

SERVICE MANUAL

notebook

**NP50HH / NP50HJ / NP50HK /
NP55HH / NP55HJ / NP55HK**



Notebook Computer

NP50HH / NP50HJ / NP50HK / NP55HH / NP55HJ / NP55HK

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 *NP50HH / NP50HJ / NP50HK / NP55HH / NP55HJ / NP55HK* series notebook PC.

The following information is included:

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

Appendix A, Part Lists

Appendix B, Schematic Diagrams

Preface

IMPORTANT SAFETY INSTRUCTIONS

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

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit as follows:
 - AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19.5V, 6.15A (**120W**) or 19.5V, 7.7A (**150W**) minimum AC/DC Adapter.

FCC Statement

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

This device may not cause harmful interference.

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

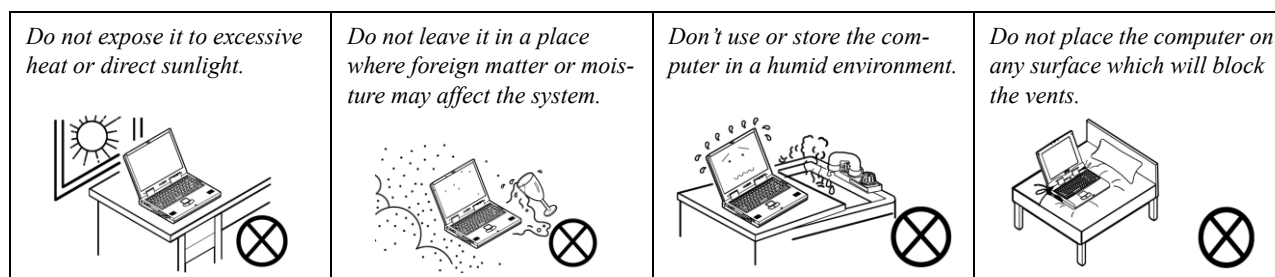
Instructions for Care and Operation

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

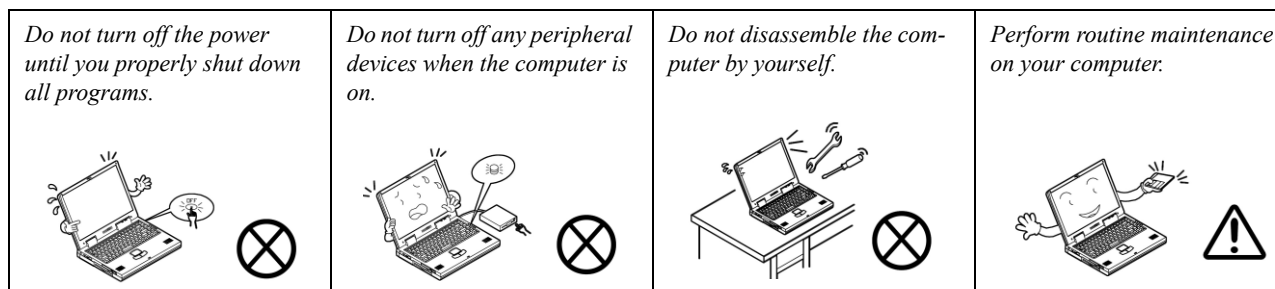
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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

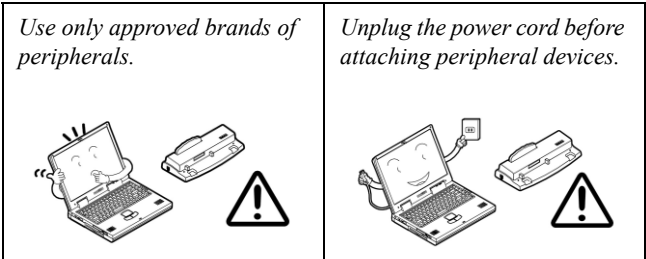


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

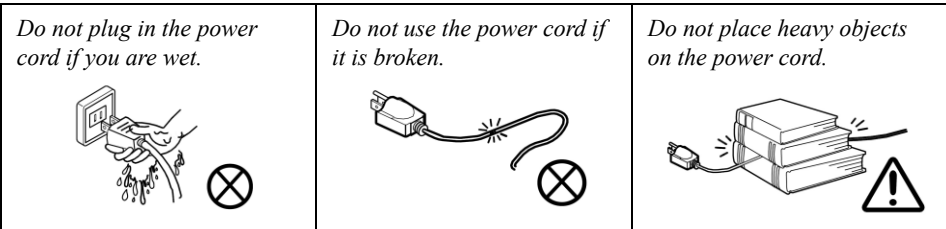
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



Power Safety

The computer has specific power requirements:

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



Power Safety Warning

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

Battery Precautions

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

Battery Guidelines

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

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



Battery Disposal

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

Caution

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

Battery Level

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

Preface

Related Documents

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

User's Manual on CD/DVD

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

System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
4. **When first setting up the computer use the following procedure** (as to safeguard the computer during shipping, the battery will be locked to not power the system until first connected to the AC/DC adapter and initially set up as below):
 - Attach the AC/DC adapter cord to the DC-In jack on the rear of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter. The battery will now be unlocked.
5. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 130 degrees); use the other hand (as illustrated in Figure 1) to support the base of the computer (**Note: Never** lift the computer by the lid/LCD).
6. Press the power button to turn the computer "on".

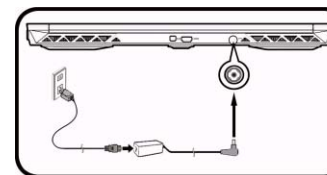
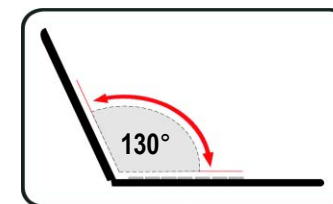
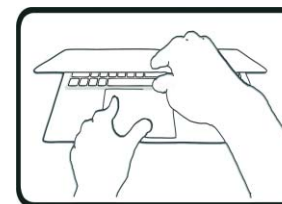


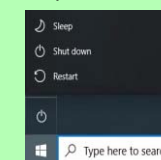
Figure 1
**Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In**



Shut Down

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

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



Contents

Introduction1-1

Overview	1-1
Specifications	1-2
External Locator - Top View with LCD Panel Open	1-4
External Locator - Front & Right Side Views	1-5
External Locator - Left Side & Rear View	1-6
External Locator - Bottom View	1-7
Mainboard Overview - Top (Key Parts)	1-8
Mainboard Overview - Bottom (Key Parts)	1-9
Mainboard Overview - Top (Connectors)	1-10
Mainboard Overview - Bottom (Connectors)	1-11

Disassembly2-1

Overview	2-1
Maintenance Tools	2-2
Connections	2-2
Maintenance Precautions	2-3
Disassembly Steps	2-4
Removing the Keyboard	2-5
Removing the Battery	2-6
Removing the M.2 SSD Module	2-8
Removing the Hard Disk Drive	2-9
Removing the System Memory (RAM)	2-11
Removing the Wireless LAN Module	2-12
Wireless LAN, Combo Module Cables	2-13
Installing the Touchpad	2-14

Part ListsA-1

Part List Illustration Location	A-2
Top (NP50HH / NP50HJ / NP50HK)	A-3
Top (NP55HH / NP55HJ / NP55HK)	A-4

Bottom	A-5
Main Board	A-6
HDD	A-7
LCD (NP50HH / NP50HJ / NP50HK)	A-8
LCD (NP55HH / NP55HJ / NP55HK)	A-9

Schematic Diagrams.....B-1

System Block Diagram	B-2
Processor 1/6	B-3
Processor 2/6	B-4
Processor 3/6	B-5
Processor 4/6	B-6
Processor 5/6	B-7
Processor 6/6	B-8
DDR4 CHA SO-DIMM_0	B-9
DDR4 CHB SO-DIMM_0	B-10
VGA PCI Express	B-11
GPU Frame Buffer Partition	B-12
Frame Buffer A	B-13
Frame Buffer A	B-14
Frame Buffer B	B-15
Frame Buffer B	B-16
VGA NVVDD Coupling	B-17
Straps and XTAL	B-18
IFP I/O Interface	B-19
Misc - GPIO, I2C and VBIOS	B-20
NVIDIA Power Sequence	B-21
GPU NVVDD, FBVDDQ	B-22
GPU GND	B-23
mDP	B-24
Panel, Inverter	B-25

Preface

HDMI	B-26	OVRM	B-58
PCH 1/7	B-27	Audio Board + Redriver	B-59
PCH 2/7	B-28	LED Board	B-60
PCH 3/7	B-29	Power SW Board	B-61
PCH 4/7	B-30	17" LED Board	B-62
PCH 5/7	B-31	Power Sequence	B-63
PCH 6/7	B-32		
PCH 7/7	B-33		
Audio Codec	B-34		
M.2 WLAN+BT, PCIE 4X SSD	B-35		
Type-C & A	B-36		
Card Reader RTS5227S RTD3	B-37		
LAN RTL8111H RTD3	B-38		
HDD, Click TP, Audio	B-39		
LED, CCD, TPM, Power SW Bd.	B-40		
KBC-ITE IT5570	B-41		
RGB KB	B-42		
VDD3, VDD5	B-43		
1V8_RUN/AON, NV3V3, 3.3VA	B-44		
3V, 5V, 3VS, 5VS	B-45		
1.8V, 1.8VS, 1.8VA, C10	B-46		
VCCST, VCCSTG	B-47		
VNN / V1.05	B-48		
VCCIN	B-49		
VCCIN Output	B-50		
AC_In, Charger	B-51		
VCCIN AUX	B-52		
DDR 1.2V / 0.6VS, 2.5V	B-53		
NVVDD1	B-54		
NVVDD2	B-55		
PEX_VDD	B-56		
FBVDDQ	B-57		

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **NP50HH / NP50HJ / NP50HK / NP55HH / NP55HJ / NP55HK** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in the *User's Manual*. The manual is shipped with the computer.

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

The **NP50HH / NP50HJ / NP50HK / NP55HH / NP55HJ / NP55HK** series notebook is designed to be upgradeable. See [Disassembly on page 2 - 1](#) for a detailed description of the upgrade procedures for each specific component. Please take note of the warning and safety information indicated by the “” symbol.

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

Introduction

Specifications



Latest Specification Information

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



CPU Speed & Computer in DC Mode

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

Processor Options

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

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

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

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

Core Logic

Intel® HM570 Express Chipset

LCD Options

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

BIOS

128Mb SPI Flash ROM

INSYDE BIOS

Memory

Dual Channel DDR4

Two 260 Pin SO-DIMM Sockets

Supporting up to **3200MHz DDR4** Memory

Memory Expandable up to **64GB**

Compatible with 8GB,16GB or 32GB Modules

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

Storage

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

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

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Intel® PTT for Systems Without TPM Hardware

(Factory Option) TPM 2.0

Video Adapter Options

Microsoft Hybrid Graphics Mode

Supports 3 Active Displays

Intel Integrated GPU

Intel® UHD Graphics

Dynamic Frequency

Intel Dynamic Video Memory Technology

Microsoft DirectX®12 Compatible

NVIDIA® Discrete GPU

NVIDIA® GeForce GTX 1650 (NP5xHH)

4GB GDDR6 Video RAM

Microsoft DirectX®12 Compatible

Supports PCIe x4

NVIDIA® GeForce RTX 3050 (NP5xHJ)

4GB GDDR6 Video RAM

Microsoft DirectX®12 Compatible

Supports PCIe x4

NVIDIA® GeForce RTX 3050 Ti (NP5xHK)

4GB GDDR6 Video RAM

Microsoft DirectX®12 Compatible

Supports PCIe x4

Pointing Device

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

Keyboard

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

Audio

High Definition Audio Compliant Interface
Sound Blaster Cinema 6
Built-In Array Microphone
Two Speakers

Card Reader

Embedded Multi-In-1 Push-Push Card Reader
MMC (MultiMedia Card)/RS MMC
SD (Secure Digital)/Mini SD/SDHC/ SDXC

M.2 Slots

Slot 1 for **Combo WLAN and Bluetooth** Module
Slot 2 for **SATA** or **PCIe Gen3 x4 SSD**

Interface

One USB 2.0 Port
Two USB 3.2 Gen 1 Type-A Ports
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 (USB 3.2).*
One Mini DisplayPort 1.4
One HDMI-Out Port
One Microphone-In Jack
One 2- In-1 Audio Jack (Headphone and Microphone)
One RJ-45 LAN Jack
One DC-In Jack

Communication

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

WLAN/ Bluetooth M.2 Modules:

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

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

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

Environmental Spec**Temperature**

Operating: 5°C - 35°C
Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%
Non-Operating: 10% - 90%

Power

Embedded 4 Cell Polymer Battery Pack, 49WH

Full Range AC/DC Adapter
AC Input: 100 - 240V, 50 - 60Hz
DC Output: 19.5V, 6.15A (**120W**)
Or
DC Output: 19.5V, 7.7A (**150W**)

Dimensions & Weight

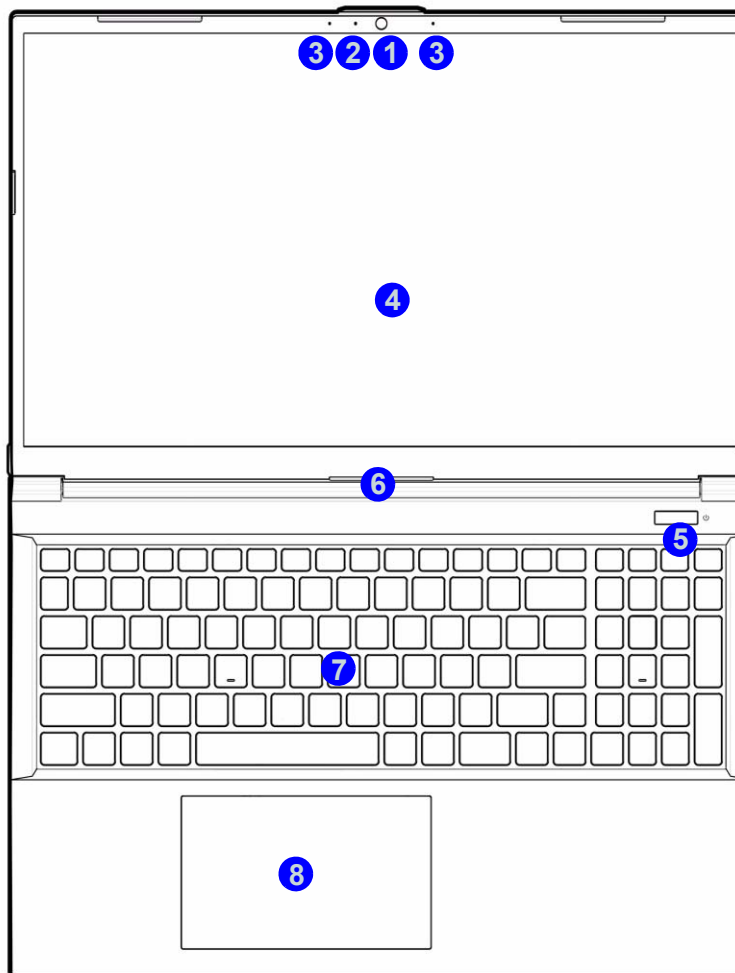
359.5mm (w) * 238mm (d) * 21.9mm (h)
1.89kg (Barebone with 49WH Battery)

Introduction

Figure 1
Top View

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

External Locator - Top View with LCD Panel Open

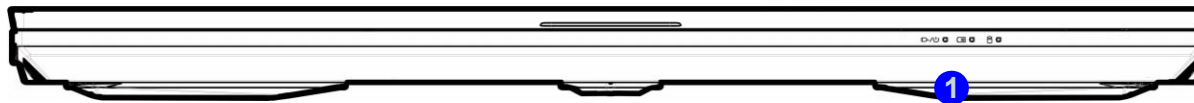


External Locator - Front & Right Side Views

Figure 2
Front View

1. LED Indicators

FRONT VIEW



RIGHT SIDE VIEW

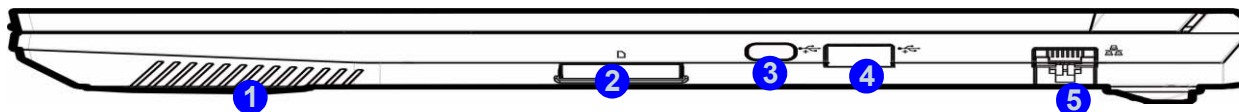


Figure 3
Right Side View

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

Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

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

LEFT SIDE VIEW

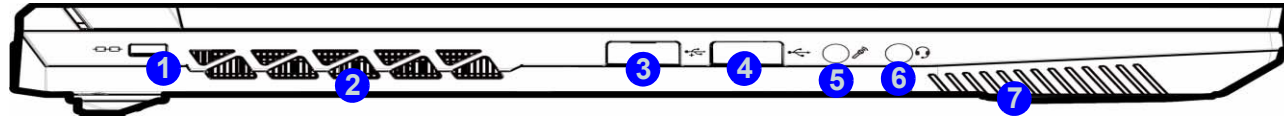
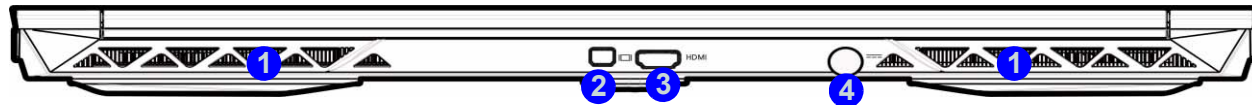


Figure 5
Rear View

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

REAR VIEW



External Locator - Bottom View

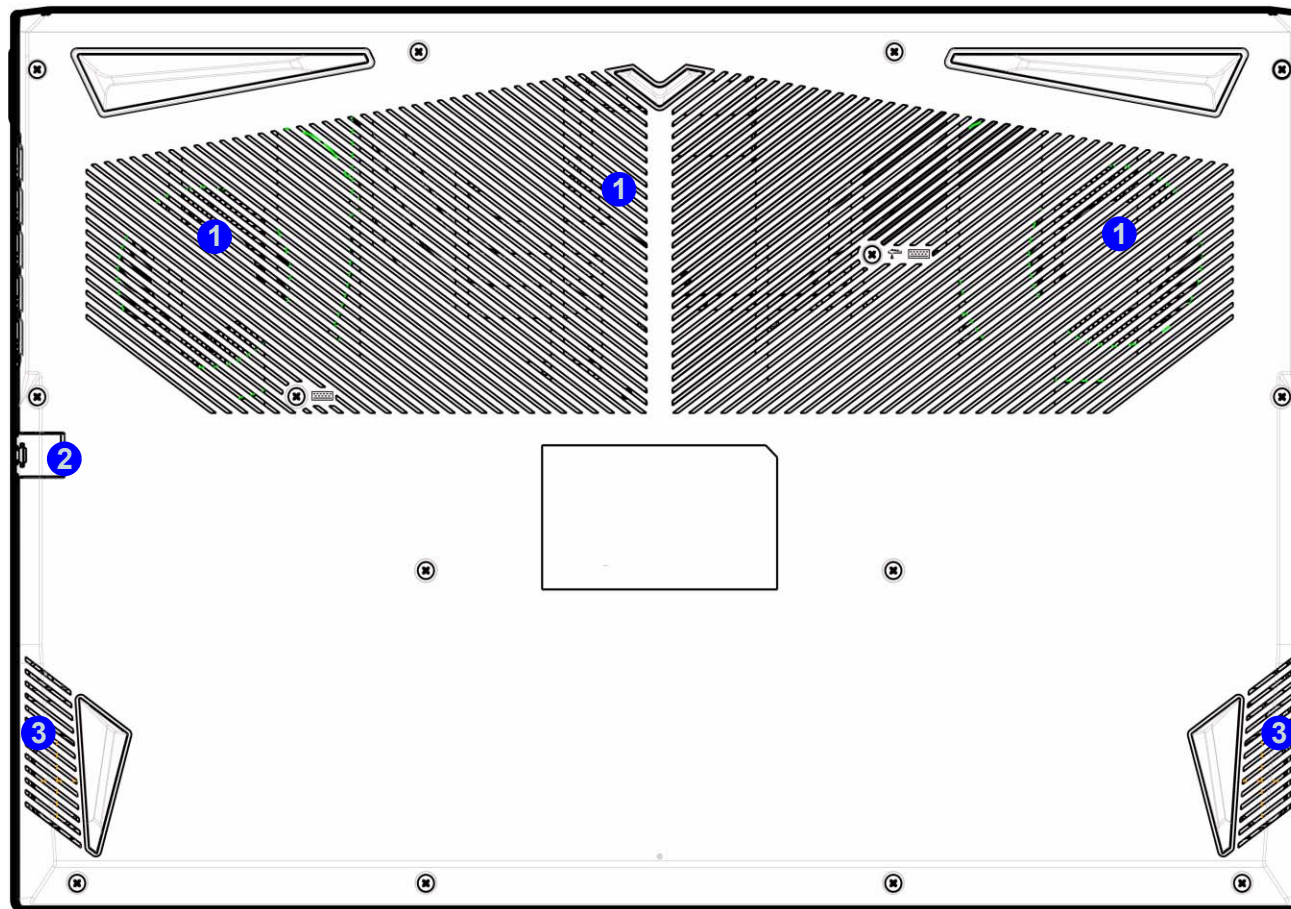


Figure 6
Bottom View

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

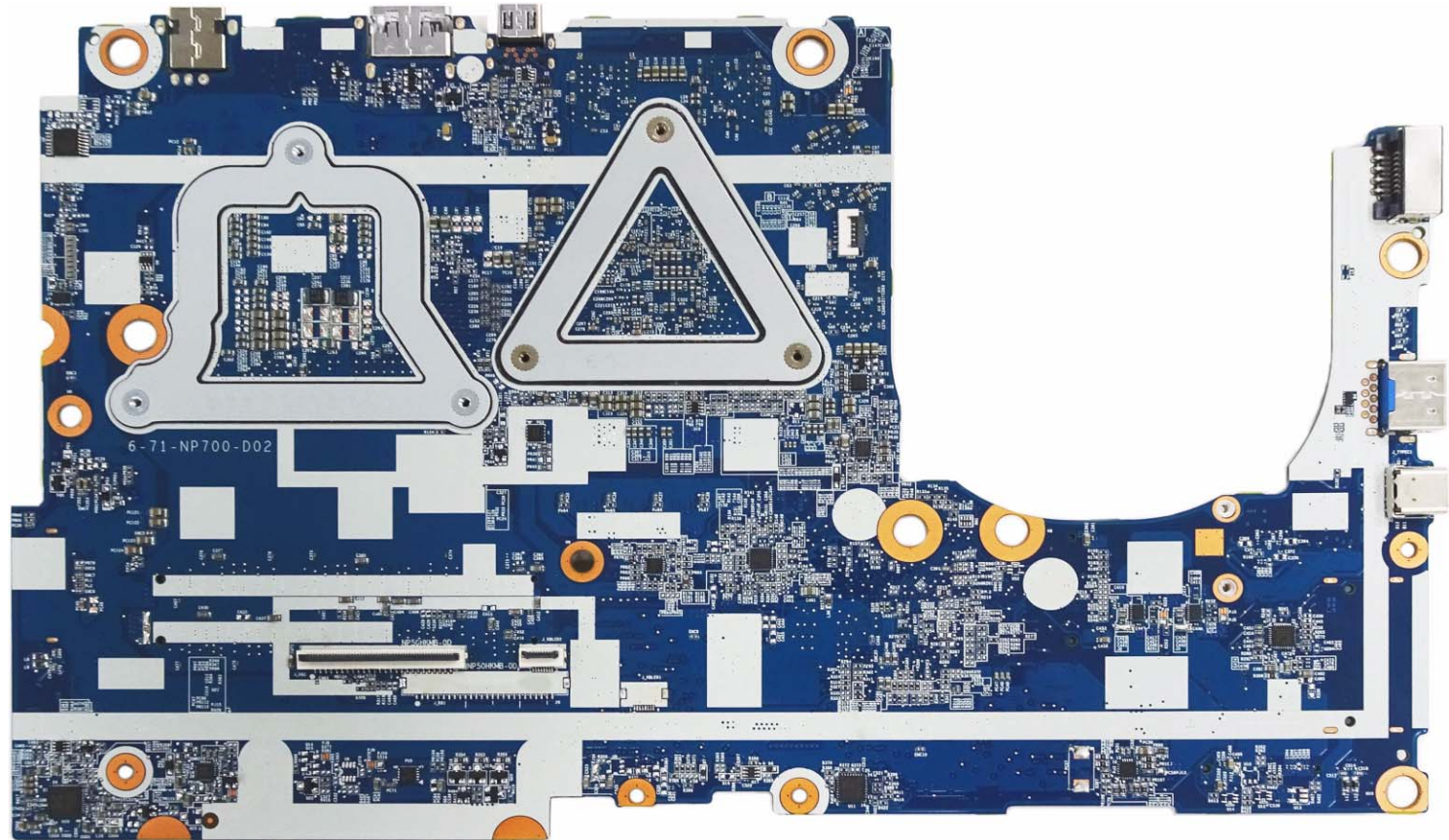


Overheating

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

Figure 7
Mainboard Top
Key Parts

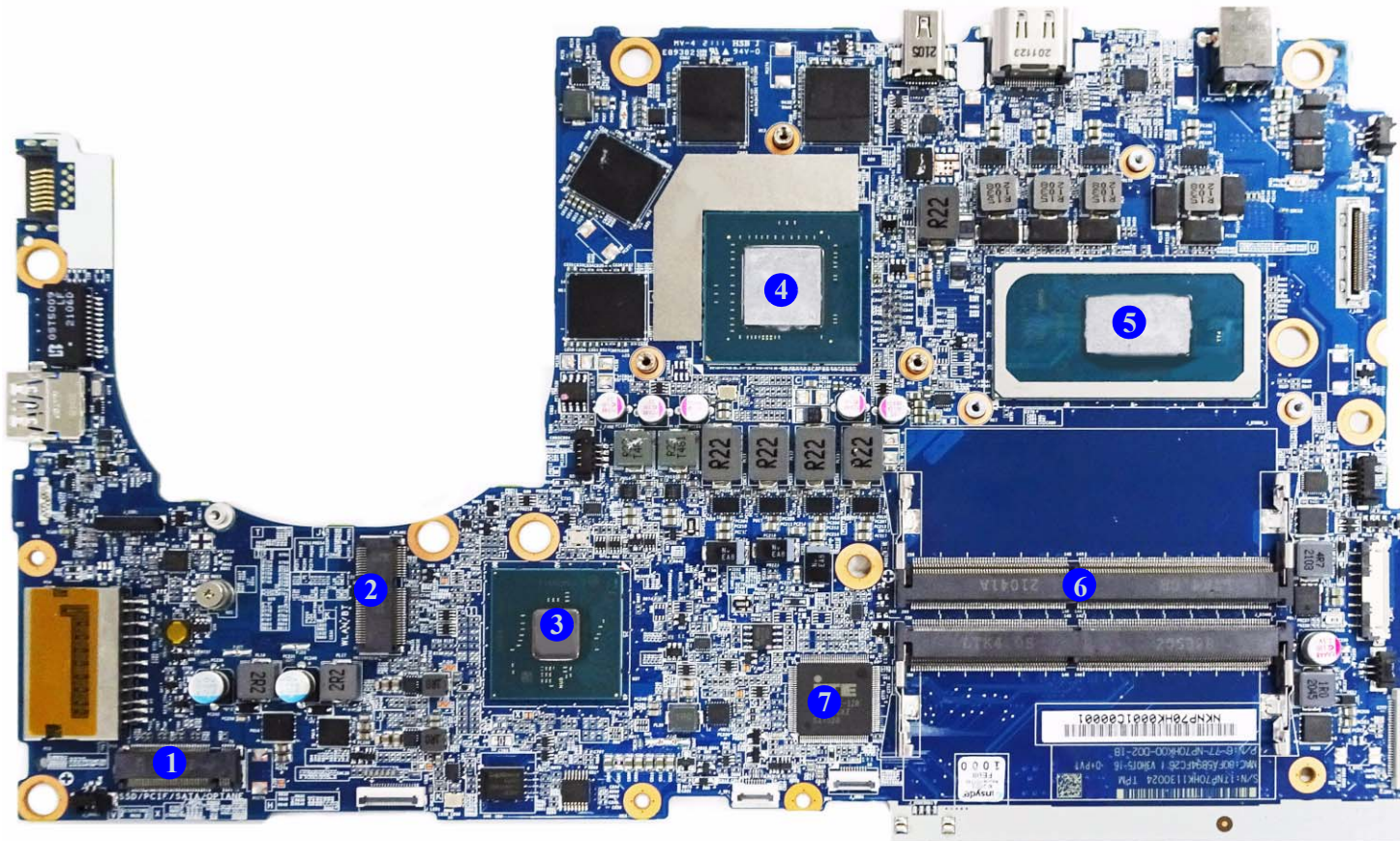
Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

Figure 8
**Mainboard Bottom
Key Parts**

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

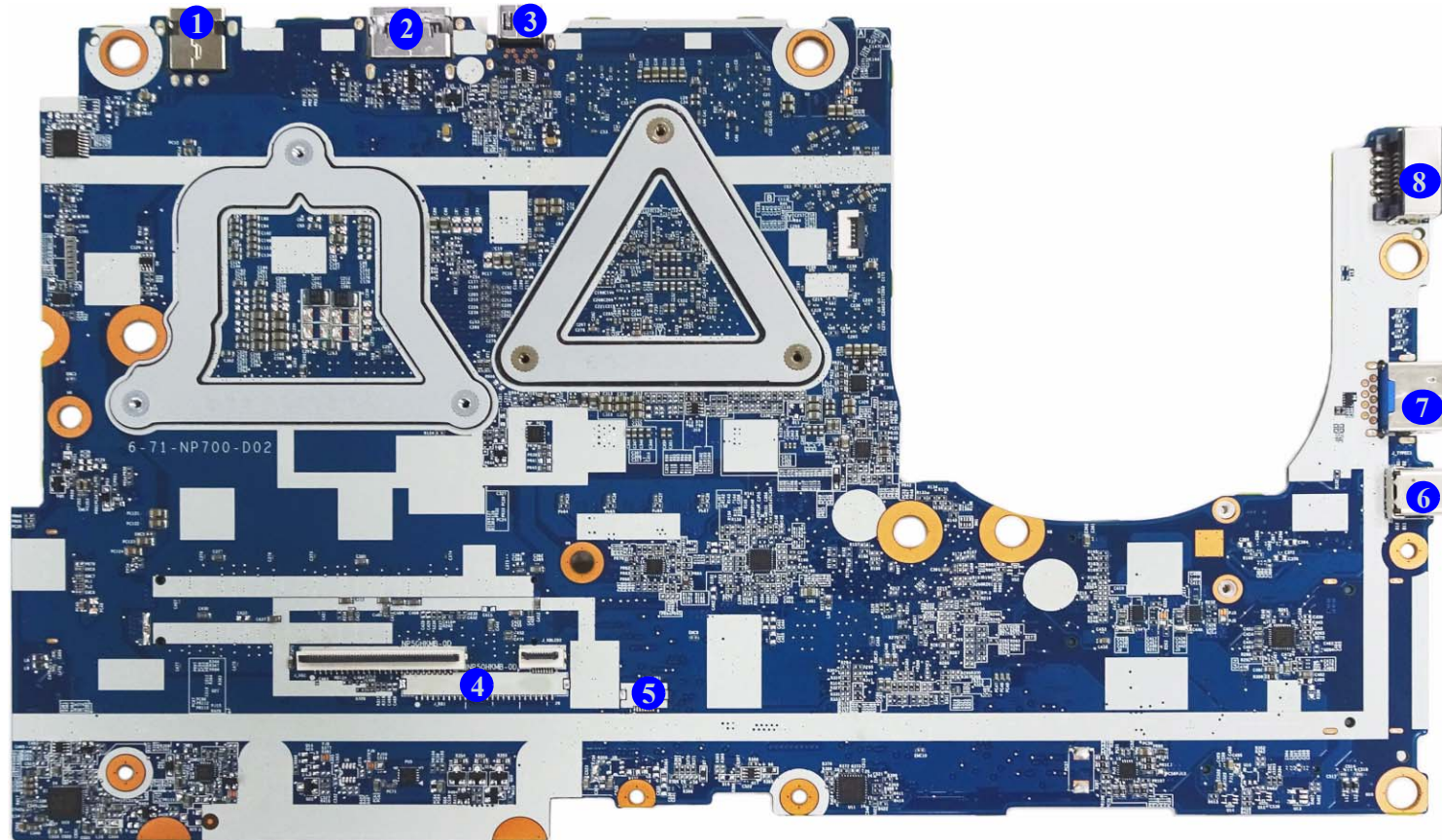


Introduction

Figure 9
**Mainboard Top
Connectors**

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

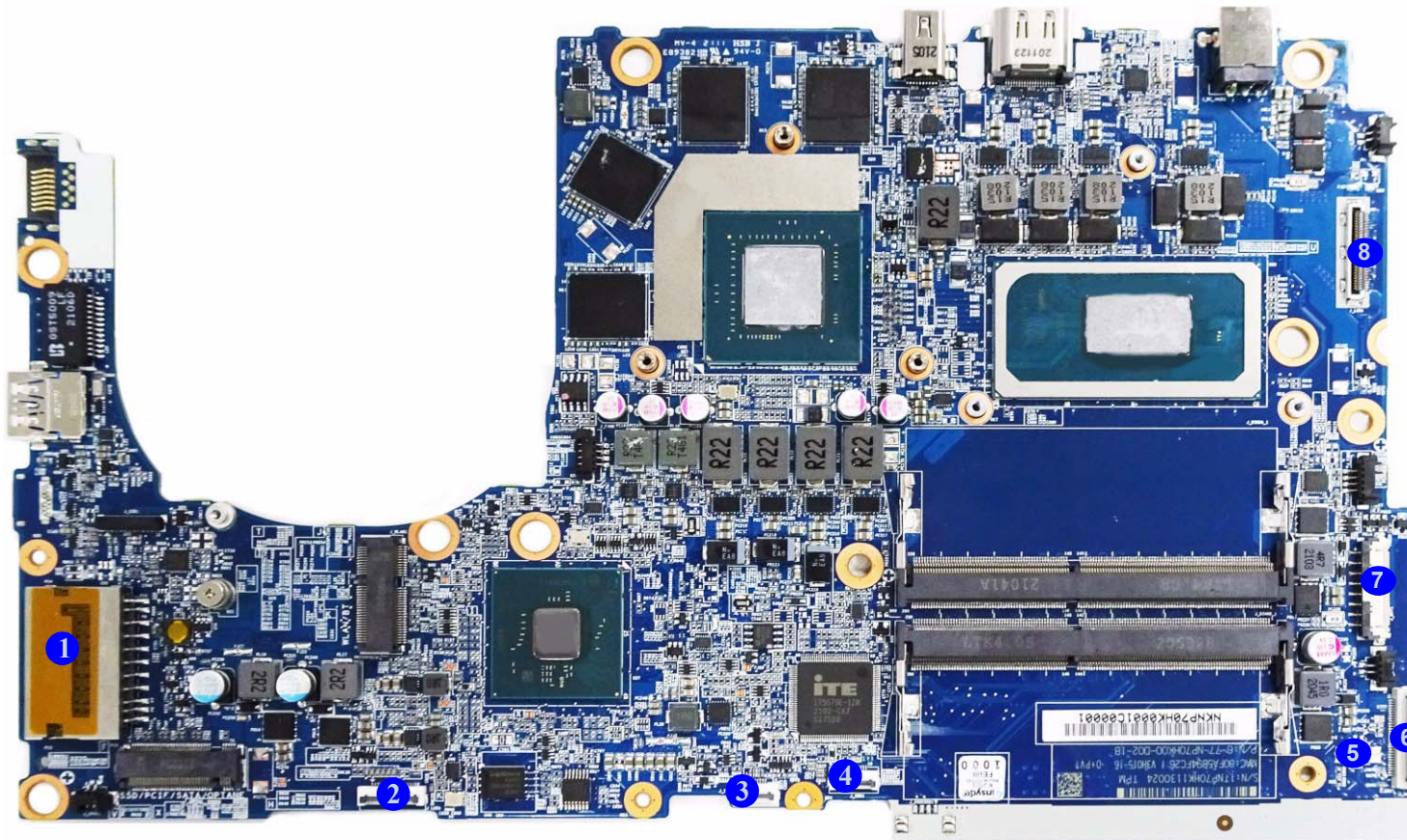
Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

Figure 10
**Mainboard Bottom
Connectors**

1. Multi-in-1 Card Reader
2. LED Connector
3. Clickpad Cable Connector
4. HDD Cable Connector
5. CMOS Battery Connector
6. Audio Connector
7. Battery Connector
8. LCD Connector



Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *NP50HH / NP50HJ / NP50HK / NP55HH / NP55HJ / NP55HK* 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.


