

SERVICE MANUAL

N150ZU / N151ZU / N152ZU

notebook



Notebook Computer

N150ZU / N151ZU / N152ZU

Service Manual

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Version 1.0
December 2018

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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 *N150ZU* / *N151ZU* / *N152ZU* 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

Appendix C, Updating the FLASH ROM BIOS

Preface

IMPORTANT SAFETY INSTRUCTIONS

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

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 3.42A (**65** Watts) minimum AC/DC Adapter.

FCC Statement

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

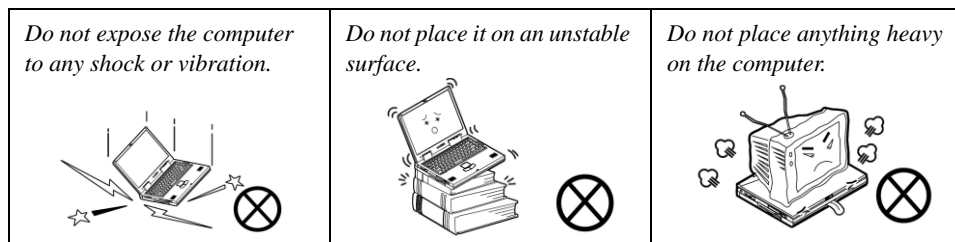
This device may not cause harmful interference.

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

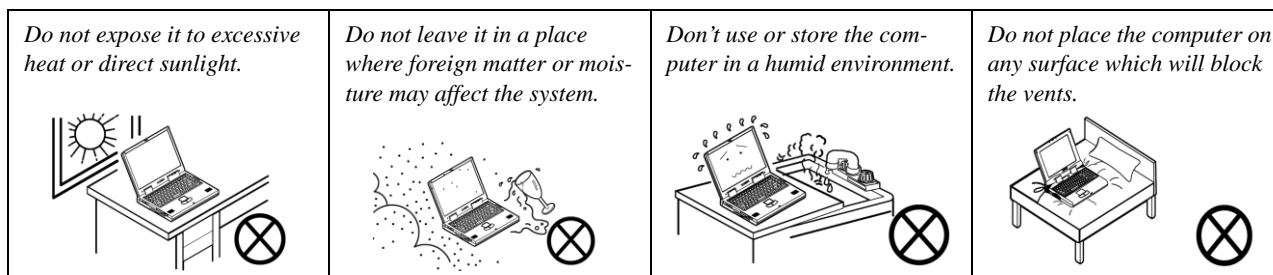
Instructions for Care and Operation

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

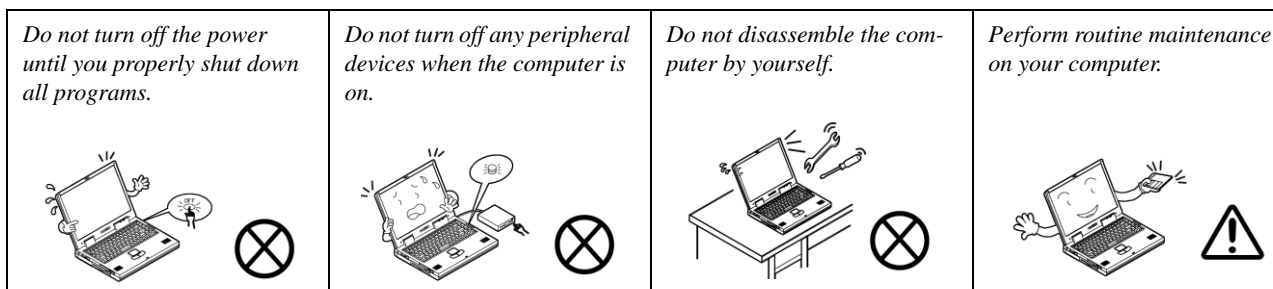
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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

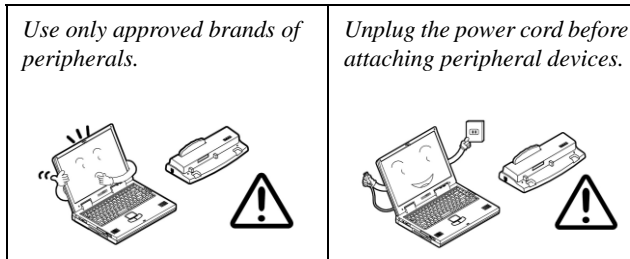


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

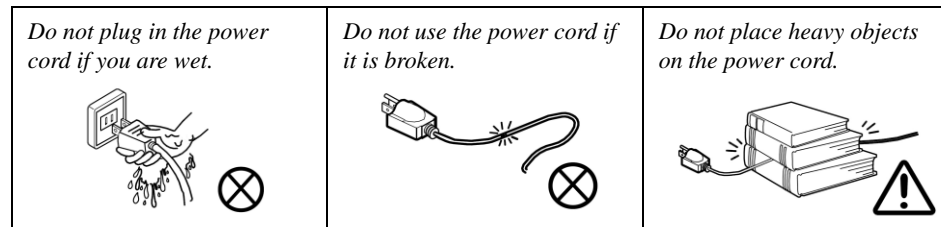
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



Power Safety

The computer has specific power requirements:

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



Power Safety Warning

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

Battery Precautions

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

Battery Guidelines

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

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




Battery Disposal

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

Caution

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

Battery Level

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

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 left of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter and **leave it there for 6 seconds or longer**.
 - Remove the adapter cord from the computer's DC-In jack, and then plug it back in again; 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".

Powering the Computer On

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

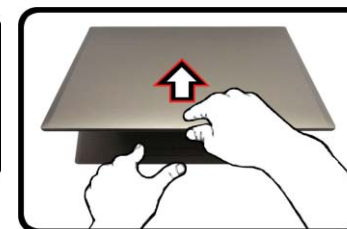
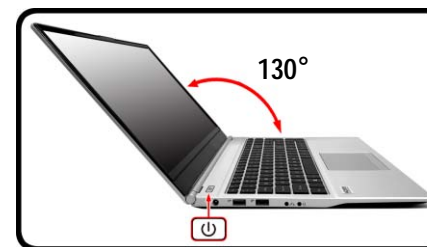


Figure 1
**Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In**

Shut Down

Note that you should always shut your computer down by choosing **Shut Down** from the **Start** Menu.

This will help prevent hard disk or system problems.

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the *N150ZU / N151ZU / N152ZU* series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in the *User's Manual*. The manual is shipped with the computer.

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

The *N150ZU / N151ZU / N152ZU* 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

i7-8565U (1.80GHz)

8MB Smart Cache, 14nm, DDR4-2400MHz, TDP 15W

Intel® Core™ i5 Processor

i5-8265U (1.60GHz)

6MB Smart Cache, 14nm, DDR4-2400MHz, TDP 15W

Intel® Core™ i3 Processor

i3-8145U (2.10GHz)

4MB Smart Cache, 14nm, DDR4-2400MHz, TDP 15W

BIOS

128Mb SPI Flash ROM

Insyde BIOS

Memory

Dual Channel DDR4

Two 260 Pin SO-DIMM Sockets

Supporting **DDR4 2400MHz** or **DDR4 2133MHz** (Depending on CPU Type) Memory Modules

Memory Expandable up to 32GB

Compatible with 4GB, 8GB or 16GB Modules

LCD Options

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

Storage

One Changeable 2.5" 7mm (h) SATA HDD/SSD

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

Video Adapter

Intel UHD Graphics 620

Dynamic Frequency

Intel Dynamic Video Memory Technology

Microsoft DirectX®12 Compatible

Pointing Device

Built-in Touchpad

Or

(Factory Option) Built-In Secure Pad (with Microsoft PTP Multi Gesture & Scrolling Functionality)

Keyboard

Full-size Keyboard (with Embedded Numeric Keypad)

Or

(Factory Option) **Multi-Color Illuminated** Full-size Keyboard (with Embedded Numeric Keypad)

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Array Microphone

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Intel PTT for Systems Without TPM Hardware

(Factory Option) TPM 2.0

(Factory Option) Fingerprint Reader Module

M.2 Slots

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

Slot 2 for **SATA/PCIe Gen3 x4 SSD**

Card Reader

Embedded Multi-In-1 Card Reader

MMC (MultiMedia Card) / RS MMC

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

Interface

One USB 3.1 Gen 2 Type-C Port*

**The maximum amount of current supplied by USB Type-C ports is 500mA (USB 2.0)/1500mA (USB 3.1).*

Or

(Factory Option) One Thunderbolt 3 Port**

***Supports USB Power Delivery/DC-in Function*

Two USB 3.0 (USB 3.1 Gen 1) Type-A Ports

One USB 2.0 Port

One Mini DisplayPort 1.2

One HDMI-Out Port

One 2- In-1 Audio Jack (Microphone and S/PDIF Optical)

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

One RJ-45 LAN Jack

One DC-in Jack

Communication

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

1.0M HD Camera Module

Or

(Factory Option) Windows Hello Camera Module

WLAN/ Bluetooth M.2 Modules:

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

(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

Power

Full Range AC/DC Adapter

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

DC Output: 19V, 3.42A **(65W)**

Embedded Lithium-Ion Polymer Battery Pack, 36WH

Environmental Spec**Temperature**

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Dimensions & Weight

360.4mm (w) * 244.5mm (d) * 19.9mm (h)

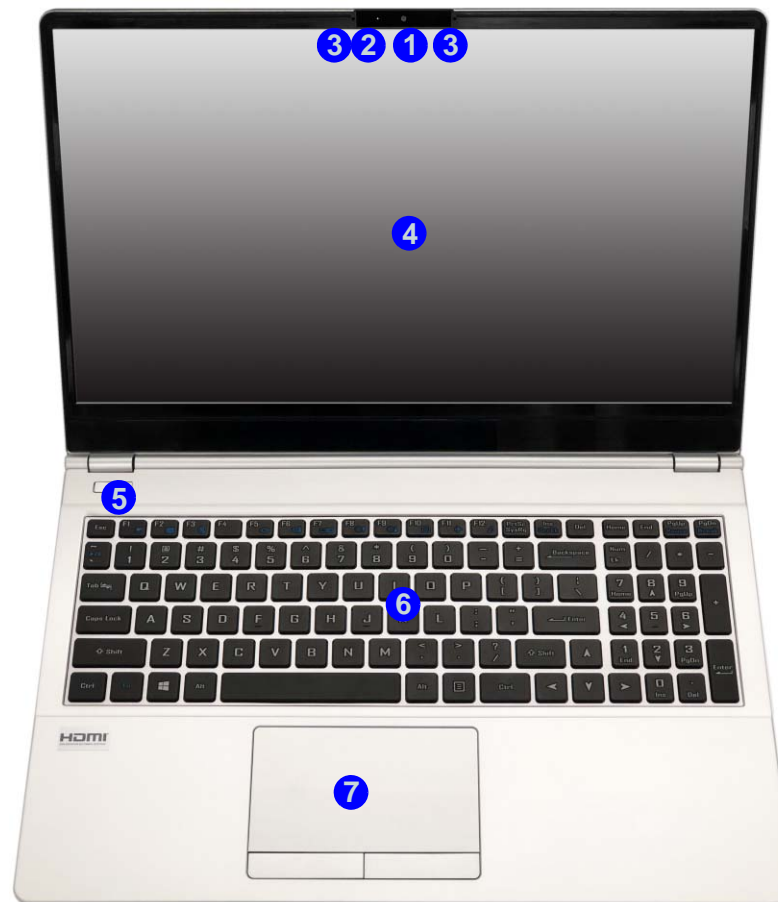
1.7kg (Barebone with 36WH Battery)

Introduction

Figure 1
Top View

1. PC Camera
2. *PC Camera LED
**When the PC camera is in use, the LED will be illuminated in white.*
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



Figure 3
Right Side View

1. USB 3.1 Gen 2 Type-C Port or (Factory Option) *Thunderbolt 3 Port
2. USB 3.0 (USB 3.1 Gen 1) Type-A Port
3. Mini DisplayPort 1.2
4. HDMI-Out Port
5. Multi-in-1 Card Reader
6. RJ-45 LAN Jack
7. Security Lock

RIGHT SIDE VIEW



Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DC-In Jack
2. USB 3.0 (USB 3.1 Gen 1) Type-A Port
3. USB 2.0 Port
4. 2- In-1 Audio Jack (Microphone and S/PDIF Optical)
5. 2- In-1 Audio Jack (Headphone and Microphone)

LEFT SIDE VIEW



Figure 5
Rear View

1. Vent

REAR VIEW



External Locator - Bottom View

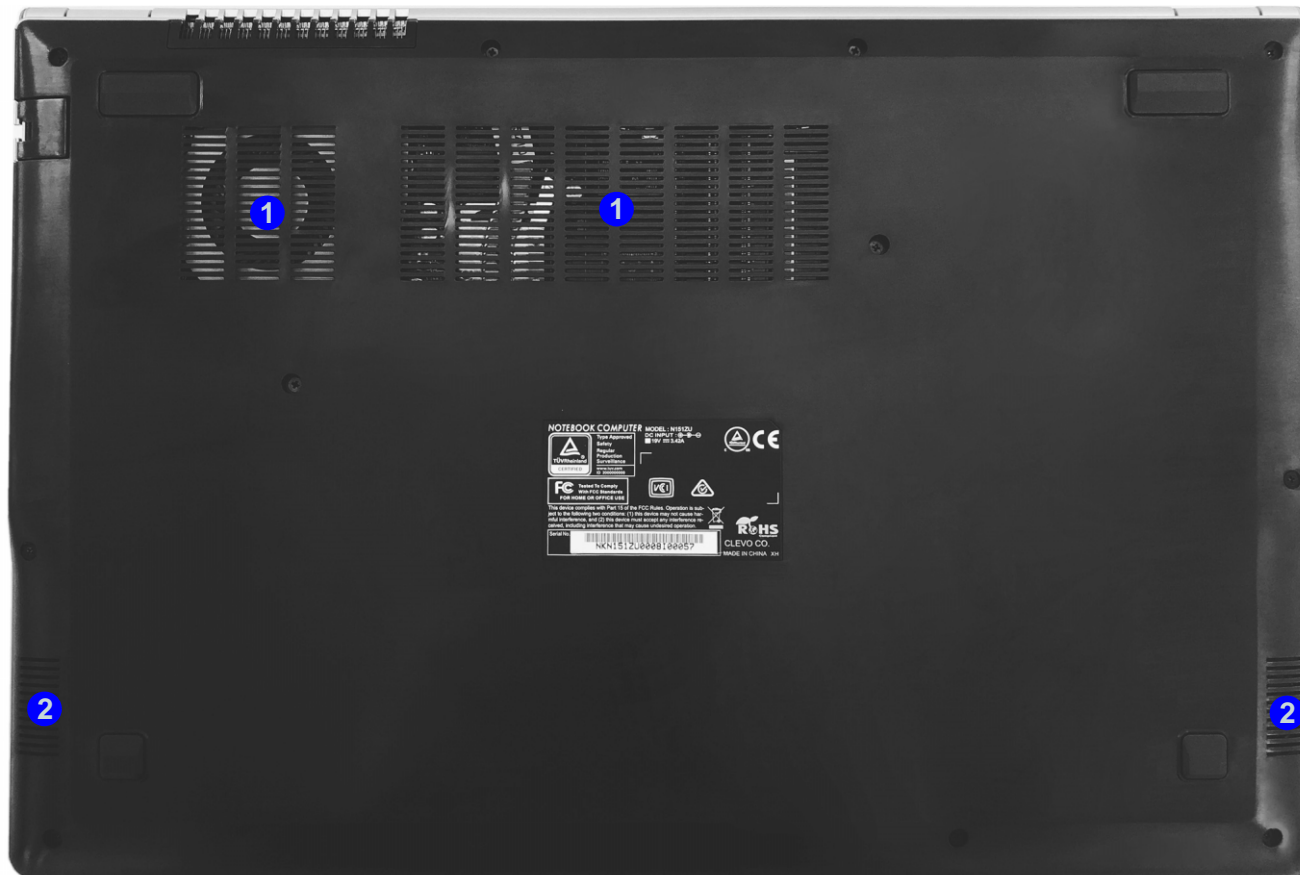


Figure 6
Bottom View

1. Vent
2. Speakers

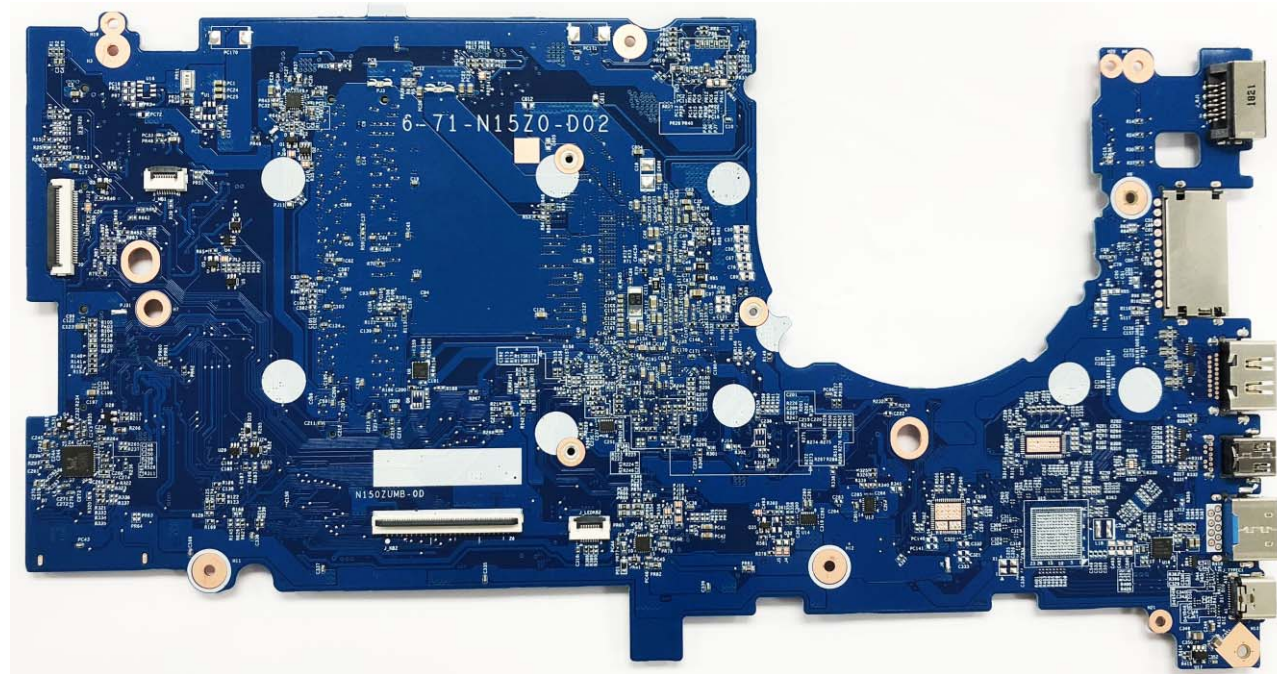


Overheating

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

Figure 7
Mainboard Top
Key Parts

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

Figure 8
**Mainboard Bottom
Key Parts**

1. CPU
2. Memory Slots
DDR4 SO-DIMM
3. KBC-ITE IT8587



Introduction

Figure 9
**Mainboard Top
Connectors**

Mainboard Overview - Top (Connectors)

1. USB Board Connector
2. Power Connector
3. Keyboard Cable Connector
4. White LED Keyboard Connector
5. RJ-45 LAN Jack
6. HDMI-Out Port
7. Mini Display Port
8. USB Port 3.0 (USB 3.1 Gen 1) Port
9. USB 3.1 Gen 2 Type-C Port or (Factory Option) *Thunderbolt 3 Port

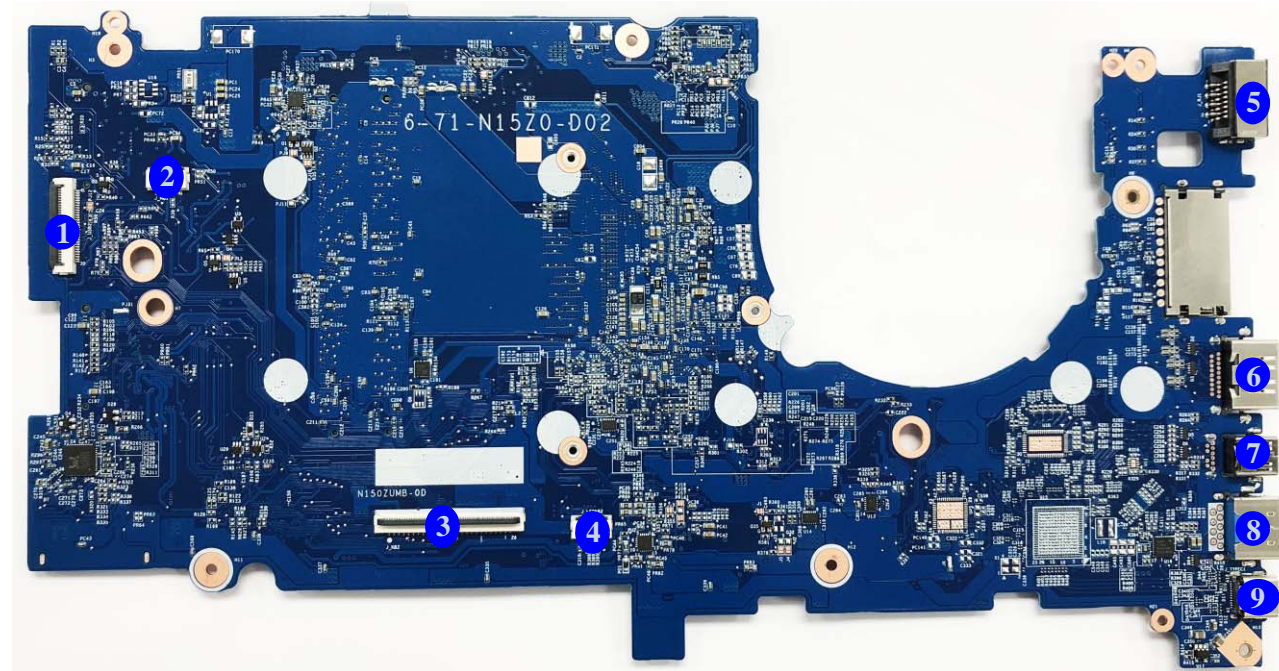
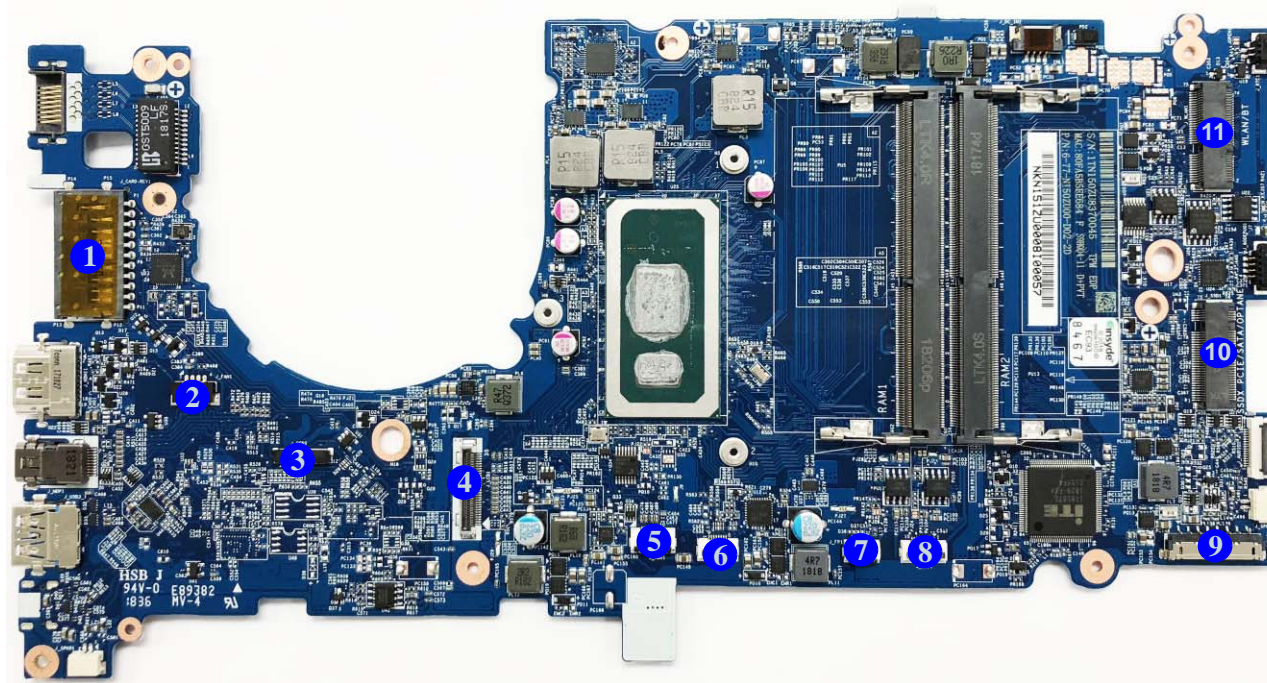


Figure 10
**Mainboard Bottom
Connectors**

1. Multi-in-1 Card Reader
2. Fan Connector
3. CCD Connector
4. LCD Cable Connector
5. HDD Connector
6. Speaker Connector
7. Fingerprint Connector
8. LED Connector
9. Battery Connector
10. M.2 Card Connector
11. WLAN Connector




Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *N150ZU* / *N151ZU* / *N152ZU* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

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

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

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

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

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


Information

Warning

Disassembly

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

Maintenance Tools

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

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



Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors

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

Pressure sockets for multi-wire connectors

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

Pressure sockets for ribbon connectors

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

Board-to-board or multi-pin sockets

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

Maintenance Precautions

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

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

Cleaning

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

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

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

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



Power Safety Warning

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

Disassembly Steps

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

To remove the Keyboard:

1. Remove the keyboard *page 2 - 5*

To remove the Battery:

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

To remove the HDD:

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

To remove the System Memory:

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

To remove the Wireless LAN Module:

1. Remove the keyboard *page 2 - 5*
2. Remove the battery *page 2 - 6*
3. Remove the WLAN *page 2 - 13*

To remove the M.2 SSD Module:

1. Remove the keyboard *page 2 - 5*
2. Remove the battery *page 2 - 6*
3. Remove the SSD module *page 2 - 15*

To remove the CCD Module:

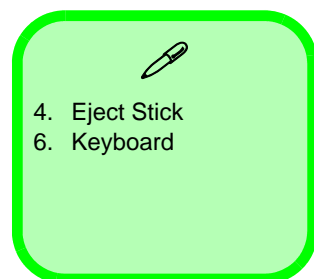
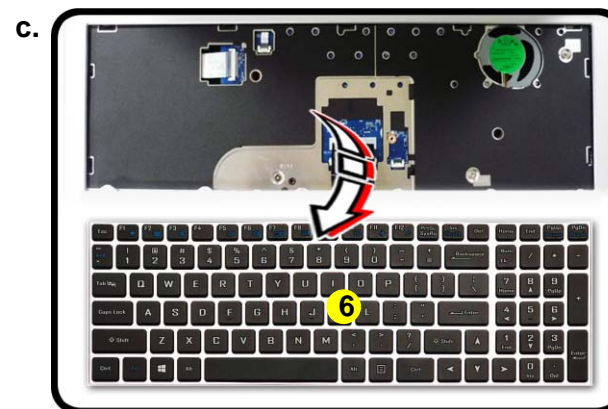
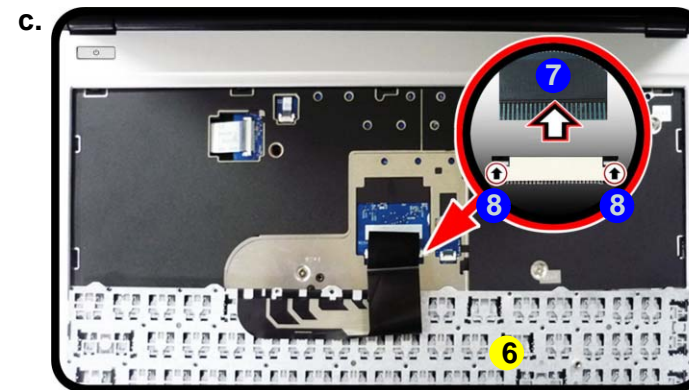
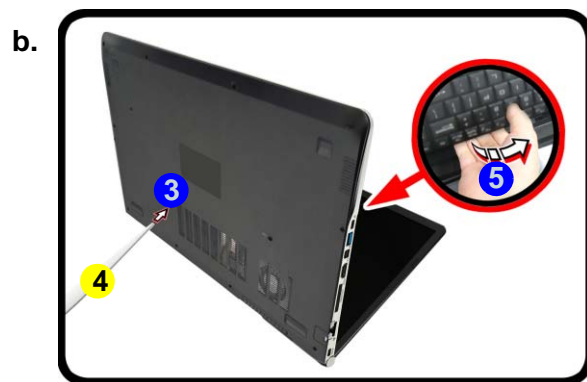
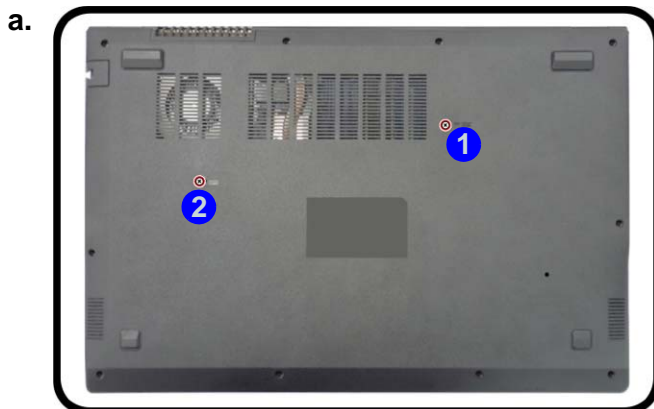
1. Remove the keyboard *page 2 - 5*
2. Remove the battery *page 2 - 6*
3. Remove the CCD module *page 2 - 16*

Removing the Keyboard

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

Figure 1
Keyboard Removal

- a.
- b. Release the keyboard by pressing at point **3**.
- c. Disconnect the keyboard ribbon cable from the locking collar socket.
- d. Remove the keyboard.

