SERVICE MANUAL

W740SU

notebook

Notebook Computer

W740SU

Service Manual

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About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the ***W740SU*** 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

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, 4.74A (**90** Watts) minimum AC/DC Adapter.

CAUTION

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

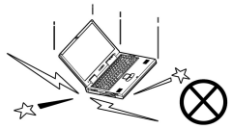
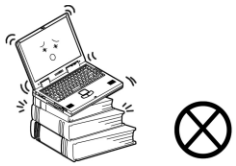
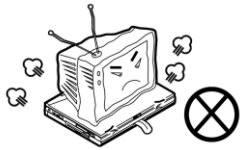
FCC Statement

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.

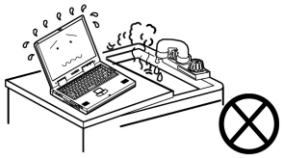
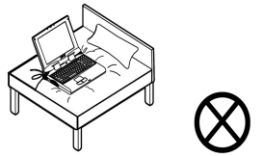
Instructions for Care and Operation

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

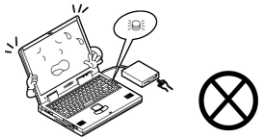
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

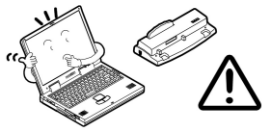
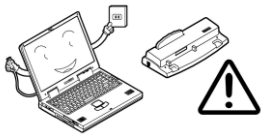
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface which will block the vents.*
			

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.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*
			

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**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

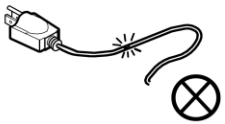
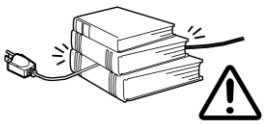
Power Safety

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.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

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 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.
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 130 degrees); use the other hand (as illustrated in Figure 1) to support the base of the computer (**Note**: **Never** lift the computer by the lid/LCD).
7. Press the power button to turn the computer "on".

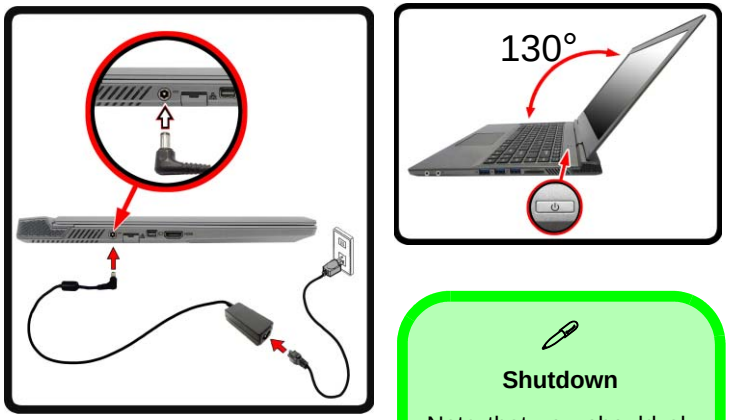


Figure 1
Opening the Lid/LCD/ Computer with AC/DC Adapter Plugged-In

Shutdown

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Power** item in **Settings** in the **Charms Bar** (use the **Windows Logo Key + C** key combination to access the **Charms Bar**) in **Windows 8**. This will help prevent hard disk or system problems.

Contents

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the ***W740SU*** 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 8*, 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 ***W740SU*** 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.

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
i7-4750HQ (2.0GHz)
6MB L3 Cache, **22nm**, DDR3L-1600MHz, TDP 47W

Core Logic

Intel® HM87 Chipset

BIOS

48Mb SPI Flash ROM
AMI BIOS

Memory

Two 204 Pin SO-DIMM Sockets Supporting **DDR3L 1600MHz** Memory
Memory Expandable up to 16GB

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

LCD

14" (35.56cm) HD/ FHD LCD

Storage

(**Factory Option**) One Changeable 2.5" 9.5mm (h)/7.0mm (h) SATA HDD
(**Factory Option**) One mSATA Solid State Drive (SSD)

Audio

High Definition Audio Compliant Interface
2 * Built-In Speakers
Built-In Microphone

Security

Security (Kensington® Type) Lock Slot
BIOS Password

Keyboard

"WinKey" keyboard (with embedded numeric keypad)

Pointing Device

Built-in Touchpad

Interface

Three USB 3.0 Ports (Including one AC/DC Powered USB port)
One HDMI-Out Port
One Mini Display Port
One Headphone-Out Jack
One Microphone-In Jack
One RJ-45 LAN Jack
One DC-in Jack

Mini Card Slot

Slot 1 for **WLAN** Module or **WLAN and Bluetooth** Combo Module
(**Factory Option**) Slot 2 for mSATA **SSD**

Video Adapter

Intel® HD Graphics 5200
Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)
Microsoft DirectX®11 Compatible

Card Reader

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

Communication

Built-In Gigabit Ethernet LAN

1.0M HD PC Camera Module

WLAN/ Bluetooth Half Mini-Card Modules:

(**Factory Option**) Intel® Centrino® Advanced-N 6235 Wireless LAN (**802.11a/g/n**) + Bluetooth 4.0

(**Factory Option**) Intel® Centrino® Advanced-N 6205 Wireless LAN (**802.11a/g/n**)

(**Factory Option**) Third-Party Wireless LAN (**802.11b/g/n**)

(**Factory Option**) Third-Party Wireless LAN (**802.11b/g/n**) + Bluetooth 4.0

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, 4.74A (**90W**)

Polymer Smart Lithium-Ion Battery Pack, 53.28WH

Dimensions & Weight

340mm (w) * 253mm (d) * 20.8mm (h)

1.9kg (with Battery)

External Locator - Top View with LCD Panel Open

Figure 1
Top View

1. Built-in PC Camera (**Optional**)
2. PC Camera LED
3. Built-In Microphone
4. LCD
5. Power Button
6. Keyboard
7. Touchpad & Buttons

External Locator - Front & Right Side Views

FRONT VIEW

Figure 2
Front View

1. LED Power Indicator

RIGHT SIDE VIEW

Figure 3
Right Side View

1. Headphone-Out Jack
2. Microphone-In Jack
3. USB 3.0 Port
4. 1 * Powered (AC/DC) USB 3.0 Port
5. Multi-in-1 Card Reader
6. Vent/Fan Intake/Outlet

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. Vent/Fan Intake/ Outlet
2. DC-In Jack
3. RJ-45 LAN Jack
4. Mini Display Port
5. HDMI-Out Port

/

LEFT SIDE VIEW

Figure 5
Rear View

1. Security Lock Slot
2. Vent/Fan Intake/ Outlet

REAR VIEW

External Locator - Bottom View

Figure 6
Bottom View

1. Vent/Fan Intake/ Outlet
2. Speakers

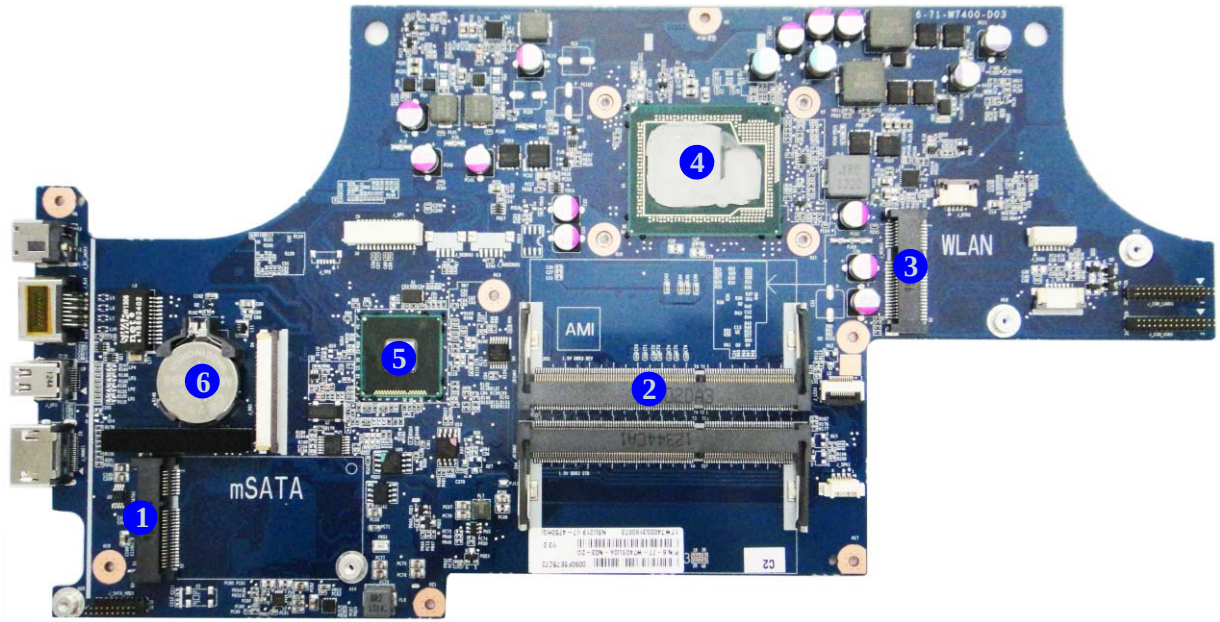
Overheating

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

Mainboard Overview - Top (Key Parts)

Figure 7
Mainboard Top Key Parts

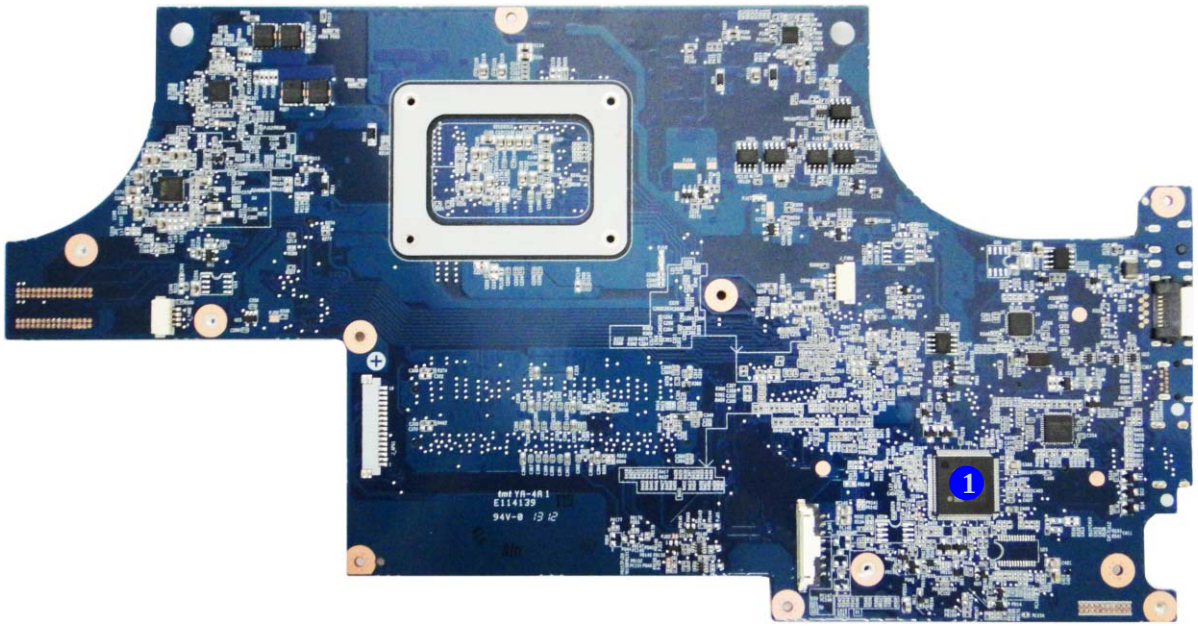
1. Mini-Card Connector (mSATA Module)
2. Memory Slots DDR3 SO-DIMM x 2
3. Mini-Card Connector (WLAN Module)
4. Intel CPU
5. Platform Controller Hub
6. CMOS Battery



Mainboard Overview - Bottom (Key Parts)

Figure 8
Mainboard Bottom Key Parts

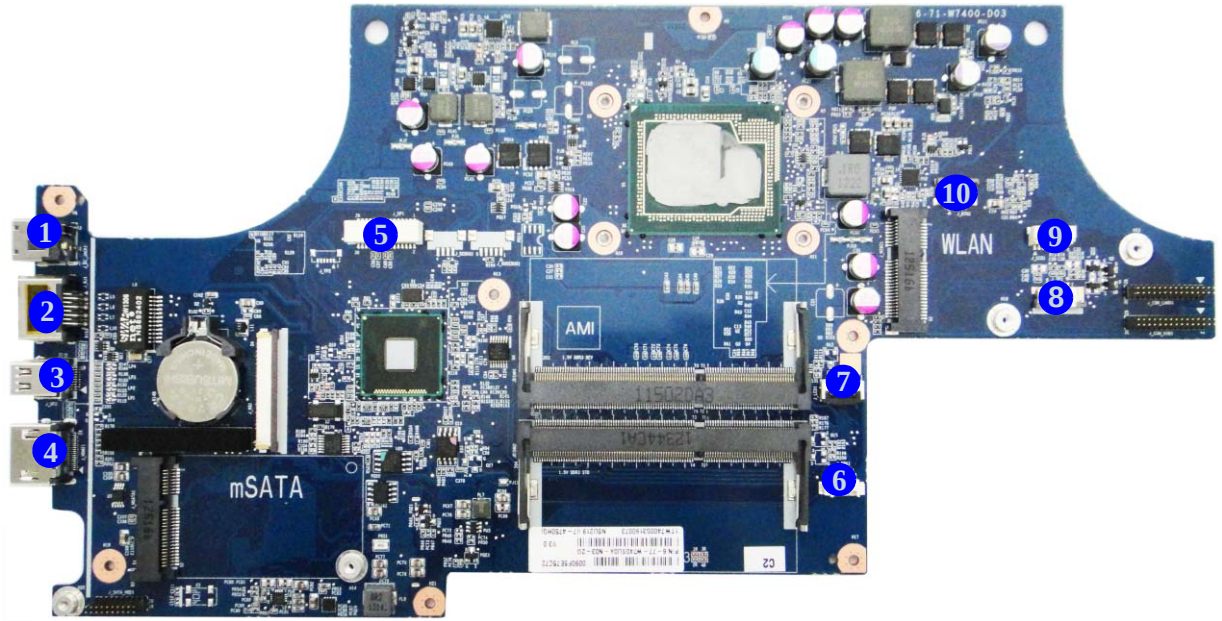
1. KBC-ITE IT8587



Mainboard Overview - Top (Connectors)

Figure 9
Mainboard Top Connectors

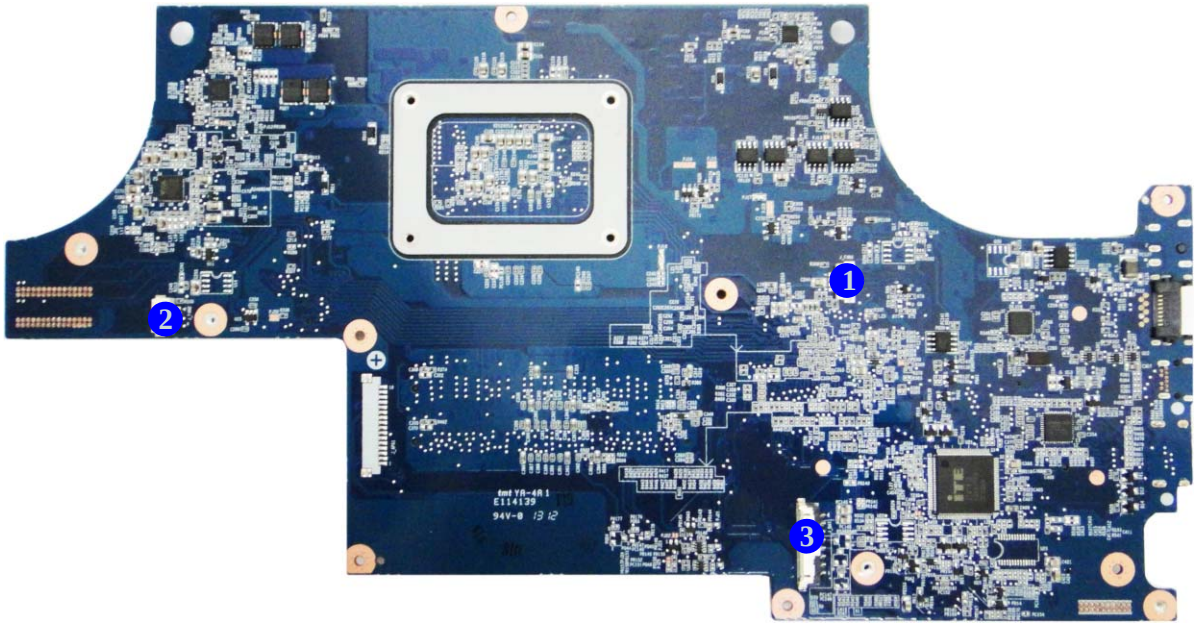
1. DC-In Jack
2. RJ-45 LAN Jack
3. Mini Display Port
4. HDMI-Out Port
5. EDP Connector
6. Speaker Connector
7. LED Connector
8. TP Connector
9. CCD Connector
10. Power Button Connector



Mainboard Overview - Bottom (Connectors)

Figure 10
Mainboard Bottom Connectors

1. Fan 1 Connector
2. Fan 2 Connector
3. Battery Connector



Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***W740SU*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

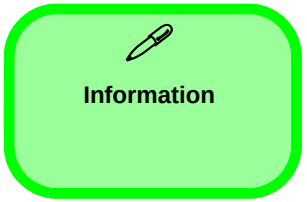
We suggest you completely review any procedure before you take the computer apart.

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.



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.

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.

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.

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 Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 8*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*

To remove the Wireless LAN Module:

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

To remove the mSATA Module:

1. Remove the battery *page 2 - 5*
2. Remove the mSATA module *page 2 - 12*

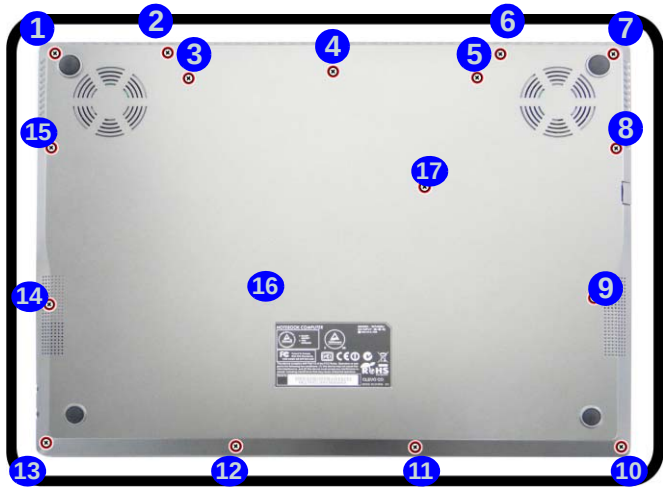
Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Remove screws 1 - 17 from the bottom cover (*Figure 1a*).
3. Lift the bottom cover from point 18 (*Figure 1b*).
4. Remove the bottom cover 19 (*Figure 1b*).
5. Remove screws 20 - 21 and disconnect cable 22 from the computer (*Figure 1c*).
6. Lift the battery 23 out of the computer (*Figure 1d*).

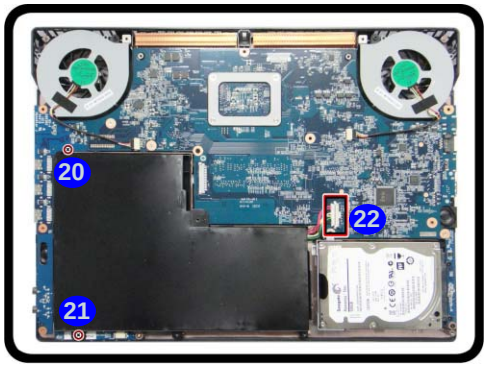
Figure 1
Battery Removal

a. Remove the screws.
b. Remove the bottom cover.
c. Remove the screw and disconnect cable.
d. Lift the battery out.

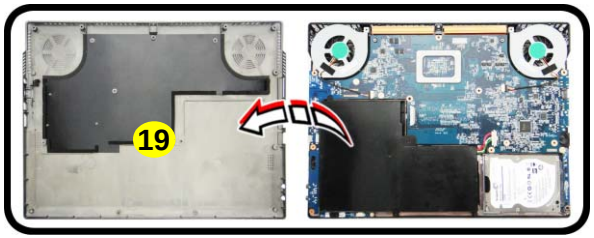
a.



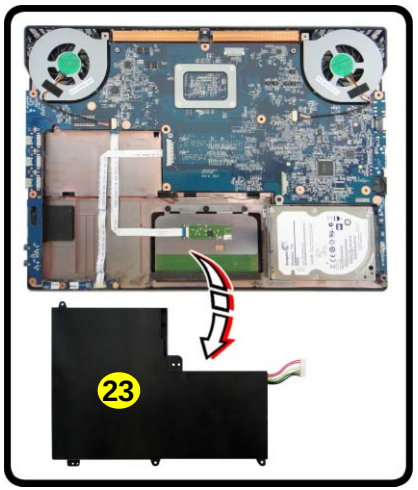
c.



b.



d.



19. Bottom Cover
23. Battery

- 19 Screws

Figure 2
HDD Assembly Removal (cont'd.)

a. Locate the harddisk.
b. Remove the screw.
c. Grip the tab and slide the HDD assembly in the direction of the arrow.
d. Lift the HDD assembly out of the bay.
e. Remove the screws and bracket from HDD.

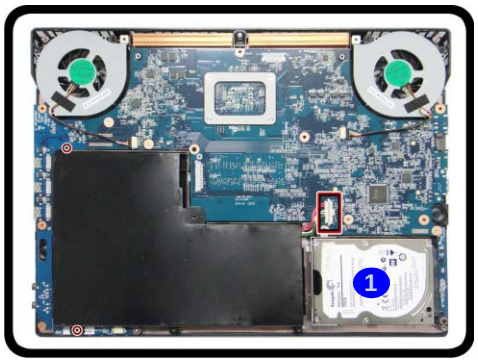
Removing the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm or 7mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

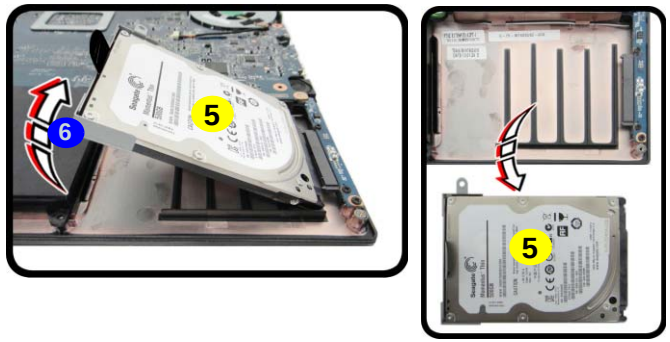
Hard Disk Upgrade Process

1. Turn **off** the computer, turn it over, remove the bottom cover and battery (***page 2 - 5***).
2. The harddisk will be visible at point 1 (***Figure 2a***).
3. Remove the screw 2 from the hard disk assembly (***Figure 2b***).
4. Grip the tab 3 and slide the hard disk assembly in the direction of arrow 4 (***Figure 2c***).
5. Lift the hard disk assembly 5 out of the bay 6 (***Figure 2d***).
6. Remove the screws 7 - 8 and the hard disk bracket 9 from the hard disk 10 (***Figure 2e***).
7. Reverse the process to install a new hard disk (do not forget to replace all the screws and bottom cover).

a.



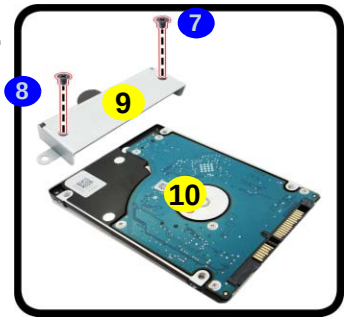
d.



b.

c.

e.



