

SERVICE MANUAL

N350TW

notebook



Notebook Computer

N350TW

Service Manual

Notice

The company reserves the right to revise this publication or to change its contents without notice. Information contained herein is for reference only and does not constitute a commitment on the part of the manufacturer or any subsequent vendor. They assume no responsibility or liability for any errors or inaccuracies that may appear in this publication nor are they in anyway responsible for any loss or damage resulting from the use (or misuse) of this publication.

This publication and any accompanying software may not, in whole or in part, be reproduced, translated, transmitted or reduced to any machine readable form without prior consent from the vendor, manufacturer or creators of this publication, except for copies kept by the user for backup purposes.

Brand and product names mentioned in this publication may or may not be copyrights and/or registered trademarks of their respective companies. They are mentioned for identification purposes only and are not intended as an endorsement of that product or its manufacturer.

Version 1.0
October 2018

Trademarks

Intel, Pentium and Intel Core are trademarks of Intel Corporation.

Windows® is a registered trademark of Microsoft Corporation.

Other brand and product names are trademarks and /or registered trademarks of their respective companies.

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 *N350TW* 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 (65W) minimum AC/DC Adapter.

CAUTION

This Computer's Optical Device is a Laser Class 1 Product

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.

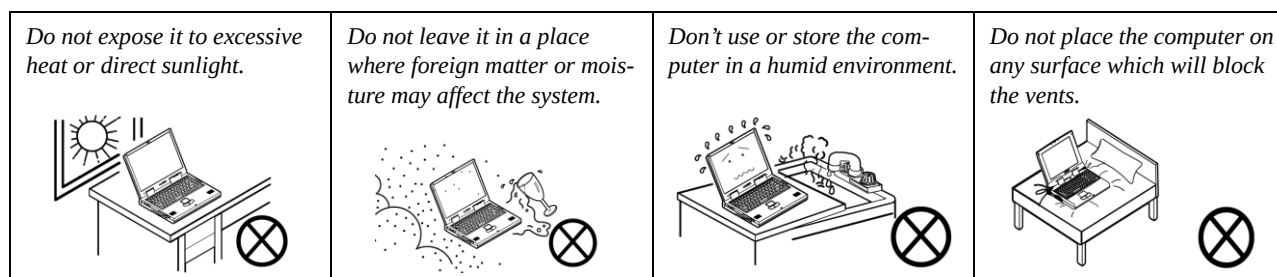
Instructions for Care and Operation

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

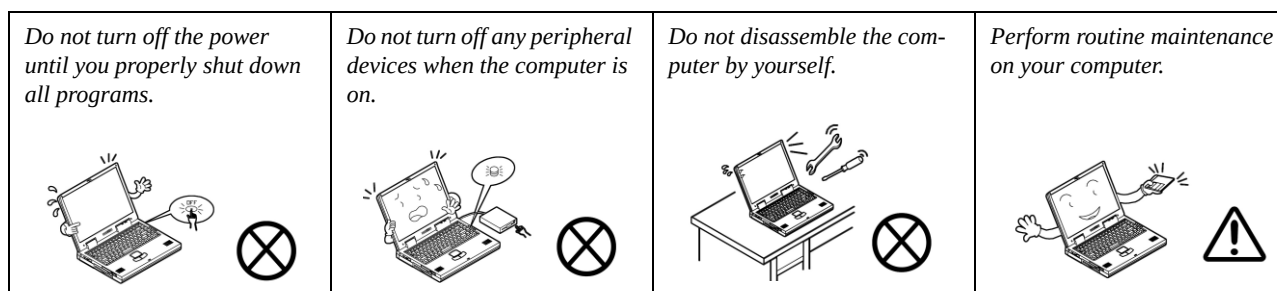
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

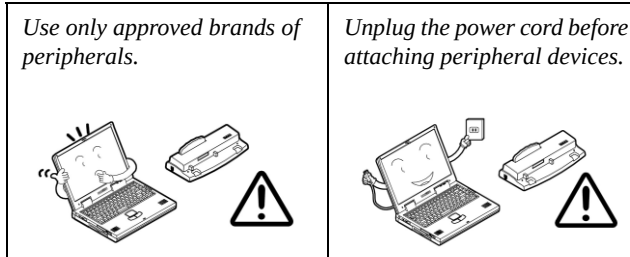


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

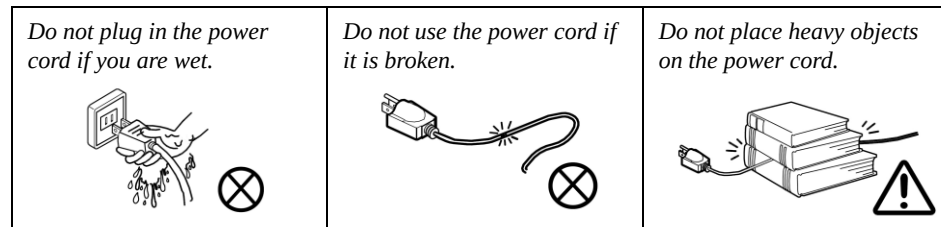
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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). 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. Attach the AC/DC adapter to the DC-In jack at 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.
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (**do not exceed 180 degrees - or 130 degrees if the system is docked to the docking station or has a 9 cell battery inserted**); 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 from the bottom right of the **Start** menu in **Windows**. This will help prevent hard disk or system problems.

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 and Installing the Hard Disk Drive	2-6
Removing the System Memory (RAM)	2-9
Removing and Installing a Processor	2-11
Removing the 3G Module	2-14
Removing the Wireless LAN Module	2-15
Wireless LAN, Combo, 3G & LTE Module Cables	2-16
Removing and Installing the M.2 SSD Module	2-17
Removing the Optical Device	2-19
Removing the Keyboard	2-20

Part ListsA-1

Part List Illustration Location	A-2
---------------------------------------	-----

Top	A-3
Bottom	A-4
DVD	A-5
LCD	A-6
MB	A-7

Schematic Diagrams.....B-1

System Block Diagram	B-2
Processor 1/6	B-3
Processor 2/6	B-4
Processor 3/6	B-5
Processor 4/6	B-6
Processor 5/6	B-7
Processor 6/6	B-8
DDR4 SO-DIMM_0	B-9
DDR4 SO-DIMM_1	B-10
Panel, Inverter	B-11
HDMI	B-12
CRT	B-13
PCH 1/9I	B-14
PCH 2/9	B-15
PCH 3/9	B-16
PCH 4/9	B-17
PCH 5/9	B-18
PCH 6/9	B-19
PCH 7/9	B-20
PCH 8/9	B-21
PCH 9/9	B-22
LAN i219-LM	B-23
LAN Transformer	B-24
Card Reader RTS5229	B-25

Preface

USB Port	B-26
3G/LTE	B-27
TPM, CCD, HDD, ODD	B-28
WLAN	B-29
KBC-ITE IT8587	B-30
Audio Codec ALC892+TPA2008	B-31
PI3WVR13612ZLE	B-32
PS8338B	B-33
miniDP	B-34
Type-C	B-35
TR_TBT	B-36
TR_Power	B-37
TPS65987D	B-38
SSD	B-39
Fan, TP, Connector	B-40
Docking Connector, COM Port	B-41
1.5VS, VCCST	B-42
5VS, 3VS, 3.3V, 5V	B-43
1.05V, VCCIO	B-44
1.2V, 0.6VS	B-45
VDD3, VDD5	B-46
VCore & VCCGT	B-47
VCore Output Stage	B-48
VCCGT Output Stage	B-49
AC-In, Charger	B-50
Audio Board	B-51
Power Switch Board	B-52
Click Board	B-53
LED Board	B-54
Smart Card Board	B-55
LID Switch Board	B-56
Power On Sequence	B-57

Updating the FLASH ROM BIOS..... C-1

Download the BIOS	C-1
Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive	C-1
Set the computer to boot from the external drive	C-1
Use the flash tools to update the BIOS	C-2
Restart the computer (booting from the HDD)	C-2

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **N350TW** 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 **N350TW** 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

i7-8700T (2.4GHz)

12MB Smart Cache, 14nm, DDR4-2666MHz, TDP 35W

Intel® Core™ i5 Processor

i5-8600T (2.3GHz), i5-8500T (2.1GHz)

9MB Smart Cache, 14nm, DDR4-2666MHz, TDP 35W

Intel® Core™ i3 Processor

i3-8300T (3.2GHz)

8MB Smart Cache, 14nm, DDR4-2400MHz, TDP 35W

Intel® Pentium Gold Processor

G5500T (3.2GHz), G5400T (3.1GHz)

4MB Smart Cache, 14nm, DDR4-2400MHz, TDP 35W

LCD

15.6" (39.62cm), 16:9, HD (1366x768)/FHD (1920x1080)

BIOS

Insyde BIOS (128Mb SPI Flash ROM)

Core Logic

Intel® H370 Chipset

Memory

Two 204 Pin SO-DIMM Sockets Supporting **DDR4 2666/2400MHz** Memory

Memory Expandable up to **32GB**

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

Storage

One Changeable 2.5" 9.5mm/7.0mm (h) SATA HDD/SSD

(Factory Option) One Changeable 9.5mm(h) Super Multi Optical Device Drive

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

Video Adapter

Intel Integrated GPU

Intel® HD Graphics 630 (i7-8700T, i5-8600T, i5-8500T, i3-8300T, G5500T)

Dynamic Frequency

Intel Dynamic Video Memory Technology

Microsoft DirectX®12 Compatible

Intel® UHD Graphics 610 (G5400T)

Dynamic Frequency

Intel Dynamic Video Memory Technology

Microsoft DirectX®12 Compatible

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Array Microphone

Security

BIOS Password

Security (Kensington® Type) Lock Slot

Fingerprint Reader

TPM v 2.0

Keyboard

Full-size "WinKey" keyboard (with numeric keypad)

(Factory Option) Full-size "WinKey" **Illuminated White-LED** Keyboard (with numeric keypad)

Pointing Device

Built-in Touchpad (scrolling key functionality integrated)

Interface

One USB 2.0 Port

Two USB 3.0 (USB 3.1 Gen 1) Type-A Ports (Including one AC/DC Powered USB Port)

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)/900mA (USB 3.1).*

Or

(Factory Option) One Thunderbolt 3 Port

One External Monitor Port

One HDMI-Out Port

One Mini DisplayPort (1.2)

One Headphone and S/PDIF Out Combo Jack

One Microphone-In Jack

One RJ-45 LAN Jack

One Docking Port

One DC-in Jack

Communication

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

1.0M HD PC Camera Module

(Factory Option) 4G M.2 Module

(Factory Option) Intel® Dual Band Wireless-AC 9560 Wireless LAN **(802.11ac)** + Bluetooth

Slots

(Factory Option) One Smart Card Reader Slot

M.2 Slots

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

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

(Factory Option) Slot 3 for **4G** Module

Card Reader

Embedded Multi-in-1 Push-Push Card Reader

MMC (MultiMedia Card) / RS MMC

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

Environmental Spec**Temperature**

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Power

Full Range AC/DC Adapter

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

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

Removable 6 Cell Smart Lithium-Ion Battery Pack, 62WH

(Factory Option) Removable 9 Cell Smart Lithium-Ion Battery Pack, 93WH

Dimensions & Weight

382mm (w) * 259.5mm (d) * 32.95mm (h)

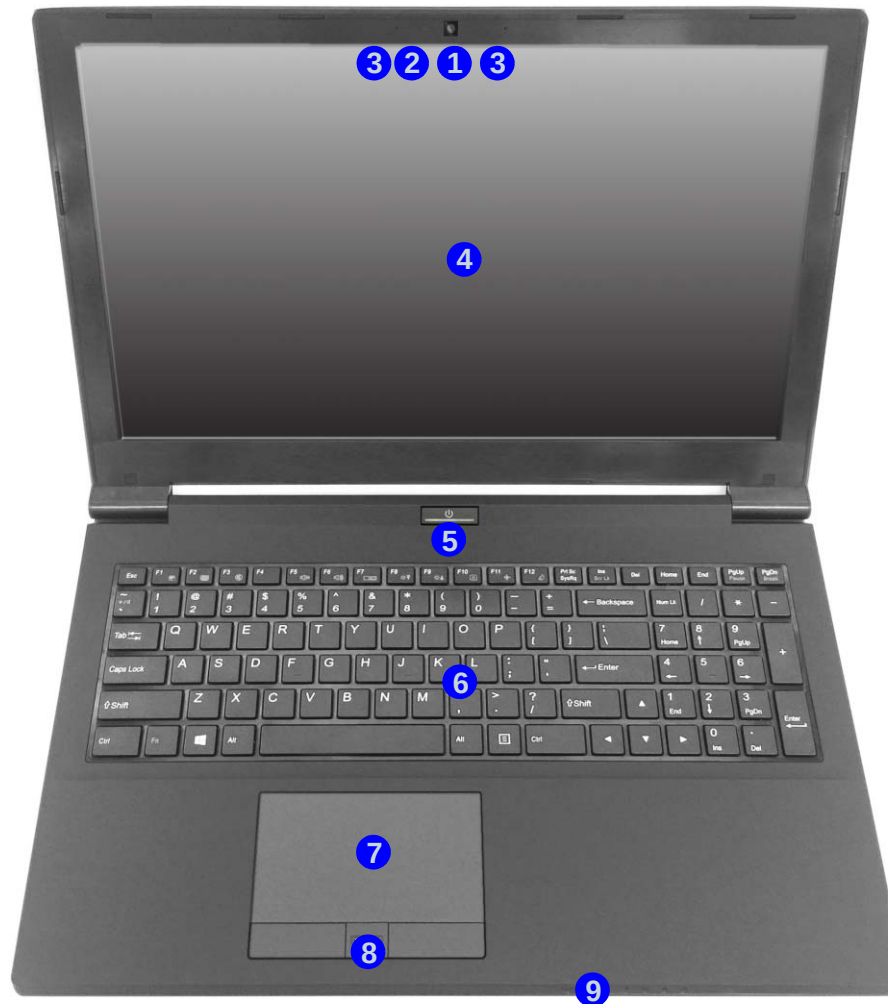
2.5kg (Barebone with 62WH Battery)

Introduction

Figure 1
Top View

1. PC Camera
(Optional)
2. *PC Camera LED
**When the PC camera is in use, the LED will be illuminated in red.*
3. Built-In Array Microphone
4. LCD
5. Power Button
6. Keyboard
7. Touchpad & Buttons
8. Fingerprint Reader
9. LED Indicators

External Locator - Top View with LCD Panel Open



External Locator - Front & Right Side Views

Figure 2
Front View

1. LED Indicator

FRONT VIEW



Figure 3
Right Side View

1. USB 2.0 Port
2. Microphone-In Jack
3. Headphone and S/PDIF Out Combo Jack
4. Optical Device Drive Bay
5. Emergency Eject Hole
6. Smart Card Reader (Optional)
7. Security Lock Slot

RIGHT SIDE VIEW



Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DC-In Jack
2. External Monitor Port
3. RJ-45 LAN Jack
4. Powered USB 3.0 Port
5. USB 3.0 Port
6. Vent
7. HDMI-Out Port
8. Mini Display Port
9. USB 3.1 Gen 2 Type-C Port or (Factory Option) Thunderbolt 3 Port
10. Multi-in-1 Card Reader

LEFT SIDE VIEW



Figure 5
Rear View

1. Battery

REAR VIEW



External Locator - Bottom View

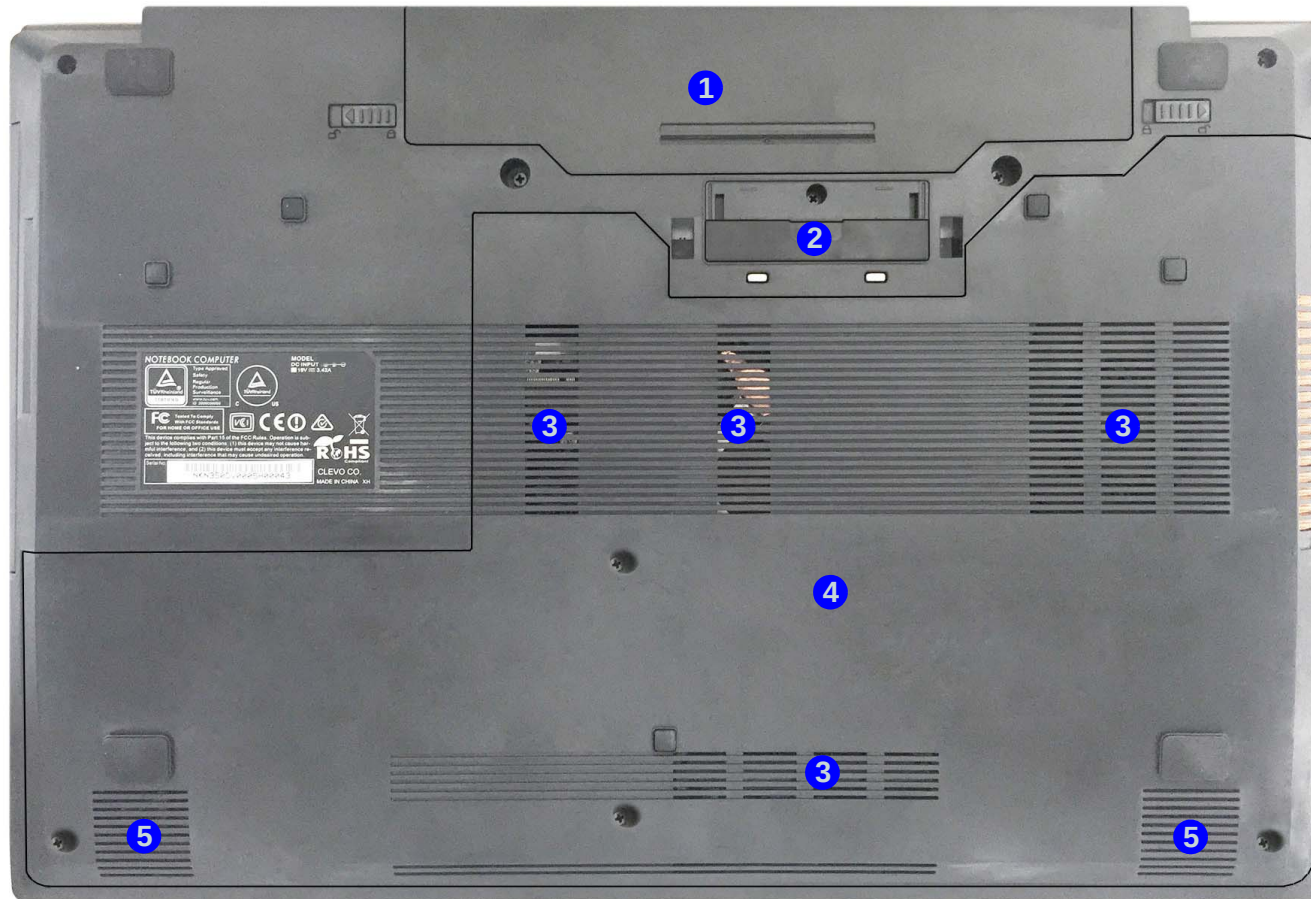


Figure 6
Bottom View

1. Battery
2. Docking Port
3. Vent
4. Component Bay Cover
5. Speakers



Overheating

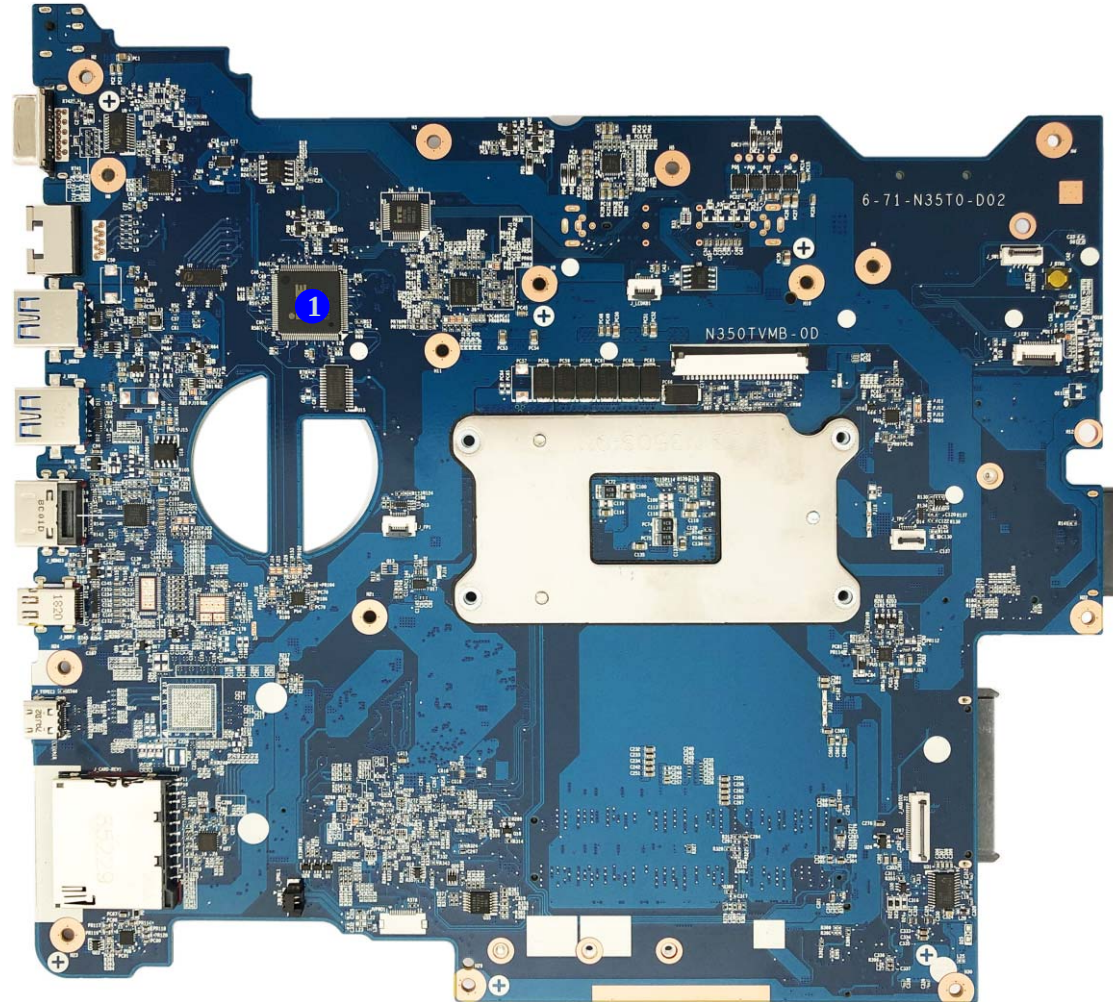
To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

Introduction

Figure 7
Mainboard Top
Key Parts

1. KBC ITE IT8587

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

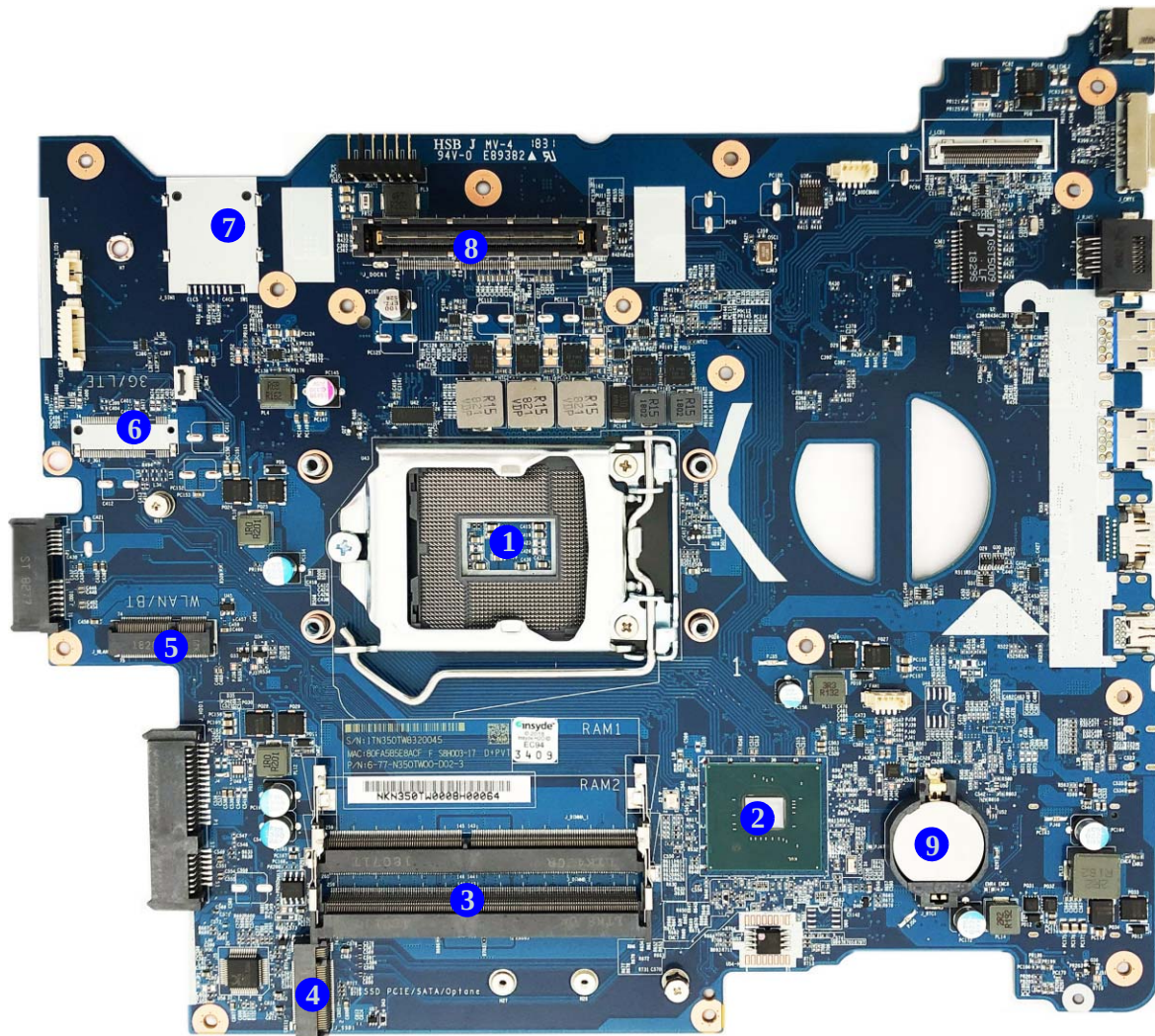


Figure 8
**Mainboard Bottom
Key Parts**

1. CPU Socket (no CPU installed)
2. Platform Controller Hub
3. Memory Slots (DDR3 SO-DIMM)
4. Mini-Card Connector (SSD Module)
5. Mini-Card Connector (WLAN/BT Module)
6. Mini-Card Connector (3G/LTE Module)
7. SIM Card
8. Docking Station Connector
9. CMOS Battery

Introduction

Figure 9
**Mainboard Top
Connectors**

1. Powered USB 3.0 Port
2. USB Ports 3.0
3. HDMI-Out Port
4. Mini Display Port
5. Multi-in-1 Card Reader
6. Keyboard Cable Connector
7. Audio Board Connector

Mainboard Overview - Top (Connectors)

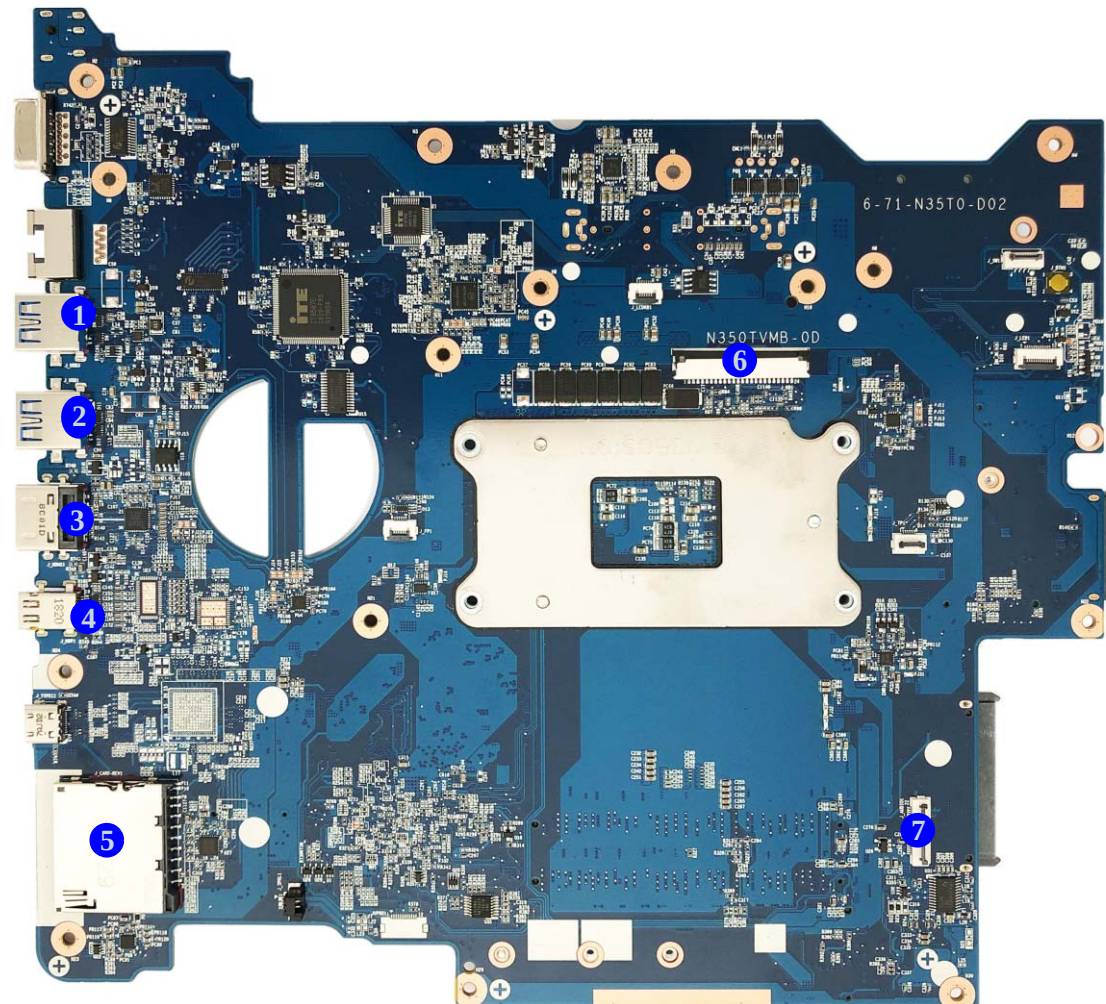
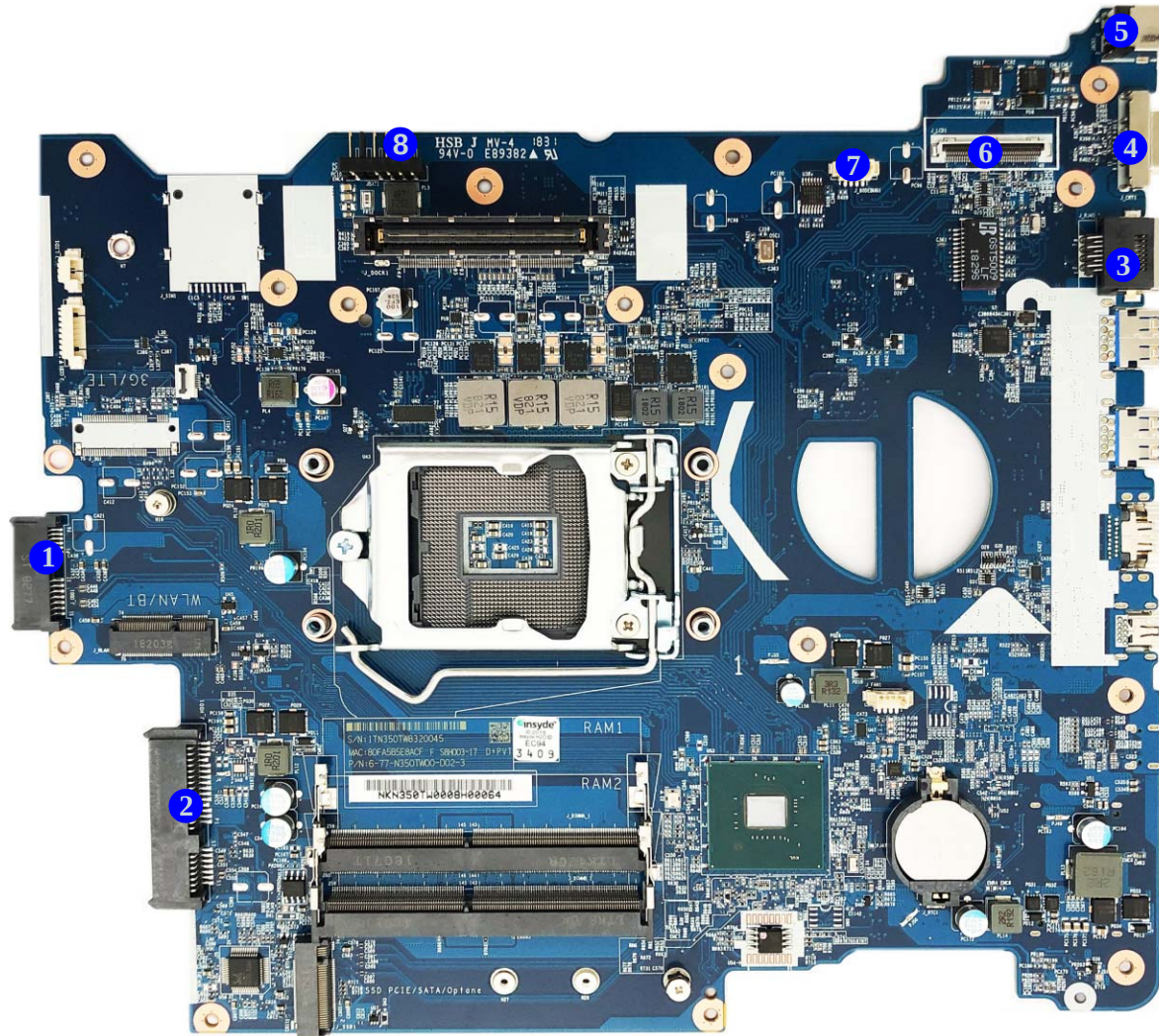


Figure 10
**Mainboard Bottom
Connectors**

1. ODD Connector
2. HDD Cable Connector
3. RJ-45 LAN Jack
4. External Monitor Port
5. DC-In Jack
6. LCD Cable Connector
7. Fan Cable Connector
8. Battery Connector



Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *N350TW* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

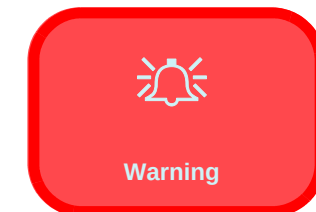
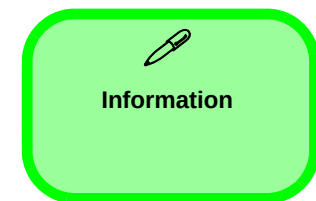
We suggest you completely review any procedure before you take the computer apart.