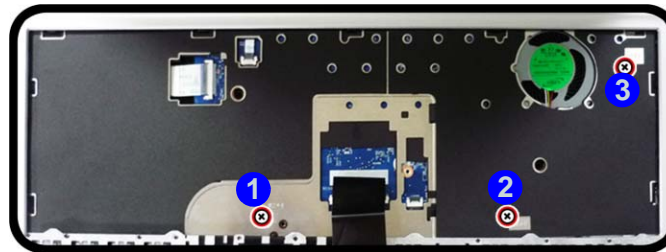


Disassembly

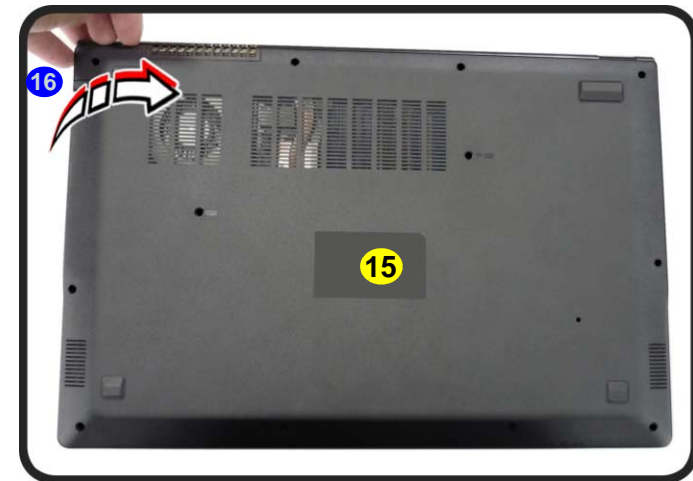
Figure 2
36W Battery Removal

- Remove the screws.
 - Remove the SD cover and screws.
 - Remove the bottom case.
- Turn **off** the computer, turn it over to remove the keyboard ([page 2 - 5](#)).
 - Remove screws **1** - **3** ([Figure 2a](#)).
 - Remove the SD card cover **4** and screws **5** - **14** on the bottom case ([Figure 2b](#)).
 - Carefully lift the bottom case **15** up in the direction of the arrow at point **16** and remove it ([Figure 2c](#)).

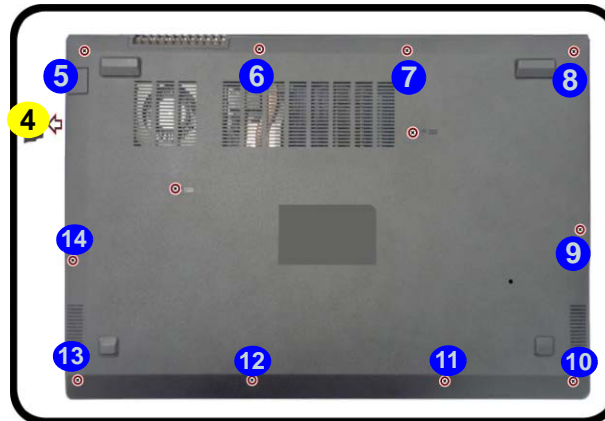
a.



c.



b.



Powering the Computer On

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

4. SD Card Cover
15. Bottom Case

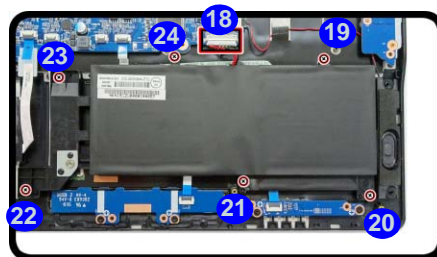
- 13 Screws

5. The battery will be visible at point **17** on the computer (**Figure 3d**).
6. Carefully disconnect the cable **18**, then remove screws **19** - **25** (**Figure 3e**).
7. Lift the battery **26** off the computer (**Figure 3f**).
8. Reverse the process to install a new battery (do not forget to replace all the screws and bottom cover - check the HDD sponge information below).

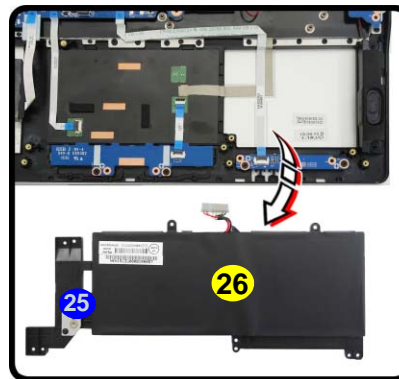
d.



e.



f.



HDD Sponge

Note that the sponge must exist on the back of the bottom cover for machines using a 36W battery.

While these sponge must be removed from the back of the bottom cover for machines using a 54W battery.



Powering the Computer On

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



26. Battery

- 7 Screws

Disassembly

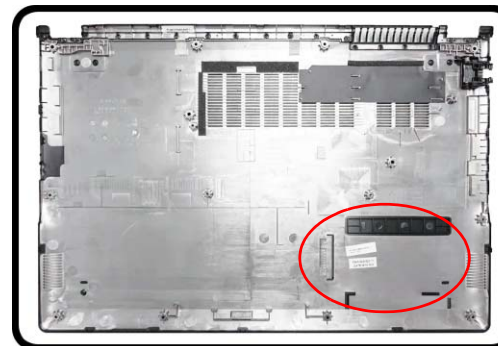
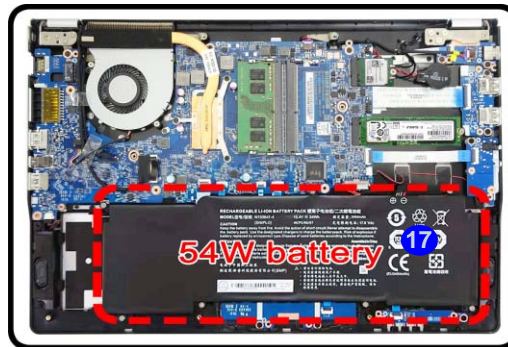
Figure 4
54W Battery Removal (cont'd.)

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

54W Battery Removal

- Turn **off** the computer, turn it over to remove the keyboard ([page 2 - 5](#)), bottom case ([page 2 - 6](#)) and hard disk ([page 2 - 9](#)).
- The battery will be visible at point **17** on the computer ([Figure 4a](#)).
- Carefully disconnect the cable **18**, then remove screws **19** - **25** ([Figure 4b](#)).
- Lift the battery **26** off the computer ([Figure 3e](#)).
- Reverse the process to install a new battery (do not forget to replace all the screws and bottom cover - check the HDD sponge information below).

a.



HDD Sponge

Note that the sponge must exist on the back of the bottom cover for machines using a 36W battery.

While these sponge must be removed from the back of the bottom cover for machines using a 54W battery.

b.



c.



Powering the Computer On

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

26. Battery

- 7 Screws

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 7.0mm (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 Upgrade Process

1. Turn **off** the computer, turn it over to remove the keyboard ([page 2 - 5](#)) and battery ([page 2 - 6](#)).
2. The hard disk drive will be visible at point **1** on the mainboard ([Figure 5a](#)).
3. Disconnect the cable **2** from the HDD assembly ([Figure 5b](#)).

a.



b.

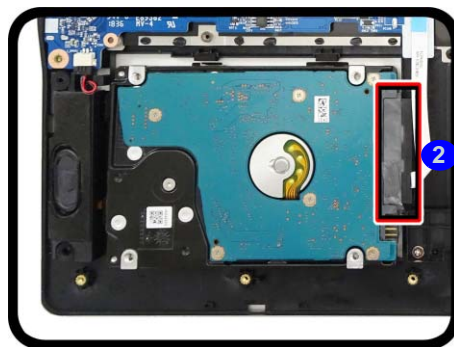


Figure 5
HDD Assembly Removal

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



HDD System Warning

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

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

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

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



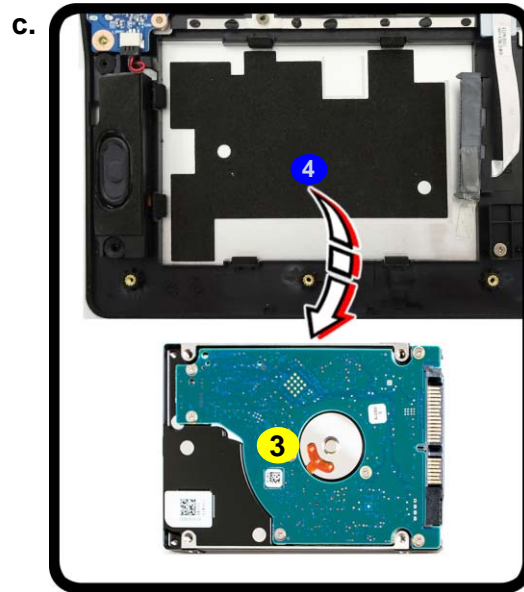
1. HDD Assembly
 - 1 Screw

Disassembly

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

c. Lift the HDD assembly out of the bay.

4. Lift the hard disk **3** out of the bay **4** (*Figure 6c*).
5. Reverse the process to install a new hard disk (do not forget to replace all the screws and bottom cover - check the HDD sponge information on [page 2 - 7](#)).



3. HDD

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 2133MHz. 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.

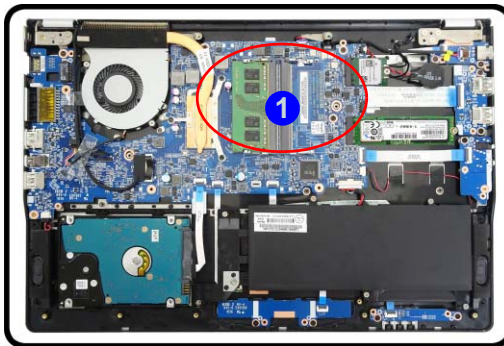
Memory Upgrade Process

1. Turn **off** the computer, turn it over to remove the keyboard ([page 2 - 5](#)) and battery ([page 2 - 6](#)).
2. The RAM modules will be visible at point **1** on the mainboard ([Figure 7b](#)).
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](#)).
4. The RAM module **4** will pop-up ([Figure 7c](#)), and you can then remove it.

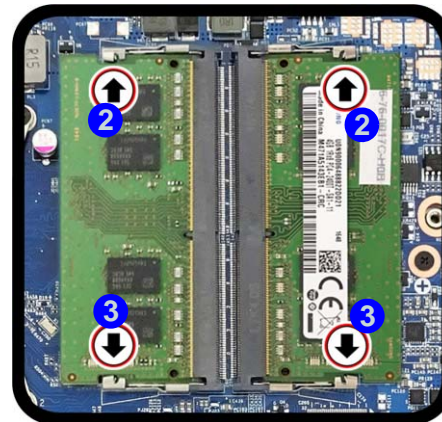
Figure 7
RAM Module Removal

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

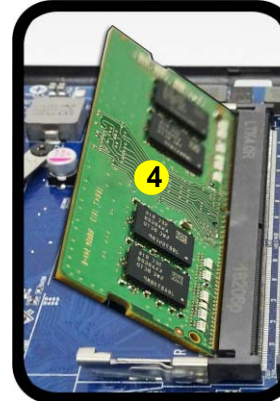
a.



b.



c.



Single Memory Module Installation

If your computer has a single memory module, then insert the module into the **Channel 0 (JDIMM1 / RAM1)** socket.



Contact Warning

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



4. RAM Module

Disassembly

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

Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over to remove the keyboard ([page 2 - 5](#)) and battery ([page 2 - 6](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard ([Figure 8a](#)).
3. Carefully disconnect the cables **2** & **3**, and then remove the screw **4** ([Figure 8b](#)).
4. The Wireless LAN module **5** ([Figure 8c](#)) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new module (do not forget to replace all the screws and bottom cover).

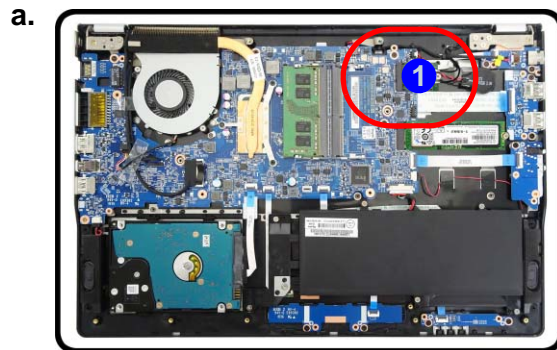


Figure 8
**Wireless LAN
Module Removal**

- Locate the WLAN.
- Disconnect the cable and remove the screw.
- The WLAN module will pop up and lift it out of the computer.

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



5. Wireless LAN Module

- 1 Screw

Disassembly

Wireless LAN, and Combo Module Cables

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo 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 (Main) on the module, and cable 2 to antenna 2 (Aux).

Removing the M.2 SSD Module

1. Turn **off** the computer, turn it over to remove the keyboard ([page 2 - 5](#)) and battery ([page 2 - 6](#)).
2. The M.2 SSD module will be visible at point **1** on the mainboard ([Figure 9a](#)).
3. Remove the screw **2** ([Figure 9b](#))
4. The M.2 SSD module **3** ([Figure 9c](#)) will pop-up, and you can remove it from the computer.
5. Reverse the process to install a new module (do not forget to replace all the screws and bottom cover).

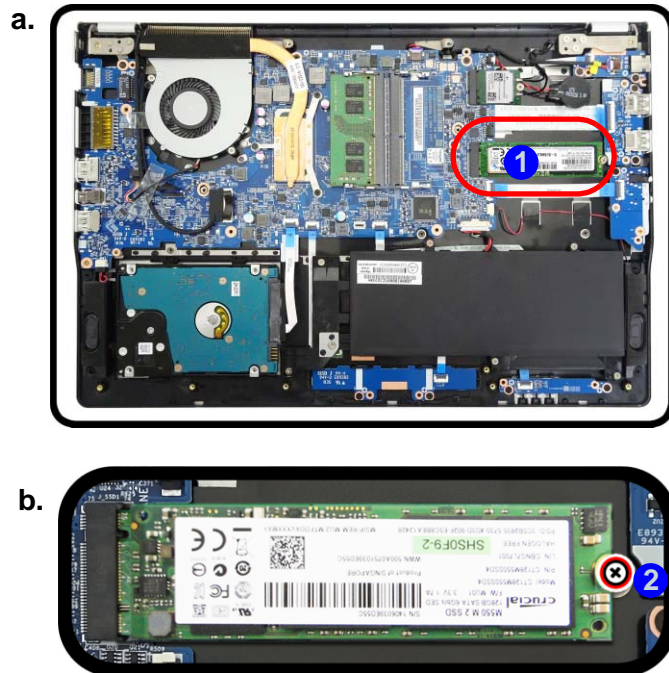


Figure 9
M.2 SSD Module Removal

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



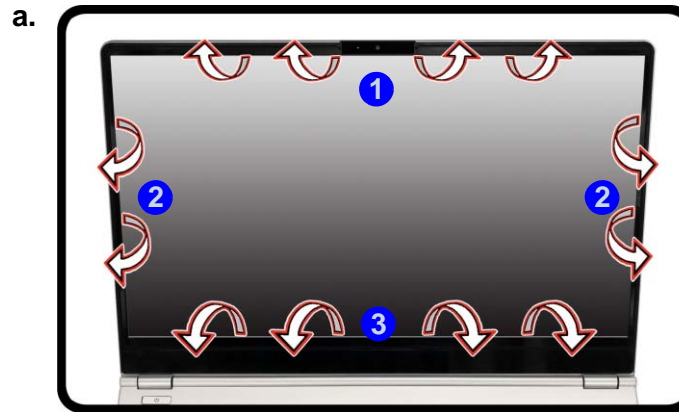
3.M2 SATA Module

- 1 Screw

Disassembly

Figure 10
CCD Removal

- a. Run your fingers around the inner frame of the LCD panel at the points indicated by the arrows.
 - b. Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Lift the LCD front panel upwards.
1. Turn **off** the computer, turn it over to remove the keyboard ([page 2 - 5](#)) and battery ([page 2 - 6](#)).
 2. Run your fingers around the inner frame of the LCD panel at the points as indicated by the arrows ① - ③ ([Figure 10a](#)).
 3. Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Carefully lift and remove the LCD front cover ⑤ upwards ([Figure 10b](#)).



4. LCD Front Cover

4. Disconnect the cable **5** (*Figure 11f*).
5. Remove the CCD module **6** (*Figure 11g*).
6. Reverse the process to install a new CCD module.



Figure 11g
CCD Re
(cont)

- c. Disconnect
- d. Remove the
ule.

Appendix A:Part Lists

This appendix breaks down the *N150ZU / N151ZU / N152ZU* series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

Note: This section indicates the *manufacturer's* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

Note: Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

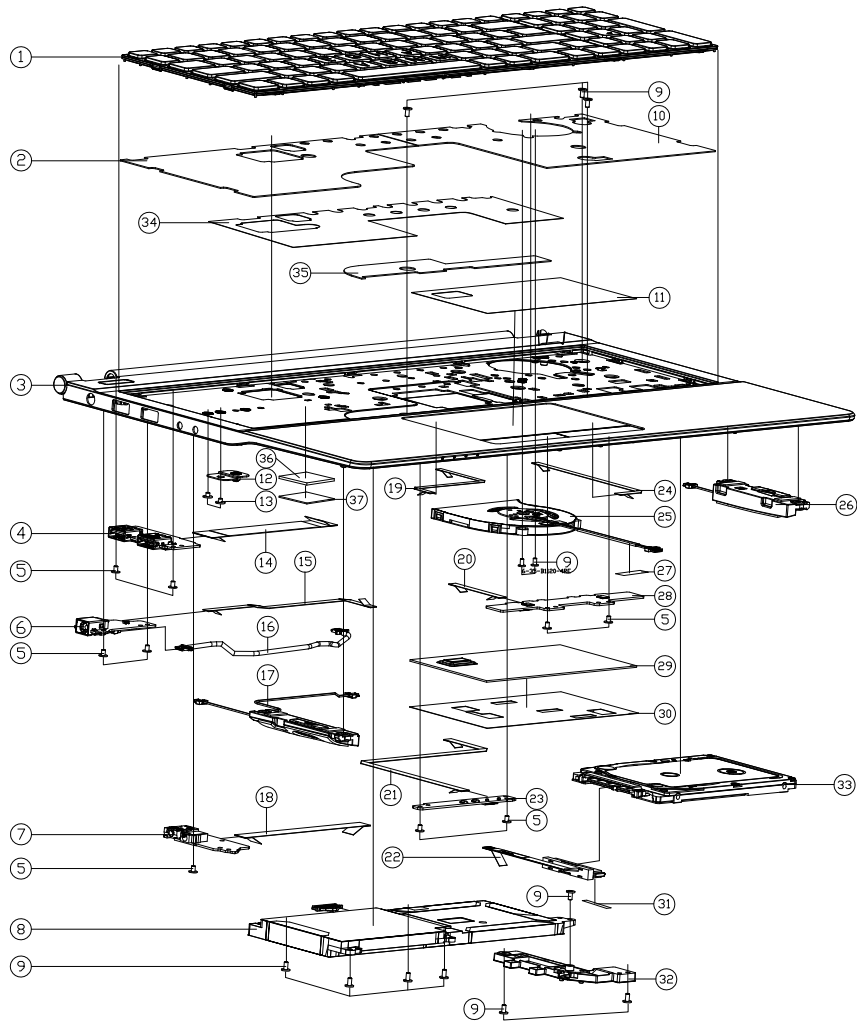
Part List Illustration Location

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

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

Part	
Top (with Fingerprint)	<i>page A - 3</i>
Top (without Fingerprint)	<i>page A - 4</i>
Bottom	<i>page A - 5</i>
LCD	<i>page A - 6</i>
MB	<i>page A - 7</i>

Top (with Fingerprint)

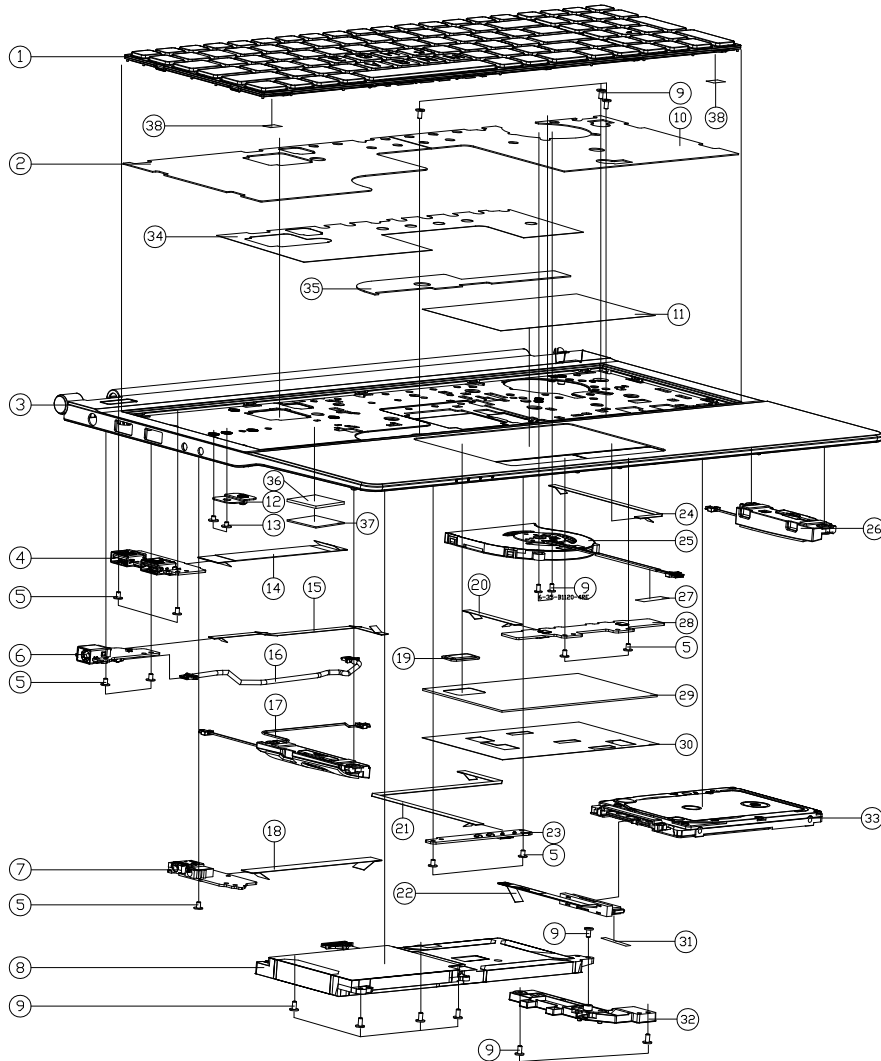


ITEM	PART NAME	PART NO	REMARK
1	KB FOR MULTI ISC BL KB SERIES N150ZU	6-N150ZU-KB-MCL-US	
1	KB FOR NON BL KB US SERIES N150ZU	6-N150ZU-KB-NBL-US	
1	KB FOR US SERIES N151ZU	6-N151ZU-KB-US	
1	KB FOR MULTI ISC BL KB US SERIES N151ZU	6-N151ZU-KB-MCL-US	
2	KB MYLAR W/O BL L N150ZU	6-40-N15Z2-060	FOR W/O BL KB, W/O FPC/SECUREPAD
3	TOP CASE MODULE N151ZU	6-39-N15Z2-112	FOR W/L KB/W/O BL KB W/FPC/SECUREPAD
3	TOP CASE MODULE N150ZU	6-39-N15Z2-011	FOR W/L KB/W/O BL KB W/FPC/SECUREPAD
4	USB BOARD V2.0 N150ZU	6-77-N15Z3-D02	
5	SCREW M2x2L KI BZ ICT NY (00-#4.5,DT-0.4)	6-35-B6120-3RD	
6	POWER SWITCH BOARD V2.0 N150ZU	6-77-N15ZS-D02	
7	AUDIO BOARD V2.0 N150ZU	6-77-N15Z8-D02	
8	W/F S U BAY/20MM/20MM TOP SP/10MM POWER CT GAGE ID 30T/0.005MM N150ZU	6-87-N130S-31A01	
8	W/F S U BAY/20MM/20MM TOP SP/10MM POWER CT GAGE ID 30T/0.005MM N150ZU	6-87-N130S-3U9A1	
8	W/F S U BAY/20MM/20MM TOP SP/10MM POWER CT GAGE ID 30T/0.005MM N150ZU	6-87-N14WS-32B00-A	
8	W/F S U BAY/20MM/20MM TOP SP/10MM POWER CT GAGE ID 30T/0.005MM N150ZU	6-87-N14WS-31A00-A	
9	SCREW M2x4L KI NI ICT NY (00-#4.5,DT-0.4)	6-35-B1120-4RE	
10	KB MYLAR W/O BL R N150ZU	6-40-N15Z2-030	
11	TP MYLAR W/FINGER AG32+SDTT-7N N150ZU	6-40-N15Z2-070	
11	TP MYLAR W/FINGER AG32+SDTT-7N N150ZU	6-40-N15Z2-110	
12	SSD BRACKET SGCC N130BU	6-33-N130S-011	ONLY FOR HE 0280V/0280V SSD
13	SCREW M2x2L KI NI ICT NY (00-#5 ,T-0.5)	6-35-B1120-2R0	
14	FFC CABLE FOR USB TO NO L-20MM GAV PITCH 45/0.01MM QDD N150ZU	6-43-N15Z0-031	
15	FFC CABLE FOR IC TO NO L-20MM GAV PITCH 45/0.01MM QDD N150ZU	6-43-N15Z0-021	
16	IC CABLE TO NO 10MM 20V AP BLUE TRANSCEIVER-BAY/10MM AND AUTO N150ZU	6-43-N15Z0-080-1	
17	SPECIAL LENS 2.4 4 PIN 0.25MM/0.1MM-0.1MM THE CENTER OF HO PRO N150ZU	6-23-SN15Z-0L1	
18	FFC CABLE FOR AUDIO TO NO L-20MM GAV PITCH 45/0.01MM QDD N150ZU	6-43-N15Z0-011	
19	FFC CABLE FOR TP TO NO L-20MM GAV PITCH 45/0.01MM QDD N150ZU	6-43-N15Z0-071-1	
20	FFC CABLE FOR TP TO CLICK L-20MM GAV PITCH 0.4 PIN QDD N150ZU	6-43-N15Z0-061	
21	FFC CABLE FOR LED TO NO L-20MM GAV PITCH 45/0.01MM QDD N150ZU	6-43-N15Z0-051	
22	HDD CONNECTOR-HDD/PCB/CABLE/MALE CODE (FFC CABLE 20MM N150ZU)	6-23-FN130-011	
23	LED BOARD V2.0 N150ZU	6-77-N15Z4-D02	
24	FFC CABLE FOR TP TO NO L-20MM GAV PITCH 45/0.01MM QDD N150ZU	6-43-N15Z0-041	
25	FAN MODULE (WINMA) PWM N141WU	6-31-N14WS-102-1	
26	SPECIAL LENS 2.4 4 PIN 0.25MM/0.1MM-0.1MM THE CENTER OF HO PRO N150ZU	6-23-SN15Z-0R1	
27	TAPE MYLAR TRANSPARENT (20x10x0.05) P1800MM	6-40-P1803-020	
28	CLICK BOARD V2.0 N150ZU	6-77-N15Z2-D02	
29	SECURE PAD SYMPHONY TM-P428 DEC 00846000 GAWD N150ZU	6-49-N15Z3-021	
30	TP MYLAR PET N150ZU	6-40-N15Z2-011	
31	TAPE MYLAR (B)MYLAR M550J	6-40-M55J2-020	
32	BATTERY HOLDER MODULE N150ZU	6-42-N15Z2-101	
33	W/O HDD ASS'Y N151ZU	6-79-N151ZU0J-010	
33	W/HDD ASS'Y N151ZU	6-79-N151ZU0J-020	
33	W/O HDD W/36WH BATTERY ASS'Y N151ZU	6-79-N151ZU0J-030	
34	KB FLOATING MYLAR N150ZU	6-40-N15Z2-090	
35	KB MYLAR W/O BL DOWN N150ZU	6-40-N15Z2-0A0	
36	THERMAL PAD M4500 (07.3x17.3x2.75)MM N750BU	6-48-N7503-010	FOR W/M.2 SSD
37	THERMAL PAD R3300 (07.3x17.3x1.7) N2300WU	6-48-N2303-011	FOR W/M.2 SSD
38	MYLAR(7x6x0.15MM,BLACK) FOR P640RF	6-40-00150-760	

