SERVICE MANUAL

X7200

notebook

Notebook Computer

X7200

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 ***X7200*** 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 20V, 15A (**300**W) minimum AC/DC Adapter.

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.*
		

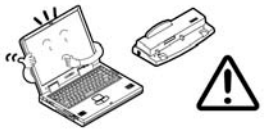
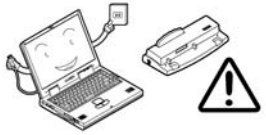
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

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.*
	

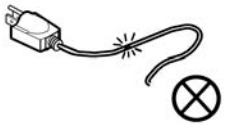
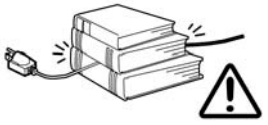
Power Safety

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). 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

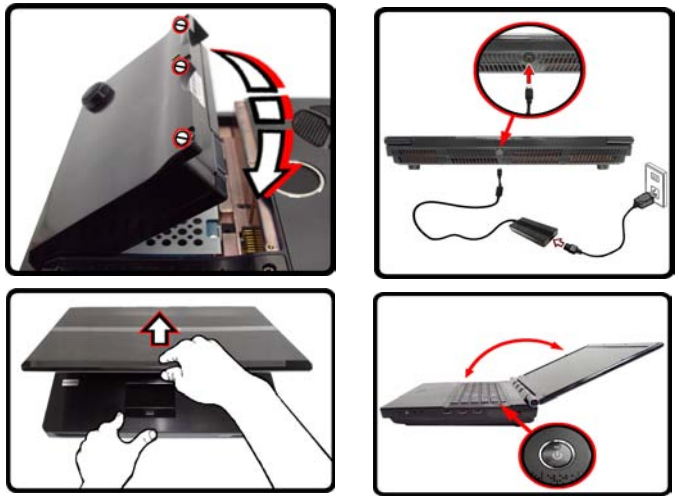
You may also need to consult the following manual for additional information:

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 tighten the screws.
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 rear 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 to exceed **135** 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".



Shut Down

Note that you should always shut your computer down by choosing **Shut Down** from the **Start** Menu. This will help prevent hard disk or system problems.

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

Contents

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the ***X7200*** 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 Vista/ Window 7*, 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 ***X7200*** 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 in this section are correct at the time of going to 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 details.

RAM Module Speeds

Use either 1066MHz OR 1333MHz DDRIII (DDR3) modules of the same brand. Do not mix DRAM speeds/brands in order to prevent unexpected system behavior.

RAID Hard Disks

All hard disks in a RAID should be identical (the same size and brand) in order to prevent unexpected system behavior.

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

i7-975 (3.33 GHz, 6.4 GT/s, 8M L3 Cache, 45nm, LGA1366 Package)

i7-950 (3.06 GHz, 4.8 GT/s, 8M L3 Cache, 45nm, LGA1366 Package)

i7-930 (2.8 GHz, 4.8 GT/s, 8M L3 Cache, 45nm, LGA1366 Package)

i7-920 (2.66 GHz, 4.8 GT/s, 8M L3 Cache, 45nm, LGA1366 Package)

LCD

17.3" FHD TFT LCD

Memory

Three 204 Pin SO-DIMM Sockets Supporting **DDR3 1066/ 1333MHz** Memory

Memory Expandable up to 12GB

(**Factory Option**) Intel Turbo Memory (Robson) Module (4GB)

Core Logic

Intel® X58 + ICH10R

BIOS

Phoenix BIOS (16Mb SPI Flash-ROM)

Storage

Three Changeable 2.5" (6cm) 9.5 mm (h) **SATA** (Serial) Hard Disk Drives supporting RAID level 0/1/5/Recovery

(**Factory Option**) One Changeable 12.7mm(h) Optical Device Type Drive (Super Multi Drive Module or Blu-Ray Combo Drive Module)

Video Adapter

nVIDIA® GeForce GTX 480M / GTX 485M / GTX 470M / GTX 460M / N10E-GLM3 PCIe Video Card (SLI)

2GB GDDR5 Video RAM on board

Microsoft DirectX® 11 Compatible

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Fingerprint Reader Module

Keyboard

Full-size “WinKey” keyboard (with numeric keypad)

Pointing Device

Built-in TouchPad (scrolling key functionality integrated)

Communication

Built-In Giga Base-TX Ethernet LAN

3.0M Pixel USB PC Camera Module

(**Factory Option**) TV Tuner Module

(**Factory Option**) HDMI-In Module

(**Factory Option**) Bluetooth 2.1 + EDR (Enhanced Data Rate) Module

Wireless LAN Module Options:

(**Factory Option**) Intel® WiFi Link 6200 (802.11a/g/n) Wireless LAN Half Mini-Card Module

(**Factory Option**) Intel® WiFi Link 6300 (802.11a/g/n) Wireless LAN Half Mini-Card Module

(**Factory Option**) Third-Party 802.11b/g/n Wireless LAN Half Mini-Card Module

Card Reader

Embedded 9-in-1 Card Reader
- MMC (MultiMedia Card) / RS MMC
- SD (Secure Digital) / Mini SD / SDHC/ SDXC Compatible
- MS (Memory Stick) / MS Pro / MS Duo

Mini Card Slots

Slot 1 for **WLAN** Module

(Factory Option) Slot 2 for TV Tuner Module or Turbo Memory Module

(Factory Option) Slot 3 for HDM**I-In** Module

Interface

Three USB 2.0 Ports

Two USB 3.0 Ports

One eSATA Port

One HDMI-Out Port

(**Factory Option**) One HDMI-In Port

One DVI-Out Port

One S/PDIF Out Jack & Rear Speaker Out

One Headphone/Speaker-Out Jack

One Microphone-In Jack/Center Speaker Out

One Line-In Jack/Side Speaker Out

One Mini-IEEE1394b Port

One RJ-45 LAN Jack

One DC-In Jack

One Infrared Receiver for Optional TV Tuner Remote Control

One CATV Antenna Jack (for **Optional** TV Tuner)

Audio

High Definition Audio Compliant Interface

S/PDIF Digital Output

Five Speakers

One Sub Woofer

Built-In Microphone

Dolby Home Theater (5.1 Channel) Certified

External 7.1 Chanel for Power DVD and Gaming

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: 20V, 15A (**300W**)

Removable Polymer Smart Lithium-Ion Battery Pack, 78.44WH

Dimensions & Weight

419mm (w) * 286mm (d) * 60.7mm (h)

Around 5.5 kg with 1 Video Card, Battery and ODD

External Locator - Top View with LCD Panel Open

Figure 1
Top View

1. PC Camera
2. Built-In Digital Microphone
3. LCD
4. LED Status Indicators
5. Touch Sensor Instant Keys
6. Speakers
7. Power Button
8. Keyboard
9. TouchPad and Buttons
10. Fingerprint Reader Module

External Locator - Front & Right Side Views

FRONT VIEW

Figure 2
Front View

1. Infrared Receiver
2. LED Power Indicators

RIGHT SIDE VIEW

Figure 3
Right Side View

1. Line-In Jack
2. S/PDIF-Out Jack
3. Microphone-In Jack
4. Headphone-In Jack
5. USB 2.0 Port
6. Security Lock Slot

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DVI-Out Port
2. Cable (CATV) Antenna Jack
3. RJ-45 LAN Jack
4. HDMI-Out Port
5. USB 3.0 Ports
6. eSATA Port
7. Mini-IEEE 1394b Port
8. HDMI-In Port (Factory Option)
9. 9-in-1 Card Reader
10. Optical Device Drive Bay
11. Emergency Eject Hole

LEFT SIDE VIEW

Figure 5
Rear View

1. Vent
2. DC-In Jack

REAR VIEW

External Locator - Bottom View

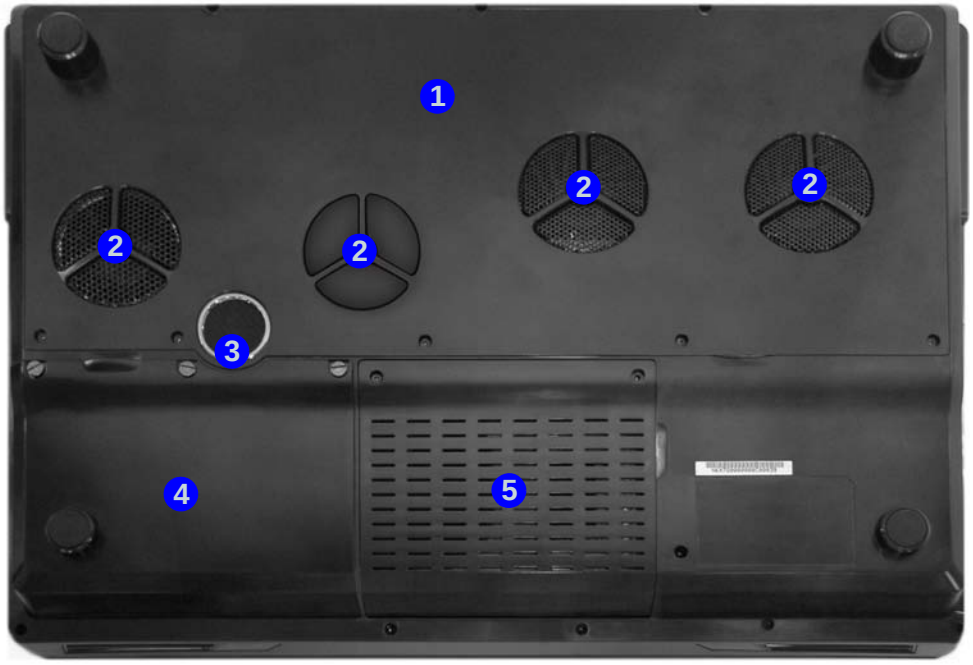


Figure 6
Bottom View

1. Component Bay Cover
2. Vent
3. Sub Woofer
4. Primary HDD Bay (HDD1 & 2)
5. Battery (Secondary HDD Bay - HDD3)

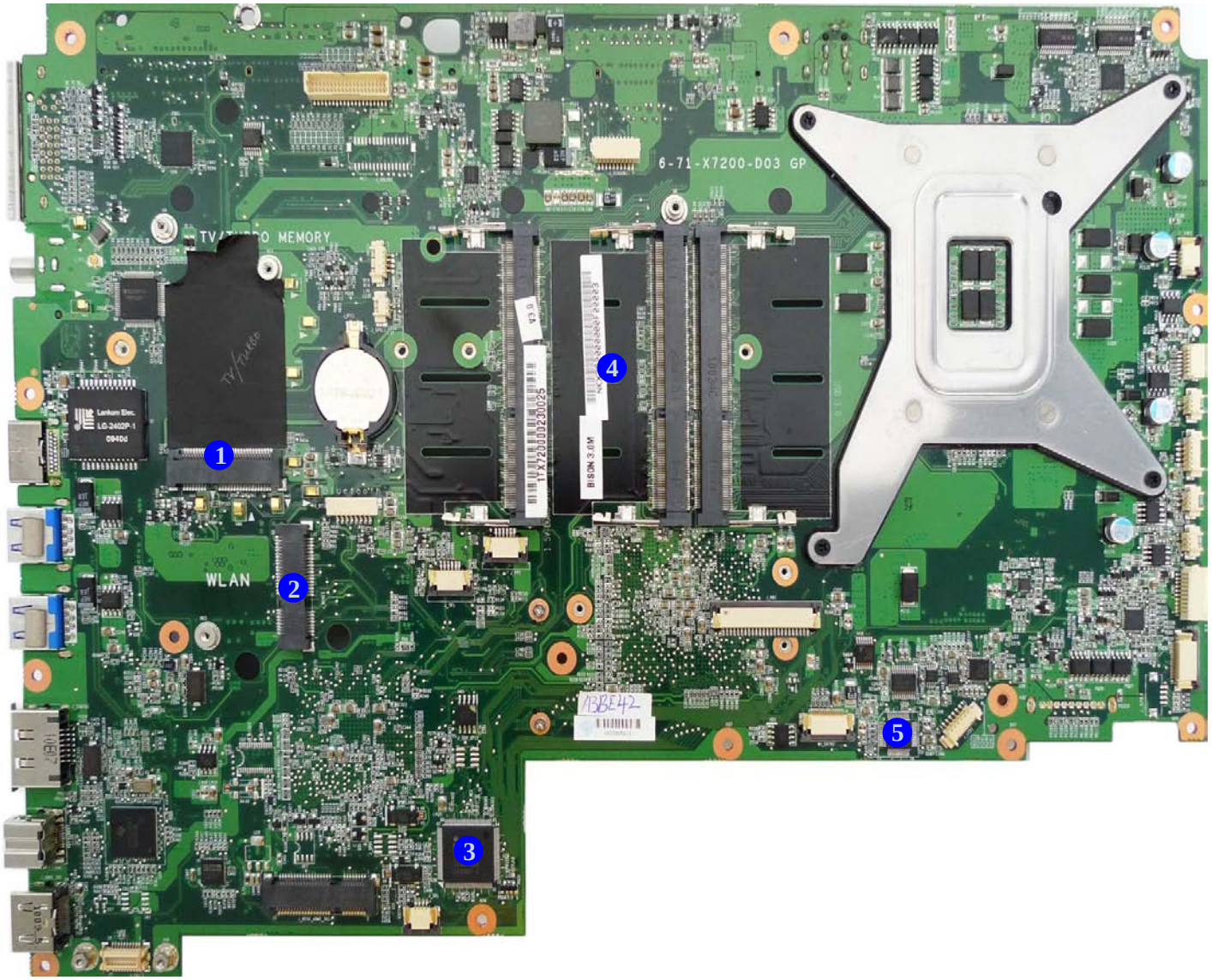
Overheating

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. TV Turbo Memory Connector
2. Mini-Card Connector (WLAN Module)
3. KBC-ITE IT8502E
4. Memory Slots DDR3 SO-DIMM
5. Azalia Codec



Mainboard Overview - Bottom (Key Parts)

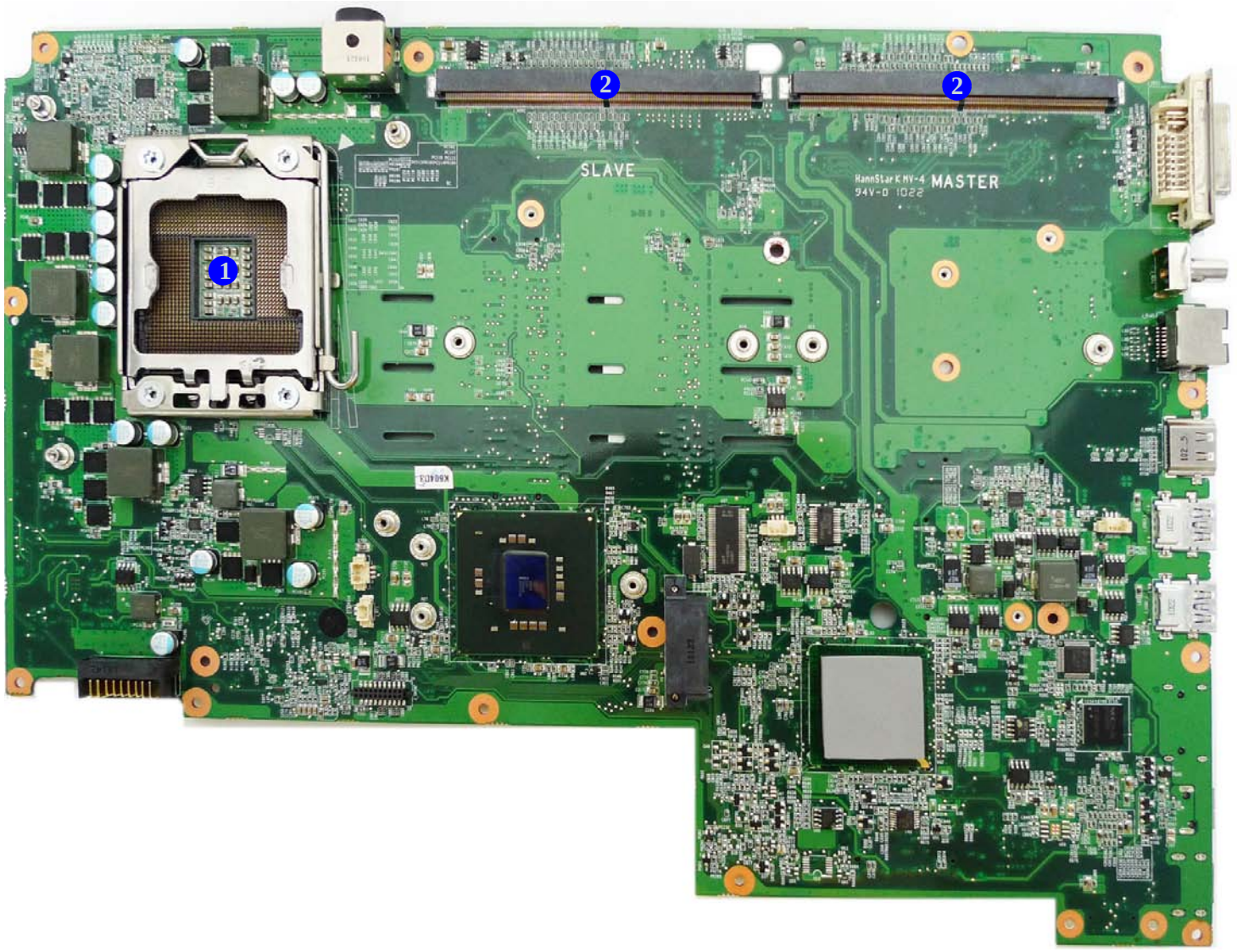


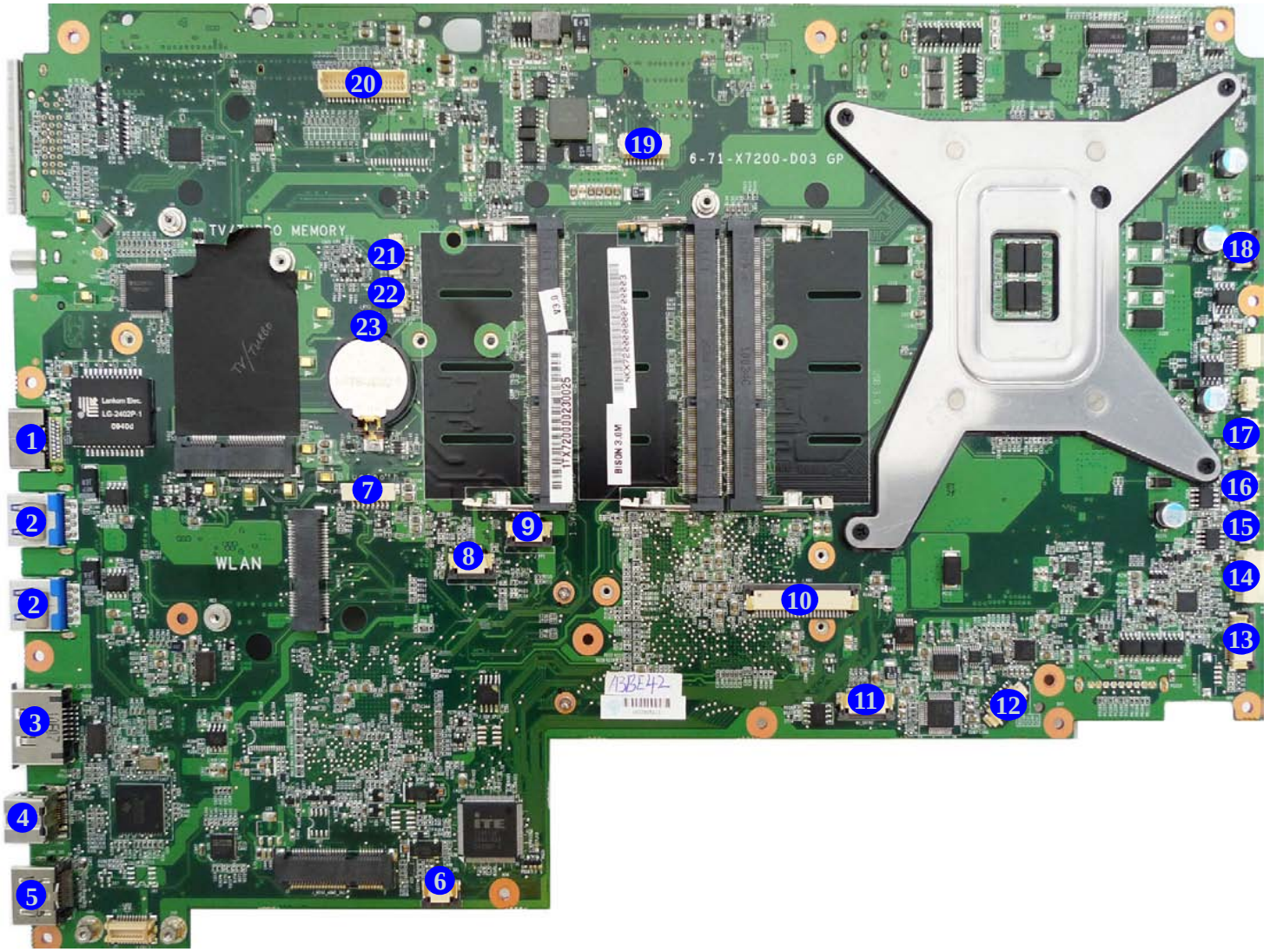
Figure 8
Mainboard Bottom Key Parts

1. CPU Socket (no CPU installed)
2. VGA-Card Connectors
3. Clock Generator

Mainboard Overview - Top (Connectors)

Figure 9
Mainboard Top Connectors

1. HDMI-Out Port
2. USB 3.0 Ports
3. eSATA Port
4. Mini-IEEE 1394b Port
5. HDMI-In Port
6. Consumer Infrared Connector
7. Bluetooth Cable Connector 1
8. TouchPad Cable Connector
9. Fingerprint Cable Connector
10. Keyboard Cable Connector
11. SATA HDD 1 Connector
12. LED Connector
13. Audio Board Connector
14. USB Connector
15. Sub Woofer Connector
16. Speaker Connector
17. CCD Connector
18. Switch Board Cable Connector
19. Sensor Connector
20. LCD Cable Connector
21. Microphone Cable Connector
22. Speaker Connector
23. CMOS Battery Connector



Mainboard Overview - Bottom (Connectors)

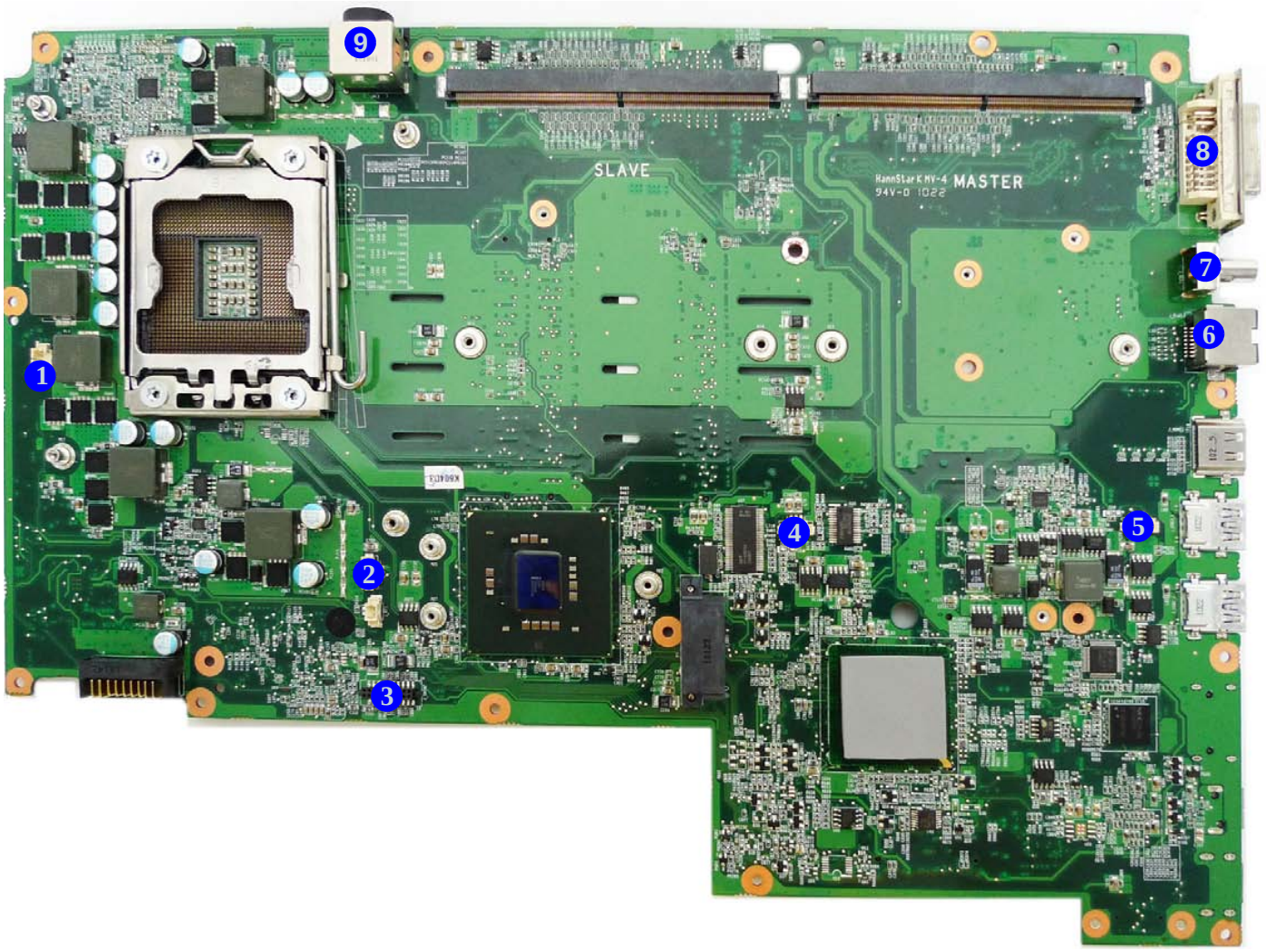


Figure 10
Mainboard Bottom Connectors

1. CPU Fan Cable Connector 1
2. CPU Fan Cable Connector 2
3. SATA HDD 2 Connector
4. VGA Fan 2 Cable Connector
5. VGA Fan 1 Cable Connector
6. RJ-45 LAN Jack
7. Cable (CATV) Antenna Jack
8. DVI-Out Port
9. DC-In Jack

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***X7200*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

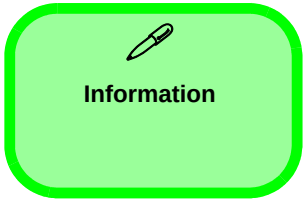
We suggest you completely review any procedure before you take the computer apart.

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). 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 Optical Device:

1. Remove the battery *page 2 - 5*
2. Remove the Optical device *page 2 - 6*

To remove a Processor:

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

To remove and install a Video Card:

1. Remove the battery *page 2 - 5*
2. Remove the video card *page 2 - 9*
3. Install the video card *page 2 - 11*

To remove the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 12*

To remove the Wireless LAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the wireless LAN *page 2 - 16*

To remove the Bluetooth Module:

1. Remove the battery *page 2 - 5*
2. Remove the Bluetooth *page 2 - 17*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 18*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD from the Primary HDD Bay *page 2 - 20*
3. Remove the HDD from the Primary HDD Bay *page 2 - 24*

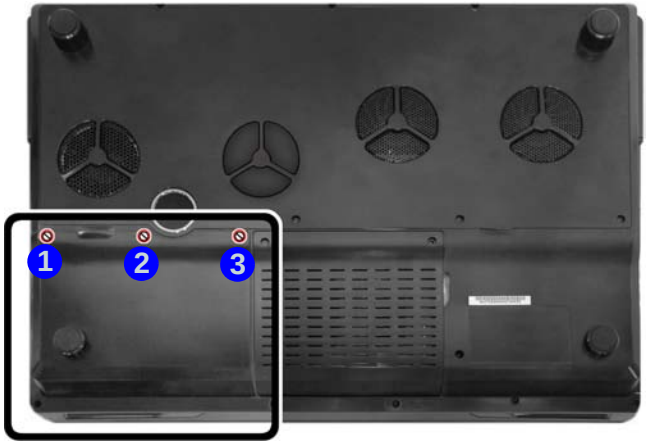
To remove the Hinges:

1. Remove the battery *page 2 - 5*
2. Remove the LCD back cover *page 2 - 26*

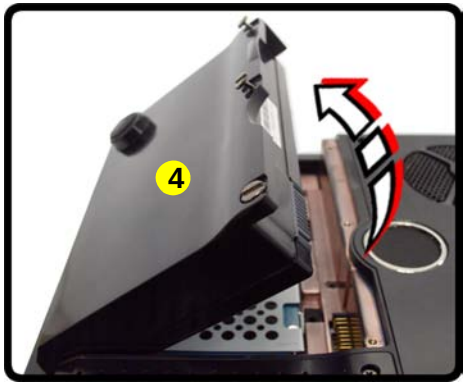
Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Loosen screws 1 - 3 (*Figure 1a*) and carefully lift the battery 4 up (*Figure 1b*).
3. Remove the battery 4 from the battery bay (*Figure 1c*).

a.



b.



c.

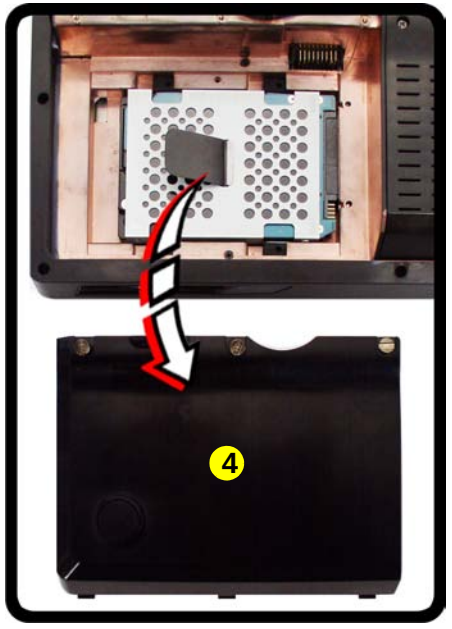


Figure 1
Battery Removal

a. Loosen screws.
b. Carefully lift the battery up.
c. Remove the battery from the battery bay.

4. Battery

- 3 Screws

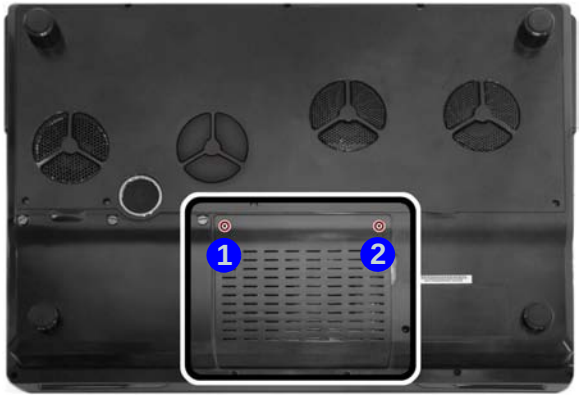
Figure 2
Optical Device Removal

a. Remove the screws from the hard disk bay cover.
b. Remove the hard disk bay cover.
c Remove the screw
d. Use a screwdriver to carefully push out the optical device at point 5.

Removing the Optical (CD/DVD) Device

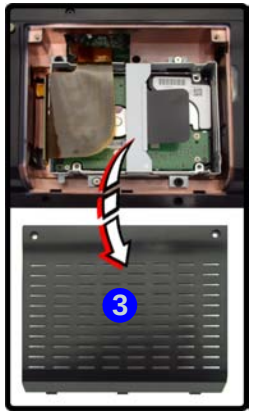
1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. Remove screws 1 & 2 from the hard disk bay cover (*Figure 2a*).
3. Remove the hard disk bay cover 3 (*Figure 2b*).
4. Remove the screw at point 4 (*Figure 2c*), and use a screwdriver to carefully push out the optical device 6 at point 5 (*Figure 2d*).
5. Reverse the process to install any new optical device.

a.



c.

b.



d.

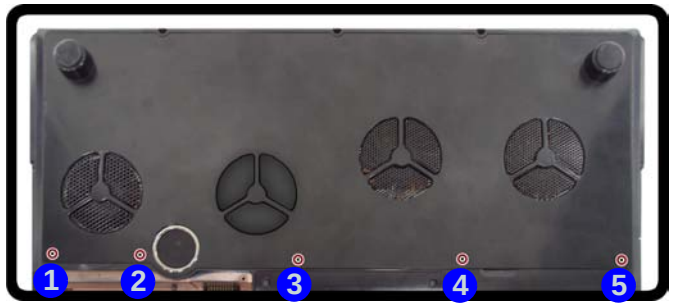
6. Optical Device

- 3 Screws

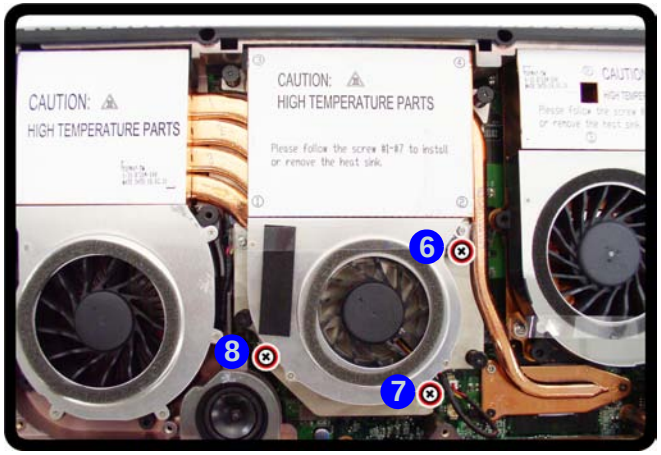
Removing the Processor

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. Remove the screws 1 - 5 from the component bay cover (*Figure 3a*).
3. Remove the screws 6 - 8 from the CPU fan (*Figure 3b*).
4. Disconnect the fan cable 9 and remove the CPU fan 10 (*Figure 3c*).
5. Remove the screws 11 - 17 from the CPU heatsink 18 (*Figure 3d*).

