

SERVICE MANUAL

NH50DB / NH50DE / NH57DB / NH57DE

notebook



Notebook Computer

NH50DB / NH50DE / NH57DB / NH57DE

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 *NH50DB* / *NH50DE* / *NH57DB* / *NH57DE* 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

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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 (**120 Watts**) minimum AC/DC Adapter.

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FCC Statement

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

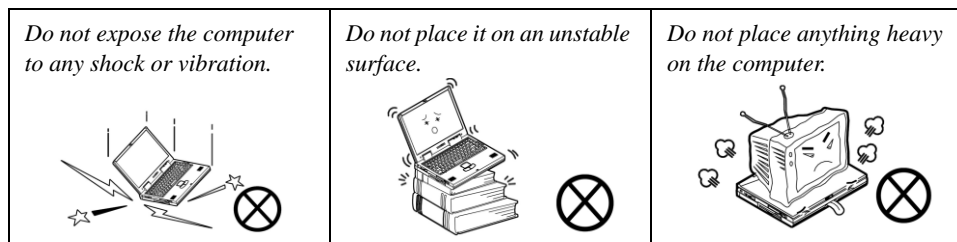
This device may not cause harmful interference.

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

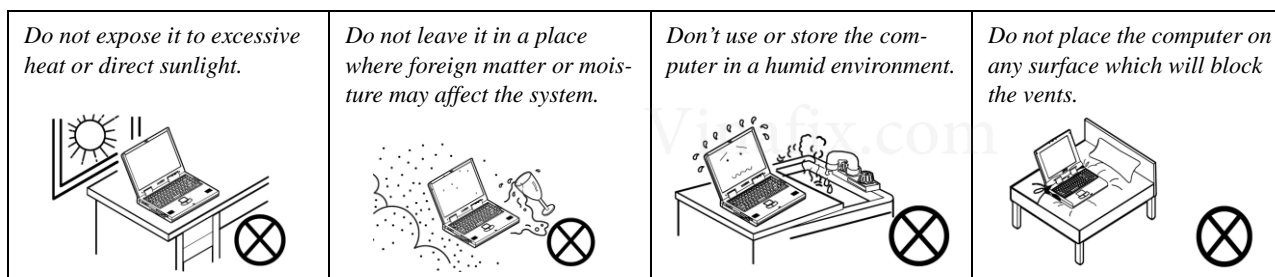
Instructions for Care and Operation

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

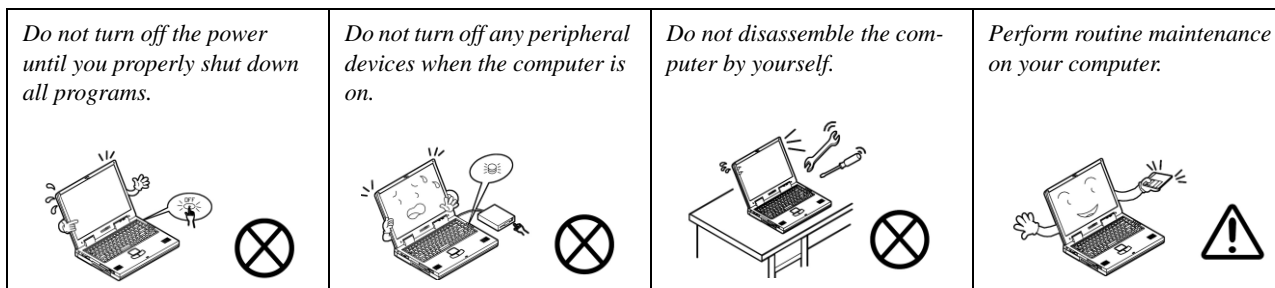
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

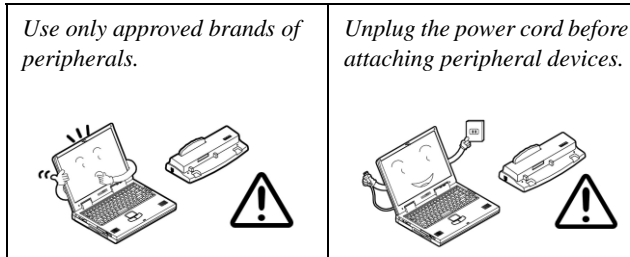


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

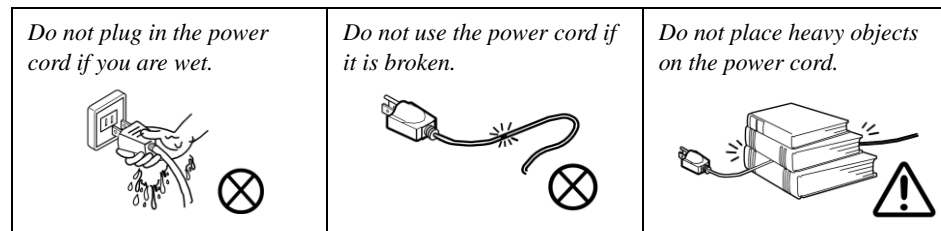
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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.

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. Insert the battery and make sure it is locked in position.
4. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
5. **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.
6. 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).
7. Press the power button to turn the computer "on".

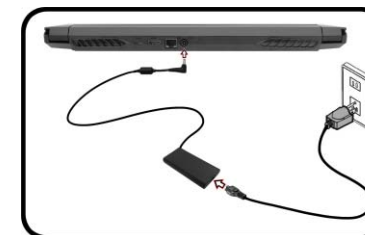

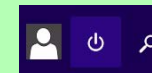


Figure 1
**Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In**


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.

Click the icon  in the **Start Screen** and choose **Shut down** from the menu.



Or

Right-click the **Start button**  at the bottom of the **Start Screen** or the **Desktop** and choose **Shut down or sign out** > **Shut down** from the context 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 Battery	2-5
Removing the Keyboard	2-6
Removing the Hard Disk Drive	2-7
Removing the System Memory (RAM)	2-9
Removing the M.2 SSD Module	2-10
Removing the Wireless LAN Module	2-11
Wireless LAN, Combo Module Cables	2-12
Removing the CCD	2-13

Part ListsA-1

Part List Illustration Location	A-2
Top (NH50DB / NH50DE)	A-3
Top (NH57DB / NH57DE)	A-4

Bottom	A-5
Main Board	A-6
HDD	A-7
LCD (NH50DB / NH50DE)	A-8
LCD (NH57DB / NH57DE)	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	B-9
DDR4 CHB SO-DIMM	B-10
VGA PCI Express	B-11
GPU Frame Buffer A/B	B-12
Frame Buffer A	B-13
Frame Buffer A	B-14
Frame Buffer B	B-15
Frame Buffer B	B-16
GPU Frame Buffer C/D	B-17
Frame Buffer C	B-18
Frame Buffer C	B-19
GPU Decoupling 1	B-20
GPU Decoupling 2	B-21
Straps and XTAL	B-22
IFP I/O Interface	B-23
Misc - GPIO, I2C and ROM	B-24
NVIDIA Power Sequence	B-25

Preface

GPU NVVDD, FBVDDQ	B-26	NVVDD2	B-58
GPU GND	B-27	PEX_VDD	B-59
mDP	B-28	FBVDDQ	B-60
Panel, Inverter	B-29	1V8_RUN/AON	B-61
HDMI	B-30	Audio Board	B-62
PCH 1/9	B-31	NH50 PW Board	B-63
PCH 2/9	B-32	Hall Sensor Board	B-64
PCH 3/9	B-33	Click Board	B-65
PCH 4/9	B-34	LED Board	B-66
PCH 5/9	B-35	NH70 PW Board	B-67
PCH 6/9	B-36	Power Sequence	B-68
PCH 7/9	B-37		
PCH 8/9	B-38		
PCH 9/9	B-39		
M.2 Card	B-40		
M.2 WLAN+BT, PCIE 4X SSD	B-41		
USB Charger	B-42		
Card Reader / LAN RTL8411B	B-43		
HDD, Click TP, Audio, Hall Con.	B-44		
LED, CCD, TPM, Power SW Con.	B-45		
KBC-ITE IT5570	B-46		
RGB KB	B-47		
5V, 5VS, 3.3V, 3.3VS	B-48		
VDD1.05V, VCCIO	B-49		
VDD3, VDD5	B-50		
DDR 1.2V / 0.6VS, 2.5V	B-51		
VCore Output Stage	B-52		
VCC_Core & VCCGT	B-53		
1.05DX_VCCSTG/VCCSFR_OC	B-54		
VCCGT & VCCSA Output Stage	B-55		
AC_In, Charger	B-56		
NVVDD1	B-57		

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **NH50DB / NH50DE / NH57DB / NH57DE** 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 **NH50DB / NH50DE / NH57DB / NH57DE** 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

i7-10750H (2.60GHz)

12MB Smart Cache, 14nm, DDR4-2933MHz, TDP 45W

Intel® Core™ i5 Processor

i5-10300H (2.50GHz)

8MB Smart Cache, 14nm, DDR4-2933MHz, TDP 45W

Core Logic

Mobile Intel® HM470 Express Chipset

BIOS

128Mb SPI Flash ROM

INSYDE BIOS

Memory

Dual Channel DDR4

Two 260 Pin SO-DIMM Sockets

Supporting **DDR4 3200MHz** Memory Modules

Memory Expandable from **32GB**

Compatible with 4GB, 8GB, 16GB 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 2280 **SATA** Solid State Drive (SSD)

Or

(Factory Option) Two PCIe Gen3 x4 M.2 2280 SSDs supporting RAID level 0/1

Audio

High Definition Audio Compliant Interface

Sound Blaster™ Cinema 6

Built-In Array Microphone

Two Speakers

LCD Options

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

Video Adapter

Intel® Integrated GPU and NVIDIA® Discrete GPU

Supports Microsoft Hybrid Graphics

Intel Integrated GPU

Intel® UHD Graphics 630

Dynamic Frequency

Intel Dynamic Video Memory Technology

Microsoft DirectX®12 Compatible

NVIDIA® Discrete GPU

NVIDIA® GeForce GTX 1650 (NH50DB / MH57DB)

4GB GDDR6 Video RAM on board

Microsoft DirectX® 12 Compatible

NVIDIA® GeForce GTX 1650Ti (NH50DE / MH57DE)

4GB GDDR6 Video RAM on board

Microsoft DirectX® 12 Compatible

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Intel® PTT for Systems Without TPM Hardware

(Factory Option) TPM 2.0

Keyboard

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

Pointing Device

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

Interface

One USB 2.0 Port
 One USB 3.2 Gen 1 Type-A Port
 One USB 3.2 Gen 2 Type-A Port
 One USB 3.2 Gen 2 Type-C Port
 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

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**
 Slot 3 for **PCIe Gen3 x4 SSD**

Communication

Built-In 10/100/1000Mb Base-TX Ethernet LAN
 1.0M HD PC Camera Module

WLAN/ Bluetooth M.2 Modules:

(**Factory Option**) Intel® Dual Band Wireless-AC 9560 Wireless LAN (**802.11ac**) + Bluetooth
 (**Factory Option**) Intel® Dual Band Wireless-AC 9462 Wireless LAN (**802.11ac**) + Bluetooth
 (**Factory Option**) Intel® Dual Band Wi-Fi 6 AX200 Wireless LAN (**802.11ax**) + Bluetooth
 (**Factory Option**) Intel® Dual Band Wi-Fi 6 AX201 Wireless LAN (**802.11ax**) + 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

Removable 4 Cell Smart Lithium-Ion Battery Pack, 41WH
 (**Factory Option**) Removable 4 Cell Smart Lithium-Ion Battery Pack, 48.96WH

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

Dimensions & Weight

361mm (w) * 258mm (d) * 24.9mm (h)
2.2kg (Barebone with 41WH Battery)

Introduction

Figure 1
Top View

1. PC Camera
2. *PC 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. Keyboard
7. 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



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RIGHT SIDE VIEW



Figure 3
Right Side View

1. USB 3.2 Gen 2 Type-A Port
2. USB 3.2 Gen 2 Type-C Port
3. Multi-in-1 Card Reader
4. Vent

Introduction

External Locator - Left Side & Rear View

Figure 4

Left Side View

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

LEFT SIDE VIEW



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REAR VIEW



Figure 5

Rear View

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

External Locator - Bottom View



Figure 6
Bottom View

1. Battery
2. Vent
3. Speakers



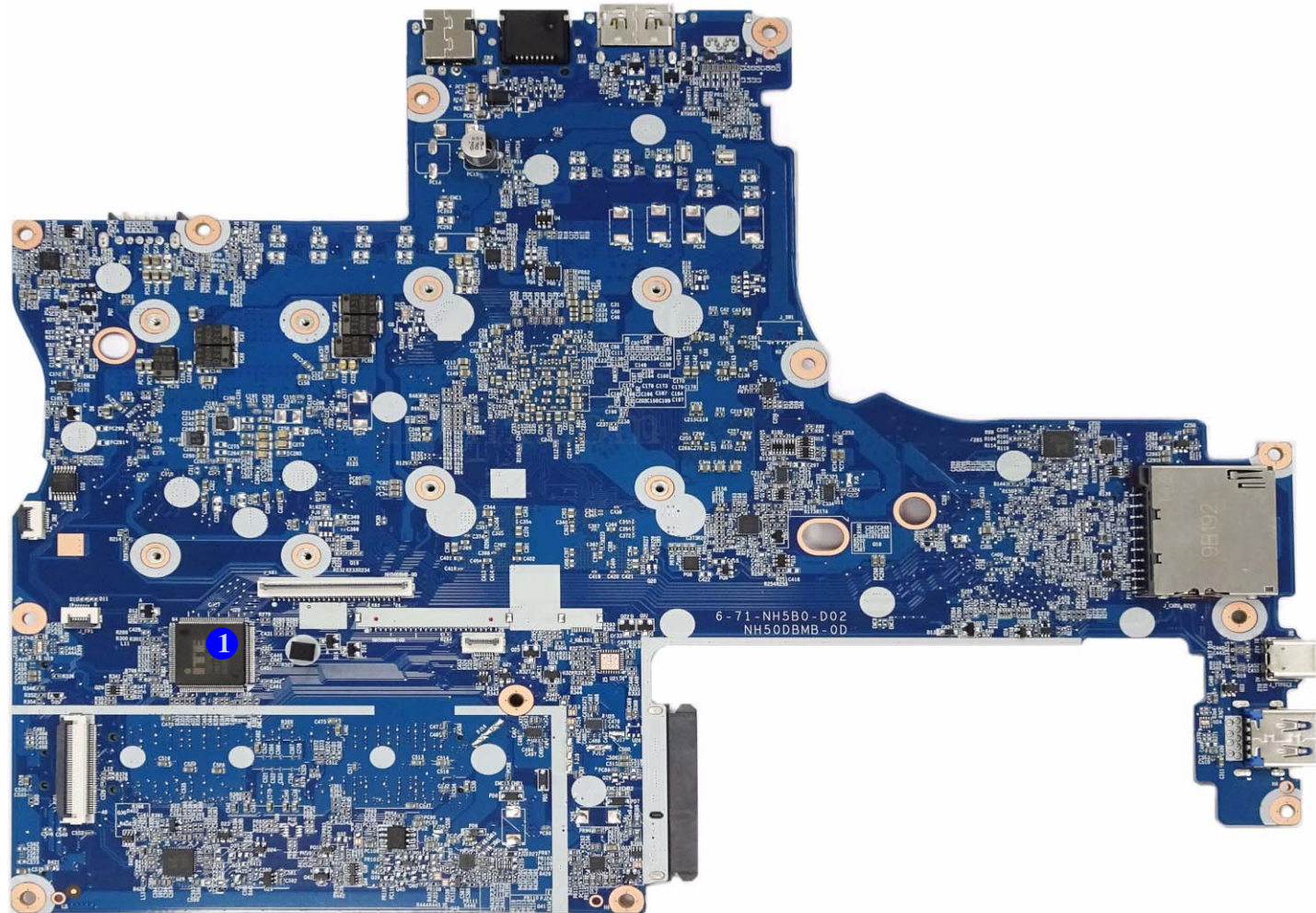
Overheating

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)

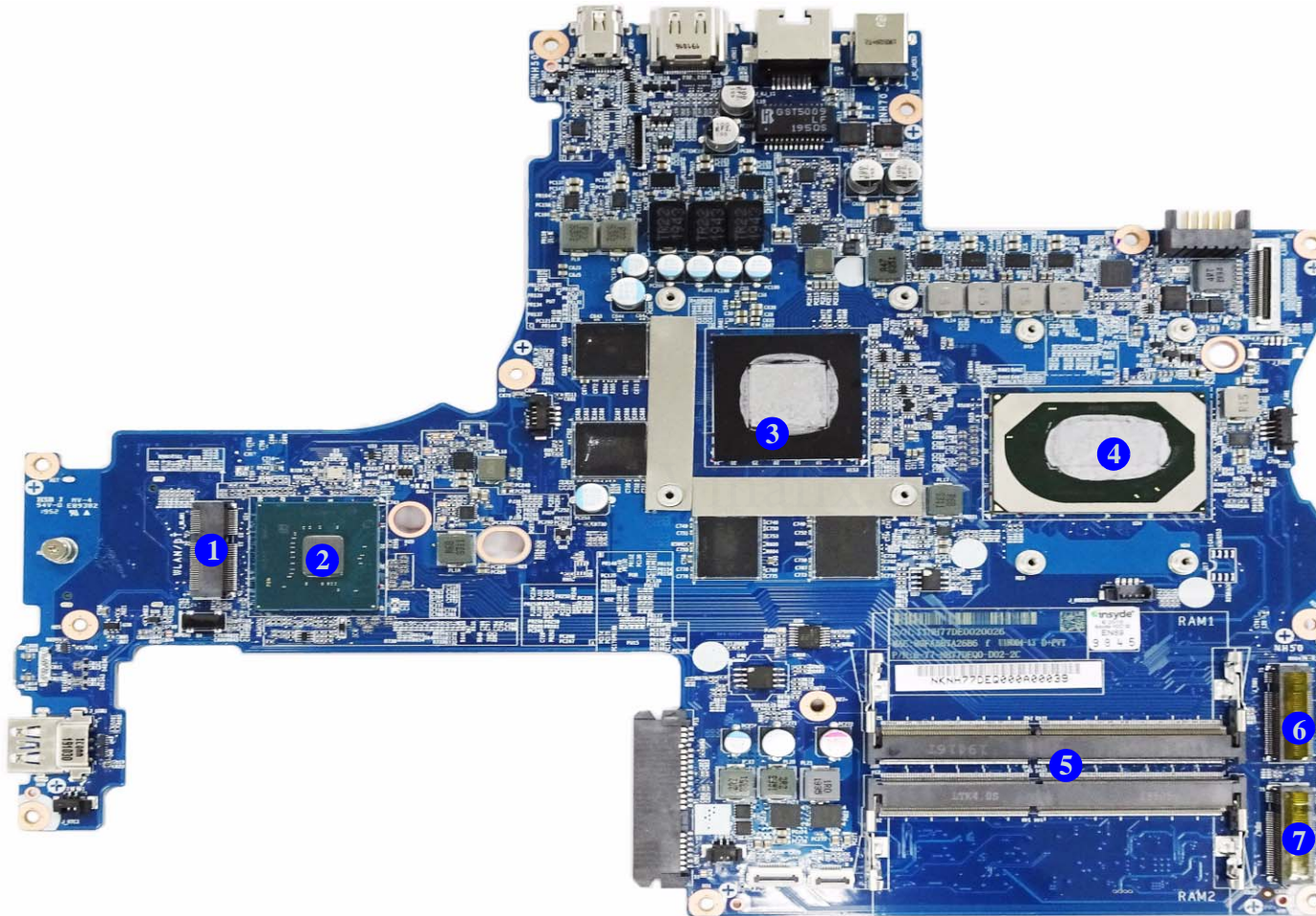


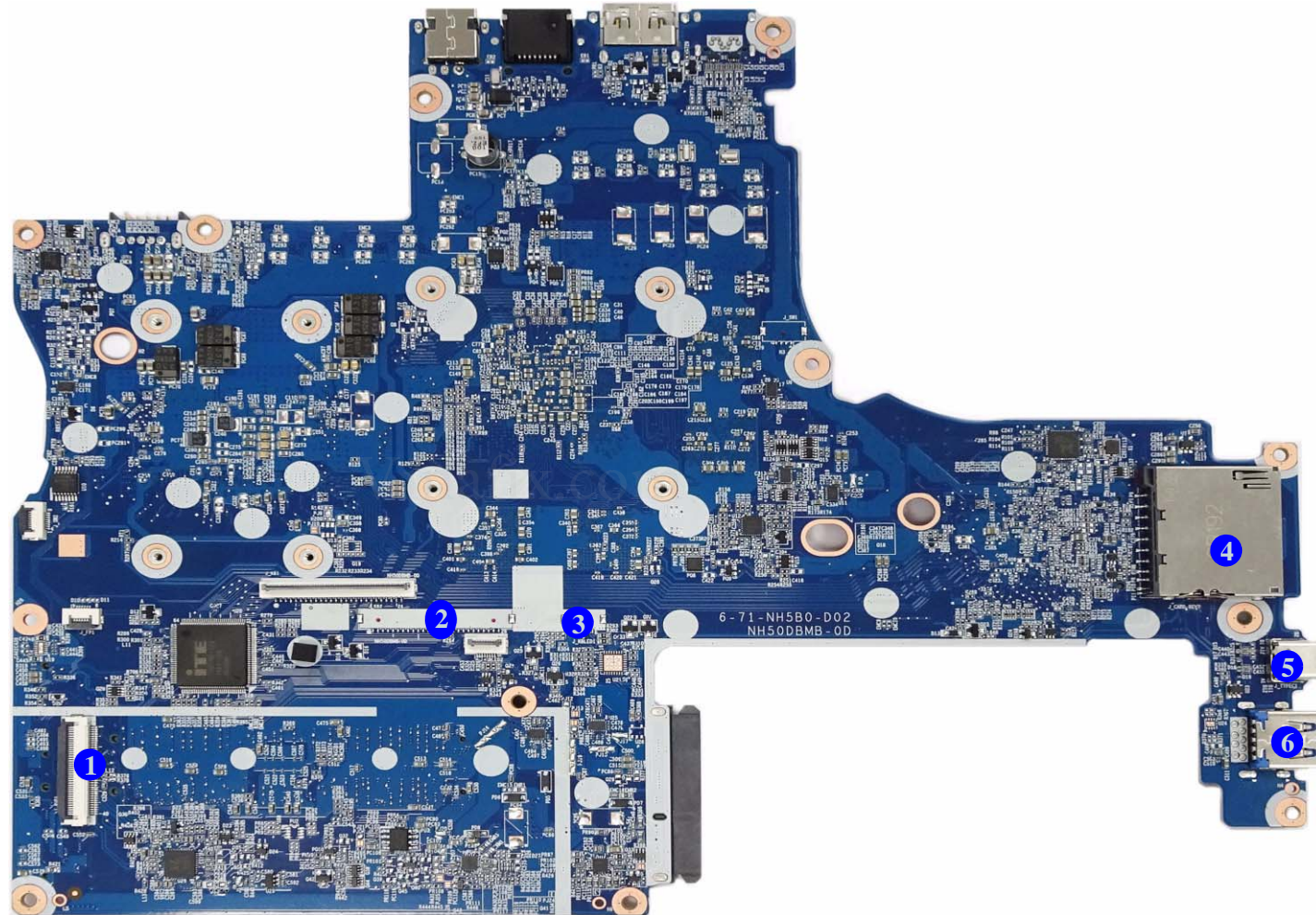
Figure 8
**Mainboard Bottom
Key Parts**

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

Figure 9
**Mainboard Top
Connectors**

1. USB Connector
2. Keyboard Cable Connector
3. KB LED Connector
4. Multi-in-1 Card Reader
5. USB 3.2 Gen 2 Type-C Port
6. USB 3.2 Gen 2 Type-A Port

Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

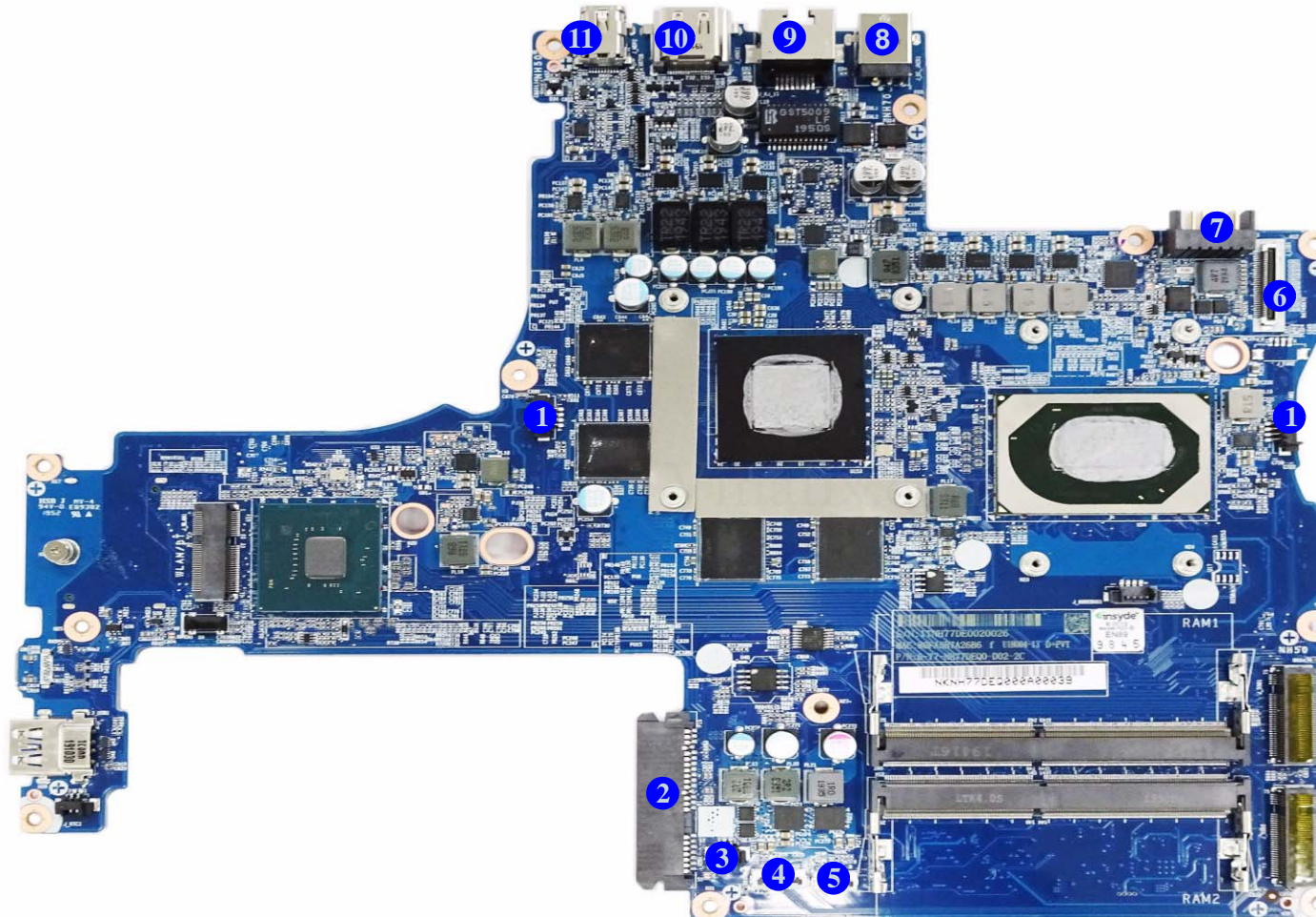


Figure 10
**Mainboard Bottom
Connectors**

1. Fan Connector
2. HDD Connector
3. Speaker Connector
4. LED Connector
5. Touchpad Connector
6. LCD Connector
7. Battery Connector
8. DC-In Jack
9. RJ-45 LAN Jack
10. HDMI-Out Port
11. Mini Display Port

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Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *NH50DB / NH50DE / NH57DB / NH57DE* 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

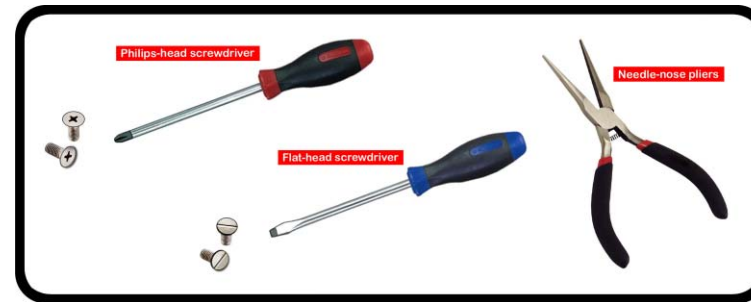
Disassembly

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 Battery:

1. Remove the battery *page 2 - 5*

To remove the Keyboard:

1. Remove the keyboard *page 2 - 6*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 7*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 7*
3. Remove the system memory *page 2 - 9*

To remove the M.2 SSD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 7*
3. Remove the SSD *page 2 - 10*

To remove the Wireless LAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 7*
3. Remove the WLAN *page 2 - 11*

To remove the CCD Module:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 7*
3. Remove the CCD module *page 2 - 13*

Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Slide the latch **1** in the direction of the arrow (*Figure 1a*).
3. Slide the latch **2** in the direction of the arrow.
4. While holding the latch **2**, lift the battery **3** (*Figure 1b*) out of the compartment (*Figure 1c*).

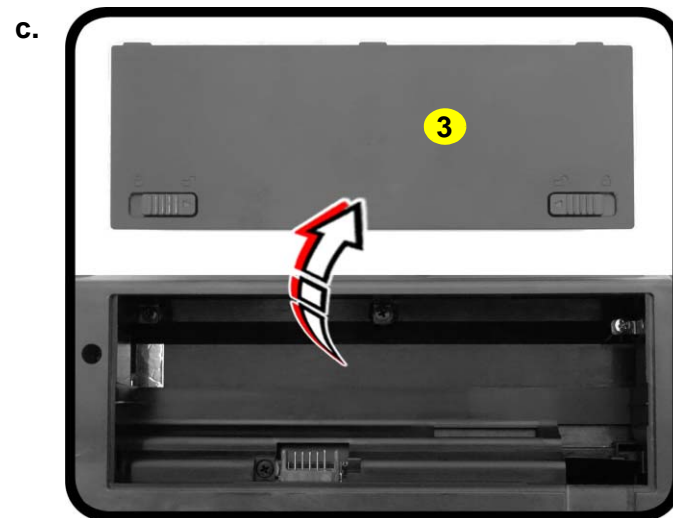


Figure 1
Battery Removal

- a. Slide the latch **1** in the direction of the arrow. and slide the latch **2** in the direction of the arrow.
- b. Lift the battery.
- c. Remove the battery.



3. Battery

Disassembly

Figure 2

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.

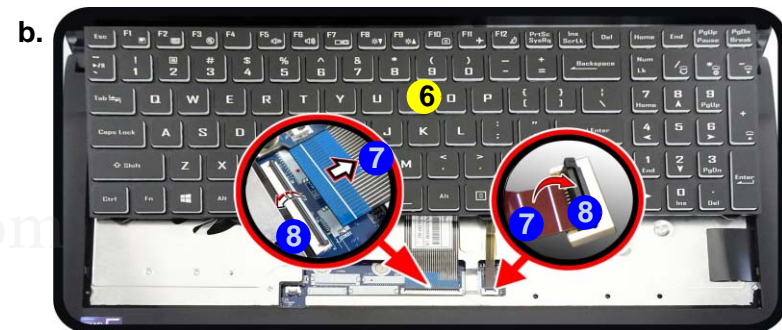
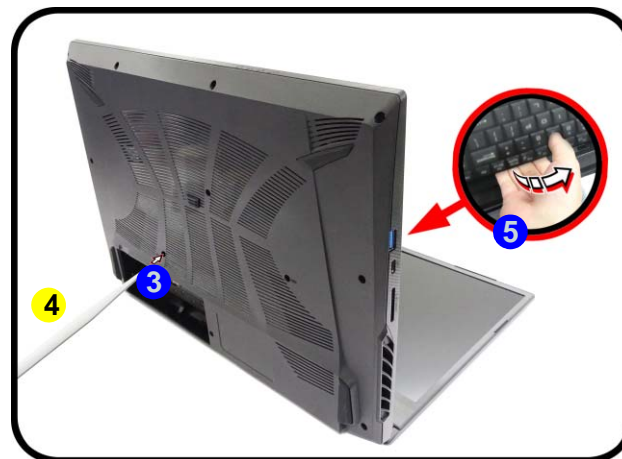
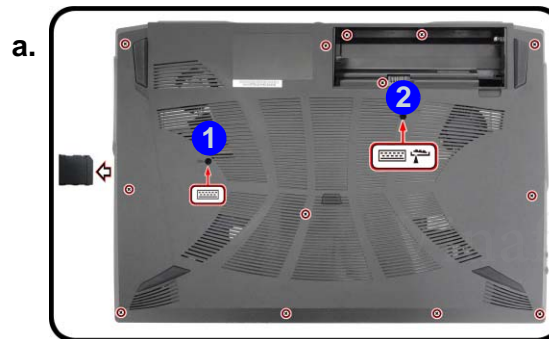


4. Eject Stick
6. Keyboard

- 2 Screws

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 2a**).
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 2b**).
5. Carefully lift the keyboard **6** off the computer (**Figure 2c**).



Removing the Hard Disk Drive

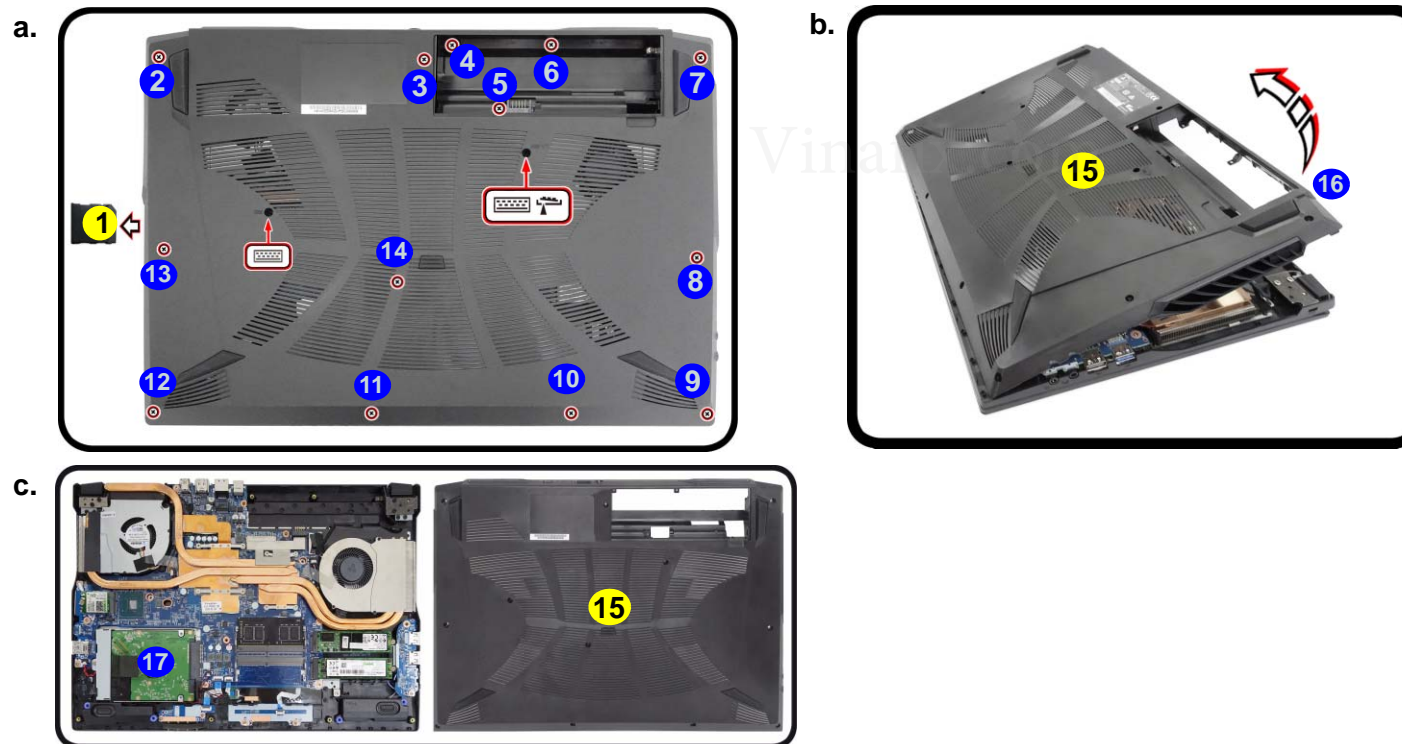
The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 7mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard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


Hard Disk Disassembly Process

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Remove the SD card cover **1** and screws **2 - 14**, **but note that screw 4 and 6 needs to be remove using 3mm diameter - type screwdriver only (Figure 3a).**
3. Carefully lift the bottom case **15** up from point **16** and remove it ([Figure 3b](#)).
4. The HDD will be visible at point **17** on the mainboard ([Figure 3c](#)).