Figure A - 1
Top
(with Fingerprint)

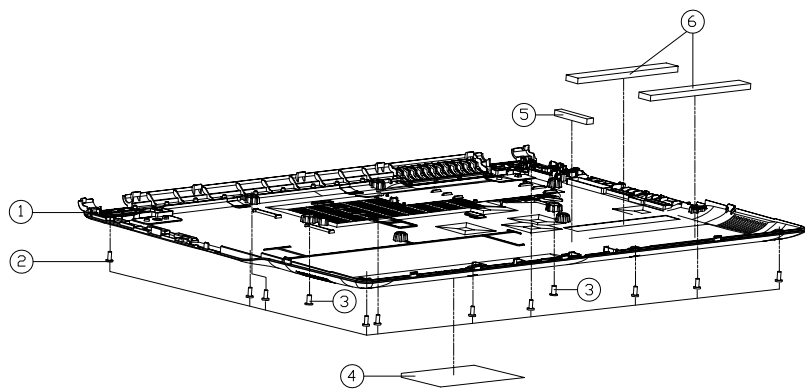
Top (without Fingerprint)

Figure A - 2
Top (without Fin-
gerprint)



ITEM	PART NAME	PART NO	REMARK
1	KB FOR MULTI ISC BL KB SERIES N150ZU	6-N150ZU-KB-MCL-US	
1	KB FOR NON BL KB US SERIES N150ZU	6-N150ZU-KB-NBL-US	
1	KB FOR US SERIES N151ZU	6-N151ZU-KB-US	
1	KB FOR MULTI ISC BL KB US SERIES N151ZU	6-N151ZU-KB-MCL-US	
2	KB MYLAR W/O BL L N150ZU	6-40-N15Z2-060	FOR W/O BL KB W/O FPC/SECUREPAD
3	TOP CASE MODULE N151ZU	6-39-N15Z2-112	FOR W/O BL KB W/O FPC/SECUREPAD
3	TOP CASE MODULE N150ZU	6-39-N15Z2-011	FOR W/O BL KB W/O FPC/SECUREPAD
4	USB BOARD V2.0 N150ZU	6-77-N15Z3-D02	
5	SCREW M2x3L KI BZ ICT NY (OD=045,DT=04)	6-35-B6120-3RD	
6	POWER SWITCH BOARD V2.0 N150ZU	6-77-N15ZS-D02	
7	AUDIO BOARD V2.0 N150ZU	6-77-N15Z8-D02	
8	WIP S L1 DAY/2N/5W/2W ZOP 30P/100P/100P (10 GAGE) IS 500/100/100	6-87-N130S-31A01	
8	WIP S L1 DAY/2N/5W/2W ZOP 30P/100P/100P (10 GAGE) IS 500/100/100	6-87-N130S-3U9A1	
8	WIP S L1 DAY/2N/5W/2W ZOP 30P/100P/100P (10 GAGE) IS 500/100/100	6-87-N14WS-32800-A	
8	WIP S L1 DAY/2N/5W/2W ZOP 30P/100P/100P (10 GAGE) IS 500/100/100	6-87-N14WS-31A00-A	
9	SCREW M2x4L KI NI ICT NY (OD=045,DT=04)	6-35-B1120-4RE	
10	KB MYLAR W/O BL R N150ZU	6-40-N15Z2-030	
11	TP MYLAR W/O FINGER AG32+SDDT-7N N150ZU	6-40-N15Z2-080	
11	TP MYLAR W/O FINGER AG32+SDDT-7N N150ZU	6-40-N15Z2-121	
12	SSD BRACKET SGCC N130BU	6-33-N130S-011	ONLY FOR H2 (2280/2280) SSD
13	SCREW M2x2L KI NI ICT NY (OD=05 ,T=05)	6-35-B1120-2R0	
14	FPC CABLE FOR USB TO MD L-30MM 60V PITCH AS/30P/100P N150ZU	6-43-N15Z0-031	
15	FPC CABLE FOR IC TO MD L-30MM 60V PITCH AS/30P/100P N150ZU	6-43-N15Z0-021	
16	IC CABLE TO MD 30MM 10V 4P BLUE W/3520S 40000-010 N150ZU	6-43-N15Z0-080-1	
17	SPRING L15042N 4 2MM 02300000-000000 HE DUNTER IF AIR PROD N150ZU	6-23-5N15Z-0L1	
18	FPC CABLE FOR AUDIO TO MD L-30MM 60V PITCH AS/30P/100P N150ZU	6-43-N15Z0-011	
19	TP W/O FP RUBBER (17.9x11.2x1.2) SILICONE N150ZU	6-47-N15Z2-090	
20	FPC CABLE FOR TP TO CLICK L-30MM 60V PITCH 1/4 PIN 100 N150ZU	6-43-N15Z0-061	
21	FPC CABLE FOR LED TO MD L-30MM 60V PITCH AS/30P/100P N150ZU	6-43-N15Z0-051	
22	HDD CONNECTOR-HDD-PCB-4/CABLE CODE FPC CABLE 72MM N150ZU	6-23-FN130-011	
23	LED BOARD V2.0 N150ZU	6-77-N15Z4-D02	
24	FPC CABLE FOR TP TO MD L-30MM 60V PITCH AS/30P/100P N150ZU	6-43-N15Z0-041	
25	FAN MODULE (WINMA) PWM N141WU	6-31-N14WS-102-1	
26	SPRING L15042N 4 2MM 02300000-000000 HE DUNTER IF AIR PROD N150ZU	6-23-5N15Z-0R1	
27	TAPE MYLAR TRANSPARENT (20x10x0.05) P1800M	6-40-P1803-020	
28	CLICK BOARD V2.0 N150ZU	6-77-N15Z2-D02	
29	TOUCH PAD SYNAPTICS PTP TM-P3453 (020x60x0.5) N150ZU	6-49-N15Z3-011	
30	TP MYLAR PET N150ZU	6-40-N15Z2-011	
31	TAPE MYLAR (B) MYLAR M550J	6-40-M55J2-020	
32	BATTERY HOLDER MODULE N150ZU	6-42-N15Z2-101	
33	W/O HDD ASS'Y N151ZU	6-79-N151ZU0J-010	
33	W/HDD ASS'Y N151ZU	6-79-N151ZU0J-020	
33	W/O HDD W/36WH BATTERY ASS'Y N151ZU	6-79-N151ZU0J-030	
34	KB FLOATING MYLAR N150ZU	6-40-N15Z2-090	
35	KB MYLAR W/O BL DOWN N150ZU	6-40-N15Z2-0A0	
36	THERMAL PAD M4500 (17.3x17.3x2.75)MM N750BU	6-48-N7503-010	FOR W/M2 SSD
37	THERMAL PAD R3300 (17.3x17.3x1.1) N230WU	6-48-N2303-011	FOR W/M2 SSD
38	MYLAR(7x6x0.15MM,BLACK) FOR P640RF	6-40-00150-760	

Bottom

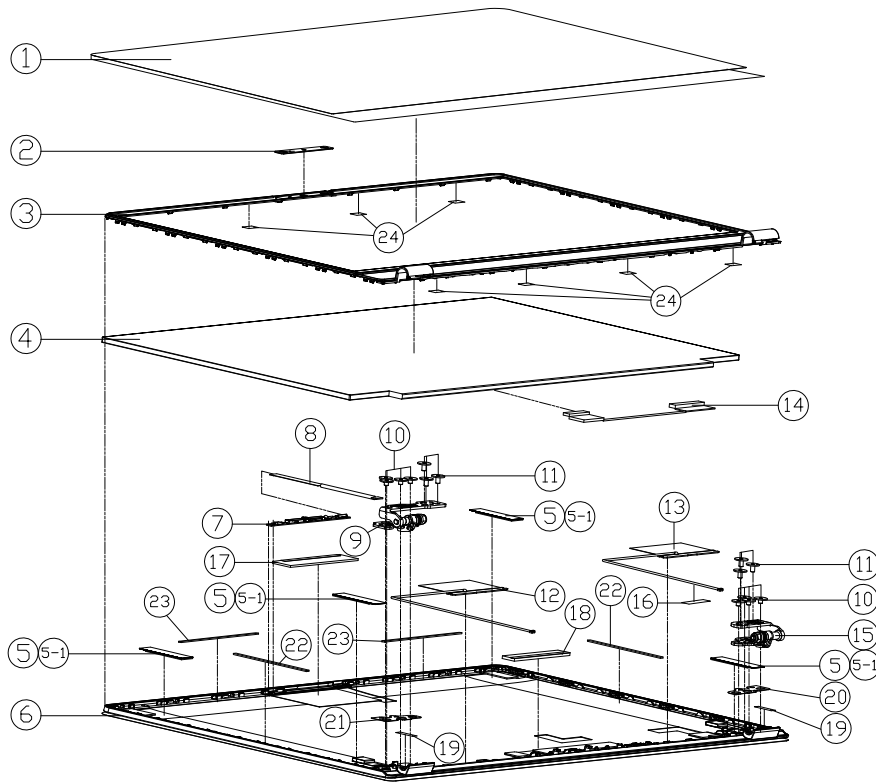


ITEM	PART NAME	PART NO	REMARK
1	BOTTOM CASE MODULE N150ZU	6-39-N15Z3-011	
1	BOTTOM CASE MODULE N151ZU	6-39-N15Z3-112	
2	SCREW M2*5L K1(T=0.8 D=4.0) BK/Z ICT NY	6-35-B6120-5R0	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	PRODUCT LABEL FOR N150ZU	6-45-N150ZU03-010	
4	PRODUCT LABEL FOR N151ZU	6-45-N151ZU03-010	
5	BOTTOM HDD SPONGE (35*5*4T) CR4382 N150ZU	6-47-0019A-35K	FOR W/36WH BATTERY
6	BOTTOM HDD SPONGE (80*10*3.5T) CR4382 N150ZU	6-47-0019A-80Y	FOR W/36WH BATTERY

Figure A - 3
Bottom

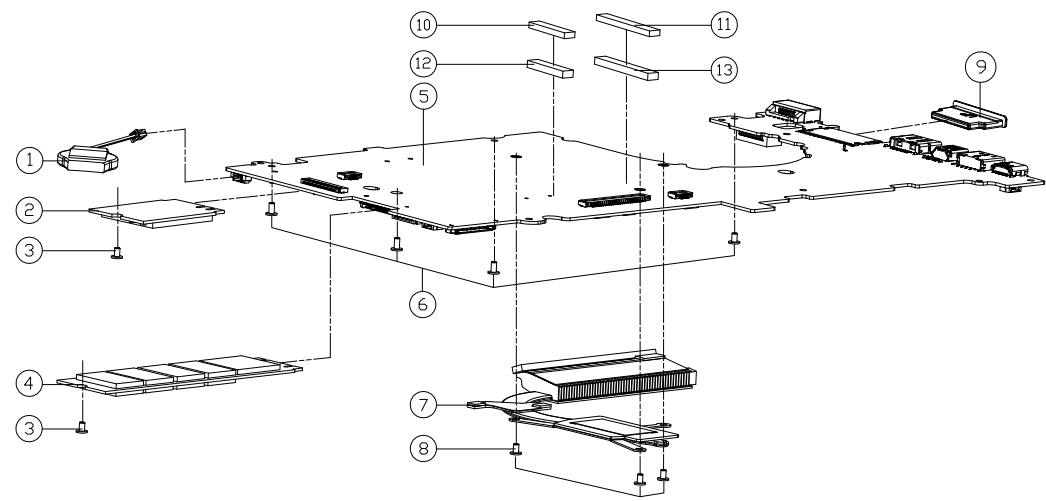
LCD

Figure A - 4
LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT MYLAR BOPP N150ZU	6-40-N15Z8-010	
2	CCD LENS PMMA N150ZU	6-42-N15Z1-020	FOR CCD
2	CCD W/IR LENS PMMA N150ZU	6-42-N15Z1-010	FOR IR CCD
3	FRONT COVER MODULE N150ZU	6-39-N15Z1-011	
3	FRONT COVER MODULE N151ZU	6-39-N15Z1-112	
4	LCD NS56' FHD/VA/VA / W/AVD GT/EP AU B550T0661 04/VA/VA LED 32 W	6-50-LBB32-G013	
4	LCD NS56' FHD/VA/VA/VA GT/EP AU B550T0661 04/VA/VA LED 32 W	6-50-LBB32-G004	
4	LCD NS56' FHD/VA/VA GT/EP INNOVUS NS566A-160 (REV D) LED 32W	6-50-LBB32-V002	
4	LCD NS56' FHD/IPS/VA/VA GT/EP LG LPS56W1-3P1 LED 32W	6-50-LBB32-L013	
4	LCD NS56' FHD/VA/VA/VA GT/EP INNOVUS NS566A-160 LED 32W	6-50-LBB26-V020	
5	DOUBLE SIDE TAPE (25*10*0.95T) FM2822K N150ZU	6-40-N15Z1-031	
5-1	DOUBLE SIDE TAPE (FM2822K 35*10*1.6T) N150ZU	6-40-N15Z1-070	ONLY FOR 6-50-LBB26-V020
6	BACK COVER MODULE N150ZU	6-39-N15Z1-021	
6	BACK COVER MODULE N151ZU	6-39-N15Z1-122	
7	WIRE CABLE FOR CCD 3033MM 12P TO 8P 3.3V (4L) N150ZU	6-88-N15ZC-5100	OPTION
7	WIRE CABLE FOR CCD 3033MM 12P TO 8P 3.3V (4L) N150ZU	6-88-N15ZC-4900	OPTION
7	WIRE CABLE FOR CCD 3033MM 12P TO 8P 3.3V (4L) N150ZU	6-88-N15ZC-5111	OPTION
8	WIRE-HFC CABLE FOR CCD 3033MM 12P TO 8P 3.3V (4L) N150ZU	6-43-N15ZT-021	FOR CCD
8	WIRE-HFC CABLE FOR CCD 3033MM 12P TO 8P 3.3V (4L) N150ZU	6-43-N15ZT-011	FOR IR CCD
9	HINGE L (SK7) N150ZU	6-33-N15Z1-0L1	
10	SCREW M2.5*2.5L KI BK/Z ICT NY(08,1-0.6)	6-35-B6125-2R5	
11	SCREW M2.5*4L KI NI ICT NY	6-35-21125-4R0	
12	ANTENNA (CLOUT) PEBA XLAM VET VL 2 PCB IN 2.4G/5G 150MM N150ZU	6-23-7N15Z-011	
13	ANTENNA (CLOUT) PEBA XLAM VET VL 2 PCB IN 2.4G/5G 150MM N150ZU	6-23-7N15Z-021	
14	WIRE CABLE FOR 12P 40MM ID 14V 3P 0.14V CONDUCTIVE-220 N150ZU	6-43-N15Z1-011-1N	
15	HINGE R (SK7) N150ZU	6-33-N15Z1-0R1	
16	TOP CASE MYLAR FRB3 25*7*0.05 P180HMM	6-40-P1802-030	
17	CCD SPONGER(60.05*15*0.75T) CR4382 N150ZU	6-47-0019A-60S	ONLY FOR 6-50-LBB26-V020
18	LCD SPONGER(50*10*0.75T) CR4382 N150ZU	6-47-0019A-50V	ONLY FOR 6-50-LBB26-V020
19	BACK HINGE MYLAR N150ZU	6-40-N15Z1-130	
20	CONDUCTIVE CLOTH FOR HINGE R N150ZU	6-47-N15Z1-040	
21	CONDUCTIVE CLOTH FOR HINGE L N150ZU	6-47-N15Z1-050	
22	LCD SPONGE (100*3*1.15)MM CR4382 N150ZU	6-47-0019A-B01	ONLY FOR 6-50-LBB26-V020
23	LCD SPONGE (100*3*1.15)MM CR4382 N150ZU	6-47-0019A-B01	
24	MYLAR(7*6*0.15MM, BLACK) FOR P640RF	6-40-00150-760	

MB



ITEM	PART NAME	PART NO	REMARK
1	SCREW W/ WING NUTS 100% NICKEL PLATED	6-23-22015-TE0	
2	SCREW W/ WING NUTS 100% NICKEL PLATED	6-88-N24CF-4220	OPTION
2	SCREW W/ WING NUTS 100% NICKEL PLATED	6-88-P75FF-4210	OPTION
2	SCREW W/ WING NUTS 100% NICKEL PLATED	6-88-N24CF-4200	OPTION
3	SCREW W/ WING NUTS 100% NICKEL PLATED	6-35-B1120-2R0	
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS1R6-101	OPTION
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS1R6-104	OPTION
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS1R6-S08	OPTION
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS1R6-S05	OPTION
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS1R6-Z00	OPTION
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS1R6-H00	OPTION
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS116-Z02	OPTION
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS117-Z00	OPTION
4	SCREW W/ WING NUTS 100% NICKEL PLATED	6-85-DS1R6-200	OPTION
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-20	
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-2E	
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-3E	
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-1C	
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-1D	
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-1E	
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-2C	
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-3C	
5	W/ WING NUTS 100% NICKEL PLATED	6-77-N150Z00-D02-3D	
6	SCREW W/ WING NUTS 100% NICKEL PLATED	6-35-B6120-3RD	
7	CPU HEATSINK MODULE	6-31-N1522-102	
8	SCREW W/ WING NUTS 100% NICKEL PLATED	6-35-B1120-3RD	
9	W/ WING NUTS 100% NICKEL PLATED	6-47-N1300-012	
10	TOP CASE RUBBER GASKET	6-47-N1522-060	ONLY FOR W/BL KB
11	KB W/BL RUBBER	6-47-N1522-030	ONLY FOR W/BL KB
12	TOP CASE RUBBER GASKET	6-47-N1522-070	ONLY FOR W/D BL KB
13	KB W/D BL RUBBER	6-47-N1522-040	ONLY FOR W/D BL KB

Figure A - 5
MB

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *N150ZU / N151ZU / N152ZU* 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>Panel - Page B - 18</i>	<i>VDD3, VDD5 - Page B - 34</i>
<i>Processor 1/12 - Page B - 3</i>	<i>PS8338B - Page B - 19</i>	<i>1.05VA, VCCST, VCCSTG - Page B - 35</i>
<i>Processor 2/12 - Page B - 4</i>	<i>miniDP - Page B - 20</i>	<i>VDDQ, VDDQ_VTT, 1.5VS, 1.8VA - Page B - 36</i>
<i>Processor 3/12 - Page B - 5</i>	<i>TR_TBT - Page B - 21</i>	<i>AC-In - Page B - 37</i>
<i>Processor 4/12 - Page B - 6</i>	<i>TR_Power - Page B - 22</i>	<i>VCore NCP81218 - Page B - 38</i>
<i>Processor 5/12 - Page B - 7</i>	<i>ASM1543, Redriver - Page B - 23</i>	<i>VCCIN, VCCGT, VCCSA Output - Page B - 39</i>
<i>Processor 6/12 - Page B - 8</i>	<i>TPS65987D Type C - Page B - 24</i>	<i>VCCIO, 2.5V - Page B - 40</i>
<i>Processor 7/12 - Page B - 9</i>	<i>Card Reader & LAN_RTL8411B - Page B - 25</i>	<i>Charger, AC IN - Page B - 41</i>
<i>Processor 8/12 - Page B - 10</i>	<i>Audio Codec - Page B - 26</i>	<i>USB Board - Page B - 42</i>
<i>Processor 9/12 - Page B - 11</i>	<i>KBC ITE IT8587 - Page B - 27</i>	<i>USB Board - Page B - 43</i>
<i>Processor 10/12 - Page B - 12</i>	<i>E, B Key - Page B - 28</i>	<i>Audio Board - Page B - 44</i>
<i>Processor 11/12 - Page B - 13</i>	<i>M Key PCIE SSD - Page B - 29</i>	<i>Click Board - Page B - 45</i>
<i>Processor 12/12 - Page B - 14</i>	<i>SATA, LED, TPM - Page B - 30</i>	<i>LED Board - Page B - 46</i>
<i>DDR4 SO_DIMM_0 - Page B - 15</i>	<i>USB - Page B - 31</i>	<i>Power Switch Board - Page B - 47</i>
<i>DDR4 SO_DIMM_1 - Page B - 16</i>	<i>Conn, CCD, Fan, TP, LED KB - Page B - 32</i>	
<i>HDMI - Page B - 17</i>	<i>3V, 5V, 3VS, 5VS, 1.8VS CTL - Page B - 33</i>	

Table B - 1
**SCHEMATIC
DIAGRAMS**

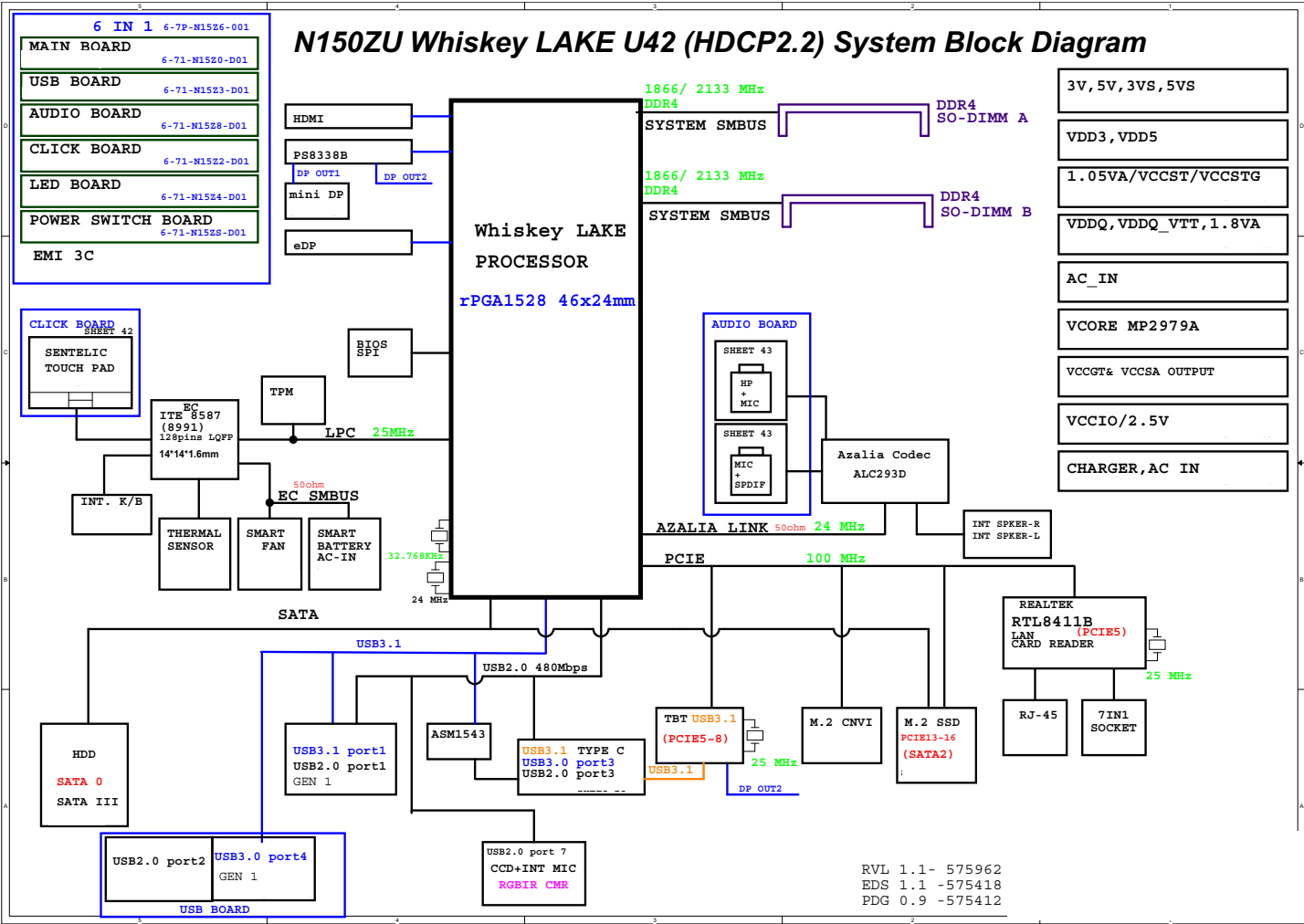


Version Note

The schematic diagrams in this chapter are based upon version 6-7P-N15Z6-003. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

