

SERVICE MANUAL

NH55ERQ / NH58ERQ / NH55EPY / NH58EPY

notebook



Notebook Computer

NH55ERQ / NH58ERQ / NH55EPY / NH58EPY

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 *NH55ERQ* / *NH58ERQ* / *NH55EPY* / *NH58EPY* 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, 11.8A (**230** 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.

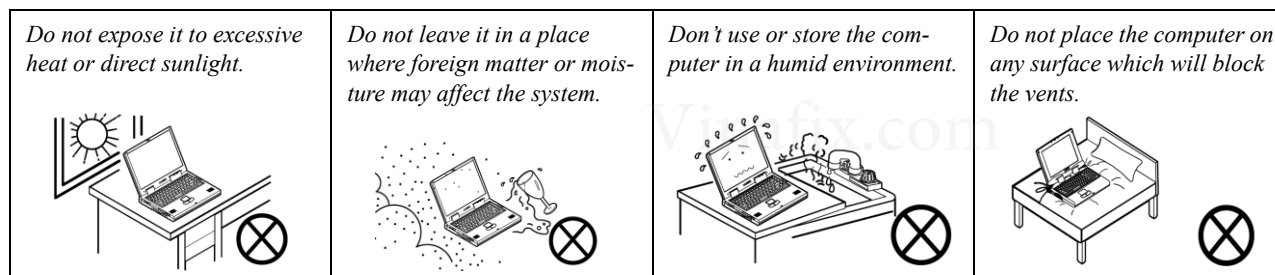
Instructions for Care and Operation

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

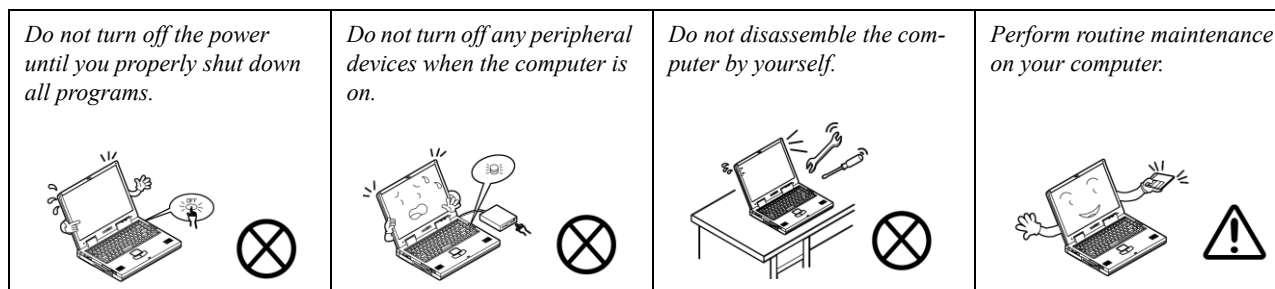
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

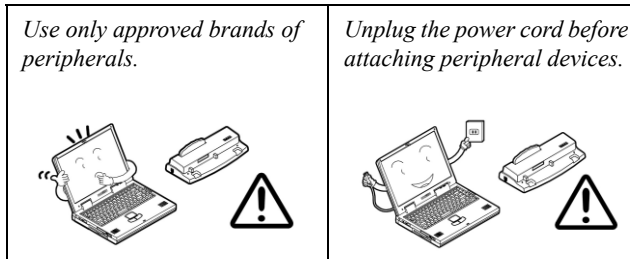


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

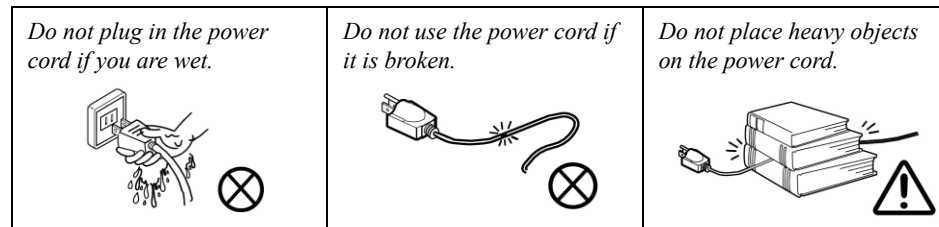
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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".

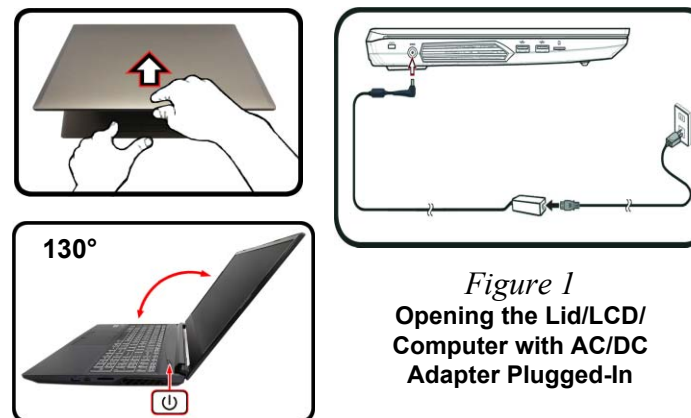

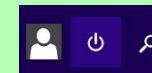


Figure 1
Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In


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 Heatsink	2-10
Removing the System Memory (RAM)	2-11
Removing the M.2 SSD Module	2-12
Removing the Wireless LAN Module	2-13
Wireless LAN, Combo Module Cables	2-14
Removing the CCD	2-15

Part ListsA-1

Part List Illustration Location	A-2
Top	A-3

Bottom	A-4
Main Board	A-5
HDD	A-6
LCD (NH55ERQ/NH55EPY)	A-7
LCD (NH58ERQ/NH58EPY)	A-8

Schematic Diagrams.....B-1

System Block Diagram	B-2
Processor 1/10	B-3
Processor 2/10	B-4
Processor 3/10	B-5
Processor 4/10	B-6
Processor 5/10	B-7
Processor 6/10	B-8
Processor 7/10	B-9
Processor 8/10	B-10
Processor 9/10	B-11
Processor 10/10	B-12
DDR4 CHA SO-DIMM	B-13
DDR4 CHB SO-DIMM	B-14
VGA PCI Express	B-15
GPU Frame Buffer A/B	B-16
Frame Buffer A	B-17
Frame Buffer A	B-18
Frame Buffer B	B-19
Frame Buffer B	B-20
GPU Frame Buffer C/D	B-21
Frame Buffer C	B-22
Frame Buffer C	B-23
Frame Buffer D	B-24
Frame Buffer D	B-25

Preface


GPU Decoupling 1	B-26	NVVDD1	B-58
GPU Decoupling 2	B-27	NVVDD2	B-59
Straps and XTAL	B-28	NVVDD3	B-60
IFP I/O Interface	B-29	PEX_VDD	B-61
Misc - GPIO, I2C and ROM	B-30	FBVDDQ	B-62
NVIDIA Power Sequence	B-31	OVR-M	B-63
GPU NVVDD, FBVDDQ	B-32	NH50 PW Board	B-64
GPU GND	B-33	NH77 PW Board	B-65
Panel, Inverter	B-34	NH77 Multi I/O Board 1/2	B-66
mDP	B-35	NH77 Multi I/O Board 2/2	B-67
HDMI	B-36	LED Board	B-68
Audio Codec	B-37	Audio Board	B-69
LAN RTL8125BG-CG	B-38	Click Board	B-70
Card Reader	B-39	DC Board	B-71
USB ANX7440 Retimer	B-40	Power Sequence	B-72
PD Controller	B-41		
USB Type-C	B-42		
M.2 PCIE 4X/SATA SSD	B-43		
M.2 WLAN+BT, PCIE 4X SSD	B-44		
HDD, Click TP, Audio, Hall Con.	B-45		
LED, CCD, TPM, Power SW Con.	B-46		
KBC-ITE IT5570	B-47		
RGB KB, Fan	B-48		
5V, 5VS, 3.3V, 3.3VS, 1.2VS, 1.5VS ..	B-49		
VDD3, VDD5	B-50		
VDDPS, 1.8V, 1.8VS	B-51		
VDDQ, VDDQ_VTT	B-52		
VCore	B-53		
VDDCR, VDDCR_SOC	B-54		
VDDP	B-55		
AC_In, Charger	B-56		
1V8_AON, NV3V3	B-57		

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the *NH55ERQ/NH58ERQ/NH55EPY/NH58EPY* 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 *NH55ERQ/NH58ERQ/NH55EPY/NH58EPY* 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.



SATA Storage

The SATA Storage is a reserved design and not supported yet. For more detailed information, please contact your Sales/FAE representative.

Processor Options

AMD Ryzen™ Cezanne H 5000 Series Processor
R9-5900HX (3.3 GHz), TDP 45W
R7-5800 (3.2 GHz), TDP 45W
R5-5600 (3.3 GHz), TDP 45W

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

Two M.2 2280 **PCIe Gen3 x4** SSDs

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

AMD Radeon Vega7
HDR Support
FreeSync Support
Microsoft DirectX®12 Compatible
NVIDIA® GeForce RTX 3070 (GN20-E5) (NH55ERQ)
8GB GDDR6 Video RAM on board
Microsoft DirectX® 12 Compatible
NVIDIA® GeForce RTX 3060 (GN20-E3) (NH55EPY)
6GB GDDR6 Video RAM on board
Microsoft DirectX® 12 Compatible

Security

Security (Kensington® Type) Lock Slot
BIOS Password
(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)

M.2 Slots

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

Slot 2 for **PCIe Gen3 x4 SSD**

Slot 3 for **PCIe Gen3 x4 SSD**

Interface

One USB 2.0 Port*

One USB 3.2 Gen 1 Type-A Port*

One USB 3.2 Gen 2 Type-A Port*

One DisplayPort 1.4 over USB 3.2 Gen 2 Type-C Port*

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

One Mini DisplayPort 1.4

One HDMI-Out Port

One Microphone-In Jack

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

One RJ-45 LAN Jack

One DC-In Jack

Communication

Built-In 10/100/1000/2500Mb Base-TX Ethernet LAN

1.0M HD Webcam

WLAN/ Bluetooth M.2 Modules:

(**Factory Option**) Intel® Dual Band Wi-Fi 6E AX210 Wireless LAN (**802.11ax**) + Bluetooth

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

(**Factory Option**) Intel® Dual Band Wireless-AC 9260 Wireless LAN (**802.11ac**) + 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, 48.96WH

Full Range AC/DC Adapter

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

DC Output: 19.5V, 11.8A (**230W**)

Dimensions & Weight

361mm (w) * 258mm (d) * 29mm (h)

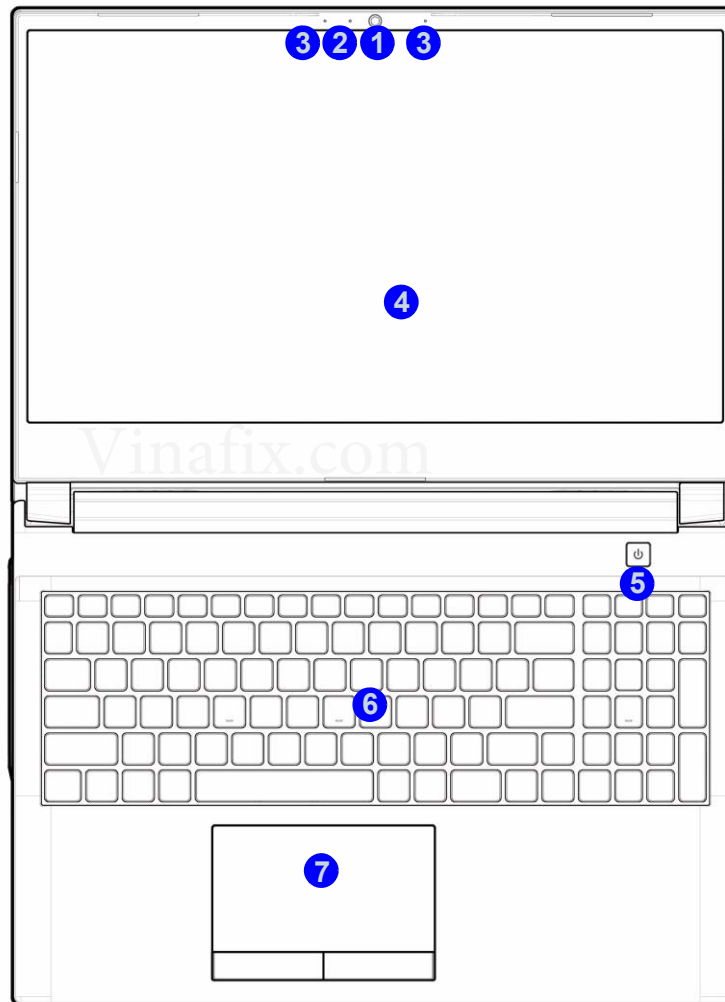
2.2kg (Barebone with 48.96WH Battery)

Introduction

Figure 1
Top View

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

External Locator - Top View with LCD Panel Open



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External Locator - Front & Right Side Views

Figure 2
Front View

1. LED Indicators

FRONT VIEW



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RIGHT SIDE VIEW

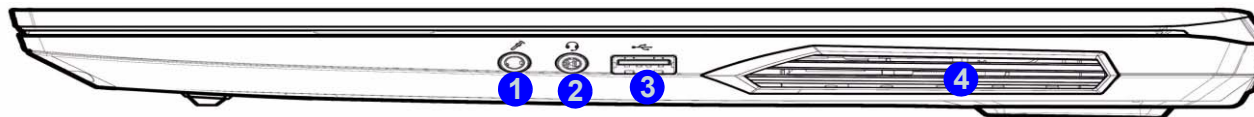


Figure 3
Right Side View

1. Microphone-In Jack
2. 2-In-1 Audio Jack (Headphone and Microphone)
3. USB 2.0 Port
4. Vent

Introduction

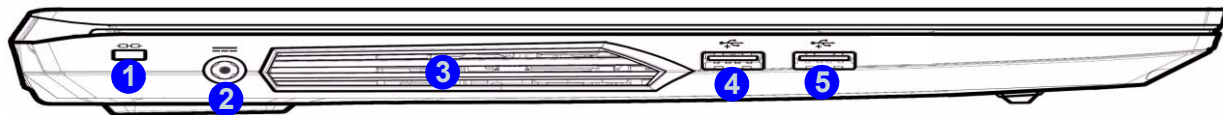
External Locator - Left Side & Rear View

Figure 4

Left Side View

1. Security Lock Slot
2. DC-In Jack
3. Vent
4. USB 3.2 Gen 2 Type-A Port
5. USB 3.2 Gen 1 Type-A Port

LEFT SIDE VIEW



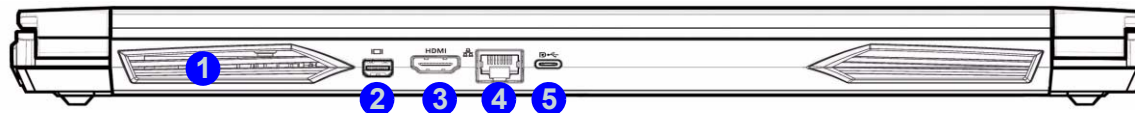
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Figure 5

Rear View

1. Vent
2. Mini Display Port 1.4
3. HDMI-Out Port
4. RJ-45 LAN Jack
5. Display Port 1.4 over USB 3.2 Gen 2 Type-C Port

REAR VIEW



External Locator - Bottom View

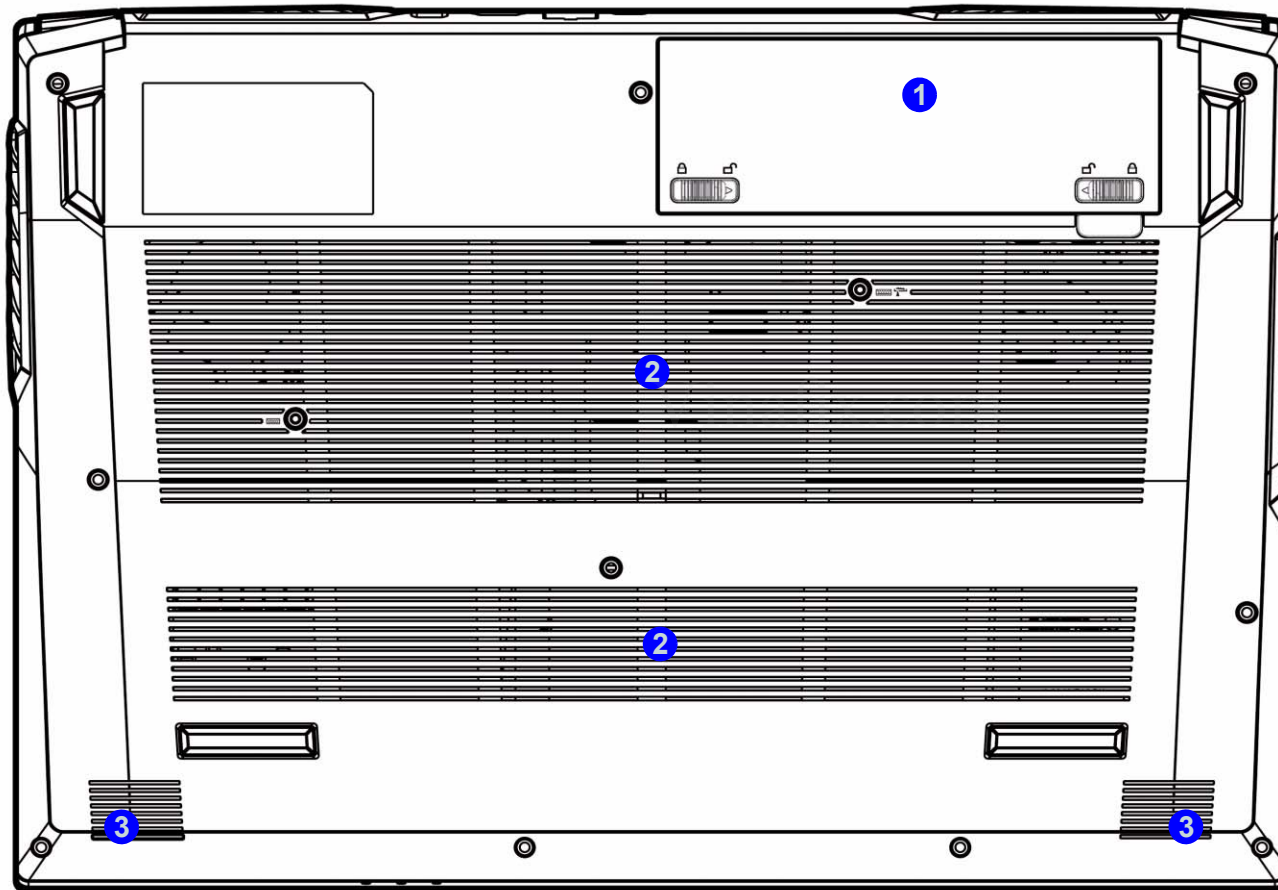


Figure 6
Bottom View

1. Battery
2. Vent
3. Speakers

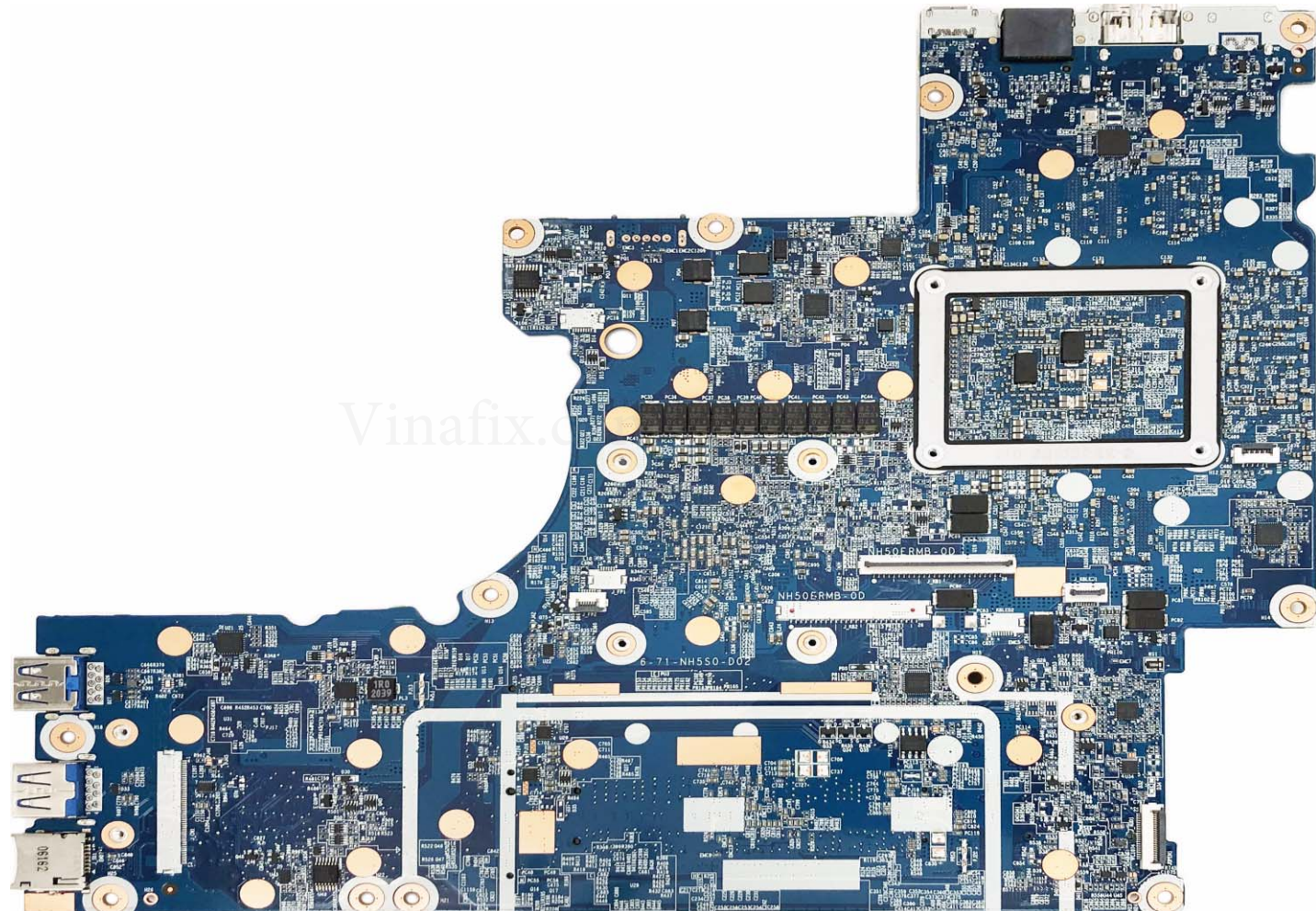


Overheating

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

Figure 7
Mainboard Top
Key Parts

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

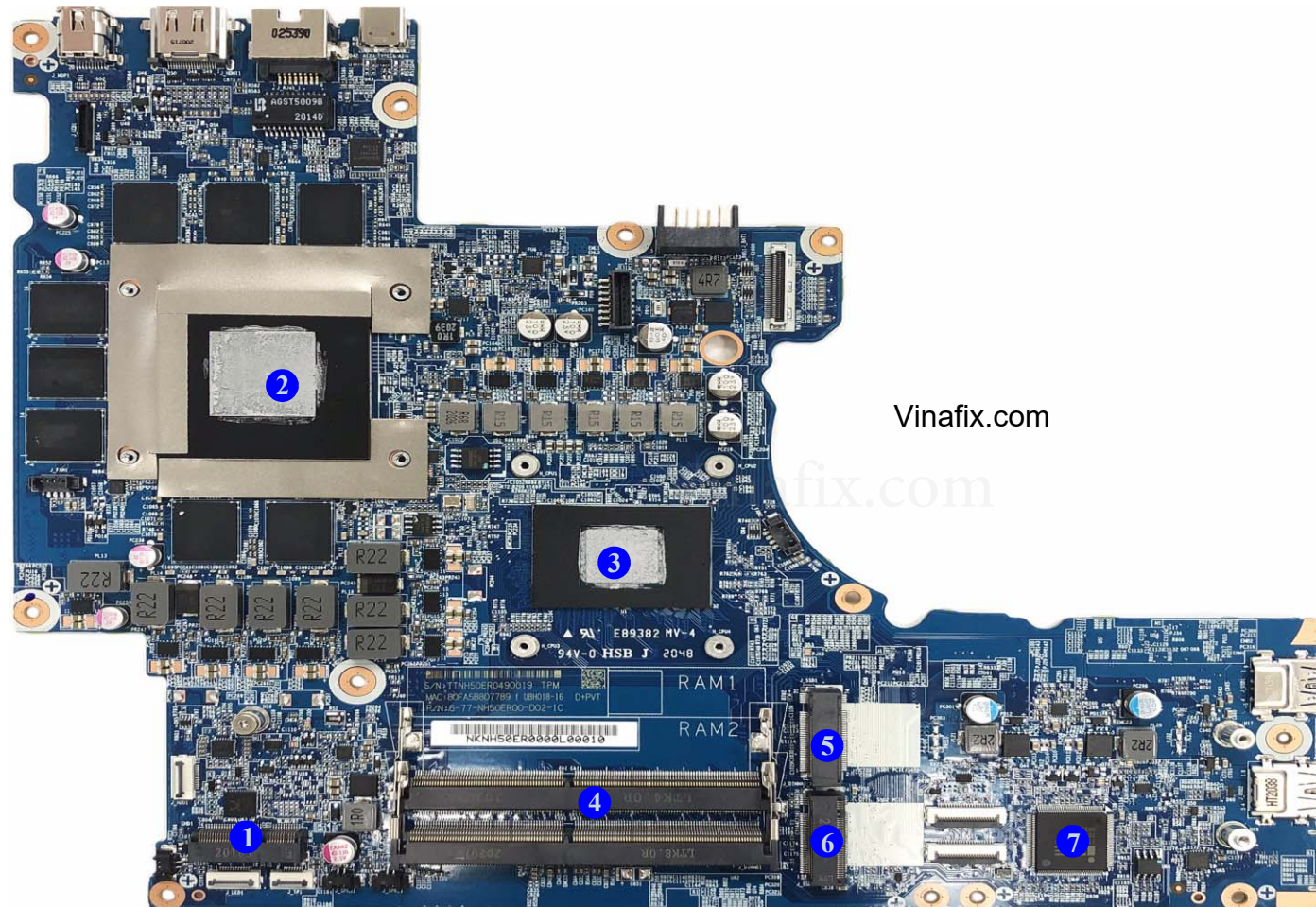


Figure 8
**Mainboard Bottom
Key Parts**

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

Introduction

Figure 9
**Mainboard Top
Connectors**

1. USB 3.2 Gen 2 Type-A Port
2. USB 3.2 Gen 1 Type-A Port
3. Keyboard Cable Connector
4. KB LED Connector
5. Audio Board Connector

Mainboard Overview - Top (Connectors)

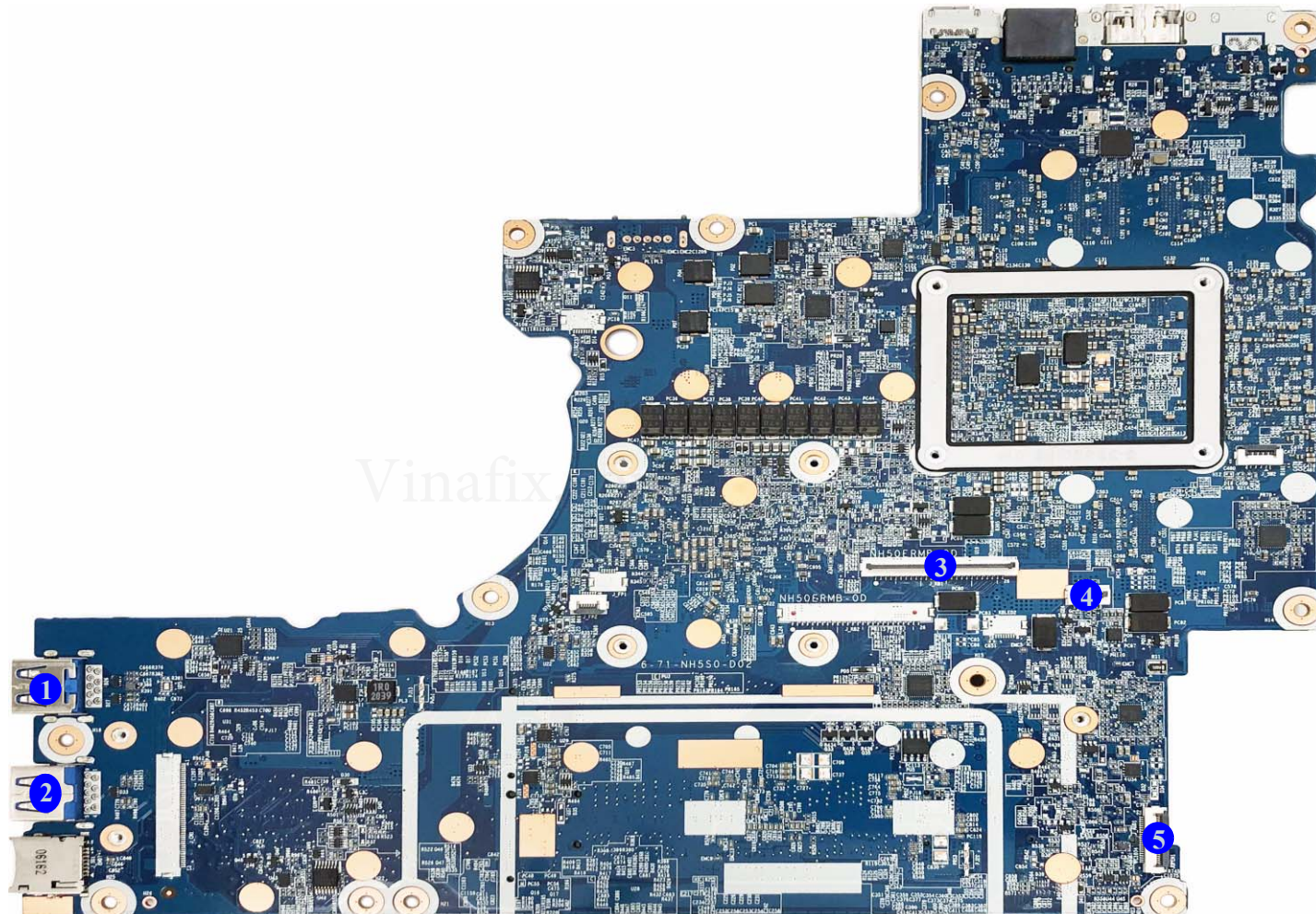
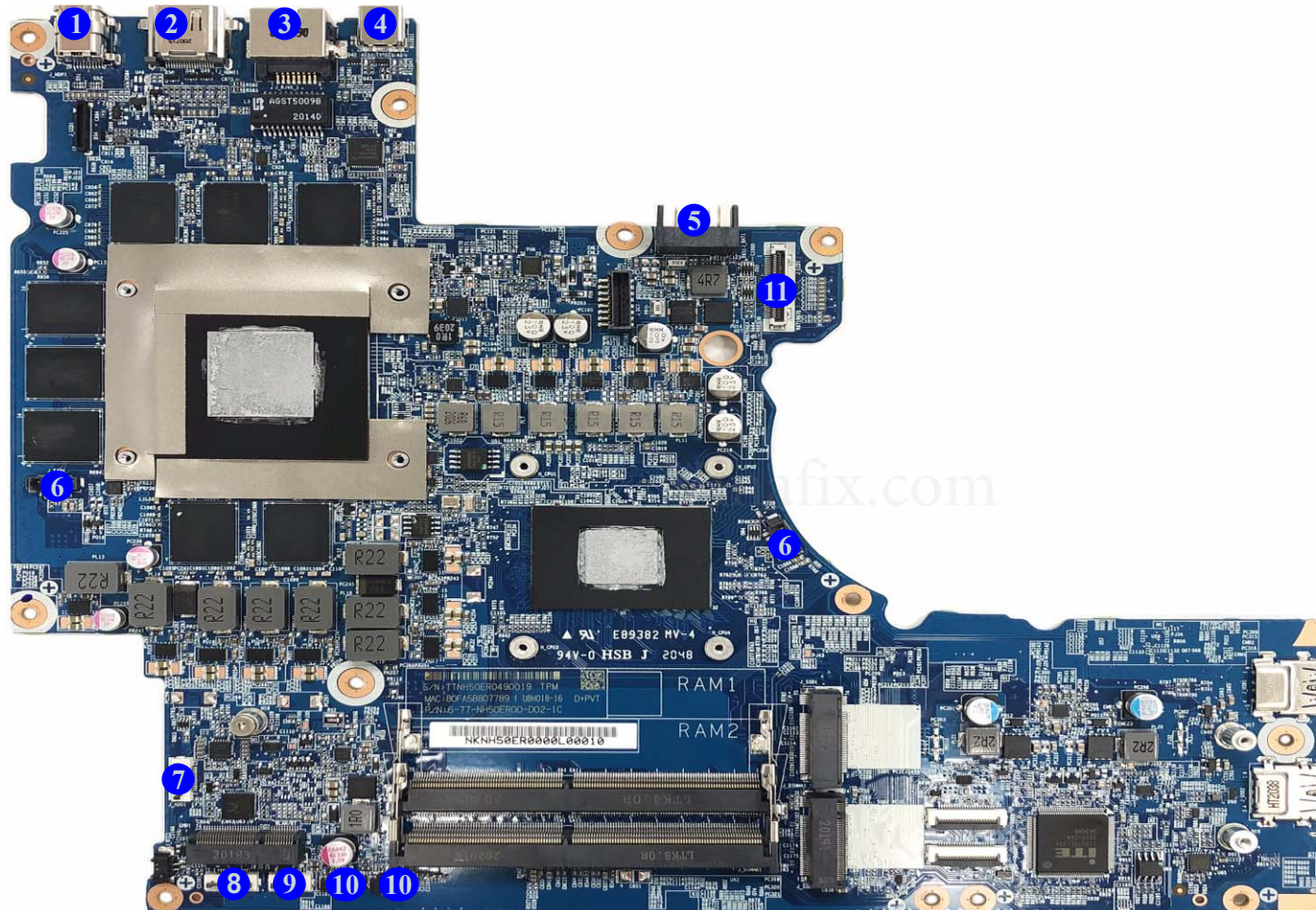


Figure 10
**Mainboard Bottom
Connectors**

1. Mini Display Port
2. HDMI-Out Port
3. RJ-45 LAN Jack
4. Display Port 1.4
over USB 3.2 Gen
2 Type-C Port
5. Battery Connector
6. Fan Connector
7. HDD Connector
8. LED Connector
9. Touchpad
Connector
10. Speaker Connector
11. LCD Connector

Mainboard Overview - Bottom (Connectors)



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Chapter 2: Disassembly



Disassembly

Note that for the disassembly of any key parts, **the bottom case must be properly closed before opening the upper part of the LCD** to avoid any damage caused by the nature of the structure.


Overview



This chapter provides step-by-step instructions for disassembling the *NH55ERQ / NH58ERQ / NH55EPY / NH58EPY* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

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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*
3. Install the HDD *page 2 - 9*

To remove the Heatsink:

1. Remove the battery *page 2 - 5*
2. Remove the Heatsink *page 2 - 10*

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 - 11*

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 - 12*

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 - 13*

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 - 15*

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*).

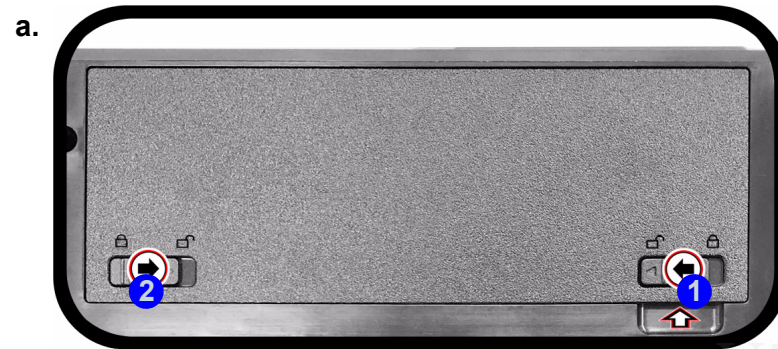


Figure 1
Battery Removal

- 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.