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

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

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

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



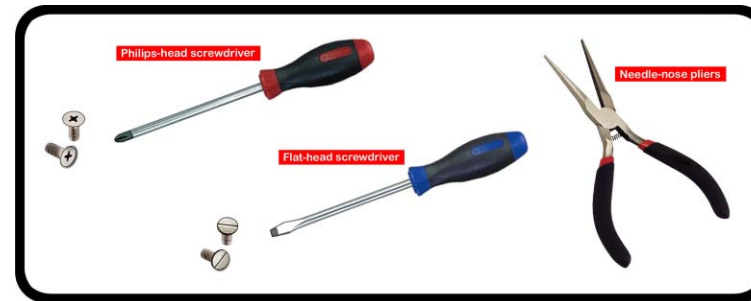
Disassembly

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

Maintenance Tools

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

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



Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors

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

Pressure sockets for multi-wire connectors

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

Pressure sockets for ribbon connectors

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

Board-to-board or multi-pin sockets

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

Maintenance Precautions

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

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

Cleaning

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

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

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

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



Power Safety Warning

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

Disassembly Steps

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

To remove the Battery:

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

To remove the HDD:

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

To remove the System Memory:

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

To remove and install a Processor:

1. Remove the battery [page 2 - 5](#)
2. Remove the processor [page 2 - 11](#)
3. Install the processor [page 2 - 13](#)

To remove the 3G Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the 3G module [page 2 - 14](#)

To remove the Wireless LAN Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the WLAN module [page 2 - 15](#)

To remove and install the M.2 SSD Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the SSD module [page 2 - 17](#)
3. Install the SSD module [page 2 - 18](#)

To remove the Optical Device:

1. Remove the battery [page 2 - 5](#)
2. Remove the ODD [page 2 - 19](#)

To remove the Keyboard:

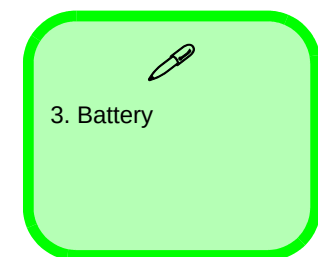
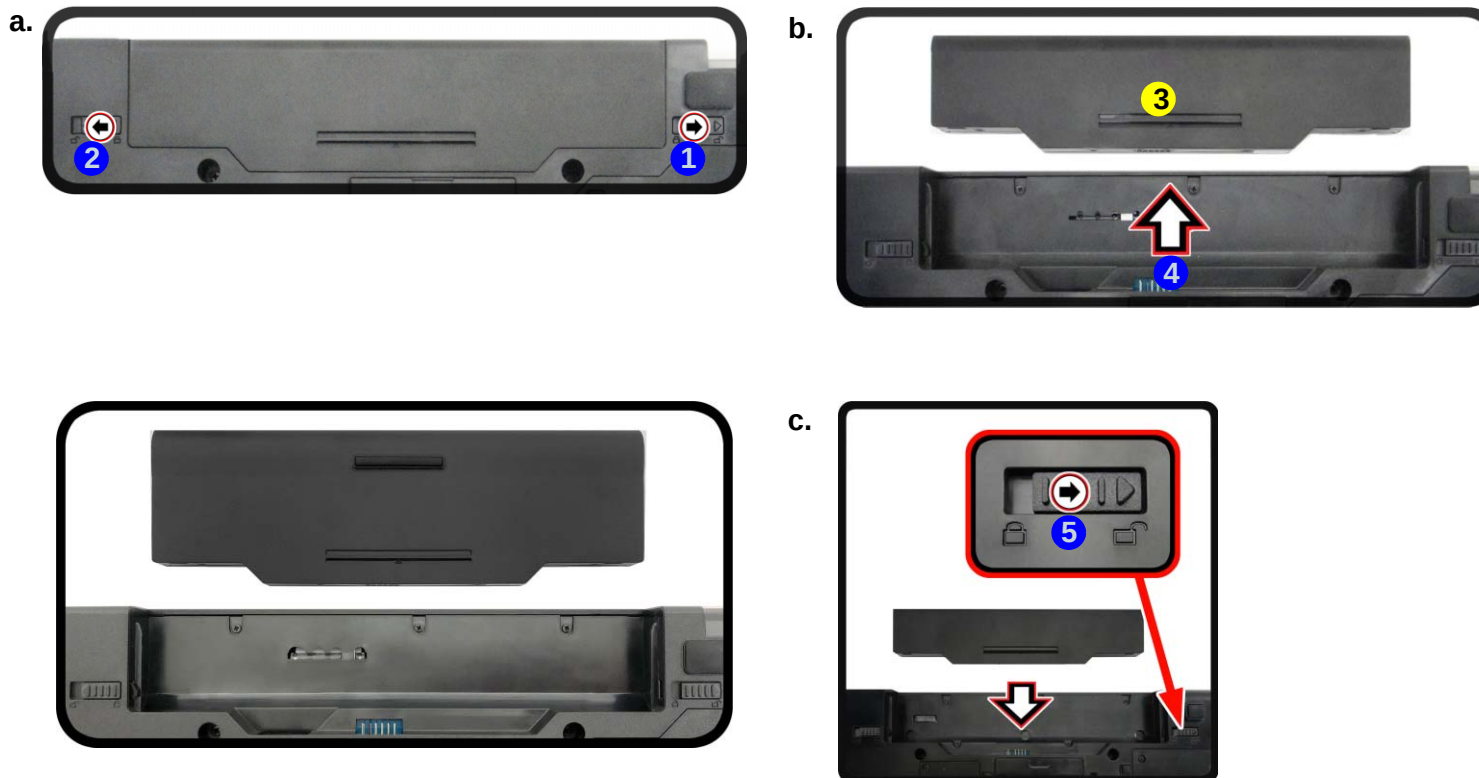
1. Remove the battery [page 2 - 5](#)
2. Remove the keyboard [page 2 - 20](#)

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, and hold it in place (*Figure 1a*).
4. Slide the battery ③ in the direction of the arrow ④ (*Figure 1b*).
5. Make sure the latch ⑤ is in the unlock position, and slide the battery into the bay until it locks into position. Make sure both locks are locked after the battery is in the bay.

Figure 1
Battery Removal

- a. Slide the latch and hold it in place.
- b. Slide the battery out.
- c. Slide the battery in.



Disassembly

Figure 2
**HDD Assembly
Removal**

- Remove the screws.
- Remove the hard disk bay cover.

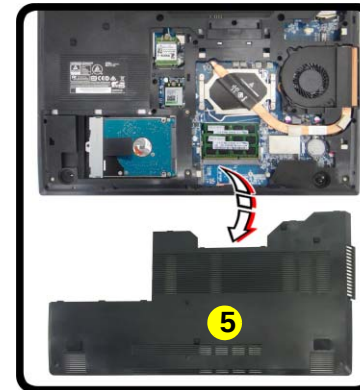
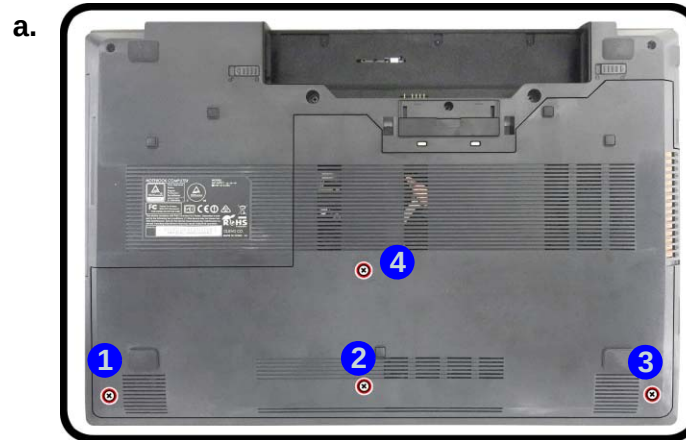
Removing and Installing the Hard Disk Drive

Hdd Removal Procedure

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (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

- Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
- Remove the screws ① - ④.
- Slide the hard disk bay cover ⑤ until the cover and case indicator ⑥ are aligned and remove it ([Figure 5b](#)).



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.

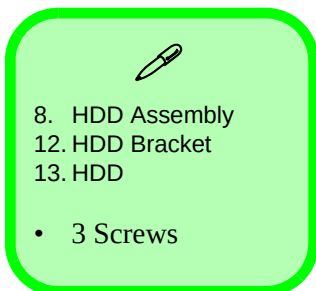


5. Hard Disk Bay Cover

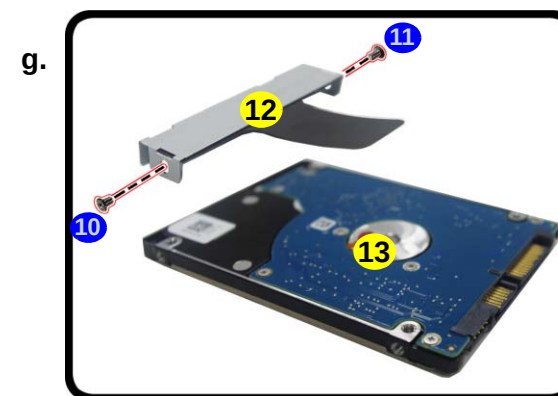
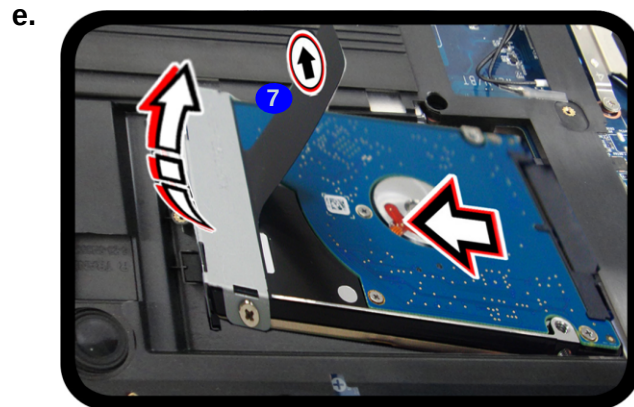
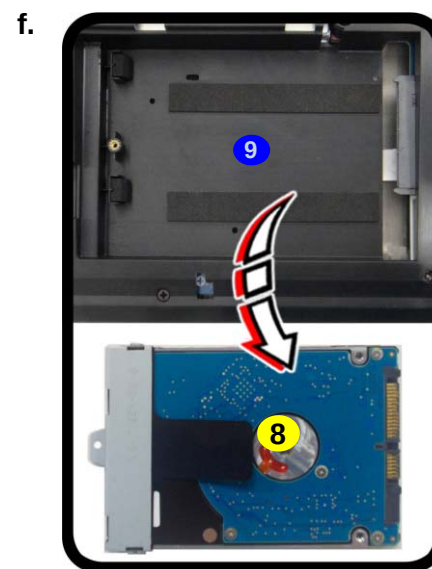
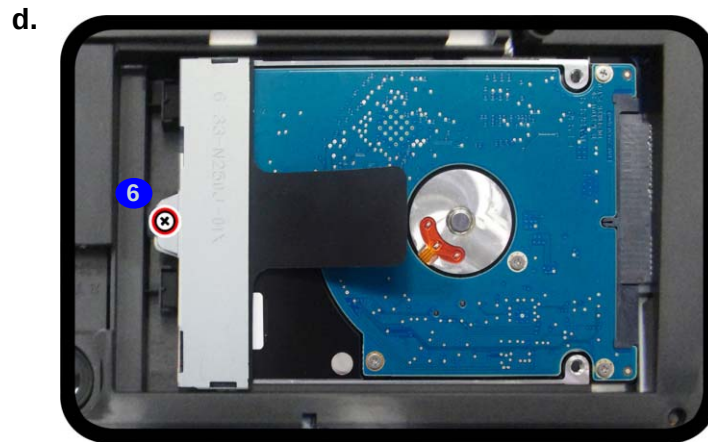
- 4 Screws

Figure 3
**HDD Assembly
Removal (cont'd.)**

- d. Remove the screw.
- b. Slightly lift and pull the HDD assembly in the direction of the arrow.
- c. Lift the HDD assembly out of the bay.
- d. Remove the screws and HDD bracket.



- 4. Remove the screw ⑥ from the hard disk assembly (*Figure 3d*).
- 5. Slightly lift and pull the hard disk assembly in the direction of arrow ⑦ (*Figure 3b*).
- 6. Lift the hard disk assembly ⑧ out of the bay ⑨ (*Figure 3c*).
- 7. Remove the screws ⑩ - ⑪ and the bracket ⑫ from the hard disk ⑬ (*Figure 3d*).
- 8. Reverse the process to install a new hard disk (do not forget to replace all the screws and bottom cover).

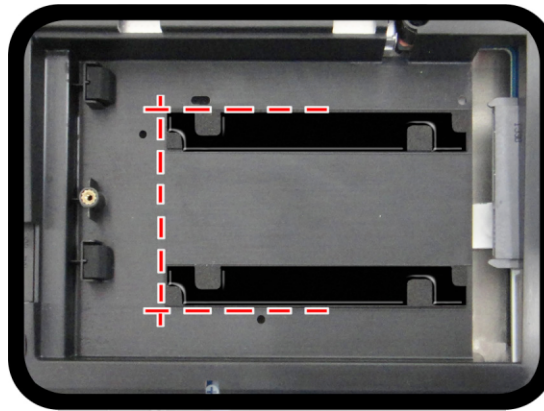


Disassembly

Hard Disk Size Note (Foam Rubber Insert)

Note that the hard disks pictured on the following pages are all 9.5mm(H) hard disk drives. In some cases 7mm(H) hard disk drives will be installed.

Figure 4
**Foam Rubber
Insert for 7mm(H)
HDDs**



- If you are replacing a 9.5mm(H) HDD with a 7mm(H) HDD then insert the foam rubber insert.
- If you are replacing a 7mm(H) HDD with a 9.5mm(H) HDD then remove the foam rubber insert.

Removing the System Memory (RAM)

The computer has two memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR3L Up to 1600 MHz. The main memory can be expanded up to 16GB. The total memory size is automatically detected by the POST routine once you turn on your computer.

Memory Upgrade Process

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
2. Locate the component bay cover and remove screws **1** - **4**.
3. Slide the component bay cover **5** until the cover and case indicator **6** are aligned and remove it ([Figure 5b](#)).

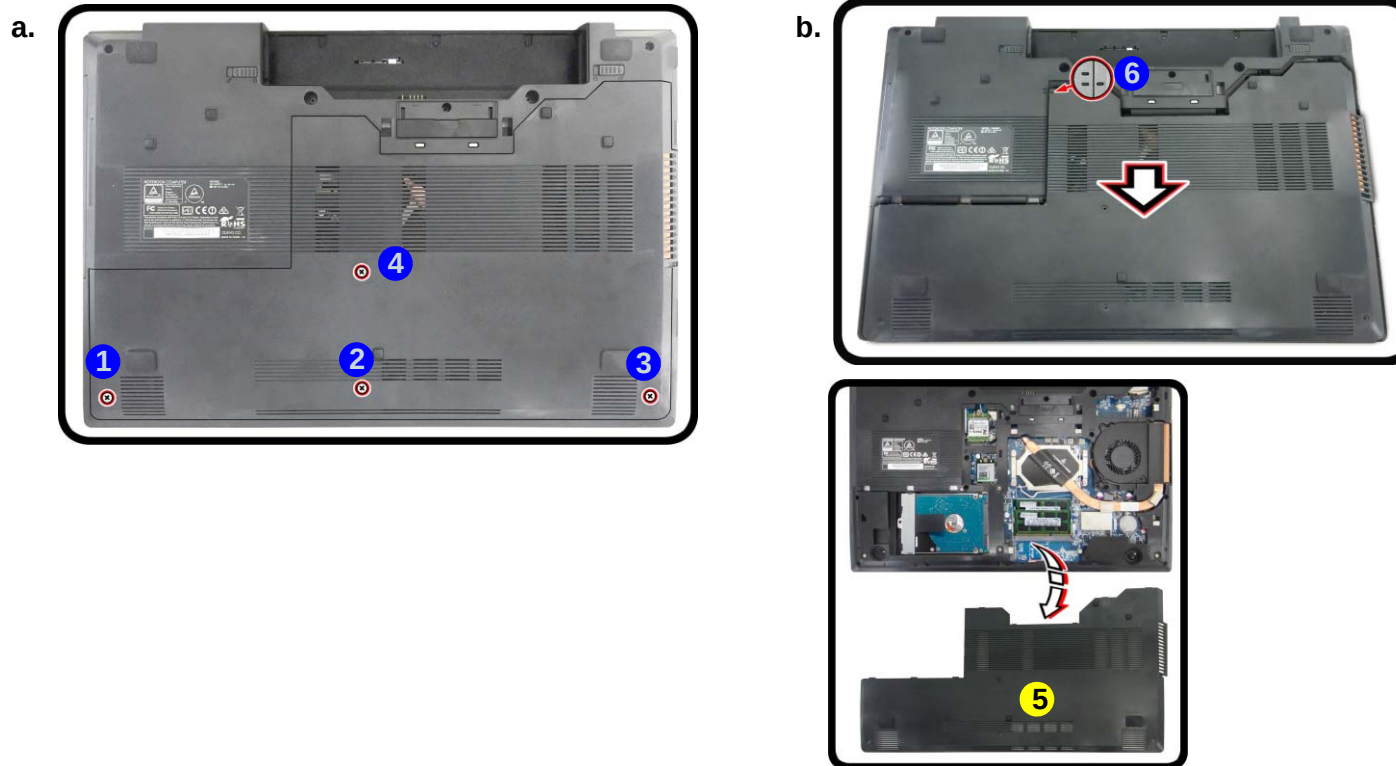


Figure 5
RAM Module Removal

- a. Remove the screws.
- b. Remove the cover.



5. Component Bay Cover

- 4 Screws

Disassembly

Figure 6
RAM Module
Removal (cont'd)

- c. The RAM modules will be visible.
- d. Pull the release latches.
- e. Remove the module.

4. The RAM modules will be visible at point **7** on the mainboard.
5. Gently pull the two release latches (**8** & **9**) on the sides of the memory socket in the direction indicated by the arrows (**Figure 6d**).
6. The RAM module **10** will pop-up (**Figure 6e**), and you can then remove it.
7. Pull the latches to release the second module if necessary.
8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
9. 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.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the component bay cover (see [page 2 - 6](#)).
12. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

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.



10. RAM Modules

c.



d.



e.



Removing and Installing a Processor

Processor Removal Procedure

1. Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)), component bay cover ([page 2 - 6](#)) and RAM ([page 2 - 9](#)).
2. The CPU heat sink will be visible at point **A** ([Figure 7a](#)).
3. Remove screws **1** - **4** from the heat sink unit in the order indicated on the label (i.e screw **4** first through to screw **1** last [Figure 7b](#)).
4. Carefully (it may be hot) remove the heat sink unit **B** ([Figure 7c](#)).

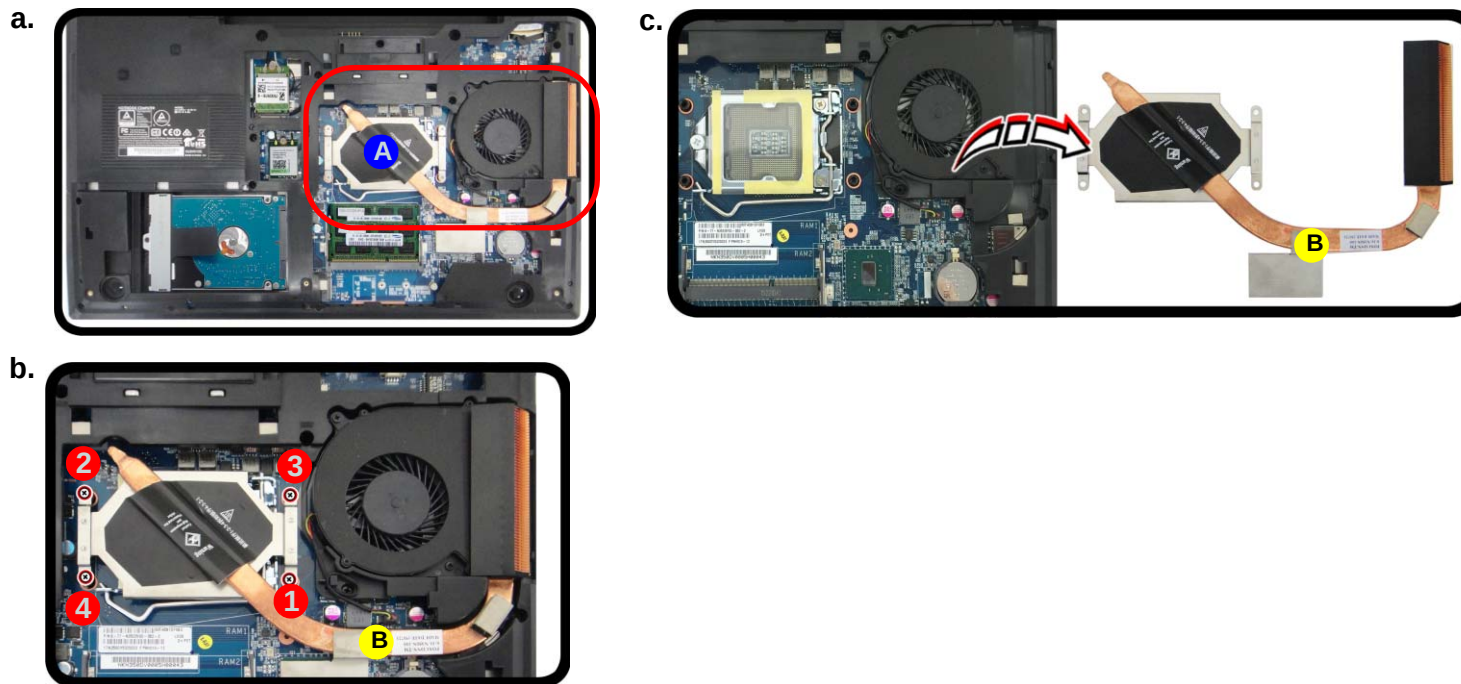


Figure 7
Processor Removal

- a. The CPU heat sink will be visible at point **A**.
- b. Remove the screws from the CPU heatsink.
- c. Carefully lift the heat sink up and off the computer.



B. Heat Sink

- 4 Screws

Disassembly

Figure 8
Processor Removal
(cont'd)

- d. Move the latch and bracket fully in the direction indicated to unlock the CPU.
- e. Lift the CPU out of the socket.

5. Press down and hold the latch **C** (with the latch held down you will be able to release it).
6. Move the latch **C** and bracket **D** fully in the direction indicated to unlock the CPU (**Figure 8c**).
7. Carefully (it may be hot) lift the CPU **E** up and out of the socket (**Figure 8e**).
8. See [page 2 - 13](#) for information on inserting a new CPU.
9. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

d.

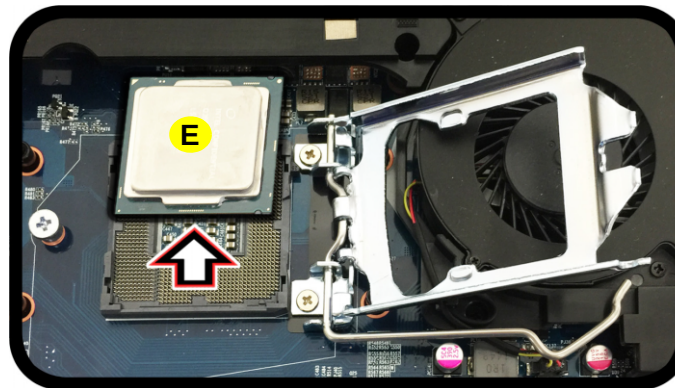


Unlock



Lock

e.



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.

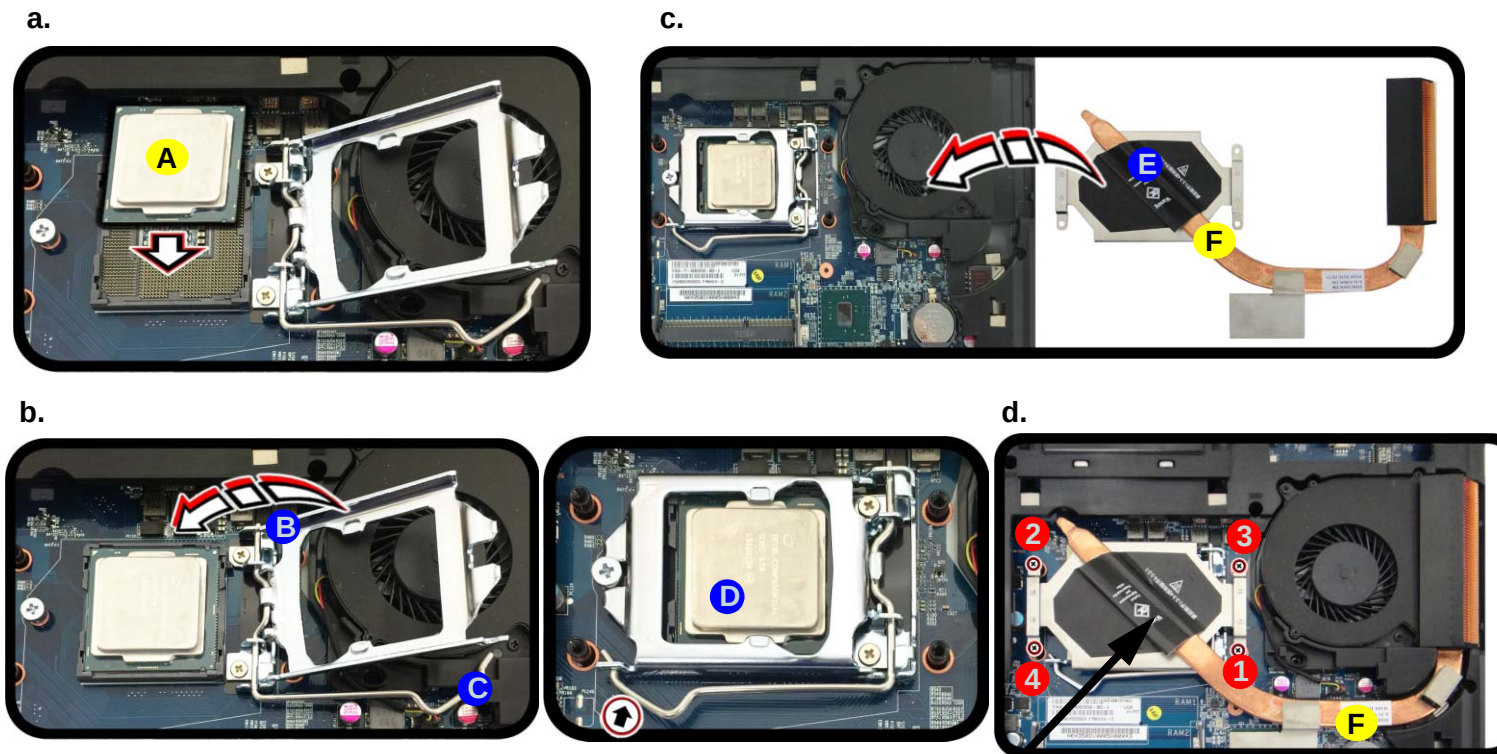
E. CPU

Processor Installation Procedure

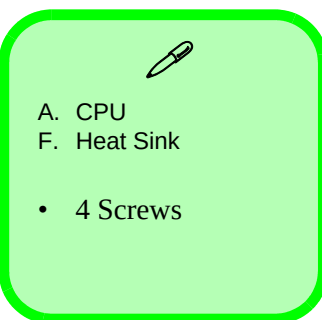
1. Insert the CPU **A** (*Figure 9a*), pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!) (*Figure 9a*).
2. Move the bracket **B** and latch **C** fully in the direction indicated to lock the CPU.
3. Apply the thermal grease **D** to the top of the CPU as shown (*Figure 9b*).
4. **Remove the sticker E** (*Figure 9c*) from the heat sink unit (if it is a new unit).
5. Insert the heat sink unit **F** as indicated in *Figure 9c*.
6. Tighten the CPU heat sink screws in the order **1** - **4** (the order as indicated on the label and *Figure 9d*).
7. Replace the component bay cover and tighten the screws.

Figure 9
**Processor
Installation**

- a. Insert the CPU.
- b. Move the latch and bracket fully in the direction indicated to lock the CPU. Apply thermal grease.
- c. Remove the sticker from the heat sink unit and insert the heat sink.
- d. Tighten the screws.



Note:
Tighten the screws in the order as indicated on the label.



Disassembly

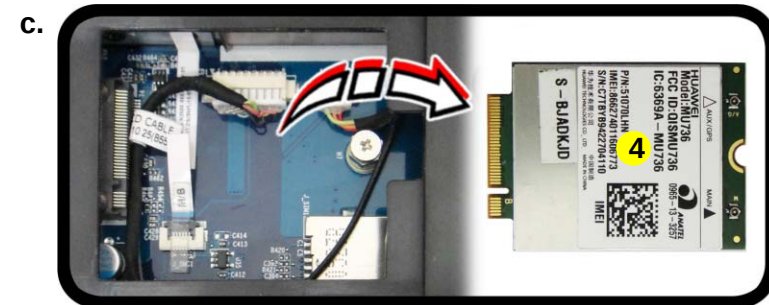
Figure 10
3G Module Removal

- Disconnect the cables and remove the screw.
- The module will pop-up.
- Remove the 3G module.

Note: Make sure you reconnect the antenna cable to socket.

Removing the 3G Module

- Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
- Carefully disconnect the cables **①** & **②**, and then remove the screw **③** ([Figure 10a](#)).
- The 3G module **④** will pop-up, and you can remove it from the computer ([Figure 10b](#)).



4. 3G Module
- 1 Screw

Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
2. Carefully disconnect the cables **1** - **2**, and then remove the screw **3** ([Figure 11a](#)).
3. The Wireless LAN module **4** ([Figure 11b](#)) will pop-up, and you can remove it from the computer.

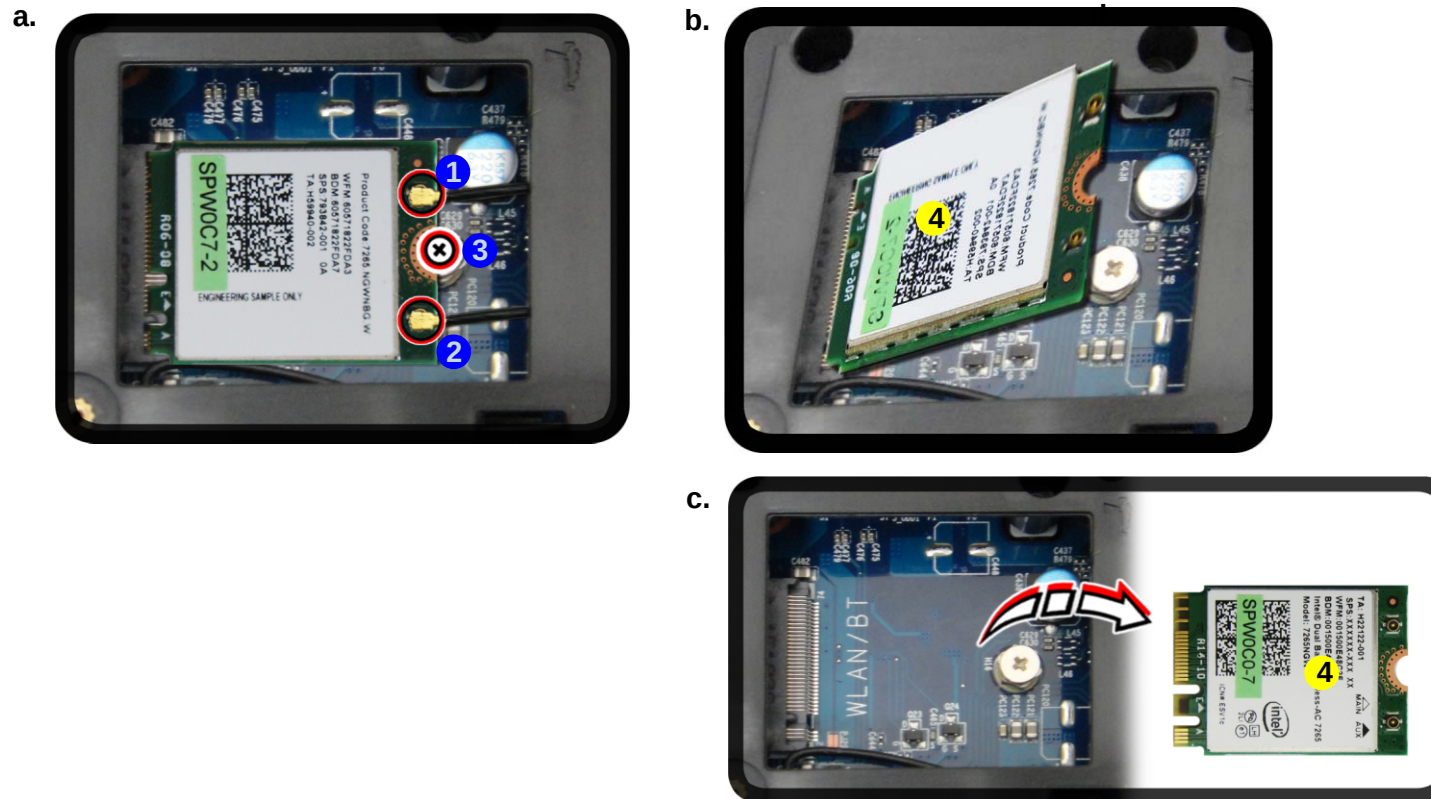


Figure 11
**Wireless LAN
Module Removal**

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

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket ([Figure 11b](#)).