Information

Warning

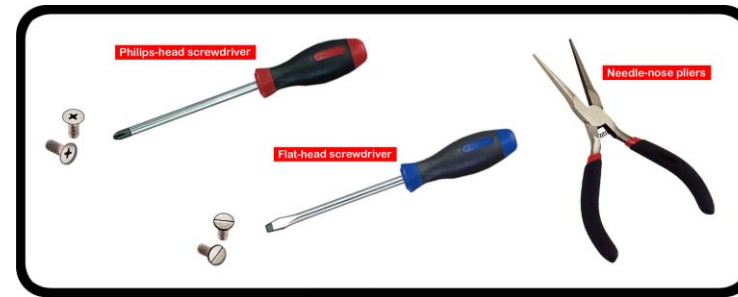
Disassembly

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 Keyboard:

1. Remove the keyboard *page 2 - 5*

To remove the Battery:

1. Remove the keyboard *page 2 - 5*
2. Remove the battery *page 2 - 6*

To remove the M.2 SSD:

1. Remove the keyboard *page 2 - 5*
2. Remove the battery *page 2 - 6*
3. Remove the M.2 SSD *page 2 - 8*

To remove the HDD:

1. Remove the keyboard *page 2 - 5*
2. Remove the battery *page 2 - 6*
3. Remove the HDD *page 2 - 9*

To remove the System Memory:

1. Remove the keyboard *page 2 - 5*
2. Remove the battery *page 2 - 6*
3. Remove the system memory *page 2 - 11*

To remove the Wireless LAN Module:

1. Remove the keyboard *page 2 - 5*
2. Remove the battery *page 2 - 6*
3. Remove the WLAN *page 2 - 12*

To install the Touchpad:

1. Install the touchpad *page 2 - 14*

Removing the Keyboard

1. Turn **off** the computer, turn it over.
2. Remove screws **1** - **2** from the bottom of the computer.
3. Open it up with the LCD on a flat surface before pressing at point **3** to release the keyboard module (use the special eject stick **4** to do this) while releasing the keyboard in the direction of the arrow **5** as shown (**Figure 1a**).
4. Carefully lift the keyboard **6** up, being careful not to bend the keyboard ribbon cable **7**. Disconnect the keyboard ribbon cable **7** from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins **8** away from the base (**Figure 1b**).
5. Carefully lift the keyboard **6** off the computer (**Figure 1c**).

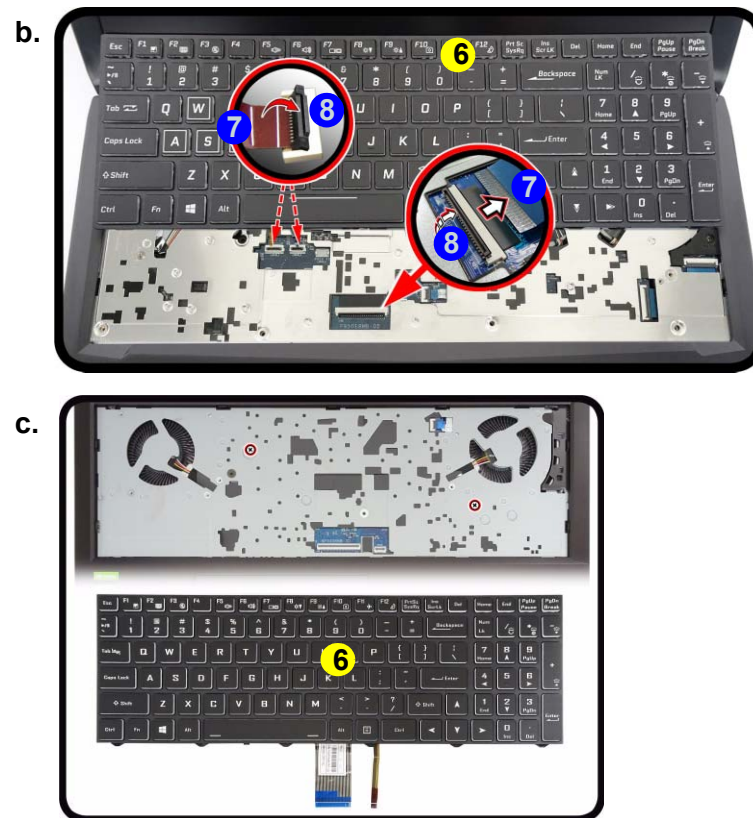
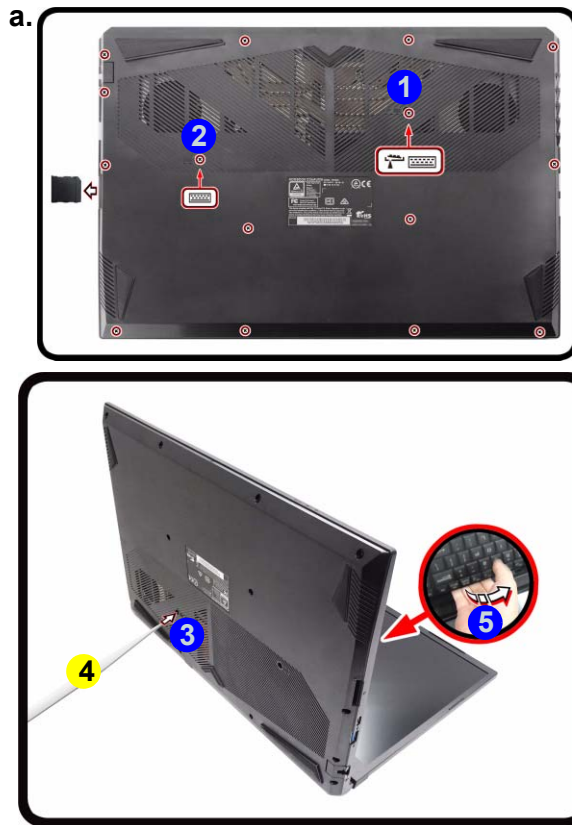


Figure 1
Keyboard Removal

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



Re-inserting the Keyboard

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



4. Eject Stick
6. Keyboard

- 2 Screws

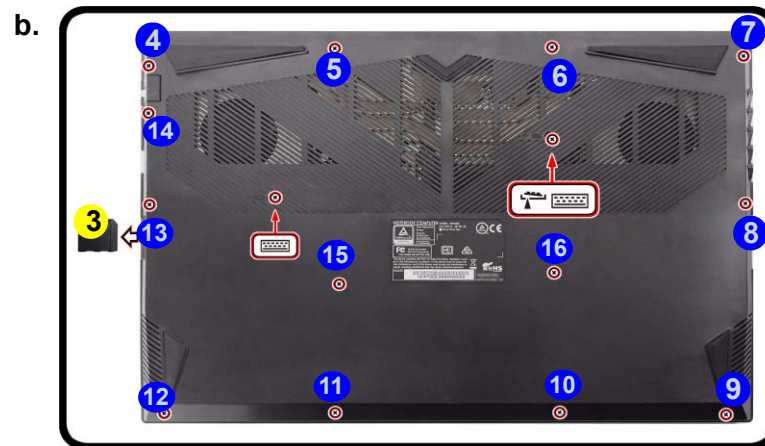
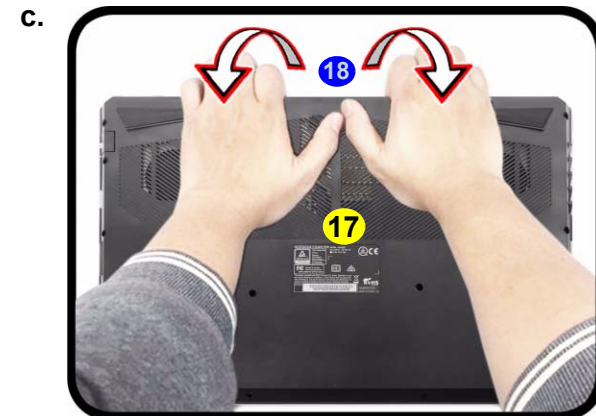
Disassembly

Figure 2
Battery Removal

- Remove the screws.
- Remove the SD cover and screws.
- Remove the bottom case.

Removing the Battery

- Turn the computer **off**, and remove the keyboard ([page 2 - 5](#)).
- Remove screws **1** - **2** ([Figure 2a](#)).
- Remove the SD card cover **3** and screws **4** - **16** ([Figure 2b](#)).
- Carefully lift the bottom case **17** up in the direction of the arrow at point **18** - **19** and remove it ([Figure 2c](#)).



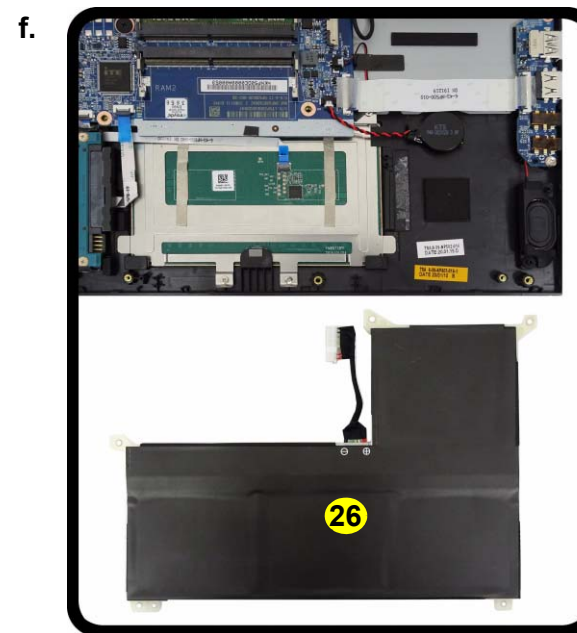
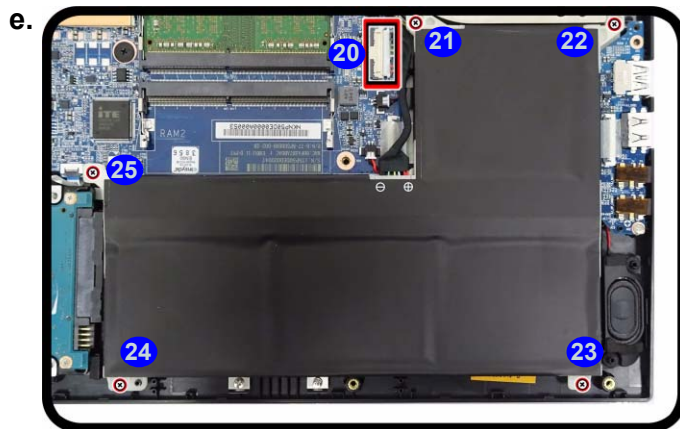
3. SD Card Cover
17. Bottom Case

- 15 Screws

5. The battery will be visible at point **19** on the computer (**Figure 3d**).
6. Carefully disconnect the cable **20**, then remove screws **21** - **25** (**Figure 3e**).
7. Lift the battery **26** off the computer (**Figure 3f**).
8. Reverse the process to install a new battery (do not forget to replace all the screws and bottom cover).

Figure 3
Battery Removal
(cont'd.)

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



26. Battery

- 5 Screws

Disassembly

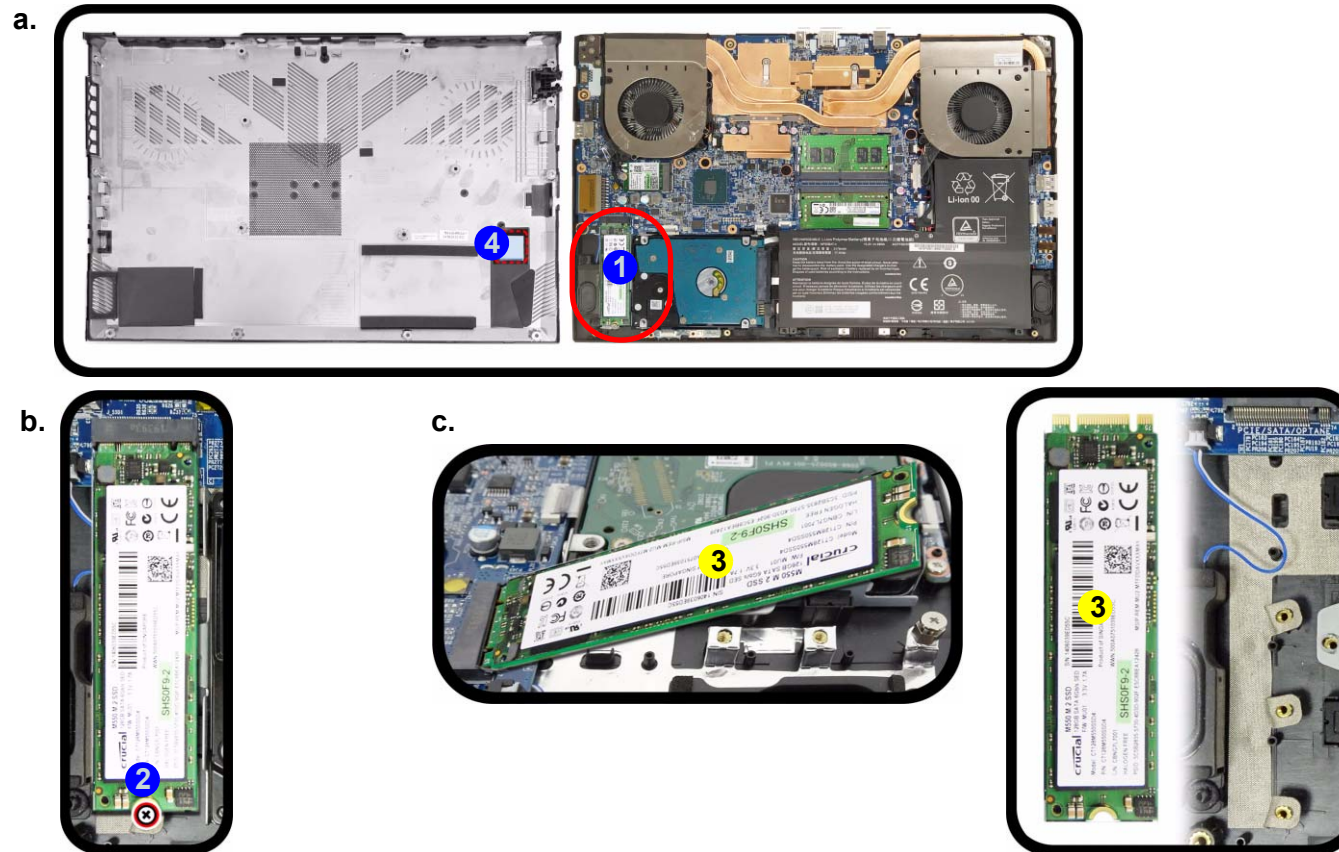
Figure 4
M.2 SSD Module Removal

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

Removing the M.2 SSD Module

M.2 SSD Removal Procedure

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



3.M2 SSD Module

- 1 Screw

Removing the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 7mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

Hard Disk Disassembly Process

1. Turn **off** the computer, and remove the battery ([page 2 - 6](#)) and SSD ([page 2 - 8](#)).
2. The HDD will be visible at point **1** on the mainboard ([Figure 5a](#)).
3. Remove screws **2** from the HDD assembly ([Figure 5b](#)).

a.



b.



Figure 5
HDD Assembly Removal

- a. Locate the HDD.
- b. Remove the screw.



HDD System Warning

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

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

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

If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.



6. Hard Disk

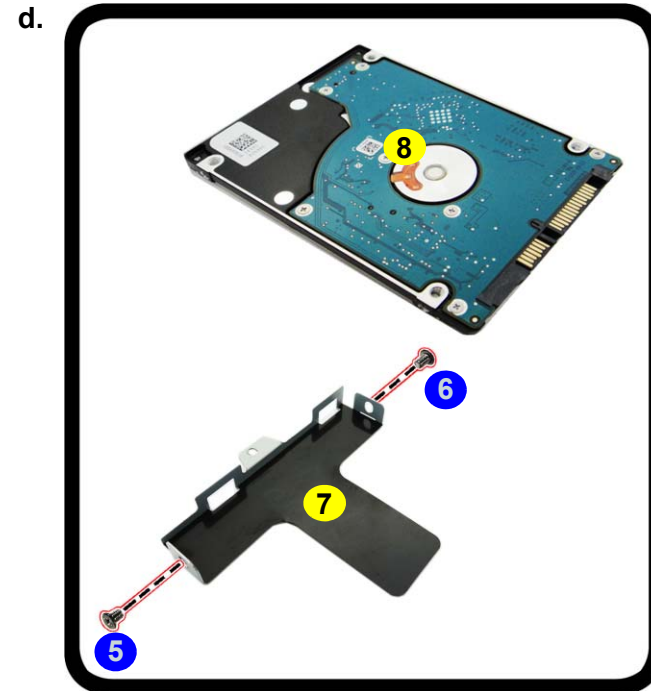
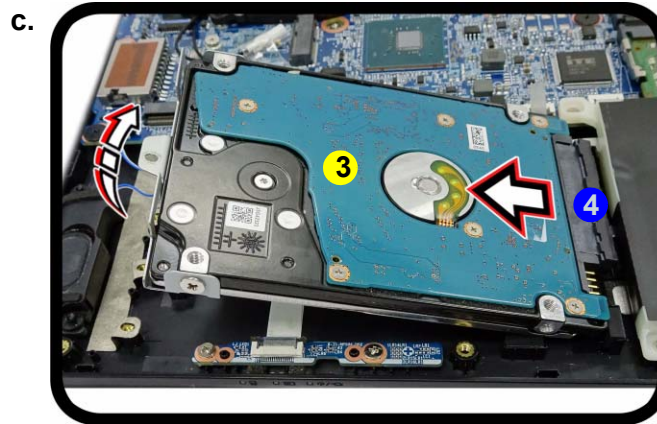
- 1 Screw

Disassembly

Figure 6
**HDD Assembly
Removal (cont'd.)**

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

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



- 3. HDD Assembly
- 7. HDD Bracket
- 8. HDD

- 2 Screws

Removing the System Memory (RAM)

The computer has four memory sockets for 260 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR4 Up to 3200 MHz. The main memory can be expanded up to 32GB. The total memory size is automatically detected by the POST routine once you turn on your computer.

Memory Upgrade Process

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 6](#)).
2. The RAM-2 modules will be visible at point **1** on the mainboard ([Figure 7a](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 7b](#)). The RAM module **4** will pop-up ([Figure 7c](#)), and you can then remove it.
4. Pull the latches to release the second module if necessary.
5. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
6. The module will only fit one way as defined by its pin alignment. Make sure the module is seated as far into the slot as it will go. **DO NOT FORCE IT**; it should fit without much pressure.
7. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
8. Replace the bottom cover and the screws (see [page 2 - 6](#)).
9. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

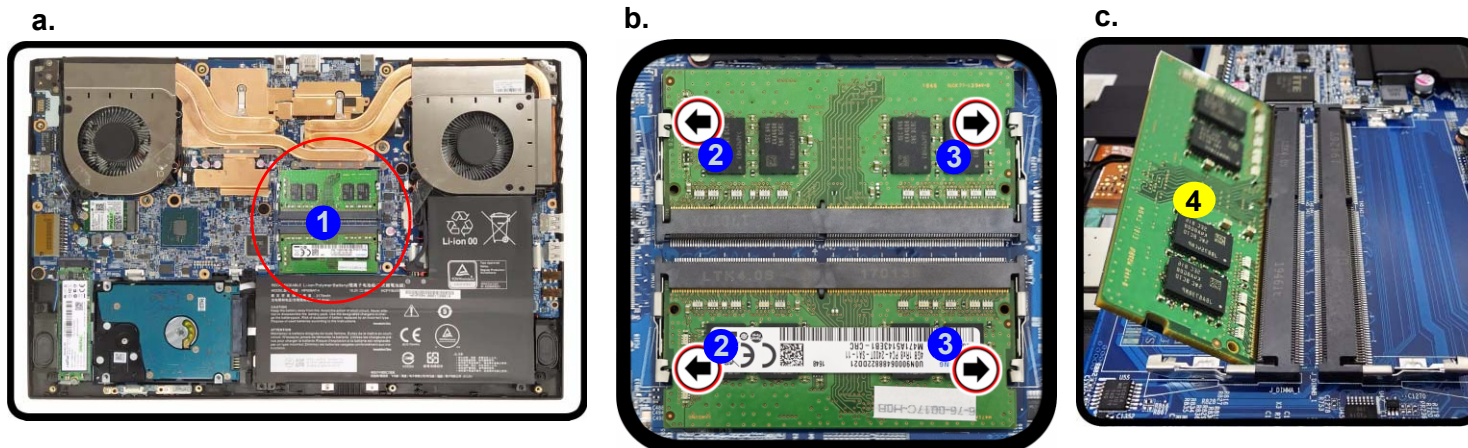


Figure 7
RAM Module Removal

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



Contact Warning

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



4. RAM Module

Disassembly

Figure 8
**Wireless LAN
Module Removal**

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

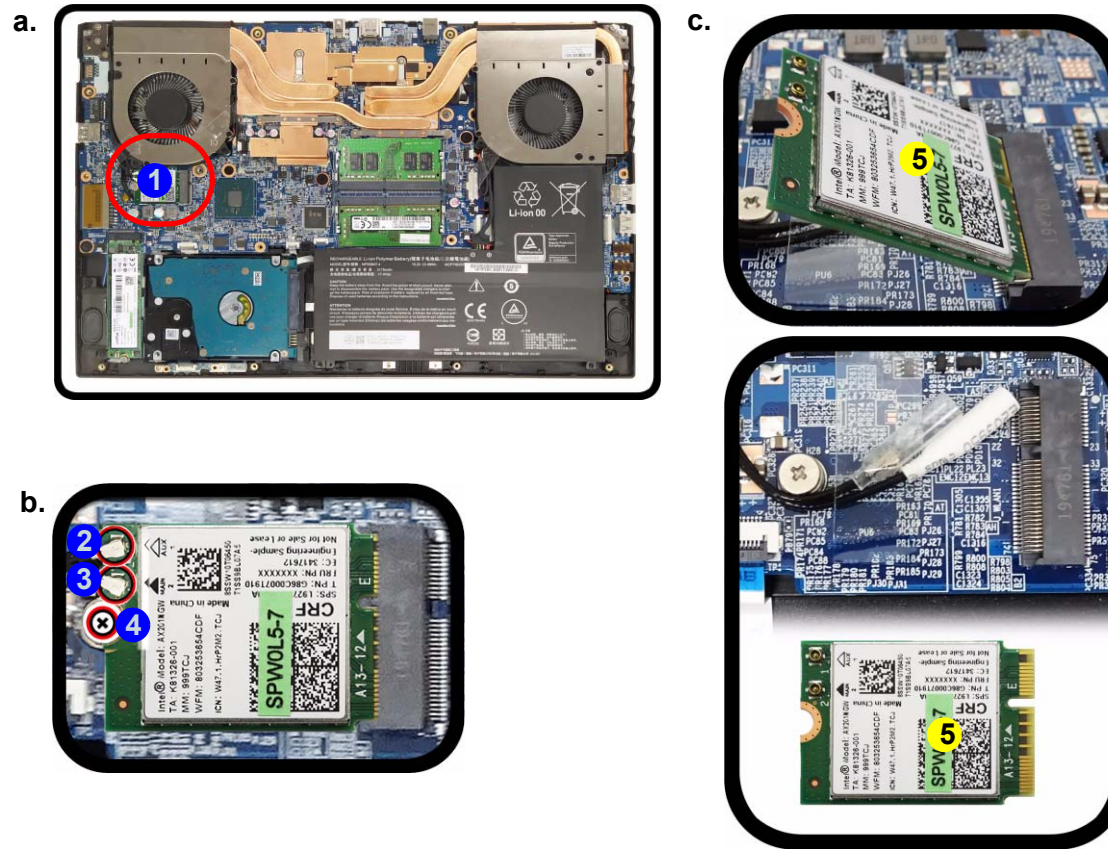
Note: Make sure you reconnect the antenna cable to the “1 + 2” socket (*Figure 8b*).

5. Wireless LAN Module

- 1 Screw

Removing the Wireless LAN Module

- Turn **off** the computer, turn it over, remove the battery (*page 2 - 6*).
- The Wireless LAN module will be visible at point **1** on the mainboard (*Figure 8a*).
- Carefully disconnect the cables **2** & **3**, and then remove the screw **4** (*Figure 8b*).
- The Wireless LAN module **5** (*Figure 8c*) will pop-up, and you can remove it from the computer.



Wireless LAN, Combo Module Cables

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

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

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

Disassembly

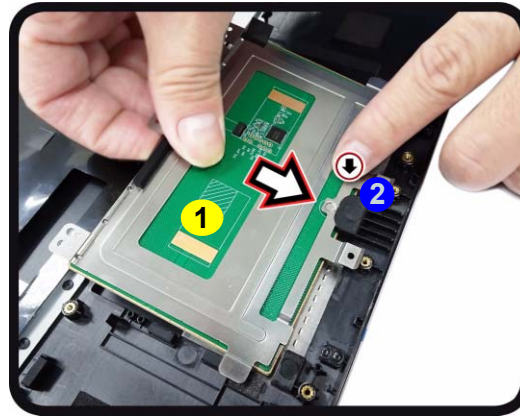
Figure 9
**Touchpad
Installation**

- a. Insert the touchpad assembly as shown.
- b. Tighten the screws and connect the cable connector.

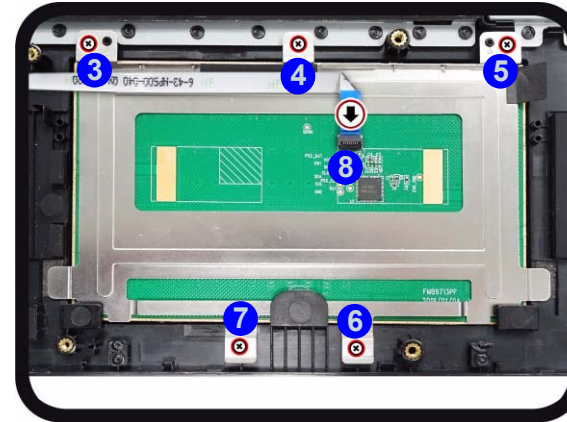
Installing the Touchpad

1. Insert the touchpad assembly **1** by carefully sliding the board attention while pushing it down **2** as shown (*Figure 9a*).
2. Tighten the screws **3** - **7** (*Figure 9b*).
3. Connect and lock the cable connector **8** in place (*Figure 9b*).

a.



b.



1. Touchpad Assembly

- 5 Screws

Appendix A:Part Lists

This appendix breaks down the *NP50HH/ NP50HJ/ NP50HK/ NP55HH/ NP55HJ/ NP55HK* 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.

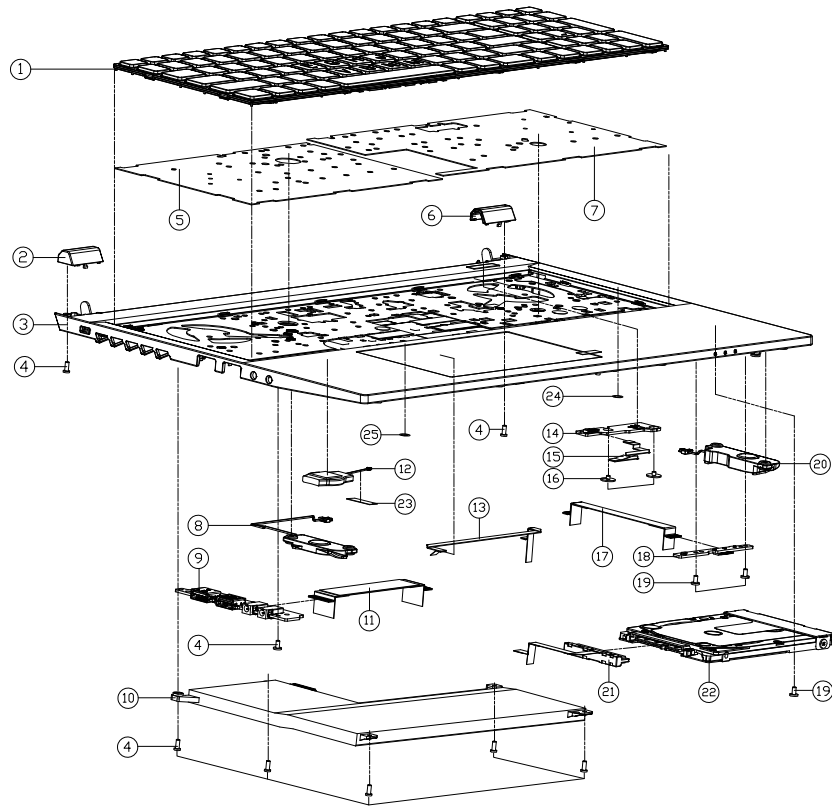
Part List Illustration Location

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

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

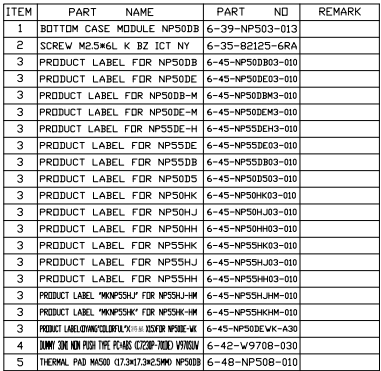
Part	NP50HH / NP50HJ / NP50HK	NP55HH / NP55HJ / NP55HK
Top	<i>page A - 3</i>	<i>page A - 4</i>
Bottom	<i>page A - 5</i>	
Main Board	<i>page A - 6</i>	
HDD	<i>page A - 7</i>	
LCD	<i>page A - 8</i>	<i>page A - 9</i>

Top (NP50HH / NP50HJ / NP50HK)



ITEM	PART NAME	PART NO	REMARK
1	KB FOR NON BL KB US SERIES NP50D5	6-NP50D5-KB-NBL-US	KB FOR NON BL KB SERIES
1	KB FOR MULTI 15C BL KB US SERIES NL50CU	6-NL50CU-KB-MCL-US	KB FOR MULTI 15C BL KB SERIES
1	IL-10 JAPANESE COMPRESSION KNOB BLACK VITE 210V LONG-PINNING ISOLATION WITH VARIO KEY CODES (FOR MCJ)	6-80-N15Z0-21D-1M	KB FOR MCJ
1	IL-10 JAPANESE COMPRESSION KNOB BLACK VITE 210V LONG-PINNING ISOLATION WITH VARIO KEY CODES (FOR MCJ)	6-80-N15Z0-21D-1M	KB FOR MCJ
2	HINGE COVER L FOR TOP (COVESTRO FR300B+) NP50DB	6-42-NP502-052	
3	<PRE-PROCESS> TOP CASE MODULE NP50HK	6-78-NP50HK02-010	
4	SCREW M2*SL K1CT-0.8 D=3.5 BK/Z ICT NY	6-35-B6120-5RC	
5	W/O BL KB MYLAR L (PET+3M-7533X 152X540X0.43T) NP70HP	6-40-NP7H2-040	
6	HINGE COVER R FOR TOP (COVESTRO FR300B+) NP50DB	6-42-NP502-042	
7	W/O BL KB MYLAR R (PET+3M-7533X178X540X0.43T) NP70HP	6-40-NP7H2-030	
8	SPK+CABLE L L44*23 2W 4? L50MM VTS251410-03 NL50CU	6-23-5NL5C-0L0	
9	AUDIO BOARD W/REDRIVER V2.0 NP70HK	6-77-NP708-D02	
10	IMP S L1152V/220V/40W 40P 300V/100V 0.4M/200 15A/1000V/100V 100V/1000V	6-87-NP50S-43G01	
11	IMP S L1152V/220V/40W 40P 300V/100V 0.4M/200 15A/1000V/100V 100V/1000V	6-87-NP50S-41B12	
11	FFC CABLE AUDIO TO MB L=90MM 60V 30PIN (GX) NP50DB	6-43-NP500-011	
12	BAT. 20MM 3V 220MAH W/CABLE 55MM BCR2020H55VMM0UB (SHIMANO)	6-23-22015-TE0	
13	FFC CABLE TP TO MB L=122MM 60V 8PIN (GX) NP50DB	6-43-NP500-041	
14	POWER SWITCH BOARD V2.0 NP70HK	6-77-NP70S-D02	
15	FFC CABLE POWER TO MB L=70MM 60V 4PIN (GX) NP50DB	6-43-NP500-021	
16	SCREW M2*2L K1 BK/Z ICT NY (Ø8,T=0.6)	6-35-B6120-2RE	
17	FFC CABLE HALL TO MB L=92MM 60V 16PIN (GX) NP50DB	6-43-NP500-031	
18	LED BOARD V2.0 NP50HK	6-77-NP504-D12	
19	SCREW M2*4L K1 NL ICT NY (ØD=04.5,DT=0.8)	6-35-B1120-4RC	
20	SPK+CABLE R L44*23 2W 4? L50MM VTS251410-04 NL50CU	6-23-5NL5C-0R0	
21	HDD CONICB-C0620000006+PCB+W/CABLE+DATE CODE 0FC CABLE 66.0MM NP50DB	6-23-FNP50-012	
22	W/O HDD ASS'Y NP50DB	6-79-NP50DB0J-010	
22	W/HDD ASS'Y NP50DB	6-79-NP50DB0J-020	
23	TOP CASE MYLAR FRB3 25*7*0.05 P180HH	6-40-P1802-030	
24	WASHER Ø6*Ø3*0.3t (MYLAR)	6-37-02000-601	
25	WASHER Ø6*Ø3*0.6t (MYLAR) FOR 3X/3C LCD/HYU/HT14X12	6-37-02000-603	

Figure A - 1
Top (NP50HH /
NP50HJ / NP50HK)



A.Part Lists

A.Part Lists

[illegible]