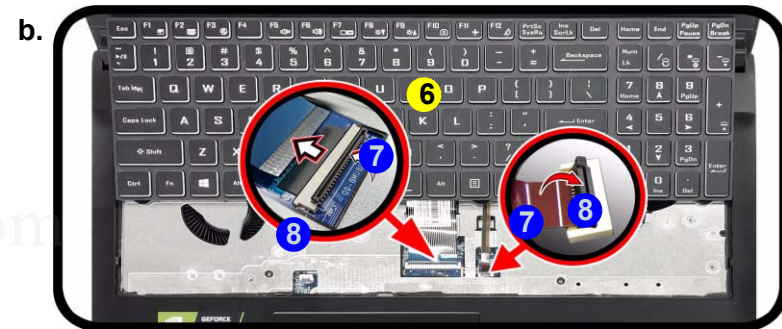
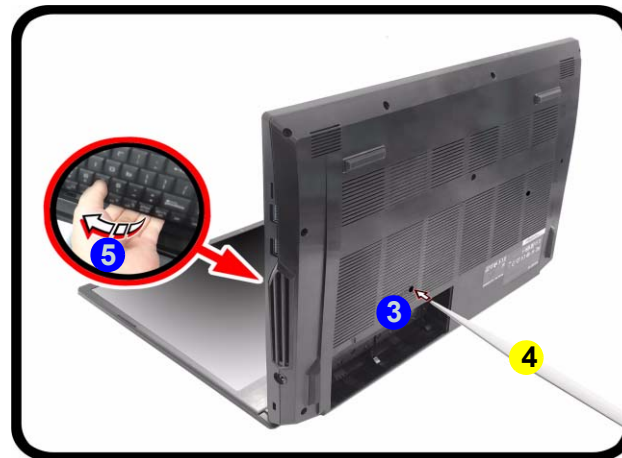
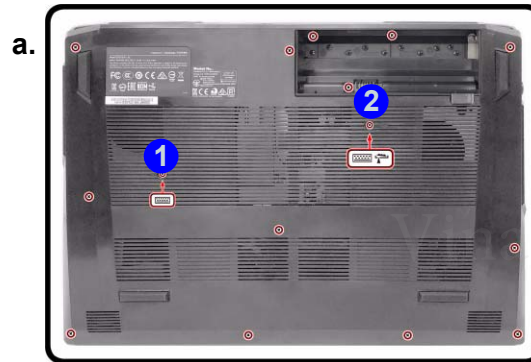


4. Eject Stick
6. Keyboard

- 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

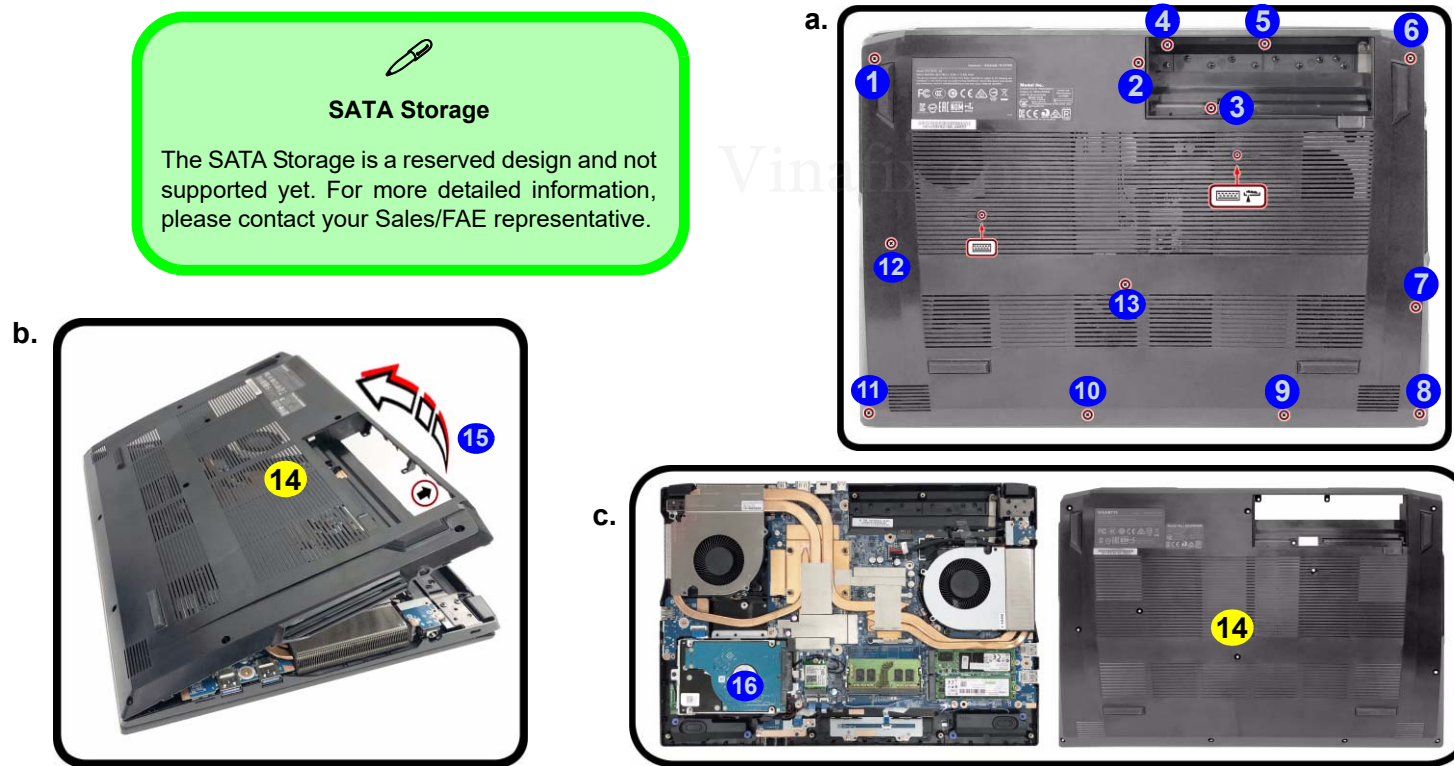
The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 7mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard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

Hard Disk Disassembly Process

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Remove the screws **1** - **13** ([Figure 3a](#)).
3. Carefully lift the bottom case **14** up from point **15** and remove it ([Figure 3b](#)).
4. The HDD will be visible at point **16** on the mainboard ([Figure 3c](#)).

Figure 3
HDD Assembly Removal

- a. Remove the screws.
- b. Remove the bottom case.
- c. Locate the HDD.



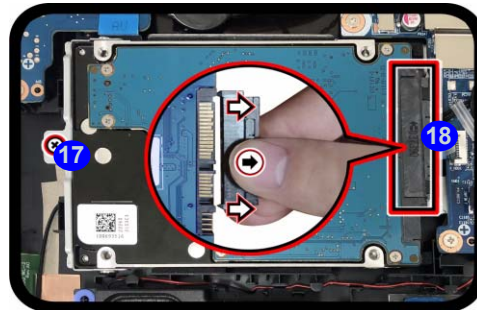
Disassembly

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

- d. Remove the screw. Slightly lift the HDD to release.
- e. Lift the HDD assembly out of the bay.
- f. Remove the screws and bracket from the HDD.

5. Remove screw 17 from the HDD assembly. Slightly lift to release the hard disk assembly from the connector 18 (Figure 4d).
6. Lift the hard disk assembly 19 out of the bay 20 (Figure 4e).
7. Remove screws 21 - 22 and bracket 23 from the hard disk 24 (Figure 4f).
8. Reverse the process to install a new hard disk (**make sure to properly press to seal all sides of the bottom case especially near the vent area**, do not forget to replace the screws).

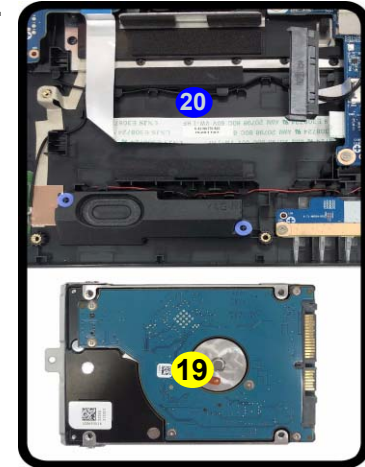
d.



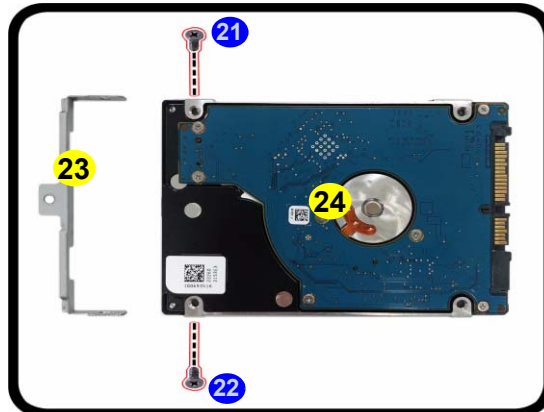
Disconnecting the Hard disk

When disconnecting the hard disk assembly and connector, firmly grip the connector in the middle to release the HDD assembly in the direction of the arrow.

e.



f.



20. HDD Assembly
23. Bracket
24. HDD

- 3 Screws



HDD System Warning

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

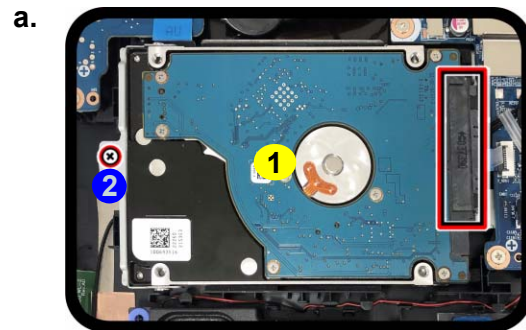
You have backed up any data you want to keep from your old HDD.


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.

Hard Disk Installation Procedure

1. Insert the hard disk assembly **1** to the connector and tighten the screw **2** (*Figure 5a*).
2. Replace the bottom case **3** by inserting it at an angle **4** and then close it down **5** (*Figure 5b*).
3. Tighten the corresponding screws to secure the bottom case in place.





Re-inserting the Hard disk

When replacing the hard disk firstly, arrange accordingly the cable under the HDD assembly.

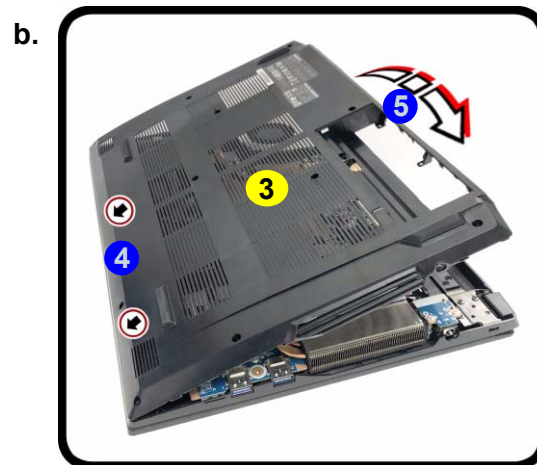



Figure 5
HDD Installation

- a. Replace the HDD assembly and tighten the screw.
- b. Replace the bottom case.



1. HDD Assembly
3. Bottom Case

- 1 Screw

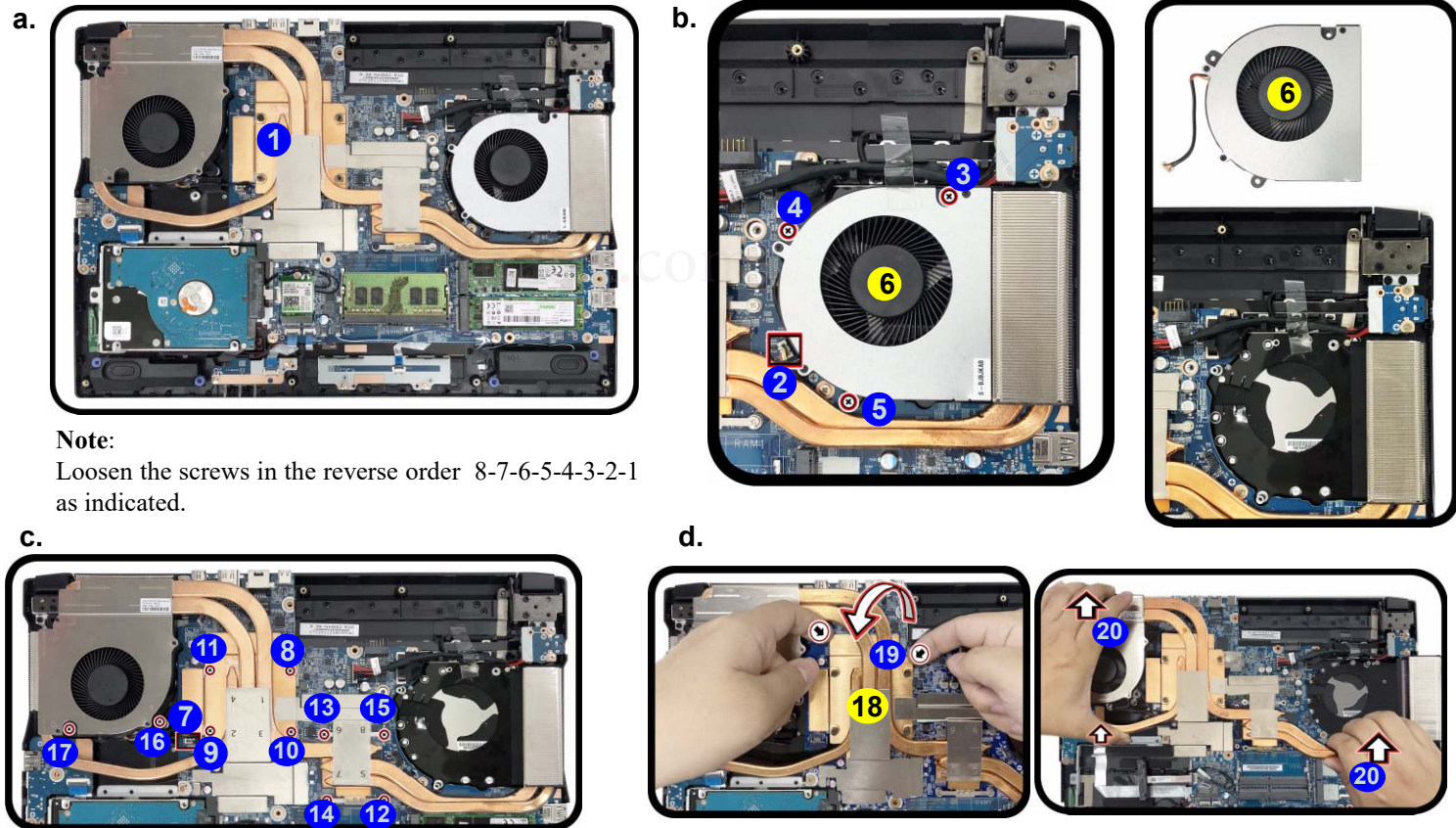
Disassembly

Figure 6
Heatsink Removal

- Locate the WLAN.
- Remove the screws and fan.
- Remove the screws in the correct order.
- Carefully remove the heat sink unit.

Removing the Heatsink

- Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)) and bottom case ([page 2 - 7](#)).
- The heatsink unit will be visible at point **1** on the mainboard ([Figure 6a](#)).
- Disconnect the cable **2** and remove screws **3** - **5** from the fan unit **6** ([Figure 6b](#)).
- Disconnect the cable **7** and remove screws **8** - **17** from the heat sink unit **18** in the order indicated on the label (i.e screw **17** first through to screw **8** last - [Figure 6c](#)).
- Carefully (it may be hot) lift the heat sink unit **18** up at point **19** and remove it **20** as shown ([Figure 6d](#)).
- Reverse the process to replace the heatsink unit.



Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.



6.Fan Unit
189.Heatsink Unit

- 14 Screws

Removing the System Memory (RAM)

The computer has two memory sockets for 260 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR4 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 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 (**for single module only** - make sure to install it in the top slot "J_DIMMB_1" as shown in [Figure 7c](#)) 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.

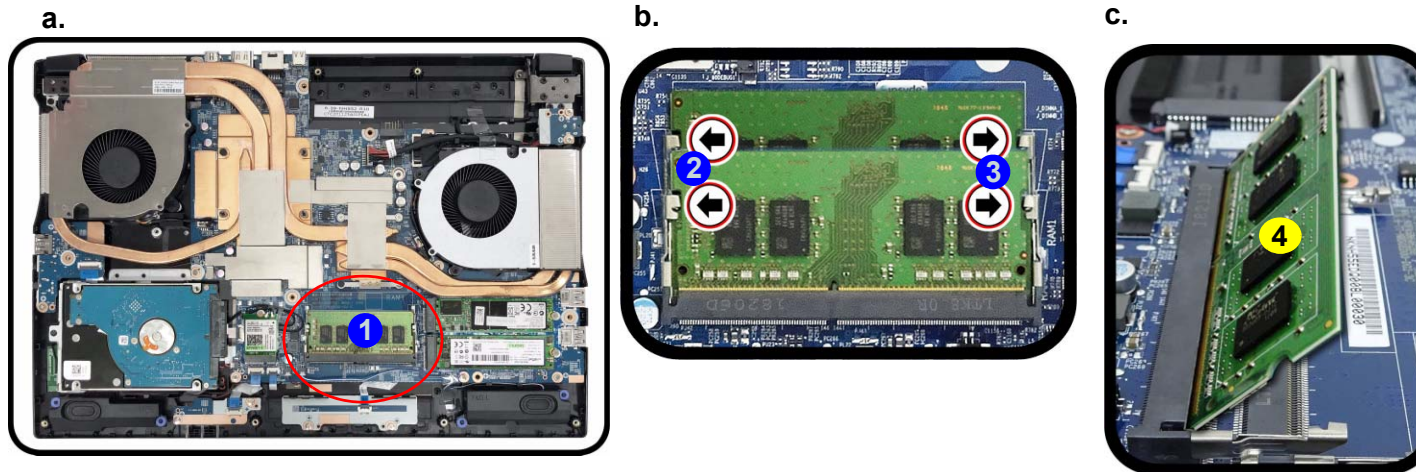


Figure 7
RAM Module Removal

- 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

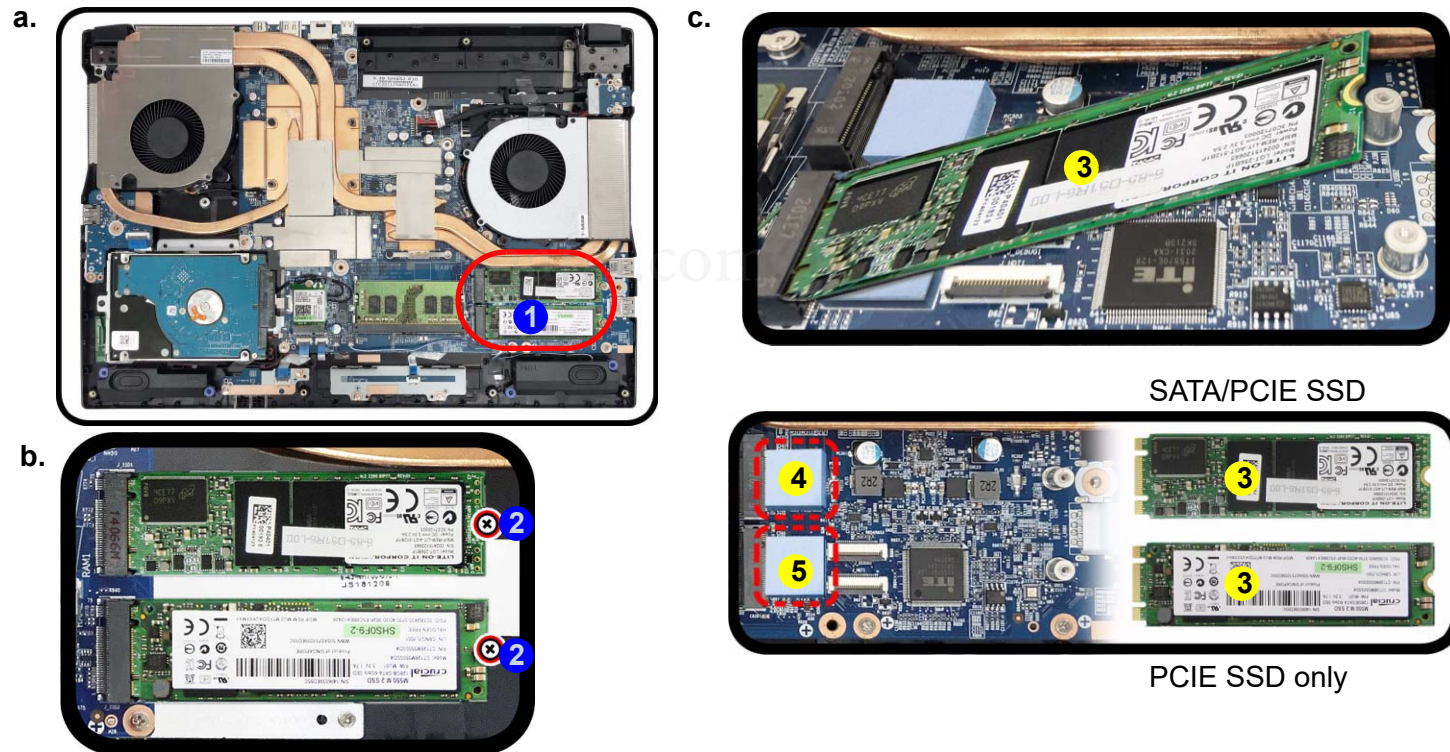
Figure 8
M.2 SSD Module Removal

- 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 8a](#)).
3. Remove the screw **2** ([Figure 8b](#)).
4. The M.2 SSD module **3** ([Figure 8c](#)) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new M.2 SSD module. Make sure that the corresponding thermal pad's **4** & **5** adhesive side down onto the mainboard surface as illustrated.



Thermal Pad

The M.2 SATA/PCIE SSD is using a **thicker** thermal pad while the M.2 PCIE SSD is using a **thinner** thermal pad.

- 3.M2 SSD Module
- 4.Thicker Thermal Pad
- 5.Thinner Thermal Pad

- 1 Screw

Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over, remove the battery ([page 2 - 5](#)) and harddisk ([page 2 - 7](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard ([Figure 9a](#)).
3. Carefully disconnect the cables **2** & **3**, and then remove the screw **4** ([Figure 9b](#)).
4. The Wireless LAN module **5** ([Figure 9c](#)) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new module (do not forget to replace the screw while making sure the cables are properly fasten **6** as shown below).

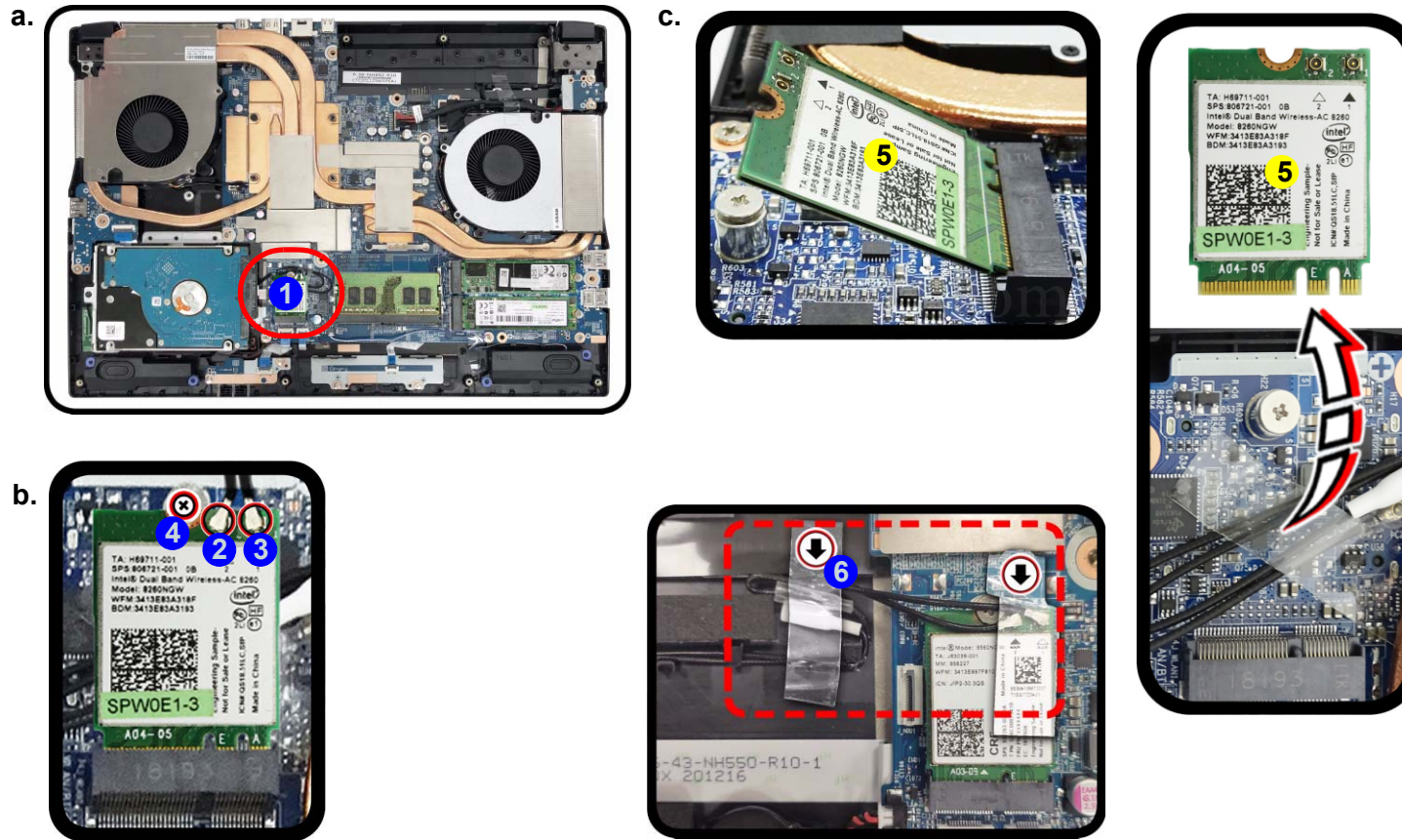


Figure 9
**Wireless LAN
Module Removal**

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

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket ([Figure 9b](#)).


5. Wireless LAN Module

- 1 Screw

Wireless LAN, Combo Module Cables

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo 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 10a](#)).
4. Remove the LCD front cover **5** ([Figure 10b](#)).

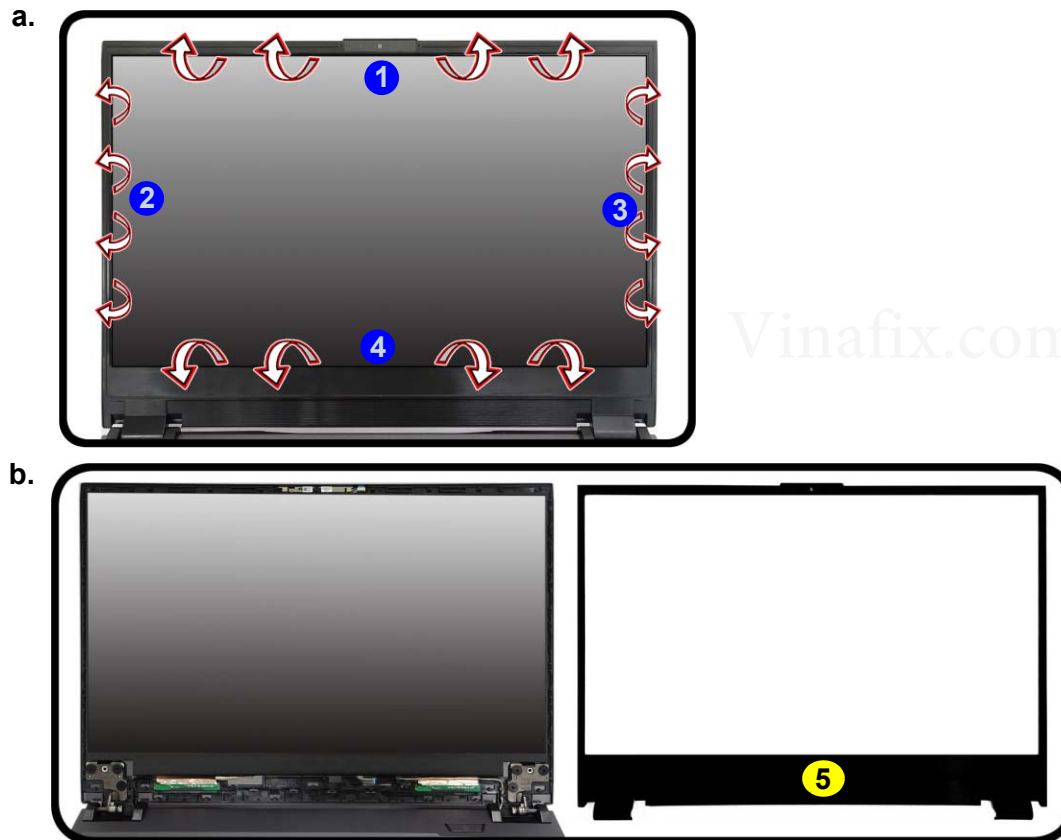


Figure 10
CCD Removal

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



Disassembly

Figure 11
CCD Removal
(cont'd)

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

- 5. Disconnect the cable ⑥ from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins ⑦ away from the base (*Figure 11c*).
- 6. Remove the CCD module ⑧ (*Figure 11d*).
- 7. Reverse the process to install a new CCD module.

c.



d.



8. CCD Module

Appendix A: Part Lists

This appendix breaks down the *NH55ERQ / NH58ERQ / NH55EPY / NH58EPY* 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

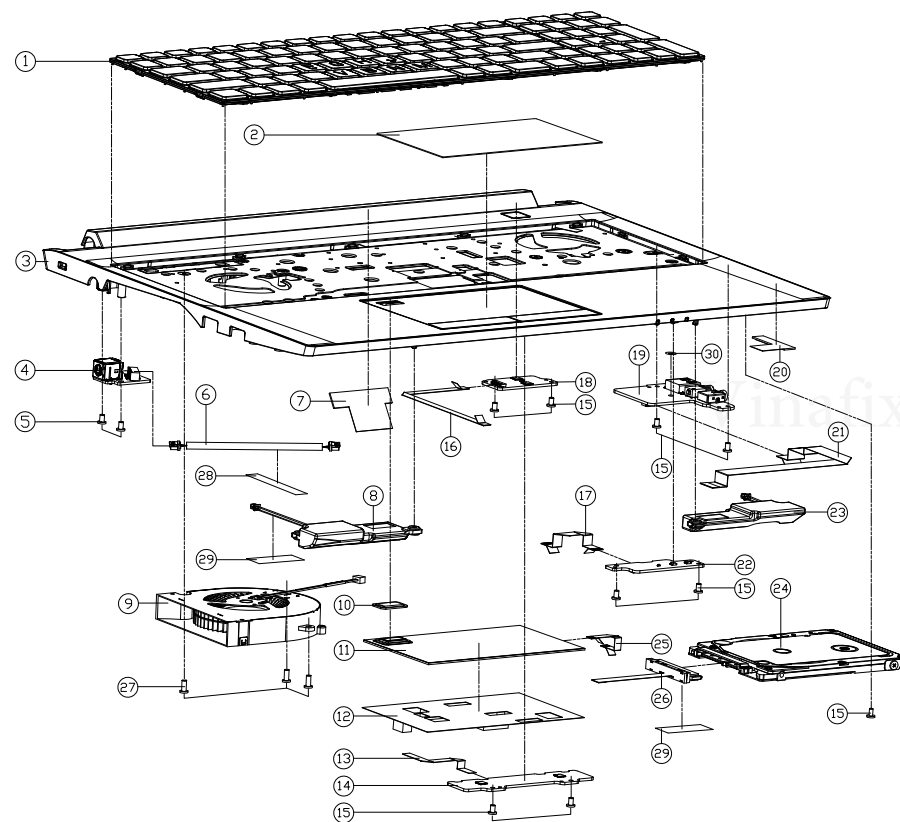
The following table indicates where to find the appropriate part list illustration.

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

Part	NH55ERQ/NH55EPY	NH58ERQ/NH58EPY
Top	<i>page A - 3</i>	
Bottom	<i>page A - 4</i>	
Main Board	<i>page A - 5</i>	
HDD	<i>page A - 6</i>	
LCD	<i>page A - 7</i>	<i>page A - 8</i>

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Top

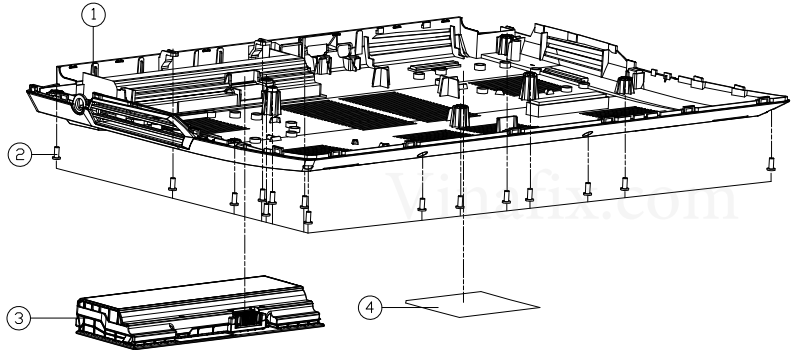


ITEM	PART NAME	PART NO	REMARK
1	KB FOR MULTI ISC BL KB US SERIES NH55EDQ	6-NH55EDQ-KB-MCL-US	FOR NH55ERQ(SB) NH55EPY(SB)
1	MCJ (OPTION) NH55ERQ	6-NH55ERQ-CUSTOM-MCJ	FOR NH55ERQ(SB) NH55EPY(SB)
1	KB FOR MULTI ISC BL KB US SERIES NH50ED	6-NH50ED-KB-MCL-US	FOR NH55ERY-Y NH55EPY-Y
2	W/D FP TP MYLAR AG32 NH55EDQ	6-40-NH552-052	
2	W/D FP TP MYLAR NH58EDQ	6-40-NH582-022	
3	TOP CASE MODULE NH55ERQ	6-39-NH552-R12	
3	TOP CASE MODULE NH58ERQ	6-39-NH582-R22	
4	DC/DC BOARD V2.0 NH50EPS	6-77-NH55C-D02	
5	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
6	DC CABLE TO MB 160MM 19V 8PIN NH77ERQ	6-43-NH770-R40	
7	ANTENNA PERK W/AN VGT W/2 PCB AR 246/56/60/2 V2-200MM NH55ERQ	6-23-7NH55-R10	
8	SPK CABLE L 1.67*23 2W 47 L 150MM DS-25M-ML-R2-HF NH50TJ	6-23-5N95T-OL1	
9	CPU FAN MODULE (FORCECON) PWM (MP)NH55ERQ	6-31-NH55S-RA1	
10	TP W/D FP RUBBER (17.9*11.2*1.2T) SILICONE	6-47-N15Z2-090	
11	TOUCH PAD SYNAPTICS PTP TR-P3429 (0.08*60MM) (W/O) NH50TJ	6-49-N15Z3-011	
12	TOUCH PAD MYLAR(PET+DS-5) (0.083*61.3)NH55ERQ	6-40-NH552-R20	
13	FFC CABLE CLICK TO TP L=60MM 3V 4PIN (CULS) NH50ED	6-43-NH500-051-1	
14	CLICK BOARD V1.0A NH50EPS	6-77-NH552-D01A	
15	SCREW M2*4L KI NI ICT NY (D=4.5,D1=0.8)	6-35-B1120-4RC	
16	FFC CABLE POWER TO MB L=120MM 3V 4PIN NH55ERQ	6-43-NH550-R30	
17	FFC CABLE LED TO MB L=58MM 3V 12PIN NH55ERQ	6-43-NH550-R20	
18	POWER SWITCH BOARD V2.0 NH55ERQ	6-77-NH55S-D02-A	
19	AUDIO BOARD V2.0 NH50EPS	6-77-NH55S8-D02	
20	ANTENNA PERK W/AN VGT W/2 PCB AR 246/56/60/2 V2-200MM NH55ERQ	6-23-7NH55-R20	
21	FFC CABLE AUDIO TO MB L=174MM 3V 22PIN NH55ERQ	6-43-NH550-R11	
22	LED BOARD V2.0 NH50EPS	6-77-NH554-D02	
23	SPK R/CABLE L25*4 2W 47 L 200MM DS-25M-ML-R2-HF NH50TJ	6-23-5NB70-OR1	
24	W/D HDD ASS'Y NH55ERQ	6-79-NH55ERQJ-010	
24	W/HDD ASS'Y NH55ERQ	6-79-NH55ERQJ-020	
25	FFC CABLE TP TO MB L=41.5MM 3V 8PIN NH55ERQ	6-43-NH552-R10	
26	HDD CONCAV-56*36*10-04P-D/V-CABLE/FANITE CUE FFC CABLE 50 MM 22PIN NH50PS	6-23-FNH55-010	
27	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
28	TAPE MYLAR (A),MYLAR M550J	6-40-M55J2-010	
29	TAPE MYLAR (C),MYLAR M550J	6-40-M55J2-030	
30	WASHER 6*4*0.0151 MYLAR, 3/8 467 3/8 467 FOR K075E	6-37-02000-607	