4. Wireless LAN
Module

- 1 Screw

Disassembly

Wireless LAN, Combo, 3G & LTE Module Cables

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

Module Type	Antenna Type	Cable Color	Cable Cover Type
WLAN/WLAN & Bluetooth Combo	WM 1	Black	Transparent
	WM 2	Black	White
LTE Broadband	LTE 1	Black	Black
	LTE 2	Black	Blue

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

Removing and Installing the M.2 SSD Module

M.2 SSD Removal Procedure

1. Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
2. The M.2 SSD module will be visible at point **1** on the mainboard ([Figure 12a](#)).
3. Remove the screw **2** ([Figure 12b](#))
4. The M.2 SSD module **3** ([Figure 12c](#)) will pop-up, and you can remove it from the computer.

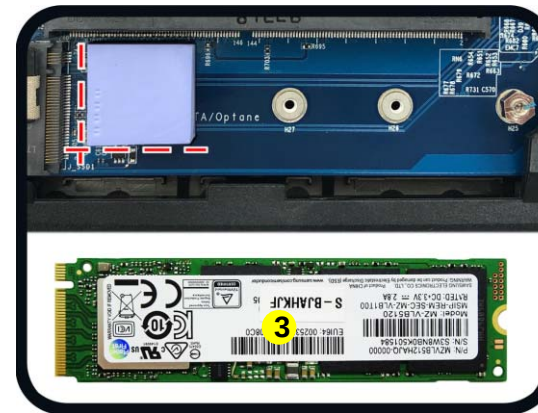


Figure 12
M.2 SSD Module Removal

- 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 13
M.2 SSD Module Installation

- Place the thermal pad.
- Insert the module.
- Tighten the screw.

M.2 SSD Installation Procedure

- Place the thermal pad **1** on the mainboard as shown (*Figure 13a*).
- Insert the module **2** in the computer (*Figure 13b*).
- Tighten the screw **3** to secure the module in place (*Figure 13c*)

a.



b.



c.



Thermal Pad

Make sure to place the thermal pad's adhesive side down on the mainboard's surface as illustrated. Insert the module with the thermal pad facing the mainboard.



- Thermal Pad
- M.2 SATA Module

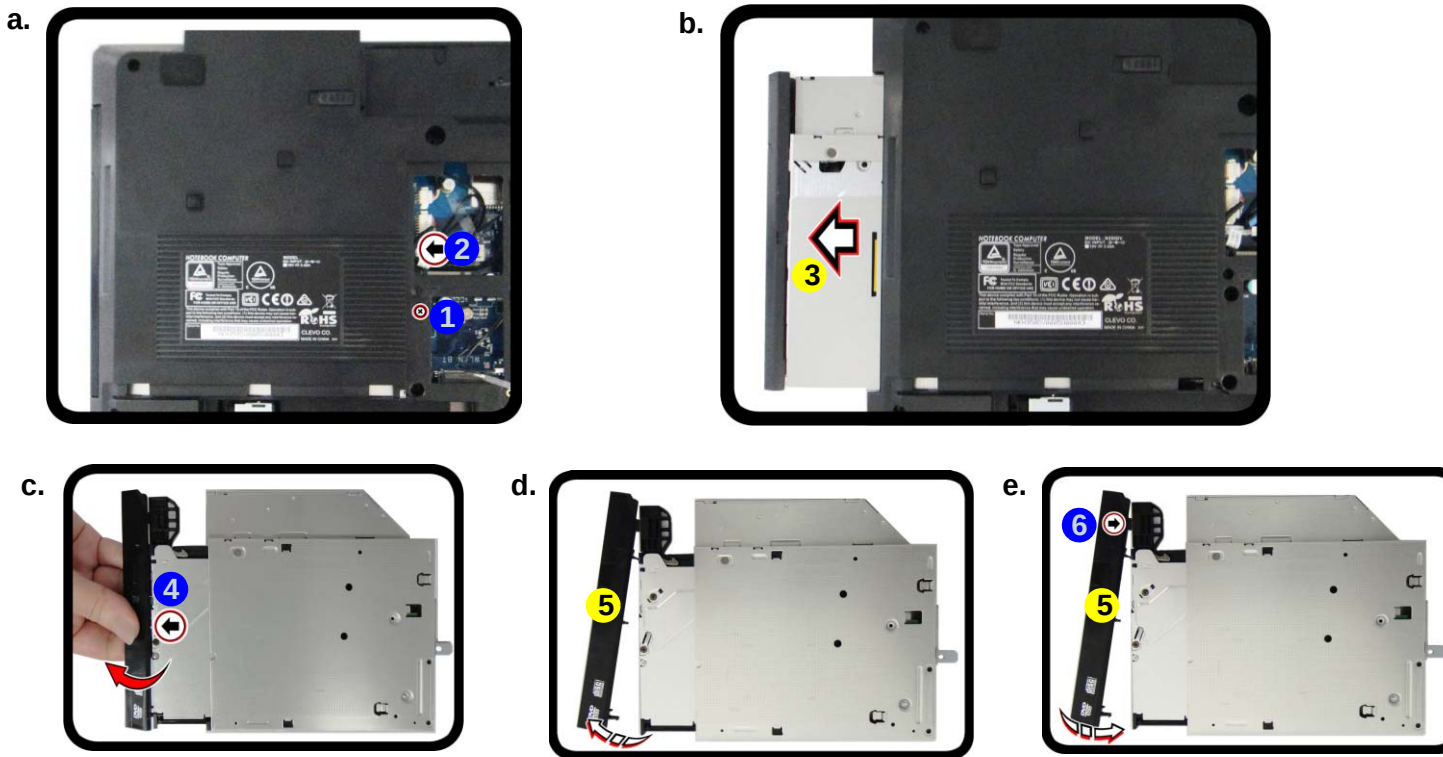
- 1 Screw

Removing the Optical Device

1. Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
2. Remove the screw at point **1**, and use a screwdriver to carefully push out the optical device **3** at point **2**.
3. Carefully pry the bezel **5** off the optical device at point **4** ([Figure 14c](#)).
4. Separate the bezel **5** and the optical device as shown ([Figure 14d](#)).
5. Reverse the process to attach the front bezel **5** with the new optical device at point **6** ([Figure 14e](#)).
6. Insert the new device and carefully slide it into the computer (the device only fits one way. DO NOT FORCE IT; The screw holes should line up). Replace the bottom cover and tighten the screws.
7. Restart the computer to allow it to automatically detect the new device.

Figure 14
ODD Removal

- a. Remove the screw.
- b. Push the optical device out of the computer.
- c. Pry the bezel off the optical device.
- d. Separate the bezel and optical device
- e. Install the front bezel.



- 3. Optical Device
- 5. Bezel Cover
- 1 Screws

Disassembly

Figure 15

Keyboard Removal

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

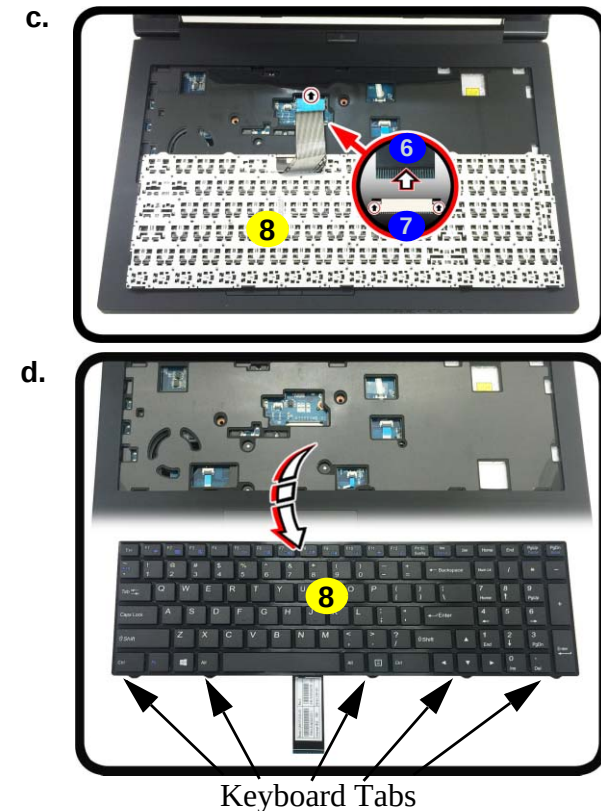
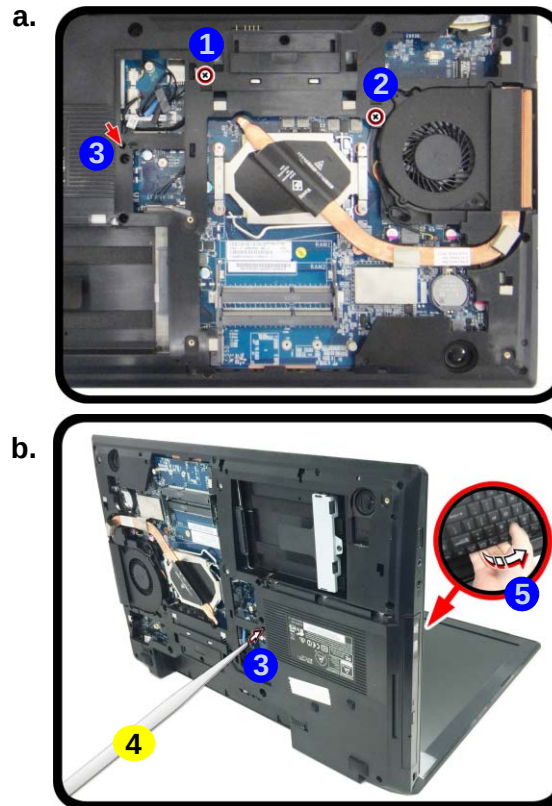
Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **five** keyboard tabs at the bottom (*Figure 15d*) at the bottom of the keyboard with the slots in the case.

- 4. Eject Stick
- 8 Keyboard
- 3 Screws

Removing the Keyboard

- Turn **off** the computer, remove the battery (*page 2 - 5*), and the component bay cover (*page 2 - 9*).
- Remove screws **1** - **2** from the bottom of the computer.
- Open it up with the LCD on a flat surface before pressing at point **3** to release the keyboard module (use an eject stick **4** to do this) while releasing the keyboard in the direction of the arrow **5** as shown (*Figure 15b*).
- Carefully raise the keyboard up, being careful not to bend the keyboard ribbon cable **6**.
- Disconnect the keyboard ribbon cable **6** from the locking collar socket **7** (*Figure 15c*).
- Carefully lift up the keyboard **8** off the computer (*Figure 15d*).
- Reverse the process to replace the keyboard (make sure to reconnect the keyboard cable).



Appendix A:Part Lists

This appendix breaks down the *N350TW* 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.

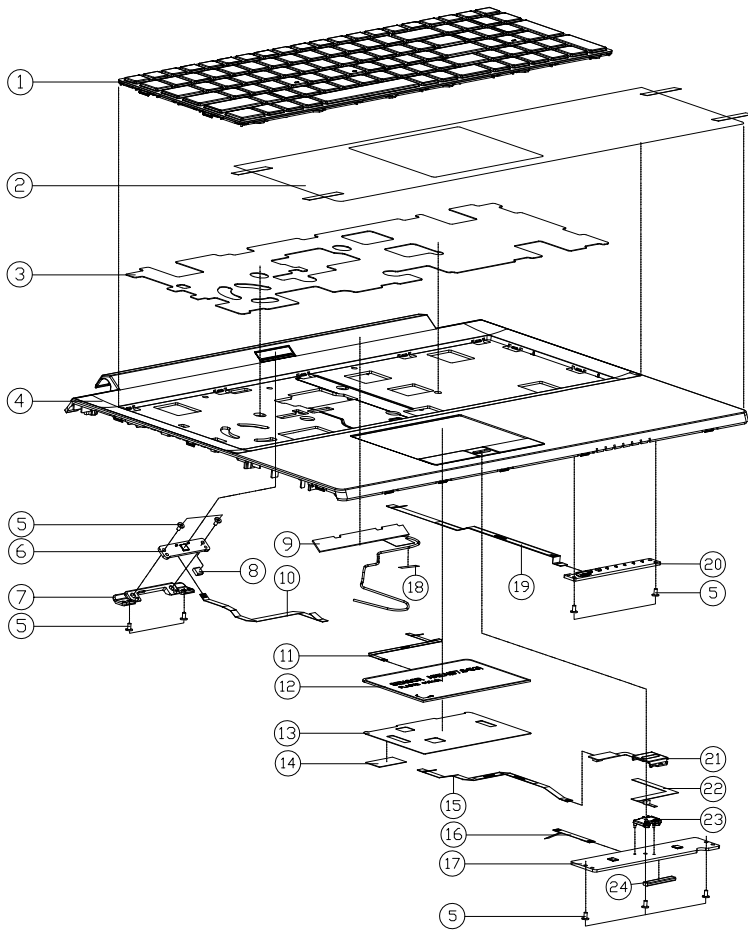
Part List Illustration Location

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

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

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

Top

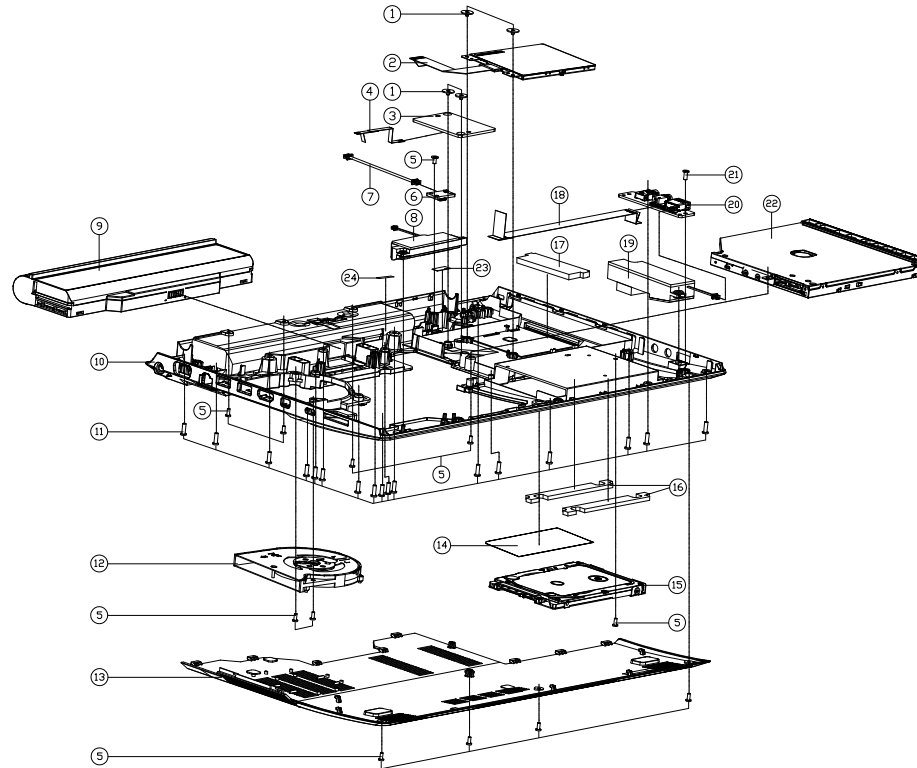


ITEM	PART NAME	PART NO	REMARK
1	WING K/B USA(BLACK) FRAME(US) MODULE FOR N250LU	6-80-N2500-011-1	
1	KB USA CYMISF33US-430 N250LU BLACK ISOLATION WITH WING KEY	6-80-N25J0-011-1	
2	TOP CASE PROTECT MYLAR (382*92.5*0.1T) (PET+3M89HS) N350DV	6-40-N3502-011	
3	WO BACKLIGHT KB MYLAR (344*107*0.4T) (PET+BS-15) N350DV	6-40-N3502-030	ONLY FOR W/O BL KB
4	TOP CASE MODULE N350TV	6-39-N35T2-011	
5	SCREW M2*4L KI NI ICT NY (DD=Ø4.5,DT=0.4)	6-35-B1120-4RE	
6	POWER SWITCH BOARD V1.0 N350TV	6-77-N35TS-D01	
7	POWER BOARD HOLDER (PC+ABS SABIC C7230P) N350DV	6-42-N3502-051	
8	EMI GASKET (5*5*2)MM	6-47-00190-05G	
9	ANTENNA PCB LITE W/ LITE PCB BL 0.76*0.86*0.56/0.56*26/26/26/26 LITE = 15MM N350DV	6-23-7N350-021	
10	FFC POWER TO MB 113MM 19V/3.3V 4PIN N350DV(HT)	6-43-N3500-031-1	
11	FFC TP TO MB 112MM 3.3V 6PIN N350DV(HT)	6-43-N3500-021-1	
12	TOUCH PAD SYNAPTICS PTP TM-03089-002 (100*55MM) W6500C (CPC)	6-49-W65D3-011	
13	TOP TP MYLAR PET N250LU	6-40-N2502-040	
14	TP AL FOIL N350DV (12*25*0.3T) (AL FOIL+TT-219+PET) N350DV	6-47-N3502-010	
15	FFC FINGER TO MB L=124MM 60V 6P N350TV	6-43-N35T2-011	
16	FFC CABLE FOR CLICK TO TP CN2 4PIN W840SU-T (CNUS)	6-43-W8400-042	
17	CLICK BOARD V1.0 N350TV	6-77-N35T2-D01	
18	TAPE MYLAR TRANSPARENT (30*5*0.05) W251HPQ	6-40-W25P3-010	
19	FFC LED TO MB 158MM 3.3V 12PIN N350DV(HT)	6-43-N3500-041-1	
20	LED BOARD V1.0 N350TV	6-77-N35T4-D01	
21	FINGERPRINT MODULE CRW-CV-N14-F2 FOR N140WU-A	6-88-N14WG-0E01-A	
22	FPR ALFOIL GASKET (52.1*38*0.1MM) N350TV	6-47-00190-522	
23	FINGER HOLDER N350TV	6-33-N35T2-011	
24	GASKET(26.5*4*2) (L26.5XW4XH2,BLACK) W670SRQ	6-47-00190-260	

Figure A - 1
Top

Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*2L K1 BK/Z ICT NY(Φ8,T=0.6)	6-35-B6120-2RE	
2	SMART CARD COM-PC CABLE (FFC CABLE 765 MM PITCH-LAPTOP P152MM	6-23-FP175-010	FOR W/ SMART CARD
3	SMART CARD BOARD V2.0 N350TV	6-77-N35TV-D02	FOR W/ SMART CARD
4	FFC CABLE SMART TO MB (66PIN/PITCH=1.25) 65MM N350DV (HT)	6-43-N3500-051-1	FOR W/ SMART CARD
5	SCREW M2*5L K1(T=0.8 D=4.0) BK/Z ICT NY	6-35-B6120-5R0	
6	LID SW BOARD V1.0 N350TV	6-77-N35TC-D01	
7	WIRE CABLE FOR WALL SENSOR TO MB 20MM 3PIN 3.3V N350DV (HT)	6-43-N3500-061	
8	SPK+CABLE L 45MM 2W 4? DS-180M-2L-K3-HF N350DV	6-23-5N350-0L1	
9	DUMP S.L.I. DUMMY/SMART PSE 32P 30P/30P/30P 300/300/30P N350DV	6-87-N350S-4D7	
9	DUMP S.L.I. DUMMY/SMART PSE 32P 30P/30P/30P 300/300/30P N350DV	6-87-N350S-61D00	
9	DUMP S.L.I. DUMMY/SMART PSE 32P 30P/30P/30P 300/300/30P N350DV	6-87-N350S-4D82	
10	BOTTOM CASE MODULE N350TV	6-39-N35T3-011	
11	SCREW M2.5*8L K1 BK/Z NY ICT	6-35-B6125-8R0	
12	CPU FAN MODULE(FORCE/COOL PWM CONTROL N750W)	6-31-N75W2-101	
13	CPU COVER MODULE N350DV	6-42-N3503-102	
14	PRODUCT LABEL FOR N350TW	6-45-N350TW03-010	
14	PRODUCT LABEL FOR N350TV	6-45-N350TV03-010	
15	W/O HDD ASS'Y N350DV	6-79-N350DV0J-010	
15	W/O HDD ASS'Y N350DV	6-79-N350DV0J-020	
16	SPONGE (76X10X25) CRACKS FOR 7MM HDD W/4REPLACED	6-47-0019A-763	
17	RUBBER FOR SMART CARD HOLE N350DV	6-47-N3503-020	FOR W/O SMART CARD
18	FFC AUDIO TO MB 22PIN 0.5PITCH 170MM N350DV (HT)	6-43-N3500-070-1	
19	SPK+CABLE R 45MM 2W 4? DS-180M-2L-K5-HF N350DV	6-23-5N350-0R1	
20	AUDIO BOARD V2.0 N350TV	6-77-N35T8-D02	
21	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
22	W/O HDD ASS'Y N350DV	6-79-N350DV0Z-000	OPTION
22	SATA DVD SUPER MULT 8X ASS'Y N350DV	6-79-N350DV00-001	OPTION
22	DUMMY HDD ASS'Y N350DV	6-79-N350DV0Z-001	OPTION
23	TAPE MYLAR TRANSPARENT (20X10X0.05) P180HM	6-40-P1803-020	
24	TAPE MYLAR TRANSPARENT (30X5X0.05) W251HPQ	6-40-W25P3-010	

DVD

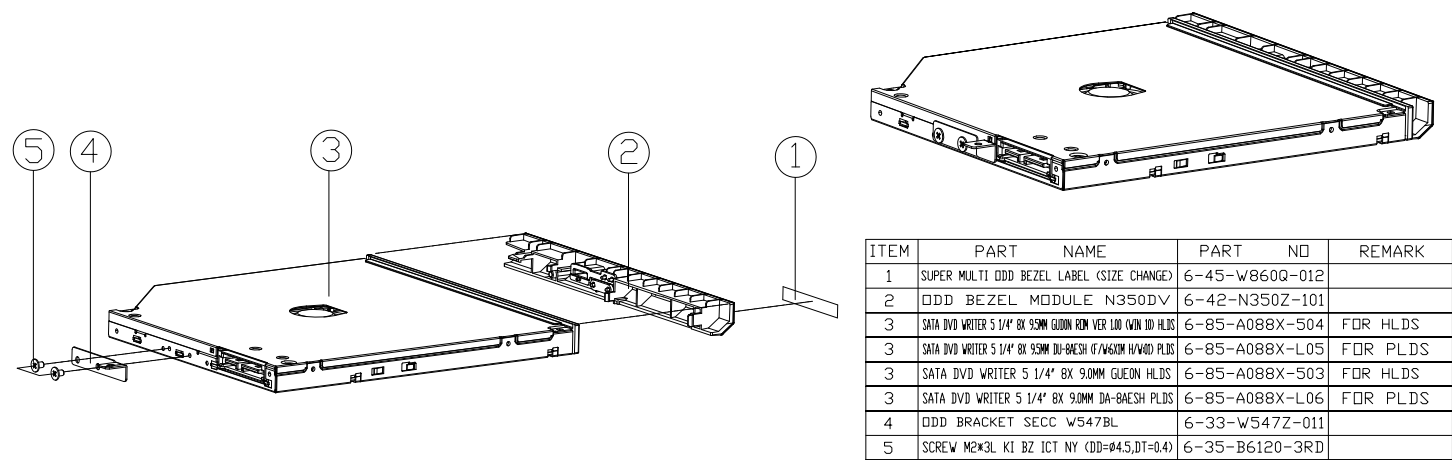
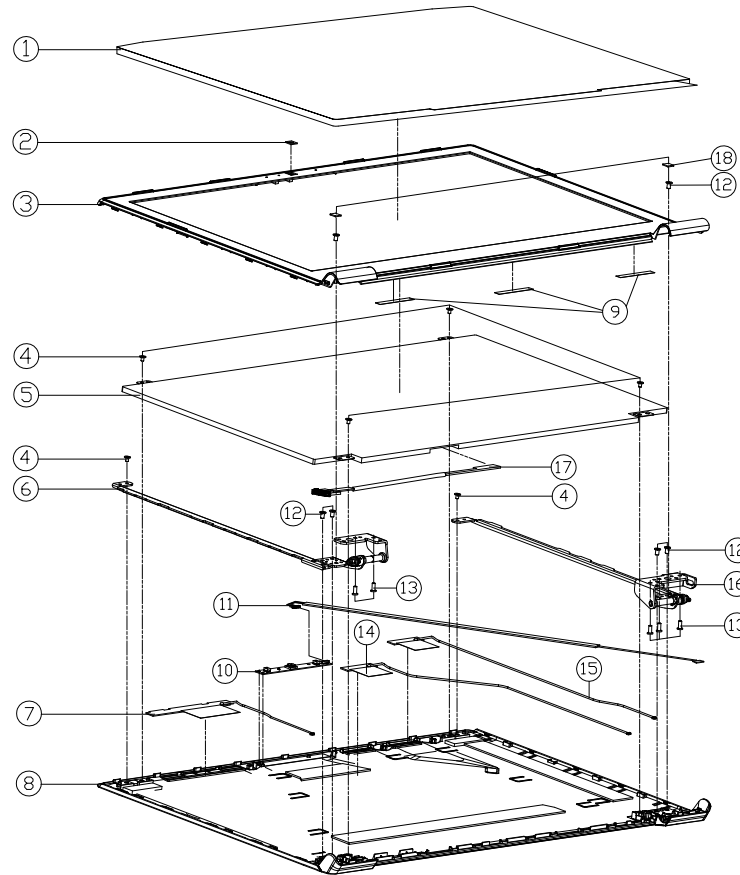
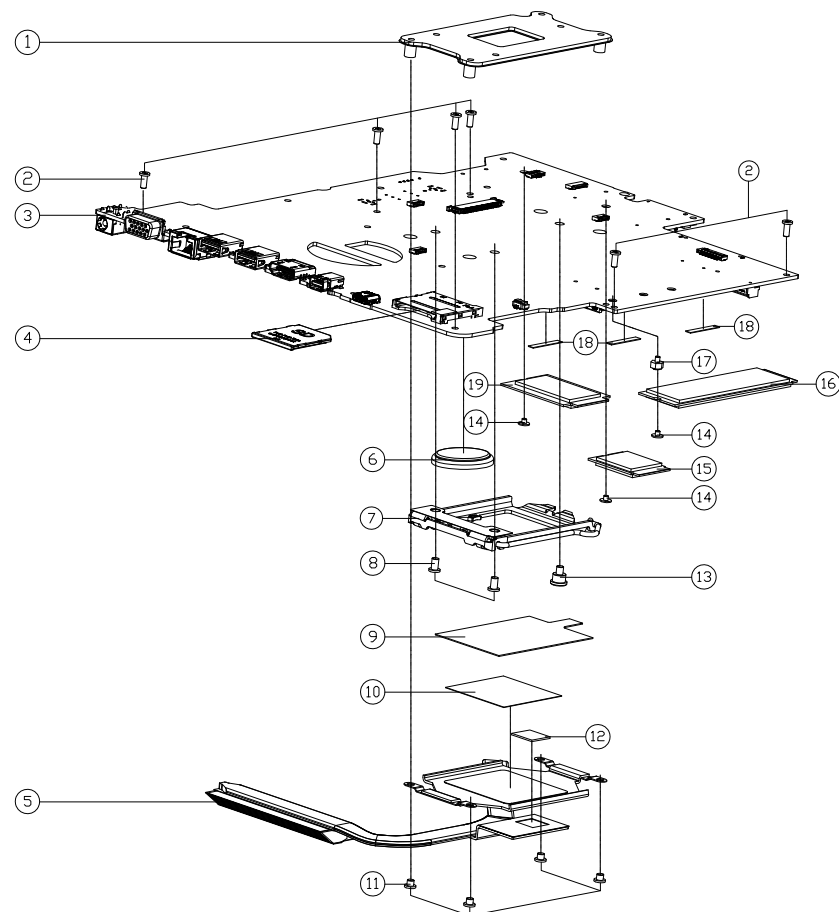


Figure A - 3
DVD

Figure A - 4
LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD PROTECT MYLAR BOPP P750DM2	6-40-P75D8-010	
2	CCD LENS (PMMA)X6.2X0.6T W230SS-HCSINTOYD	6-42-W23H1-010-1	
3	LCD FRONT COVER MODULE N350DV	6-39-N3501-012	
4	SCREW M2*3L KI BZ ICT NY (CD=04.5,DT=0.4)	6-35-B6120-3RD	
5	LCD 15.6" FHD/ EDP AU B15GHTN03.8 (H/W6B) LED 32MM	6-50-LB232-G18	
5	LCD 15.6" HD/NON GT/EDP/ DOE NT156WH-M42 PG CODE: 8030 (LED) 32MM	6-50-L8B32-Z001	
5	LCD 15.6" FHD/IPS/G S-YNCA/NON GT/EDP LG LP156WF-SP2 (LED) 32MM	6-50-LBB32-L090	
5	LCD 15.6" FHD/IPS/NON GT/EDP LG LP156WF-SP1 (LED)32MM	6-50-LBB32-L012	
5	LCD 15.6" FHD/IPS/N7/NON GT/EDP LG LP156WF-SP1 (LED)32MM	6-50-LBB32-L020	
6	HINGE L (SGCC+SK7) SNR N350DV	6-33-N3501-0L1	
7	ANTENNA IPEX4 LIT VGT L1E1 PCB DR 0.7X0.9X0.56/0.92/26/26/26 L1E1-60MM N350V	6-23-7N350-010	OPTION
8	LCD BACK COVER MODULE N350DV	6-39-N3501-022	
9	FRONT COVER ADHESIVE(40x5x0.15TXS0NY G9000) N350DV	6-40-N3501-030	FOR 93WH Battery
10	IOC CAMERA CHIMNEY FIX CONNECTOR(20X20X10 IN 10 D1974 VSMU F1005 WHITE-LED W24-MC	6-88-W51PC-5110	
11	IOC CAMERA FUSION FINGERPRINT-00 IN 10 D1974 VSMU F1005 WHITE-LED W24-MC	6-88-N770C-4910	
10	WIRE CABLE FOR CCD D-MIC 500MM 3.3V BP (CM) N250LU	6-43-N250T-011-2	
12	SCREW M2.5X4L KI NI ICT NY	6-35-21125-4R0	
13	SCREW M2.5X6L K BZ ICT NY	6-35-82125-6RA	
14	ANTENNA IPEX4 WLAN VGT W11 PCB AR 24G/5GHz W11-550MM N350DV	6-23-7N350-030	
15	ANTENNA IPEX4 WLAN VGT W12 PCB AR 24G/5GHz W12-550MM N350DV	6-23-7N350-040	
16	HINGE R (SGCC+SK7) SNR N350DV	6-33-N3501-0R1	
17	WIRE CABLE FOR COP 200MM 15V 400A LC00000000 (D) 001A (D) CON:V000-222 N240LU	6-43-N2401-011-1N	
18	RUBBER FRONT COVER SCREW SILICONE W970SUW	6-47-W9701-041	



ITEM	PART NAME	PART NO	REMARK
1	CPU SUPPORT FOR LGA 1150 SUS301 N350DV	6-33-N350S-011	
2	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
3	MAIN BOARD V2.0 (EDPXTBT3XW/LTE) N350TV	6-77-N350TV00-D02	
3	MAIN BOARD V2.0 (EDPXUSB31XW/LTE) N350TV	6-77-N350TV00-D02-1	
3	MAIN BOARD V2.0 (EDPXTBT3XW/D LTE) N350TV	6-77-N350TV00-D02-2	
3	MAIN BOARD V2.0 (EDPXUSB31XW/D LTE) N350TV	6-77-N350TV00-D02-3	
3	MAIN BOARD V2.0 (EDPXTBT3DXW/LTE) N350TW	6-77-N350TW00-D02	
3	MAIN BOARD V2.0 (EDPXUSB31XW/LTE) N350TW	6-77-N350TW00-D02-1	
3	MAIN BOARD V2.0 (EDPXTBT3XW/D LTE) N350TW	6-77-N350TW00-D02-2	
3	MAIN BOARD V2.0 (EDPXUSB31XW/D LTE) N350TW	6-77-N350TW00-D02-3	
4	DUMMY 3IN MINI PUSH TYPE PC-BASE C7292P-T00BC(XHANGE) W970UO	6-42-W970H-011	
5	CPU HEAT SINK MODULE N350DVCYINGFAND	6-31-N350N-101-1	
6	BATTERY 3V 220MA BBRCR2032B (KTS)	6-23-6A2B2-030	
7	I/FM FOR CPU SOCKET(METAL) LGA 1150P (PT44I31-640)	6-86-25B50-001-S	
8	SCREW M3*5.0L KI NI ICT NY	6-35-B1130-5R0	
9	CPU SOCKET MYLAR FOR D90VF	6-40-D90FS-070	
10	THERMAL PAD PSX 35*35*0.2MM N350DV	6-48-N350S-010	
11	SCREW M3*2.5L KI NI ICT NY	6-35-B1130-2RS	
12	THERMAL PAD T-FLEX 330 DC-I 10*(10)*0.75MM P750ZM	6-48-P7503-0D0	
13	SCREW M3*3.5L SZ B/Z ICT NY	6-35-Z2130-3R5	
14	SCREW M2xL KI NI BCT NY ((DD=#5,T=0.5))	6-35-B1120-2R0	
15	M/MOT CONDU HUB, 1/2 INCH JETERIOR PLUG 2 SLIDING PHOS BRZ METAL FIBER OPTIC RZ ZEN	6-88-N24GF-4210	OPTION
16	SSD M2 2280 1TB(ORC0000) INTEL SSCSSCR0VQW004 (544G) SATA3	6-85-D511T-Z00	OPTION
16	SSD M2 2280 512GB PHISON EMPS5EPM2MZ162-E7 (47) POCE G304 MLC	6-85-D515B-H00	OPTION
16	SSD RZ 2280 512GB PHISON SPMS5EPM2MZ162-C0 CD SHARP ORIGIN TO ILC DA LIANGI DRIVEN	6-85-D51R6-H04	OPTION
16	SSD M2 2280 512GB SHUNGWIN MPUSLSHSLAH000PHAS PHAS PICE GSAM TO ILC DA LIANGI	6-85-D515B-S08	OPTION
16	SSD RZ 2280 512GB SHUNGWIN MPUSLSHSLAH000PHAS PHAS PICE GSAM TO ILC DA LIANGI	6-85-D5116-Z02	OPTION
16	HYPHEN MEMORY RZ 2280 64GB INTL MPUSLSHSLAH000PHAS PHAS PICE GSAM TO ILC DA LIANGI	6-85-D5164-Z00	OPTION
16	SSD RZ 2280 1TB(SAMSUNG SHUNGWIN MPUSLSHSLAH000PHAS PHAS PICE GSAM TO ILC DA LIANGI	6-85-D511T-S00	OPTION
16	SSD RZ 2280 512GB SHUNGWIN MPUSLSHSLAH000PHAS PHAS PICE GSAM TO ILC DA LIANGI	6-85-D51R6-S07	OPTION
17	SCREW M2xSL QH-25 3-PO STED ICT NY FOR DIFF CARDS(CHANGED)	6-35-Z2120-RP5-1	
18	TAPE MYLAR TRANSPARENT (30x5x0.05) W251HPQ	6-40-WA2SP3-010	
19	L/E A/KIND OF/TYPE TRANSFORMER ELECTRIC POWER SUPPLY UNIT FOR THE MAINBOARD AND POWER SUPPLY	6-88-N5506-8802	OPTION