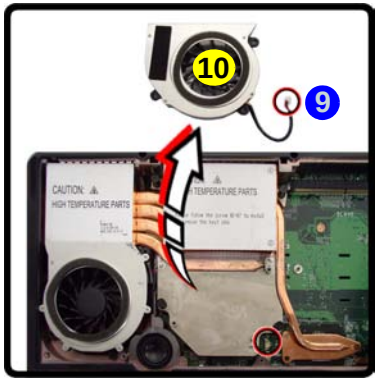
a.



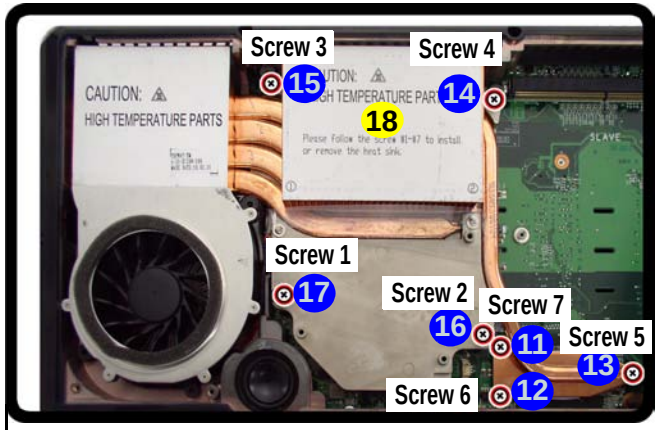
b.



c.



d.



Heat Sink Screw Removal and Insertion

Remove the screws from the heat sink in the order indicated here: **7-6-5-4-3-2-1**. When tightening the screws, make sure that they are tightened in the order: **1-2-3-4-5-6-7**.

Figure 3
Processor Removal

a. Remove the screws from the component bay cover.
b. Remove the screws from the CPU fan.
c. Disconnect the fan cable and remove the CPU fan.
d. Remove the screws from the CPU heatsink.

Heat Sink Screw Removal and Insertion

Remove the screws from the heat sink in the order indicated here: **7-6-5-4-3-2-1**.

When tightening the screws, make sure that they are tightened in the order: **1-2-3-4-5-6-7**.

10. CPU Fan
18. CPU Heatsink

- 15 Screws

Figure 4
Processor Removal (cont'd)

e. Carefully lift up the heat sink off the computer by pulling the plastic strip up.
f. Press down and hold the latch (with the latch held down you will be able to release it)
g. Turn the release latch to unlock the CPU.
h. Lift the CPU out of the socket.

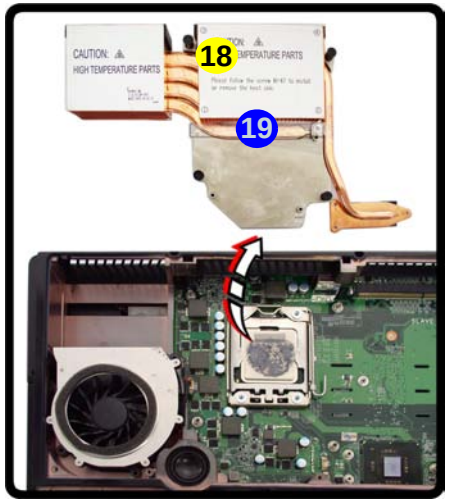
Caution

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

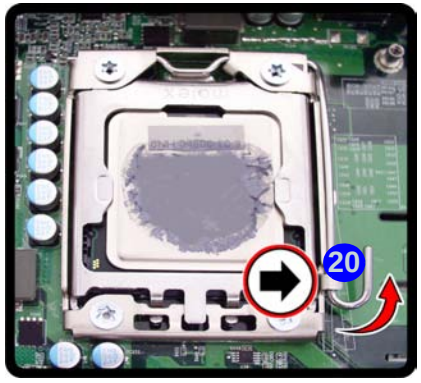
18. CPU Heatsink
23. CPU

6. Carefully lift up the heat sink 18 off the computer by pulling the plastic strip 19 up (***Figure 4e***).
7. Press down and hold the latch 20 (with the latch held down you will be able to release it) (***Figure 4f***).
8. Move the latch upward 21 and bracket downward 22 fully in the direction indicated to unlock the CPU 23 (***Figure 4g***).
9. Carefully (it may be hot) lift the CPU 23 up out of the socket (***Figure 4h***).
10. Reverse the process to install a new CPU.
11. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

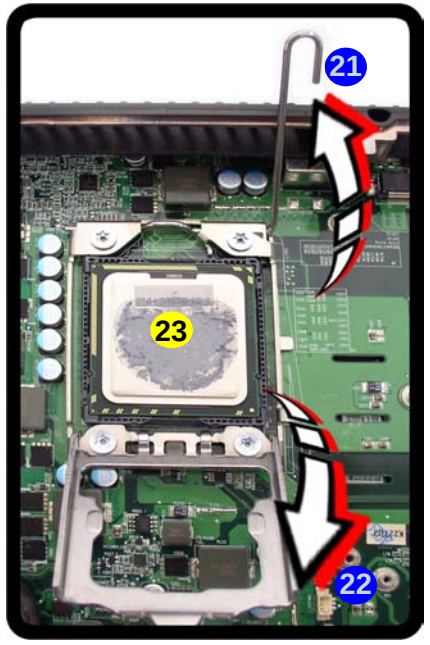
e.



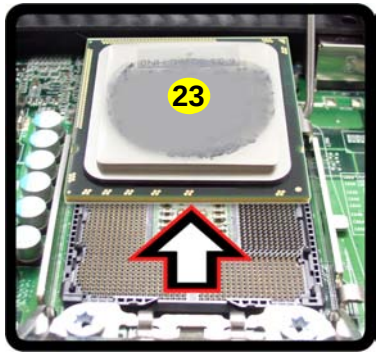
f.



g.



h.

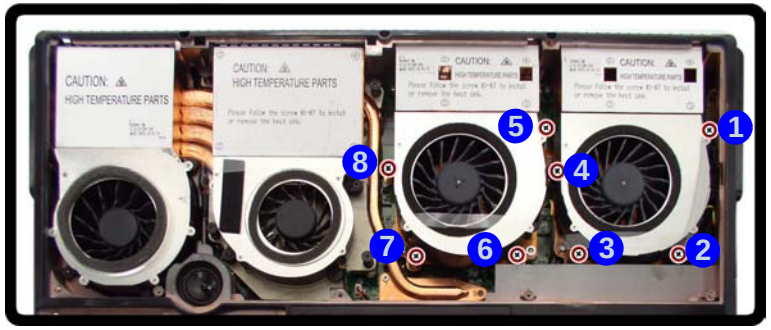


Removing and Installing the Video Card

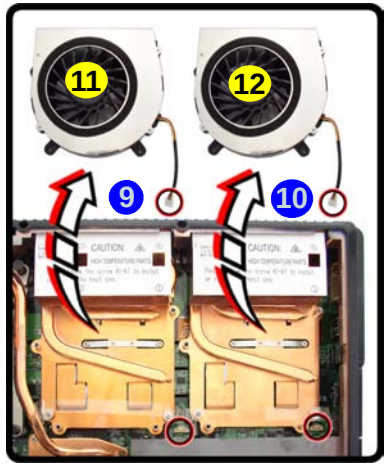
Video Card Removal Procedure

1. Turn **off** the computer, turn it over and remove the battery (*page 2 - 5*) and component cover (*page 2 - 7*).
2. Remove screws 1 - 8 (*Figure 5a*).
3. Disconnect the fan cables 9 & 10 and remove the fan units 11 & 12 (*Figure 5b*).
4. Remove screws 13 - 20 from the heat sink unit in the order indicated on the label (i.e screw **4** first through to screw **1** last) (*Figure 5c*).
5. Carefully (**it may be hot**) remove the heat sink units 21 & 22 by pulling the plastic strips 23 & 24 up (*Figure 5d*).
6. Remove screws 25 - 28 from the video cards 29 & 30 (*Figure 5d*).

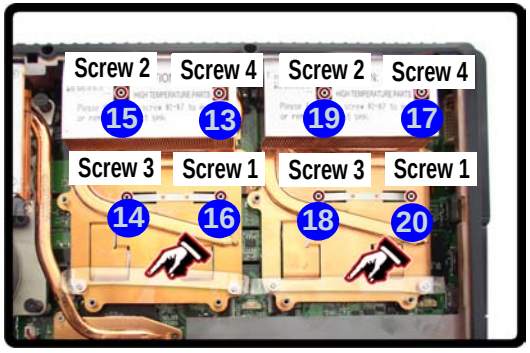
a.



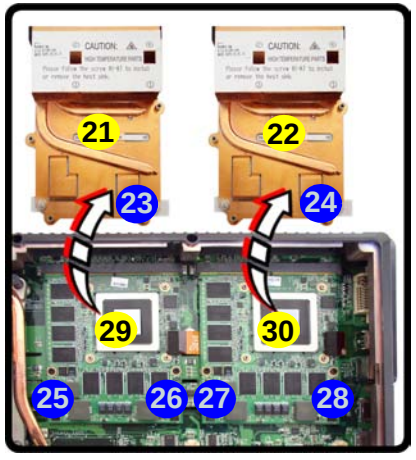
b.



c.



d.



Heat Sink Screw Removal and Insertion

Remove the screws from the heat sink in the order indicated here: **4-3-2-1**.

When tightening the screws, make sure that they are tightened in the order: **1-2-3-4** .

Figure 5
Video Card Removal Procedure

a. Remove the fan screws.
b. Disconnect the fan cables & remove the fan units.
c. Remove the screws in the correct order.
d. Carefully remove the heat sink units by pulling the plastic strips up. Remove the video

Caution

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

11 & 12.Fan Units
21 & 22.Heat Sink Units
29 & 30.Video Cards

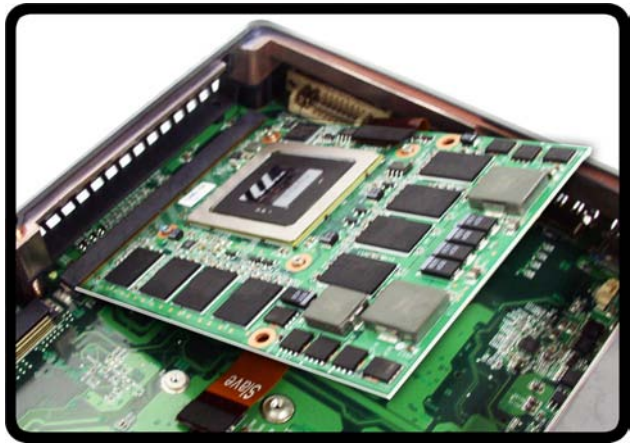
- 20 Screws

Figure 6
Video Card Removal (cont'd)

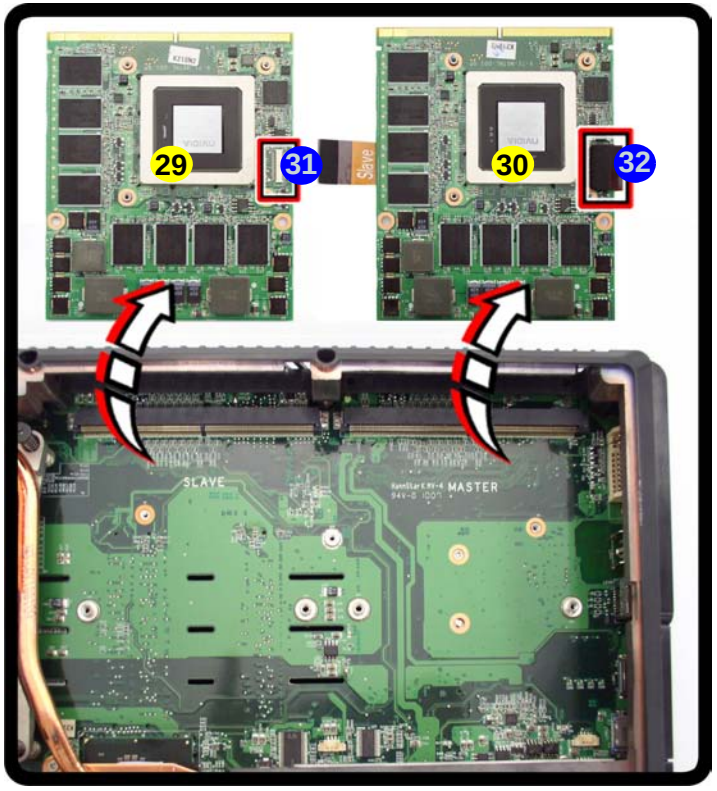
e. The video cards will pop up.
f. Disconnect the video card cables and remove the video cards.

7. The video cards 29 & 30 will pop up.
8. Disconnect the video card cables 31 & 32 and remove the video cards 29 & 30 (***Figure 6f***).

e.



f.



Caution

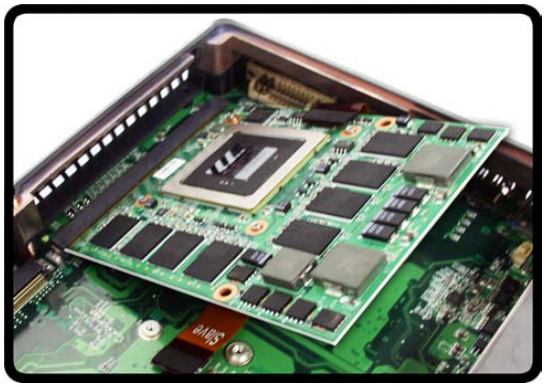
The heat sink, and video card area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

29 & 30.Video Cards

Installing a New Video Card

1. Prepare to fit the video cards 29 & 30 into the slot by holding it at at about a 30° angle (*page 2 - 10*).
2. The card needs to be fully into the slot, and the video card and socket have a guide-key and pin which align to allow the card to fit securely (*Figure 7h*).
3. Fit the connectors firmly into the socket, straight and evenly (*Figure 7h*).

g.



h.

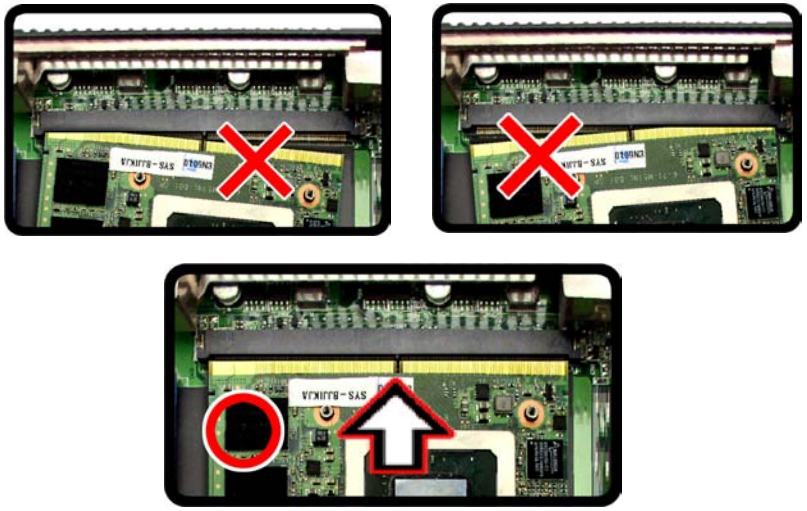


Figure 7
Installing a New Video Card

g. Insert the video cards at a 30 degree angle.
h. Fit the connectors straight and even.

Caution

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

4. DO NOT attempt to push one end of the card in ahead of the other.
5. The card's pin alignment will allow it to only fit one way. **Make sure the module is seated as far into the socket as it will go** (none of the gold colored contact should be showing). DO NOT FORCE the card; it should fit without much pressure.
6. Secure the card with screws 25 - 28 (*Figure 5 on page 2 - 9*).
7. Place the heat sink back on the card, and secure the screws in the order indicated in *Figure 5 on page 2 - 9*.
8. Attach the video card fan and secure with the screws as indicated in *Figure 5 on page 2 - 9*.
9. Reinsert the component bay cover, and secure with the screws as indicated in *Figure 14 on page 2 - 18*.

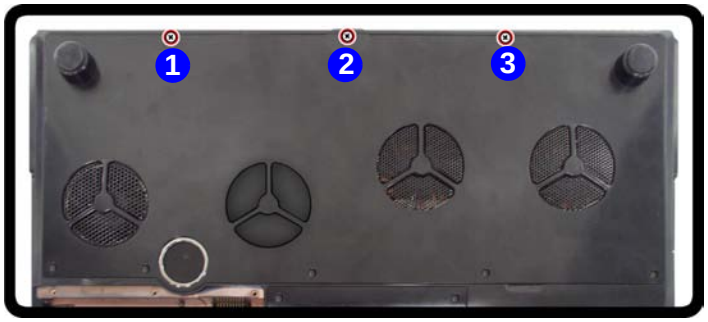
Figure 8
Keyboard Removal

a. Remove screws from the bottom of the computer.
b. Turn the computer over, open the Lid/LCD, and carefully (a cable is connected to the underside of the LED cover module) unsnap up the LED cover module from point 4 on the right .
c. Disconnect cable and remove the LED cover module .

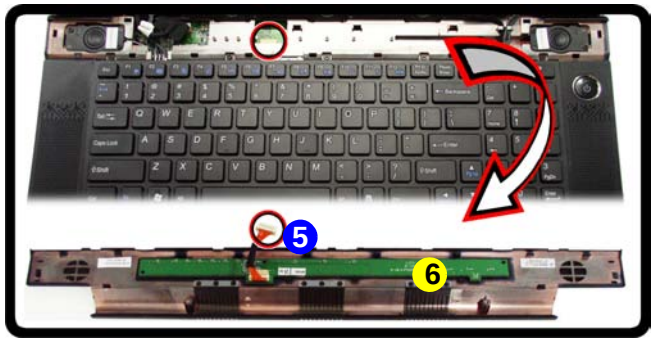
Removing the Keyboard

1. Turn **off** the computer and remove the battery (*page 2 - 5*).
2. Remove screws 1 - 3 from the bottom of the computer (*Figure 8a*).
3. Turn the computer over, open the Lid/LCD, and carefully (a cable is connected to the underside of the LED cover module) unsnap up the LED cover module from point 4 on the right (*Figure 8b*).
4. Disconnect cable 5 and remove the LED cover module 6 (*Figure 8c*).

a.



c.



b.

6. LED Cover Module

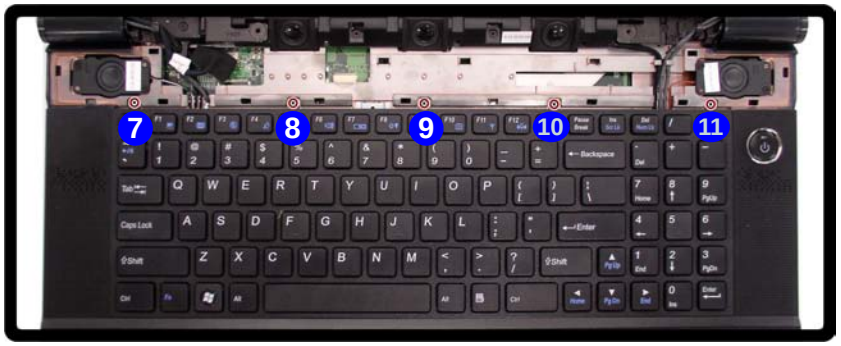
- 3 Screws

5. Remove screws 7 - 11 from the keyboard (*Figure 9d*).
6. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable 12. Disconnect the keyboard ribbon cable 12 from the locking collar socket 13 (*Figure 9e*).
7. Remove the keyboard 14 (*Figure 9f*).

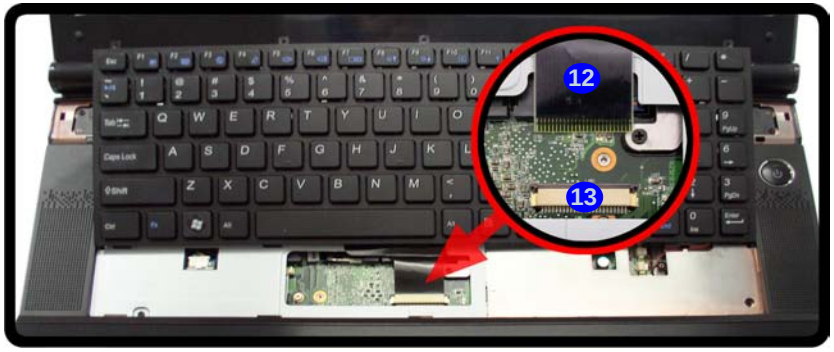
Figure 9
Keyboard Removal (cont'd.)

d. Remove screws from the keyboard.
e. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable . Disconnect the keyboard ribbon cable from the locking collar socket .
f. Remove the keyboard.

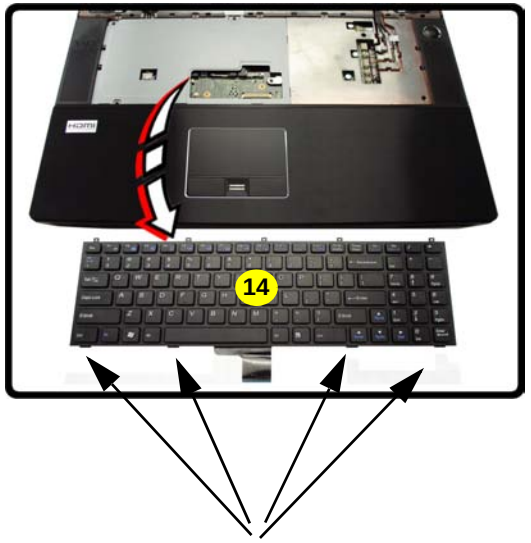
d.



e.



f.



Re-Inserting the Keyboard

When re-inserting the keyboard, align first the **four** keyboard tabs (*Figure 9f*) that are located at the bottom, to the slots in the case.

14. Keyboard

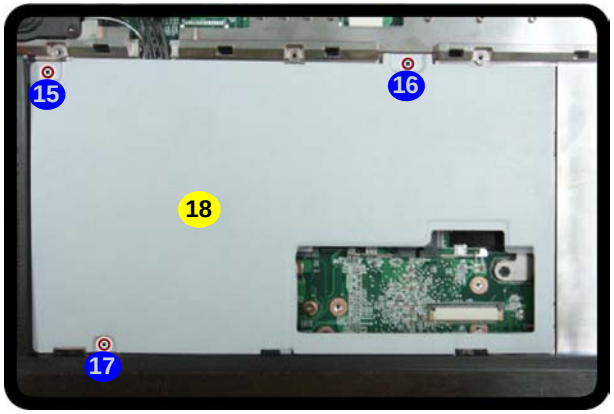
- 5 Screws

Figure 10
Keyboard Removal (cont'd.)

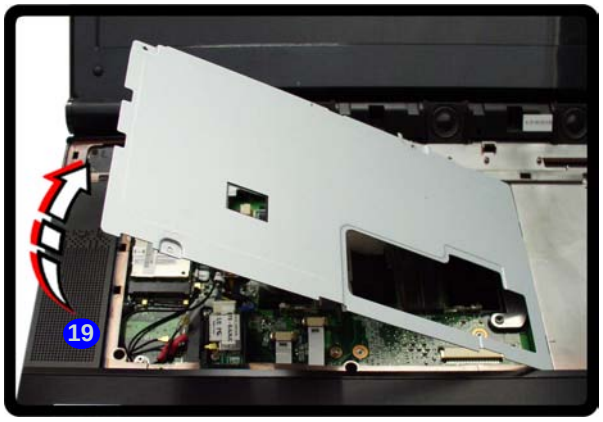
g. Remove screws from the keyboard shielding plate.
h. Lift the keyboard shielding plate up in the direction of the arrow.
i. Remove the keyboard shielding plate.

8. Remove screws 15 - 17 from the keyboard shielding plate 18 (***Figure 10g***).
9. Lift the keyboard shielding plate up in the direction of the arrow 19 (***Figure 10h***).
10. Remove the keyboard shielding plate 18 (***Figure 10i***).

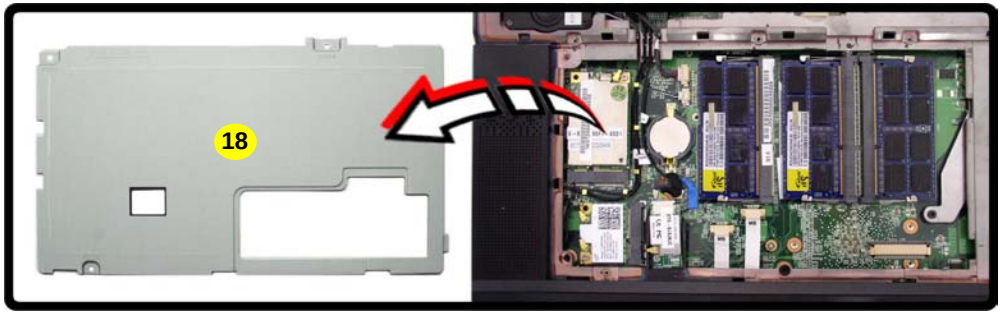
g.



h.



i.



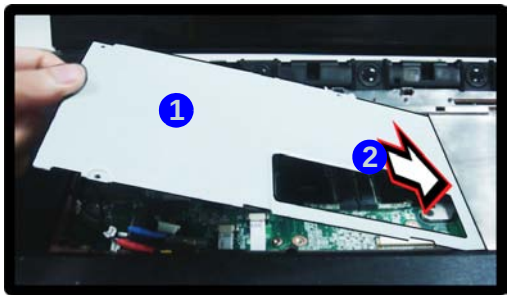
18. Keyboard Shielding Plate

- 3 Screws

Keyboard Shielding Plate Insertion

1. When re-inserting the keyboard shielding plate 1 make sure you insert it by sliding it into position at an angle as illustrated by arrow 2 below, and press it down into position (***Figure 11a***).
2. Secure the plate with screws 3 - 5 (***Figure 11b***).

a.



b.

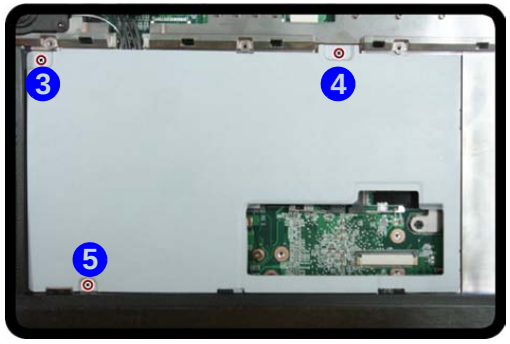


Figure 11
Keyboard Shielding Plate Insertion

a. When re-inserting the keyboard shielding plate make sure you insert it by sliding it into position at an angle as illustrated by arrow below, and press it down into position.
b. Secure the plate with screws.

- 3 Screws

Figure 12
Wireless LAN Module Removal

a. The Wireless LAN module will be visible at point 1 on the mainboard.
b. Disconnect the cables and remove the screw.
c. The WLAN module will pop up.
d. Lift the WLAN module out.

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

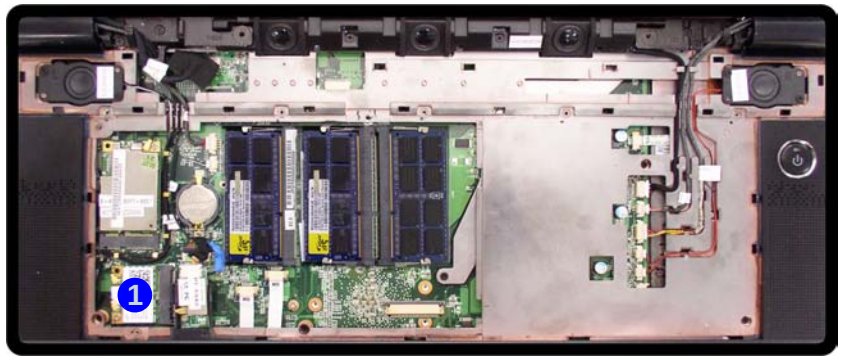
5. WLAN Module.

- 1 Screw

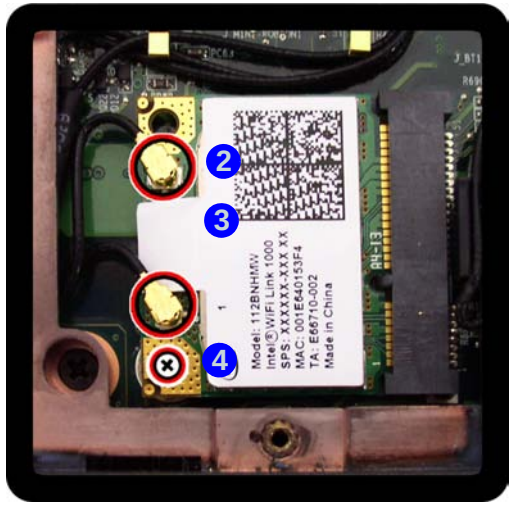
Removing the Wireless LAN Module

1. Turn **off** the computer, remove the battery (***page 2 - 5***) and the keyboard (***page 2 - 9***).
2. The Wireless LAN module will be visible at point 1 (***Figure 12a***) on the mainboard.
3. Carefully disconnect cables 2 - 3, then remove screw 4 from the module socket (***Figure 12b***).
4. The Wireless LAN module 5 (***Figure 12c***) will pop-up.
5. Lift the Wireless LAN module 5 (***Figure 12d***) up and off the computer.

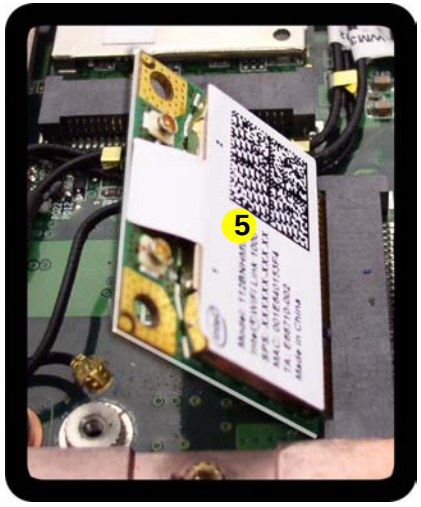
a.



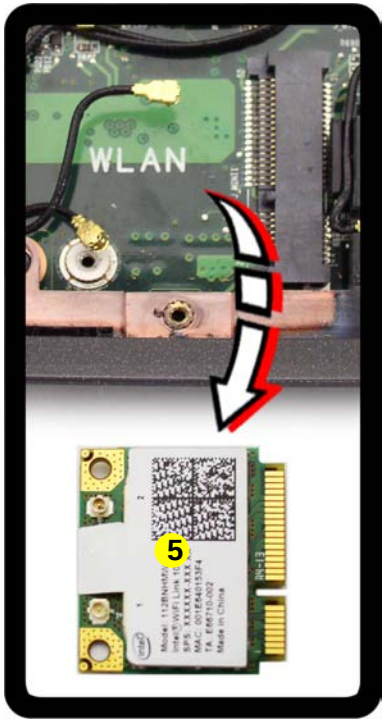
b.



c.



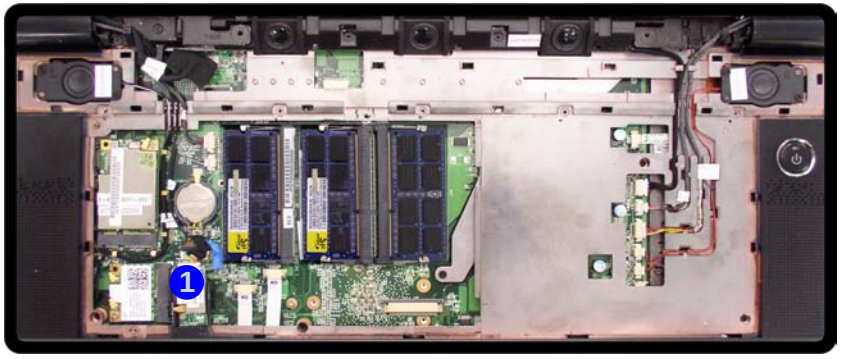
d.



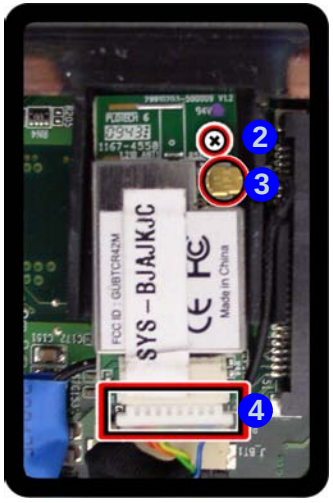
Removing the Bluetooth Module

1. Turn **off** the computer, remove the battery (*page 2 - 5*) and the keyboard (*page 2 - 9*).
2. The Bluetooth module will be visible at point 1 (*Figure 13a*).
3. Remove screw 2 (*Figure 13b*).
4. Carefully separate the Bluetooth module from the connector 3 and disconnect the cable 4(*Figure 13b*).
5. Lift the Bluetooth module 5 (*Figure 13c*) up and off the computer..

a.



b.



c.

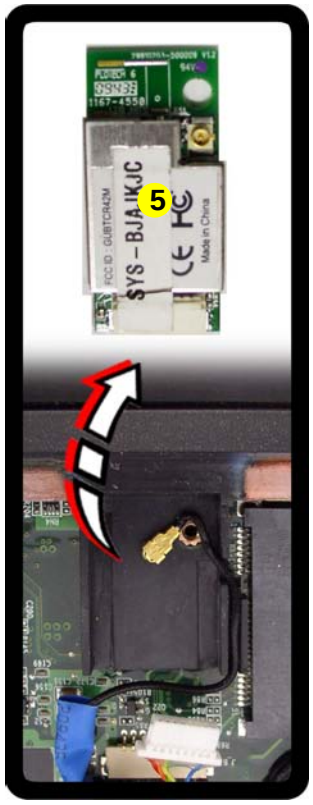


Figure 13
Bluetooth Module Removal

a. The Bluetooth module will be visible at point 1.
b. Remove the screw, disconnect the cable and the connector.
c. Lift the Bluetooth module up off the socket.

5. Bluetooth Module

- 1 Screw

Figure 14
RAM Module Removal

a. The RAM modules will be visible at points 1 - 3.
b. Gently pull the two release latches on the sides of the memory socket in the direction indicated by the arrows.
c. The RAM module will pop-up, and you can then remove it.