HDD

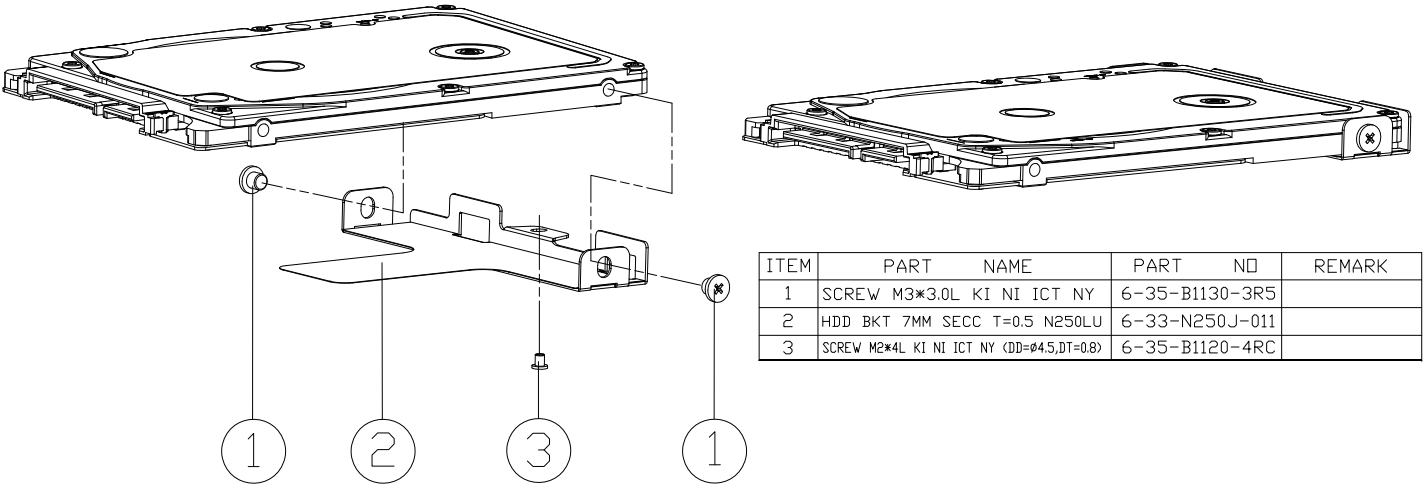
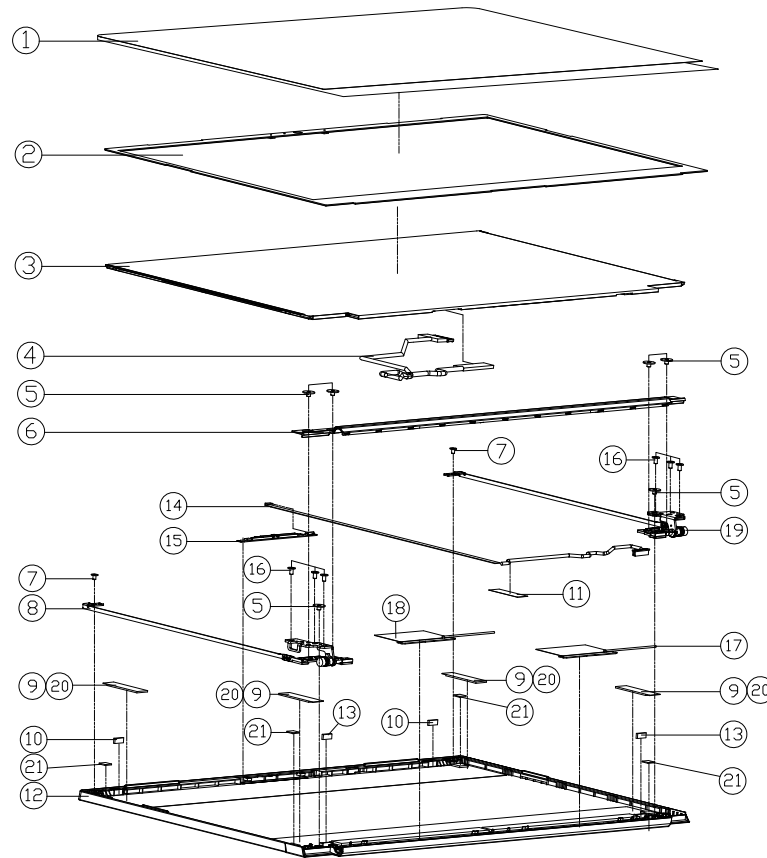


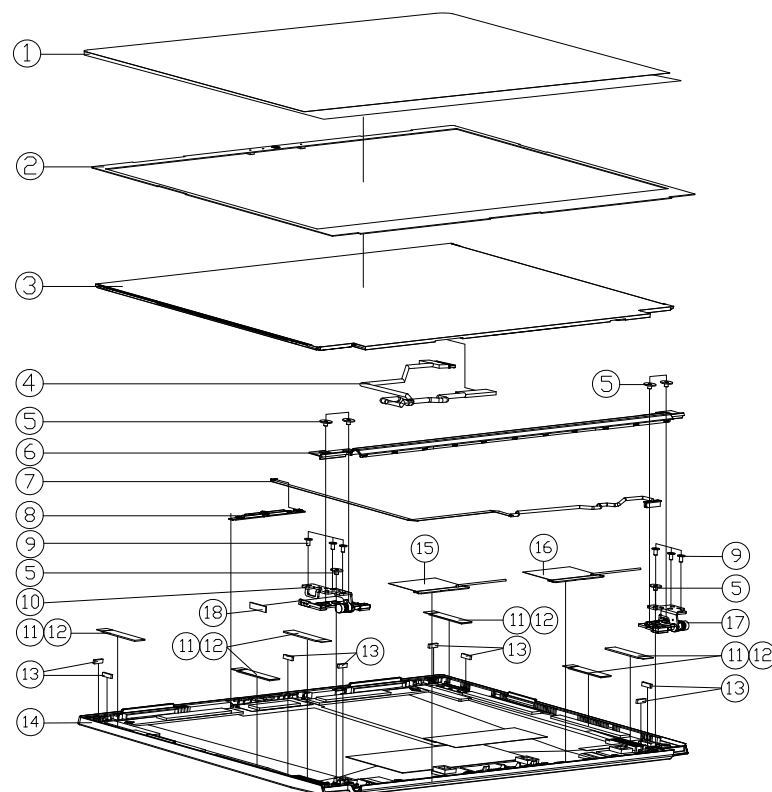
Figure A - 5
HDD

LCD (NP50HH / NP50HJ / NP50HK)

Figure A - 6
LCD (NP50HH /
NP50HJ / NP50HK)



ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT MYLAR BOPP N150ZU	6-40-N15Z8-010	
2	FRONT COVER MYLAR NP50DB	6-40-NP501-031	FOR 6-50-LBB32-L01A
2	FRONT COVER MYLAR (CHANGE SIZE) NP50DB	6-40-NP501-032	FOR 6-50-LBB32-G170
2	FRONT COVER MYLAR (1870A+TESM4965) 356.75x225.45x0.77 NP50HK	6-40-NP501-K11	FOR 6-50-LBB26-L126
3	LCD N156" FHD/VVA/144HZ/VA/NDN G7/EDP AU B156HAN08.4 32NM	6-50-LBB32-G170	
3	LCD N156" FHD/VVA/VA/NDN G7/EDP LG LP156WFC-SP03 LED 32NM	6-50-LBB32-L01A	
3	LCD N156" FHD/VVA/VA/NDN G7/EDP SHARP X0156F1NM-N61 QLED 255NM	6-50-LBB25-A020	
3	LCD N156" FHD/VVA/VA/144HZ/VA G-SYNC/VA/NDN G7/EDP LG LP156WFC-SP05 LED 26NM	6-50-LBB26-L126	
4	WIRE CABLE FOR EDP 250MM 30V 1 40PIN QHT/LW CON.V0340-2120 NP50DB	6-43-NP501-012-1N	
4	WIRE CABLE FOR EDP 250MM 1 30V 30PIN QHT/LW CON.V0340-2120 NP50DB	6-43-NL5C1-013-1N	
5	SCREW M2.5*2.5L KI BK/Z ICT NY(Ø0.6,T=0.6)	6-35-B6125-2R5	
6	FRONT BEZEL MODULE NP50DB	6-42-NP501-103	
7	SCREW M2*3L KI NI ICT NY (DD=Ø4.0,DT=0.8)	6-35-B1120-3RD	
8	HINGE L (SK7) NP50DB	6-33-NP501-0L1	
9	LALATAPE PANEL 3.2 NK50SB	6-47-NK501-071	FOR 6-50-LBB32-G170
10	LCD RUBBER (8*3.4*1.3) NP50DB	6-47-NP501-010	FOR 6-50-LBB32-L01A
11	TOP CASE MYLAR FR83 25*7*0.05 P180HM	6-40-P1802-030	
12	BACK COVER MODULE NP50DB	6-39-NP501-024	
13	LCD PANEL FIXED RUBBER LEFT (5.5*3*1.05T) NH70EDQ	6-47-NH701-060	
14	WIRE+FFC CABLE FOR CCD 500MM 3.3V 12P (HT) NP50DB	6-43-NP50T-011-1	
15	UNC COVER CHROMIUM TITANIDE CRYSTALLINE SALT IN HD VPE-MC 04012 DRYER MICRO FILTER WHITE-LED	6-88-N15ZC-5102	OPTION
15	UNC COVER CHROMIUM TITANIDE CRYSTALLINE SALT IN HD VPE-MC 04012 DRYER MICRO FILTER WHITE-LED	6-88-N15ZC-4900	OPTION
16	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
17	ANTENNA PE44 VLAH VET VLT PCB DIAPLASTIC 24G/5G/4G/2G VLT-250MM NP50DB	6-23-7NP50-011	
18	ANTENNA PE44 VLAH VET VLT PCB DIAPLASTIC 24G/5G/4G/2G VLT-250MM NP50DB	6-23-7NP50-020	
19	HINGE R (SK7) NP50DB	6-33-NP501-0R1	
20	BACK SPONGE REMOVE ADHESIVE 0P95T NP50DB	6-47-NP501-030	FOR 6-50-LBB25-A020
21	LCD GASKET (6*6*0.6) NP50DB	6-47-00190-660-1	FOR 6-50-LBB26-L126



ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT MYLAR BOPP N150ZU	6-40-N15Z8-010	
2	FRONT COVER MYLAR NP50DB	6-40-NP501-031	FDR 6-50-LBB32-L01
2	FRONT COVER MYLAR (CHANGE SIZE) NP50DB	6-40-NP501-032	FDR 6-50-LBB32-G17 6-50-LBB26-L12
2	FRONT COVER MYLAR (B70A+TESA495) 356.75x225.45x0.77 NP50BK	6-40-NP501-K11	FDR 6-50-LBB25-A02
3	LCD NIS6 FHD/VVA/H44H2/NEN G/TEP LG LP56WFC-SPI3 LED 2.6MM	6-50-LBB26-L126	
3	LCD NIS6 FHD/VVA/H44H2/NEN G/TEP ROE NY56FHM-M1 FG-B00B-P033 ALD20 2S MM	6-50-LBB25-A020	
3	LCD NIS6 FHD/PSP/M4/NEN G/TEP LG LP56WFC-SPI3 LED 3.2MM	6-50-LBB32-L01A	
3	LCD NIS6 FHD/VVA/H44H2/NEN G/TEP PANDA LM56L2F LED 3.2MM	6-50-LBB32-G170	
4	WIPE CABLE FOR EDP 250MM 1 30V 30PIN HT/LV CON/LV-K30LPMSO NL5C00	6-43-NL5C1-013-1N	
4	WIPE CABLE FOR EDP 250MM 30V 1 40PIN HT/LV CON/LV-K40LPMSO NP50B0	6-43-NP501-012-1N	
5	SCREW M2.5x2.5L KI BK/Z ICT NY(Ø8,T=0.6)	6-35-B6125-2R5	
6	FRONT BEZEL MODULE NP50DB	6-42-NP501-103	
7	WIPE+FFC CABLE FOR CCD 500MM 3.3V 12P (HT) NP50DB	6-43-NP50T-011-1	
8	OVC CAMERA COORD THERMO STABILIZATION IN IR W/OIR-HOT OVR2 DRYER NIS70 P2725 WHITE-LED	6-88-N15ZC-5102	OPTION
8	OVC CAMERA COORD THERMO STABILIZATION IN IR DRYER NIS70 P2725 WHITE-LED W/OIR-HOT DRYER VHS-FPD	6-88-N15ZC-4900	OPTION
9	SCREW M2.5x4L CD=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
10	HINGE L MODULE NP55DE	6-33-NP551-L02	
11	LCD BACK SPONGE ITEM (CM10J012) QIS-10-04CR382-CR4932 NH58ED0	6-47-0019A-C02-1	FDR 6-50-LBB26-L126 6-50-LBB25-A020
12	LCD LALA SPONGE (35X10X0.75T) FM938222-CR4932 NH58ED0	6-47-0019A-35R-1	FDR 6-50-LBB32-G170 6-50-LBB26-LIOA
13	LCD RUBBER (8x2.5x1.45T) SLICION BLACK NH58ED0	6-47-NH581-041	
14	BACK COVER MODULE NP55DE	6-39-NP551-021	
15	ANTENNA PEPA WLAH WGT ML P23 BLAUPLASTIC ZAG/S5/GSDP WL2-250MM NP50B0	6-23-7NP50-020	
16	ANTENNA PEPA WLAH WGT ML P23 BLAUPLASTIC FIBL ZAG/S5/GSDP WL1-200MM NP50B0	6-23-7NP50-011	
17	HINGE R MODULE NP55DE	6-33-NP551-R02	
18	MYLAR(L12X3.5X0.7TX0.5PC+TESA-4965) NP55DE	6-40-NP551-020	

Figure A - 7
LCD (NP55HH /
NP55HJ / NP55HK)

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *NP50HH / NP50HJ / NP50HK / NP55HH / NP55HJ / NP55HK* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	GPU GND - Page B - 23	1V8_RUN/AON, NV3V3, 3.3VA - Page B - 44
Processor 1/6 - Page B - 3	mDP - Page B - 24	3V, 5V, 3VS, 5VS - Page B - 45
Processor 2/6 - Page B - 4	Panel, Inverter - Page B - 25	1.8V, 1.8VS, 1.8VA, C10 - Page B - 46
Processor 3/6 - Page B - 5	HDMI - Page B - 26	VCCST, VCCSTG - Page B - 47
Processor 4/6 - Page B - 6	PCH 1/7 - Page B - 27	VNN / V1.05 - Page B - 48
Processor 5/6 - Page B - 7	PCH 2/7 - Page B - 28	VCCIN - Page B - 49
Processor 6/6 - Page B - 8	PCH 3/7 - Page B - 29	VCCIN Output - Page B - 50
DDR4 CHA SO-DIMM_0 - Page B - 9	PCH 4/7 - Page B - 30	AC_In, Charger - Page B - 51
DDR4 CHB SO-DIMM_0 - Page B - 10	PCH 5/7 - Page B - 31	VCCIN AUX - Page B - 52
VGA PCI Express - Page B - 11	PCH 6/7 - Page B - 32	DDR 1.2V / 0.6VS, 2.5V - Page B - 53
GPU Frame Buffer Partition - Page B - 12	PCH 7/7 - Page B - 33	NVVDD1 - Page B - 54
Frame Buffer A - Page B - 13	Audio Codec - Page B - 34	NVVDD2 - Page B - 55
Frame Buffer A - Page B - 14	M.2 WLAN+BT, PCIE 4X SSD - Page B - 35	PEX_VDD - Page B - 56
Frame Buffer B - Page B - 15	Type-C & A - Page B - 36	FBVDDQ - Page B - 57
Frame Buffer B - Page B - 16	Card Reader RTS5227S RTD3 - Page B - 37	OVRM - Page B - 58
VGA NVVDD Coupling - Page B - 17	LAN RTL8111H RTD3 - Page B - 38	Audio Board + Redriver - Page B - 59
Straps and XTAL - Page B - 18	HDD, Click TP, Audio - Page B - 39	LED Board - Page B - 60
IFP I/O Interface - Page B - 19	LED, CCD, TPM, Power SW Bd. - Page B - 40	Power SW Board - Page B - 61
Misc - GPIO, I2C and VBIOS - Page B - 20	KBC-ITE IT5570 - Page B - 41	17" LED Board - Page B - 62
NVIDIA Power Sequence - Page B - 21	RGB KB - Page B - 42	Power Sequence - Page B - 63
GPU NVVDD, FBVDDQ - Page B - 22	VDD3, VDD5 - Page B - 43	

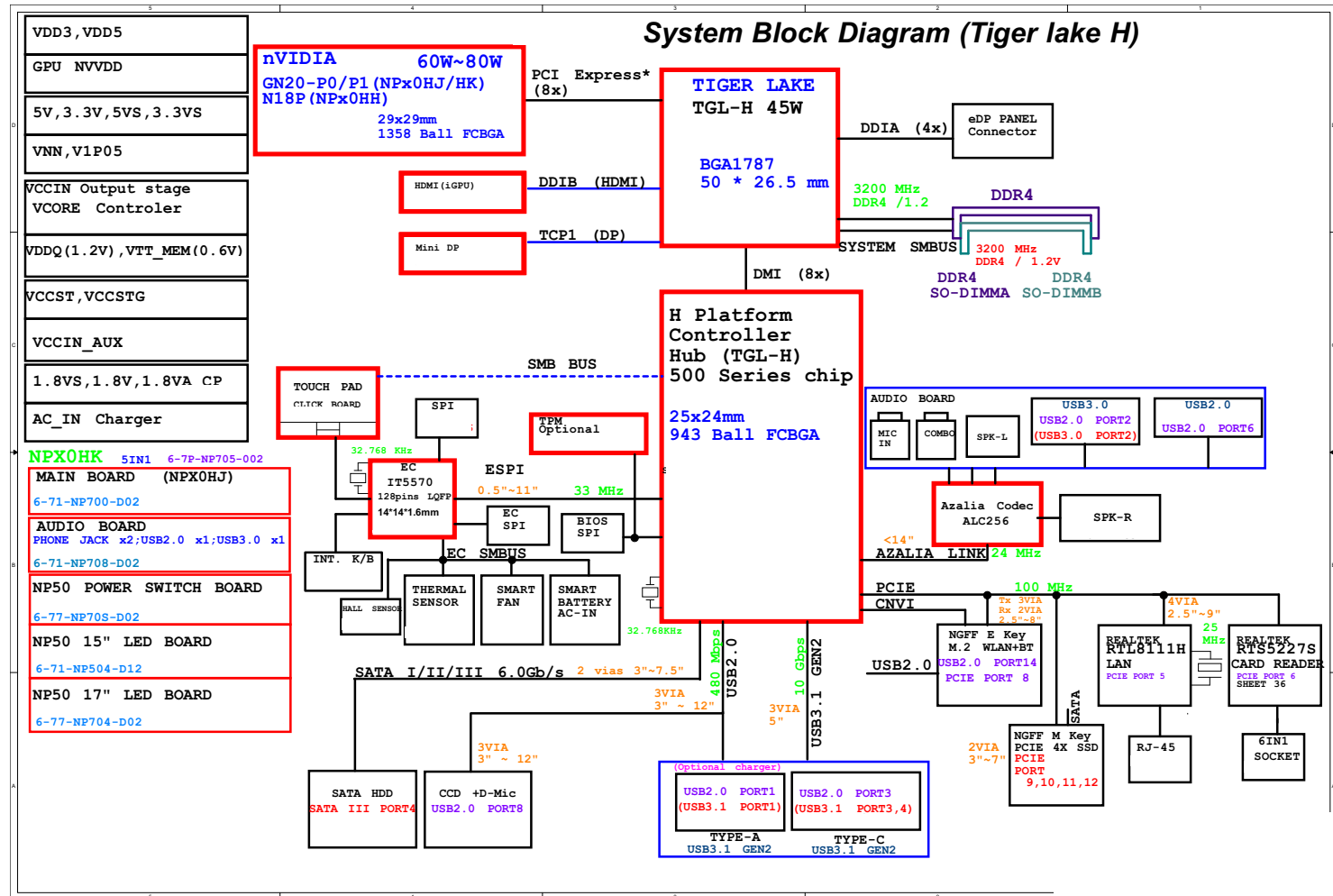
Table B - 1
**SCHEMATIC
DIAGRAMS**



Version Note

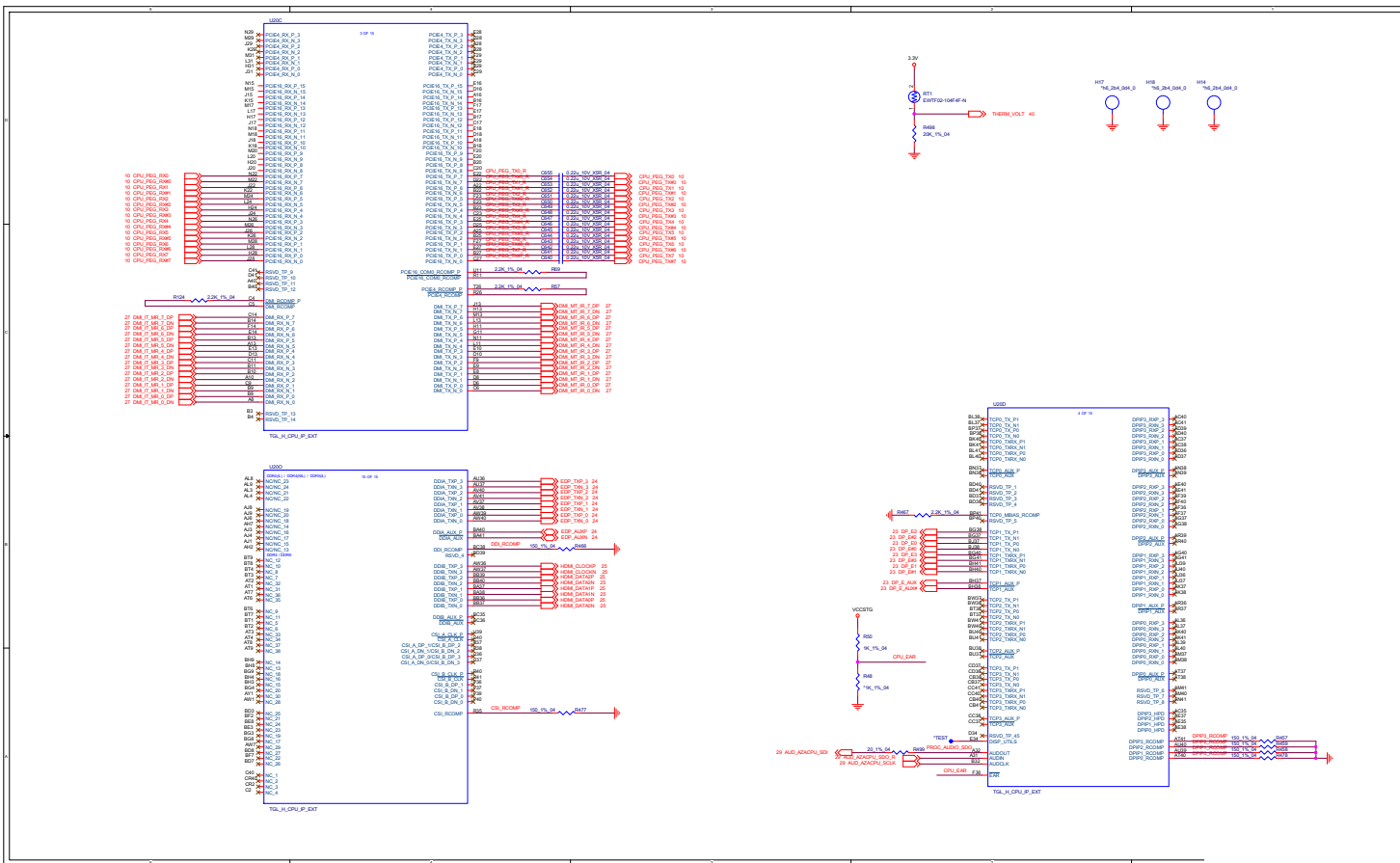
The schematic diagrams in this chapter are based upon version 6-7P-NP705-002. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram



Sheet 1 of 62
System Block
Diagram

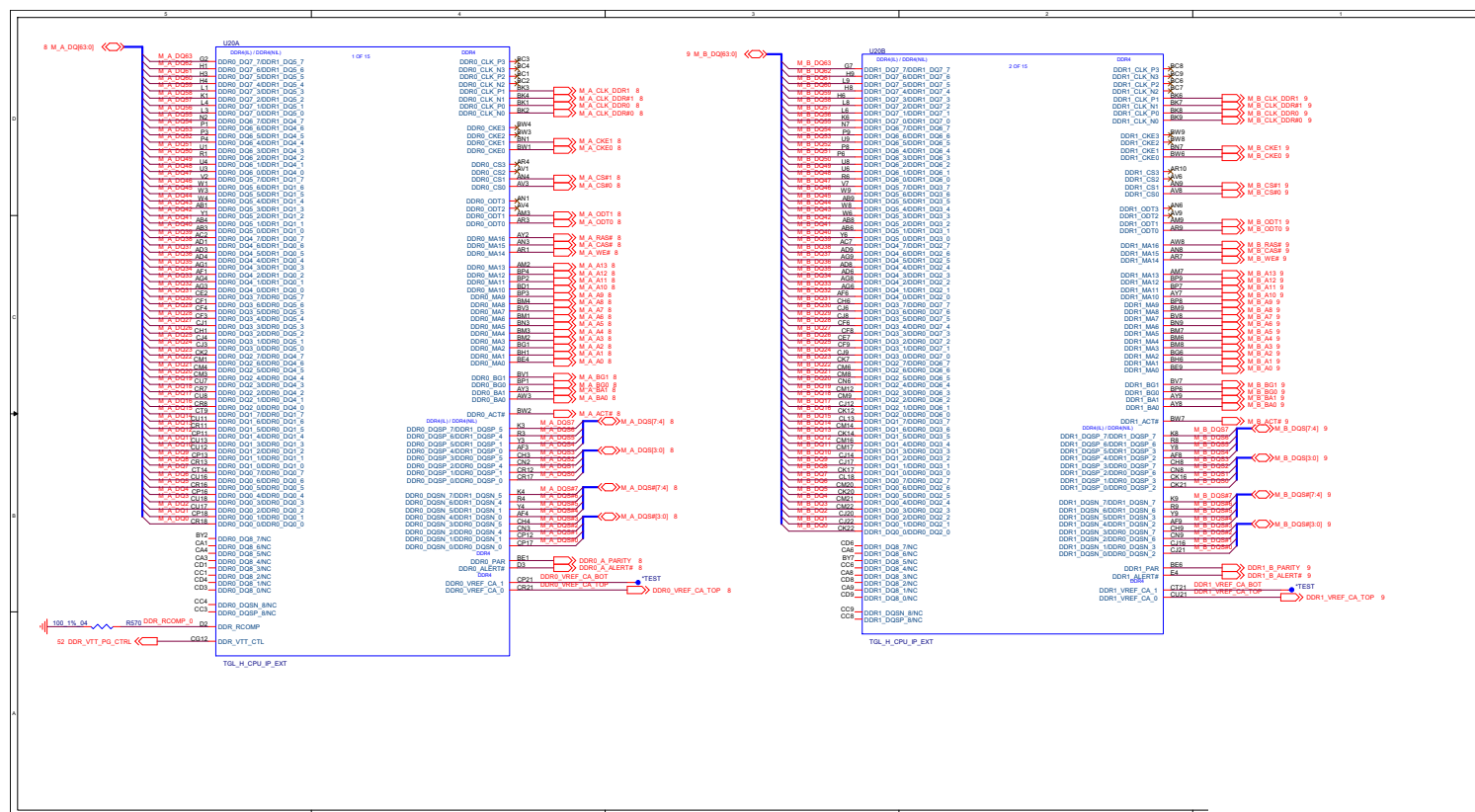
Processor 1/6



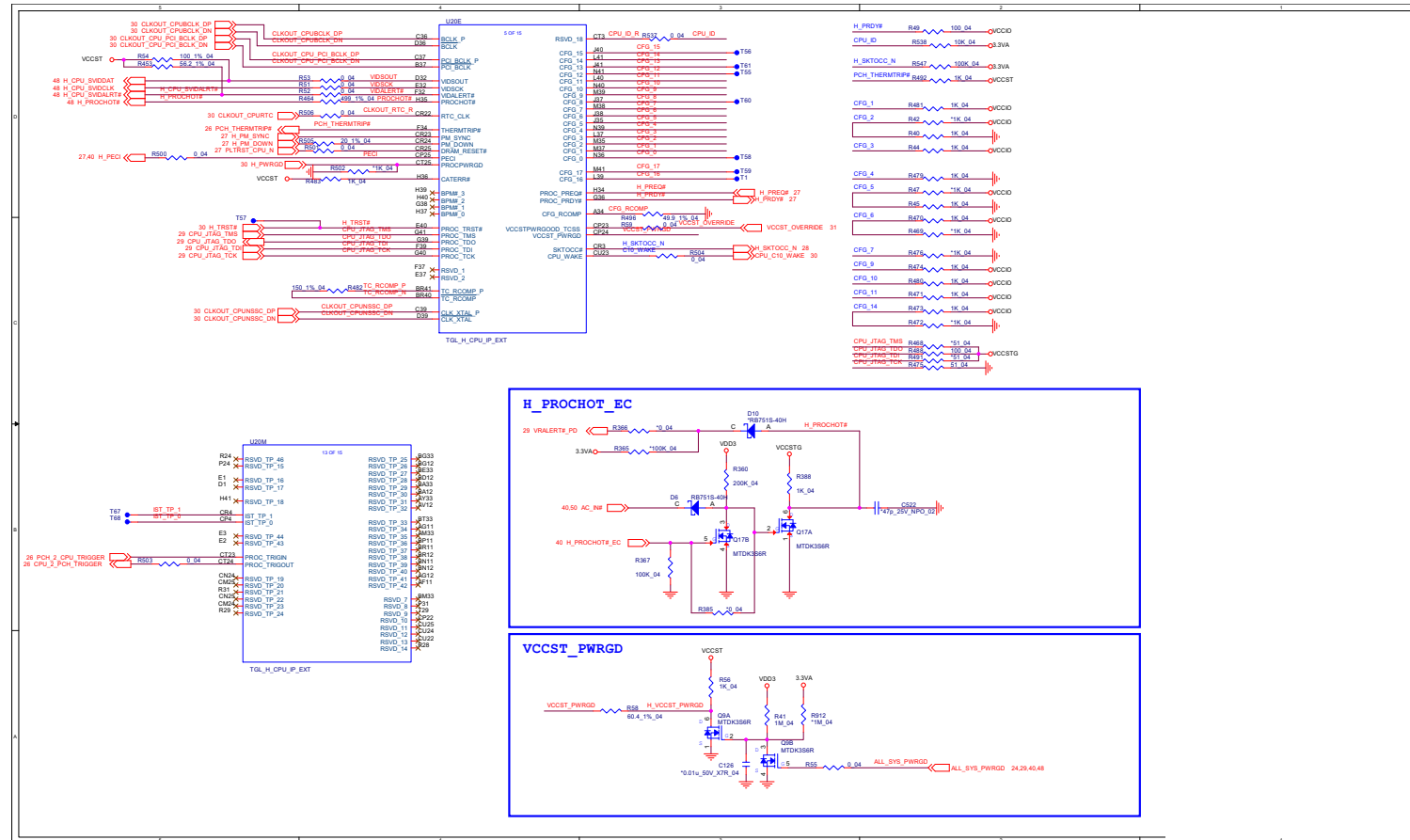
Sheet 2 of 62
Processor 1/6

Processor 2/6

Sheet 3 of 62
Processor 2/6



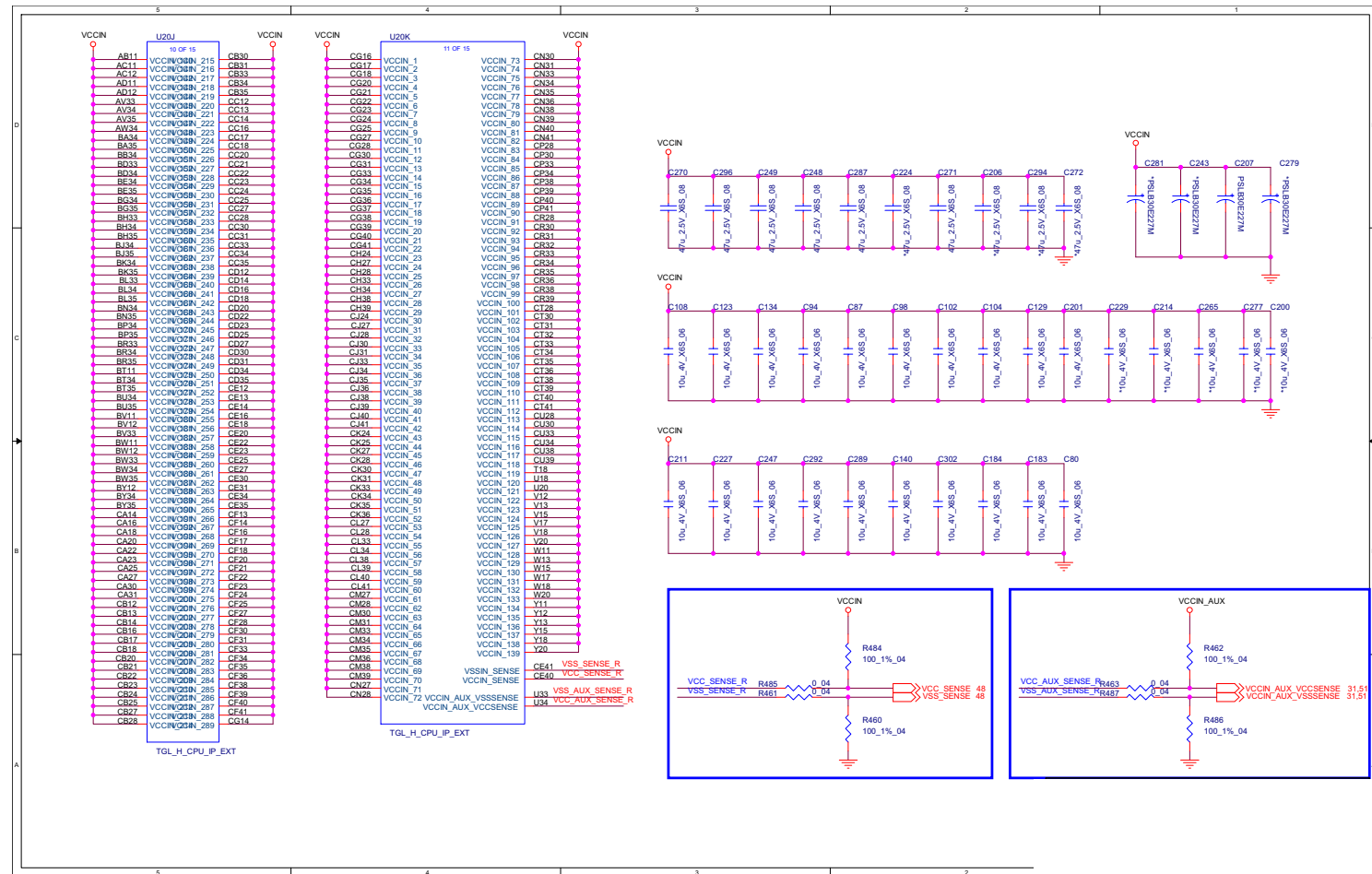
Processor 3/6



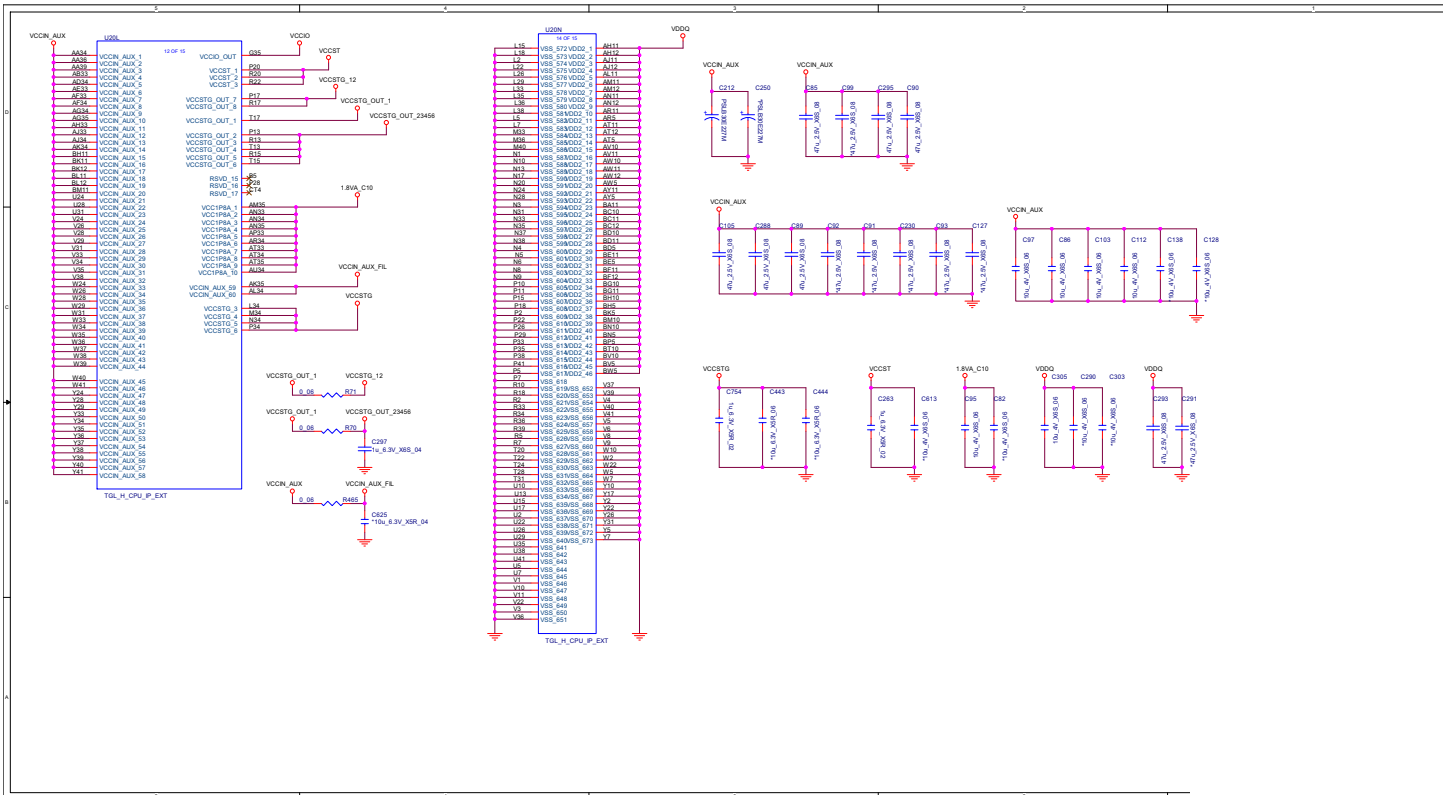
Sheet 4 of 62
Processor 3/6

Schematic Diagrams

Processor 4/6

Sheet 5 of 62
Processor 4/6

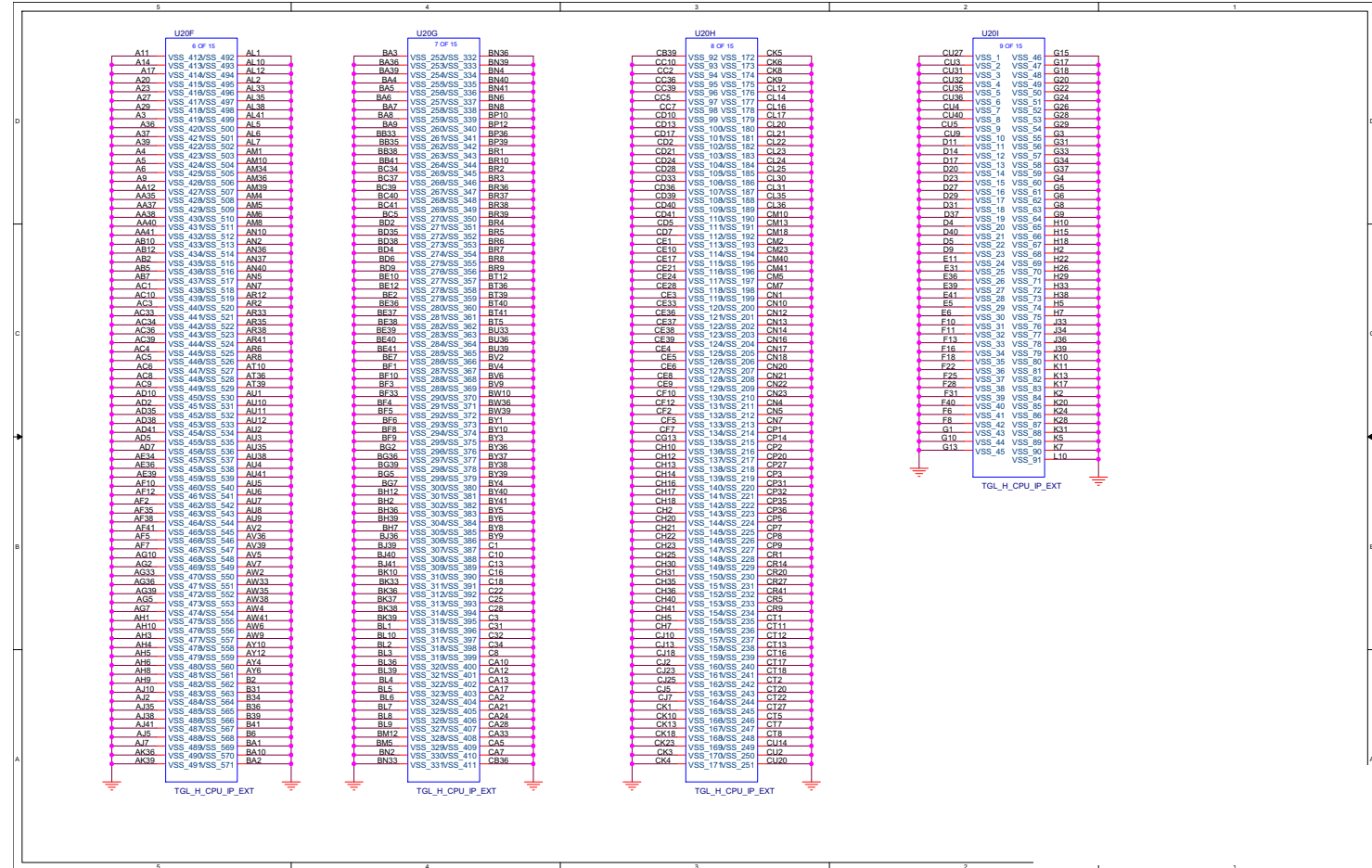
Processor 5/6



Sheet 6 of 62
Processor 5/6

Schematic Diagrams

Processor 6/6



Sheet 7 of 62
Processor 6/6

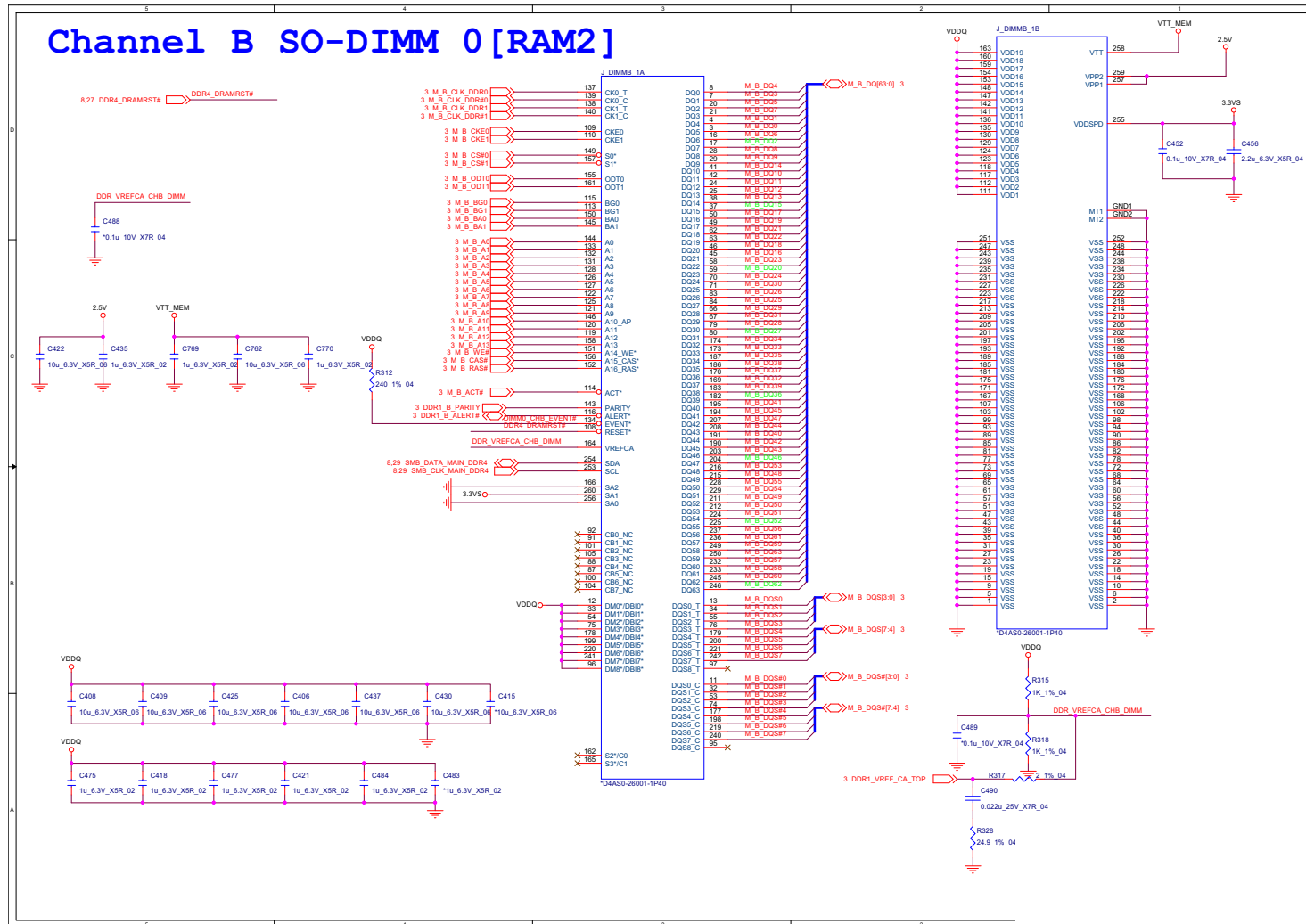
B.Schematic Diagrams

B.Schematic Diagrams

Schematic Diagrams

DDR4 CHB SO-DIMM_0

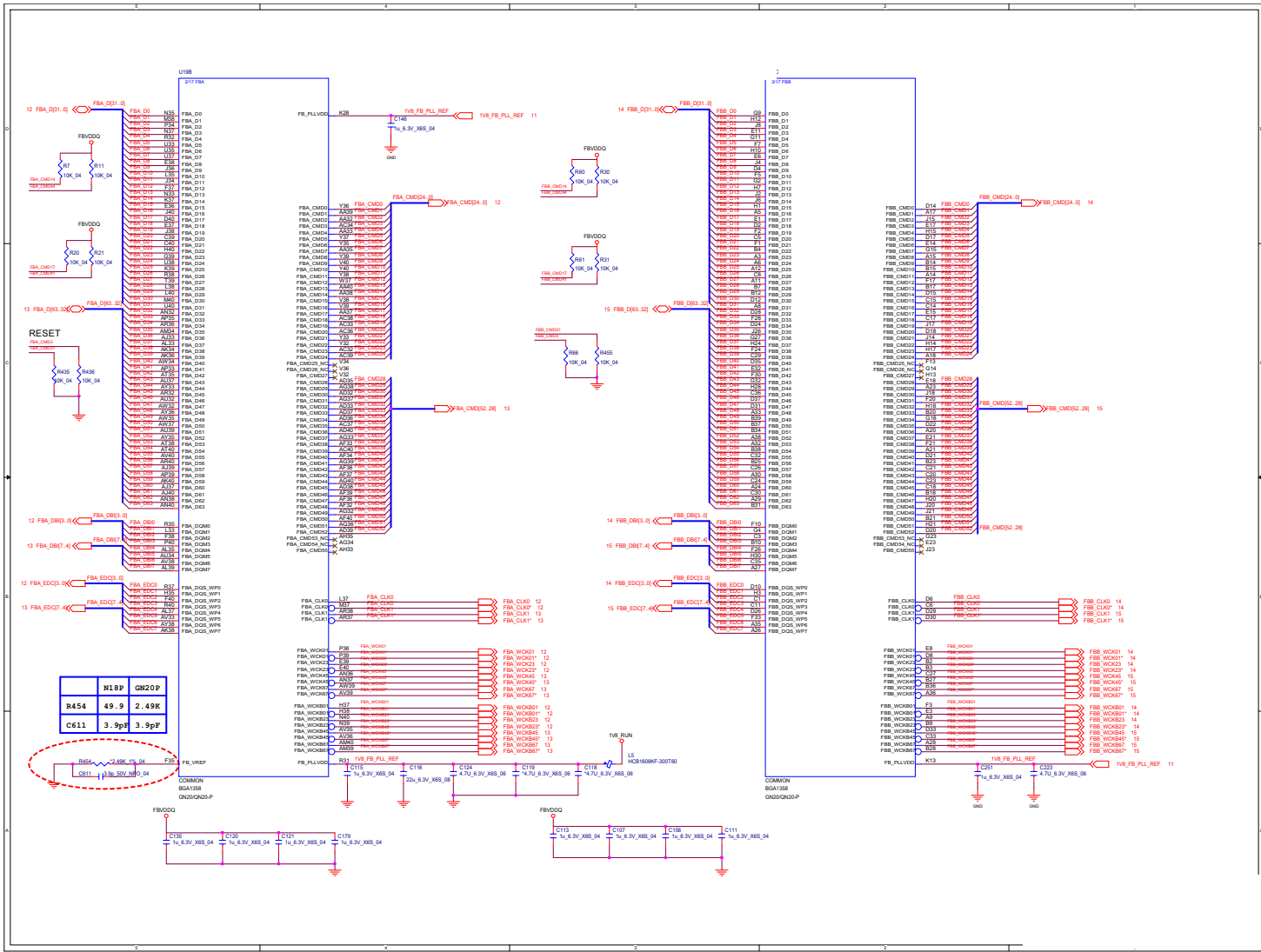
Sheet 9 of 62
DDR4 CHB SO-
DIMM_0



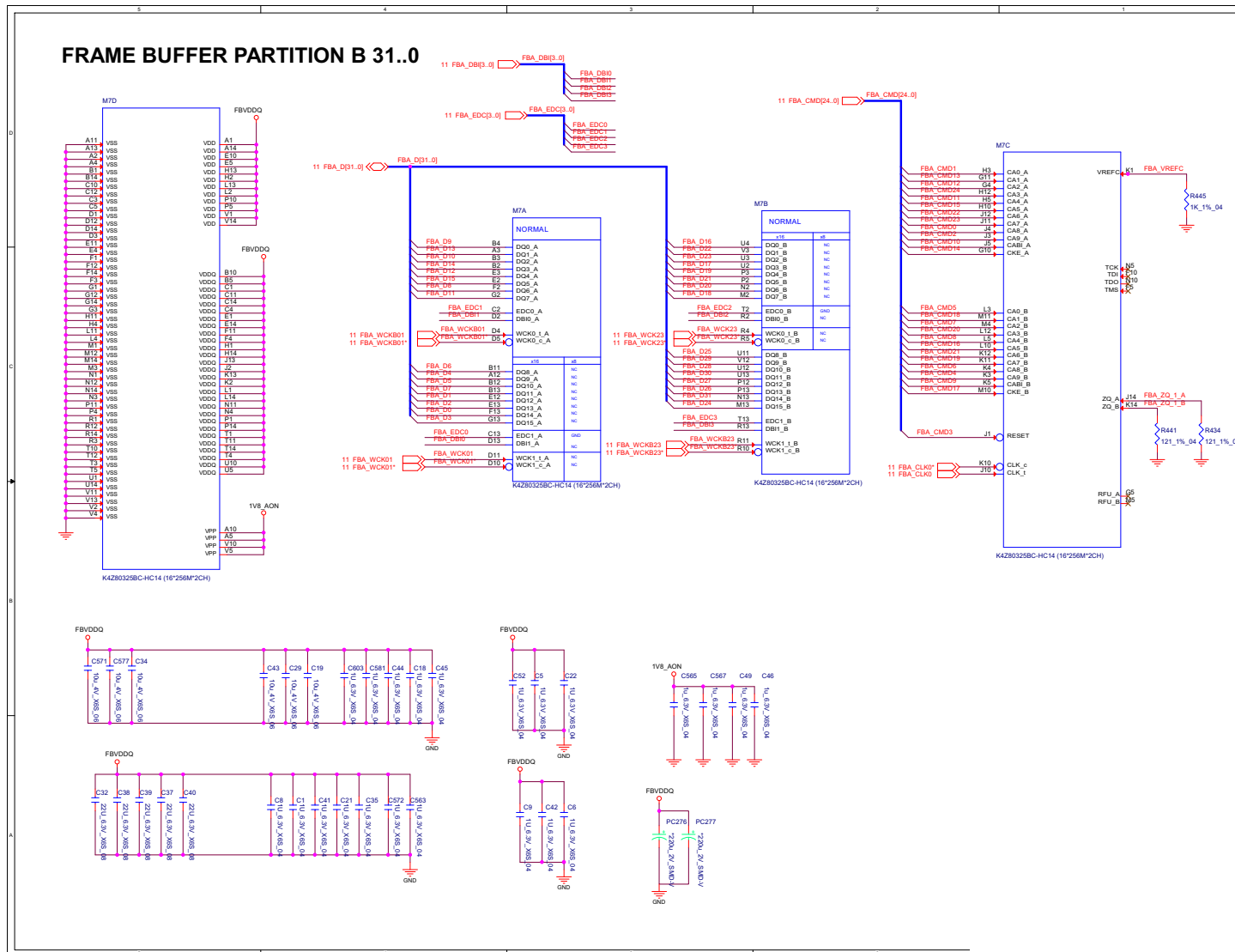
VGA PCI Express B - 11



GPU Frame Buffer Partition



Frame Buffer A



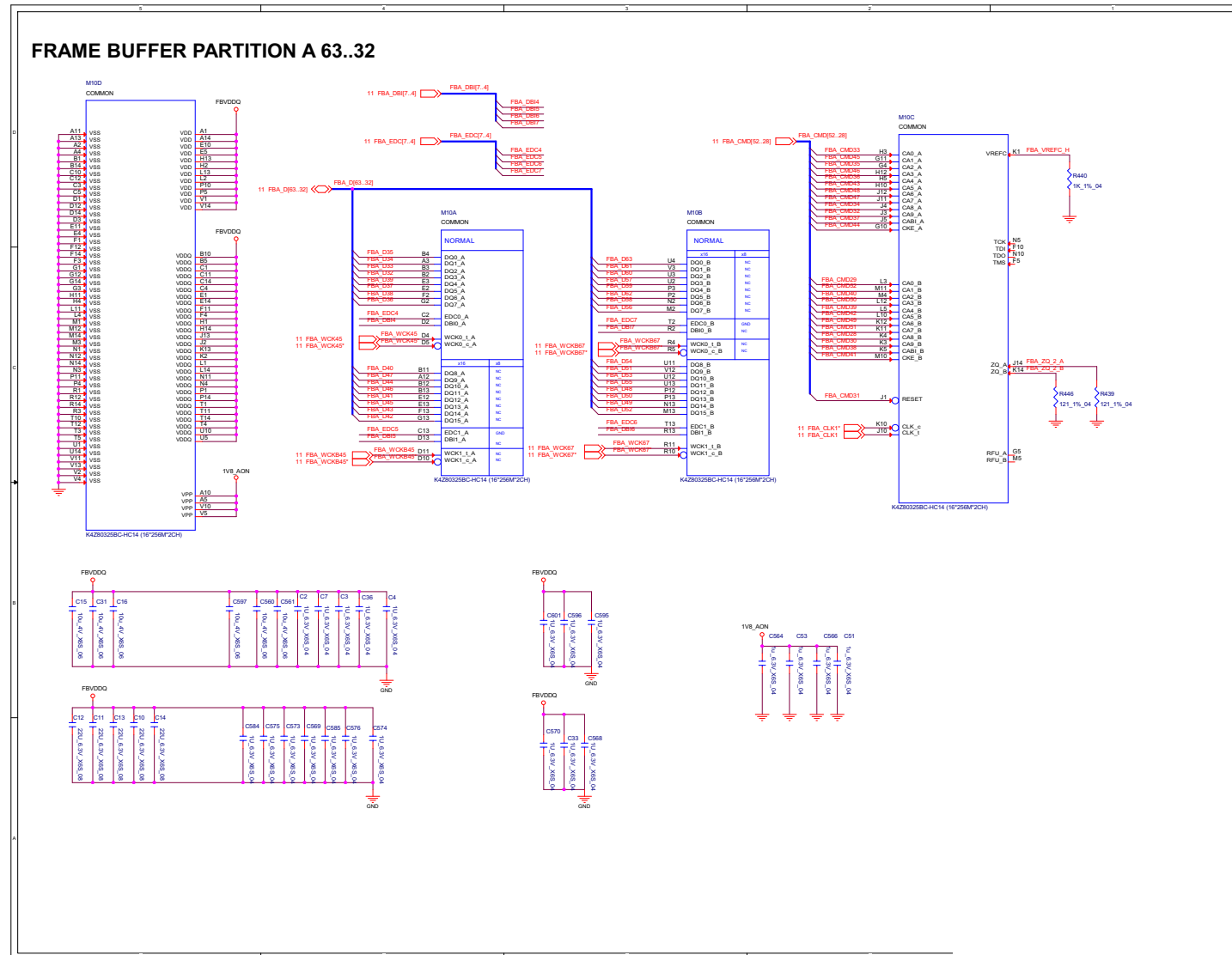
Sheet 12 of 62
Frame Buffer A

B.Schematic Diagrams

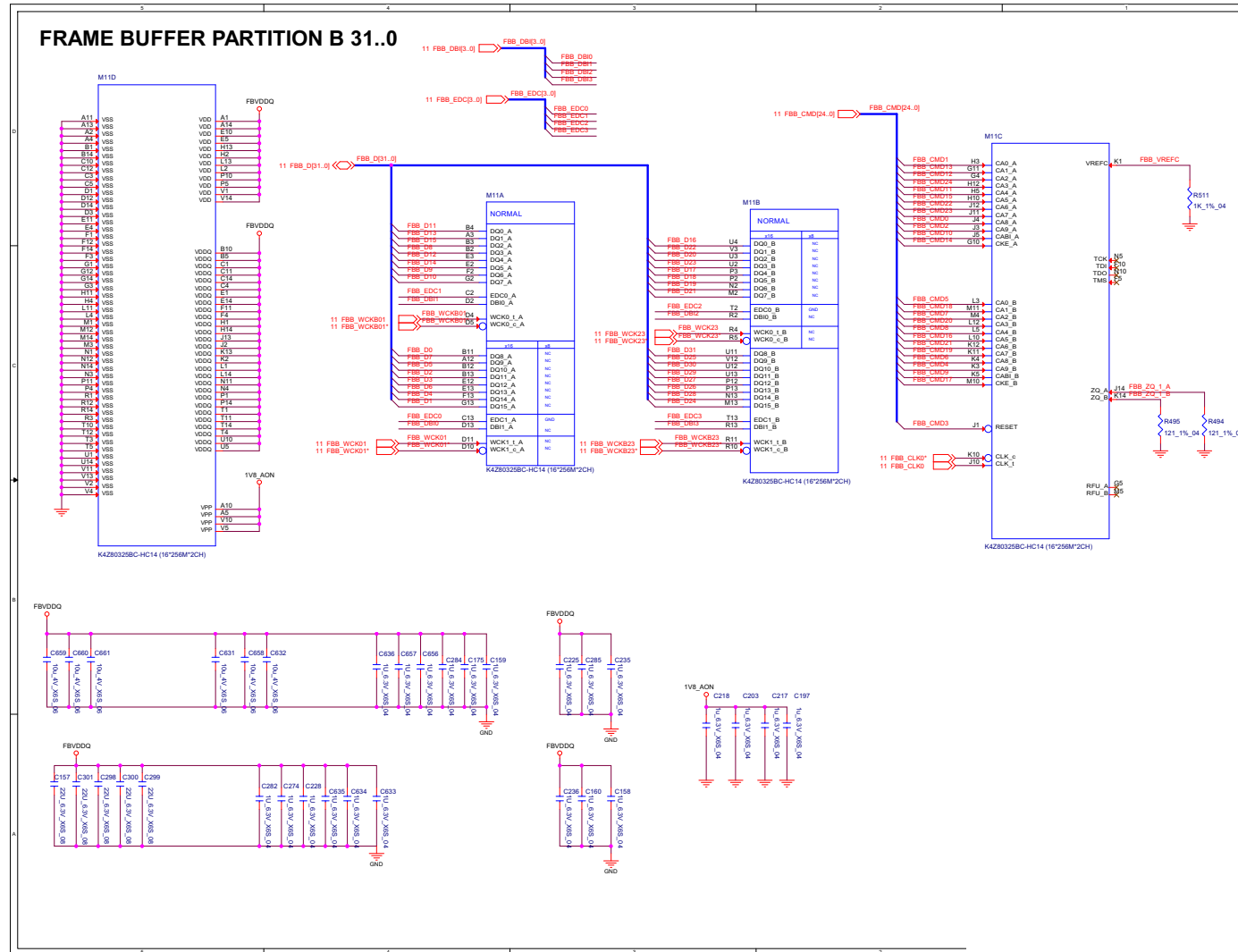
Frame Buffer A

B.Schematic Diagrams

Sheet 13 of 62
Frame Buffer A