Figure A - 1
Top

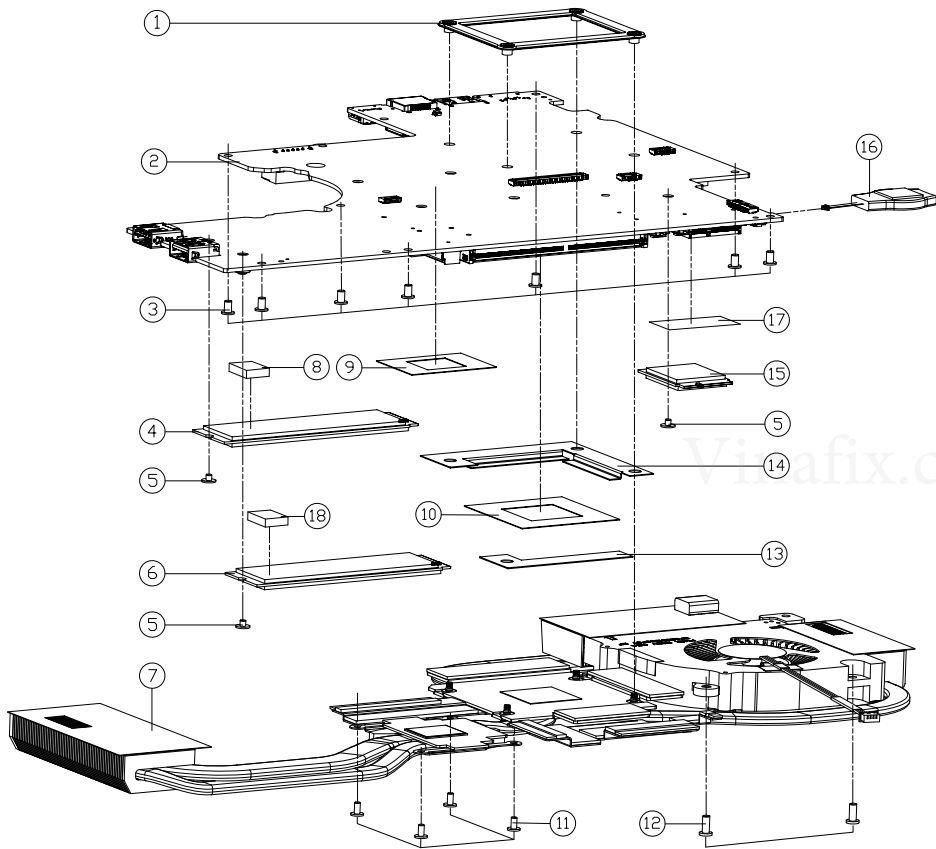
Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	BOTTOM CASE MODULE NH55ERQ	6-39-NH553-R12	
2	.SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
3	BAT P S LI 14.4V/3440/4836WH 45P 30P/300 (0040250) 98002242H /B/ NH55ERQ	6-87-NH50S-41C01	
3	BAT P S LI 14.4V/3440/4836WH 45P 32TAC/LG (0040250) 54139022001 NH55ERQ	6-87-NH50S-42D01	
3	BAT P S LI 14.4V/3440/4836WH 45P 32TAC/PINK/SONIC (0040250) 54139022003 02750000	6-87-NH5DS-42H00-1	
4	PRODUCT LABEL FOR NH55ERQ	6-45-NH55ERQ3-010	
4	PRODUCT LABEL FOR NH55ERQ-Y	6-45-NH55ERQY-010	
4	PRODUCT LABEL FOR NH58ERQ	6-45-NH58ERQ3-010	
4	PRODUCT LABEL FOR NH55EPY	6-45-NH55EPY3-010	
4	PRODUCT LABEL FOR NH58EPY	6-45-NH58EPY3-010	

Main Board



ITEM	PART NAME	PART NO	REMARK
1	VGA SUPPORT FOR NH50EPS	6-33-NH5SS-010	
2	MAIN BOARD/CPU/KEY 5 500W/330 V24 C/PVAV/TPM W/SEK	6-77-NH50ER00-D02-1C	
2	MAIN BOARD/CPU/KEY 7 500W/330 V24 C/PVAV/TPM W/SEK	6-77-NH50ER00-D02-1D	
2	MAIN BOARD/CPU/KEY 5 500W/330 V24 C/PVAV/TPM W/SEK	6-77-NH50ER00-D02-2D	
2	MAIN BOARD/CPU/5 500W/330 V24 C/PVAV/TPM W/SEK+SAFE GUARDIAN PROTECT	6-77-NH50ER00-D02-1C	
2	MAIN BOARD/CPU/7 500W/330 V24 C/PVAV/TPM W/SEK+SAFE GUARDIAN PROTECT	6-77-NH50ER00-D02-2D	
2	MAIN BOARD/CPU/KEY 5 500W/330 V24 C/PVAV/TPM W/SEKPS	6-77-NH50ER00-D02-2E	
2	MAIN BOARD/CPU/5 500W/330 V24 C/PVAV/TPM W/SEK+SAFE GUARDIAN PROTECT	6-77-NH50EPY0-D02-2D	
2	MAIN BOARD/CPU/7 500W/330 V24 C/PVAV/TPM W/SEK+SAFE GUARDIAN PROTECT	6-77-NH50EPY0-D02-1C	
2	MAIN BOARD/CPU/5 500W/330 V24 C/PVAV/TPM W/SEK+SAFE GUARDIAN PROTECT	6-77-NH50EPY0-D02-2C	
2	MAIN BOARD/CPU/7 500W/330 V24 C/PVAV/TPM W/SEK+SAFE GUARDIAN PROTECT	6-77-NH50EPY0-D02-1D	
2	MAIN BOARD/CPU/5 500W/330 V24 C/PVAV/TPM W/SEK+SAFE GUARDIAN PROTECT	6-77-NH50EPY0-D02-1E	
2	MAIN BOARD/CPU/5 500W/330 V24 C/PVAV/TPM W/SEK+SAFE GUARDIAN PROTECT	6-77-NH50EPY0-D02-2E	
3	SCREW M2.5x4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B112S-4RA	
4	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS	6-85-D511T-S04	OPTION
4	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS	6-85-D515B-S0A	OPTION
4	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS	6-85-D51R6-S0A	OPTION
4	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS 技嘉	6-985-NH5PQ-002-G	FOR 技嘉
4	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS 技嘉	6-985-NH5PQ-001-G	FOR 技嘉
5	SCREW M2x2L KI NI ICT NY (D=4.5,T=0.8)	6-35-B1120-2RA	
6	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS	6-85-D511T-S04	OPTION
6	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS	6-85-D515B-S0A	OPTION
6	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS	6-85-D51R6-S0A	OPTION
6	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS 技嘉	6-985-NH5PQ-002-G	FOR 技嘉
6	SSD RE 250 GB 500MBPS NVMe PCIe 4.0 3D TLC 96 LAYERS 技嘉	6-985-NH5PQ-001-G	FOR 技嘉
7	CPU/VGA THERMAL MODULE (MP)NH55ER0	6-31-NH55N-RA1	
8	THERMAL PAD M4500T (14.7x14.7x7.0)MM NH50AC	6-48-NH5AS-010	FOR W/ 1ST M2 SSD
9	CPU MYLAR AMD FPS TYPE-2 (34.6x24.6) NH50ER	6-40-NH50S-R10	
10	GN20 MYLAR E5-E7 PC50DS	6-40-X17K0-010	FOR NH50ER/EPY0-Y
10	GN20 MYLAR E3 PC50DS	6-40-X17K0-020	FOR NH50EPY0-Y
11	SCREW M2x4L KI NI ICT NY (D=4.5,T=0.8)	6-35-B1120-4RC	
12	SCREW M2.5x6L K BZ ICT NY	6-35-B212S-6RA	
13	EMI ABSORBER E5 51x19 NH50ER	6-47-NH502-R30	
14	EMI ABSORBER 62x56 NH50ER	6-47-NH502-R40	
15	RAM 8GB DDR4 3200MHz 1.2V E5 51x19 NH50ER	6-88-N15CF-4210	OPTION
15	RAM 8GB DDR4 3200MHz 1.2V E5 51x19 NH50ER	6-88-P75FF-4210	OPTION
15	RAM 8GB DDR4 3200MHz 1.2V E5 51x19 NH50ER	6-88-NL5RF-7000	OPTION
15	RAM 8GB DDR4 3200MHz 1.2V E5 51x19 NH50ER	6-988-N15CF-4210-G	FOR 技嘉
15	RAM 8GB DDR4 3200MHz 1.2V E5 51x19 NH50ER	6-88-X17KF-4210	OPTION
16	DATA 20MM 3V 220MM V-CABLE 50MM (302823235)NH50ER	6-23-22015-TE0	
17	TAPE MYLAR (C)MYLAR M550J	6-40-M55J2-030	
18	THERMAL PAD M4500T (12x12x5.25) NH50ED	6-48-NH50S-010	FOR W/ 2ND M2 SSD

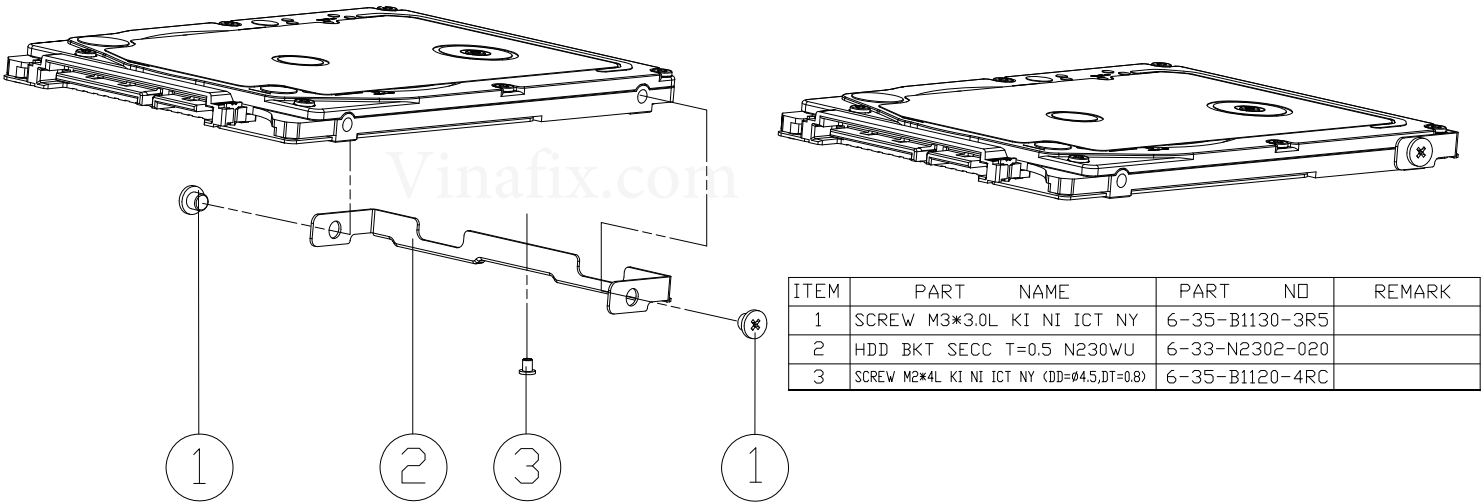
Figure A - 3
Main Board

Vinafix.com

A.Part Lists

HDD

Figure A - 4
HDD



A. Part Lists

A.Part Lists

This exploded view diagram illustrates the assembly of a ceiling-mounted projector screen. The components are numbered as follows:

- 1**: The top screen panel.
- 2**: A vertical support post.
- 3**: The top frame rail.
- 21**: A horizontal support bar.
- 4**: The bottom screen panel.
- 5**: A mounting bracket.
- 6**: A horizontal support bar.
- 7**: A vertical support post.
- 8**: A horizontal support bar.
- 9**: A vertical support post.
- 10**: A horizontal support bar.
- 14** and **19**: A horizontal support bar.
- 11** and **20**: A vertical support post.
- 12**: The bottom frame rail.
- 15**: A horizontal support bar.
- 16**: A vertical support post.
- 17**: A horizontal support bar.
- 18**: A vertical support post.
- 19** and **14**: A horizontal support bar.
- 22**: A vertical support post.

ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT CLOTH NH55EDQ	6-44-NH558-010	
2	CCD LENS PPMa (DIAMETER 3.6MM) (MP1) P970EN	6-42-P97N1-011-1	
3	LCD FRONT COVER MODULE NH50ED	6-39-NH501-014-1	
4	LCD N556 FHD/VW/VAH42/N/NDN GT/CEP PANDA LMS6LFP LED 2.6MM	6-50-LBB26-Y130	
5	LCD N556 FHD/VW/VAH44/N/NDN GT/CEP AU BESGHAM8.4 3.2MM	6-50-LBB32-Y170	
4	LCD N556 FHD/VW/VA40B2/N/NDN GT/ CEP SHARP LQSL6040S QLED 2.6MM	6-50-LBB26-A142	
4	LCD N556 FHD/VW/VA40Z5/G-5/NDN GT/CEP LG LPS646F-SPB3 LED 2.6MM	6-50-LBB26-L124	
5	WIRE CABLE FOR EDP AC 30MM (D) 3V3V 30PIN COAXIALS CONDA L0982-HD N550LU	6-43-NH5H1-010-2S	FOR 6-50-LBB26-Y130 6-50-LBB26-L124
5	COAXIAL CABLE FOR EDP 30MM 1.3V3V 30PIN C&P 2200 COAXIAL C&P L1682-ZP0 N550C	6-43-PB501-R10-N	FOR 6-50-LBB26-A142
6	CCD CABLE L-5530MM 30V 8PIN (HL) ADD MARK LABEL N55ED	6-43-NH50T-011	
7	IPC CAMERA CABLE FIBER OPTIC 10 M IN 8P50V 8P60V FIBER WHITE LED VHS MEMBER 1000MM WITH FIBER	6-88-N15ZC-5100	OPTION
7	IPC CAMERA CABLE FIBER OPTIC 10 M IN 8P50V 8P60V FIBER WHITE LED VHS MEMBER 1000MM WITH FIBER	6-88-N15ZC-4900	OPTION
7	IPC CAMERA CABLE FIBER OPTIC 10000MM 10 M IN 8P50V 8P60V FIBER WHITE LED	6-88-N15ZC-5102	OPTION
8	.SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
9	SCREW M2.5*2.5L KI BK/Z ICT NY(08,T=0.6)	6-35-B6125-2R5	
10	HINGE L MODULE NH58EDQ	6-33-NH581-L01	
11	LCD RUBBER (8*25*1.45T) SILICON BLACK NH58EDQ	6-47-NH581-041	FOR 6-50-LBB32-Y170 6-50-LBB26-A142
12	LCD BACK COVER MODULE NH58EDQ	6-39-NH581-023	
13	HINGE R MODULE NH58EDQ	6-33-NH581-R01	
14	LCD LALA SPONG (35*10*1.35T) FM92822X/CR4832 NH58EDQ	6-47-0019A-35P-1	
15	LCD LALA SPONG (35*10*1.20T) FM92822X/CR4832 NH58EDQ	6-47-0019A-35Q-1	FOR 6-50-LBB26-L124 6-50-LBB26-Y130
16	MYLAR(7*6*0.15MM)BLACK FOR P640RF	6-40-00150-760	
17	TOP CASE MYLAR FR83 25*7*0.05 P180HM	6-40-P1802-030	
18	SCREW M2.5*4L (D=4.6,T=0.8) KI NI ICT NY	6-35-B1125-4RA	
19	LCD LALA SPONG (35*10*1.75T) FM92822X/CR4832 NH58EDQ	6-47-0019A-35R-1	FOR 6-50-LBB32-Y170
20	LCD RUBBER (8*25*1.45T) SILICON BLACK NH58EDQ	6-47-NH581-041	FOR 6-50-LBB26-L124 6-50-LBB26-Y130
21	FRONT COVER GLUE U60 ONTTO 5000 135*30*0.5 FOR W555S2	6-40-W5551-040	
22	LCD RUBBER (8*25*1.2T) SILICON BLACK NH58EDQ	6-47-NH581-051	

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *NH55ERQ/NH58ERQ/NH55EPY/NH58EPY* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
<i>System Block Diagram - Page B - 2</i>	<i>Frame Buffer D - Page B - 25</i>	<i>RGB KB, Fan - Page B - 48</i>
<i>Processor 1/10 - Page B - 3</i>	<i>GPU Decoupling 1 - Page B - 26</i>	<i>5V, 5VS, 3.3V, 3.3VS, 1.2VS, 1.5VS - Page B - 49</i>
<i>Processor 2/10 - Page B - 4</i>	<i>GPU Decoupling 2 - Page B - 27</i>	<i>VDD3, VDD5 - Page B - 50</i>
<i>Processor 3/10 - Page B - 5</i>	<i>Straps and XTAL - Page B - 28</i>	<i>VDDPS, 1.8V, 1.8VS - Page B - 51</i>
<i>Processor 4/10 - Page B - 6</i>	<i>IFP I/O Interface - Page B - 29</i>	<i>VDDQ, VDDQ_VTT - Page B - 52</i>
<i>Processor 5/10 - Page B - 7</i>	<i>Misc - GPIO, I2C and ROM - Page B - 30</i>	<i>VCore - Page B - 53</i>
<i>Processor 6/10 - Page B - 8</i>	<i>NVIDIA Power Sequence - Page B - 31</i>	<i>VDDCR, VDDCR_SOC - Page B - 54</i>
<i>Processor 7/10 - Page B - 9</i>	<i>GPU NVVDD, FBVDDQ - Page B - 32</i>	<i>VDDP - Page B - 55</i>
<i>Processor 8/10 - Page B - 10</i>	<i>GPU GND - Page B - 33</i>	<i>AC_In, Charger - Page B - 56</i>
<i>Processor 9/10 - Page B - 11</i>	<i>Panel, Inverter - Page B - 34</i>	<i>IV8_AON, NV3V3 - Page B - 57</i>
<i>Processor 10/10 - Page B - 12</i>	<i>mDP - Page B - 35</i>	<i>NVVDD1 - Page B - 58</i>
<i>DDR4 CHA SO-DIMM - Page B - 13</i>	<i>HDMI - Page B - 36</i>	<i>NVVDD2 - Page B - 59</i>
<i>DDR4 CHB SO-DIMM - Page B - 14</i>	<i>Audio Codec - Page B - 37</i>	<i>NVVDD3 - Page B - 60</i>
<i>VGA PCI Express - Page B - 15</i>	<i>LAN RTL8125BG-CG - Page B - 38</i>	<i>PEX_VDD - Page B - 61</i>
<i>GPU Frame Buffer A/B - Page B - 16</i>	<i>Card Reader - Page B - 39</i>	<i>FBVDDQ - Page B - 62</i>
<i>Frame Buffer A - Page B - 17</i>	<i>USB ANX7440 Retimer - Page B - 40</i>	<i>OVR-M - Page B - 63</i>
<i>Frame Buffer A - Page B - 18</i>	<i>PD Controller - Page B - 41</i>	<i>NH50 PW Board - Page B - 64</i>
<i>Frame Buffer B - Page B - 19</i>	<i>USB Type-C - Page B - 42</i>	<i>NH77 PW Board - Page B - 65</i>
<i>Frame Buffer B - Page B - 20</i>	<i>M.2 PCIE 4X/SATA SSD - Page B - 43</i>	<i>NH77 Multi I/O Board 1/2 - Page B - 66</i>
<i>GPU Frame Buffer C/D - Page B - 21</i>	<i>M.2 WLAN+BT, PCIE 4X SSD - Page B - 44</i>	<i>NH77 Multi I/O Board 2/2 - Page B - 67</i>
<i>Frame Buffer C - Page B - 22</i>	<i>HDD, Click TP, Audio, Hall Con. - Page B - 45</i>	<i>LED Board - Page B - 68</i>
<i>Frame Buffer C - Page B - 23</i>	<i>LED, CCD, TPM, Power SW Con. - Page B - 46</i>	<i>Audio Board - Page B - 69</i>
<i>Frame Buffer D - Page B - 24</i>	<i>KBC-ITE IT5570 - Page B - 47</i>	<i>Click Board - Page B - 70</i>

Table B - 1
**SCHEMATIC
DIAGRAMS**

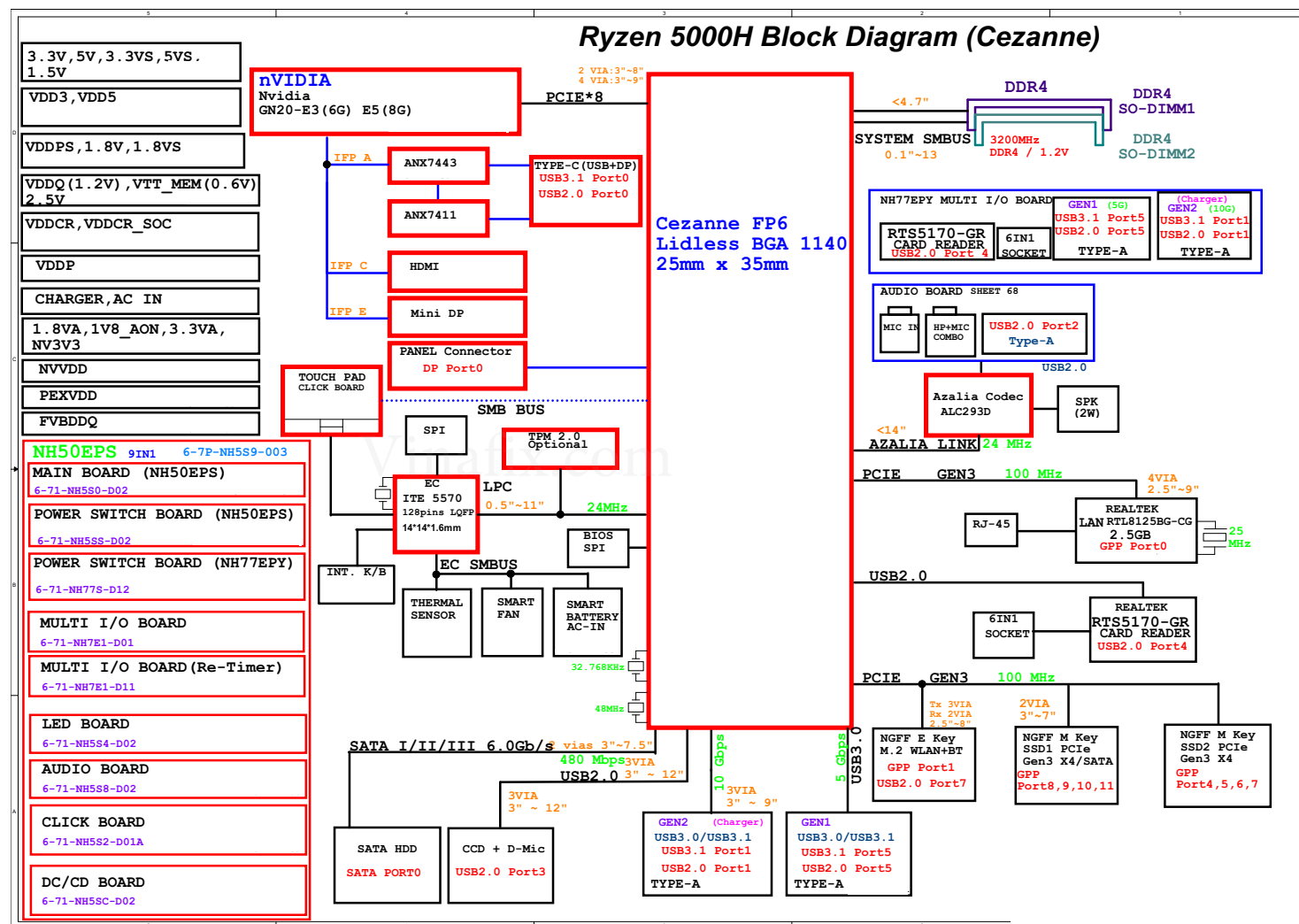


Version Note

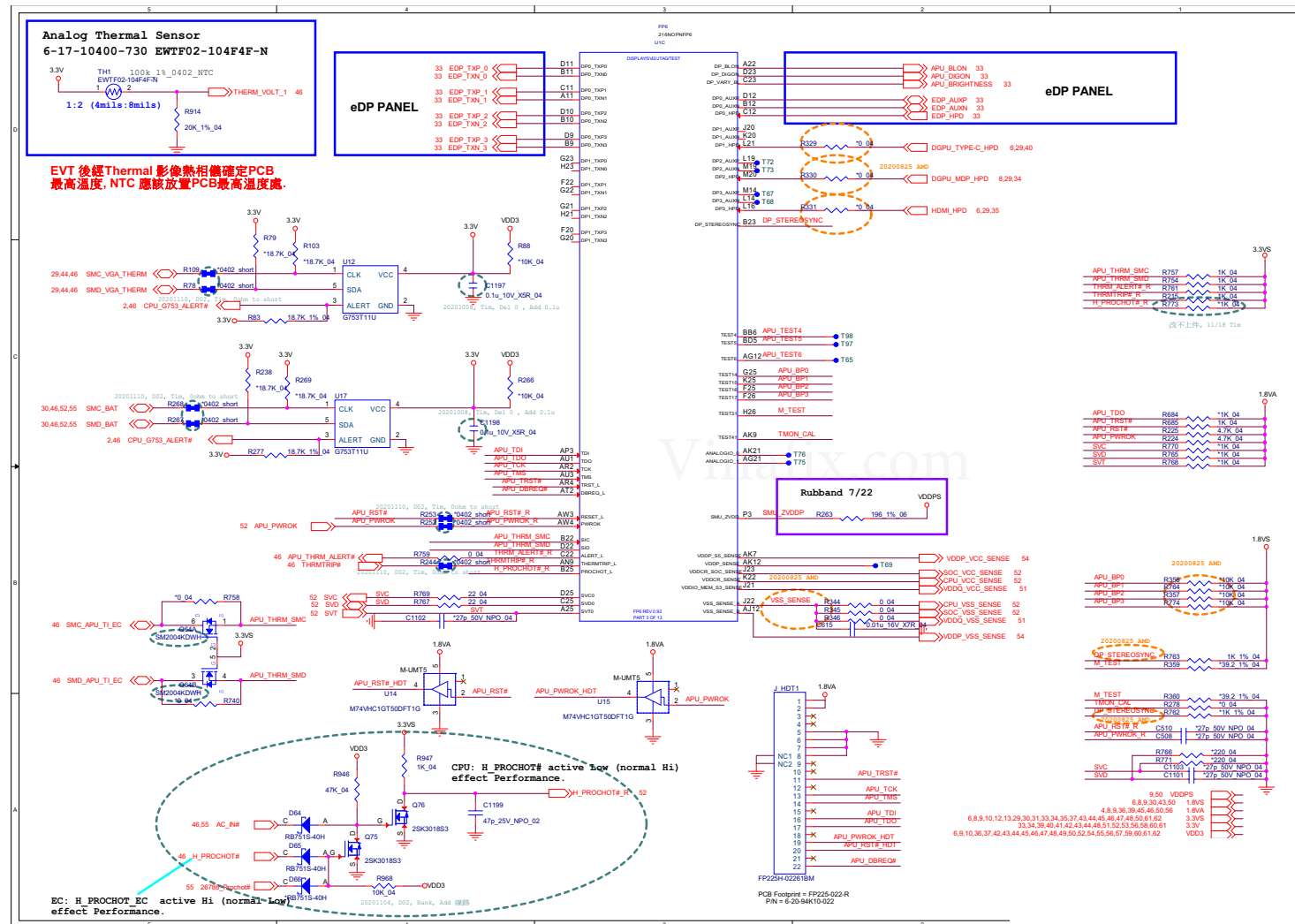
The schematic diagrams in this chapter are based upon version 6-7P-NH5S9-003. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