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 Module

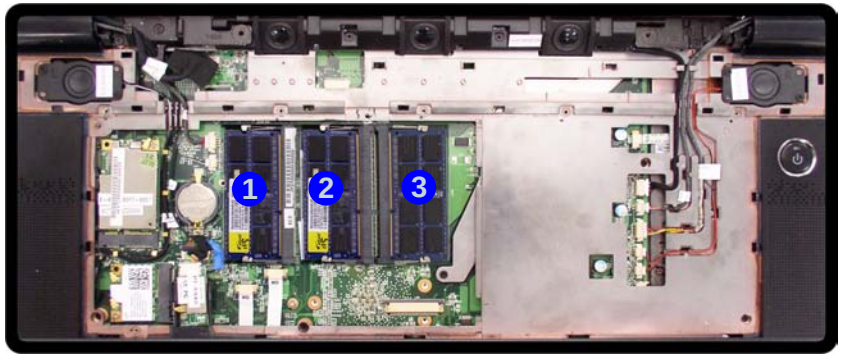
Removing the System Memory (RAM)

The computer has three memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR3 1066/1333MHz. The main memory can be expanded up to 12GB. The SO-DIMM modules supported are 1024MB, and 2048MB and **DDRIII** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

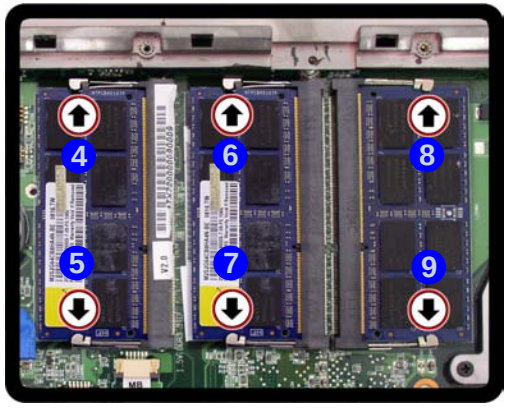
Memory Upgrade Process

1. Turn **off** the computer, remove the battery (***page 2 - 5***) and the keyboard (***page 2 - 9***).
2. The RAM modules will be visible at points 1 - 3 (***Figure 14a***).
3. Gently pull the two release latches (4 - 9) on the sides of the memory socket in the direction indicated by the arrows (***Figure 14b***).
4. The RAM module 10 will pop-up (***Figure 14c***), and you can then remove it.

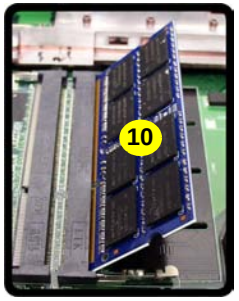
a.



b.



c.



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

Figure 15
Removing the Hard Disk(s) from the Primary HDD Bay

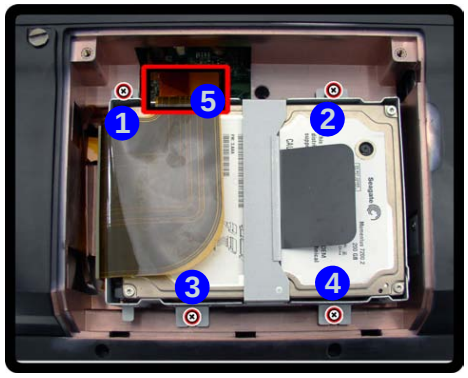
a. Remove screws and disconnect cable from the hard disk assembly.
b. Remove the hard disk assembly.
c. Grip the tab to remove the HDD cable.

Removing the Hard Disk(s) from the Primary HDD Bay

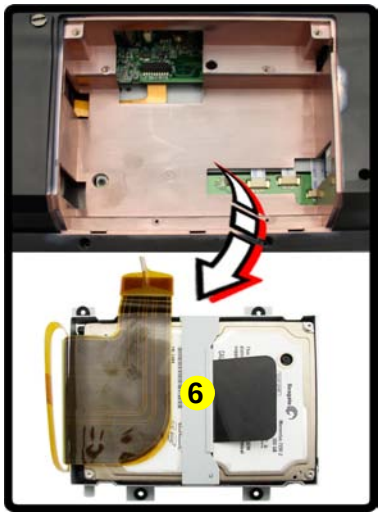
The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new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

1. Turn **off** the computer ,remove the battery (***page 2 - 5***) and hard disk bay cover (***page 2 - 6***).
2. Remove screws 1 - 4 from the hard disk assembly (***Figure 15a***).
3. Disconnect cable 5 from the hard disk assembly (***Figure 15a***).
4. Remove the hard disk assembly 6 (***Figure 15b***).
5. Grip the tab to remove the HDD cable 7 (***Figure 15c***).

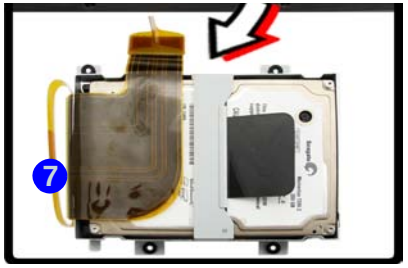
a.



b.



c.



6. Hard Disk Assembly

- 4 Screws

6. Remove screws 8 - 11 (*Figure 16d*). *The number and sequence of screws to be removed will depend on whether or not you have one or two hard disks installed in the case.

d.

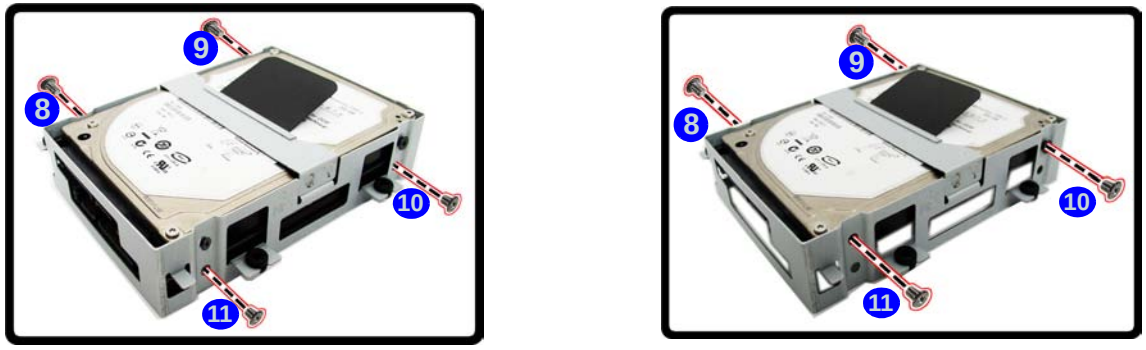


Figure 16
Removing the Hard Disk(s) from the Primary HDD Bay (cont'd.)

d. Remove the screws.

- 4 Screws

Figure 17
Inserting the Primary Hard Disk(s)

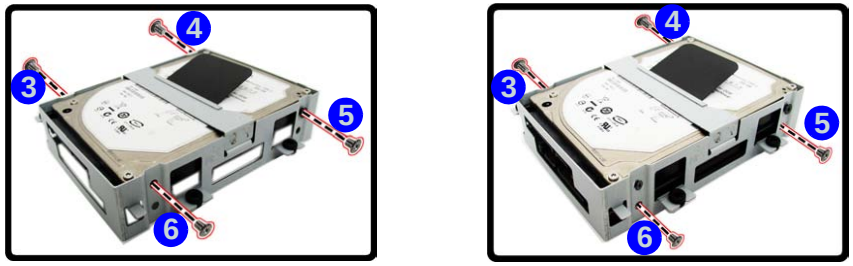
a. Insert the HDD into the case.
b. Insert screws to secure the hard disk(s) in the case.

Inserting the Primary Hard Disk(s)

1. Insert the HDD(s) 1 into the HDD case 2 as illustrated (***Figure 17a***). ***Make sure the cable connectors are facing towards the gap at the rear of the case**.
2. Insert screws 3 - 6 to secure the hard disk(s) in the case (***Figure 17b***).

a.

b.

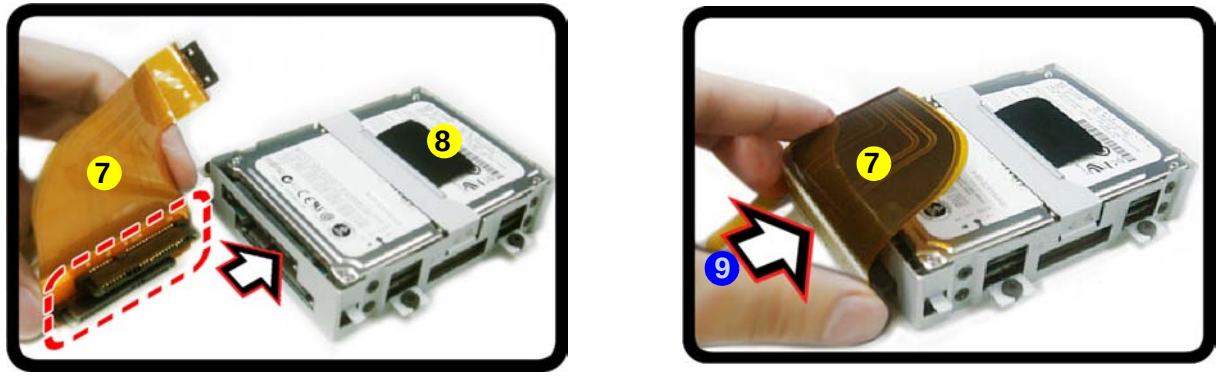


1. Hard Disk
2. Hard Disk Case

- 4 Screws

3. Firmly insert the HDD cable 7 into the hard disk assembly 8 in the direction of the arrow 9 as indicated below (*Figure 18c*).
4. Insert the HDD assembly into the bay by pushing it straight down (*Figure 18d*). ***Do not insert the assembly at an angle.***
5. Firmly connect cable 7 to the mainboard and then secure the assembly with screws 10 - 13 (*Figure 18d*).

c.



d.

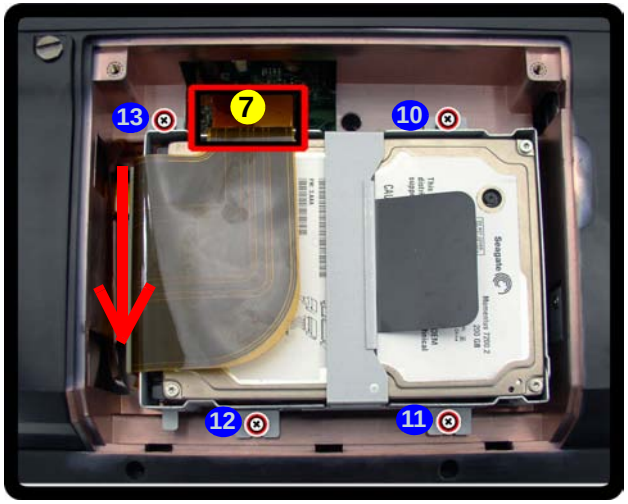


Figure 18
Inserting the Primary Hard Disk(s) (cont'd.)

c. Firmly insert the HDD cable into the hard disk assembly.
d. Insert the HDD assembly into the bay by pushing it straight down. Firmly connect the cable and then secure the assembly with screws.

8. Hard Disk Assembly
9. Hard Disk Cable

- 4 Screws

Removing the Hard Disk from the Secondary HDD Bay

Figure 19
Removing the Hard Disk from the Secondary HDD Bay

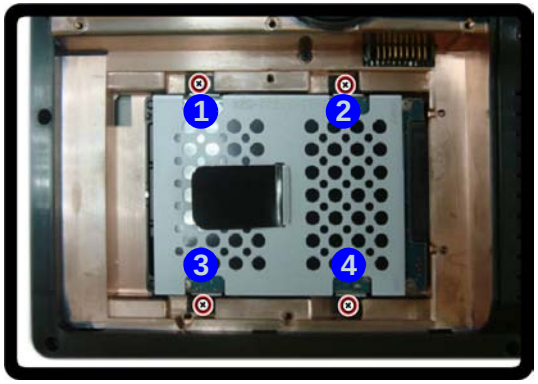
a. Remove screws from the hard disk assembly.
b. Grip the tab and slide the hard disk assembly in the direction of the arrow 5. Lift the hard disk assembly out of the compartment.
c. Remove screws from the hard disk assembly.
d. Separate the HDD from the HDD case.

10. Hard Disk
11. Hard Disk Case

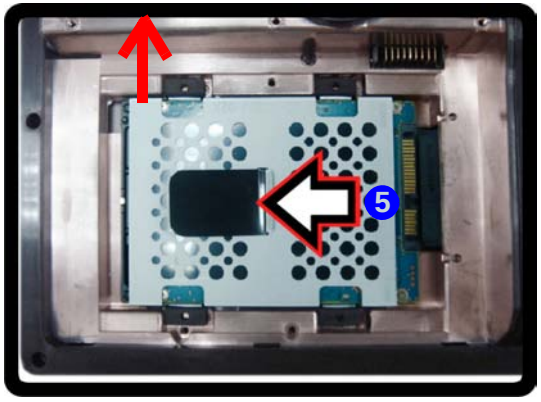
- 8 Screws

1. Remove screws 1 - 4 from the hard disk assembly (***Figure 19a***).
2. Grip the tab and slide the hard disk assembly in the direction of the arrow 5 (***Figure 19b***).
3. Lift the hard disk assembly out of the compartment (***Figure 19b***).
4. Remove screws 6 - 9 from the hard disk assembly (***Figure 19c***).
5. Separate the hard disk 10 from the HDD case 11 (***Figure 19d***).
6. Insert the replacement HDD into the case ***Make sure the cable connector is facing towards the rear of the case as illustrated below**.

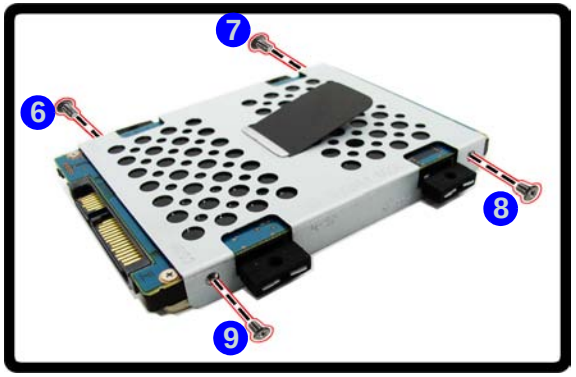
a.



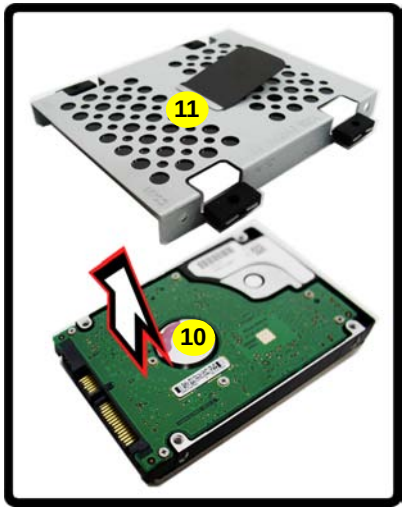
b.



c.



d.



7. Replace screws 6 - 9 (*page 2 - 23*).
8. Insert the HDD assembly into the bay by pushing it straight down (do not insert the assembly at an angle) and then slide it in the direction of the arrow 12 to lock in place (*Figure 20e*).

e.

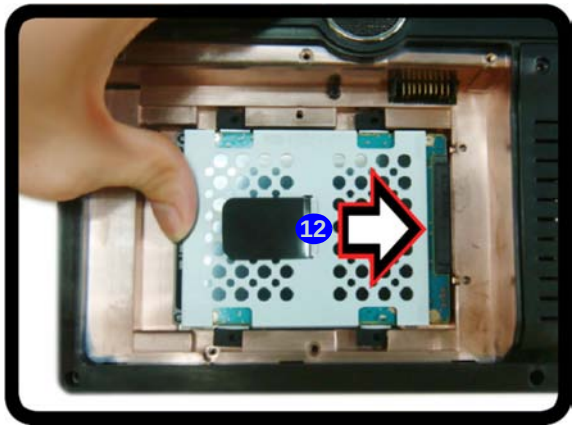


Figure 20
Removing the Hard Disk(s) from the Secondary HDD Bay (cont'd.)

e. Insert the HDD assembly into the bay by pushing it straight down and then slide it in the direction of the arrow to lock in place.

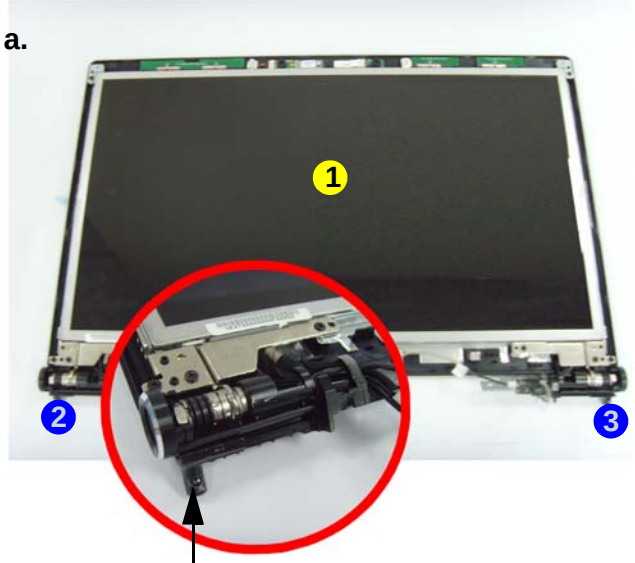
Figure 21
Hinge Removal

a. Re-insert the hinges into the top case.
b. Raise the LCD to a 90° angle.
c. Remove the whole LCD assembly again from the base of the computer. Remove the screws at the base of the LCD assembly.

Removing the Hinges

1. The whole LCD assembly 1 is detached from the base of the computer.
2. Re-insert hinges 2 & 3 (***Figure 21a***) into the top case and raise the LCD to a 90° angle (***Figure 21b***) to adjust the positioning of the hinges for removal.
3. Remove the whole LCD assembly again from the base of the computer (***Figure 21c***).
4. Remove screws 4 - 7 at the base of the LCD assembly (***Figure 21c***).

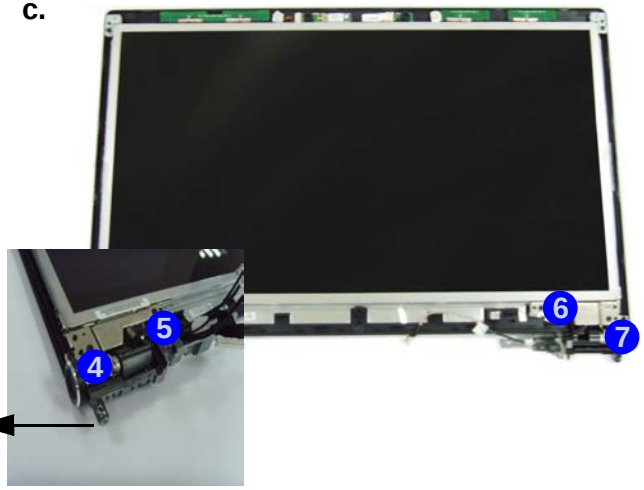
a.



Note:
This is the position of the hinges prior to re-inserting them into the top case of the computer.

b.

c.



Note:
This will be the new position of the hinges after re-inserting them into the top case of the computer.

1. LCD Assembly

- 4 Screws

5. Remove hinges 8 & 9 (*Figure 22d*).

d.

Figure 22
Hinge Removal

d. Remove the hinges.

8 & 9.Hinges

Appendix A:Part Lists

This appendix breaks down the ***X7200*** 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.

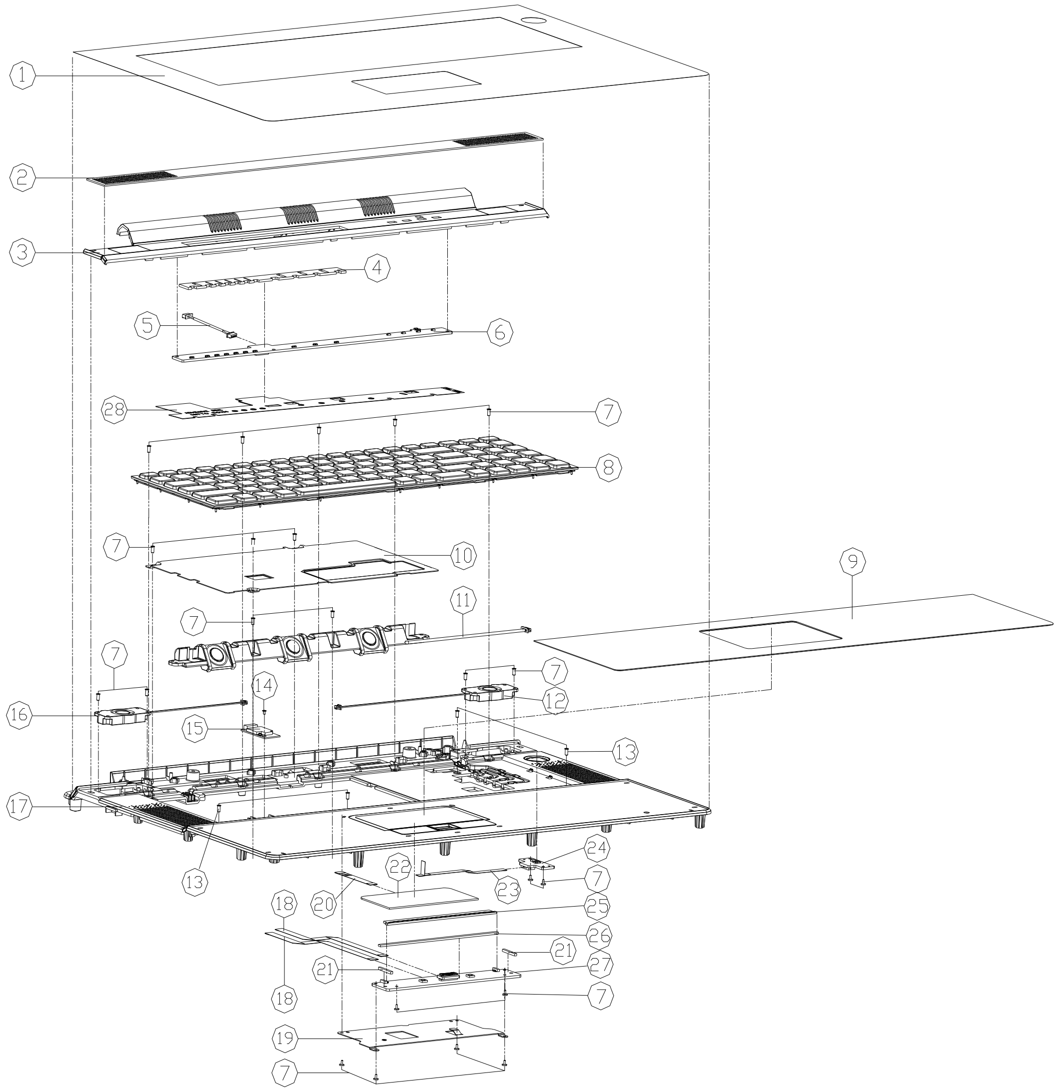
Part List Illustration Location

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

Table A - 1
Part List Illustration Location

Part	X7200
Top	*page A - 3*
Bottom	*page A - 4*
LCD	*page A - 5*
SATA DVD Super-Multi	*page A - 6*
SATA Blu-Ray Combo	*page A - 7*
VGA-GTX1	*page A - 8*

Top

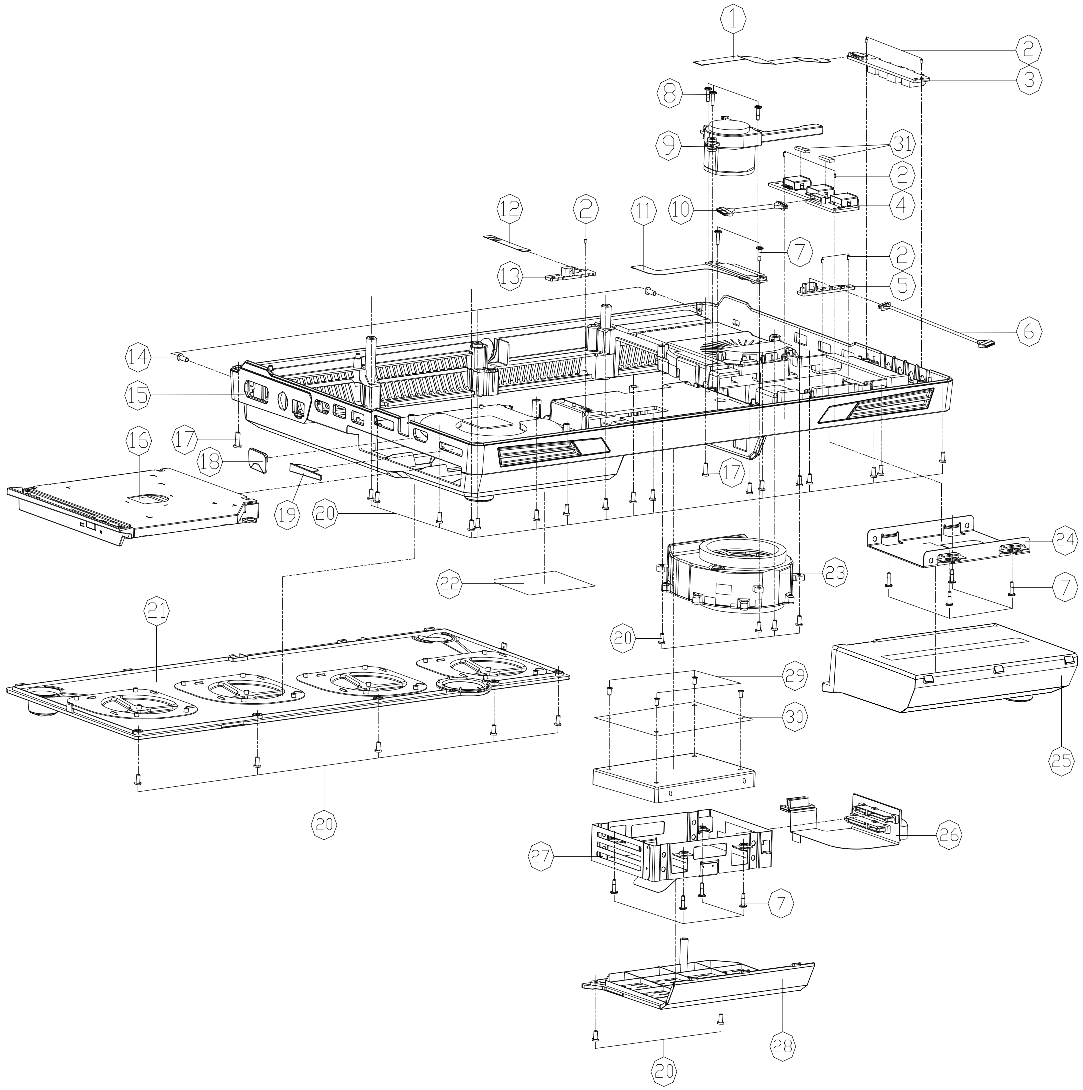


ITEM	PART NAME	PART NO	REMARK
1	TOP CASE PROTECT MYLAR PET X7200	6-40-X7208-020	
2	PMMA FOR CENTER COVER PMMA X7200	6-42-X7202-081	
3	CENTER COVER MODULE X7200	6-42-X7208-102	
4	TOUCH SENSOR LENS PMMA X7200	6-42-X7202-091	
5	WIRE CABLE 20PIN M/B TO TOUCH SENSOR FOR X7200	6-43-X7203-012	
6	TOUCH SENSOR BOARD V2.0 X7200	6-77-X7201-D02	
7	*(非耐落)SCREW M2*4L I BZ ICT GTY-PATCH (T=0.8 D=4)	6-35-C6120-4RB	
8	K/B USA(黑色)& FRAME (US) MODULE M980NU/W870CU/X7200	6-79-M980NU0K-010	
9	AL PLATE FOR PLAM REST AL X7200	6-33-X7202-031	
10	KB SHIELDING SECC X7200	6-33-X7202-042	
11	SPEAKER L-M-R MODULE(L,R-FRONT ? CENTER) 1	6-23-5X720-031	
12	SPEAKER REAR-R MODULE 1W 8? 2P (FORGRAND) X7200	6-23-5X720-011	
13	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
14	*(非耐落)SCREW M2*3L KI NI ICT GTY-PATCH (DD=ø4.0,DT=0.8)	6-35-B1120-3RD	
15	BLUETOOTH V2.1 BTC04R281B 凱碩 8 PIN USB CSR BC04 A07 (4839) WITH MS BT	6-88-M77C5-5300	
15	BLUETOOTH V2.1 GUBTCR42M-NS-藍天/互億8 PIN USB CSR BC04_A07 WITH MS BT SOFTWARE AND NCC LABEL	6-88-M73T5-3901	
16	SPEAKER REAR-L MODULE 1.5W 4? 2P (FORGRAND) X7200	6-23-5X720-021	
17	TOP CASE MODULE X7200	6-39-X7202-012	
18	FINGER BOARD FFC CABLE X7200	6-43-X720F-012	
19	TP BRACKET SECC X7200	6-33-X7202-050	
20	TOUCH PAD FFC CABLE X7200	6-43-X7202-012	
21	CLICK SPONGE (21.5*3*3T) SM55 X7200	6-47-0019A-212	
22	TOUCH PAD SYNAPTICS TM-01146-003 MULTI-GESTURE C4800	6-49-C4802-010	
23	POWER BOARD FFC CABLE X7200	6-43-X720S-012	
24	SWITCH BOARD V2.0 X7200	6-77-X720S-D02	
25	TP LENS PMMA X7200	6-42-X7202-0A2	
26	CLICK SPONGE (112.7*3.3*3T) SM55 X7200	6-47-0019A-B20	
27	CLICK BOARD V2.0+FINGER SENSOR BOARD V2.0 MODULE X7200	6-77-X720A-N02A	
28	TOUCH SENSOR CU FOIL+MYLAR X7200	6-40-X7202-011	

Figure A - 1
Top

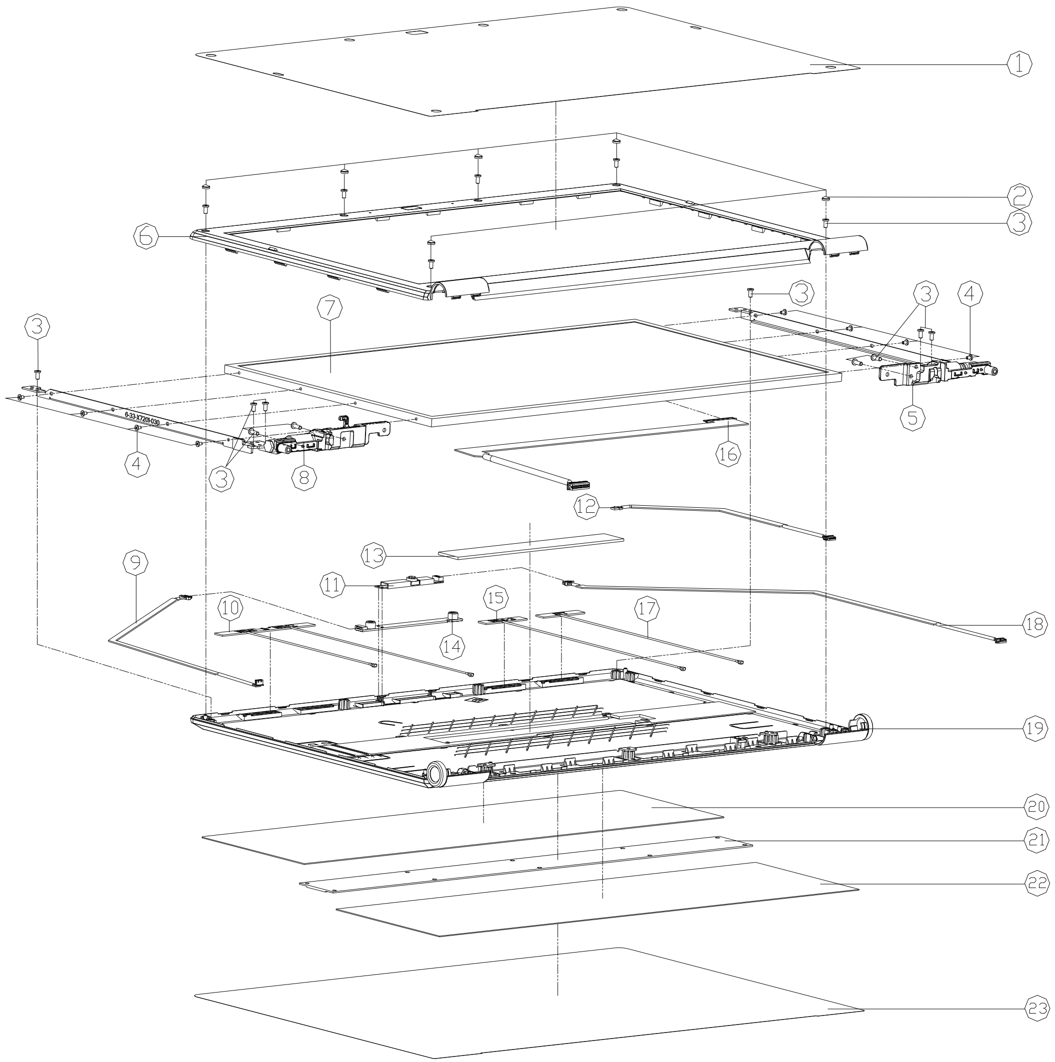
Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	AUDIO BOARD FFC CABLE X7200	6-43-X7200-052	
2	*(非耐落)SCREW M2*4L I BZ ICT GTY-PATCH (T=0.8 D=4)	6-35-C6120-4RB	
3	AUDIO BOARD V3.0 X7200	6-77-X7208-D03	
4	USB BOARD V3.0 X7200	6-77-X7203-D03	
5	POWER LED BOARD V2.0 X7200	6-77-X7204-D02	
6	WIRE CABLE 6PIN M/B TO LED BOARD FOR X7200	6-43-X7200-032	
7	SCREW M2*7.5L D1=2.1 L=4.5 S=2.5 K NI ICT	6-35-81120-750	
8	SCREW M2*11.5 K BZ ICT NY (DD=5 DT=0.8 THREAD 3 MM)	6-35-82120-115	
9	SPEAKER SUB_WOOFER MODULE 2W 4? 2P (FORGRAND) X7200	6-23-5X720-042	
10	WIRE CABLE 20PIN M/B TO USB BOARD FOR X7200	6-43-X7200-022	
11	FPC CABLE M/B TO 3RD SATA HDD FOR X7200	6-43-X720J-011	
12	IR BOARD FFC CABLE X7200	6-43-X7200-062	
13	IR BOARD V2.0 X7200	6-77-X720H-D02	
14	SCREW M2*8L K1 BK/Z ICT NY	6-35-B6120-8R0	
15	BOTTOM CASE MODULE X7200	6-39-X7203-012	
16	SATA DVD SUPER MULTI ASS'Y X7200	6-79-X72000Q-010	
16	SATA BLU-RAY COMBO ASS'Y X7200	6-79-X72000W-010	
17	SCREW M3*7L KI BK/Z ICT NY(ø=5.2 T=1)	6-35-B6130-7R0	
18	WITHOUT HDMI IN RUBBER SILICON X7200	6-47-X7202-011	FOR NO HDMI IN
19	CARD READER RUBBER COVER	6-47-M66NE-010	
20	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
21	CPU COVER MODULE X7200	6-42-X7208-202	
22	PRODUCT LABEL FOR X7200	6-45-X7200003-010	
23	FAN 60*20.5MM 5V 0.5A 3000RPM AB0805HX-BB3	6-31-X720S-200	
24	3RD HDD BRACKET SECC X7200	6-33-X720J-021	
25	BAT.P S LI 14.8V/5.3AH/78.44WH 4S2P MERRY/(EXA CELL POLYMER) 90S82200(00) X7200	6-87-X720S-4Z71	
26	FPC CABLE 20PIN M/B TO SATA HDD FOR X7200	6-43-X720J-021	
27	2IN1 HDD BRACKET SECC X7200	6-33-X720J-011	
28	HDD COVER PC+ABS X7200	6-42-X720J-012	
29	SCREW M3*2.5L KI NI ICT NY	6-35-B1130-2R5	
30	HDD AL FOIL X7200	6-47-X720J-010	
31	GASKET(10*5*3) FOR PCB (1394) M570TU	6-47-00190-103	