9. HDD Bracket
10. HDD

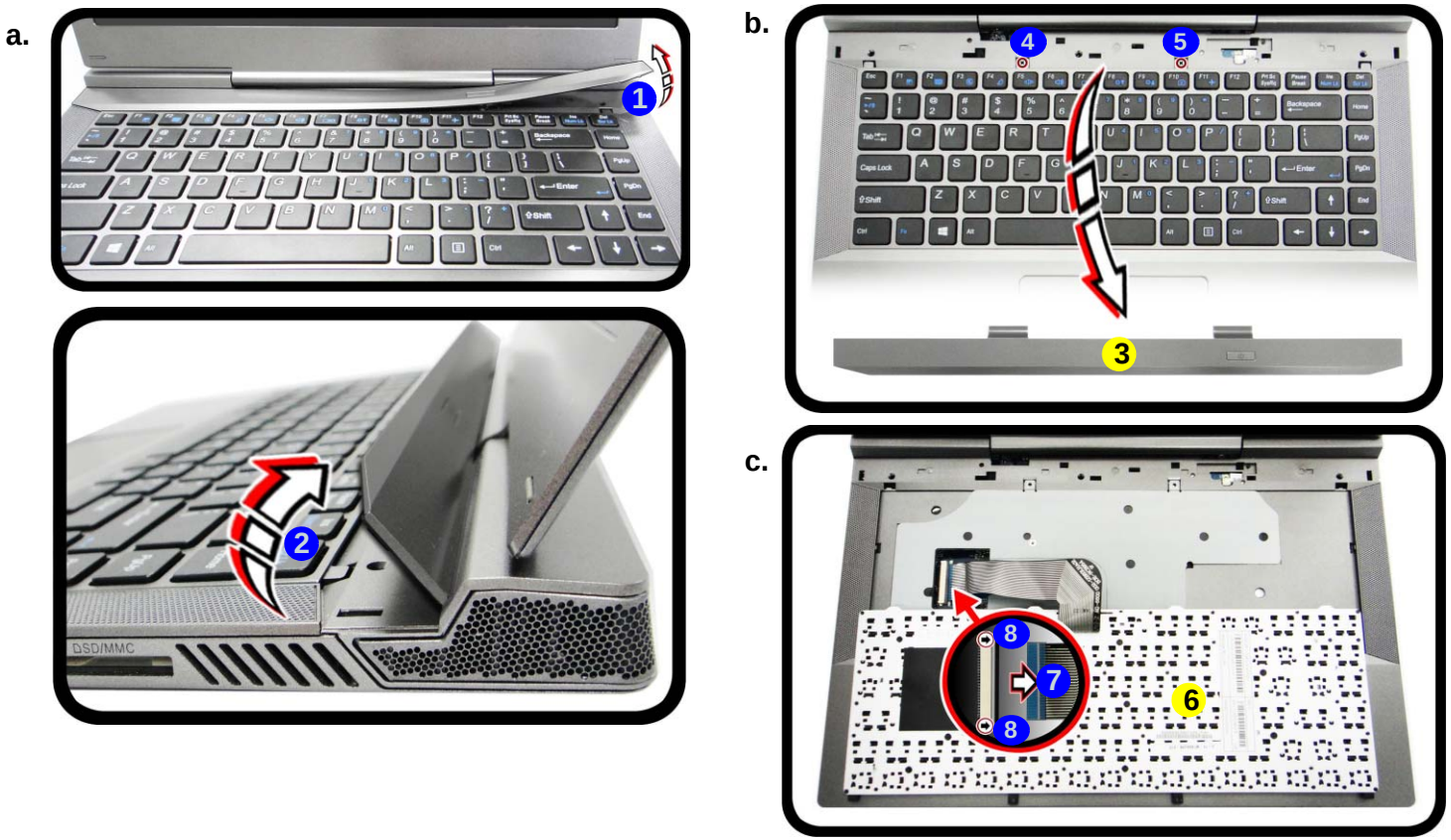
- 3 Screws

Removing the Keyboard

1. Turn **off** the computer, turn it over, remove the battery (*page 2 - 5*).
2. Lift the center cover at point 1 toward the direction of the arrow 2 (*Figure 4a*).
3. Remove the center cover module 3 and screws 4 - 5 (*Figure 4b*).
4. Carefully lift the keyboard 6 up, being careful not to bend the keyboard ribbon cable 7 (*Figure 4c*).
5. Disconnect the keyboard ribbon cable from the locking collar socket 8 (*Figure 4c*).

Figure 3
Keyboard Removal

a. Lift the center cover.
b. Remove the center cover and screws.
c. Disconnect the keyboard ribbon cable from the locking collar socket.



3.Center Cover Module
6.Keyboard

- 2 Screws

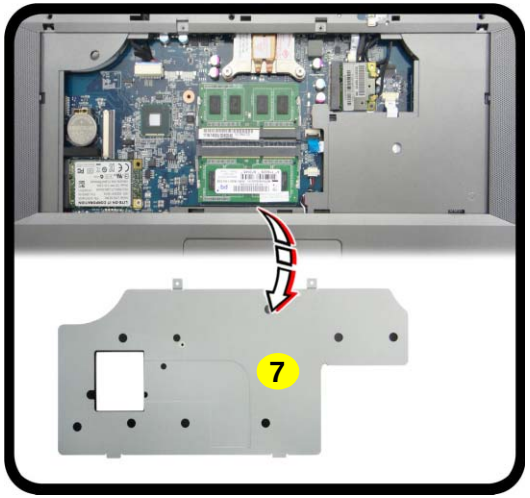
Figure 4
Keyboard Removal (cont'd.)

d. Remove the keyboard.
e. Remove the keyboard shielding plate.

6. Carefully lift up the keyboard 6 off the computer (***Figure 5d***).
7. Remove the keyboard shielding plate 7 up and off the bottom case (***Figure 5e***).
8. Reverse the process to install a new keyboard.

d.

e.



7.Keyboard Shielding Plate

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 8GB. The SO-DIMM modules supported are 1024MB and 2048MB **DDRIII** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

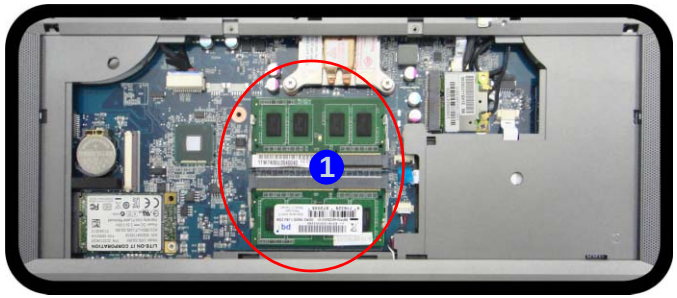
Memory Upgrade Process

1. Turn **off** the computer, turn it over, remove the bottom cover, battery (***page 2 - 5***) and keyboard (***page 2 - 8***).
2. The RAM modules will be visible at point 1 on the mainboard (***Figure 6a***).
3. Gently pull the two release latches (2 & 3) on the sides of the memory socket in the direction indicated by the arrows (***Figure 6b***). The RAM module 4 will pop-up, and you can then remove it.

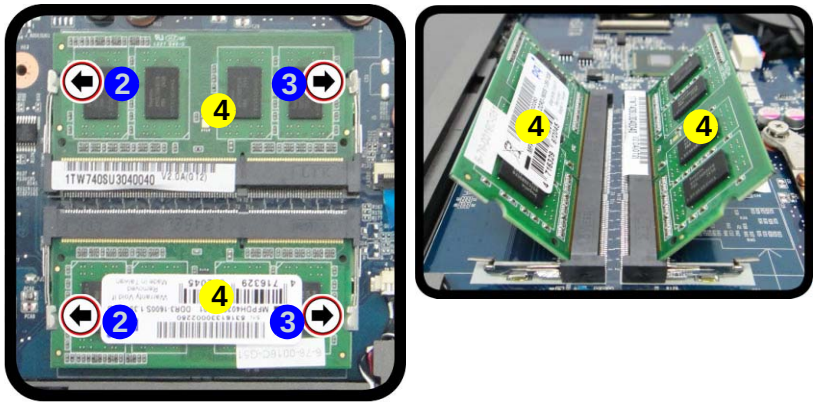
Figure 5
RAM Module Removal

a. The RAM modules will be visible at point 1 on the mainboard.
b. Pull the release latches to remove the module(s).

a.



b.



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

4. RAM

Figure 6
Wireless LAN Module Removal

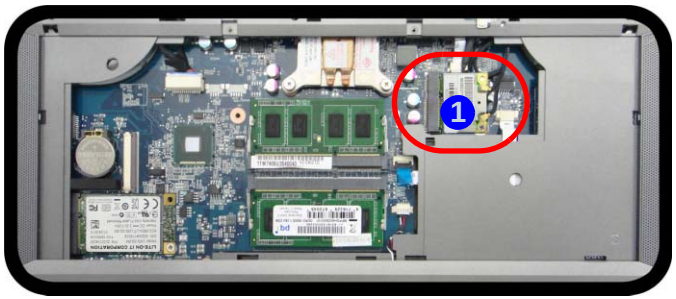
a. Locate the WLAN.
b. Disconnect the cables and remove the screw.
c. The WLAN module will pop up.

Note: Make sure you reconnect the antenna cable to the "1 + 2" socket (***Figure 7b***).

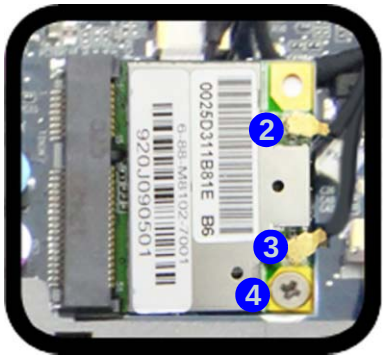
Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over, remove the battery (***page 2 - 5***) and keyboard (***page 2 - 8***).
2. The Wireless LAN module will be visible at point 1 on the mainboard and keyboard ribbon cable under the Wireless LAN module (***Figure 7a***).
3. Carefully disconnect the cable 2 & 3, and then remove the screw 4 (***Figure 7b***)
4. The Wireless LAN module 5 (***Figure 7c***) will pop-up, and you can remove it from the computer.

a.



b.



c.

5.Wireless LAN Module

- 1 Screw

Removing the mSATA Module

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

Figure 7
mSATA Module Removal

a. Locate the mSATA module.
b. Remove the screw.
c. The module will pop-up.
d. Remove the mSATA module.

a.

b.

c.

d.

3. mSATA Module

- 1 Screw

Appendix A:Part Lists

This appendix breaks down the ***W740SU*** 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.

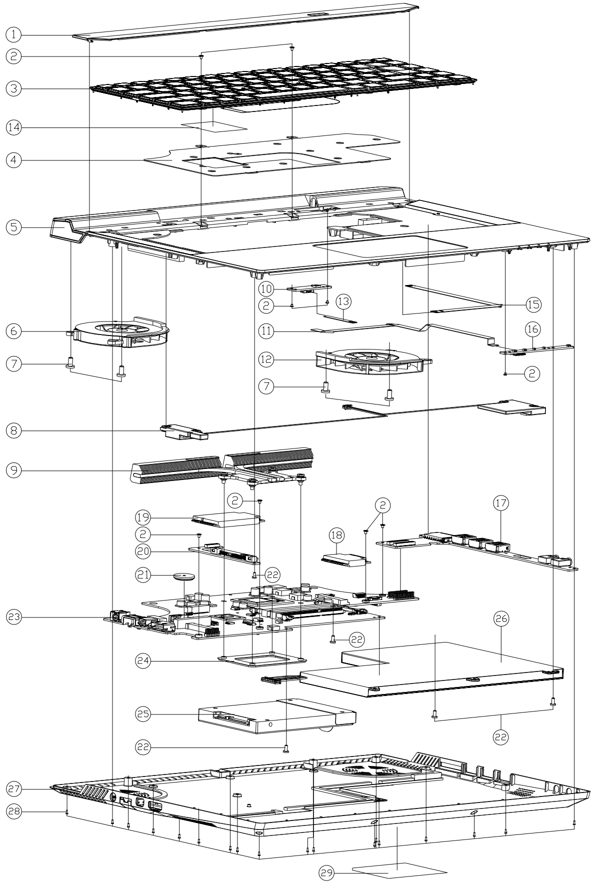
Part List Illustration Location

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

Table A - 1
Part List Illustration Location

Part	
Top-Bottom	*page A - 3*
HDD	*page A - 4*
LCD	*page A - 5*

Top-Bottom

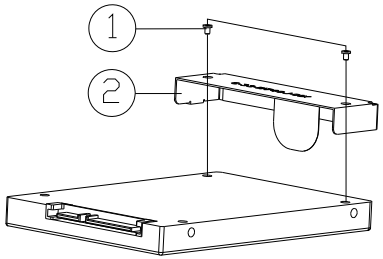


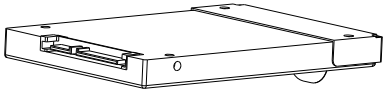
ITEM	PART NAME	PART NO	REMARK
1	CENTER COVER MODULE W740SU	6-42-W7402-102	
2	SCREW M2*3L KI NI ICT NY (DD=ø4.5,DT=0.4)	6-35-B1120-3RE	
3	K/B USA(BLACK)& FRAME(US) MODULE W740SU	6-79-W740SU0K-010	
4	KB SHIELD MODULE FOR W740SU	6-33-W7407-102	
5	IDLE 24H TOP CASE MODULE ASS'Y W740SU	6-79-W740SU02-010	
6	FAN MODULE (L) FOR W740SU	6-31-W740S-L02	
7	SCREW M2*4L KI BZ ICT NY	6-35-B6120-4RA	
8	SPK+CABLE FRONT R/L 20*13 2W 4Ω LT201359XM+TYPE 170MM/234MM W740SU	6-23-5W740-0S2	
9	CPU HEATSINK MODULE FOR W740SU	6-31-W740N-103	
10	POWER BUTTON BOARD V2.0A W740SU	6-77-W740C-D02A	
11	FFC LED TO MB (PITCH=0.5,12PIN,L=212) W740SU	6-43-W7400-021	
12	FAN MODULE (R) FOR W740SU	6-31-W740S-R02	
13	FFC POWER TO MB (PITCH=1,4PIN,L=35) W740SU	6-43-W7400-031	
14	MYLAR 50*50*0.15 FOR W740SU	6-40-W7402-051	
15	FFC CLICK TO MB (PITCH=1.0,6PIN,L=182) W740SU	6-43-W7400-011	
16	LED BOARD V2.0A W740SU	6-77-W7404-D02A	
17	FUNCTION I/O BOARD V3.0 W740SU	6-77-W7401-D03	
18	WLAN+BT COMBO XAVI XB70ME2 (RTL8723AE) 802.11BGN 1X1 (PCI-E) +BT4.0 LE (USB) +REALTEK BT SOFTWARE HALF MINI-CARD	6-88-W345F-8700	
18	WLAN LITEON WN6601LH-CC (RTL8188EE) 2 ANT. 802.11BGN 1X1 HALF MINI-CARD PCI-E FOR WOWLAN P370SM	6-88-P3702-9400	
18	WLAN+BT COMBO LITEON WCBN601LH-CC (RTL8723AE) 802.11BGN 1X1 (PCI-E) +BT4.0 LE (USB) +REALTEK BT SOFTWARE HALF MINI-CARD	6-88-W345F-9400	
18	WLAN 802.11 AGN INTEL TAYLOR PEAK (WIFI LINK 6205) 62205ANHMWG 2X2 HALF MINI-CARD PCI-E NOV P170HM	6-88-P1702-4200	
18	WLAN+BT COMBO INTEL ADVANCED-N 6235 (JACKSON PEAK 2) 6235ANHMWG 2X2 ABGN+BT 4.0 LE HALF MINI-CARD PCI-E	6-88-W25SF-4200	
18	WLAN AZUREWAVE AW-NE238H (RTL8188EE) 2 ANT. 802.11BGN 1X1 HALF MINI-CARD PCI-E FOR WOWLAN P370SM	6-88-P3702-7000	
19	MSATA3 SSD 32GB 3.3V 1A (LITEON P/N : LMS-32L6M) (CONTROLLER:MARVELL&FLASH: TOSHIBA)LMS-32L6M FW:DM5004	6-85-D4032-L02	
20	HDD BOARD V3.0 W740SU	6-77-W740N-D03	
21	BATTERY 3V 210MA CR2032 (MITSUBISHI)	6-23-62015-607	
22	SCREW M2*5L KI(T=0.8 D=4.0) BK/Z ICT NY	6-35-B6120-5R0	
23	MAIN BOARD V3.0(W/TPM) W740SU	6-77-W740SU00-D03	
23	MAIN BOARD V3.0(W/O TPM) W740SU	6-77-W740SU00-D03-1	
24	CPU SUPPORT SECC T=1.0MM W740SU	6-33-W740S-010	
25	W/O HDD ASS'Y W740SU	6-79-W740SU0J-010	
25	W/ HDD ASS'Y W740SU	6-79-W740SU0J-020	
26	BAT.P S LI 11.1V/4.8AH/53.28WH 3S2P SMP/CDSLIGHT(POLYMER) 980T/QA017F(TEXTURE) W740SU	6-87-W740S-42E1	
27	BOTTOM CASE MODULE FOR W740SU	6-39-W7403-012	
28	SCREW M2*6L KI(T=0.8 D=4.0) BK/Z ICT NY	6-35-B6120-6R0	
29	PRODUCT LABEL FOR W740SU	6-45-W740SU03-010	

Figure A - 1
Top-Bottom

HDD

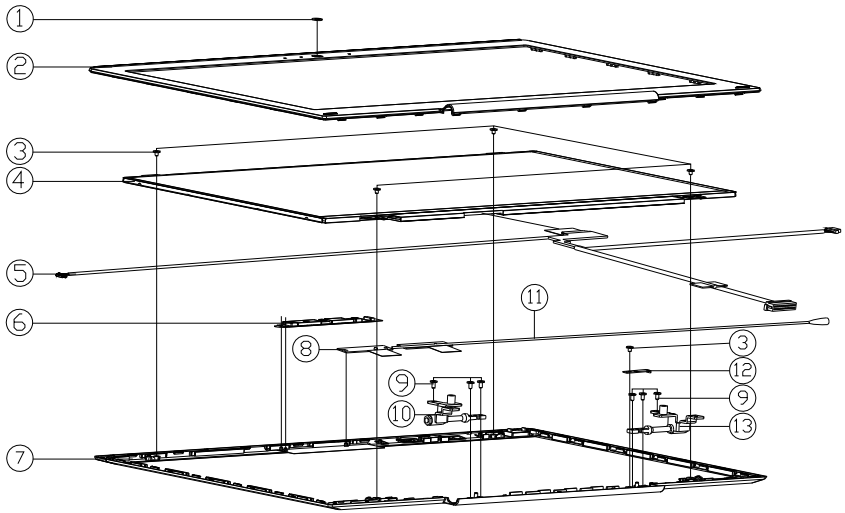
Figure A - 2
HDD





ITEM	PART NAME	PART NO	REMARK
1	SCREW M3*4L K1 BZ ICT NY (D=4.8 T=0.5)	6-35-B6130-4RB	
2	HDD BRACKET MODULE FOR W740SU	6-33-W740J-102	

LCD



ITEM	PART NAME	PART NO	REMARK
1	CCD LENS (D=6MM(PMMA) W740SU	6-42-W740T-010	
2	LCD FRONT COVER MODULE (D+P)W740SU	6-39-W7401-012	
3	SCREW M2*2L I BZ ICT GRY-PATCH NY (T=0.5 D=4)	6-35-C2120-2R0	
4	LCD 14.0" HD AU B140XTN02.4 (GLARE TYPE) (EDP) (LED 30PIN	6-50-J8130-G00	
4	LCD 14.0" FHD AU B140HAN01.1 ((EDP) (LED 32PIN	6-50-JB232-G00	
5	[illegible]	6-43-W7401-012-A	
6	[illegible]	6-88-W740C-4901	
7	LCD BACK COVER MODULE (D+P)W740SU	6-39-W7401-022	
8	[illegible]	6-23-7W740-011	
9	SCREW M2*4L KI BZ ICT NY	6-35-B6120-4RA	
10	LCD HINGE L (SK7)W740SU	6-33-W7401-0L1	
11	[illegible]	6-23-7W740-021	
12	LCD BACKET W740SU	6-33-W7401-010	
13	LCD HINGE R (SK7)W740SU	6-33-W7401-0R1	

Figure A - 3
LCD

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the ***W740SU*** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

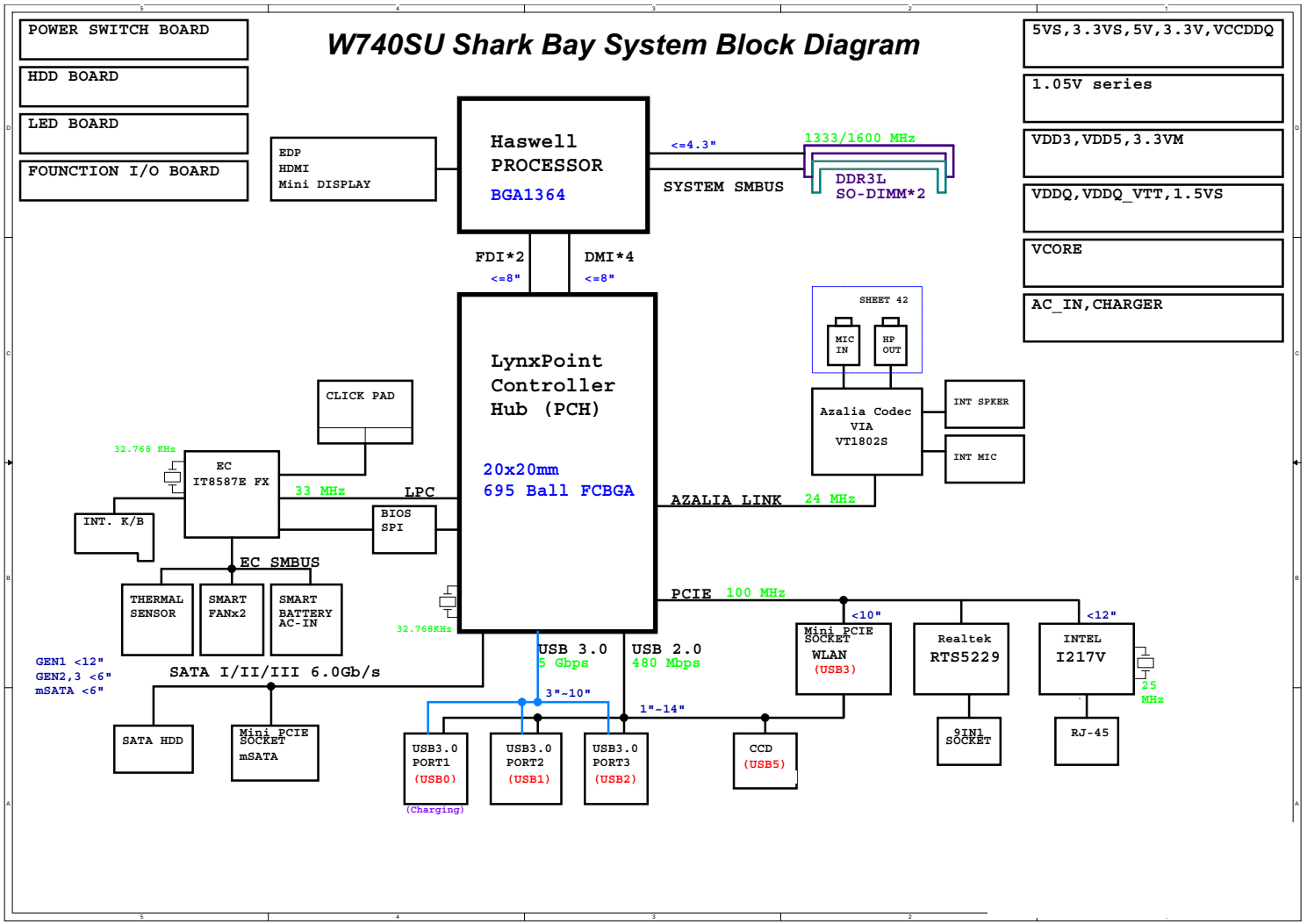
Table B - 1
SCHEMATIC DIAGRAMS

Version Note

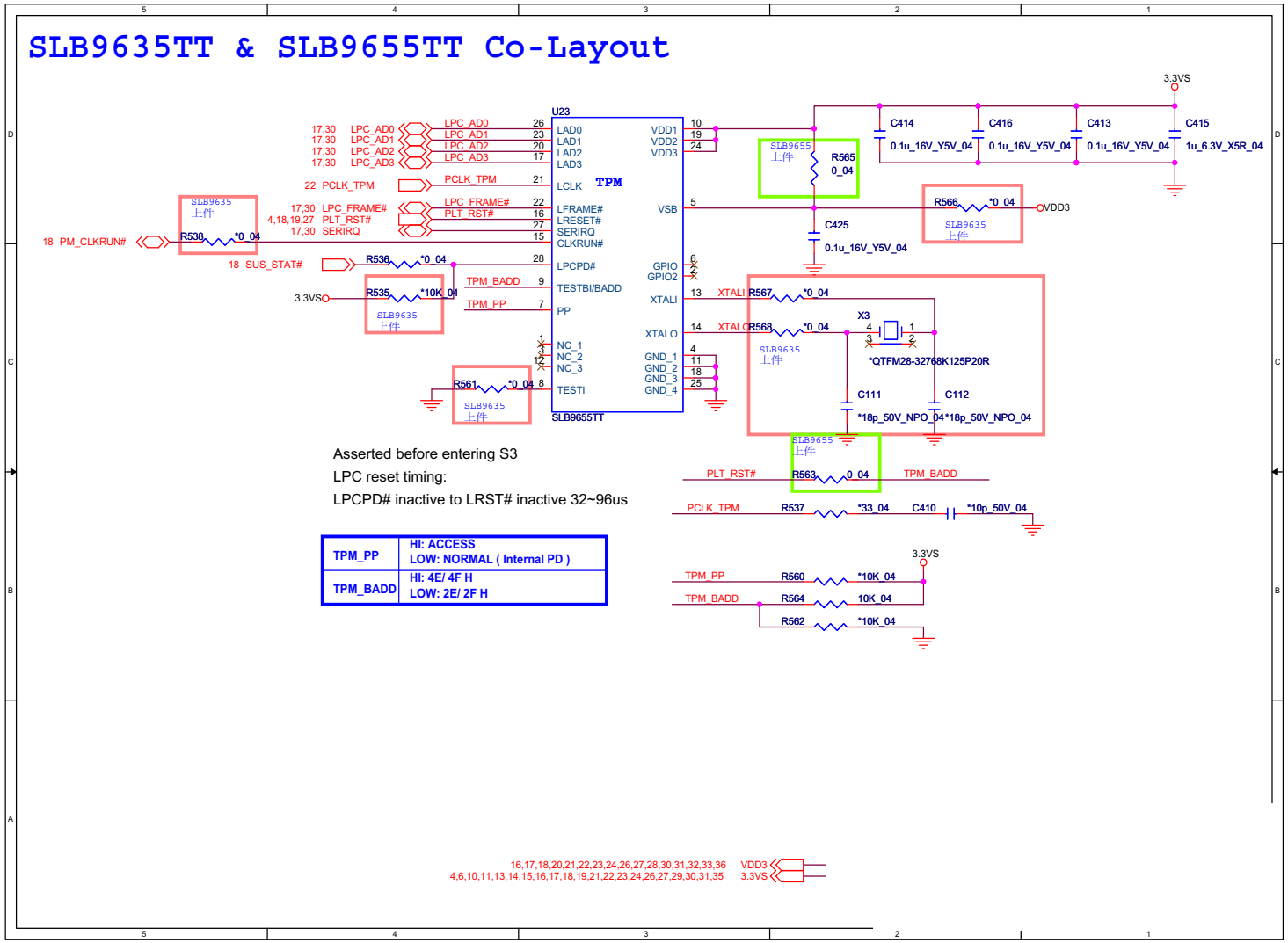
The schematic diagrams in this chapter are based upon version 6-7P-W7405-004. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 42
System Block Diagram