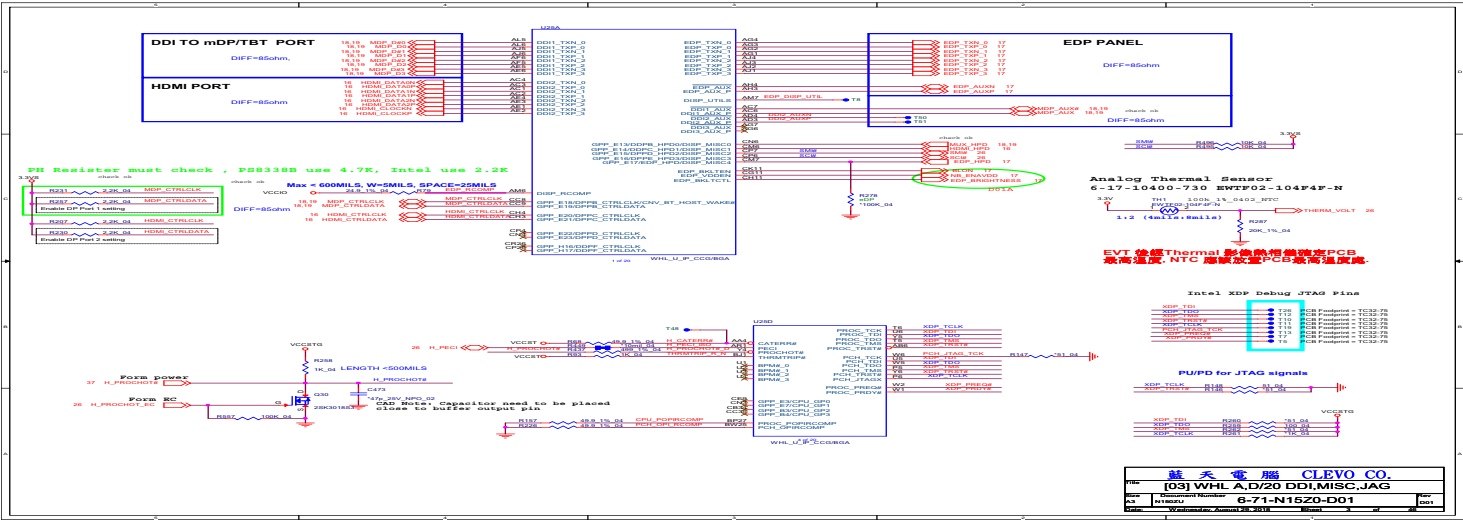
Sheet 1 of 46
System Block
Diagram



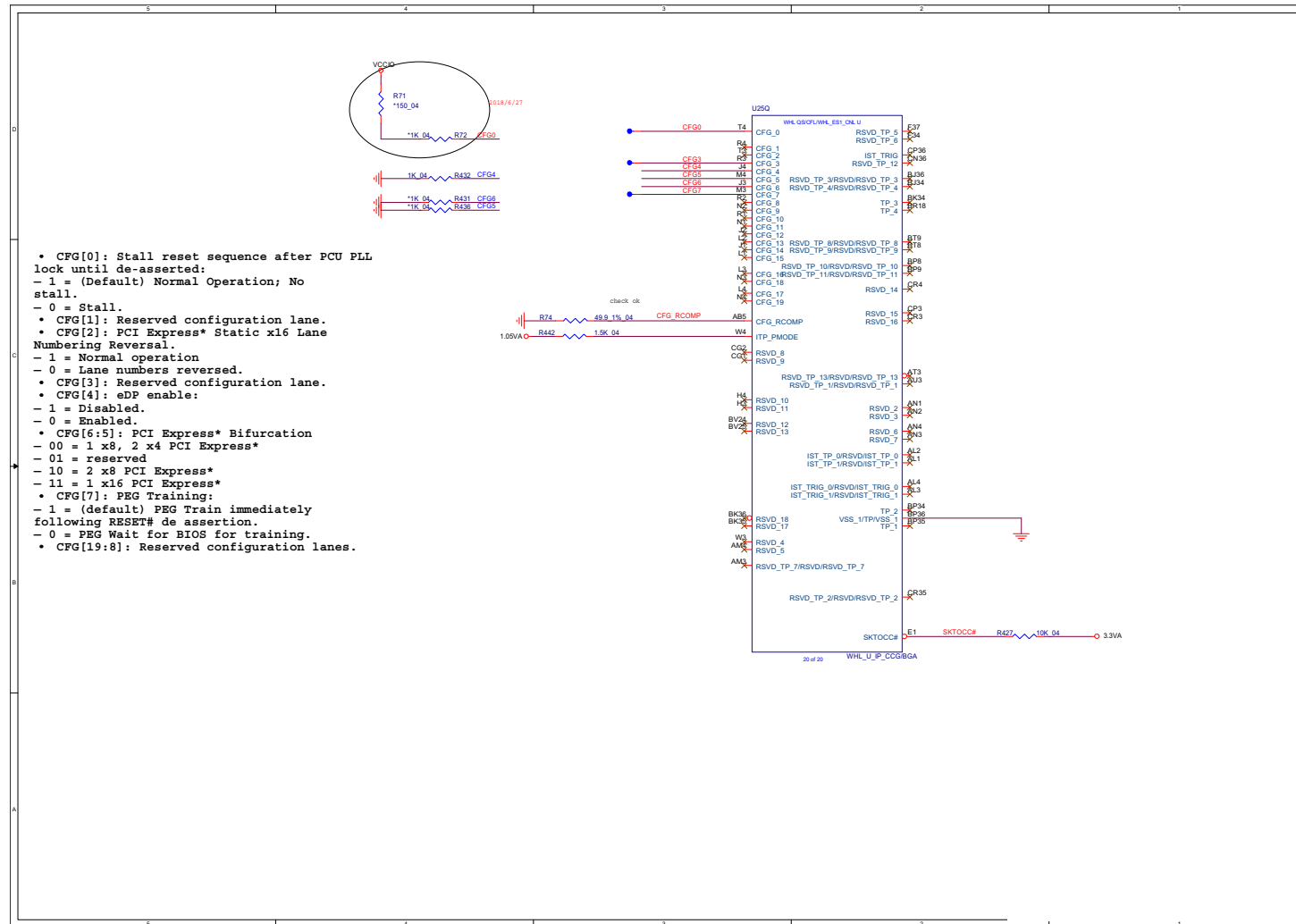
Schematic Diagrams

Processor 2/12

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Processor 2/12



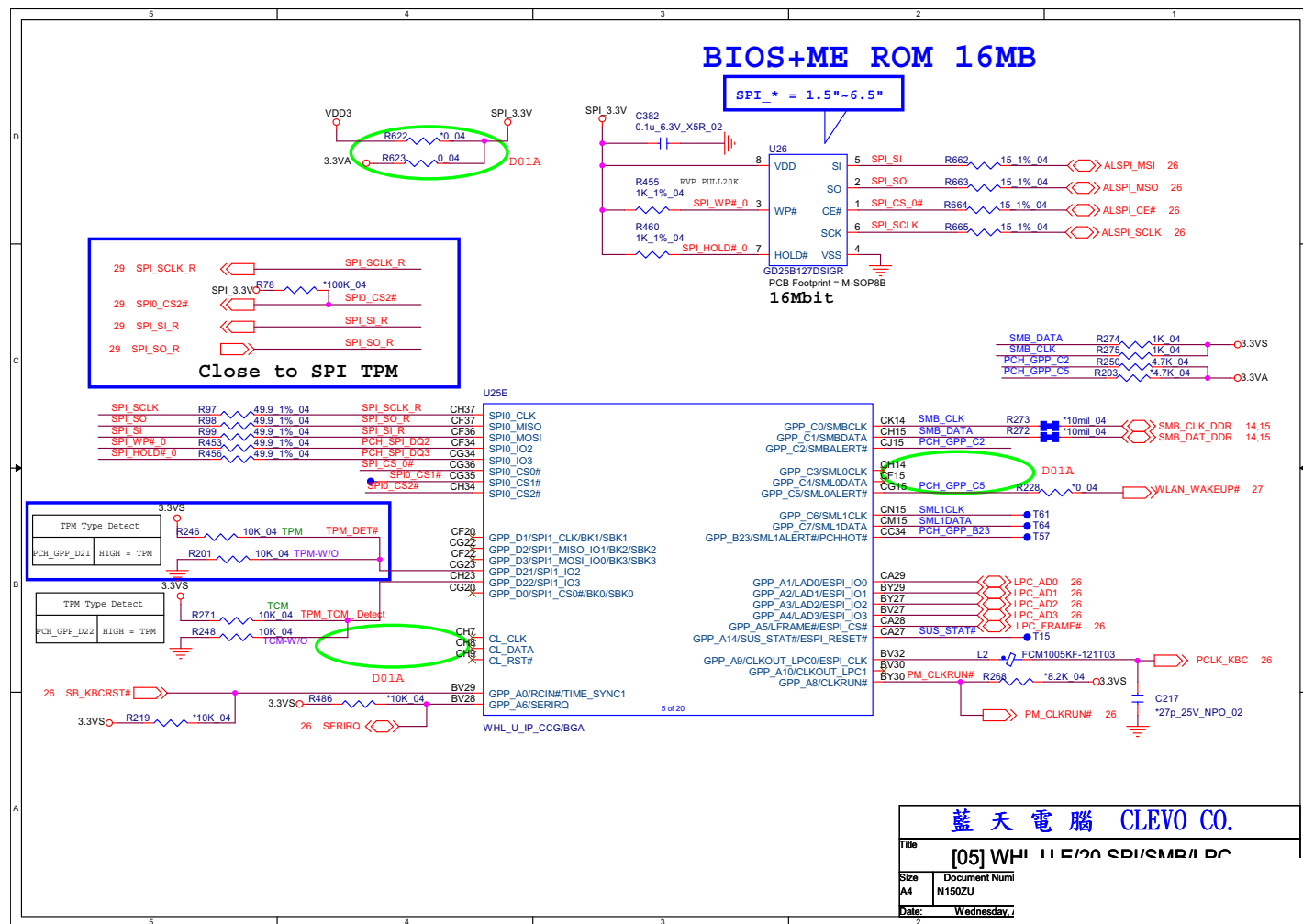
Processor 3/12

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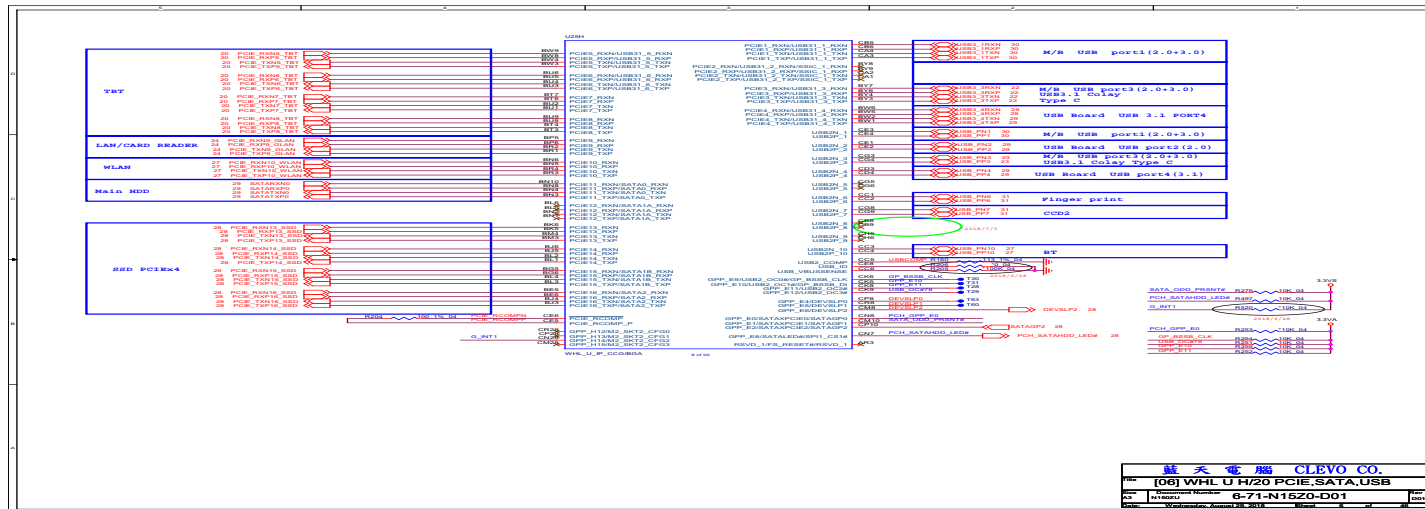
Processor 4/12

B.Schematic Diagrams

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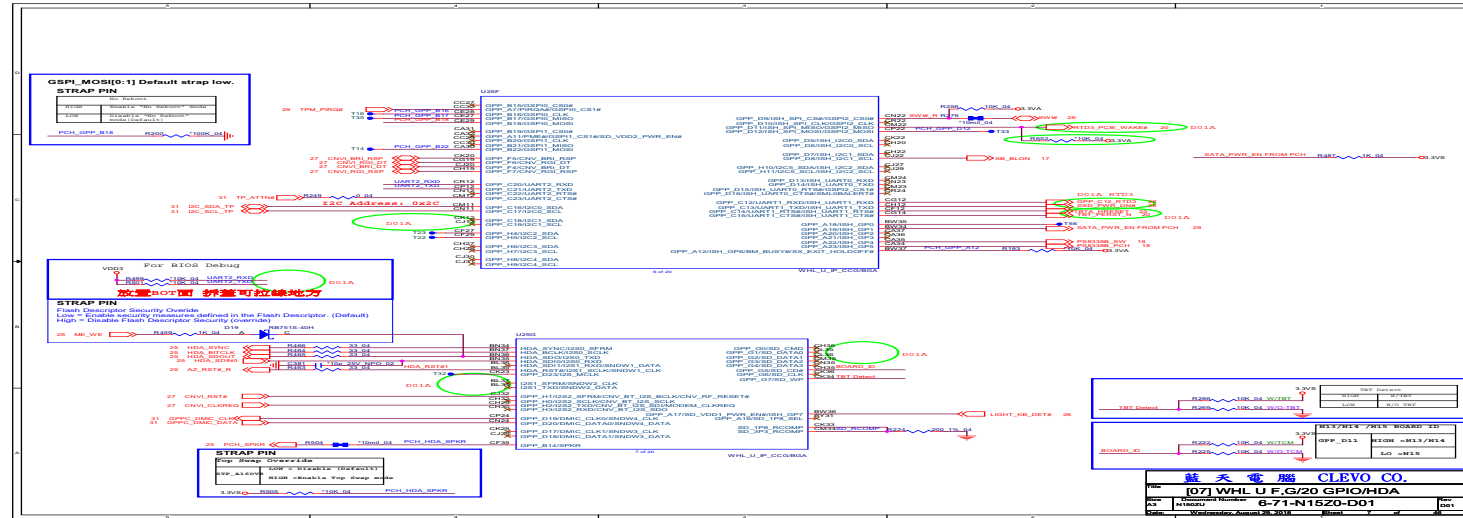
Processor 5/12

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Processor 5/12

Processor 6/12

B.Schematic Diagrams

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Processor 6/12

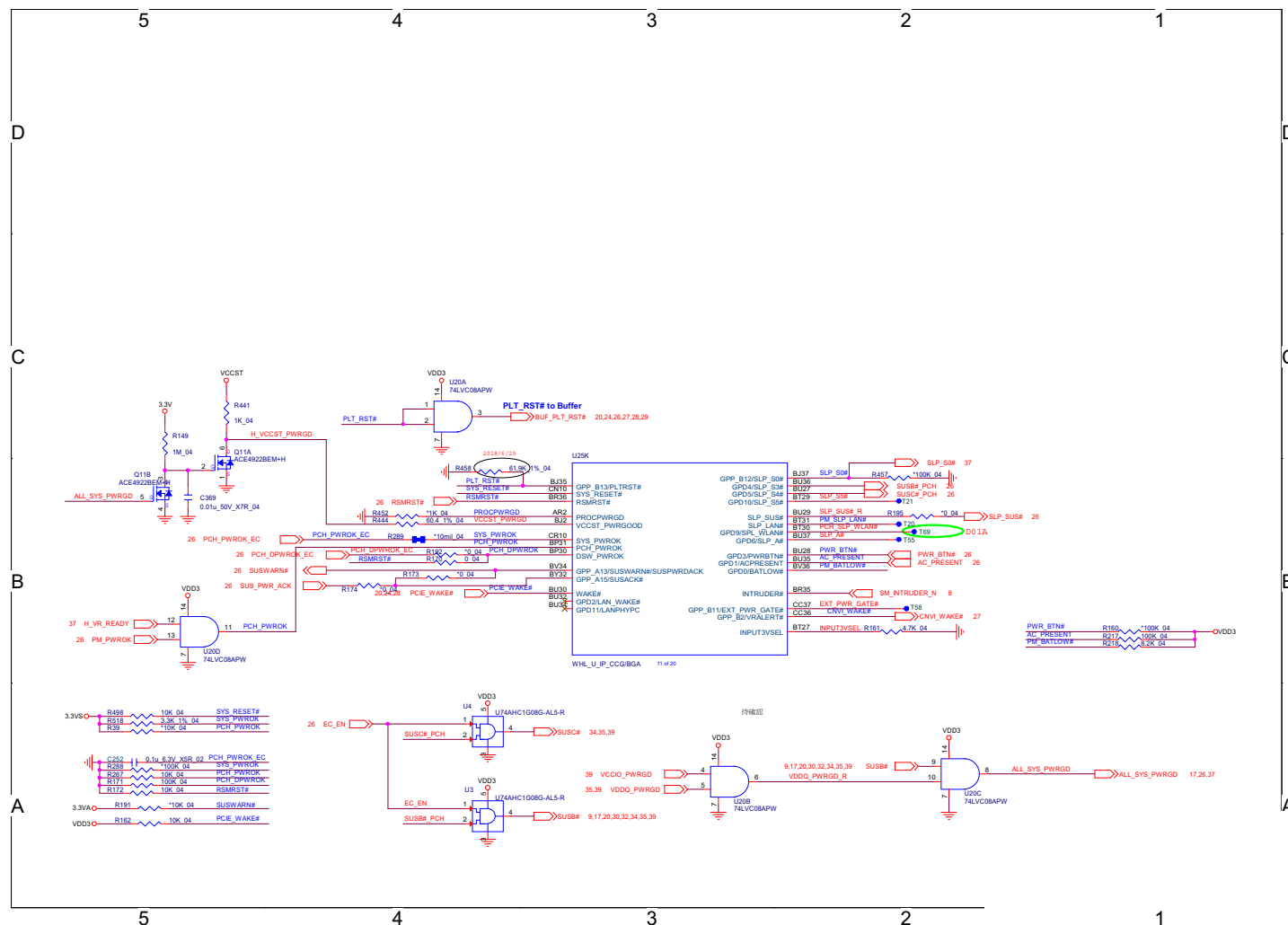


Processor 7/12 B - 9



Processor 8/12

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Processor 8/12



Processor 9/12 B - 11



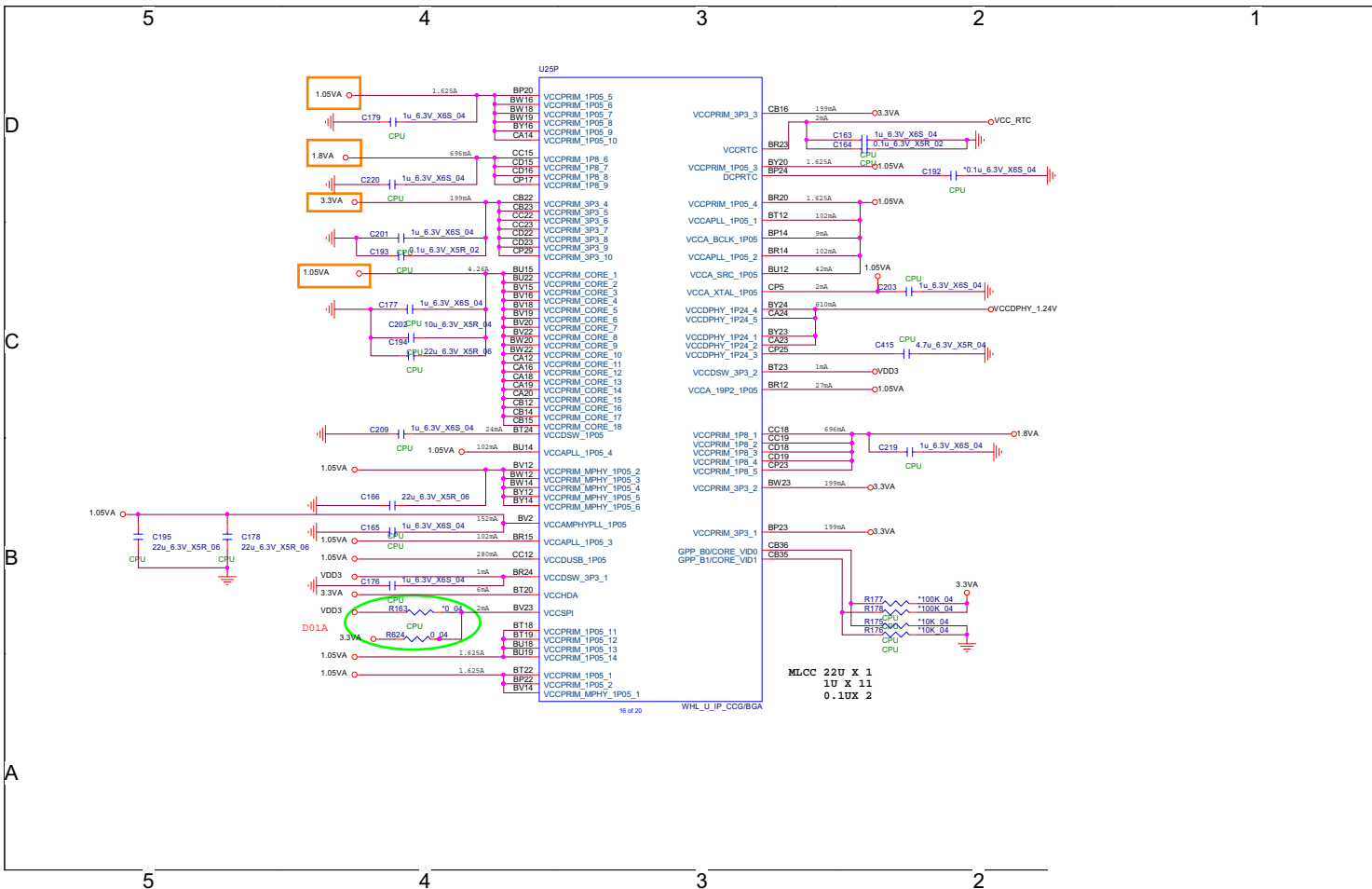
Processor 10/12

B. Schematic Diagrams

U250 (VME 68010) CPU Pin Connections Table:

Pin	Signal	Pin	Signal	Pin	Signal
K12	RSVD_25VCC_OPC_1RSVD_25	RSVD_38VCCOPIO_1RSVD_39	AA24	RSVD_25VCC_OPC_1RSVD_25	RSVD_38VCCOPIO_1RSVD_39
K14	RSVD_26VCC_OPC_2RSVD_26	RSVD_40VCCOPIO_2RSVD_40	AA26	RSVD_26VCC_OPC_2RSVD_26	RSVD_40VCCOPIO_2RSVD_40
K15	RSVD_27VCC_OPC_3RSVD_27	RSVD_41VCCOPIO_3RSVD_41	AA28	RSVD_27VCC_OPC_3RSVD_27	RSVD_41VCCOPIO_3RSVD_41
K16	RSVD_28VCC_OPC_4RSVD_28	RSVD_42VCCOPIO_4RSVD_42	AA30	RSVD_28VCC_OPC_4RSVD_28	RSVD_42VCCOPIO_4RSVD_42
K17	RSVD_29VCC_OPC_5RSVD_29	RSVD_43VCCOPIO_5RSVD_43	AA32	RSVD_29VCC_OPC_5RSVD_29	RSVD_43VCCOPIO_5RSVD_43
K18	RSVD_30VCC_OPC_6RSVD_30	RSVD_44VCCOPIO_6RSVD_44	AA34	RSVD_30VCC_OPC_6RSVD_30	RSVD_44VCCOPIO_6RSVD_44
K19	RSVD_31VCC_OPC_7RSVD_31	RSVD_45VCCOPIO_7RSVD_45	AA36	RSVD_31VCC_OPC_7RSVD_31	RSVD_45VCCOPIO_7RSVD_45
K20	RSVD_32VCC_OPC_8RSVD_32	RSVD_46VCCOPIO_8RSVD_46	AA38	RSVD_32VCC_OPC_8RSVD_32	RSVD_46VCCOPIO_8RSVD_46
K21	RSVD_33VCC_OPC_9RSVD_33	RSVD_47VCCOPIO_9RSVD_47	AA40	RSVD_33VCC_OPC_9RSVD_33	RSVD_47VCCOPIO_9RSVD_47
K22	RSVD_34VCC_OPC_10RSVD_34	RSVD_48VCCOPIO_10RSVD_48	AA42	RSVD_34VCC_OPC_10RSVD_34	RSVD_48VCCOPIO_10RSVD_48
K23	RSVD_35VCC_OPC_11RSVD_35	RSVD_49VCCOPIO_11RSVD_49	AA44	RSVD_35VCC_OPC_11RSVD_35	RSVD_49VCCOPIO_11RSVD_49
K24	RSVD_36VCC_OPC_12RSVD_36	RSVD_50VCCOPIO_12RSVD_50	AA46	RSVD_36VCC_OPC_12RSVD_36	RSVD_50VCCOPIO_12RSVD_50
K25	RSVD_37VCC_OPC_13RSVD_37	RSVD_51VCCOPIO_13RSVD_51	AA48	RSVD_37VCC_OPC_13RSVD_37	RSVD_51VCCOPIO_13RSVD_51
K26	RSVD_38VCC_OPC_14RSVD_38	RSVD_52VCCOPIO_14RSVD_52	AA50	RSVD_38VCC_OPC_14RSVD_38	RSVD_52VCCOPIO_14RSVD_52
K27	RSVD_39VCC_OPC_15RSVD_39	RSVD_53VCCOPIO_15RSVD_53	AA52	RSVD_39VCC_OPC_15RSVD_39	RSVD_53VCCOPIO_15RSVD_53
K28	RSVD_40VCC_OPC_16RSVD_40	RSVD_54VCCOPIO_16RSVD_54	AA54	RSVD_40VCC_OPC_16RSVD_40	RSVD_54VCCOPIO_16RSVD_54
K29	RSVD_41VCC_OPC_17RSVD_41	RSVD_55VCCOPIO_17RSVD_55	AA56	RSVD_41VCC_OPC_17RSVD_41	RSVD_55VCCOPIO_17RSVD_55
K30	RSVD_42VCC_OPC_18RSVD_42	RSVD_56VCCOPIO_18RSVD_56	AA58	RSVD_42VCC_OPC_18RSVD_42	RSVD_56VCCOPIO_18RSVD_56
K31	RSVD_43VCC_OPC_19RSVD_43	RSVD_57VCCOPIO_19RSVD_57	AA60	RSVD_43VCC_OPC_19RSVD_43	RSVD_57VCCOPIO_19RSVD_57
K32	RSVD_44VCC_OPC_20RSVD_44	RSVD_58VCCOPIO_20RSVD_58	AA62	RSVD_44VCC_OPC_20RSVD_44	RSVD_58VCCOPIO_20RSVD_58
K33	RSVD_45VCC_OPC_21RSVD_45	RSVD_59VCCOPIO_21RSVD_59	AA64	RSVD_45VCC_OPC_21RSVD_45	RSVD_59VCCOPIO_21RSVD_59
K34	RSVD_46VCC_OPC_22RSVD_46	RSVD_60VCCOPIO_22RSVD_60	AA66	RSVD_46VCC_OPC_22RSVD_46	RSVD_60VCCOPIO_22RSVD_60
K35	RSVD_47VCC_OPC_23RSVD_47	RSVD_61VCCOPIO_23RSVD_61	AA68	RSVD_47VCC_OPC_23RSVD_47	RSVD_61VCCOPIO_23RSVD_61
K36	RSVD_48VCC_OPC_24RSVD_48	RSVD_62VCCOPIO_24RSVD_62	AA70	RSVD_48VCC_OPC_24RSVD_48	RSVD_62VCCOPIO_24RSVD_62
K37	RSVD_49VCC_OPC_25RSVD_49	RSVD_63VCCOPIO_25RSVD_63	AA72	RSVD_49VCC_OPC_25RSVD_49	RSVD_63VCCOPIO_25RSVD_63
K38	RSVD_50VCC_OPC_26RSVD_50	RSVD_64VCCOPIO_26RSVD_64	AA74	RSVD_50VCC_OPC_26RSVD_50	RSVD_64VCCOPIO_26RSVD_64
K39	RSVD_51VCC_OPC_27RSVD_51	RSVD_65VCCOPIO_27RSVD_65	AA76	RSVD_51VCC_OPC_27RSVD_51	RSVD_65VCCOPIO_27RSVD_65
K40	RSVD_52VCC_OPC_28RSVD_52	RSVD_66VCCOPIO_28RSVD_66	AA78	RSVD_52VCC_OPC_28RSVD_52	RSVD_66VCCOPIO_28RSVD_66
K41	RSVD_53VCC_OPC_29RSVD_53	RSVD_67VCCOPIO_29RSVD_67	AA80	RSVD_53VCC_OPC_29RSVD_53	RSVD_67VCCOPIO_29RSVD_67
K42	RSVD_54VCC_OPC_30RSVD_54	RSVD_68VCCOPIO_30RSVD_68	AA82	RSVD_54VCC_OPC_30RSVD_54	RSVD_68VCCOPIO_30RSVD_68
K43	RSVD_55VCC_OPC_31RSVD_55	RSVD_69VCCOPIO_31RSVD_69	AA84	RSVD_55VCC_OPC_31RSVD_55	RSVD_69VCCOPIO_31RSVD_69
K44	RSVD_56VCC_OPC_32RSVD_56	RSVD_70VCCOPIO_32RSVD_70	AA86	RSVD_56VCC_OPC_32RSVD_56	RSVD_70VCCOPIO_32RSVD_70
K45	RSVD_57VCC_OPC_33RSVD_57	RSVD_71VCCOPIO_33RSVD_71	AA88	RSVD_57VCC_OPC_33RSVD_57	RSVD_71VCCOPIO_33RSVD_71
K46	RSVD_58VCC_OPC_34RSVD_58	RSVD_72VCCOPIO_34RSVD_72	AA90	RSVD_58VCC_OPC_34RSVD_58	RSVD_72VCCOPIO_34RSVD_