B.Schematic Diagrams

Sheet 1 of 71
System Block
Diagram

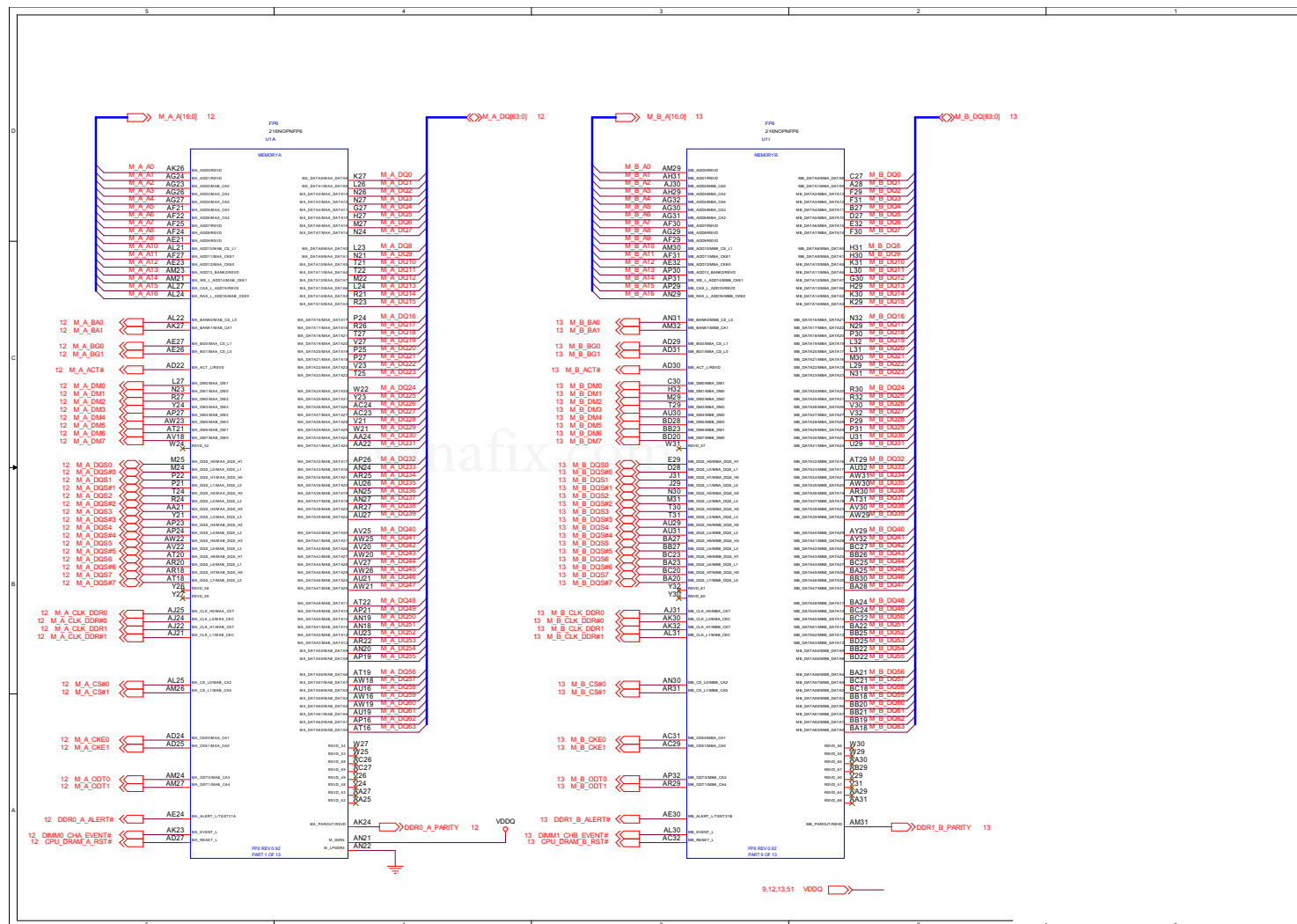


Processor 1/10 B - 3



Processor 2/10

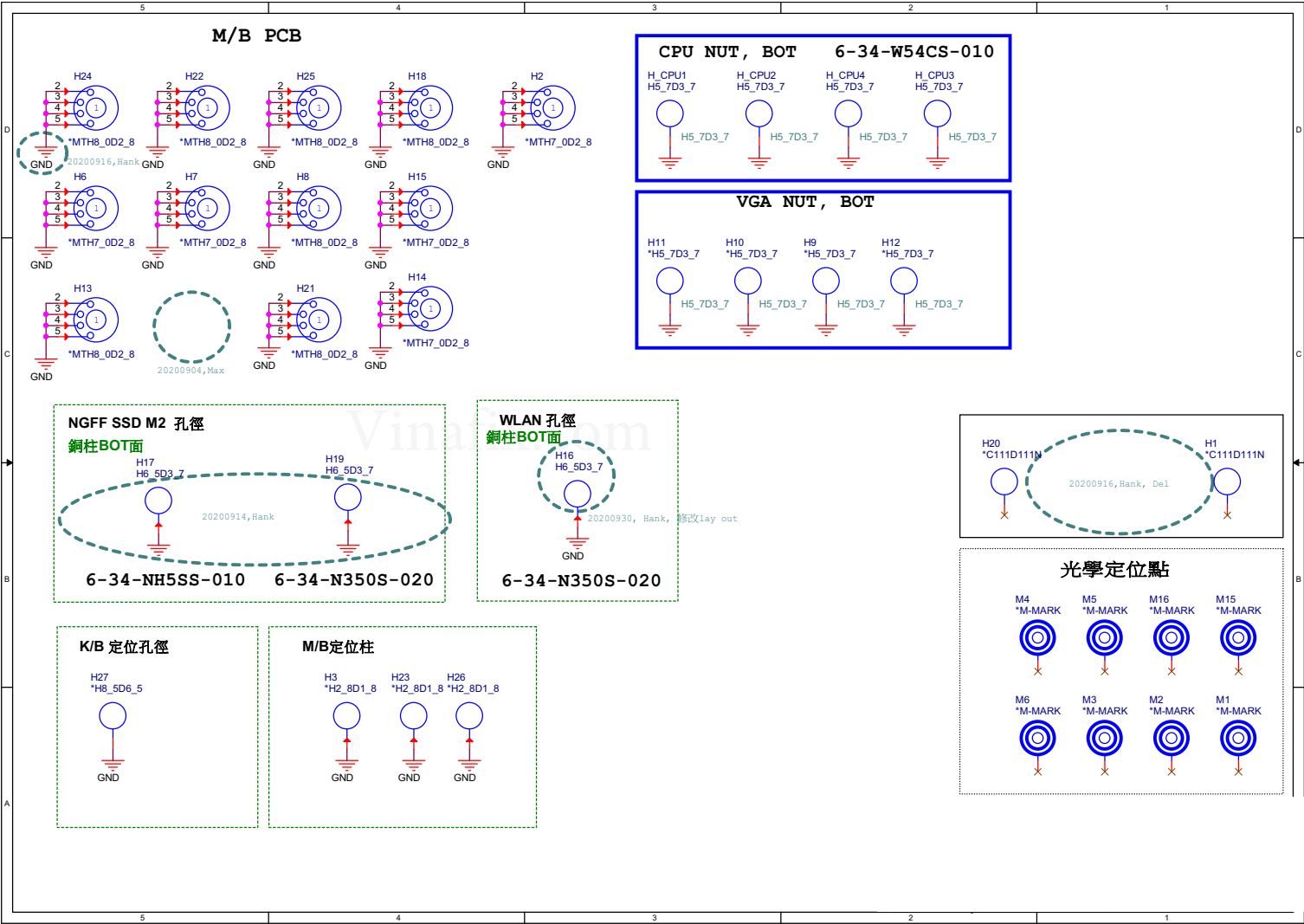
Sheet 3 of 71
Processor 2/10



Processor 3/10 B - 5



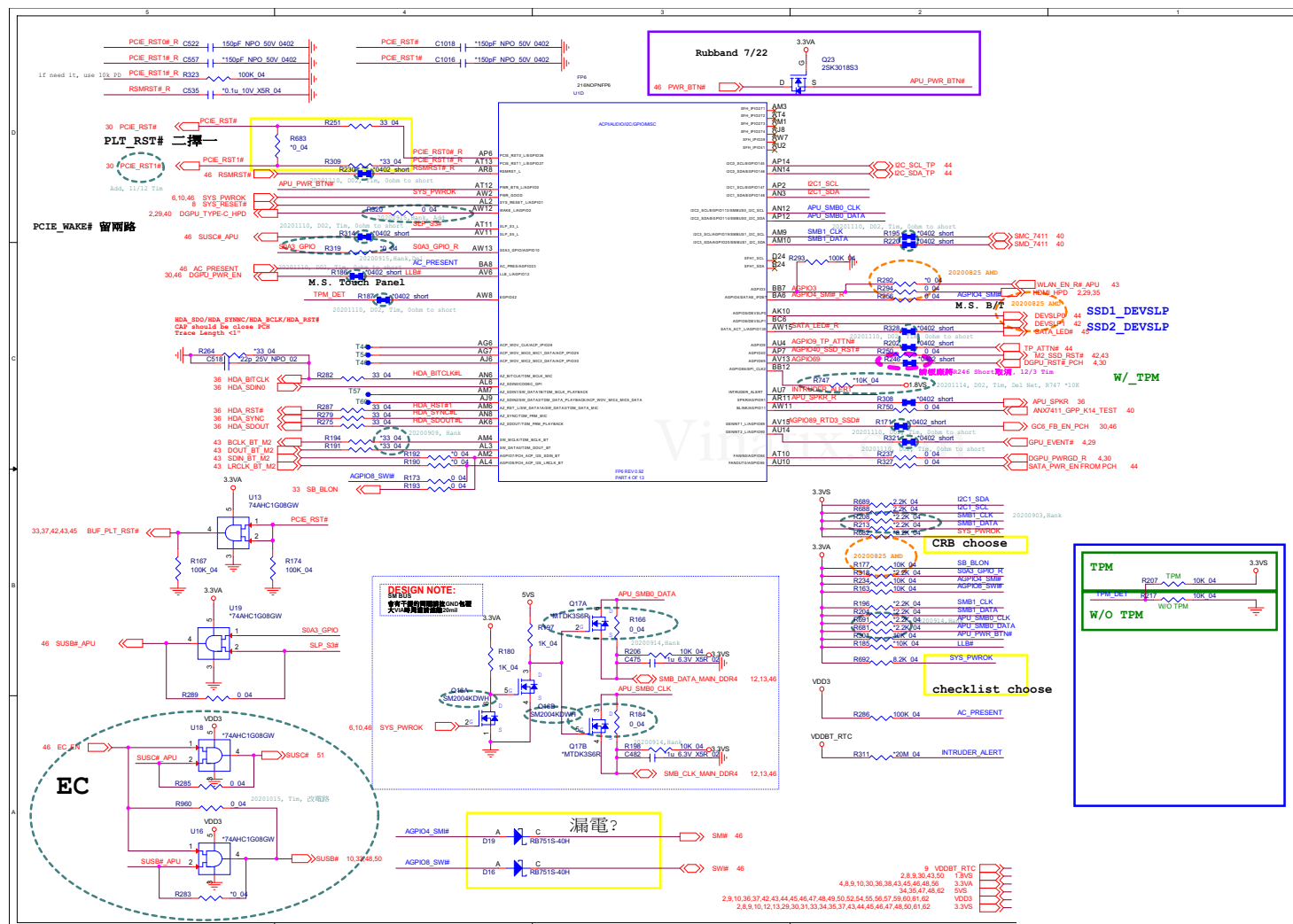
Processor 4/10



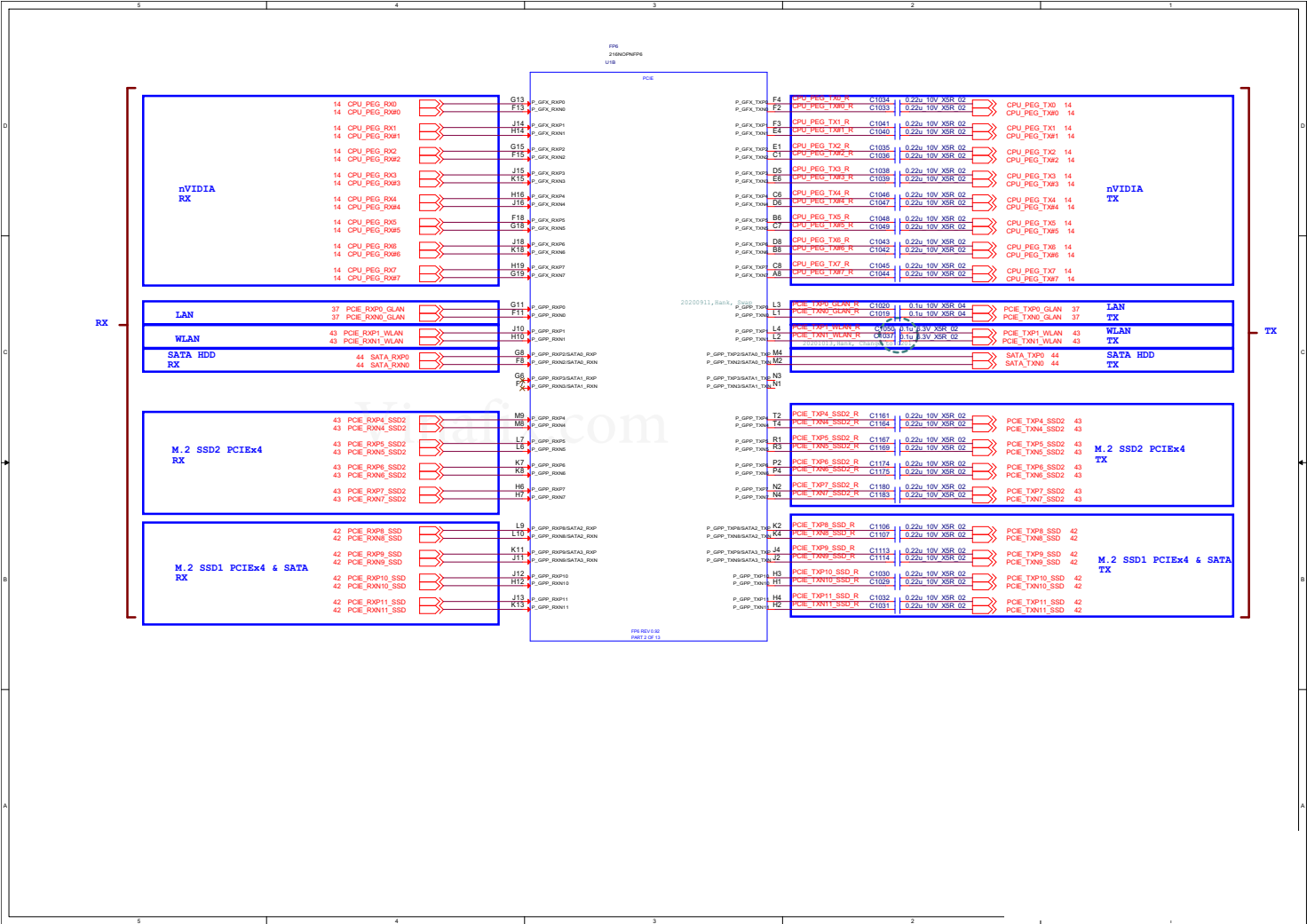
Sheet 5 of 71
Processor 4/10

B.Schematic Diagrams

Processor 5/10 B - 7



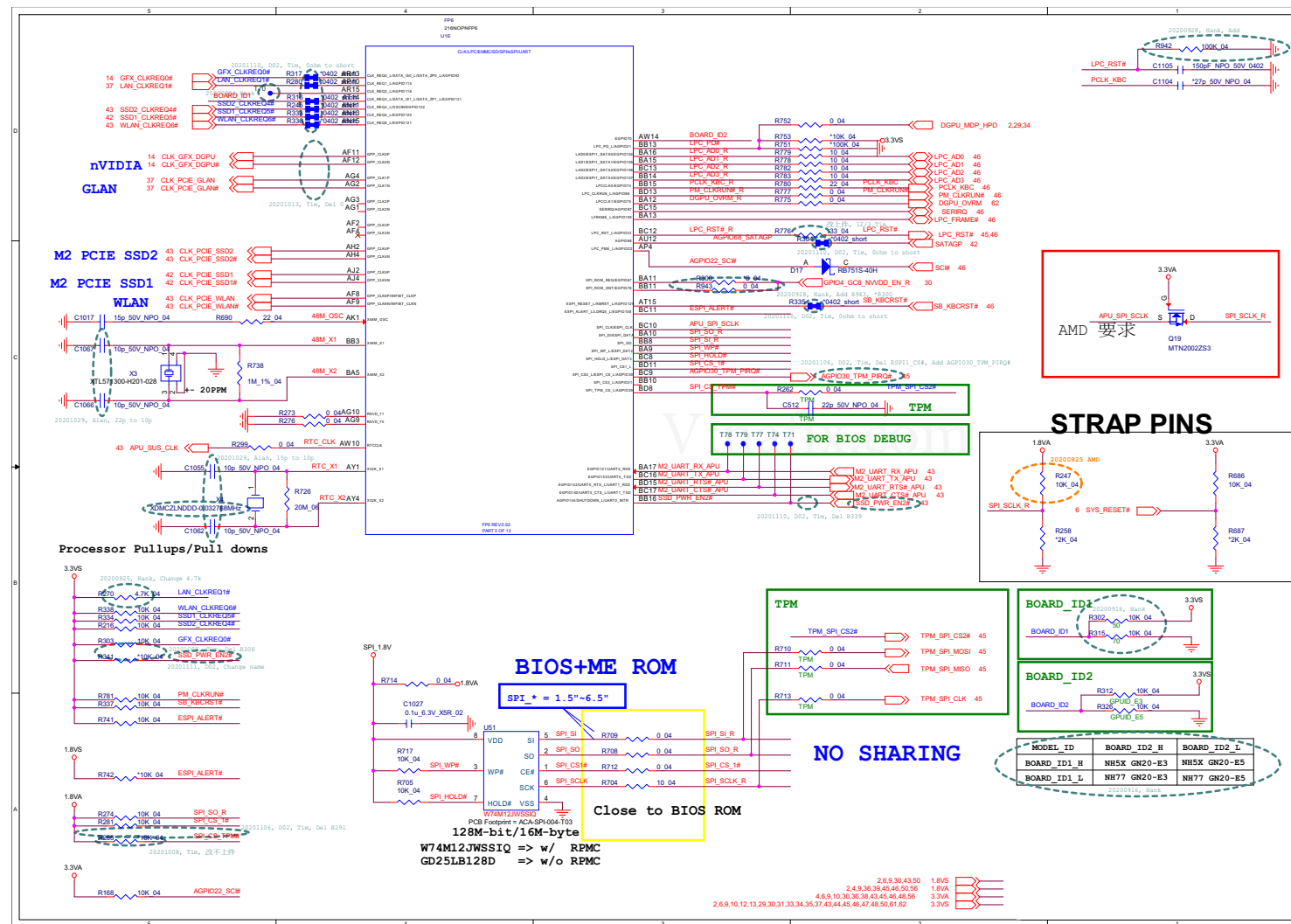
Processor 6/10



Sheet 7 of 71
Processor 6/10

B.Schematic Diagrams

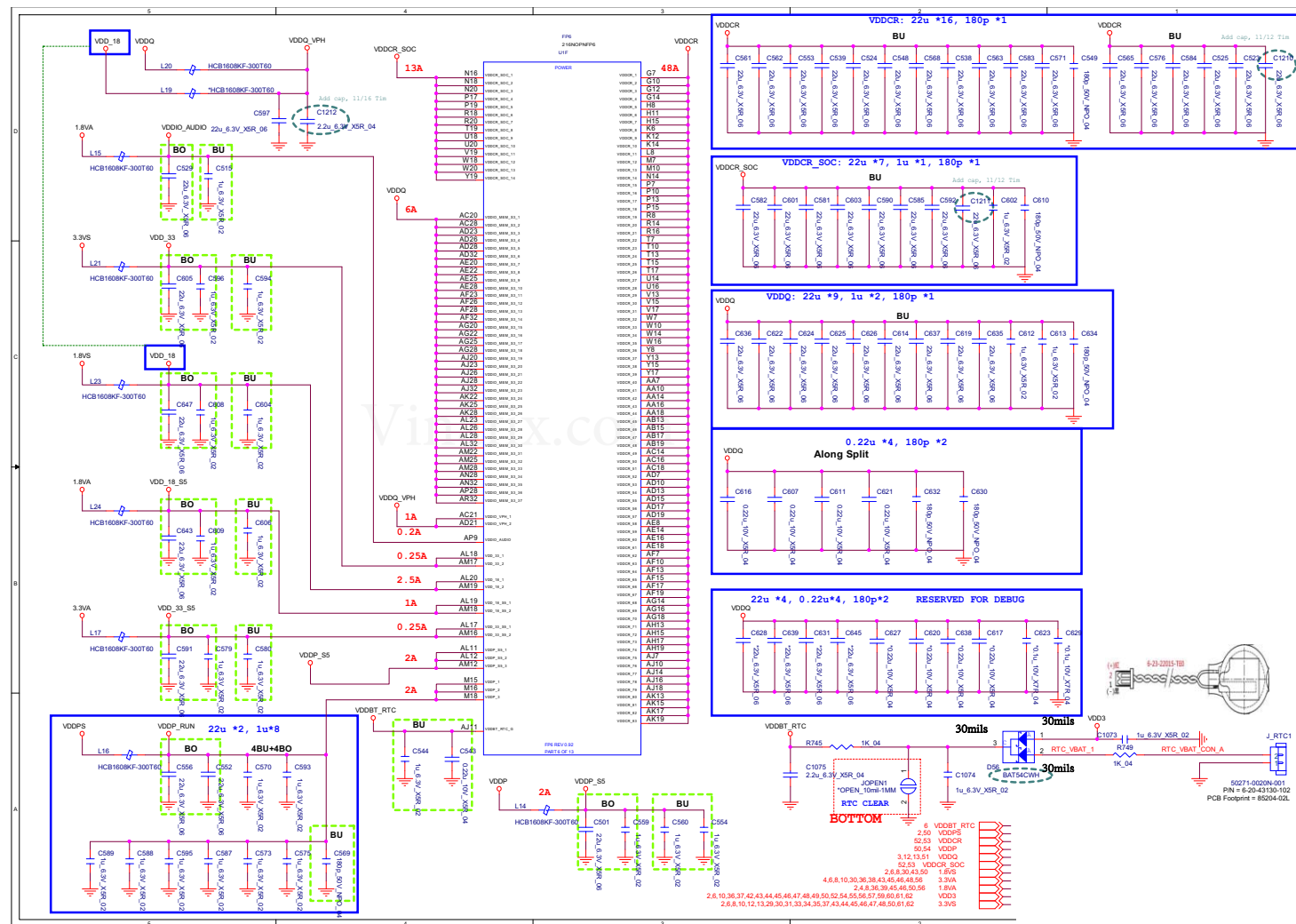
Processor 7/10



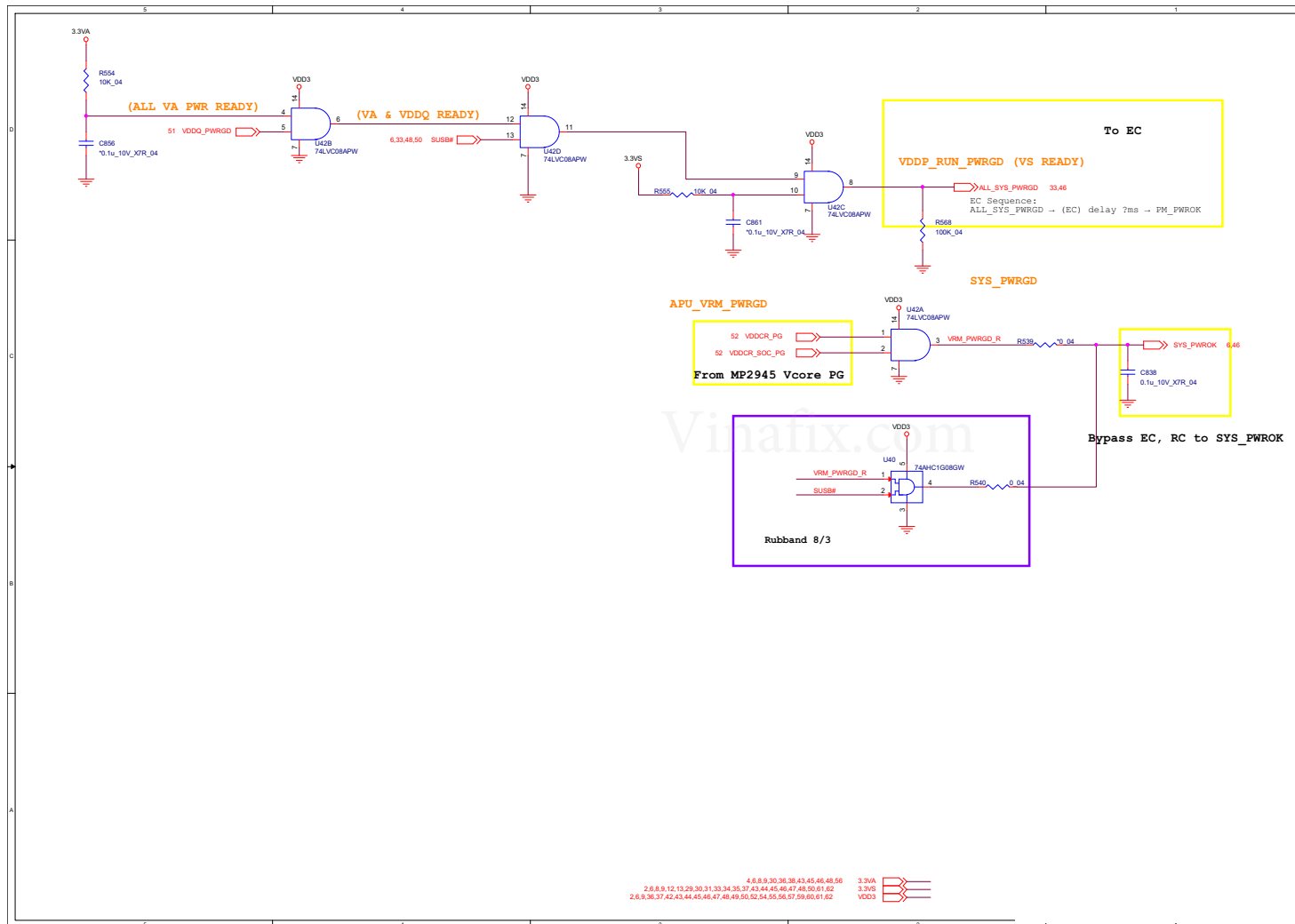
Processor 8/10

B.Schematic Diagrams

Sheet 9 of 71
Processor 8/10

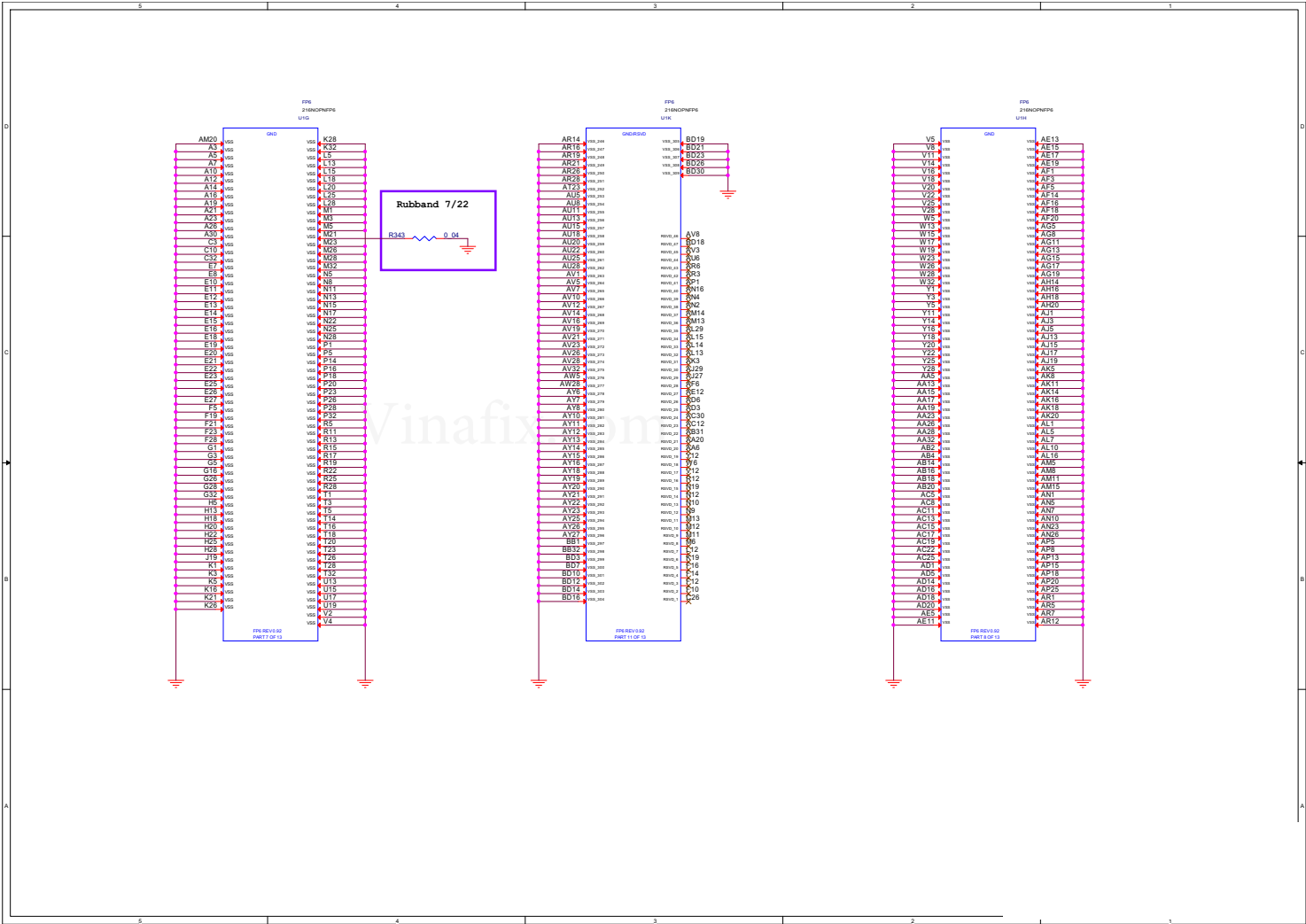


Processor 9/10

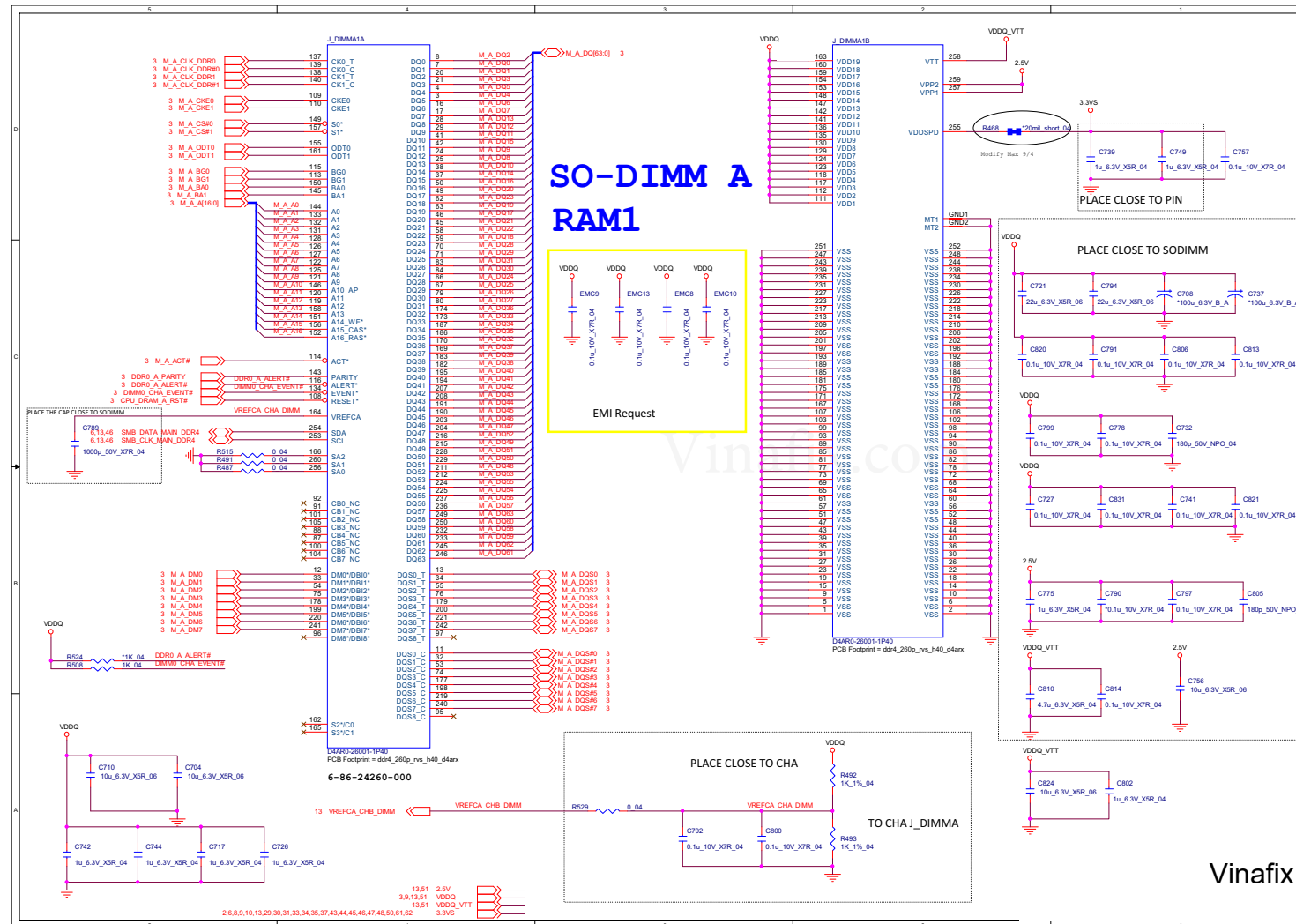


Sheet 10 of 71
Processor 9/10

Processor 10/10



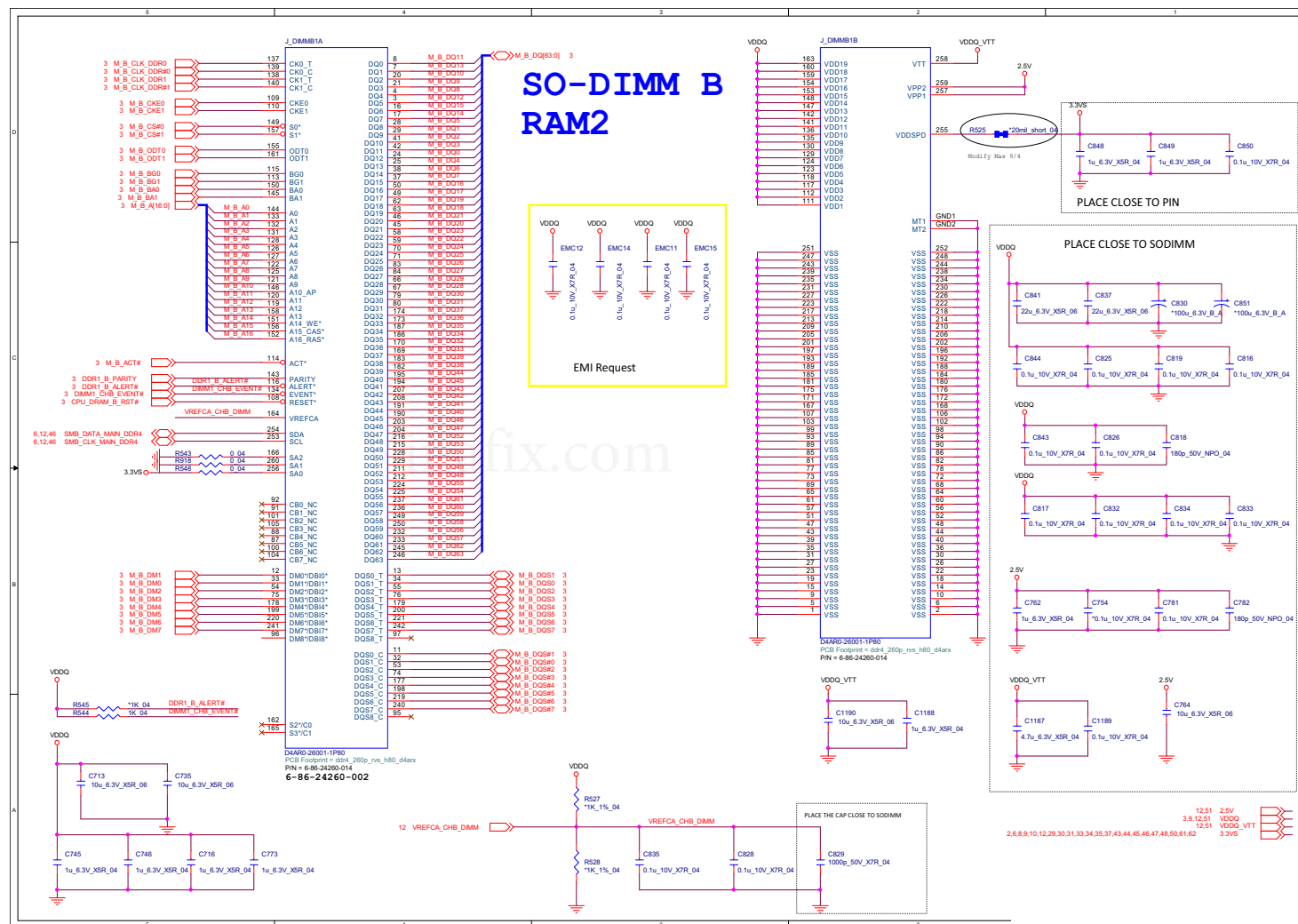
DDR4 CHA SO-DIMM



DDR4 CHB SO-DIMM

B.Schematic Diagrams

Sheet 13 of 71
DDR4 CHB SO-
DIMM



VGA PCI Express B - 15



GPU Frame Buffer A/B

Sheet 15 of 71
GPU Frame Buffer
A/B



Frame Buffer A B - 17

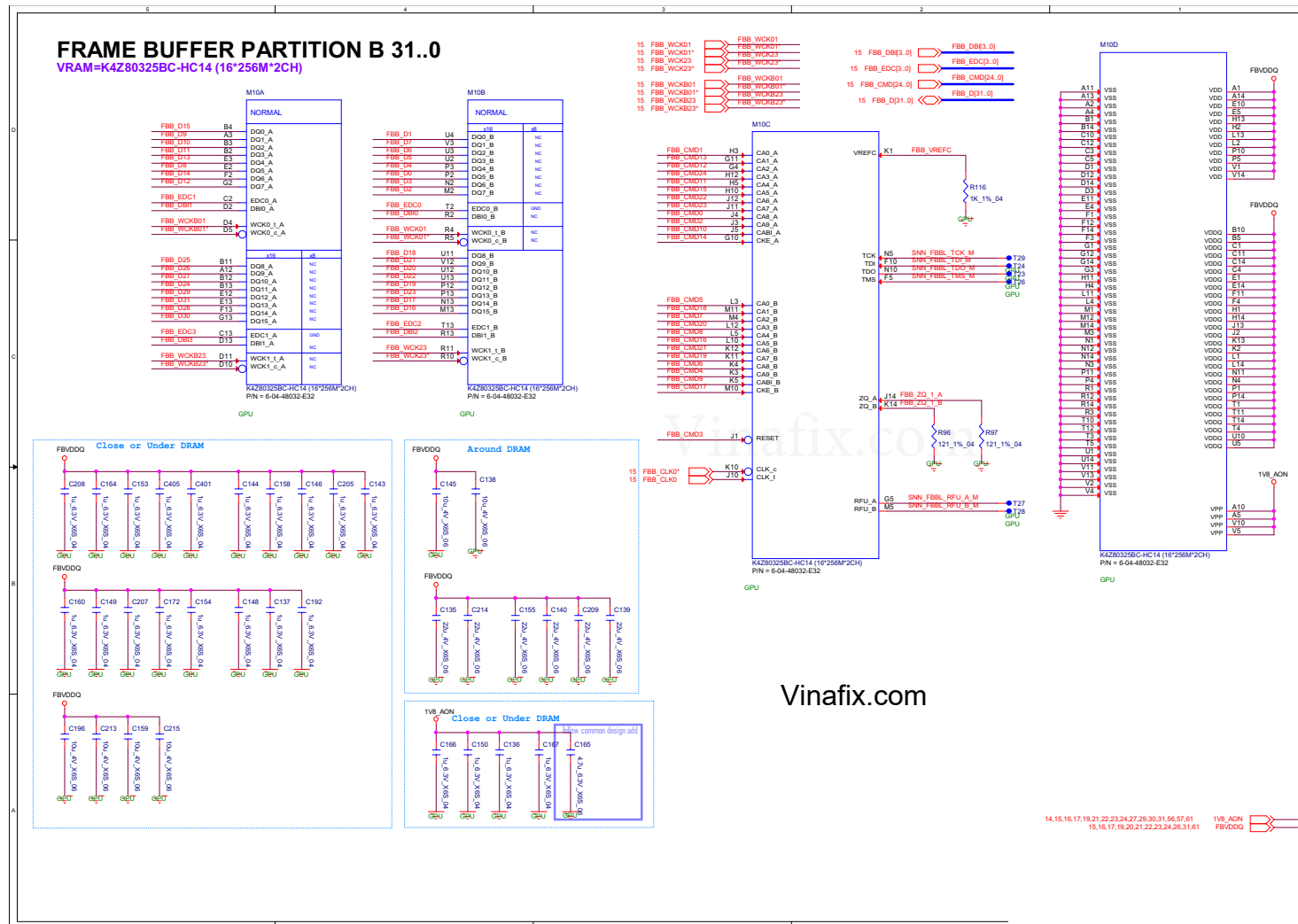


Frame Buffer A

B. Schematic Diagrams

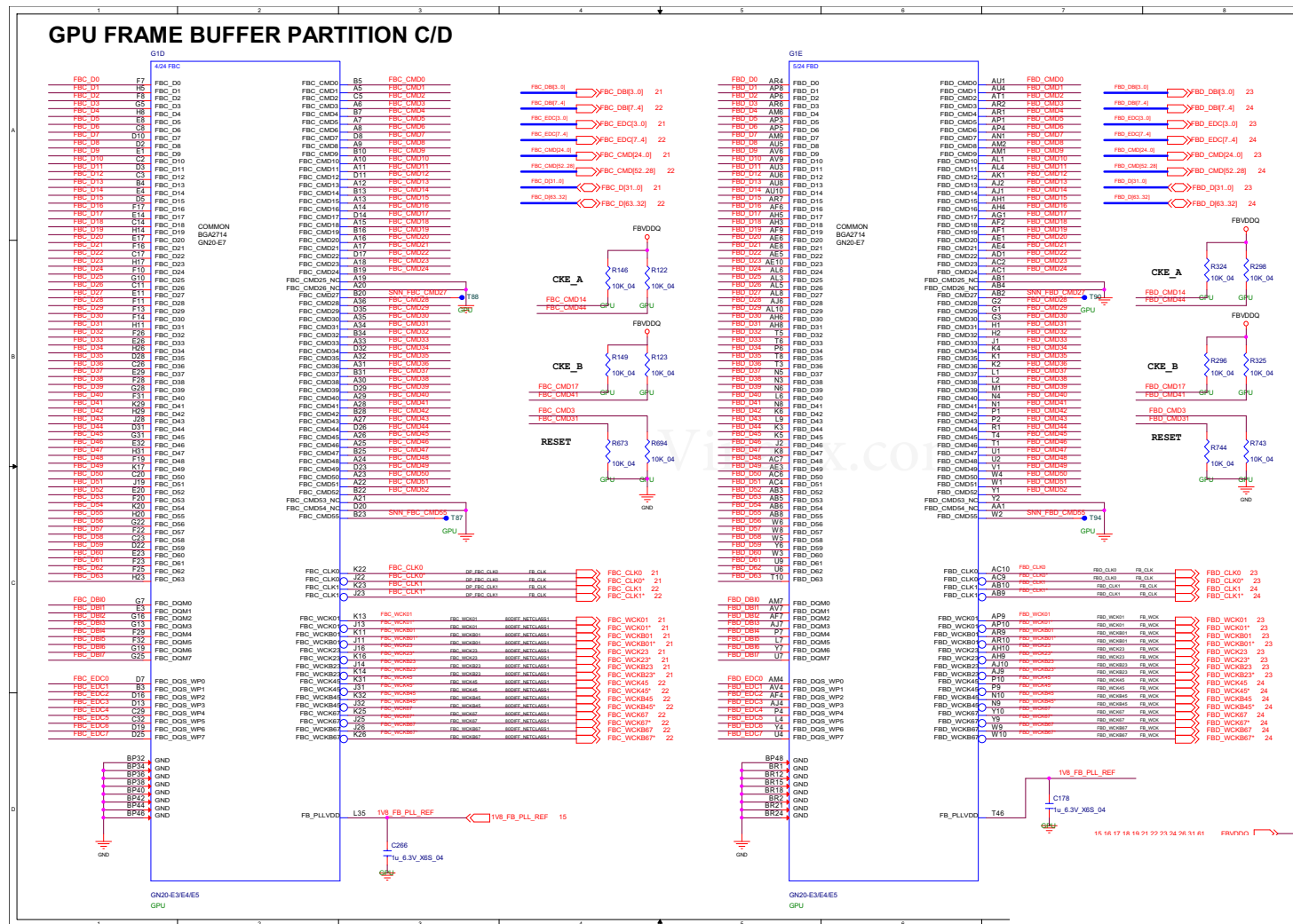
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Frame Buffer B