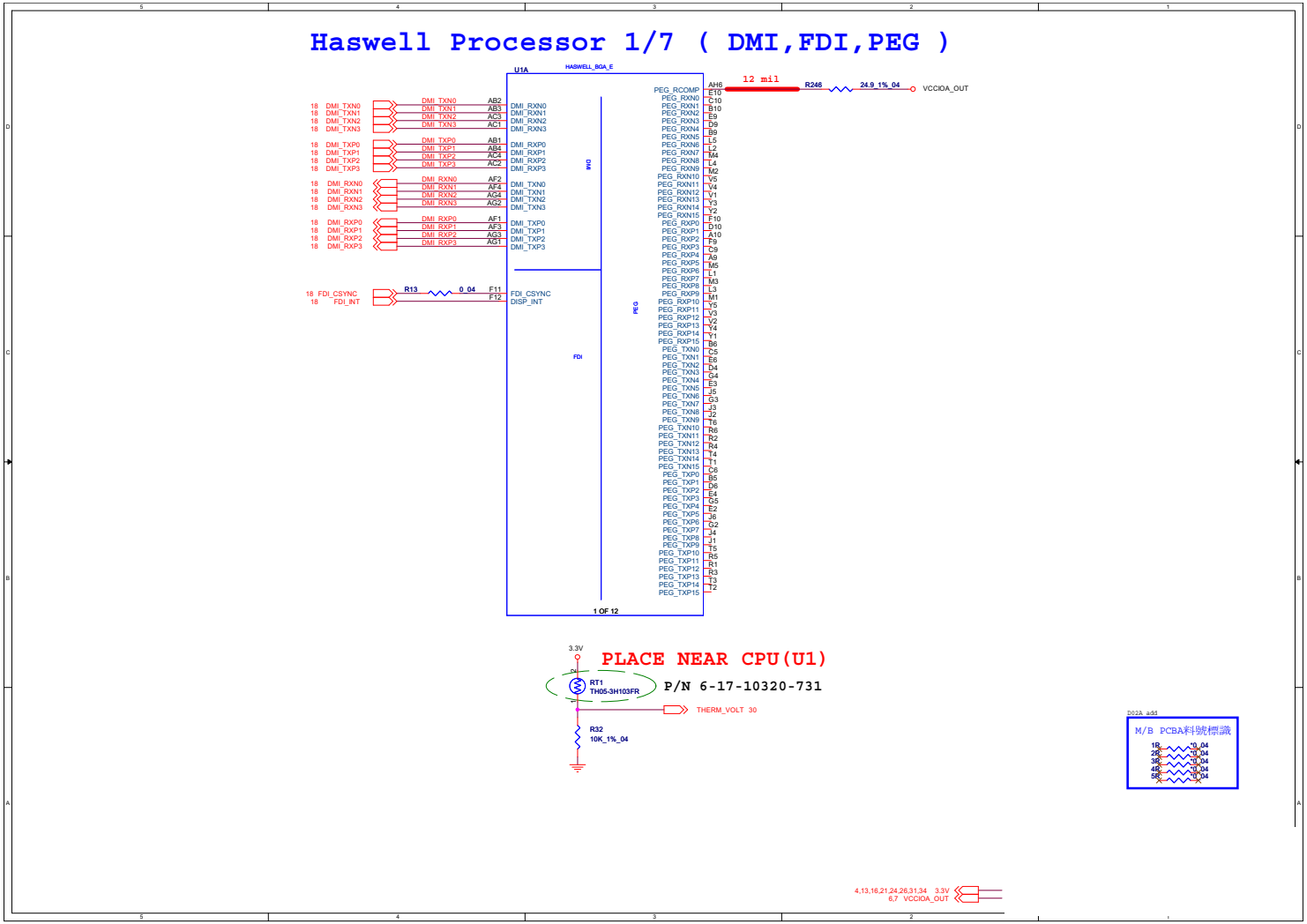
TPM



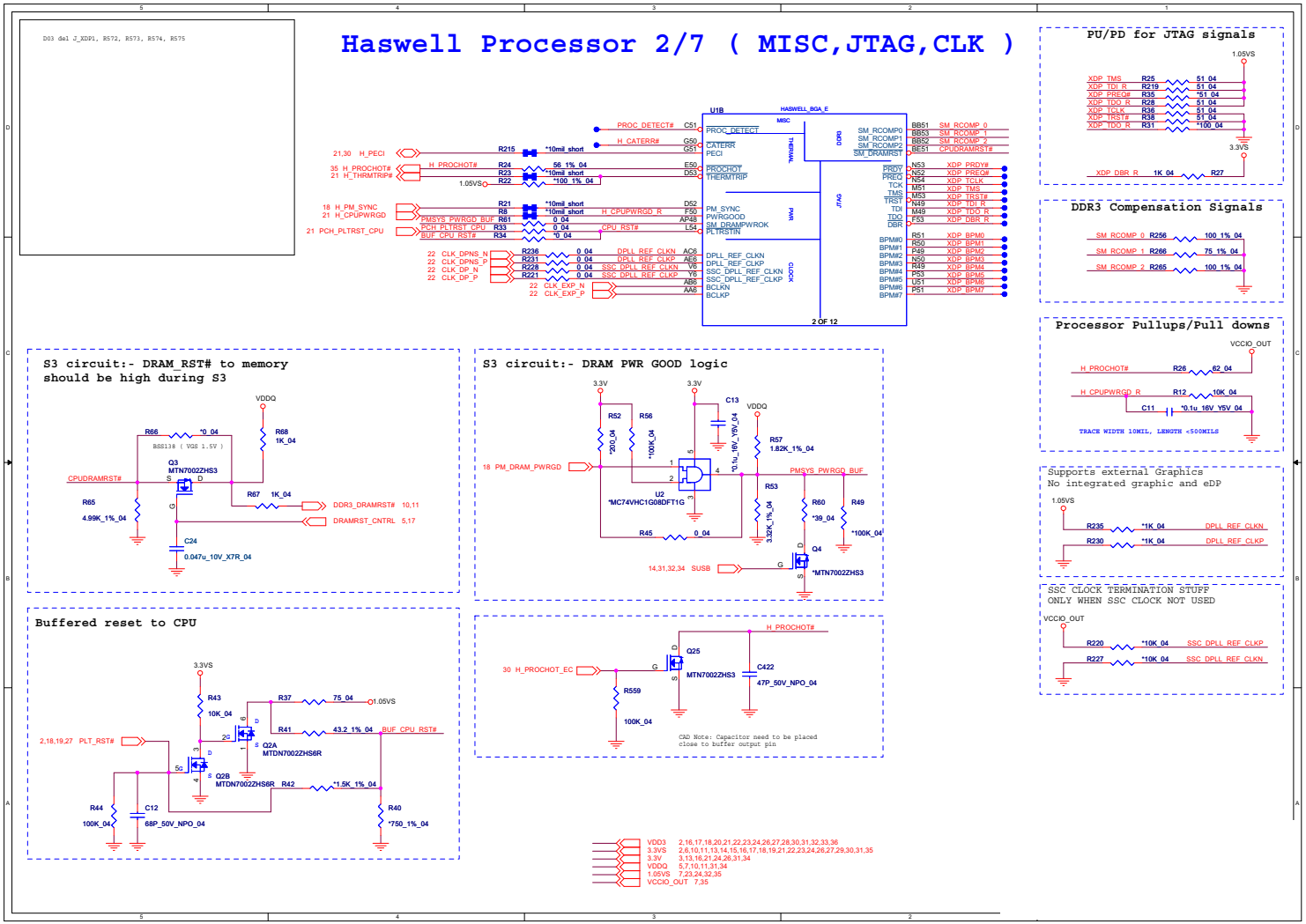
Sheet 2 of 42
TPM

Processor 1/7-DMI, FDI, PEG

Sheet 3 of 42
Processor 1/7-DMI, FDI, PEG



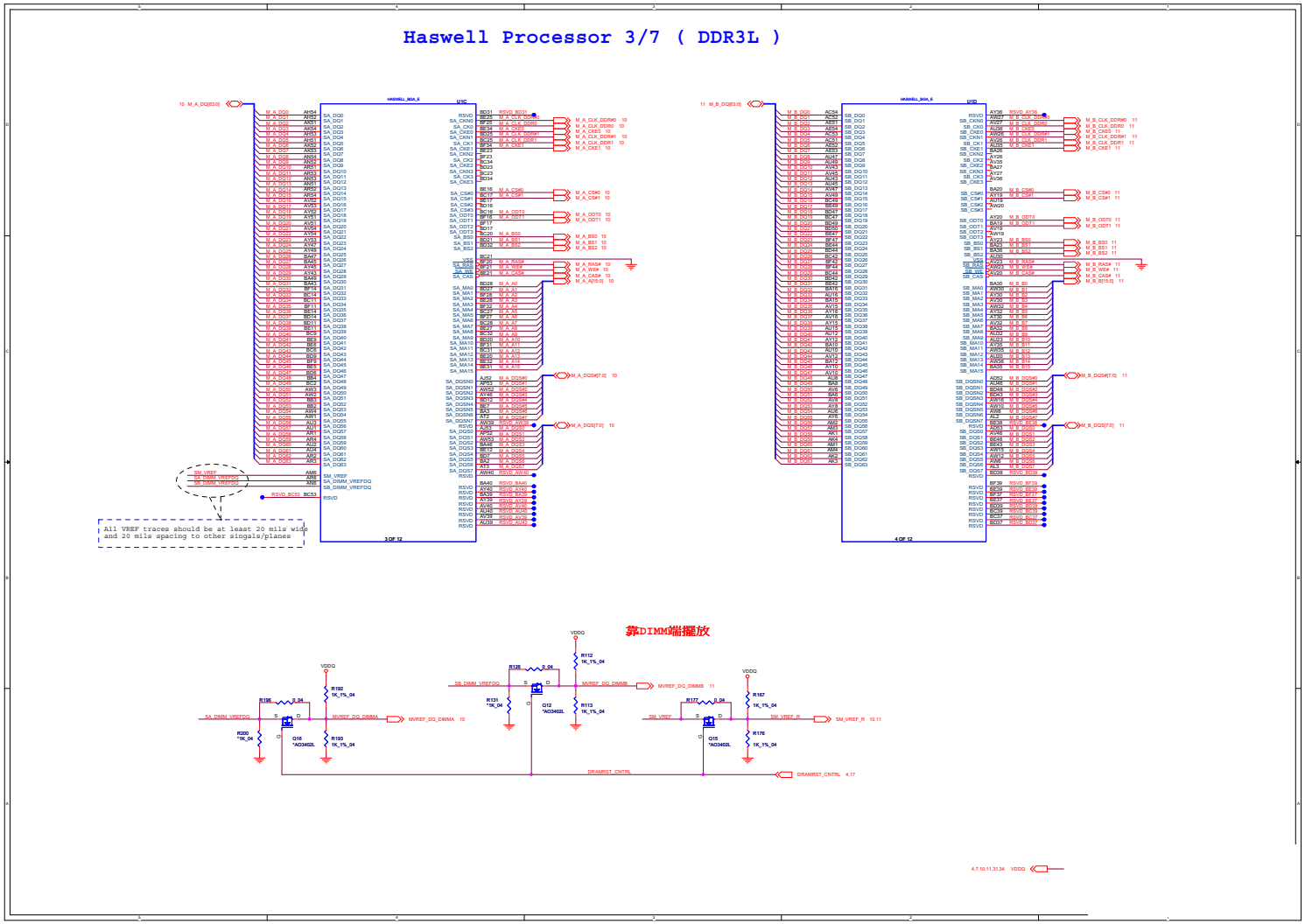
Processor 2/7- CLK, MISC



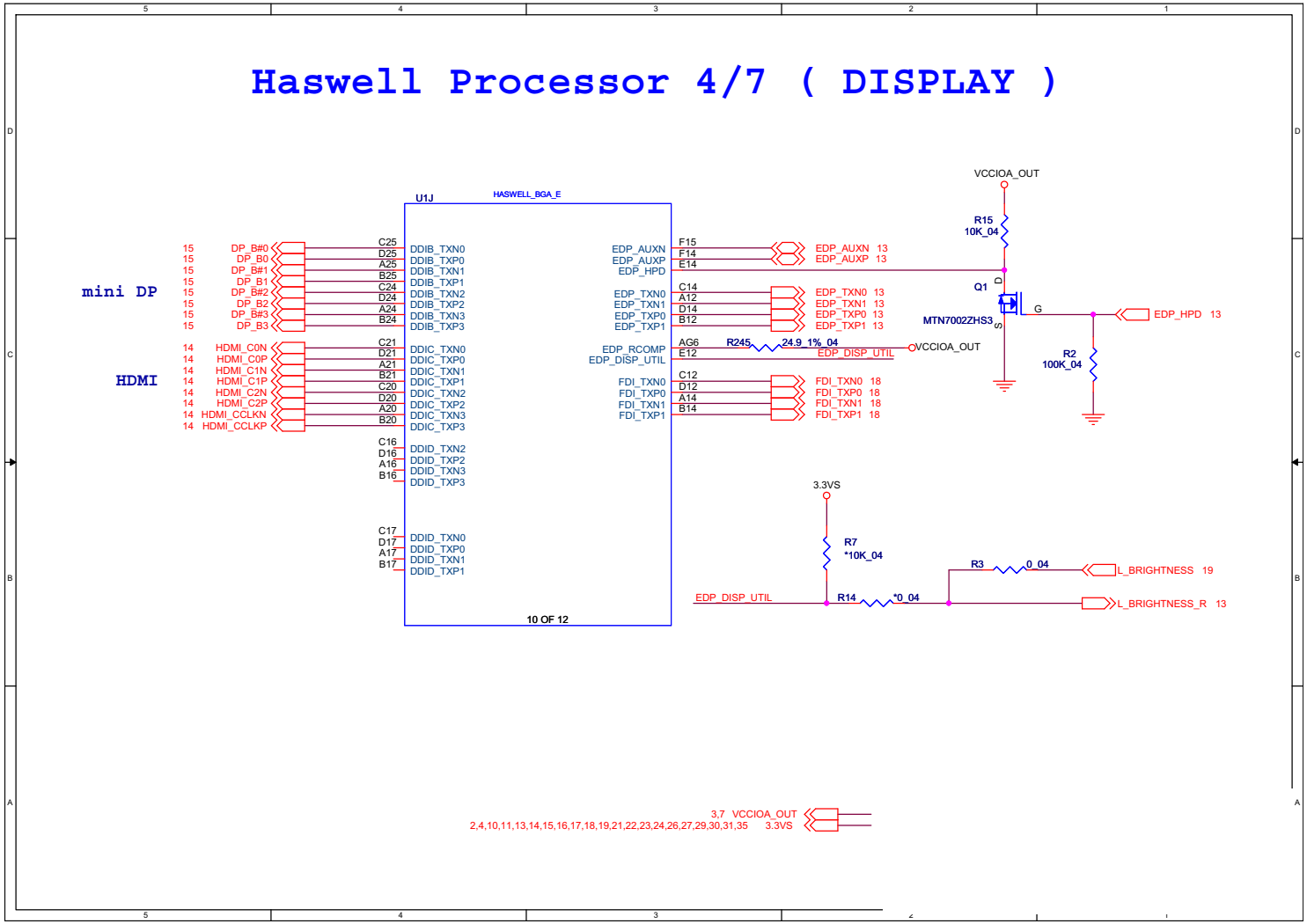
Sheet 4 of 42
Processor 2/7-CLK, MISC

Processor 3/7- (DDR3)

Sheet 5 of 42
Processor 3/7-
(DDR3)