Figure A - 5
MB

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *N350TW* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	PCH 8/9 - Page B - 21	Fan, TP, Connector - Page B - 40
Processor 1/6 - Page B - 3	PCH 9/9 - Page B - 22	Docking Connector, COM Port - Page B - 41
Processor 2/6 - Page B - 4	LAN i219-LM - Page B - 23	1.5VS, VCCST - Page B - 42
Processor 3/6 - Page B - 5	LAN Transformer - Page B - 24	5VS, 3VS, 3.3V, 5V - Page B - 43
Processor 4/6 - Page B - 6	Card Reader RTS5229 - Page B - 25	1.05V, VCCIO - Page B - 44
Processor 5/6 - Page B - 7	USB Port - Page B - 26	1.2V, 0.6VS - Page B - 45
Processor 6/6 - Page B - 8	3G/LTE - Page B - 27	VDD3, VDD5 - Page B - 46
DDR4 SO-DIMM_0 - Page B - 9	TPM, CCD, HDD, ODD - Page B - 28	VCore & VCCGT - Page B - 47
DDR4 SO-DIMM_1 - Page B - 10	WLAN - Page B - 29	VCore Output Stage - Page B - 48
Panel, Inverter - Page B - 11	KBC-ITE IT8587 - Page B - 30	VCCGT Output Stage - Page B - 49
HDMI - Page B - 12	Audio Codec ALC892+TPA2008 - Page B - 31	AC-In, Charger - Page B - 50
CRT - Page B - 13	PI3WVR13612ZLE - Page B - 32	Audio Board - Page B - 51
PCH 1/9I - Page B - 14	PS8338B - Page B - 33	Power Switch Board - Page B - 52
PCH 2/9 - Page B - 15	miniDP - Page B - 34	Click Board - Page B - 53
PCH 3/9 - Page B - 16	Type-C - Page B - 35	LED Board - Page B - 54
PCH 4/9 - Page B - 17	TR_TBT - Page B - 36	Smart Card Board - Page B - 55
PCH 5/9 - Page B - 18	TR_Power - Page B - 37	LID Switch Board - Page B - 56
PCH 6/9 - Page B - 19	TPS65987D - Page B - 38	Power On Sequence - Page B - 57
PCH 7/9 - Page B - 20	SSD - Page B - 39	

Table B - 1
**SCHEMATIC
DIAGRAMS**

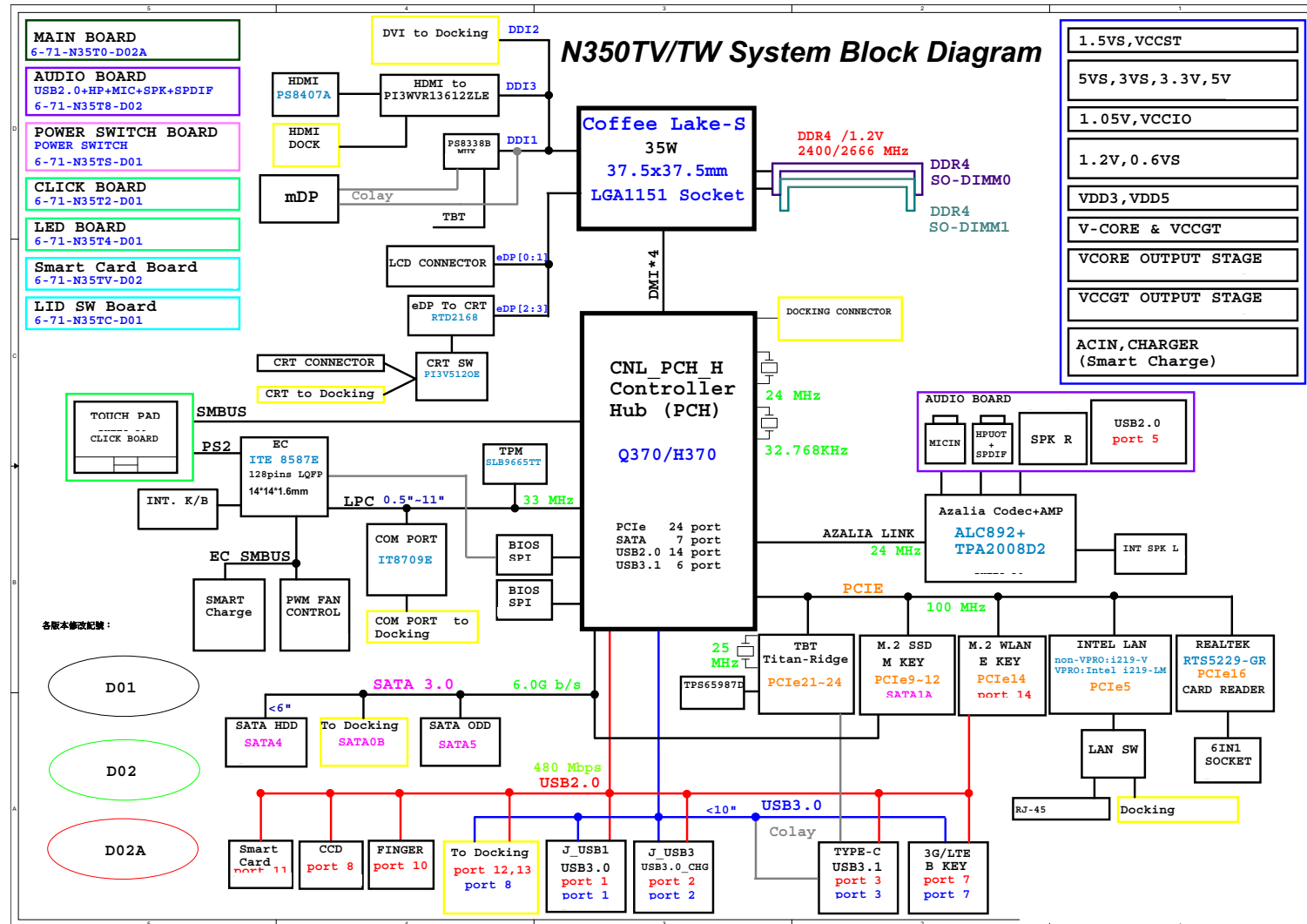


Version Note

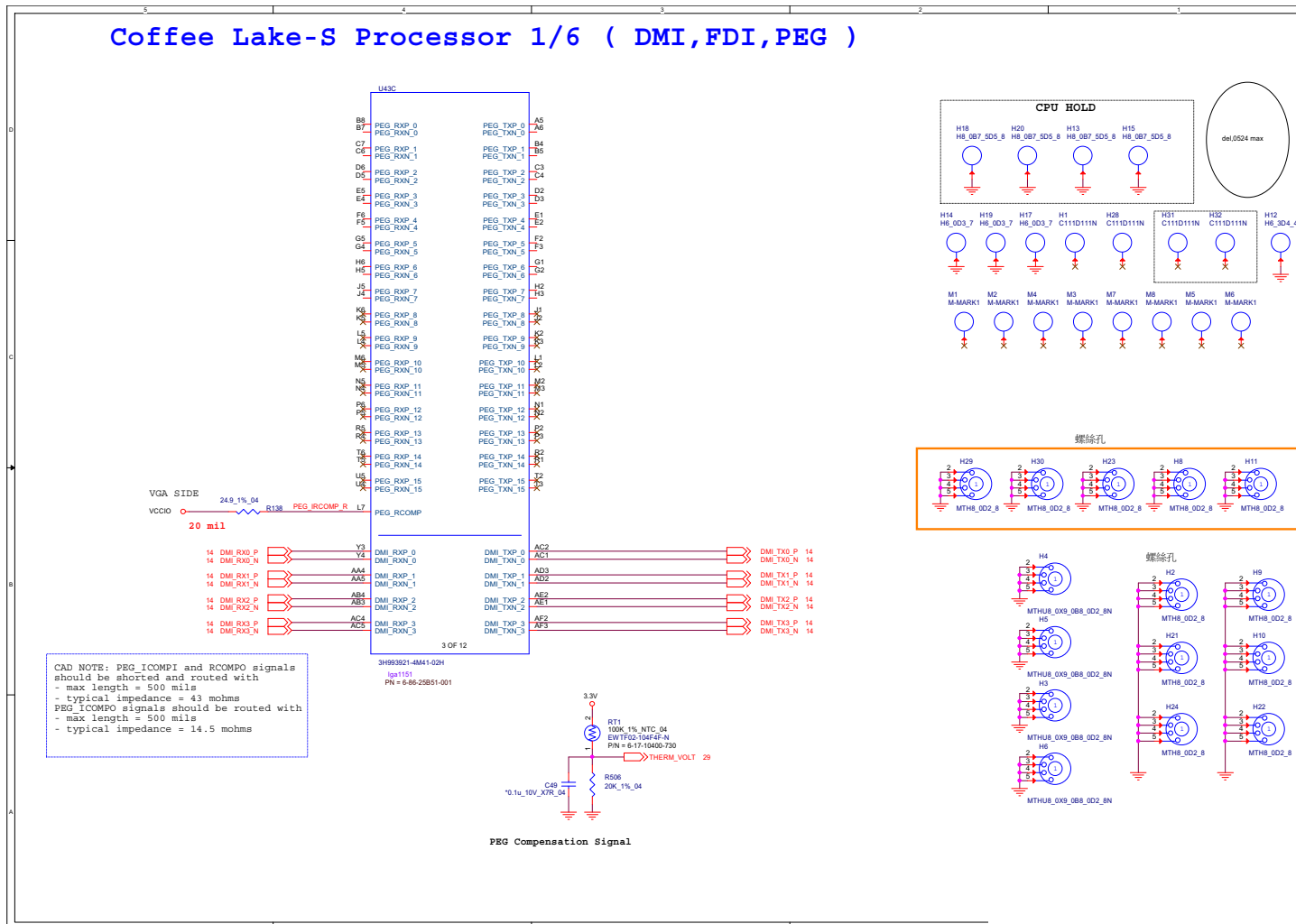
The schematic diagrams in this chapter are based upon version 6-7P-N35T7-003. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 50
System Block
Diagram