Processor 11/12

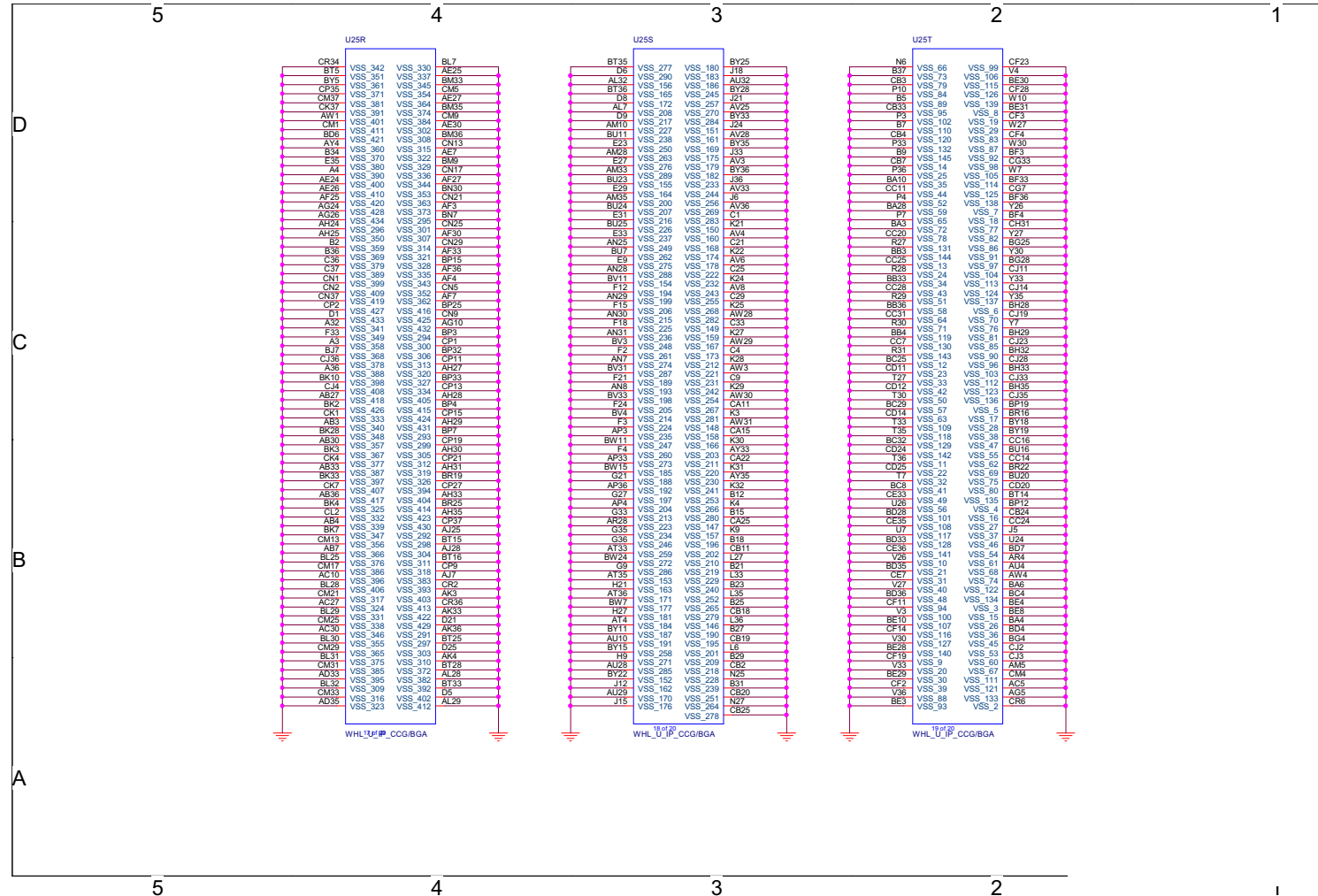


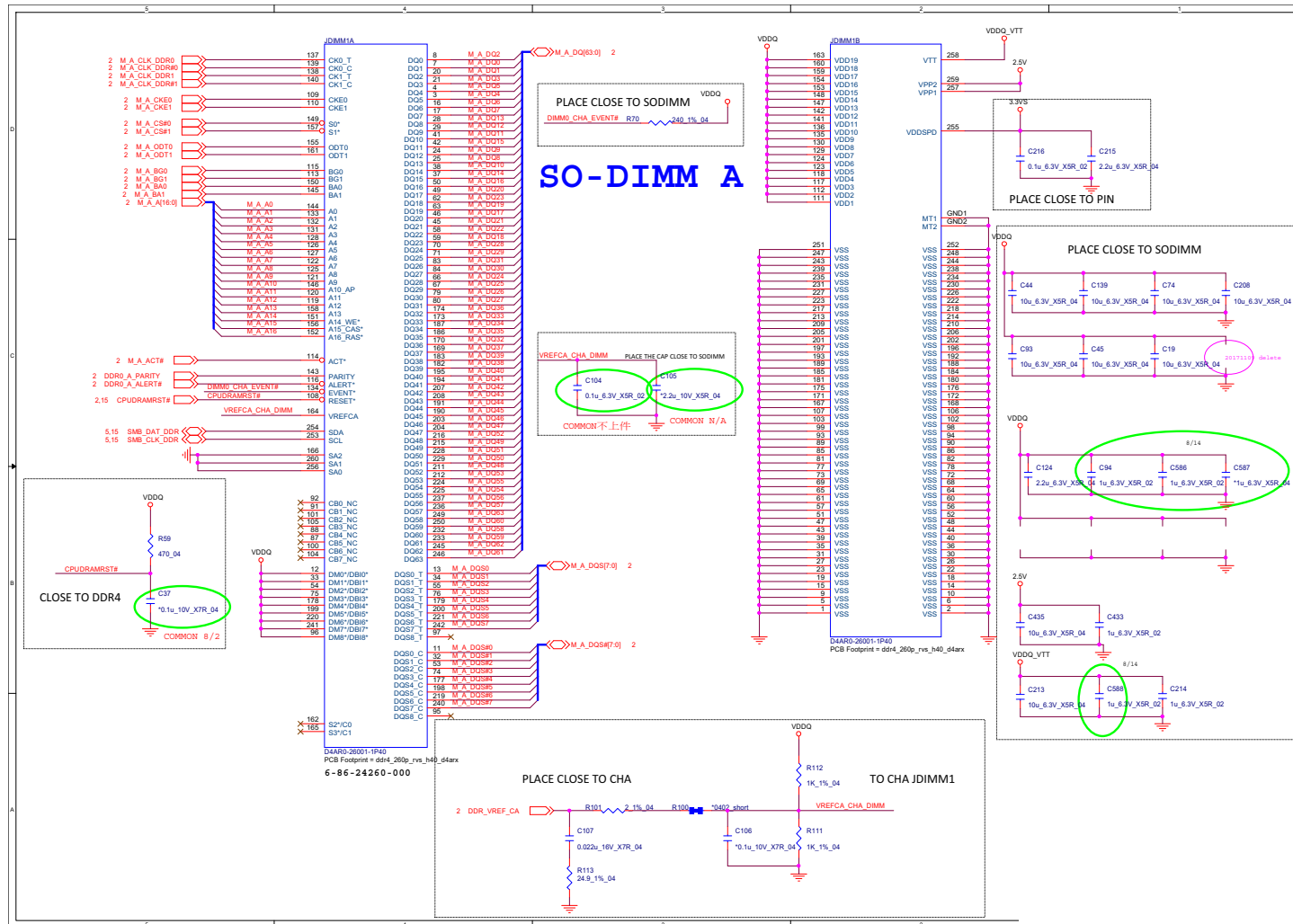
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Schematic Diagrams

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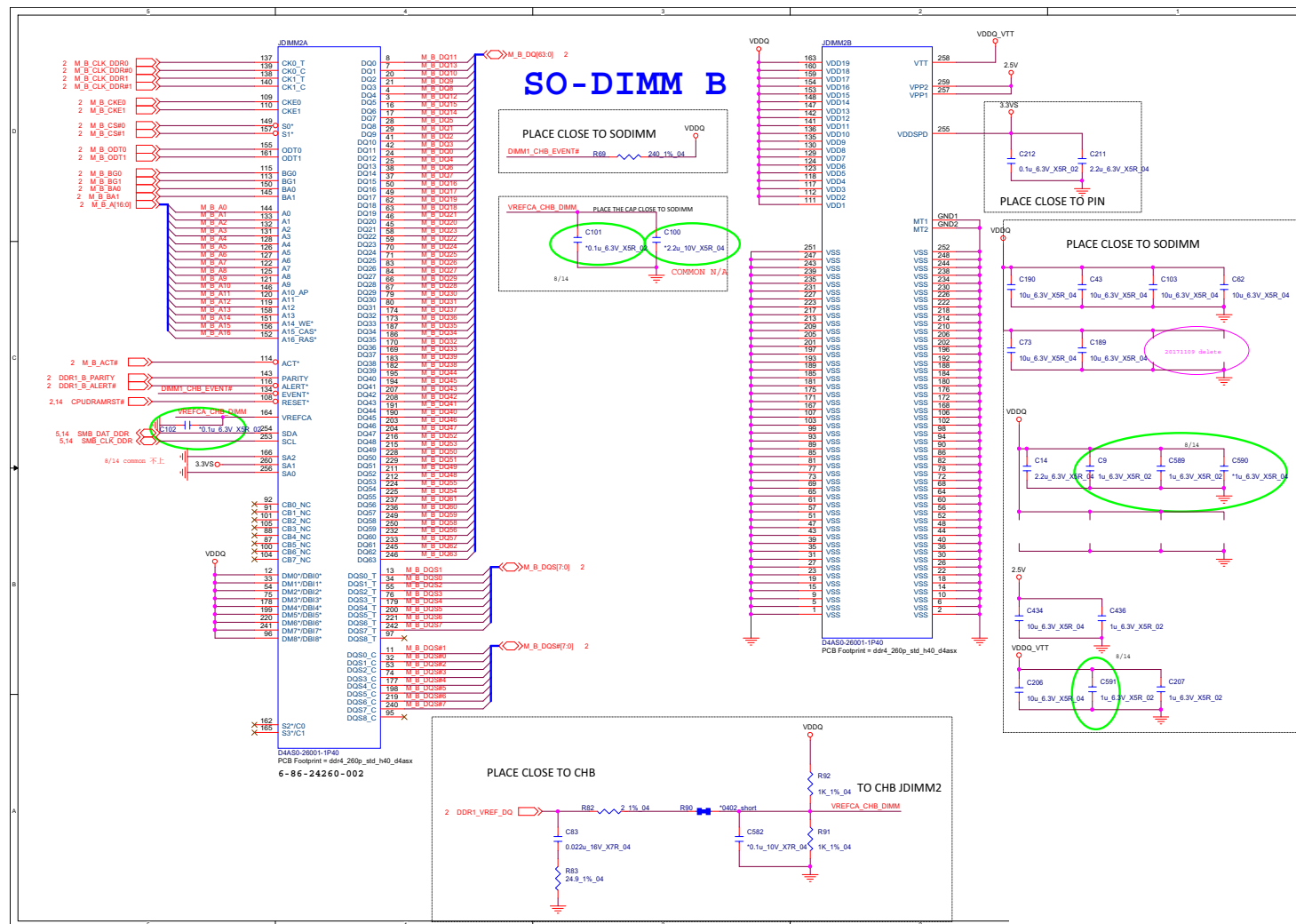




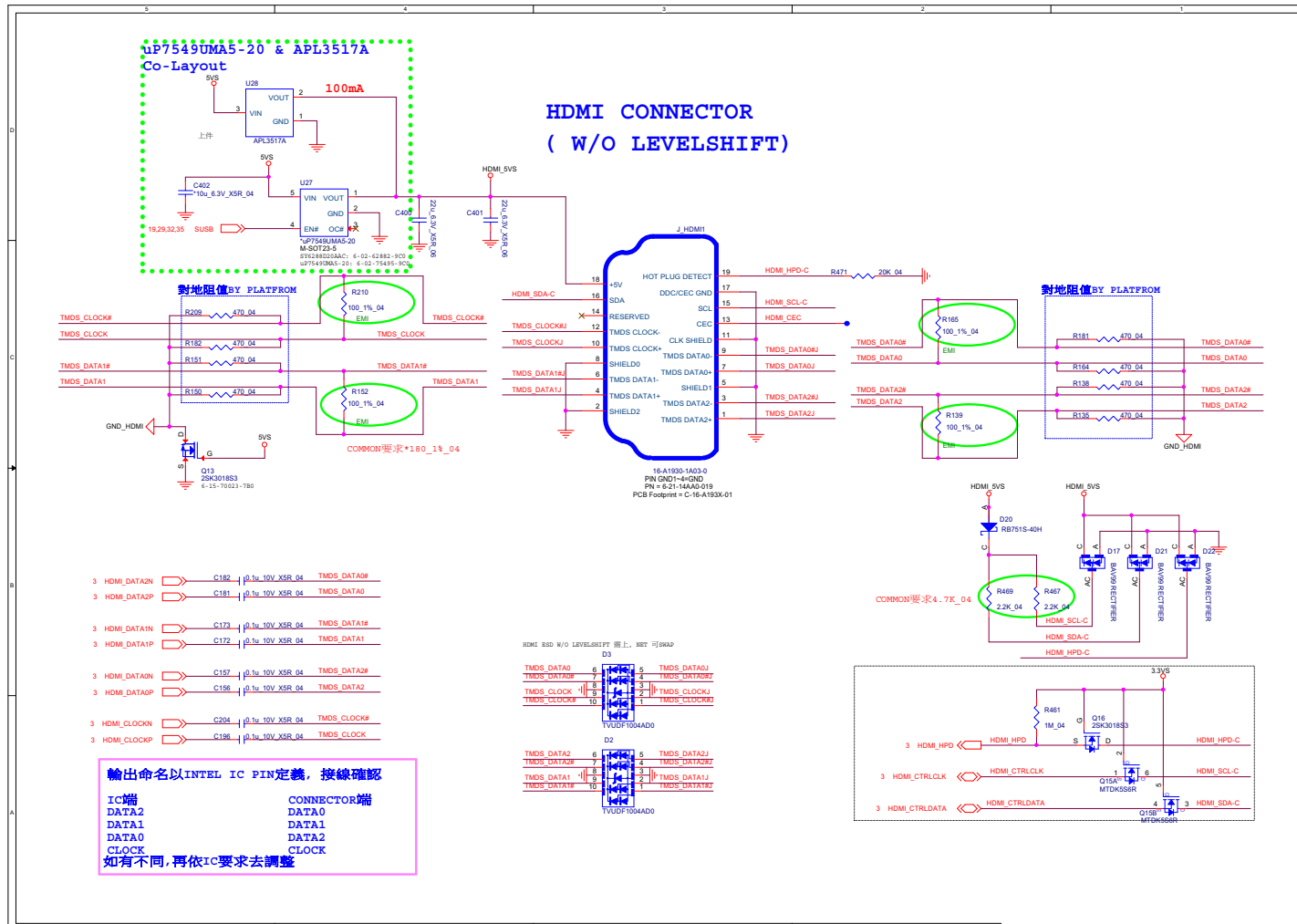
DDR4 SO_DIMM_1

B. Schematic Diagrams

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DDR4 SO-DIMM_1

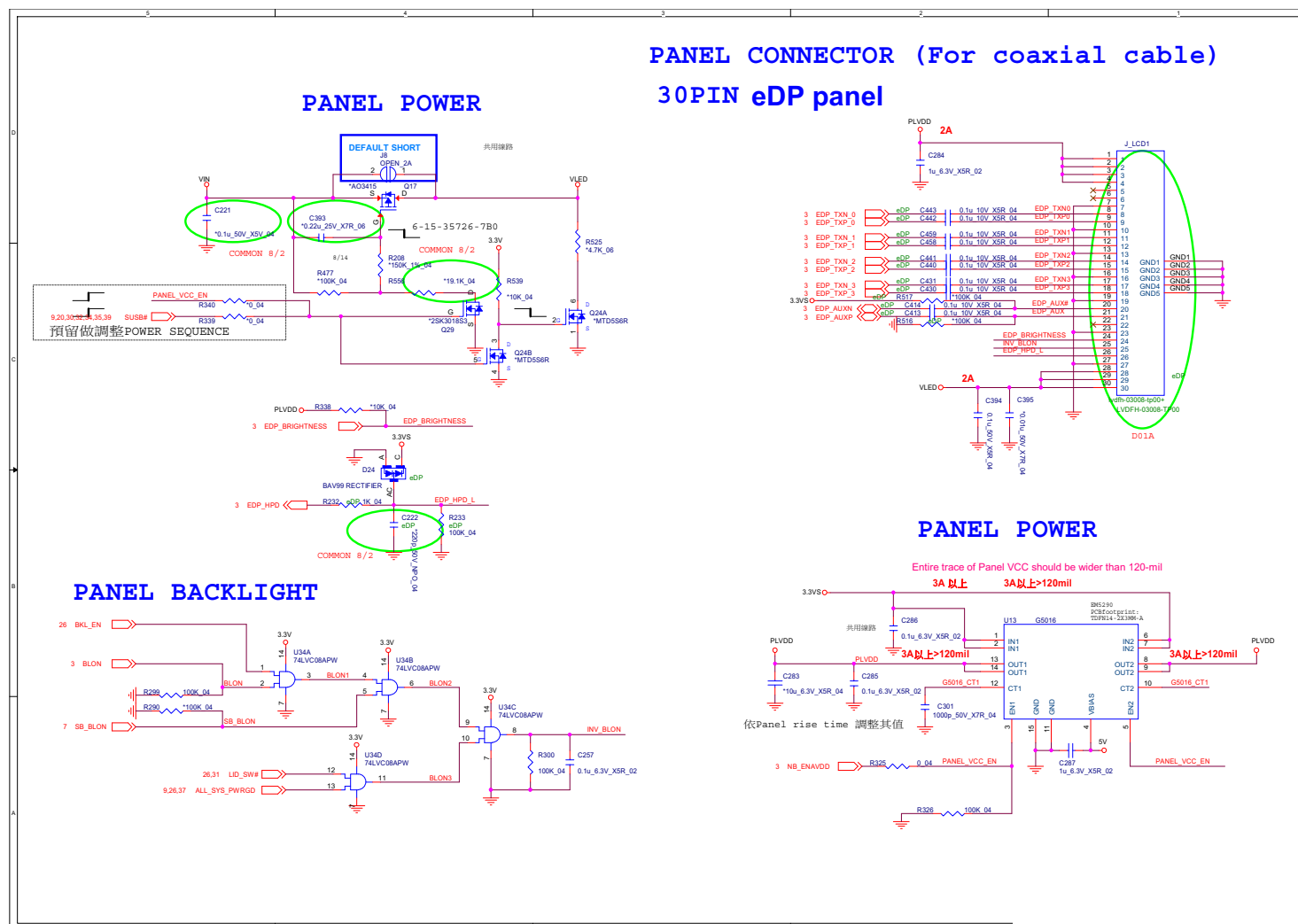


HDMI B - 17



Panel

Sheet 17 of 46
Panel

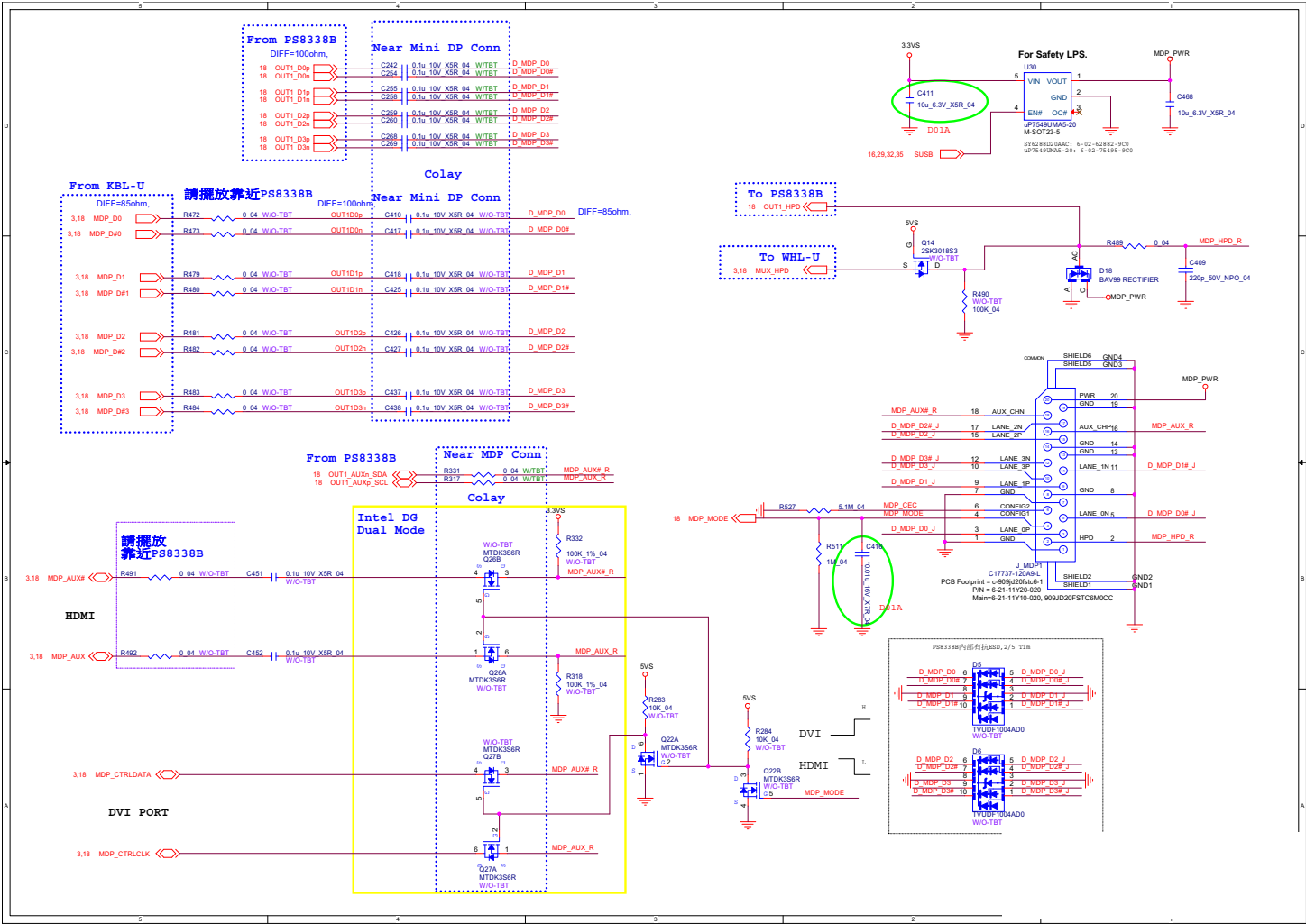


B.Schematic Diagrams

To mDP DIFF=100ohm,

To TBT DIFF=100ohm.