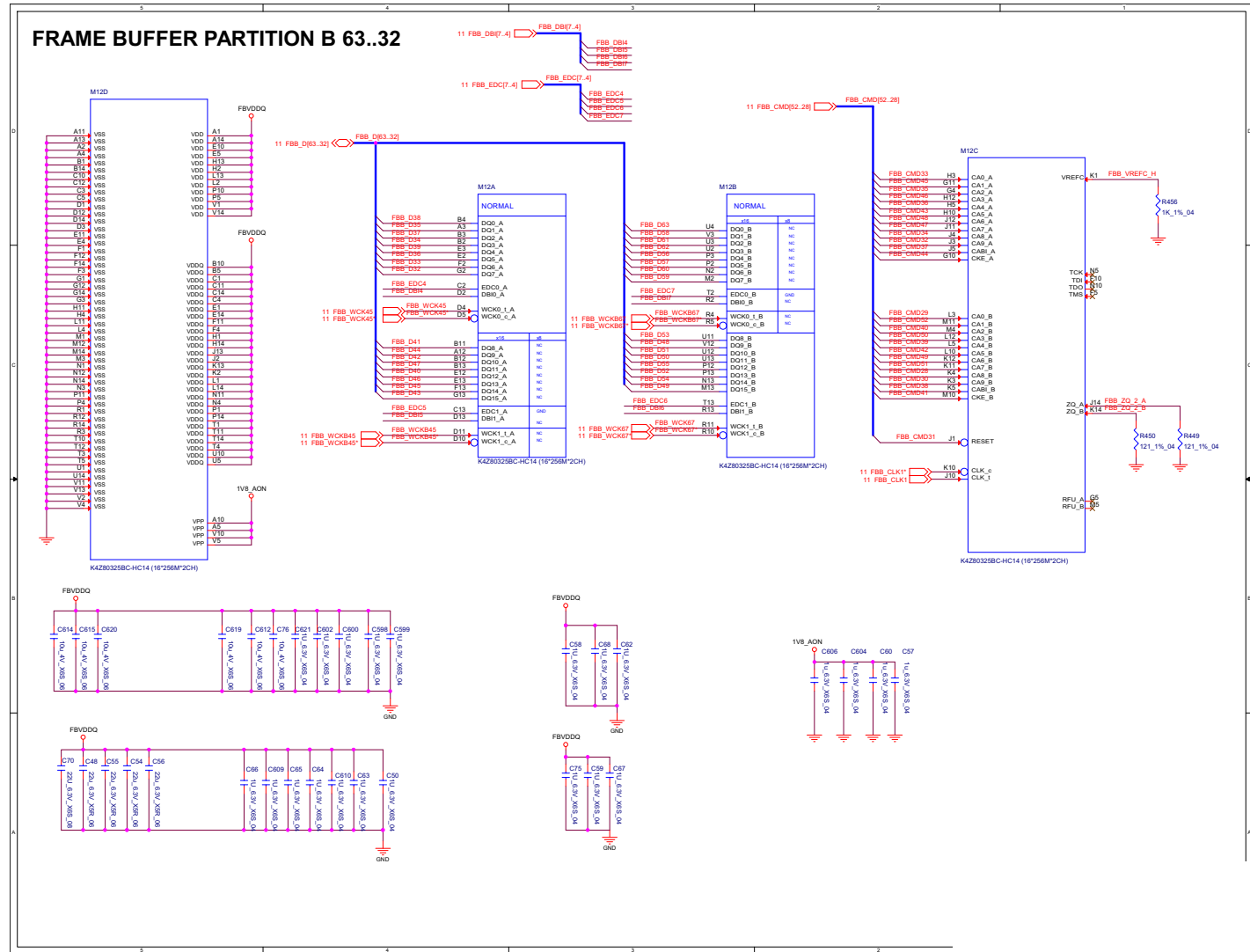


Frame Buffer B



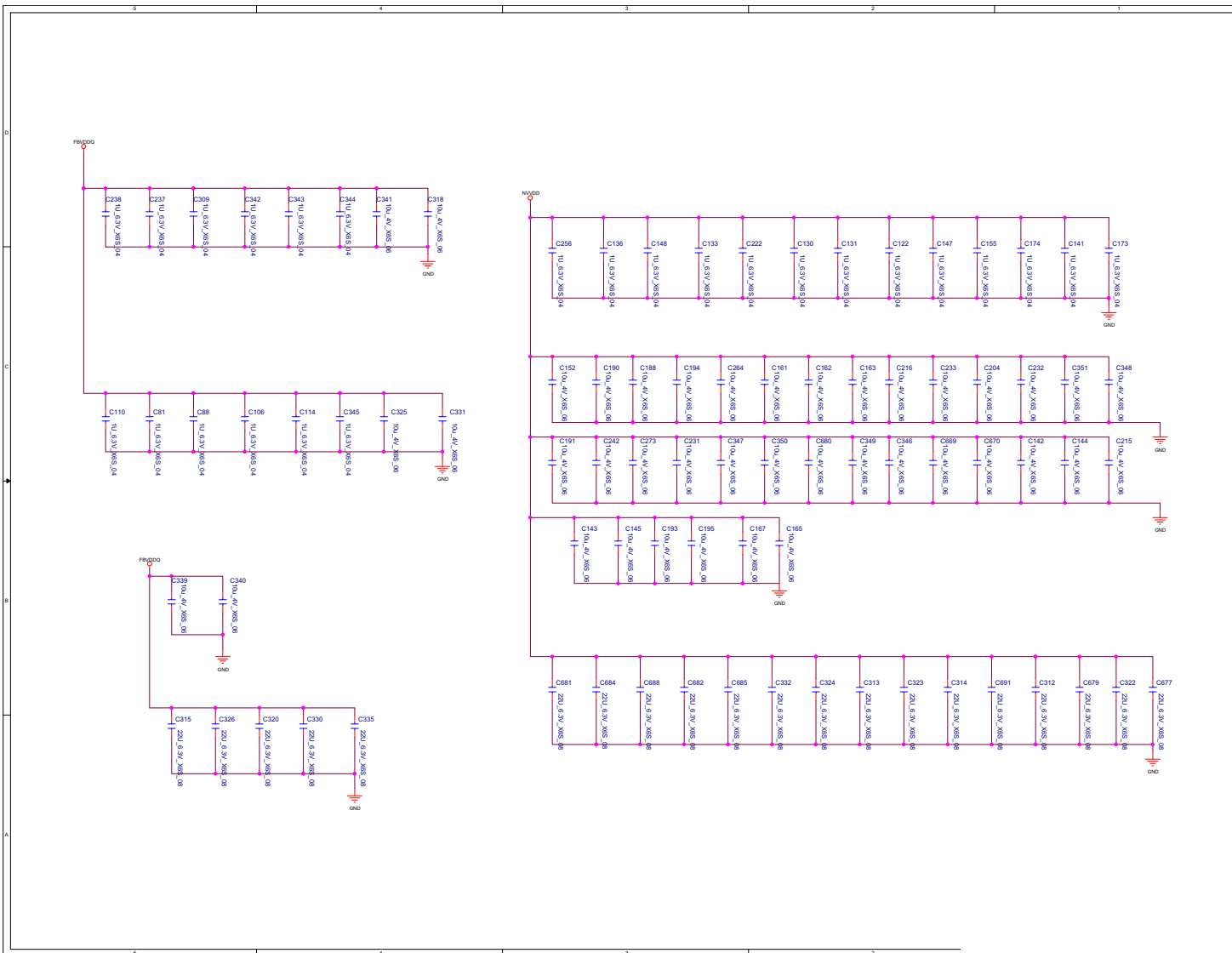
Sheet 14 of 62
Frame Buffer B

Frame Buffer B

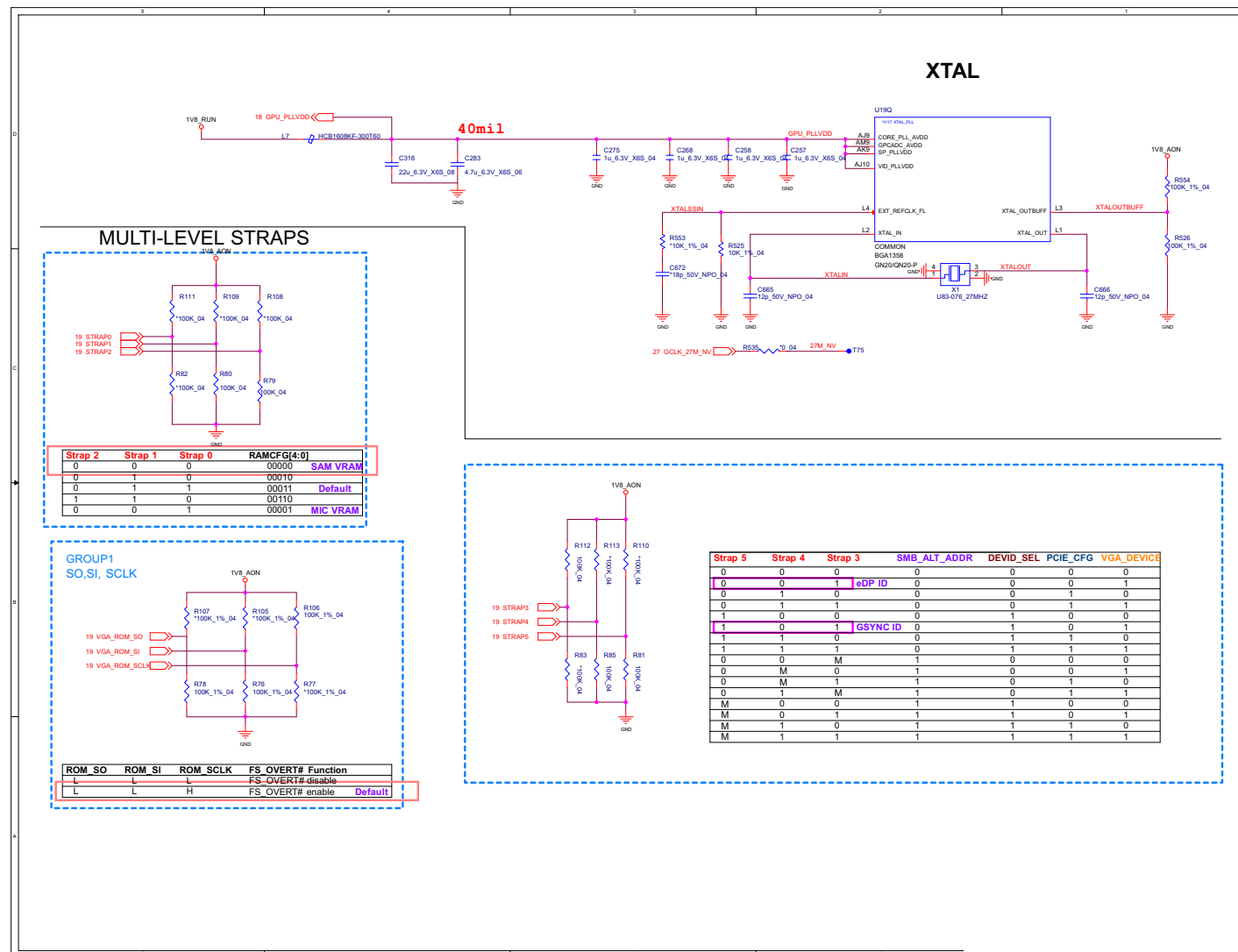


Sheet 15 of 62
Frame Buffer B

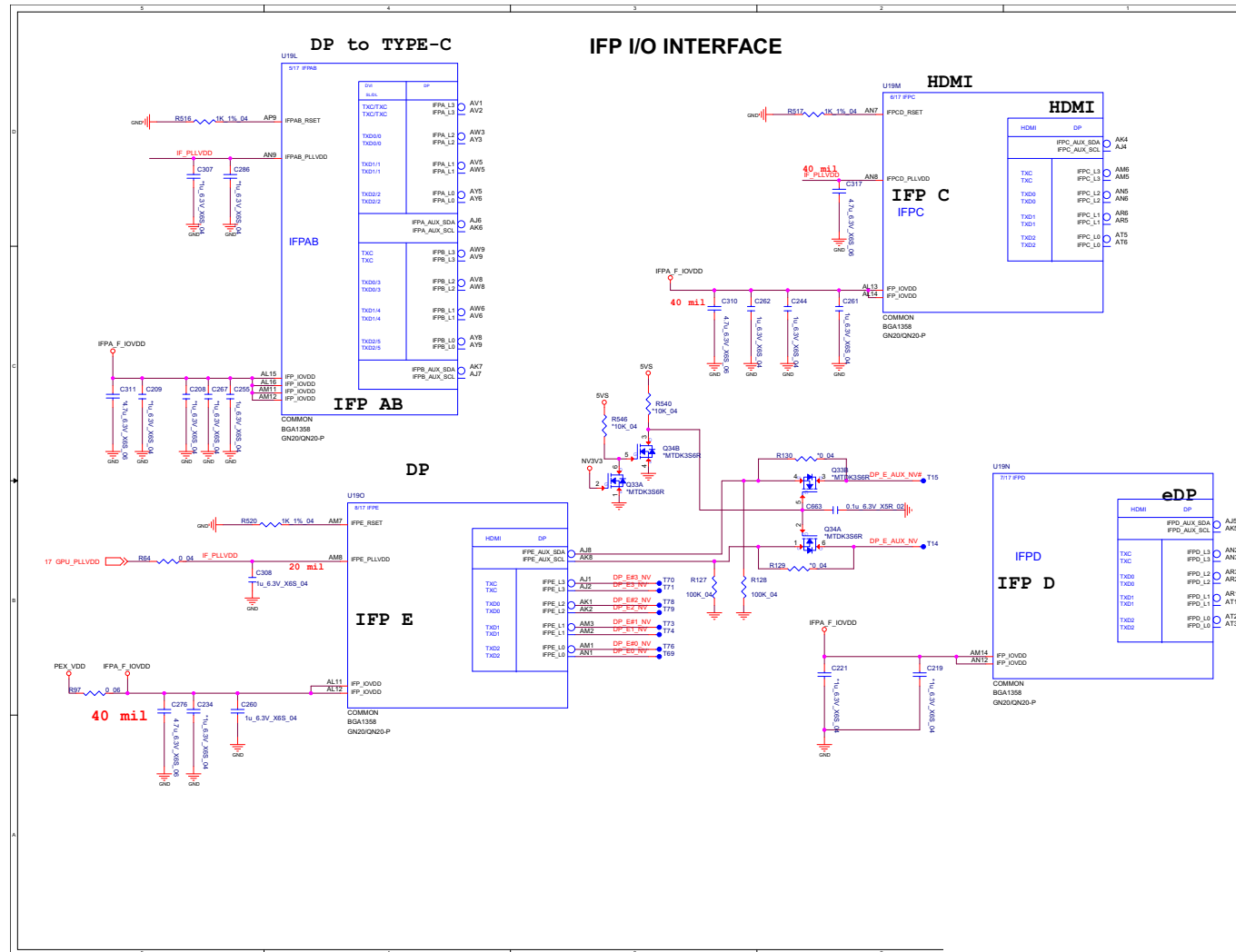
VGA NVVDD Coupling



Sheet 16 of 62
VGA NVVDD
Coupling



IFP I/O Interface

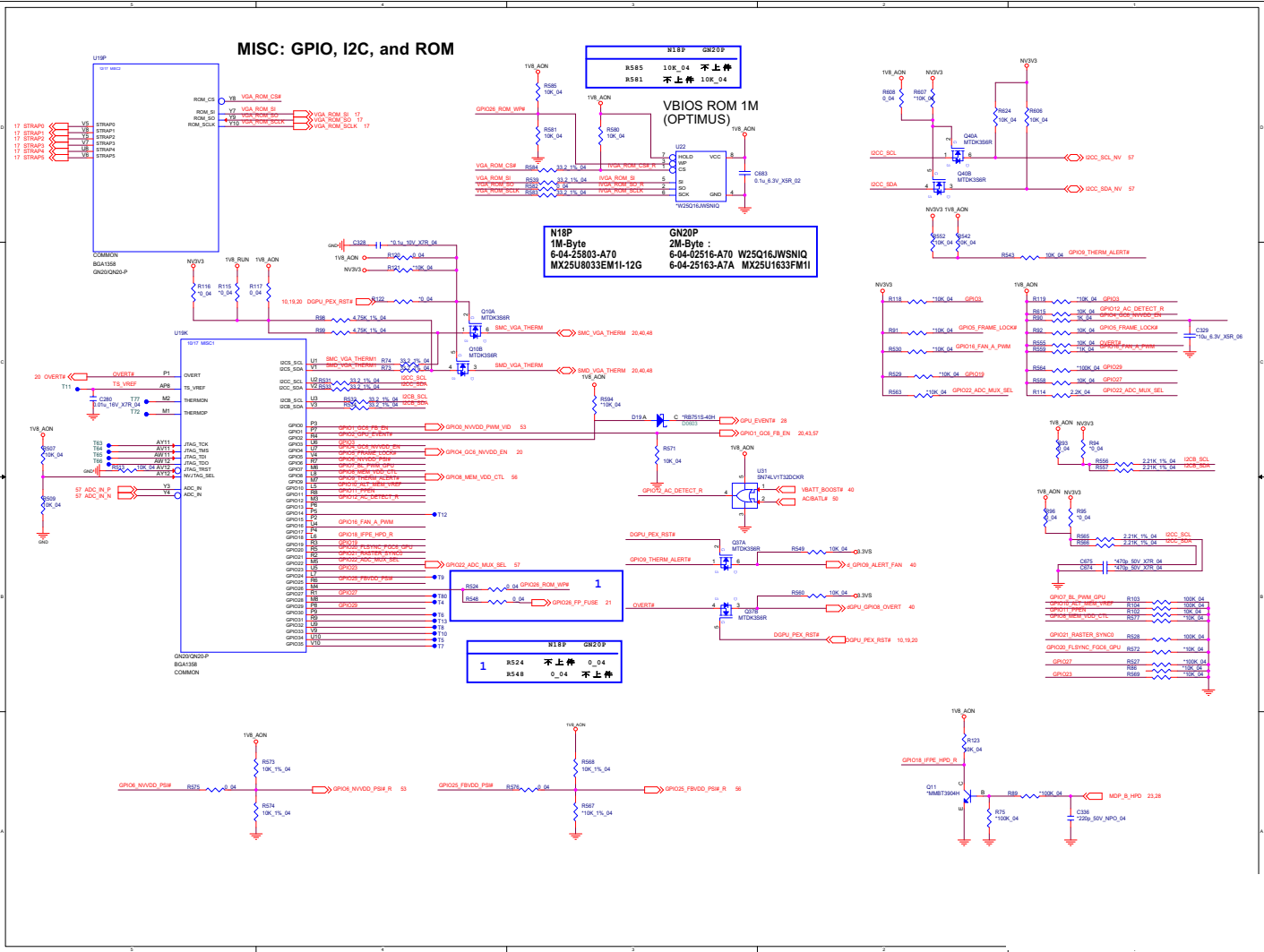


Sheet 18 of 62
IFP I/O Interface

Schematic Diagrams

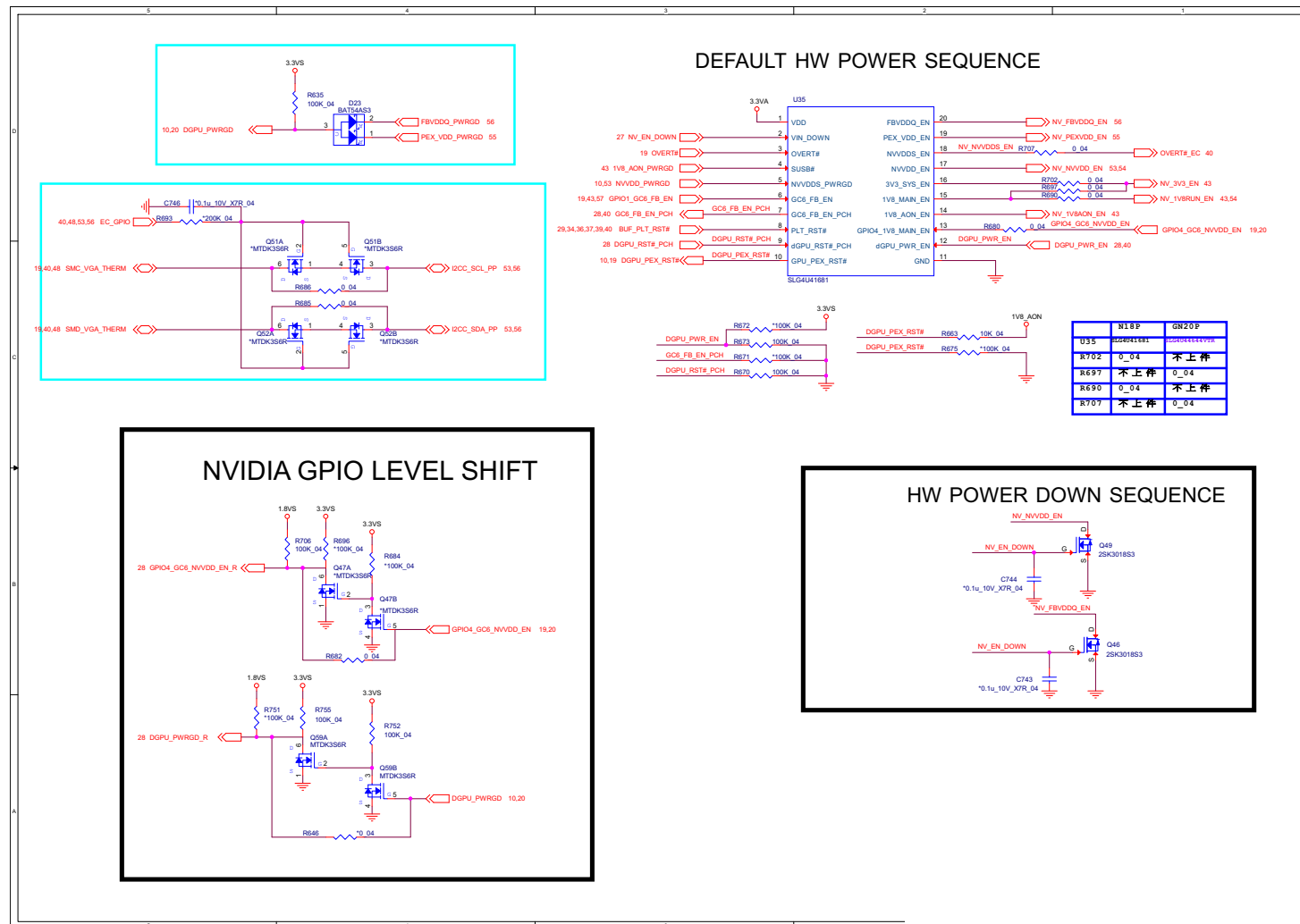
Misc - GPIO, I2C and VBIOS

Sheet 19 of 62
Misc - GPIO, I2C,
and VBIOS



NVIDIA Power Sequence

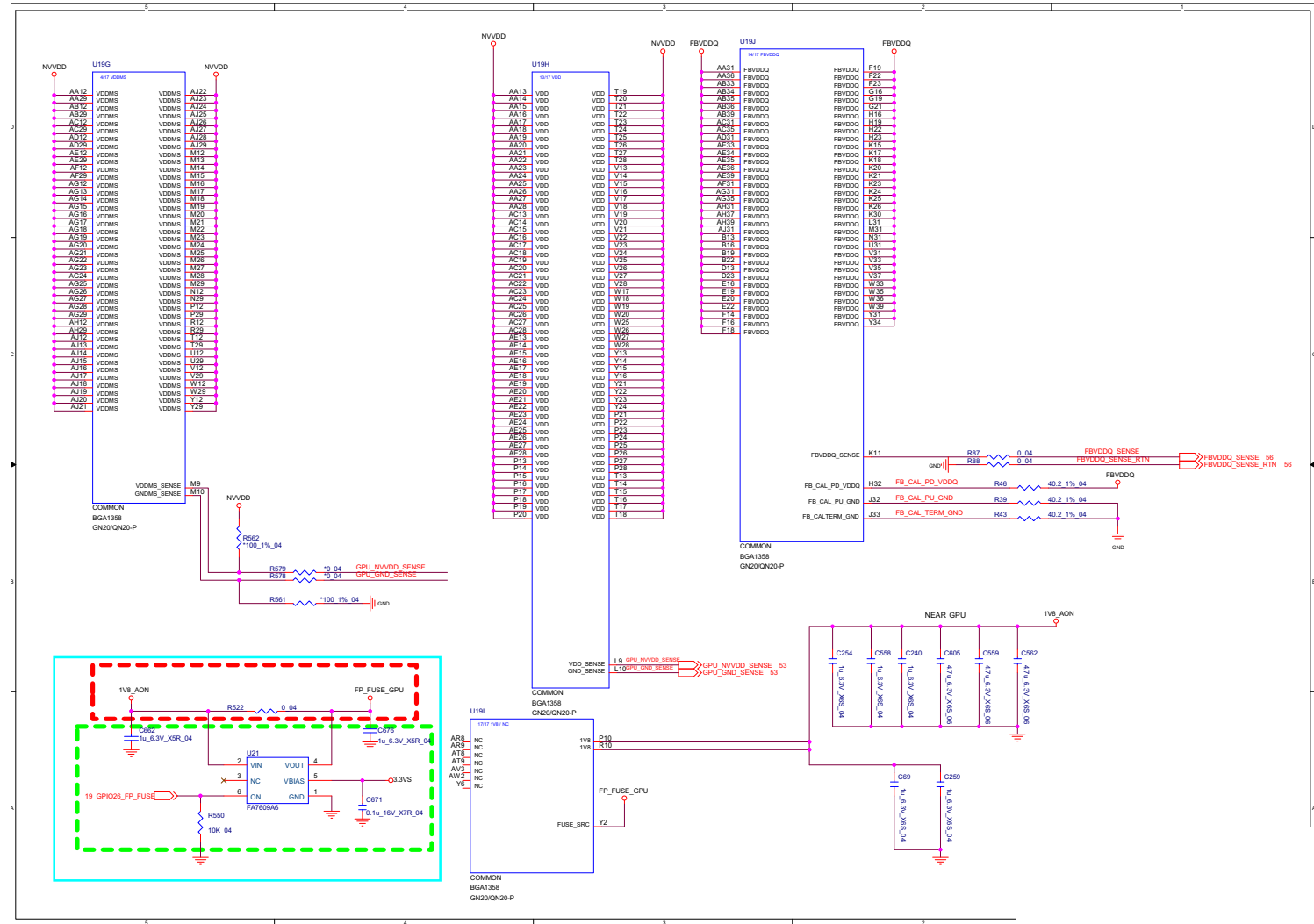
Sheet 20 of 62
NVIDIA Power
Sequence

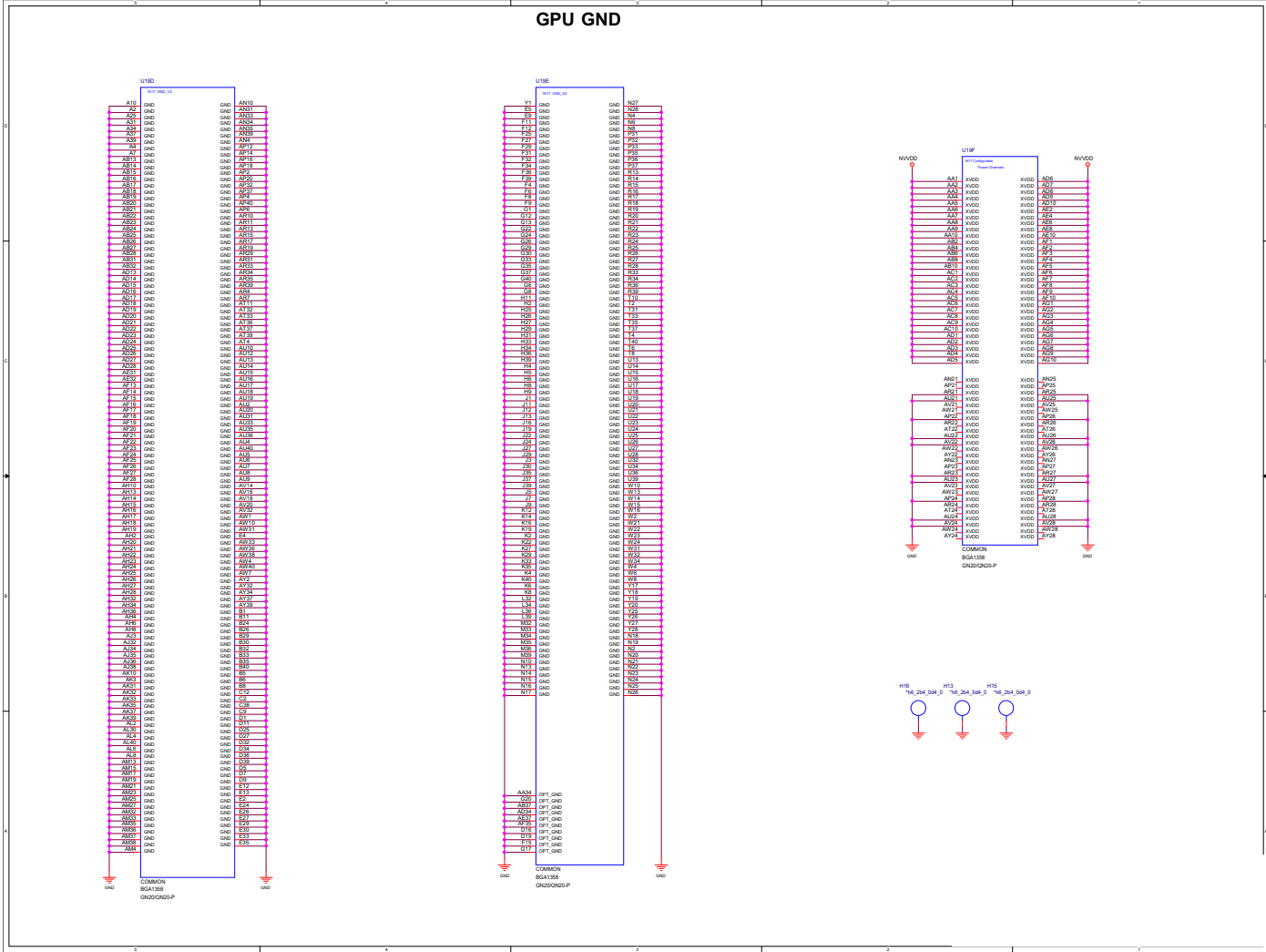


Schematic Diagrams

GPU NVVDD, FBVDDQ

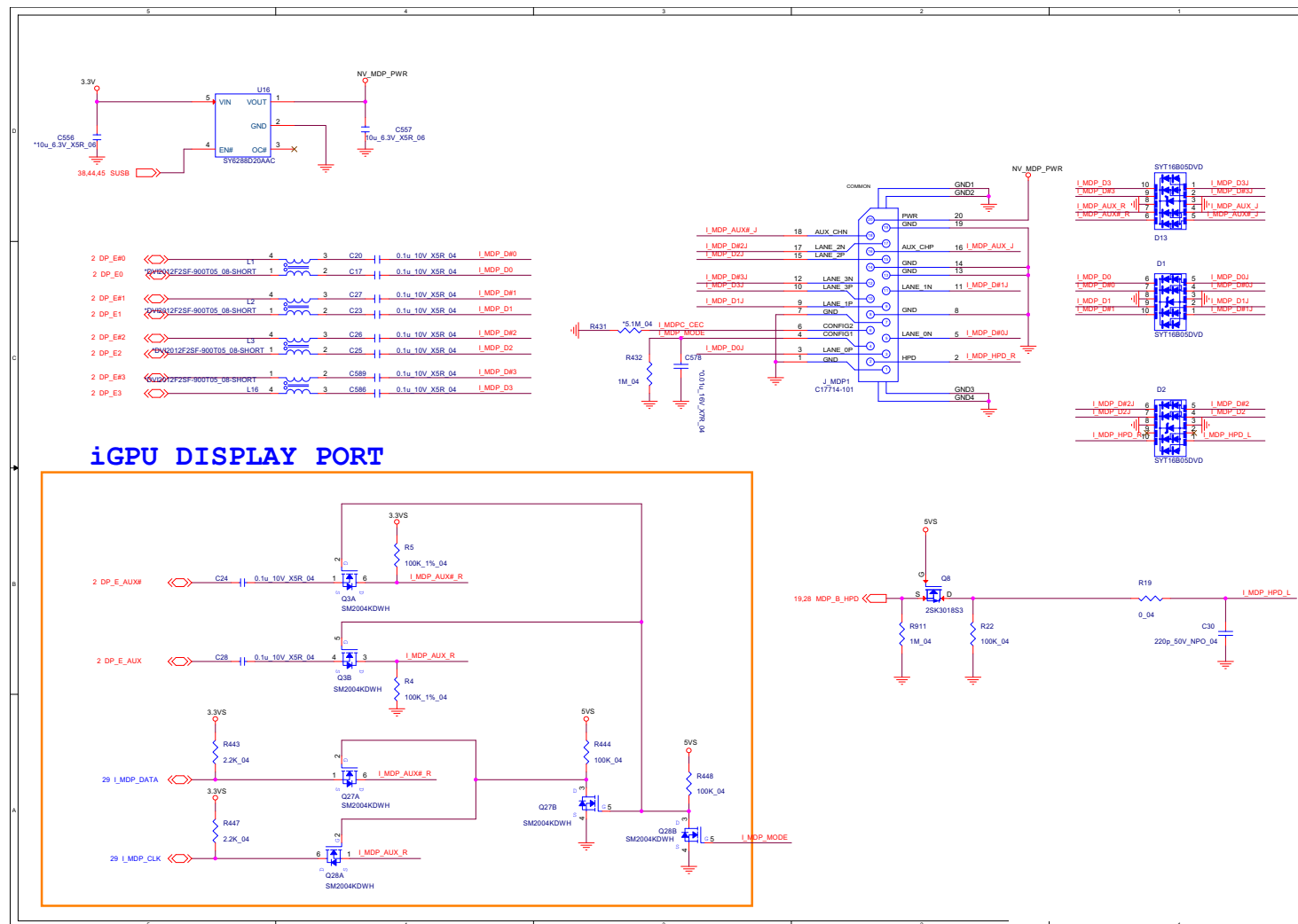
Sheet 21 of 62
GPU NVVDD,
FBVDDQ



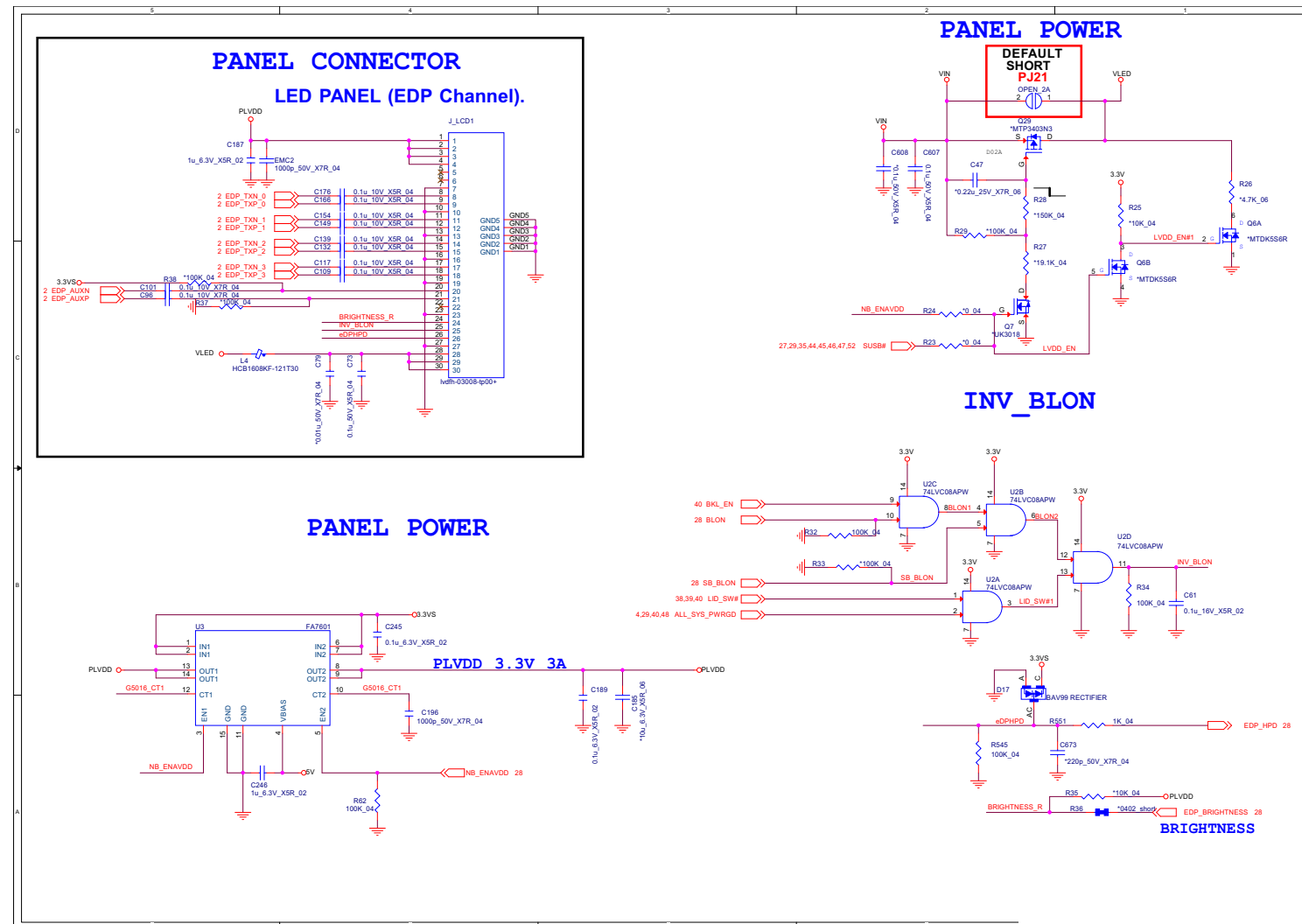


mDP

Sheet 23 of 62
mDP



Panel, Inverter

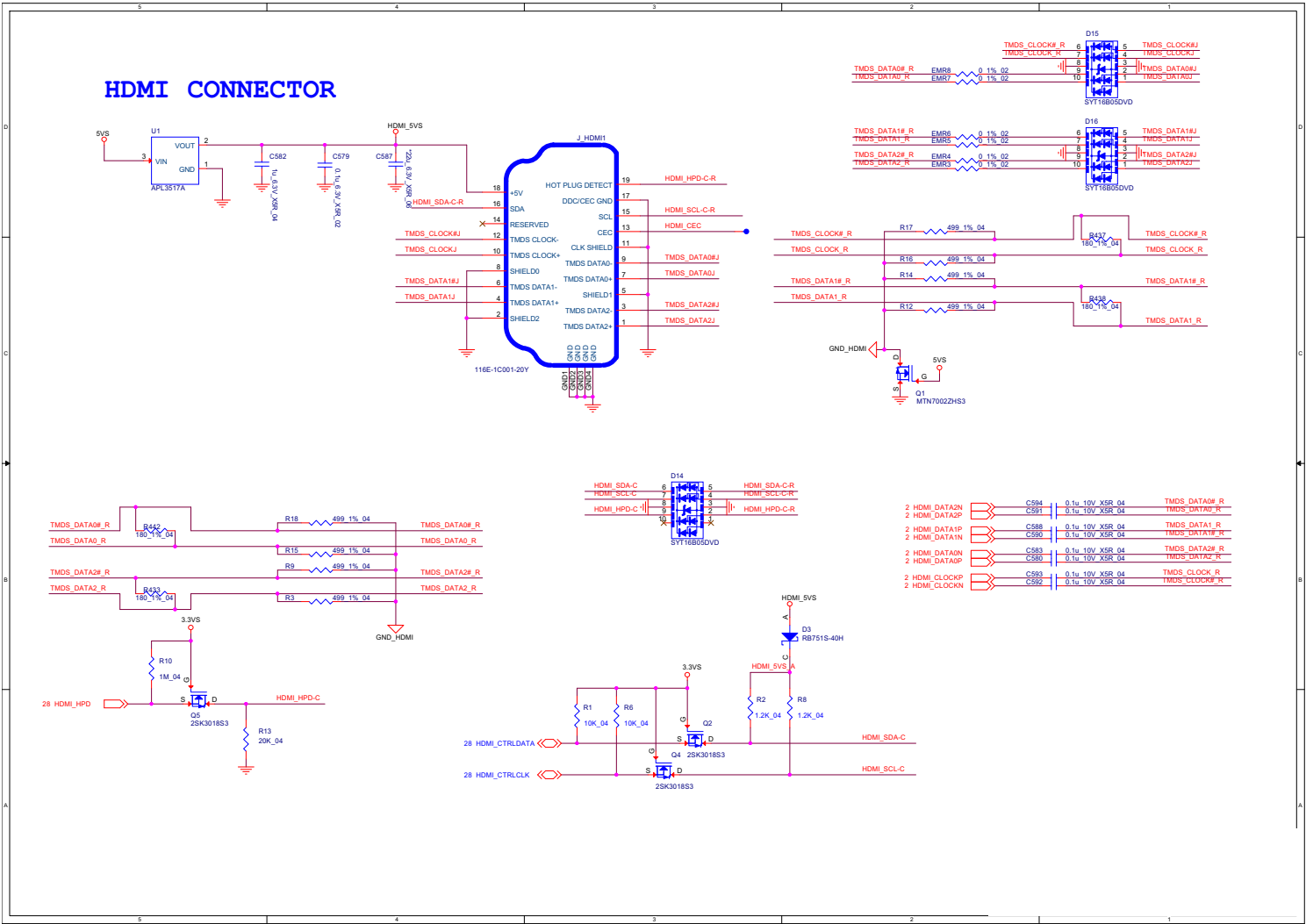


Sheet 24 of 62
Panel, Inverter

Schematic Diagrams

HDMI

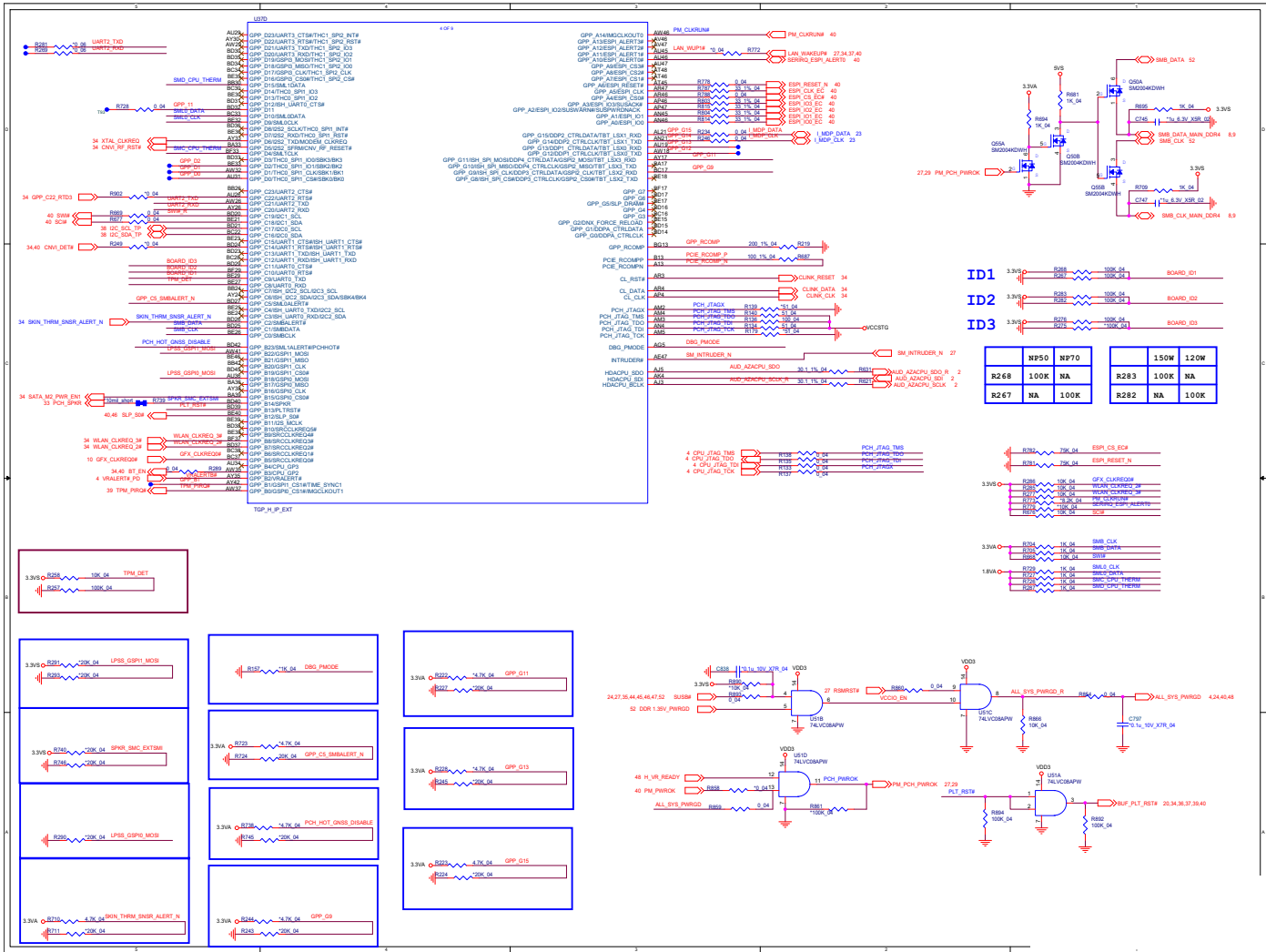
Sheet 25 of 62
HDMI



