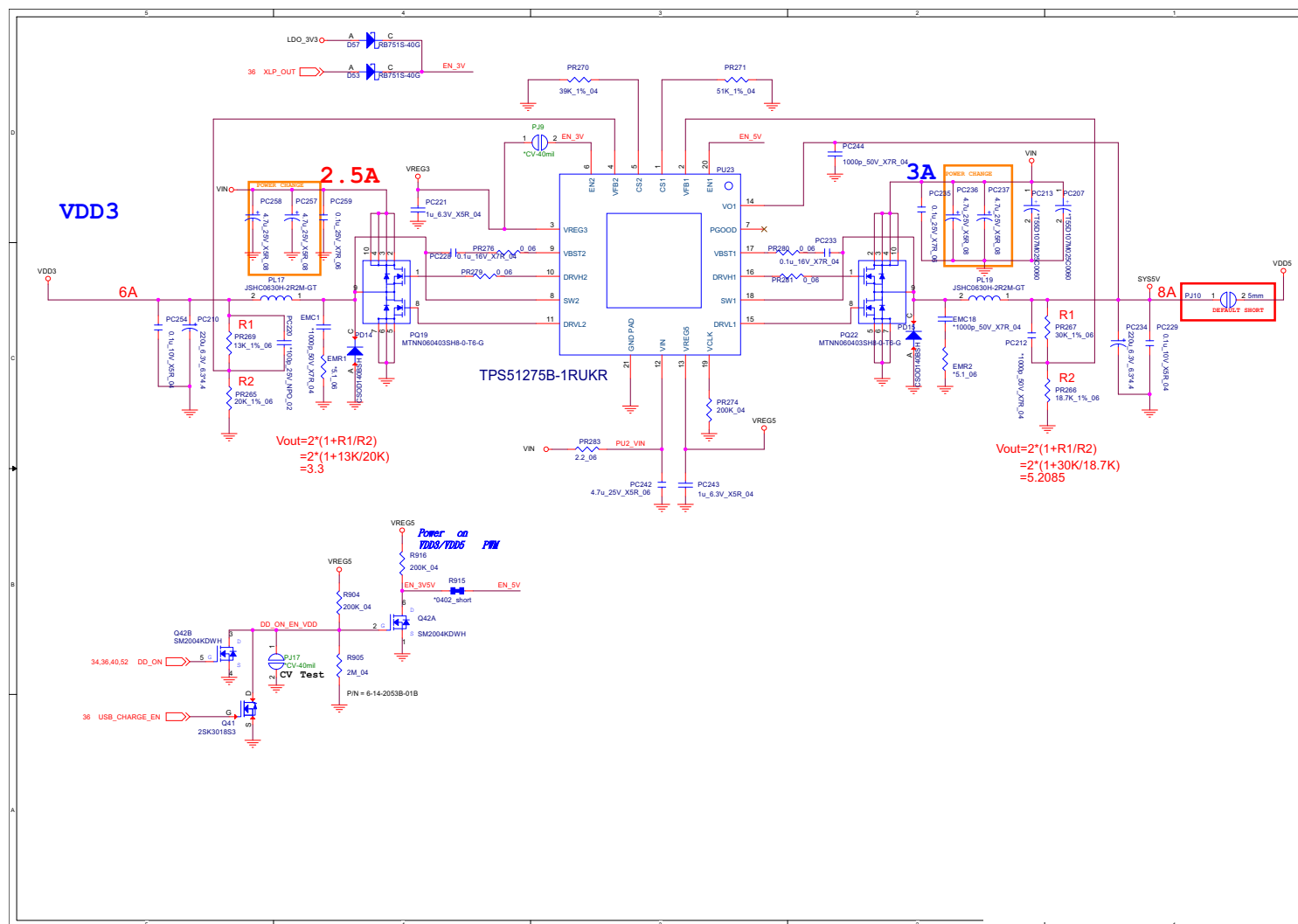
3.3V, 5V, 3VS, 5VS, CTL



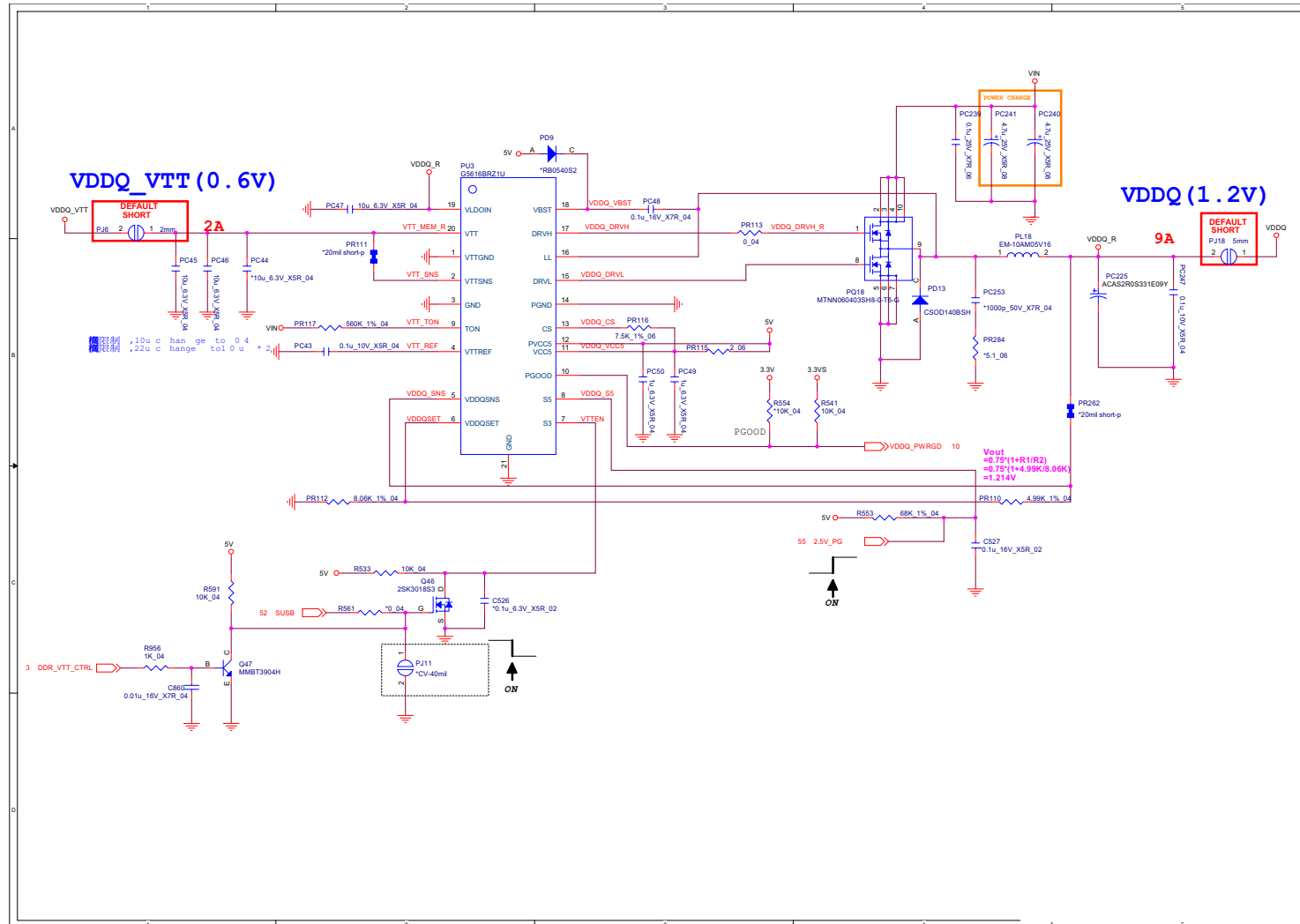
Sheet 52 of 63