LCD

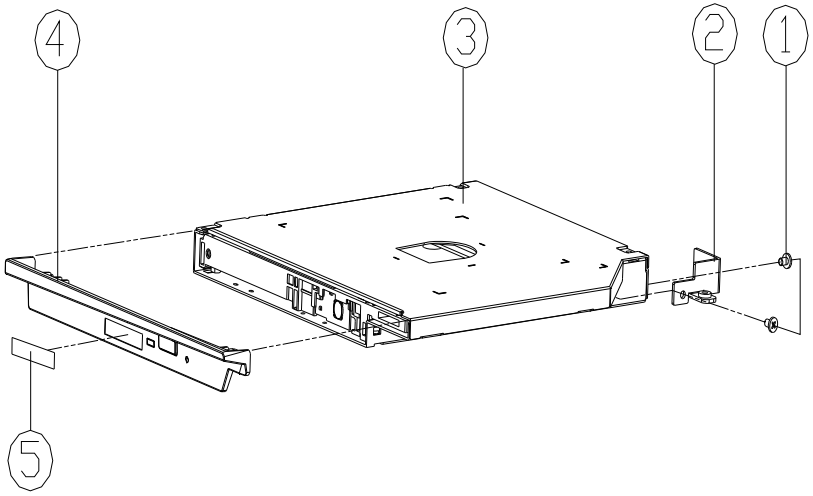


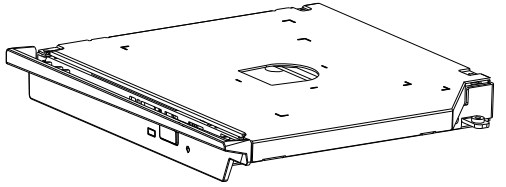
ITEM	PART NAME	PART NO	REMARK
1	FRONT COVER PROTECT MYLAR PET X7200	6-40-X7208-030	
2	FRONT COVER SCREW SILICON RUBBER X7200	6-47-X7201-031	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	
5	HINGE R SECC+SK7+ZN X7200	6-33-X7201-021	
6	FRONT COVER MODULE X7200	6-39-X7201-012	
7	LCD 17.3" FHD HANNSTAR HSD173PUW1-A GLARE TYPE (LED) 5.8 MM	6-50-NB258-N00	(OPTION)
7	LCD 17.3" FHD AU B173HW01 V4 (H/W:1A) (GLARE TYPE) (LED) 6.0 MM	6-50-NB260-G01	(OPTION)
8	HINGE L SECC+SK7+ZN X7200	6-33-X7201-031	
9	WIRE CABLE 4PIN M/B TO MIC FOR X7200(HL)	6-43-X7204-012	
10	ANTENNA WIMAX COMBO FVC WM1+WM2 PCB 2.4G/3.5GHZ/5G WM1=490MM WM2=500MM X7200	6-23-7X720-011	
11	UVC CAMERA BISON FIX BN2834SA8-010 3M B5100M	6-88-B51MC-4900	(OPTION)
12	WIRE CABLE 2PIN M/B TO BACK LED BOARD FOR X7200	6-43-X7200-012	
13	LCD LIGHT GUIDE PMMA X7200	6-42-X7201-021	
14	DIGITAL-MIC MODULE DK-A02 FOR M980NU	6-23-EM980-010	
15	ANTENNA WIMAX FVC WM3 PCB 2.4G/3.5GHZ/5G L=665MM X7200	6-23-7X720-031	
16	WIRE CABLE 40PIN M/B TO LCD LG LP173WD1 FOR X7200(EDID) HL/YD	6-43-X7201-012-A	
17	ANTENNA BLUETOOTH FVC BT PCB 2.4G L=695MM FVC X7200	6-23-7X720-021	
18	WIRE CABLE 5PIN M/B TO CCD MODULE FOR X7200	6-43-X720T-012-1	
19	LCD BACK COVER MODULE X7200	6-39-X7201-023	
20	LCD AL PLATE TOP AL X7200	6-33-X7201-011	
21	PMMA FOR LCD LOGO X7200 (X7200)	6-42-X7201-060	
22	LCD AL PLATE BOTTOM AL X7200	6-33-X7201-051	
23	BACK COVER PROTECT MYLAR 8B35 X7200	6-40-X7208-040	

Figure A - 3
LCD

SATA DVD Super-Multi

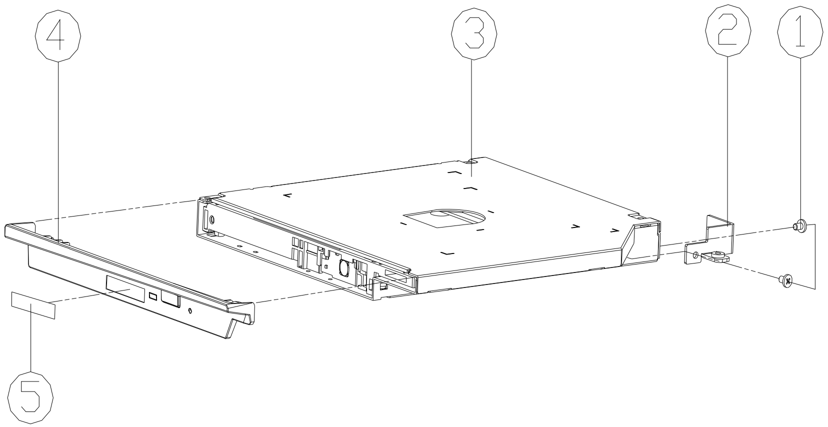
Figure A - 4
SATA DVD Super-Multi

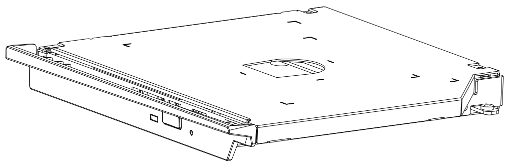




ITEM	PART NAME	PART NO	REMARK
1	(non-printing)SCREW M2*3L K1 NI ICT GTY-PATCH	6-35-B1120-3RE	
2	CD ROM BRACKET SECC M980NU	6-33-M980Z-010	
3	SATA DVD SUPER MULTI S [illegible]	6-85-A078X-T08	FOR TSST
3	SATA DVD SUPER MULTI S [illegible]	6-85-A078X-506	FOR HLDS
4	ODD SUPER MULTI BEZEL MODULE X7200	6-42-X720Q-102	
5	SUPER MULTI ODD BEZEL LABEL (SIZE CHANGE)	6-45-W860Q-011	

SATA Blu-Ray Combo



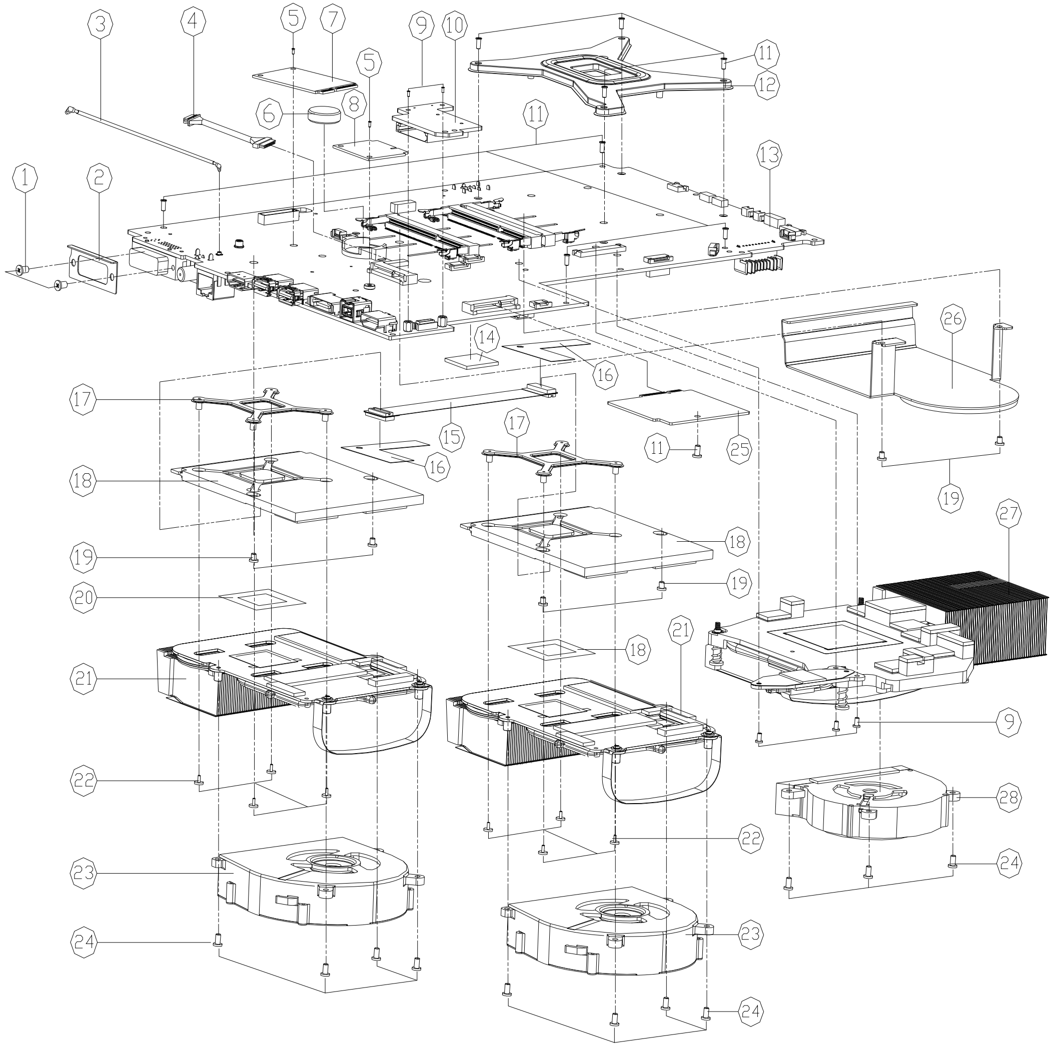


ITEM	PART NAME	PART NO	REMARK
1	(非耐落)SCREW M2*3L K1 NI ICT GTY-PATCH	6-35-B1120-3RE	
2	CD ROM BRACKET SECC M980NU	6-33-M980Z-010	
3	SATA BLU-RAY COMBO 5 1/4" 6X 12.7MM CT21N ROM VER 1.00 (WINDOWS 7 SUPPORT) HLDS	6-85-B076X-510	FOR HLDS
3	SATA BLU-RAY WRITER 5 1/4" 12.7MM MAX. 6X UJ240 H/W: 1.00 F/W: 1.00 (WINDOWS 7 SUPPORT) PANASONIC	6-85-B076X-P20	FOR PANASONIC
4	ODD SUPER MULTI BEZEL MODULE X7200	6-42-X720Q-102	
5	BLU-RAY ODD BEZEL LABEL (SIZE CHANGE) W860CU	6-45-W860W-011	

Figure A - 5
SATA Blu-Ray Combo

VGA-GTX1

Figure A - 6
VGA-GTX1



ITEM	PART NAME	PART NO	REMARK
1	SCREW 4-40*5L K NI ACT NY	6-35-81304-5R0	
2	DVI BRACKET SUS X7200	6-33-X720S-021	
3	COAXIAL CABLE 1.37MM BLACK L=85MM FOR TV TUNER X7200 FVC	6-43-X720T-020	
4	WIRE CABLE 8PIN M/B TO BLUETOOTH MODULE FOR D900C	6-43-D90CB-010	
5	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	
6	BATTERY 3V 210MA CR2032 (MITSUBISHI)	6-23-62015-607	
7	HYBRID+ATSC TV TUNER YUAN S/W MC907 MCE MINICARD-PCIE W870CU 3-IN-1 (ANALOG + DVB-T + ATSC)	6-88-W8707-6500	(OPTION)
7	HYBRID TV TUNER YUAN S/W MC770A MCE MINI-CARD D900F(DVB-T)	6-88-D90F7-6501	(OPTION)
8	WLAN AZUREWAVE AW-NE104H 802.11BGN HALF MINI-CARD PCI-E RTL8191SE R30 DELETE W760C	6-88-W76C2-7001	(OPTION)
8	WLAN 802.11A+G+N INTEL PUMA PEAK (WIFI LINK 6200 622AN_HMWG 2X2 MINI-CARD PCI-E(半卡)MOW	6-88-M77C2-4210	(OPTION)
8	WLAN 802.11A+G+N INTEL PUMA PEAK (WIFI LINK 6300 633AN_HMWG 3X3 MINI-CARD PCI-E (半卡) MOW	6-88-M77C2-4220	(OPTION)
8	WLAN XAVI XW714E 802.11BGN HALF MINI-CARD	6-88-W76C2-8702	(OPTION)
9	*(非耐落)SCREW M2*4L I BZ ICT GTY-PATCH (T=0.8 D=4)	6-35-C6120-4RB	
10	CARD READER BOARD V2.0A X7200	6-77-X720V-D02A	
11	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
12	CPU SUPPORTER SUS X7200	6-33-X720S-011	
13	MAIN BOARD V3.0 (W/O HDMI-IN) X7200	6-77-X7200-D03-1	
13	MAIN BOARD V3.0 (W/HDMI-IN) X7200	6-77-X7200-D03	
14	THERMAL PAD T-FLEX 6100HR DC1 FOR SB (25*25*2.5) D900F	6-48-D90FS-010	
15	FPC CABLE FOR VGA CARD 40P MCP79_SLI V2.0	6-43-M980L-011	ONLY FOR TWO VGA CARD
16	MYLAR FOR VGA SLI M980NU	6-40-M9800-010	ONLY FOR TWO VGA CARD
17	GPU SUPPORTER FOR N10E GTX1 SUS430 D900F	6-33-D90FS-020	
18	VGA BOARD NVIDA N11E-GTX1 DDR3 1GB/32M*32	6-77-M57NL-101-M	(OPTION)
18	VGA BOARD NVIDA N11E-GTX1 DDR3 1GB/32M*32	6-77-M57NL-101-N	(OPTION)
19	SCREW M2.5*3L K1 BZ ICT NY-	6-35-B6125-3R0	
20	VGA N10E-GTX1 MYLAR D900F	6-40-D90FS-050	
21	VGA(N11-P817) THERMAL MODULE X7200	6-31-X720N-200	
22	SCREW M1.6*3.5L K(T=1.2 D=4.5) BZ ICT NY	6-35-82116-3R5	
23	FAN MODULE 85*18.5MM 5V 0.5A 3200RPM BS6005MS-U94 A-POWER X7200	6-31-X720S-100	
24	SCREW M2.5*5L KI BK/Z ICT NY-	6-35-B6125-5RA	
25	HDMI IN MODULE CV620 MINI-PCIE (BOTTOM 增加MYLAY) FOR X8100	6-88-X810H-6501	
26	VGA PLANK SECC X7200	6-33-X7201-082	ONLY FOR ONE VGA CARD
27	CPU THERMAL MODUEL X7200	6-31-X720N-102	
28	VGA FAN MODULE ADDA D900F	6-31-D90FS-200	

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the ***X7200*** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

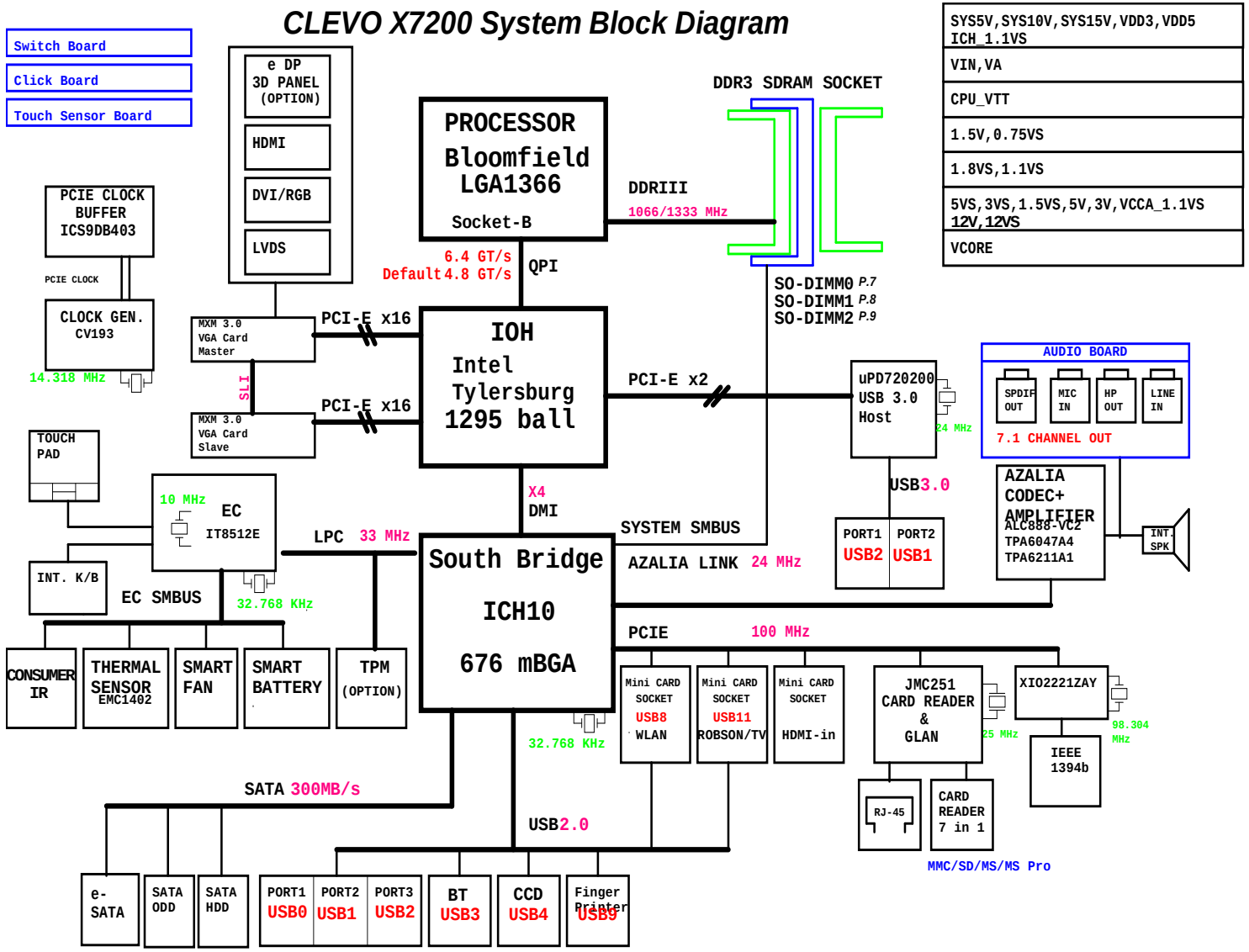
Table B - 1
SCHEMATIC DIAGRAMS

Version Note

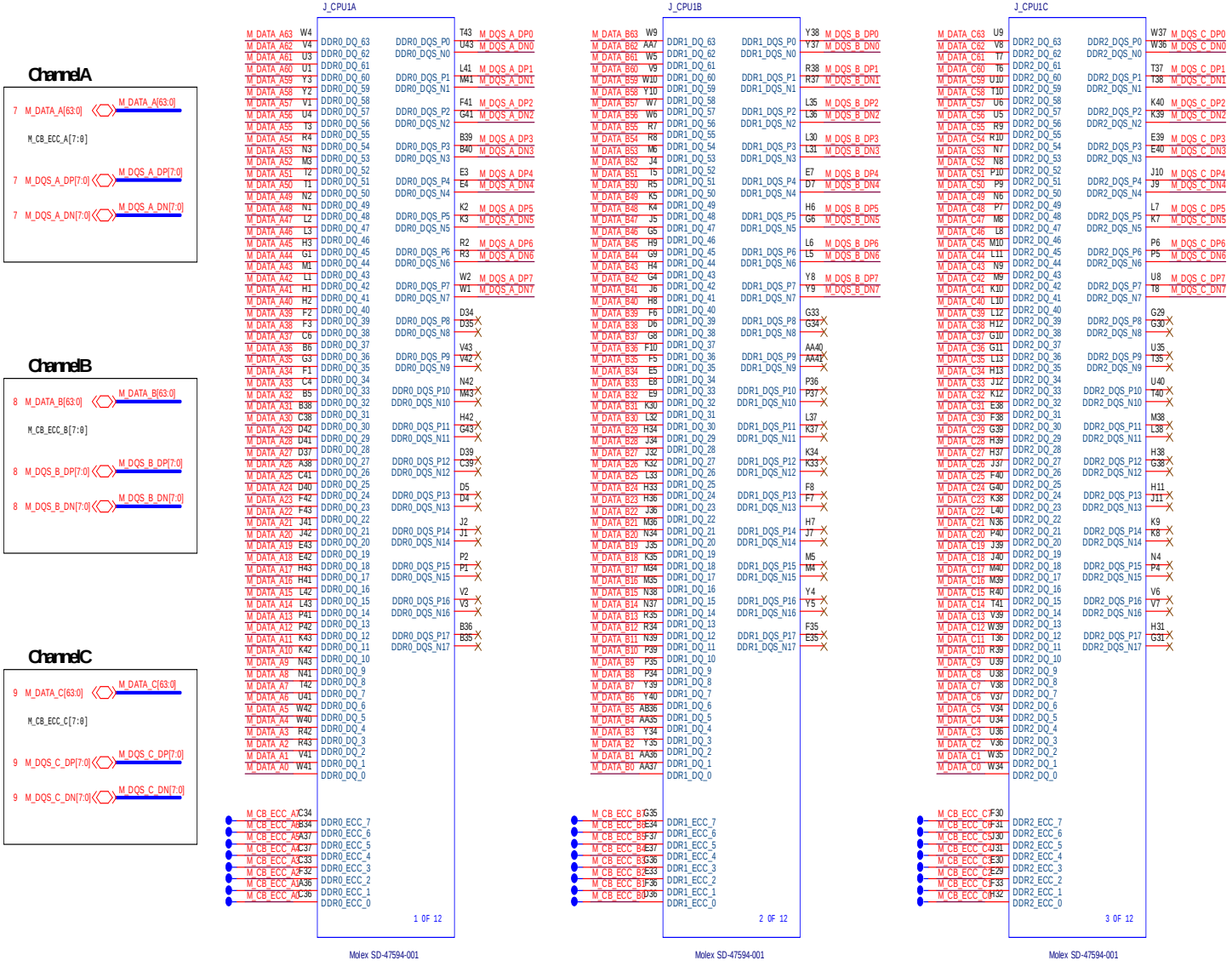
The schematic diagrams in this chapter are based upon version 6-7P-X720A-003A. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 52
System Block Diagram