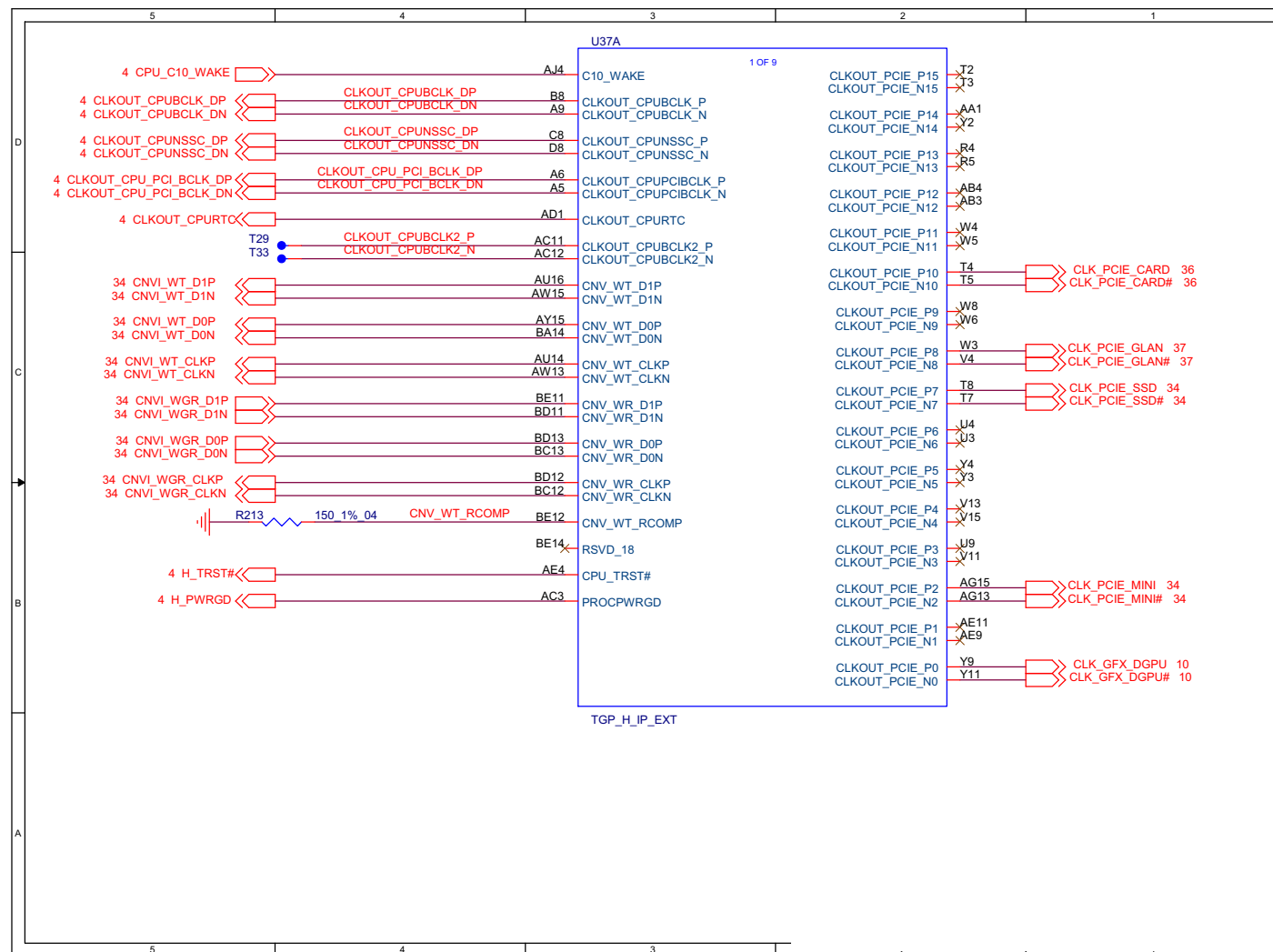
PCH 2/7

B.Schematic Diagrams

PCH 4/7



PCH 5/7

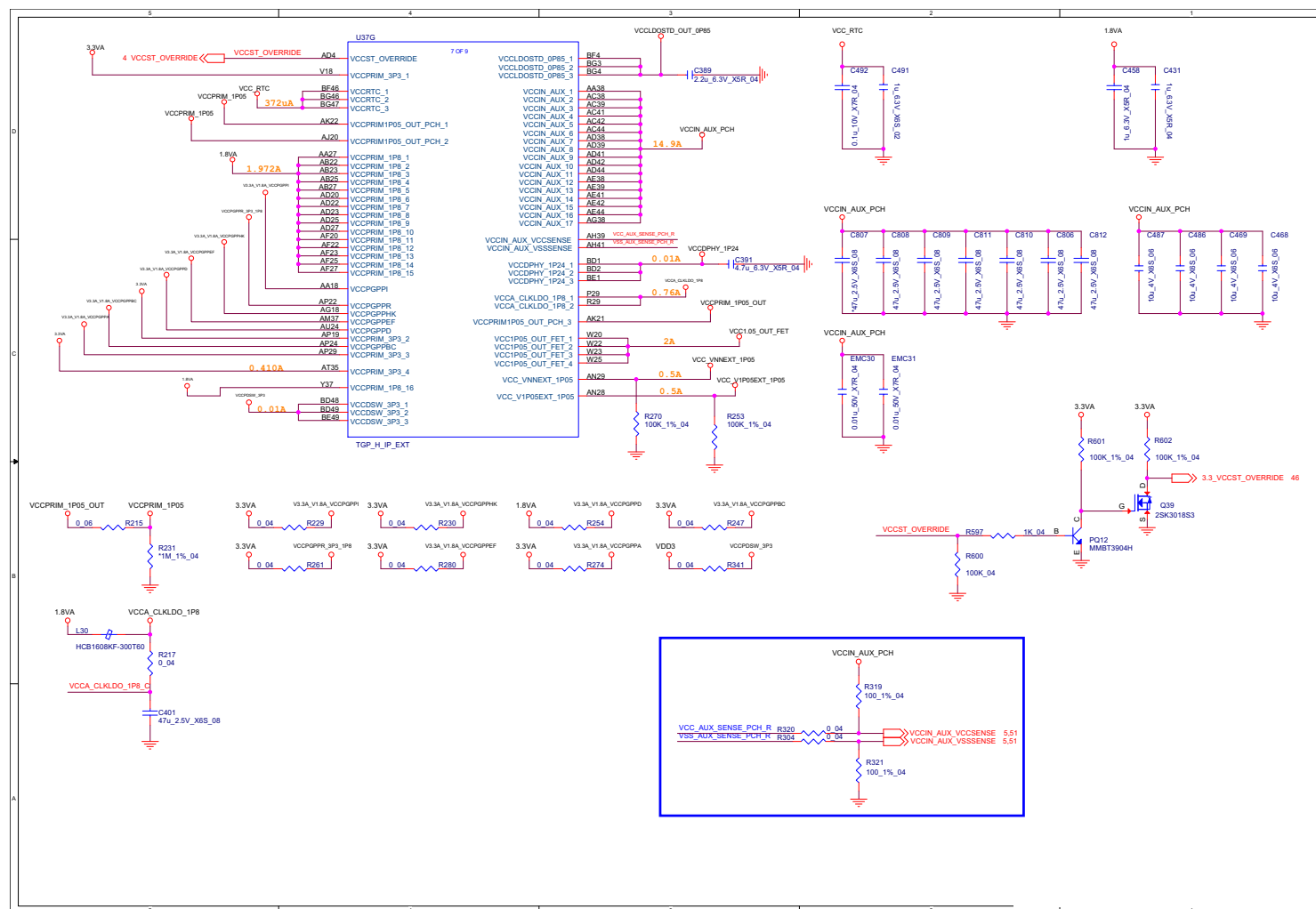


Sheet 30 of 62
PCH 5/7

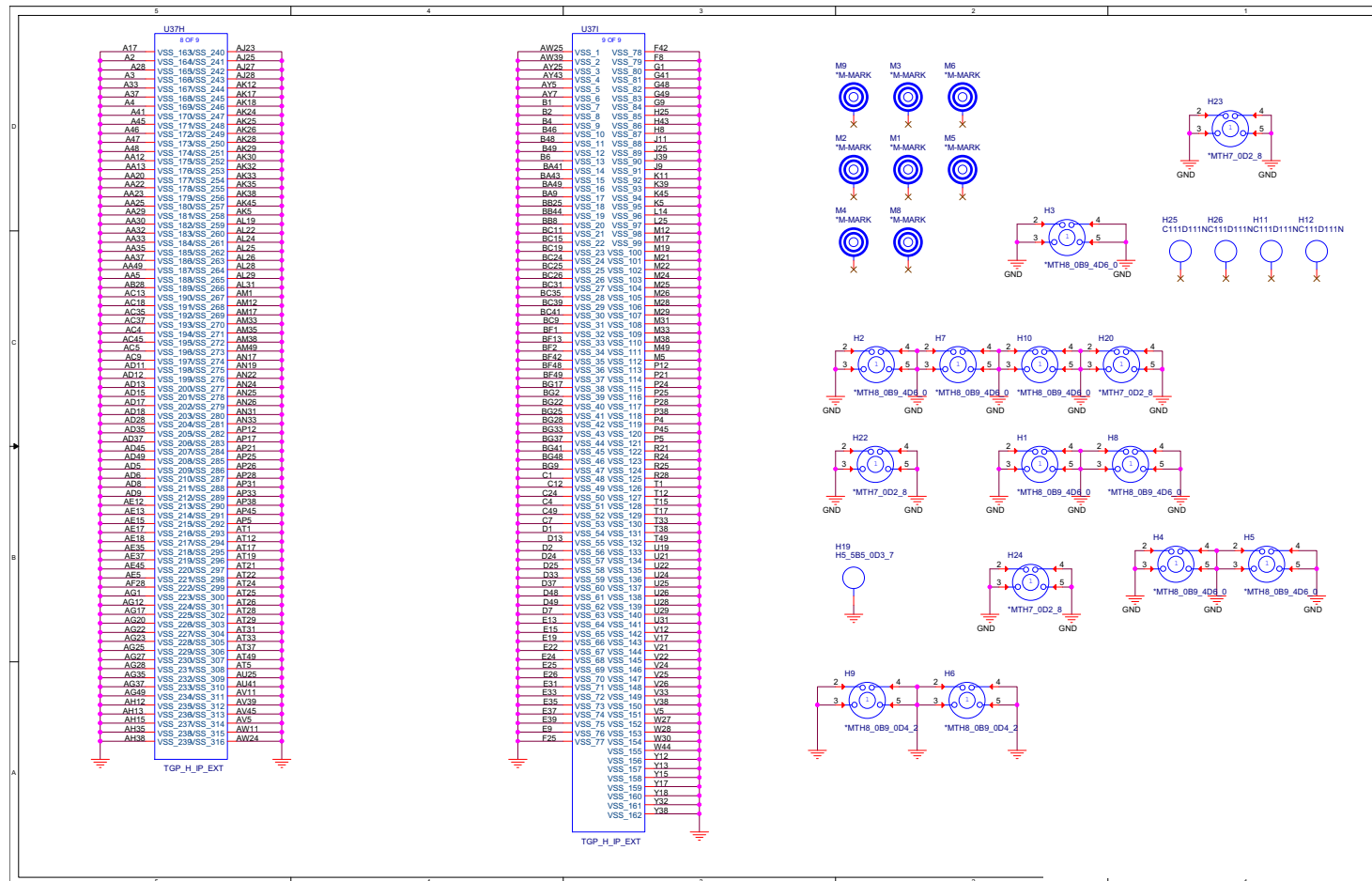
B.Schematic Diagrams

PCH 6/7

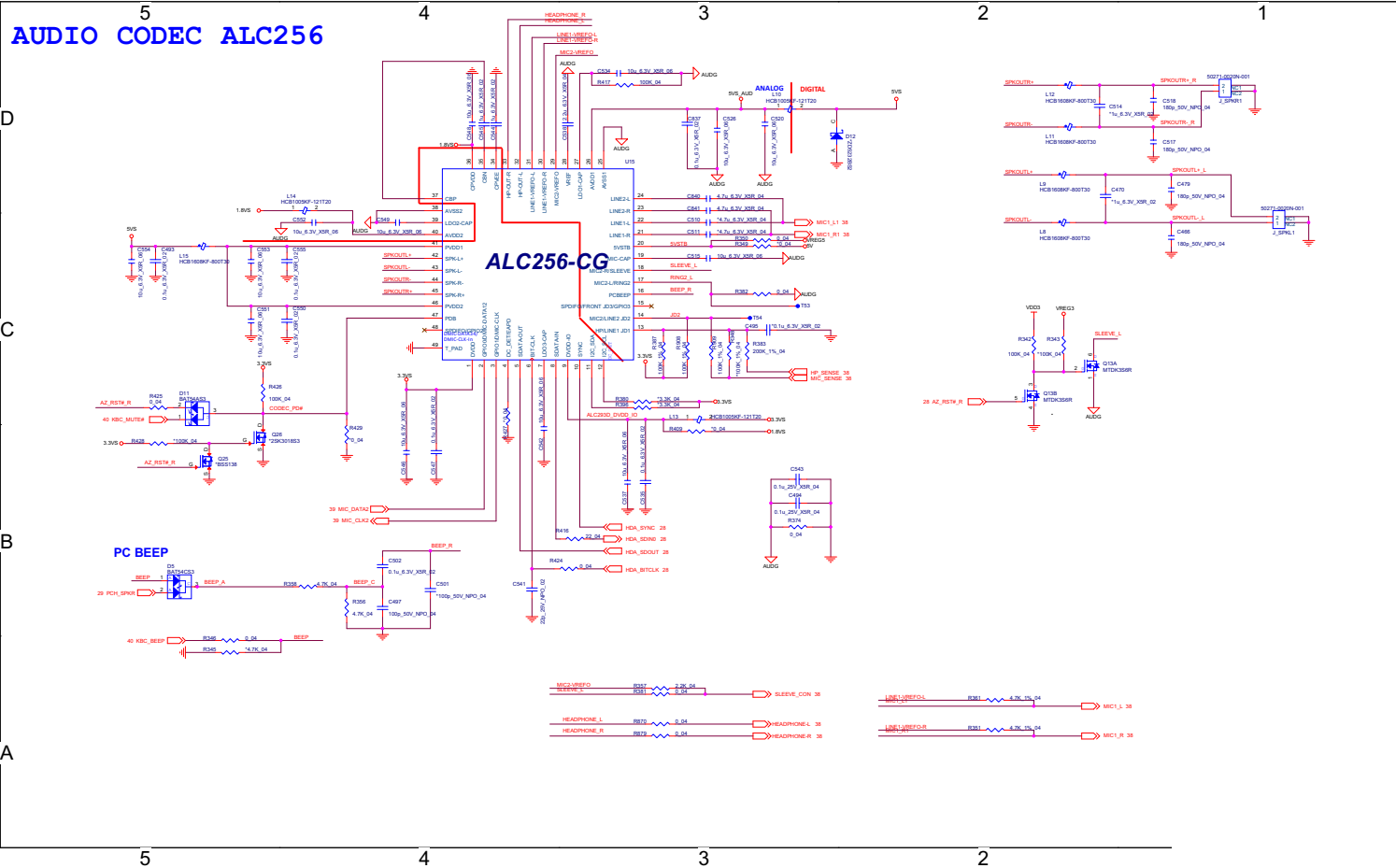
Sheet 31 of 62
PCH 6/7



PCH 7/7

Sheet 32 of 62
PCH 7/7

Audio Codec



Sheet 33 of 62
Audio Codec

B.Schematic Diagrams

[illegible]

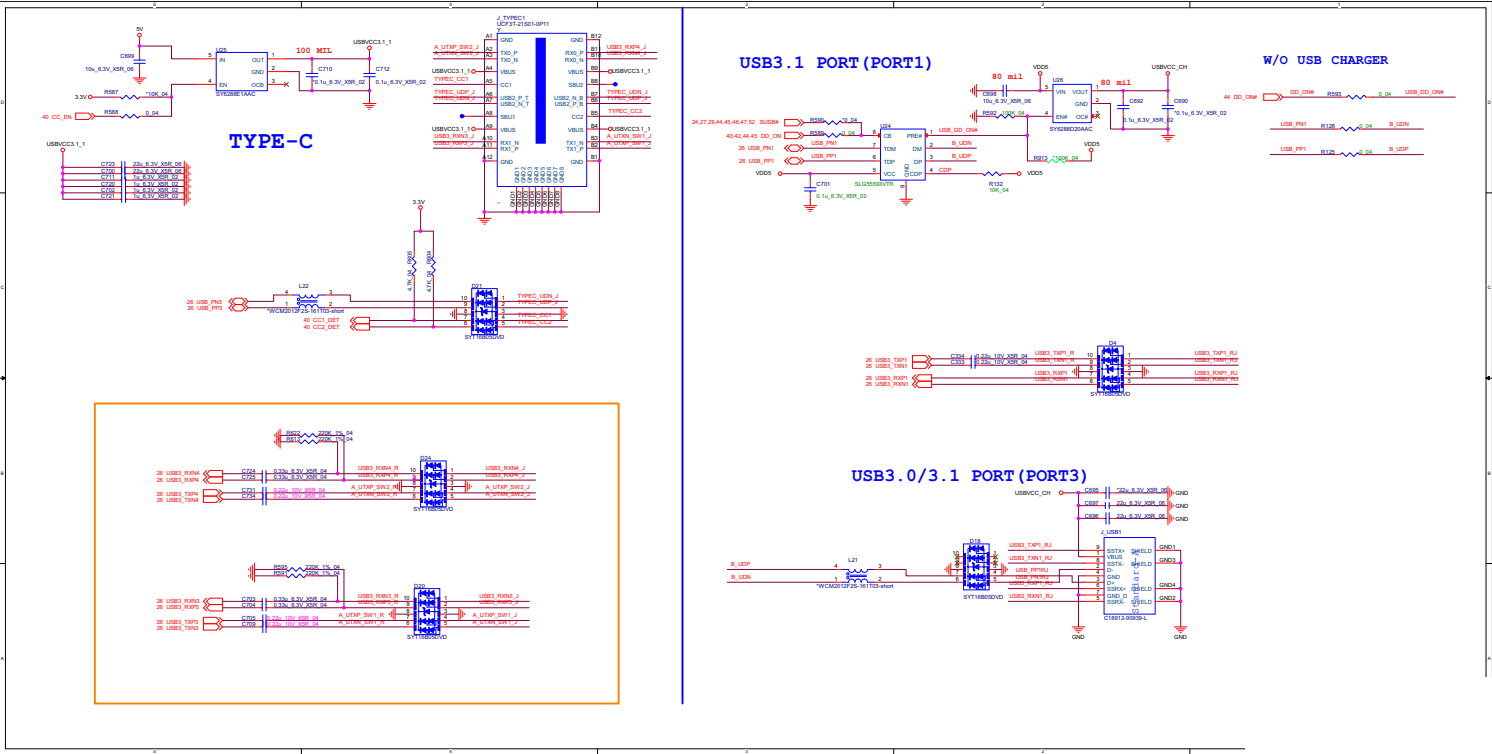
Diagram showing the connections for pins 1 to 4:

- Pin 1: WLAN_EN
- Pin 2: BT_EN
- Pin 3: WLAN_PWR_EN
- Pin 4: WLAN_3.3V

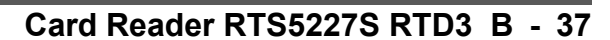
Schematic Diagrams

Type-C & A

Sheet 35 of 62
Type-C & A



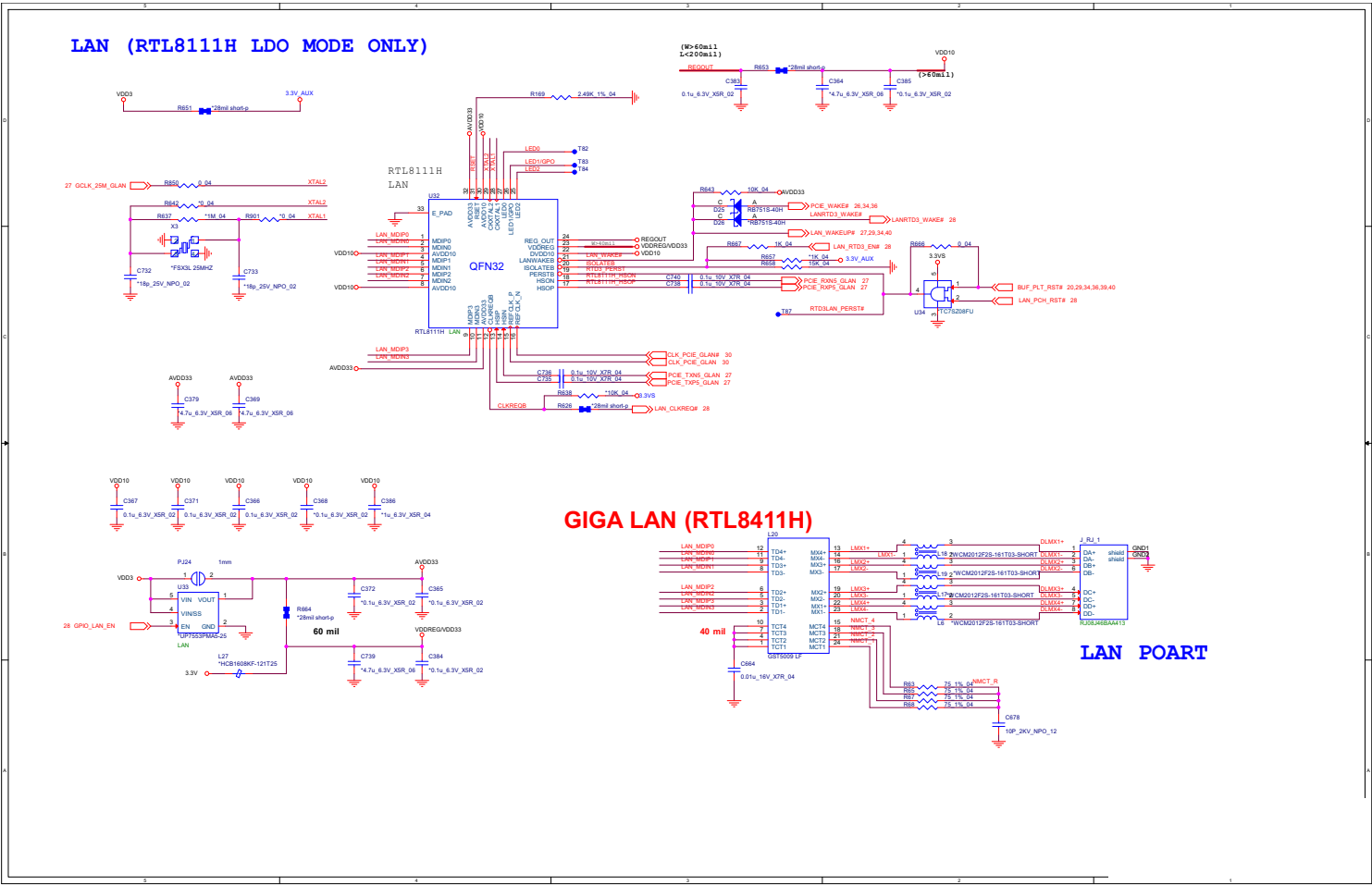
Sheet 36 of 62
Card Reader
RTS5227S RTD3



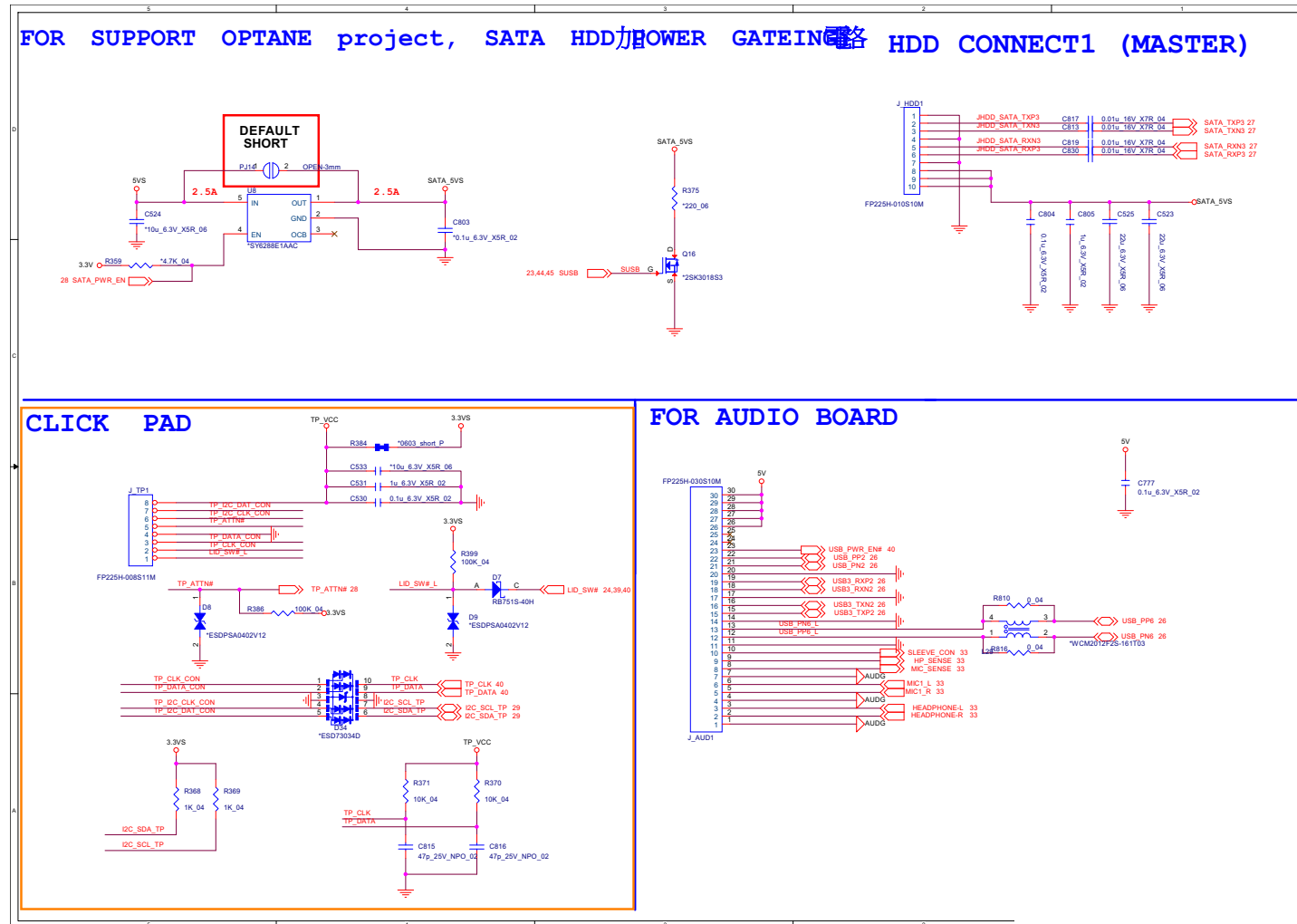
Schematic Diagrams

LAN RTL8111H RTD3

Sheet 37 of 62
LAN RTL8111H
RTD3

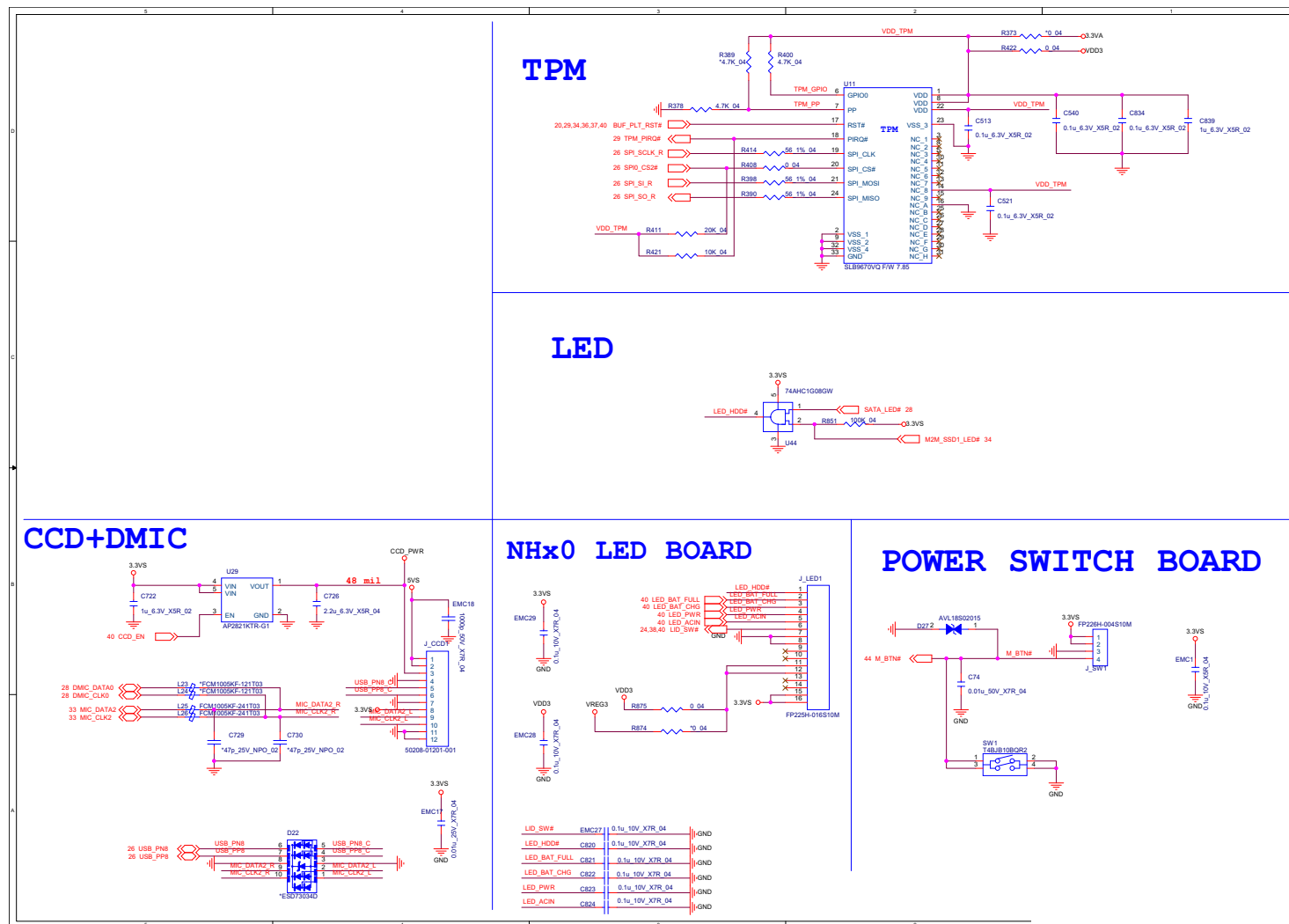


HDD, Click TP, Audio

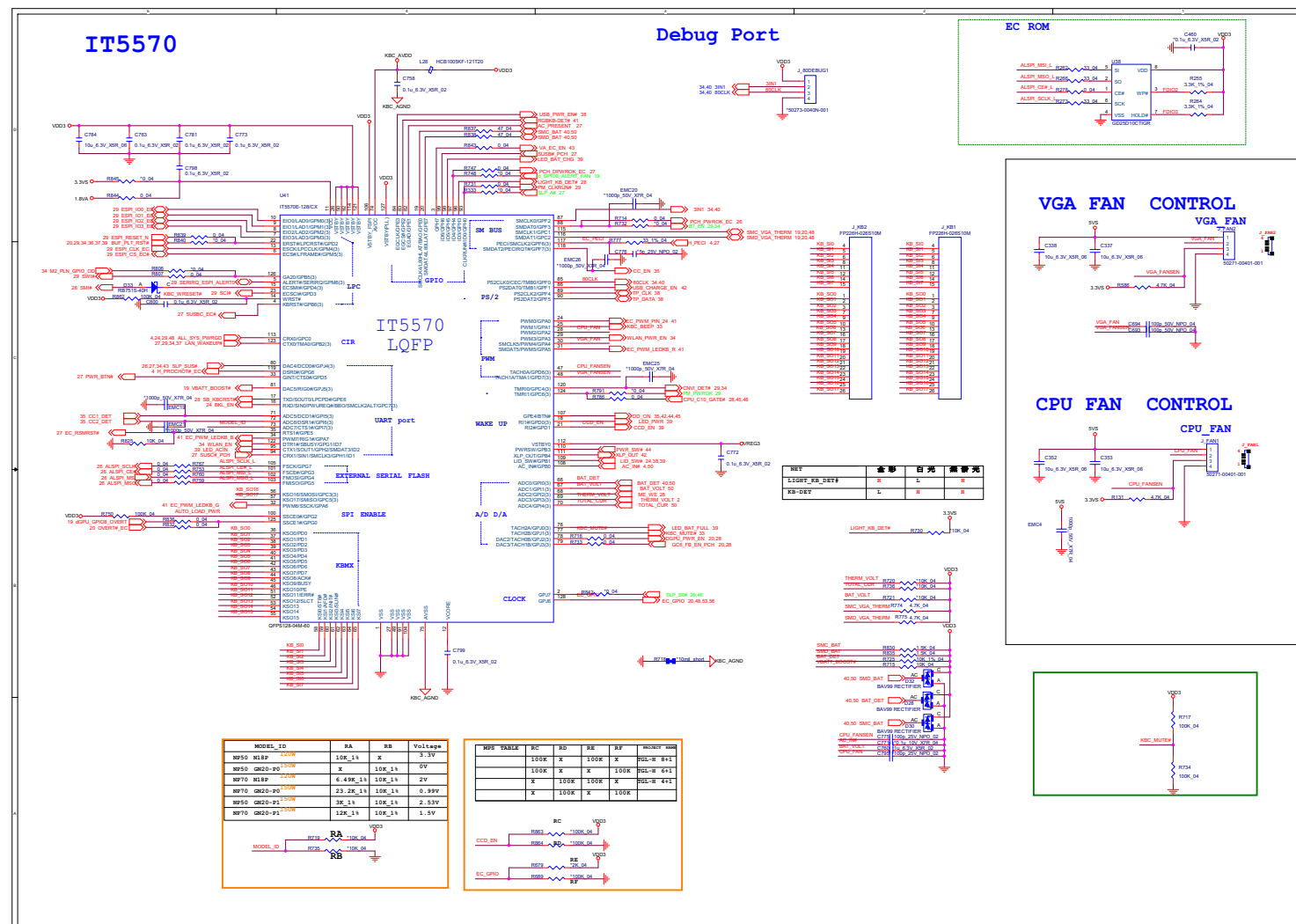


B. Schematic Diagrams

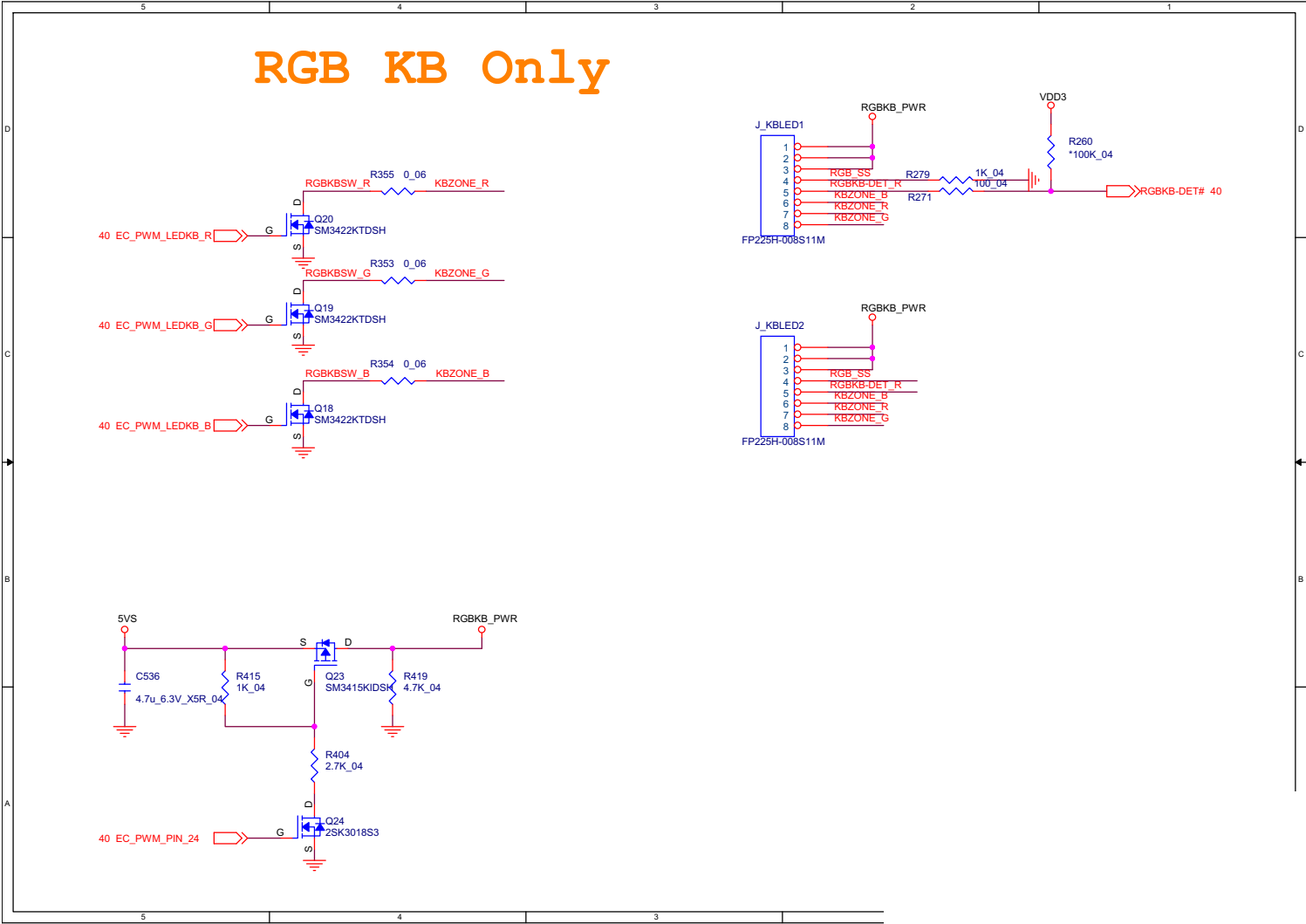
Sheet 39 of 62
LED, CCD, TPM,
Power SW Bd.