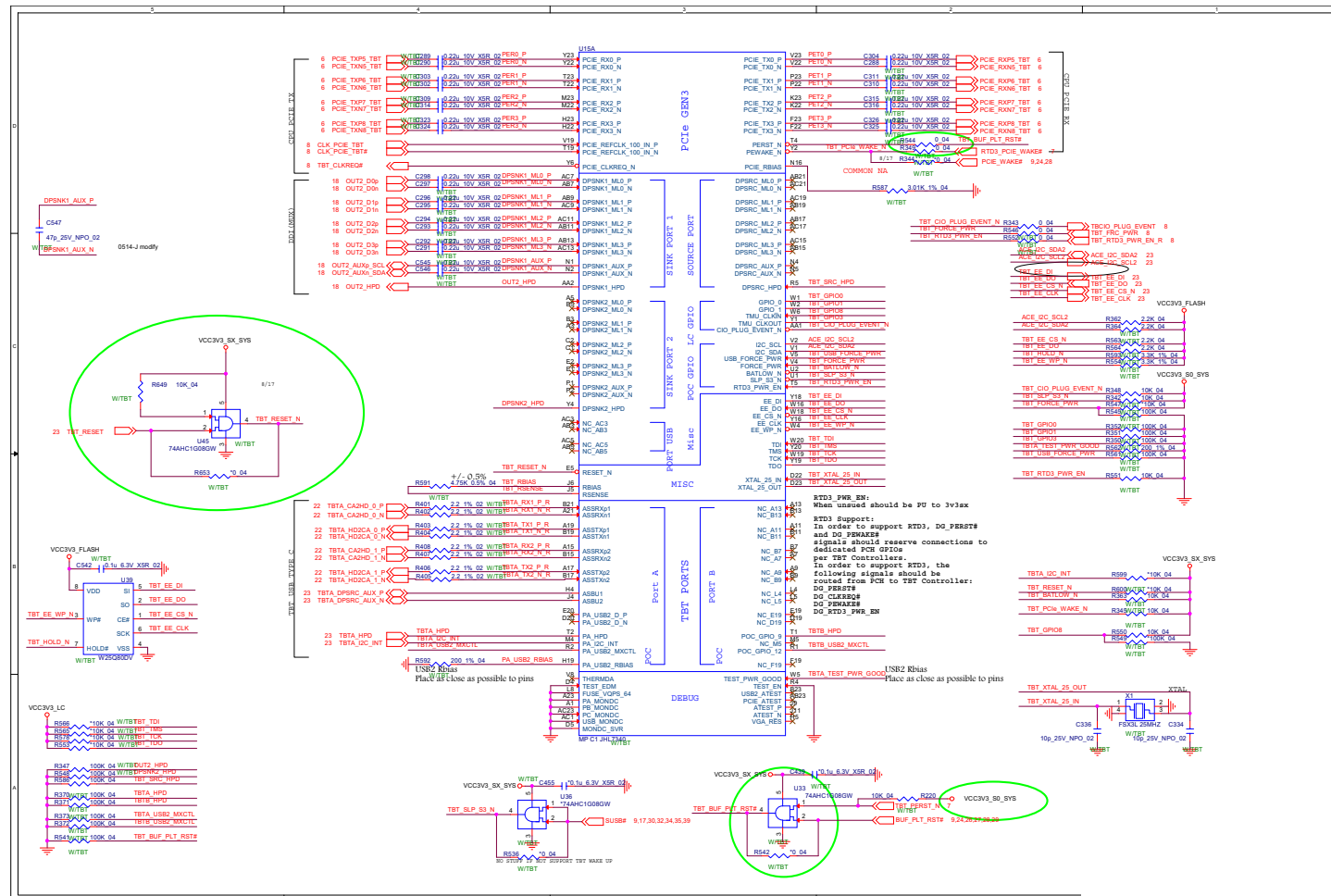
miniDP



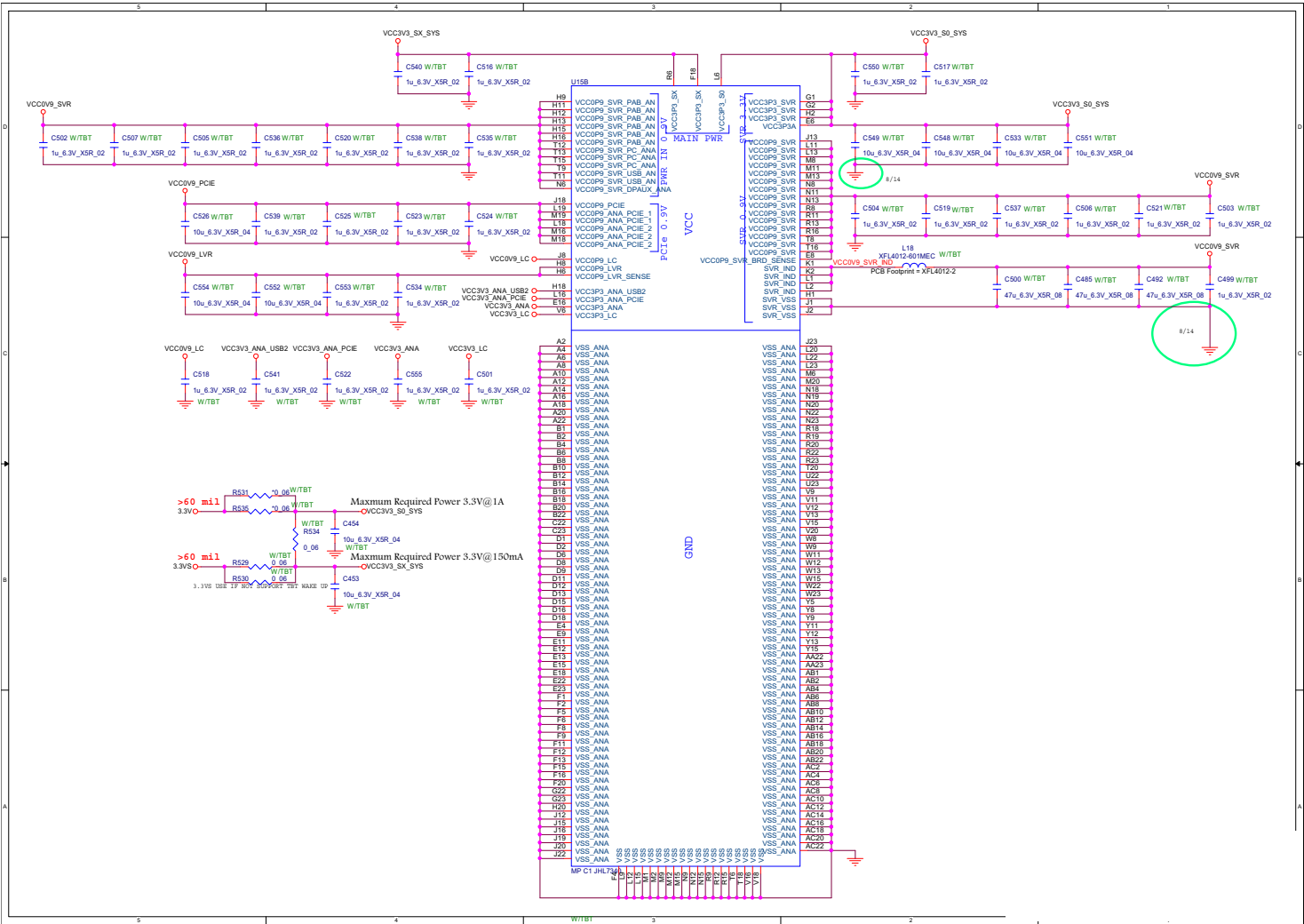
Sheet 19 of 46
miniDP

TR_TBT B - 21

B.Schematic Diagrams



TR_Power



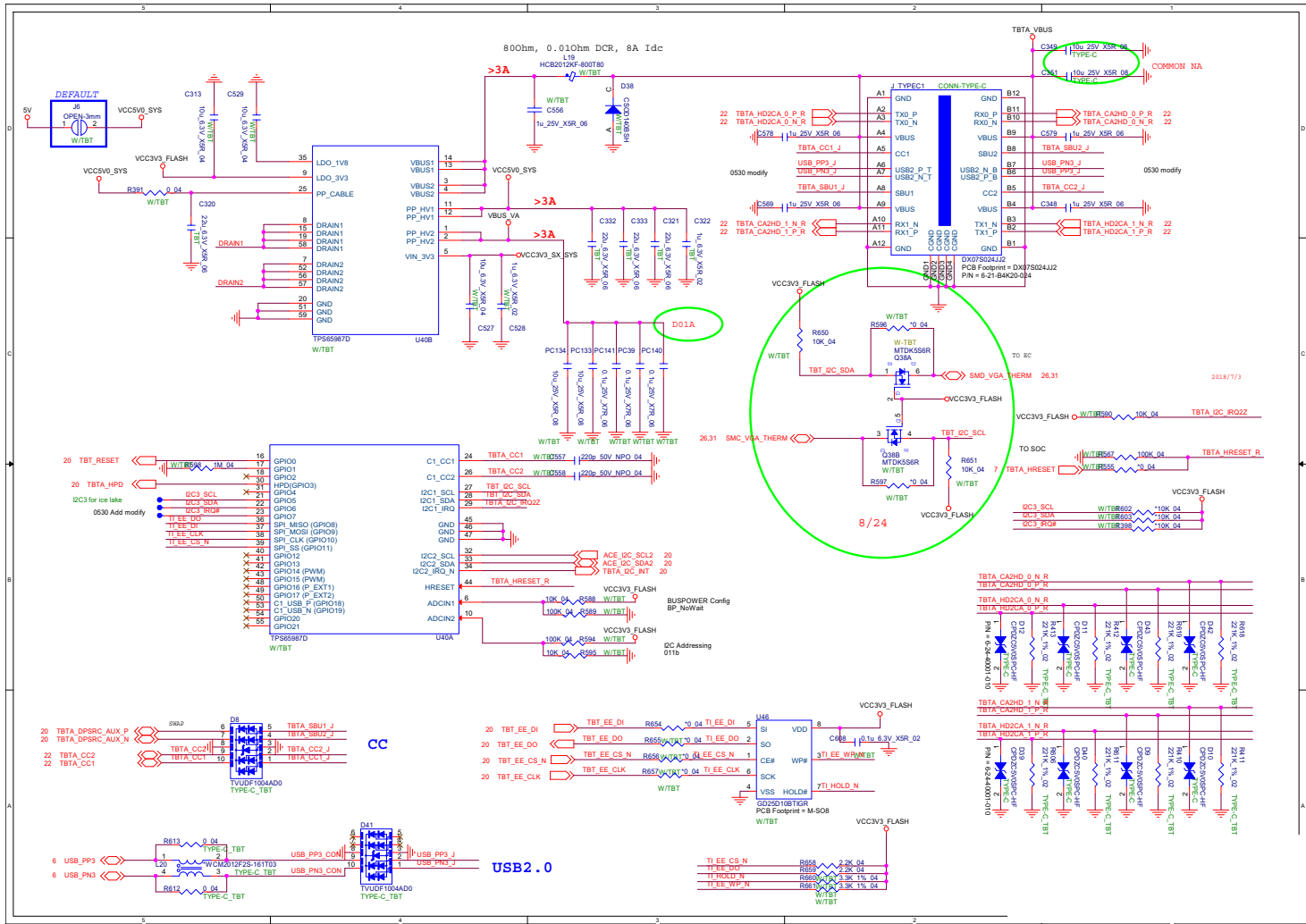
Sheet 21 of 46
TR_Power

B.Schematic Diagrams

TPS65987D Type C

B. Schematic Diagrams

Sheet 23 of 46
TPS65987D Type C

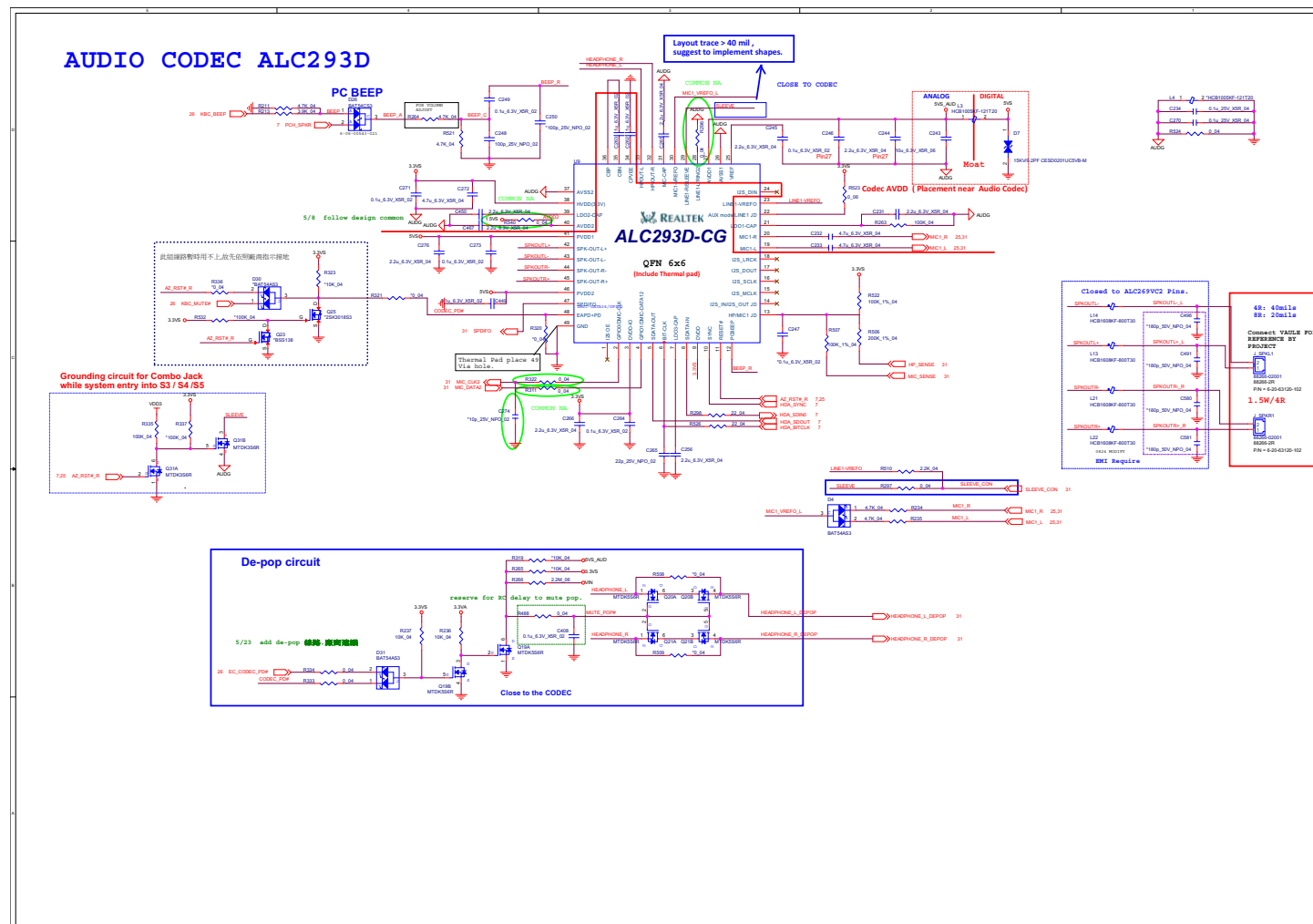


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Card Reader &
LAN_RTL8411B



Audio Codec

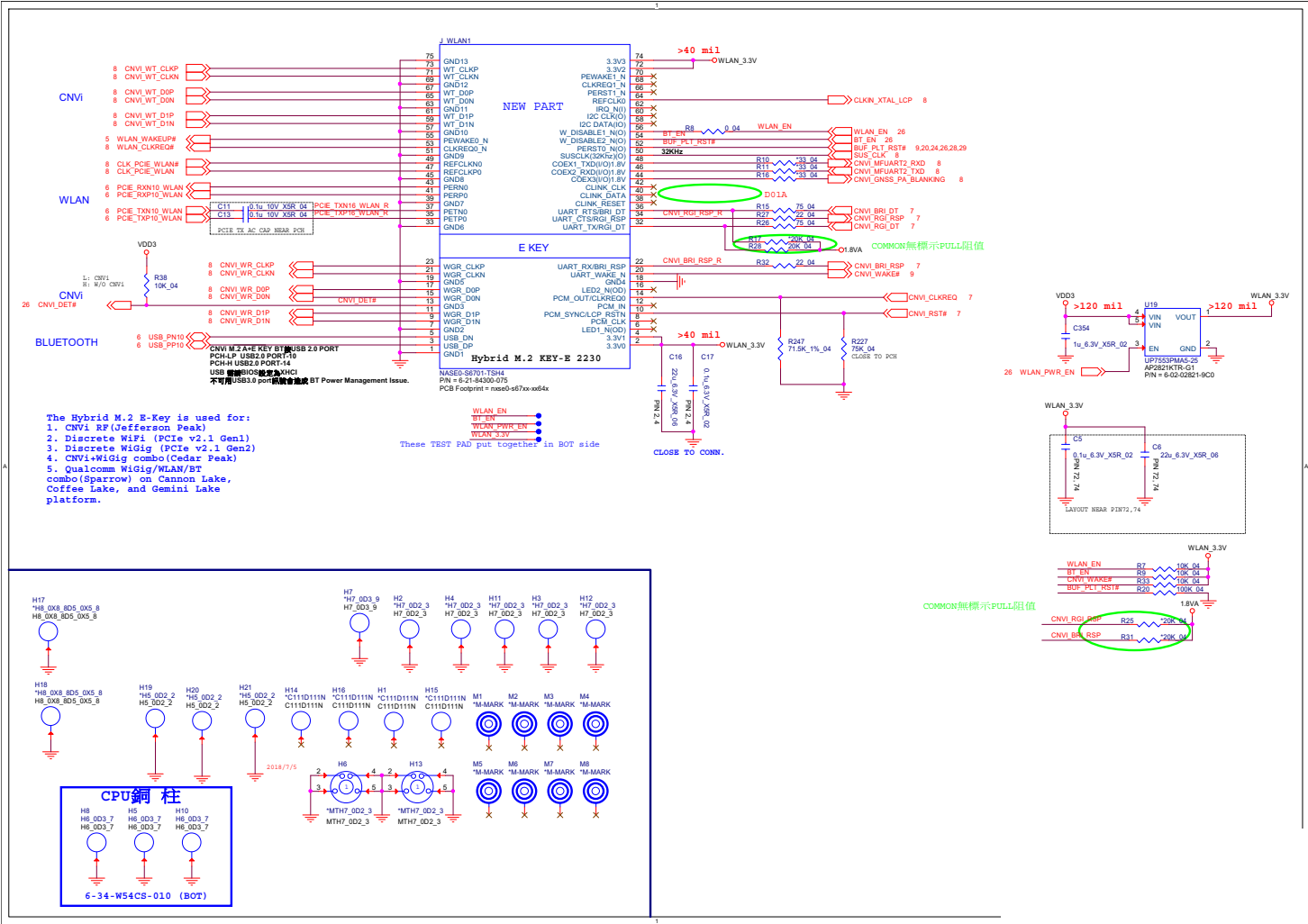
Sheet 25 of 46
Audio Codec



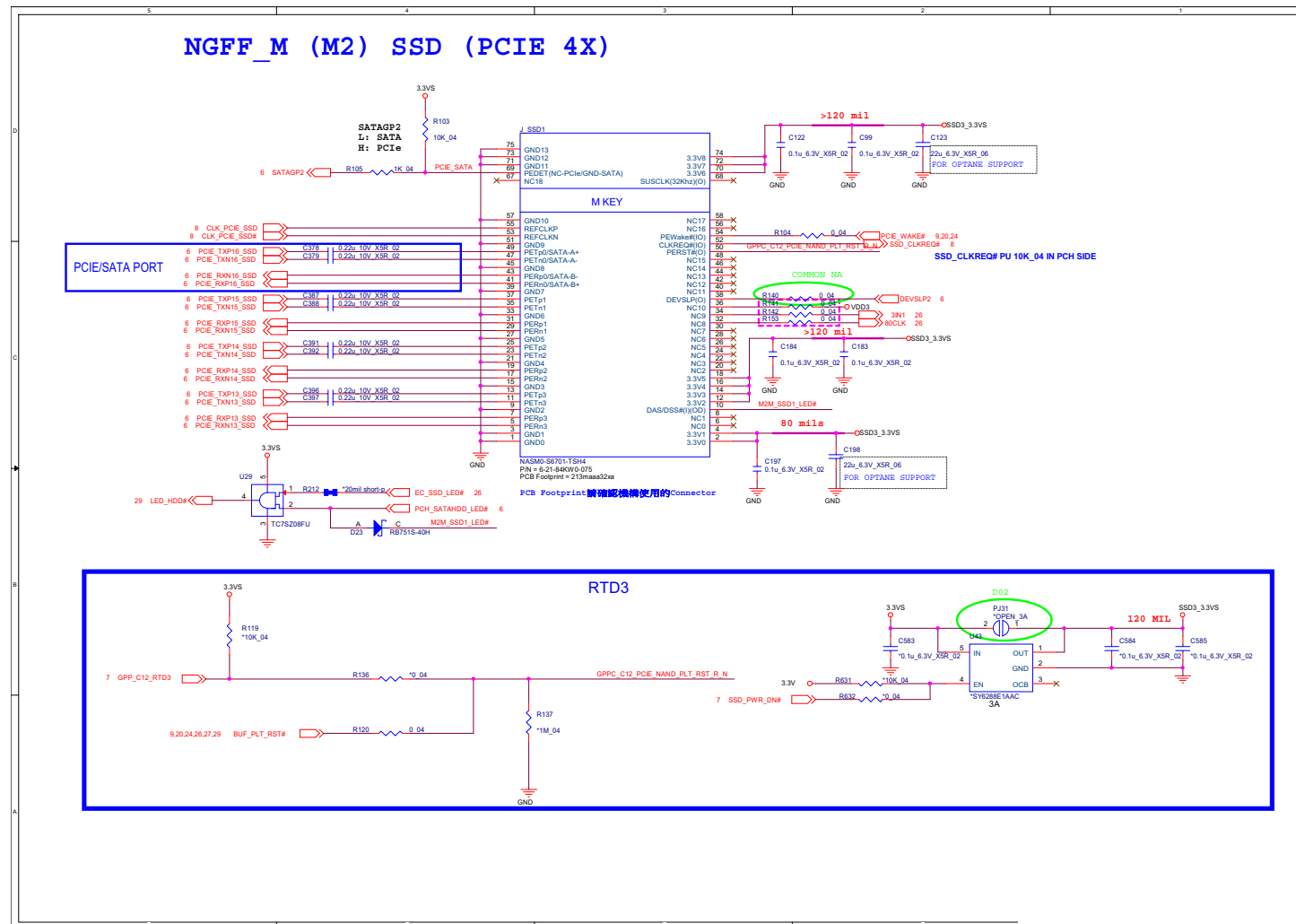
Schematic Diagrams

E, B Key

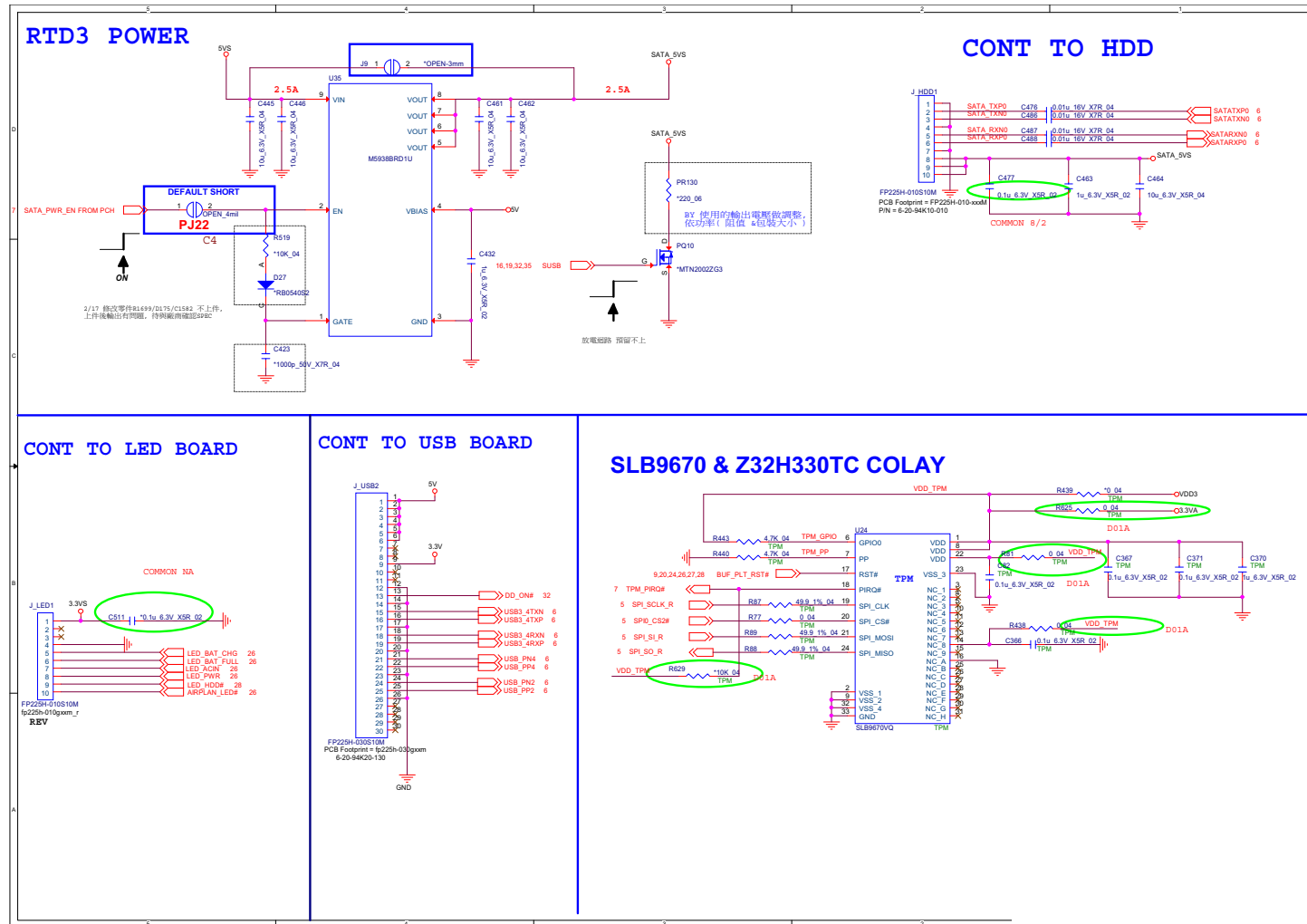
Sheet 27 of 46
E, B Key



M Key PCIE SSD B - 29