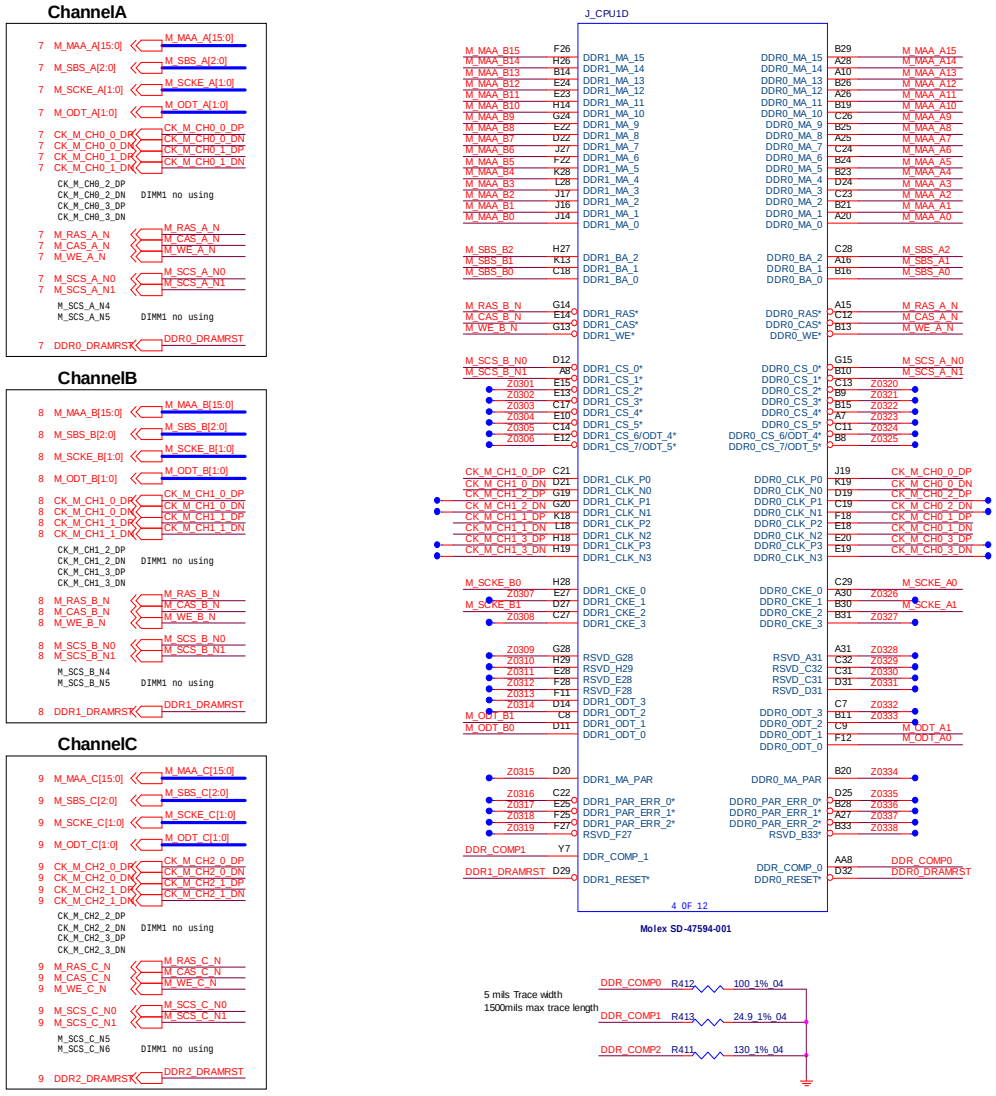
LGA1366 Part A DDR3 1/2



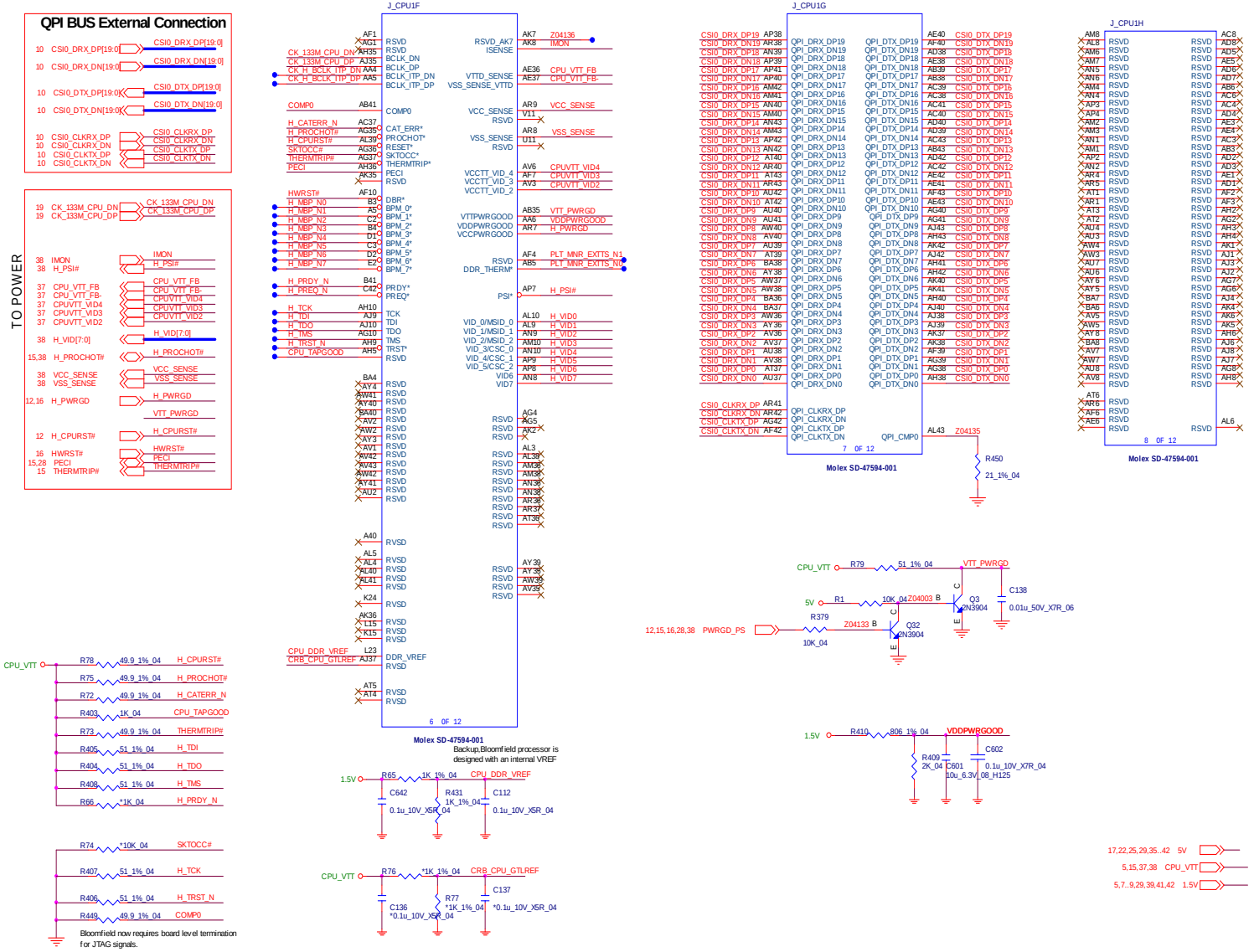
Sheet 2 of 52
LGA1366 Part A
DDR3 1/2

Sheet 3 of 52
LGA1366 Part B
DDR3 2/2

LGA1366 Part B DDR3 2/2

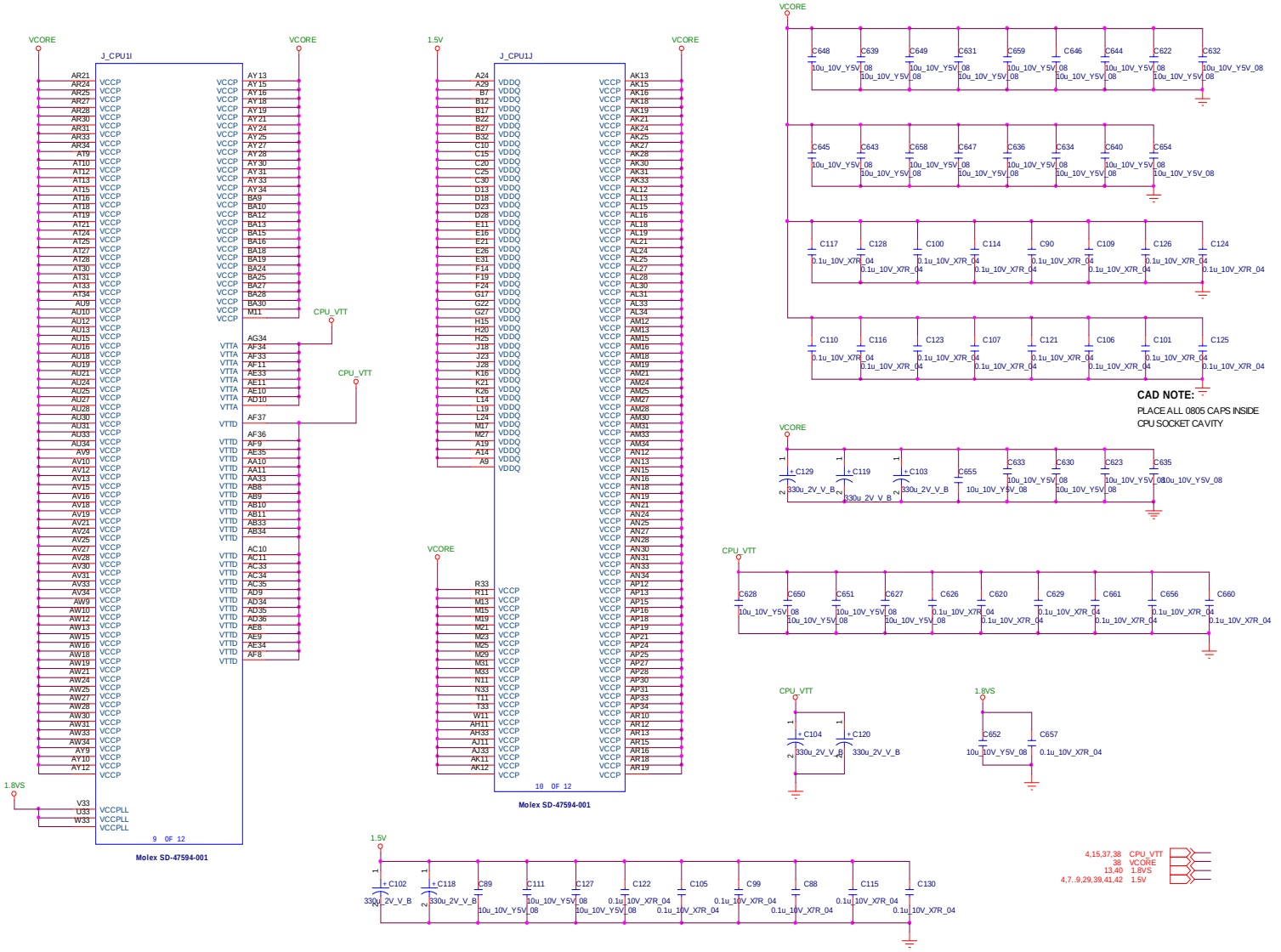


LGA1366 Part C QPI

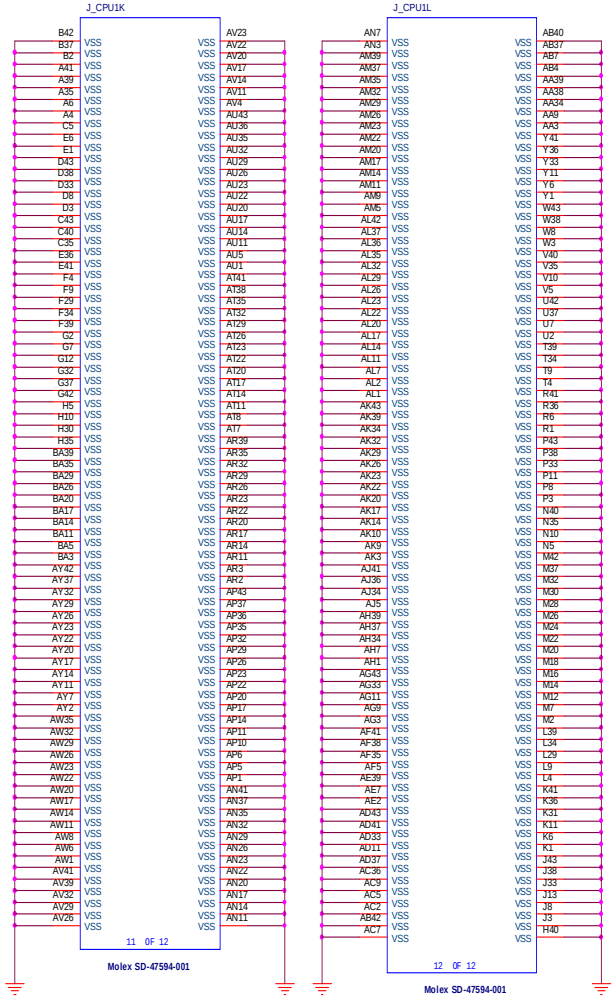


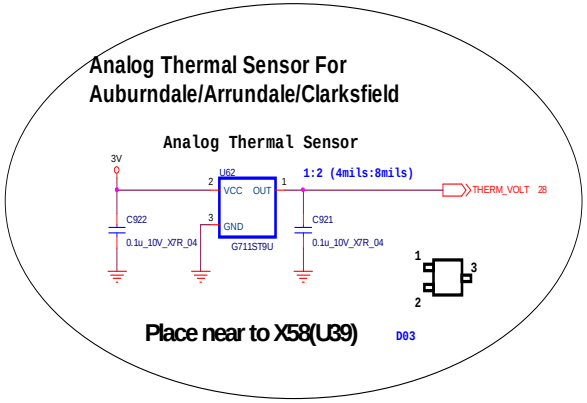
LGA1366 Part D Power

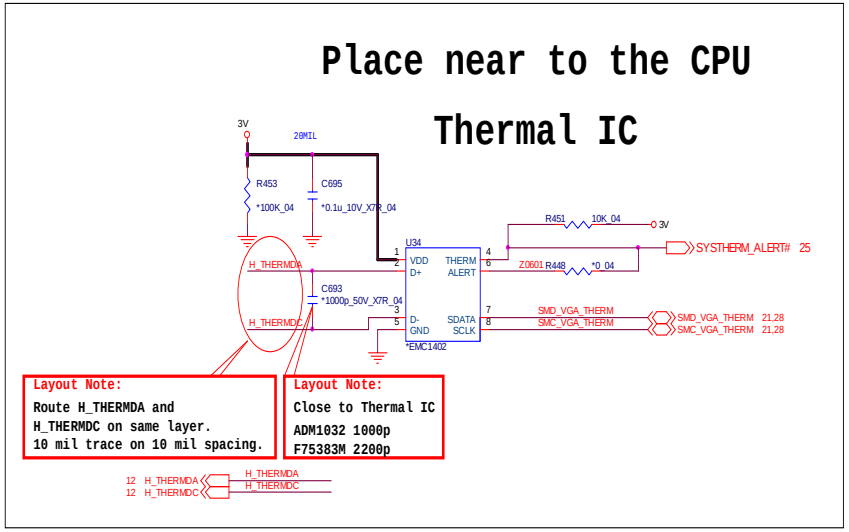
Sheet 5 of 52
LGA1366 Part D Power



LGA1366 Part E GND, Thermal





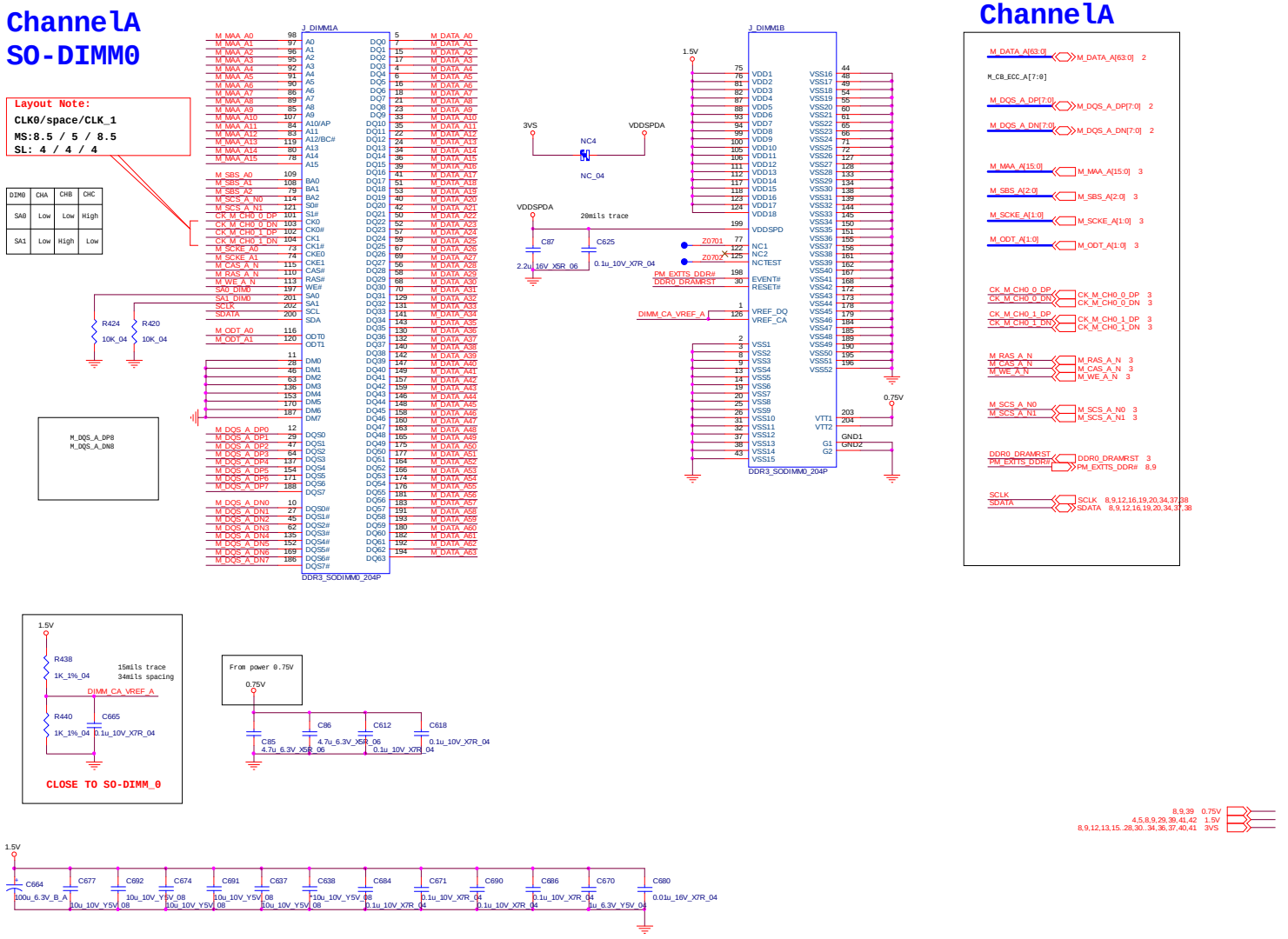


12,13,15..17,20,21,25,28..30,34,35,37..41 3V

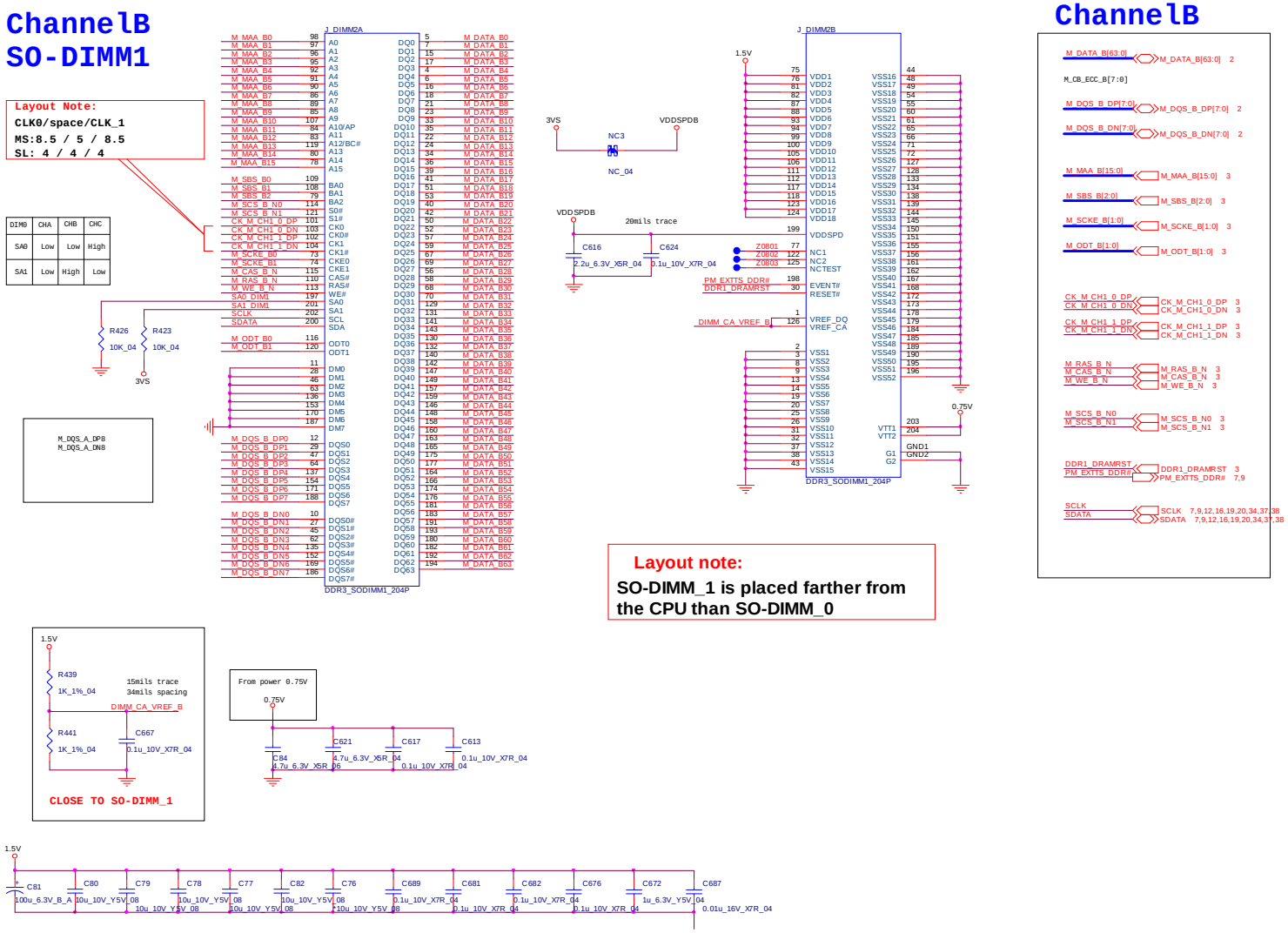
Sheet 6 of 52
LGA1366 Part E
GND, Thermal