Figure 3
HDD Assembly Removal

- a. Remove the SD card cover and screws.
- b. Remove the bottom case.
- c. Locate the HDD.



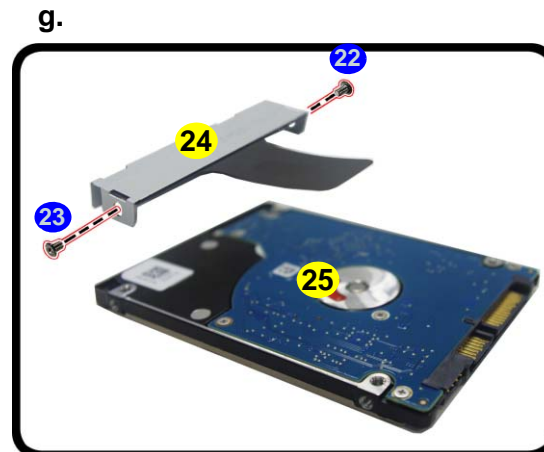
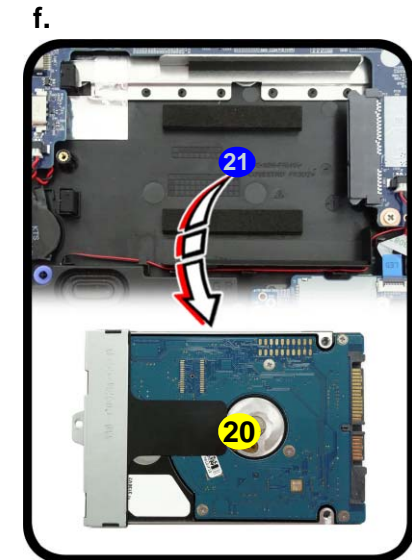
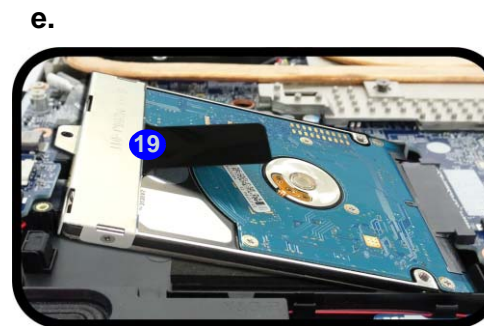
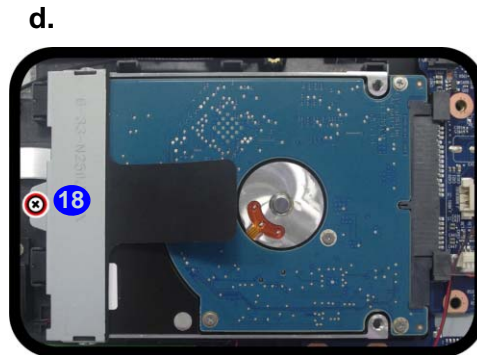
- 
15. Bottom Case
- 13 Screws

Disassembly

Figure 4
**HDD Assembly
Removal (cont'd.)**

- d. Remove the screws.
- e. Slightly lift and pull the HDD in the direction of the arrow.
- f. Lift the HDD assembly out of the bay.
- g. Remove the screws and bracket from the HDD.

5. Remove screws **18** from the HDD assembly (*Figure 4b*).
6. Slightly lift and pull the hard disk assembly in the direction of arrow **19** (*Figure 4c*).
7. Lift the hard disk assembly **20** out of the bay **21** (*Figure 4d*).
8. Remove screws **22** - **23** and bracket **24** from the hard disk **25** (*Figure 4e*).
9. Reverse the process to install a new hard disk (do not forget to replace the screws).



20. HDD Assembly
24. Bracket
25. HDD

- 3 Screws



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.

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 up to 3200 MHz. The main memory can be expanded up to 32GB. The total memory size is automatically detected by the POST routine once you turn on your computer.

Memory Upgrade Process

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)).
2. The RAM modules will be visible at point **1** on the mainboard ([Figure 5a](#)).
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 5b](#)). The RAM module **4** will pop-up ([Figure 5c](#)), and you can then remove it.
4. Pull the latches to release the second module if necessary.
5. Insert a new module (**for only one module** - insert module in the top slot "J_DIMMB1" as shown in [Figure 5c](#)) by 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 - 7](#)).
9. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Figure 5
RAM Module Removal

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

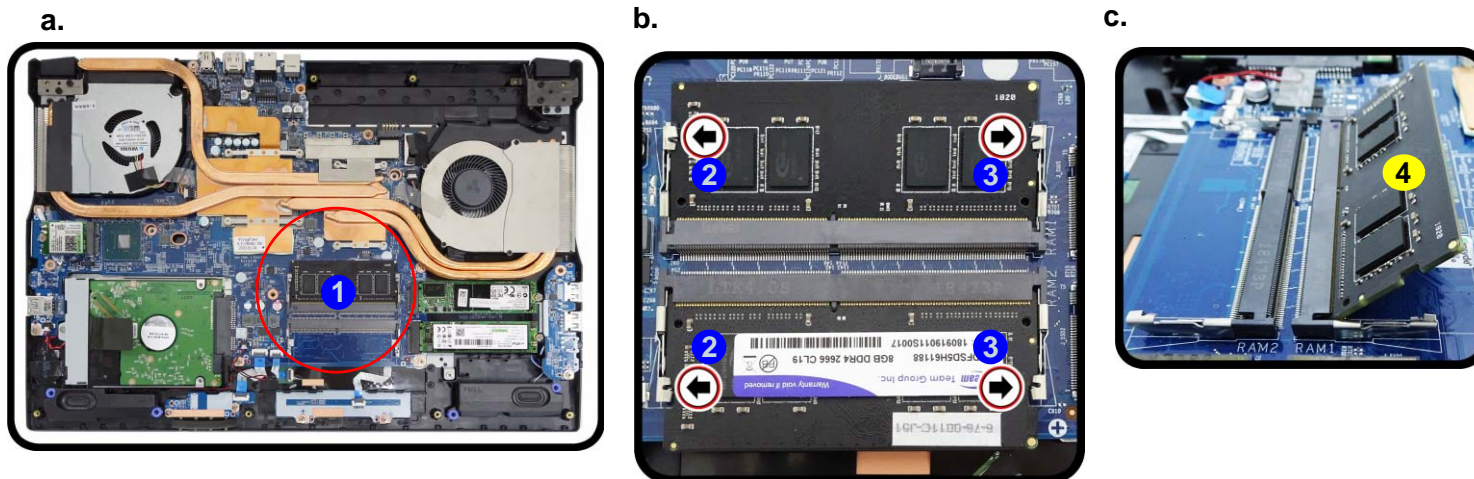


Contact Warning

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

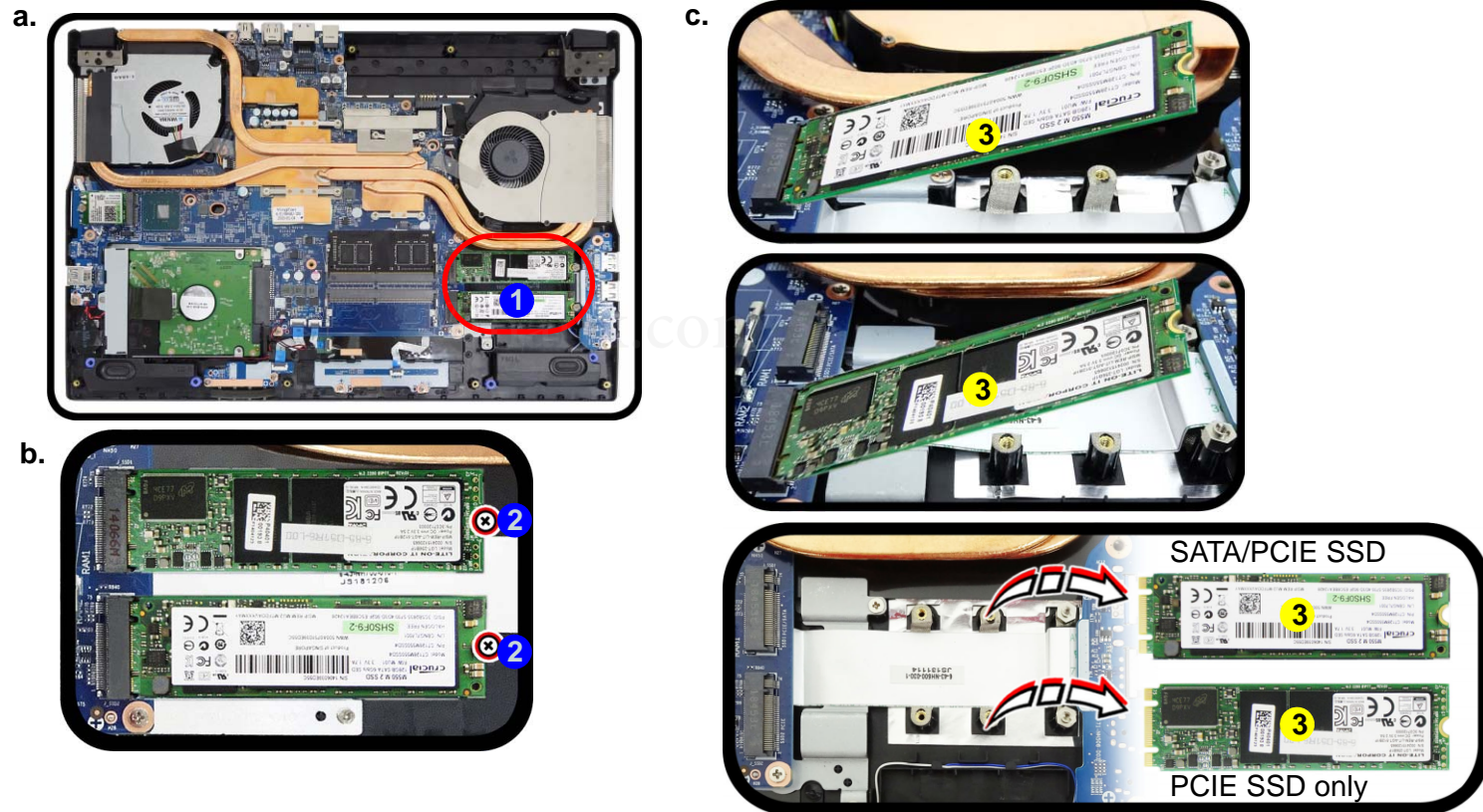
Figure 6
M.2 SSD Module Removal

- 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 Module Removal Procedure

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)).
2. The M.2 SSD module will be visible at point **1** on the mainboard ([Figure 6a](#)).
3. Remove the screw **2** ([Figure 6b](#)).
4. The M.2 SSD module **3** ([Figure 6c](#)) will pop-up, and you can remove it from the computer.



3.M2 SSD Module

- 1 Screw

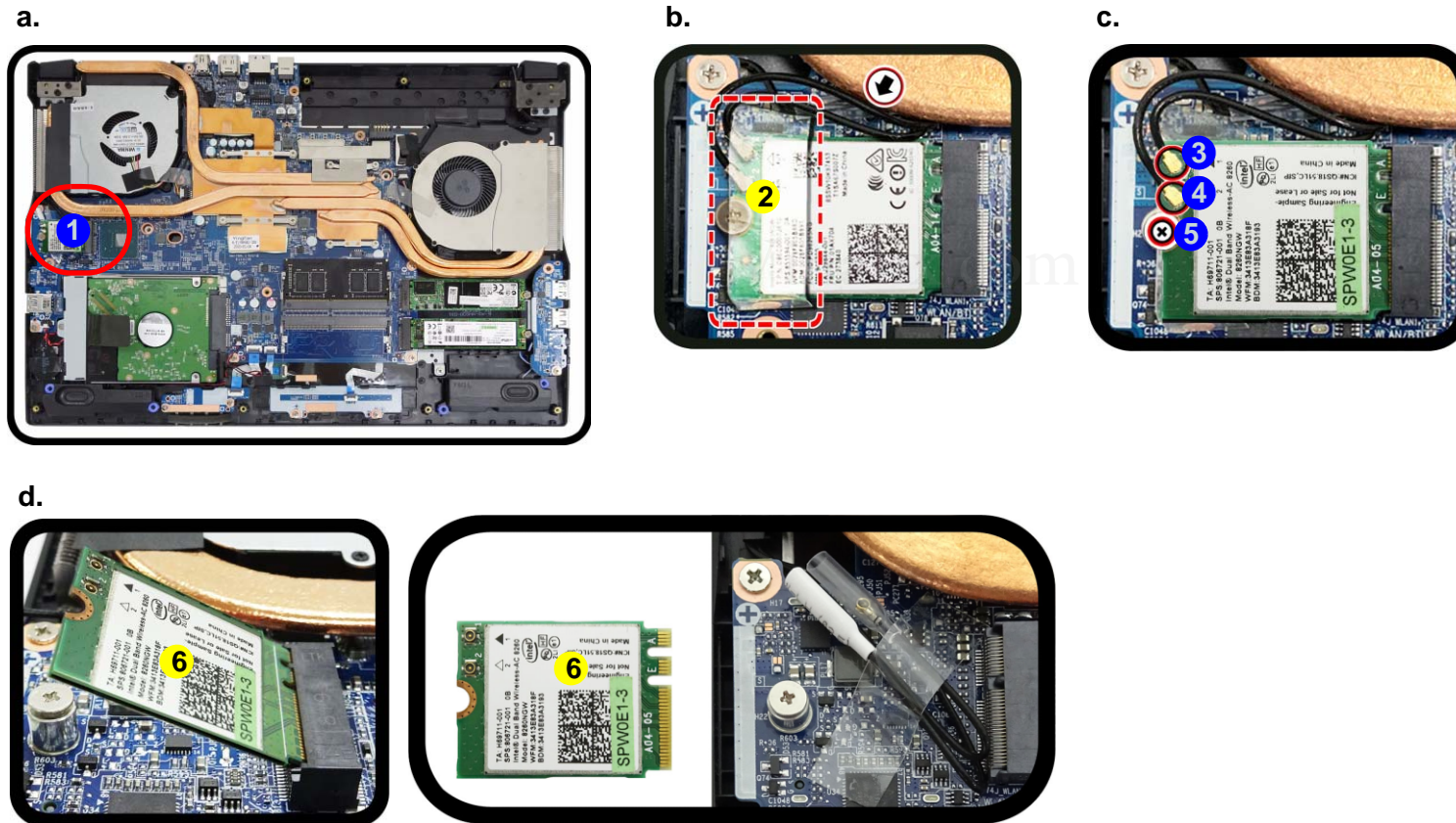
Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard ([Figure 7a](#)).
3. Remove the mylar cover **2** ([Figure 7b](#)).
4. Carefully disconnect the cables **3** & **4**, and then remove the screw **5** ([Figure 7c](#)).
5. The Wireless LAN module **6** ([Figure 7d](#)) will pop-up, and you can remove it from the computer.
6. Reverse the process to install a new module (do not forget to replace the mylar and screws while making sure that the cables are properly inserted as shown in [Figure 7c](#)).

Figure 7
**Wireless LAN
Module Removal**

- Locate the WLAN.
- Remove the mylar cover.
- 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 7b](#)).



2. Mylar Cover
6. Wireless LAN Module

- 1 Screw

Disassembly

Wireless LAN, Combo Module Cables

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo 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	WM 1	Black	Transparent
	WM 2	Black	White

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

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Removing the CCD

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
2. Lay the computer down on a flat surface with the top case up forming a 90 degree angle.
3. Carefully run your fingers around the inner frame of the LCD panel to lift at points **1** - **4** as indicated by the arrows ([Figure 8a](#)).
4. Remove the LCD front cover **5** ([Figure 8b](#)).

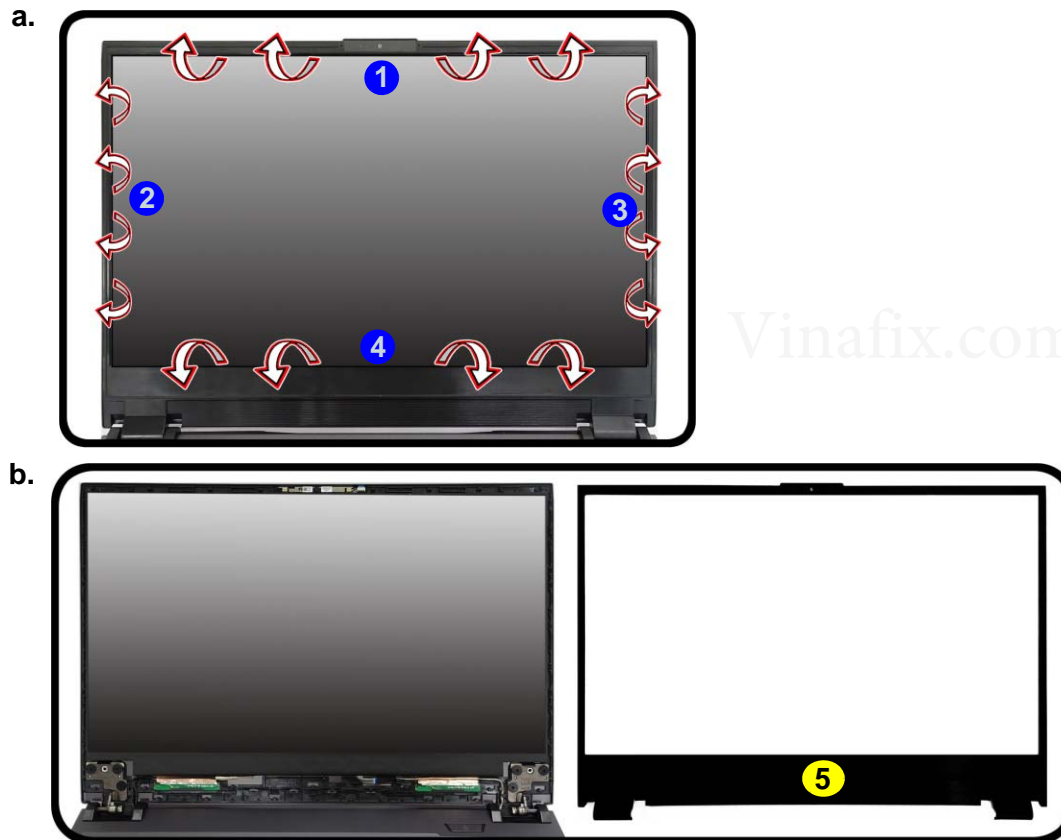


Figure 8
CCD Removal

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



Disassembly

Figure 9
CCD Removal
(cont'd)

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

- 5. Disconnect the cable ⑥ from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins ⑦ away from the base (*Figure 9c*).
- 6. Remove the CCD module ⑧ (*Figure 9d*).
- 7. Reverse the process to install a new CCD module.

c.



d.



8. CCD Module

Appendix A:Part Lists

This appendix breaks down the *NH50DB / NH50DE / NH57DB / NH57DE* 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.

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Part List Illustration Location

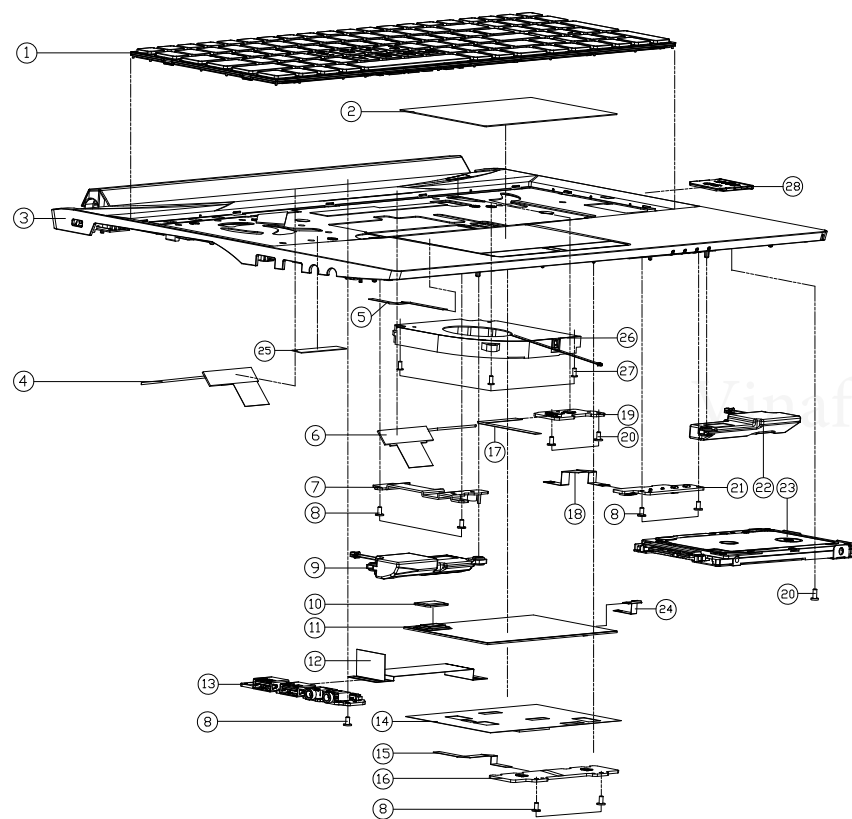
The following table indicates where to find the appropriate part list illustration.

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

Part	NH50DB / NH50DE	NH57DB / NH57DE
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>

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Top (NH50DB / NH50DE)



ITEM	PART NAME	PART NO	REMARK
1	KB FOR MULTI ISC BL KB SERIES NH50ED	6-NH50ED-KB-MCL	
1	W/O PAPER COVER FOR KEY BOARD NH50ED	6-80-N15Z0-21D-1M	
2	W/O FP TP MYLAR AG32 APPEARANCE NH50ED	6-40-NH502-031	ONLY FOR W/O FPC TOUCH PAD
2	W/FP TP MYLAR AG32 APPEARANCE NH50ED	6-40-NH502-040	ONLY FOR W/FP SECURE PAD
3	TOP CASE MODULE NH50RA	6-39-NH5E2-012	
4	ANTENNA PCB XUAN JEN W/2 PCB DL 400MM 24G/5G W/2 30MM NH50ED	6-23-7NH50-040	
5	FFC CABLE FINGER TP TO MB L-550MM 3V 6PIN (QX) NH50ED	6-43-NH500-061	ONLY FOR W/FP SECURE PAD
6	ANTENNA PCB XUAN JEN W/1 PCB DL 400MM 24G/5G W/1 20MM NH50ED	6-23-7NH50-030	
7	MB SUPPORT BRKT NH50ED	6-33-NH502-021	
8	SCREW M2x4L K1 NI ICT NY (OD=04.5,DT=0.8)	6-35-B1120-4RC	
9	SPK L-CABLE L25x44 2W 4P L150MM JS-2514-M-32-HF NH70LJ	6-23-5NB70-0L1	
10	TP W/O FP RUBBER (17.9x11.2x1.2T) SILICONE	6-47-N15Z2-090	
11	TOUCH PAD SYNAPTICS PTP TM-P2429 (008x50MM (WxH)) NH50ED	6-49-N15Z3-011	ONLY FOR W/O FPC TOUCH PAD
11	SECURE PAD SYNAPTICS TM-P2429 SEC (008x50MM (WxH)) NH50ED	6-49-N15Z3-021	ONLY FOR W/FP SECURE PAD
12	FFC CABLE AUDIO TO MB L-102MM 3V 4PIN (QX) NH50ED	6-43-NH500-031	
13	AUDIO BOARD W/O REDRIVER V2.0 NH50DB	6-77-NH5B8-D02	
13	AUDIO BOARD W/REDRIVER V2.0 NH50DB	6-77-NH5B8-D12	
14	TP MYLAR PET NH50ED	6-40-NH502-021	
15	FFC CABLE CLICK TO TP L-61MM 3V 4PIN (QX) NH50ED	6-43-NH500-051	
16	CLICK BOARD V1.0 NH50DB	6-77-NH5B2-D01	
17	FFC CABLE POWER TO MB L-80MM 3V 4PIN (QX) NH50ED	6-43-NH500-021	
18	FFC CABLE LED TO MB L-580MM 3V 12PIN (QX) NH50ED	6-43-NH500-011	
19	POWER SW BOARD V1.0 NH50DB	6-77-NH5B5-D01	
20	SCREW M2x5L K1 NI ICT NY (OD=04.5,DT=0.4)	6-35-B1120-4RE	
21	LED BOARD V1.0A NH50RA	6-77-NH5E4-D01A	
22	SPK R-CABLE L25x44 2W 4P L200MM JS-2514-M-32-HF NH70LJ	6-23-5NB70-0R1	
23	W/O HDD ASS'Y NH50RA	6-79-NH50RA0J-010	
23	W/HDD ASS'Y NH50RA	6-79-NH50RA0J-020	
24	FFC CABLE TP TO MB L-36MM 3V 8PIN (QX) NH50ED	6-43-NH500-041	
25	FAN SPONGE 40x10x1.05 NH555RAQ-HM	6-47-0019A-40Z	
26	VGA FAN MODULE (WINMA) PWM NH50RA	6-31-NH5E2-202	
27	SCREW M2x5L K1KT-0.8 D=4.0 BK/Z ICT NY	6-35-B6120-5R0	
28	DUMMY 30N NON PUSH TYPE PCB HAS 07230P-7000XCHANGED V5700W	6-42-W9708-011	

Figure A - 1
Top (NH50DB / NH50DE)

Top (NH57DB / NH57DE)

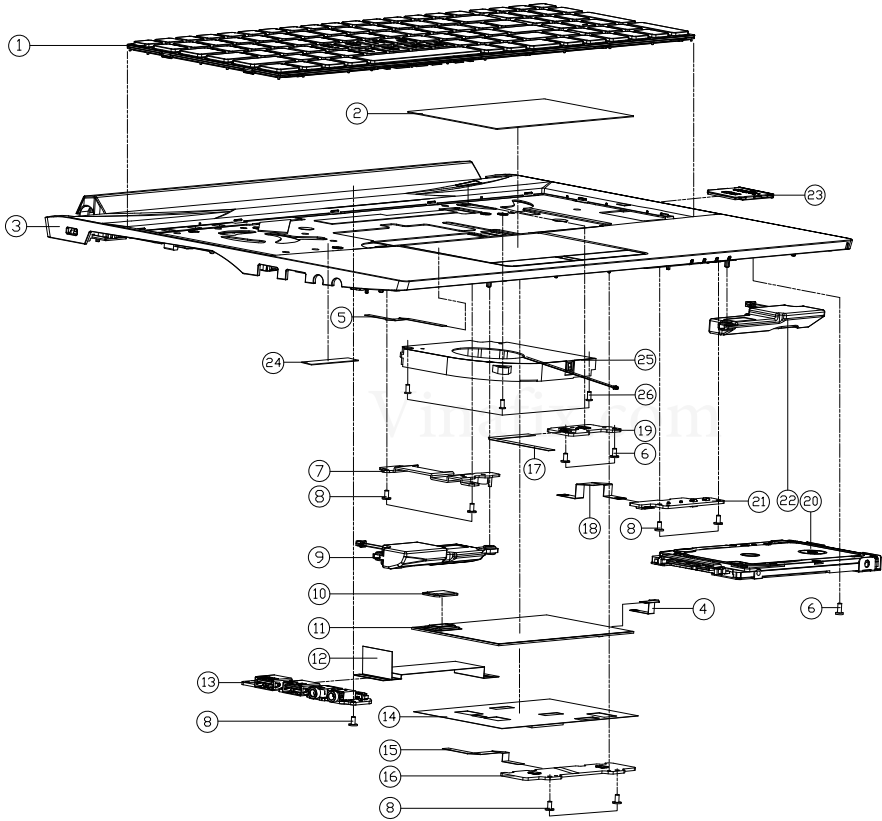
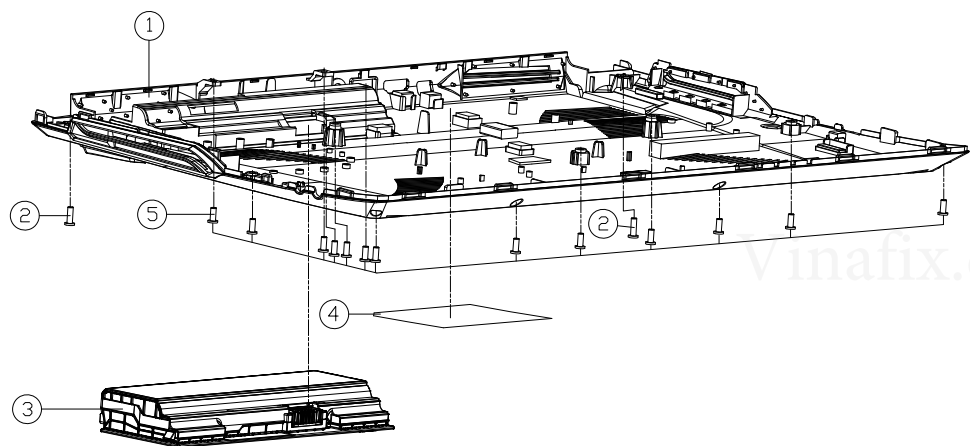


Figure 2
Top (NH57DB / NH57DE)

ITEM	PART NAME	PART NO	REMARK
1	KB FOR MULTI 15C BL KB SERIES NH50ED	6-NH50ED-KB-MCL	FOR MULTI 15C BL KB SERIES
1	W/O HDD ASS'Y NH50RA	6-80-N1520-21D-1M	KB FOR MCJ
2	W/O FP TP MYLAR AG32 APPEARANCE NH50ED	6-40-NH502-031	ONLY FOR W/O FRT TOUCH PAD
2	W/FP TP MYLAR AG32 APPEARANCE NH50ED	6-40-NH502-040	ONLY FOR W/FP SECURE PAD
3	TOP CASE MODULE NH50RA	6-39-NH5E2-012	
4	FFC CABLE TP TO MB L:36MM 3V 8PIN (QX) NH50ED	6-43-NH500-041	
5	FFC CABLE FINGER TP TO MB L:55MM 3V 6PIN (QX) NH50ED	6-43-NH500-061	ONLY FOR W/FP SECURE PAD
6	SCREW M2x4L KI NI ICT NY (D=04.5,D1=0.4)	6-35-B1120-4RE	
7	MB SUPPORT BRKT NH50ED	6-33-NH502-021	
8	SCREW M2x4L KI NI ICT NY (D=04.5,D1=0.8)	6-35-B1120-4RC	
9	SPK L-CABLE L25x41 2W 4V L50MM DS-2514-M-32-HF N8701J1	6-23-5NB70-0L1	
10	TP W/O FP RUBBER (17.9x11.2x1.27) SILICONE	6-47-N1522-090	
11	TOUCH PAD SYNAPTICS TTP-TN-P3429 (00x64MM) (WHL) NH50ED	6-49-N15Z3-011	ONLY FOR W/O FRT TOUCH PAD
11	SECURE PAD SYNAPTICS TTP-TN-P3429 (00x64MM) (WHL) NH50ED	6-49-N15Z3-021	ONLY FOR W/FP SECURE PAD
12	FFC CABLE AUDIO TO MB L:102MM 3V 40PIN (QX) NH50ED	6-43-NH500-031	
13	AUDIO BOARD W/O REDRIVER V2.0 NH50DB	6-77-NH5B8-D02	
13	AUDIO BOARD W/REDRIVER V2.0 NH50DB	6-77-NH5B8-D12	
14	TP MYLAR PET NH50ED	6-40-NH502-021	
15	FFC CABLE CLICK TO TP L:60MM 3V 4PIN (QX) NH50ED	6-43-NH500-051	
16	CLICK BOARD V1.0 NH50DB	6-77-NH5B2-D01	
17	FFC CABLE POWER TO MB L:80MM 3V 4PIN (QX) NH50ED	6-43-NH500-021	
18	FFC CABLE LED TO MB L:58MM 3V 12PIN (QX) NH50ED	6-43-NH500-011	
19	POWER SW BOARD V1.0 NH50DB	6-77-NH5B5-D01	
20	W/O HDD ASS'Y NH50RA	6-79-NH50RA0J-010	
20	W/HDD ASS'Y NH50RA	6-79-NH50RA0J-020	
21	LED BOARD V1.0A NH50RA	6-77-NH5E4-D01A	
22	SPK R-CABLE L25x41 2W 4V L50MM DS-2514-M-32-HF N8701J1	6-23-5NB70-0R1	
23	DUMMY 3IN NON PUSH TYPE PEAKS (0.72x0.72x0.72) (WHL) NH50ED	6-42-W9708-011	
24	FAN SPONGE 40x10x1.05 NH55RAQ-HM	6-47-0019A-40Z	
25	VGA FAN MODULE (WINMA) PWM NH50RA	6-31-NH5E2-202	
26	SCREW M2x5L KI CT=0.8 D=4.0 BK/Z ICT NY	6-35-B6120-5R0	

Bottom



ITEM	PART NAME	PART NO	REMARK
1	BOTTOM CASE MODULE NH55RA0	6-39-NH553-A13	
1	BOTTOM CASE MODULE NH50RA	6-39-NH5E3-012	FOR NON OPEN
2	SCREW M2.5*BL KI BK/Z NY ICT	6-35-B6125-8R0	
3	SNIP 5 LU NAV/COMM/VSRAH KOP DOP/STB QUINCEO 3042501 AB N000	6-87-NH50S-41C01	
3	SNIP 5 LU NAV/COMM/VSRAH KOP DOP/STB QUINCEO 3042501 N000	6-87-NH50S-42D01	
3	SNIP 5 LU NAV/COMM/VSRAH KOP DOP/STB QUINCEO 3042501 C000000000	6-87-NH5ES-42D00	
3	SNIP 5 LU NAV/COMM/VSRAH KOP DOP/STB QUINCEO 3042501 AB C000000000	6-87-NH5ES-41F00	
3	SNIP 5 LU NAV/COMM/VSRAH KOP DOP/STB QUINCEO 3042501 AB C000000000	6-87-NH5ES-41D00	
4	PRODUCT LABEL FOR NH50DE	6-45-NH50DE03-010	
4	PRODUCT LABEL FOR NH50DB	6-45-NH50DB03-010	
4	PRODUCT LABEL FOR NH55DBQ	6-45-NH55DBQ3-010	
4	PRODUCT LABEL FOR NH55DEQ	6-45-NH55DEQ3-010	
4	PRODUCT LABEL FOR NH57DE	6-45-NH57DE03-010	
4	PRODUCT LABEL FOR NH57DB	6-45-NH57DB03-010	
4	PRODUCT LABEL FOR NH58DEQ	6-45-NH58DEQ3-010	
4	PRODUCT LABEL FOR NH58DBQ	6-45-NH58DBQ3-010	
5	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	

Figure A - 3
Bottom

A.Part Lists

This exploded view diagram illustrates the assembly of the Vizio V2201-B1 monitor. The components are numbered 1 through 18, indicating the sequence of assembly. The main parts include the monitor bezel (1), the LCD panel (7), the back cover (15), and the stand (16). The diagram shows the bezel being attached to the LCD panel using screws (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14). The back cover is then attached to the bezel using screws (15). The stand is attached to the back cover using screws (16, 17, 18). The diagram also shows the internal components of the monitor, including the LCD panel, the back cover, and the stand.