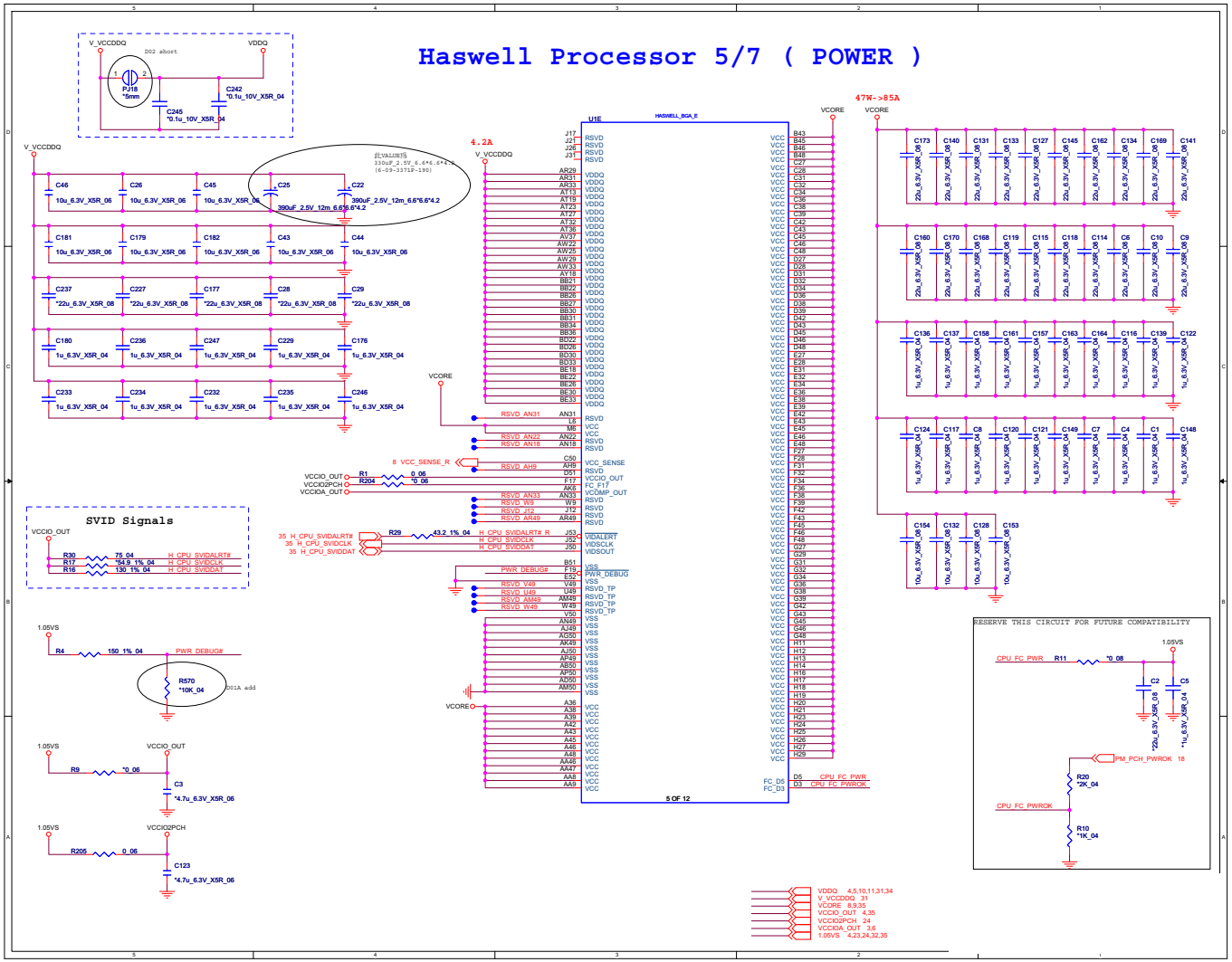
Processor 4/7- Display



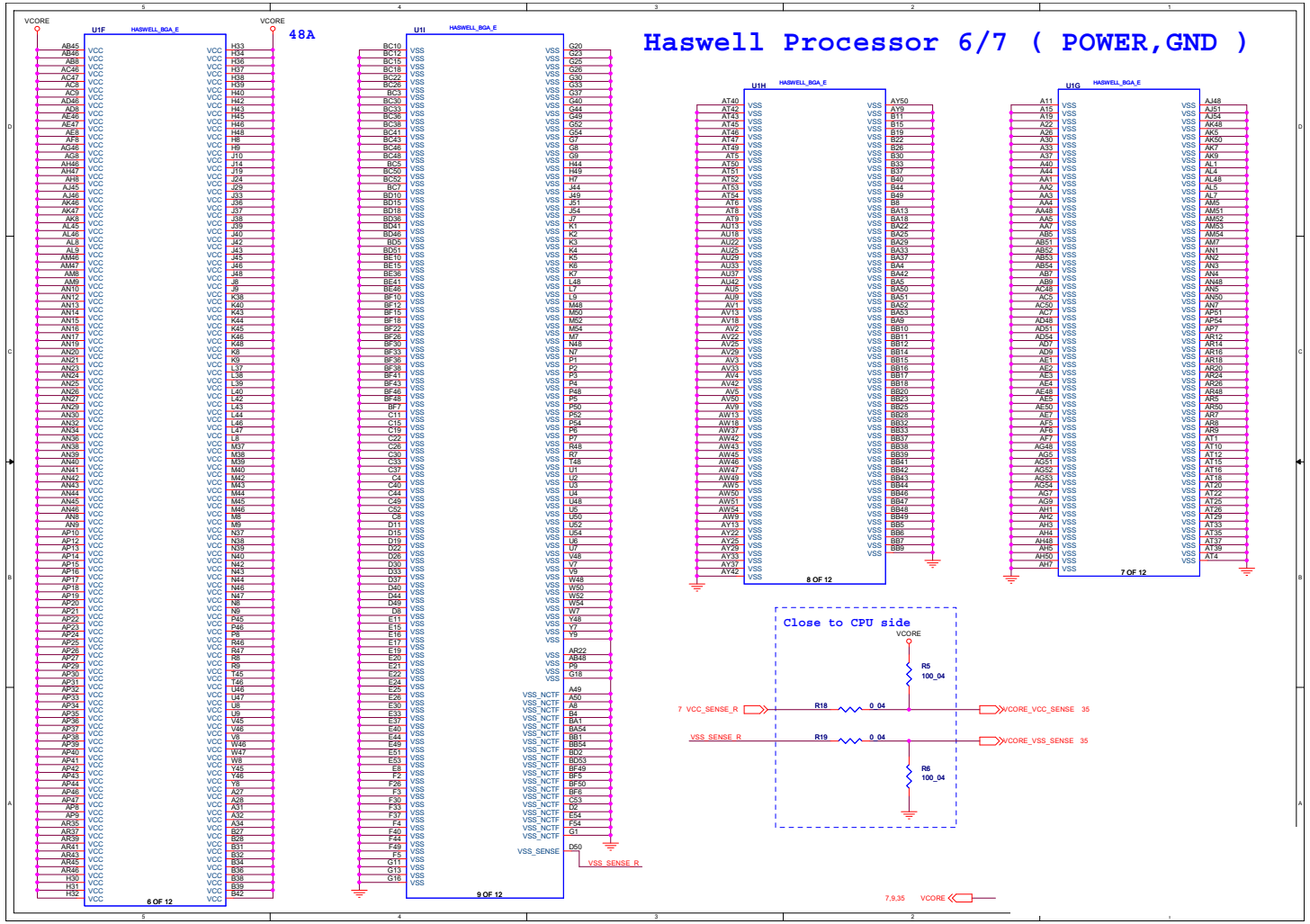
Sheet 6 of 42
Processor 4/7-
Display

Processor 5/7- Power

Sheet 7 of 42
Processor 5/7-
Power



Processor 6/7- GND

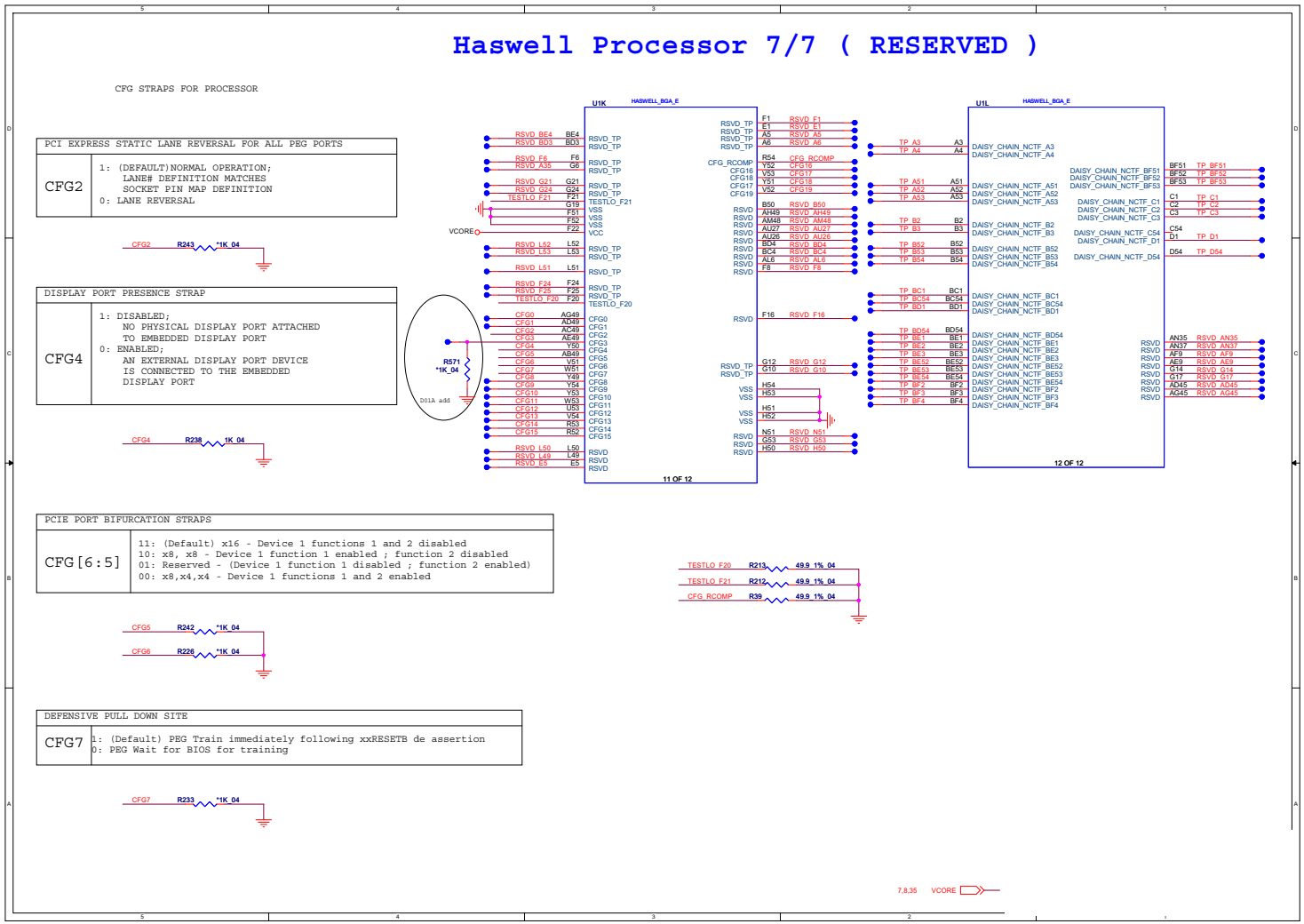


Sheet 8 of 42
Processor 6/7- GND

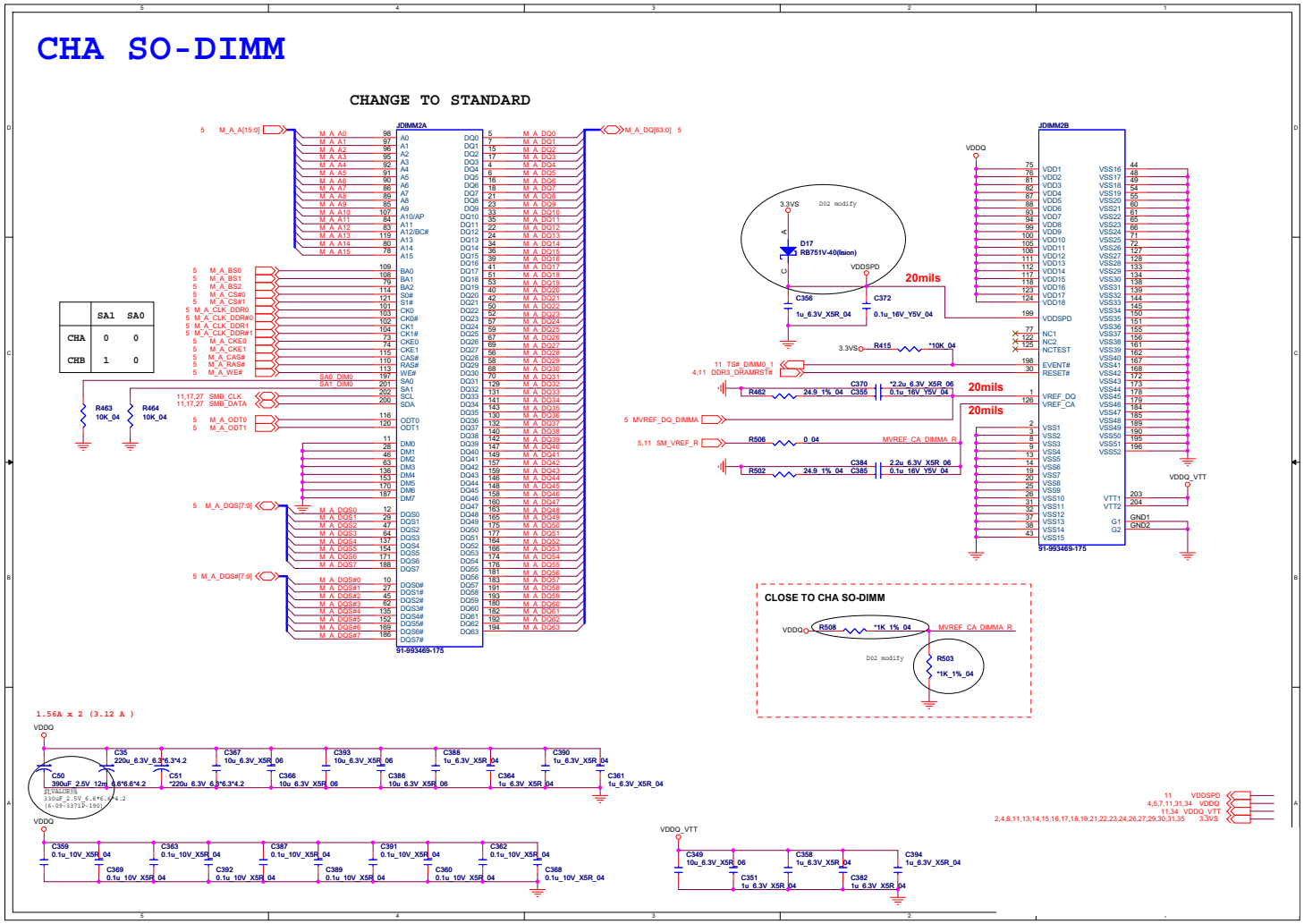
B.Schematic Diagrams

Processor 7/7- RSVD

Sheet 9 of 42
Processor 7/7-RSVD



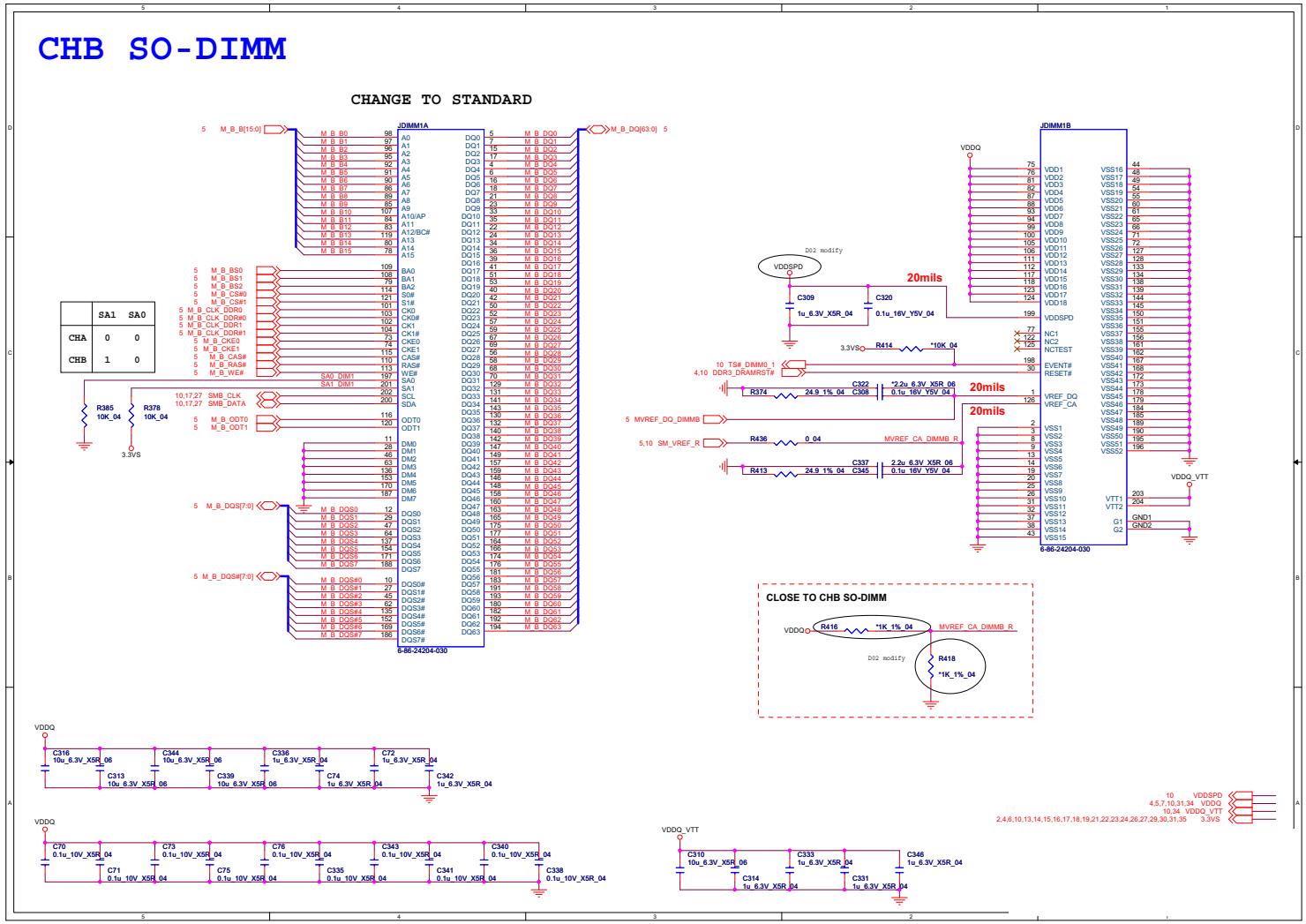
DDR3 SO-DIMM_0



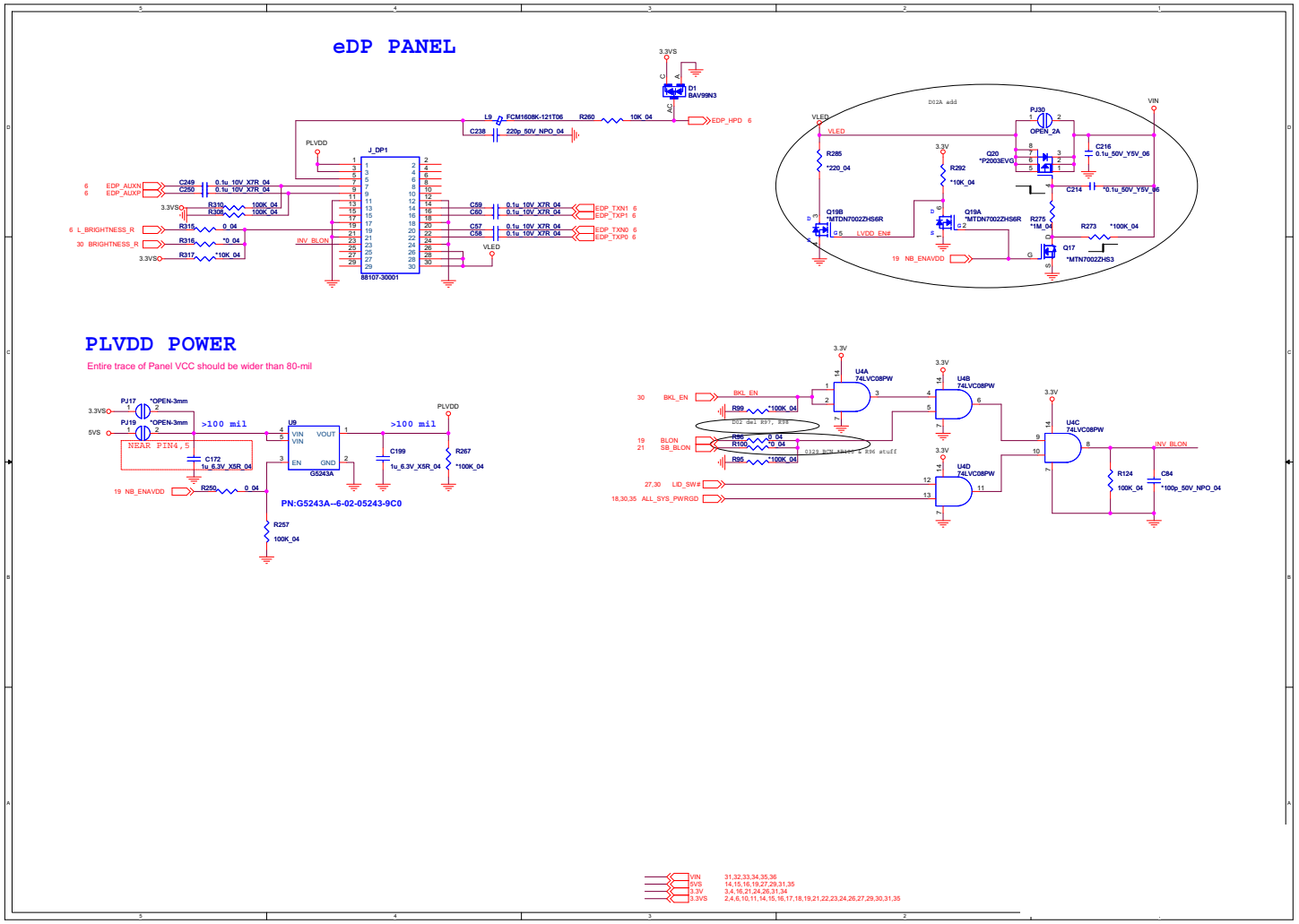
Sheet 10 of 42
DDR3 SO-DIMM_0

DDR3 SO-DIMM_1

Sheet 11 of 42
DDR3 SO-DIMM_1



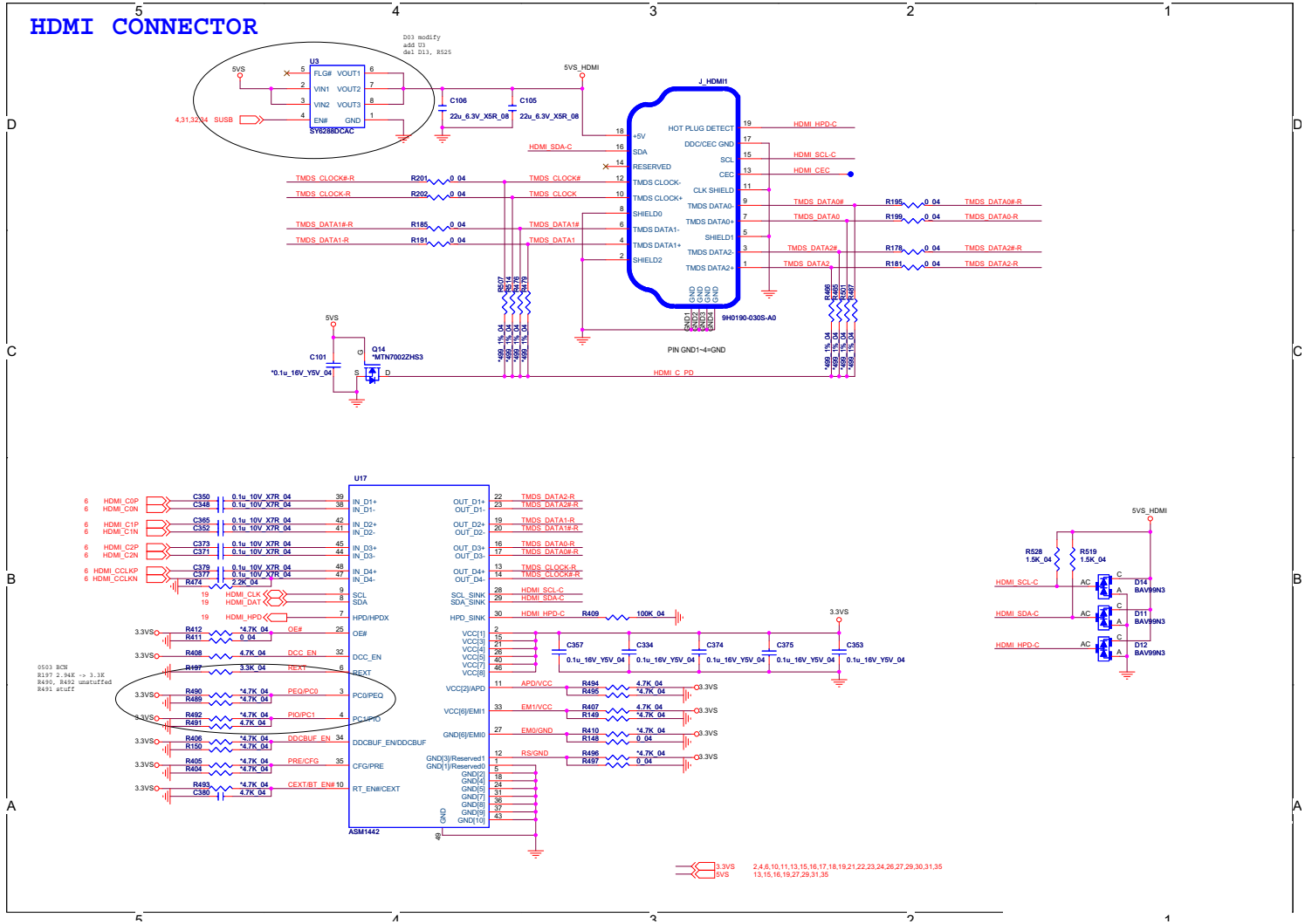
PANEL



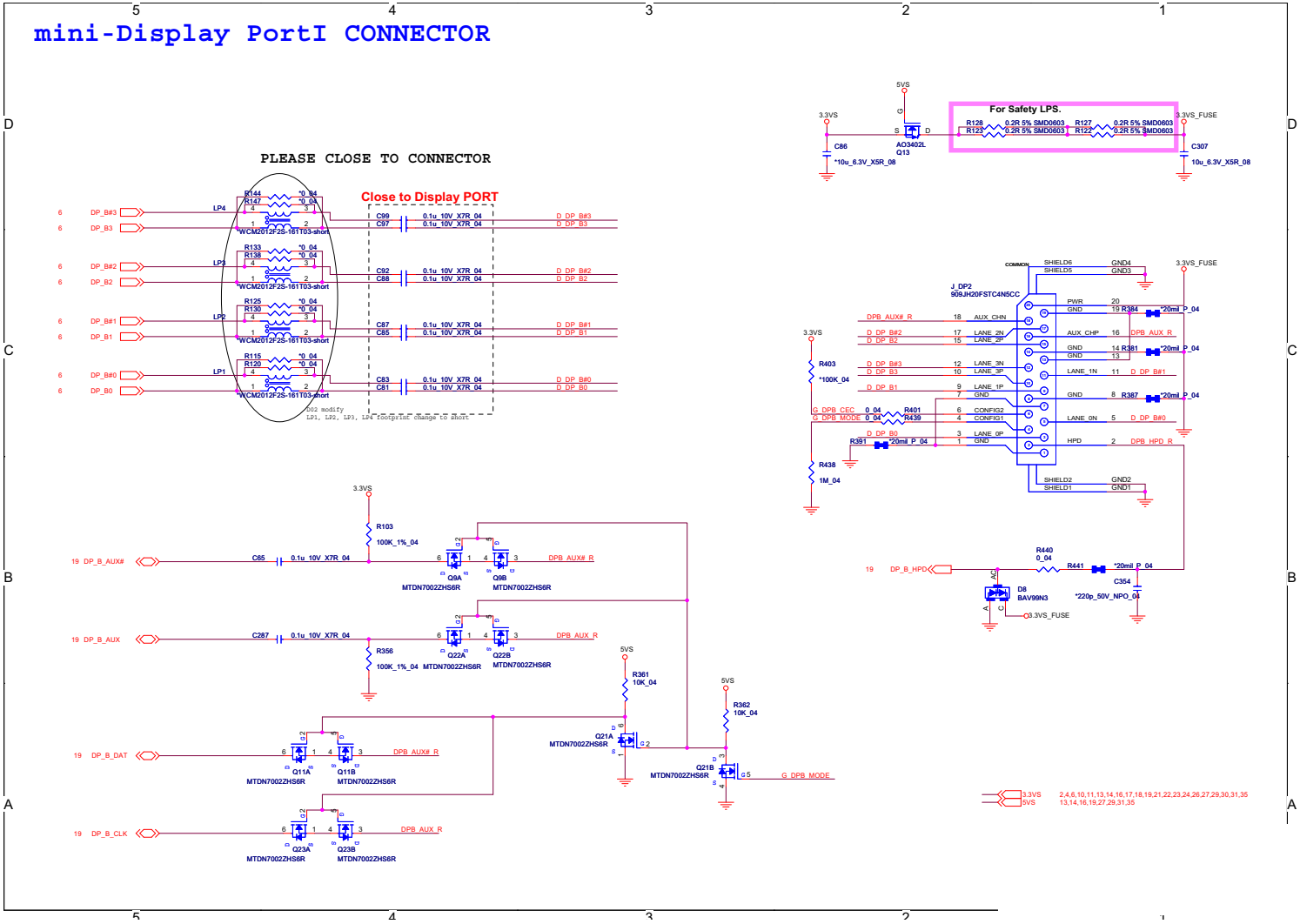
Sheet 12 of 42
PANEL

HDMI

Sheet 13 of 42
HDMI



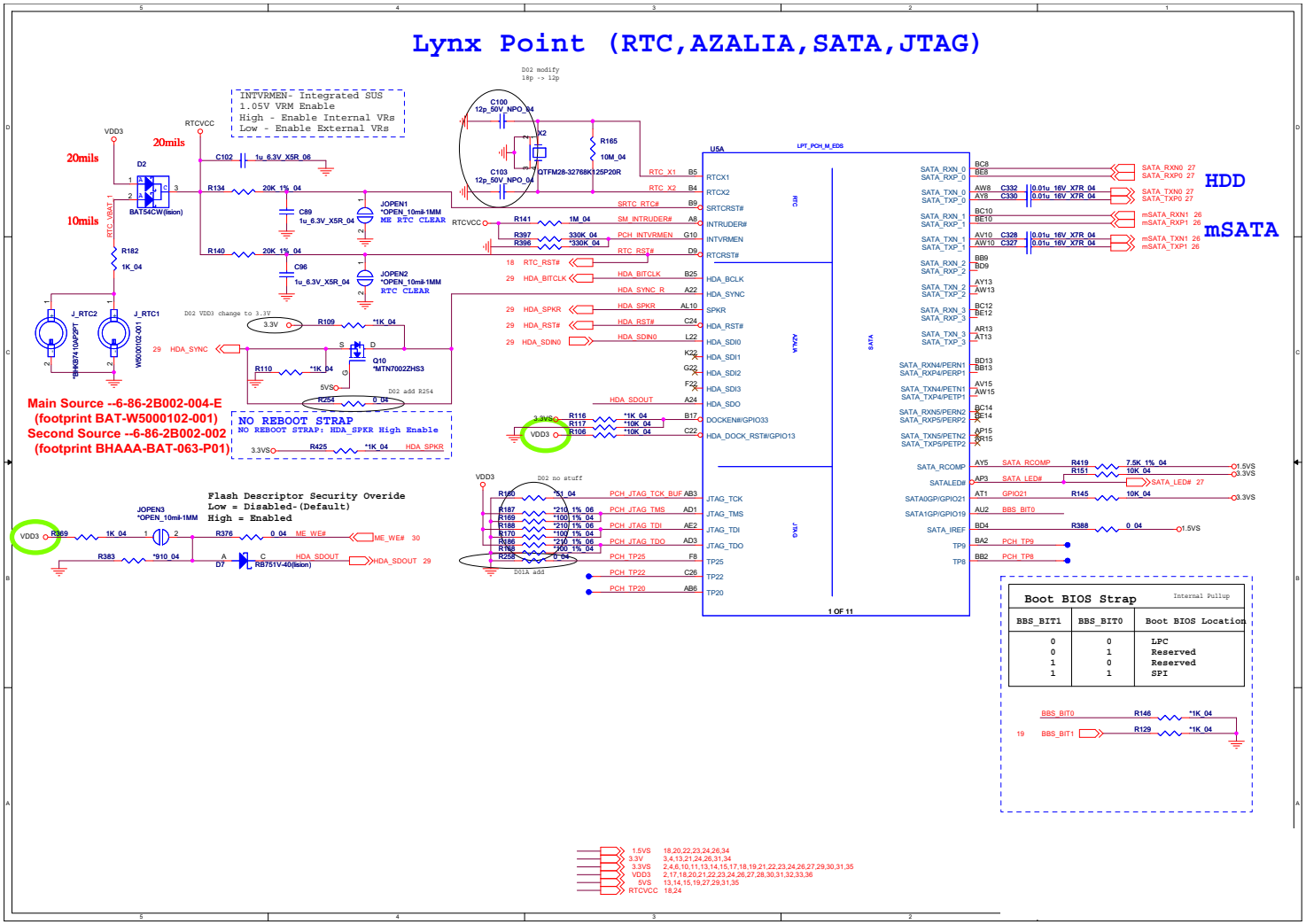
Mini Display Port



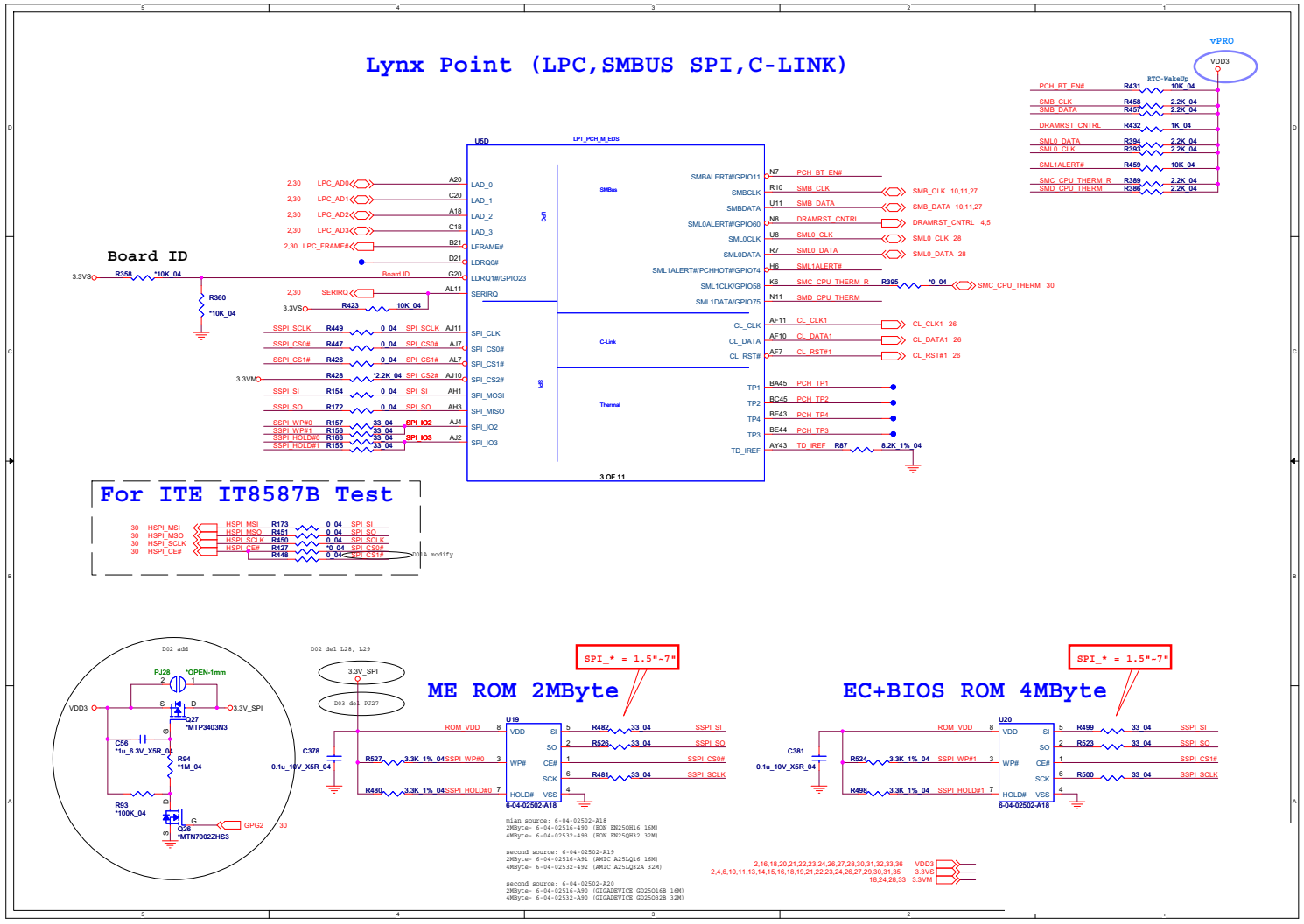
Sheet 14 of 42
Mini Display Port

PCH 1/10 - RTC, HDA, SATA

Sheet 15 of 42
PCH 1/10 - RTC, HDA, SATA



PCH 2/10 - LPC, SMBUS SPI, CL



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PCH 2/10 - LPC, SMBUS, SPI, CL