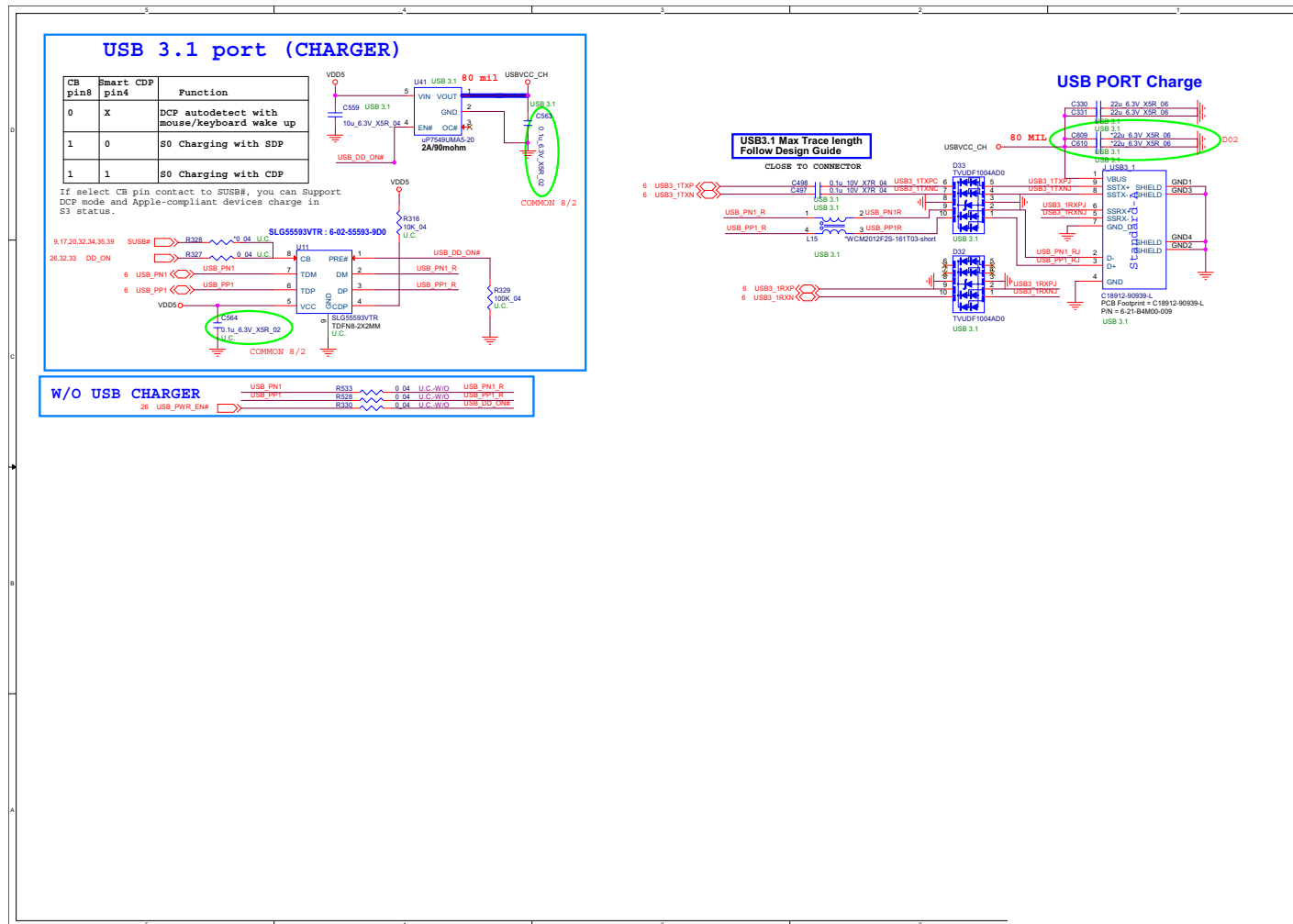
SATA, LED, TPM



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SATA, LED, TPM

Schematic Diagrams

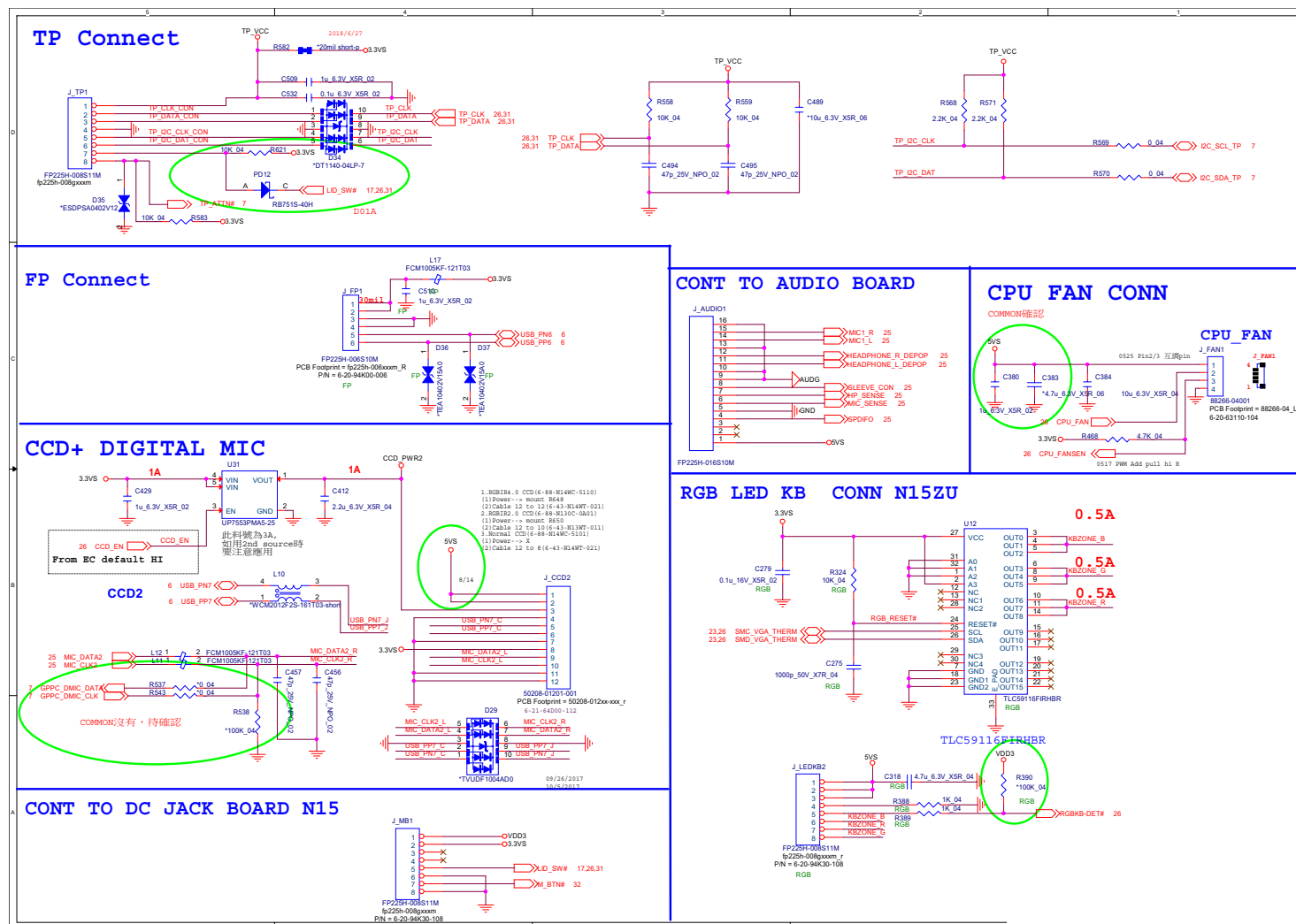
USB



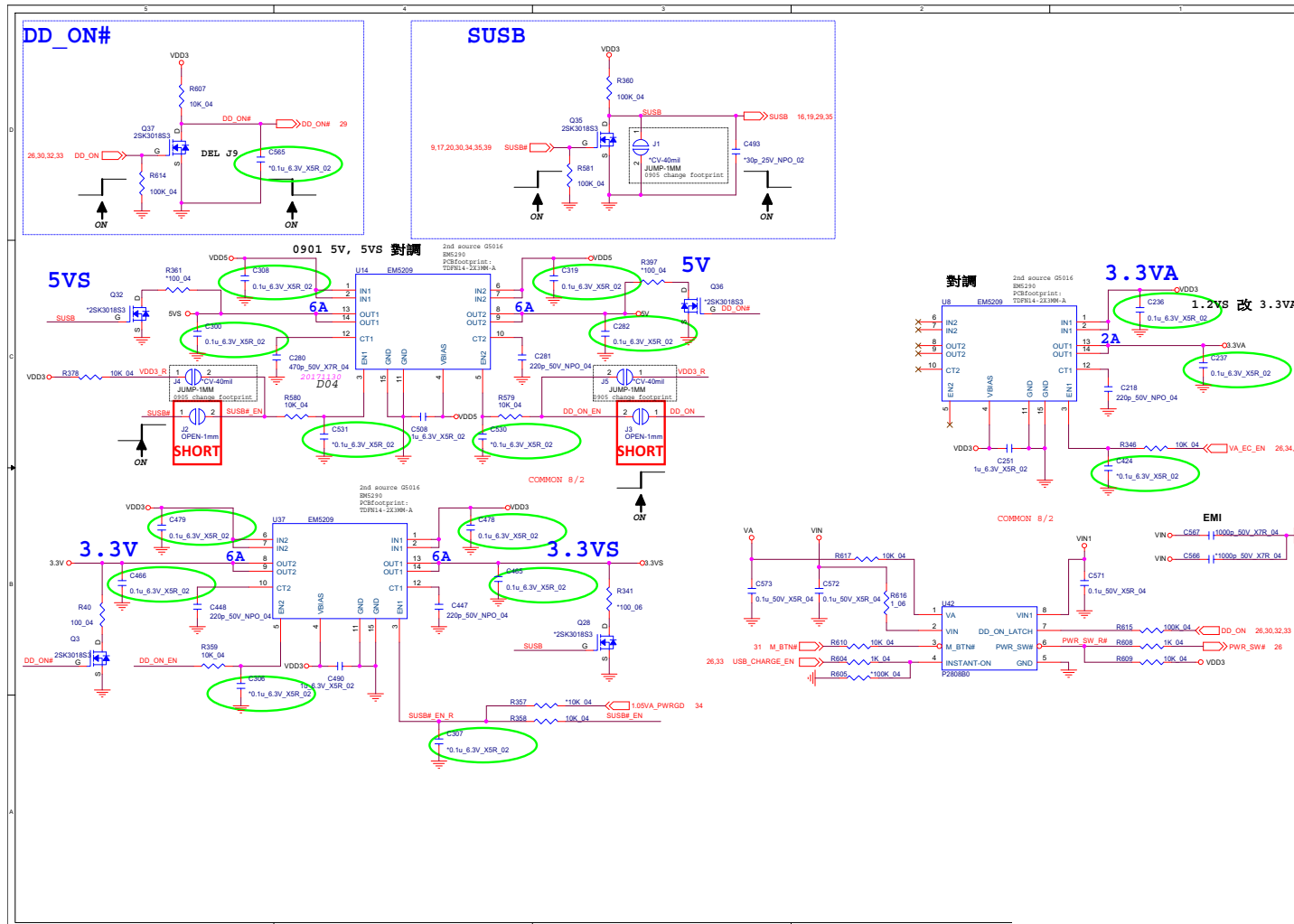
B.Schematic Diagrams

B.Schematic Diagrams

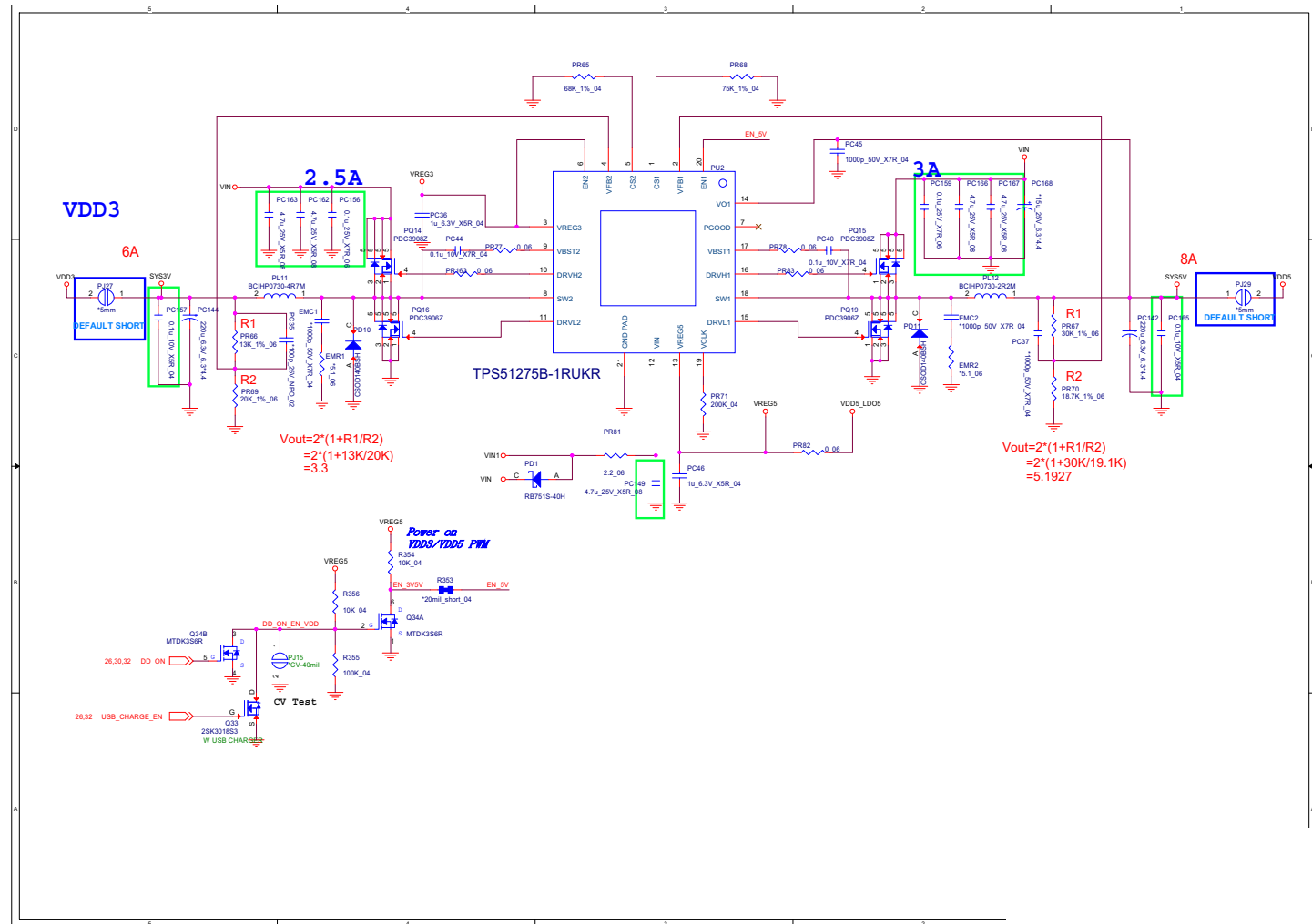
Sheet 31 of 46
Conn, CCD, Fan,
TP, LED KB



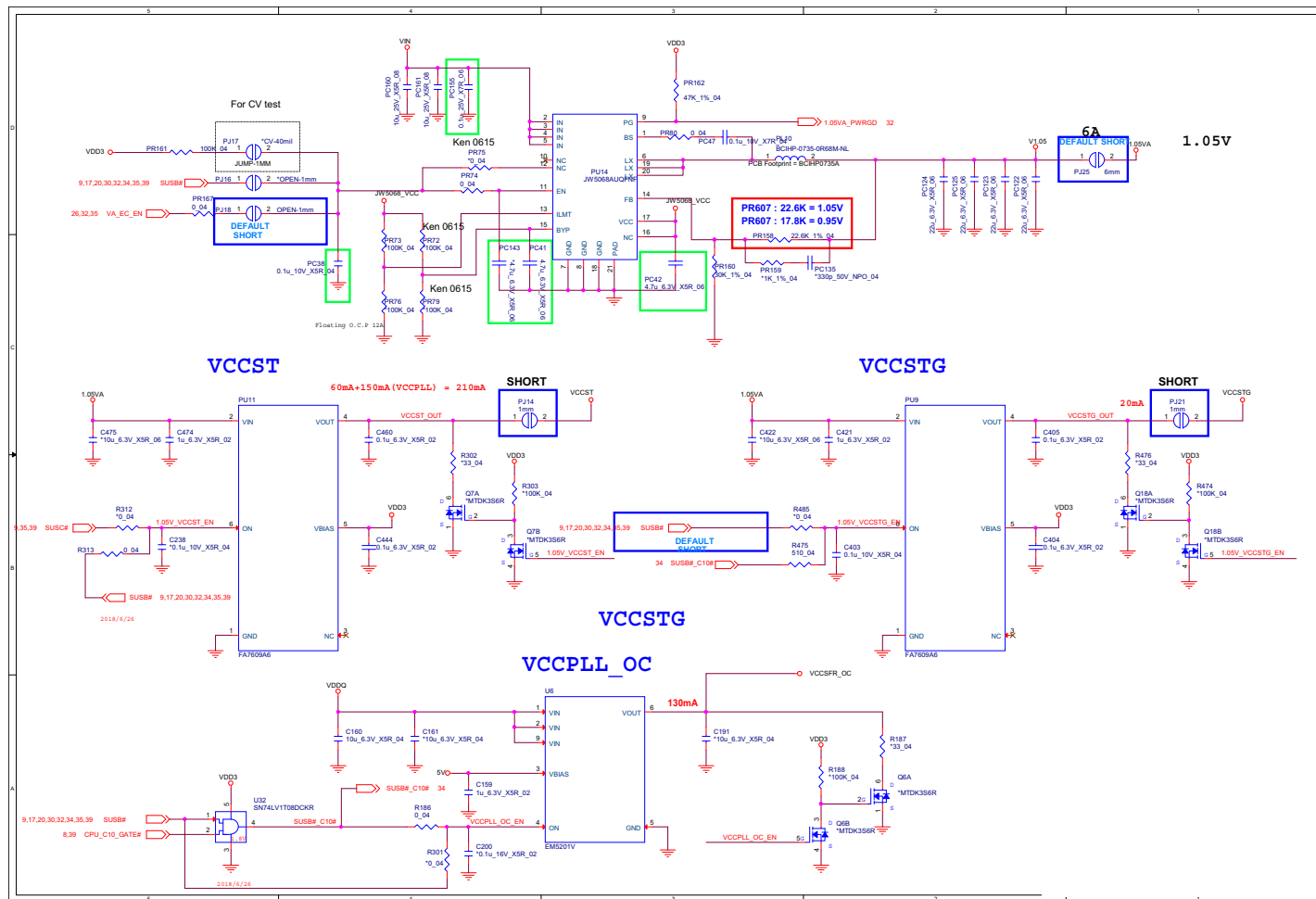
3V, 5V, 3VS, 5VS, 1.8VS CTL



Sheet 32 of 46
3V, 5V, 3VS, 5VS,
1.8VS CTL



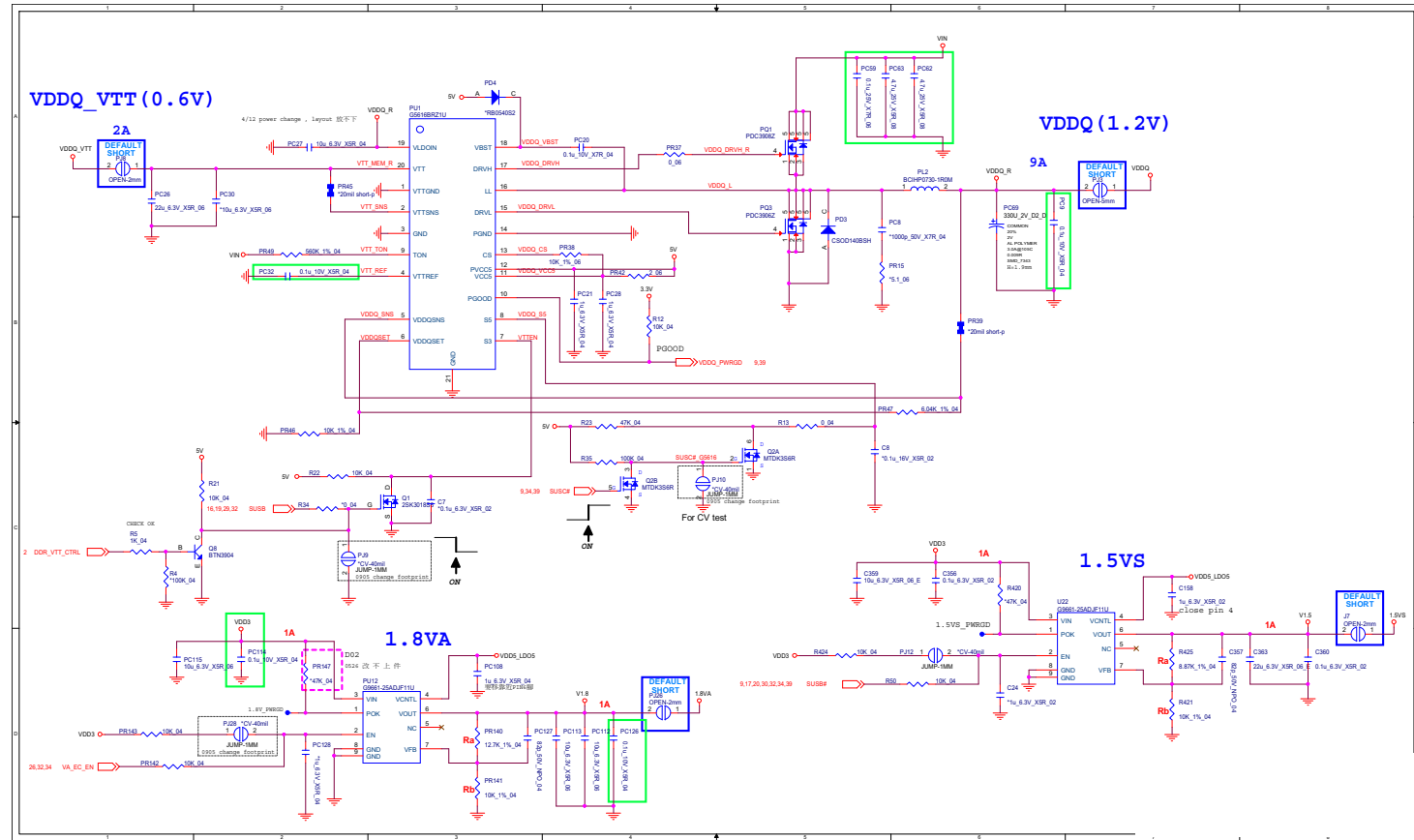
Sheet 34 of 46
1.05VA, VCCST,
VCCSTG



Schematic Diagrams

VDDQ, VDDQ_VTT, 1.5VS, 1.8VA

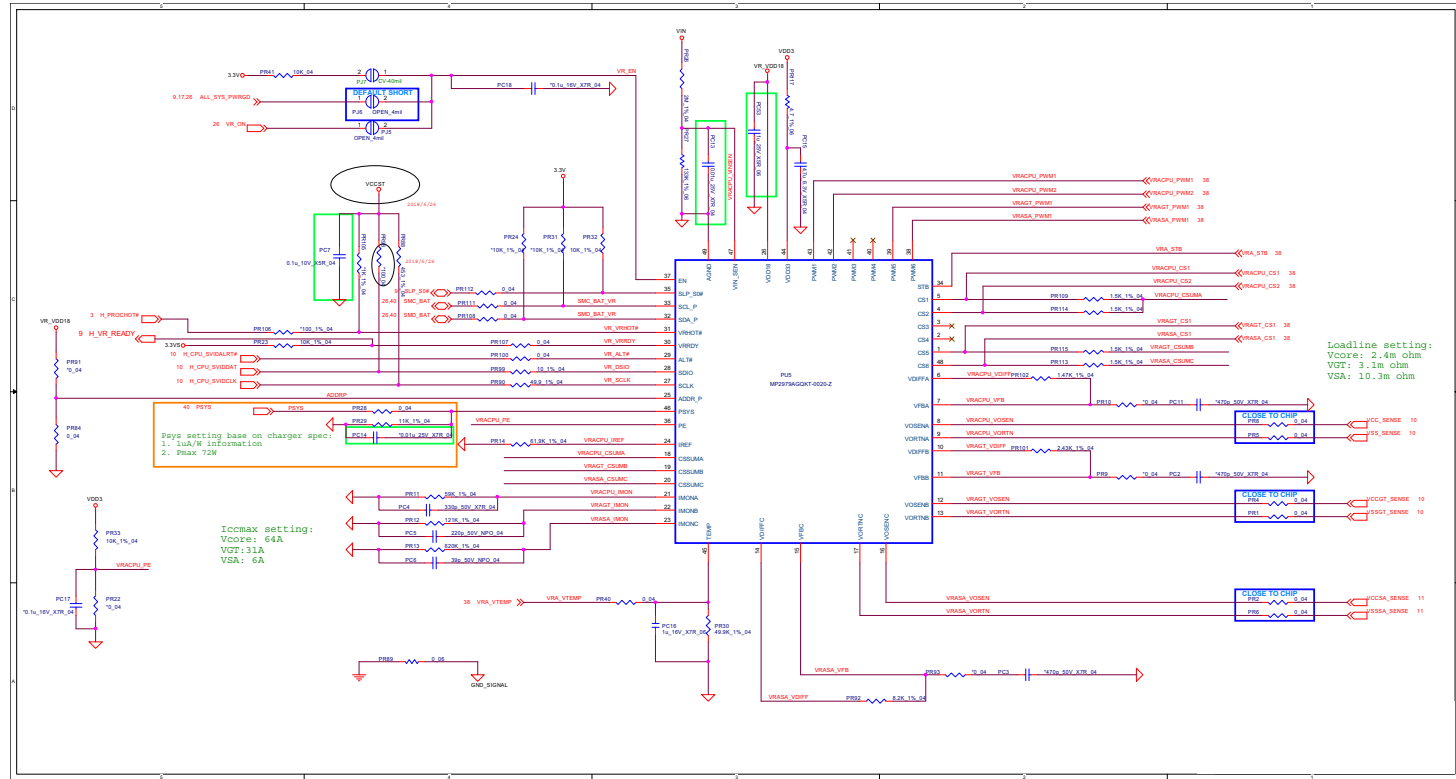
Sheet 35 of 46
VDDQ, VDDQ_VTT,
1.5VS, 1.8VA