ITEM	PART	NAME	PART	NO	REMARK
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500C00	DOE-2B	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500C00	DOE-1B	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500C00	DOE-2C	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500C00	DOE-1C	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500B000	DOE-1B	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500B000	DOE-1D	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500B000	DOE-2B	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500B000	DOE-1C	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500B000	DOE-2C	
1	WIN BARNDROP-REINFORCED 1/2	CONCRETE WALL CURBING 1/2 INCH	6-77-NH500B000	DOE-2D	
2	SCREW MEXSL	CD-46,1-080 KT INI ICT NY	6-35-B1125-4RA		
3	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-35-ZA120-2RS-1		
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS16G-101		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS16G-H04		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS16G-K00		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS15B-W01		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS15B-S08		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS15B-K00		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS15B-B00		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS164-Z00		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS132-Z03		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS11T-S04		OPTION
4	SCREW MEXSL	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-85-DS16C-H03		OPTION
5	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-35-B1120-2RA		
6	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-85-DS164-Z00		
6	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-85-DS132-Z03		OPTION
6	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-85-DS11T-S04		OPTION
6	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-85-DS16K-K00		OPTION
6	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-85-DS15B-W01		OPTION
6	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-85-DS15B-S08		OPTION
7	THEMAL MEDIALS	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-31-NH582-010		
8	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-35-B6120-SR0		
9	TAPE MYLAR	(C)MYLAR M55J0	6-40-M55J2-030		
10	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-35-B1120-4RC		
11	WASHER	0#2-30 STEEL 1/2 INCH HOLE CROWNDRILL	6-37-02000-030		
12	THEMAL PAD	RS300 20W2X30 INCH	6-48-NH702-011		
13	EMI ABSORBER	(4#4X30) FOR N5H504	6-47-NB5P2-021		ONLY FOR N5H504/505
14	VGA NISIP MYLAR	NH504R	6-40-NH585-010		ONLY FOR N5H504/505
15	RUBBER	(4#4X30) FOR MB N5H505	6-47-NH502-050		ONLY FOR N5H504/505
16	WAX COAT	20W2X30 INCH	6-23-22015-TE0		
17	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-88-N414F-4210		OPTION
18	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-88-N246F-4220		OPTION
19	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-88-NISCF-4210		OPTION
19	SCREW MEXSL	KT-108 D=40 1/2 INI ICT NY CD=45, 1-080	6-88-N414F-4210		OPTION
20	TAPE MYLAR	(C)MYLAR M55J0	6-40-M55J2-010		

HDD

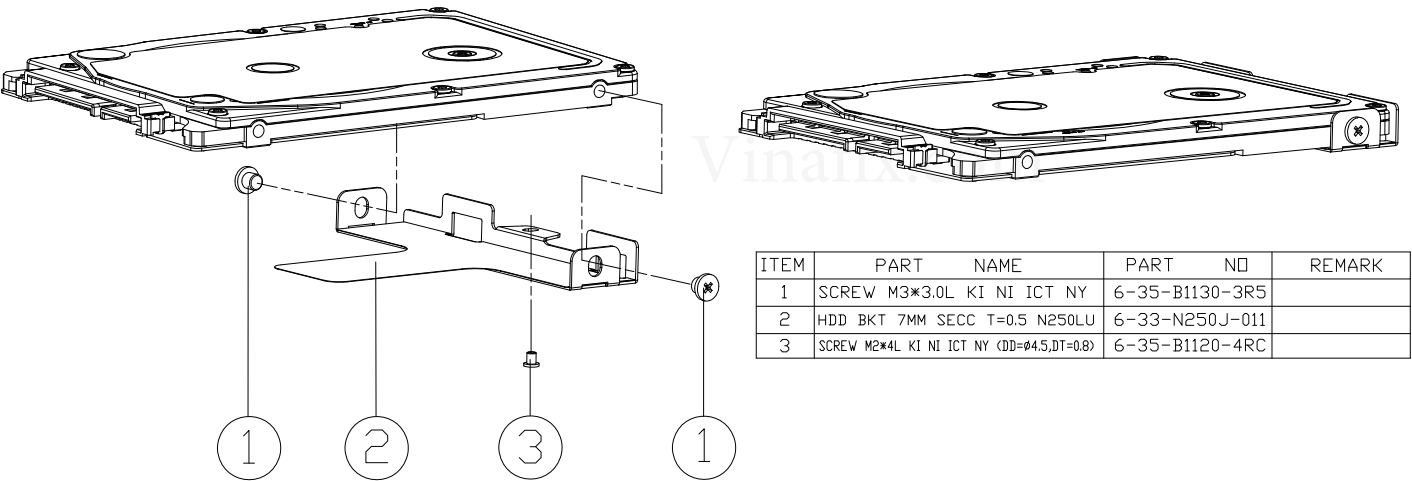
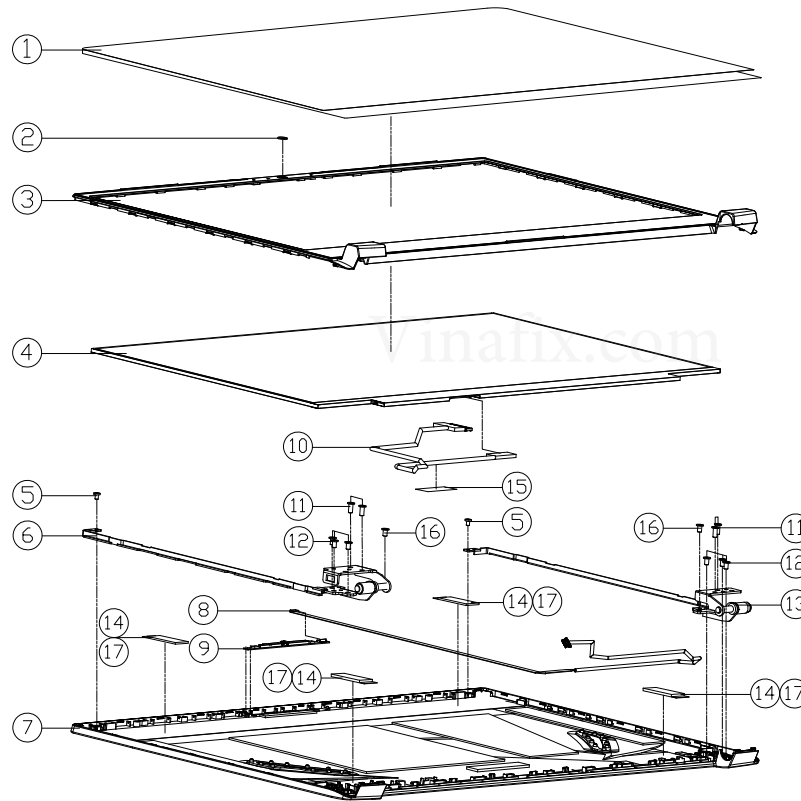


Figure A - 5
HDD

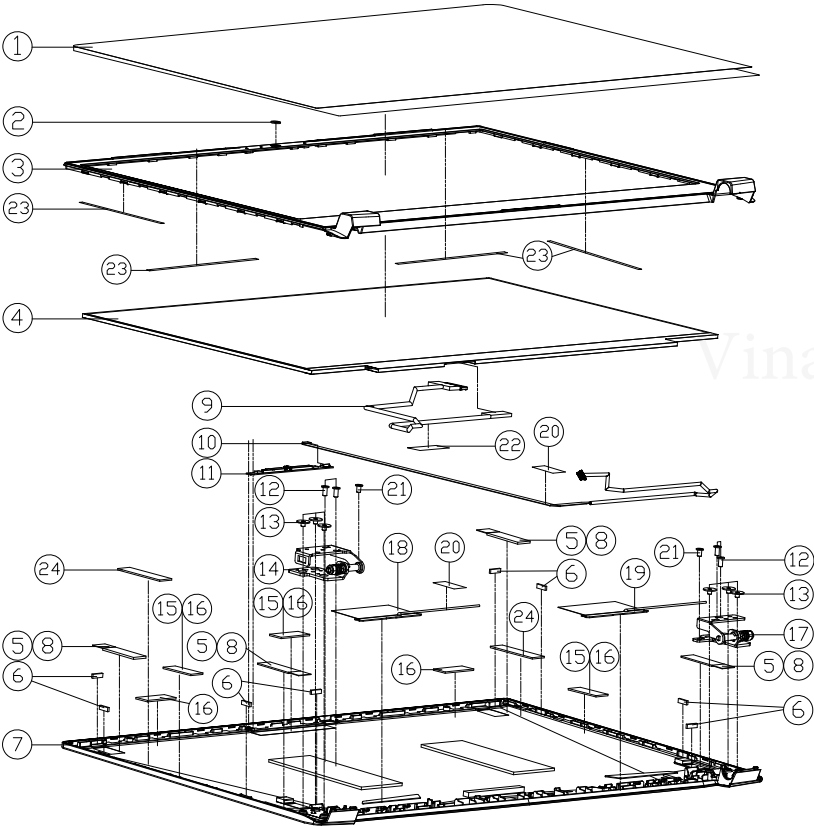
LCD (NH50DB / NH50DE)

Figure A - 6
LCD (NH50DB /
NH50DE)



ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT MYLAR BOPP N150ZU	6-40-N15Z8-010	
2	CCD LENS PMMA (DIAMETER 3.6MM) (MPI) P970EN	6-42-P97N1-011-1	
3	LCD FRONT COVER MODULE NH50ED	6-39-NH501-013	
4	LCD N156" FHD/WVA/120HZ/VA/NOEN GT/EDP PANDA LMS5LFTL LED 32MM	6-50-LBB32-Y150	
4	LCD N156" FHD/WVA/NOEN GT/EDP DEE NVIS6FPM-N63 FG 4000/8000 LED 26 MM	6-50-LBB26-Z020	
4	LCD N156" FHD/IPS/VA/NOEN GT/EDP LG LP156WFC-SP103 LED 32MM	6-50-LBB32-L015	
4	LCD N156" FHD/WVA/144HZ/VA G-SYNC/NOEN GT/EDP LG LP156WFC-SP103 LED 26MM	6-50-LBB26-L124	
5	SCREW M2*3L KI BZ ICT NY (DD=04.5,DT=0.4)	6-35-B6120-3RD	
6	HINGE L (SK7+SGCC) NH50ED	6-33-NH501-0L2	
7	LCD BACK COVER MODULE NH50ED	6-39-NH501-022	
8	CCD CABLE L=550MM 30V 8PIN (HT) NH50ED NH50ED	6-43-NH50T-011-1	
9	INC CABLE FROM TUNING OF THE CABLE IN THE DIVERSE FROM THE VARIOUS LED VARIOUS FROM THE DIVERSE	6-88-N15ZC-5100	OPTION
9	INC CABLE FROM TUNING OF THE CABLE IN THE DIVERSE FROM THE VARIOUS LED VARIOUS FROM THE DIVERSE	6-88-N15ZC-4900	OPTION
10	WIRE CABLE FOR EDP 300MM 30V 1.30 PIN HT/LV CONALVO-430LPM50 PRESET	6-43-PB501-032-2N	FOR 6-50-LBB26-Z020 6-50-LBB32-L015
10	WIRE CABLE FOR EDP 4K 300MM (D) 19V 30PIN (CM/PLS CONALVO-430LPM50-HF) N501U	6-43-N85H1-010-2S	FOR 6-50-LBB32-Y150
10	WIRE CABLE FOR EDP 300MM 30V 1.40 PIN HT/LV CONALVO-430LPM50 PRESET	6-43-PB501-012-2N	FOR 6-50-LBB26-L124
11	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
12	SCREW M2.5*4L KI NI ICT NY	6-35-21125-4R0	
13	HINGE R (SK7+SGCC) NH50ED	6-33-NH501-0R2	
14	LA LA ADHESIVE (35*10*1.6T) NH50ED	6-47-NH501-0A0-1	FOR 6-50-LBB26-Z020 6-50-LBB26-L124
15	MYLAR (15*5*0.25T) FOR M/B N745WU-N	6-40-N7452-050-N	
16	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
17	PANEL LA LA ADHESIVE(35*10*1) NH50ED	6-47-NH501-080-1	FOR 6-50-LBB32-Y150 6-50-LBB32-L015

LCD (NH57DB / NH57DE)



ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT MYLAR BOPP N150ZU	6-40-N15Z8-010	
2	CCD LENS PMMA (DIAMETER 3.6MM) (MPI) P970EN	6-42-P97N1-011-1	
3	LCD FRONT COVER MODULE NH50ED	6-39-NH501-013	
4	LCD NIS6" FHD/VVA/200Z/N/NON GT/EP PANDA LMS6LTL LED 32NM	6-50-LBB32-Y150	
4	LCD NIS6" FHD/VVA/140Z/2N 6-SIN/NON/NON GT/EP LG LP56WFC-SPB3 LED 32NM	6-50-LBB26-L124	
4	LCD NIS6" FHD/IPS/N/NON GT/EP LG LP56WFC-SPB3 LED 32NM	6-50-LBB32-L015	
4	LCD NIS6" FHD/VVA/N/NON GT/EP BEE NYS6FM-N61 T6 800/800Z QLED 26 W	6-50-LBB26-Z020	
5	TAPE FOR FIX 1.35MM PANEL FM822K+CR4832 P950EN	6-40-P95N1-011-1	FOR 6-50-LBB32-Y150 6-50-LBB32-L015
6	LCD RUBBER (8*2.5*1.45T) SILICON BLACK NH58EDQ	6-47-NH581-041	
7	BACK COVER MODULE NH57ED	6-39-NH571-023	
8	LALATAPE FOR 026 PANEL (40*10*1.8T) N140WU	6-47-N1401-010	FOR 6-50-LBB26-L124 6-50-LBB26-Z020
9	WIRE CABLE FOR EIP 300M 30V 1 30 PIN HTALV CONLVV-400LPM50 P950EN	6-43-PB501-032-2N	
9	WIRE CABLE FOR EIP 300M 30V 1 40 PIN HTALV CONLVV-400LPM50 P950EN	6-43-PB501-012-2N	
9	WIRE CABLE FOR EIP 4K 300M 10 19V 30PIN (CONLVV-400LPM50-4K) N850U	6-43-NB5H1-010-2S	
10	CCD CABLE L=550MM 30V 8PIN (GHT) NH50ED NH50ED	6-43-NH50T-011-1	
11	HC CHINA FRONT COVER (DIAMETER 3.6MM) IN 0.15MM 1500 PPM WHITE LED VIBRATION UNIT VIB UNIT	6-88-N15ZC-5100	OPTION
11	HC CHINA FRONT COVER (DIAMETER 3.6MM) IN 0.15MM 1500 PPM WHITE LED VIBRATION UNIT VIB UNIT	6-88-N15ZC-4900	OPTION
12	.SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
13	SCREW M2.5*2.5L KI BK/Z ICT NY(Ø8,T=0.6)	6-35-B6125-2R5	
14	HINGE L MODULE NH57ED	6-33-NH571-L00	
15	LCD SPONGE (SM55 25*10*1T) NH55EDQ	6-47-0019A-25R	FOR 6-50-LBB32-L015 6-50-LBB32-Y150
16	LCD SPONGE (SM55 25*10*1-5T) NH55EDQ	6-47-0019A-25Q	FOR 6-50-LBB26-L124 6-50-LBB26-Z020
17	HINGE R MODULE NH57ED	6-33-NH571-R00	
18	ANTENNA (SLIT) IP6X4 W/LAN WGT M2 PCB TL 24G/5G 450MM N150Z	6-23-7NH57-020	
19	ANTENNA (SLIT) IP6X4 W/LAN WGT W/L PCB TL 24G/5G 250MM N150Z	6-23-7NH57-010	
20	TAPE MYLAR TRANSPARENT (20*10*0.05) P180HM	6-40-P1803-020	
21	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
22	MYLAR (15*5*0.25T) FOR M/B N745WU-N	6-40-N7452-050-N	
23	FRONT COVER GLUE UAD ONTTO 5000 135*0.05) FOR W655Z	6-40-W6551-040	
24	LCD SPONGE (60*10*1.5T) SM55 P970EN	6-47-0019A-60U	FOR 6-50-LBB32-L015 6-50-LBB32-Y150

Figure A - 7
LCD (NH57DB / NH57DE)

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Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *NH50DB / NH50DE / NH57DB / NH57DE* 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	NVIDIA Power Sequence - Page B - 25	5V, 5VS, 3.3V, 3.3VS - Page B - 48
Processor 1/6 - Page B - 3	GPU NVVDD, FBVDDQ - Page B - 26	VDD1.05V, VCCIO - Page B - 49
Processor 2/6 - Page B - 4	GPU GND - Page B - 27	VDD3, VDD5 - Page B - 50
Processor 3/6 - Page B - 5	mDP - Page B - 28	DDR 1.2V / 0.6VS, 2.5V - Page B - 51
Processor 4/6 - Page B - 6	Panel, Inverter - Page B - 29	VCore Output Stage - Page B - 52
Processor 5/6 - Page B - 7	HDMI - Page B - 30	VCC_Core & VCCGT - Page B - 53
Processor 6/6 - Page B - 8	PCH 1/9 - Page B - 31	I.05DX_VCCSTG/VCCSFR_OC - Page B - 54
DDR4 CHA SO-DIMM - Page B - 9	PCH 2/9 - Page B - 32	VCCGT & VCCSA Output Stage - Page B - 55
DDR4 CHB SO-DIMM - Page B - 10	PCH 3/9 - Page B - 33	AC_In, Charger - Page B - 56
VGA PCI Express - Page B - 11	PCH 4/9 - Page B - 34	NVVDD1 - Page B - 57
GPU Frame Buffer A/B - Page B - 12	PCH 5/9 - Page B - 35	NVVDD2 - Page B - 58
Frame Buffer A - Page B - 13	PCH 6/9 - Page B - 36	PEX_VDD - Page B - 59
Frame Buffer A - Page B - 14	PCH 7/9 - Page B - 37	FBVDDQ - Page B - 60
Frame Buffer B - Page B - 15	PCH 8/9 - Page B - 38	IV8_RUN/AON - Page B - 61
Frame Buffer B - Page B - 16	PCH 9/9 - Page B - 39	Audio Board - Page B - 62
GPU Frame Buffer C/D - Page B - 17	M.2 Card - Page B - 40	NH50 PW Board - Page B - 63
Frame Buffer C - Page B - 18	M.2 WLAN+BT, PCIE 4X SSD - Page B - 41	Hall Sensor Board - Page B - 64
Frame Buffer C - Page B - 19	USB Charger - Page B - 42	Click Board - Page B - 65
GPU Decoupling 1 - Page B - 20	Card Reader / LAN RTL8411B - Page B - 43	LED Board - Page B - 66
GPU Decoupling 2 - Page B - 21	HDD, Click TP, Audio, Hall Con. - Page B - 44	NH70 PW Board - Page B - 67
Straps and XTAL - Page B - 22	LED, CCD, TPM, Power SW Con. - Page B - 45	Power Sequence - Page B - 68
IFP I/O Interface - Page B - 23	KBC-ITE IT5570 - Page B - 46	
Misc - GPIO, I2C and ROM - Page B - 24	RGB KB - Page B - 47	

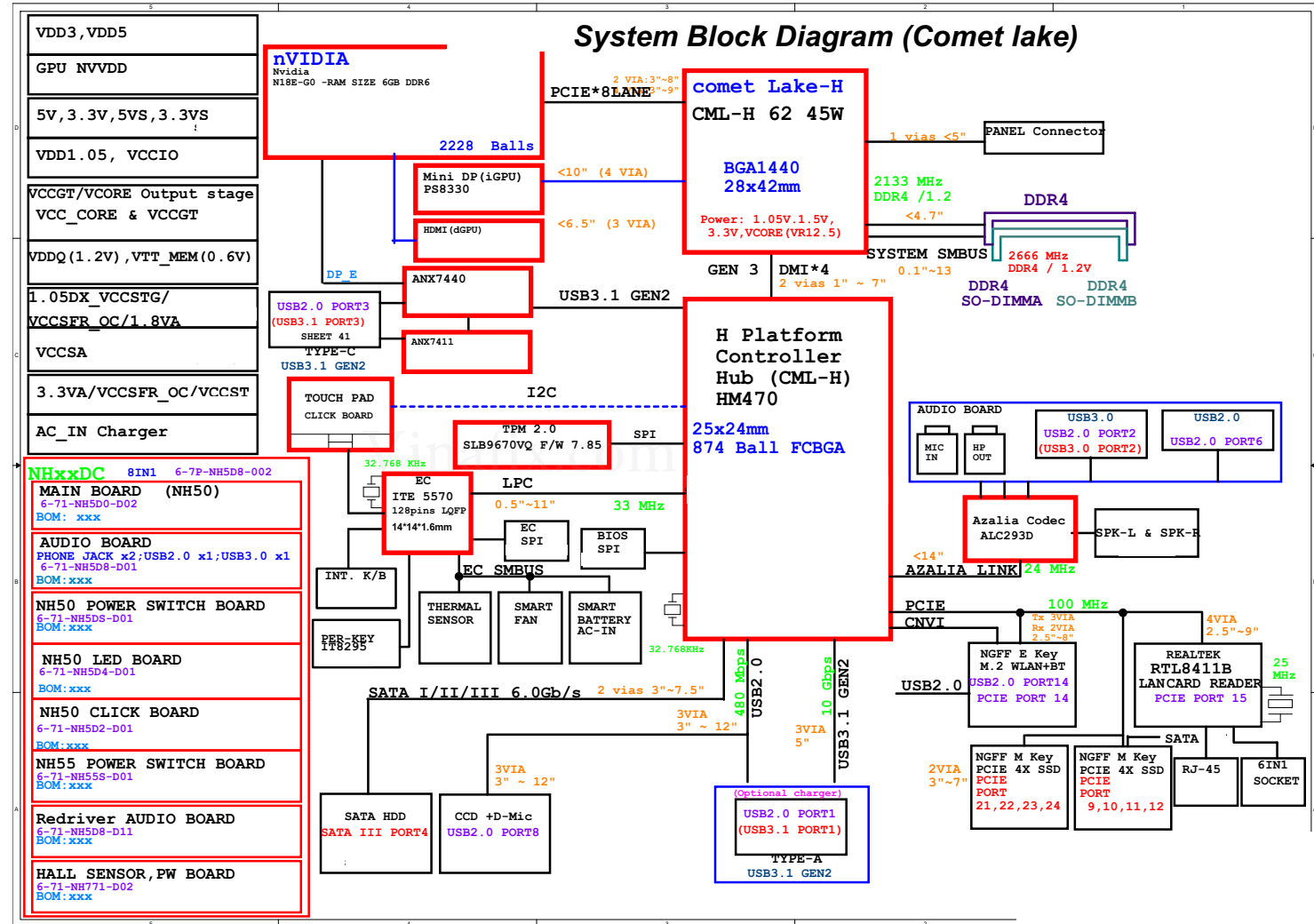
Table B - 1
**SCHEMATIC
DIAGRAMS**



Version Note

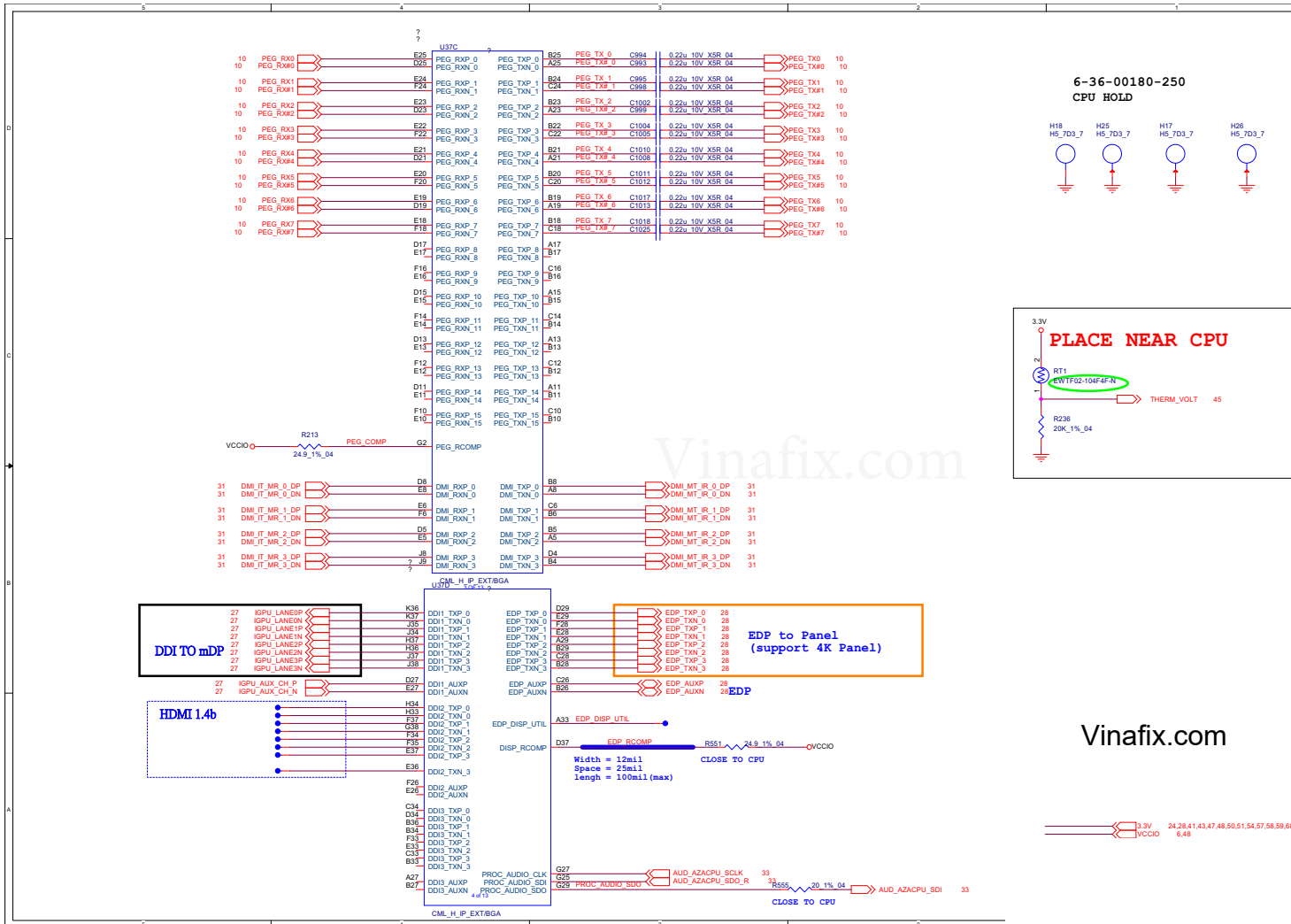
The schematic diagrams in this chapter are based upon version 6-7P-NH5D8-002. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram



Sheet 1 of 67
System Block
Diagram

Processor 1/6

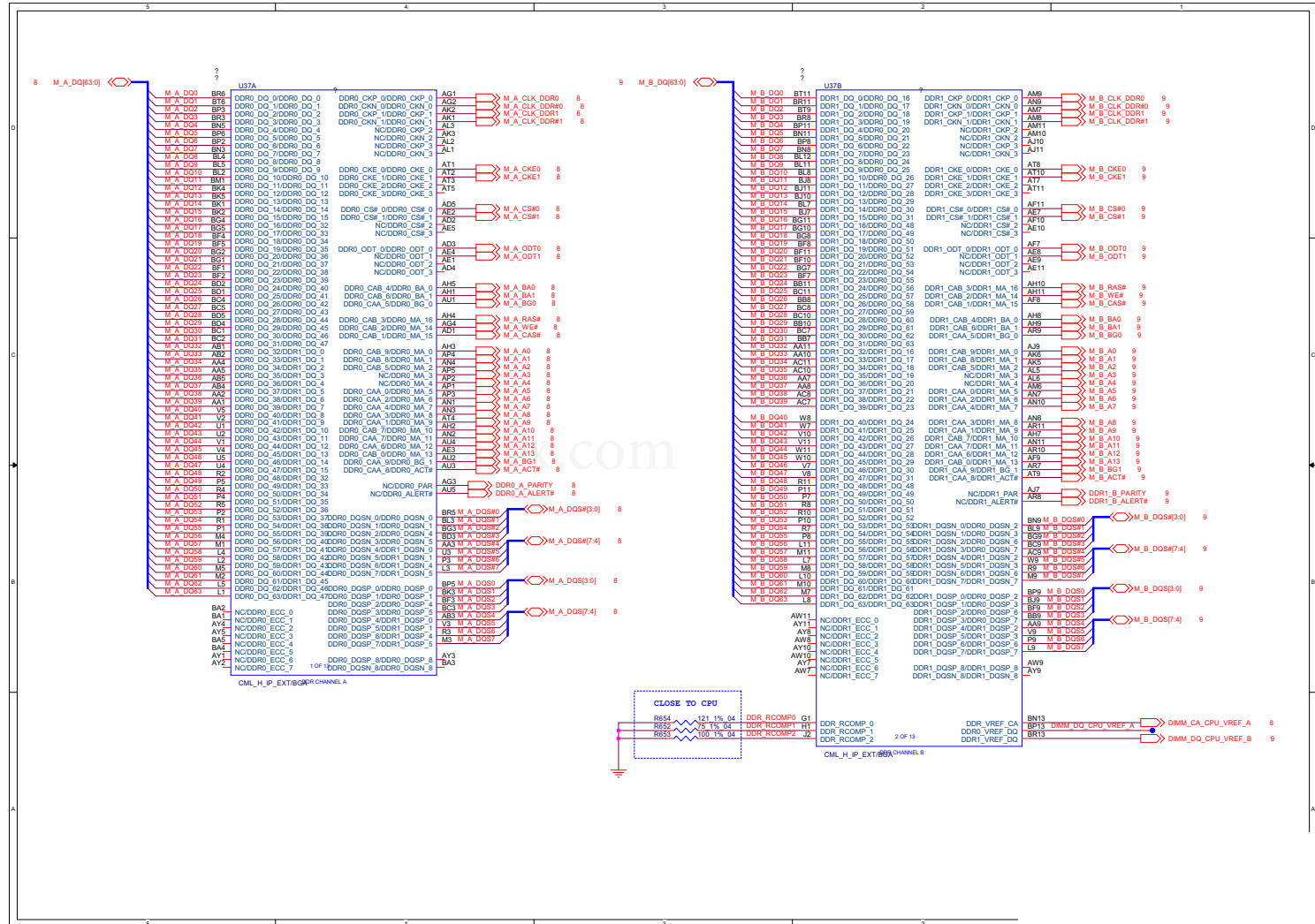


Sheet 2 of 67
Processor 1/6

Schematic Diagrams

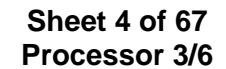
Processor 2/6

Sheet 3 of 67
Processor 2/6



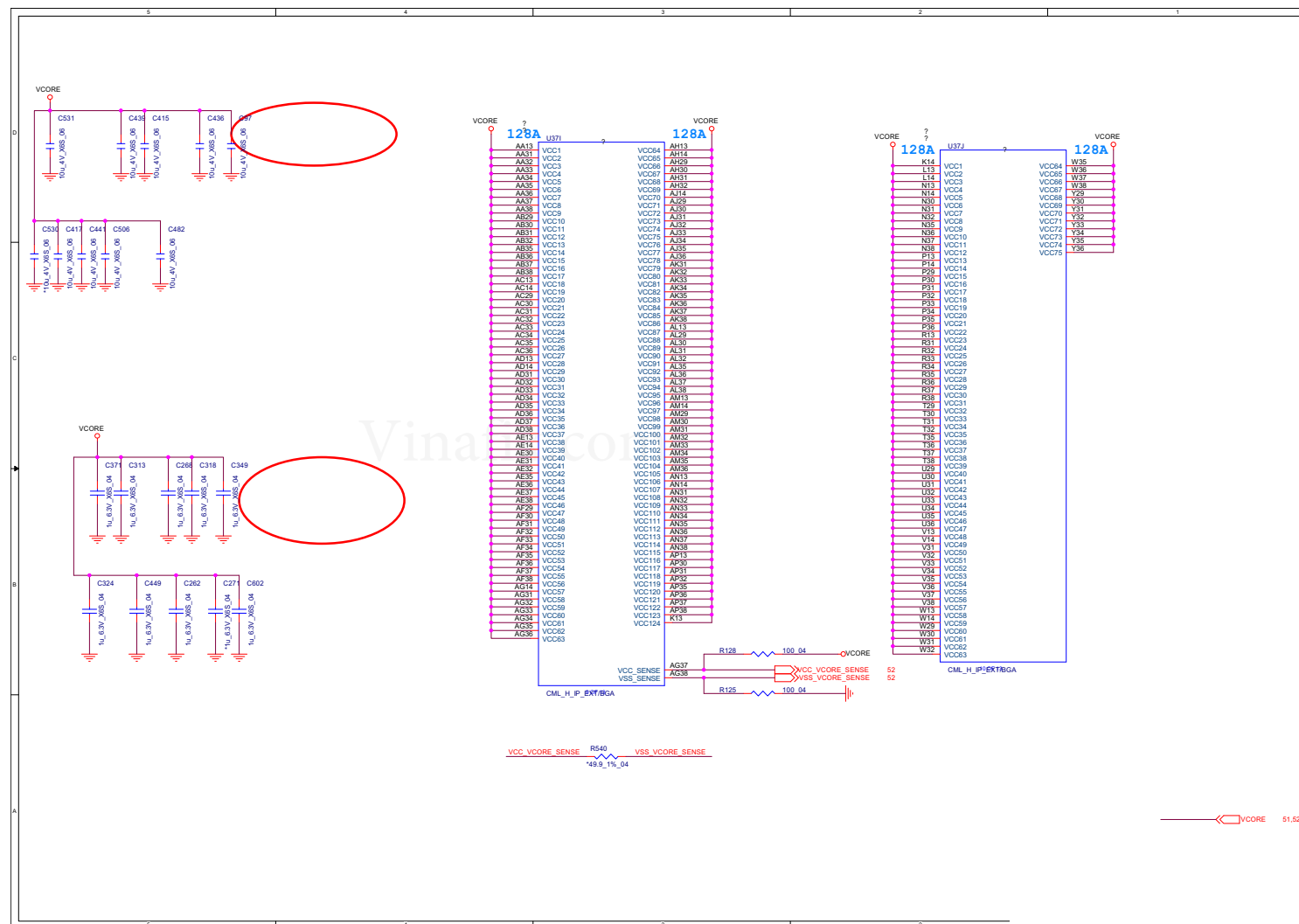
Processor 3/6 B - 5

B.Schematic Diagrams

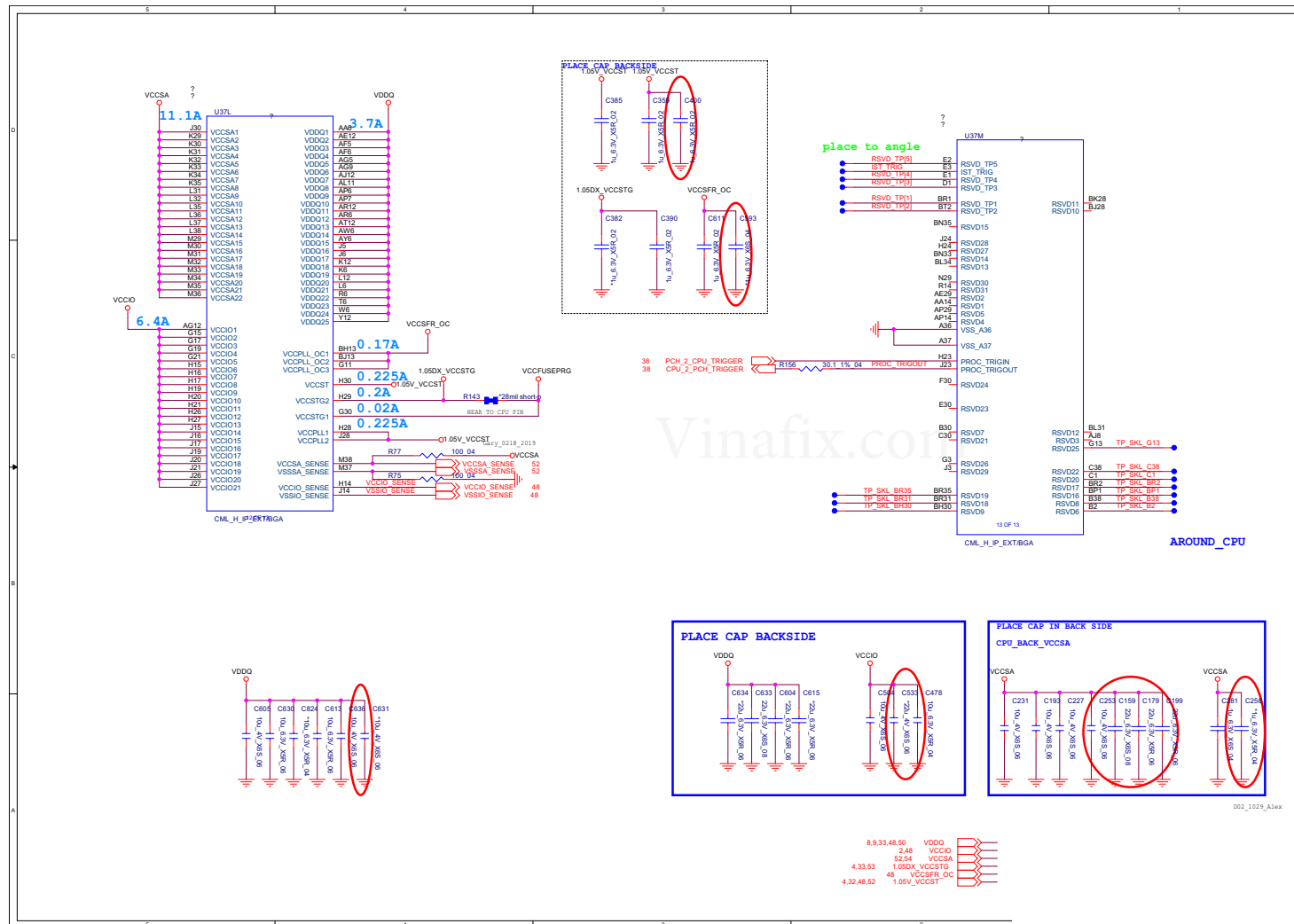


Processor 4/6

Sheet 5 of 67
Processor 4/6



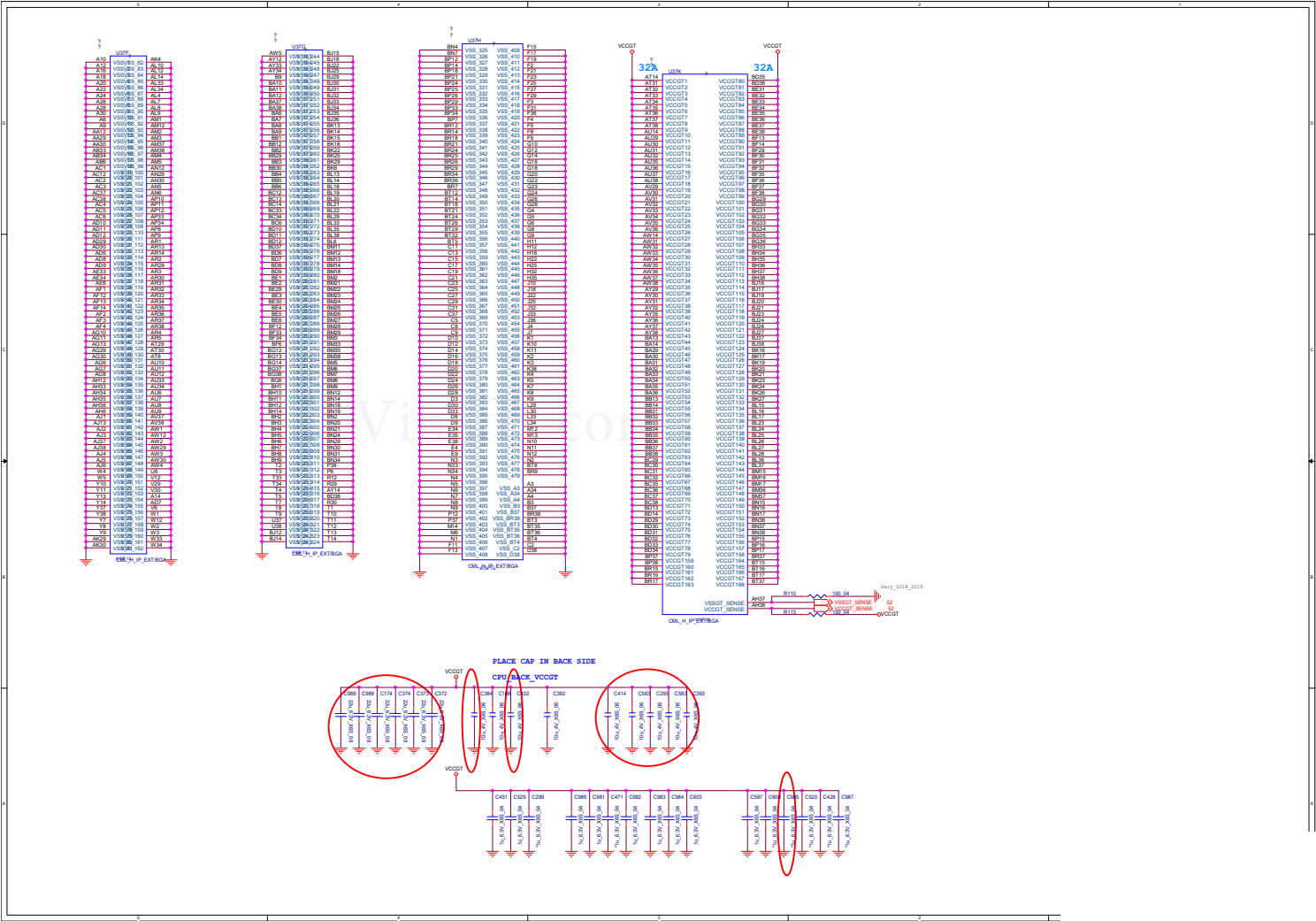
Processor 5/6 B - 7



Schematic Diagrams

Processor 6/6

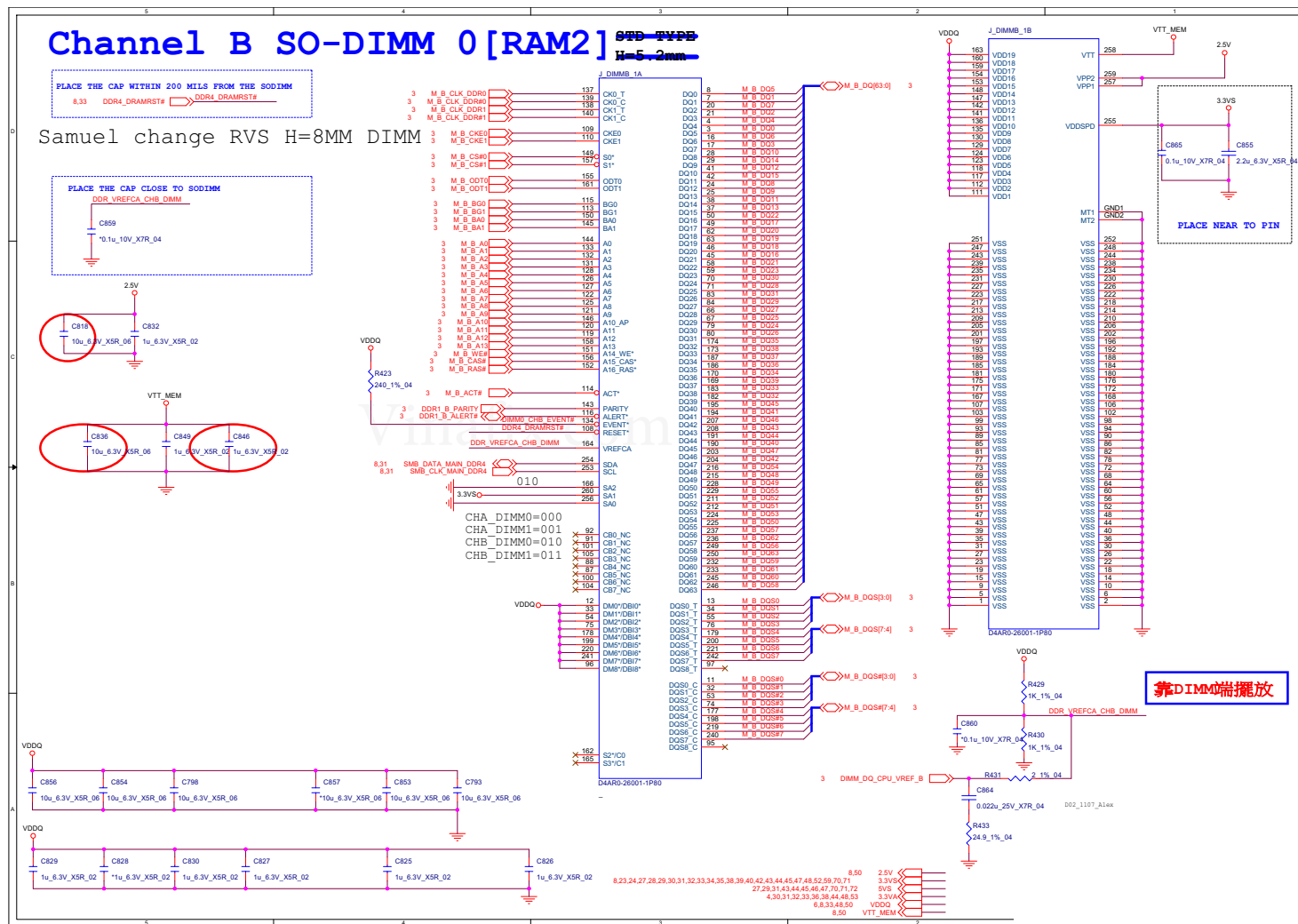
Sheet 7 of 67
Processor 6/6



DDR4 CHB SO-DIMM

B.Schematic Diagrams

Sheet 9 of 67
DDR4 CHB SO-
DIMM



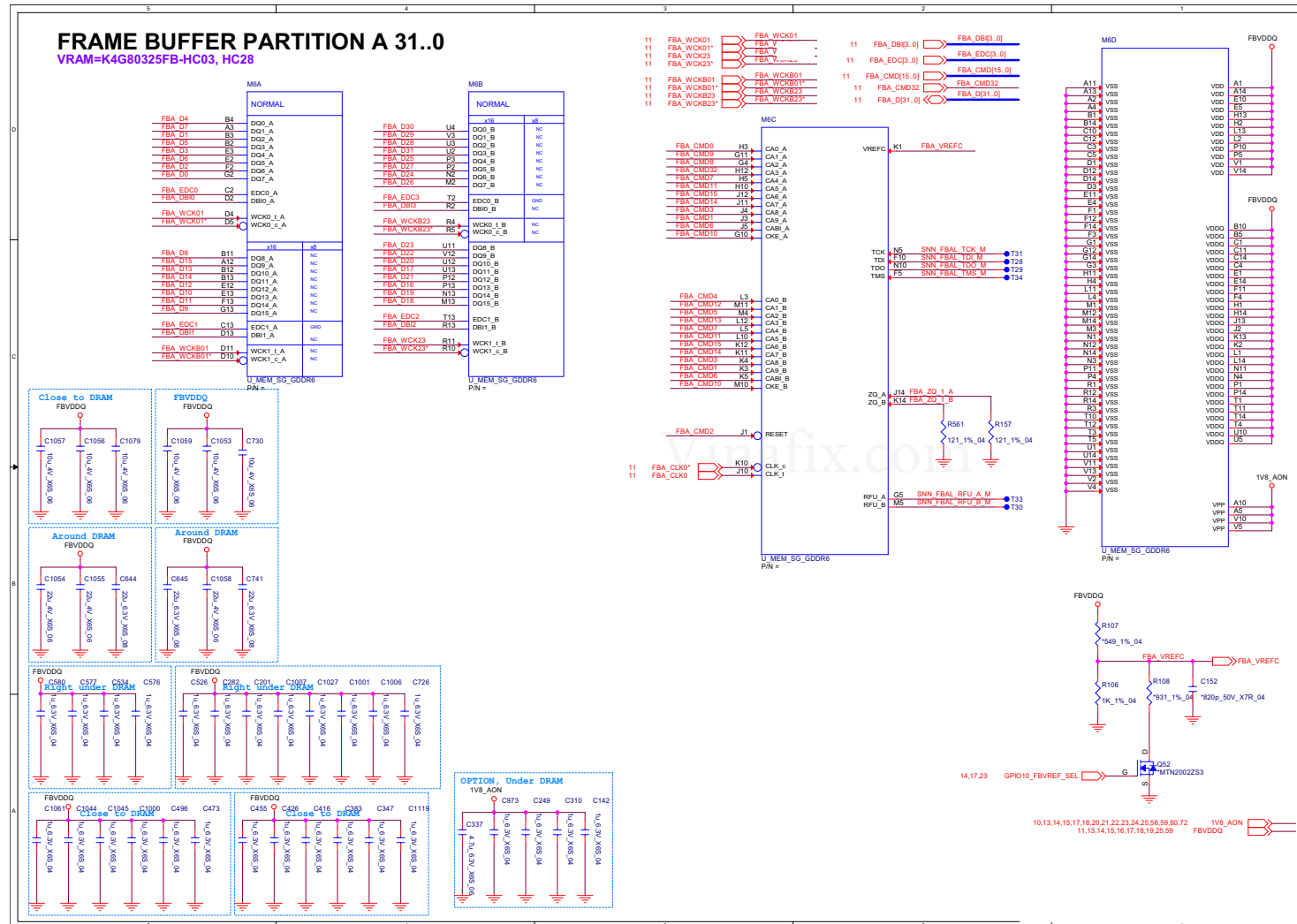
VGA PCI Express B - 11



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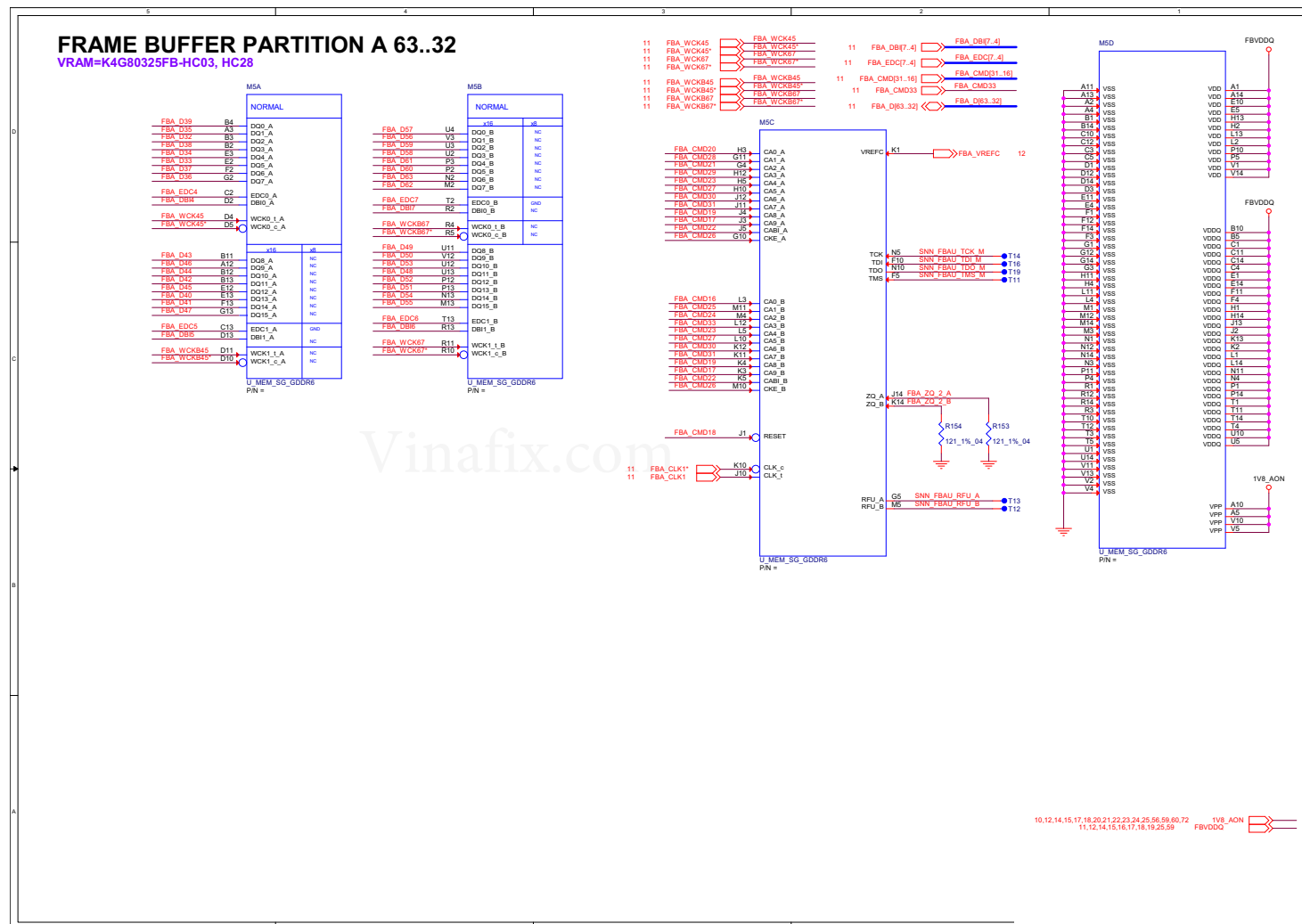


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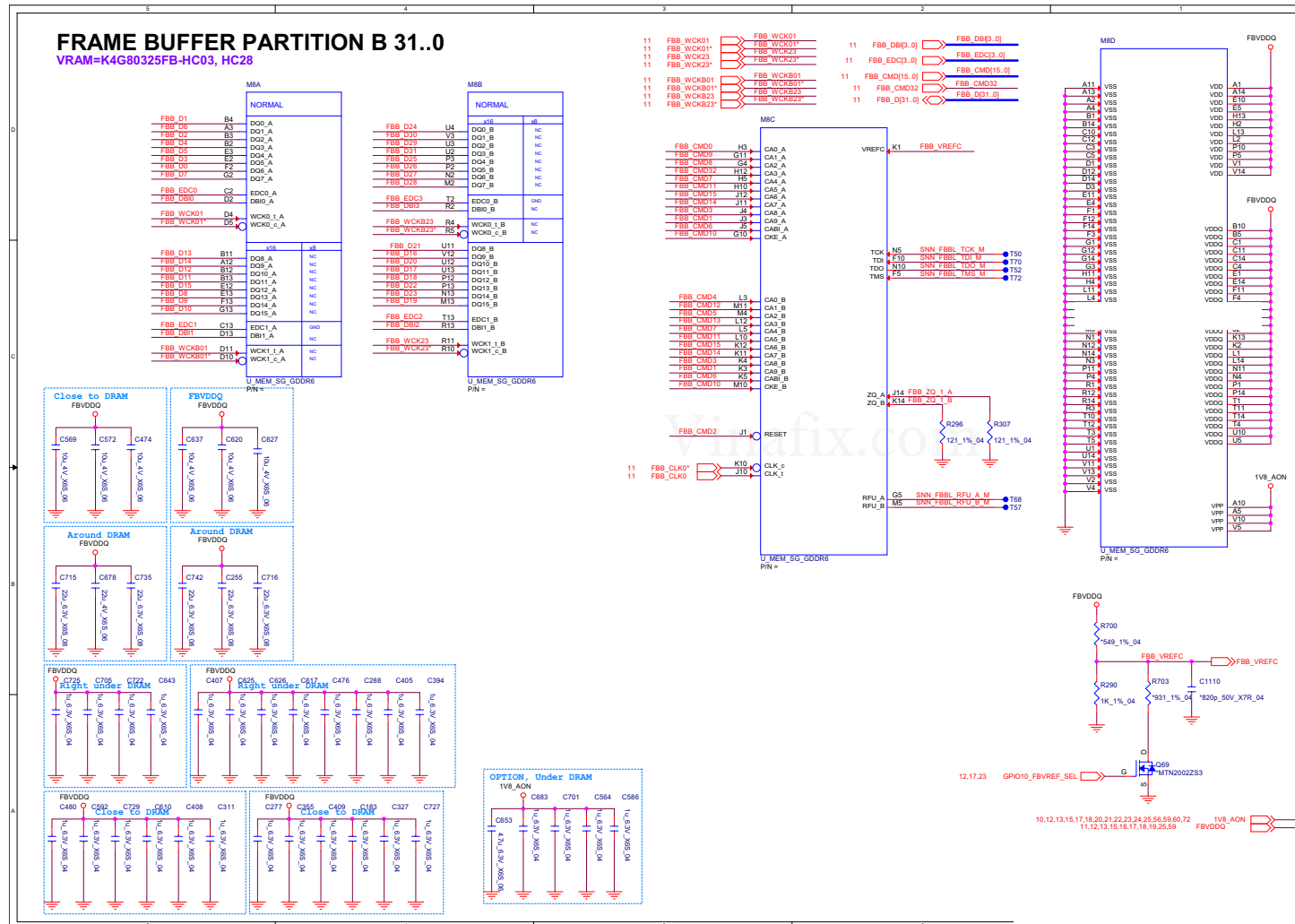


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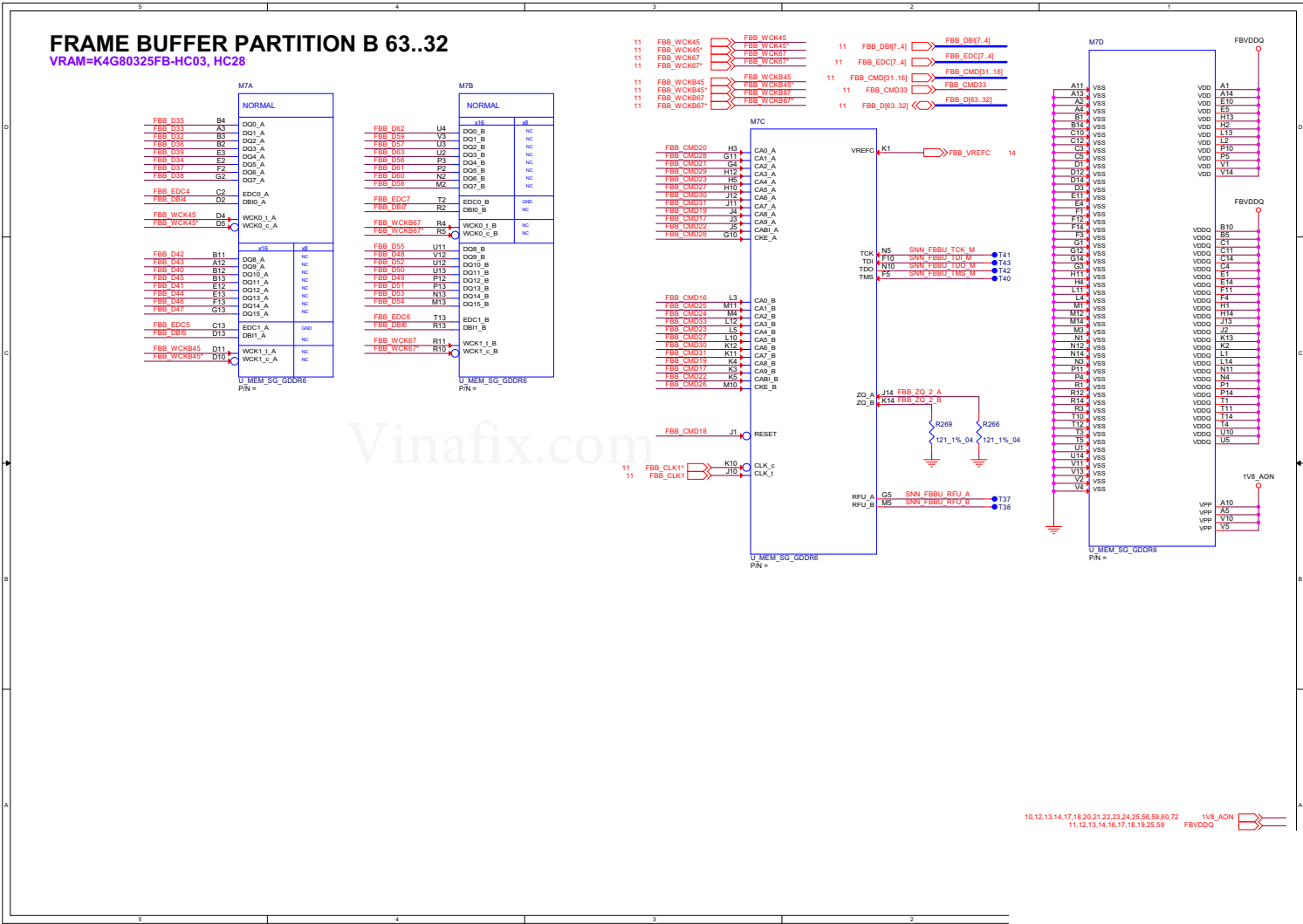
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Frame Buffer A



Frame Buffer B B - 15



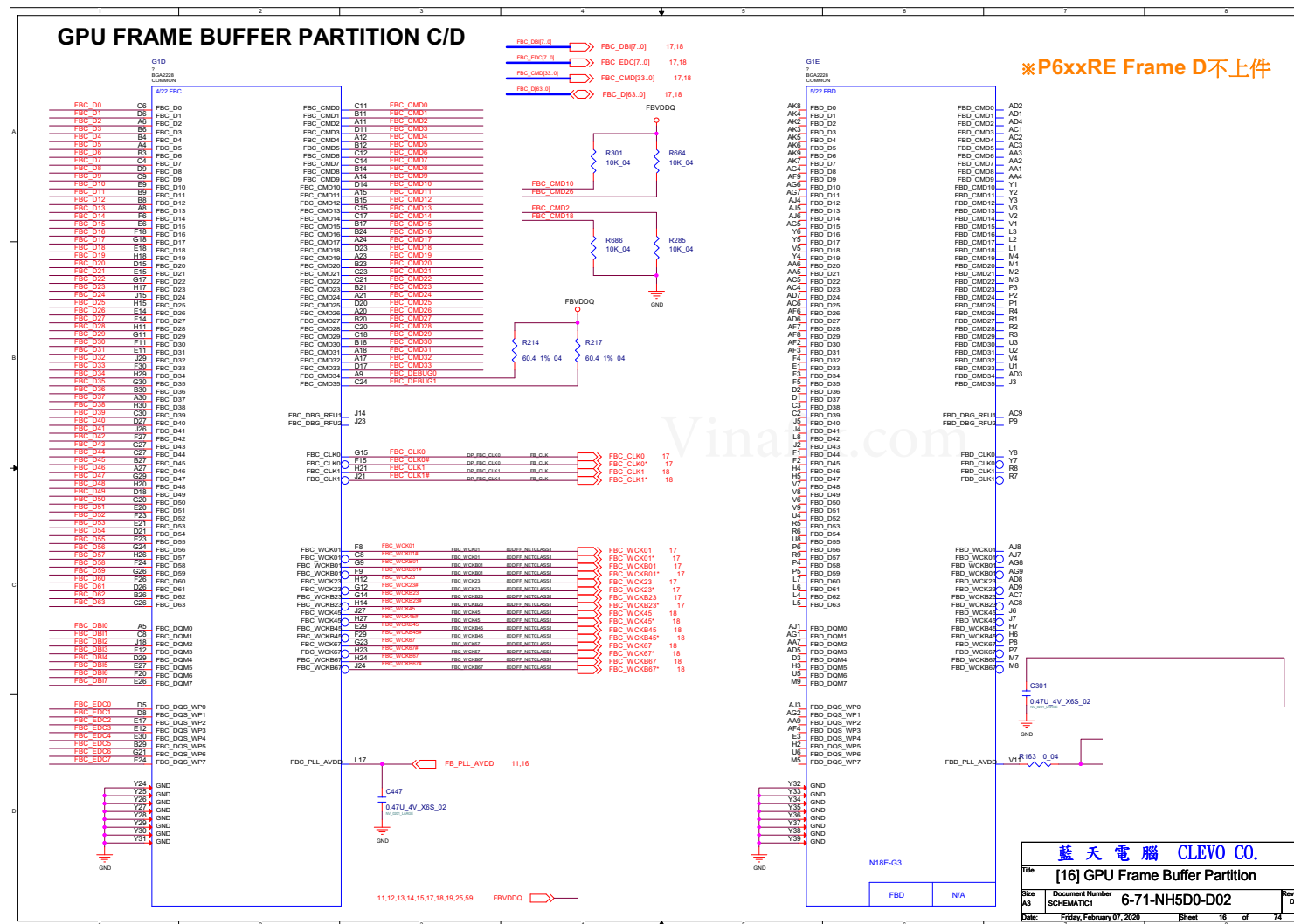
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B.Schematic Diagrams

Sheet 15 of 67
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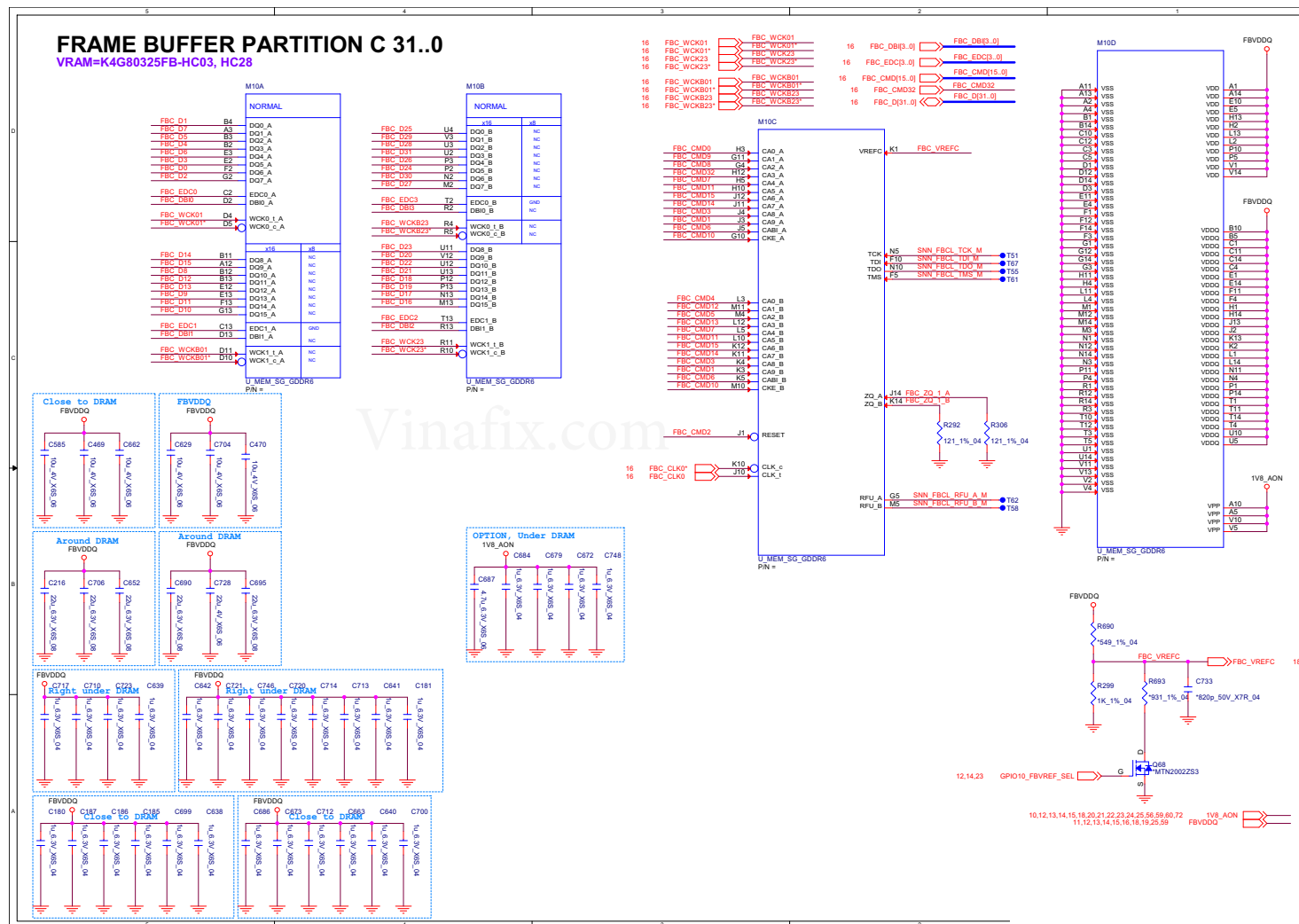
GPU Frame Buffer C/D



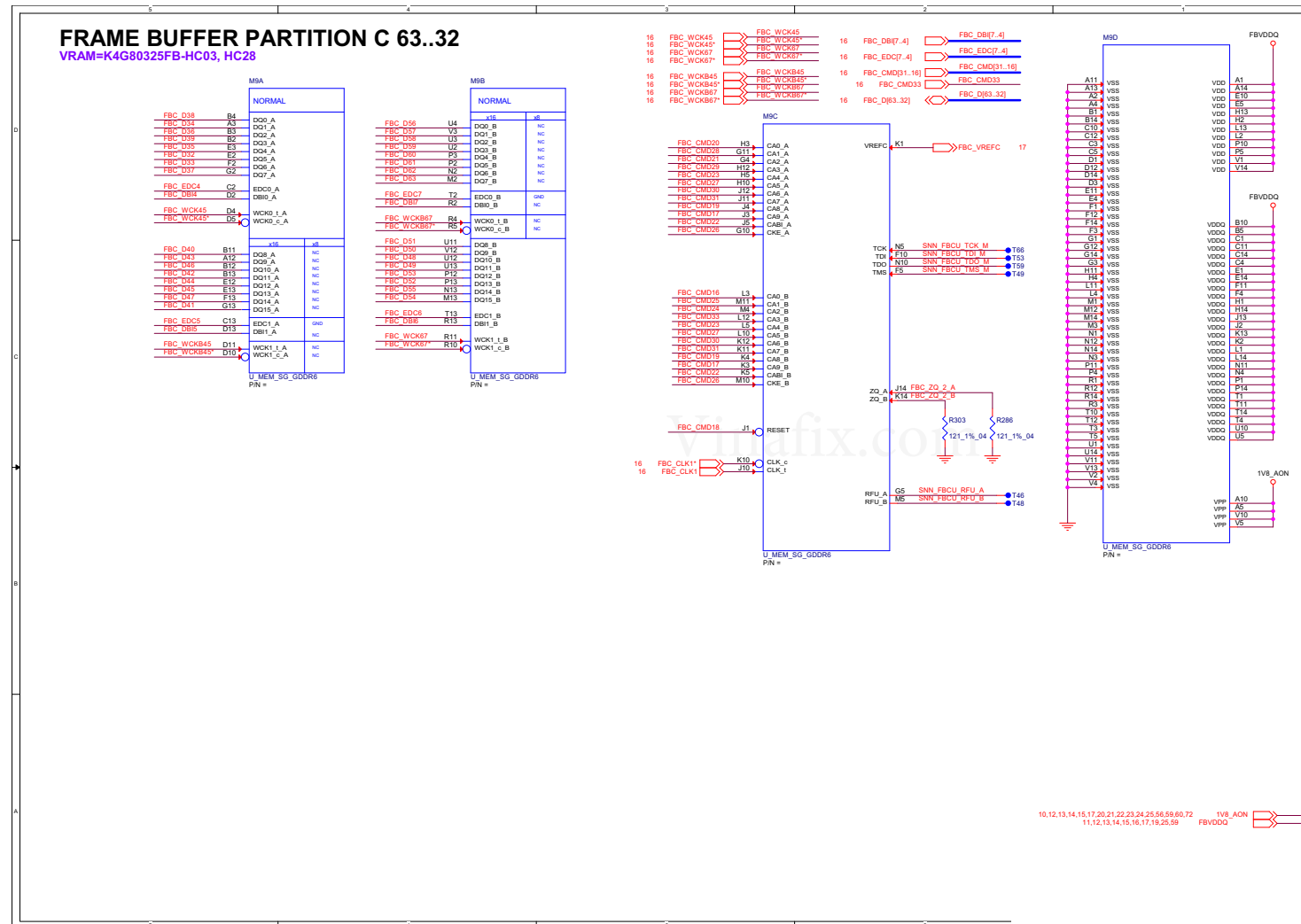
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B. Schematic Diagrams

Sheet 17 of 67
Frame Buffer C

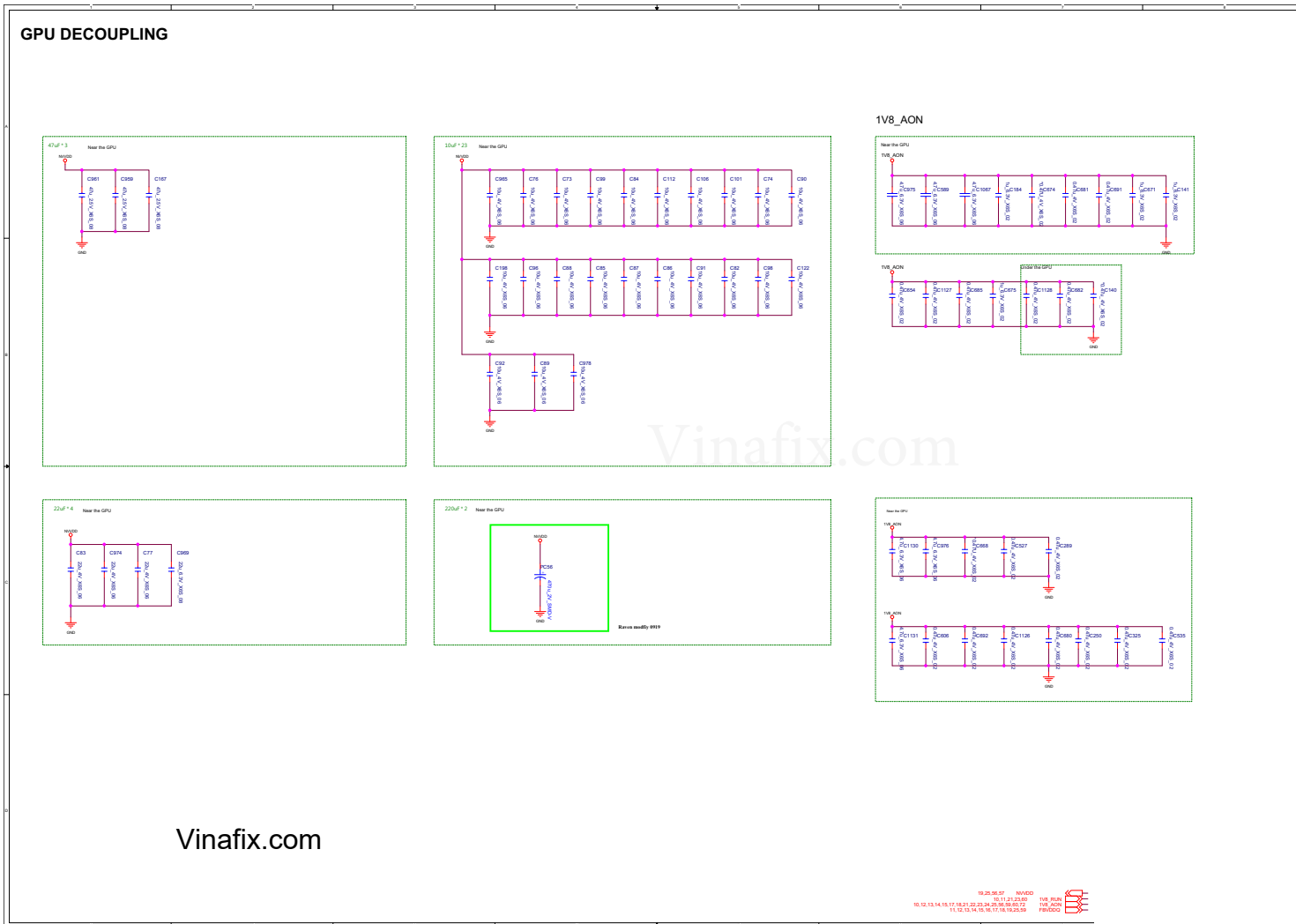


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Sheet 19 of 67
GPU Decoupling 1