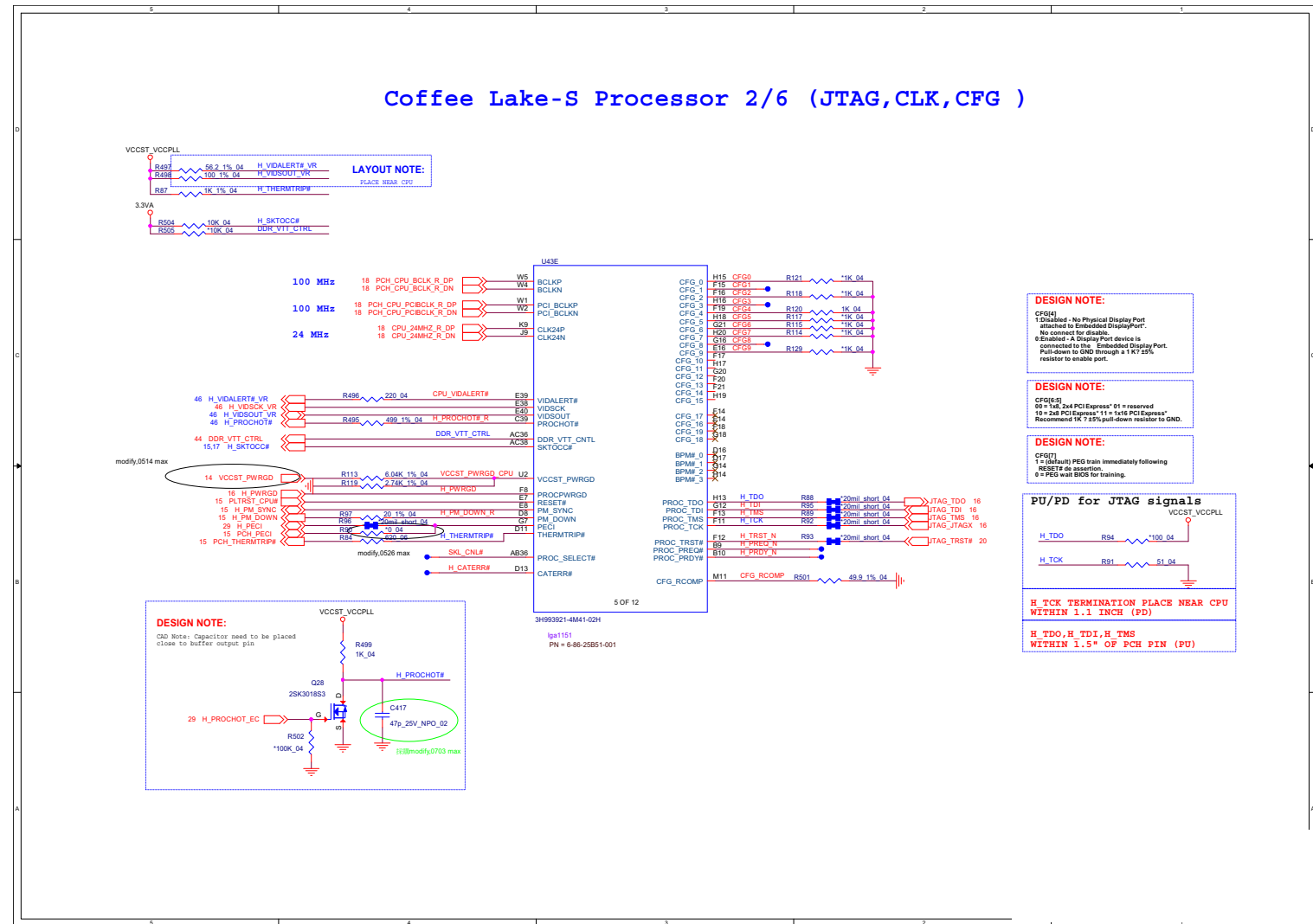
Processor 1/6

Sheet 2 of 50
Processor 1/6

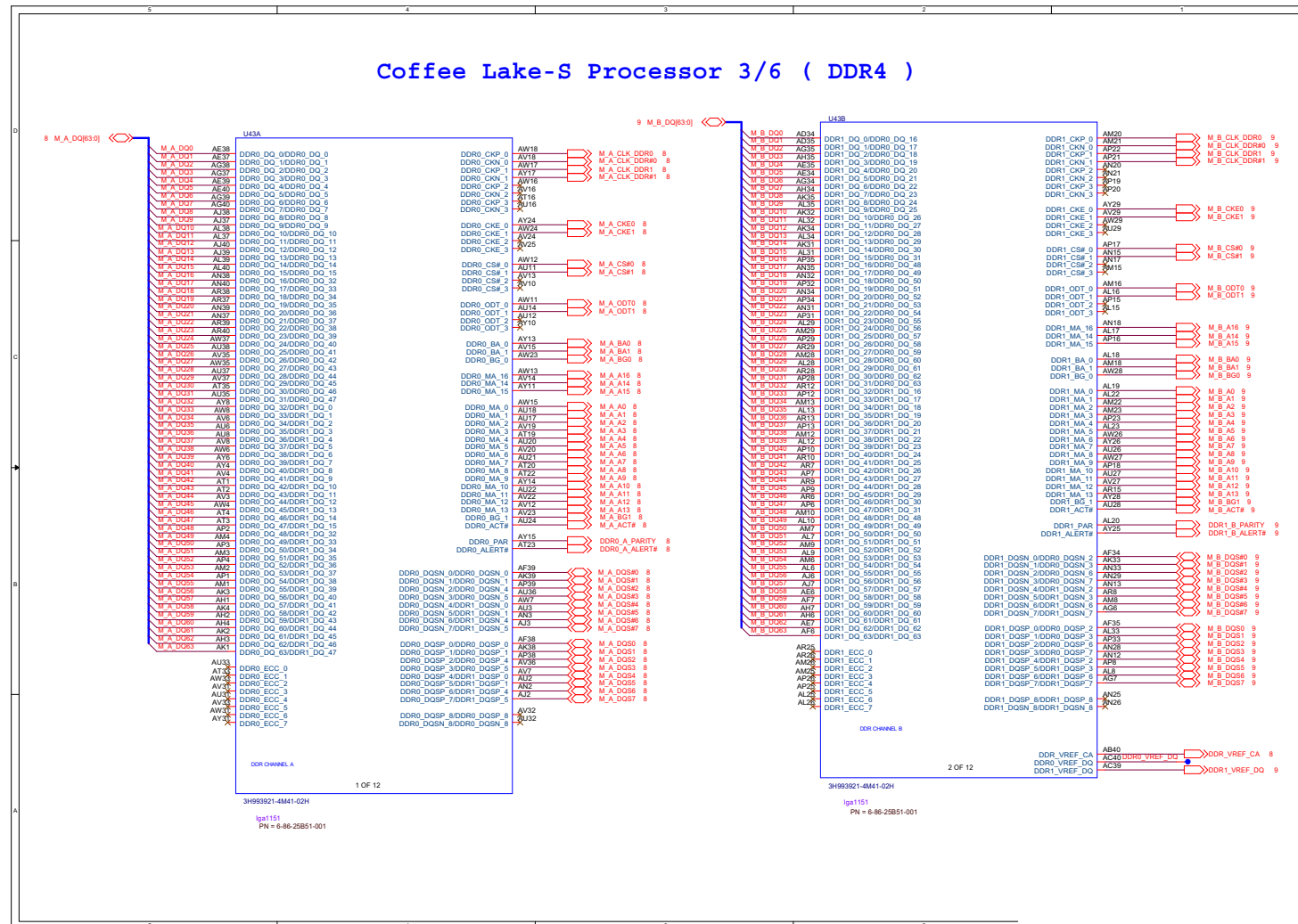
Schematic Diagrams

Processor 2/6

Sheet 3 of 50
Processor 2/6



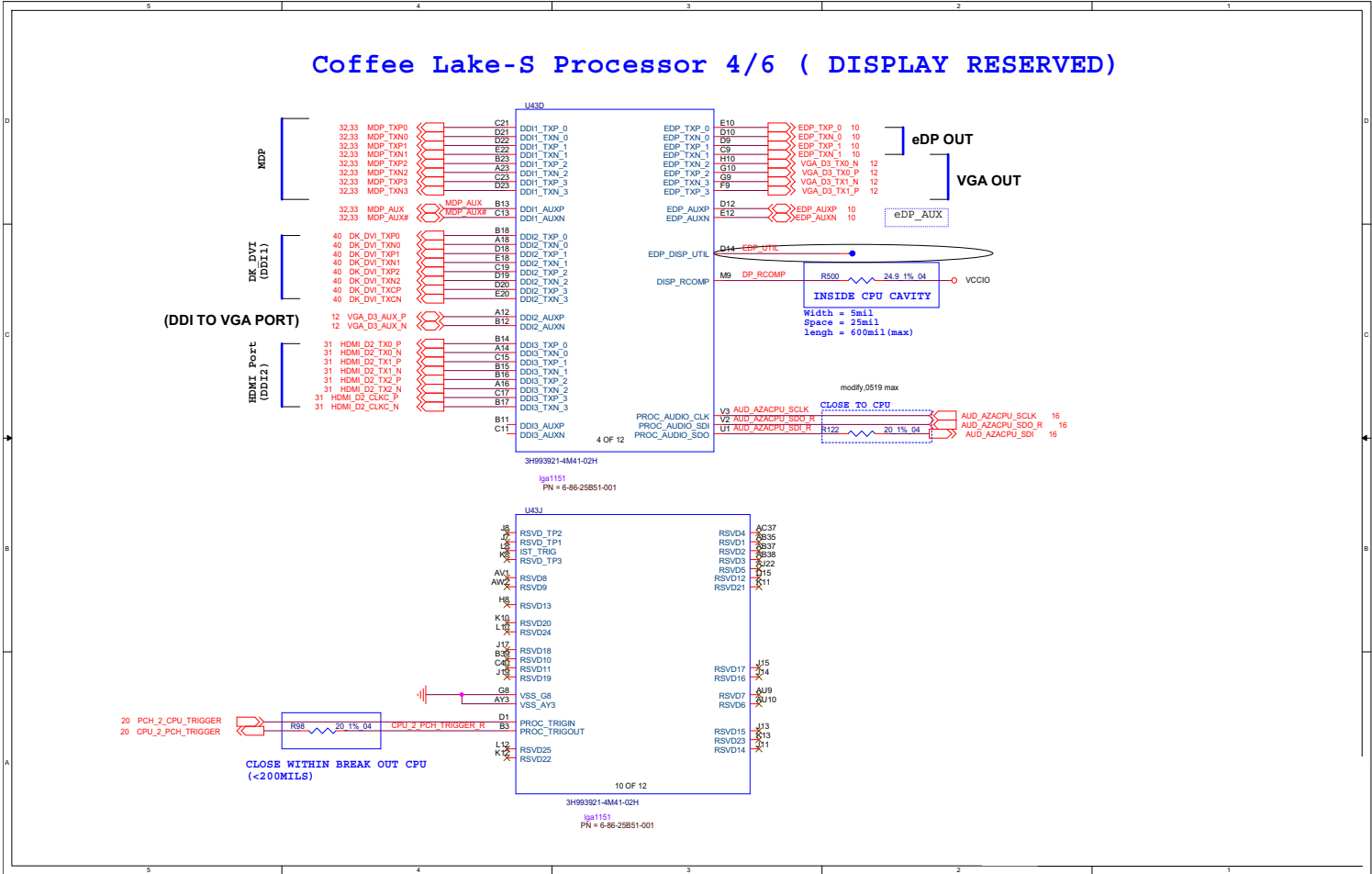
Processor 3/6



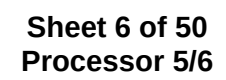
Sheet 4 of 50
Processor 3/6

B.Schematic Diagrams

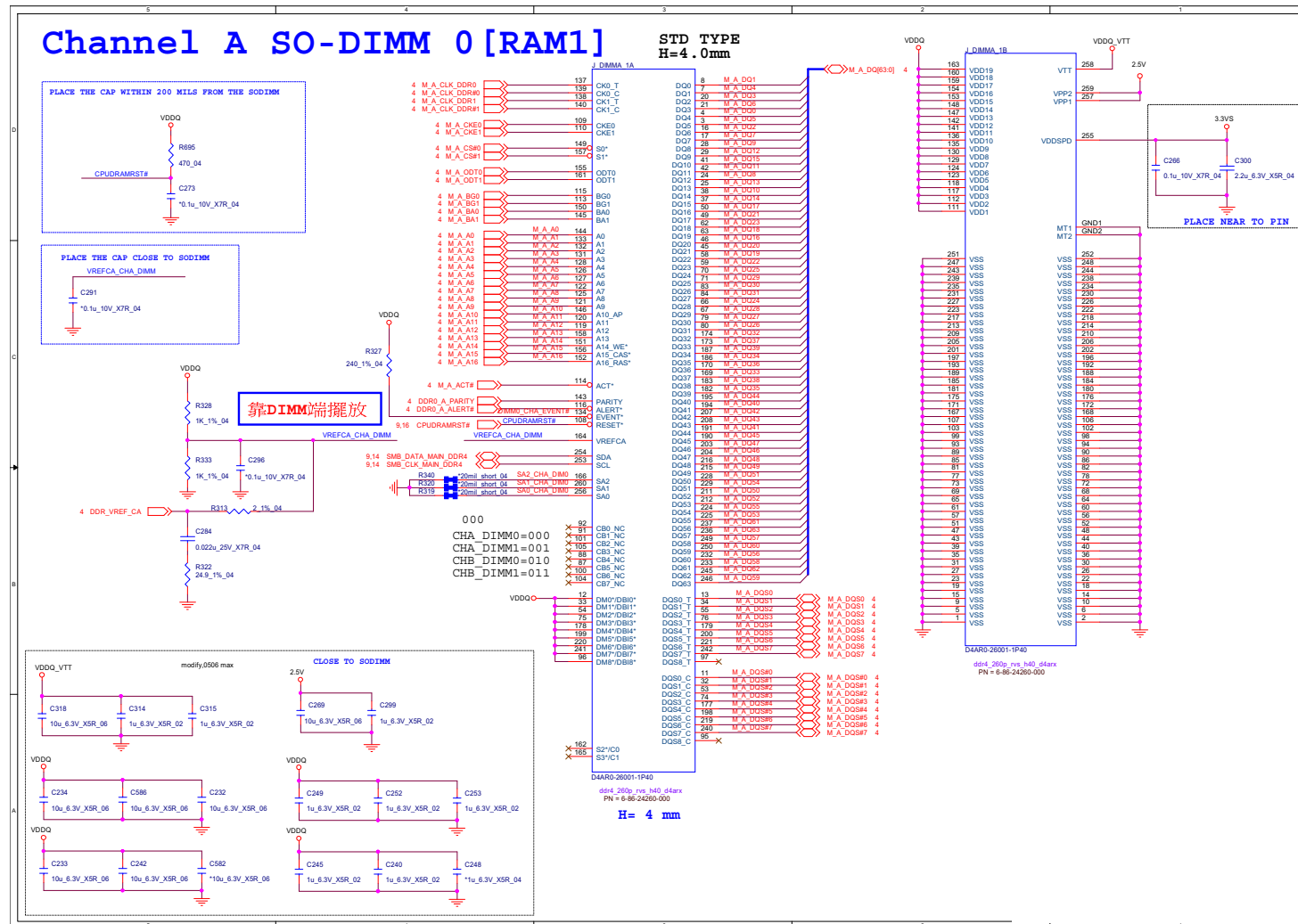
Processor 4/6



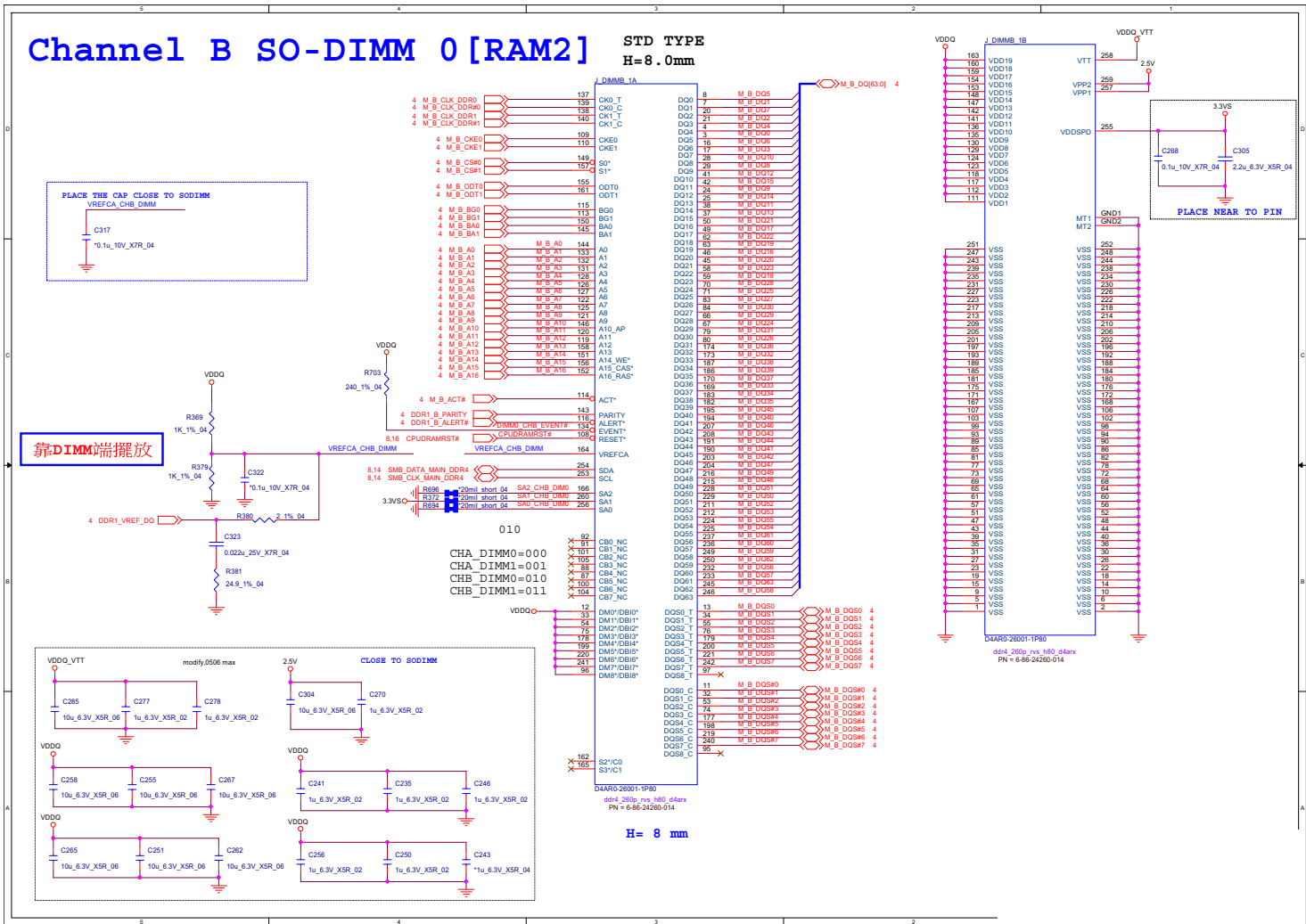
B.Schematic Diagrams



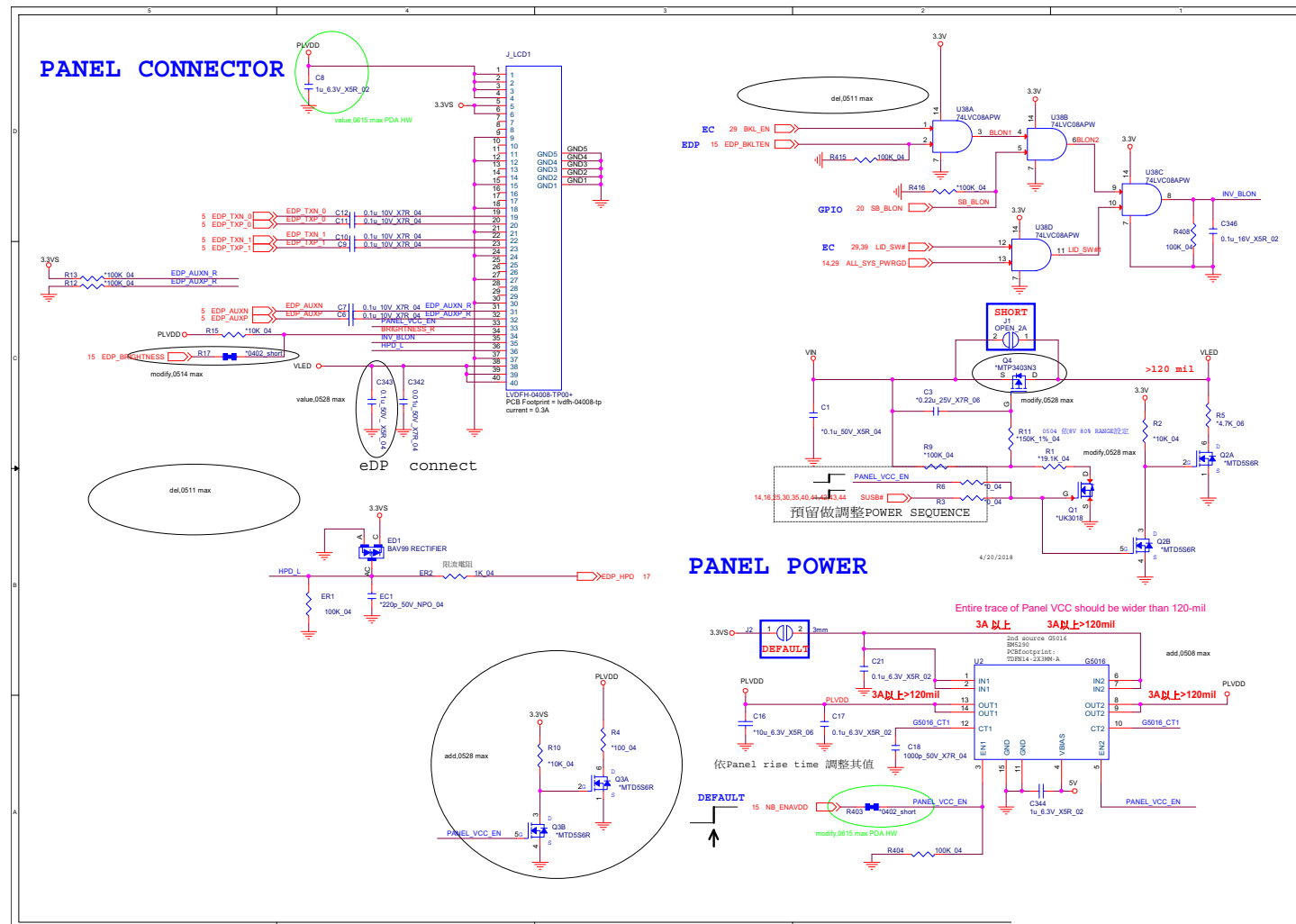
DDR4 SO-DIMM_0 B - 9



DDR4 SO-DIMM_1



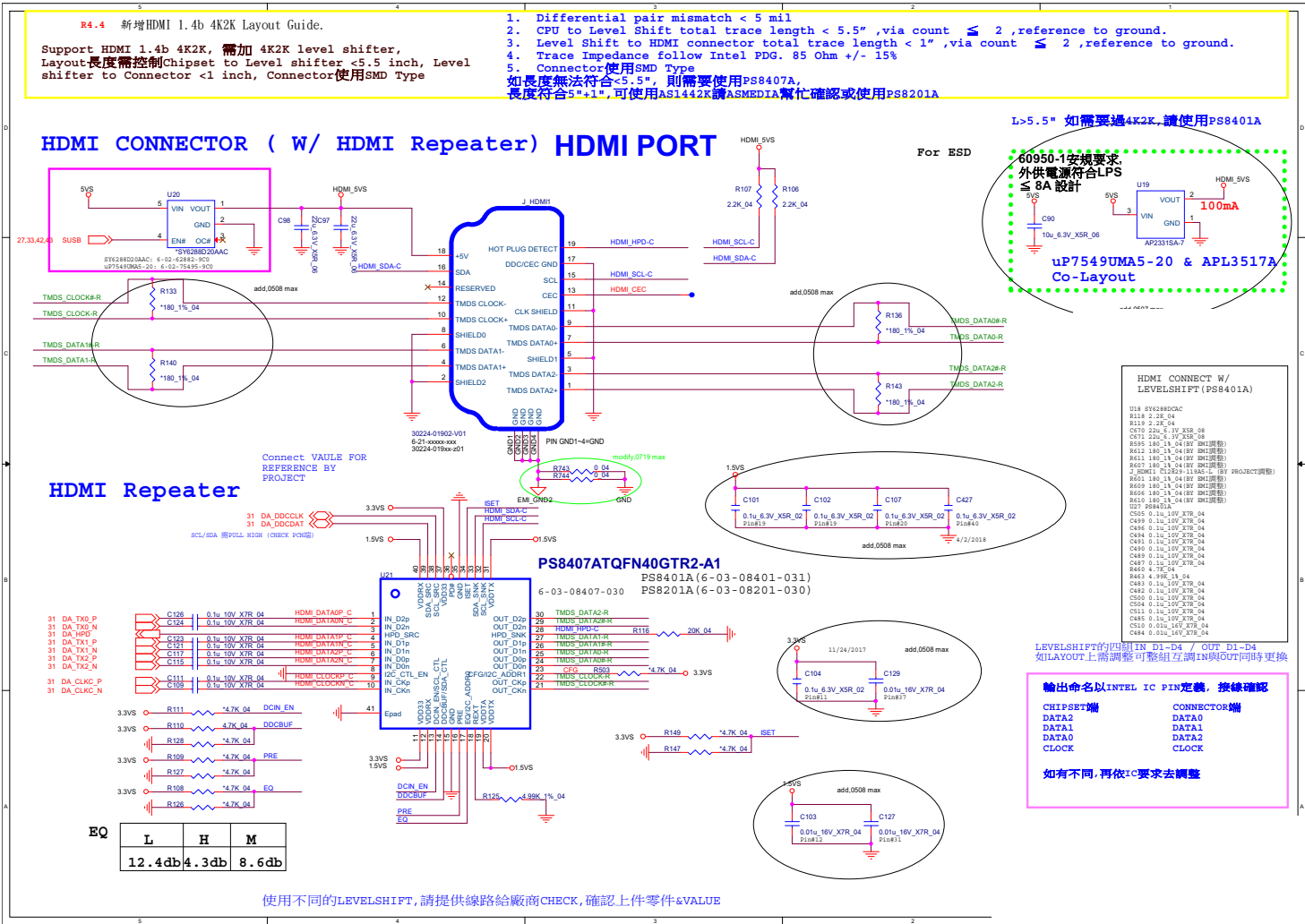
Panel, Inverter B - 11



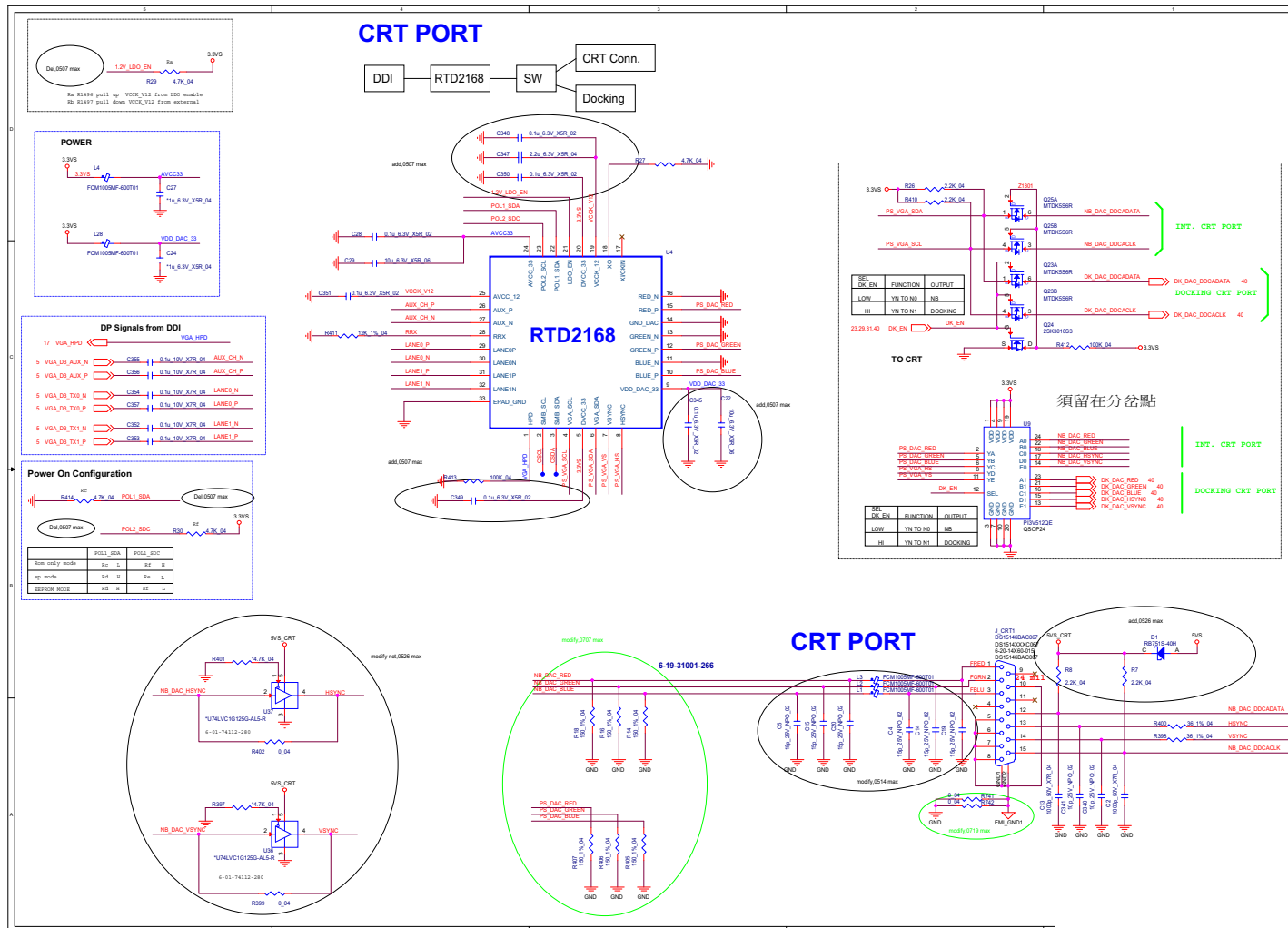
Schematic Diagrams

HDMI

Sheet 11 of 50
HDMI



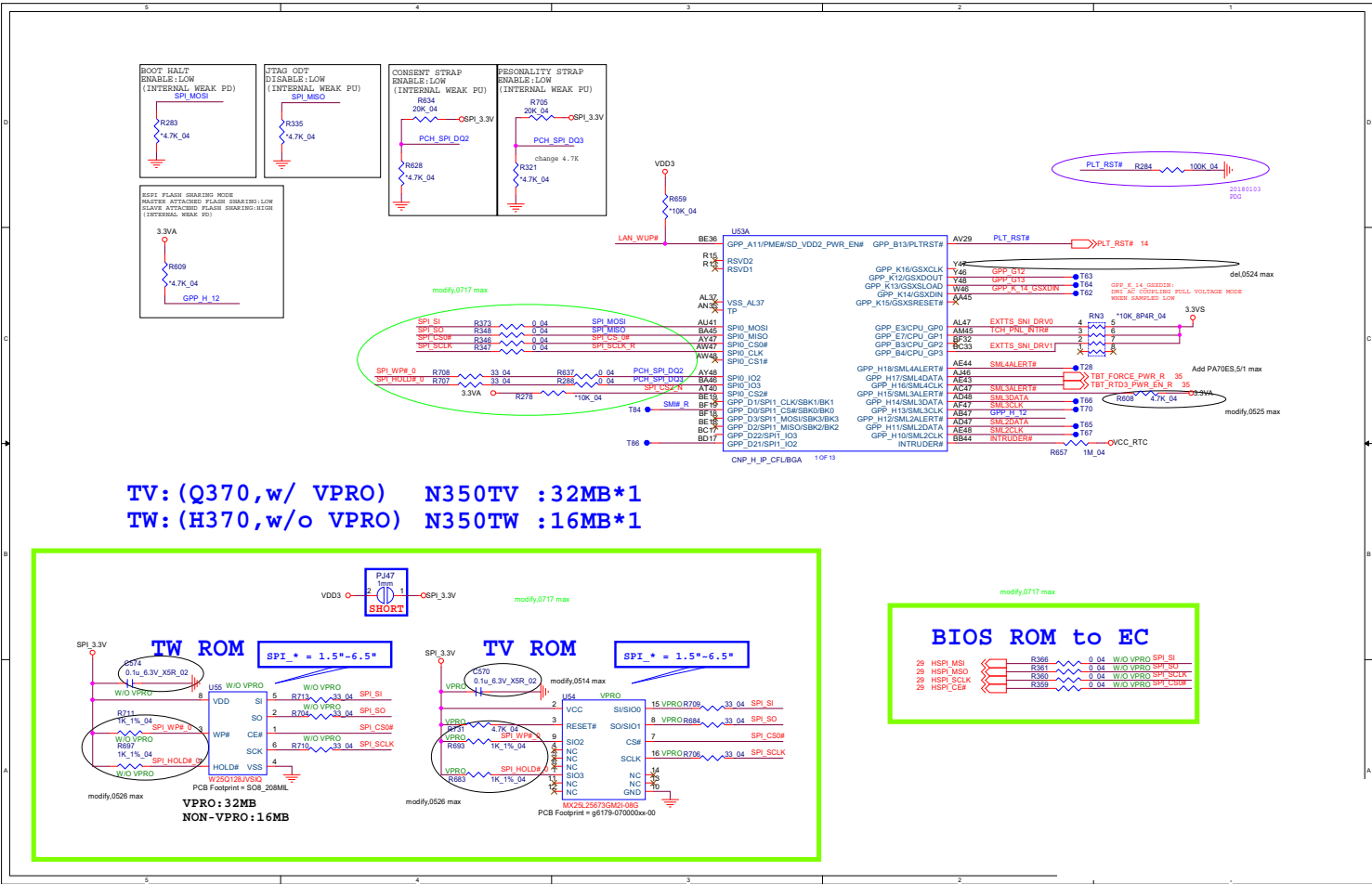
CRT



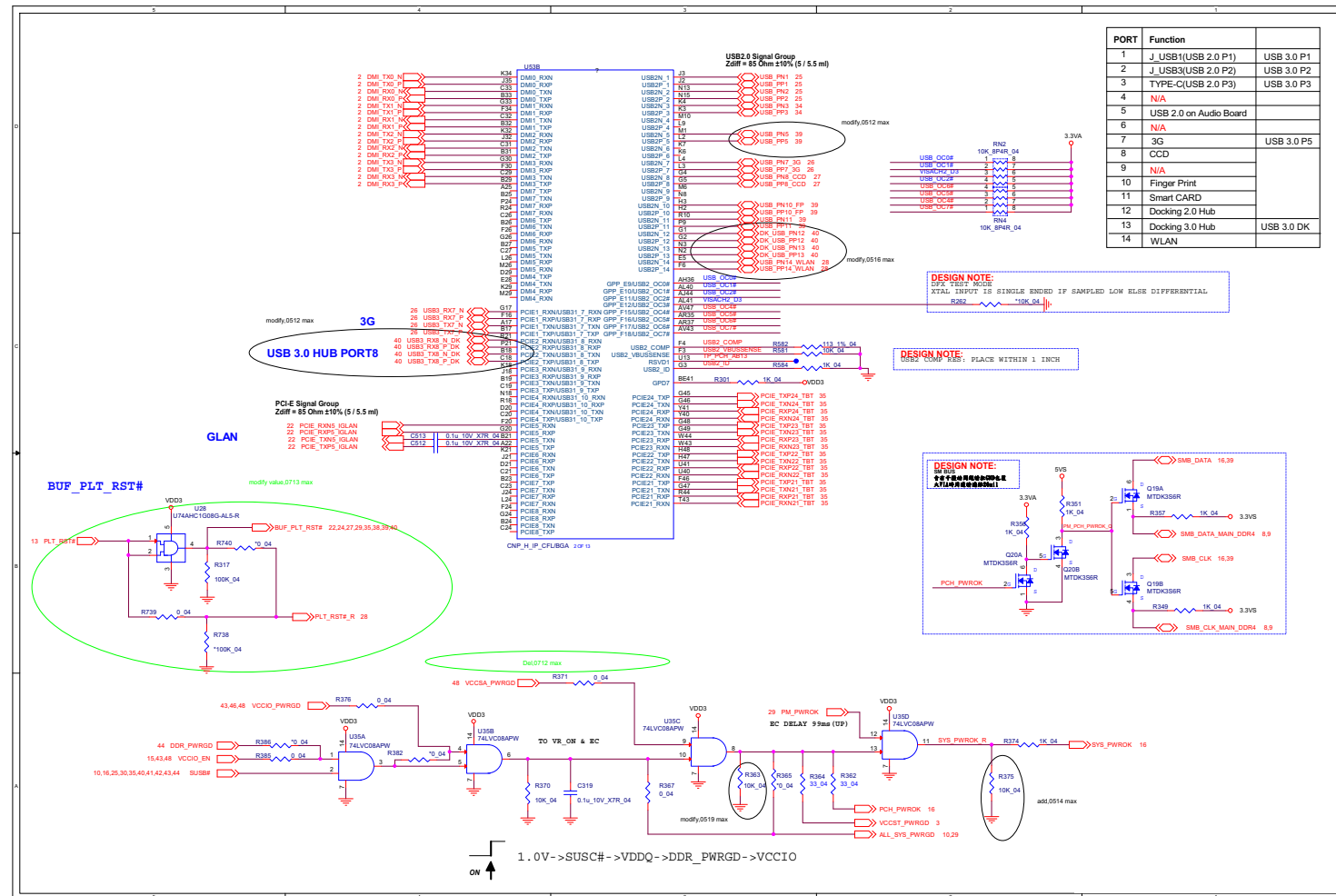
Schematic Diagrams

PCH 1/9I

Sheet 13 of 50
PCH 1/9



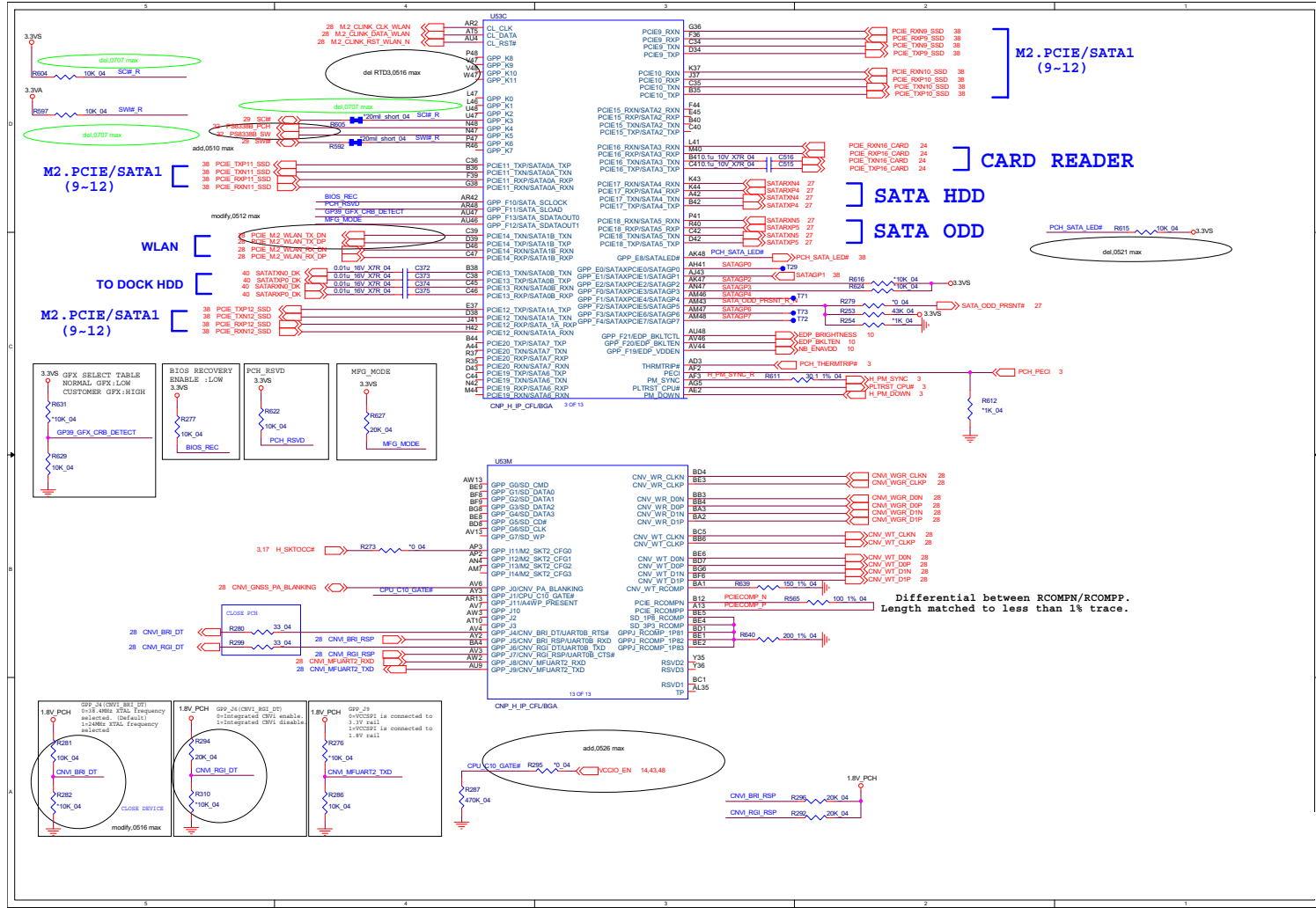
PCH 2/9

Sheet 14 of 50
PCH 2/9

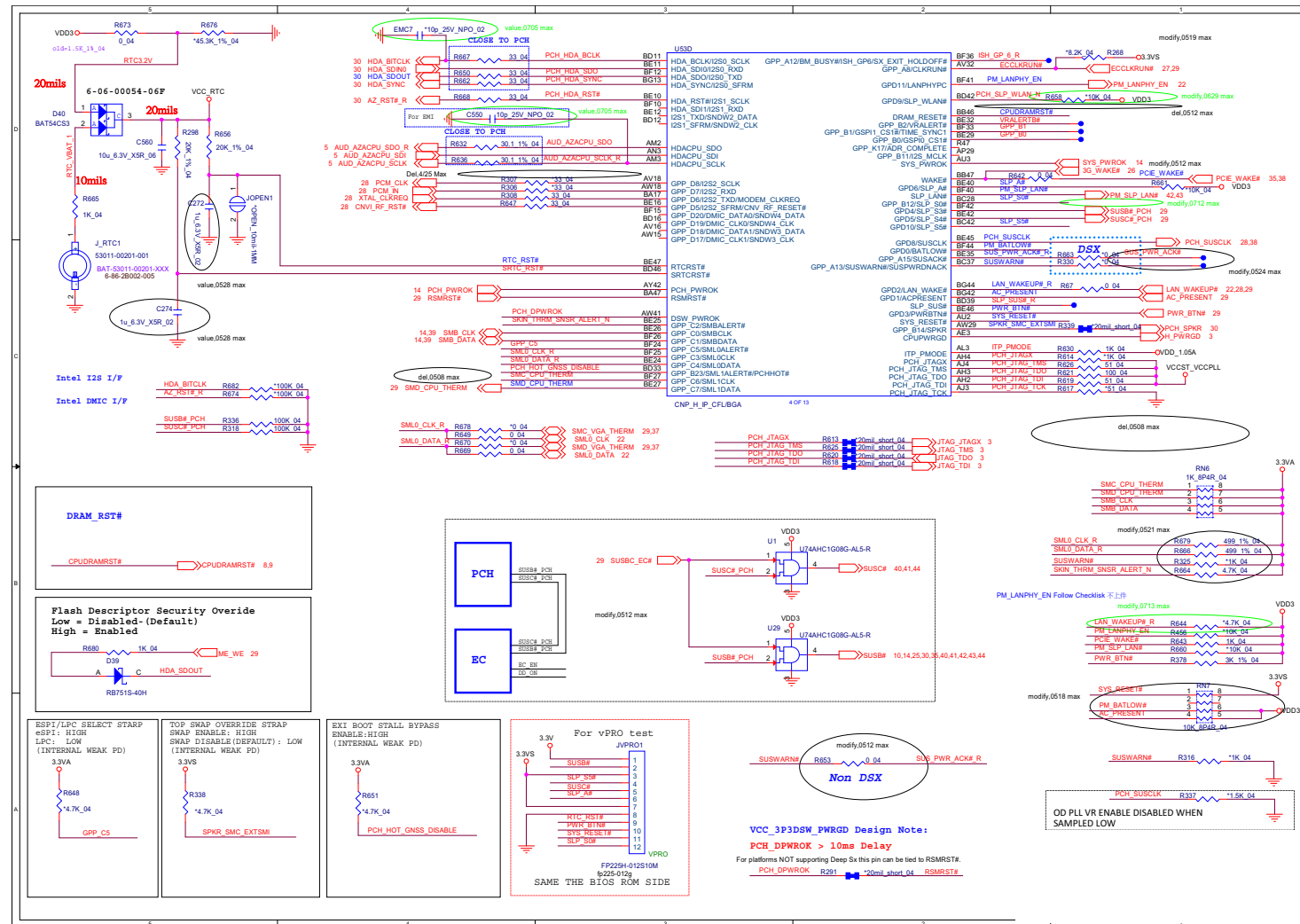
Schematic Diagrams

PCH 3/9

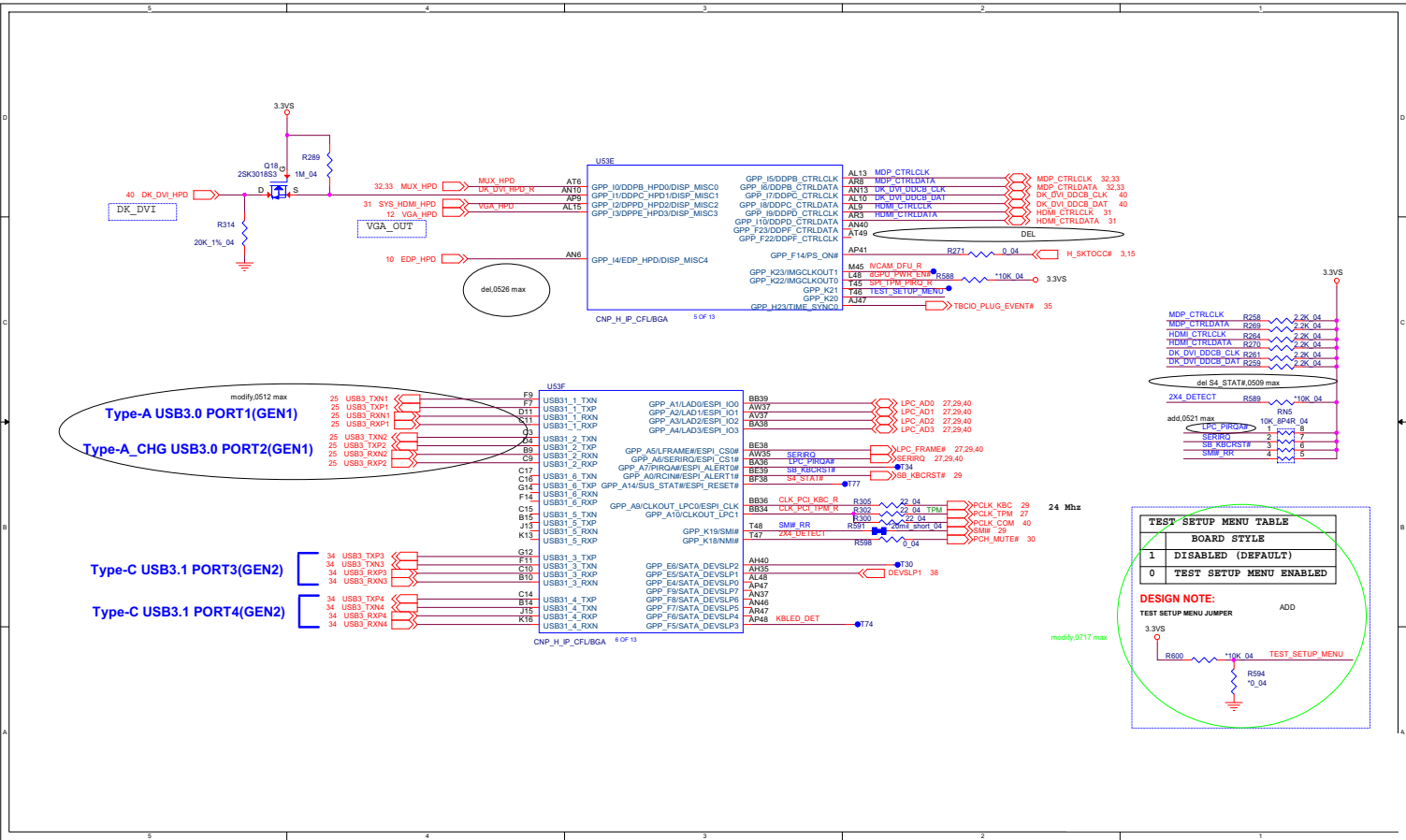
Sheet 15 of 50
PCH 3/9



PCH 4/9

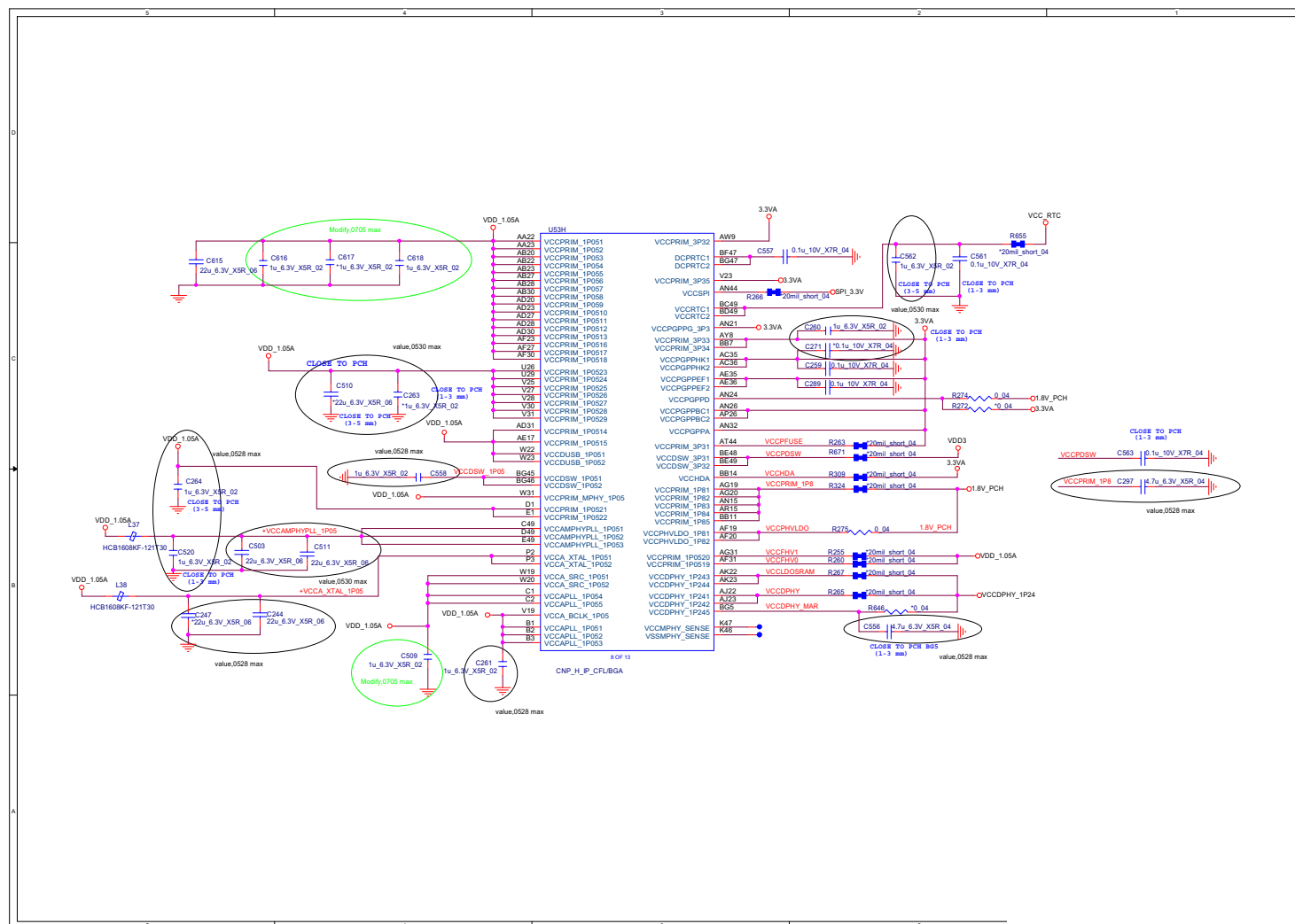


PCH 5/9

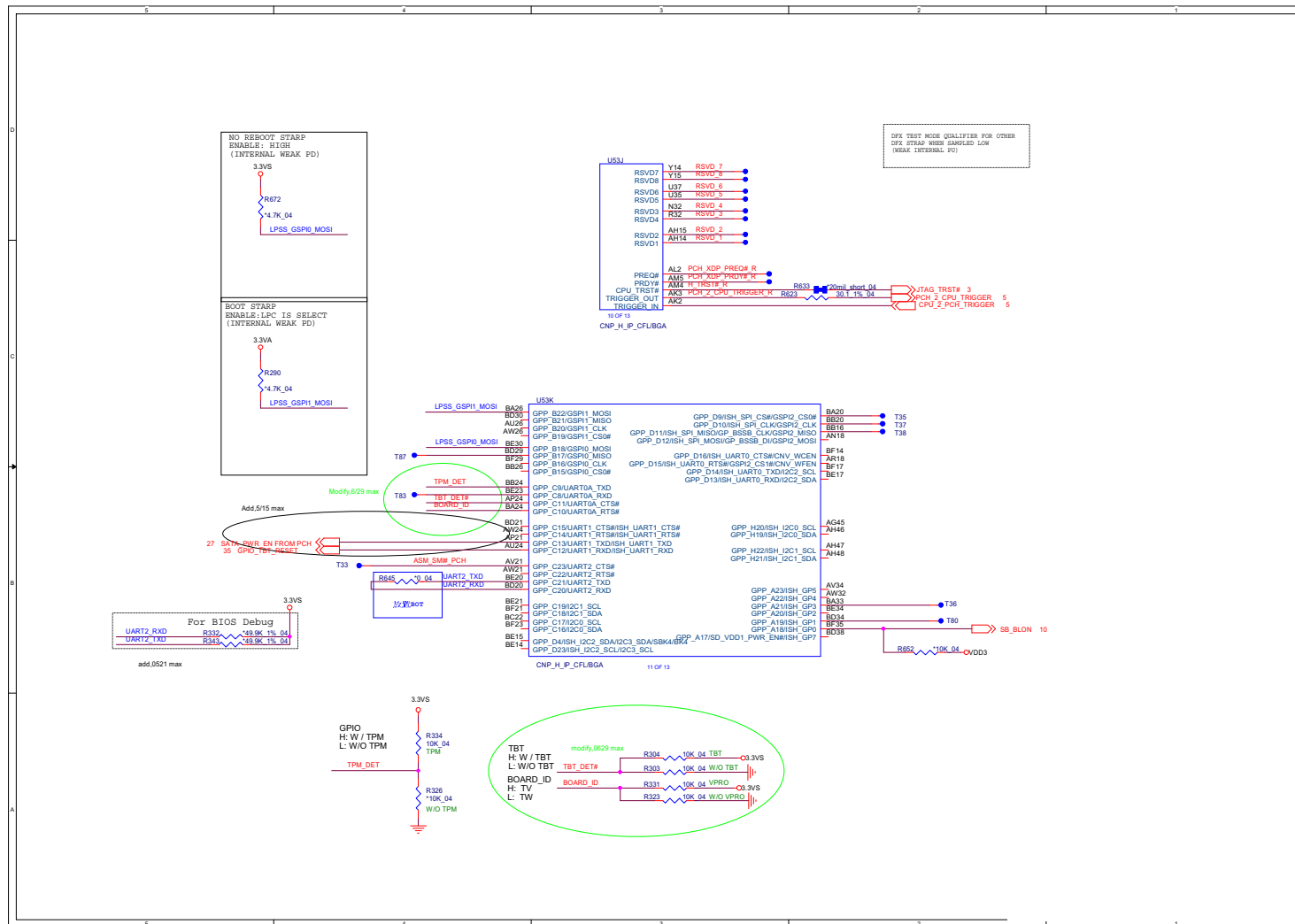


PCH 7/9

Sheet 19 of 50
PCH 7/9



PCH 8/9



Sheet 20 of 50
PCH 8/9

PCH 9/9

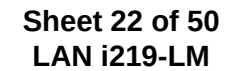