KBC-ITE IT5570

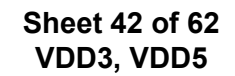
Sheet 40 of 62
KBC-ITE IT5570

RGB KB



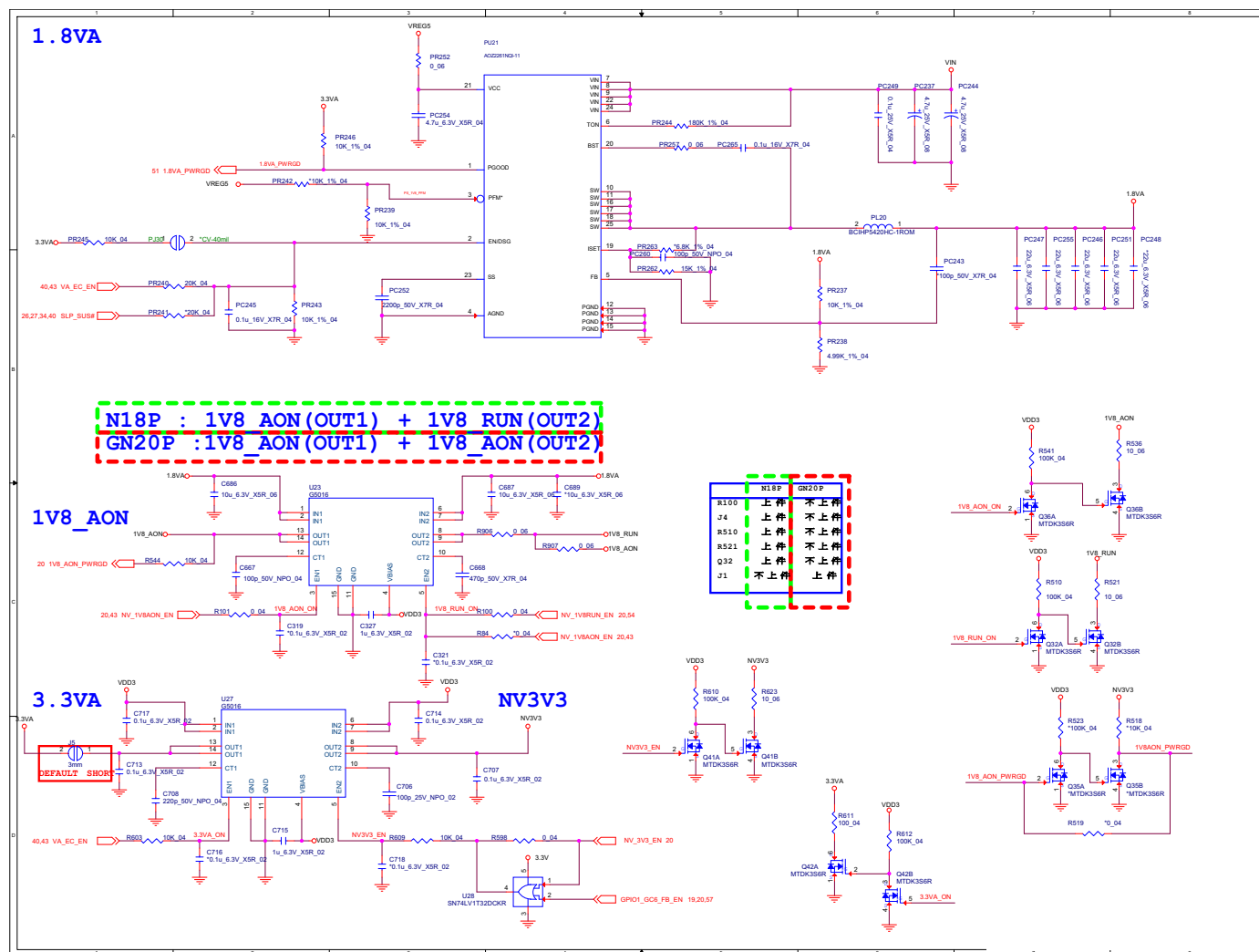
Sheet 41 of 62
RGB KB

VDD3, VDD5 B - 43



1V8_RUN/AON, NV3V3, 3.3VA

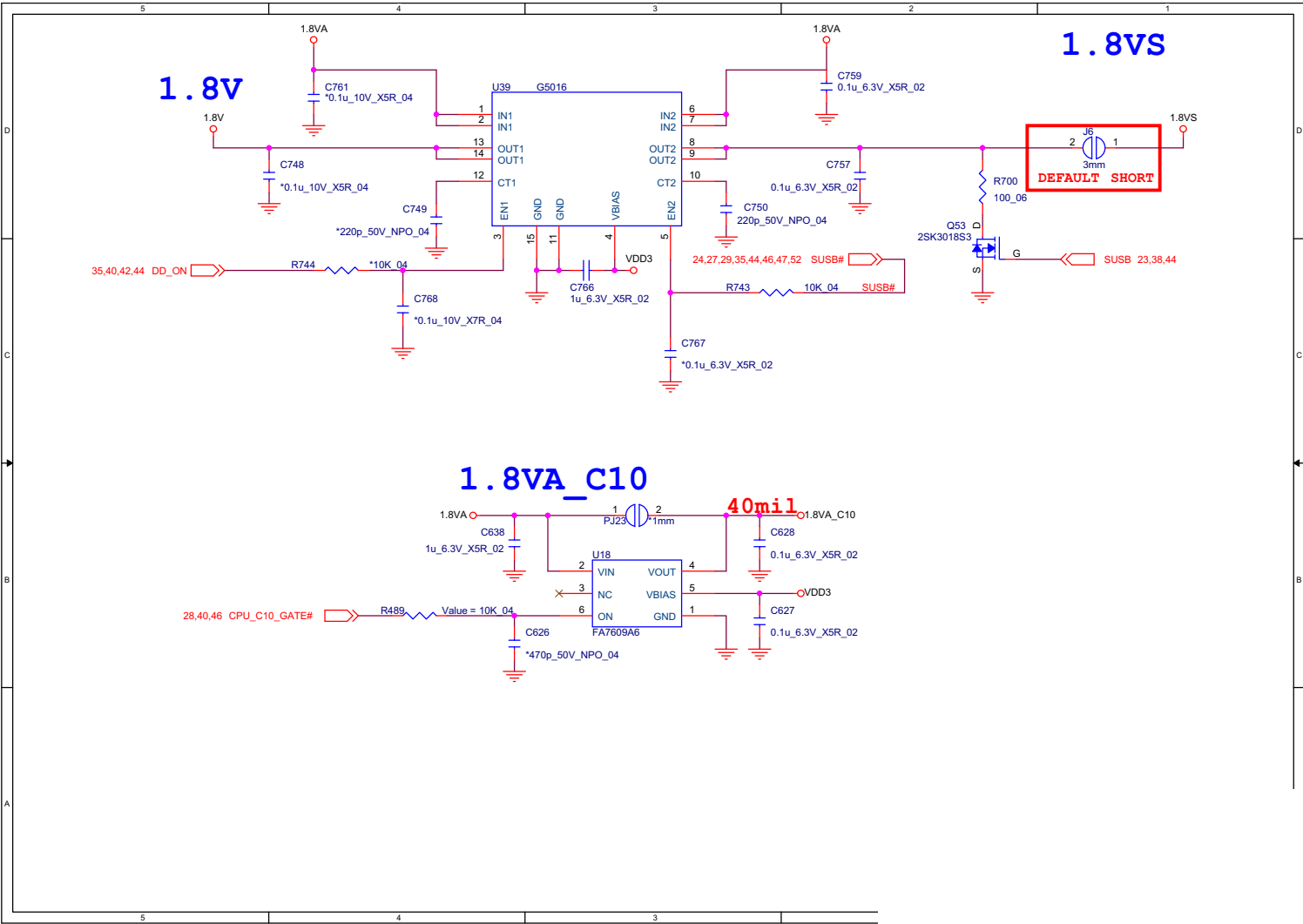
Sheet 43 of 62
1V8_RUN/AON,
NV3V3, 3.3VA