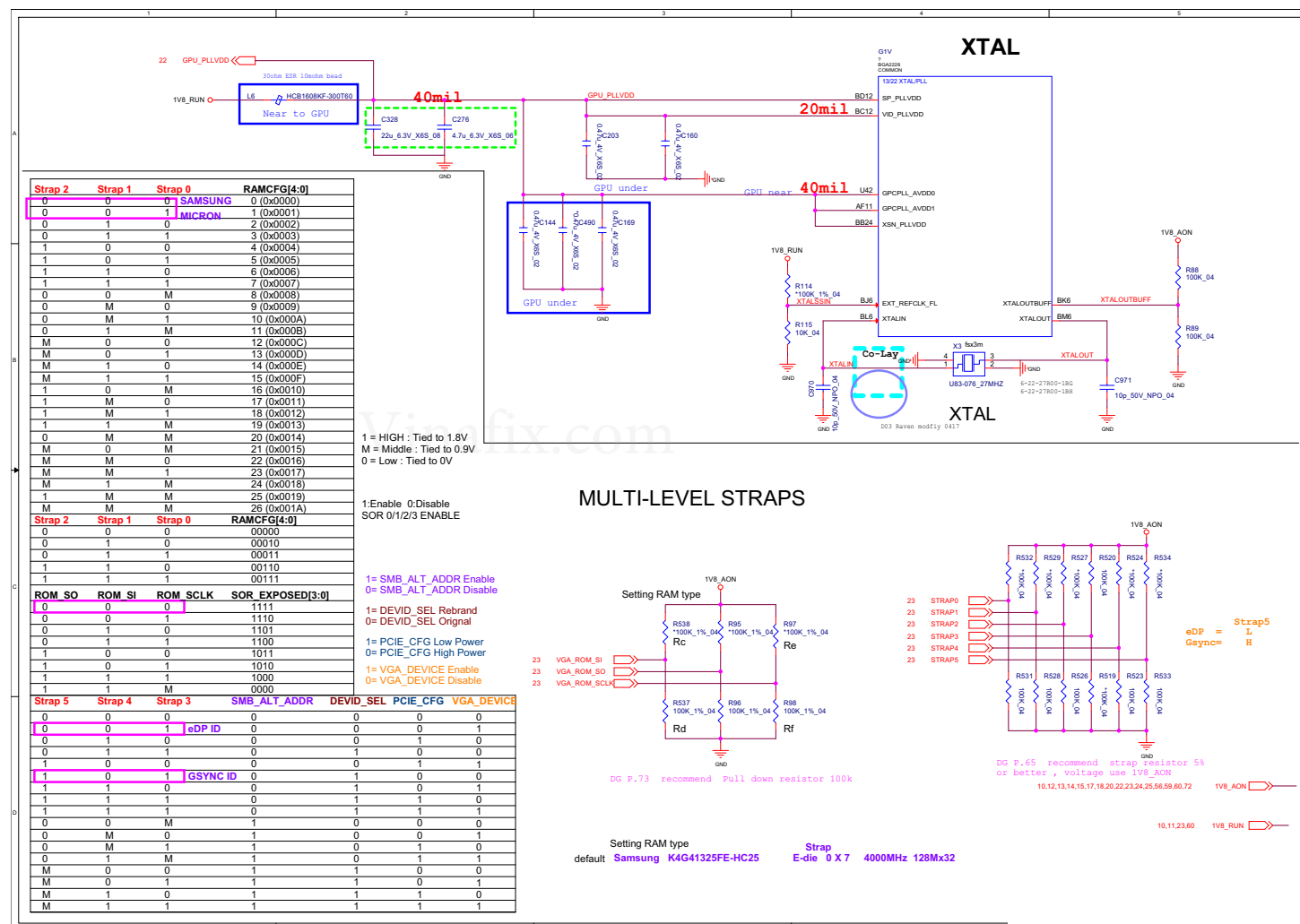
GPU Decoupling 2



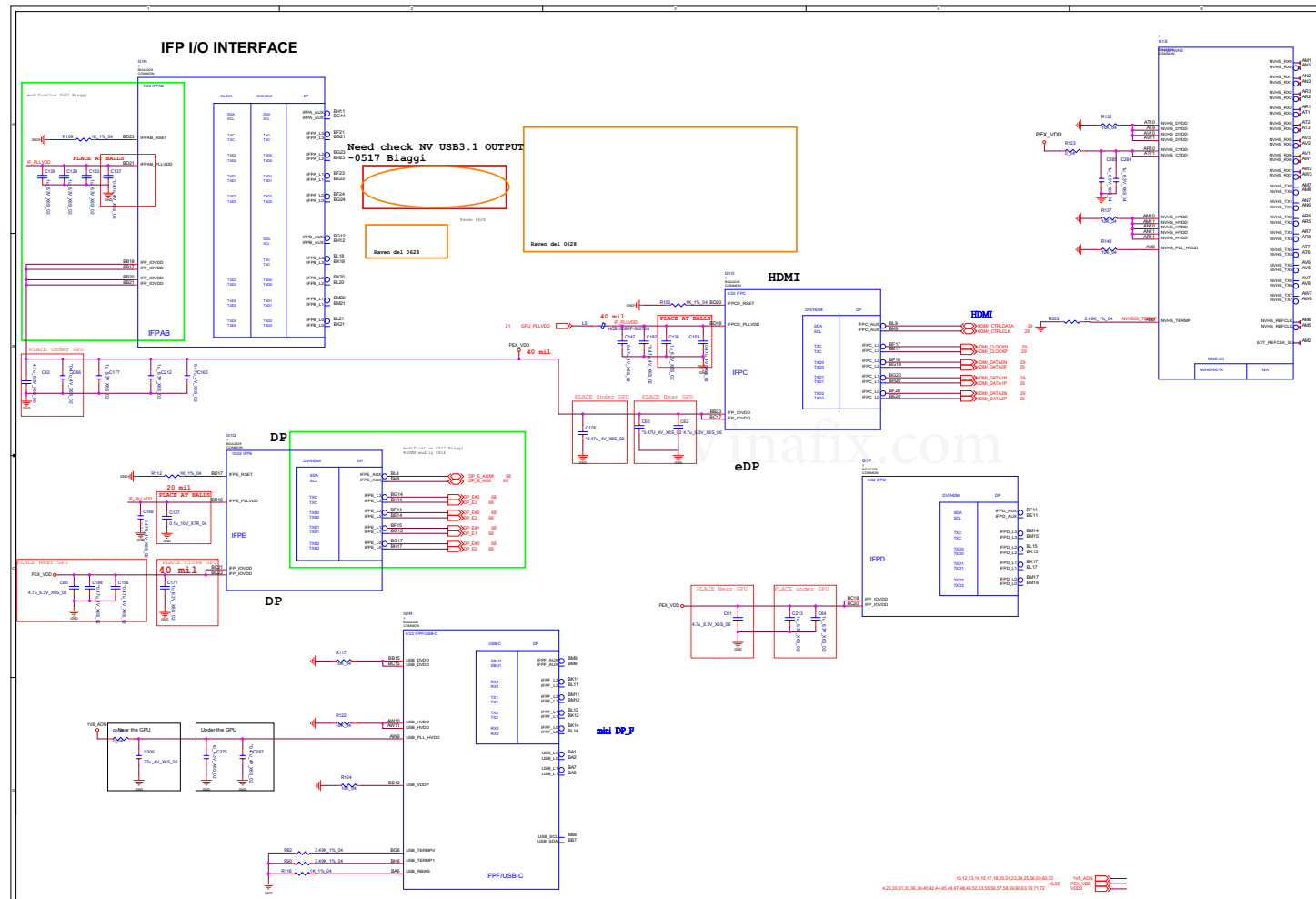
Sheet 20 of 67
GPU Decoupling 2

Straps and XTAL

Sheet 21 of 67
Straps and XTAL



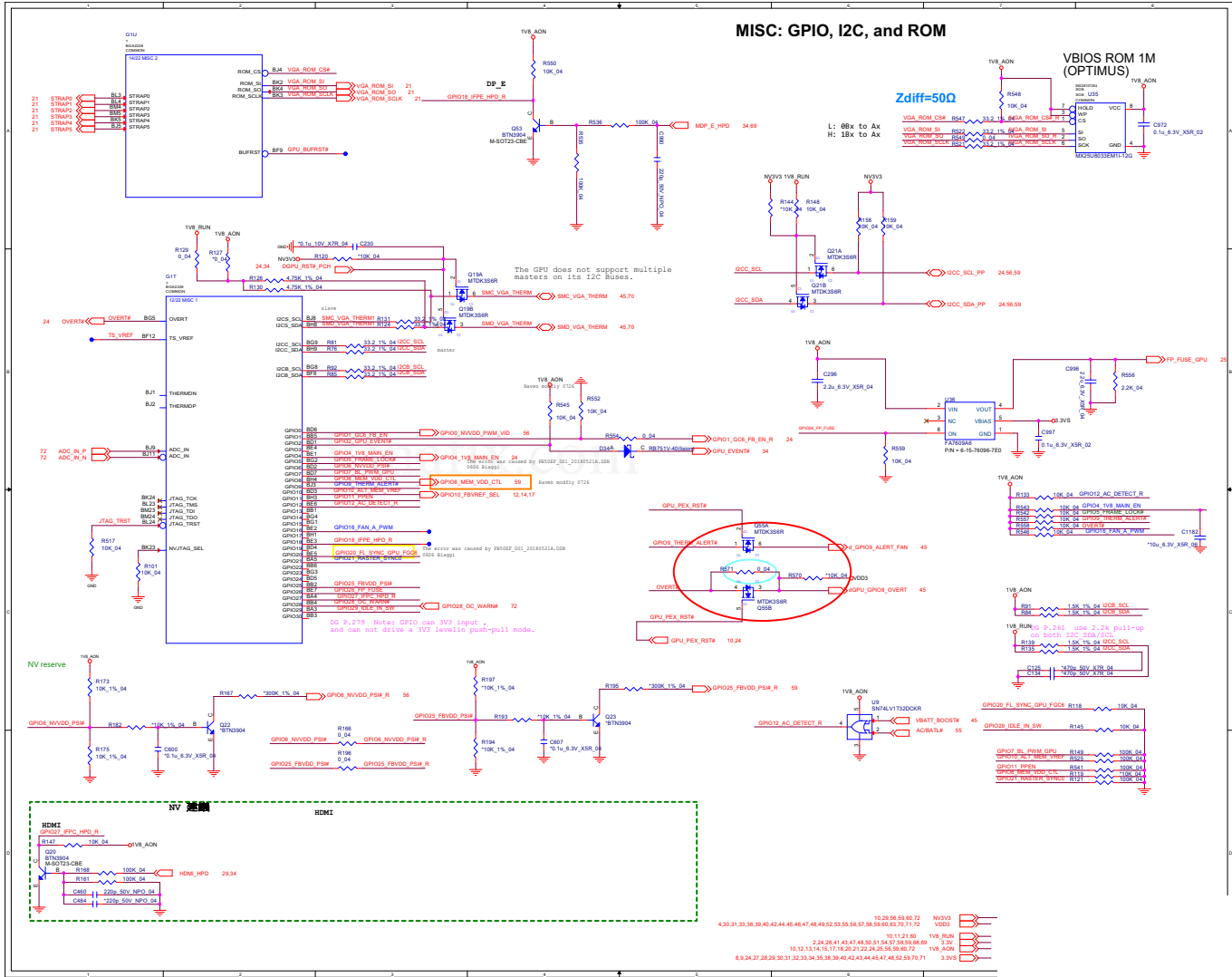
IFP I/O Interface



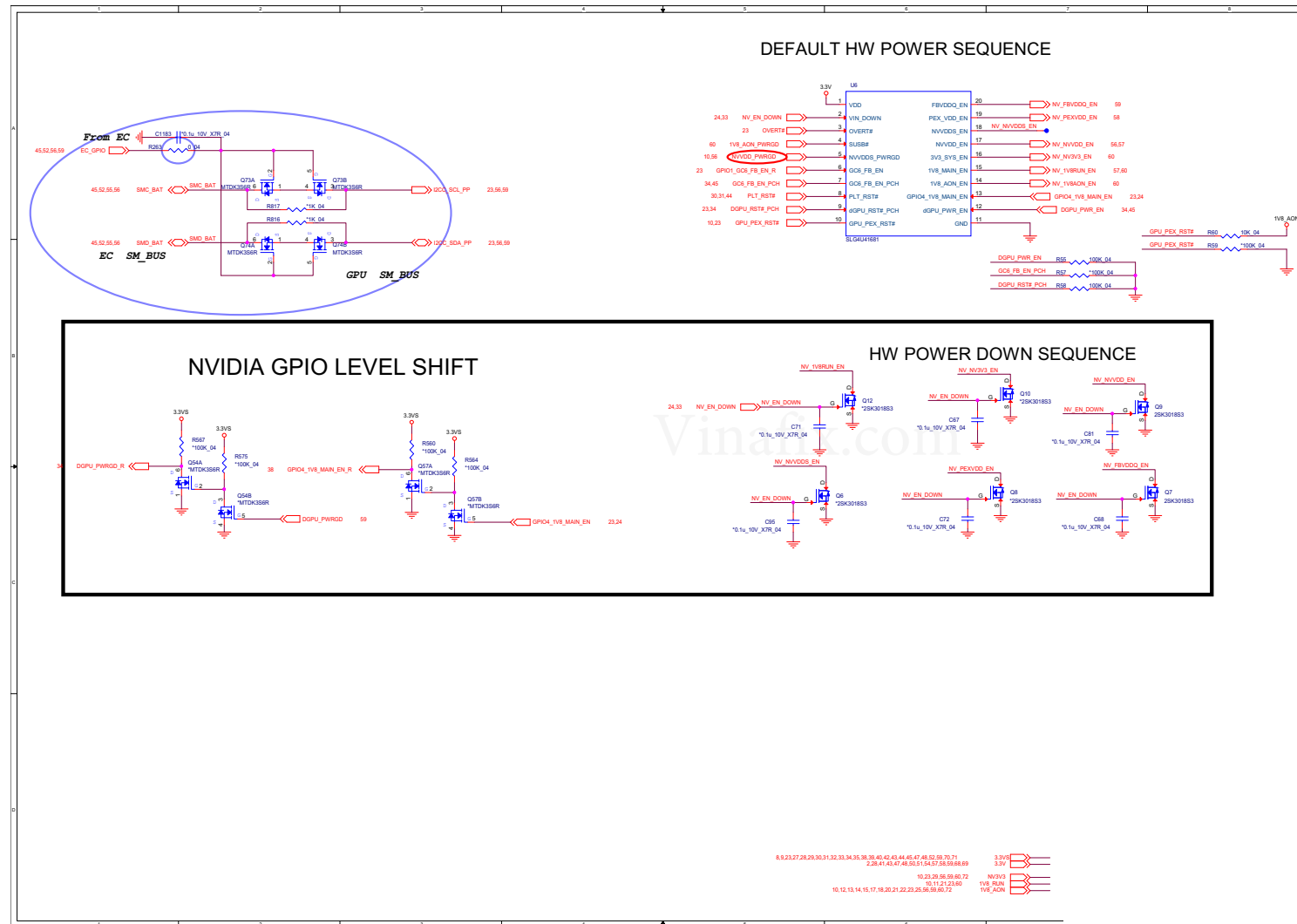
Misc - GPIO, I2C and ROM

B. Schematic Diagrams

Sheet 23 of 67
Misc - GPIO, I2C,
and ROM



NVIDIA Power Sequence

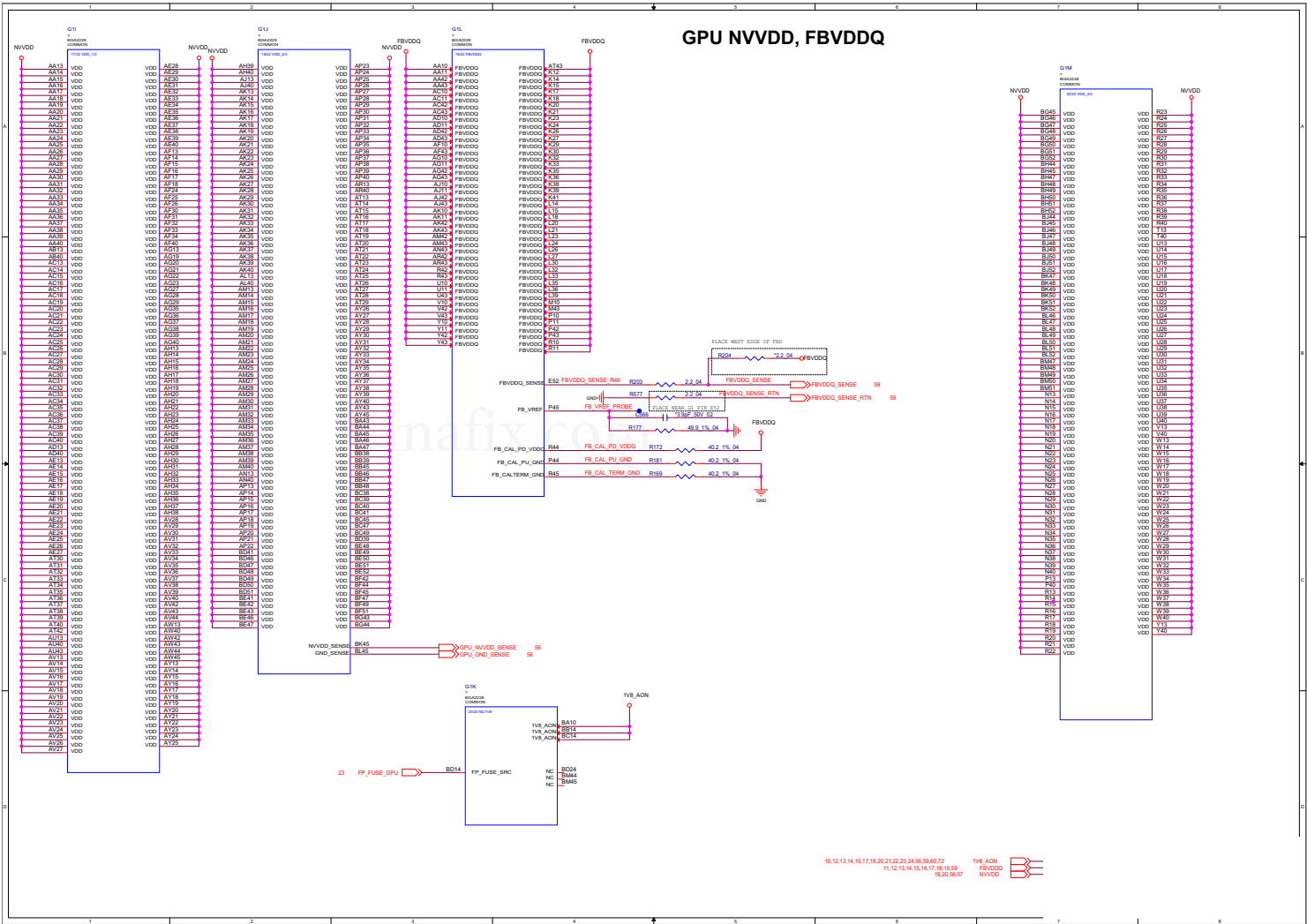


Sheet 24 of 67
NVIDIA Power
Sequence

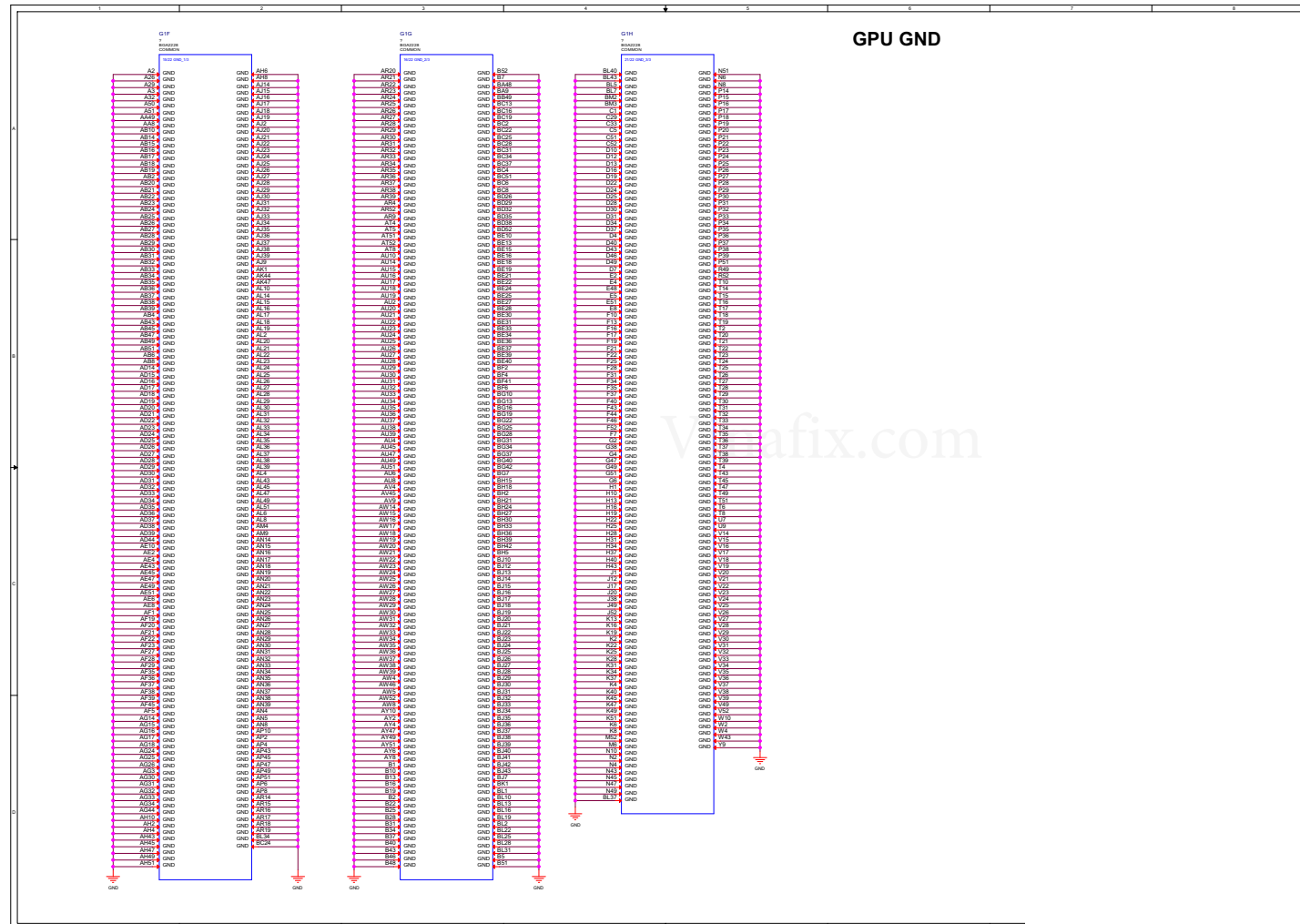
Schematic Diagrams

GPU NVVDD, FBVDDQ

Sheet 25 of 67
GPU NVVDD,
FBVDDQ

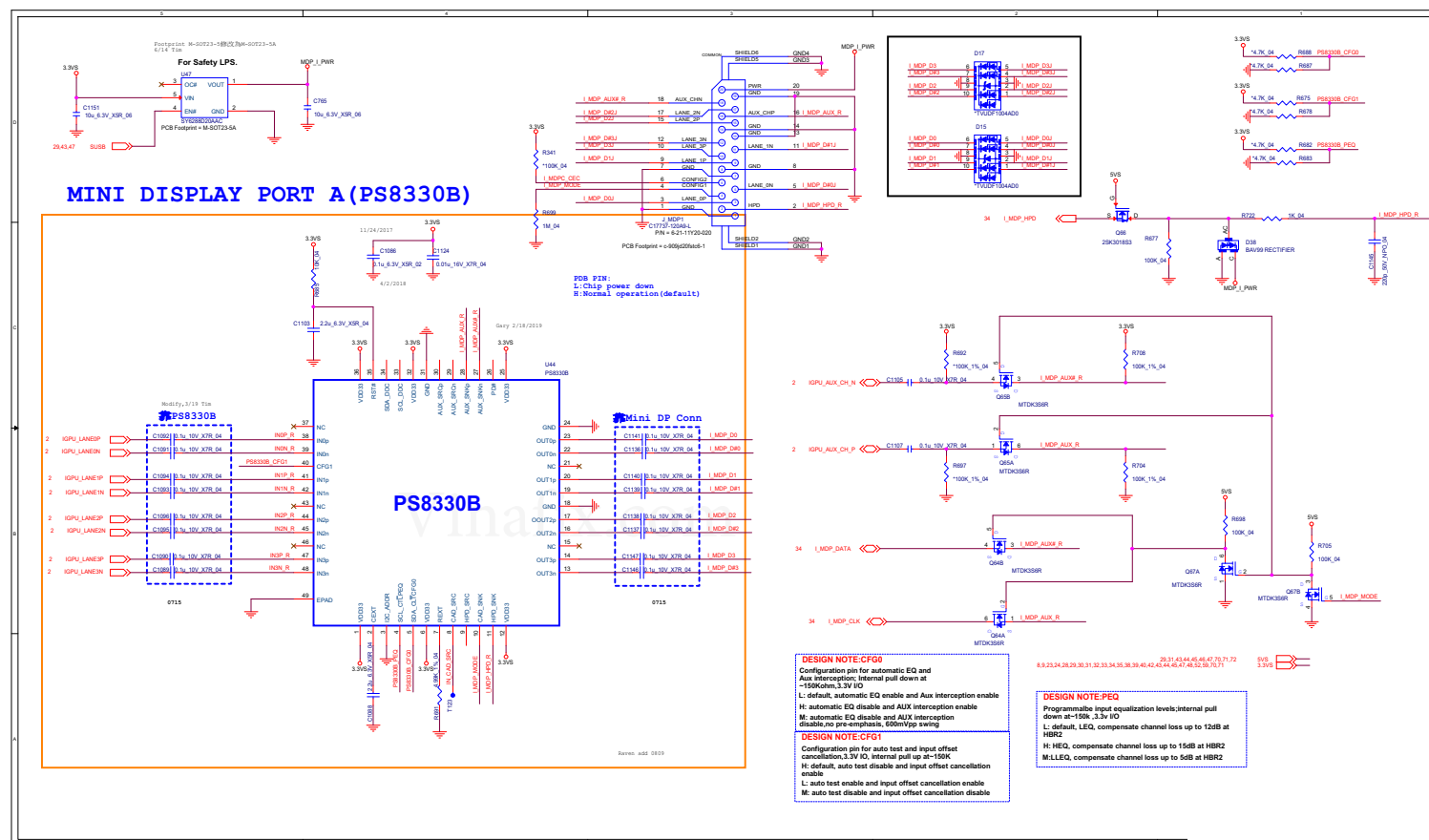


GPU GND

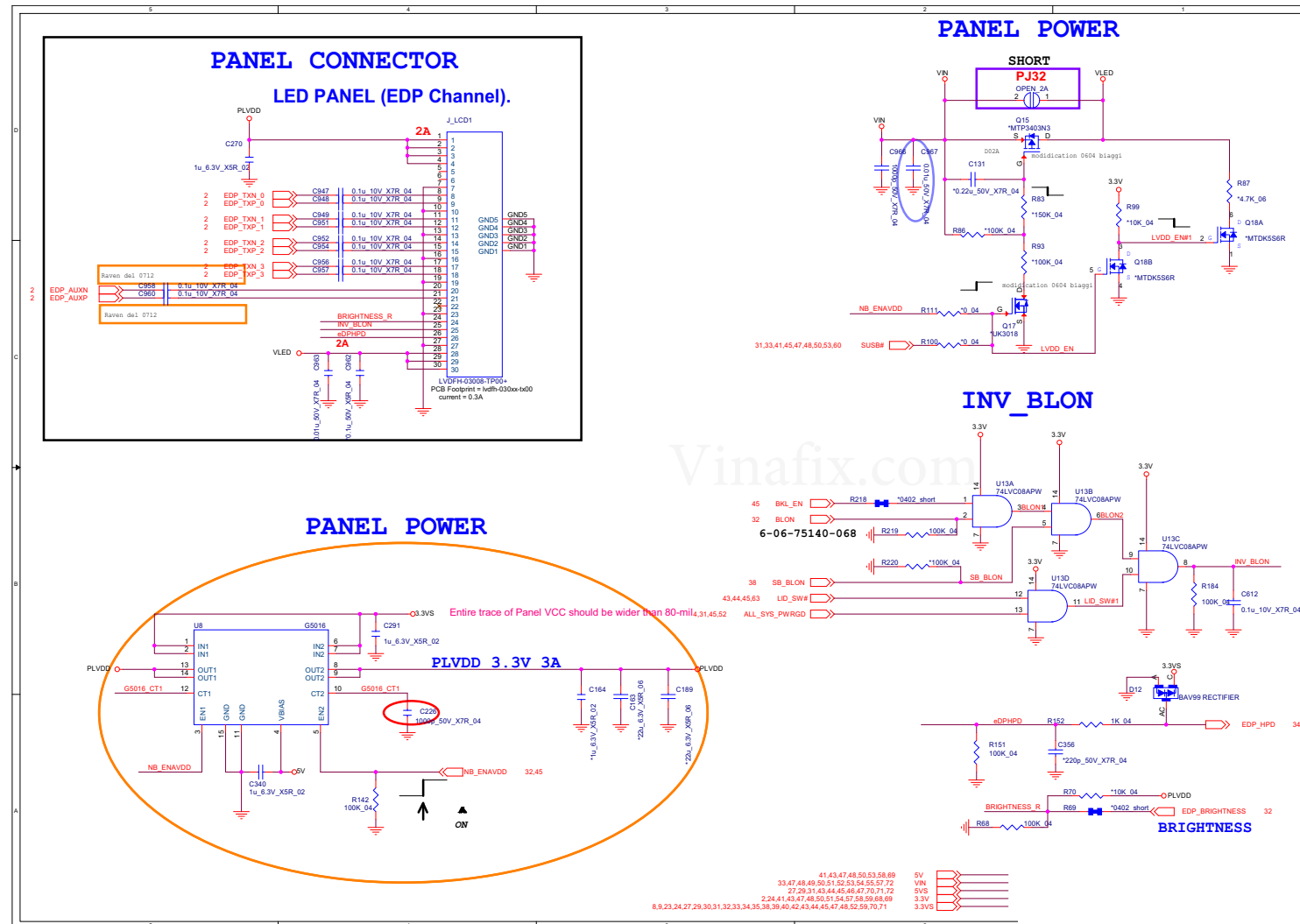
Sheet 26 of 67
GPU GND

mDP

Sheet 27 of 67
mDP

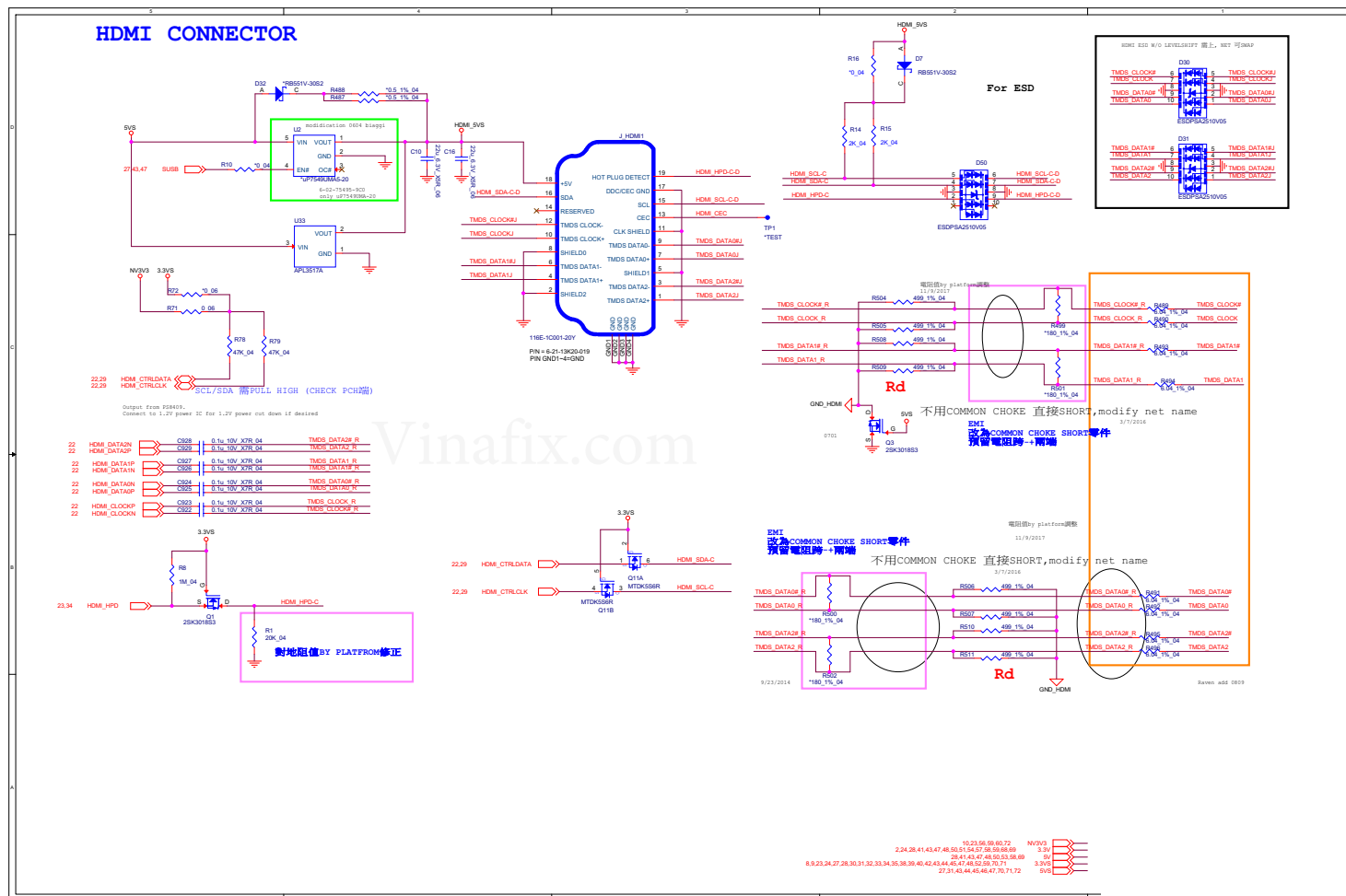


Panel, Inverter



HDMI

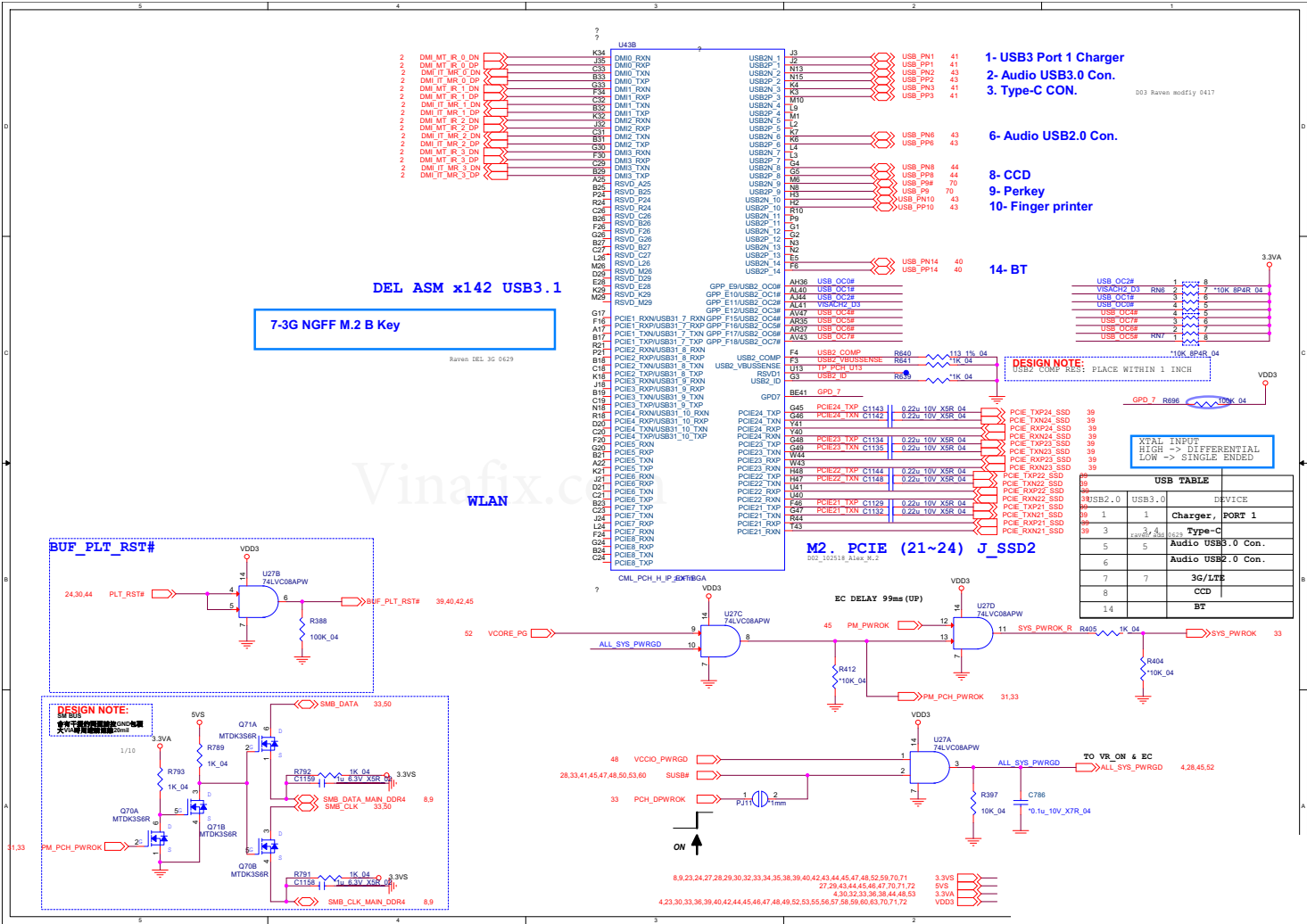
Sheet 29 of 67
HDMI



Schematic Diagrams

PCH 2/9

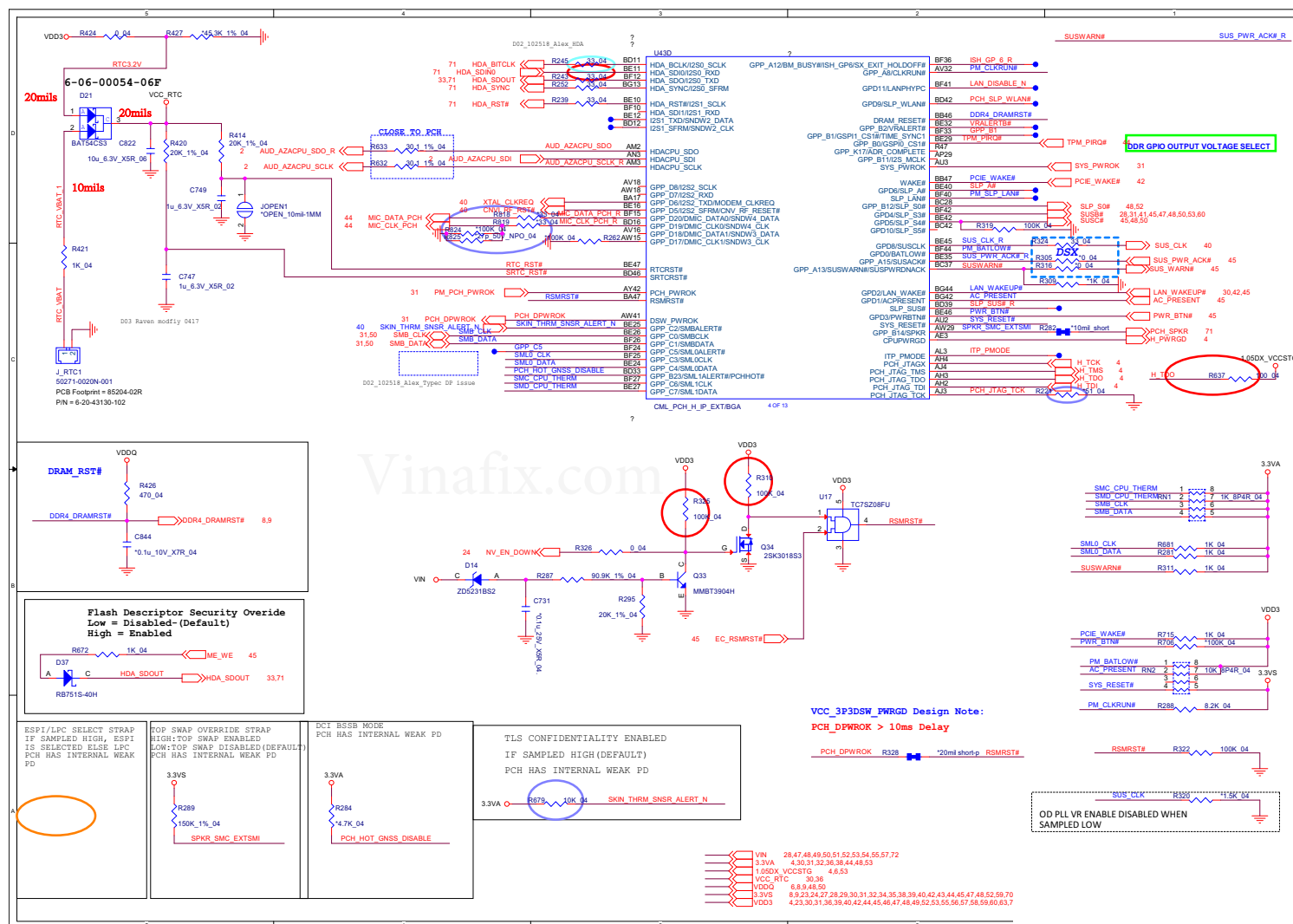