PCH 3/10 - DMI, FDI, PWRGD

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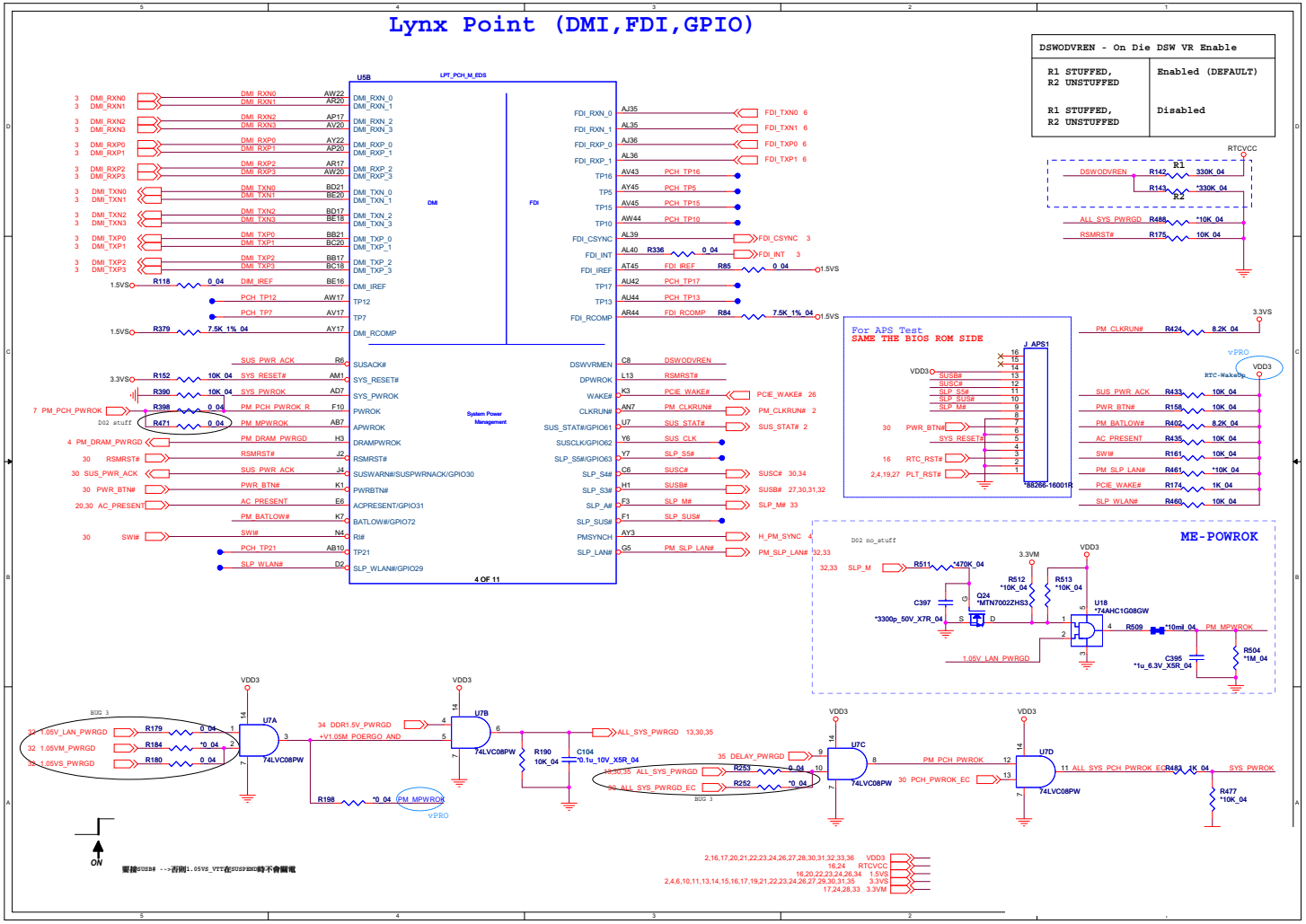
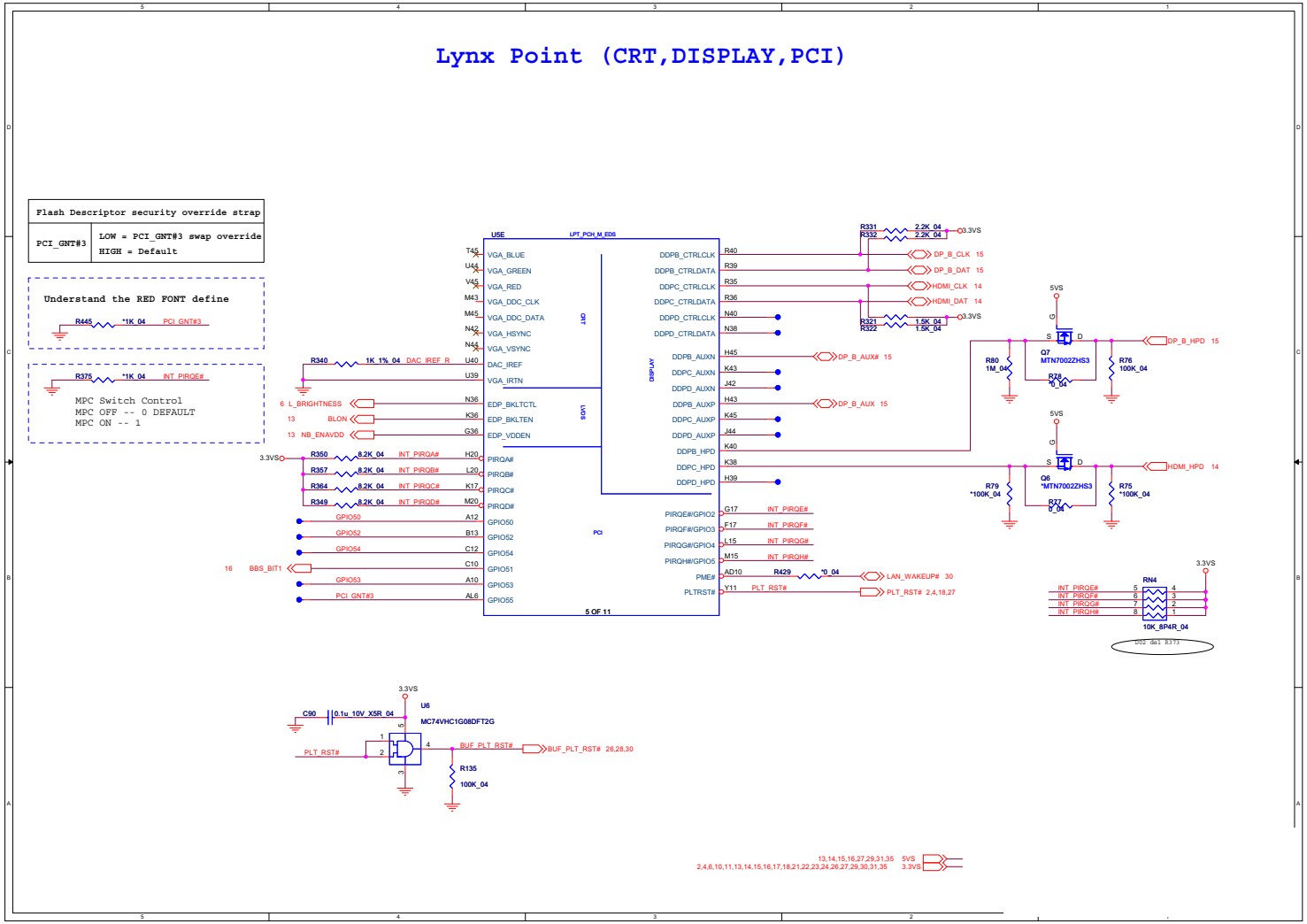
PCH 3/10 - DMI, FDI, PWRGD



PCH 4/10 - CRT, Display, PCI



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PCH 4/10 - CRT, Display, PCI

B.Schematic Diagrams

PCH 5/10 - PCIe, USB

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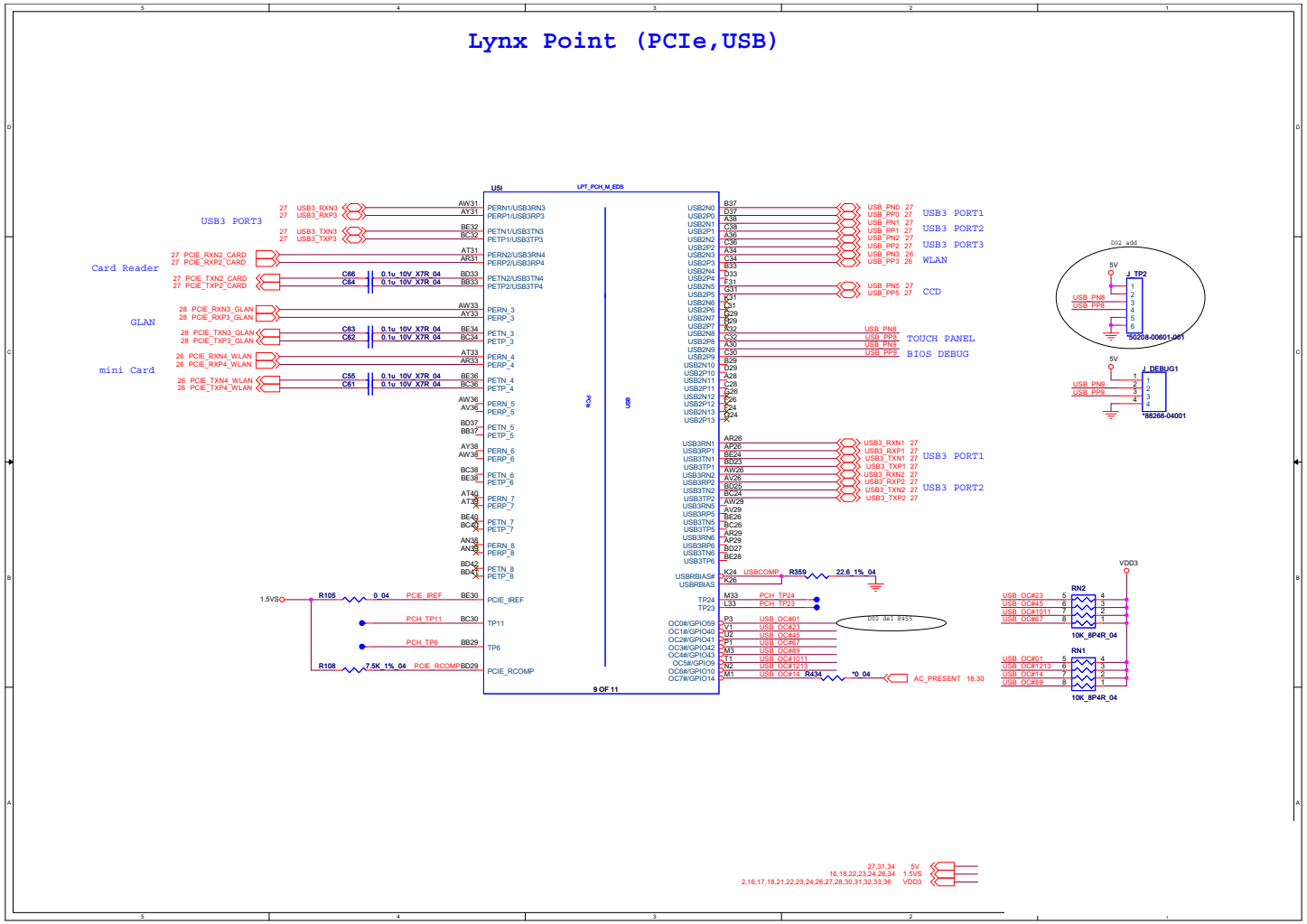
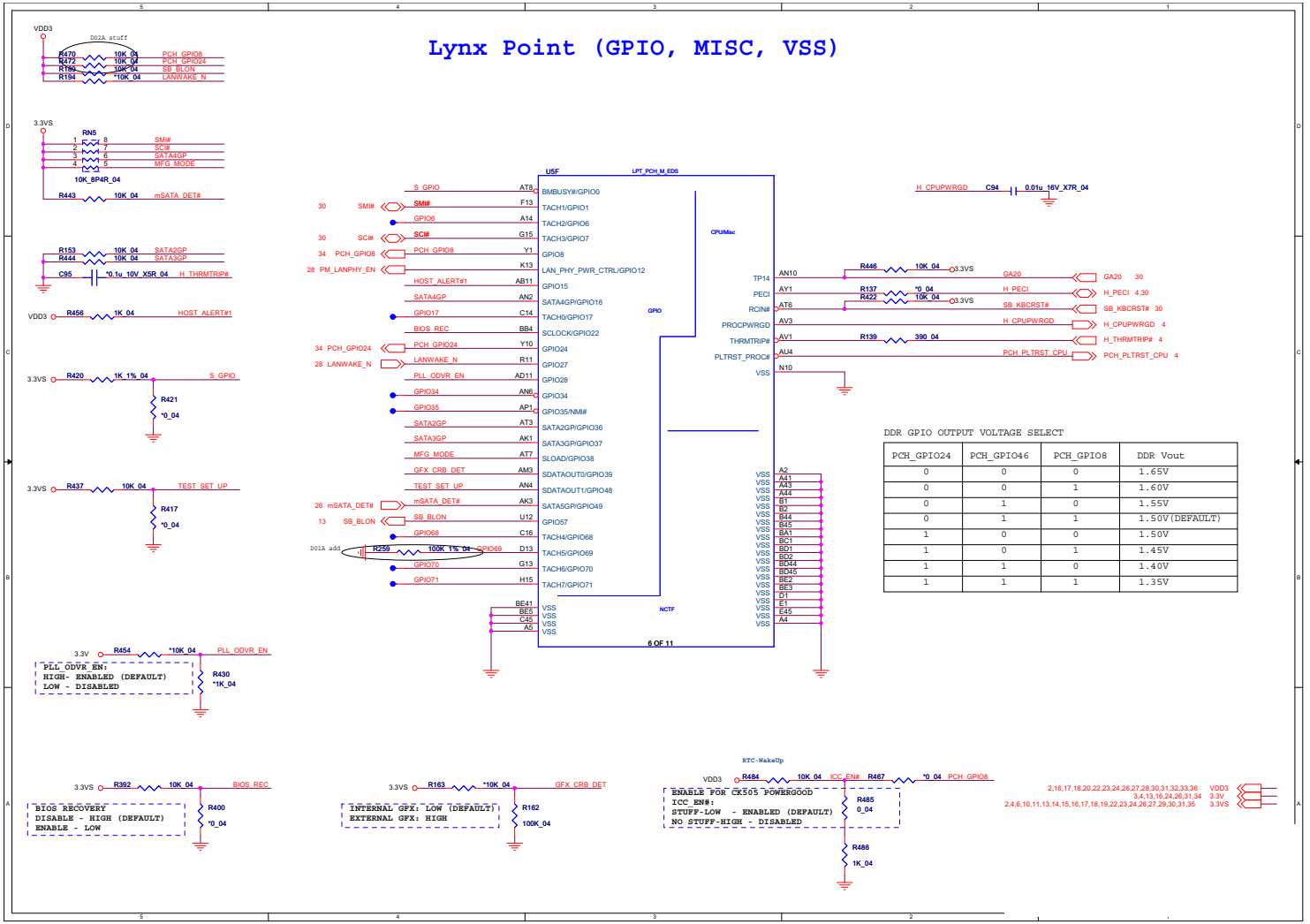
PCH 5/10 - PCIe, USB



PCH 6/10 - GPIO, Misc



Sheet 20 of 42
PCH 6/10 - GPIO, Misc

PCH 7/10 - CLK

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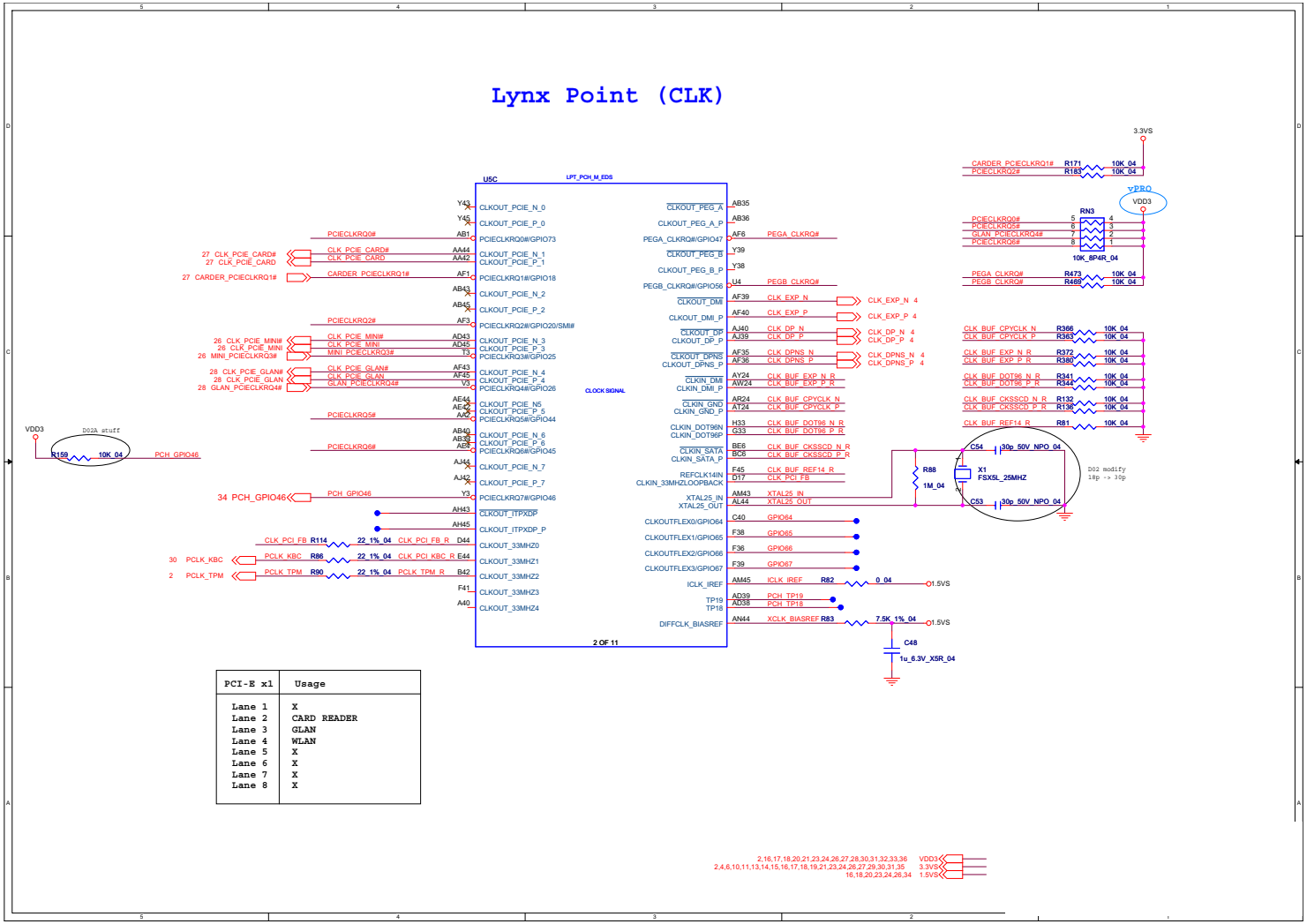
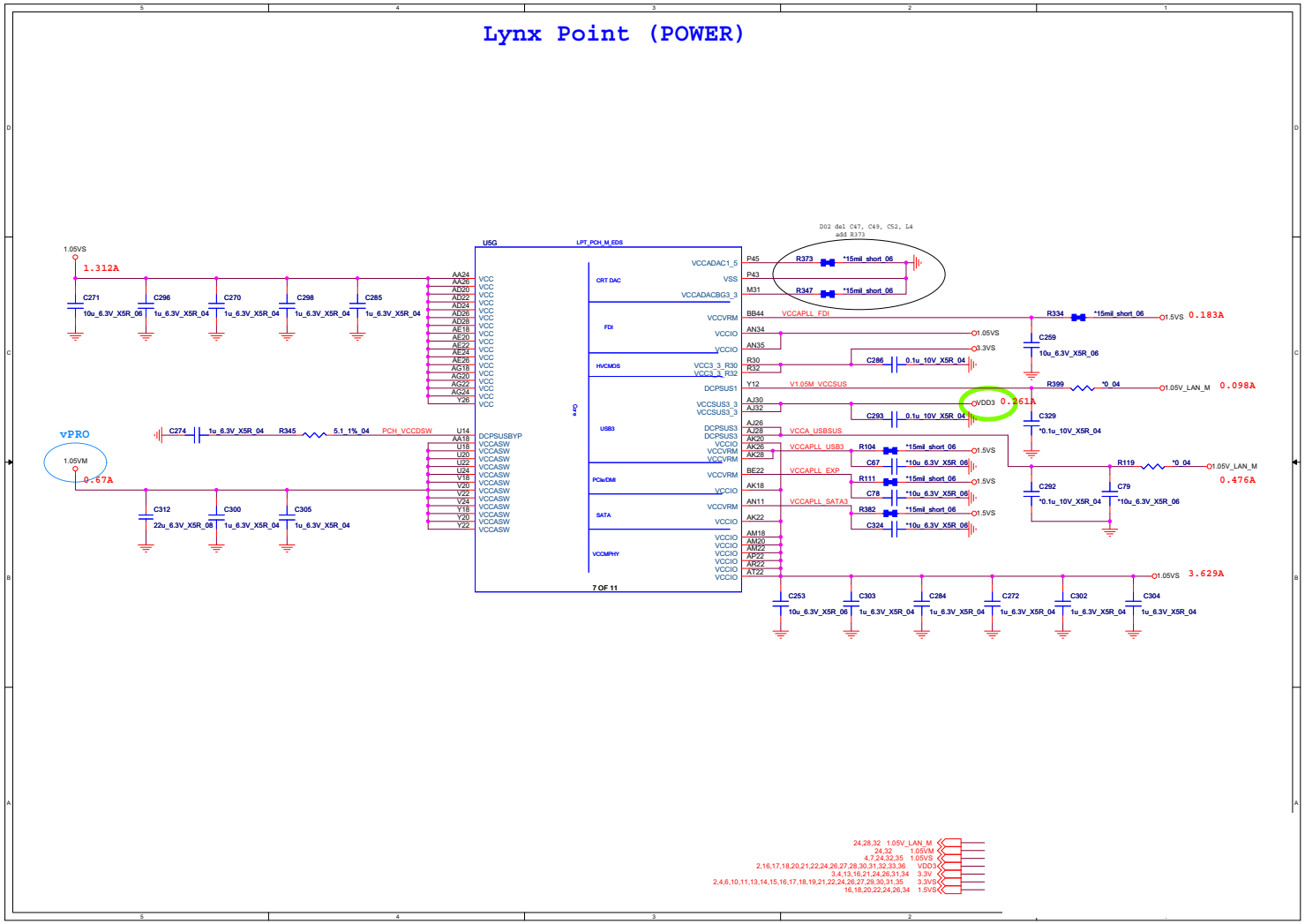
PCH 7/10 - CLK