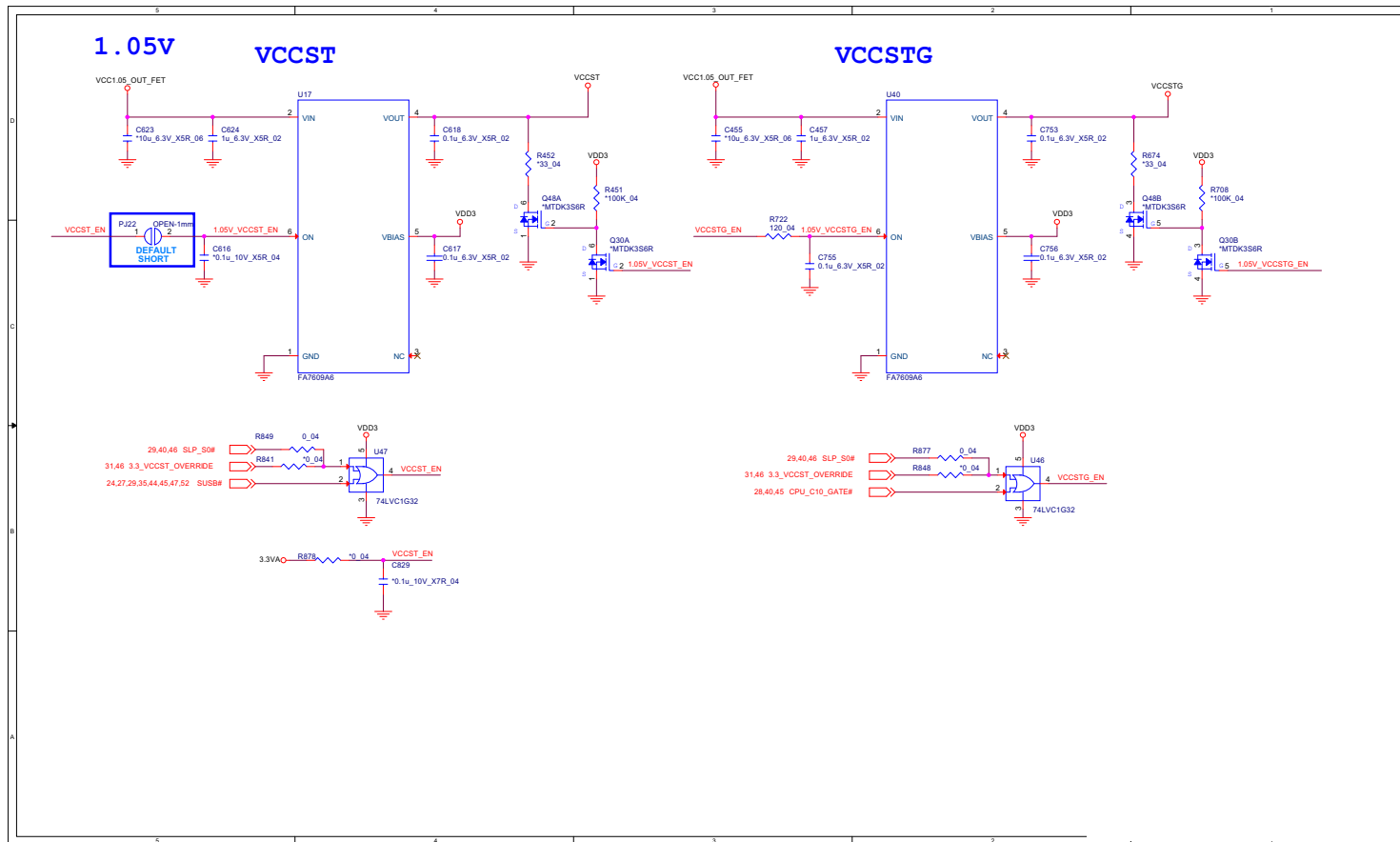
Schematic Diagrams

1.8V, 1.8VS, 1.8VA, C10

Sheet 45 of 62
1.8V, 1.8VS,
1.8VA_C10



VCCST, VCCSTG

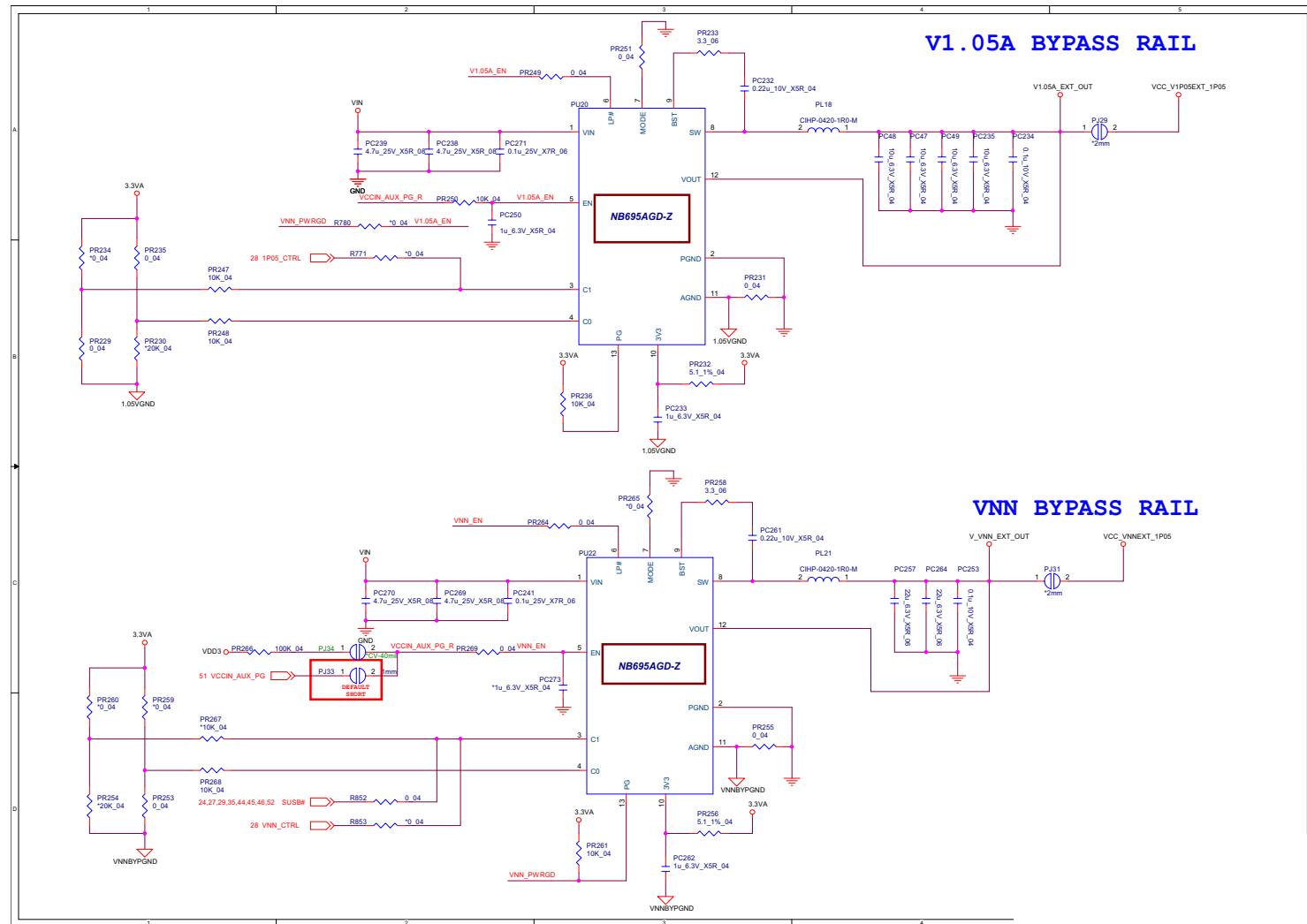


Sheet 46 of 62
VCCST, VCCSTG

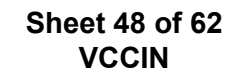
Schematic Diagrams

VNN / V1.05

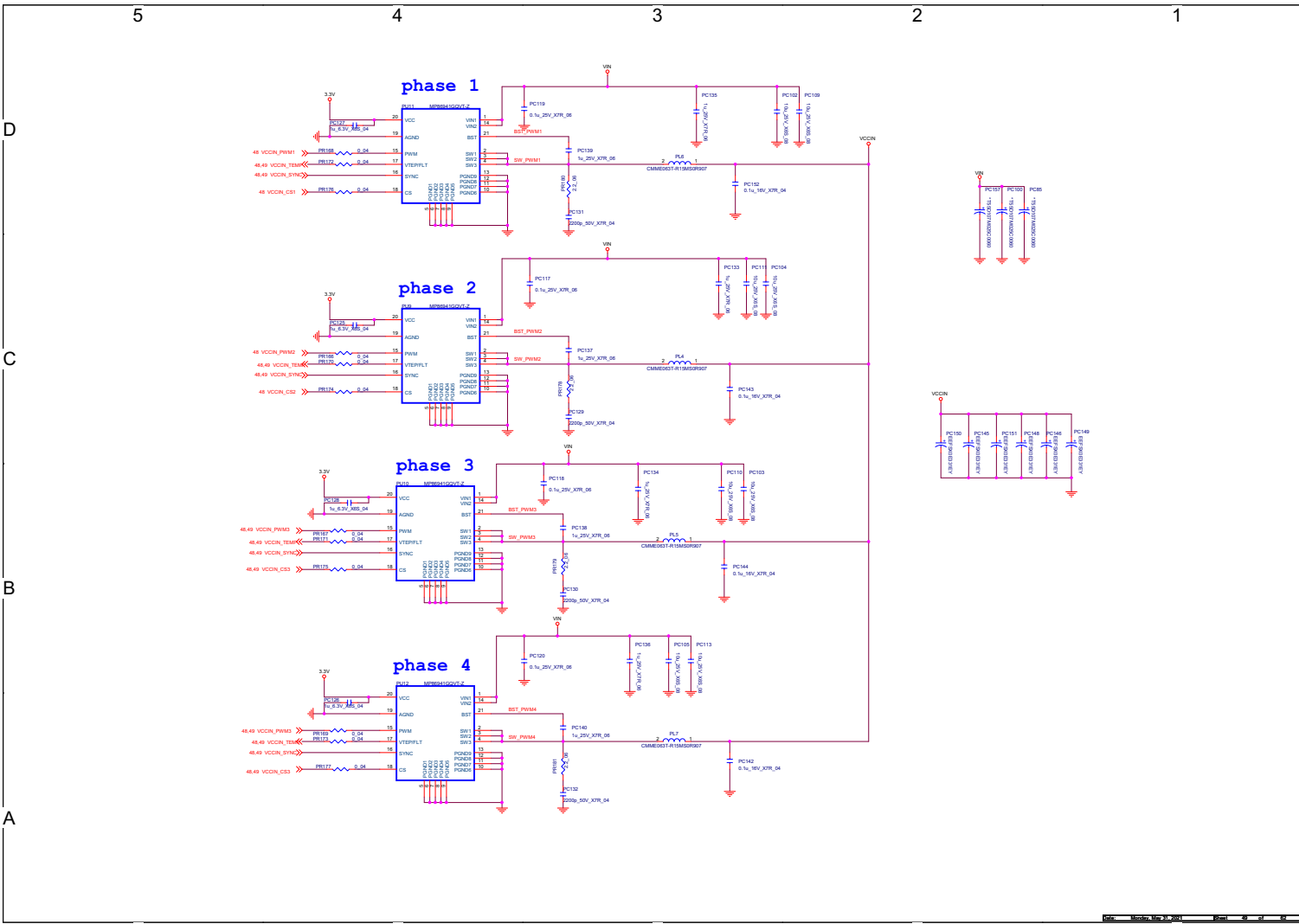
Sheet 47 of 62
VNN / V1.05



VCCIN B - 49

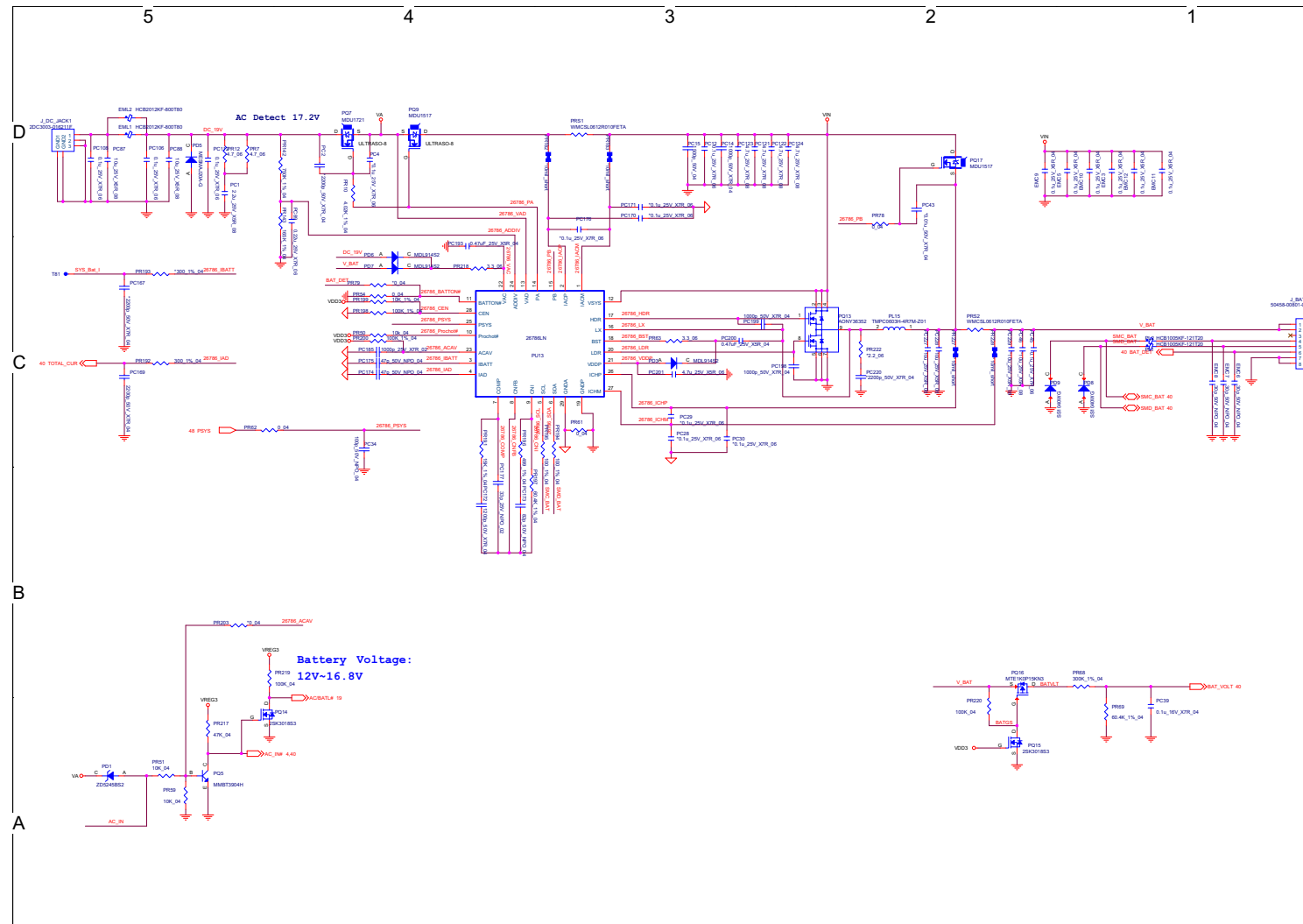


VCCIN Output



Sheet 49 of 62
VCCIN Output

AC_In, Charger

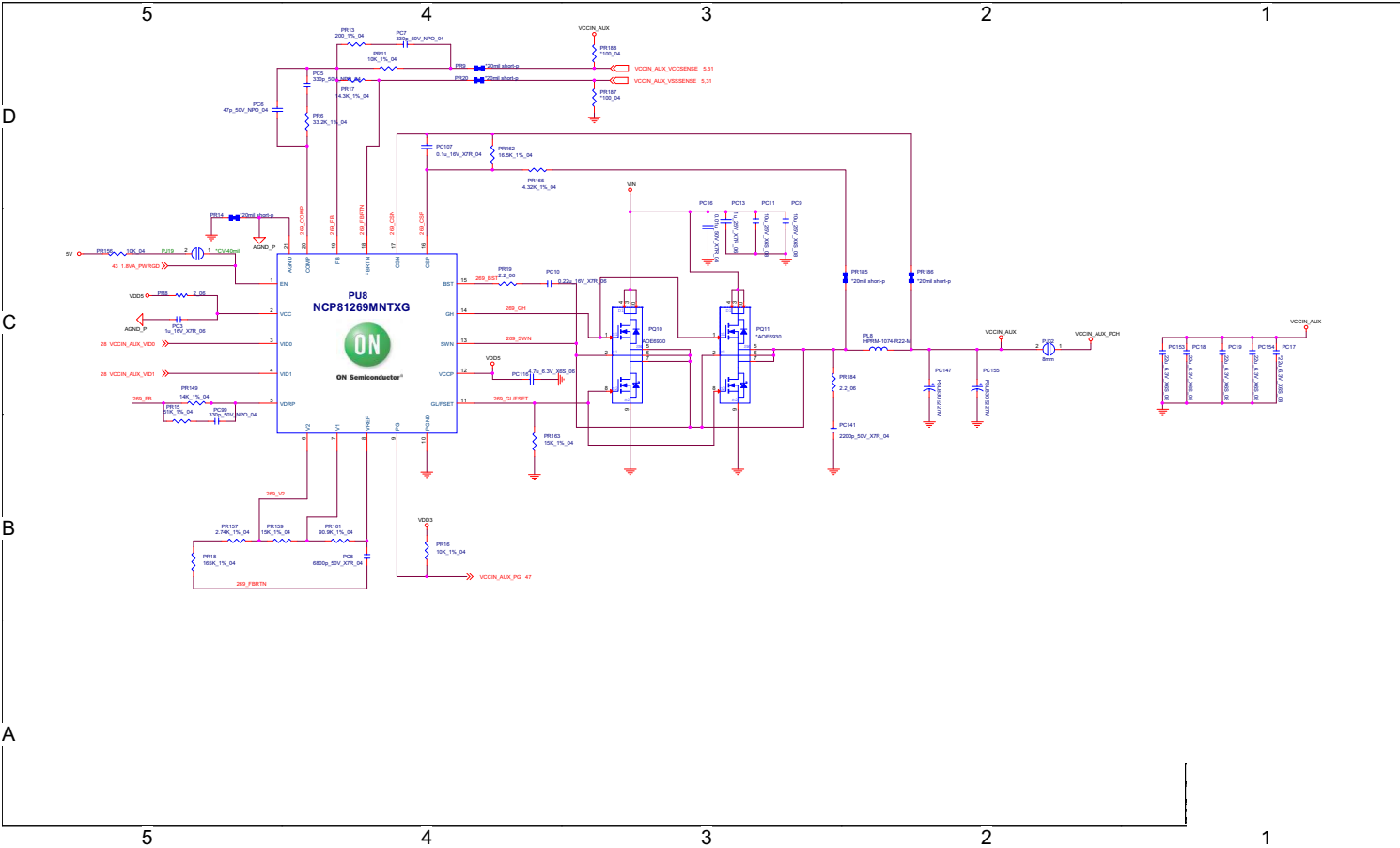


Sheet 50 of 62
AC_In, Charger

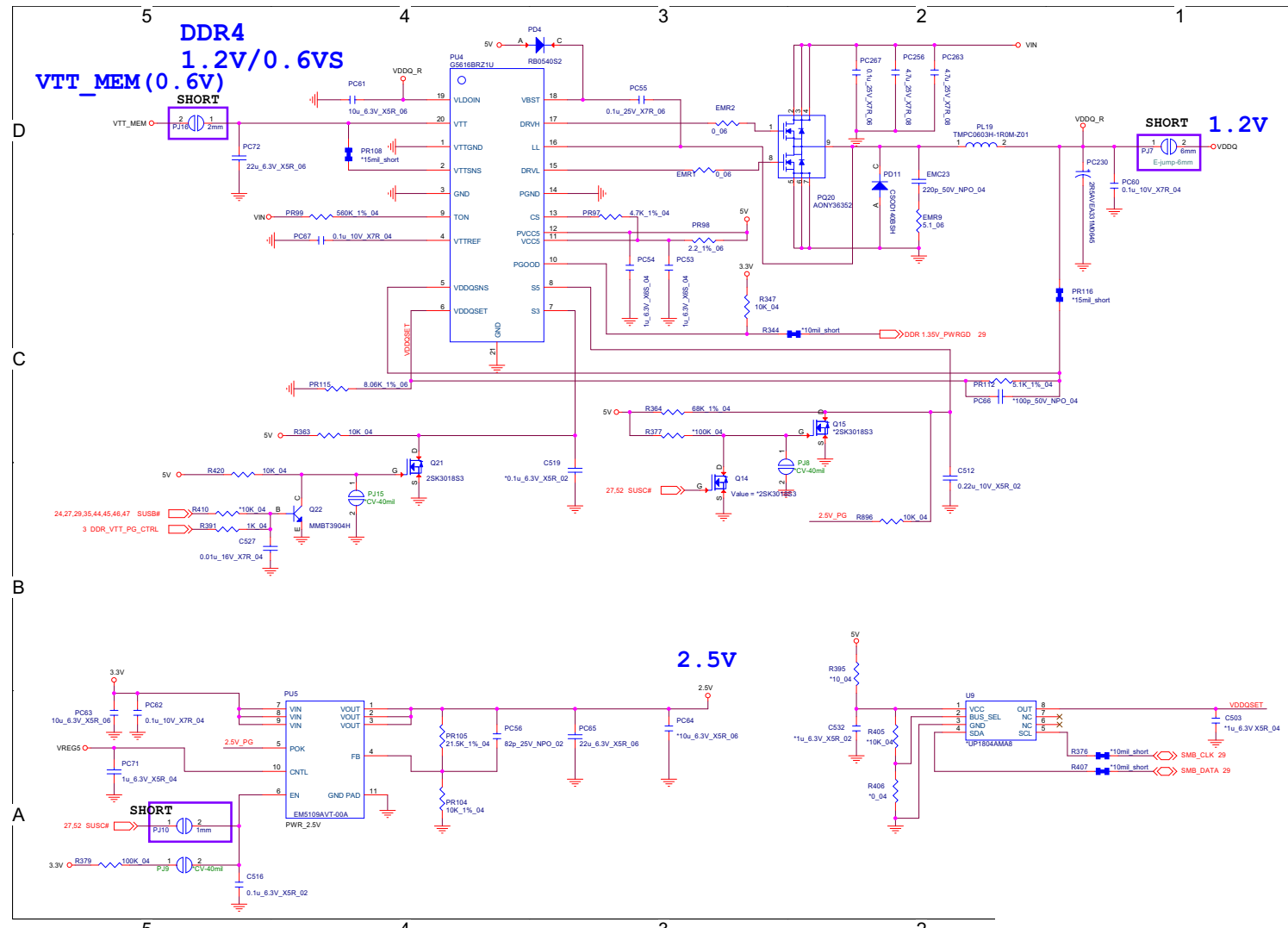
Schematic Diagrams

VCCIN AUX

Sheet 51 of 62
VCCIN AUX

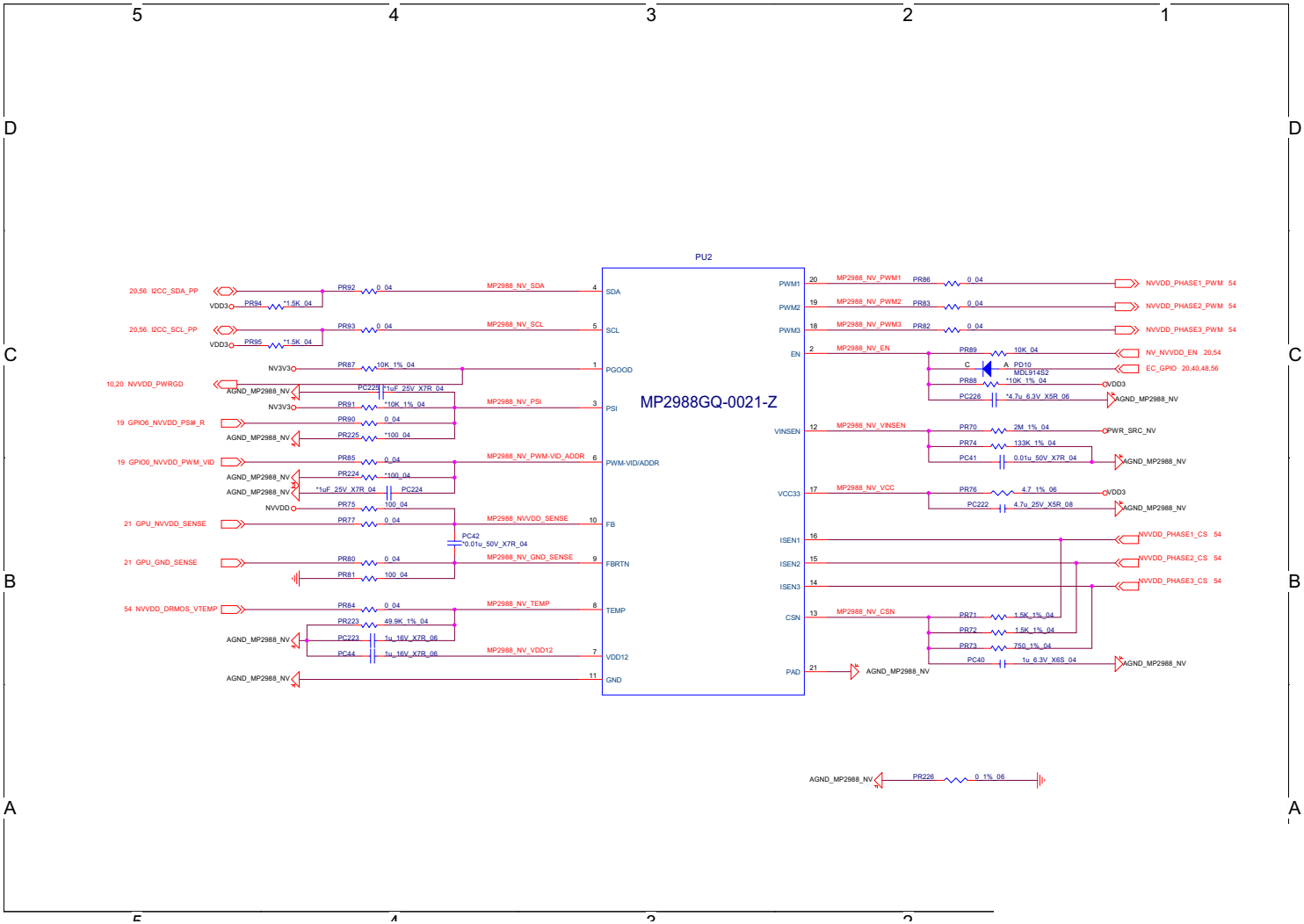


Sheet 52 of 62
DDR 1.2V / 0.6VS,
2.5V



NVVDD1

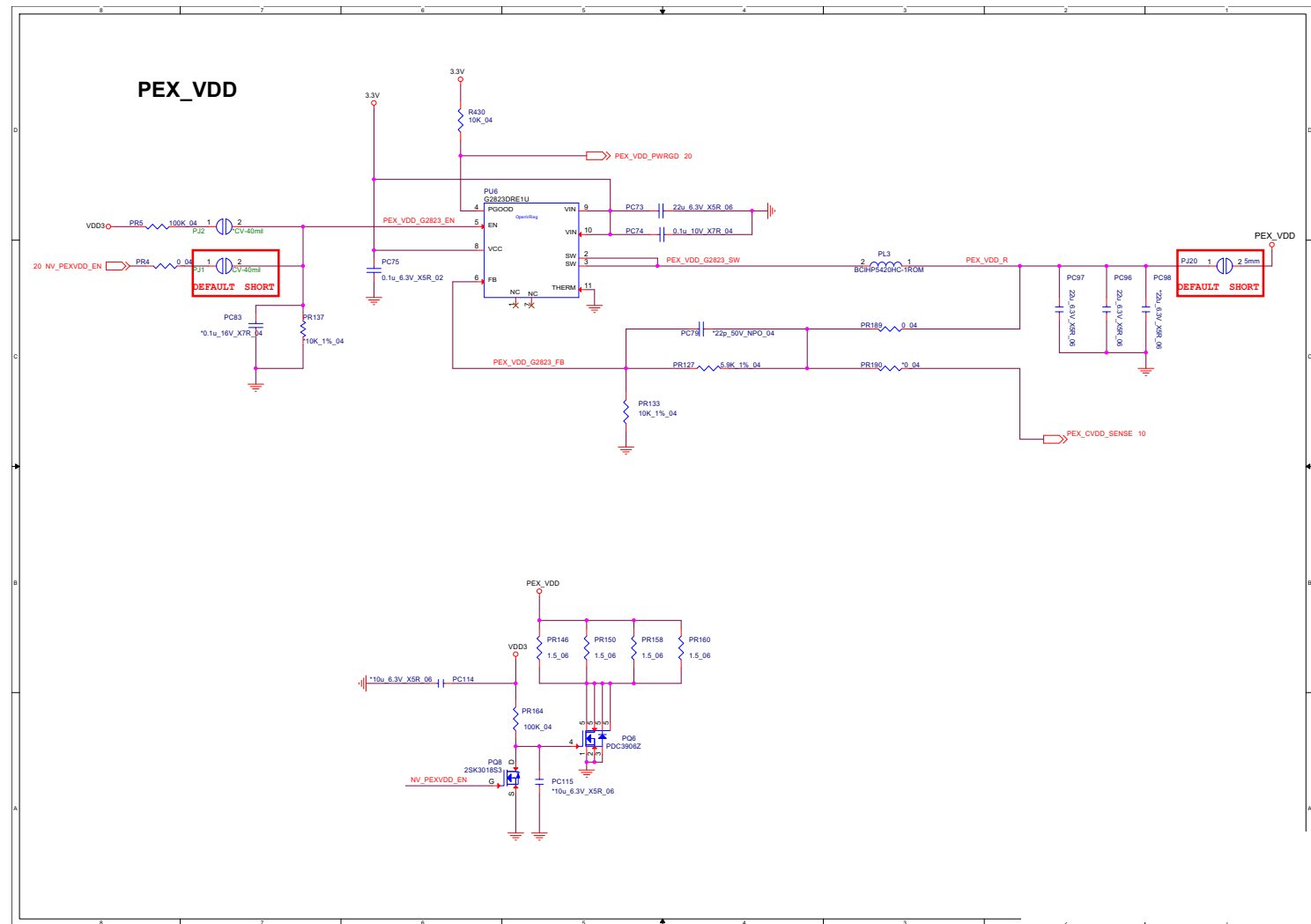
Sheet 53 of 62
NVVDD1



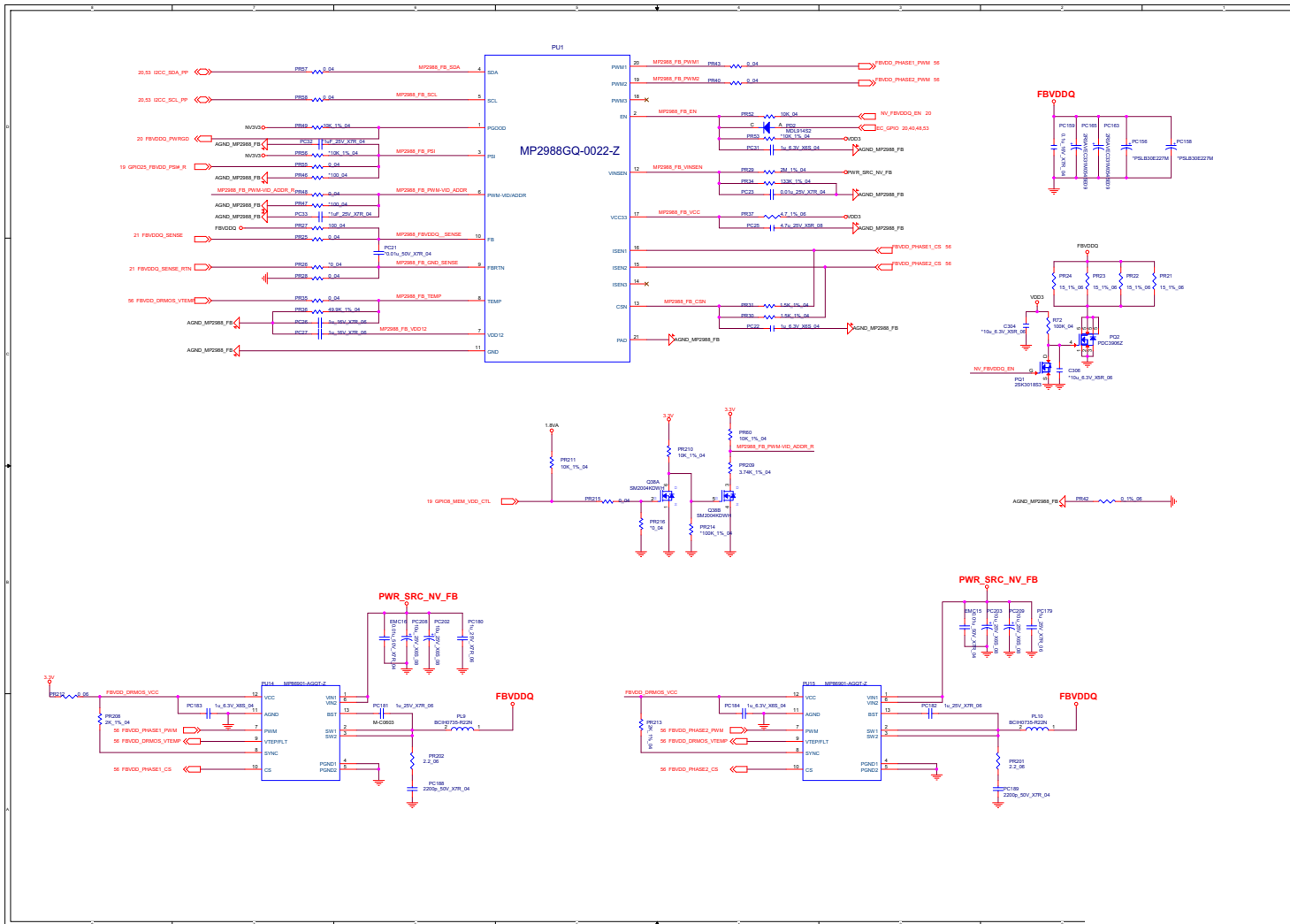
Sheet 54 of 62
NVVDD2



Sheet 55 of 62
PEX_VDD



FBVDDQ

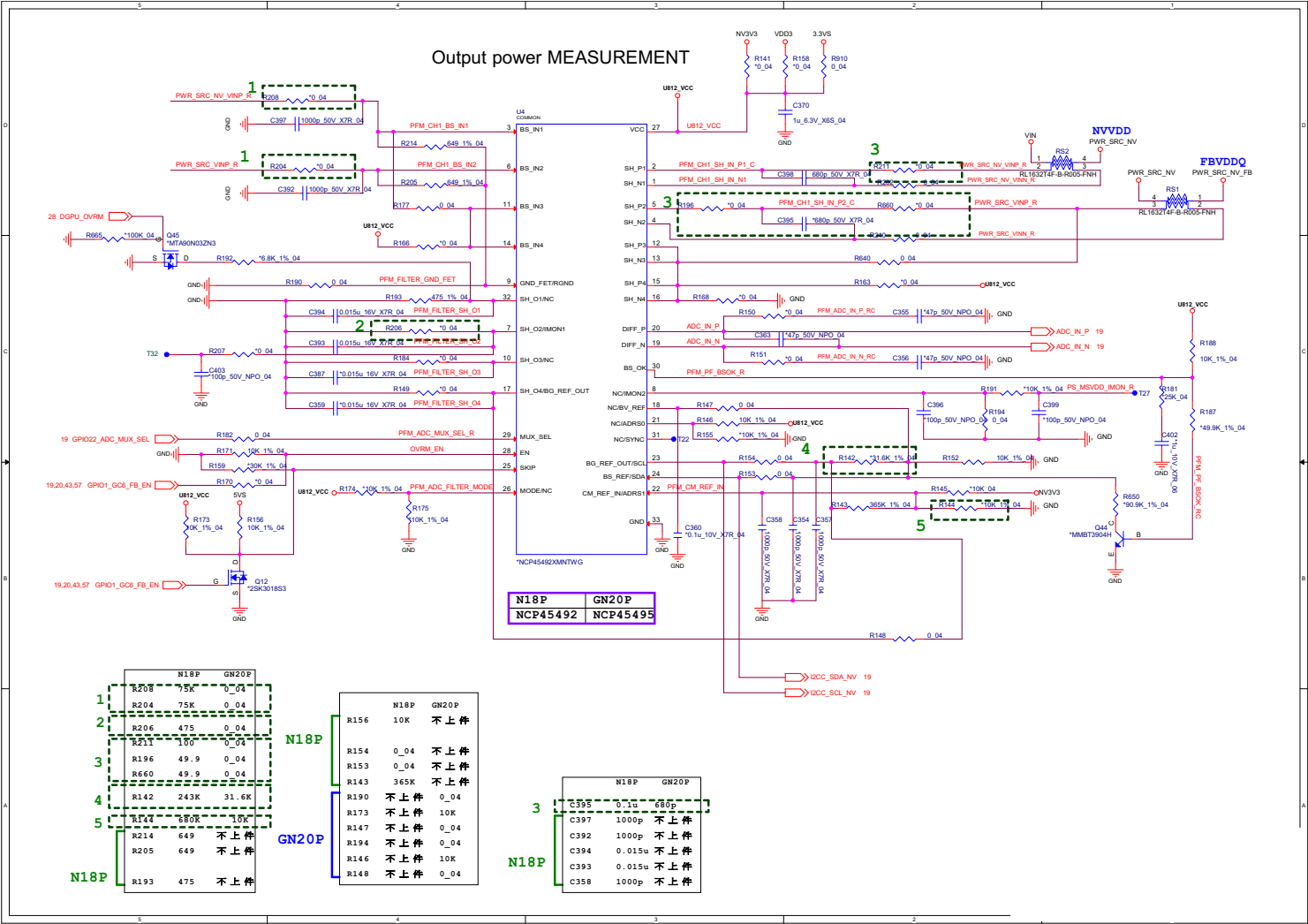


Sheet 56 of 62
FBVDDQ

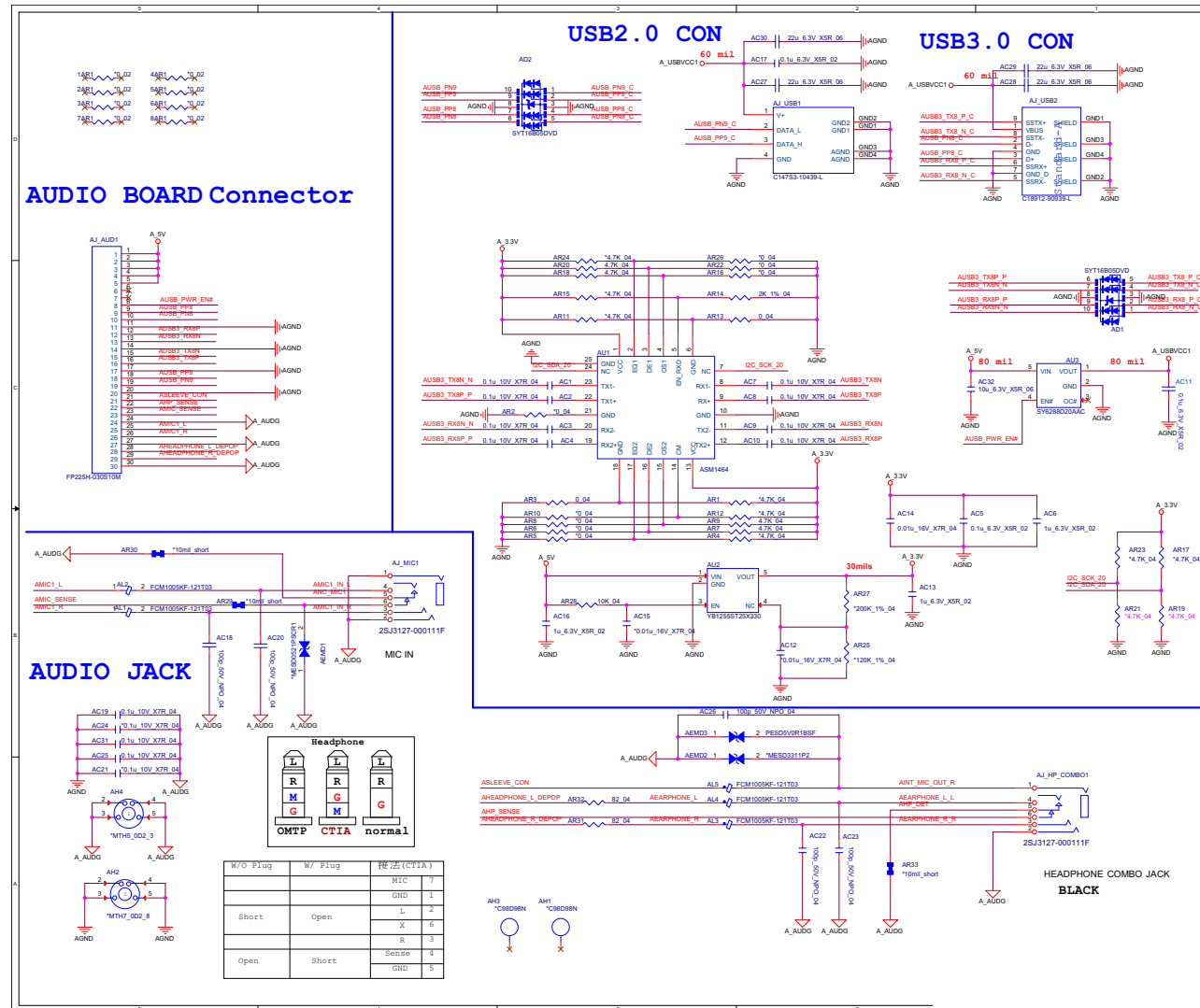
Schematic Diagrams

OVRM

Sheet 57 of 62
OVRM



Audio Board + Redriver

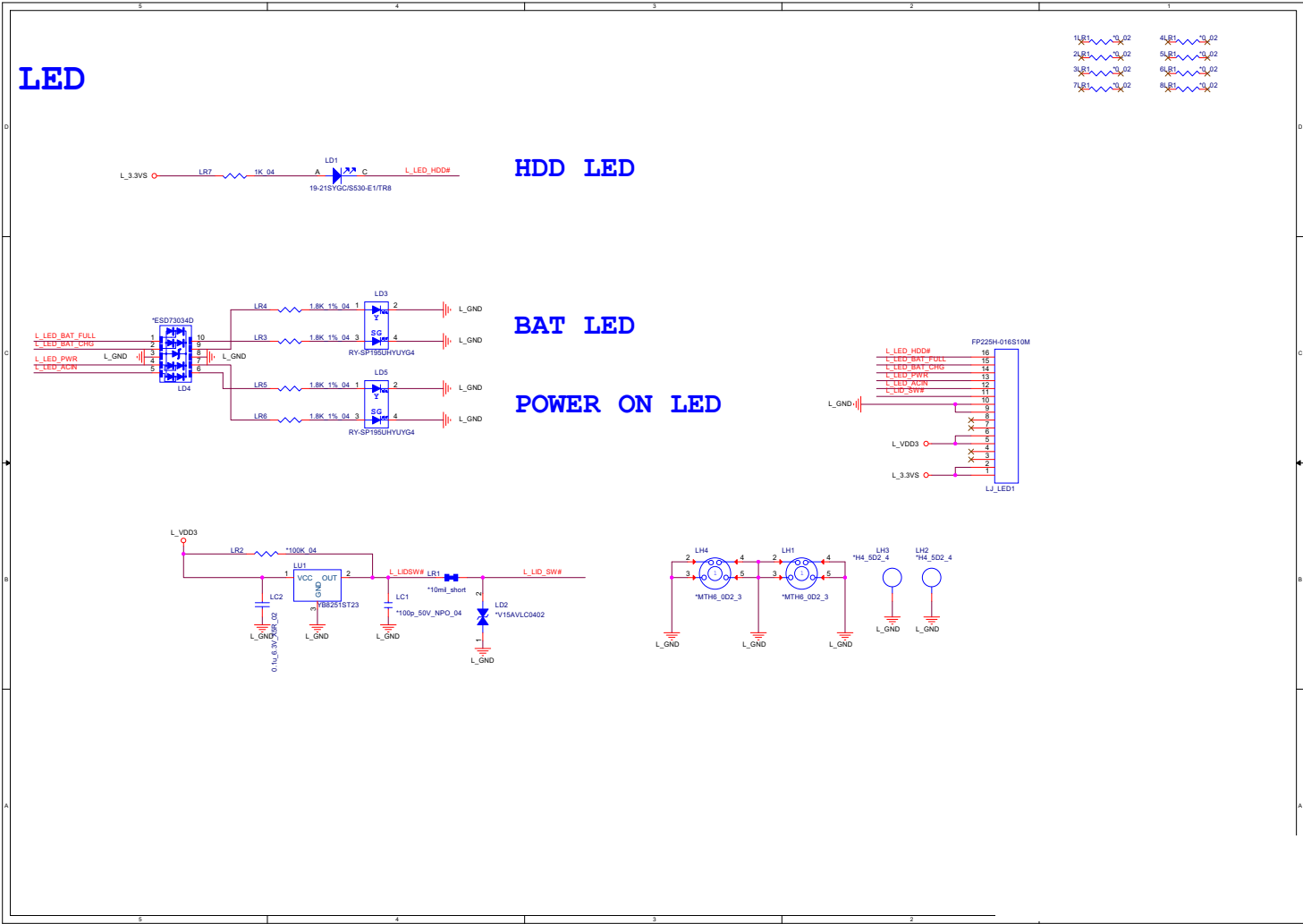


Sheet 58 of 62
Audio Board +
Redriver

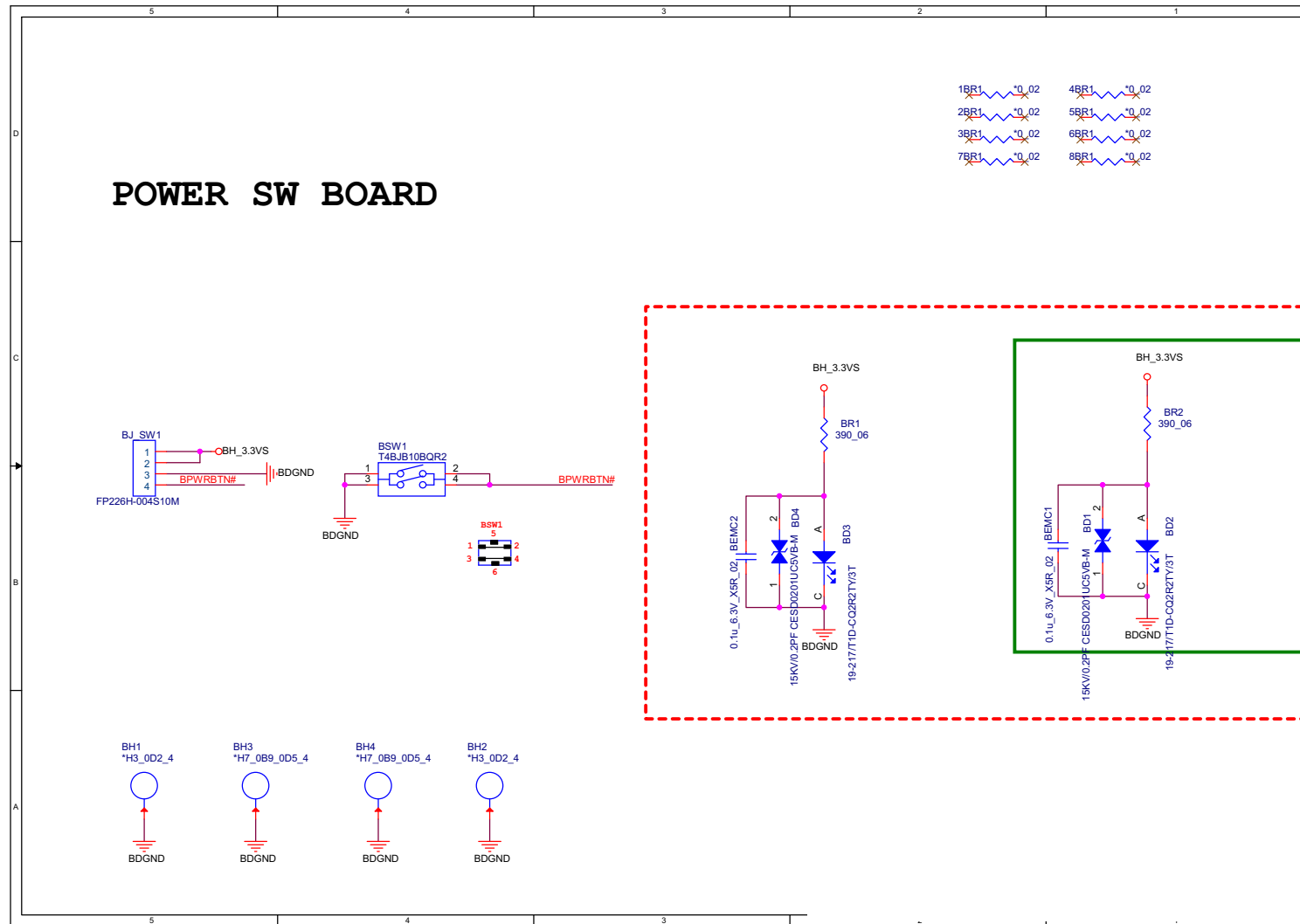
Schematic Diagrams

LED Board

Sheet 59 of 62
LED Board



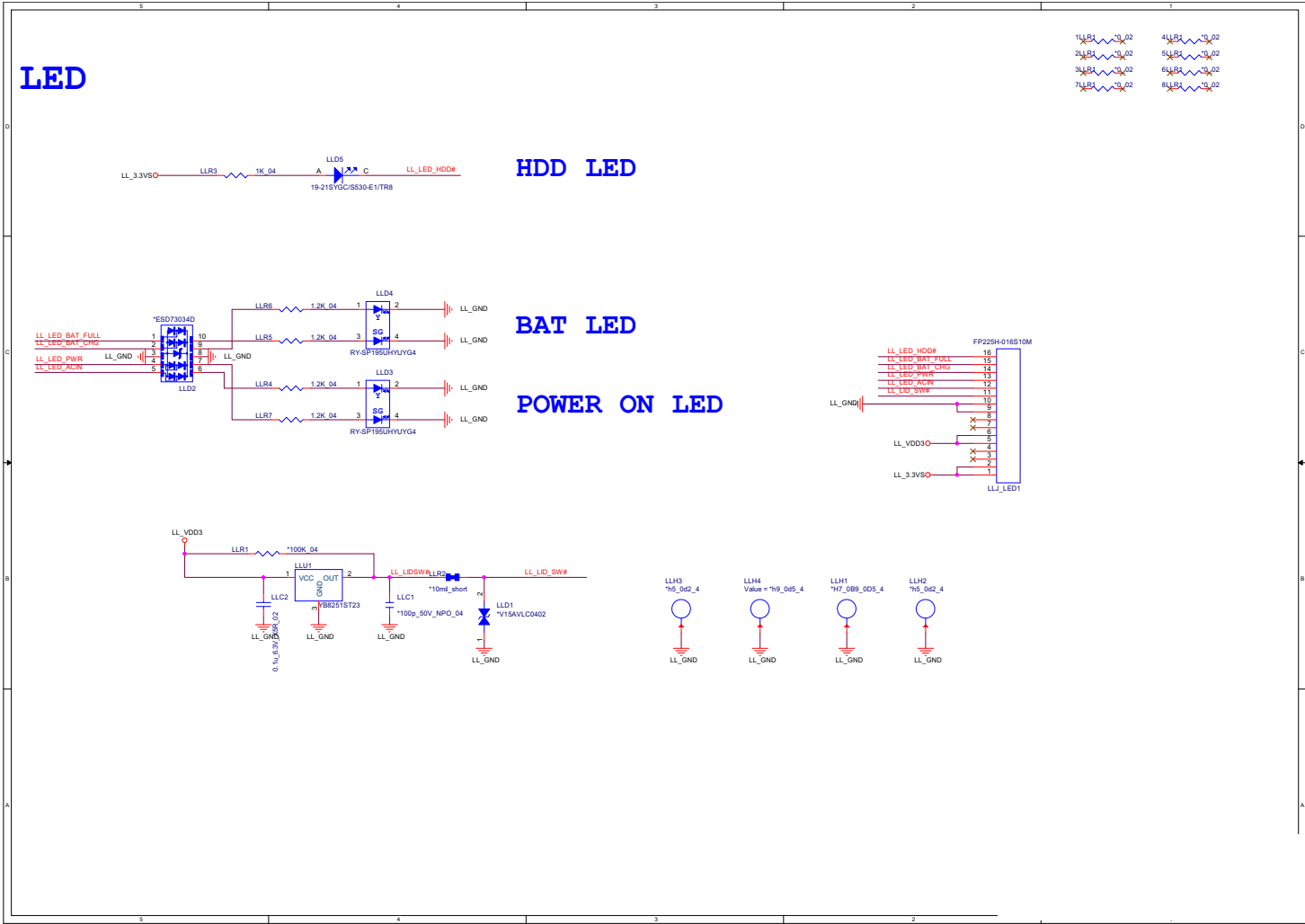
Power SW Board



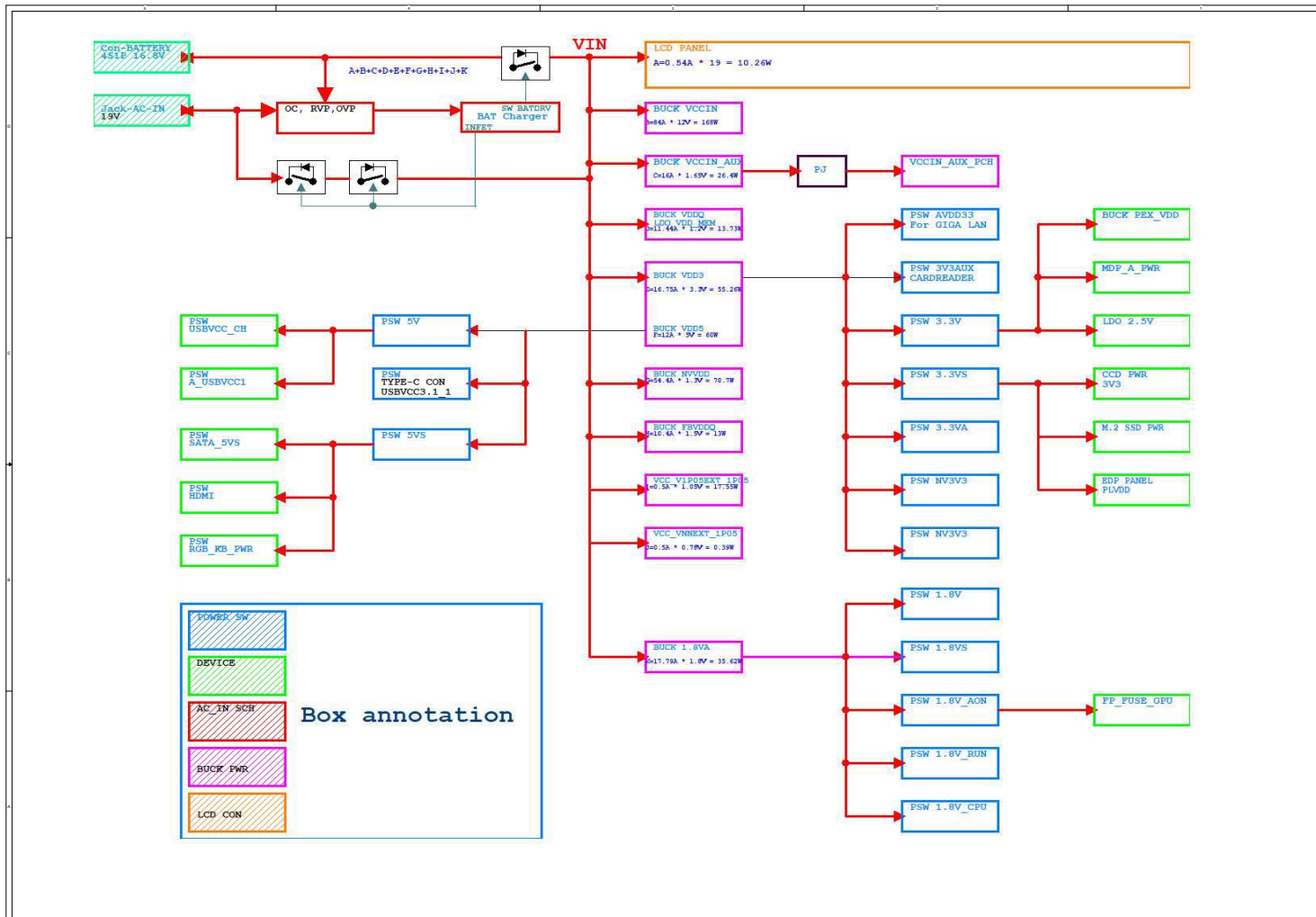
Sheet 60 of 62
Power SW Board

17" LED Board

Sheet 61 of 62
17" LED Board



Power Sequence



Sheet 62 of 62
Power Sequence