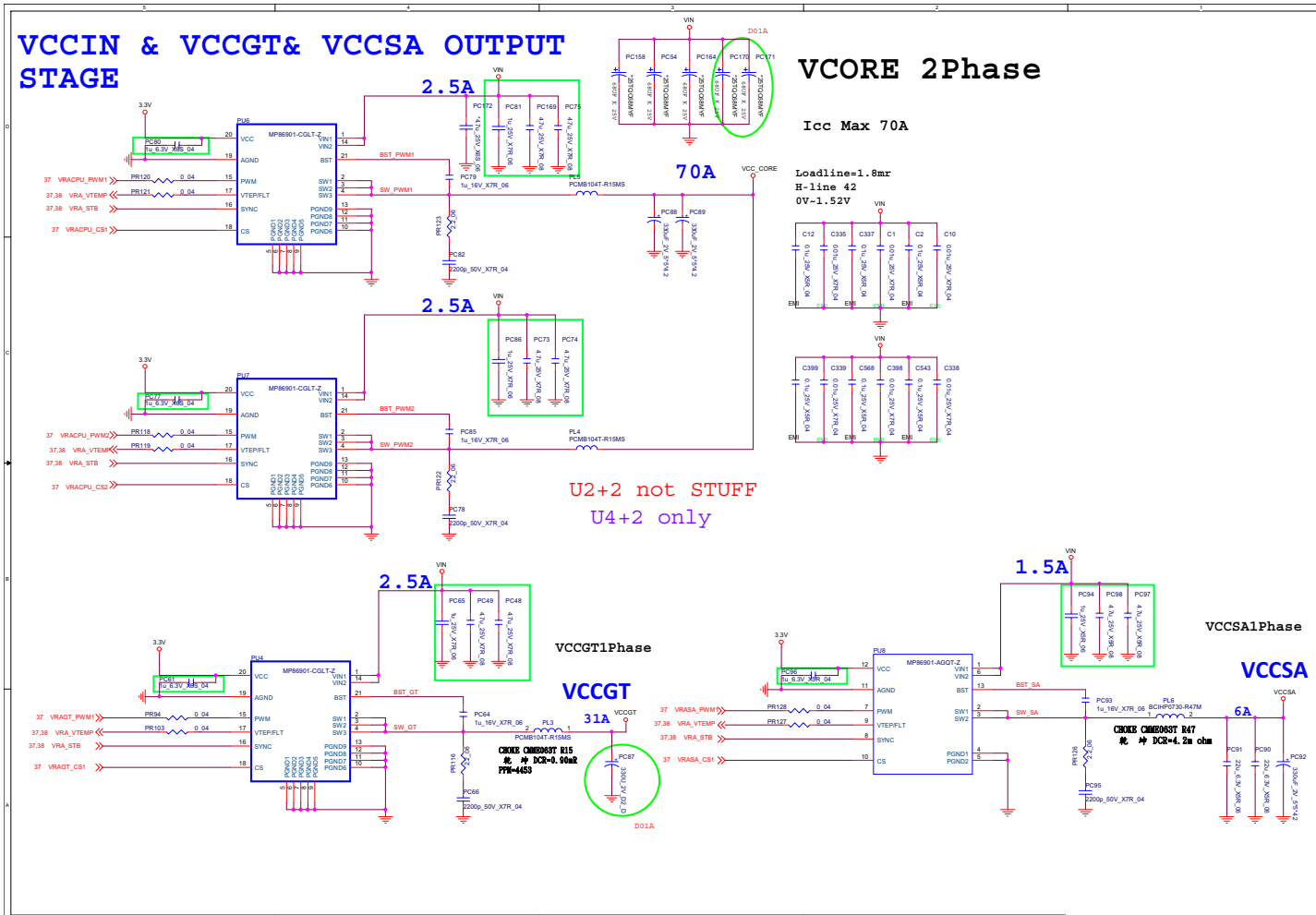
AC-In B - 37

VCore NCP81218

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VCore NCP81218



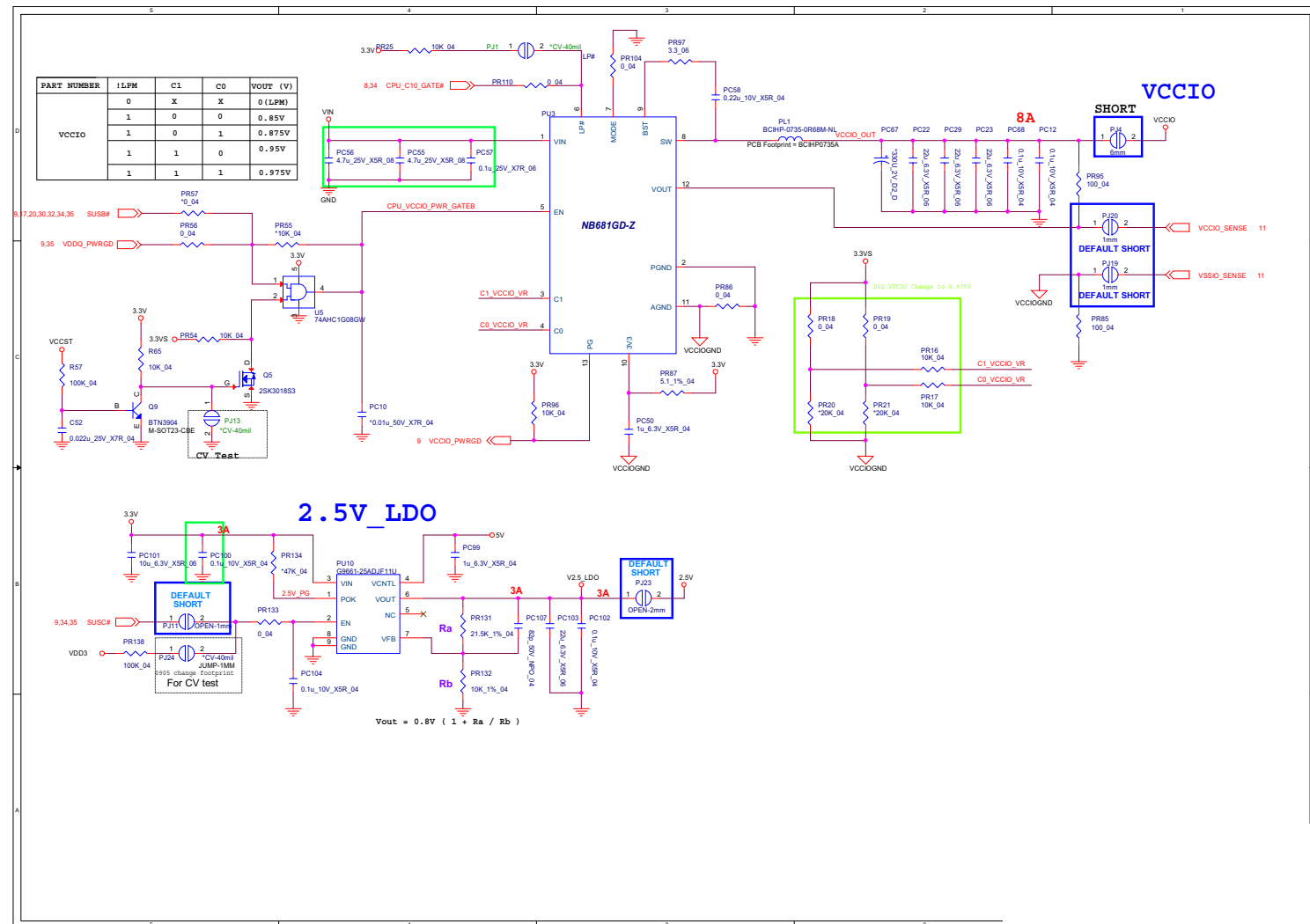
VCCIN, VCCGT, VCCSA Output



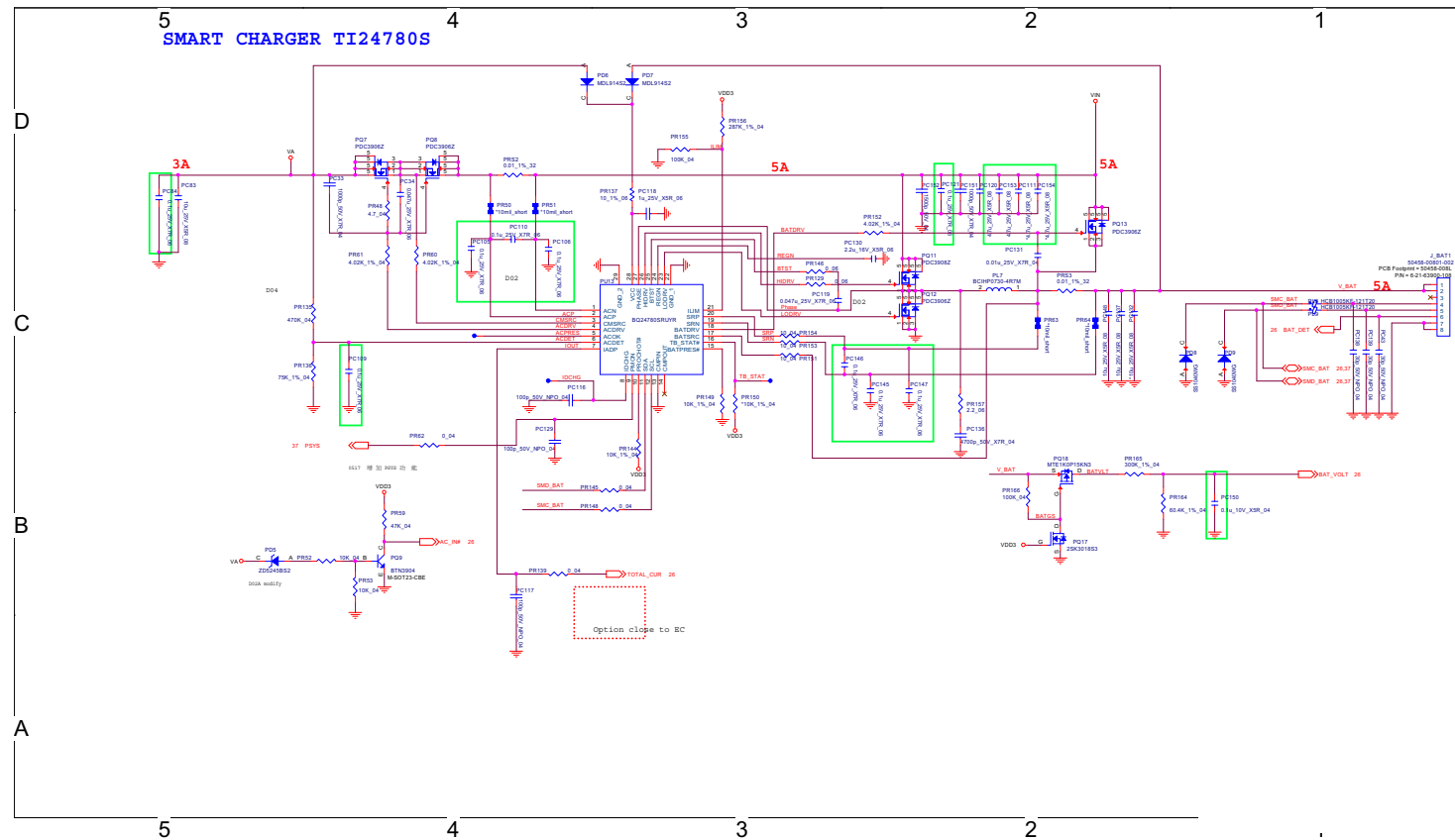
VCCIO, 2.5V

B. Schematic Diagrams

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VCCIO, 2.5V



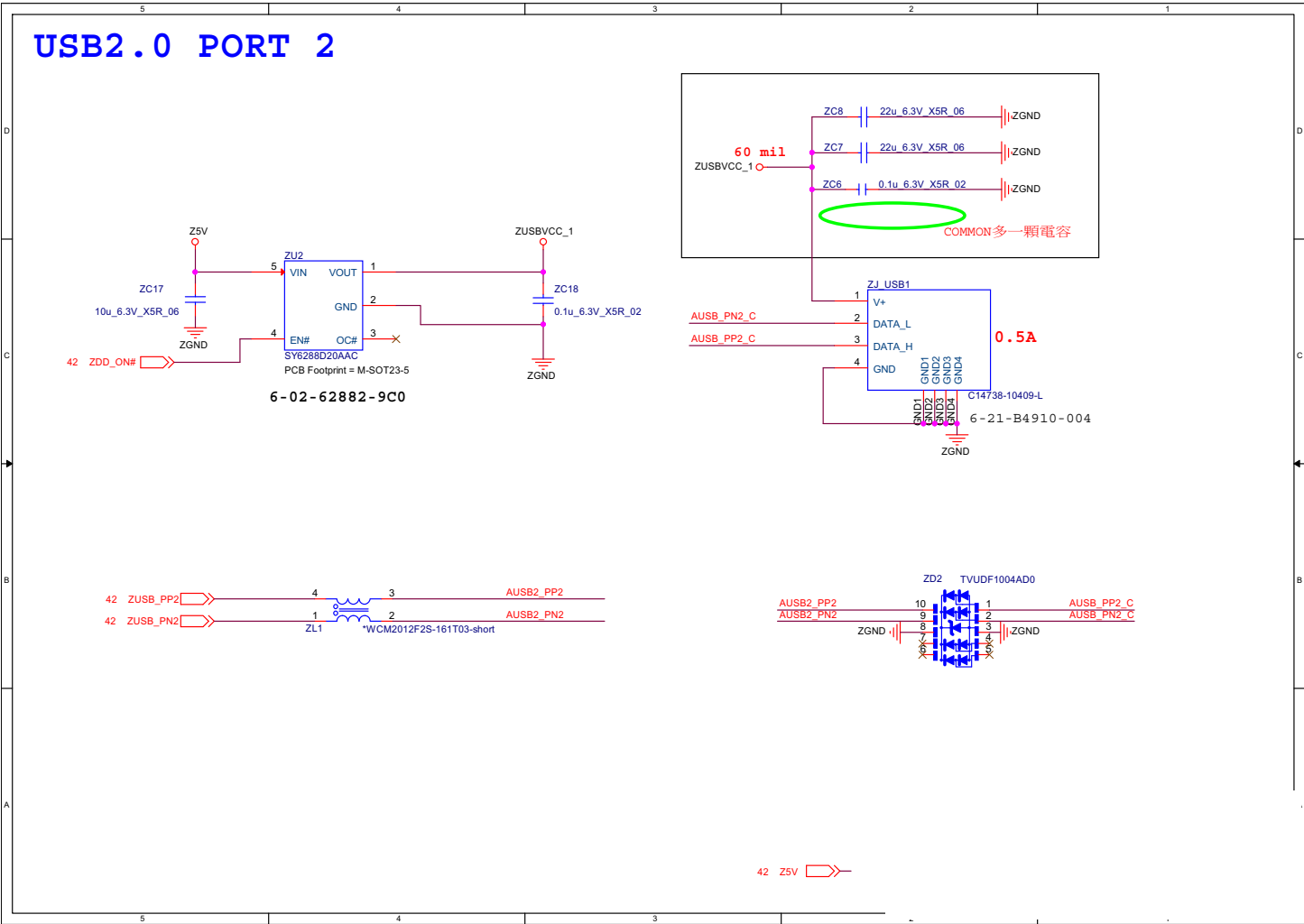
Charger, AC IN

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Charger, AC IN

Schematic Diagrams

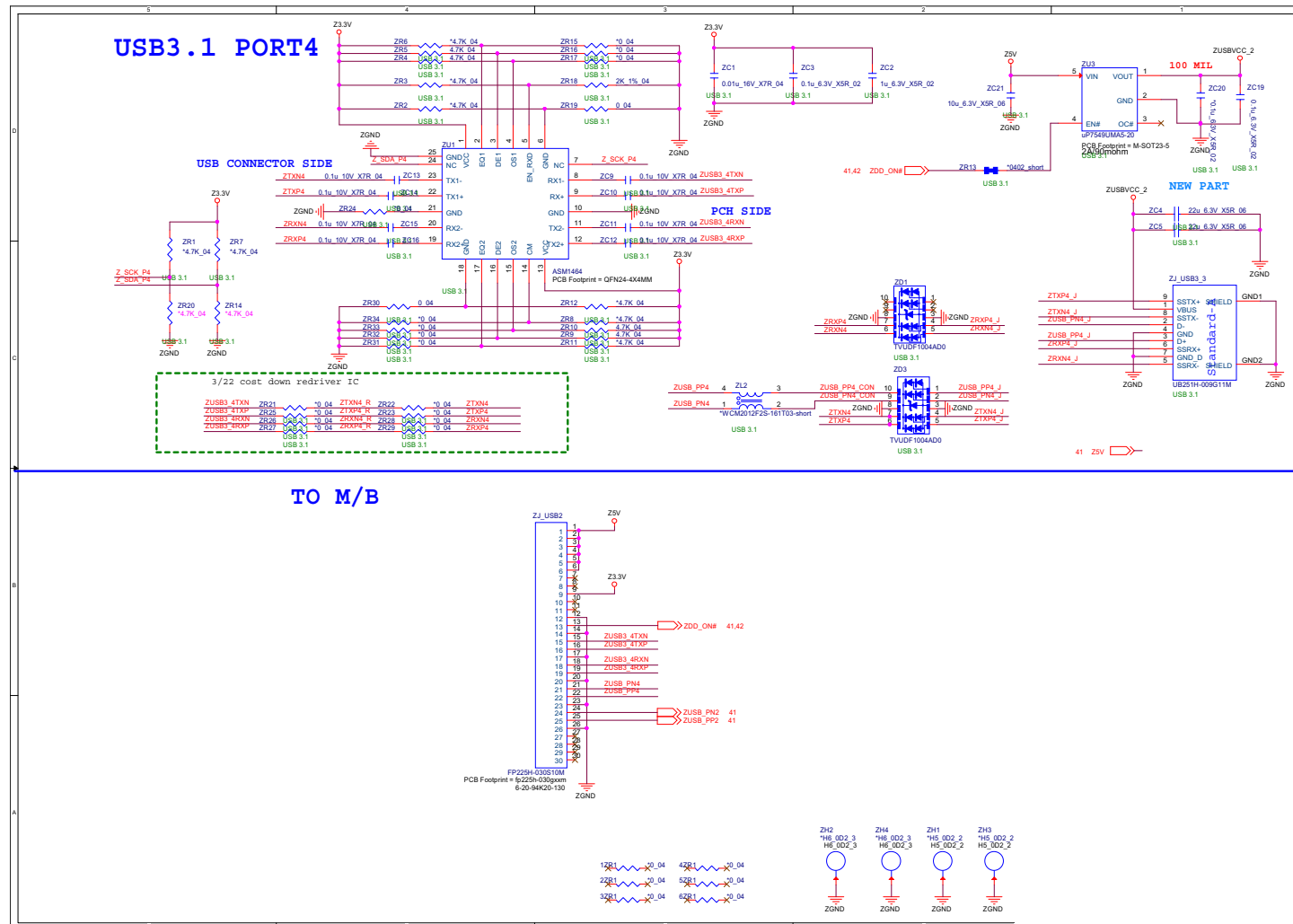
USB Board

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USB Board

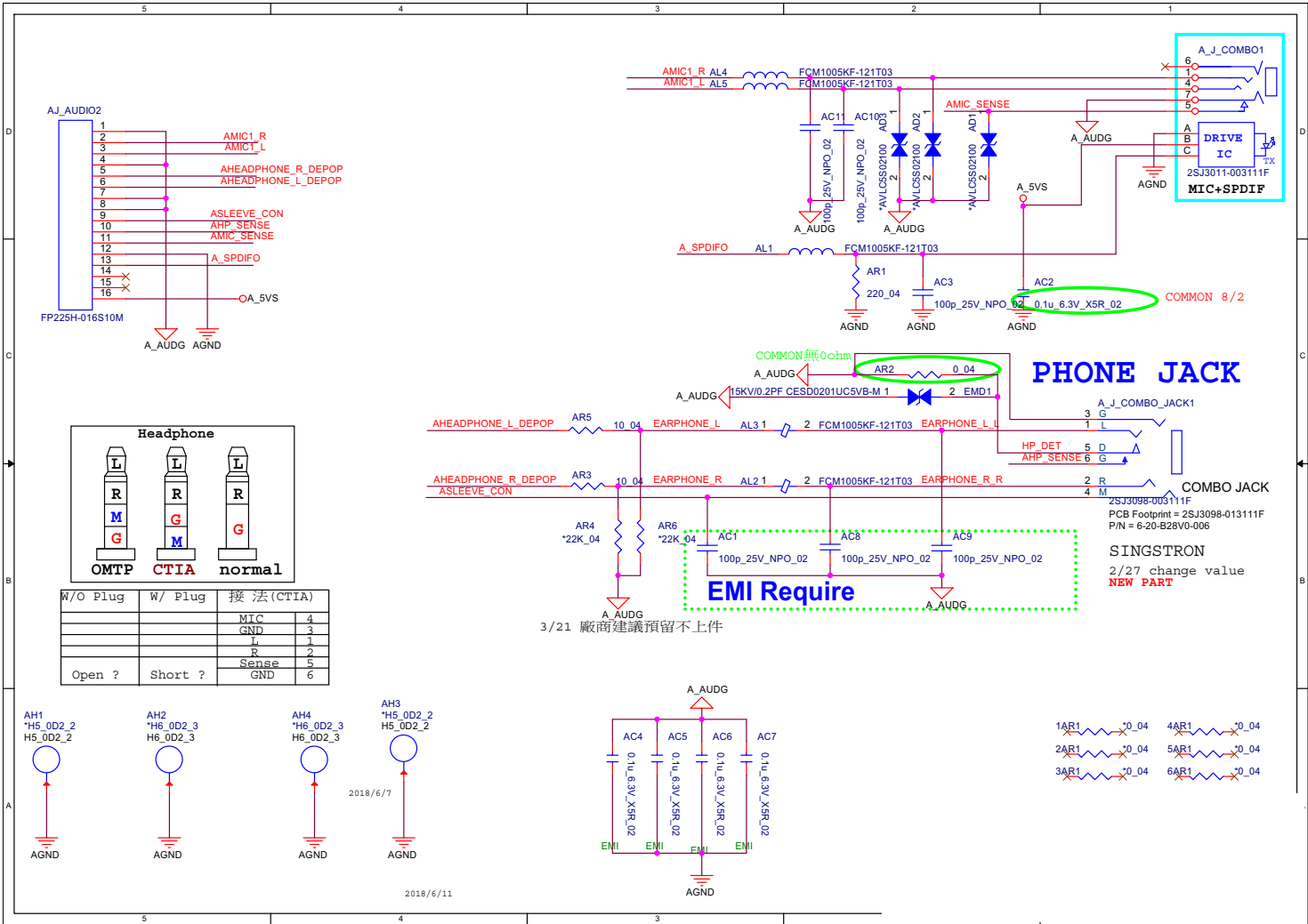


B.Schematic Diagrams

USB Board B - 43

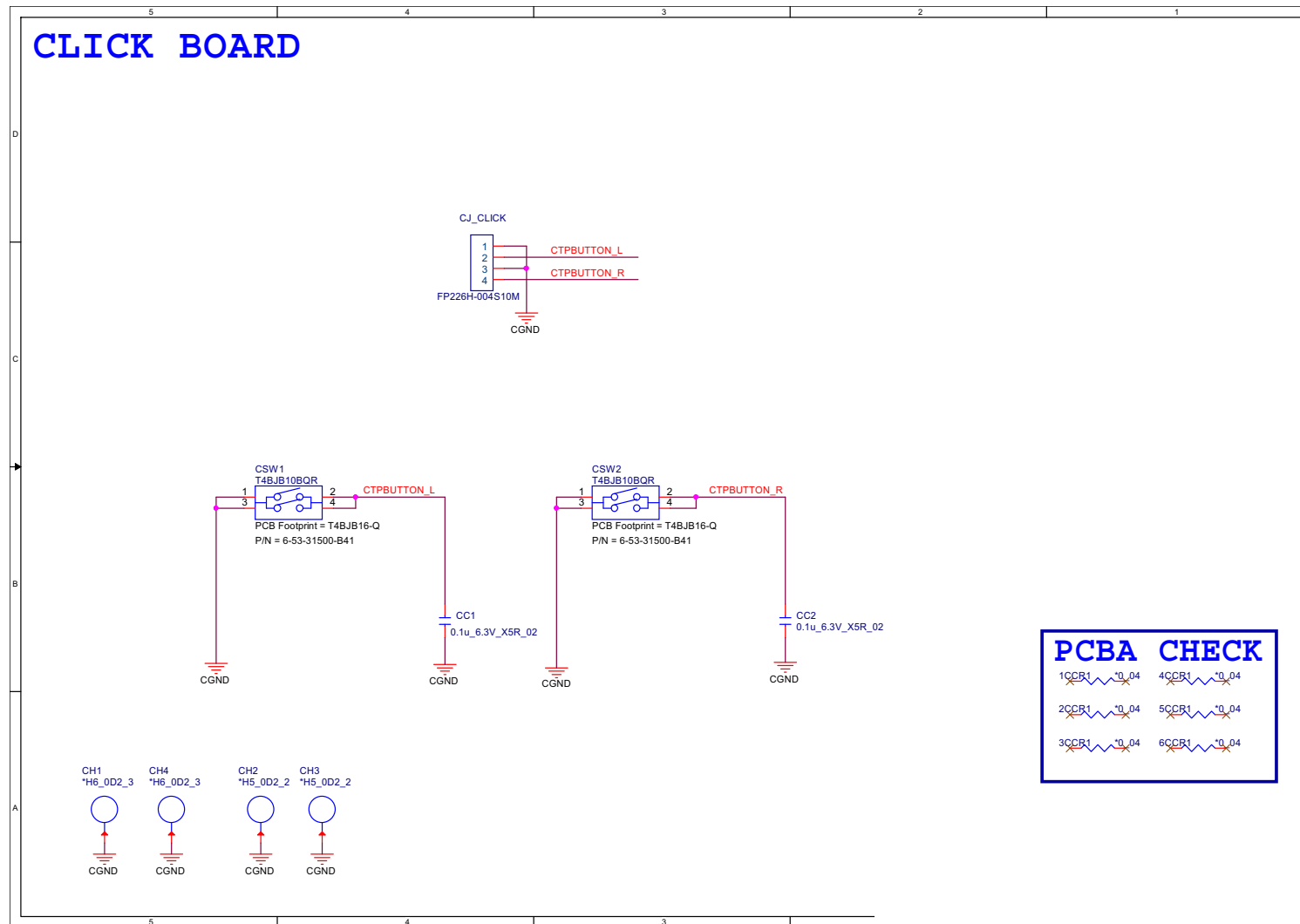


Audio Board



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Audio Board

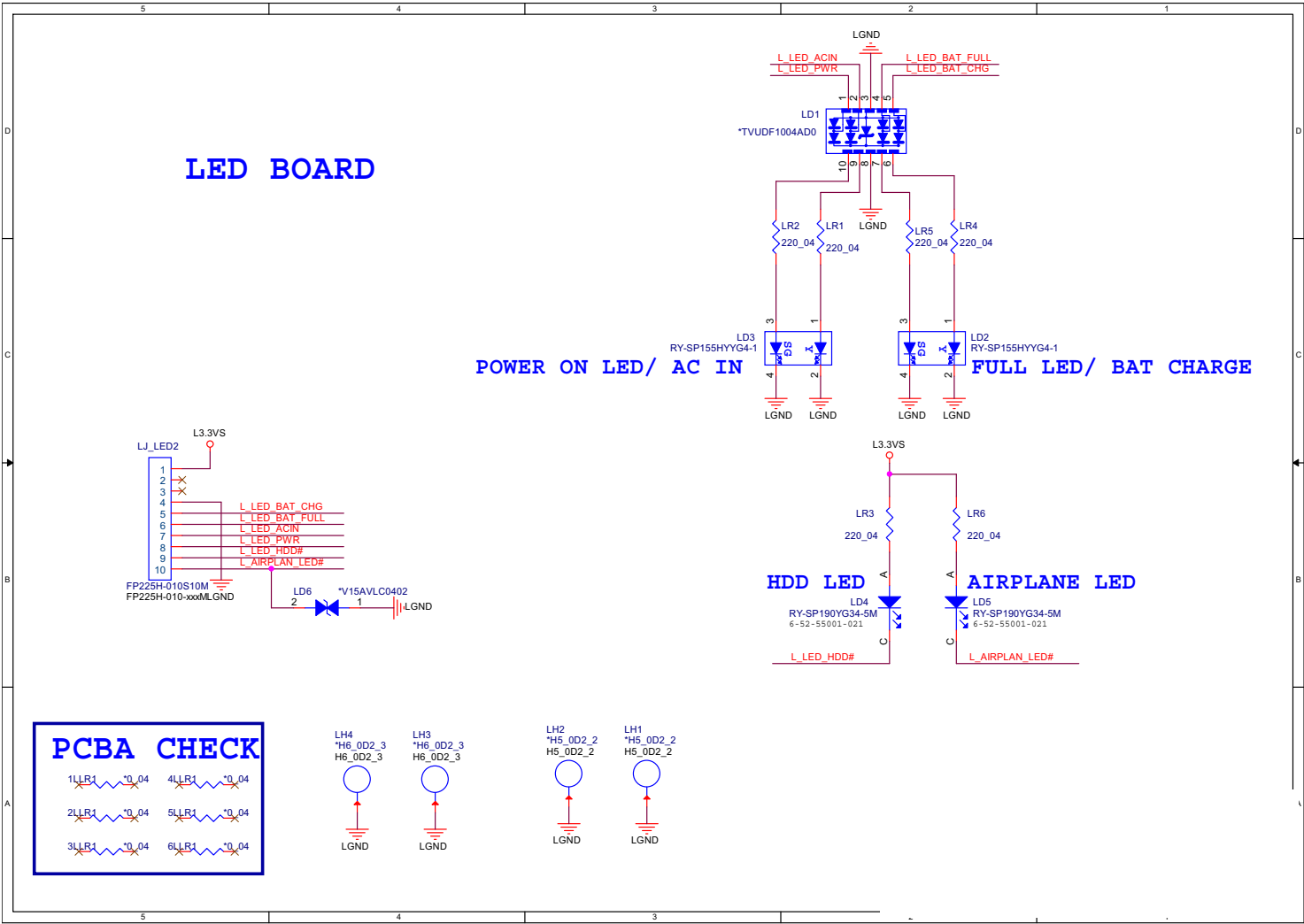
Click Board

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Click Board

Schematic Diagrams

LED Board

Sheet 45 of 46
LED Board



Power Switch Board B - 47

Appendix C: Updating the FLASH ROM BIOS

To update the FLASH ROM BIOS, you must:

- Download the BIOS update from the web site.
- Unzip the files onto a bootable CD/DVD/USB Flash Drive.
- Reboot your computer from an external CD/DVD/USB Flash Drive.
- Use the flash tools to update the flash BIOS using the commands indicated below.
- Restart the computer booting from the HDD and press **F2** at startup enter the BIOS.
- Load setup defaults from the BIOS and save the default settings and exit the BIOS to restart the computer.
- After rebooting the computer you may restart the computer again and make any required changes to the default BIOS settings.

Download the BIOS

1. Go to www.clevo.com.tw and point to **E-Services** and click **E-Channel**.
2. Use your user ID and password to access the appropriate download area (BIOS), and download the latest BIOS files (the BIOS file will be contained in a batch file that may be run directly once unzipped) for your computer model (see sidebar for important information on BIOS versions).

Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive

1. Insert a bootable CD/DVD/USB flash drive into the CD/DVD drive/USB port of the computer containing the downloaded files.
2. Use a tool such as Winzip or Winrar to unzip all the BIOS files and refresh tools to your bootable CD/DVD/USB flash drive (you may need to create a bootable CD/DVD with the files using a 3rd party software).

Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the “+” and “-” keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.



BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are V1.0X.XX or higher as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore **you may not downgrade your BIOS to an older version** after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.0X.05, you **MAY NOT** then go back and flash the BIOS to ver 1.0X.04).

BIOS Update

Use the flash tools to update the BIOS

1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message “**EFI Shell**”. You will then be prompted to give “**Y**” or “**N**” responses to the programs being loaded by EFI Shell. Choose “**N**” for any memory management programs.
2. You should now see **DISK fsX:\>** (X is the designated drive number for the CD/DVD drive/USB flash drive).
3. **Type the following command:**

fsX:\> Flash.nsh

4. The utility will then proceed to flash the BIOS.
5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F9**) and select “**Yes**” to confirm the selection.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.