PCH 8/10 - POWER



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PCH 8/10 - POWER

B.Schematic Diagrams

PCH 9/10 - Power

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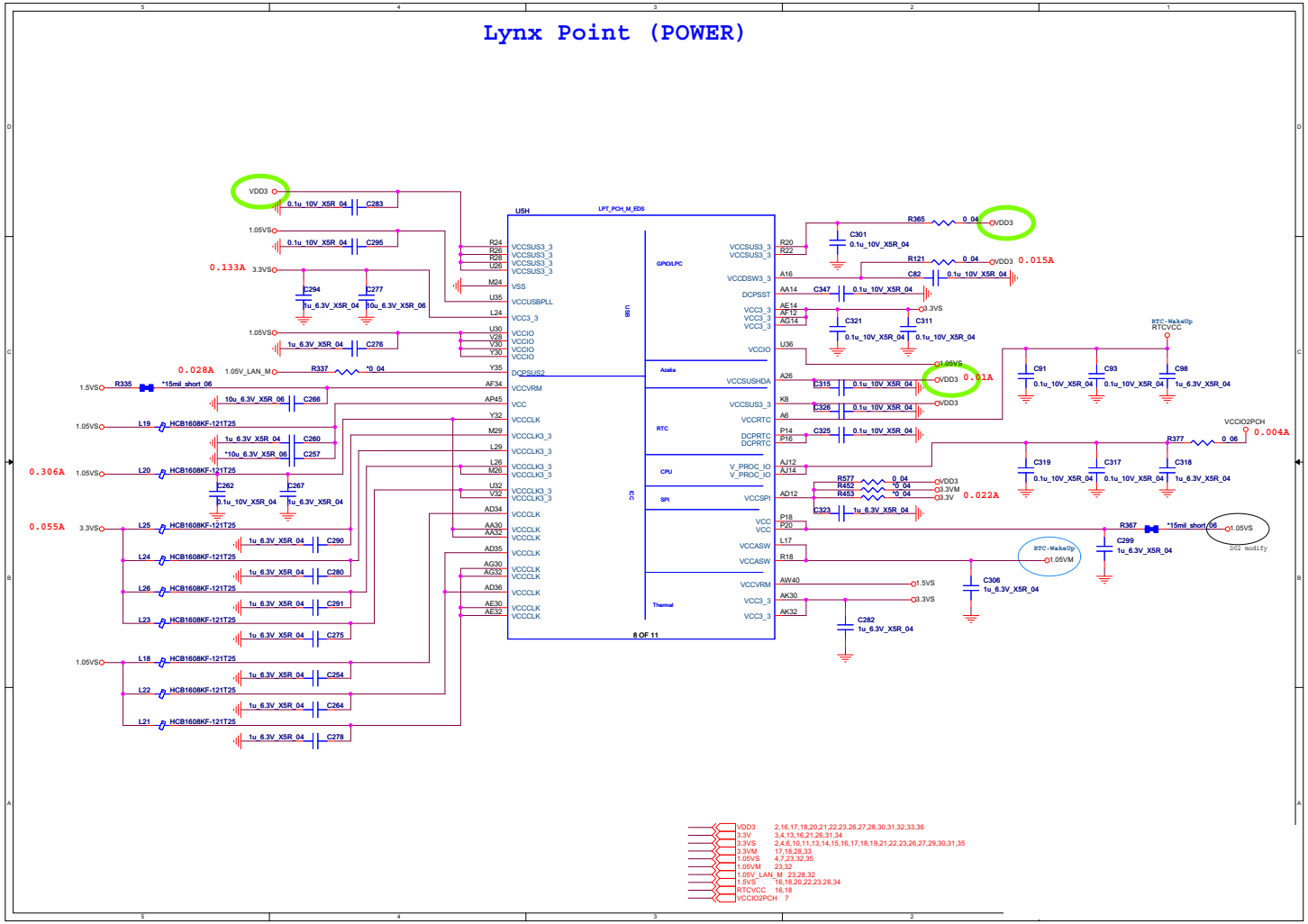
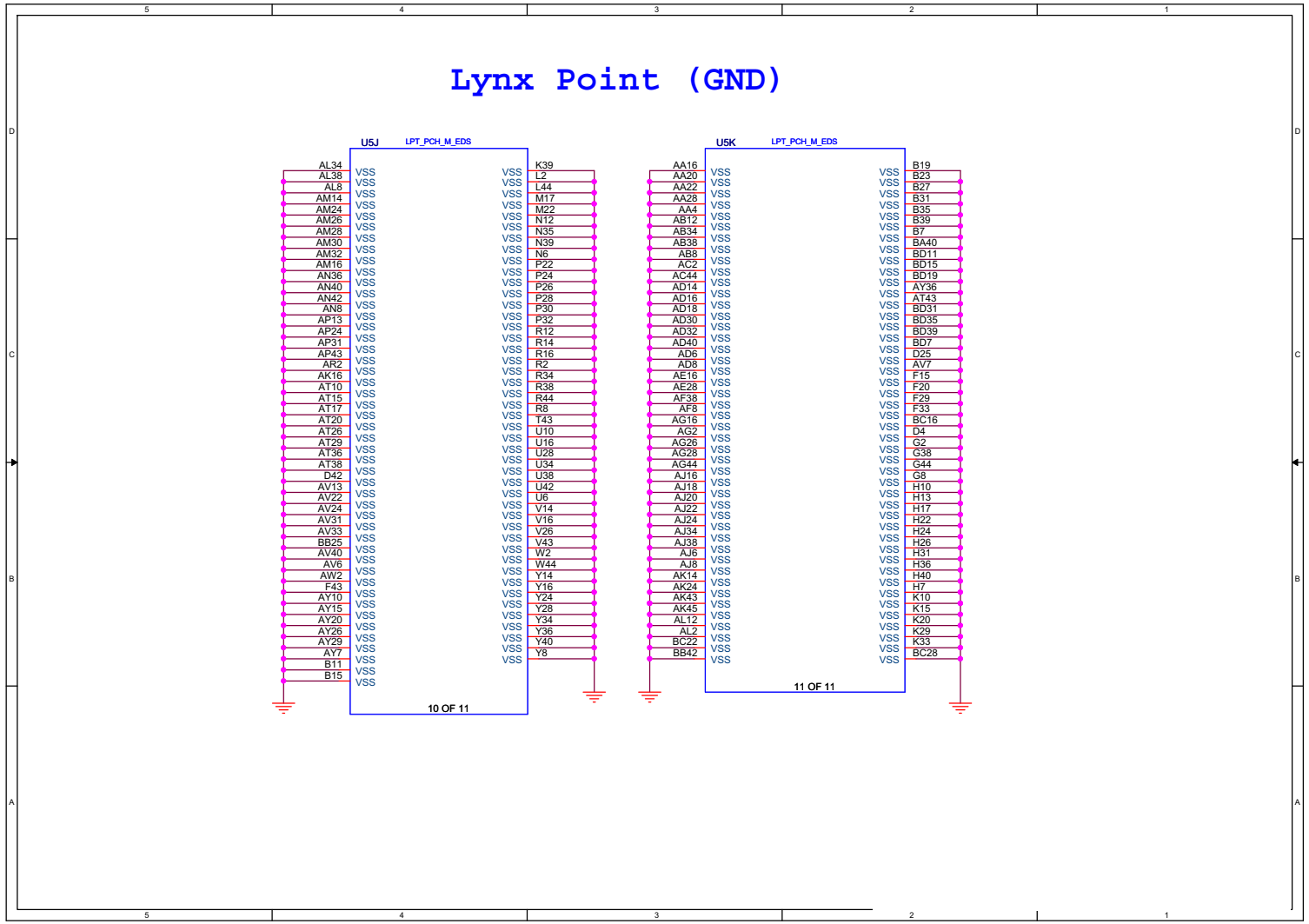
PCH 9/10 - Power



PCH 10/10 - GND



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PCH 10/10 - GND

WLAN, mSATA

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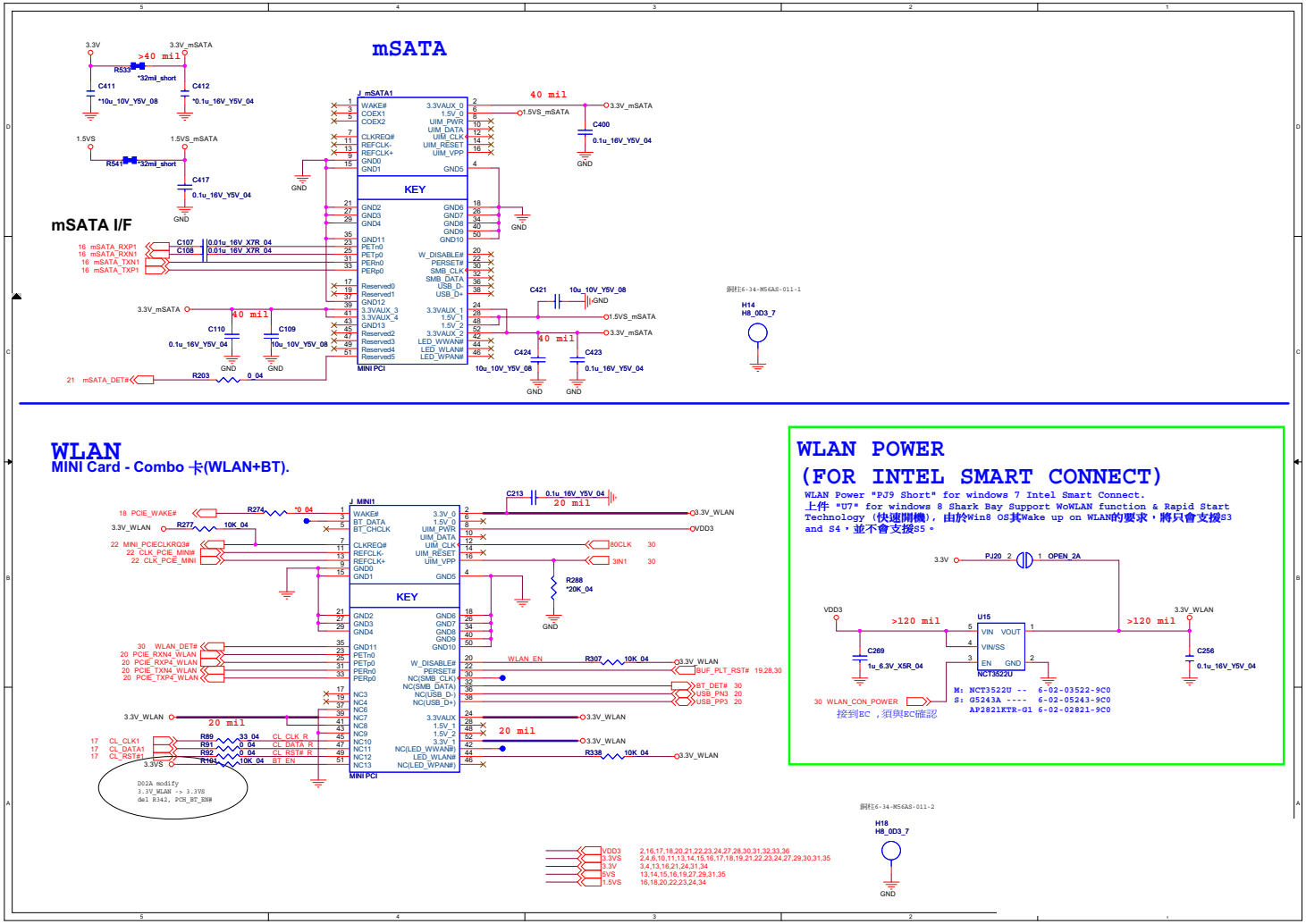
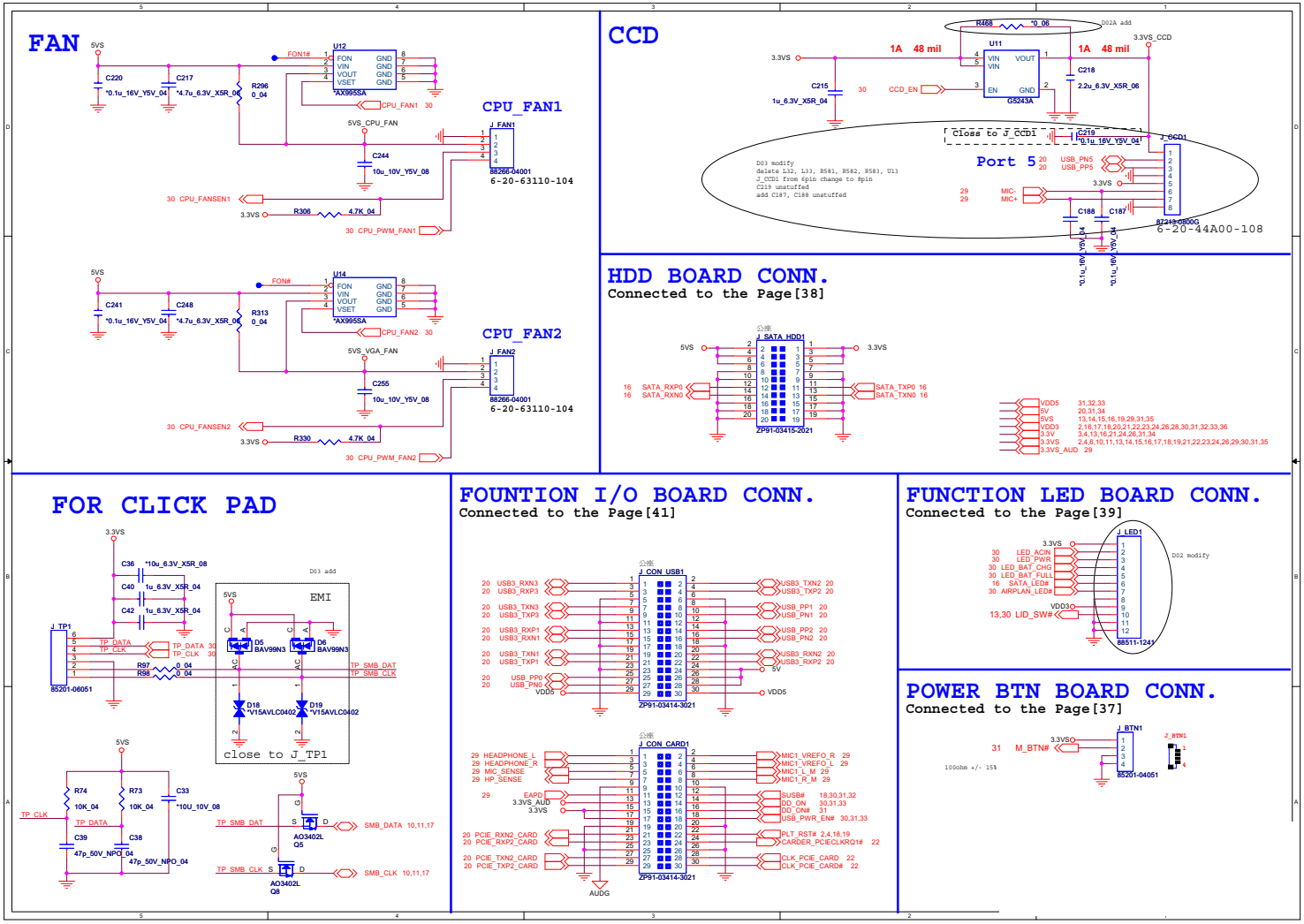
WLAN, mSATA



CCD, FAN, CLICK



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CCD, FAN, CLICK

LAN, RJ-45

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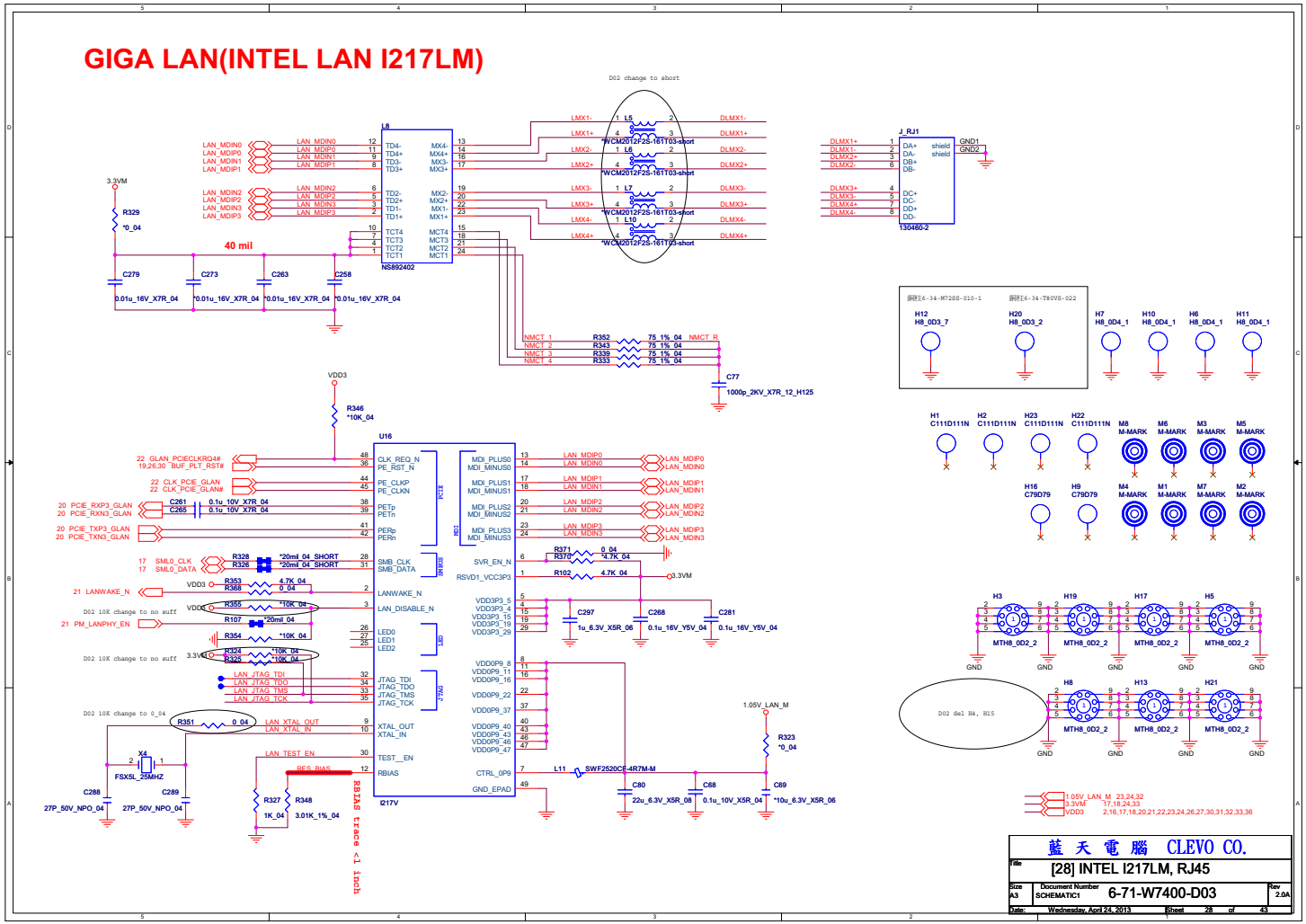
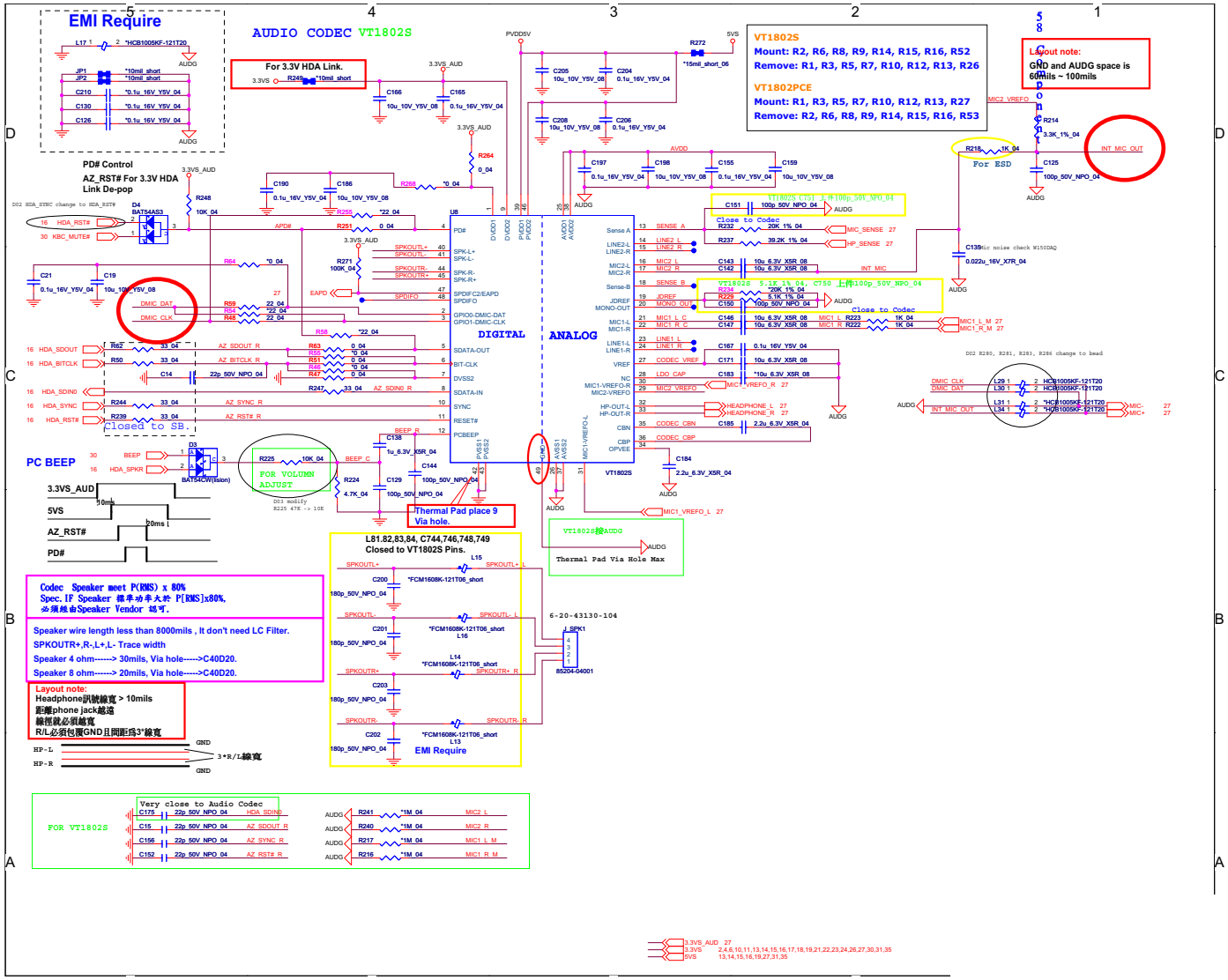
LAN, RJ-45



VT1802S


EMI Require
AUDIO CODEC VT1802S
For 3.3V HDA Link.
VT1802S
Mount: R2, R6, R8, R9, R14, R15, R16, R52
Remove: R1, R3, R5, R7, R10, R12, R13, R26
VT1802PCE
Mount: R1, R3, R5, R7, R10, R12, R13, R27
Remove: R2, R6, R8, R9, R14, R15, R16, R53
Layout note:
GND and AUDG space is 60mils ~ 100mils
PD# Control
AZ_RST# For 3.3V HDA Link De-pop
DIGITAL
ANALOG
PC BEEP
FOR VOLUMN ADJUST
Thermal Pad place 9 Via hole.
L81.82,83,84, C744,746,748,749 Closed to VT1802S Pins.
EMI Require
Thermal Pad Via Hole Max
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.
Speaker wire length less than 8000mils , It don't need LC Filter.
SPKOUTR+,R-,L+,L- Trace width
Speaker 4 ohm------> 30mils, Via hole----->