Sheet 21 of 50
PCH 9/9

B.Schematic Diagrams

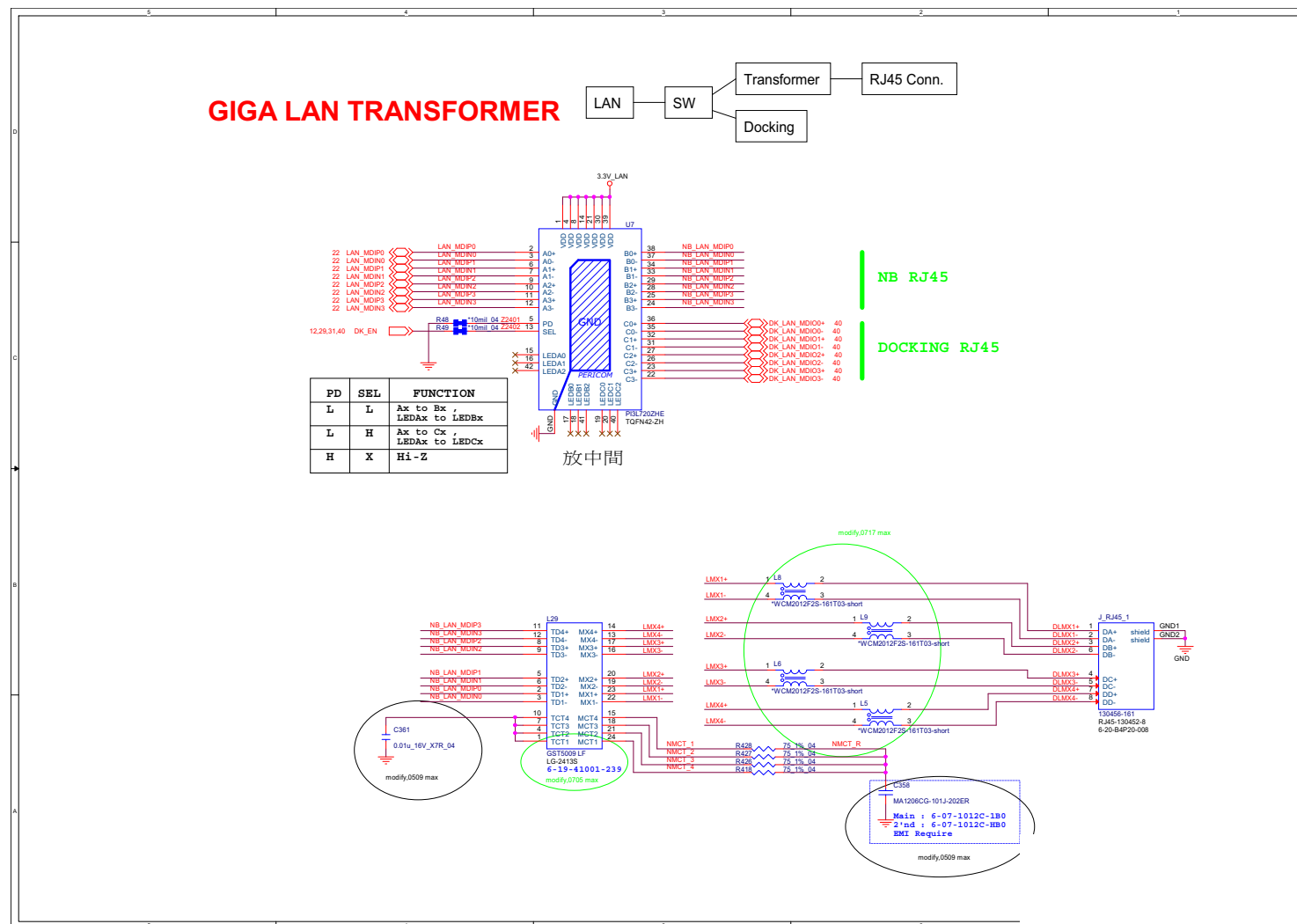
LAN i219-LM B - 23

B.Schematic Diagrams

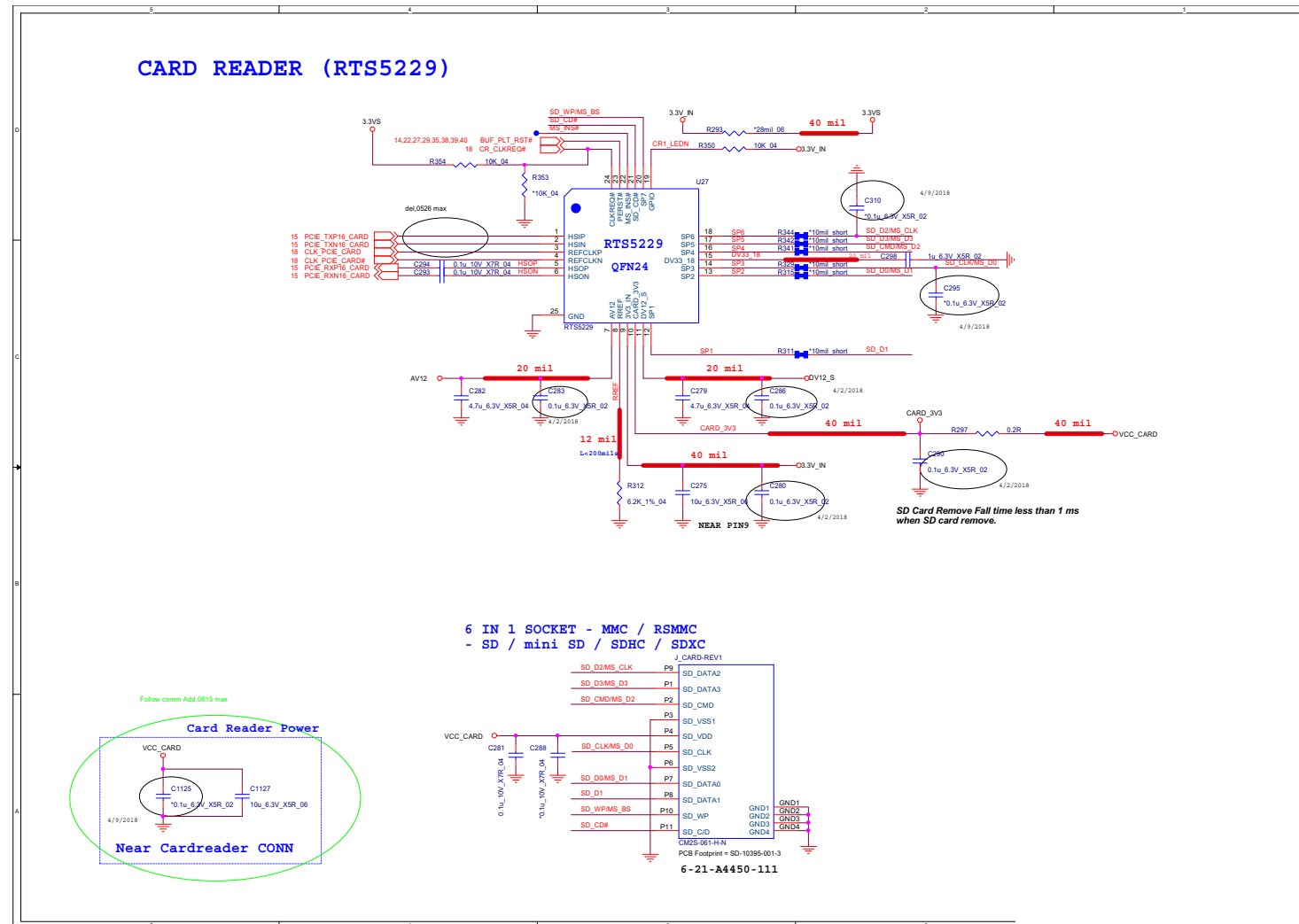


LAN Transformer

Sheet 23 of 50
LAN Transformer

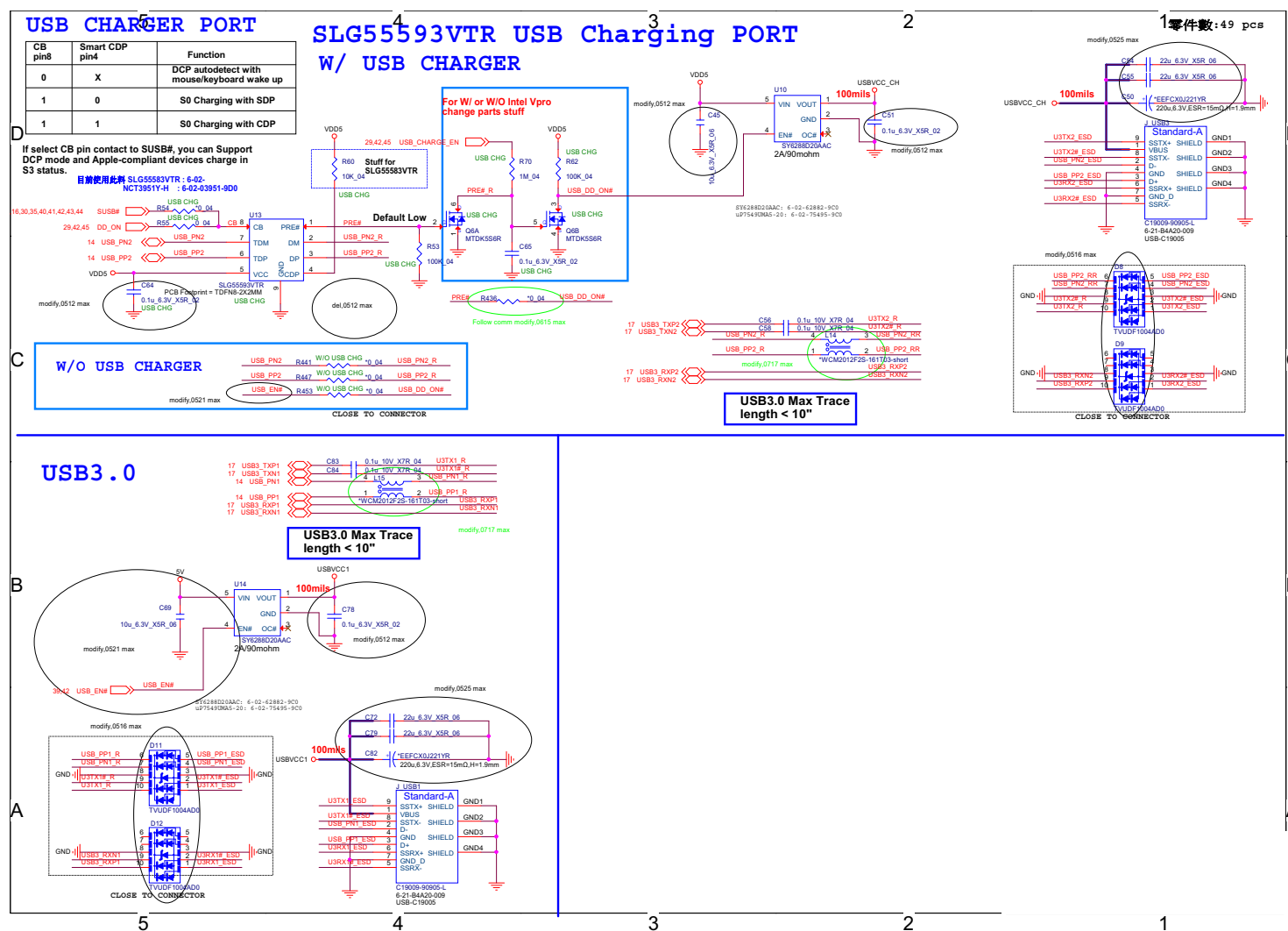


Card Reader RTS5229

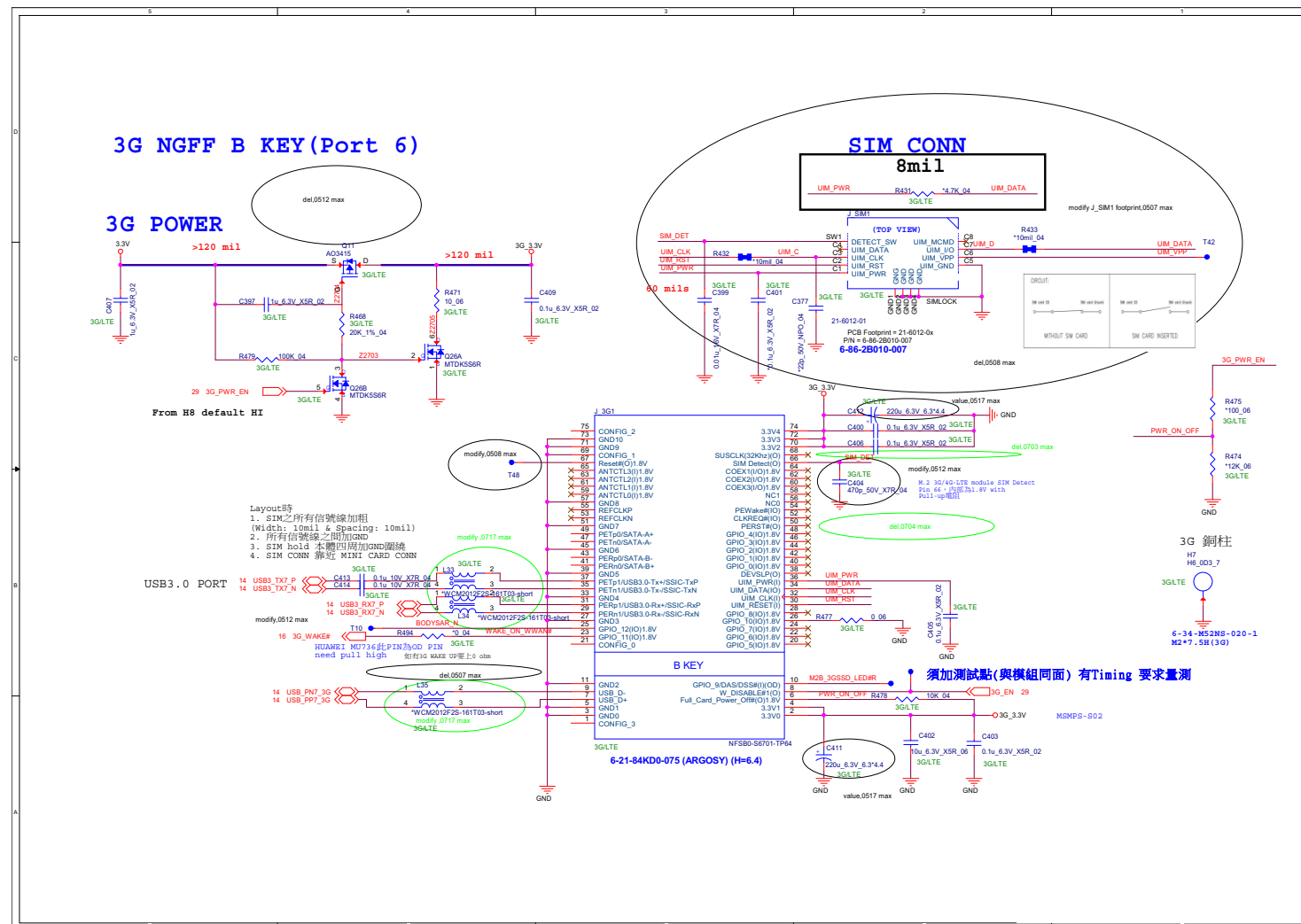


Sheet 24 of 50
Card Reader
RTS5229

Sheet 25 of 50
USB Port



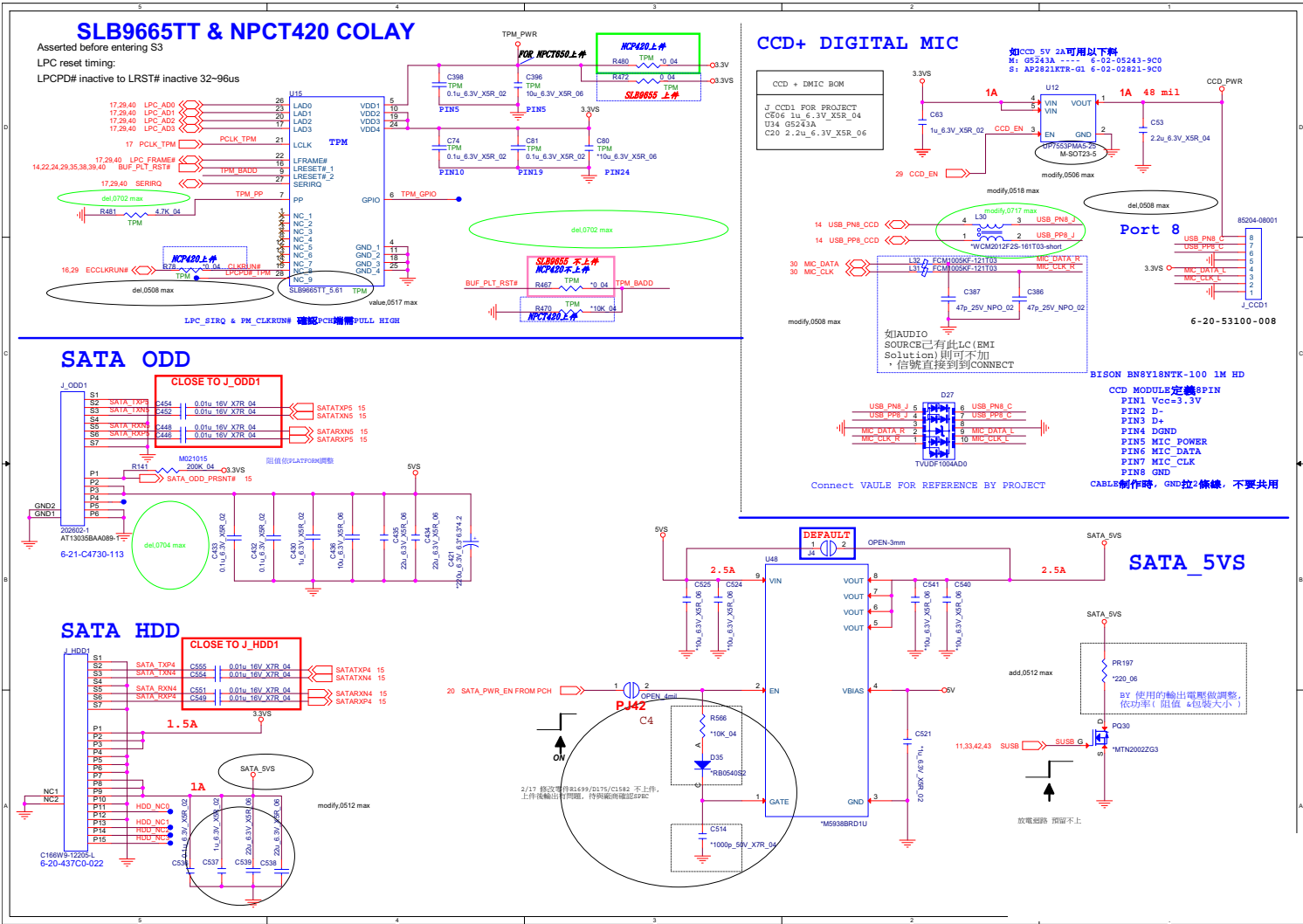
3G/LTE

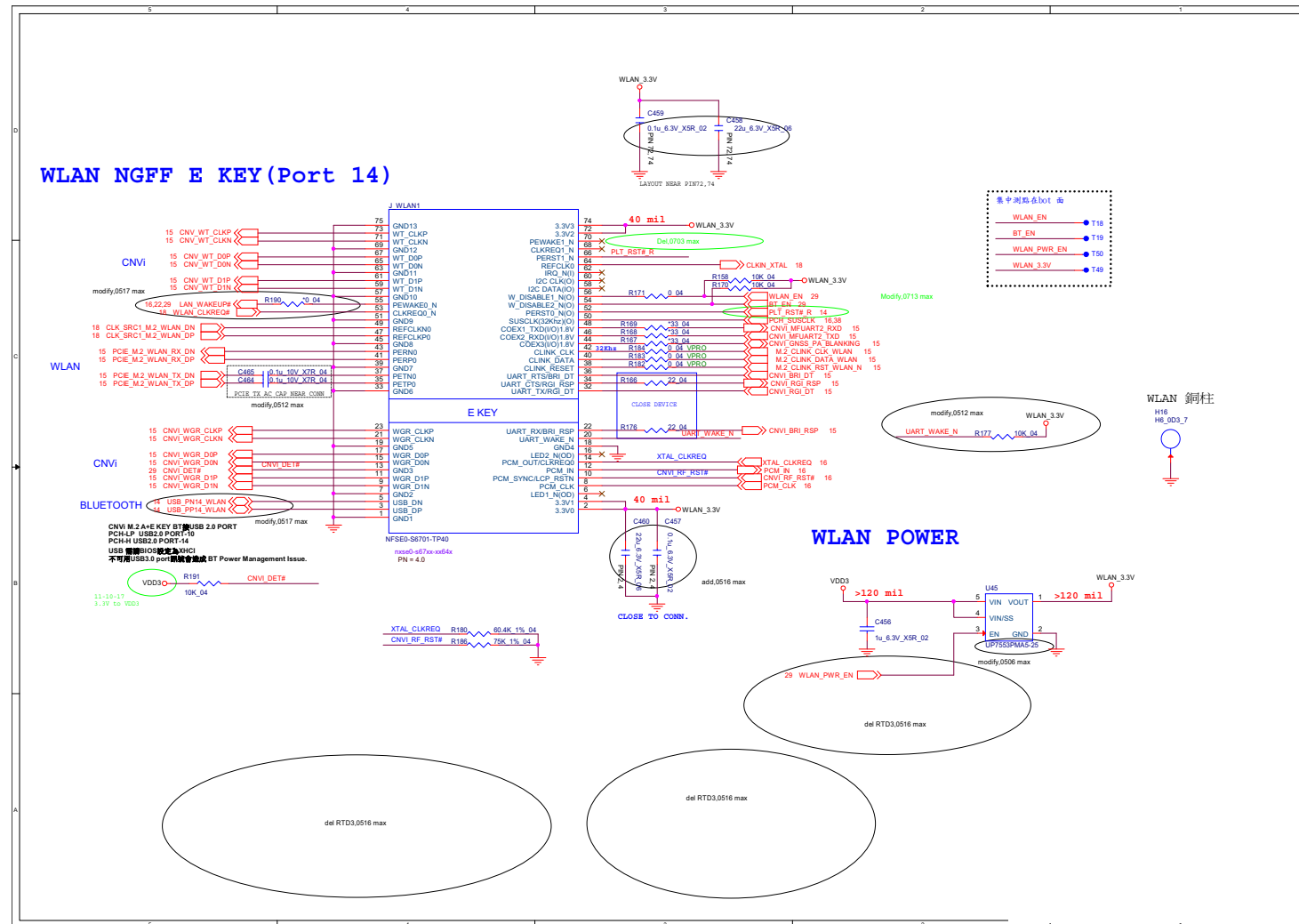
Sheet 26 of 50
3G/LTE

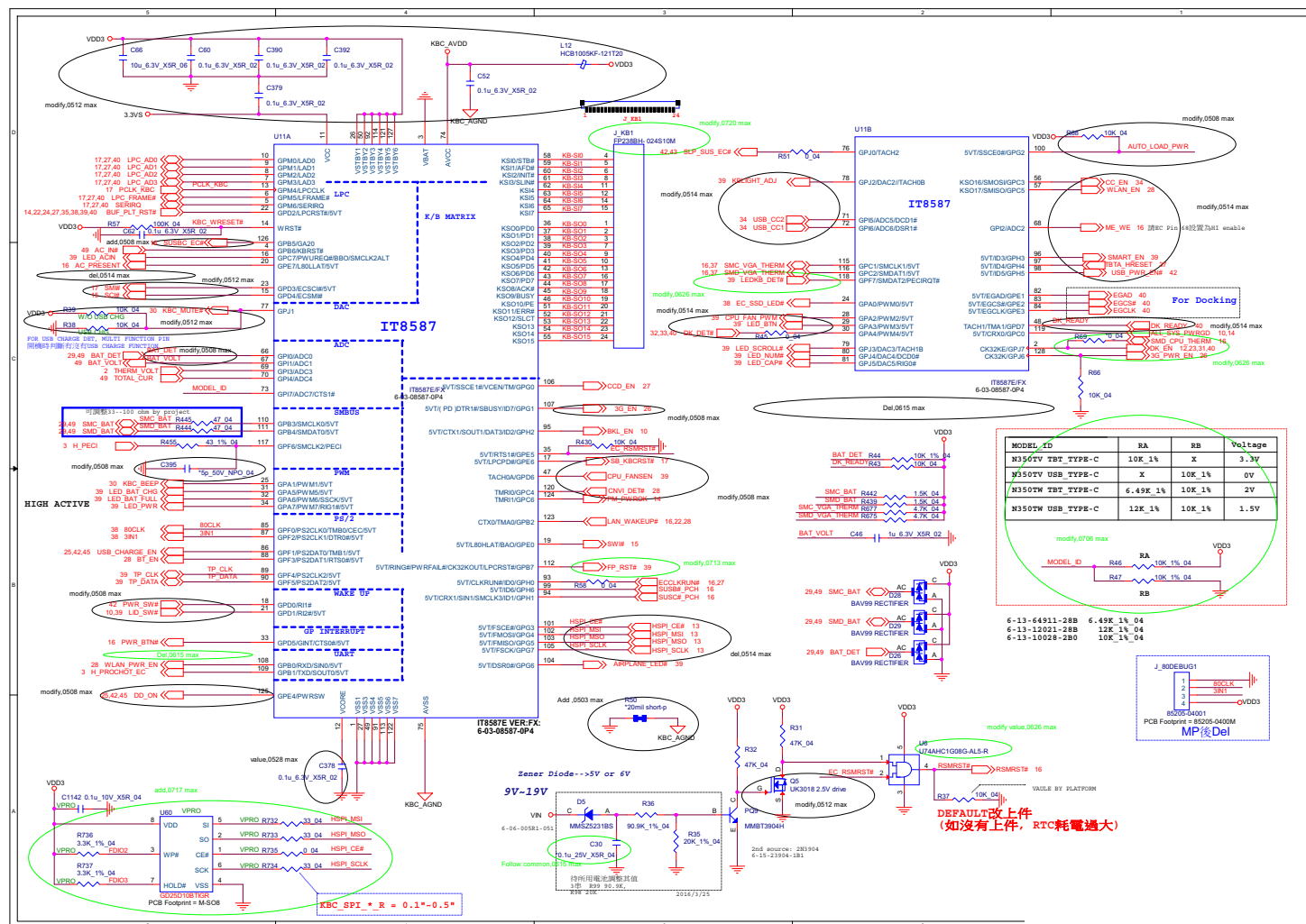
Schematic Diagrams

TPM, CCD, HDD, ODD

Sheet 27 of 50
TPM, CCD, HDD,
ODD







ALC889 上件

PC BEEP

ALC889 不上件

AUDIO AMP Enable

CODEC Speaker meet P(RMS) x 80% Spec. IF Speaker 標準功率大於 P(RMS)x80%, 必須經由 Speaker Vendor 認可. N7010 AMP 原廠 Speaker Connector 儘可能短 less than 8000 mils.

Gain Settings

NAME	UNIT	AVDD	INPUT IMPEDANCE
0	0	6dB	30K
0	1	10dB	70K
1	0	15.6dB	45K
1	1	21.6dB	25K

Layout note:
Headphone 訊號線寬 > 10mils
Distance phone jack 線寬
線寬必須 3mil
RUL 必須包圍 GND 且間距為 3' 線寬

Layout Note:
Very close to CODEC

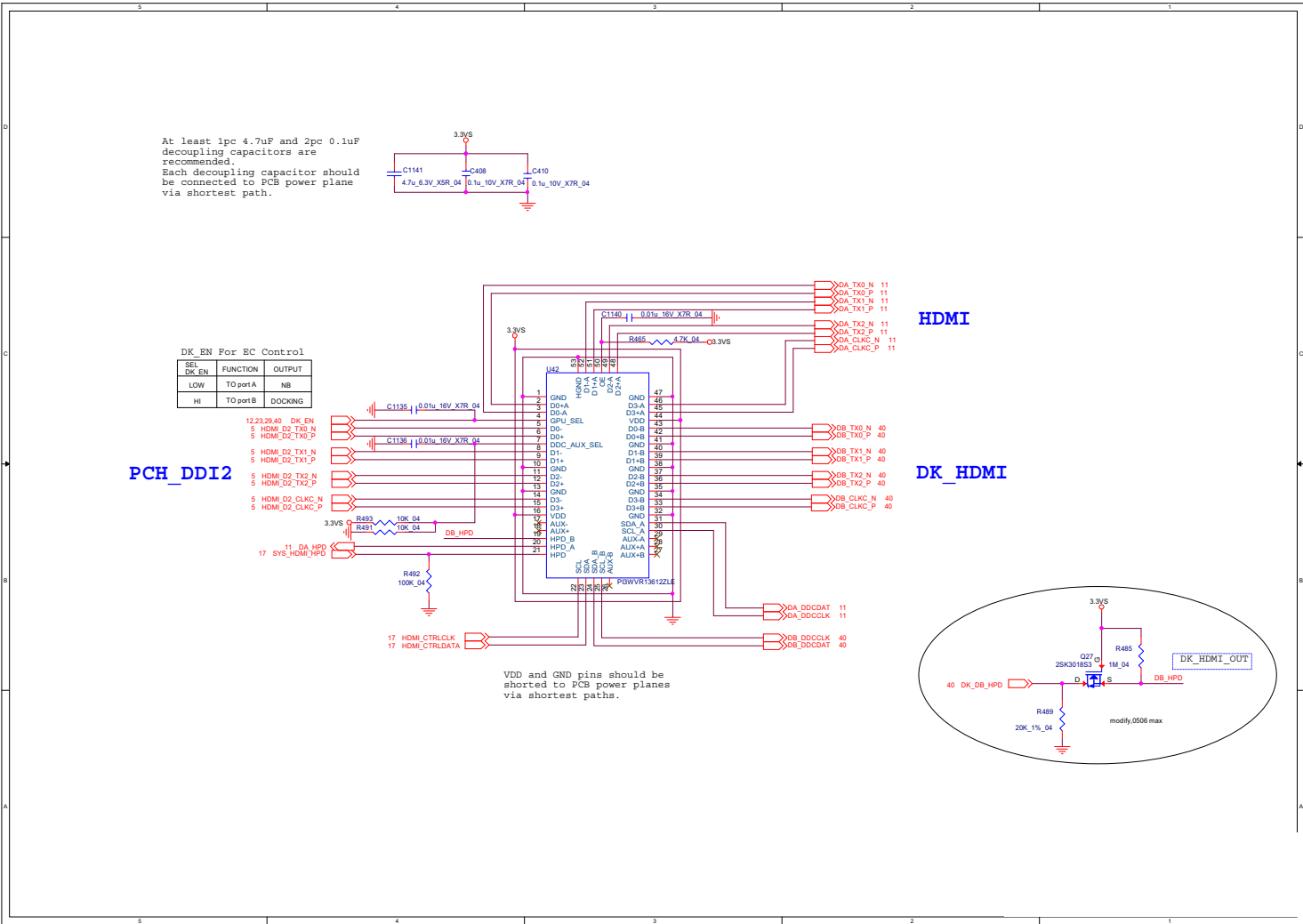
EMI Require

Close to BEAD

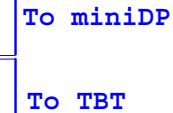
Schematic Diagrams

PI3WVR13612ZLE

Sheet 31 of 50
PI3WVR13612ZLE



MINI DISPLAY PORT B (PS8338B)