Sheet 19 of 71
Frame Buffer B

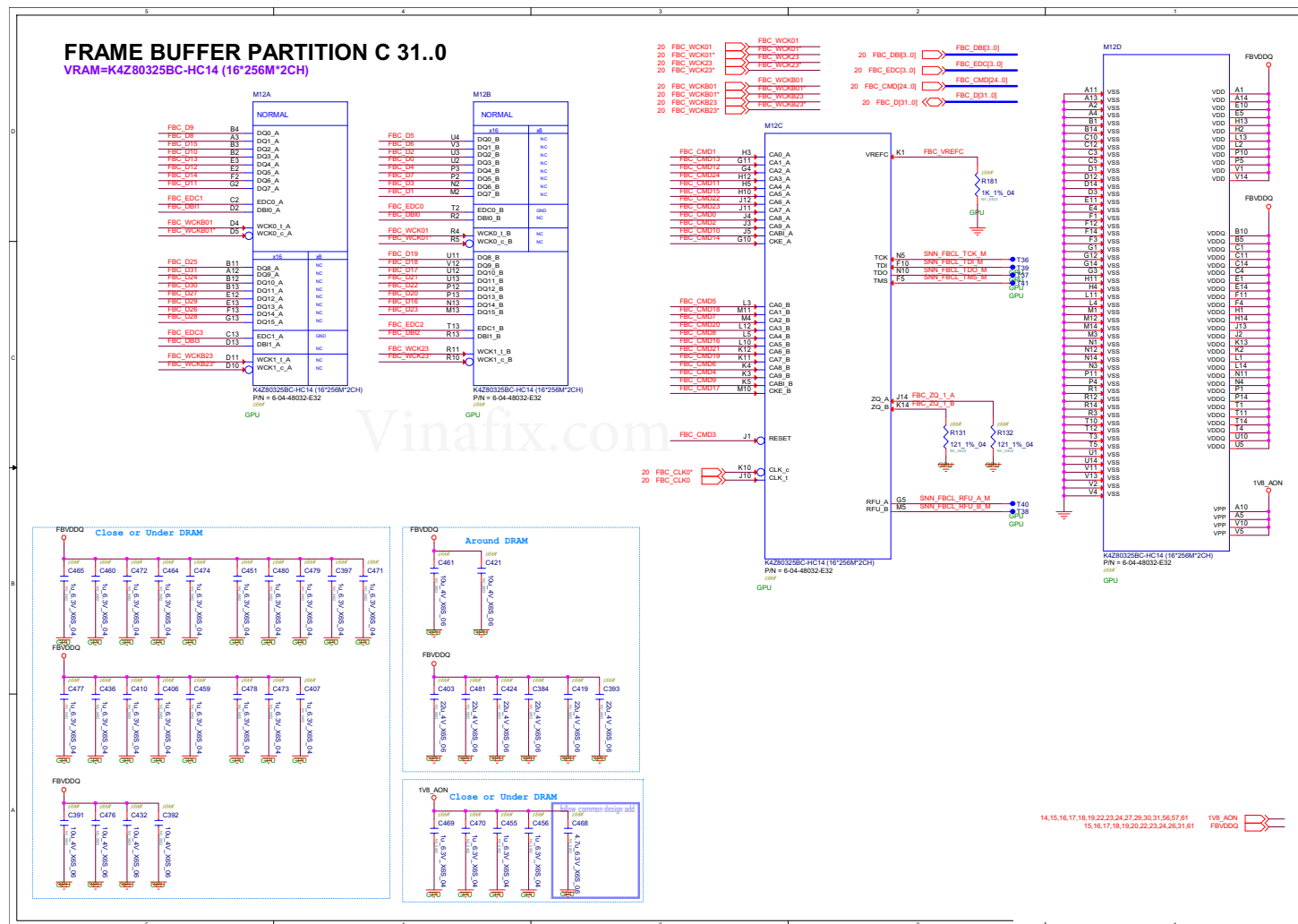




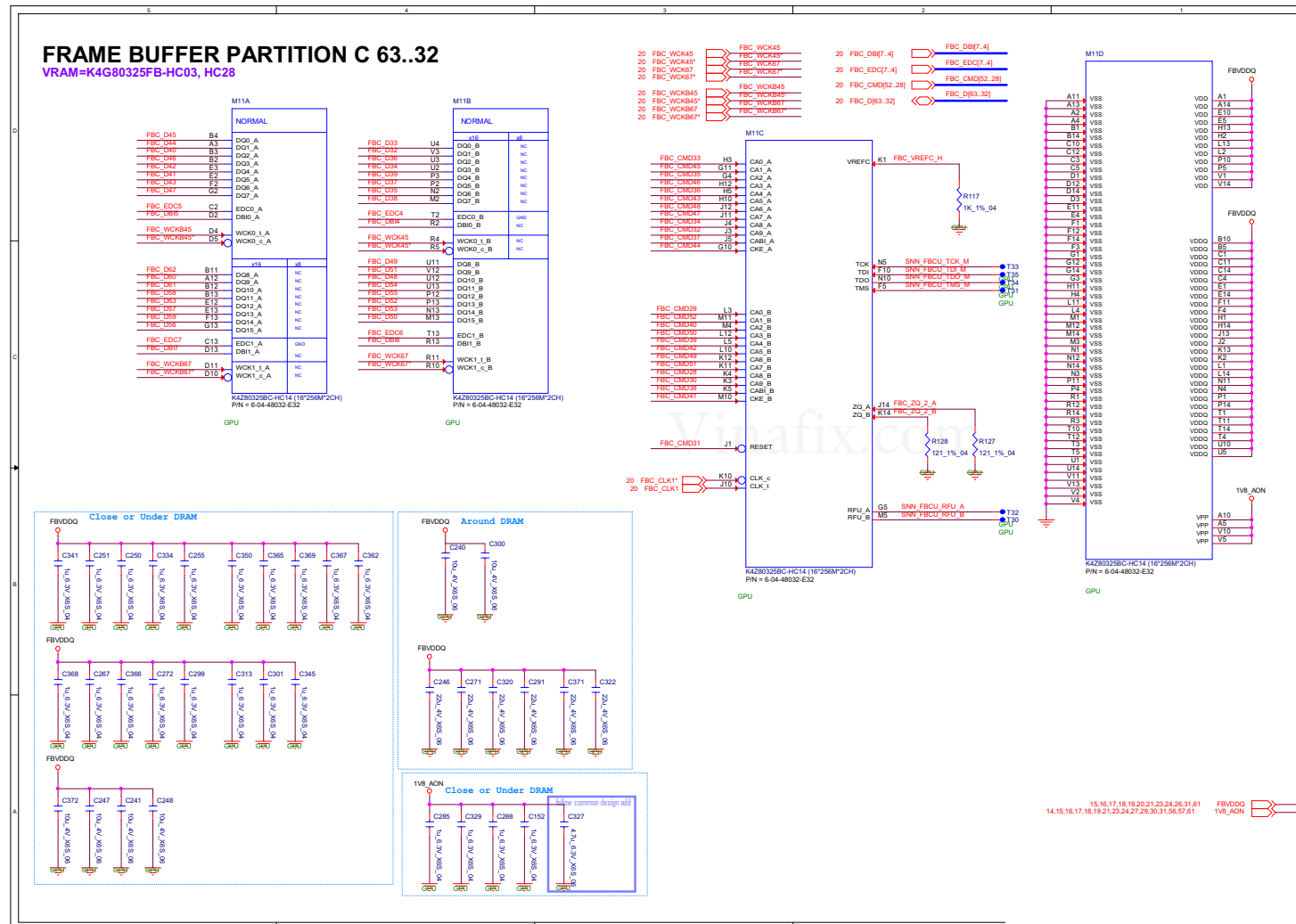
Frame Buffer C

B.Schematic Diagrams

Sheet 21 of 71
Frame Buffer C

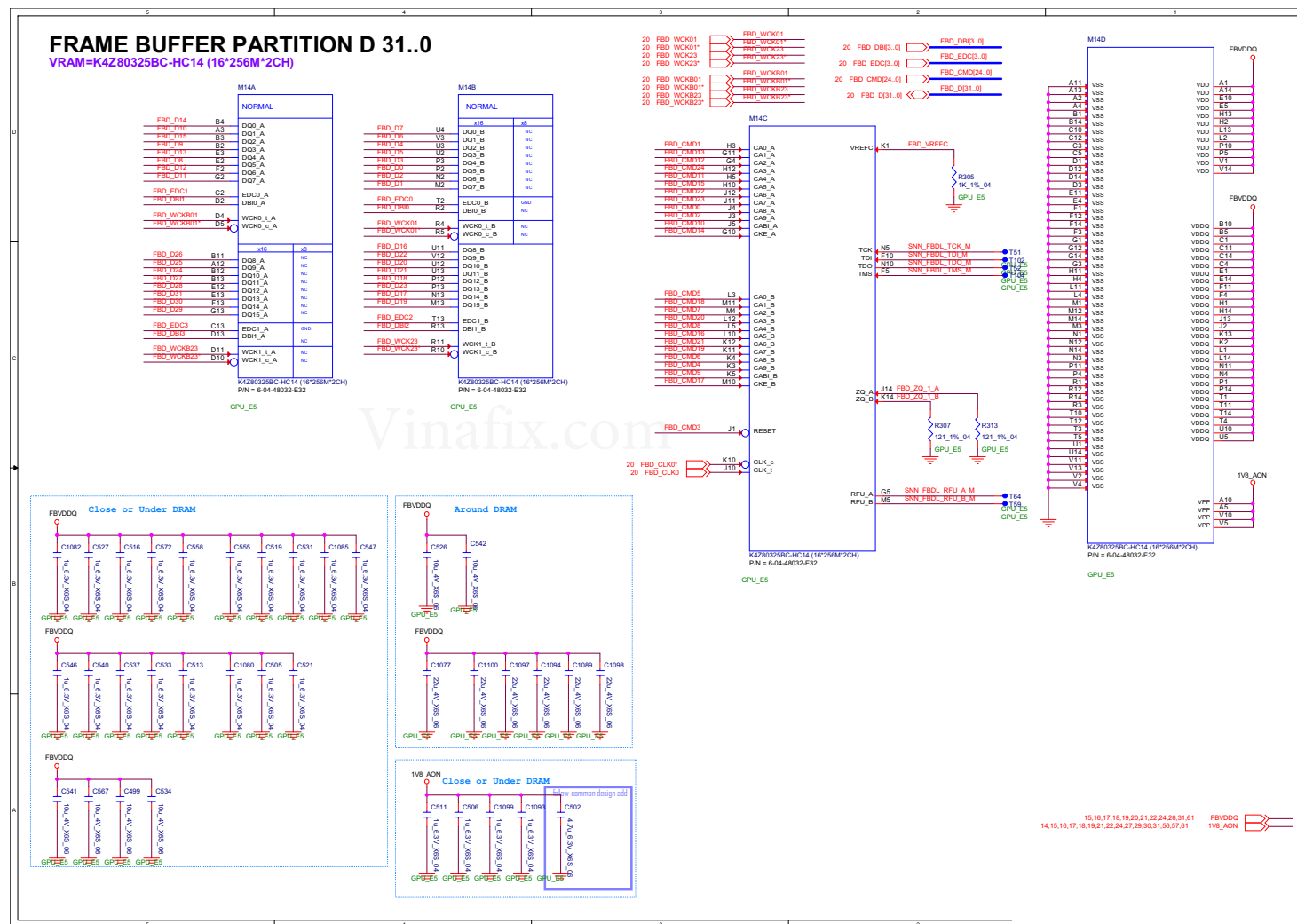


Frame Buffer C B - 23



B.Schematic Diagrams

Sheet 23 of 71
Frame Buffer D



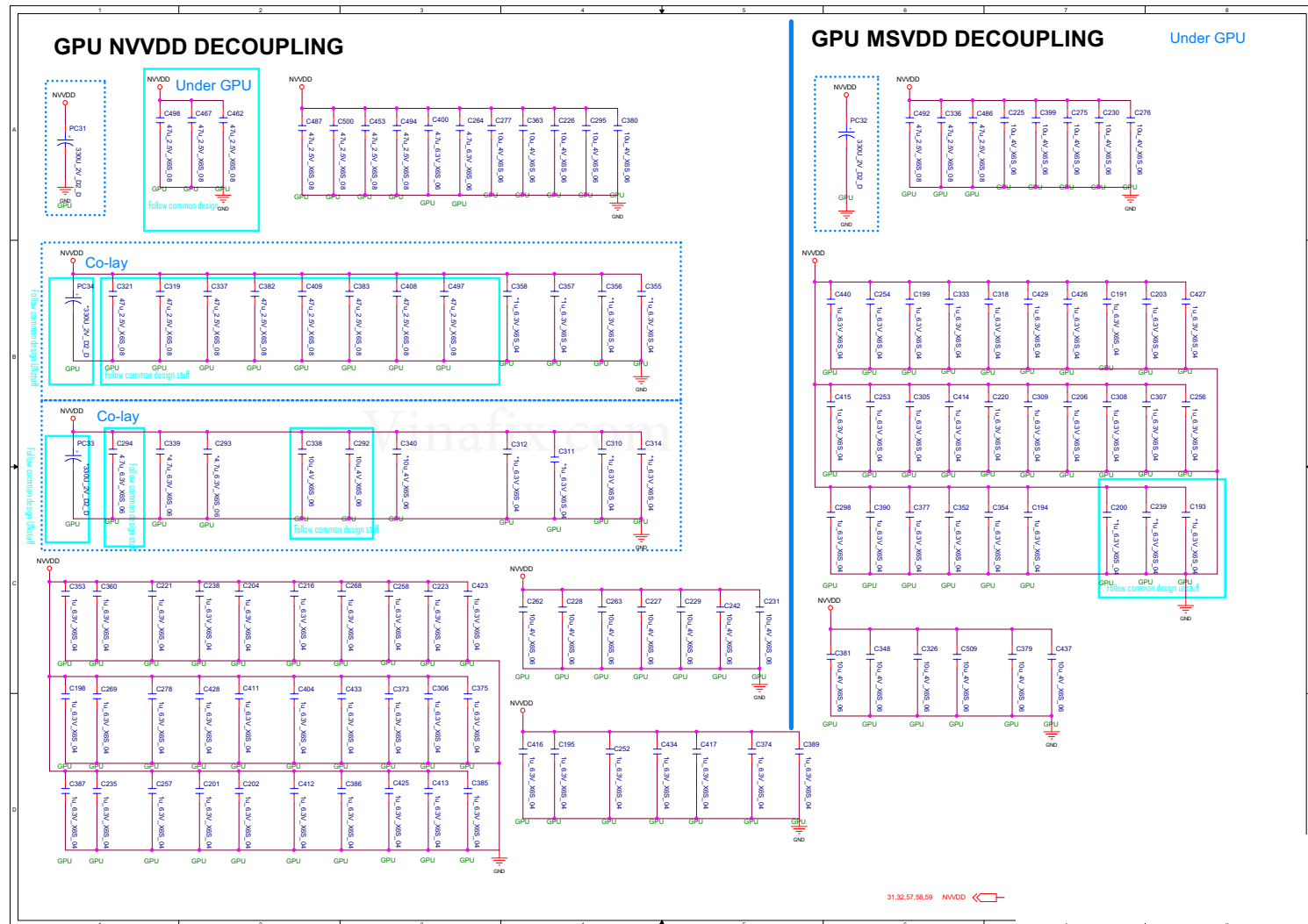
Frame Buffer D B - 25



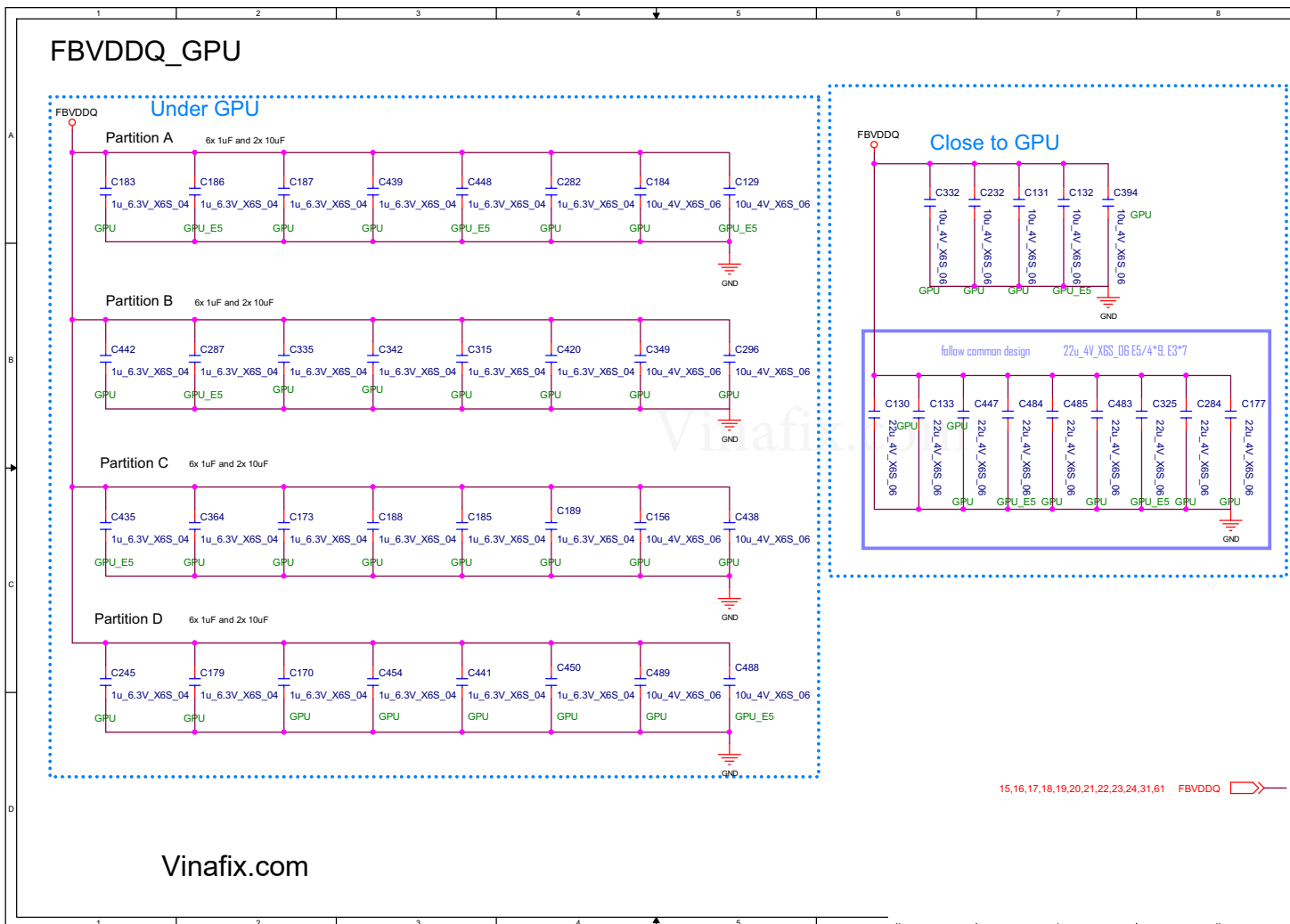
Schematic Diagrams

GPU Decoupling 1

Sheet 25 of 71
GPU Decoupling 1



GPU Decoupling 2

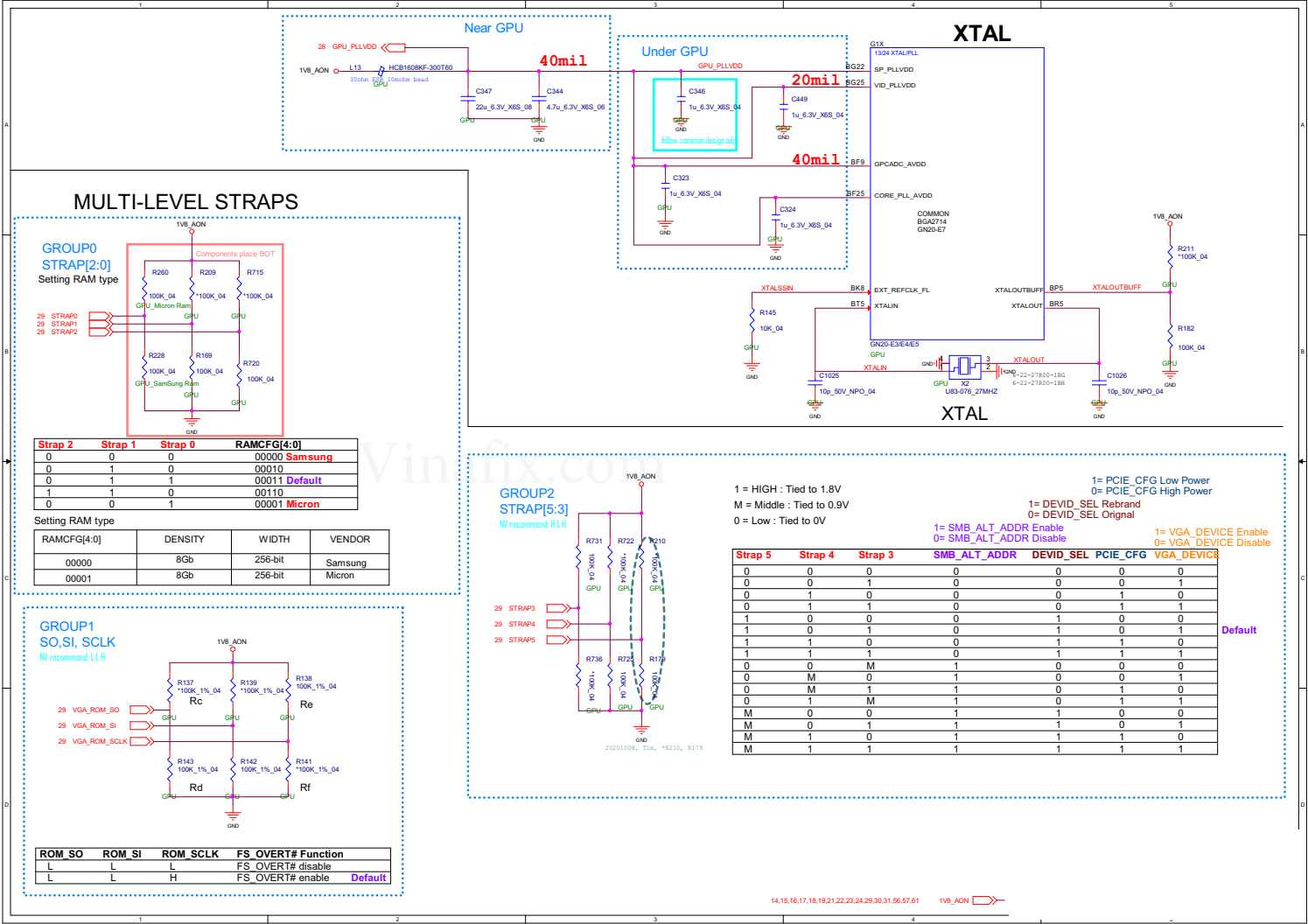


Sheet 26 of 71
GPU Decoupling 2

Schematic Diagrams

Straps and XTAL

Sheet 27 of 71
Straps and XTAL



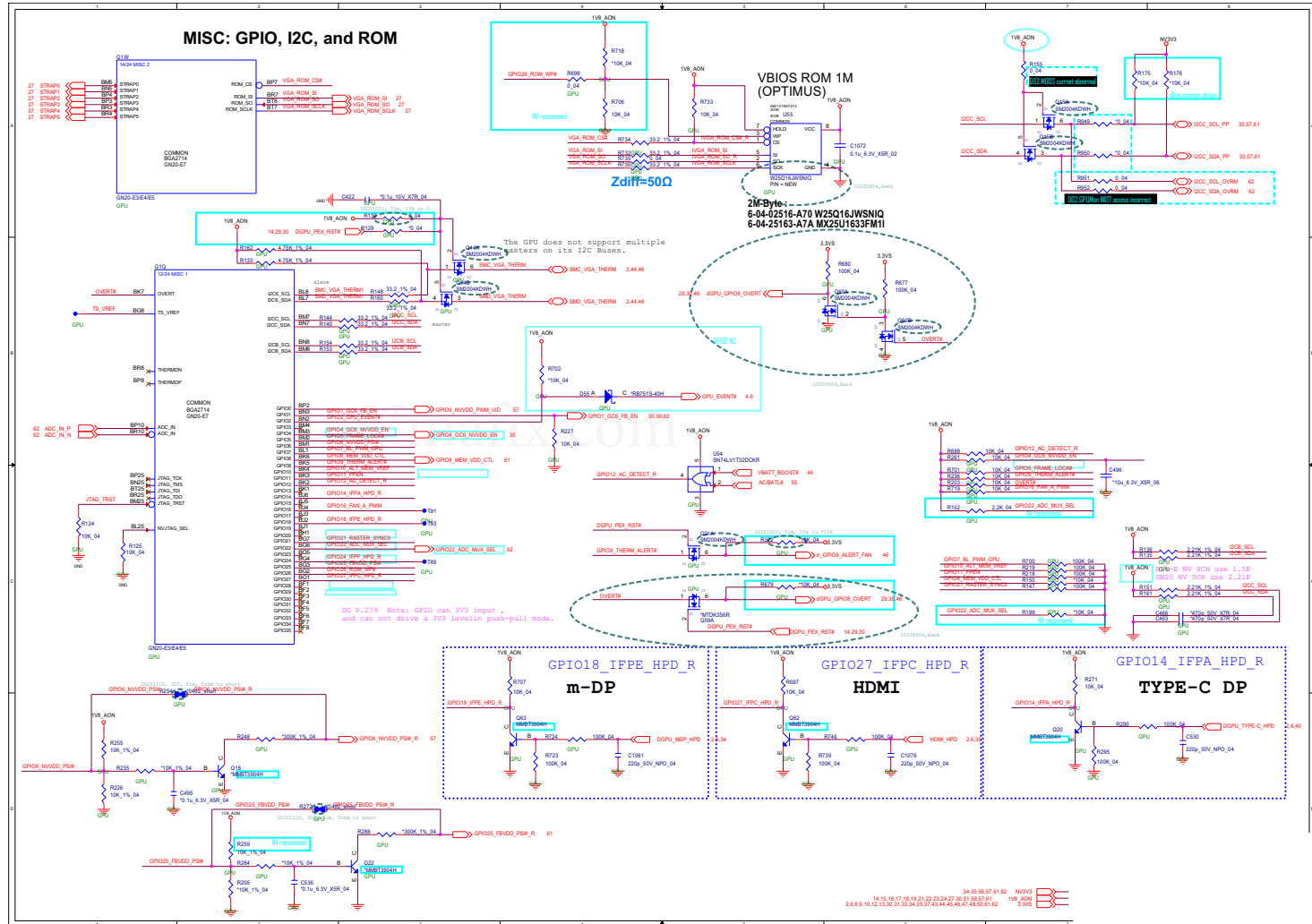
The diagram illustrates the I/F I/O interface for the BG2714 GPU, showing connections for various display and interface protocols. The main sections are:

- DP to TYPE-C**: Shows connections for DP (DisplayPort) and TYPE-C (USB-C) interfaces, including pins for SDA, SCL, TXC, TXD, and RXD.
- IFP AB**: Interface for the IFP AB (Image Processing) block, showing connections for FFA_AUX, FFA_AUX, and FFA_AUX.
- IFP C**: Interface for the IFP C (Image Processing) block, showing connections for FFA_AUX, FFA_AUX, and FFA_AUX.
- IFP D**: Interface for the IFP D (Image Processing) block, showing connections for FFA_AUX, FFA_AUX, and FFA_AUX.
- IFP E**: Interface for the IFP E (Image Processing) block, showing connections for FFA_AUX, FFA_AUX, and FFA_AUX.
- IFP F**: Interface for the IFP F (Image Processing) block, showing connections for FFA_AUX, FFA_AUX, and FFA_AUX.

The diagram also includes a watermark "Vinafix.com" and a reference to "14.32.60 PEX_VDD".

Misc - GPIO, I2C and ROM

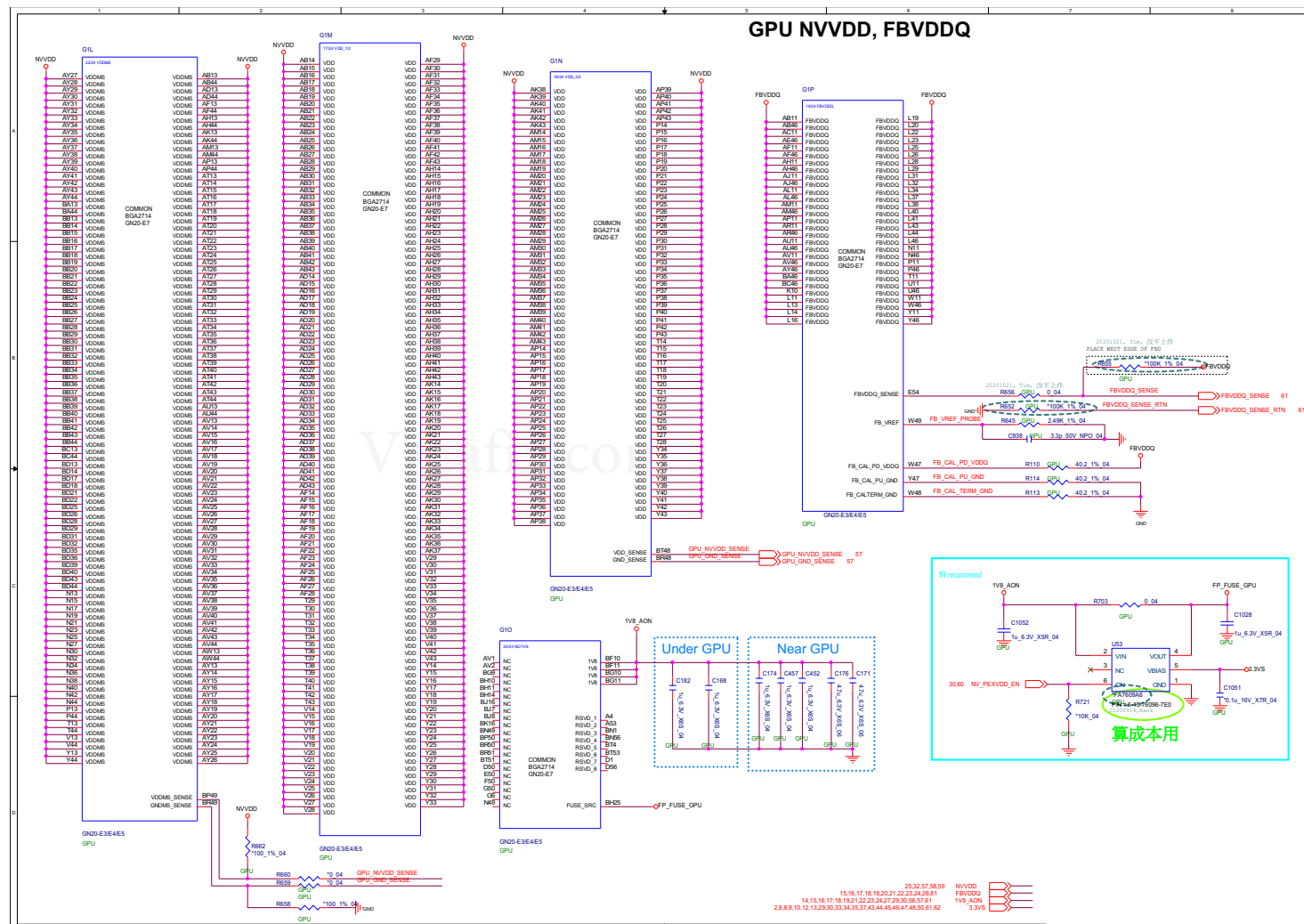
Sheet 29 of 71
Misc - GPIO, I2C,
and ROM



B.Schematic Diagrams

B.Schematic Diagrams

Sheet 31 of 71
GPU NVVDD,
FBVDDQ

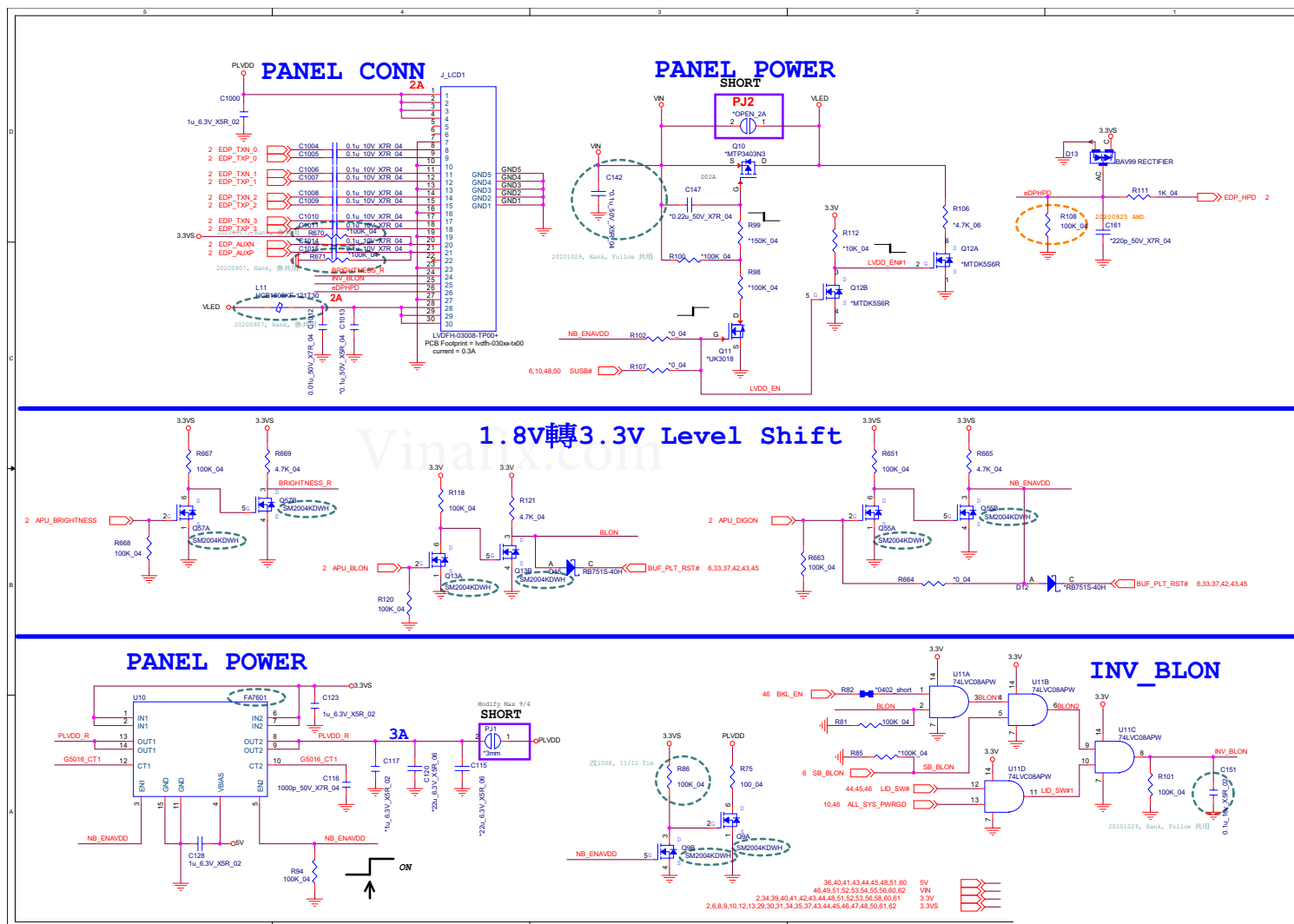


The diagram illustrates the pinout for the GPU GND section, organized into columns G1F, G1H, G1I, G1J, and G1K. Each column lists pins and their functions, such as GND, VDD, and various power planes. The diagram also shows connections to other components like the GPU, GPU-E3485, and GPU-E3486. A large 'WATER' watermark is visible across the center of the diagram.