3.3V, 5V, 3VS, 5VS,
CTL

VDD3, VDD5

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VDD3, VDD5



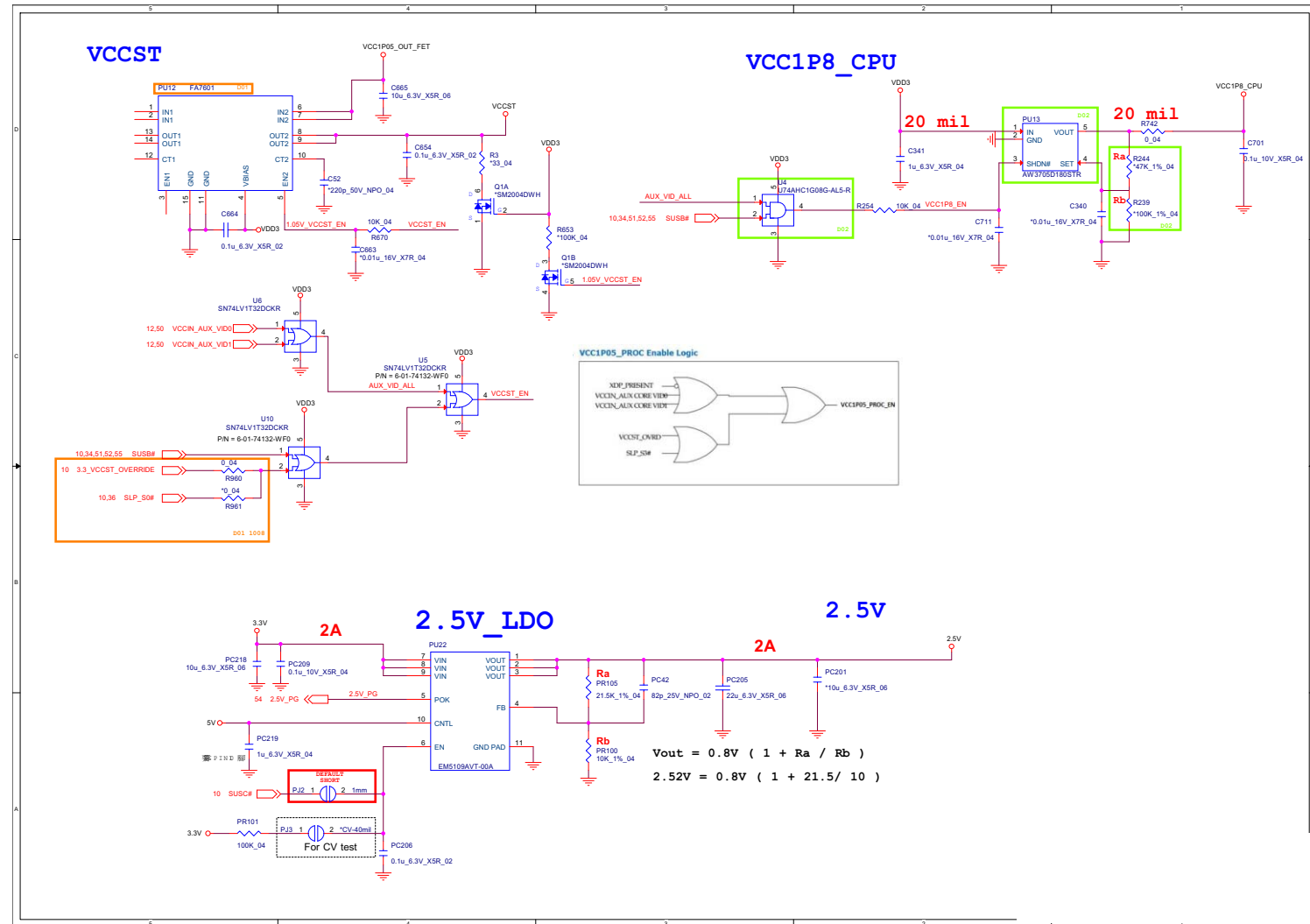
VDDQ, VDDQ_VTT



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VDDQ, VDDQ_VTT