KBC-ITE IT8587E

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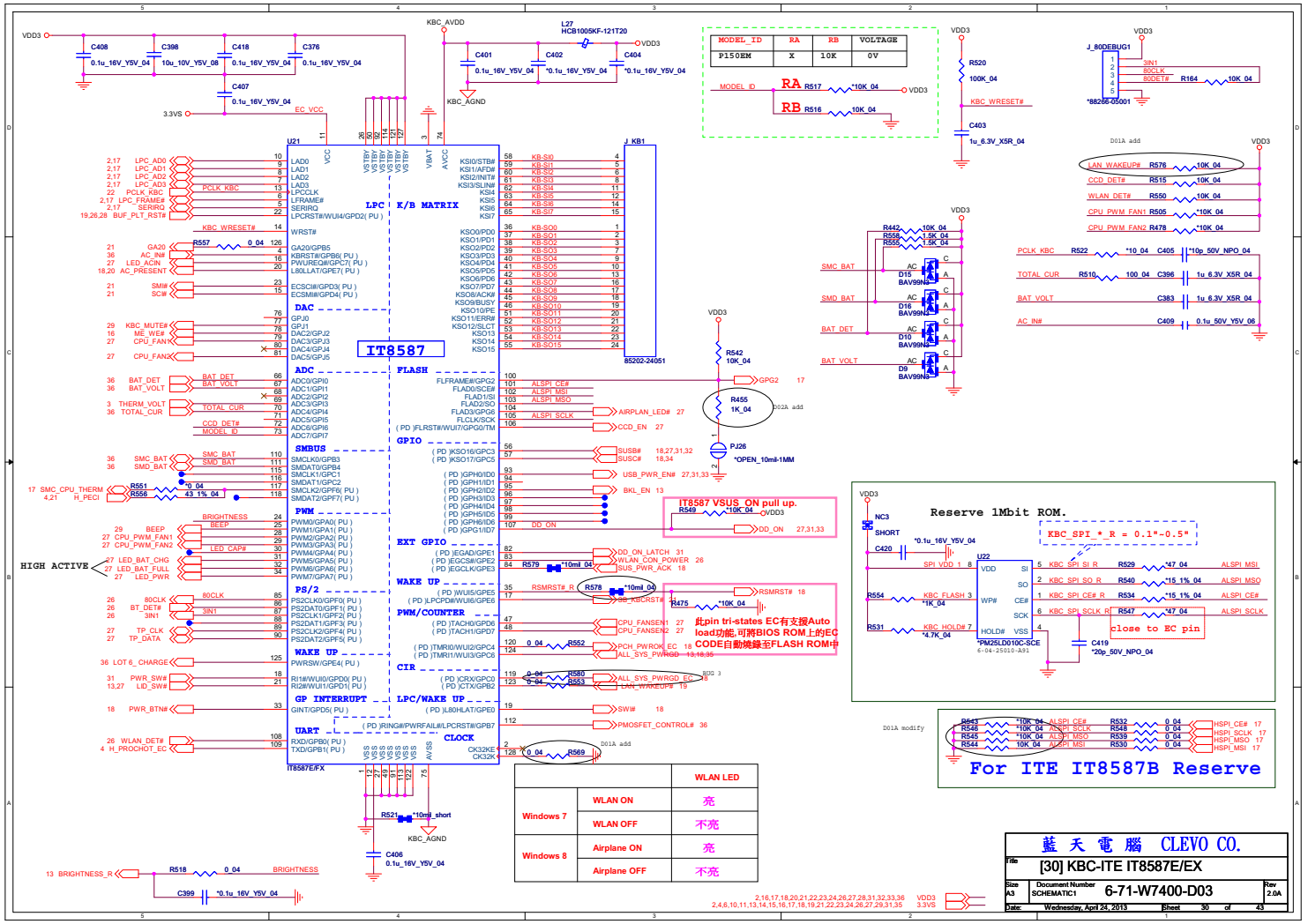
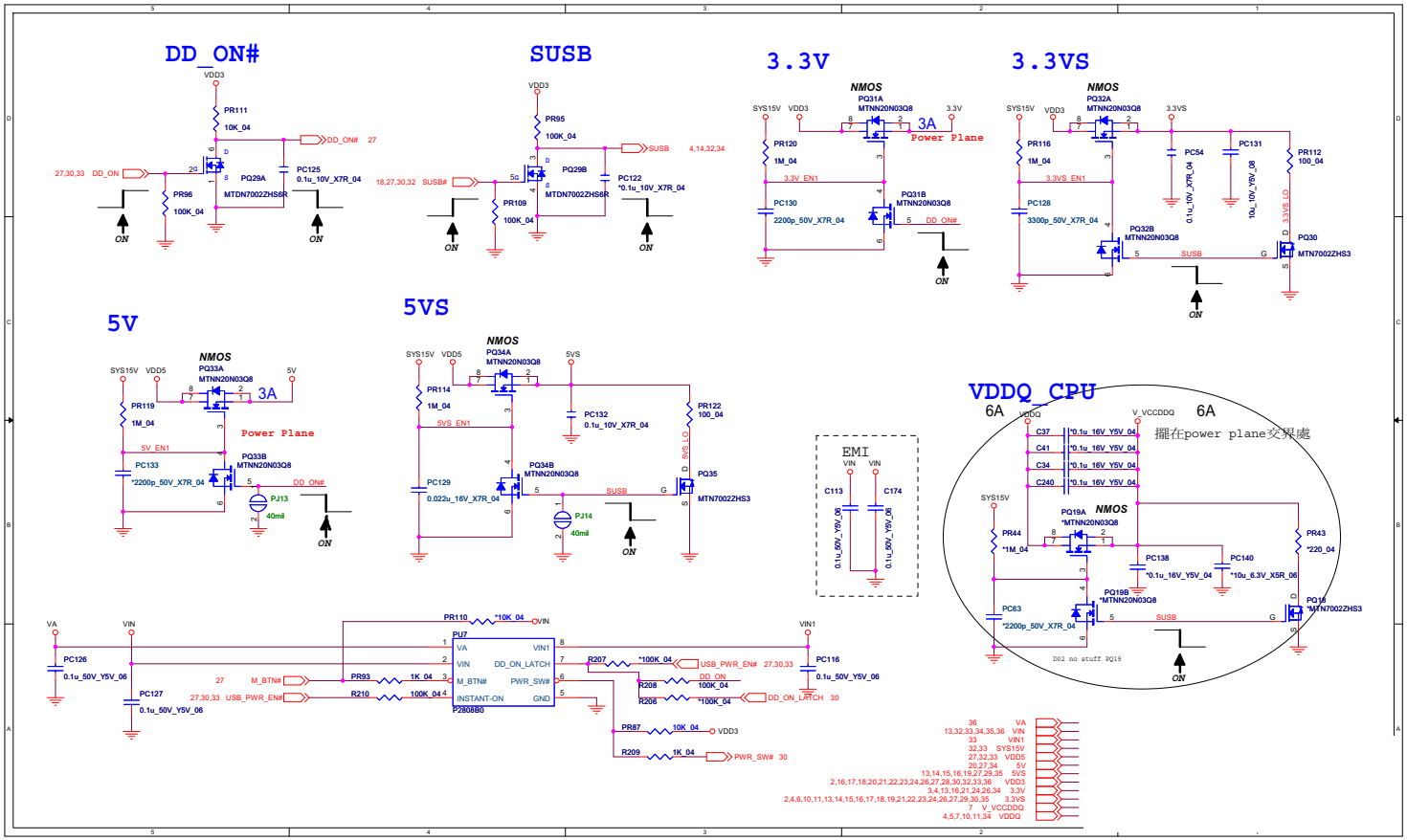
KBC-ITE IT8587E



5VS, 3.3VS, 5V, 3.3V, VCCDDQ



Sheet 30 of 42
5VS, 3.3VS, 5V, 3.3V, VCCDDQ

1.05V

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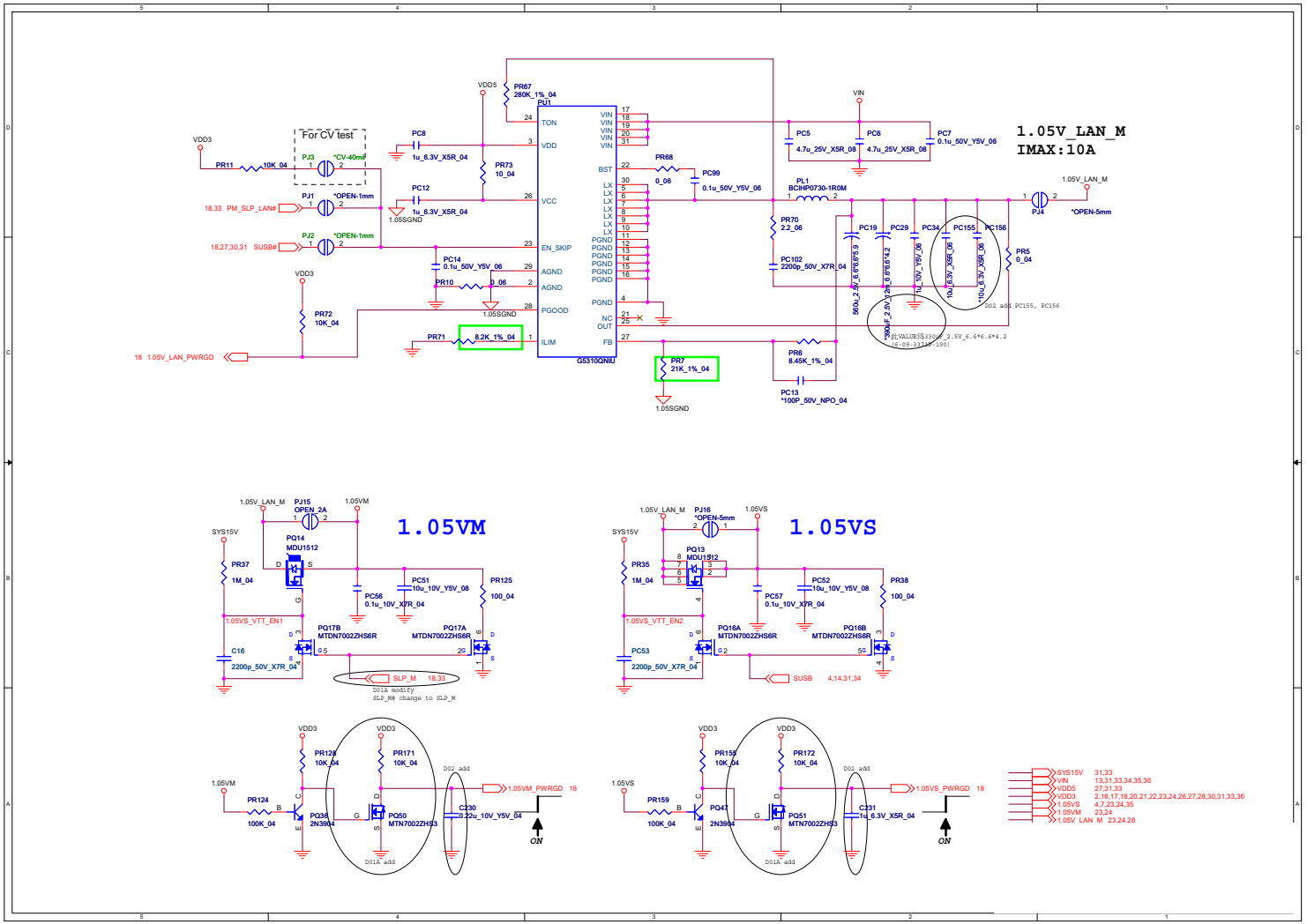
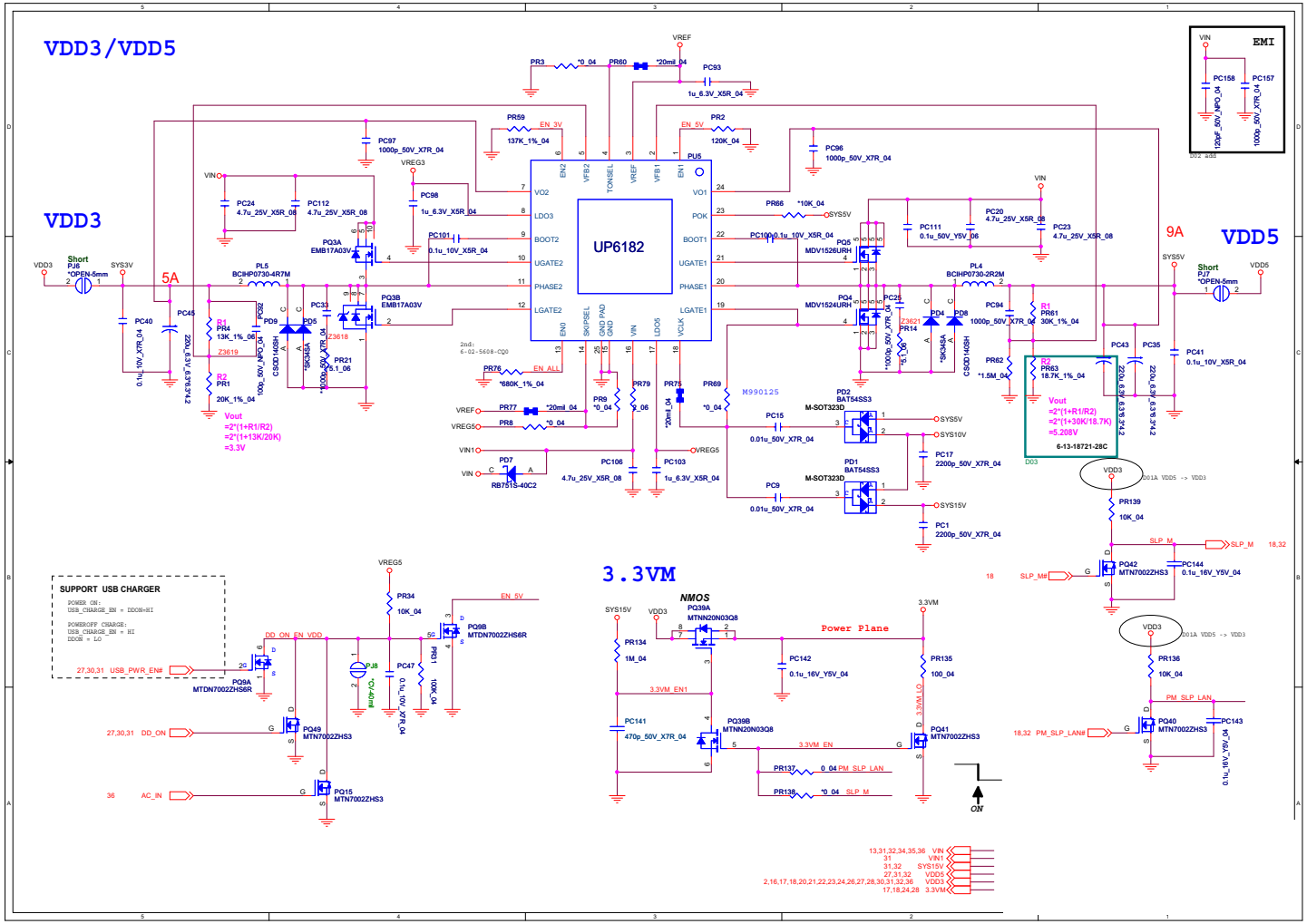
1.05V



VDD3, VDD5, 3.3VM



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VDD3, VDD5, 3.3VM

VDDQ, VDDQ_VTT, 1.5VS

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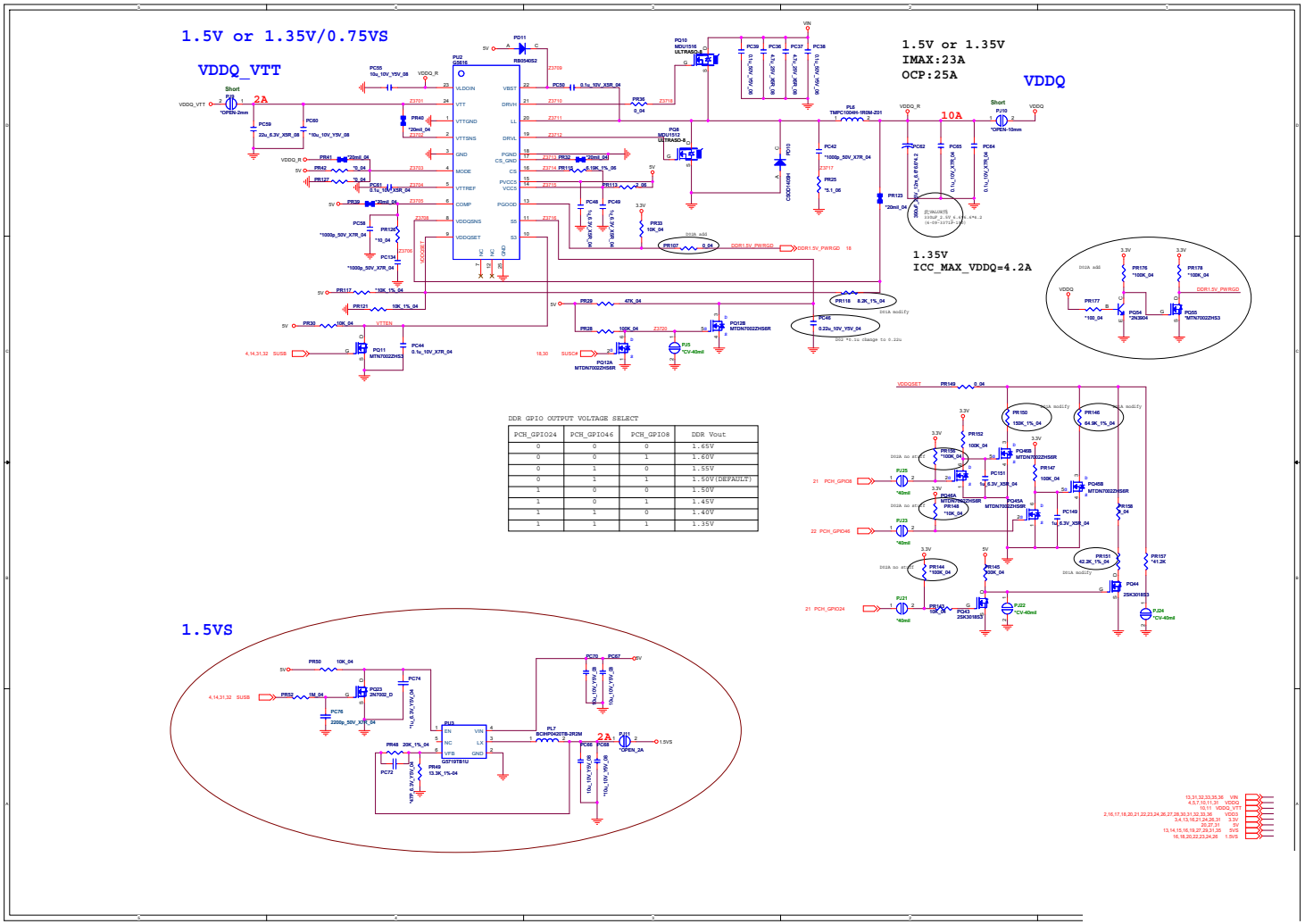
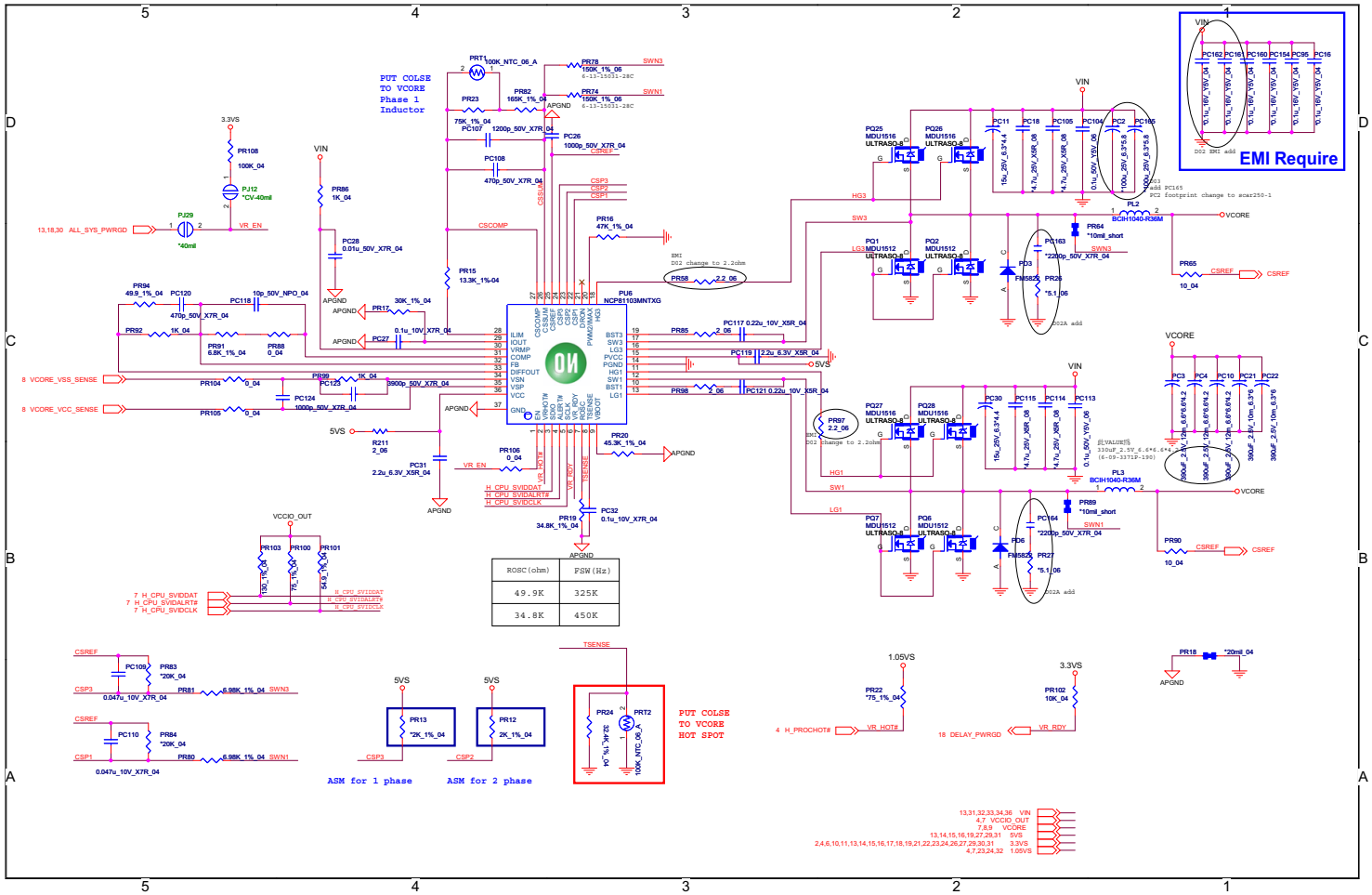
VDDQ, VDDQ_VTT, 1.5VS



VCORE



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VCORE

AC-IN, Charger

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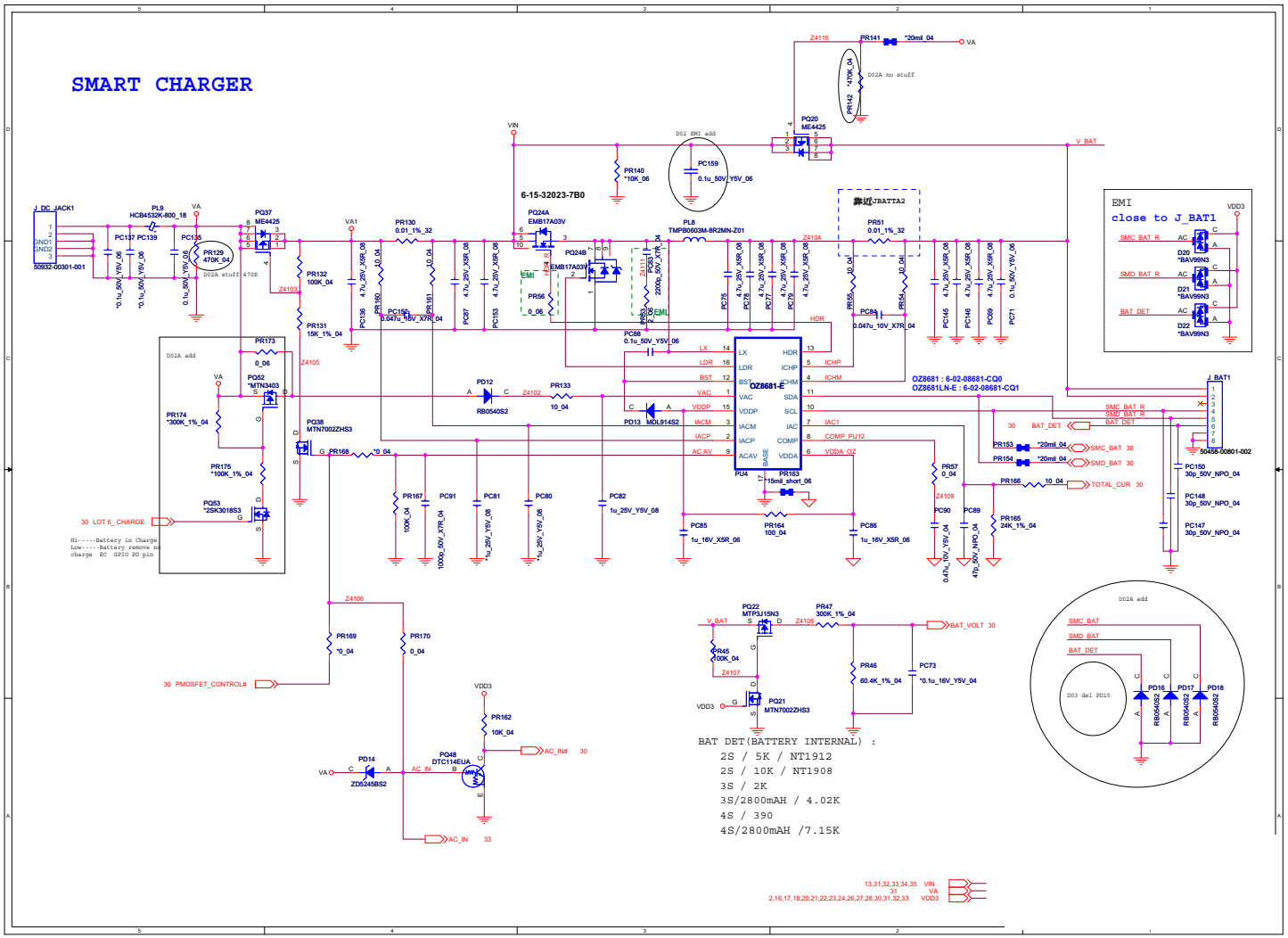
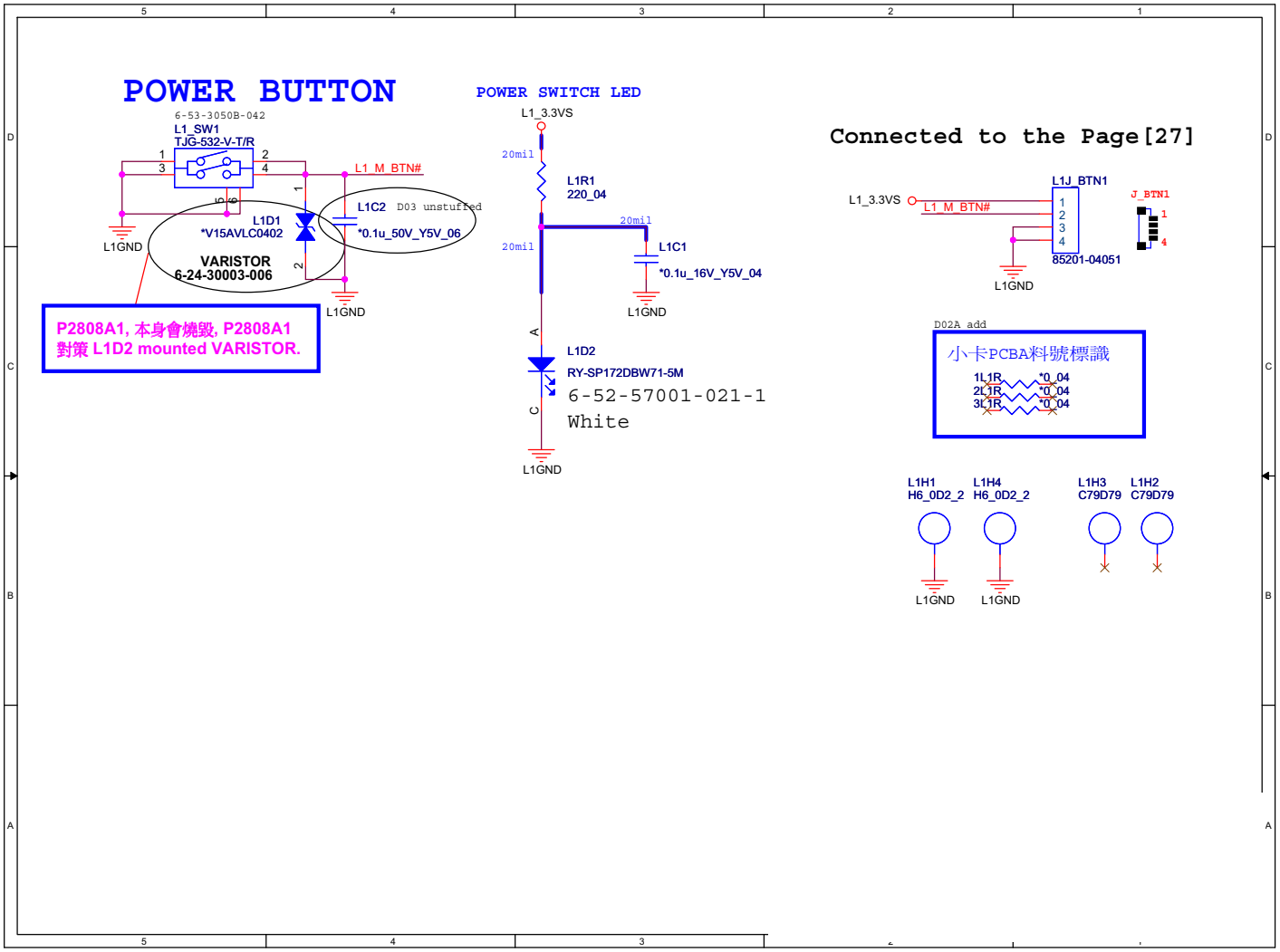
AC-IN, Charger