GPU GND B - 33

Panel, Inverter

B. Schematic Diagrams

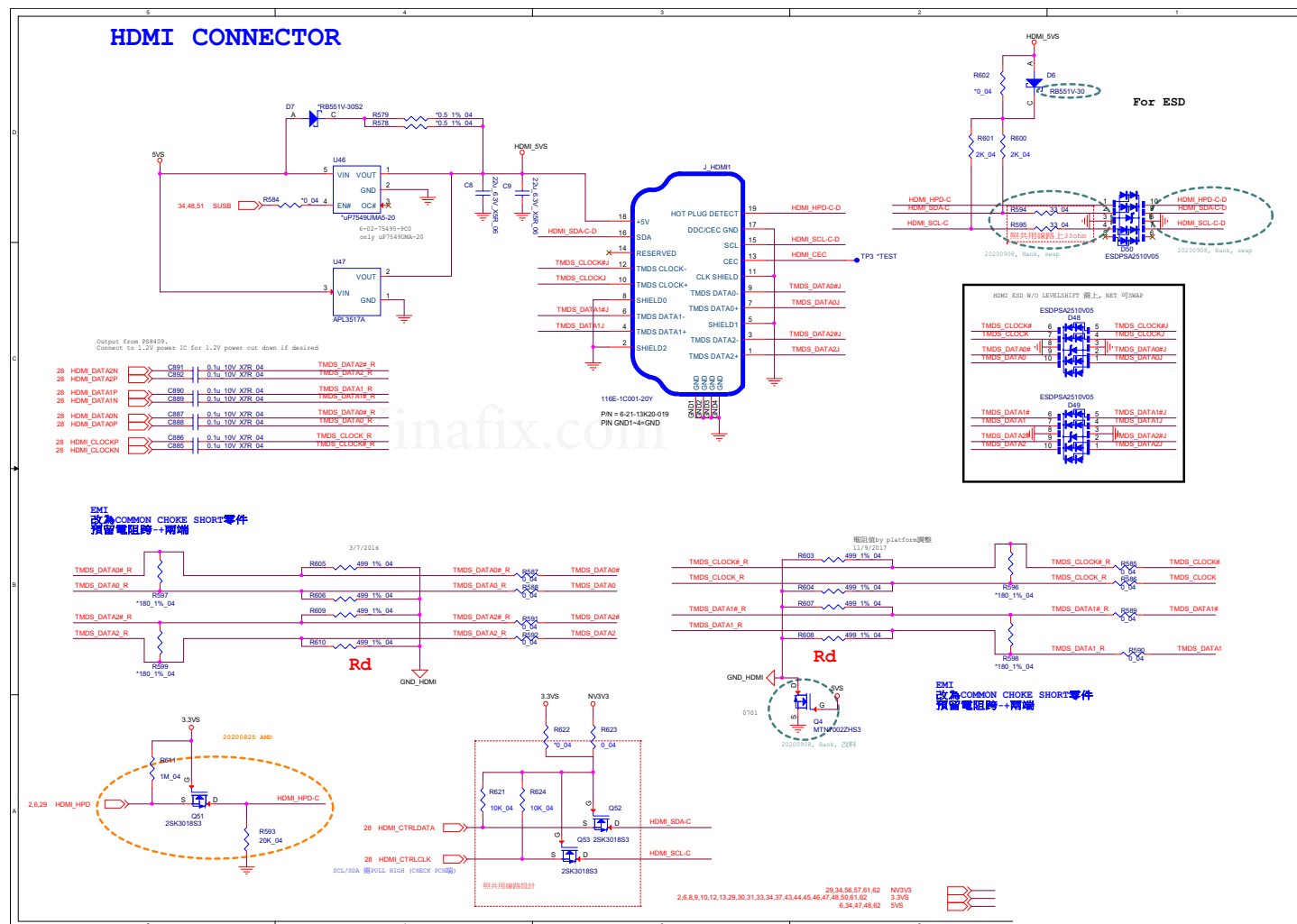


mDP

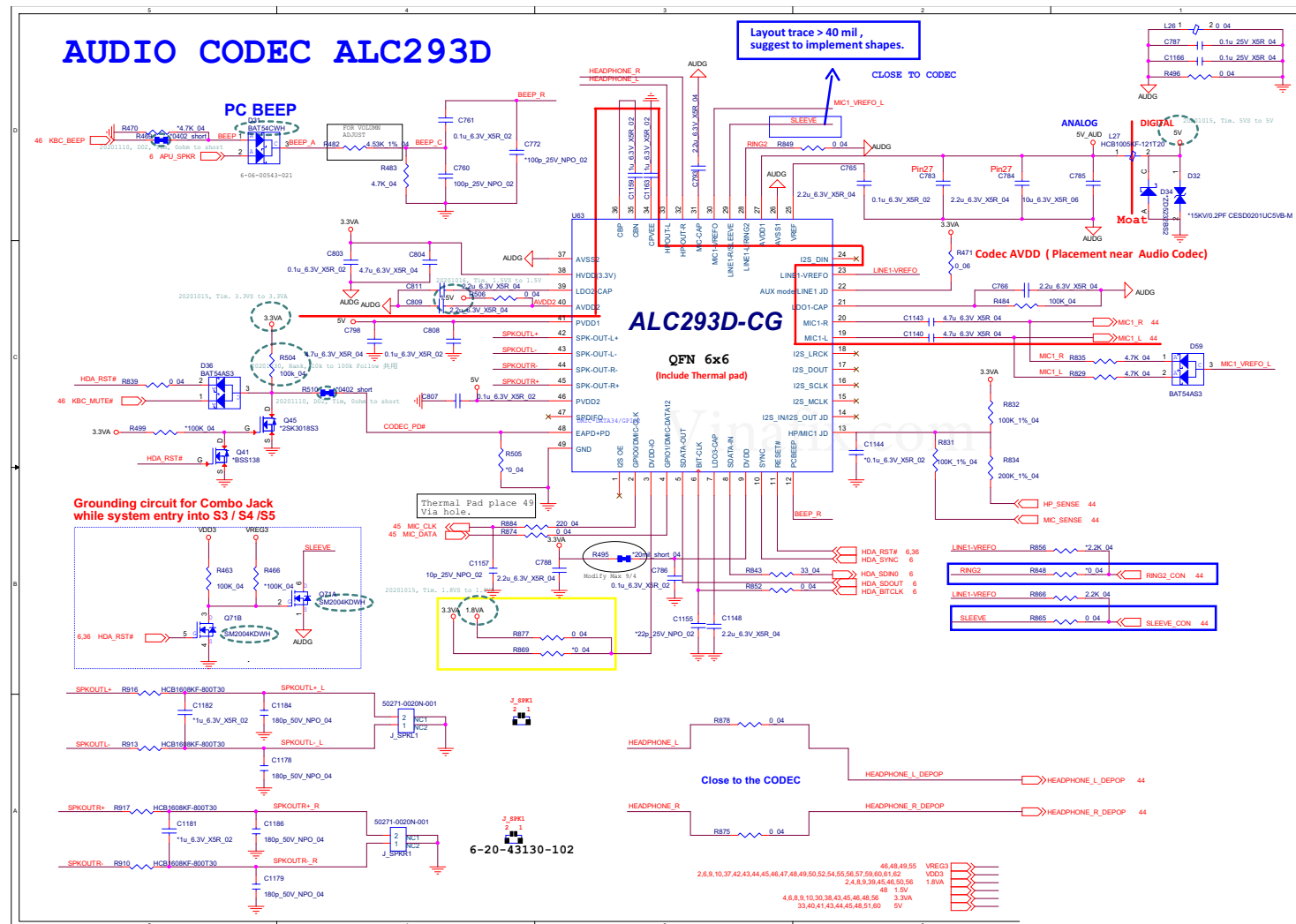


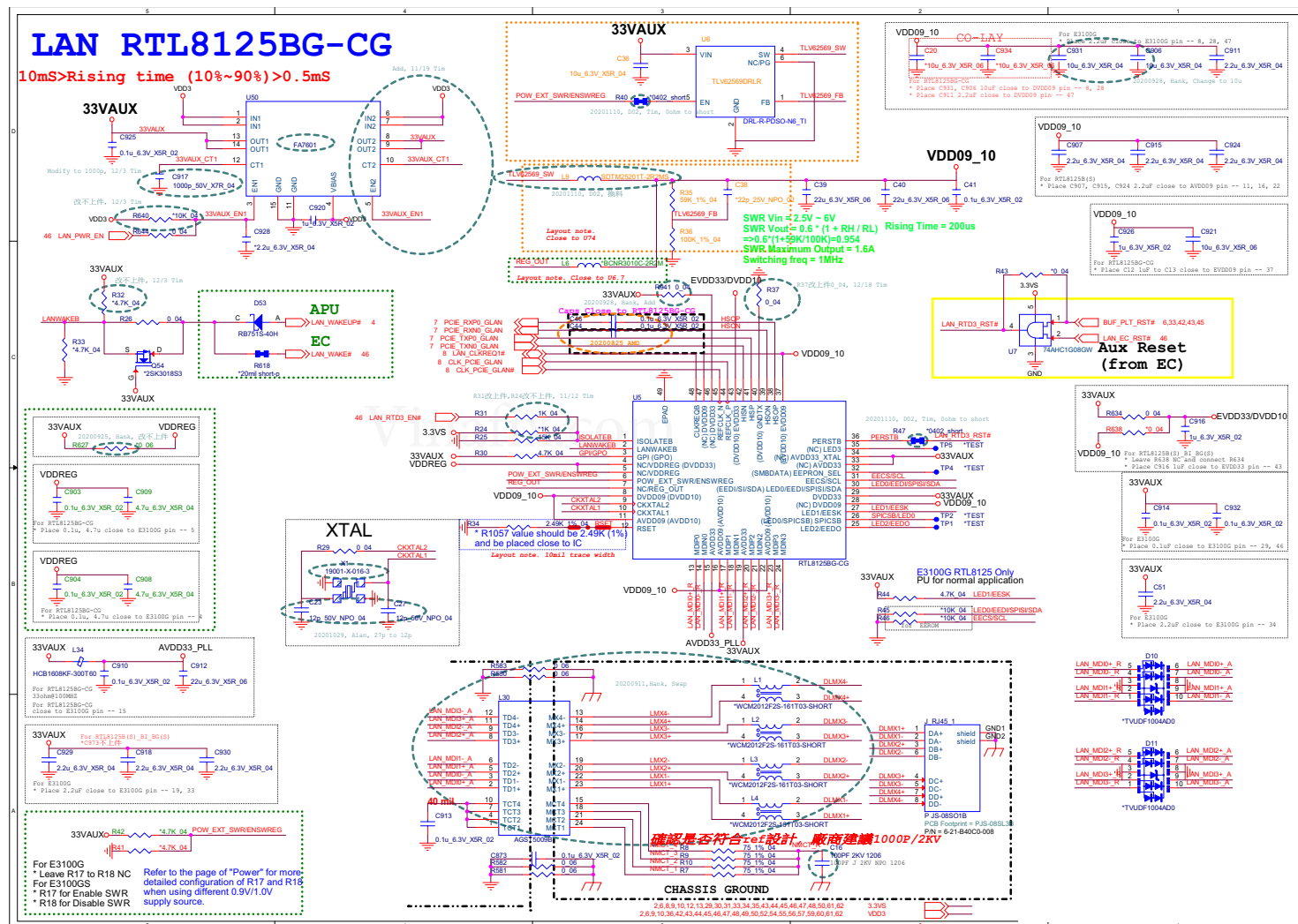
HDMI

Sheet 35 of 71
HDMI



Audio Codec B - 37



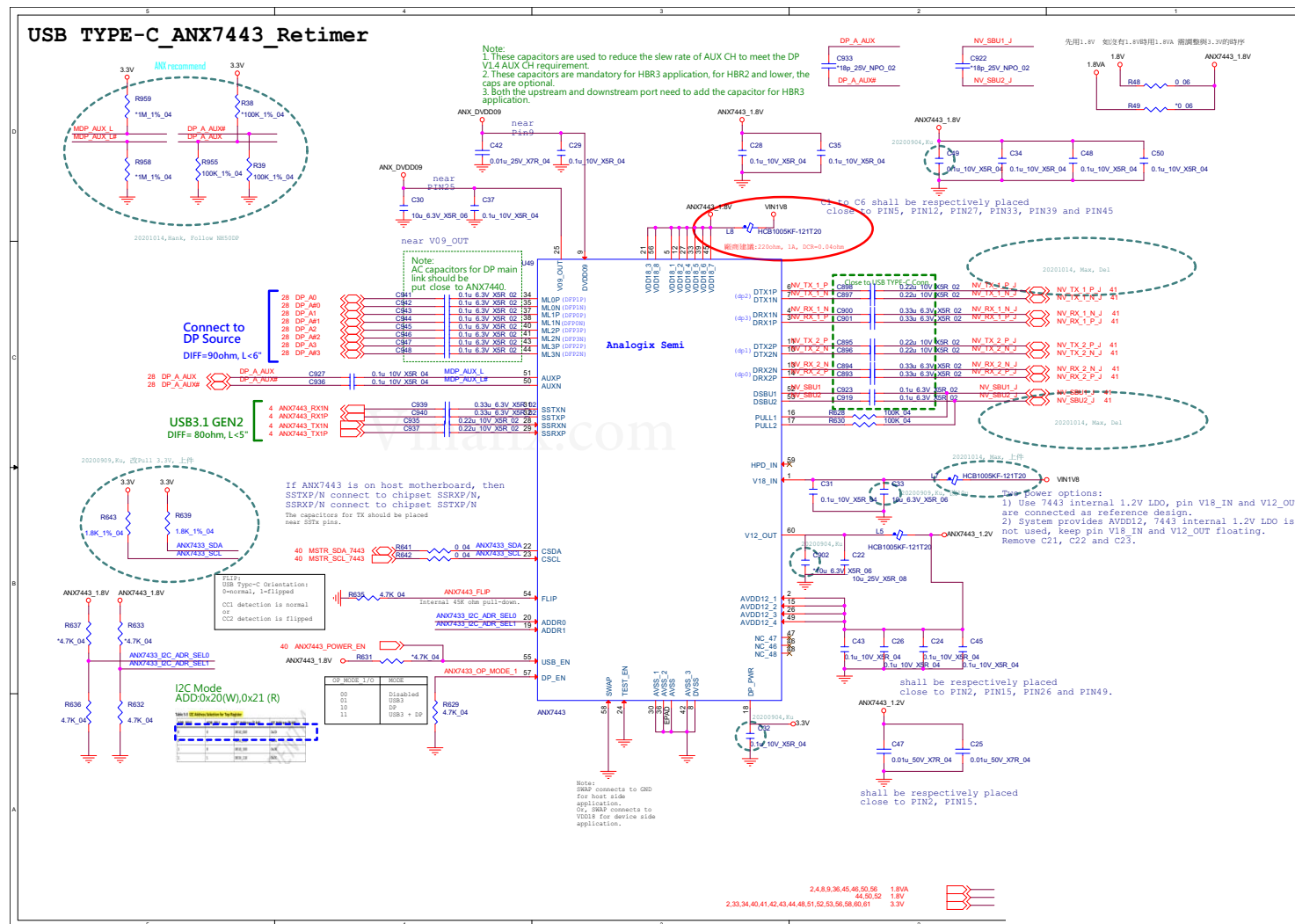


Card Reader B - 39



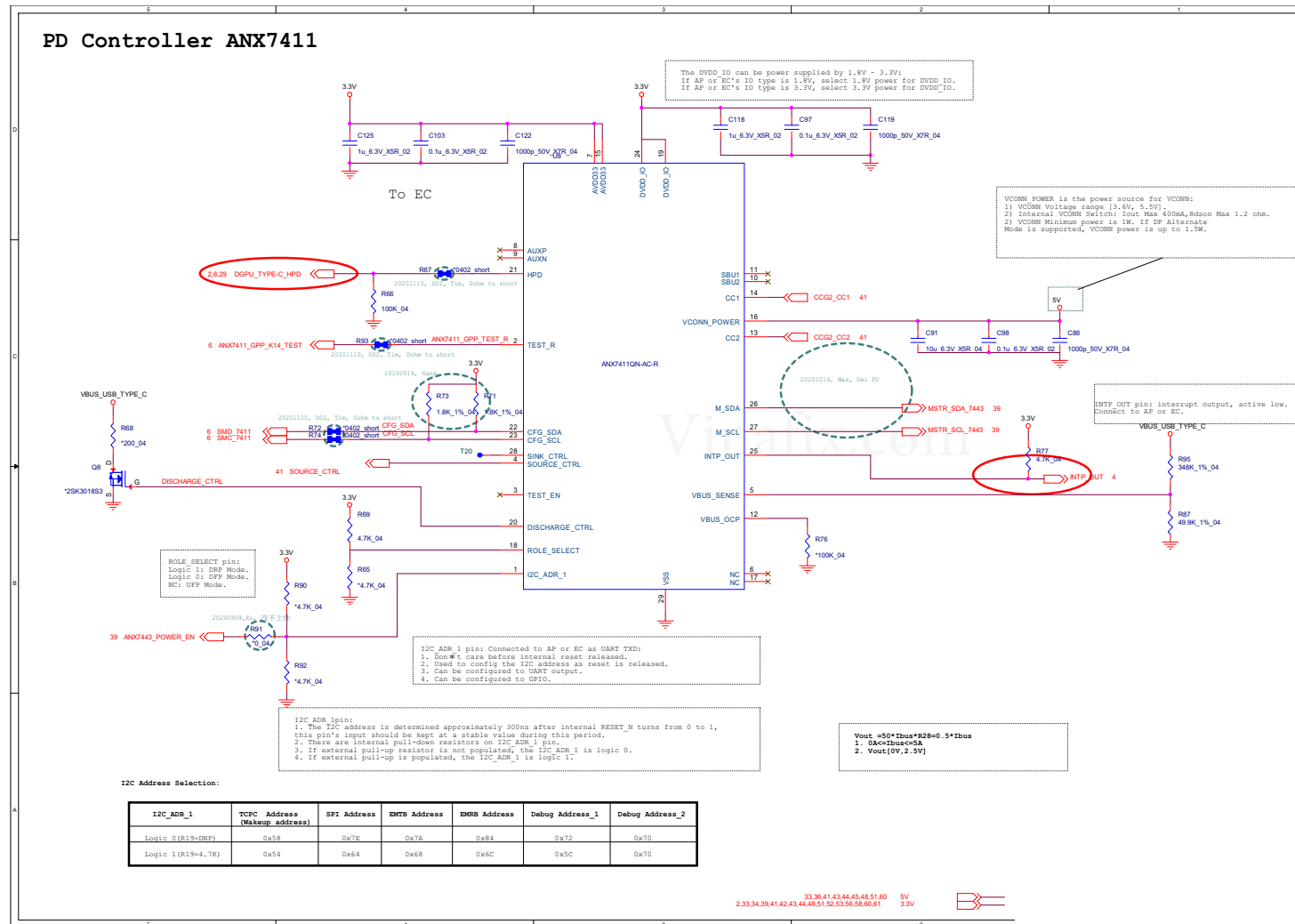
USB ANX7440 Retimer

Sheet 39 of 71
USB ANX7440
Retimer



PD Controller

Sheet 40 of 71
PD Controller



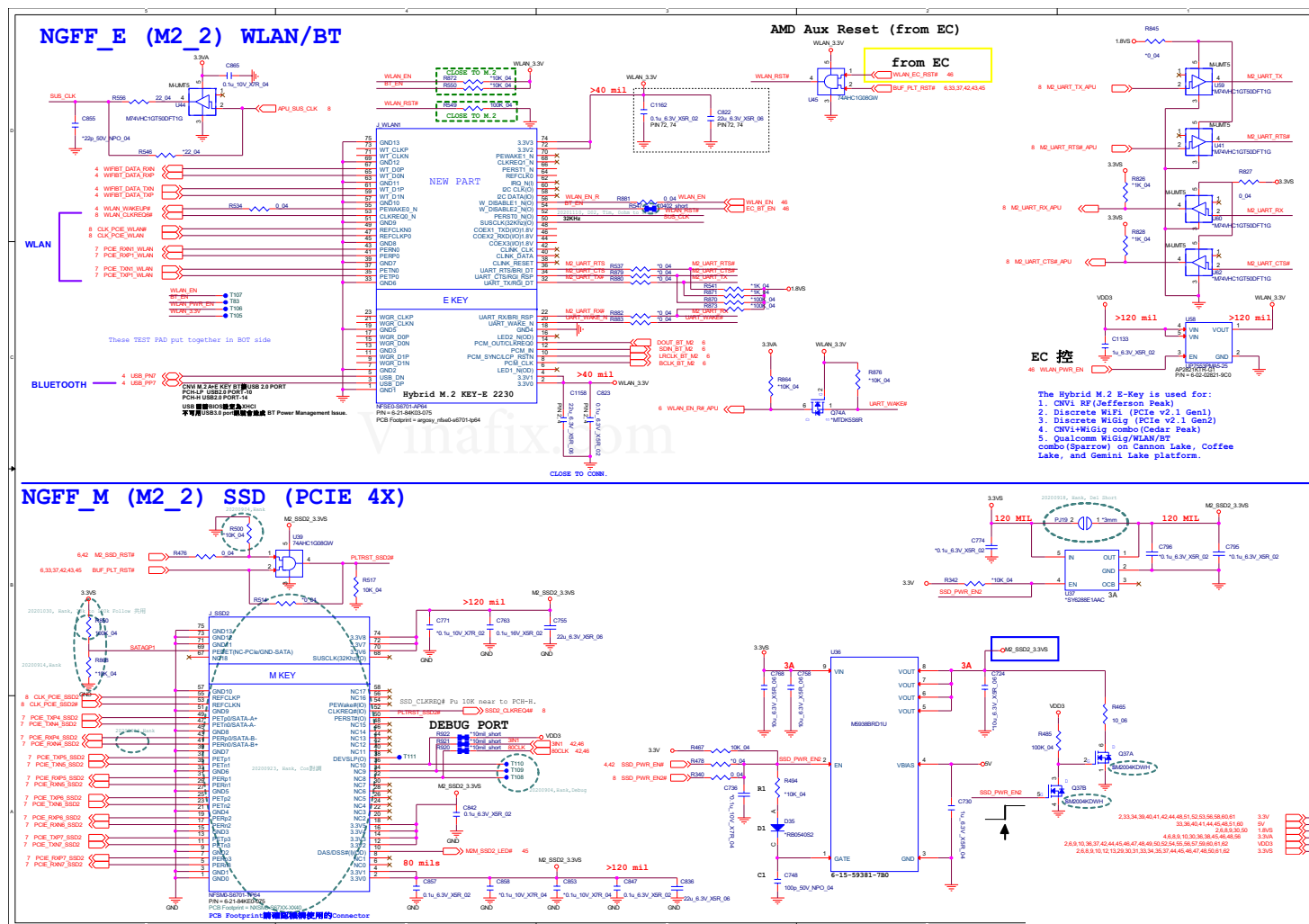
B - 42 USB Type-C

Sheet 42 of 71
M.2 PCIE 4X/SATA
SSD

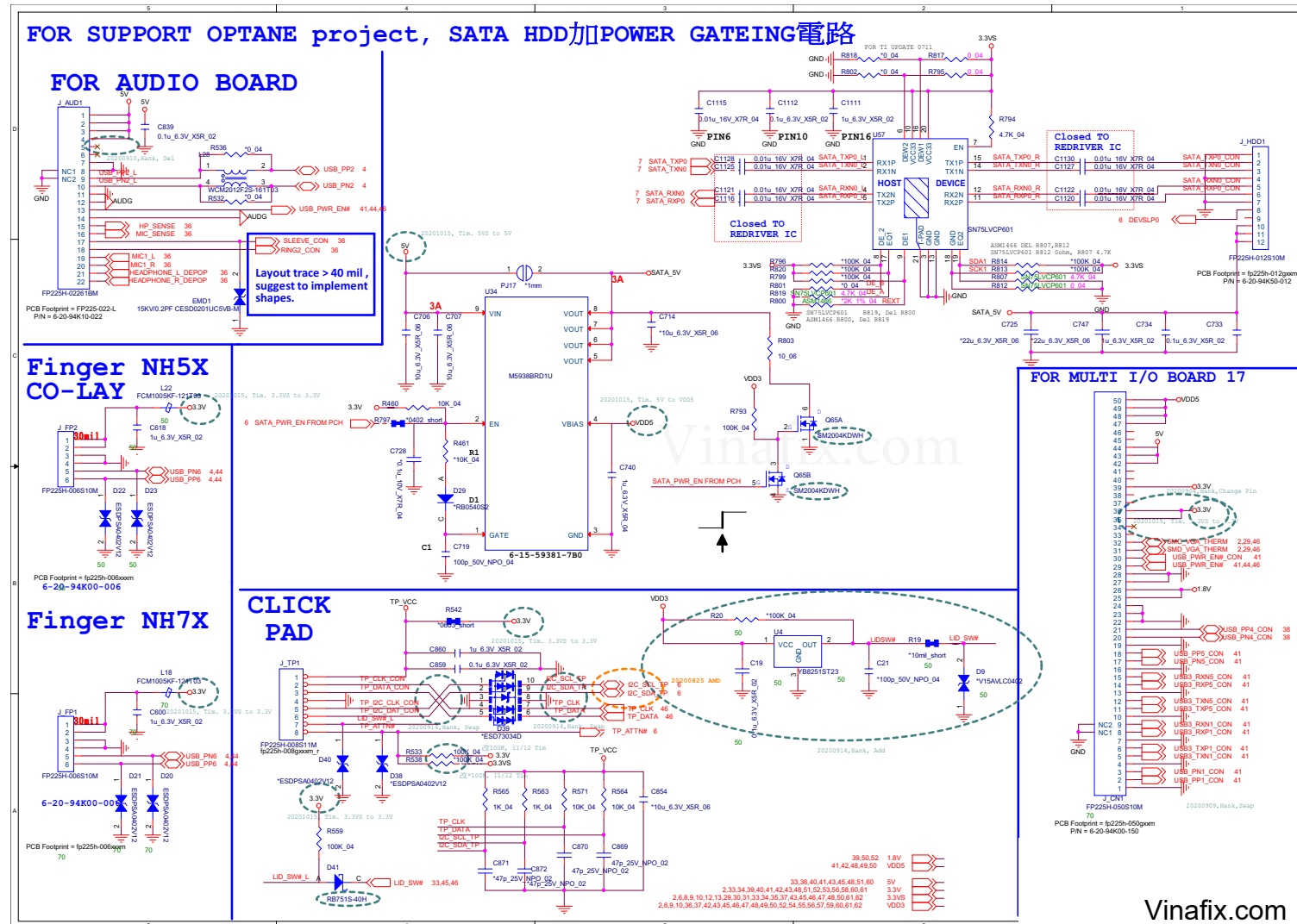


B.Schematic Diagrams

Sheet 43 of 71
M.2 WLAN+BT,
PCIE 4X SSD

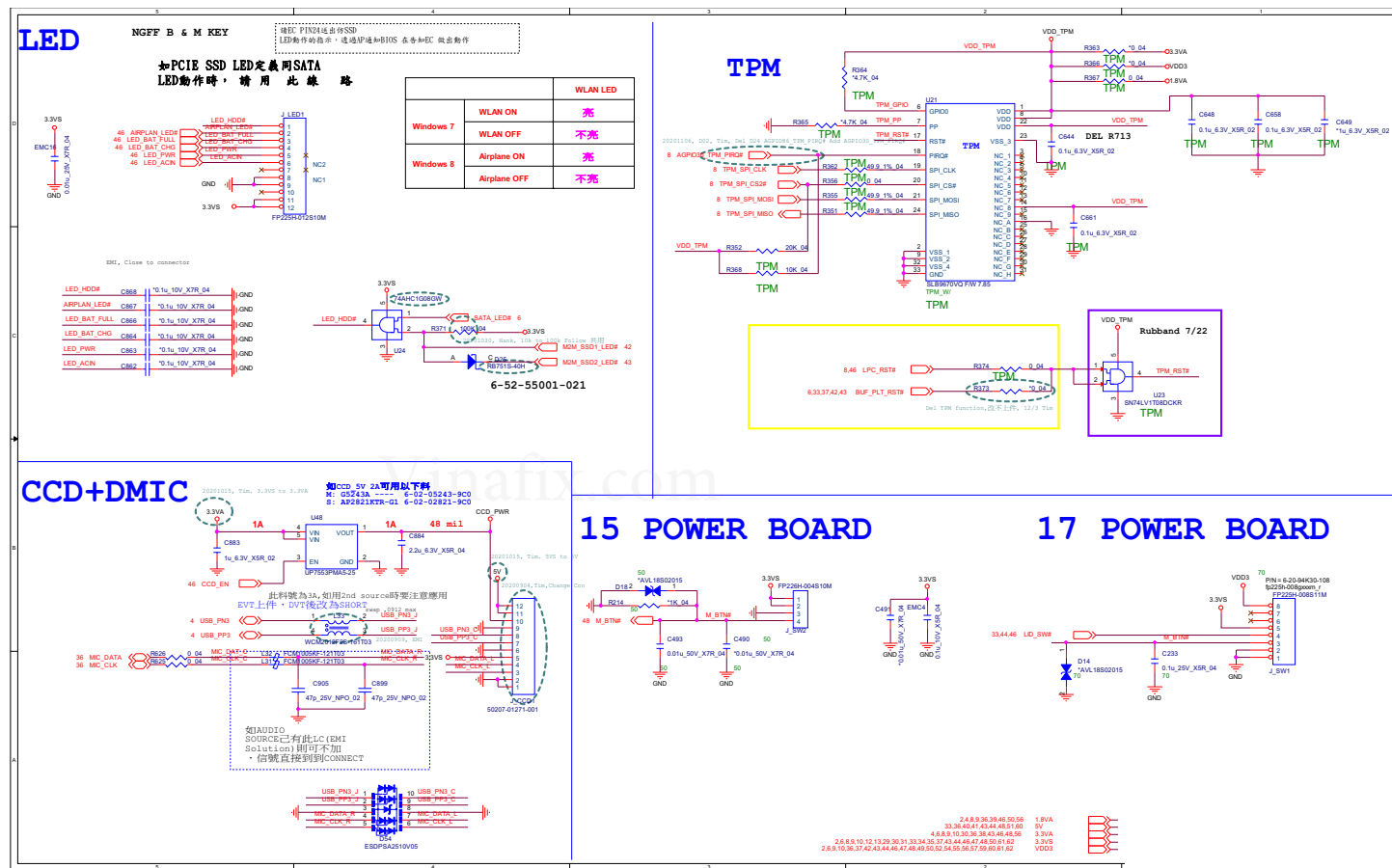


HDD, Click TP, Audio, Hall Con.

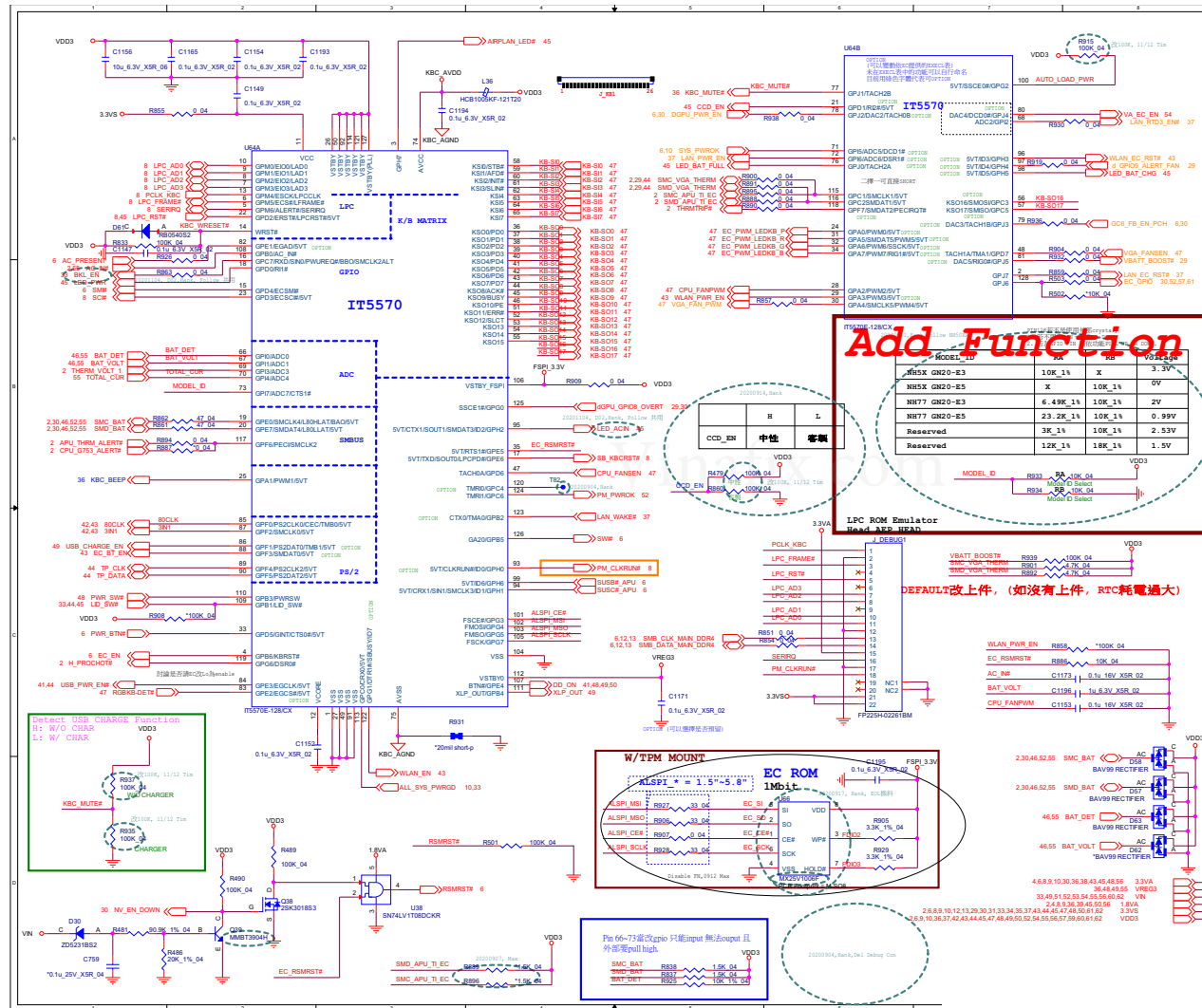


B.Schematic Diagrams

B - 46 LED, CCD, TPM, Power SW Con.