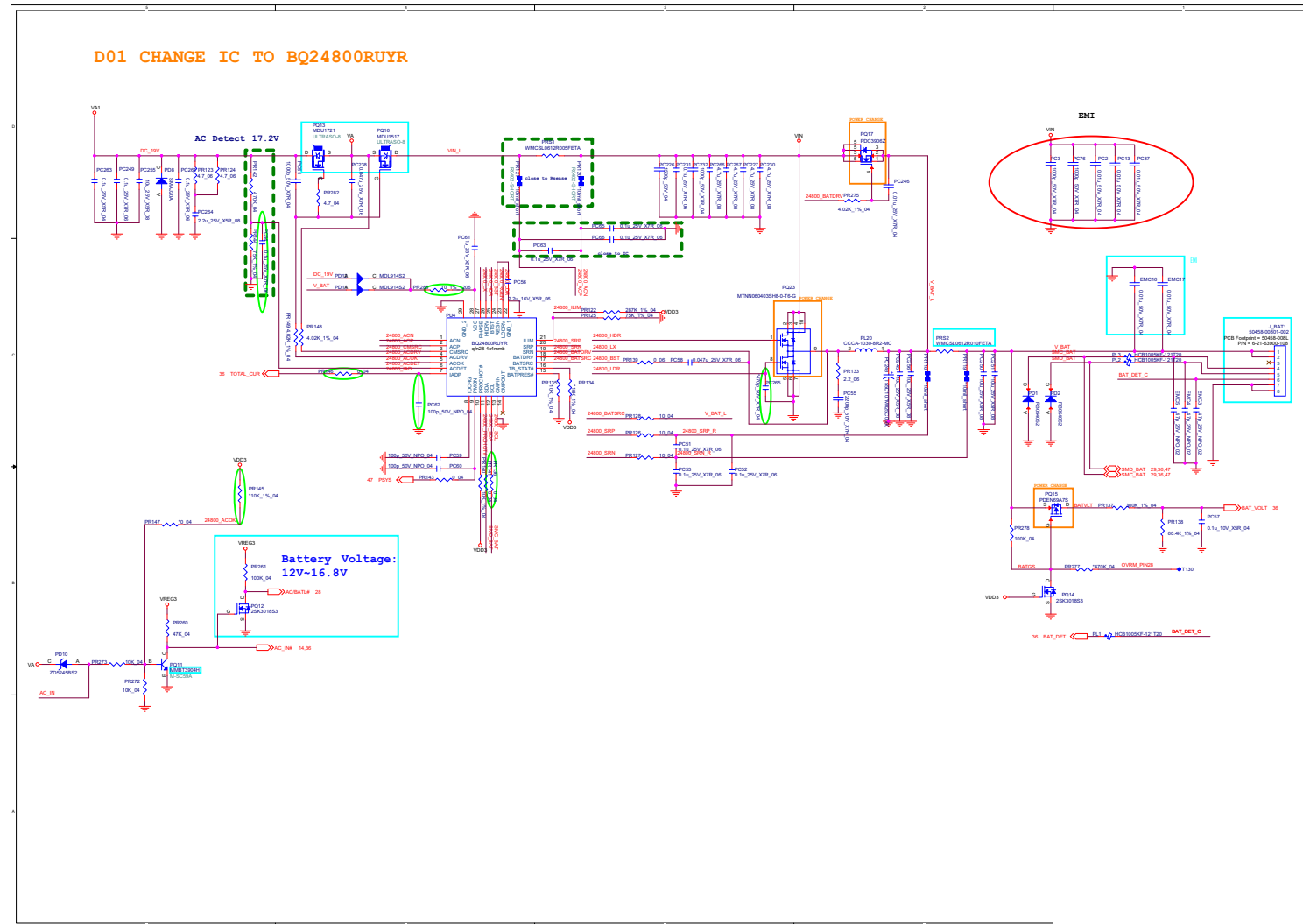
Schematic Diagrams

2.5V, VCCST, VCC1P8

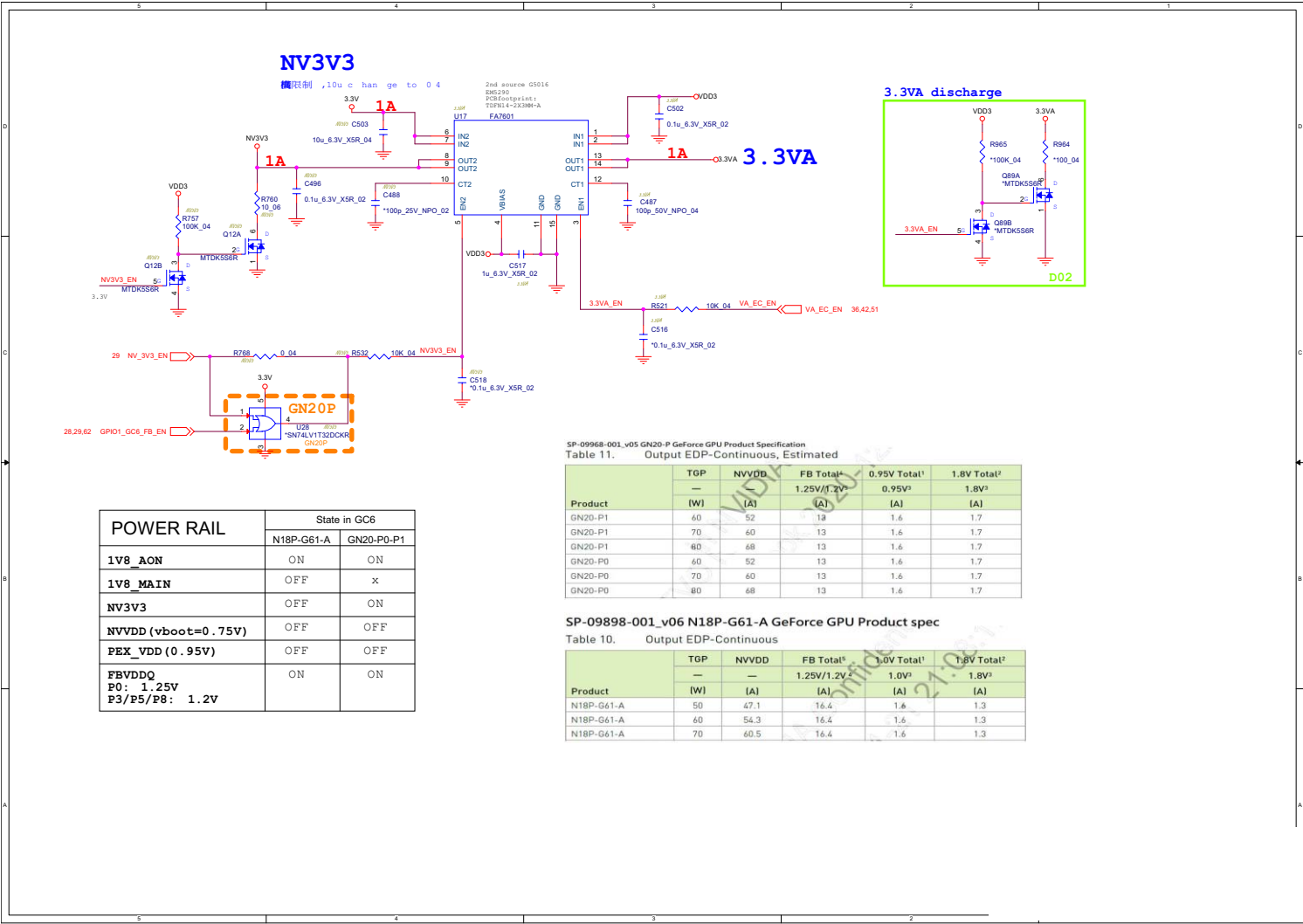