DDR3 Channel A SO-DIMM_0

Sheet 7 of 52
DDR3 Channel A
SO-DIMM_0



DDR3 Channel B SO-DIMM_1

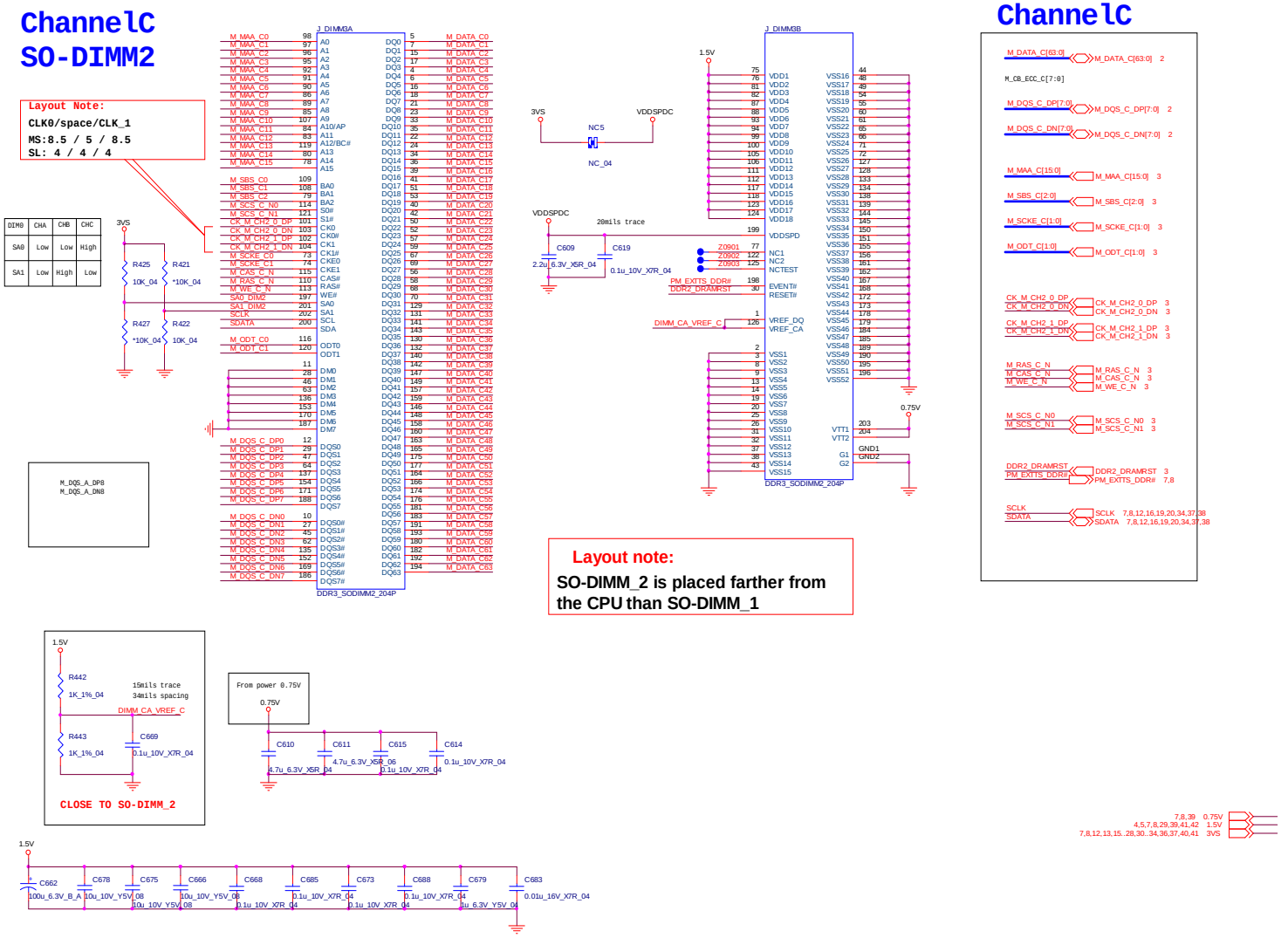


ChannelB

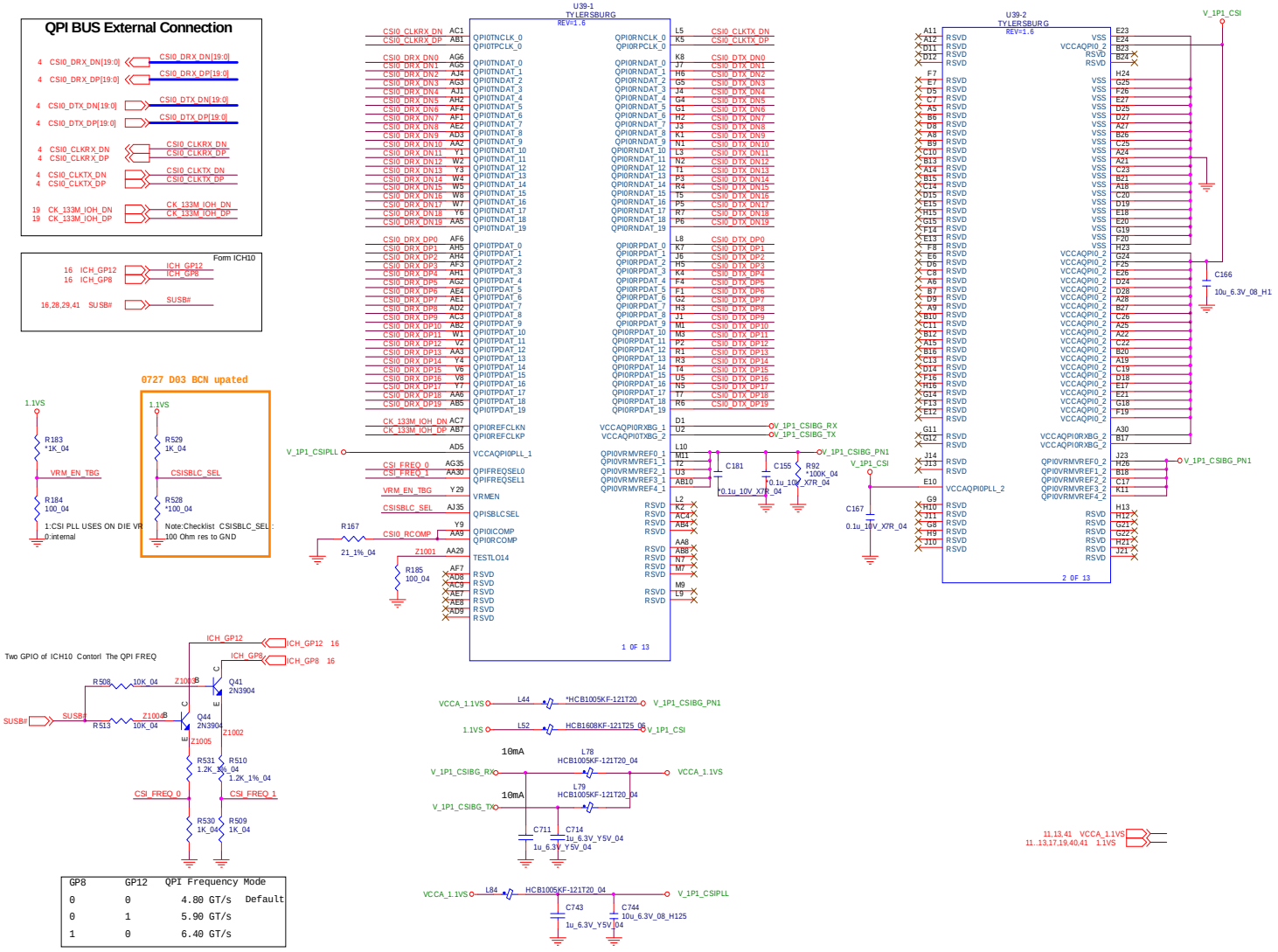
Sheet 8 of 52
DDR3 Channel B
SO-DIMM_1

DDR3 Channel C SO-DIMM_2

Sheet 9 of 52
DDR3 Channel C
SO-DIMM_2



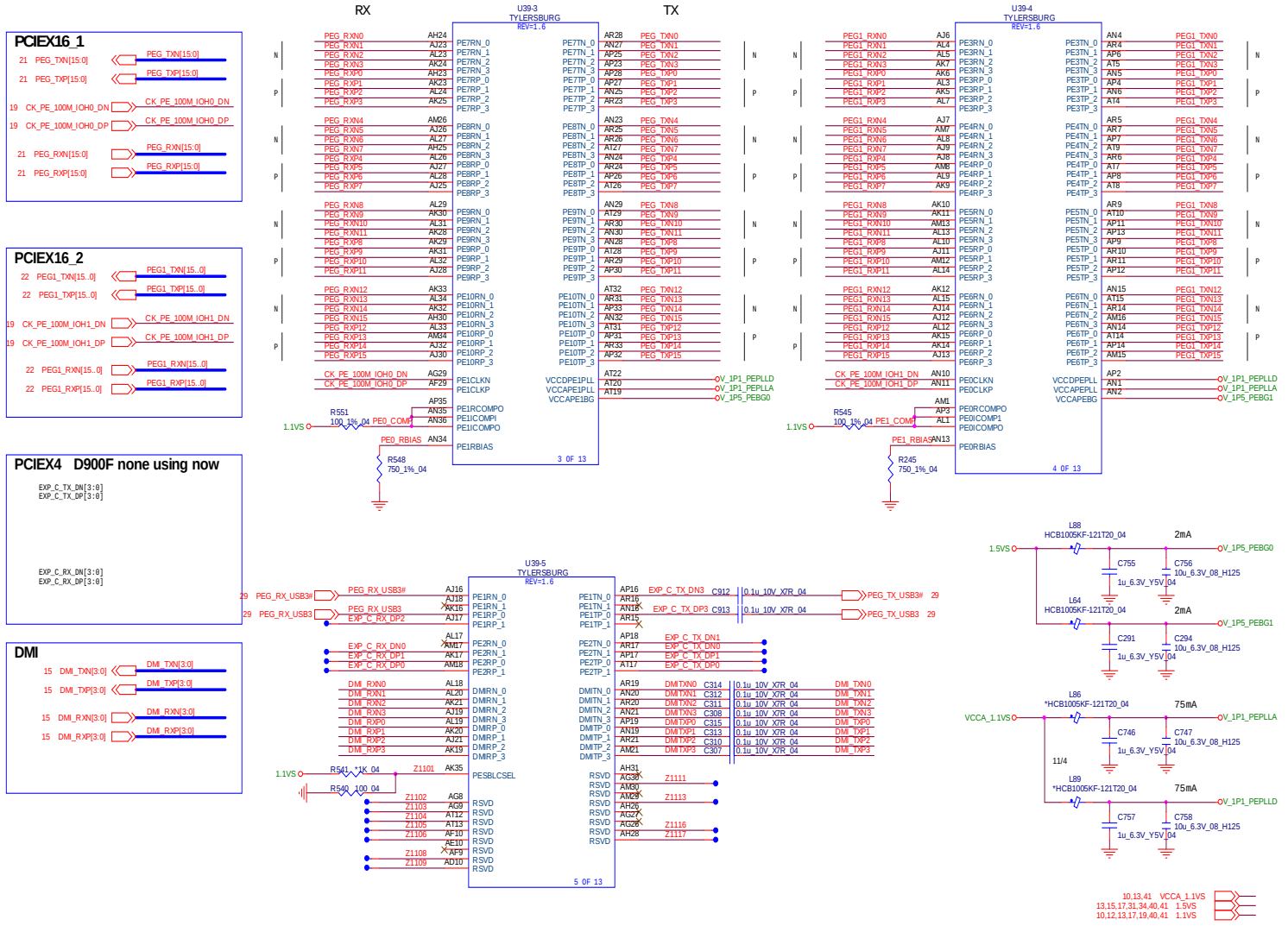
X58 QPI Interface



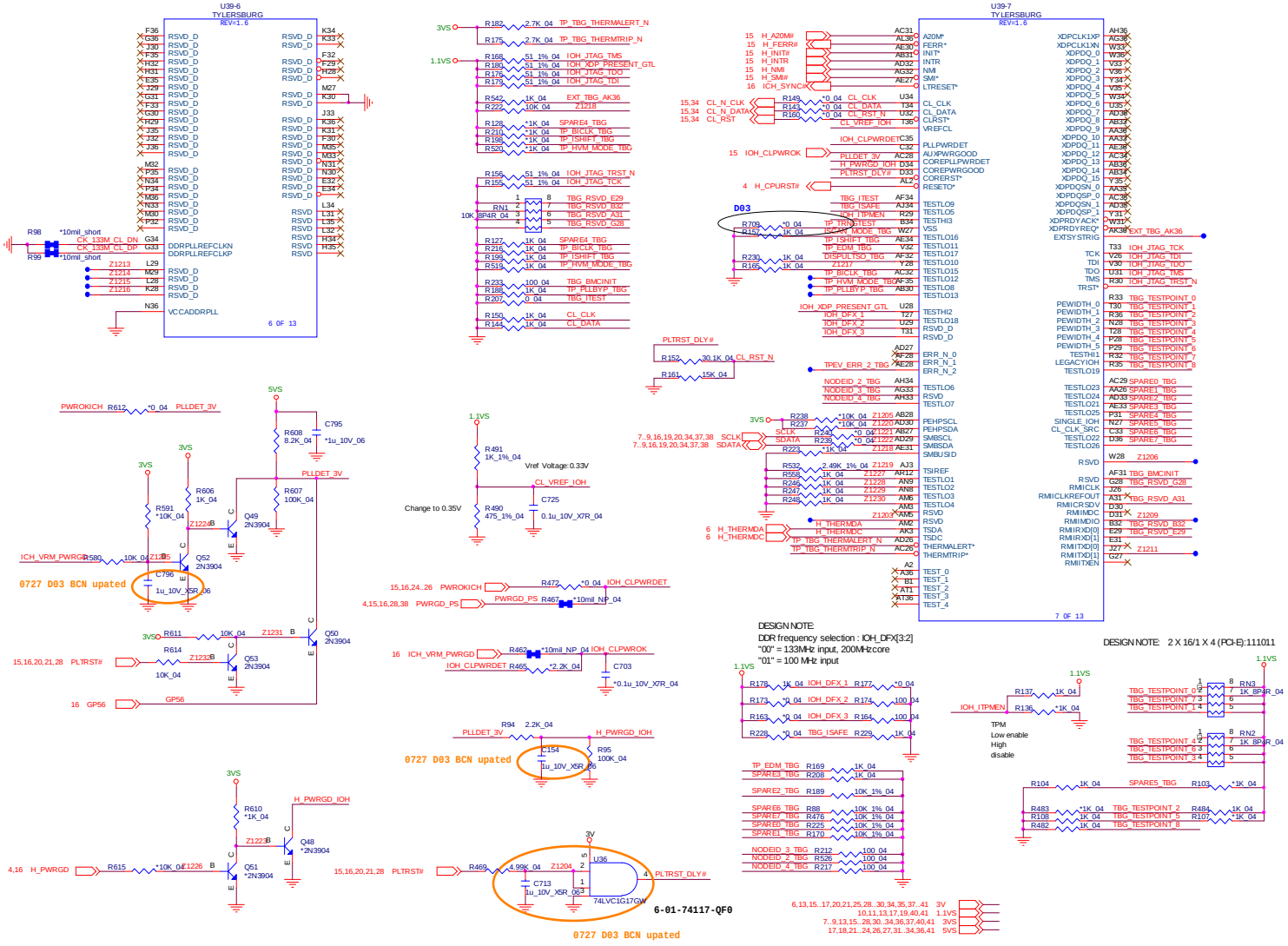
Sheet 10 of 52
X58 QPI Interface

X58 PCIEX16, PCIEX4, DMI

Sheet 11 of 52
X58 PCIEX16, PCIEX4, DMI



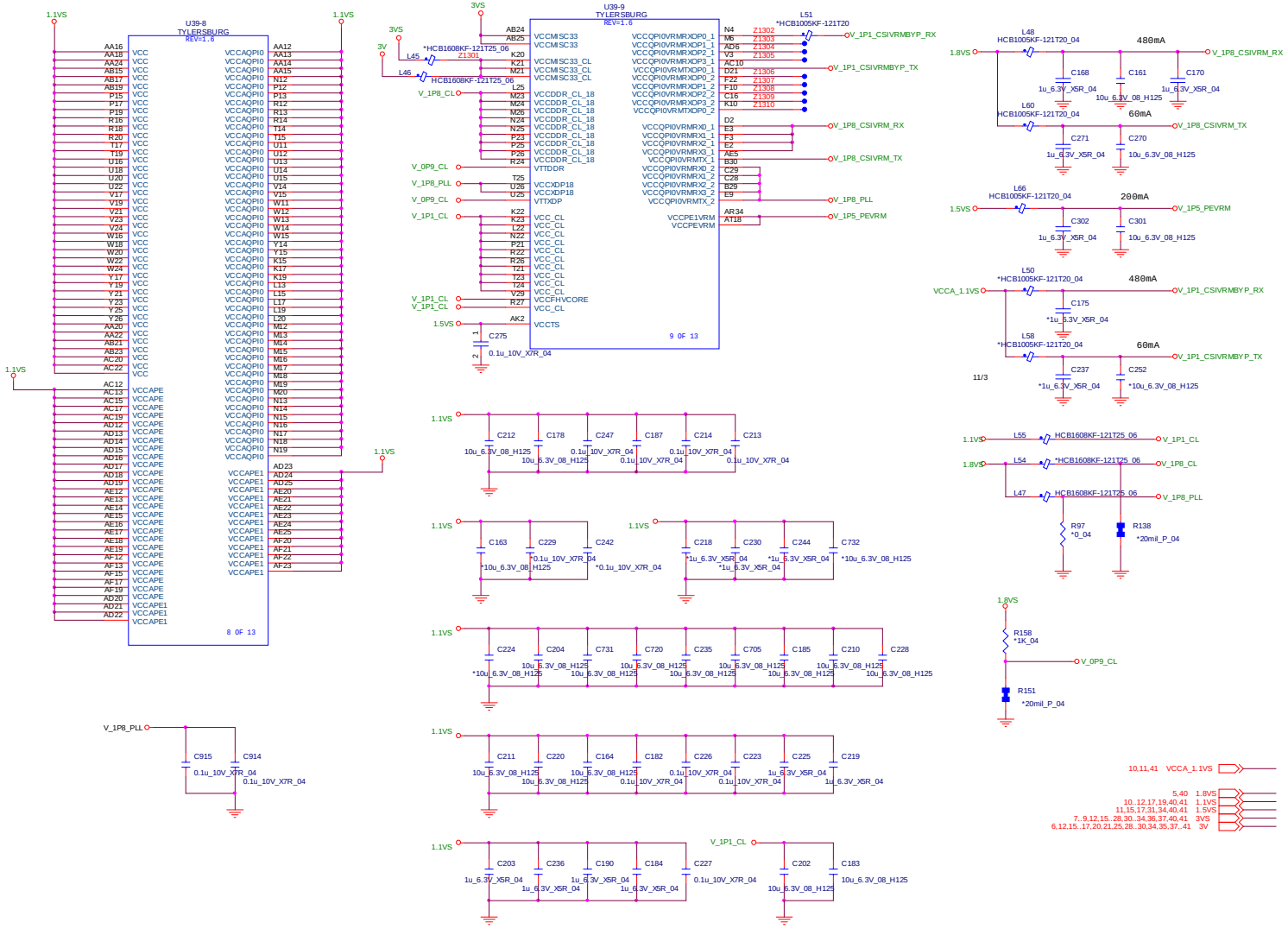
X58 MISC



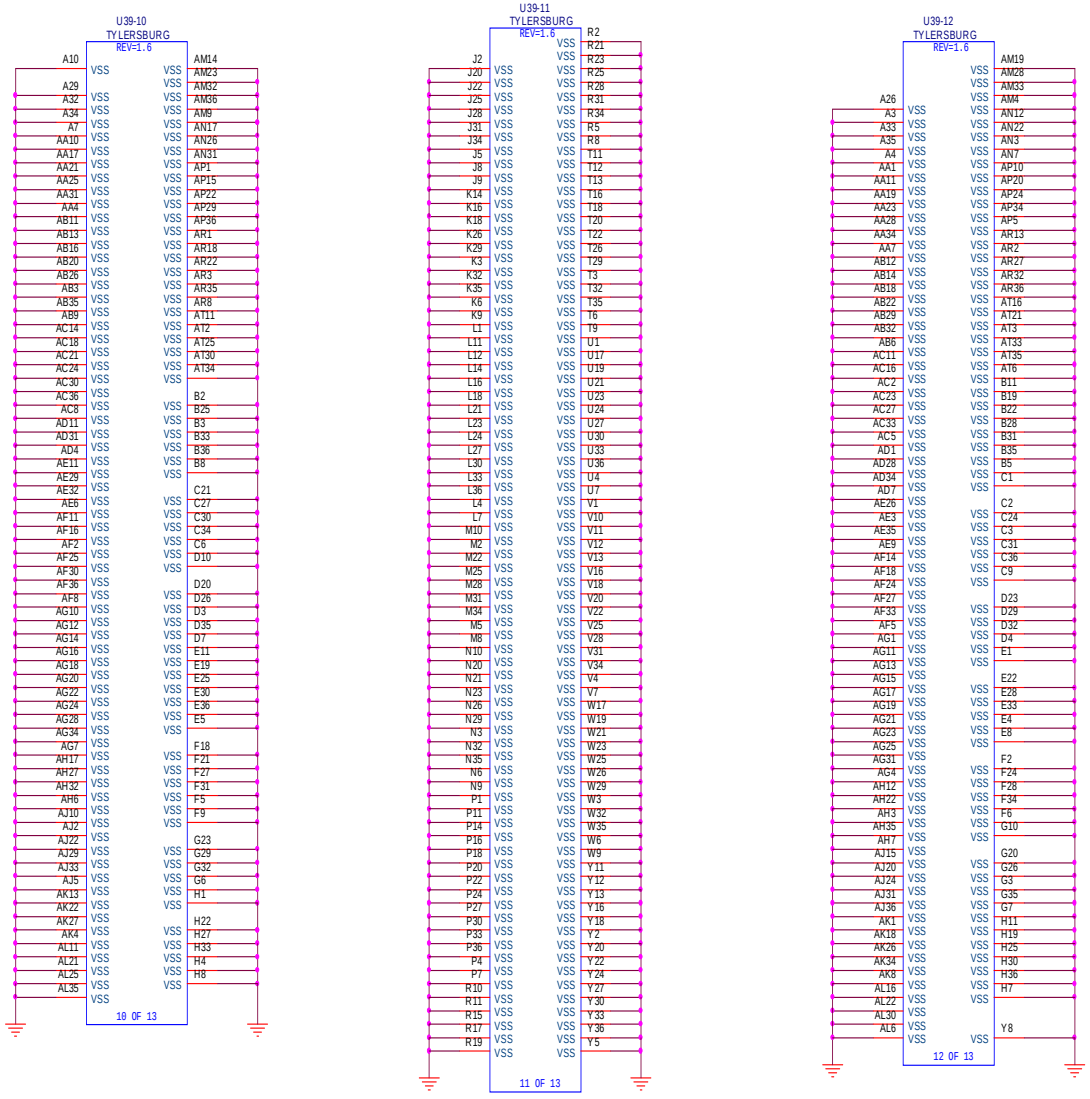
Sheet 12 of 52
X58 MISC

X58 PWR

Sheet 13 of 52
X58 PWR



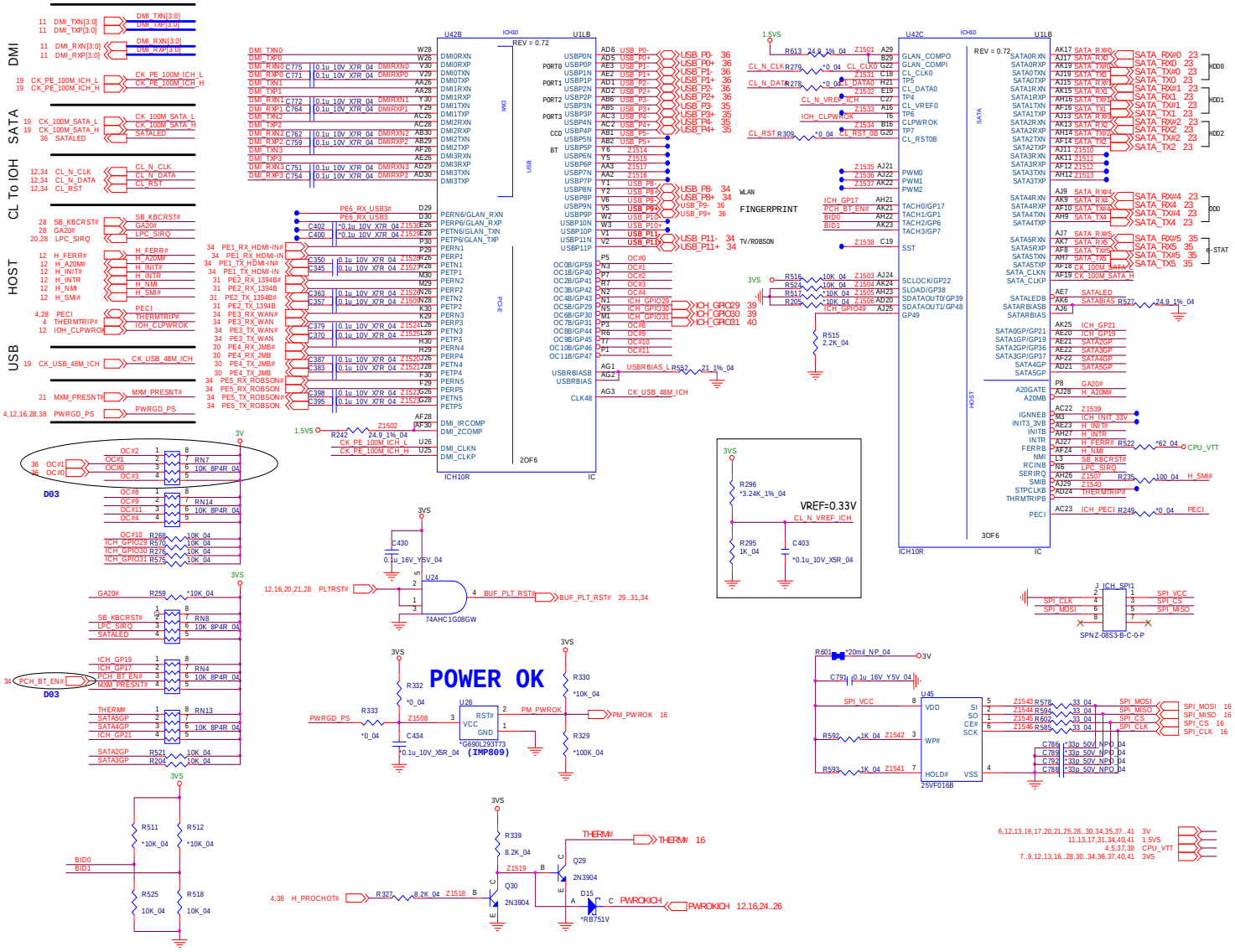
X58 GND



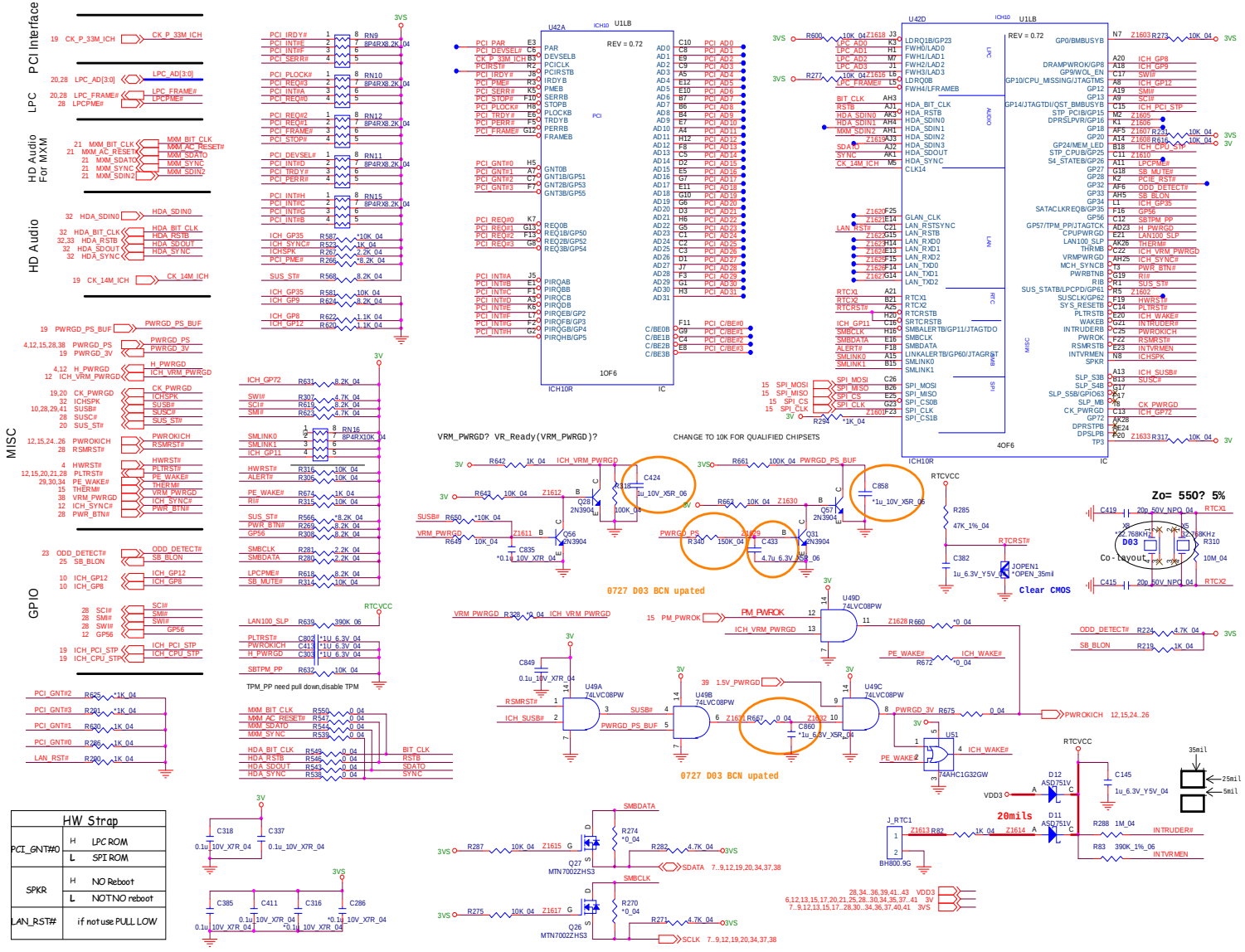
Sheet 14 of 52
X58 GND

ICH10 DMI/PCIE/USB/SATA

Sheet 15 of 52
ICH10 DMI/PCIE/
USB/SATA



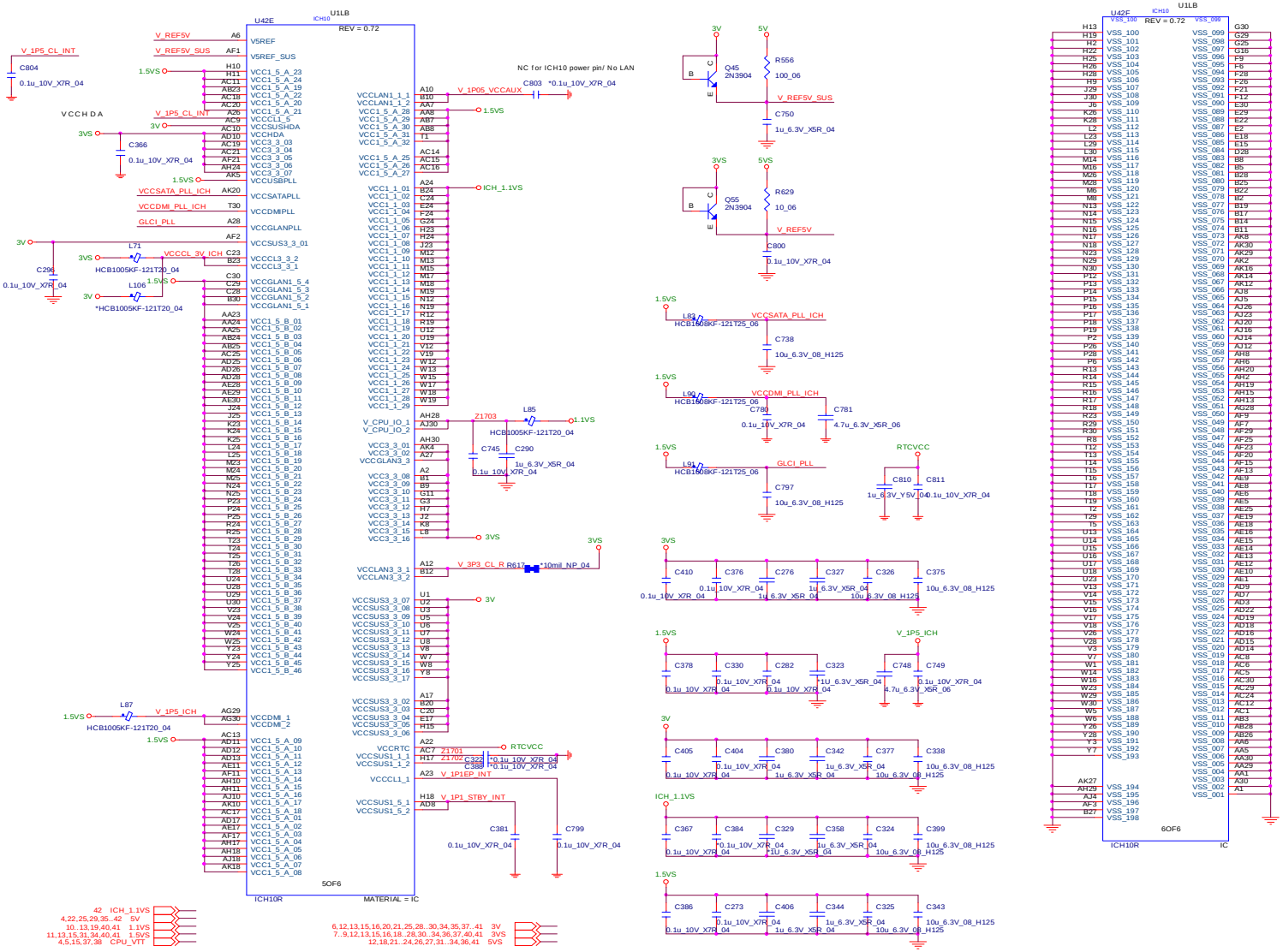
ICH10 PCI/SPI/Other



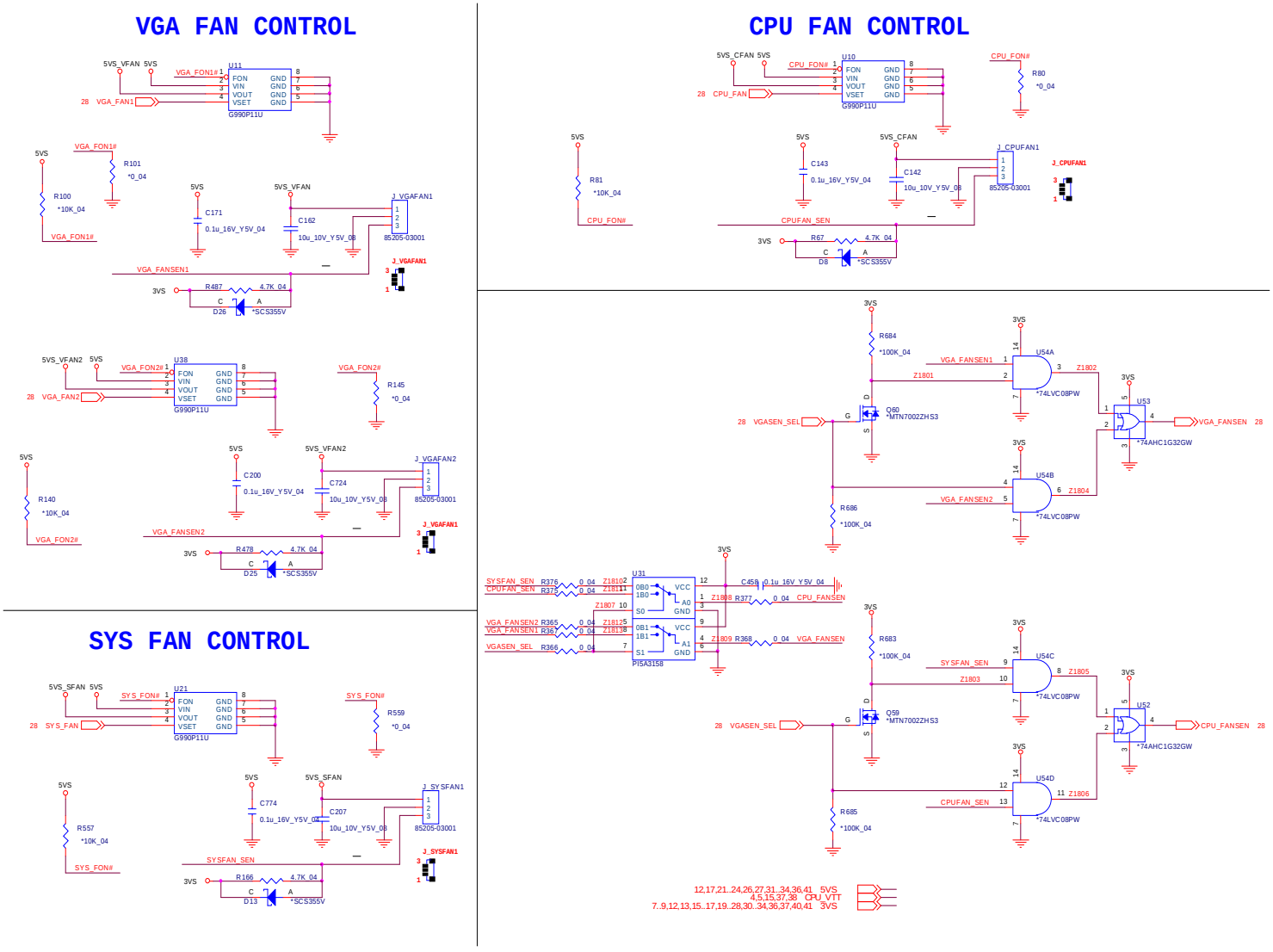
Sheet 16 of 52
ICH10 PCI/SPI/ Other

ICH10 Power/GND

Sheet 17 of 52
ICH10 Power/GND



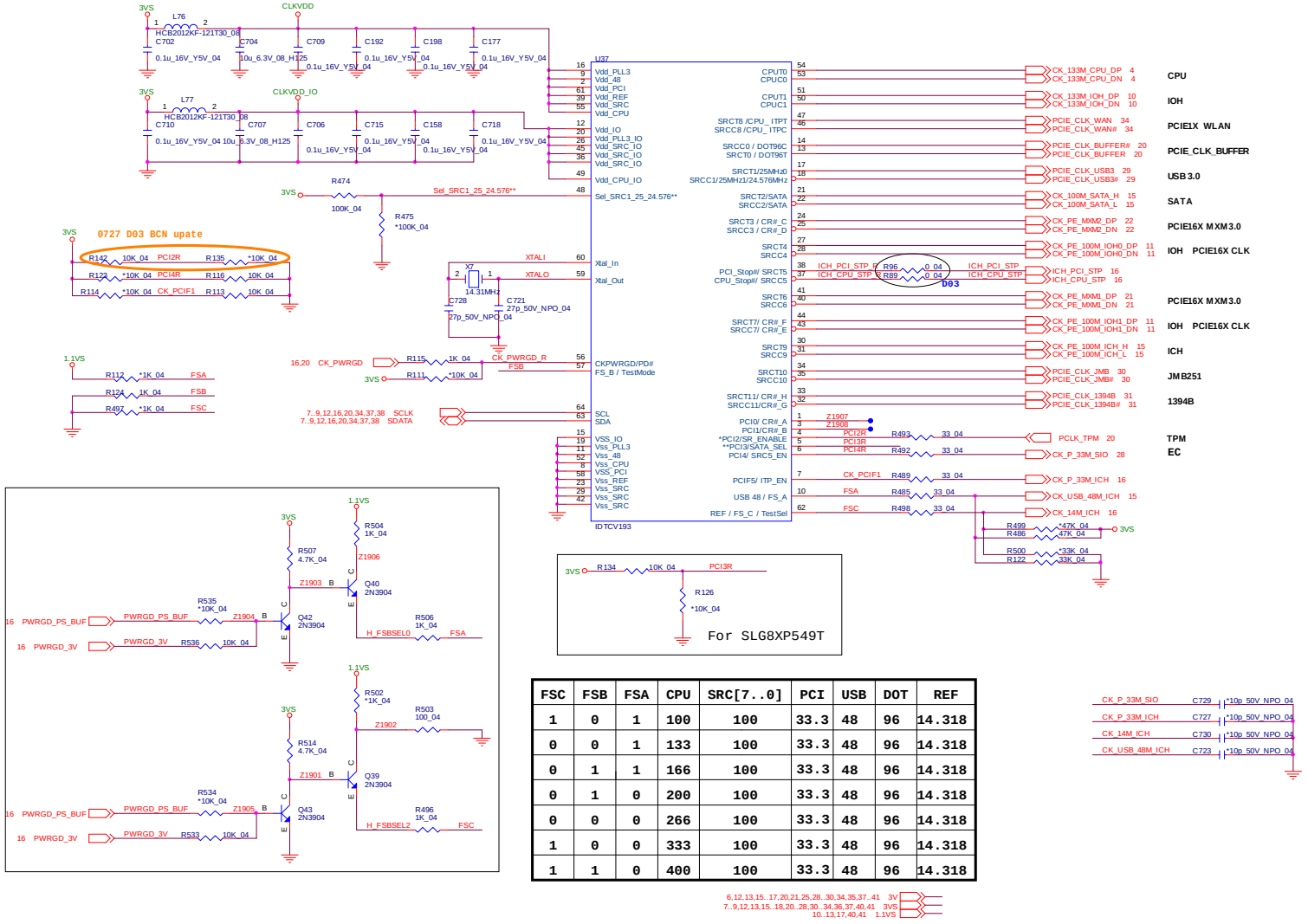
Fan CTRL



Sheet 18 of 52
Fan CTRL

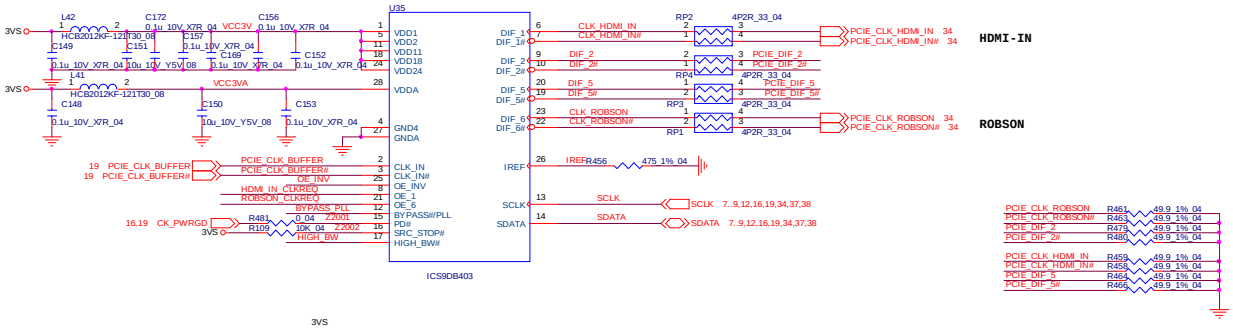
Clock Generator CV193

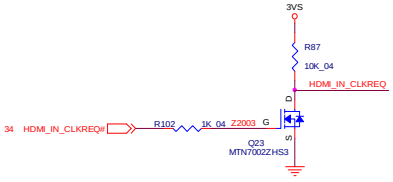
Sheet 19 of 52
Clock Generator
CV193

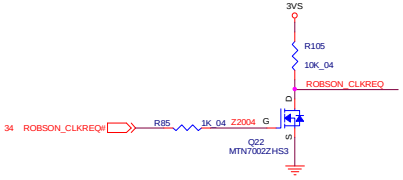


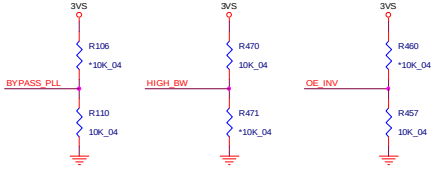
FSC	FSB	FSA	CPU	SRC[7..0]	PCI	USB	DOT	REF
1	0	1	100	100	33.3	48	96	14.318
0	0	1	133	100	33.3	48	96	14.318
0	1	1	166	100	33.3	48	96	14.318
0	1	0	200	100	33.3	48	96	14.318
0	0	0	266	100	33.3	48	96	14.318
1	0	0	333	100	33.3	48	96	14.318
1	1	0	400	100	33.3	48	96	14.318

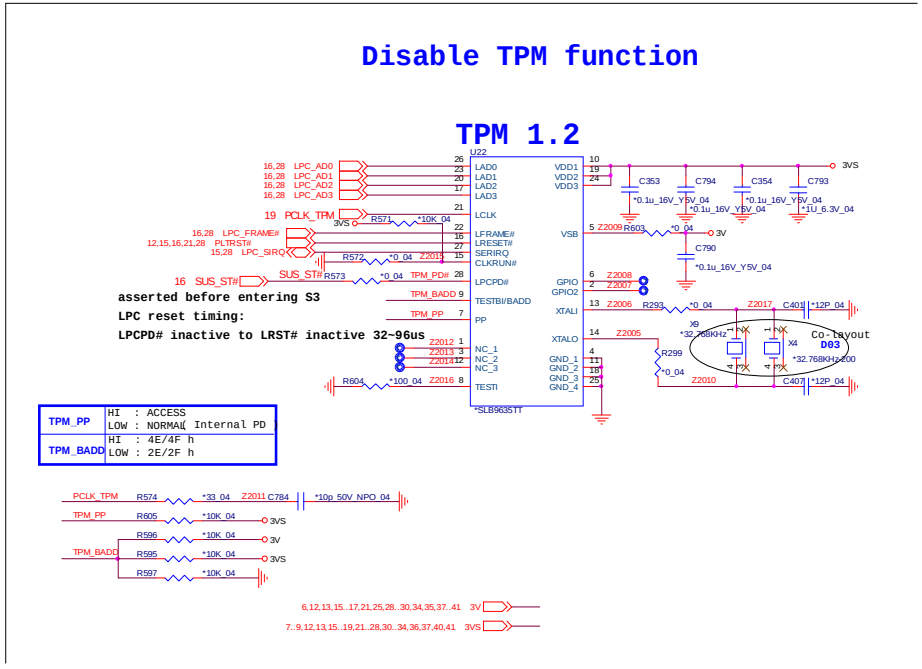
Clock Buffer ICS9DB403GLFT











Sheet 20 of 52
Clock Buffer
ICS9DB403GLFT

MXM 3.0 PCI-E Master

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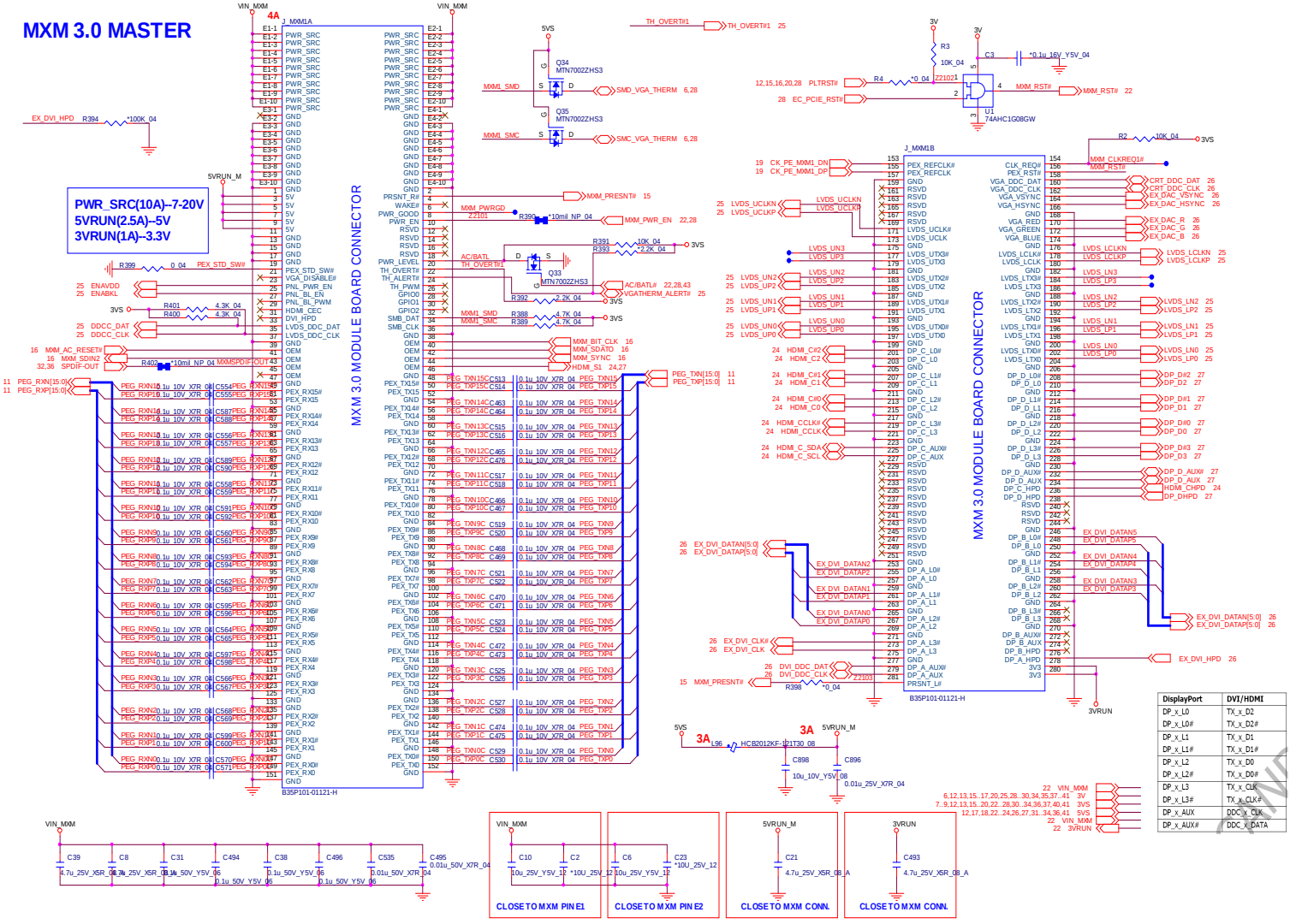
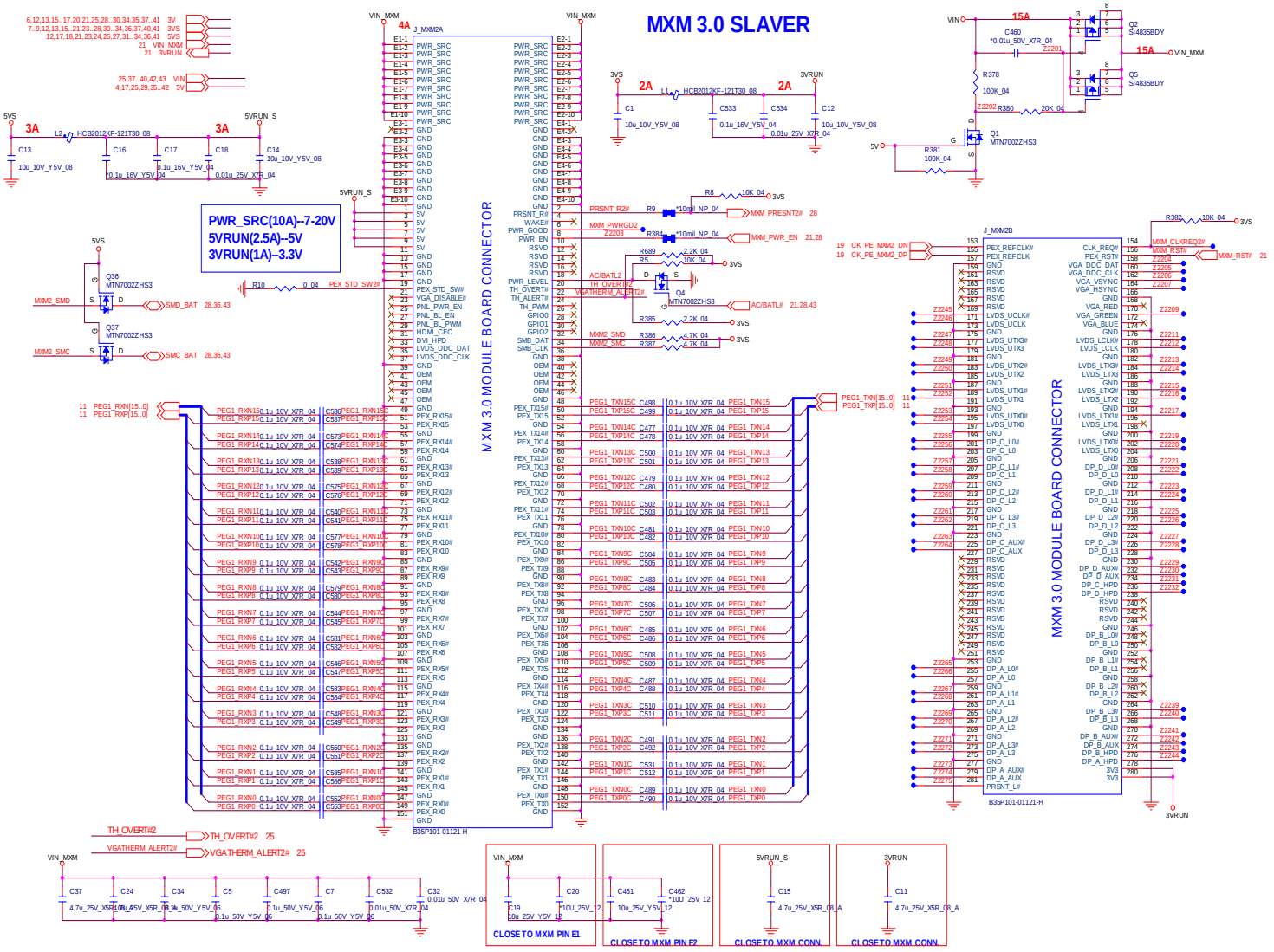
MXM 3.0 PCI-E Master