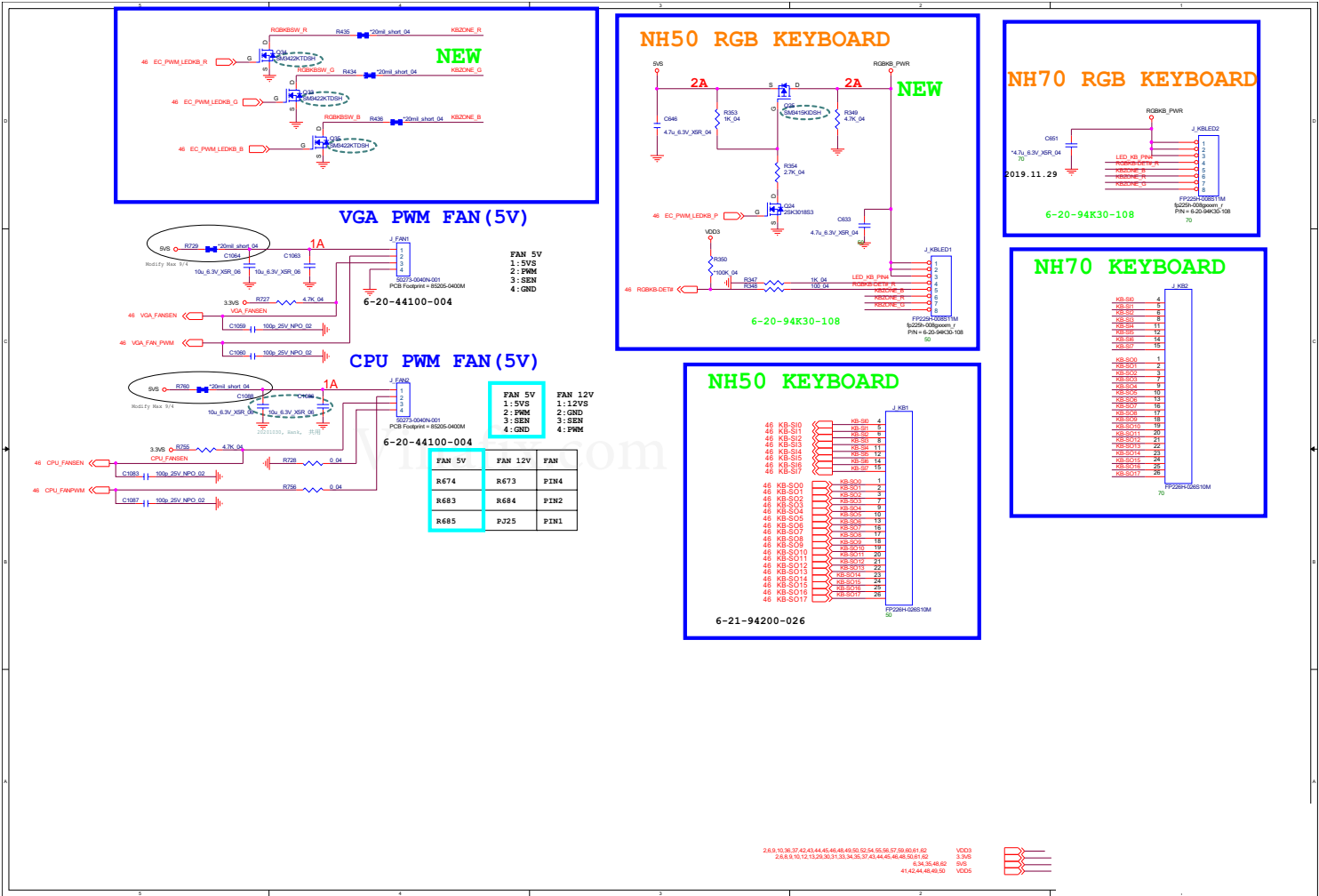


B.Schematic Diagrams

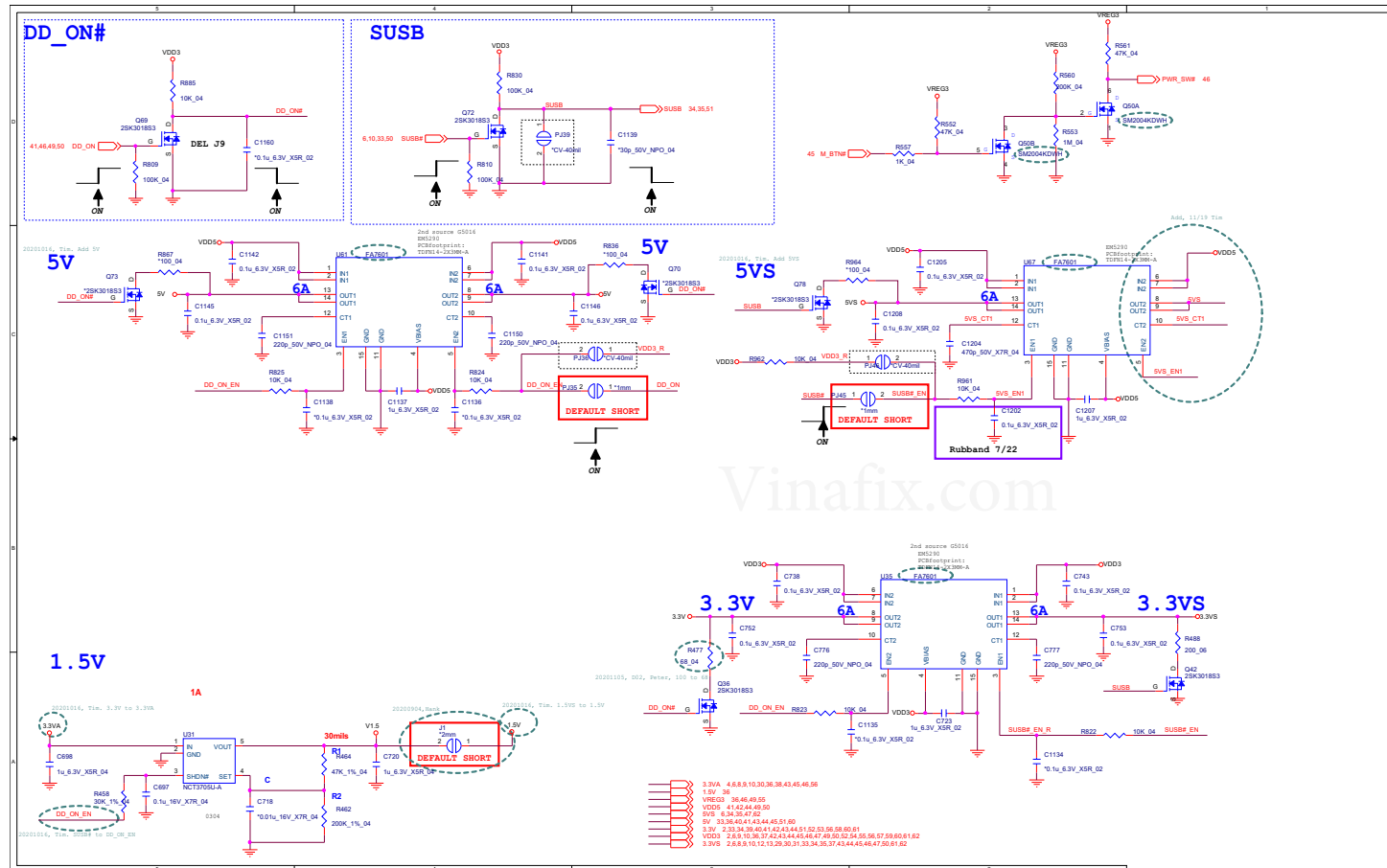


RGB KB, Fan

Sheet 47 of 71
RGB KB, Fan



5V, 5VS, 3.3V, 3.3VS, 1.2VS, 1.5VS

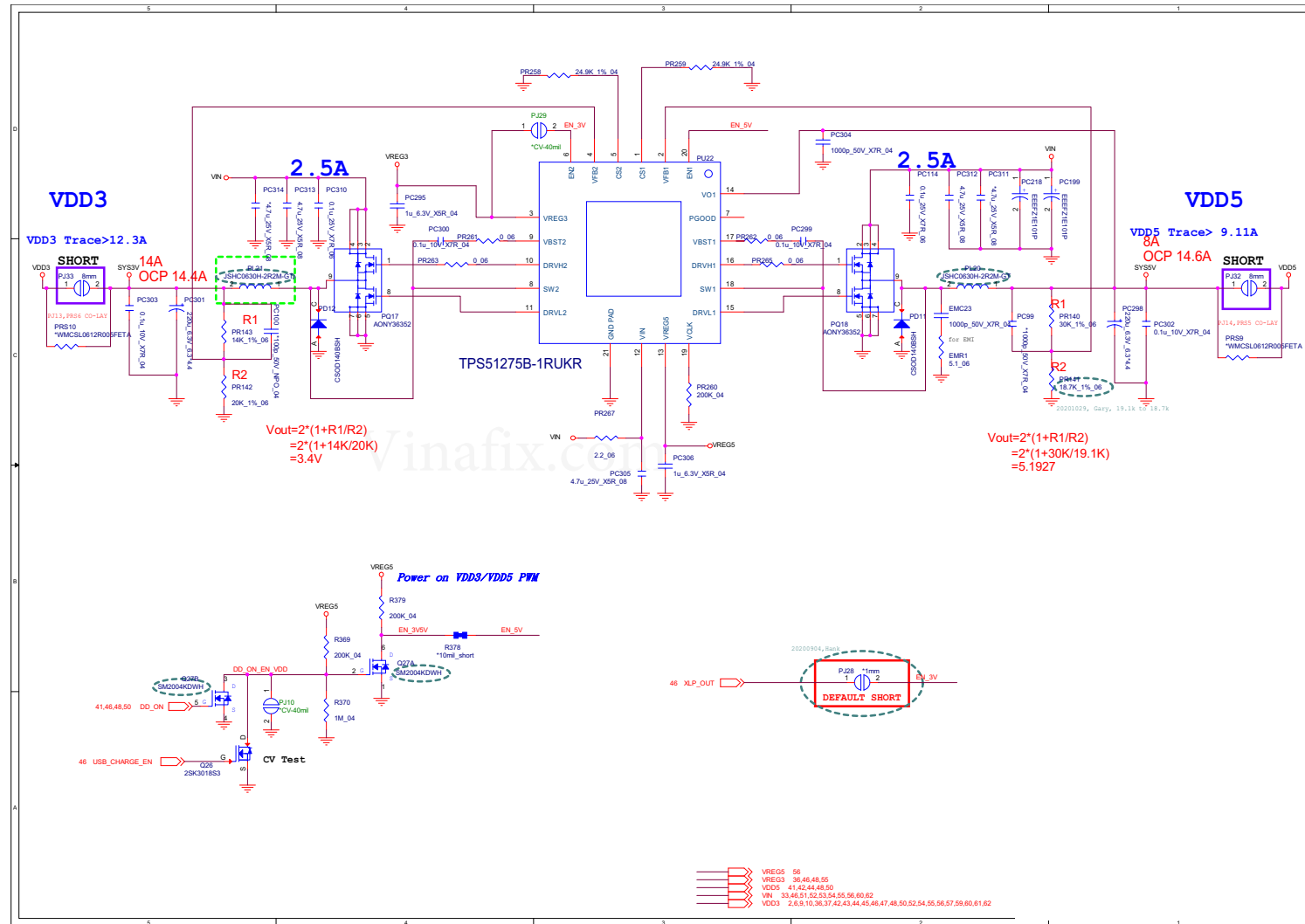


Sheet 48 of 71
5V, 5VS, 3.3V,
3.3VS, 1.2VS, 1.5VS

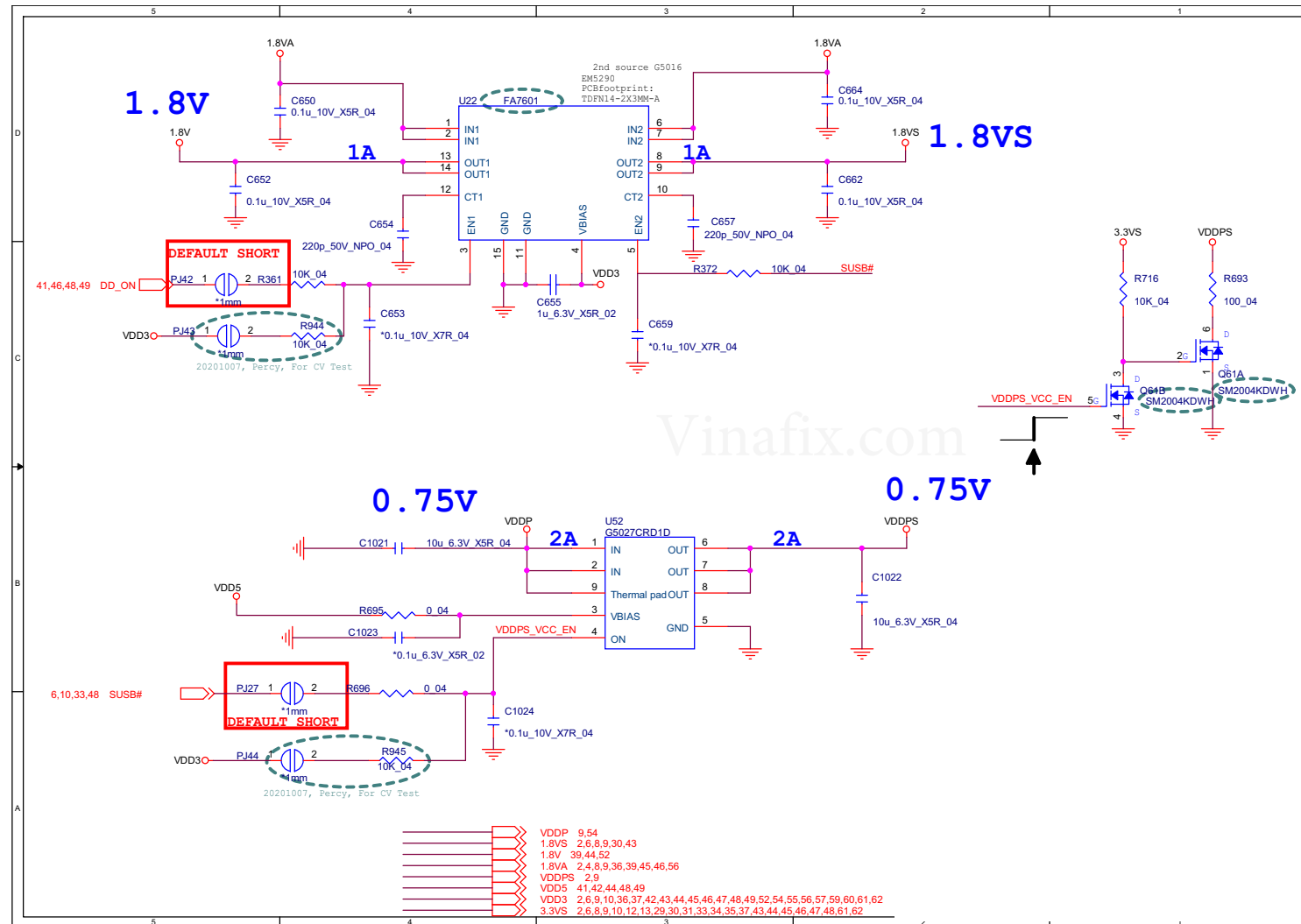
Schematic Diagrams

VDD3, VDD5

Sheet 49 of 71
VDD3, VDD5



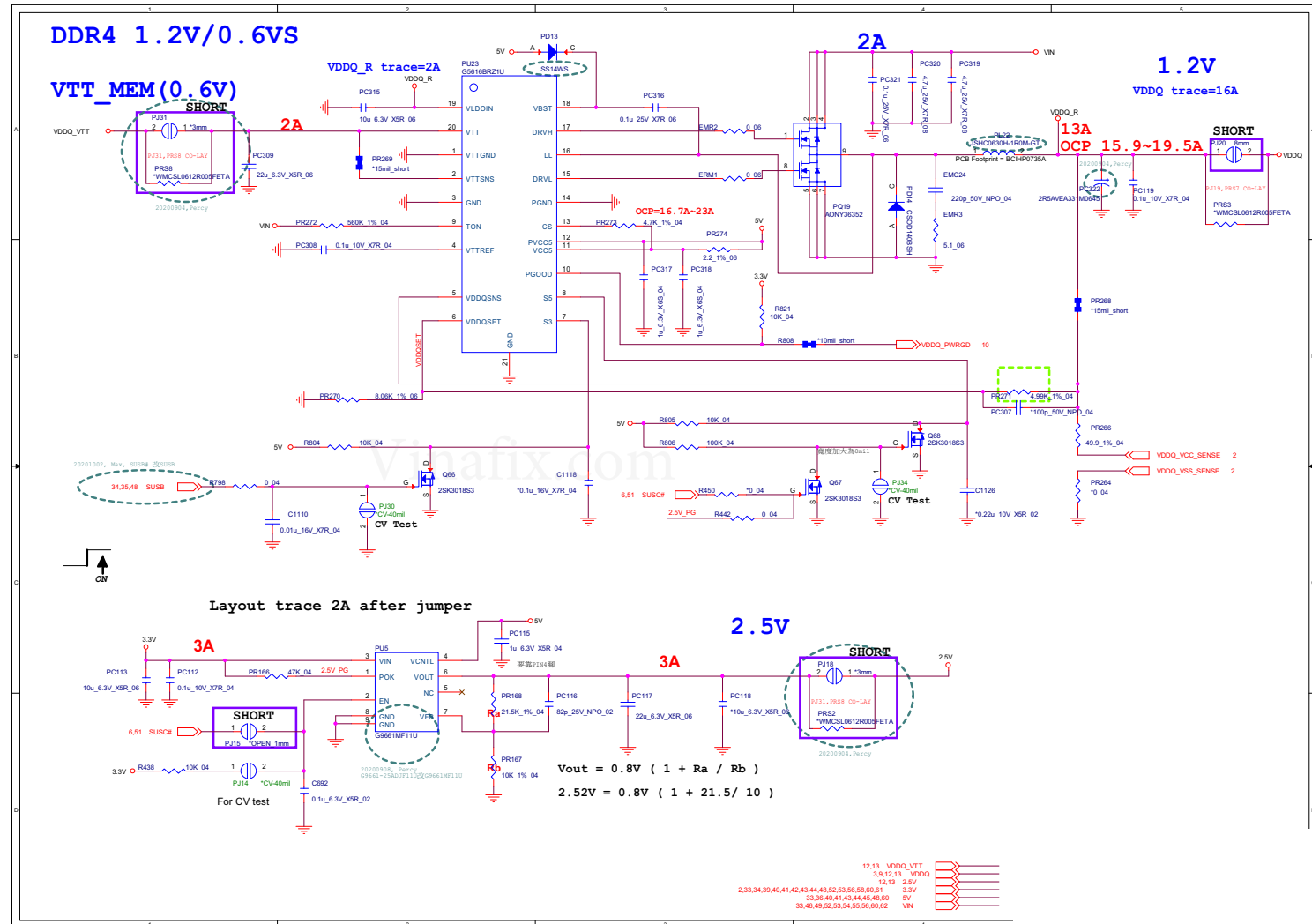
VDDPS, 1.8V, 1.8VS



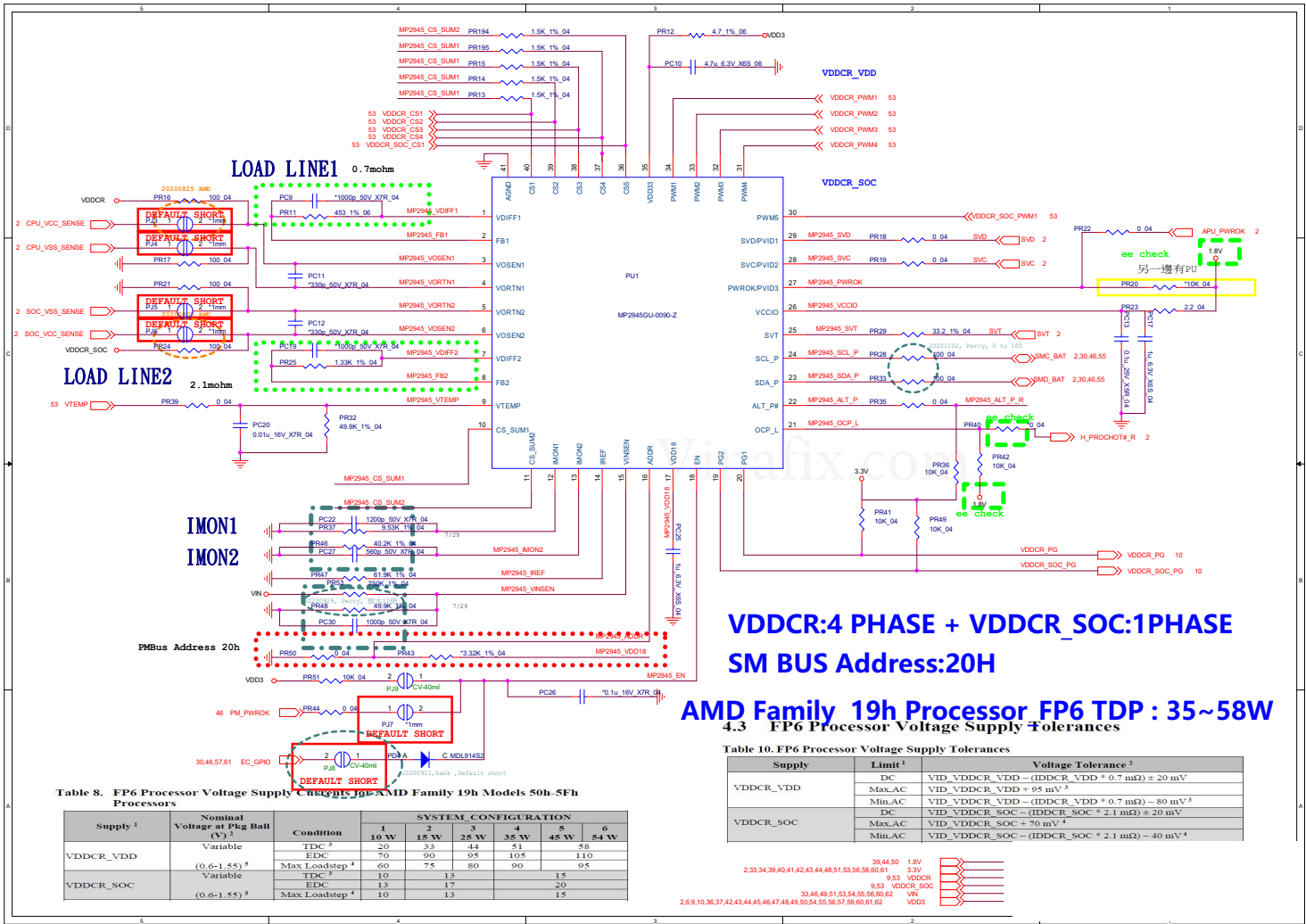
Sheet 50 of 71
VDDPS, 1.8V /
1.8VS

Schematic Diagrams

VDDQ, VDDQ_VTT

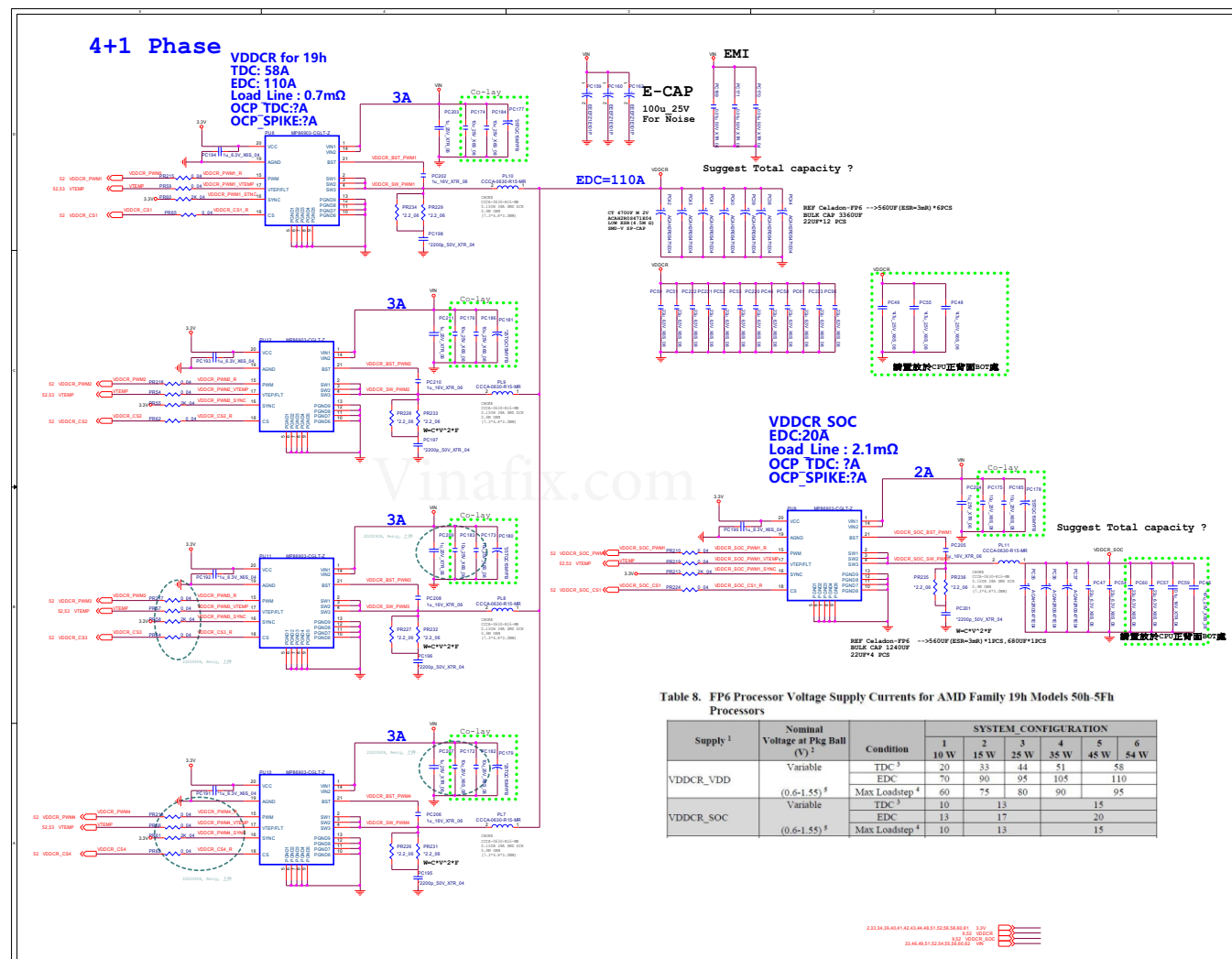


VCore



Sheet 52 of 71
VCore

Sheet 53 of 71
VDDCR,
VDDCR SOC

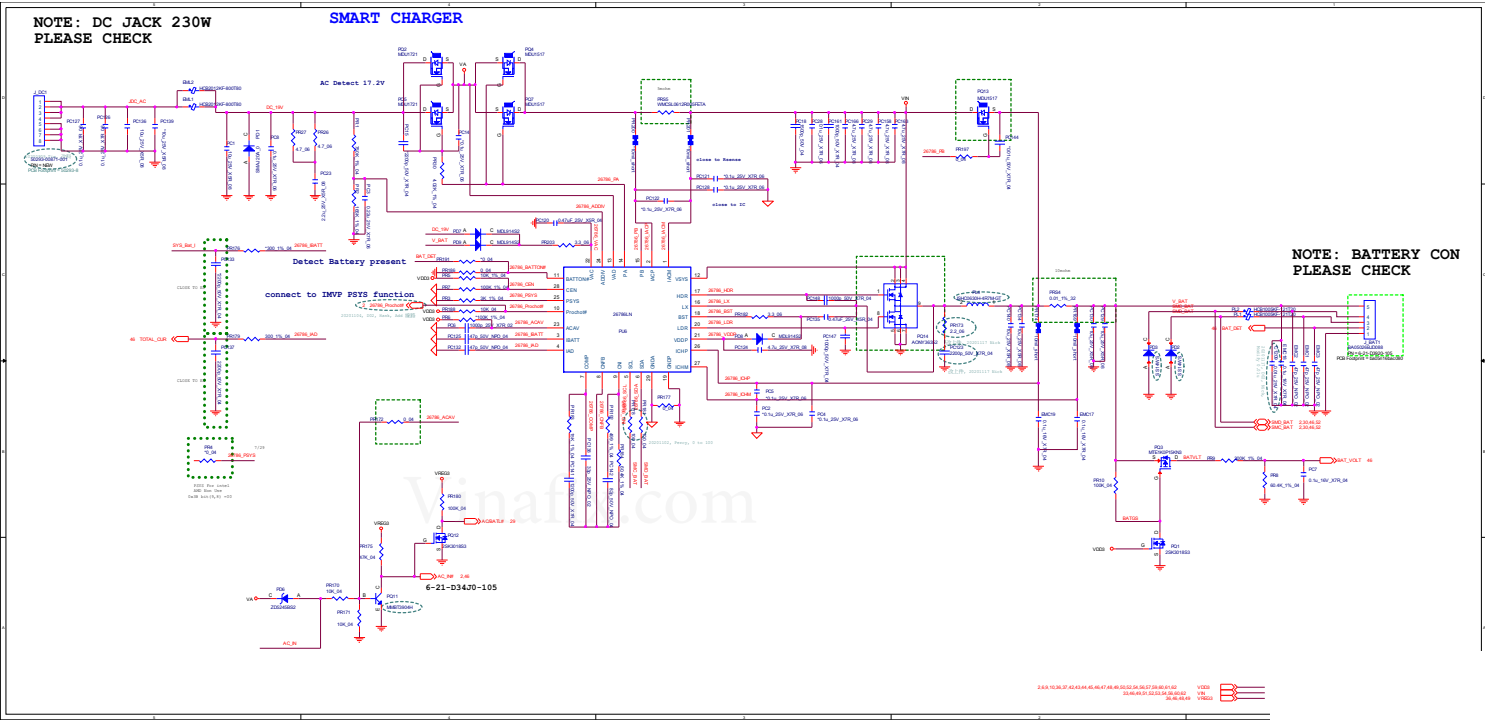


Sheet 54 of 71
VDDP

Schematic Diagrams

AC_In, Charger

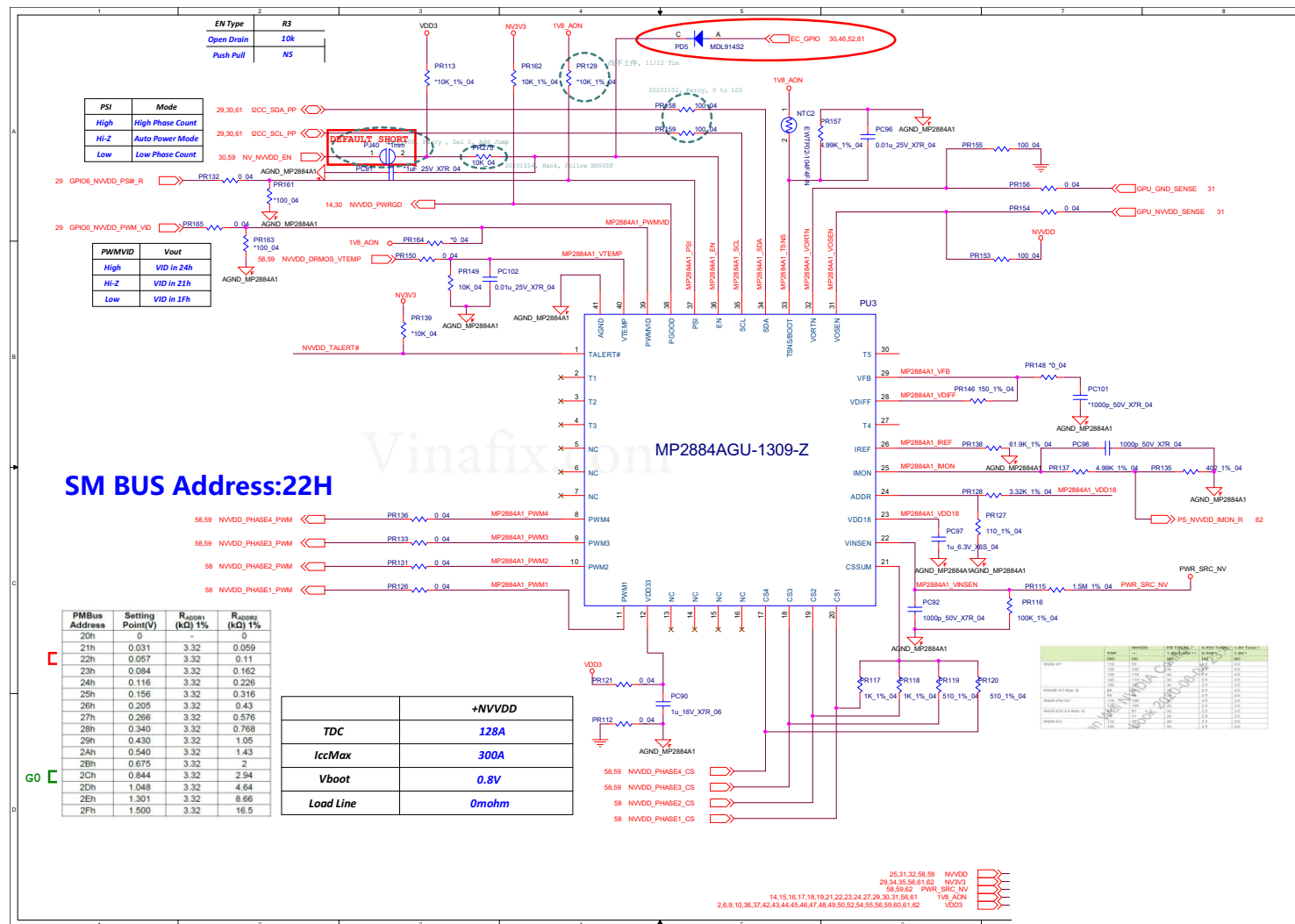
Sheet 55 of 71
AC_In, Charger



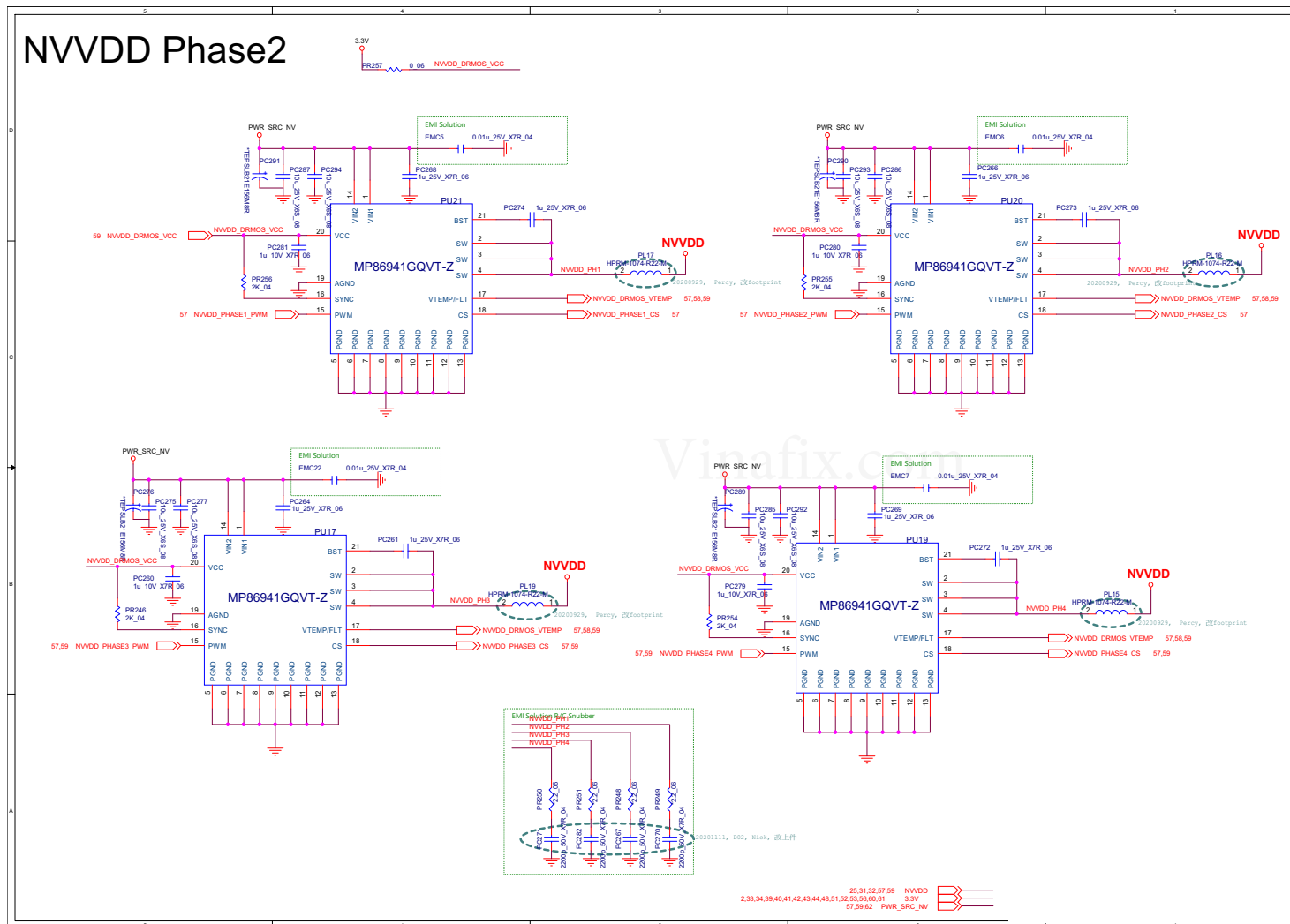
1V8_AON, NV3V3 B - 57

NVVD1

Sheet 57 of 71
NVVDD1



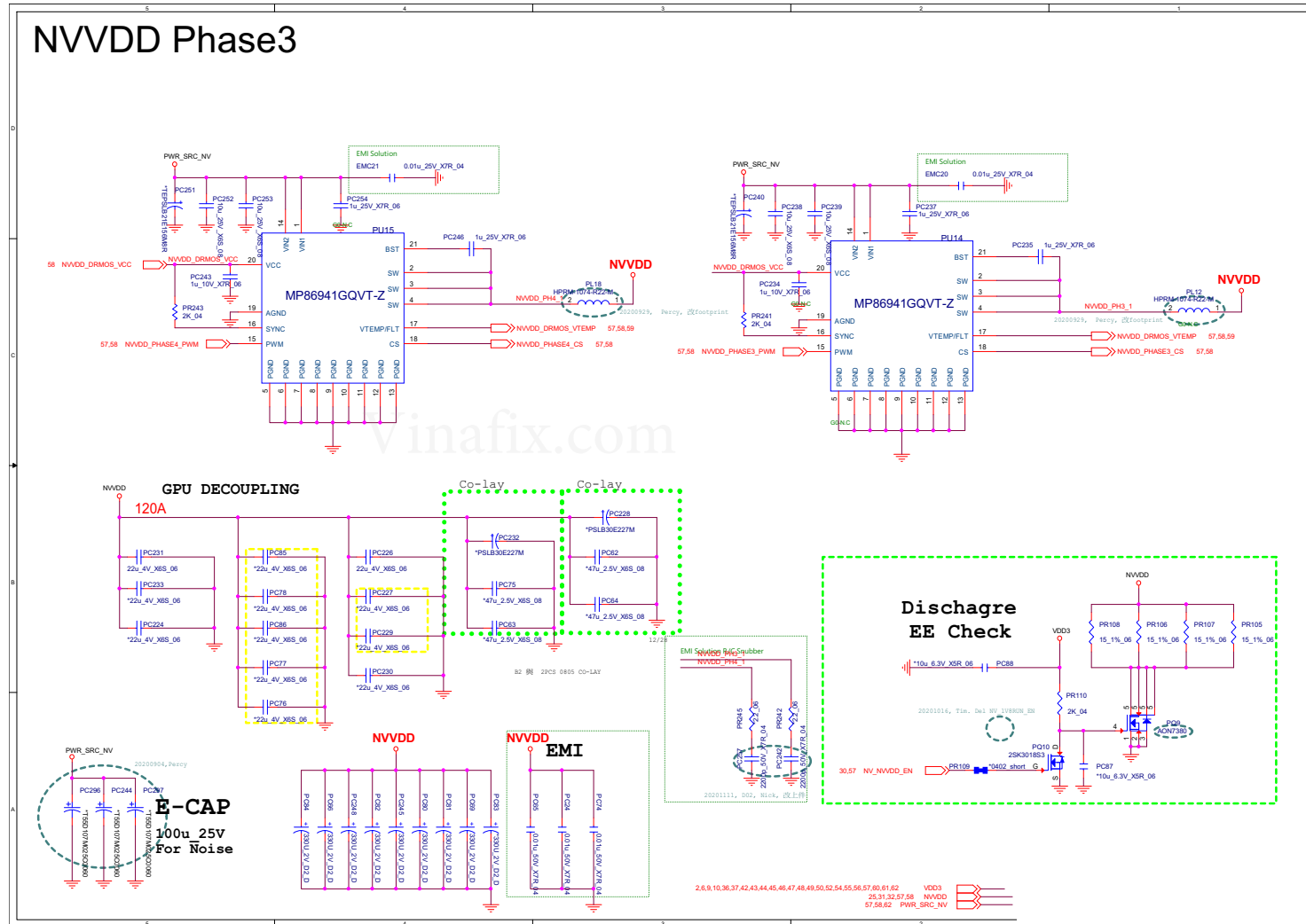
NVVDD2 B - 59



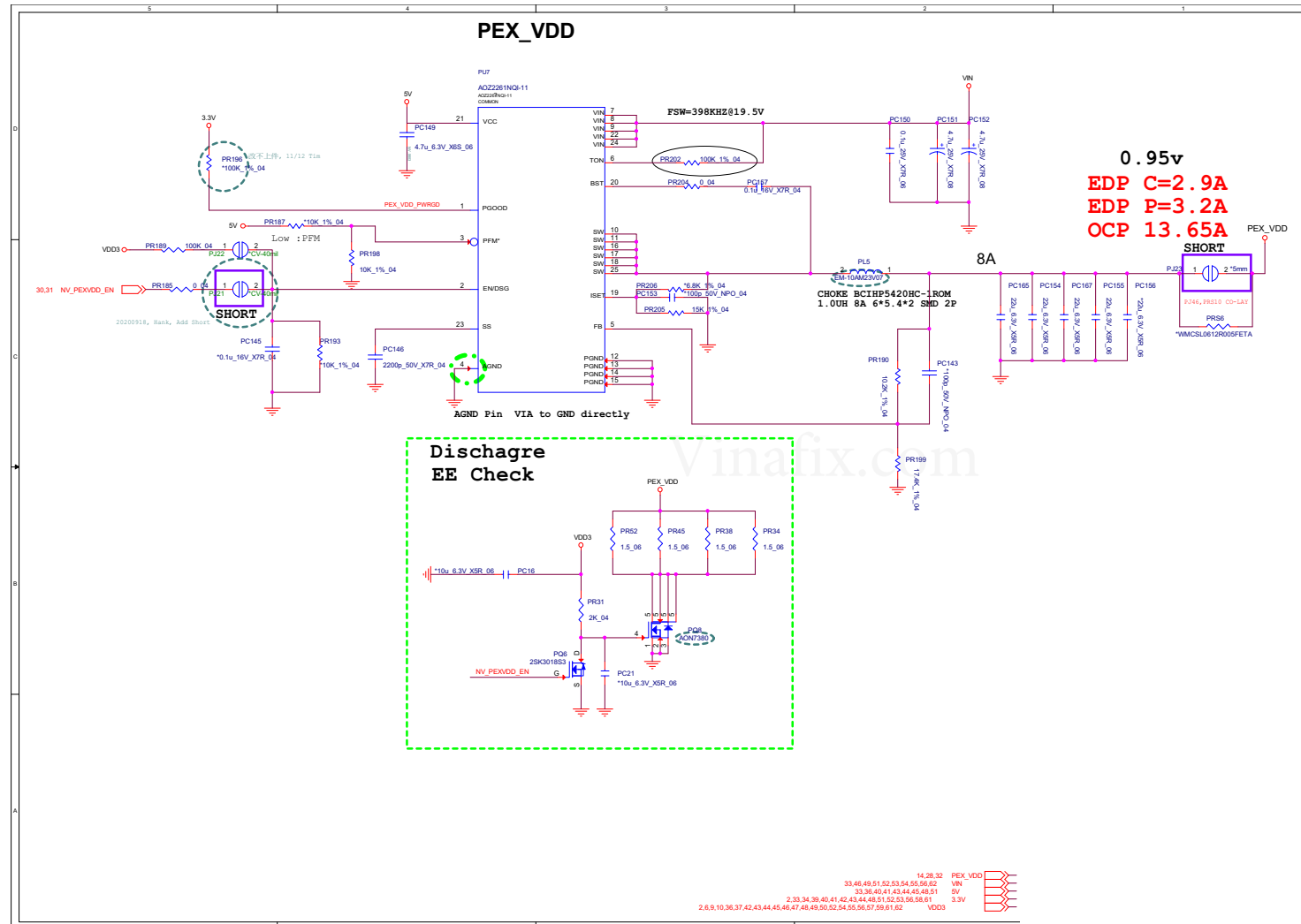