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2.5V, VCCST,
VCC1P8

B.Schematic Diagrams

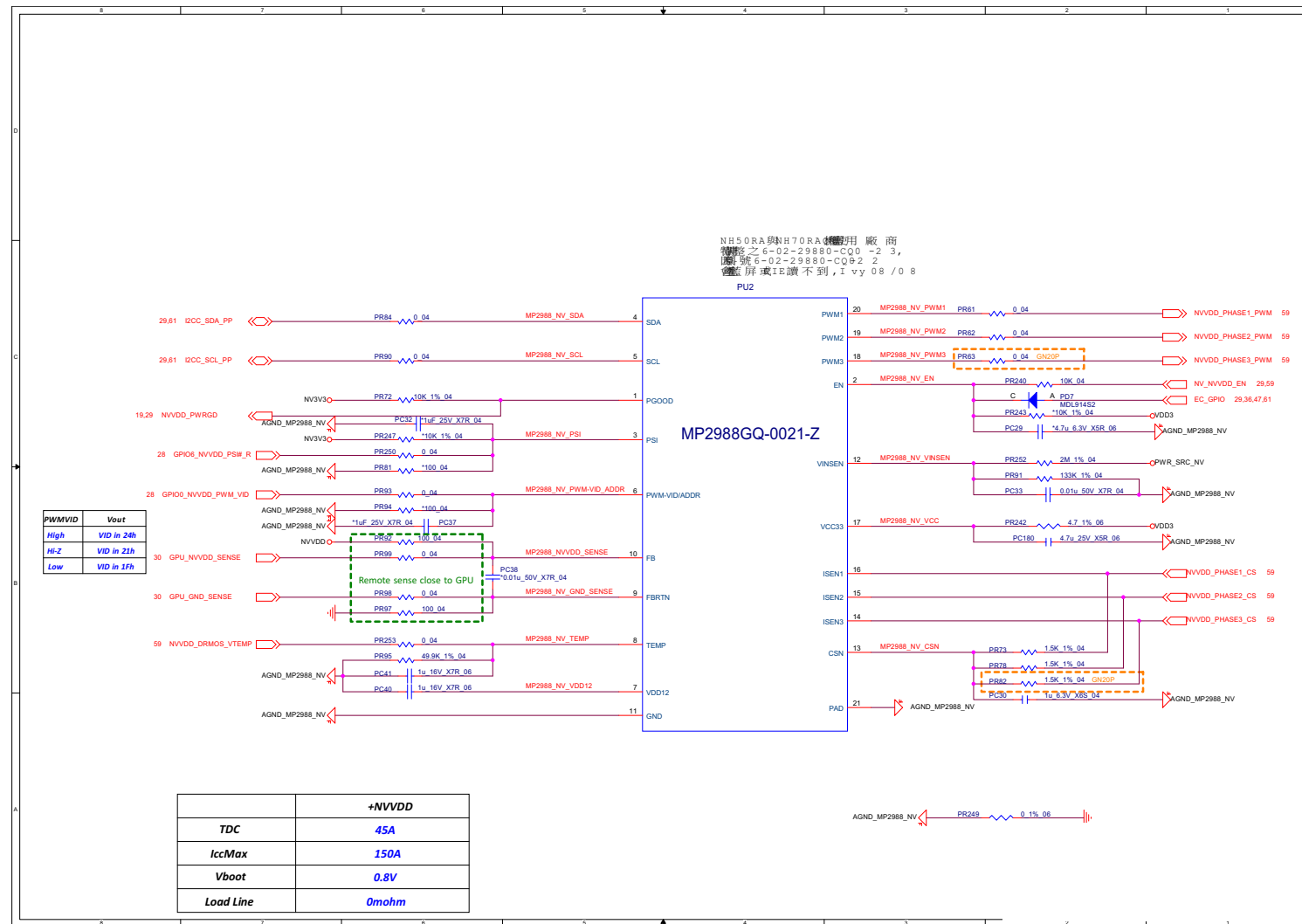