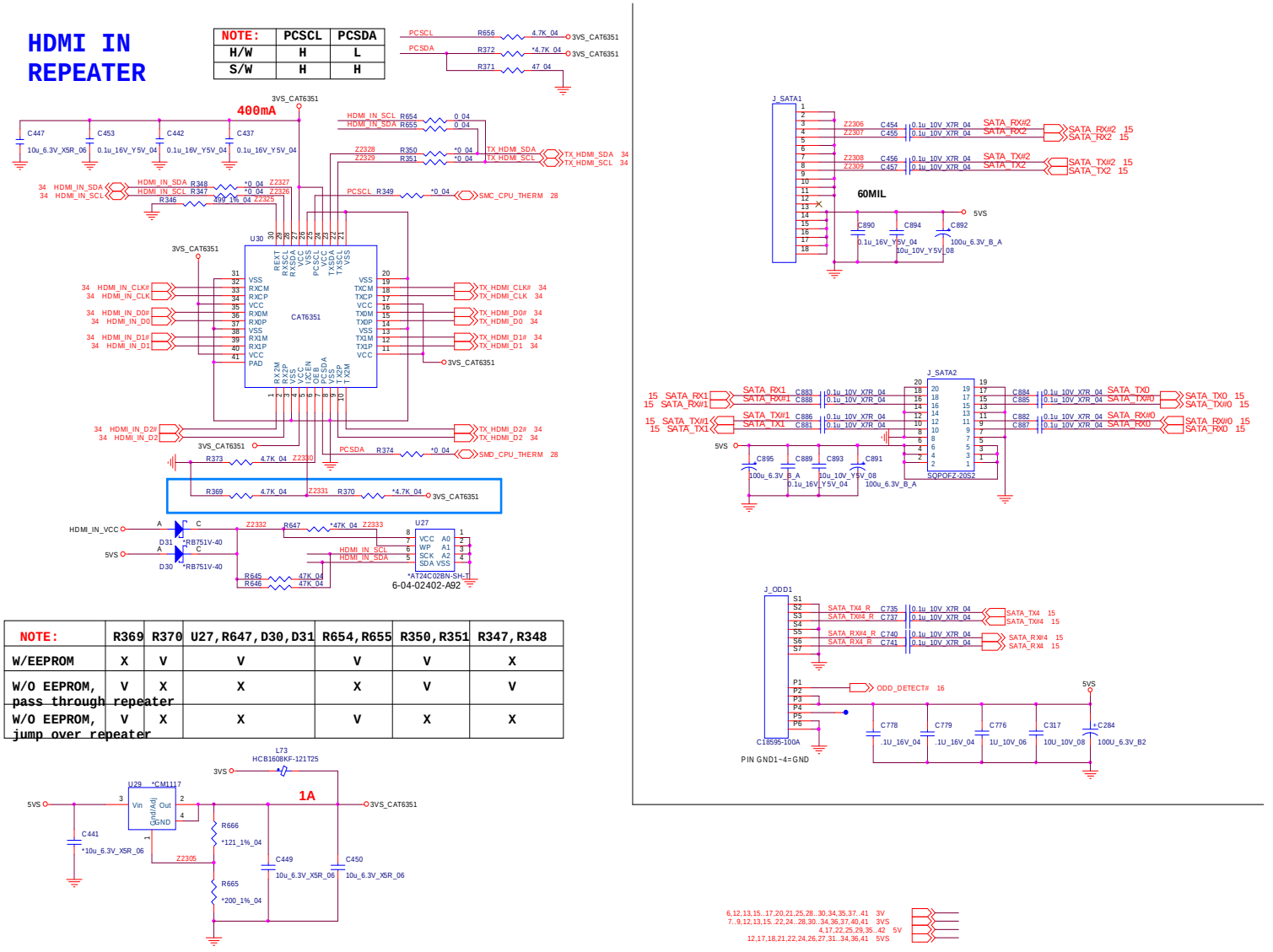
MXM 3.0 PCI-E SLAVER



Sheet 22 of 52
MXM 3.0 PCI-E SLAVER

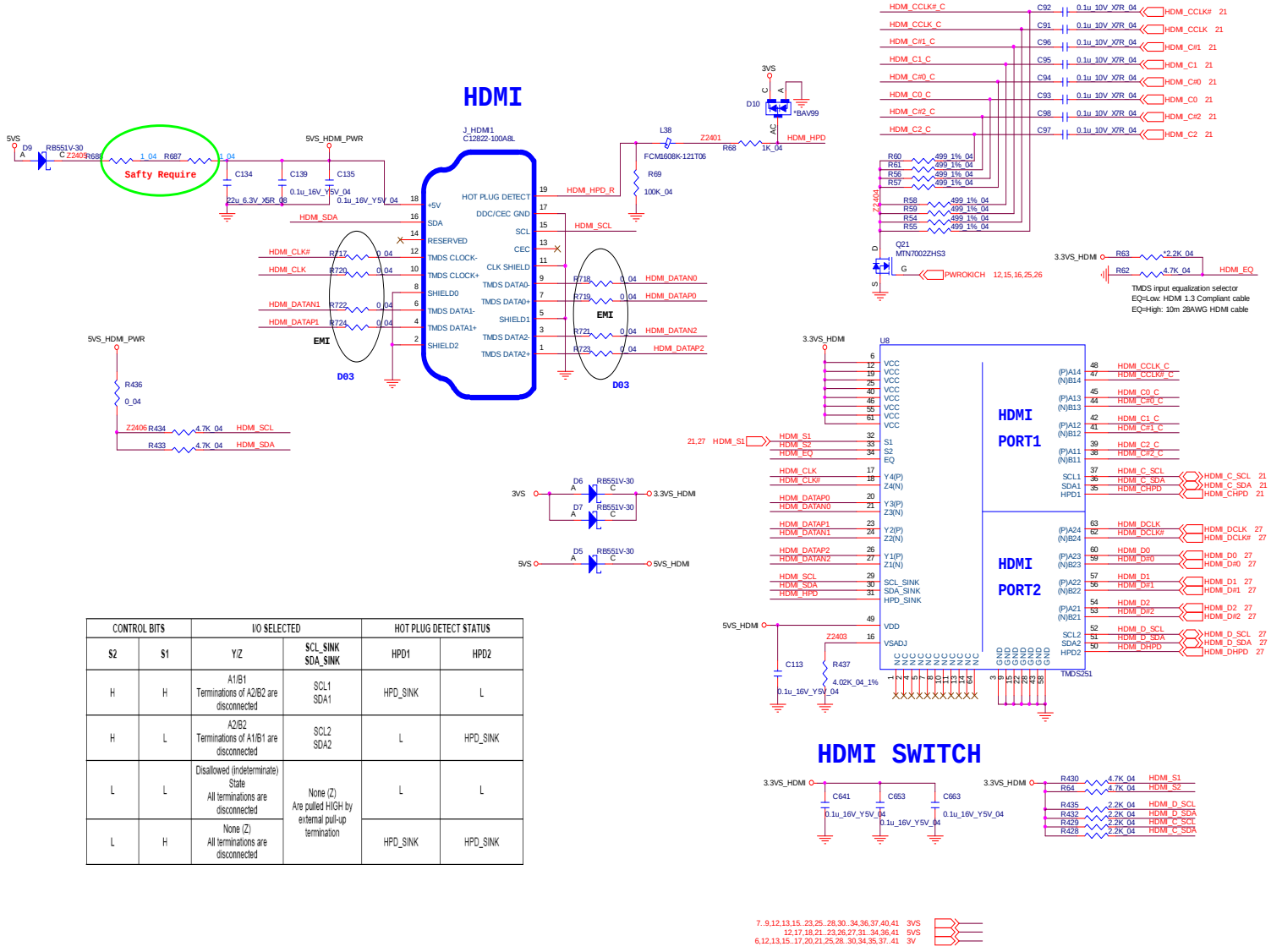
HDMI-In Buffer/SATA HDD CON

Sheet 23 of 52
HDMI-In Buffer/
SATA HDD CON



NOTE:	R369	R370	U27,R647,D30,D31	R654,R655	R350,R351	R347,R348
W/EEPROM	X	V	V	V	V	X
W/O EEPROM, pass through repeater	V	X	X	X	V	V
W/O EEPROM, jump over repeater	V	X	X	V	X	X

HDMI Port



CONTROL BITS		I/O SELECTED		HOT PLUG DETECT STATUS	
S2	S1	Y/Z	SCL_SINK SDA_SINK	HPD1	HPD2
H	H	A1/B1 Terminations of A2/B2 are disconnected	SCL1 SDA1	HPD_SINK	L
H	L	A2/B2 Terminations of A1/B1 are disconnected	SCL2 SDA2	L	HPD_SINK
L	L	Disallowed (indeterminate) State All terminations are disconnected	None (Z) Are pulled HIGH by external pull-up termination	L	L
L	H	None (Z) All terminations are disconnected		HPD_SINK	HPD_SINK

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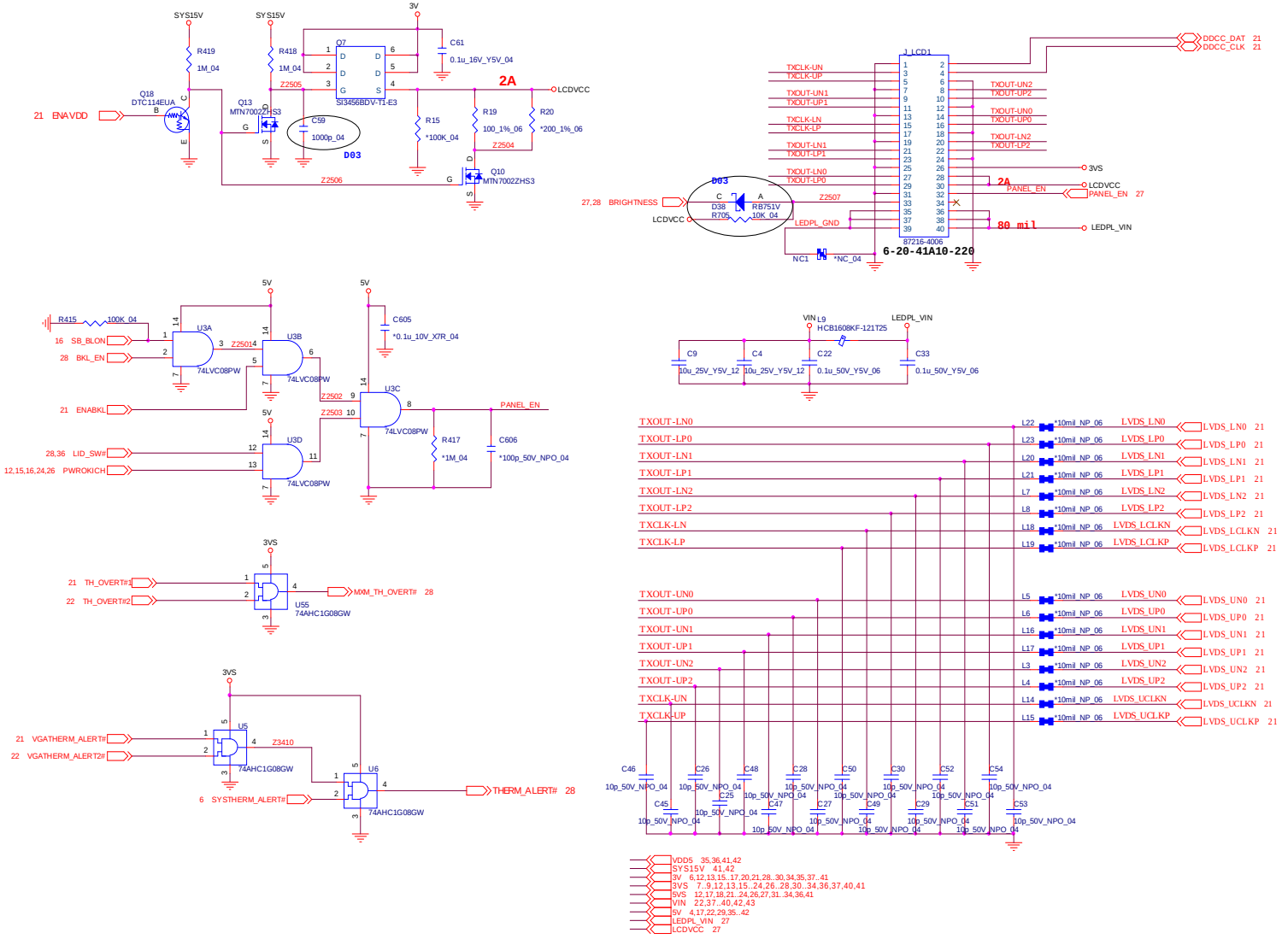
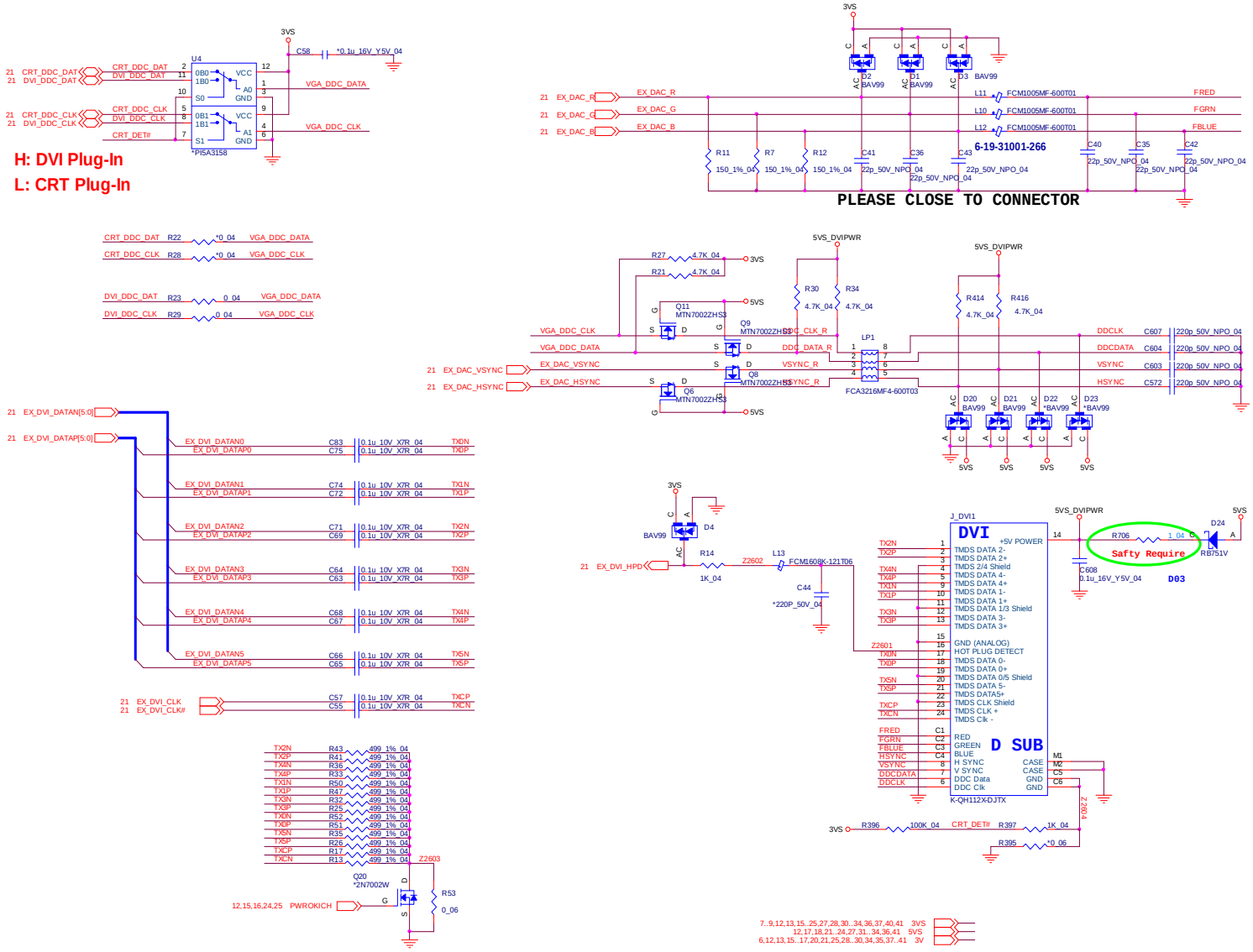
HDMI Port

LCD, INT

Sheet 25 of 52
LCD, INT



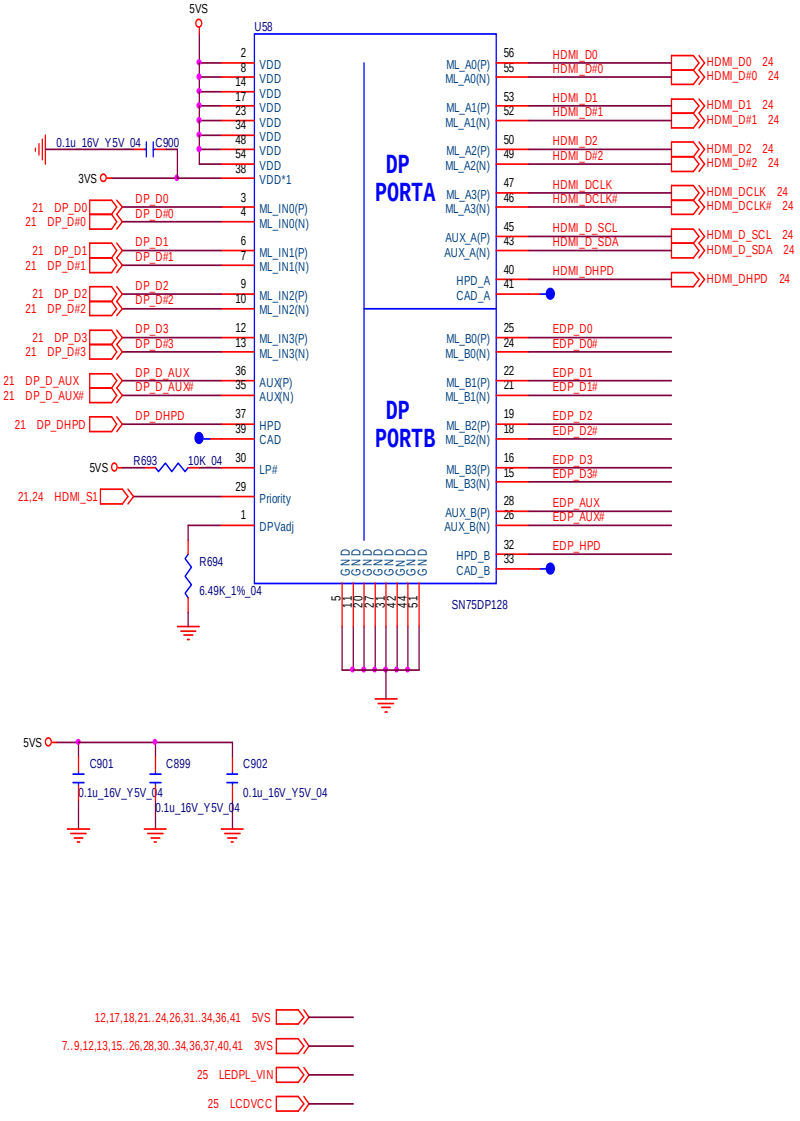
DVI-I



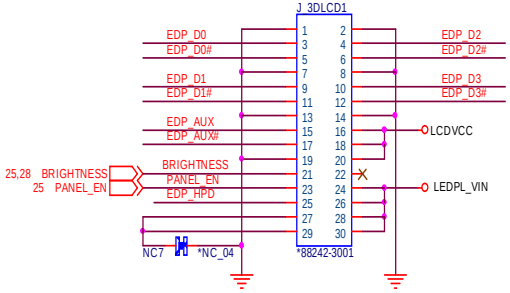
Sheet 26 of 52
DVI-I

DP Switch SN75DP128

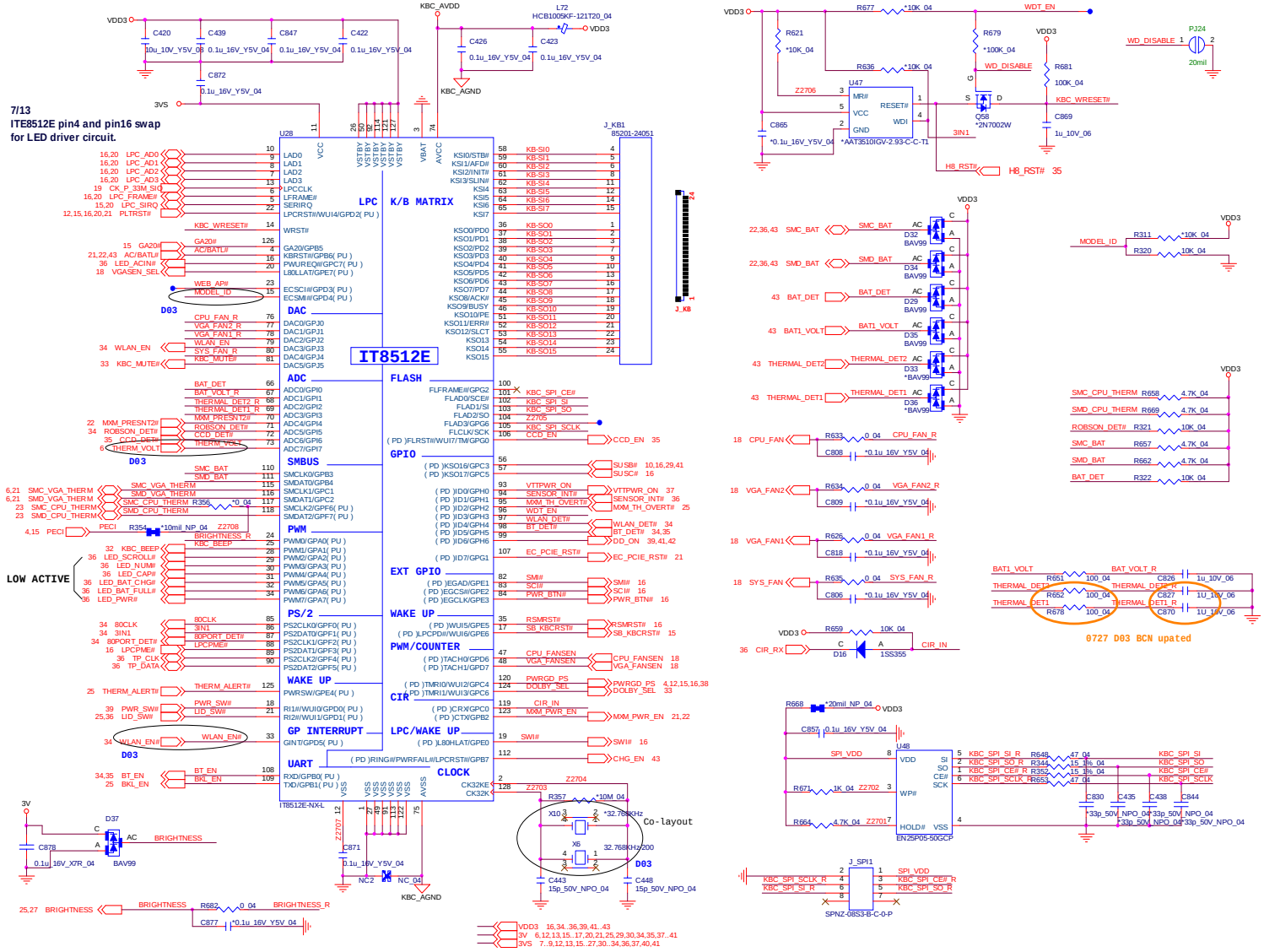
Sheet 27 of 52
DP Switch
SN75DP128



FOR 3D PANEL



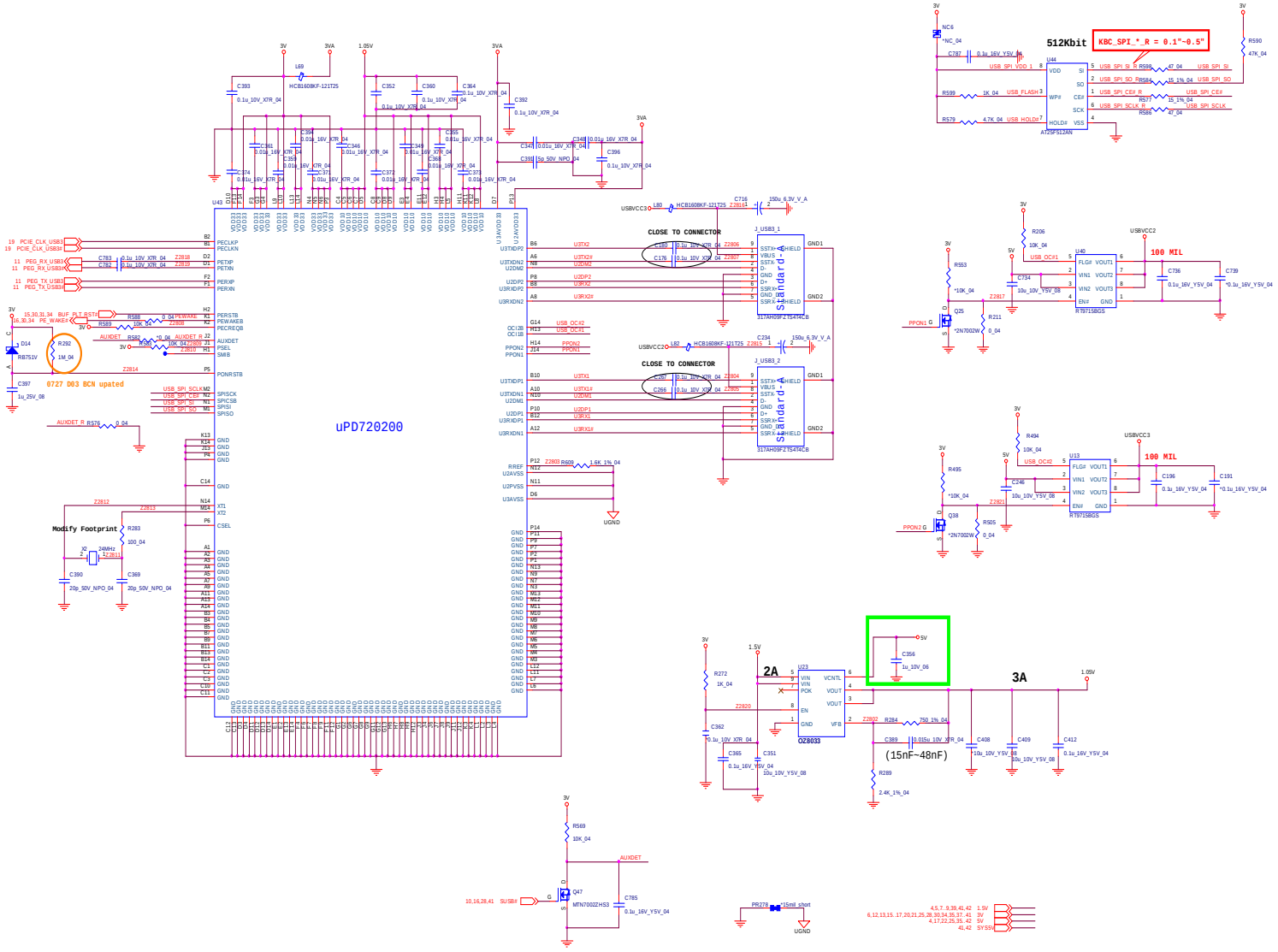
KBC-ITE IT8512E



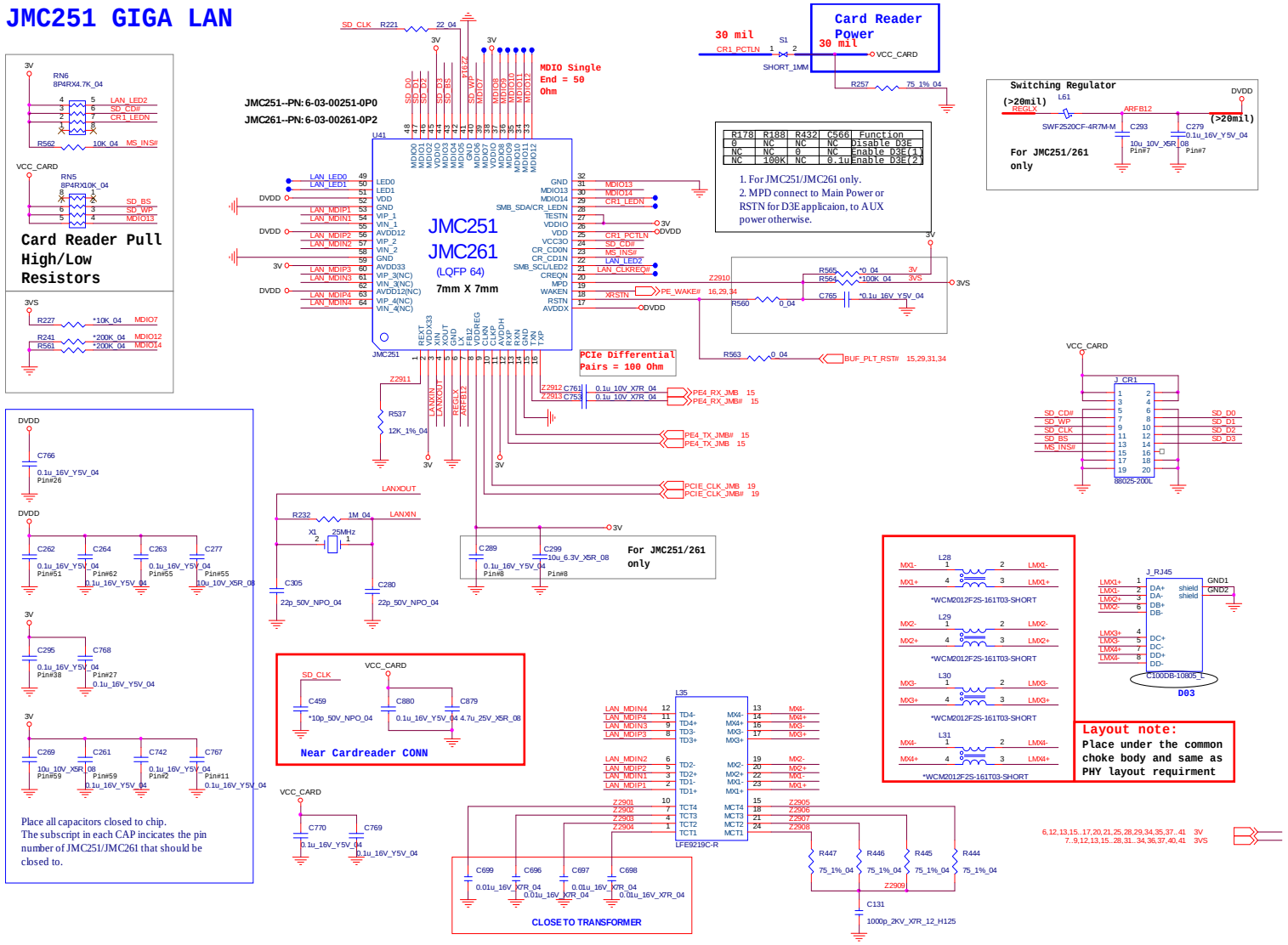
Sheet 28 of 52
KBC-ITE IT8512E

USB 3.0

Sheet 29 of 52
USB 3.0



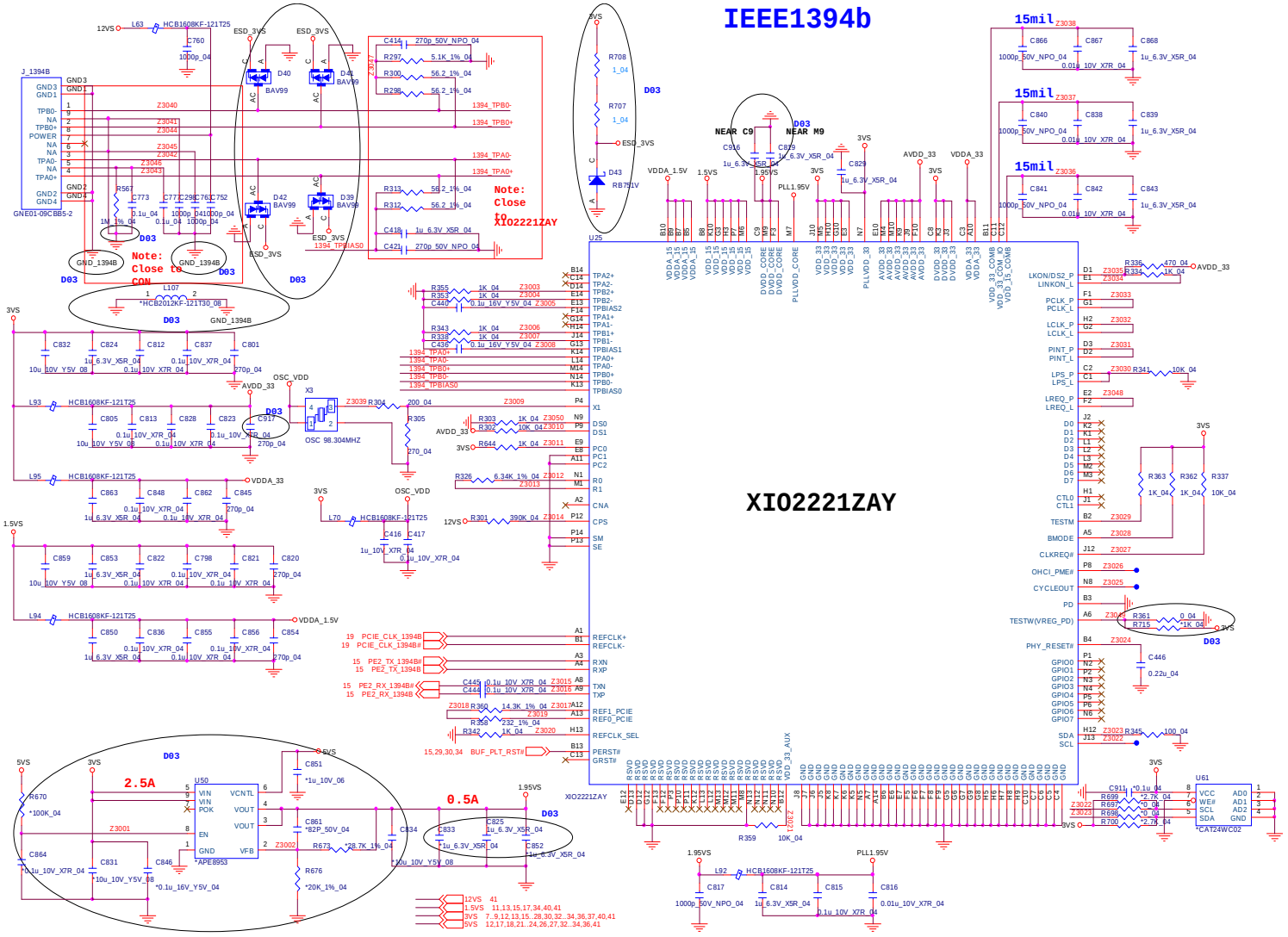
PCIE Card Reader/LAN JMC251



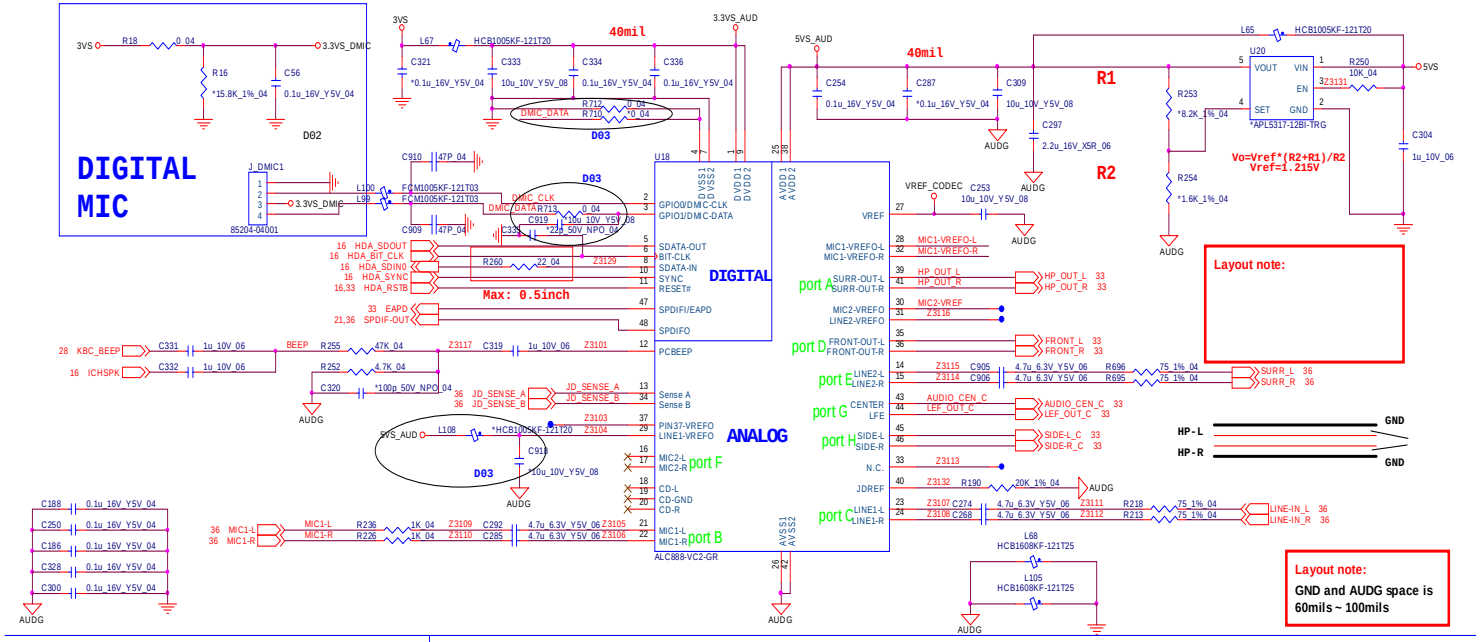
Sheet 30 of 52
PCIE Card Reader/
LAN JMC251