NVVDD3

NVVDD Phase3

Sheet 59 of 71
NVVDD3

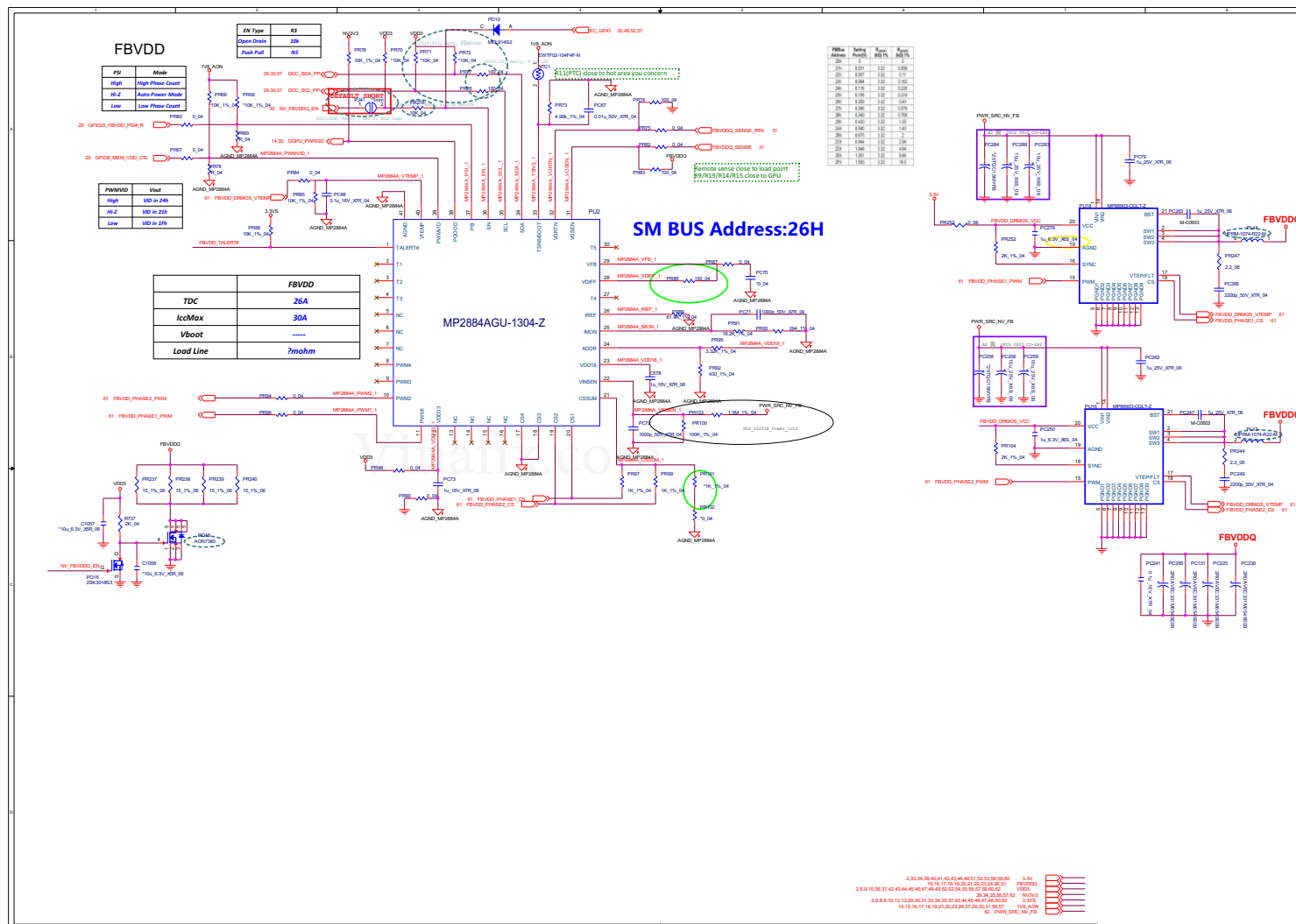


PEX_VDD B - 61

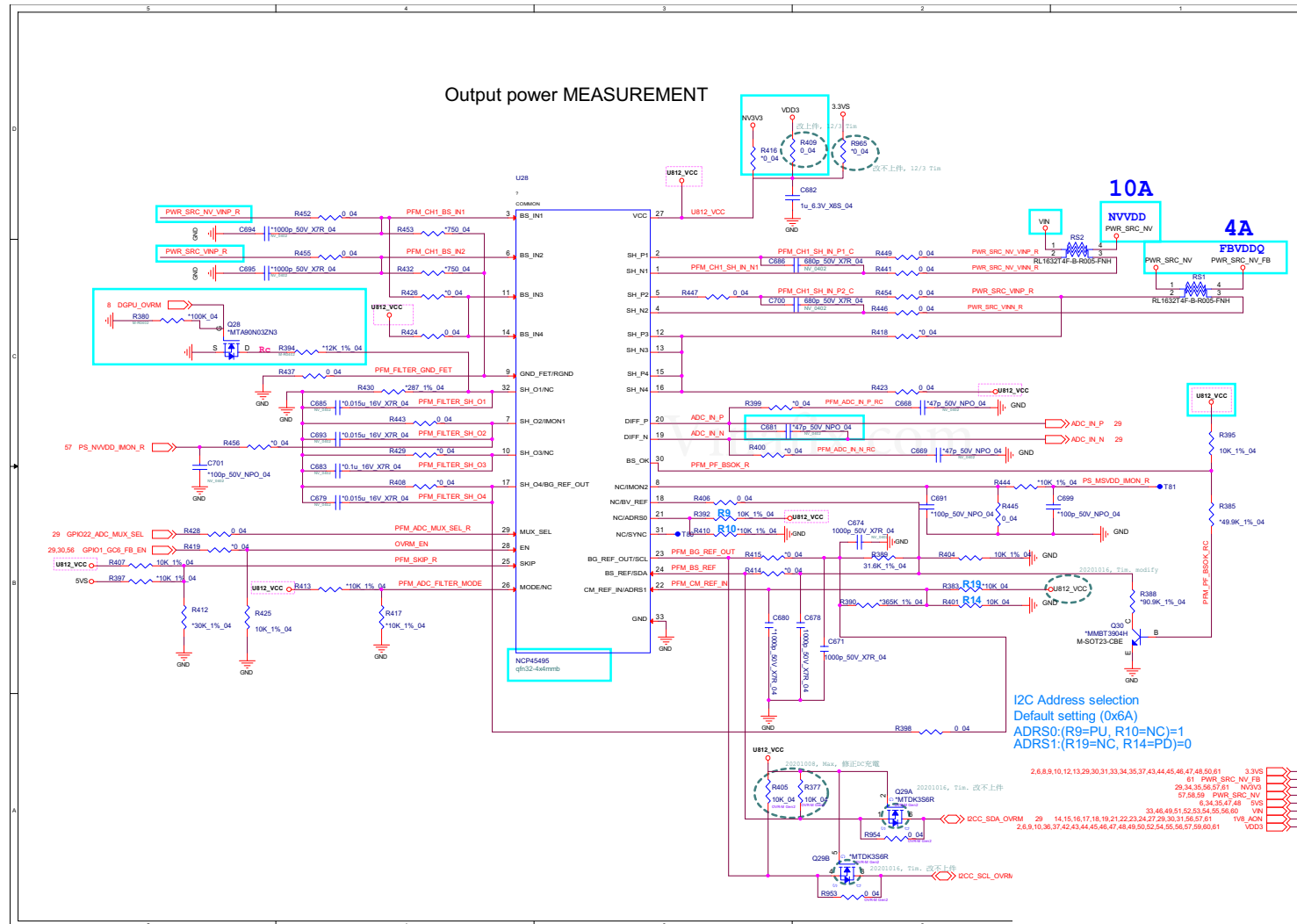


FBVDDQ

Sheet 61 of 71
FBVDDQ

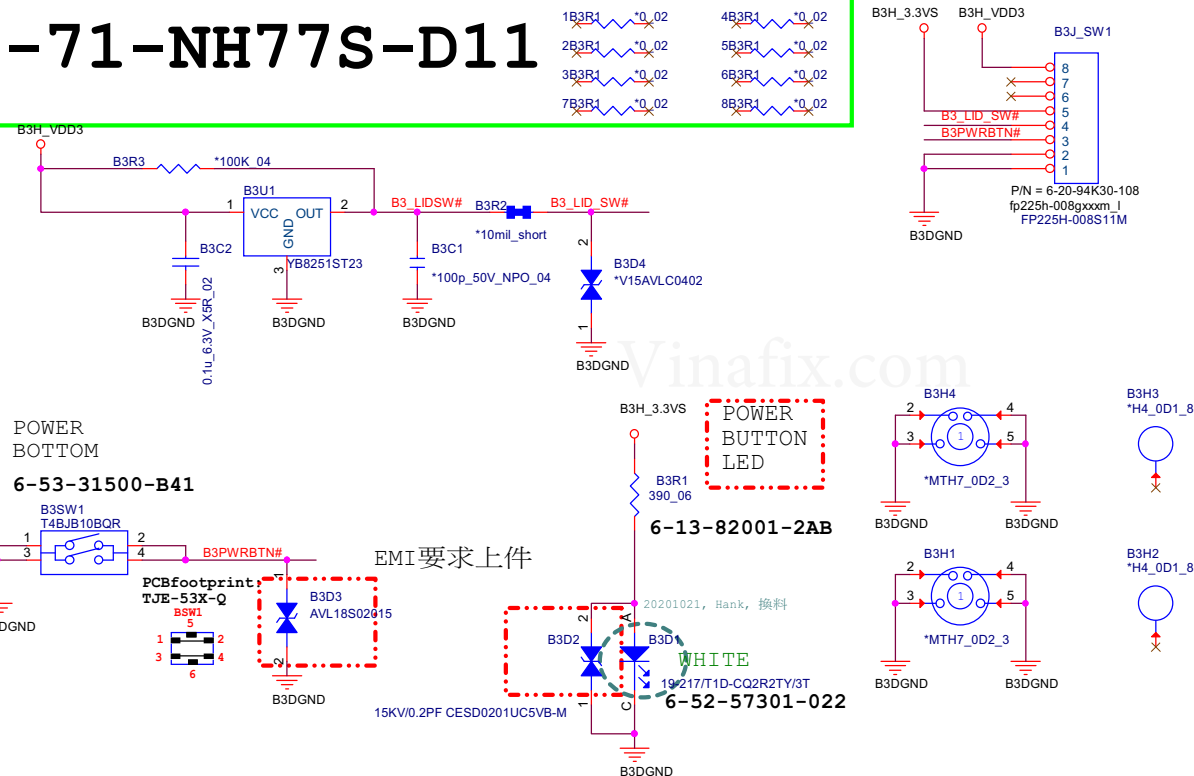


OVR-M B - 63



NH77X POWER BOARD

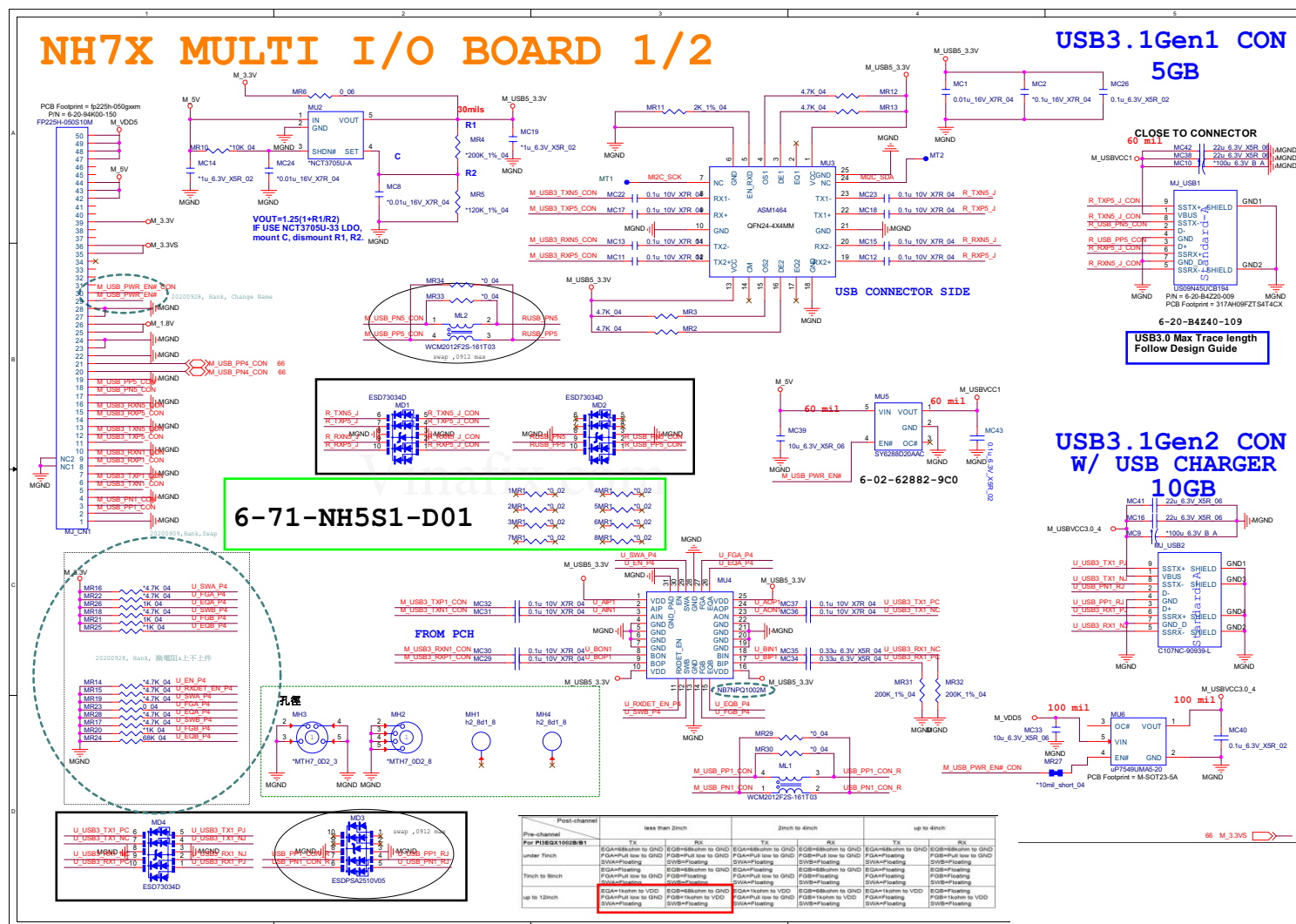
6-71-NH77S-D11



Sheet 64 of 71
NH77 PW Board

NH77 Multi I/O Board 1/2

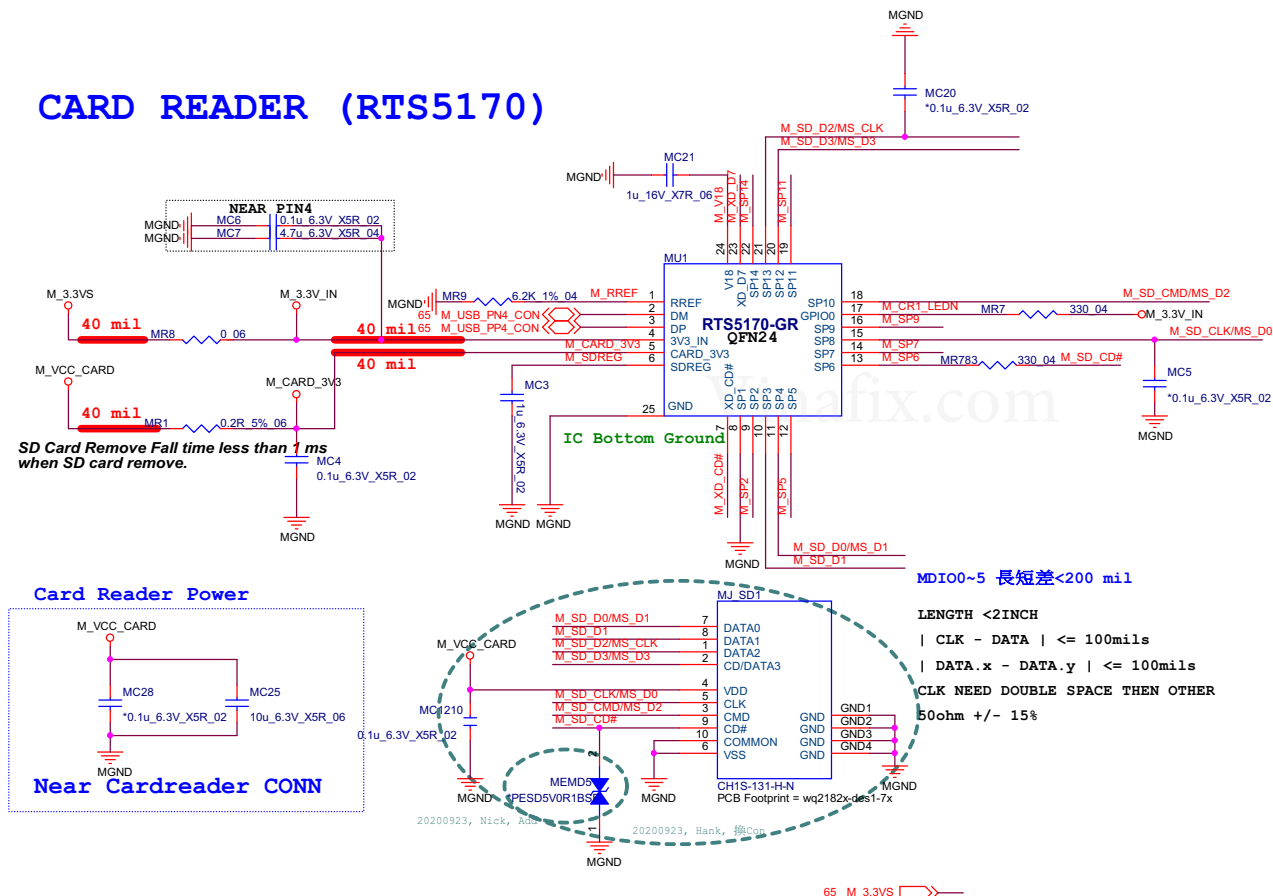
Sheet 65 of 71
NH77 Multi I/O
Board 1/2



NH77 Multi I/O Board 2/2

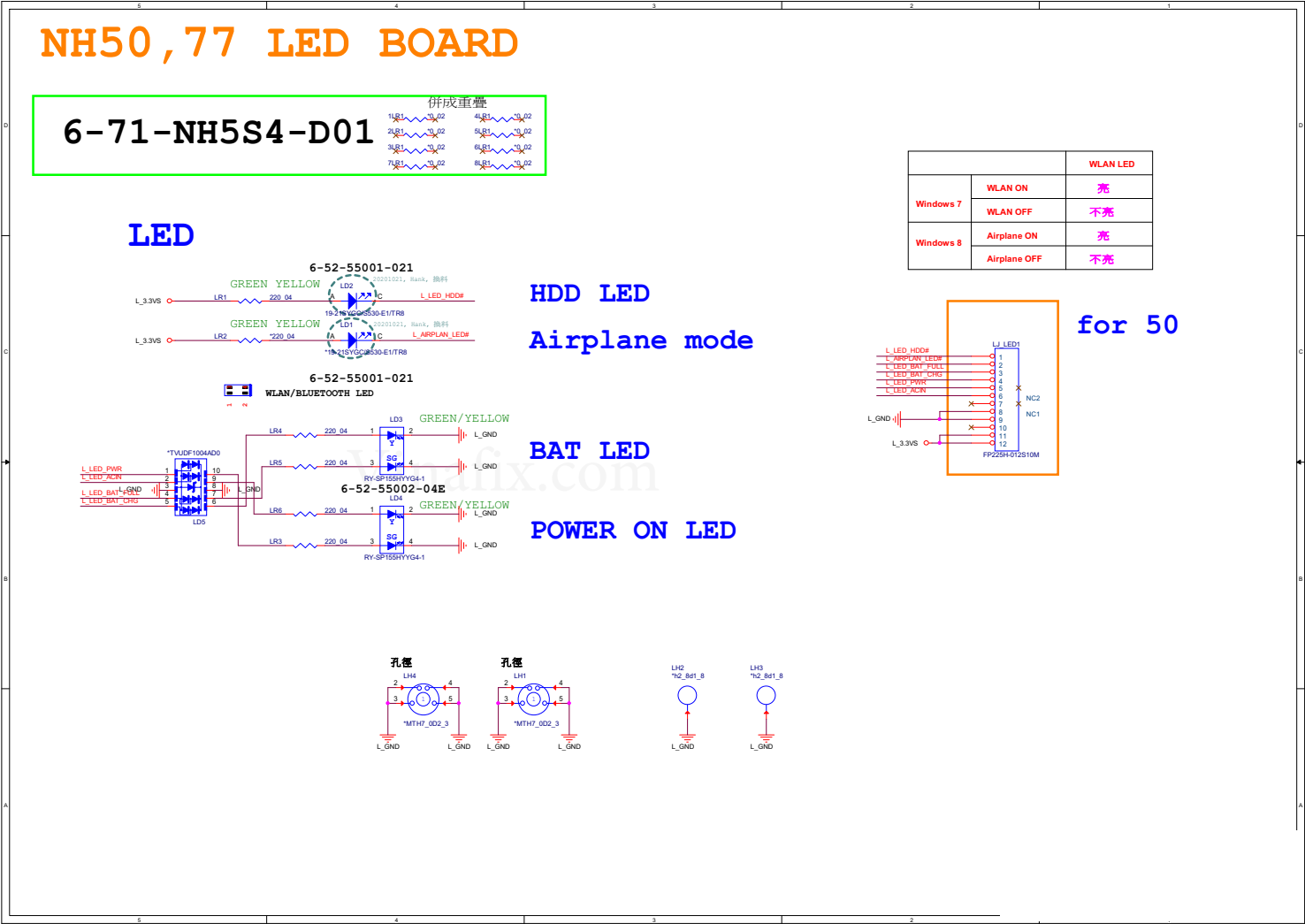
NH7X MULTI I/O BOARD 2/2

CARD READER (RTS5170)

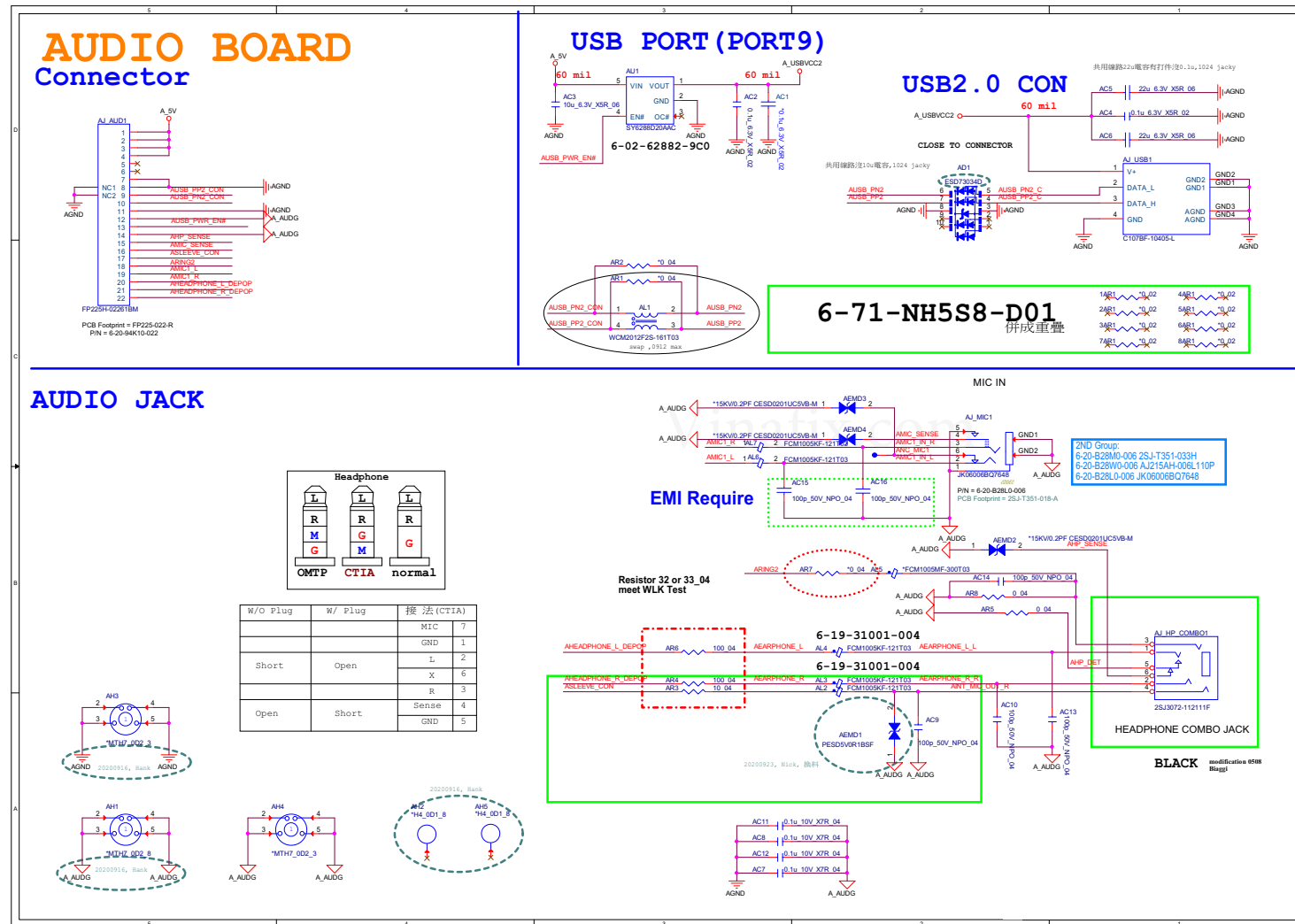


Sheet 66 of 71
NH77 Multi I/O
Board 2/2

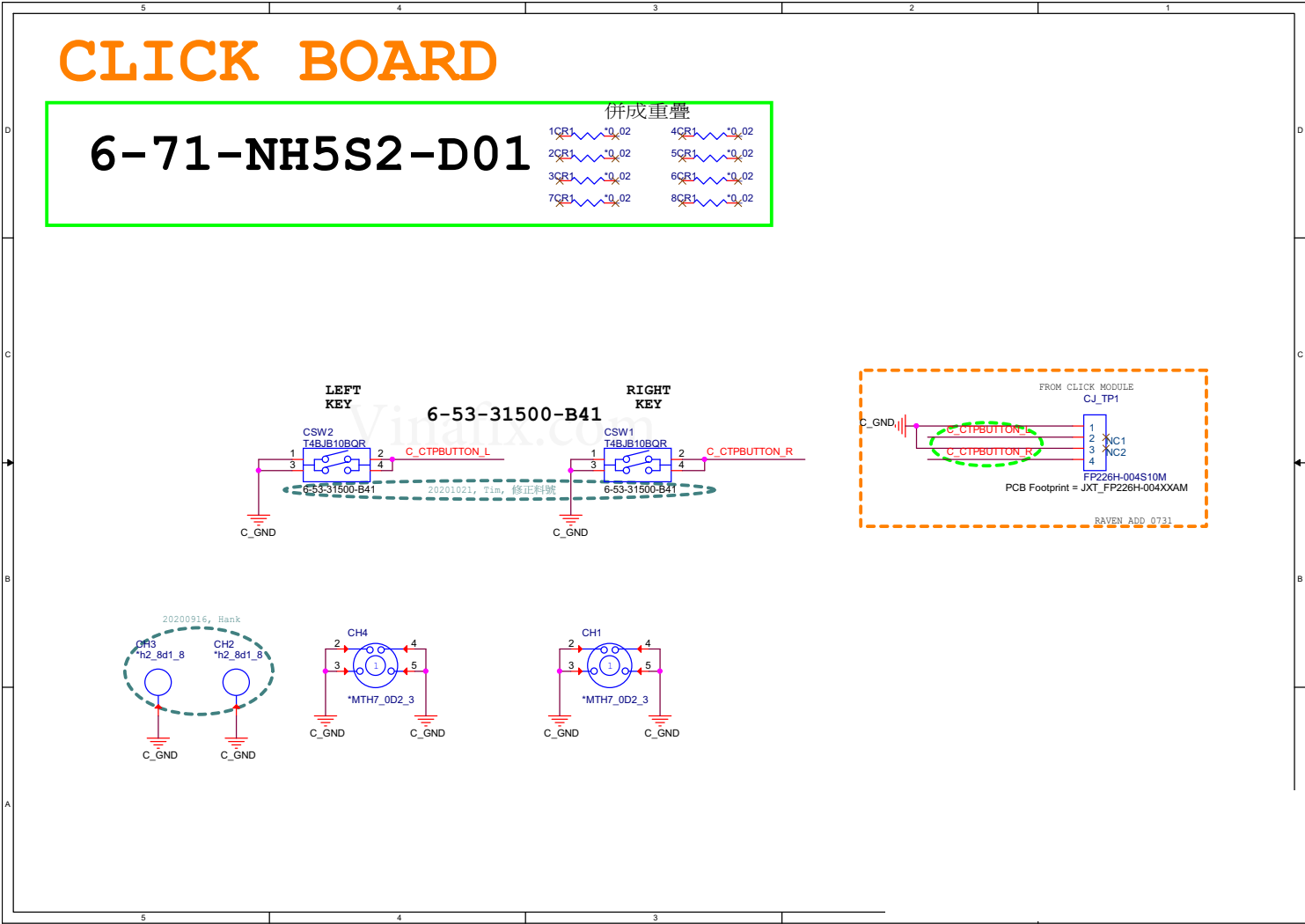
LED Board



Audio Board

Sheet 68 of 71
Audio Board

Click Board



Sheet 69 of 71
Click Board

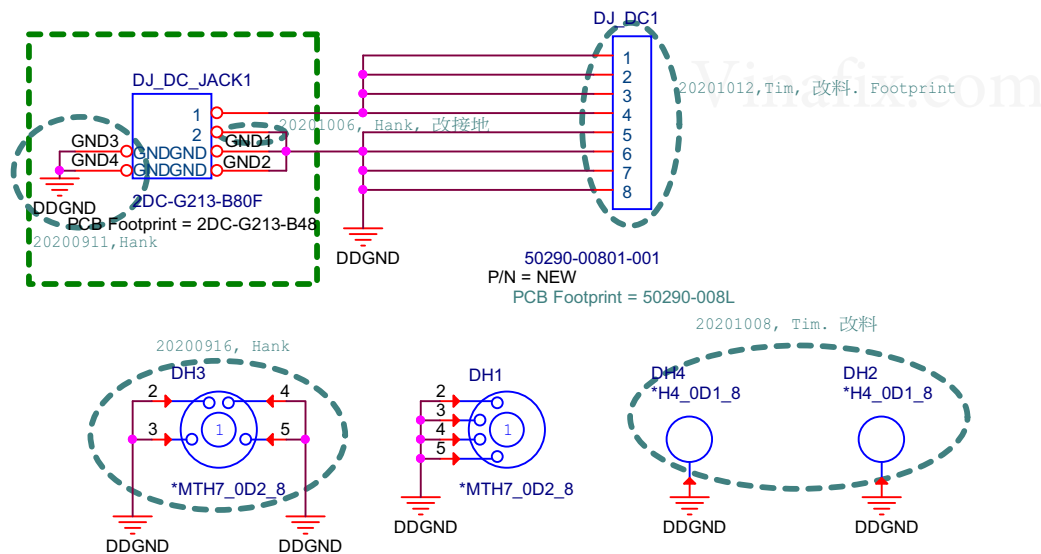
DC Board

DC TO DC BOARD

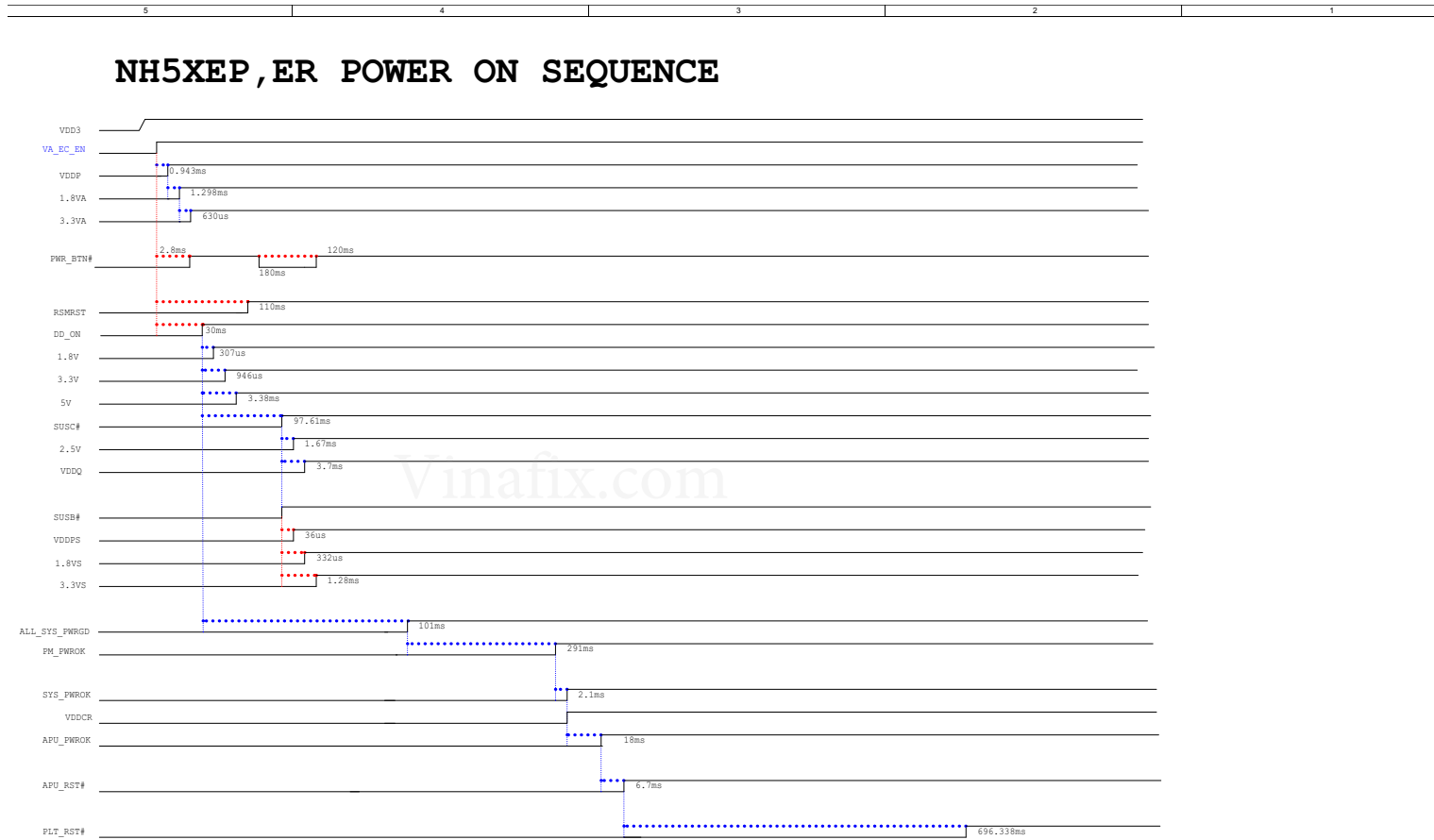
6-71-NH5SC-D01



Sheet 70 of 71
Click Board



Power Sequence



Sheet 71 of 71
Power Sequence