3.3VA, NV3V3



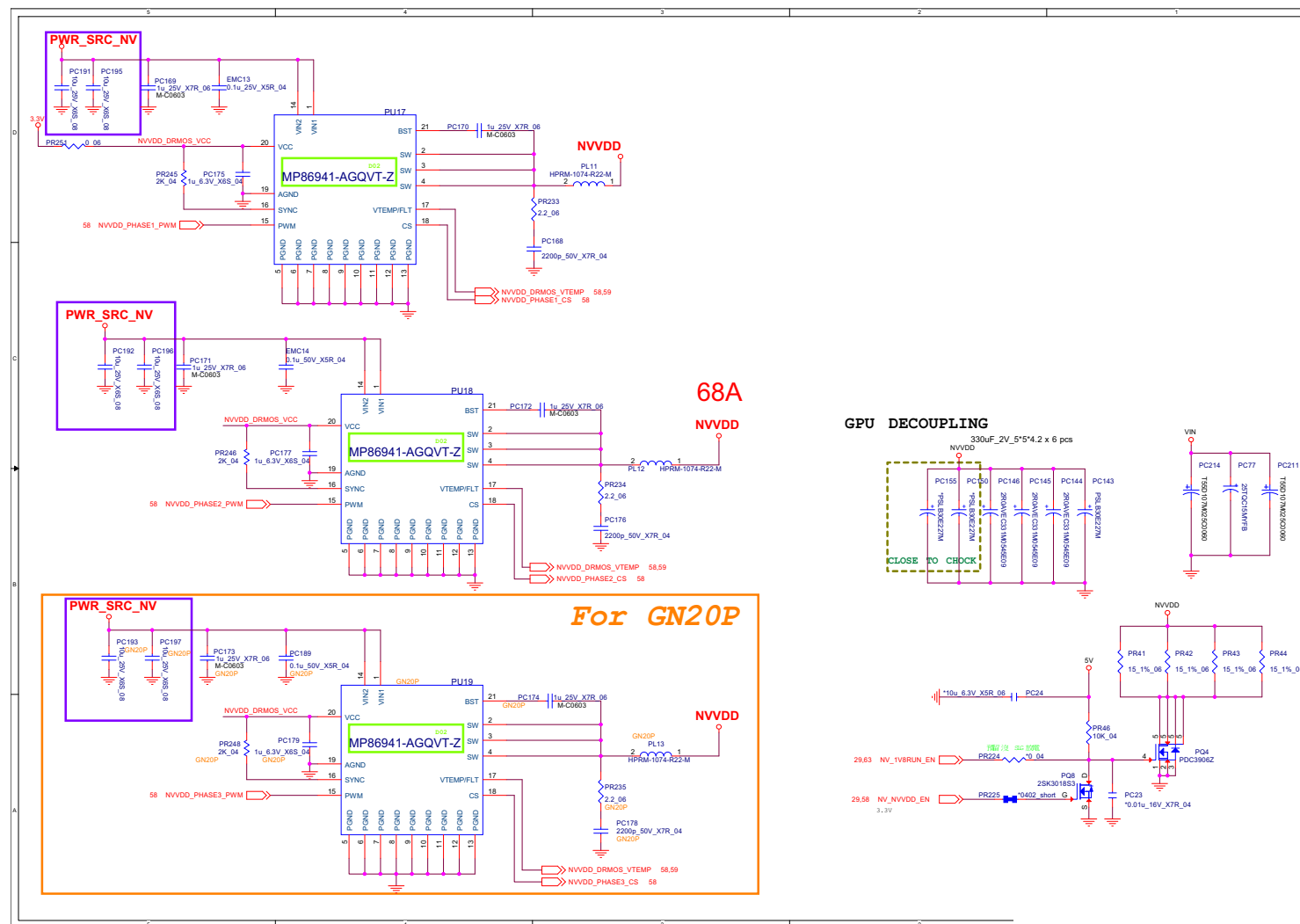
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3.3VA, NV3V3