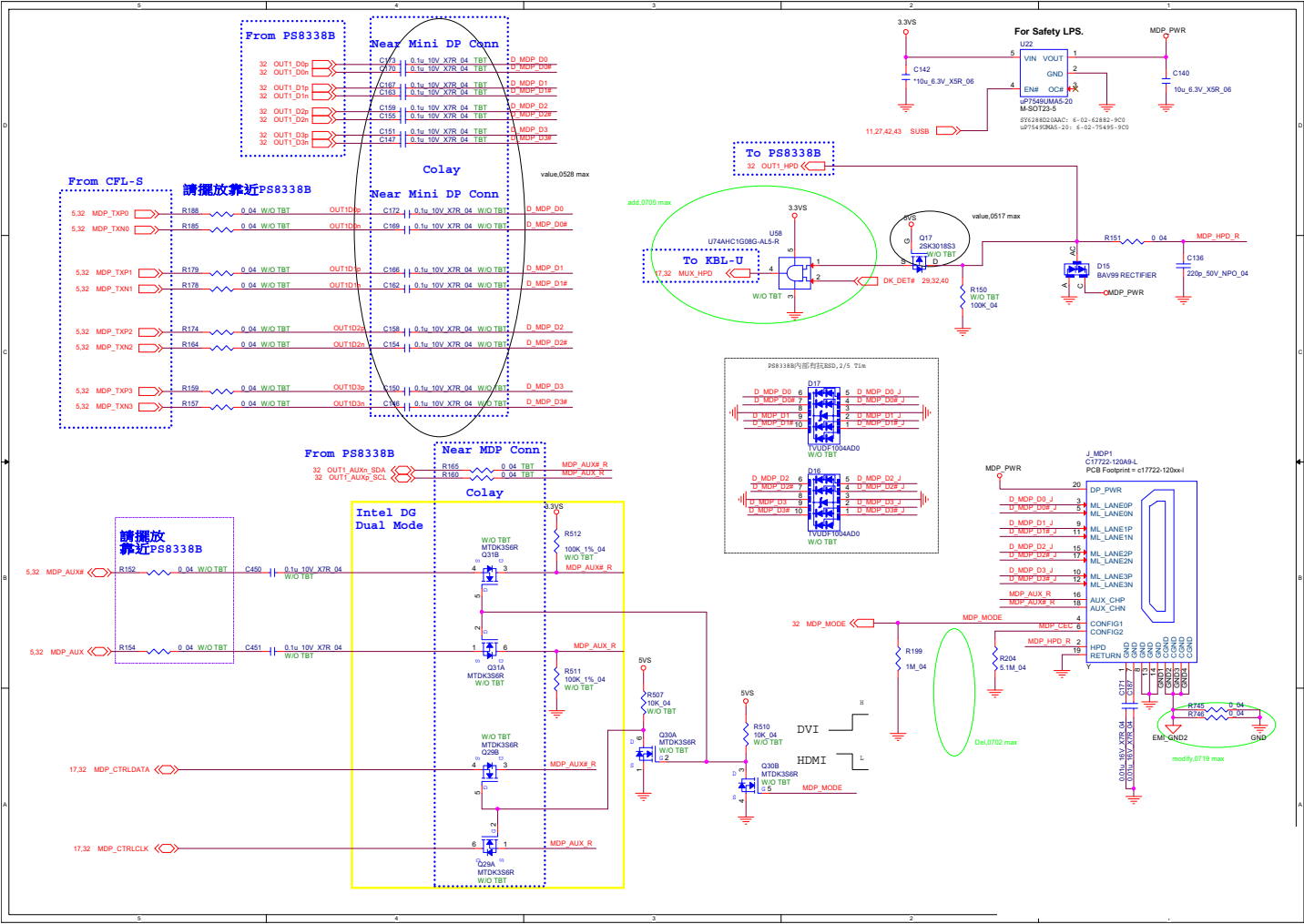


B.Schematic Diagrams

Schematic Diagrams

miniDP

Sheet 33 of 50
miniDP

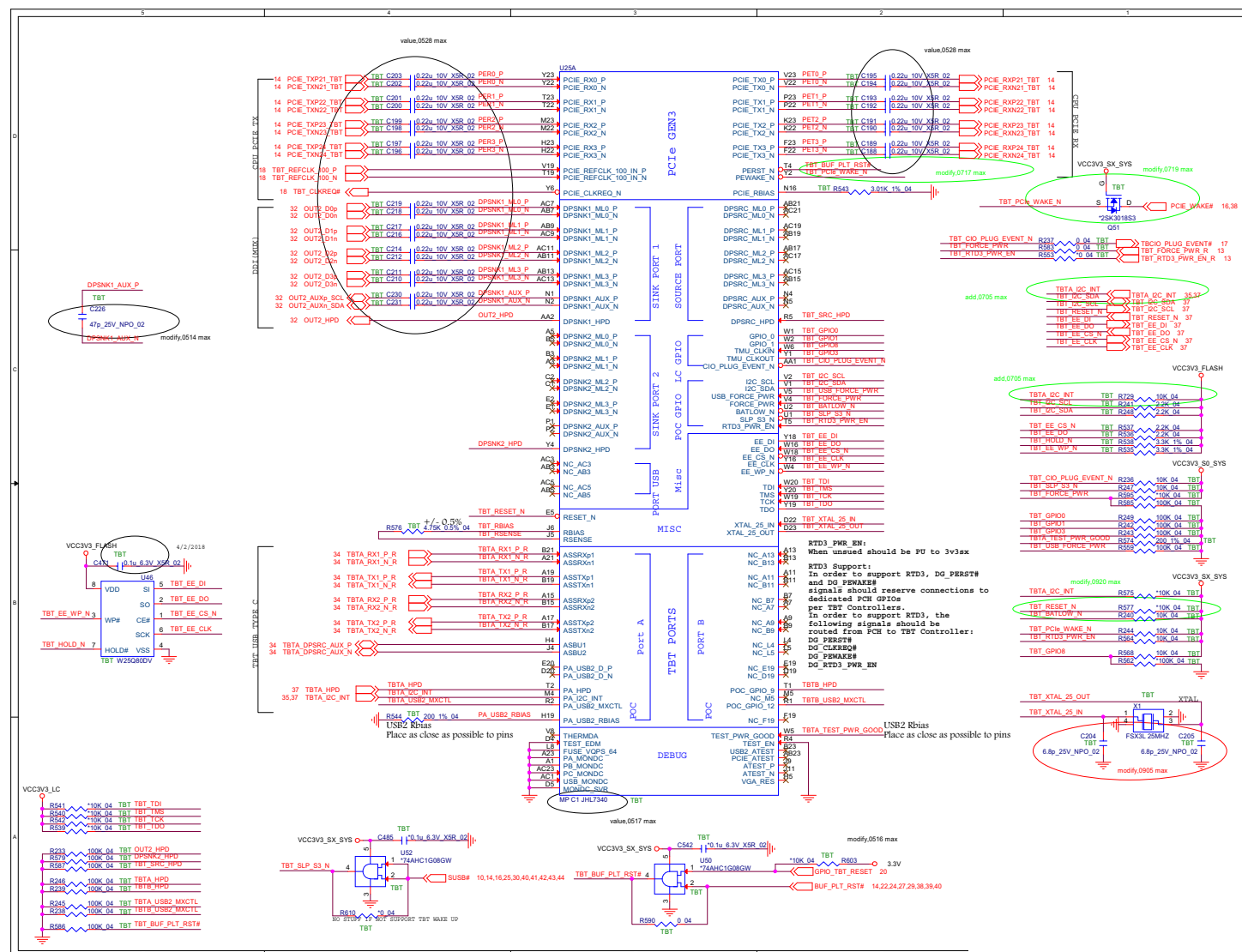


B.Schematic Diagrams

TR_TBT

B. Schematic Diagrams

Sheet 35 of 50
TR_TBT



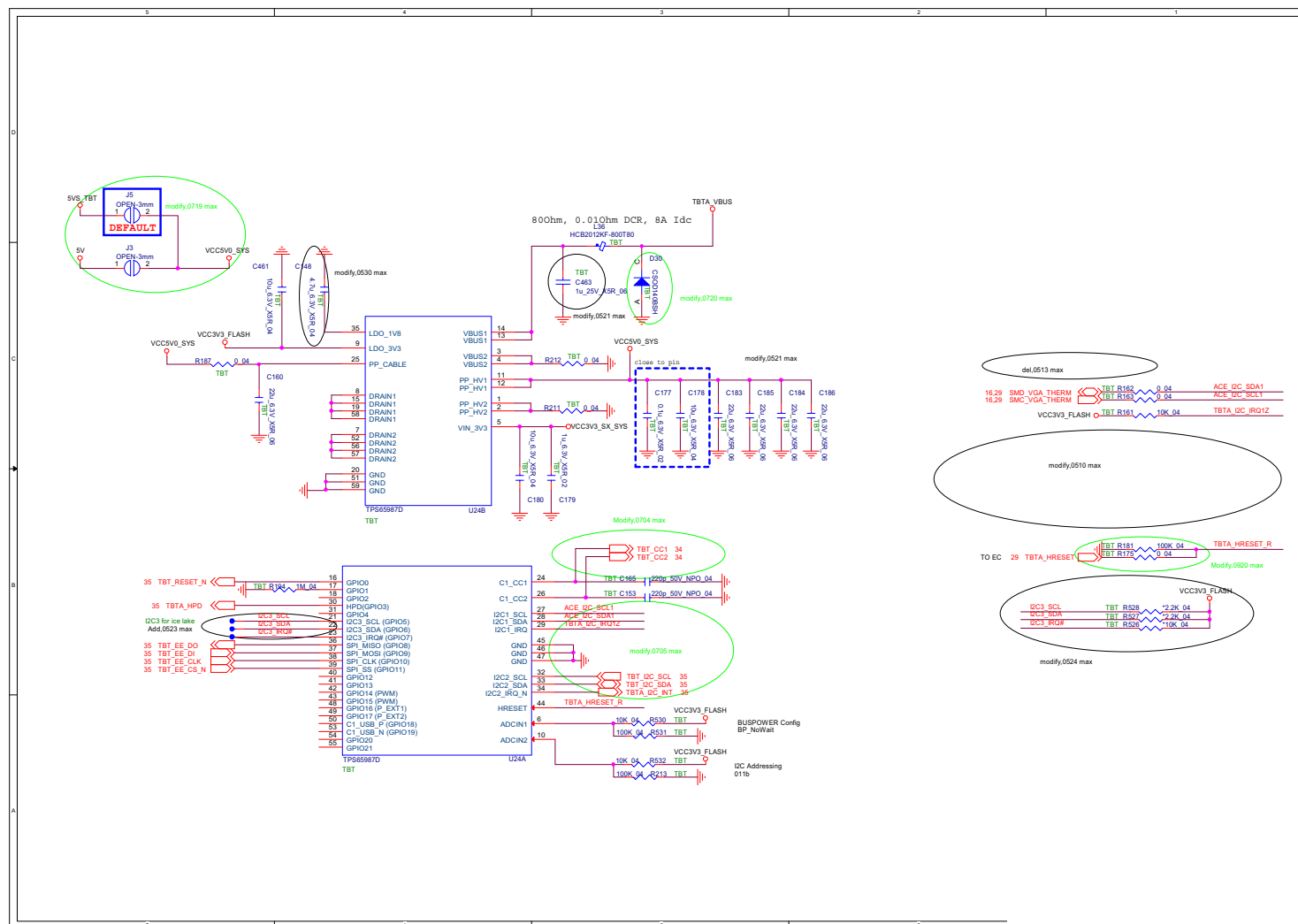
B.Schematic Diagrams



TPS65987D

B. Schematic Diagrams

Sheet 37 of 50
TPS65987D



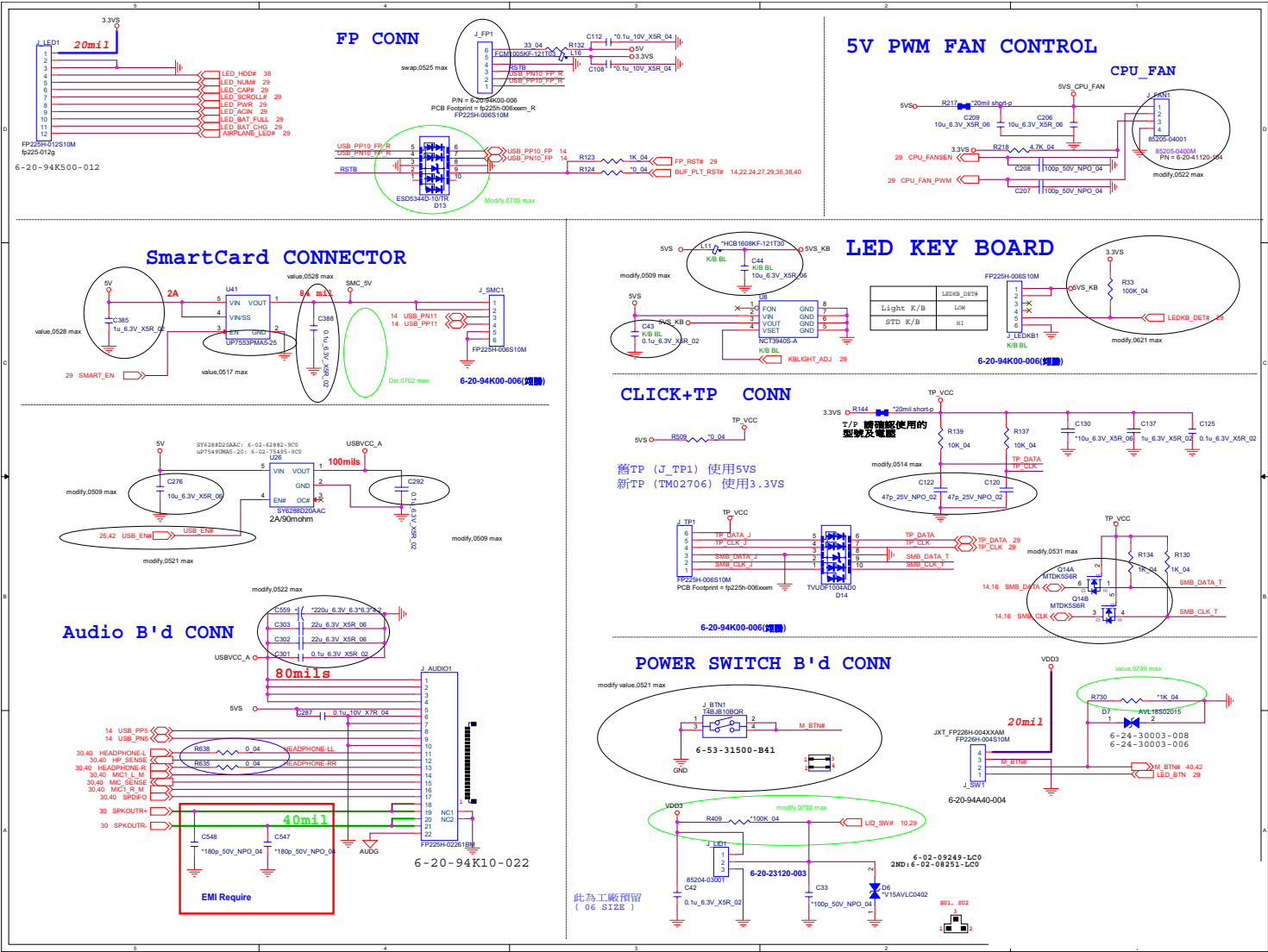
10



Schematic Diagrams

Fan, TP, Connector

Sheet 39 of 50
Fan, TP, Connector



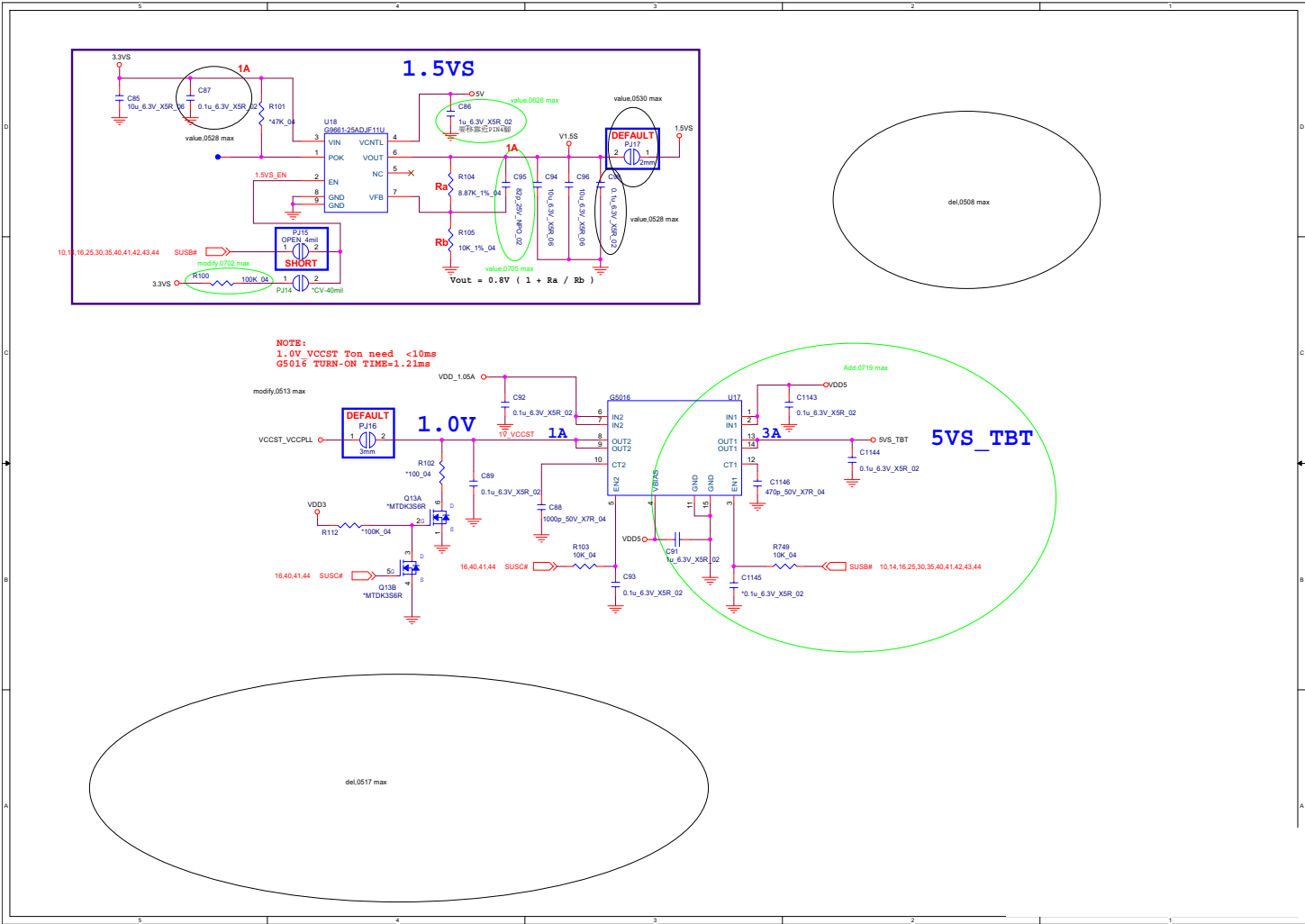
[illegible]