Sheet 31 of 67
PCH 2/9





PCH 4/9

B.Schematic Diagrams



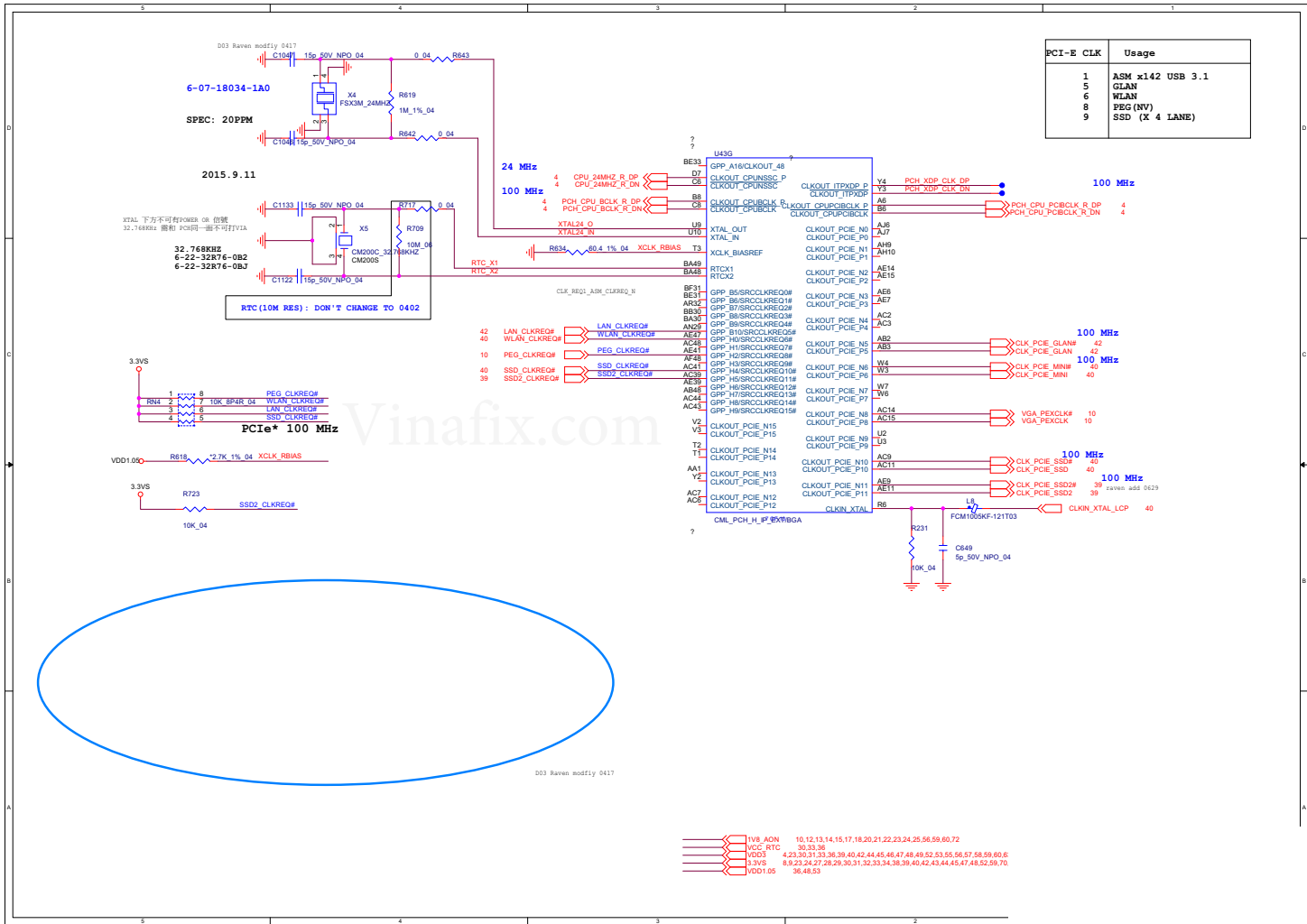
B.Schematic Diagrams

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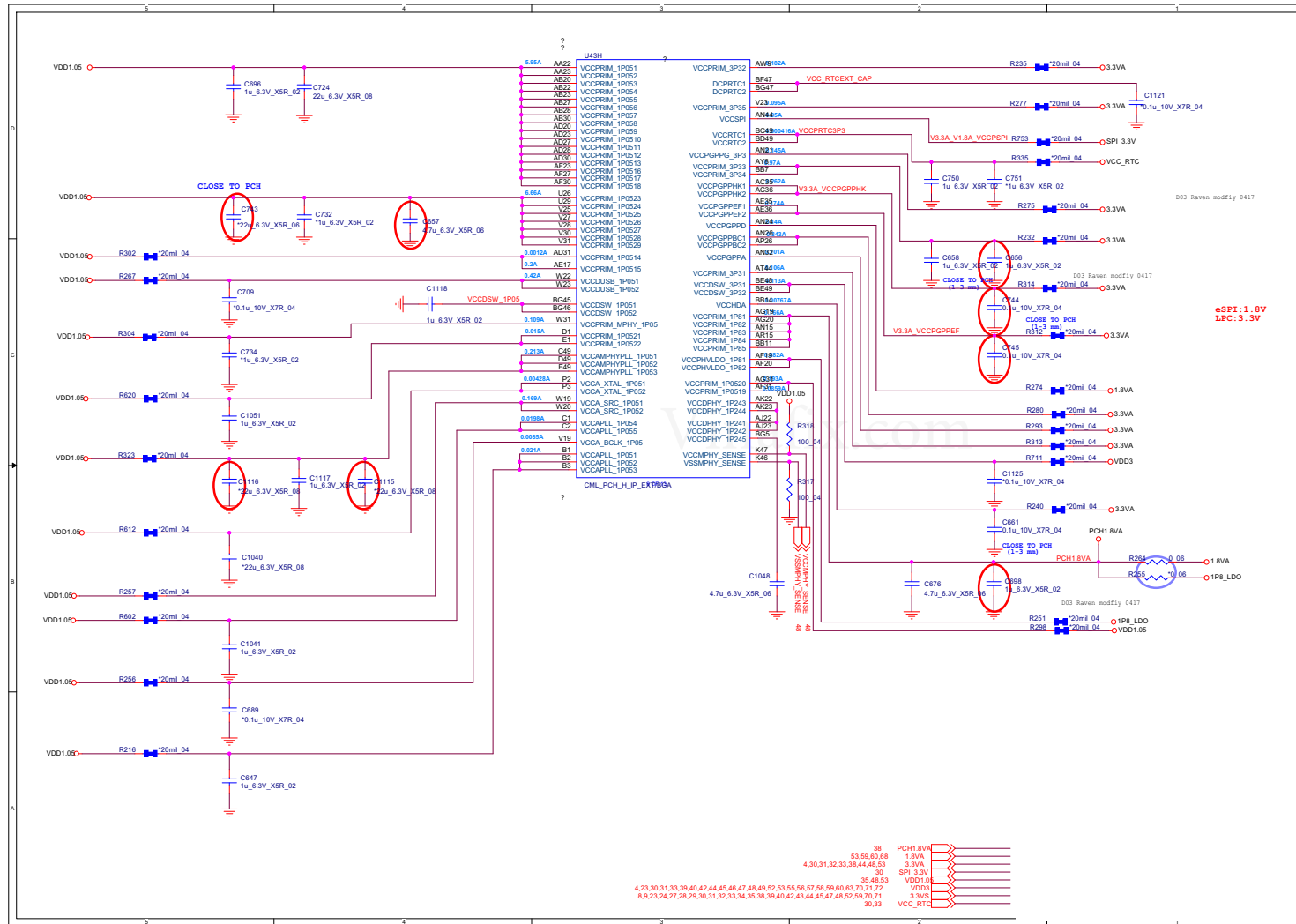
PCH 6/9

B. Schematic Diagrams

Sheet 35 of 67
PCH 6/9



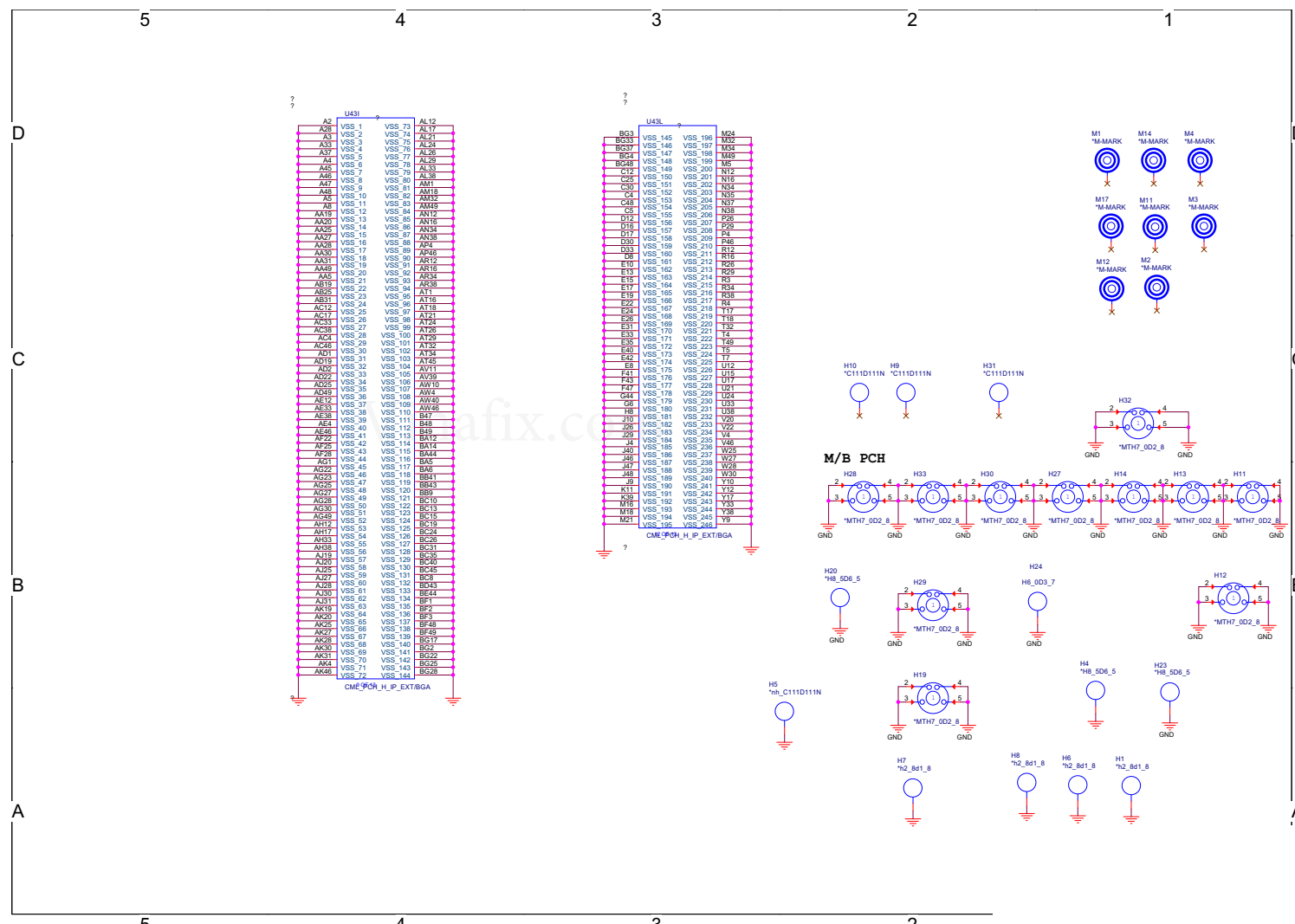
PCH 7/9



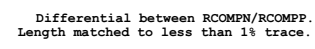
Sheet 36 of 67
PCH 7/9

PCH 8/9

Sheet 37 of 67
PCH 8/9



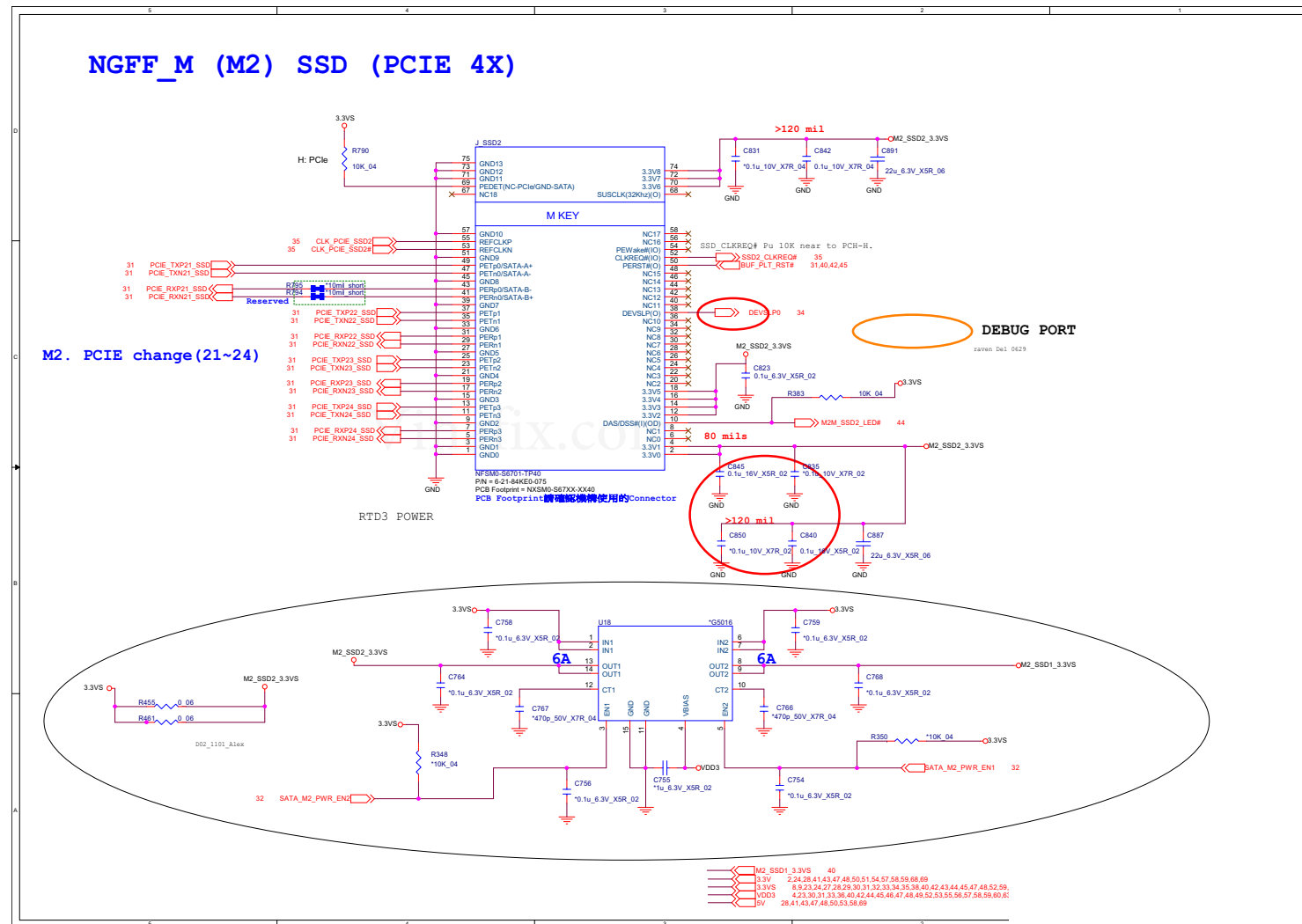
PCH 9/9 B - 39



Schematic Diagrams

M.2 Card

Sheet 39 of 67
M.2 Card



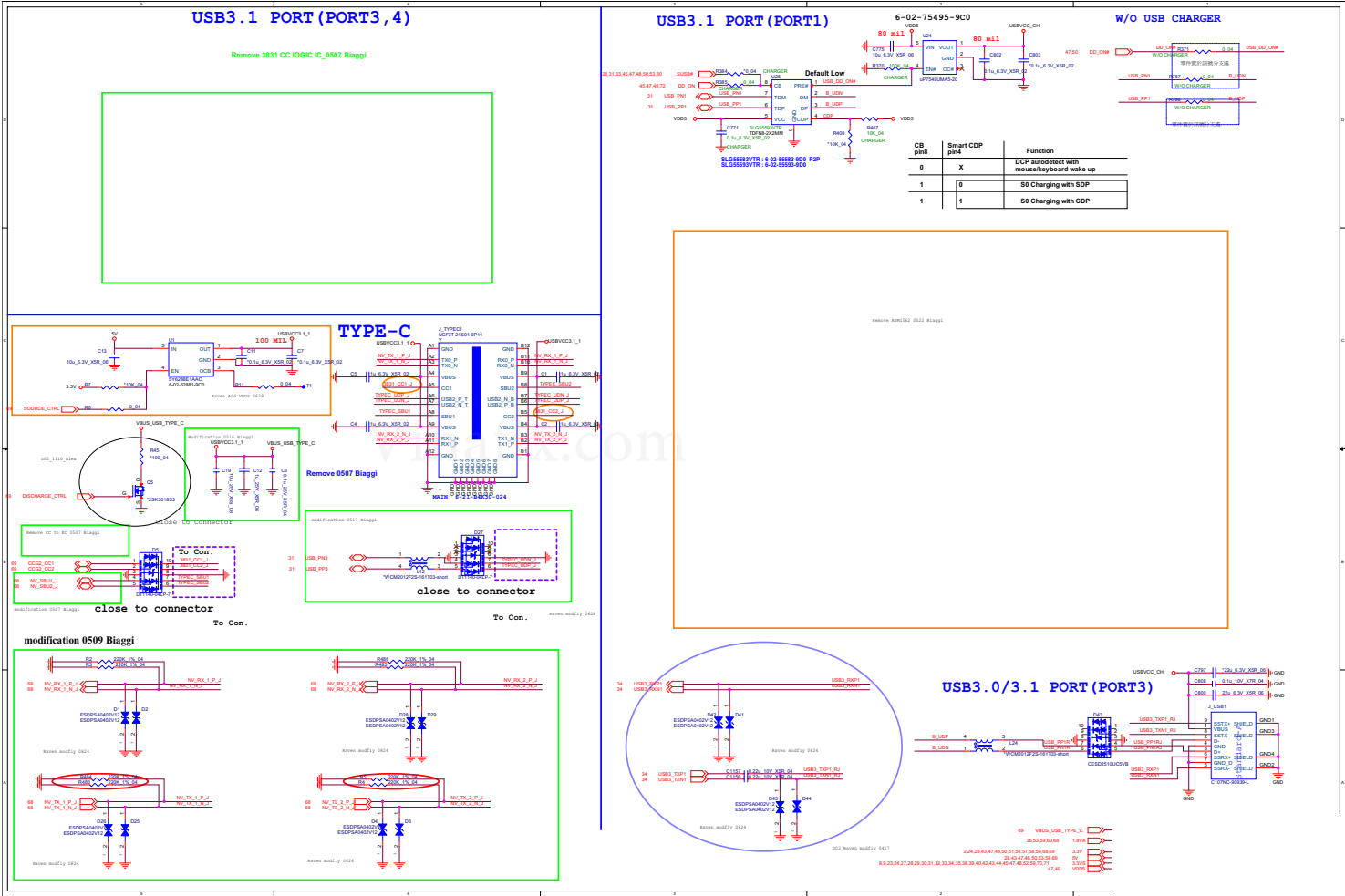
Sheet 40 of 67
M.2 WLAN+BT,
PCIE 4X SSD



Schematic Diagrams

USB Charger

Sheet 41 of 67
USB Charger

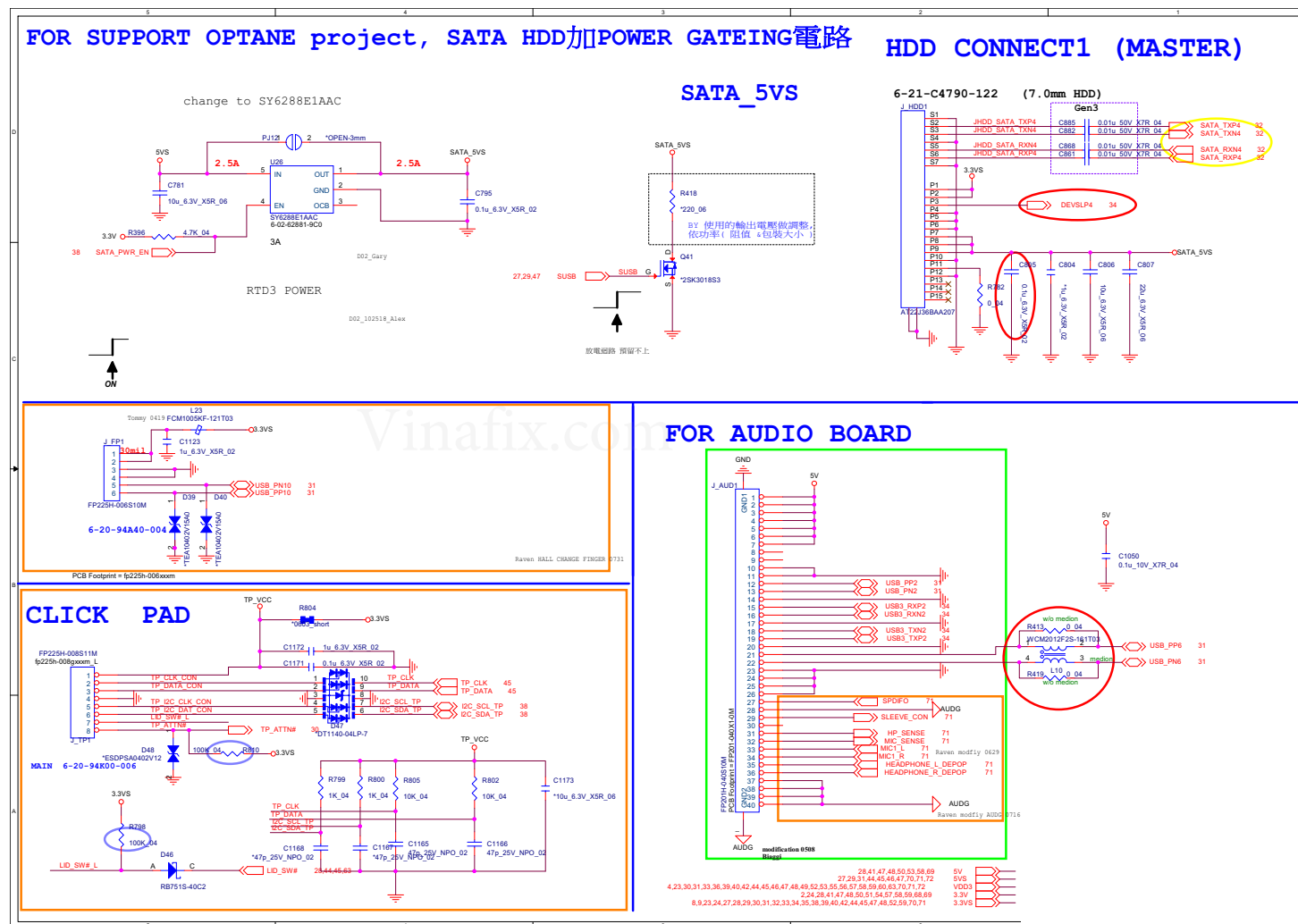


Sheet 42 of 67
Card Reader /
LAN RTL8411B



B.Schematic Diagrams

Sheet 43 of 67
HDD, Click TP,
Audio, Hall Con.



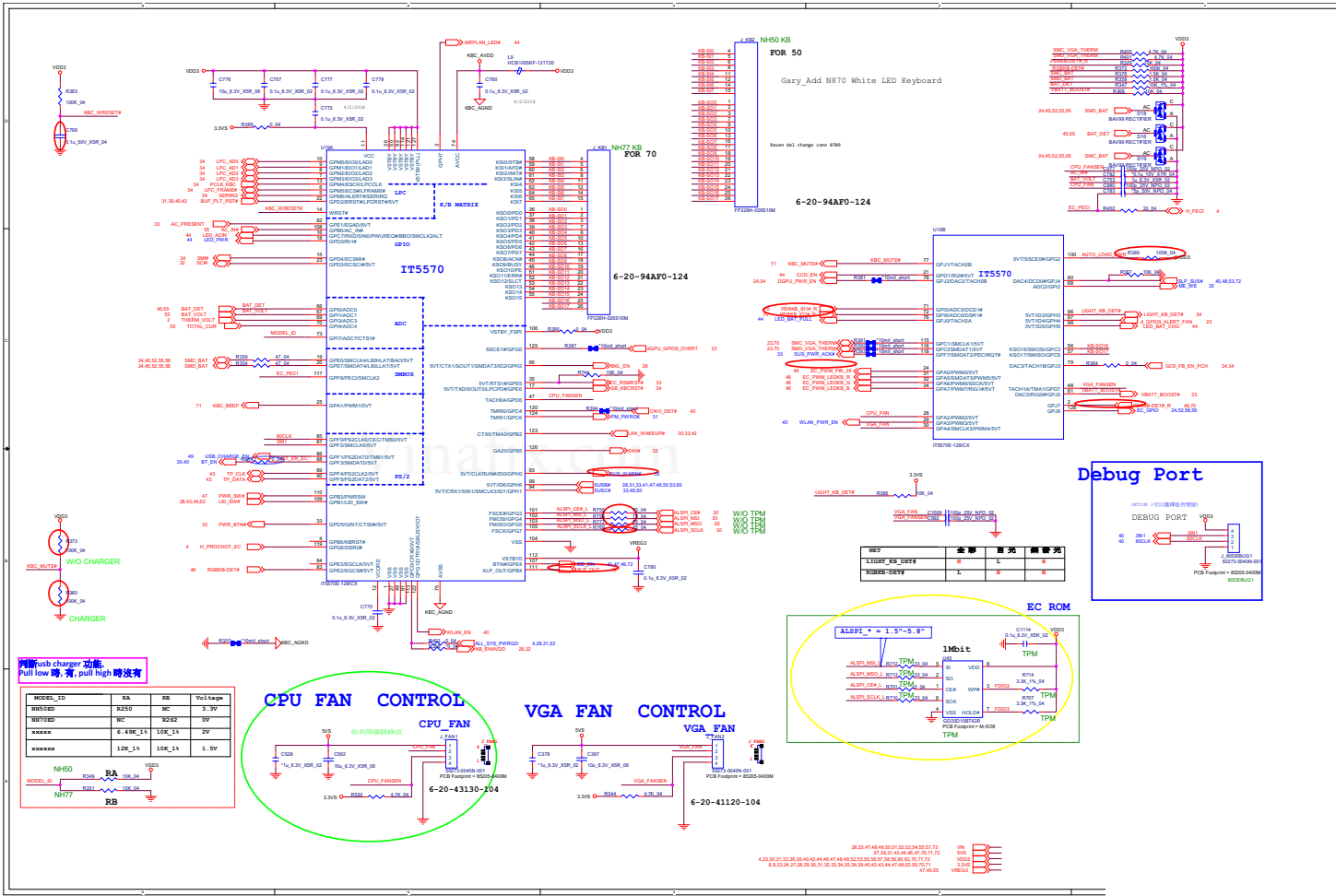
[illegible]

Sheet 44 of 67
LED, CCD, TPM,
Power SW Con.