NVVDD1

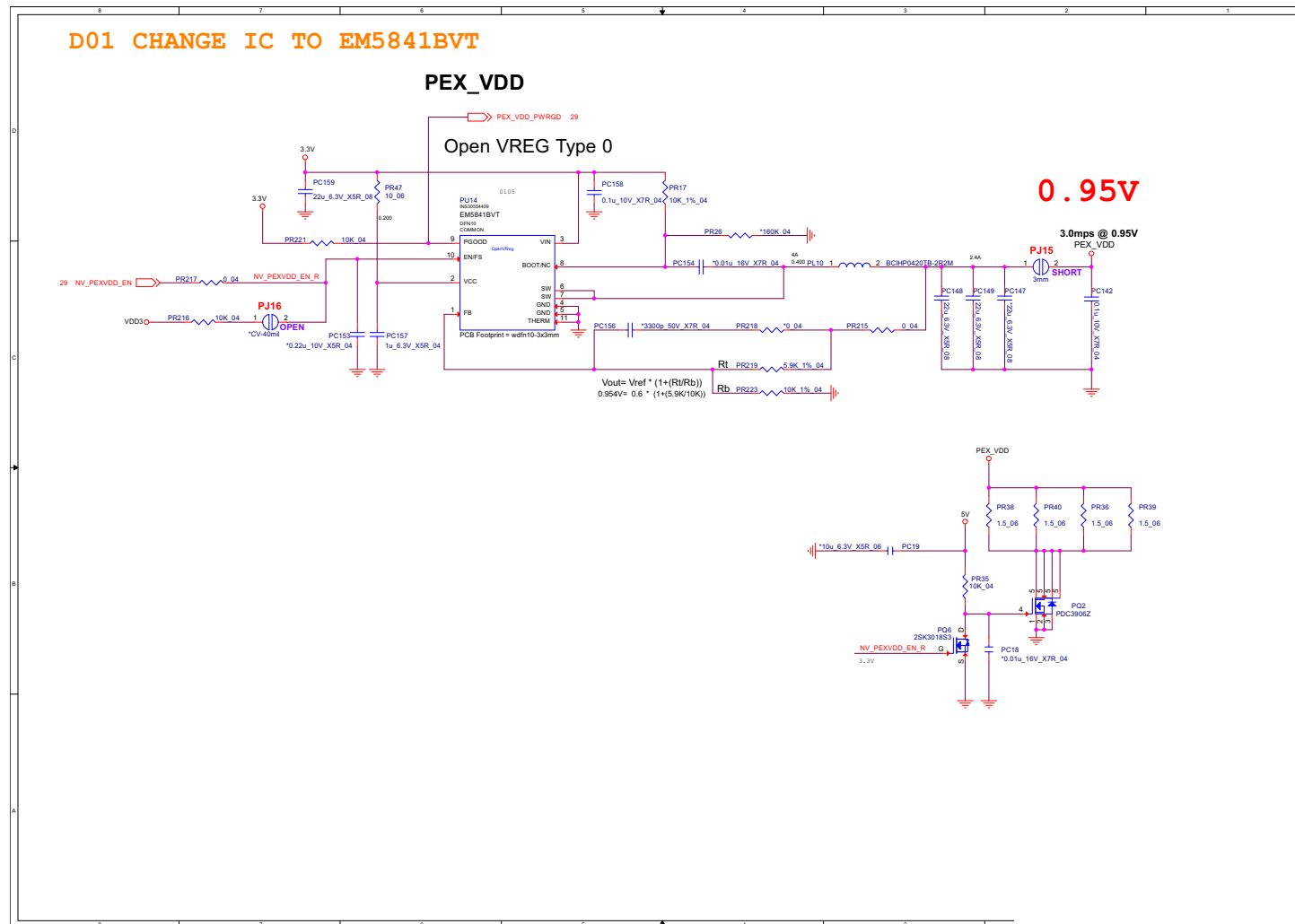
Sheet 58 of 63
NVVDD1

NVVDD2

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NVVDD2

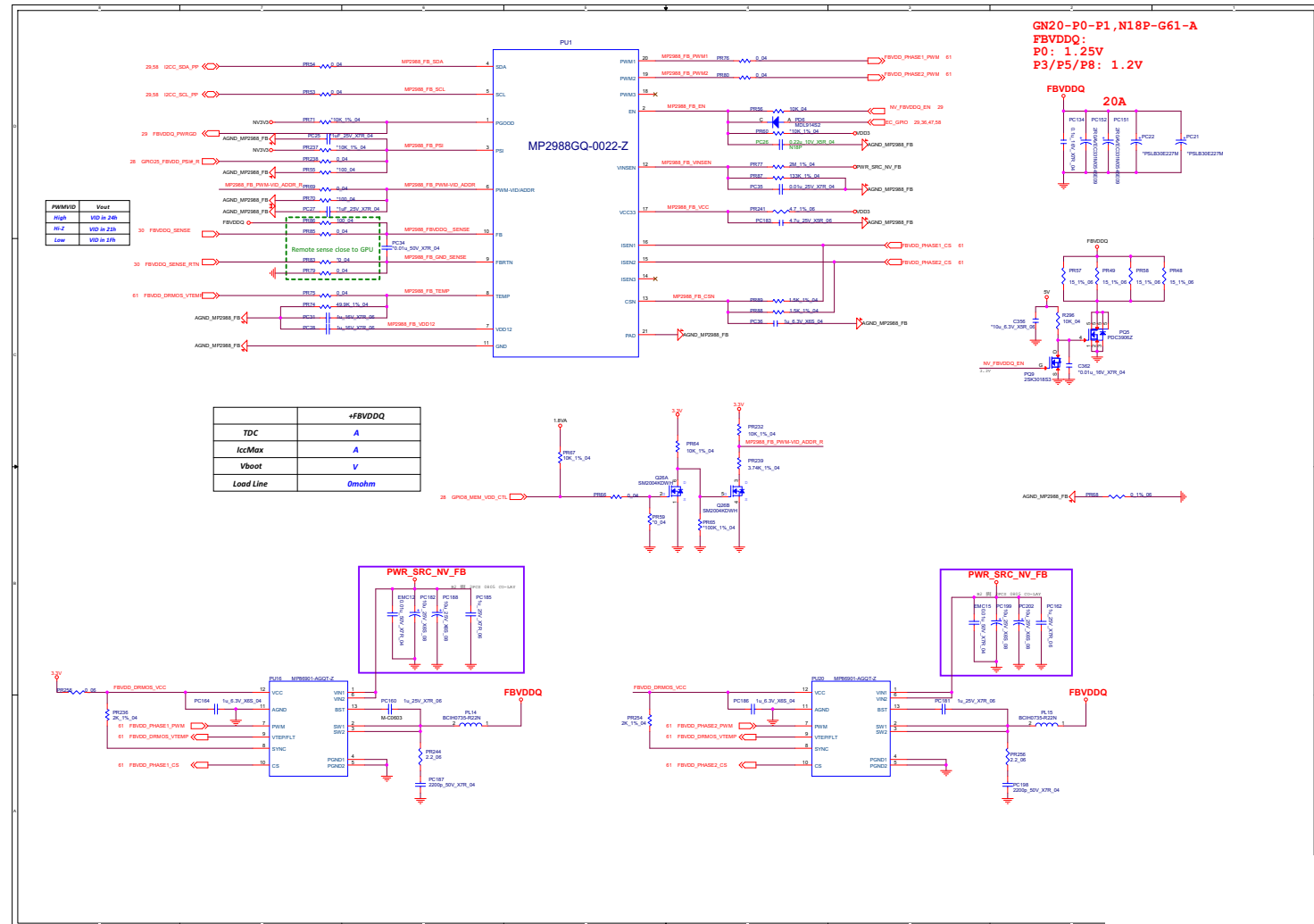


PEX_VDD B - 61

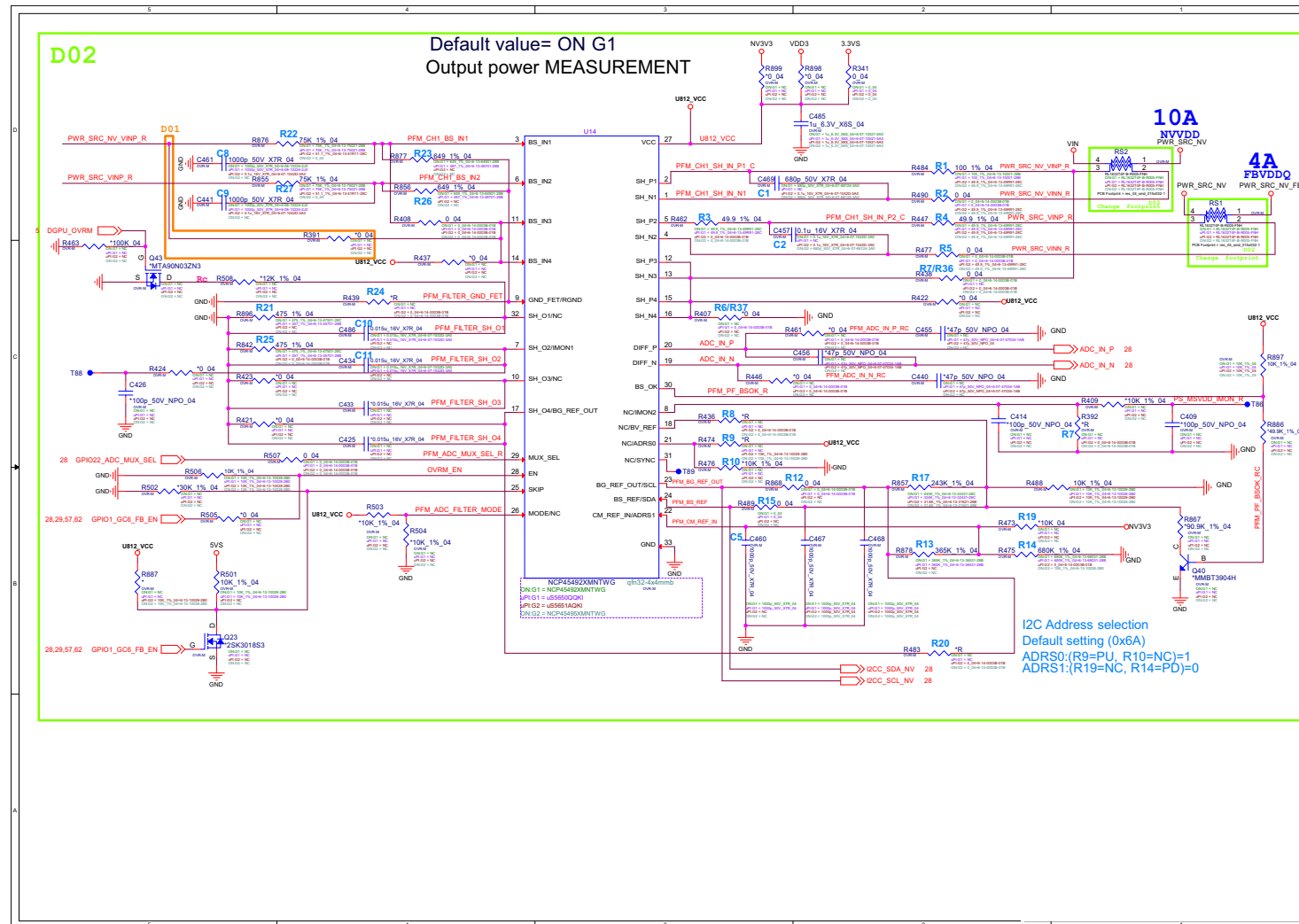


FBVDDQ

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FBVDDQ



OVR-M

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OVR-M

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1V8_AON/RUN