POWER SWITCH BOARD



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POWER SWITCH BOARD

HDD Board

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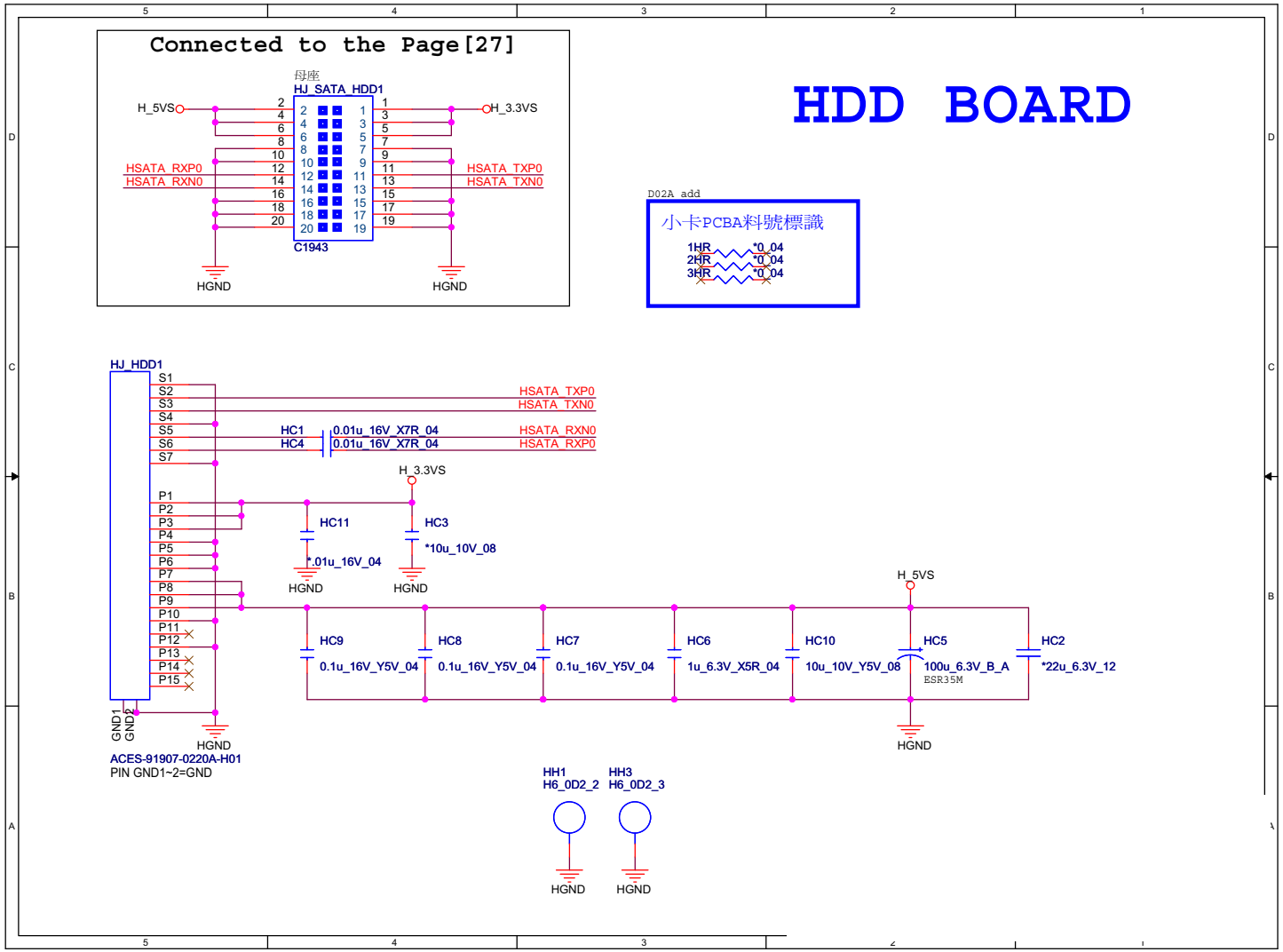
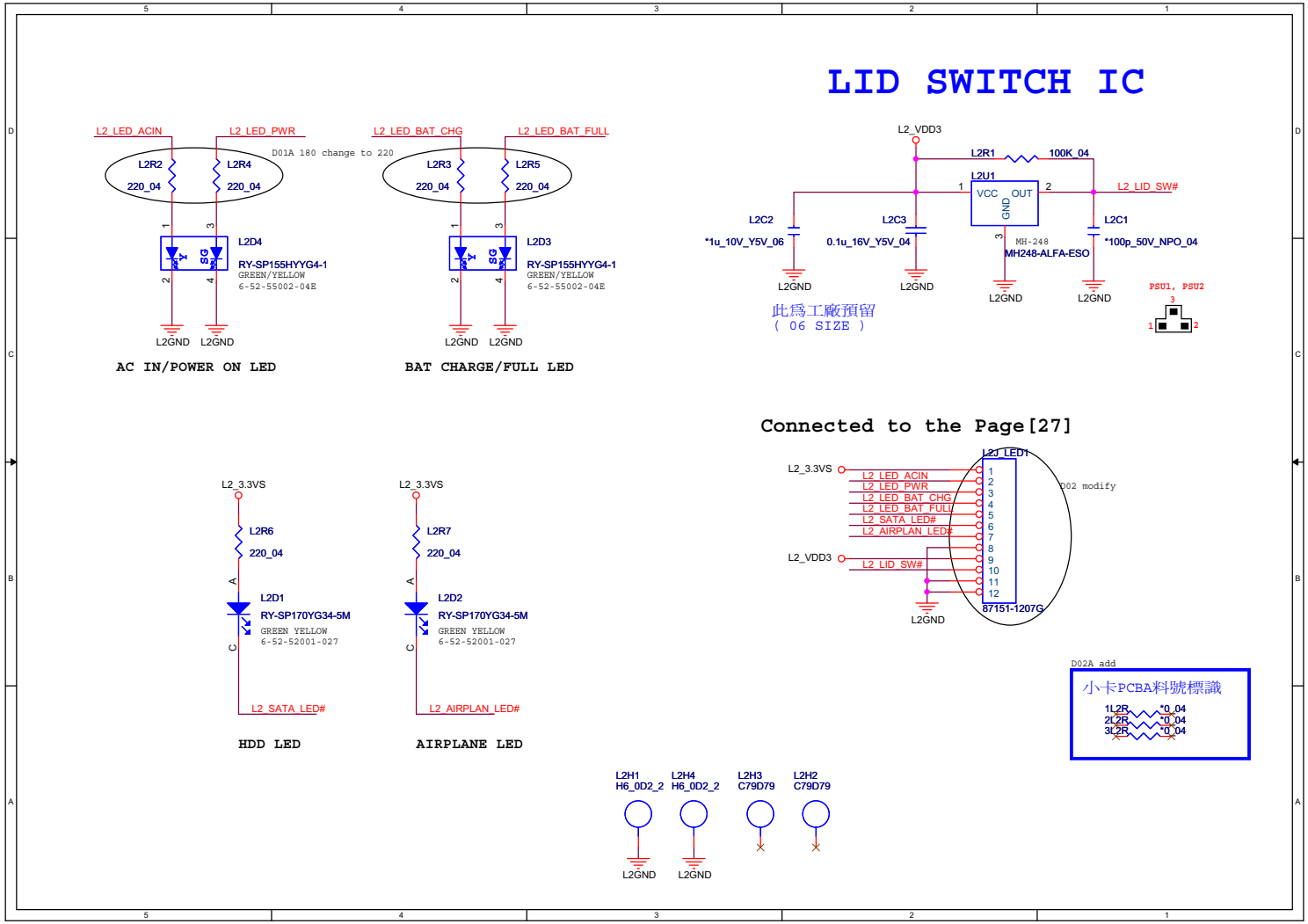
HDD Board



LED Board



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LED Board

Card Reader

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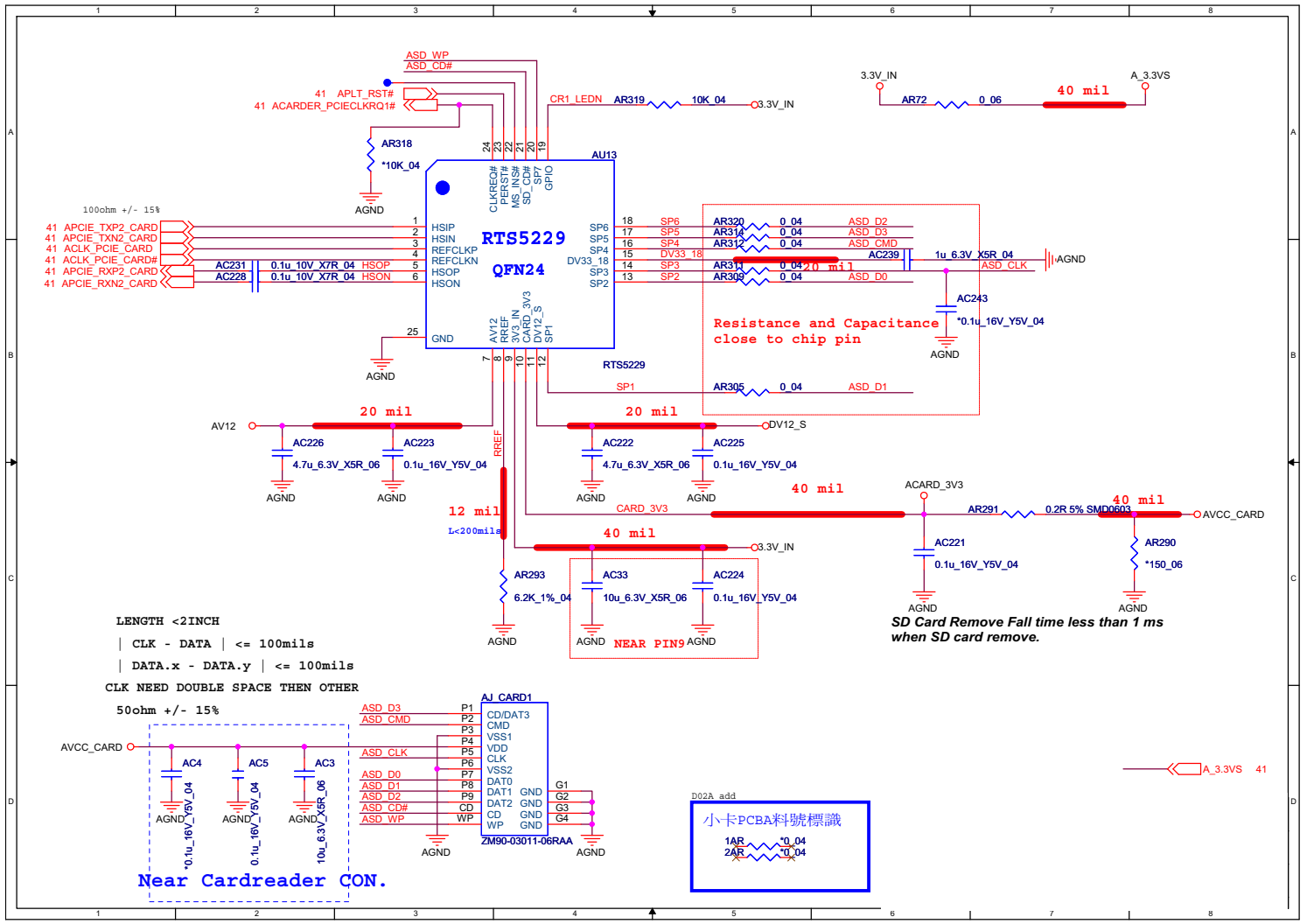
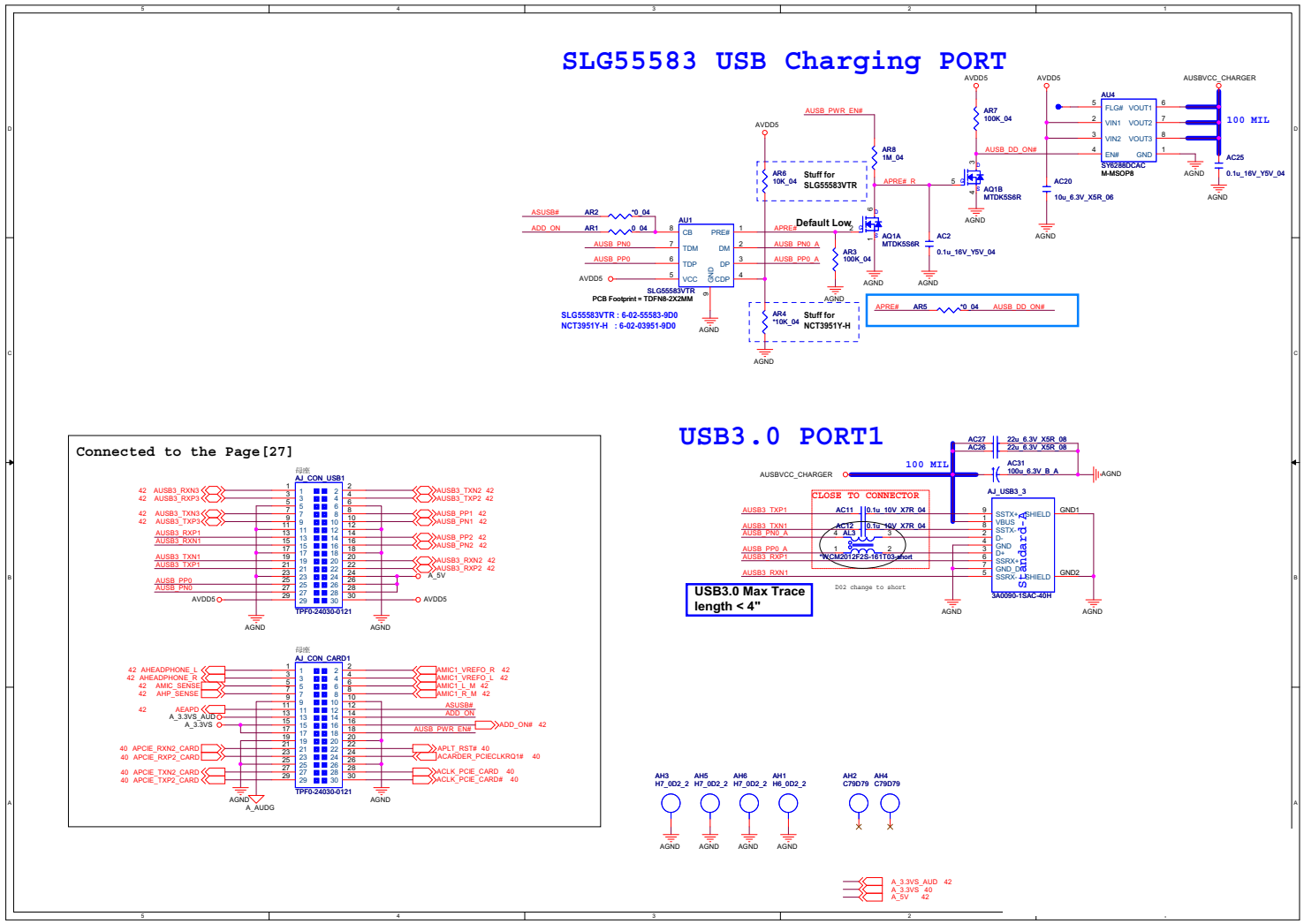
Card Reader



USB



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USB

USB, Audio Board

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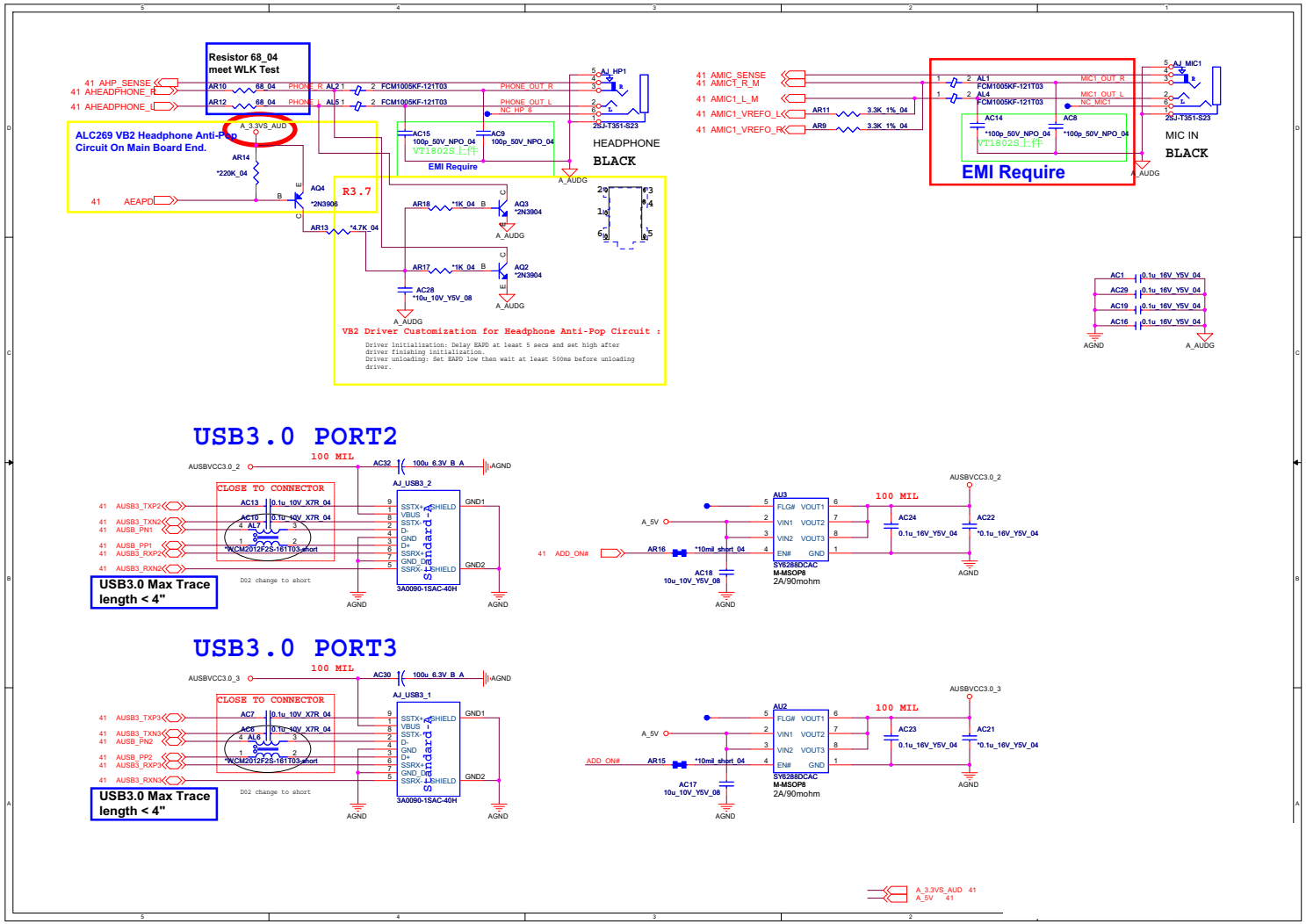
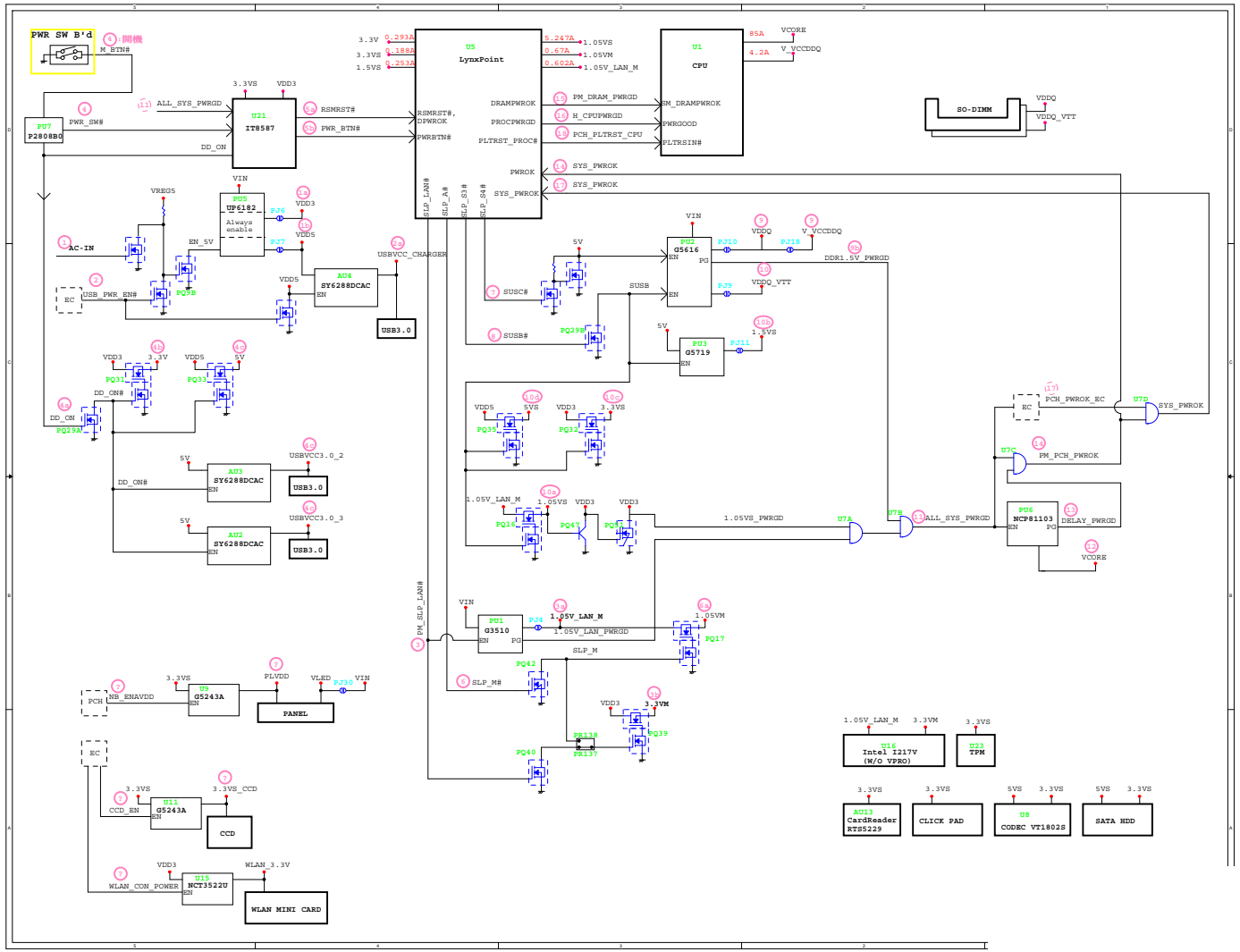
USB, Audio Board



Power Diagram



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Power Diagram

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 **F4** 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).

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 **F3**) and select "**Yes**" to confirm the selection.
5. Press **F4** 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.