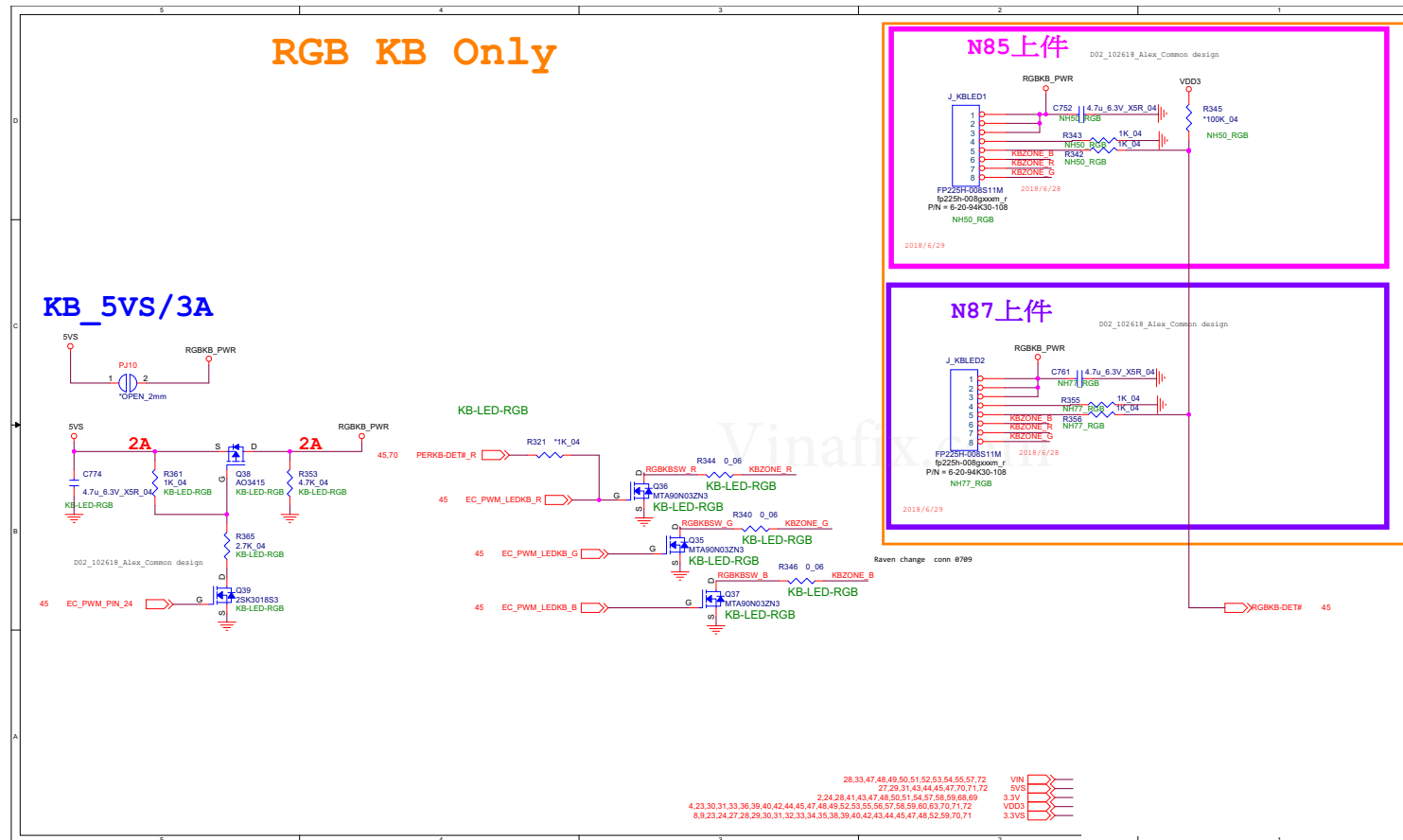
KBC-ITE IT5570

B. Schematic Diagrams

Sheet 45 of 67
KBC-ITE IT5570



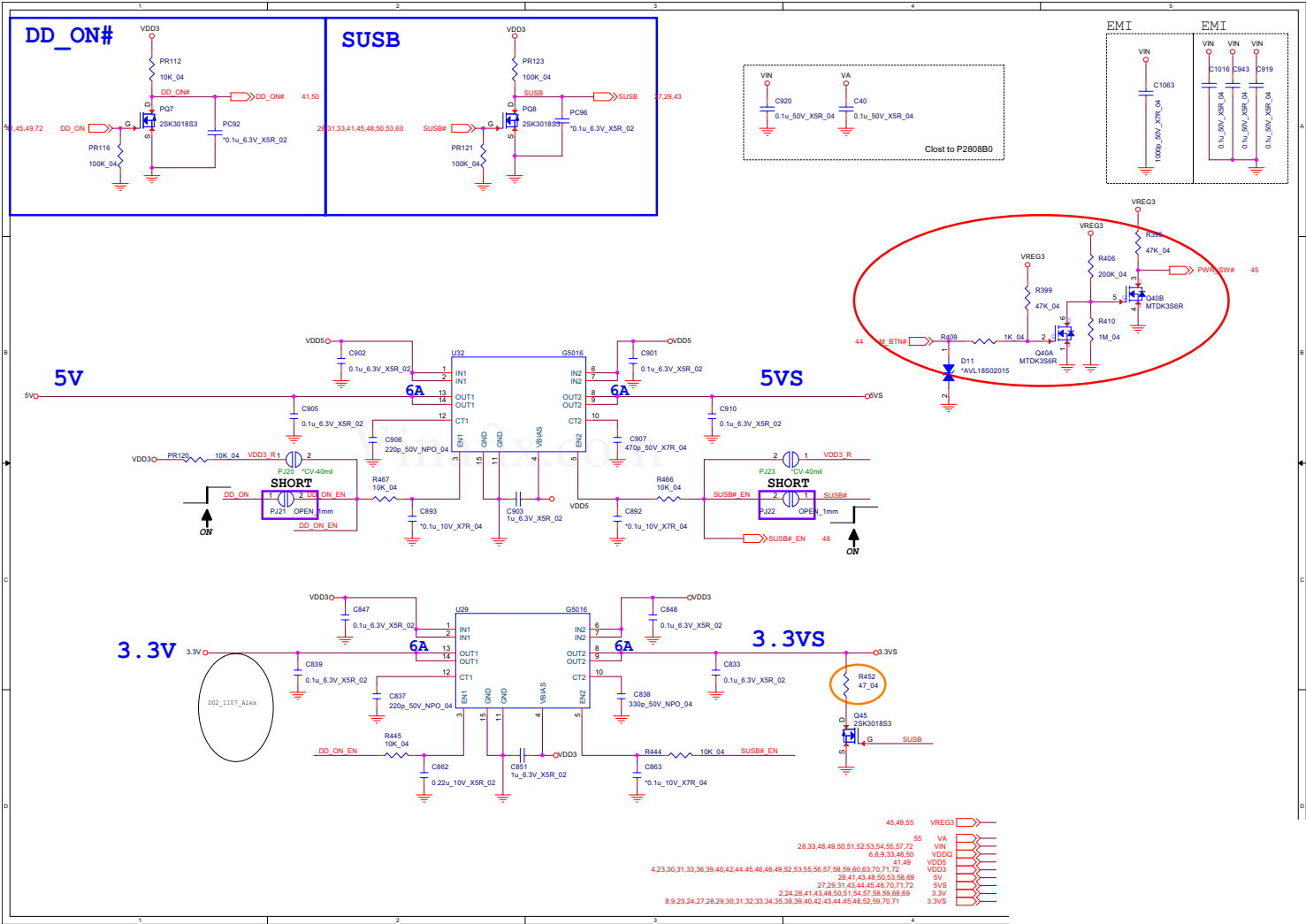
RGB KB B - 47



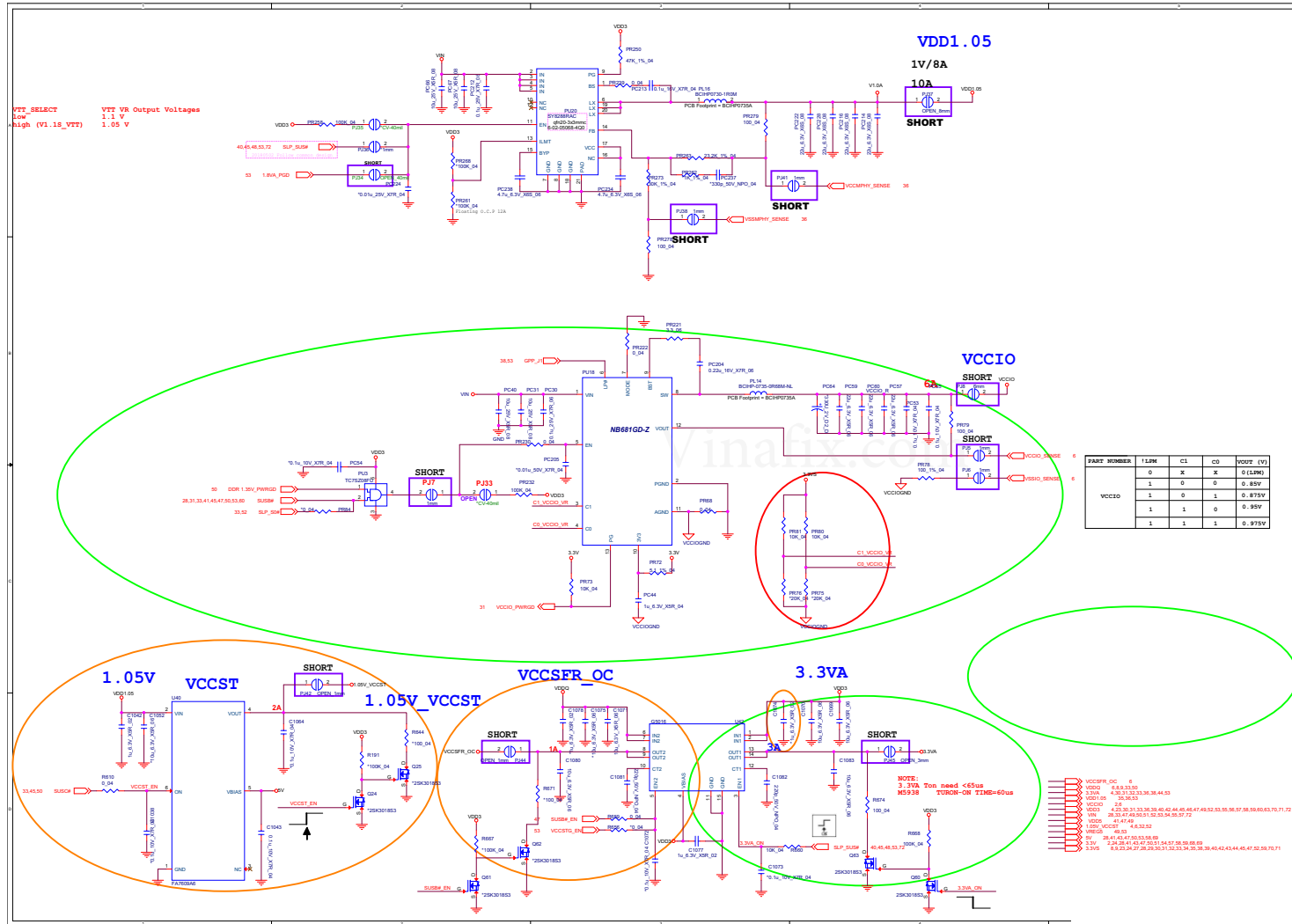
Schematic Diagrams

5V, 5VS, 3.3V, 3.3VS

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



VDD1.05V, VCCIO

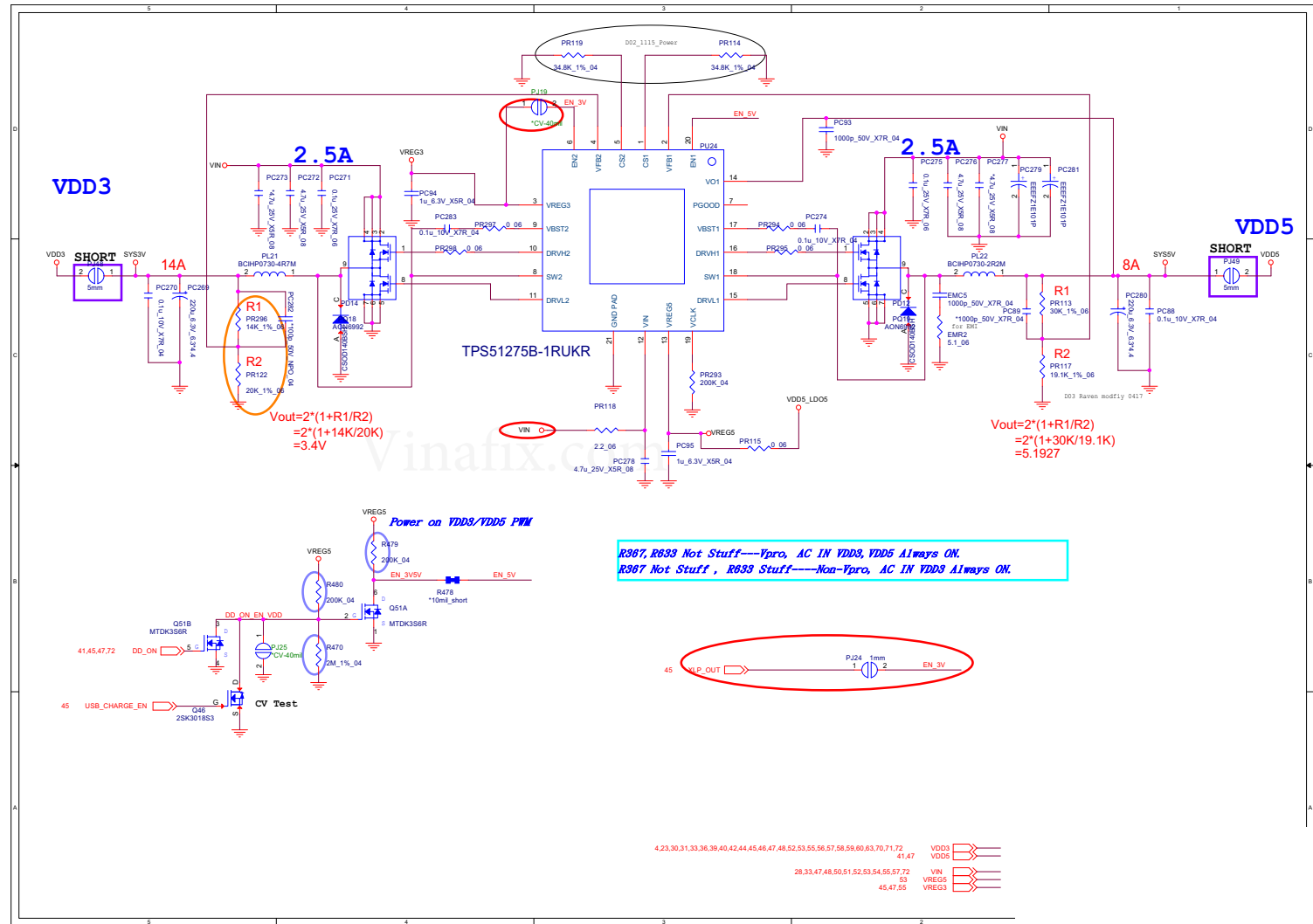


Sheet 48 of 67
VDD1.05V, VCCIO

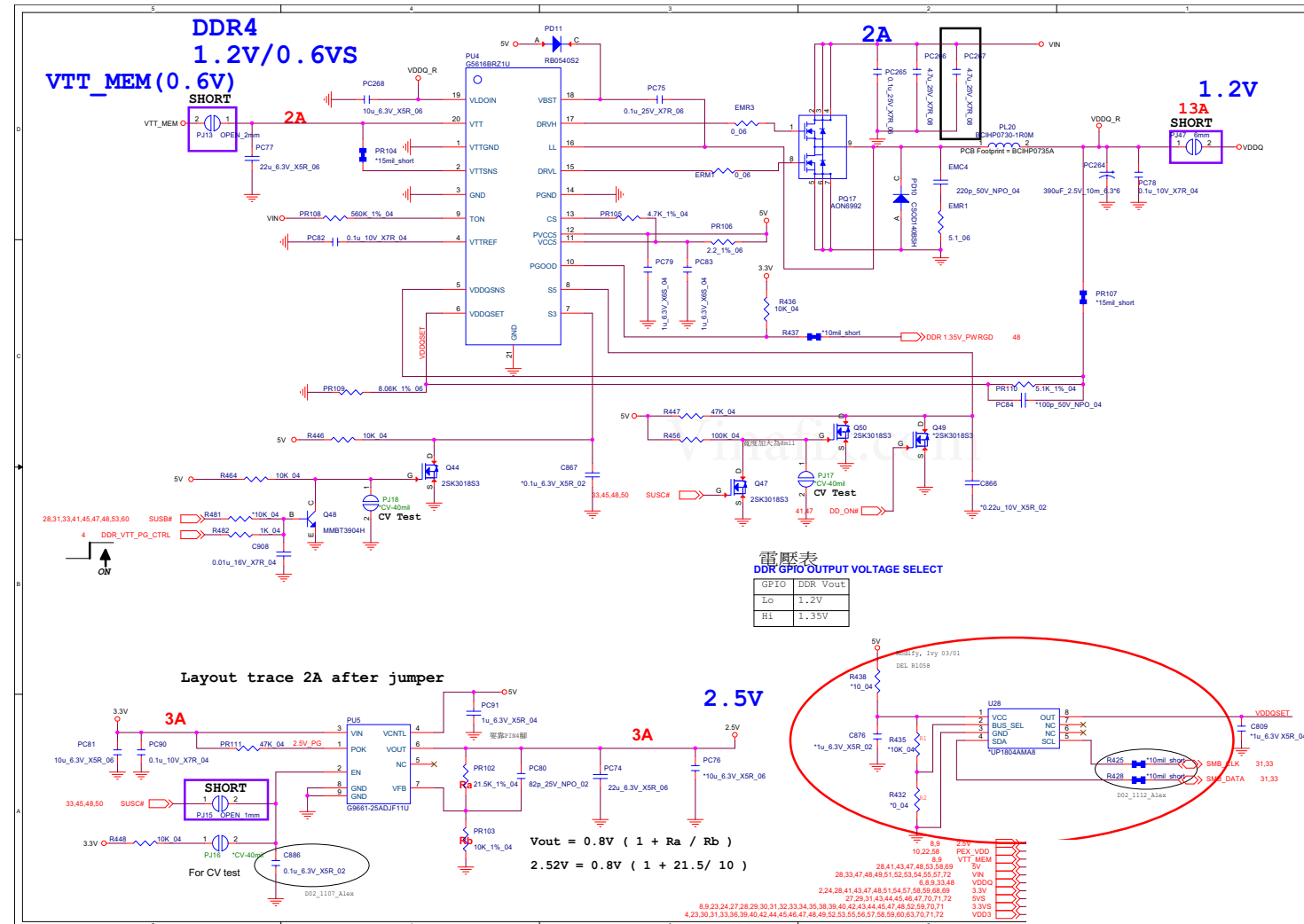
Schematic Diagrams

VDD3, VDD5

Sheet 49 of 67
VDD3, VDD5

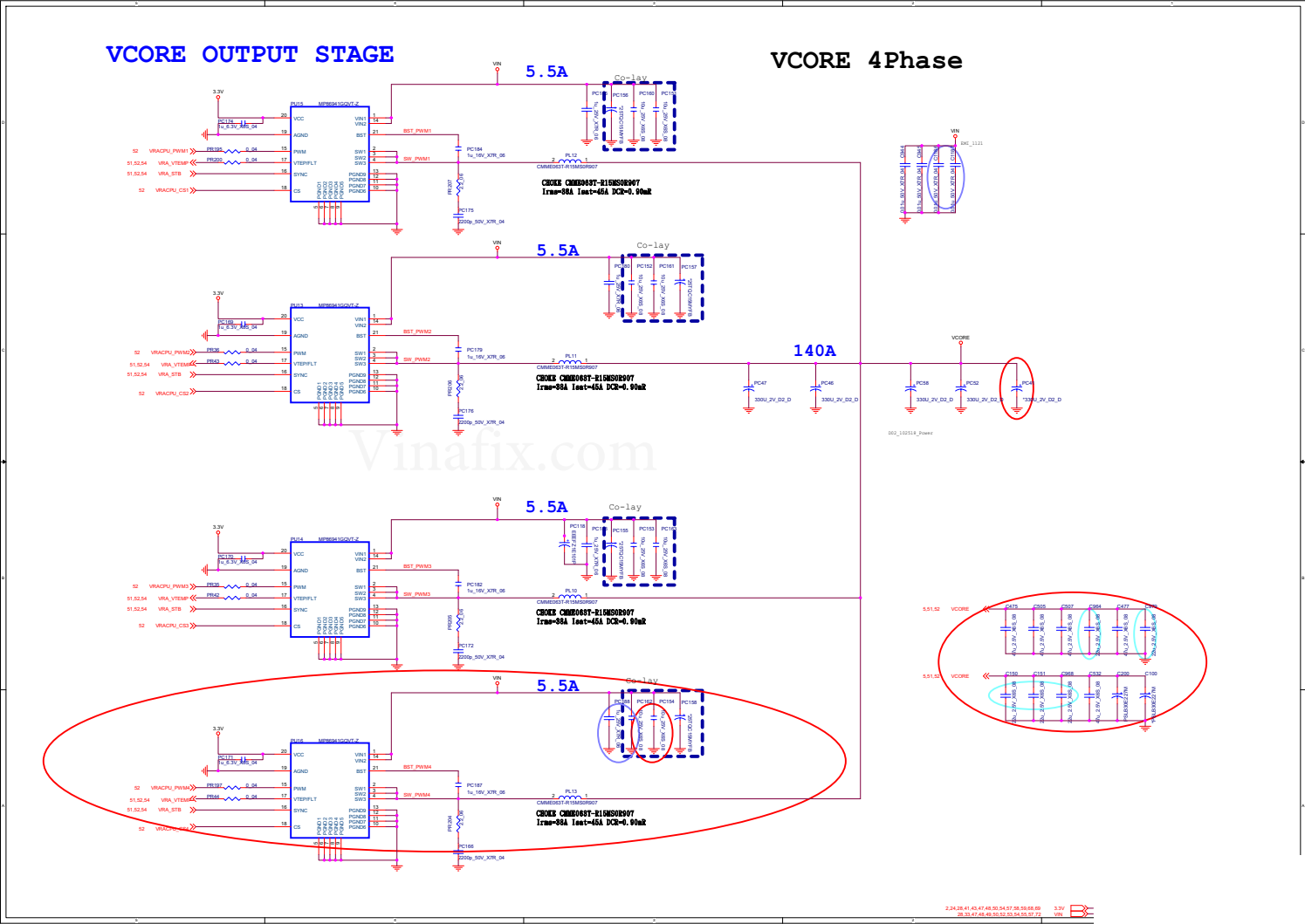


DDR 1.2V / 0.6VS, 2.5V



Sheet 50 of 67
DDR 1.2V / 0.6VS,
2.5V

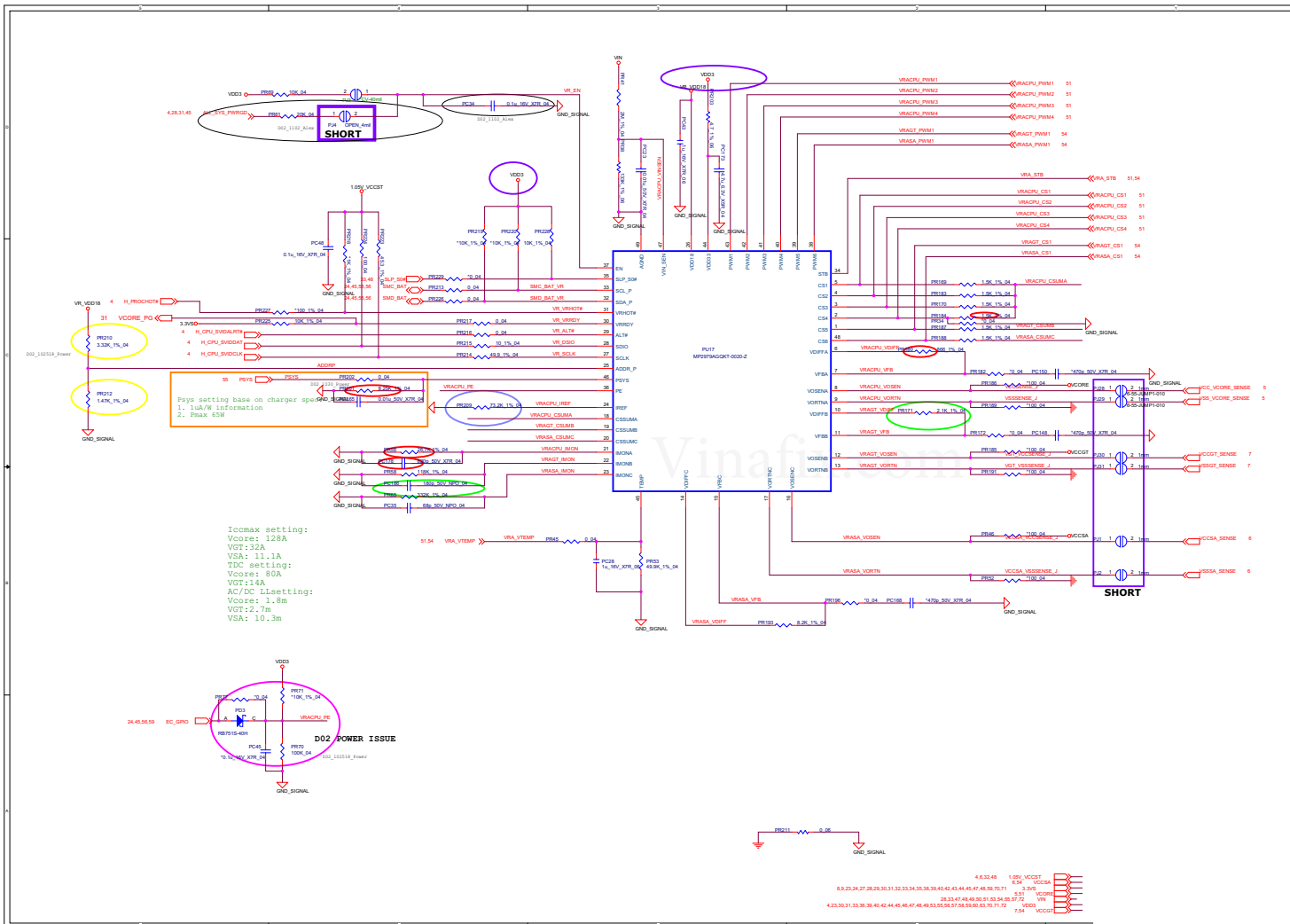
VCore Output Stage



Sheet 51 of 67
VCore Output
Stage

B.Schematic Diagrams

VCC_Core & VCCGT

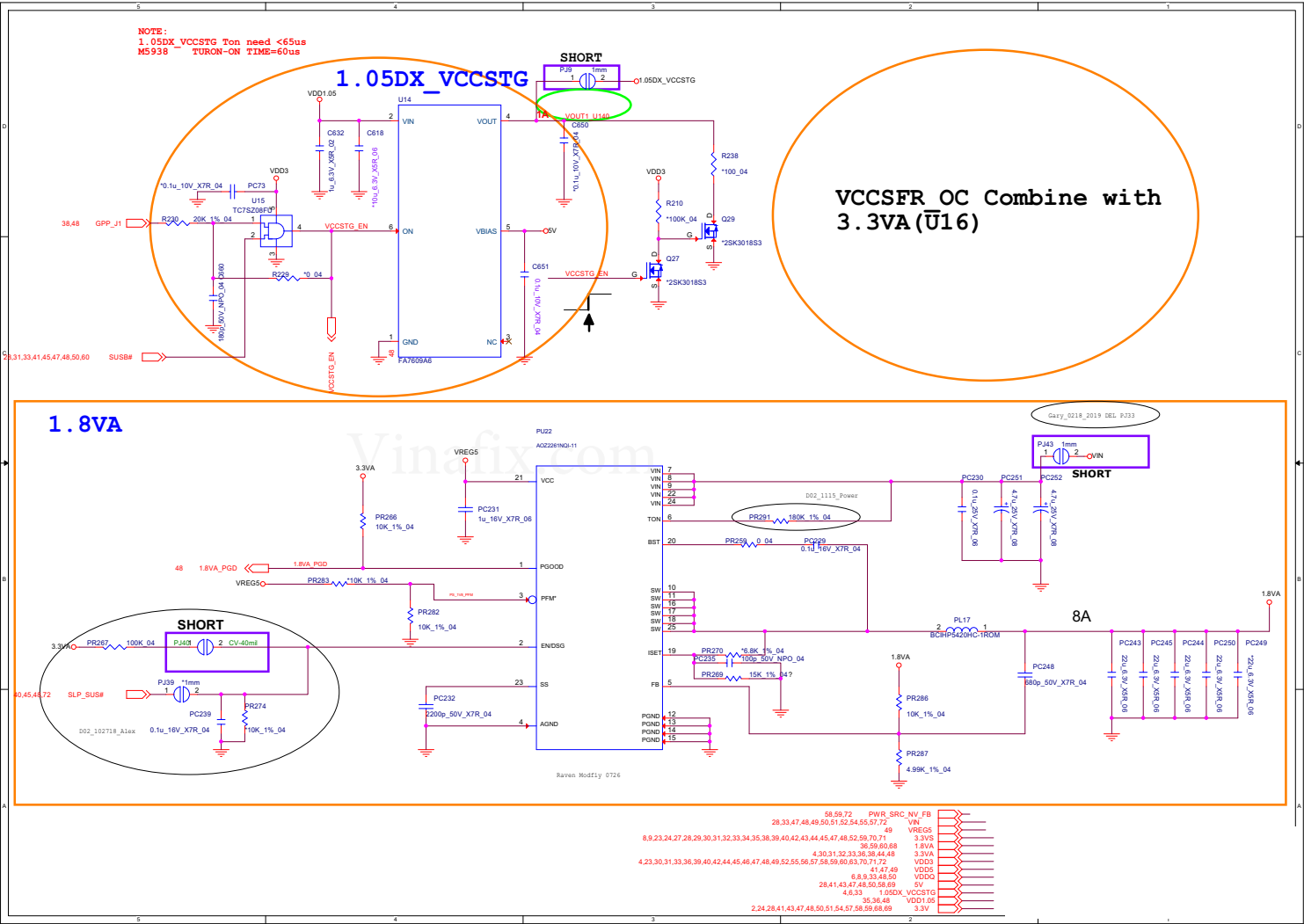


Sheet 52 of 67
VCC_Core &
VCCGT

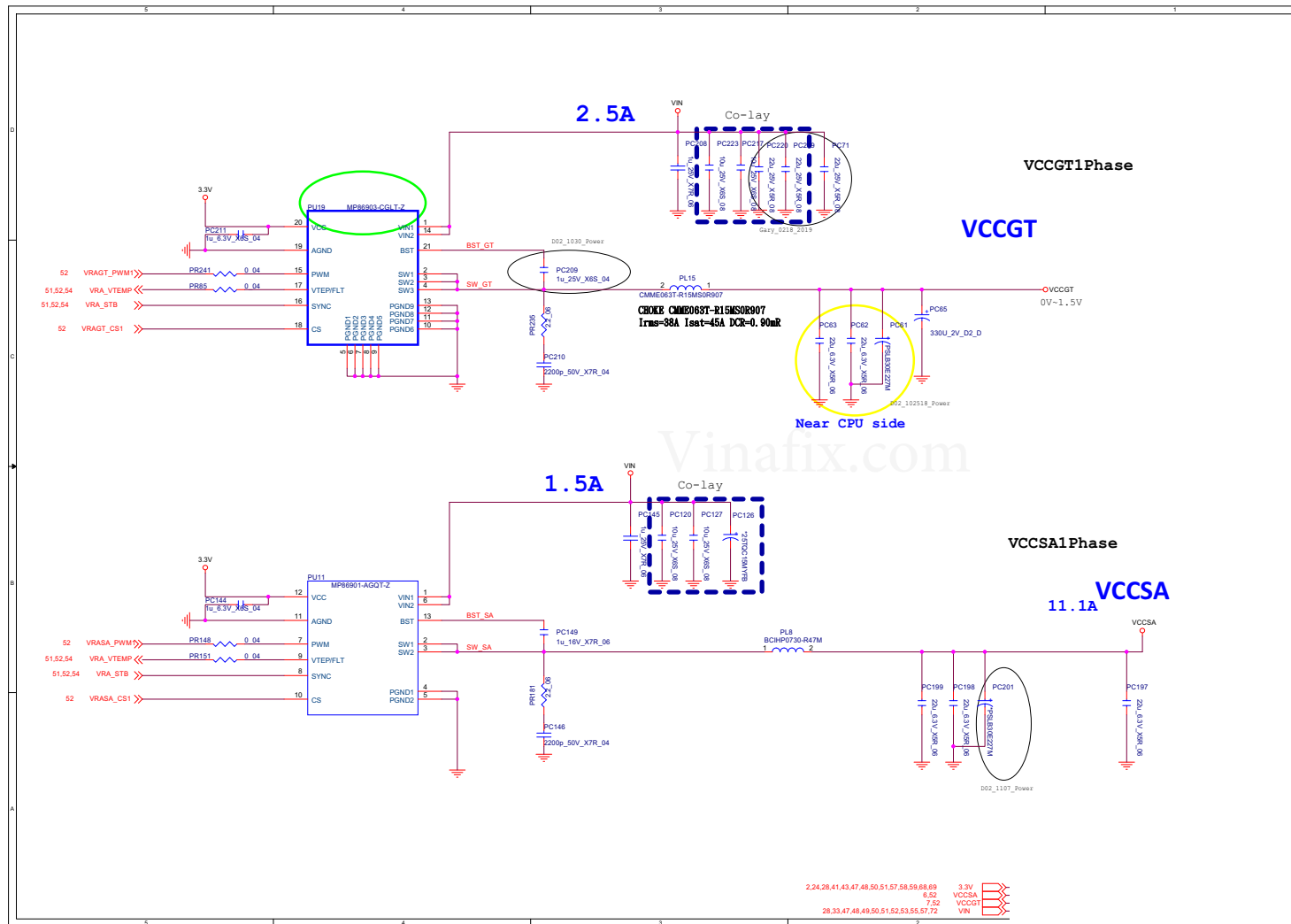
Schematic Diagrams

1.05DX_VCCSTG/VCCSFR_OC

Sheet 53 of 67
1.05DX_VCCSTG/
VCCSFR_OC



VCCGT & VCCSA Output Stage

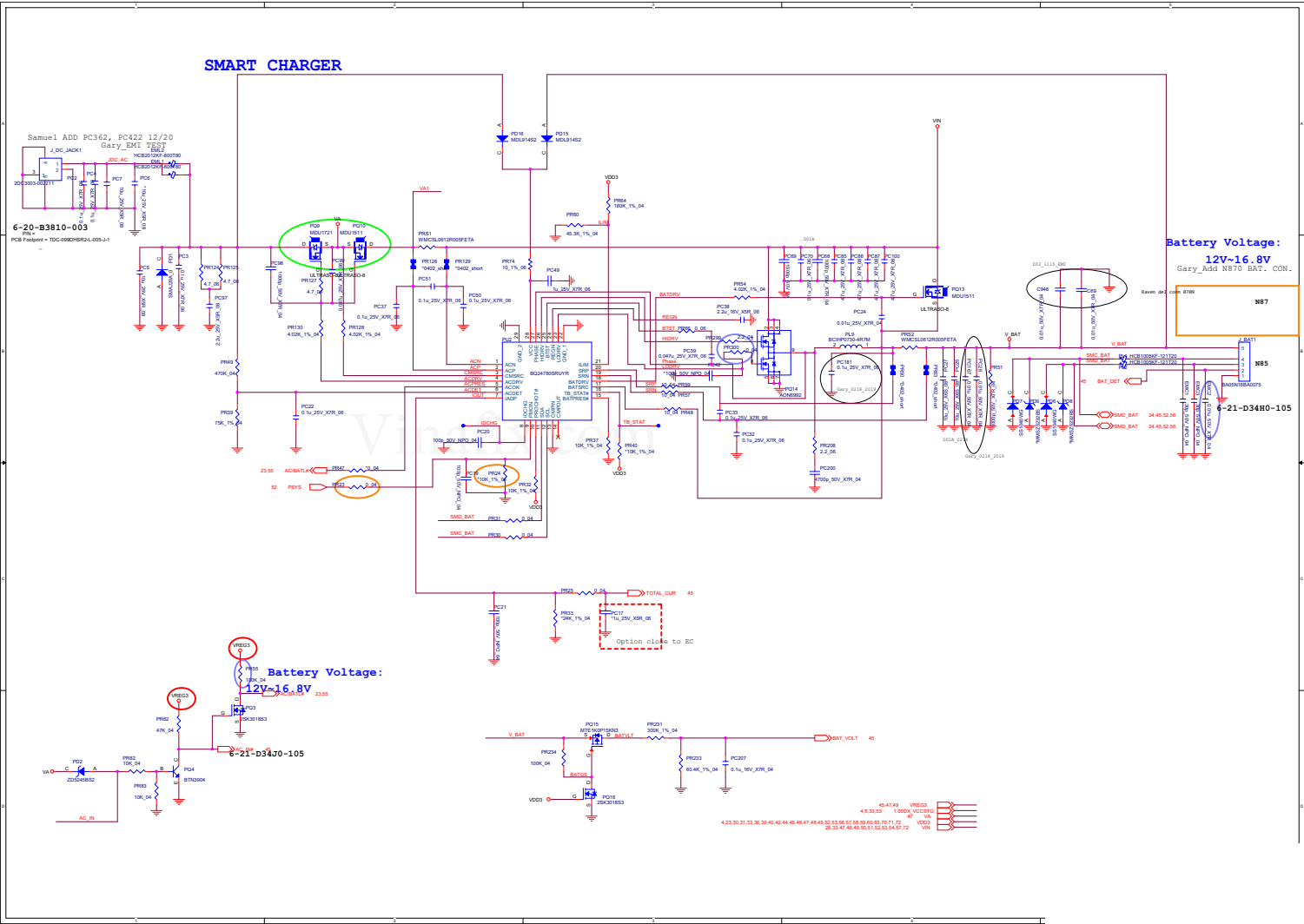