B.Schematic Diagrams

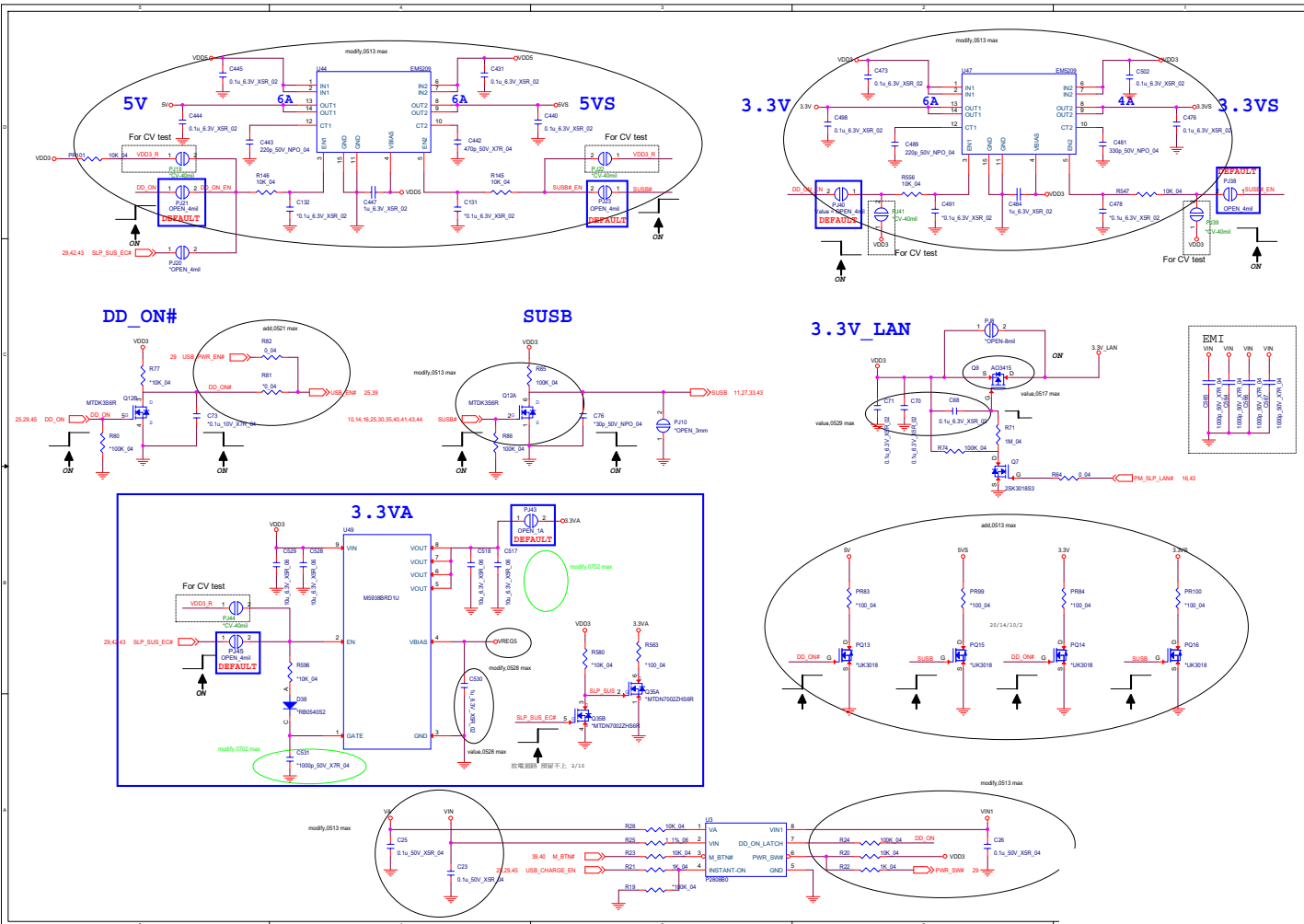
Schematic Diagrams

1.5VS, VCCST

Sheet 41 of 50
1.5VS, VCCST



5VS, 3VS, 3.3V, 5V

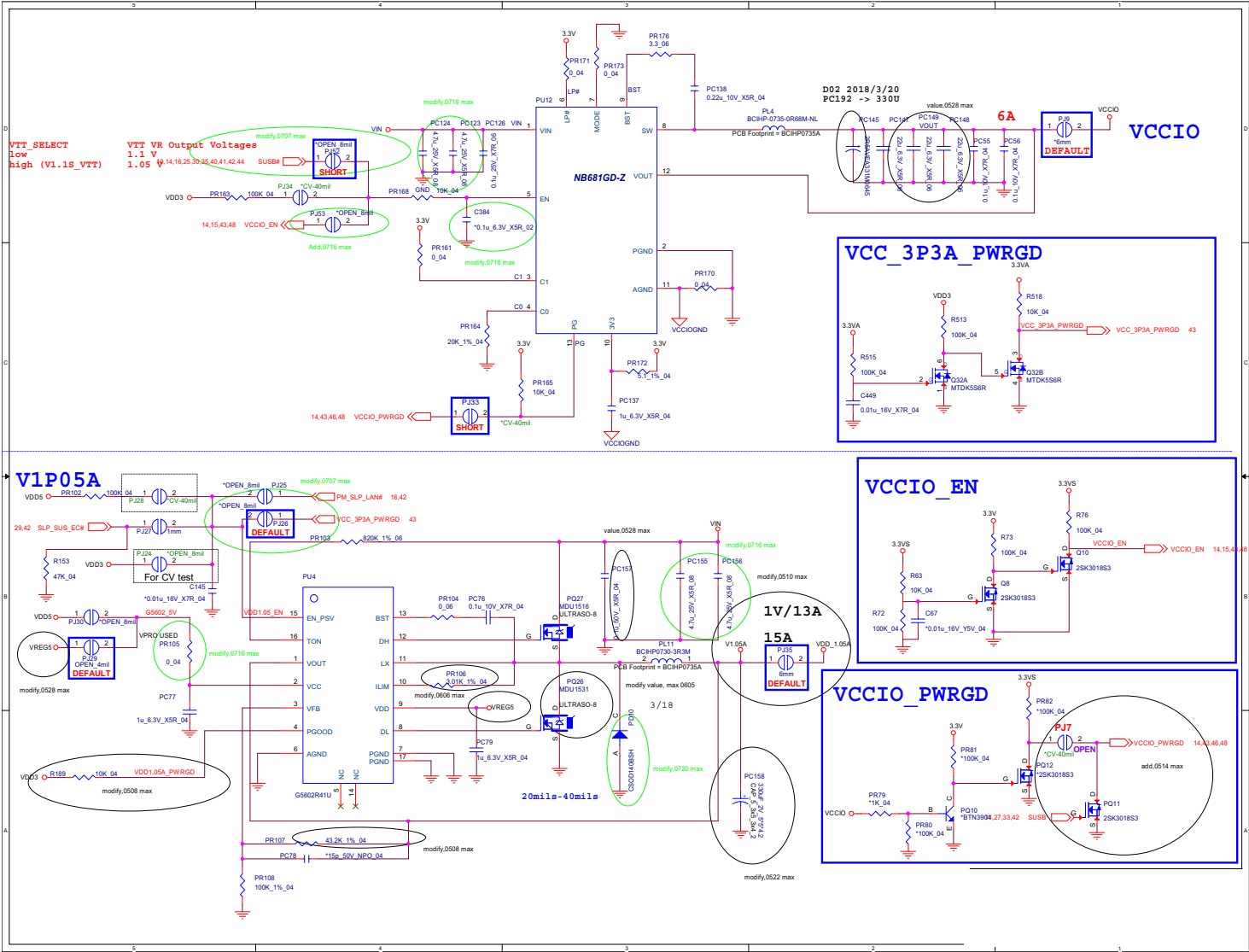


Sheet 42 of 50
5VS, 3VS, 3.3V, 5V

Schematic Diagrams

1.05V, VCCIO

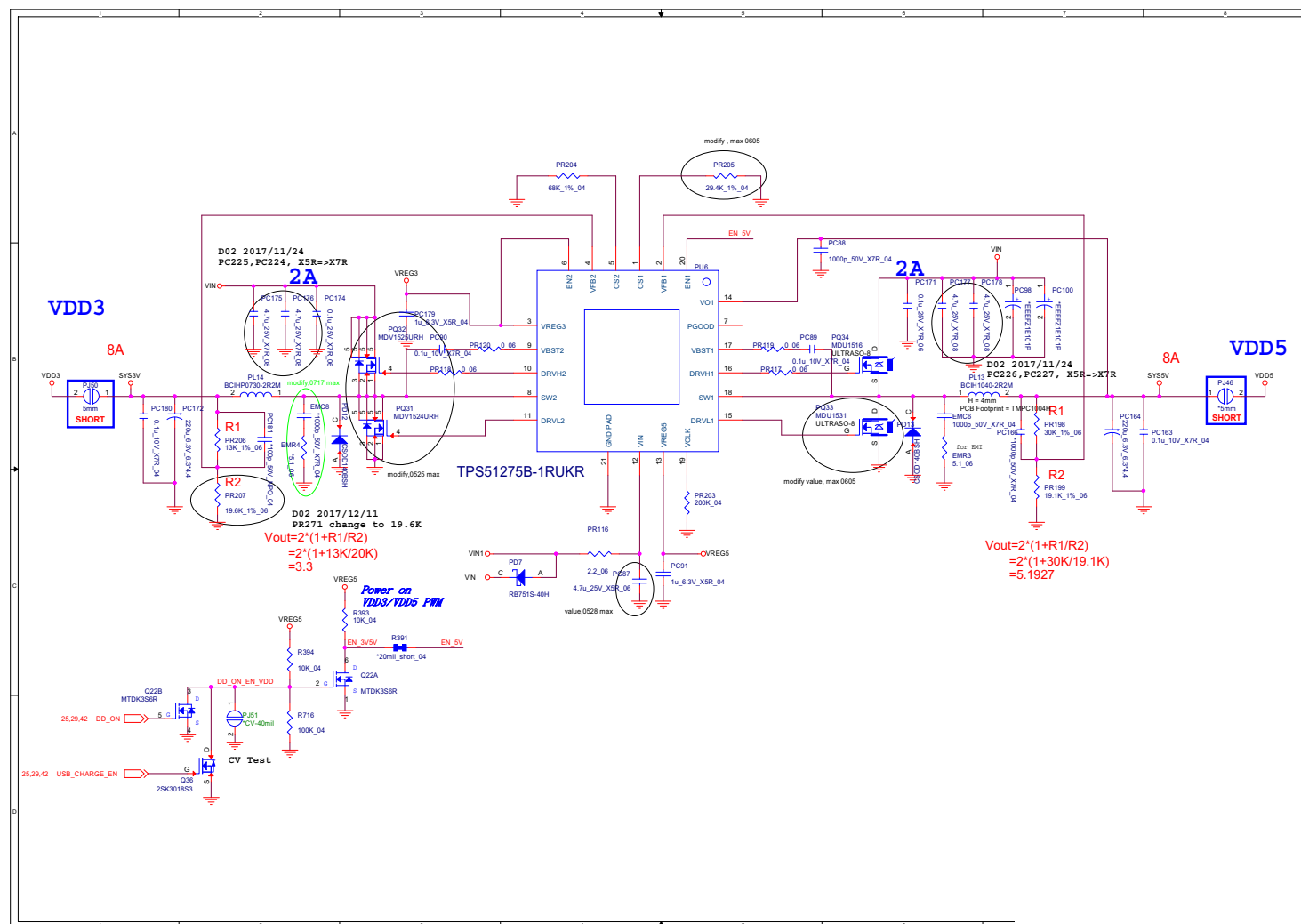
Sheet 43 of 50
1.05V, VCCIO



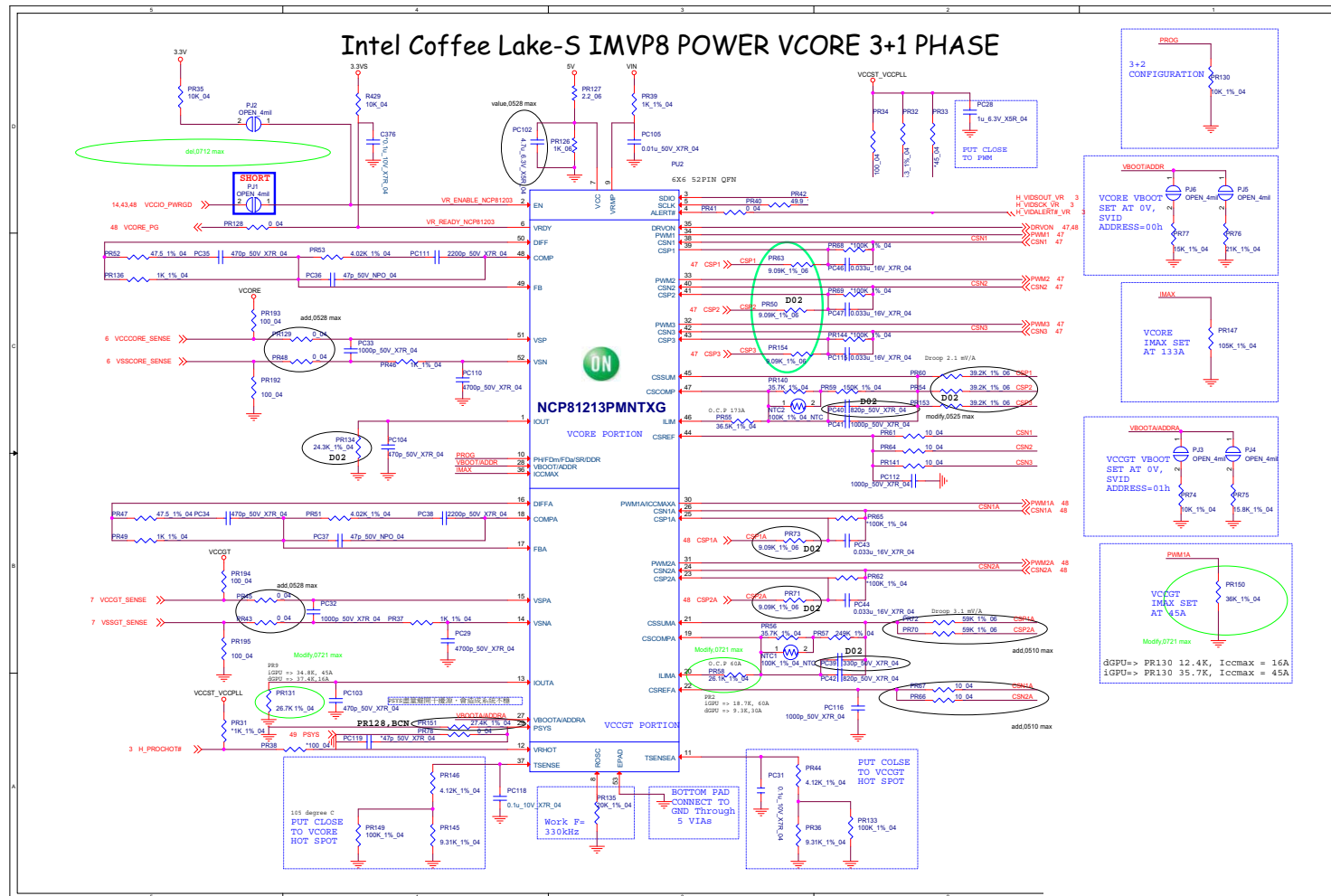


VDD3, VDD5

Sheet 45 of 50
VDD3, VDD5

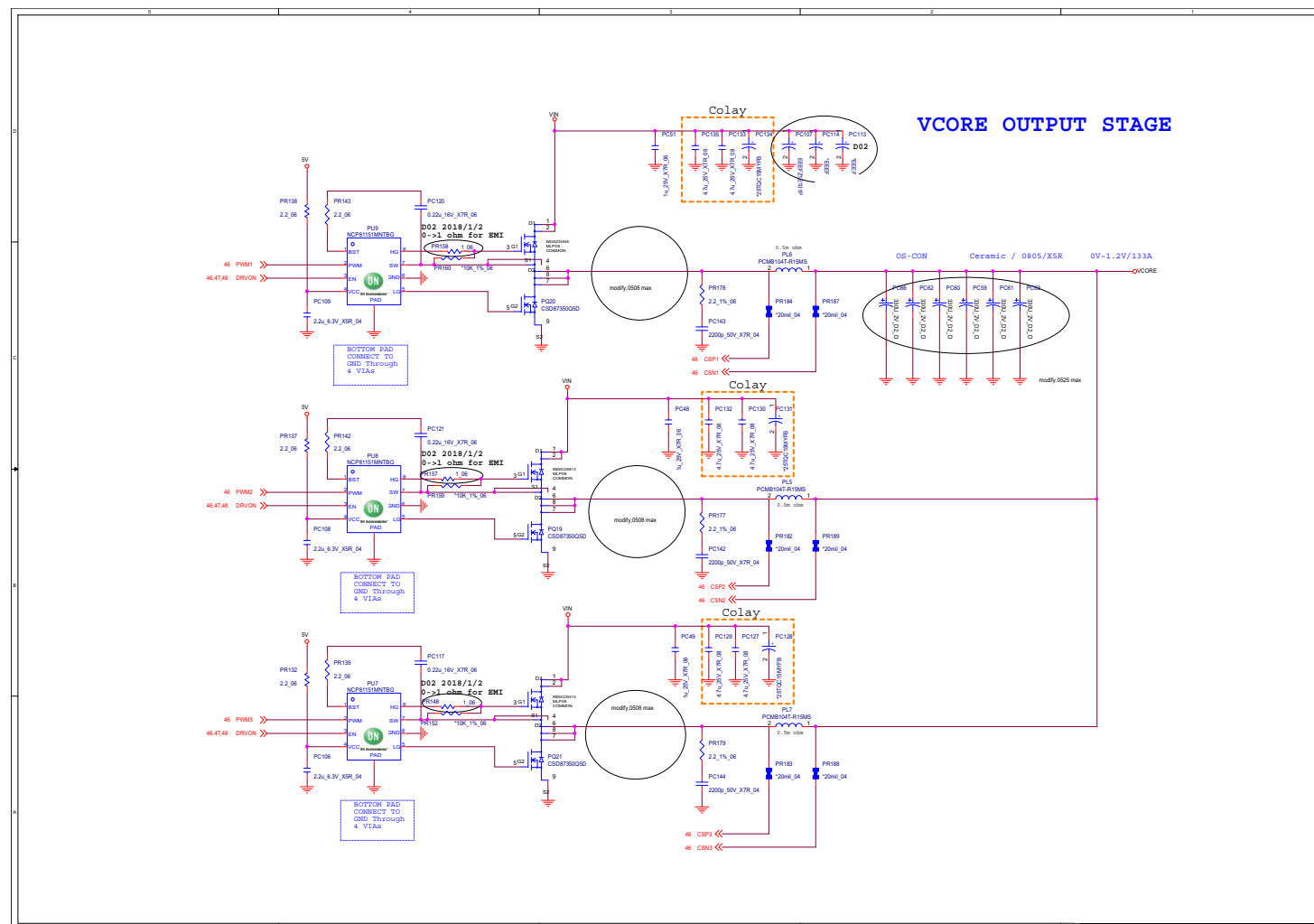


/ Core & VCCGT B - 47

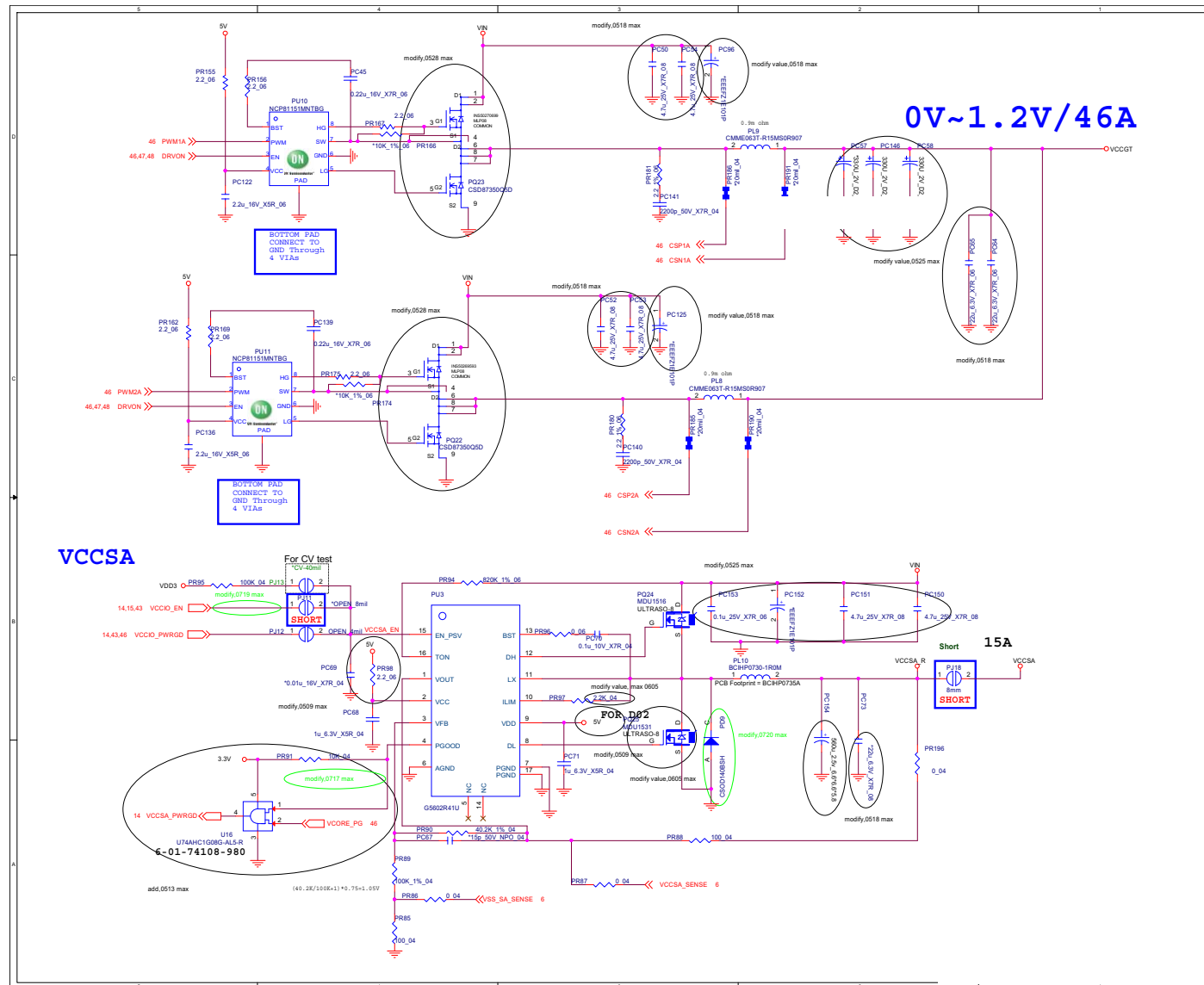


VCore Output Stage

B. Schematic Diagrams



VCCGT Output Stage

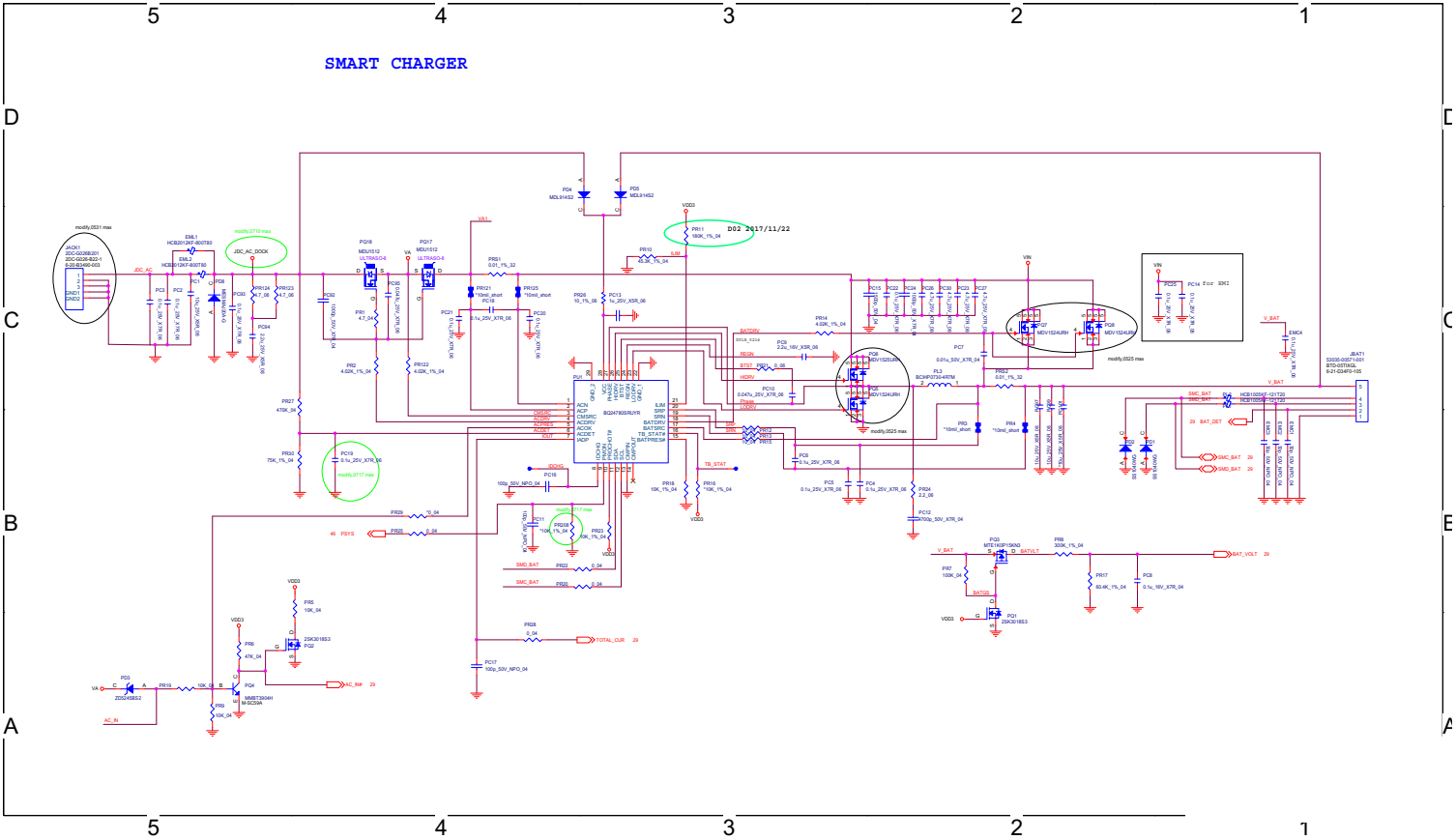


Sheet 48 of 50
VCCGT Output
Stage

Schematic Diagrams

AC-In, Charger

Sheet 49 of 50
AC-In, Charger



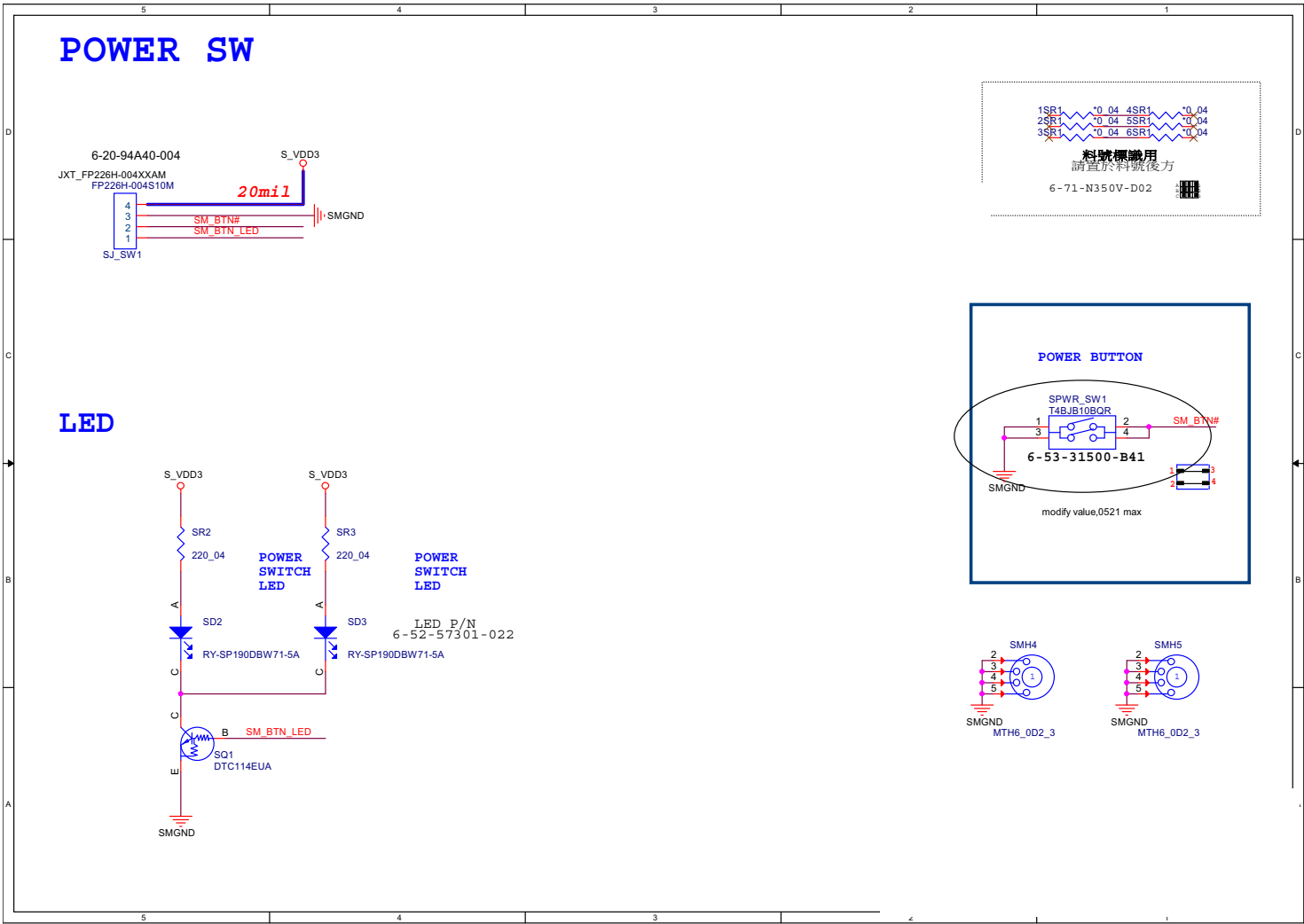
Audio Board B - 51



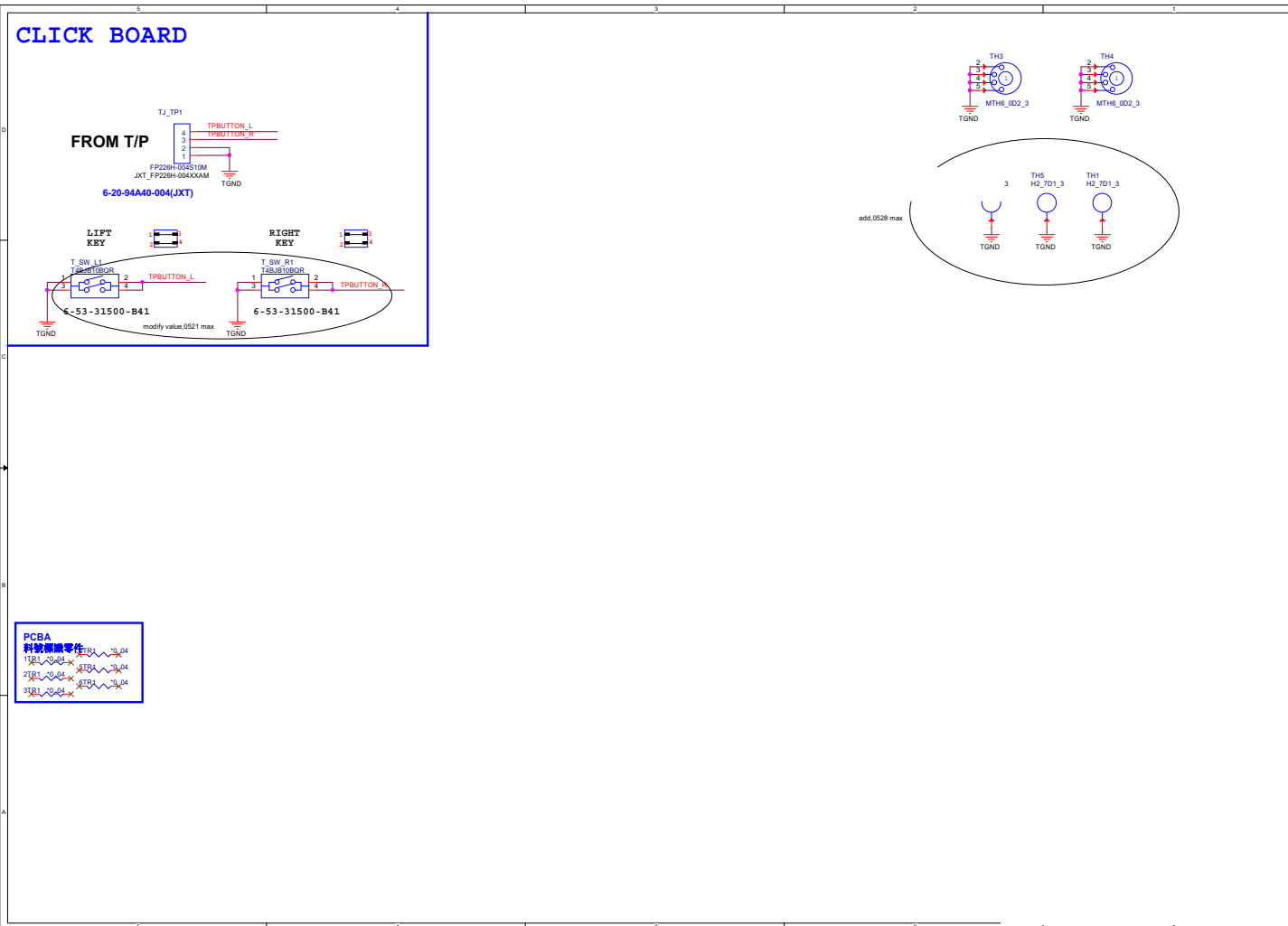
Schematic Diagrams

Power Switch Board

Sheet 51 of 50
Power Switch
Board



Click Board

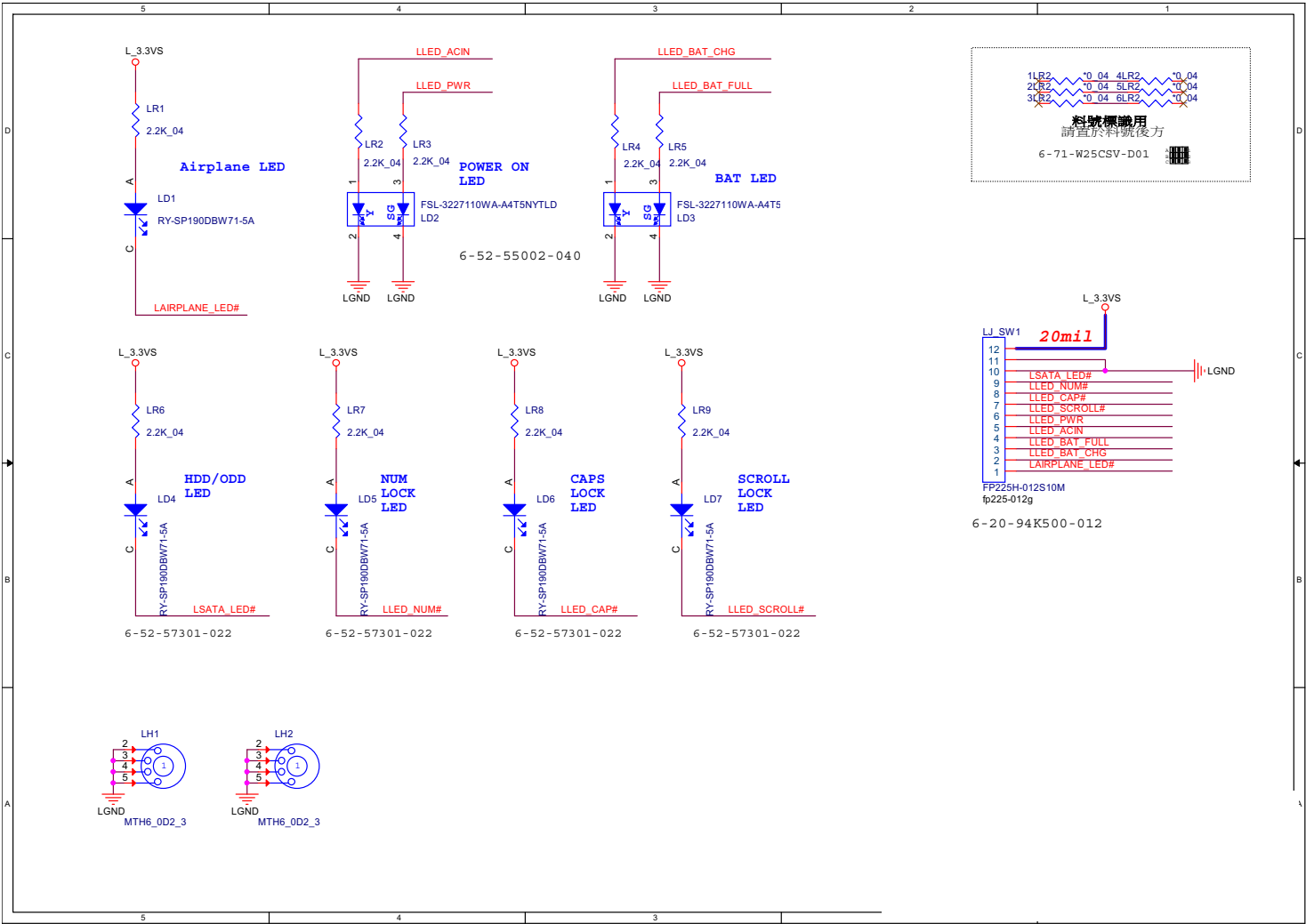


Sheet 52 of 50
Click Board

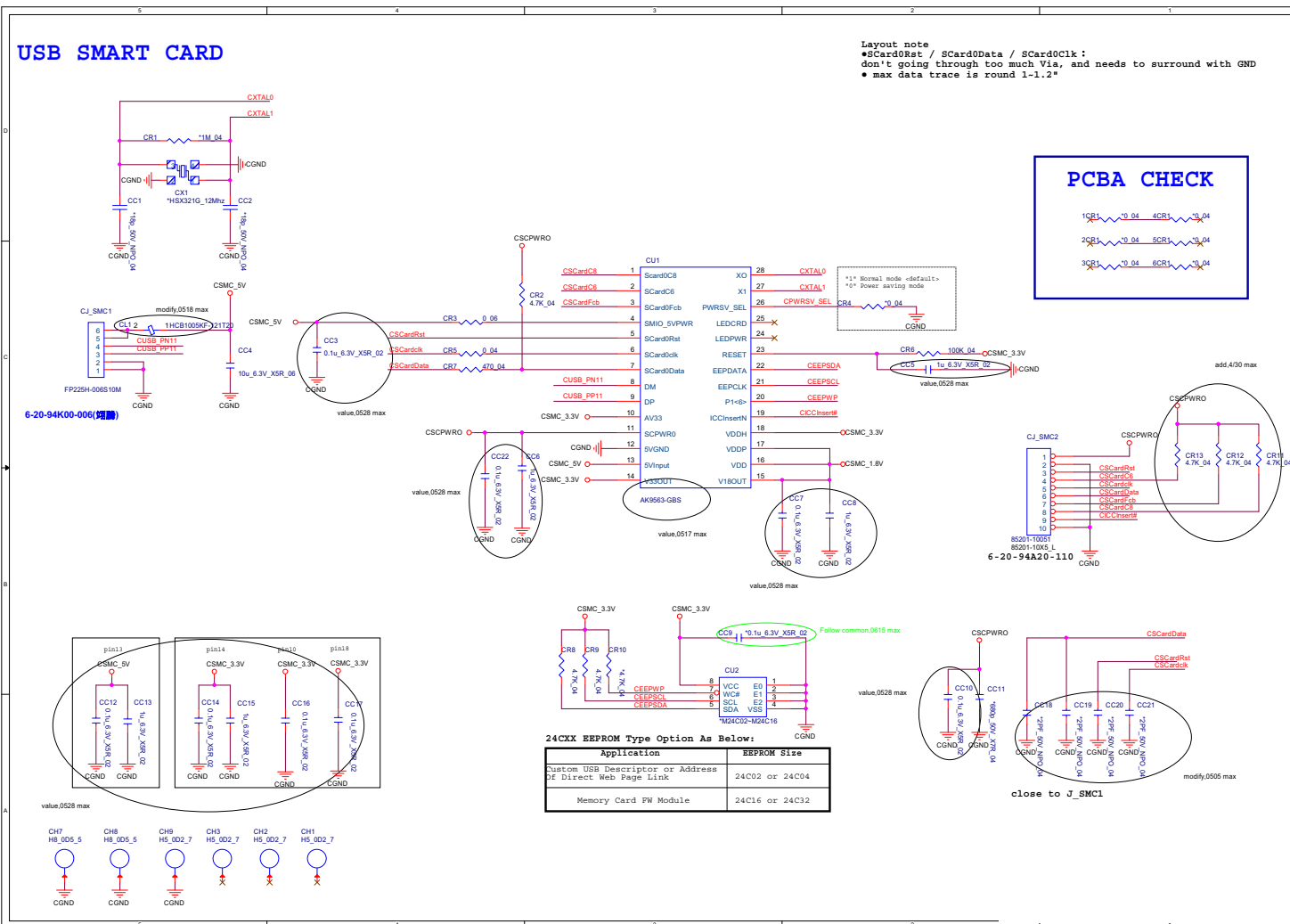
Schematic Diagrams

LED Board

Sheet 53 of 50
LED Board

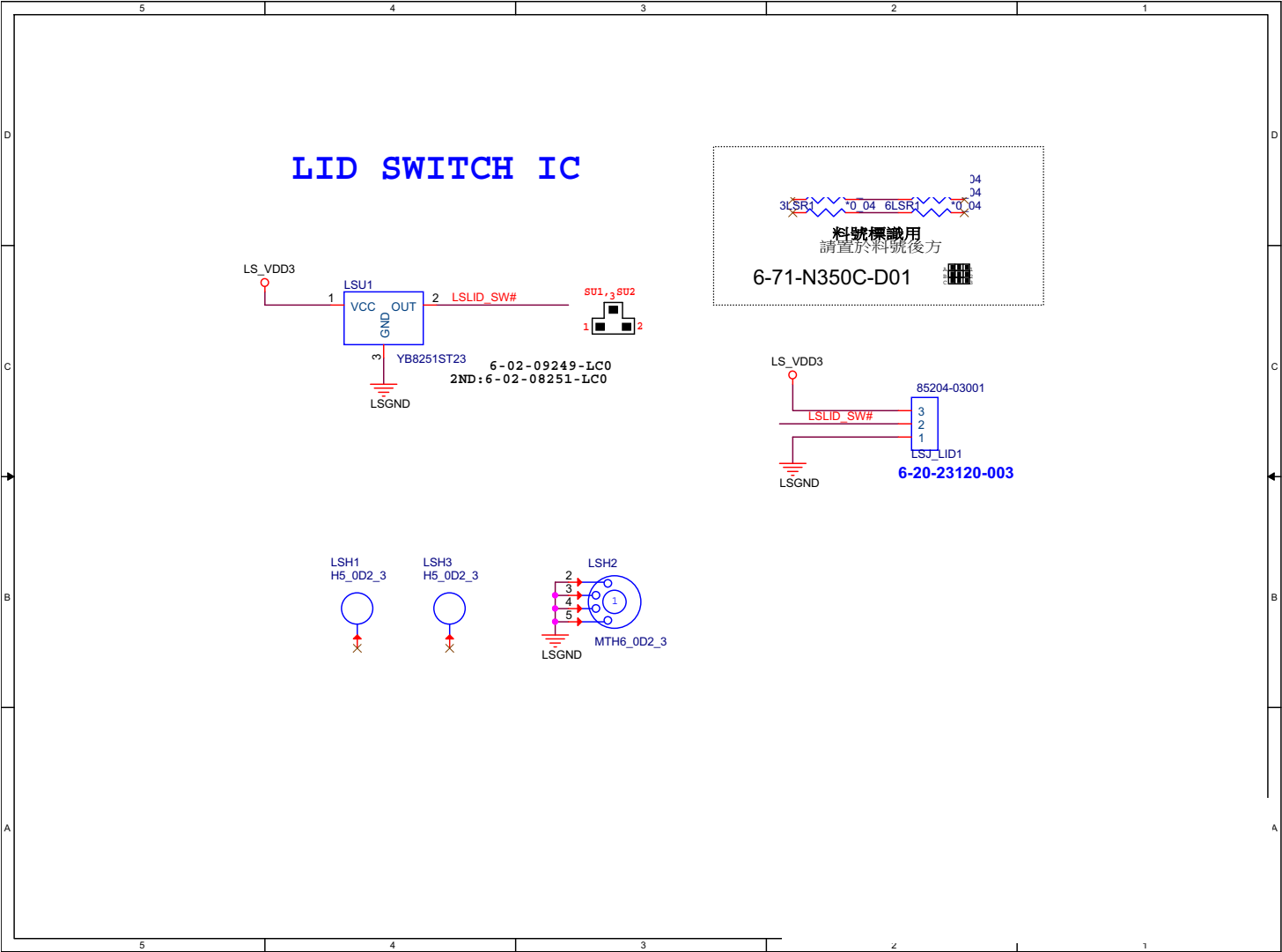


Smart Card Board

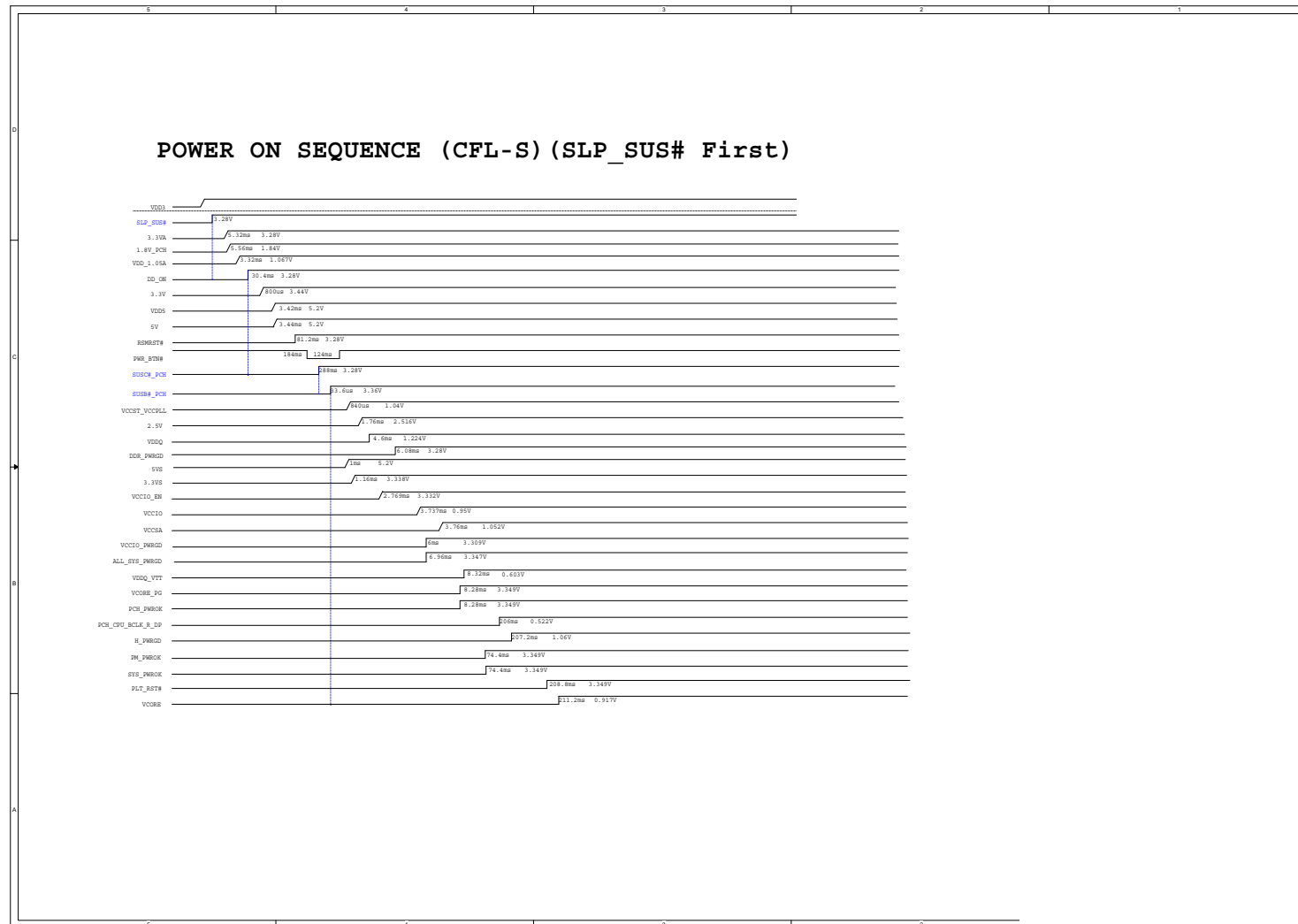


LID Switch Board

Sheet 55 of 50
LID Switch Board



Power On Sequence



Sheet 56 of 50
Power On
Sequence

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 **V1.01.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 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

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 “**Starting MS-DOS**”. You will then be prompted to give “**Y**” or “**N**” responses to the programs being loaded by DOS. Choose “**N**” for any memory management programs.
2. You should now be at the DOS prompt e.g: **DISK C:\>** (C is the designated drive letter for the CD/DVD drive/USB flash drive).
3. **Type the following command** at the DOS prompt:

C:\> Flash.bat

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.