Sheet 54 of 67
VCCGT & VCCSA
Output Stage

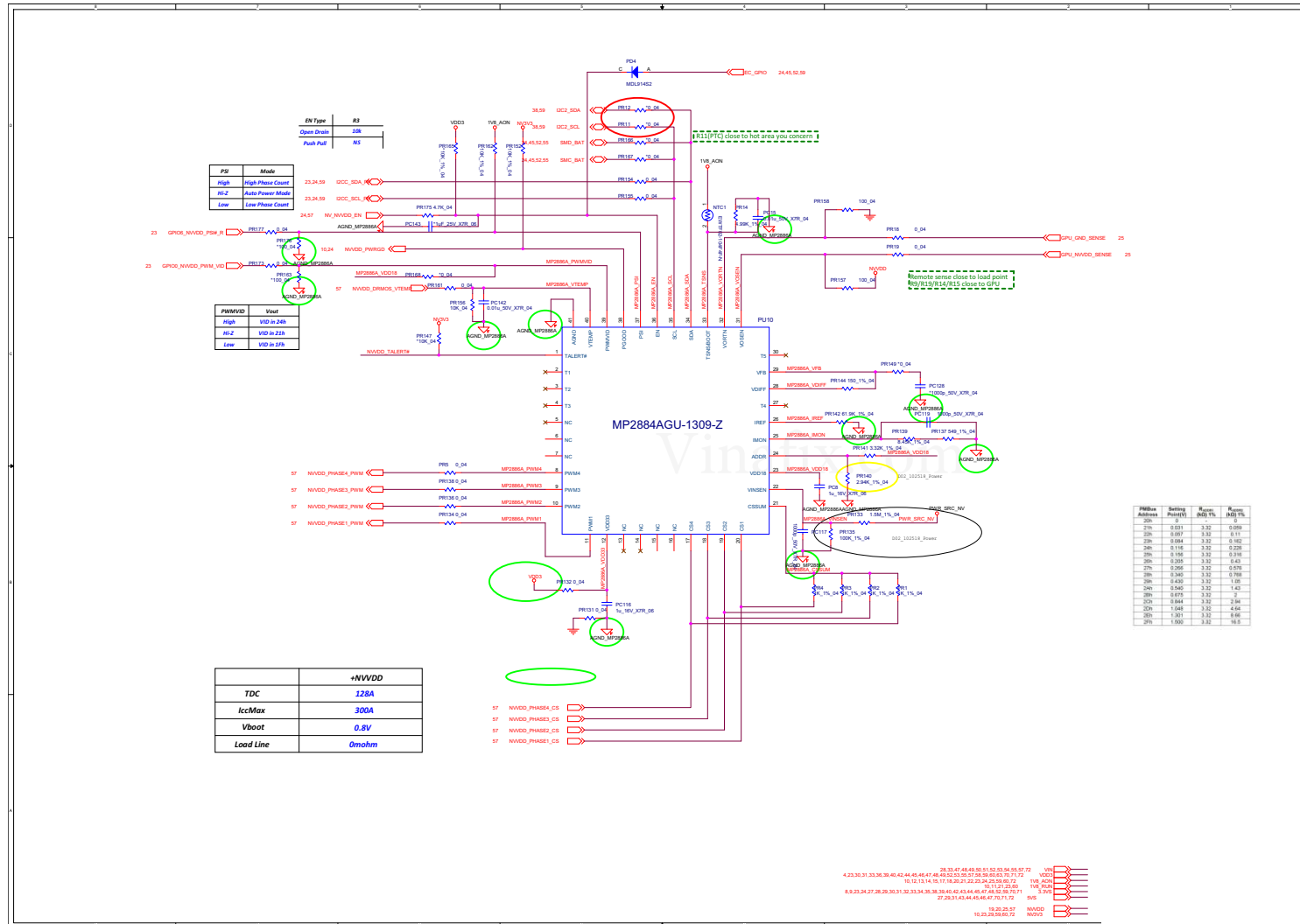
Schematic Diagrams

AC_In, Charger

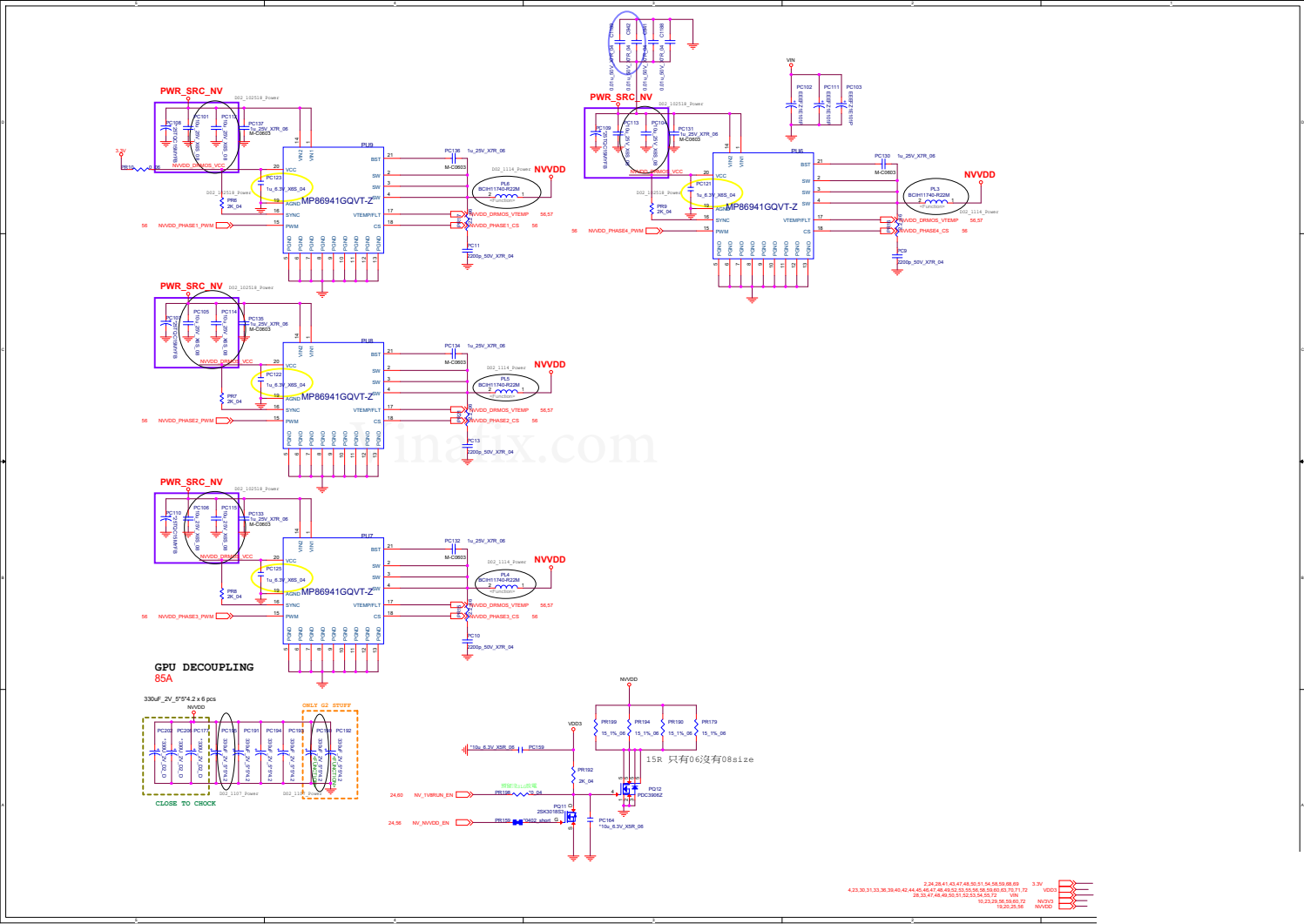
Sheet 55 of 67
AC_In, Charger



NVVDD1

Sheet 56 of 67
NVVDD1

NVVDD2



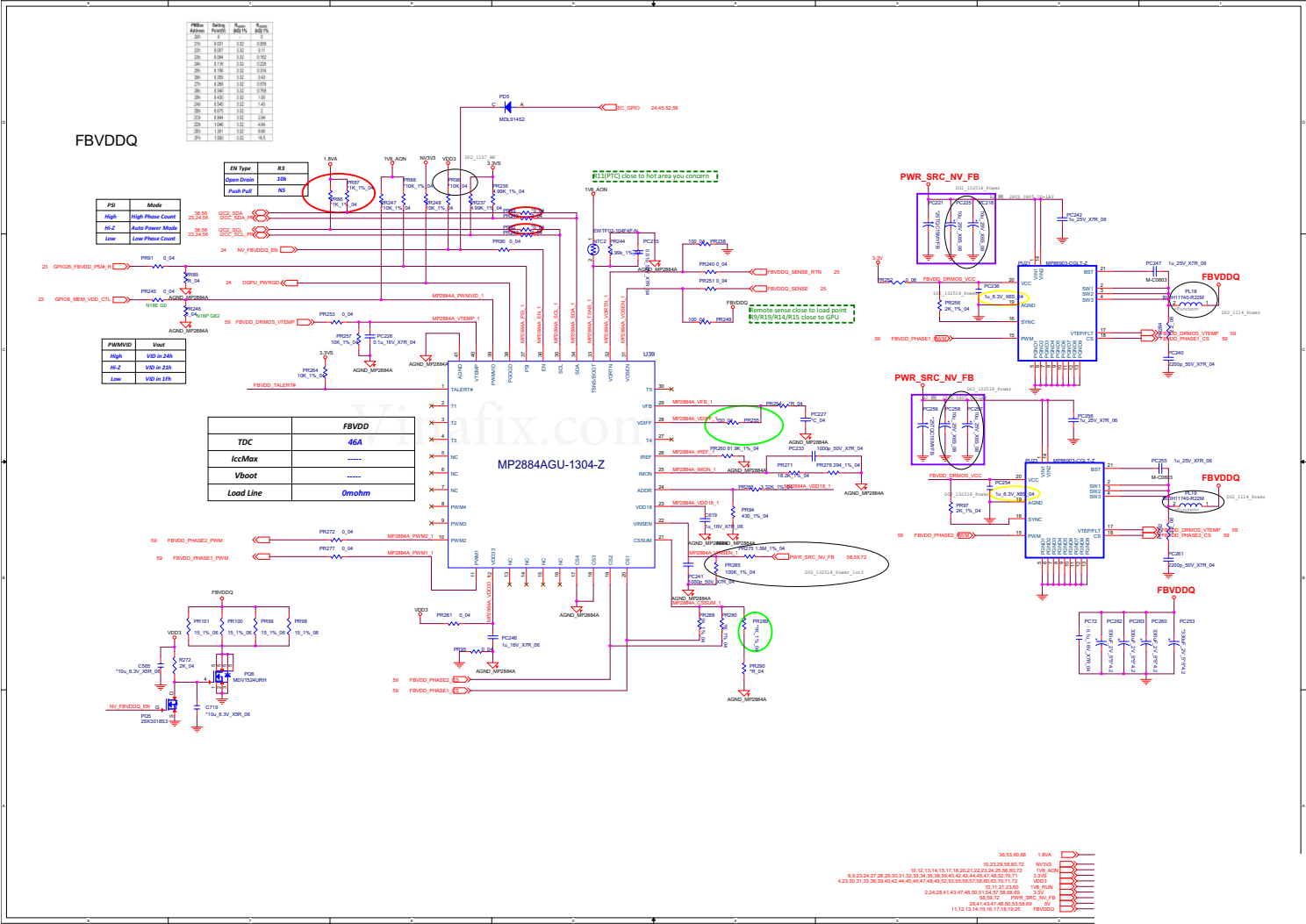
Sheet 57 of 67
NVVDD2

B.Schematic Diagrams

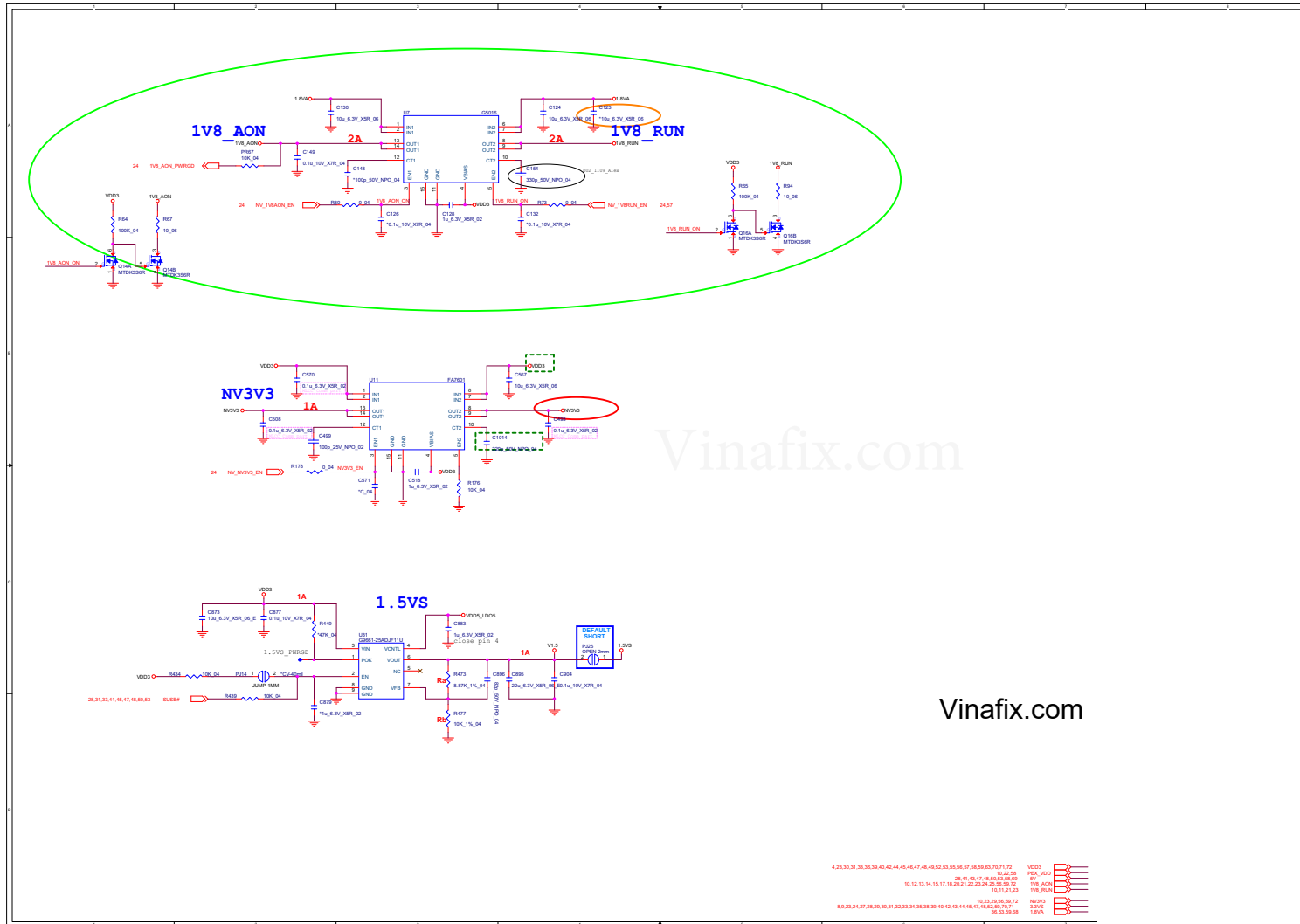
PEX_VDD B - 59



FBVDDQ



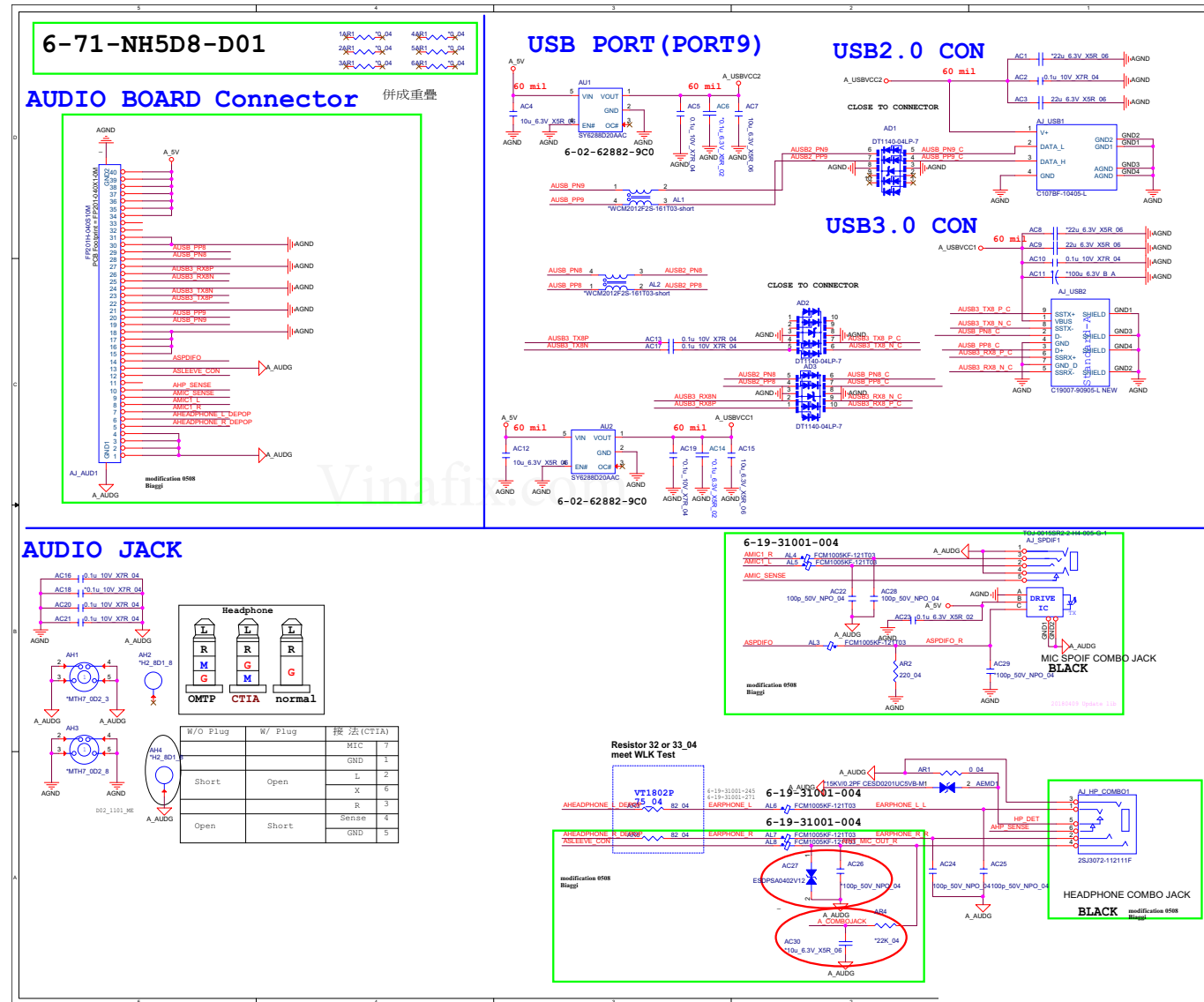
1V8_RUN/AON



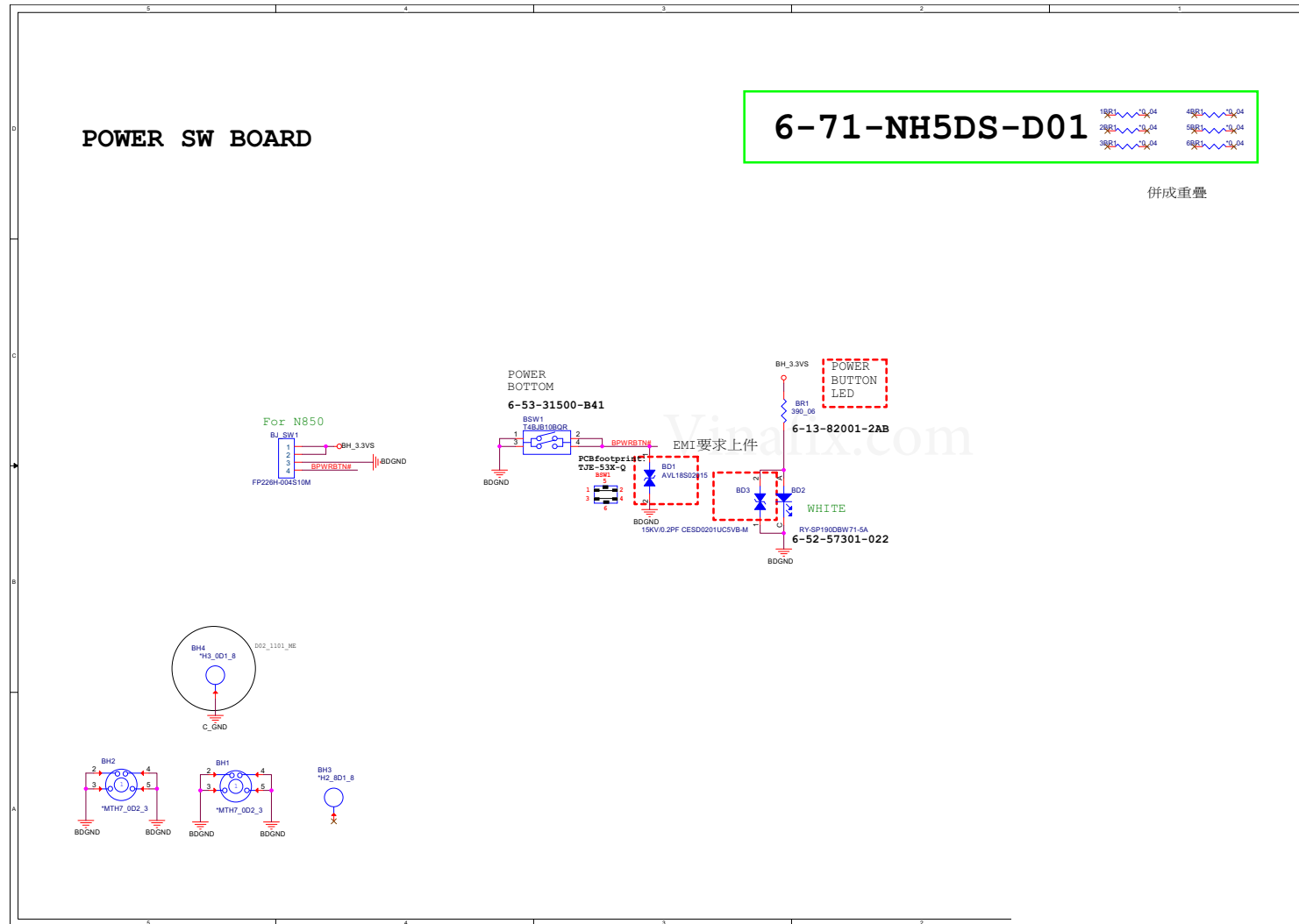
Sheet 60 of 67
1V8_RUN/AON

Audio Board

Sheet 61 of 67
Audio Board



NH50 PW Board

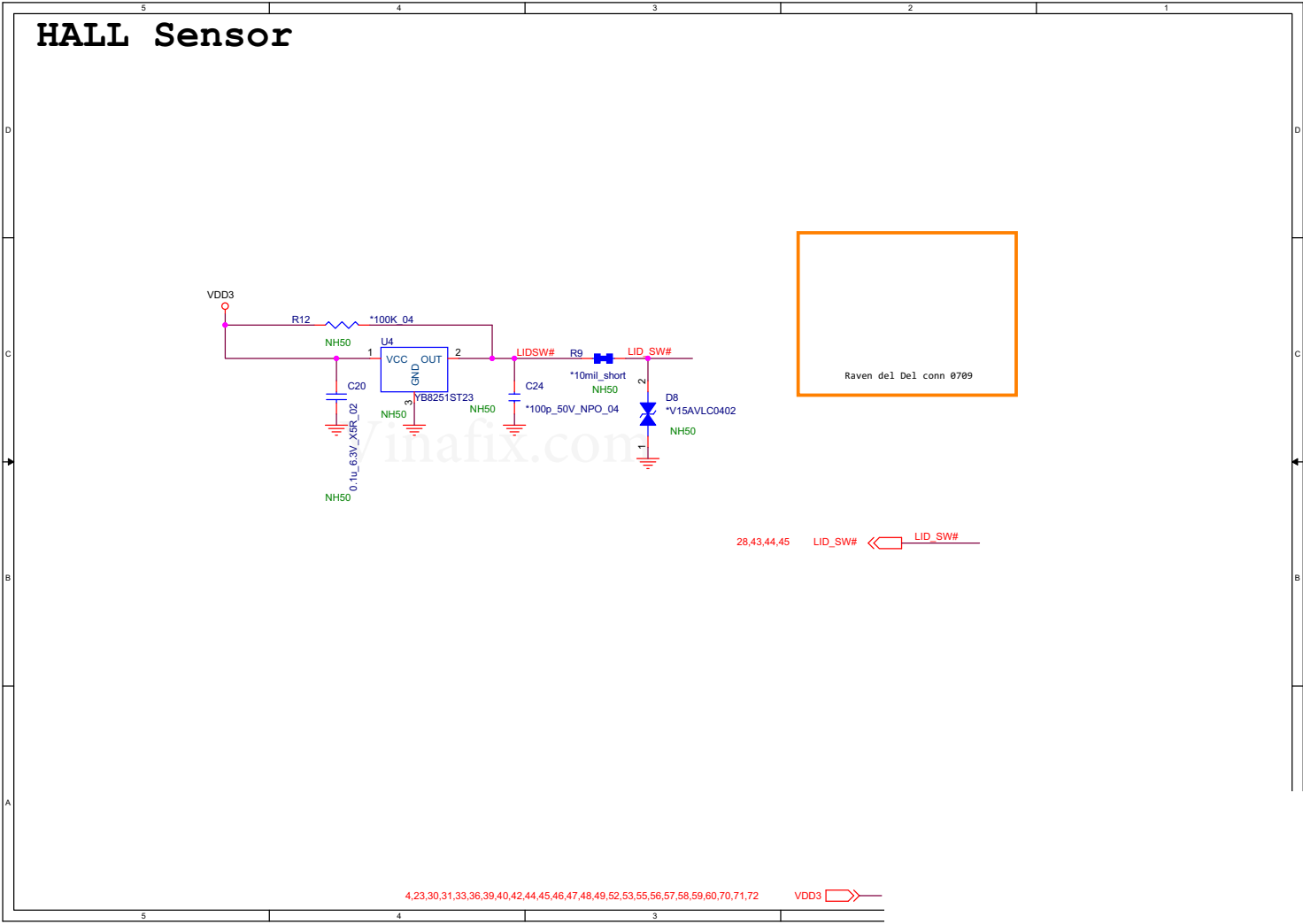


Sheet 62 of 67
NH50 PW Board

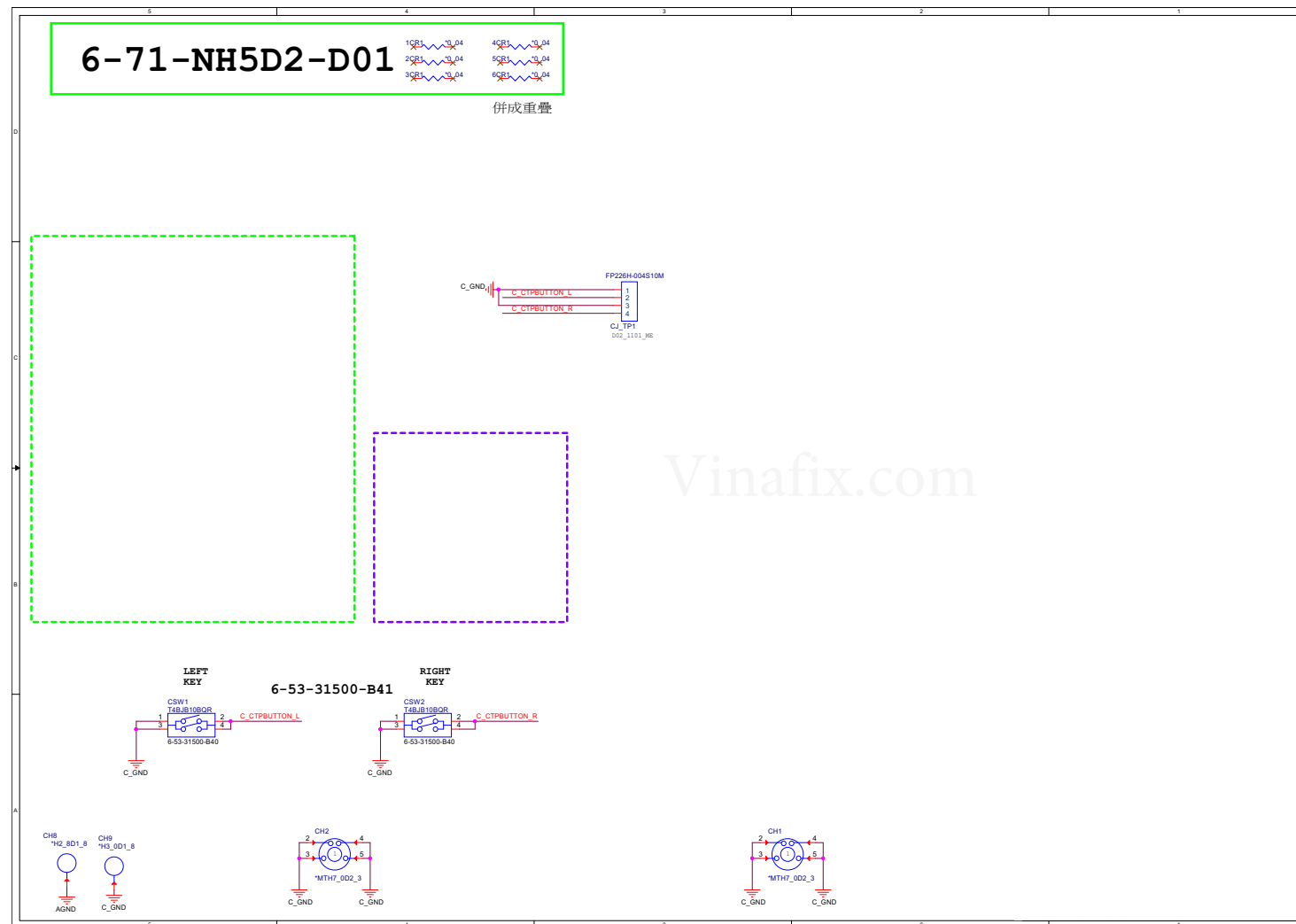
Hall Sensor Board

B.Schematic Diagrams

Sheet 63 of 67
Hall Sensor Board



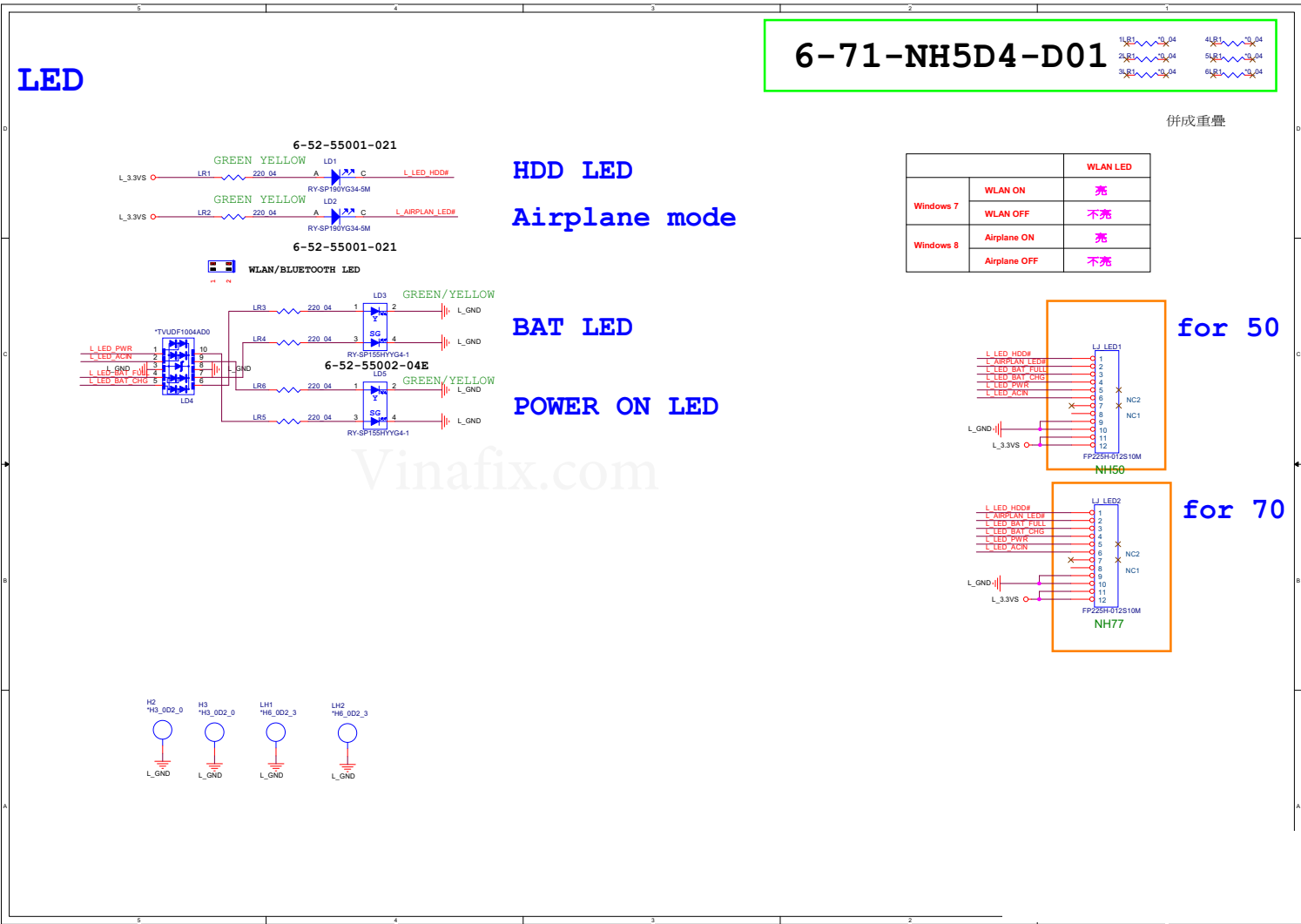
Click Board



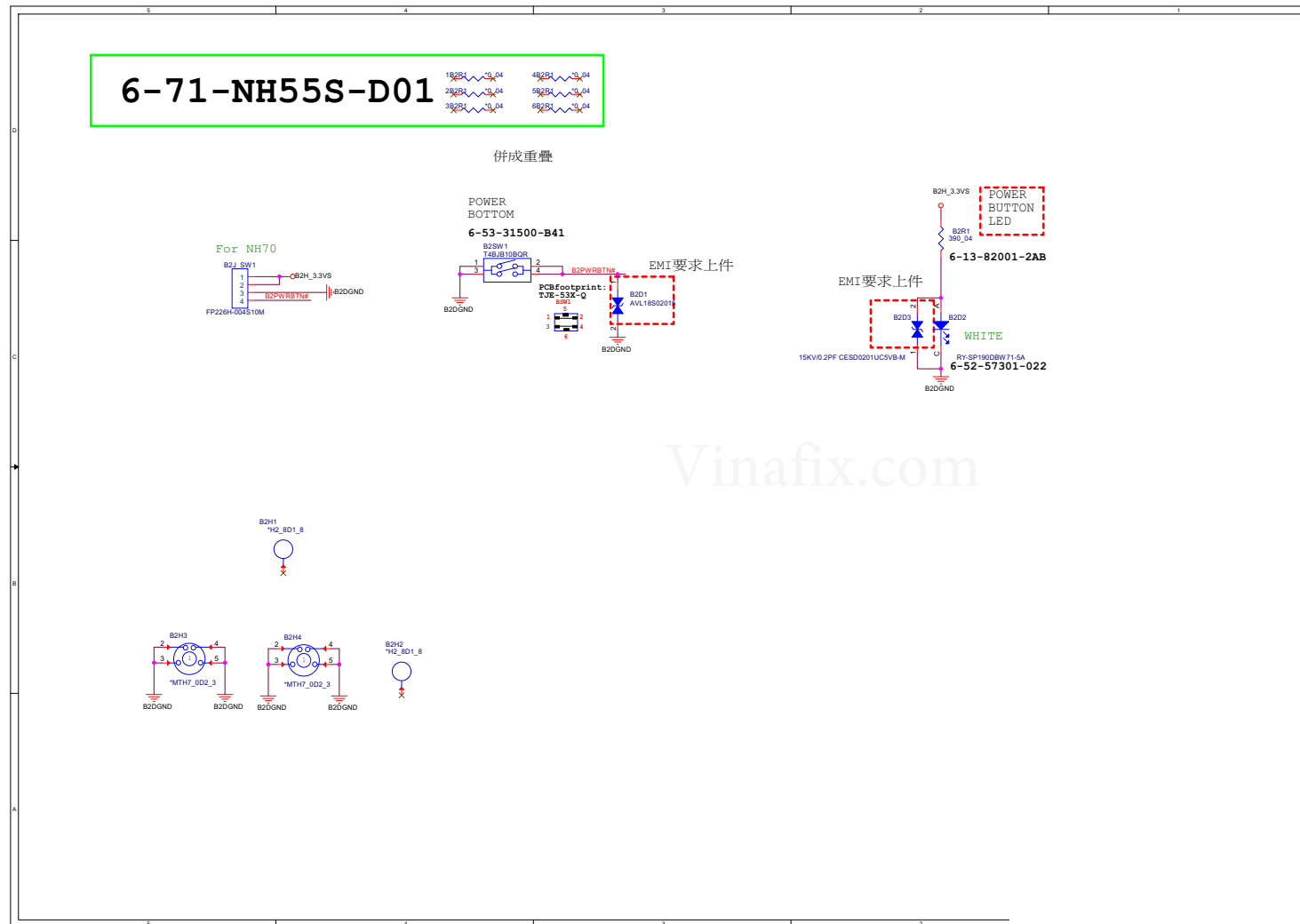
Sheet 64 of 67
Click Board

LED Board

Sheet 65 of 67
LED Board



NH70 PW Board



Sheet 66 of 67
NH70 PW Board

Power Sequence