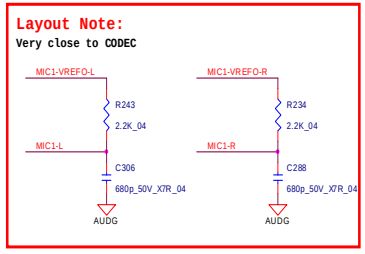
1394B (TI-XIO2221BZAY)

Sheet 31 of 52
1394B (TI-XIO2221BZAY)



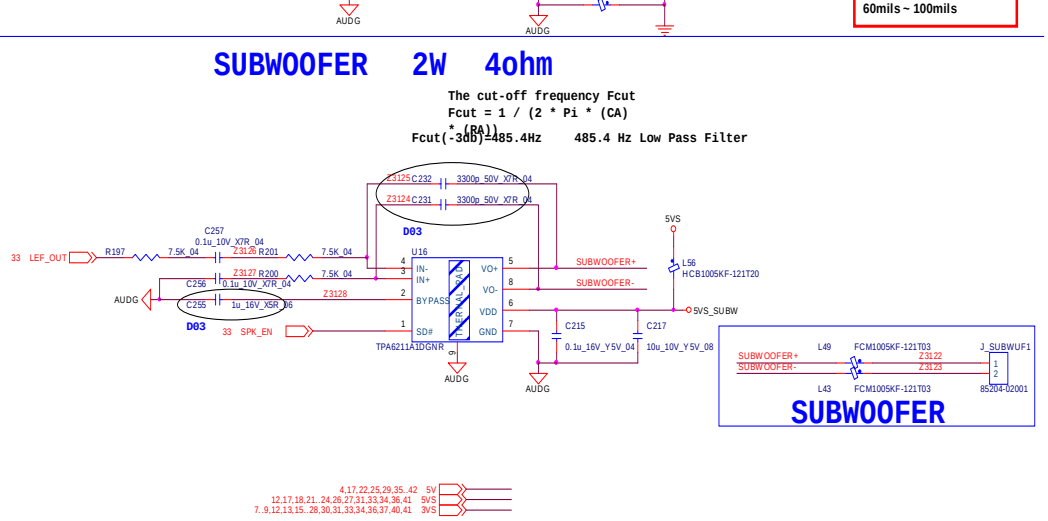
Codec888, Subwoofer, DMIC





Layout Note:
U43 pin 1 ~ pin 11 and pin 47 and pin 48 are Digital signals.
The others are Analog signals.

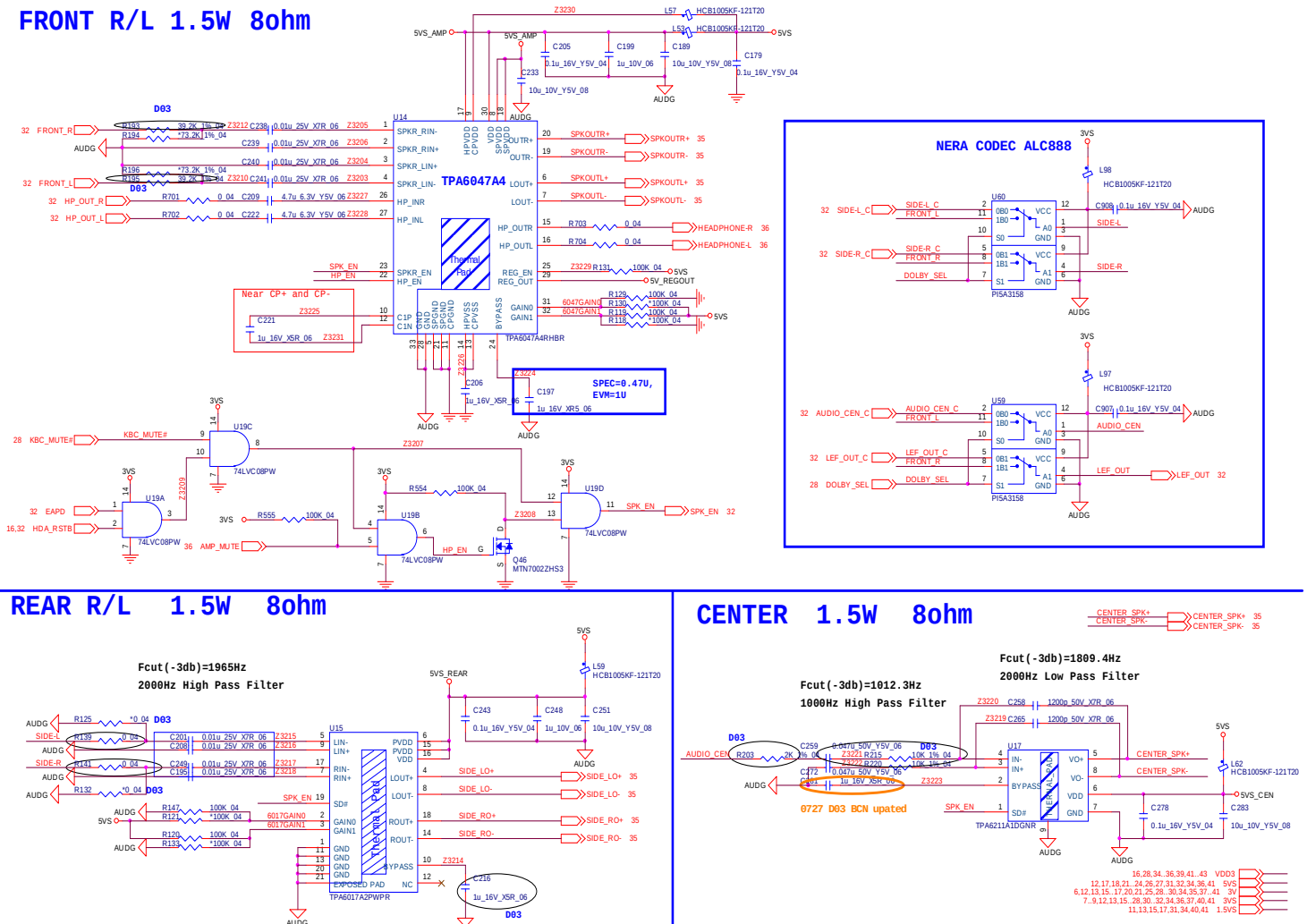
Layout Note:
(1)MIC1-L (U13.21) (2)MIC1-R (U13.22)
(3)LINE-L (U13.23) (4)LINE-R (U13.24)



Sheet 32 of 52
Codec888, Subwoofer, DMIC

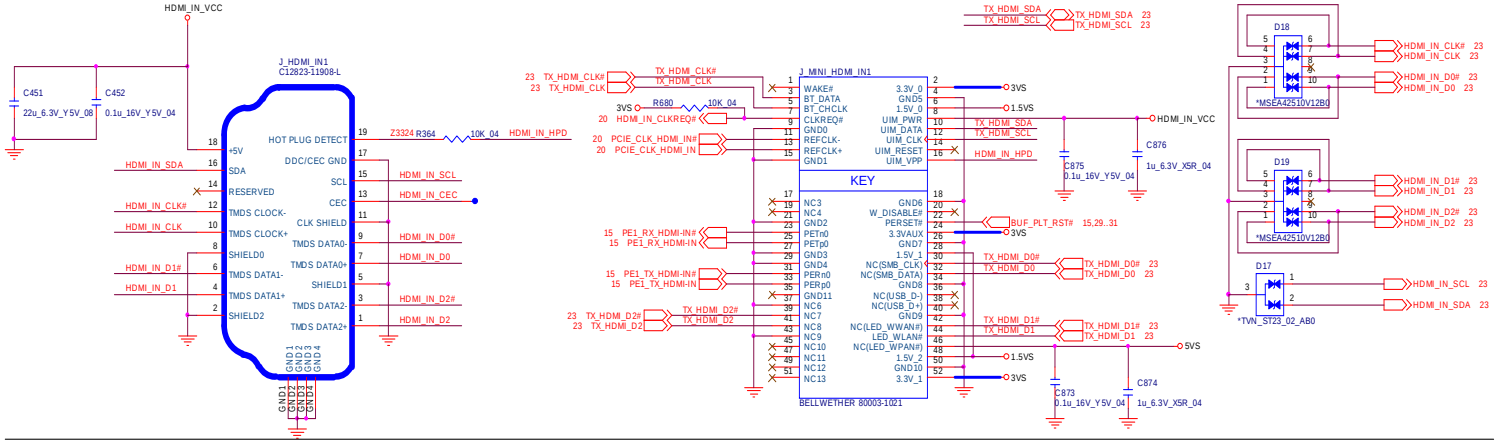
Sheet 33 of 52
Audio AMP
TPA6047A4/
TPA6211

Audio AMP TPA6047A4/TPA6211

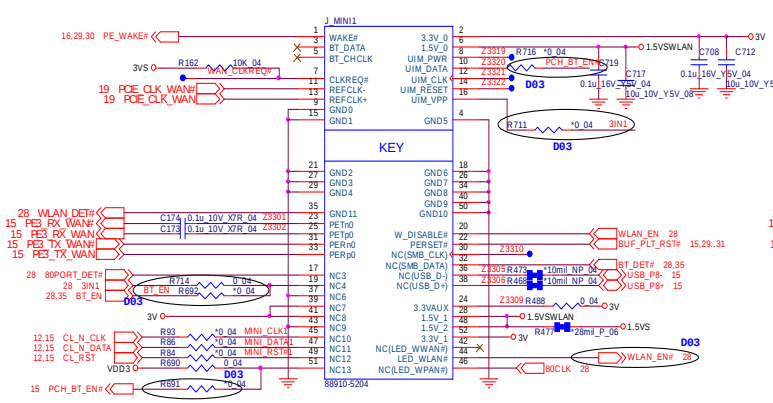


WLAN/HDMI-In/TV/ROBSON

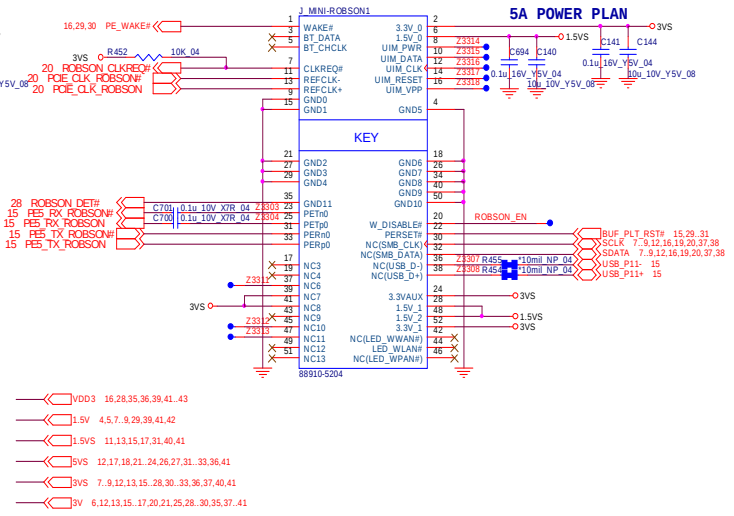
MINI-PCIE CARD for HDMI IN



MINI CARD for WAN& DEBUG CARD



TV/ROBSON CARD 2 IN 1



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WLAN/HDMI-In/TV/
ROBSON

CCD/BT/SATA

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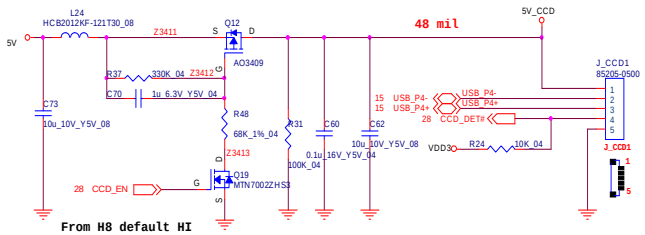
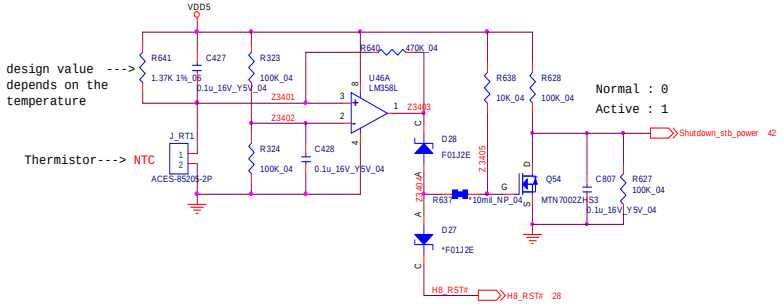
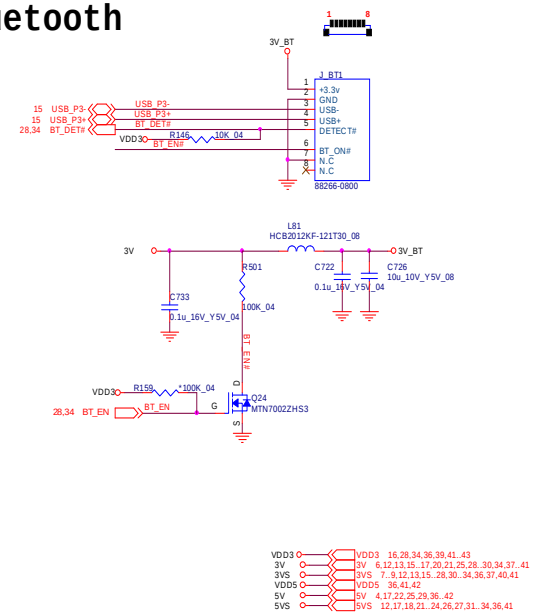
CCD/BT/SATA

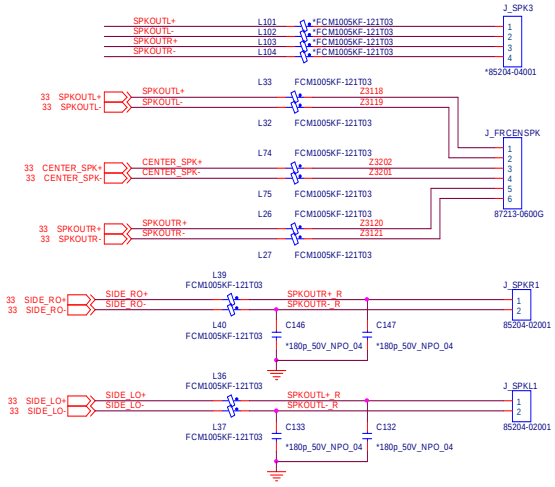
CCD



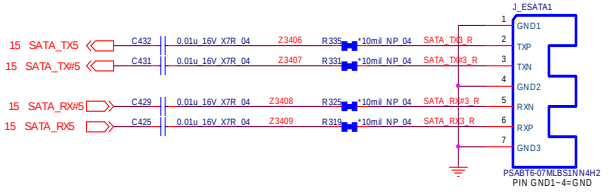


Bluetooth



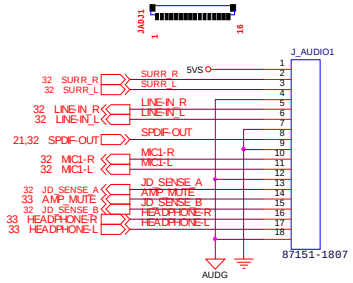


e-SATA

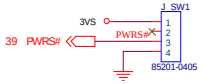


Daughter Connector

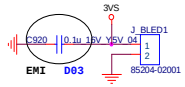
PHONE JACK BOARD



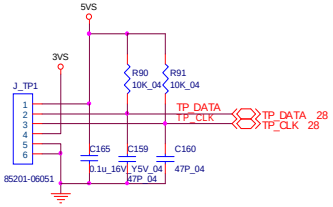
SWITCH BOARD



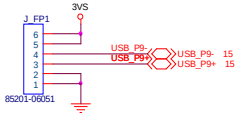
BLACK LED CON



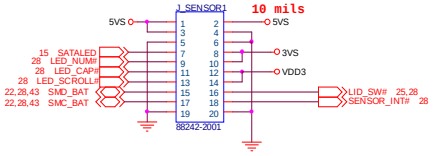
CLICK BOARD



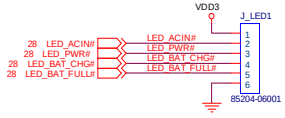
FINGERPRINT



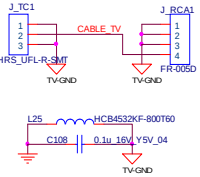
TOUCH SENSOR



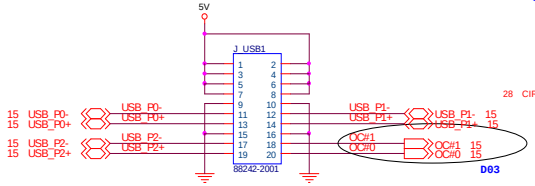
POWER LED BOARD



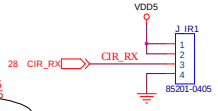
TV TUNER

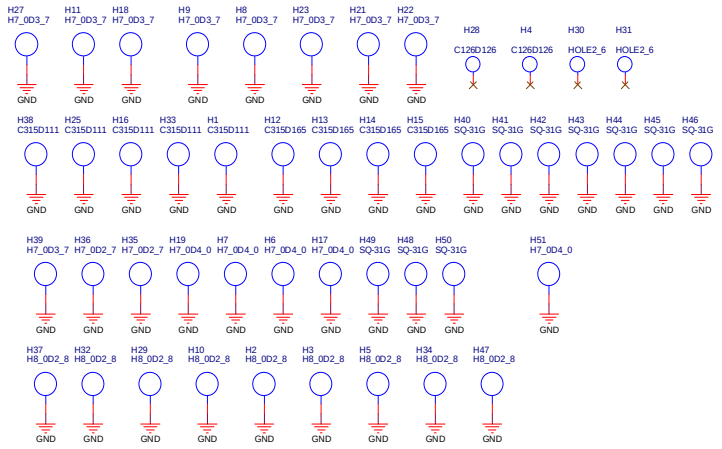


USB BOARD



CONSUMER IR





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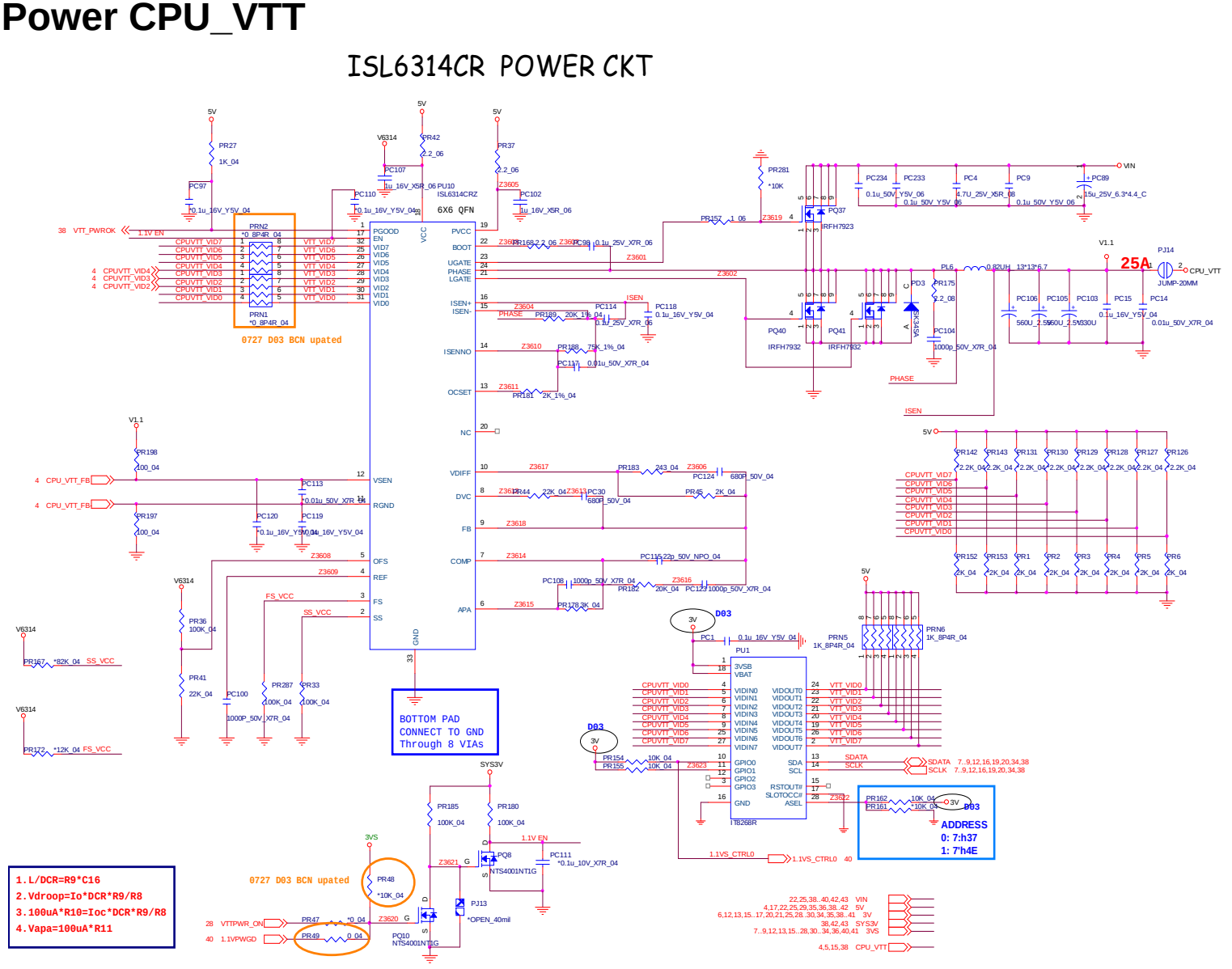
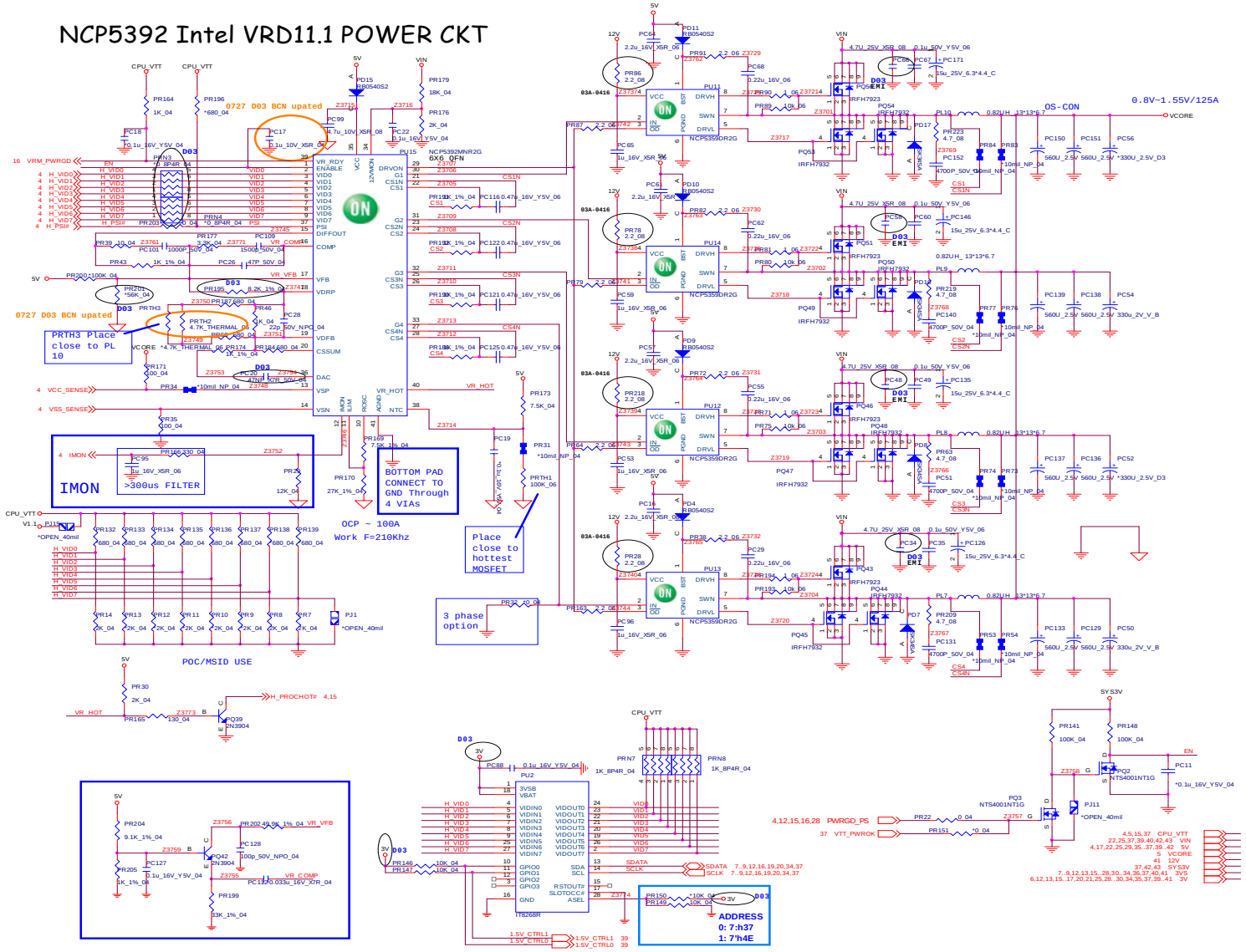
Daughter
Connector

Power CPU_VTT

Sheet 37 of 52
Power CPU_VTT



Power VCORE

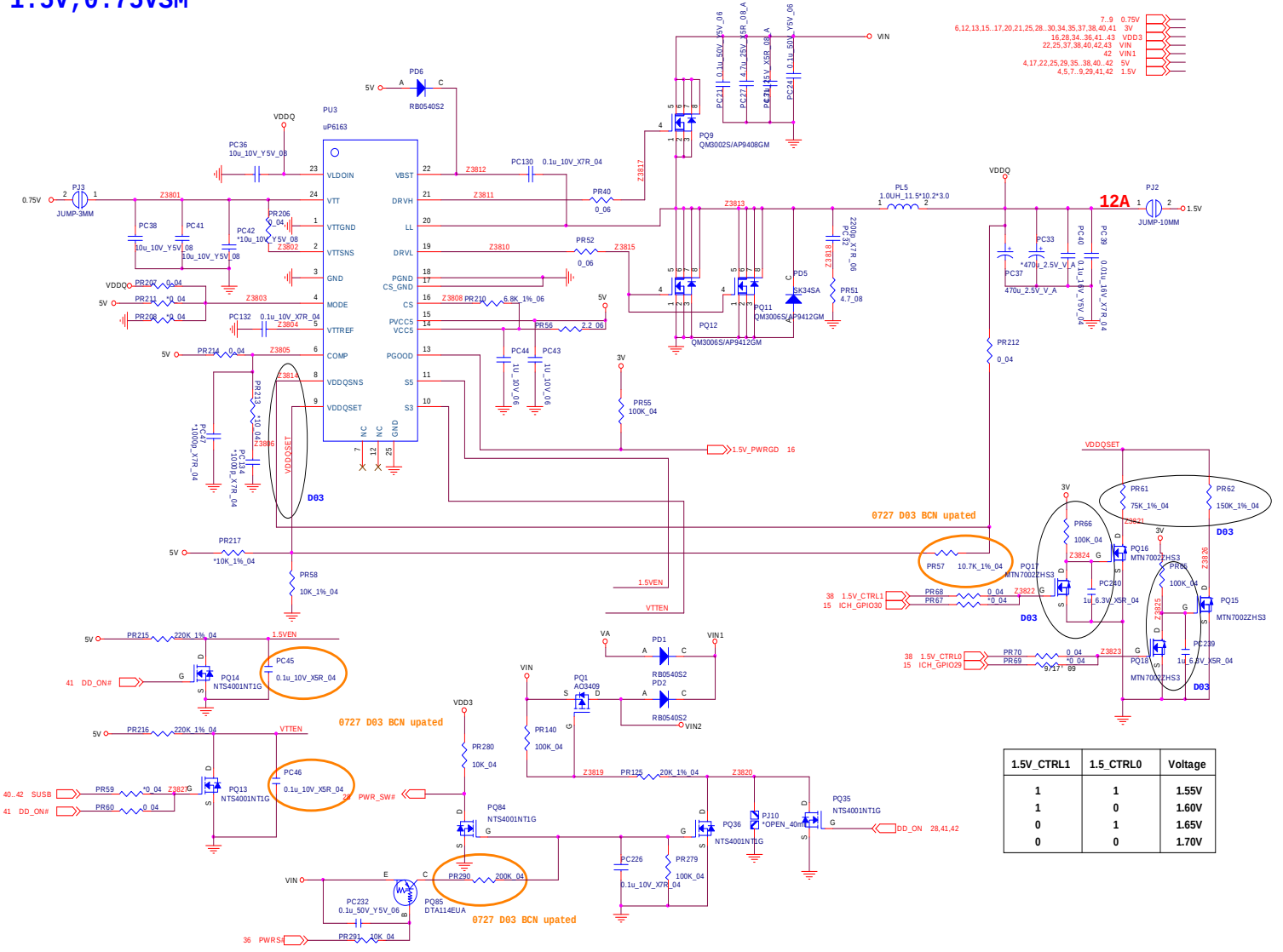


Sheet 38 of 52
Power VCORE

Power 1.5V/0.75VS

1.5V,0.75VSM

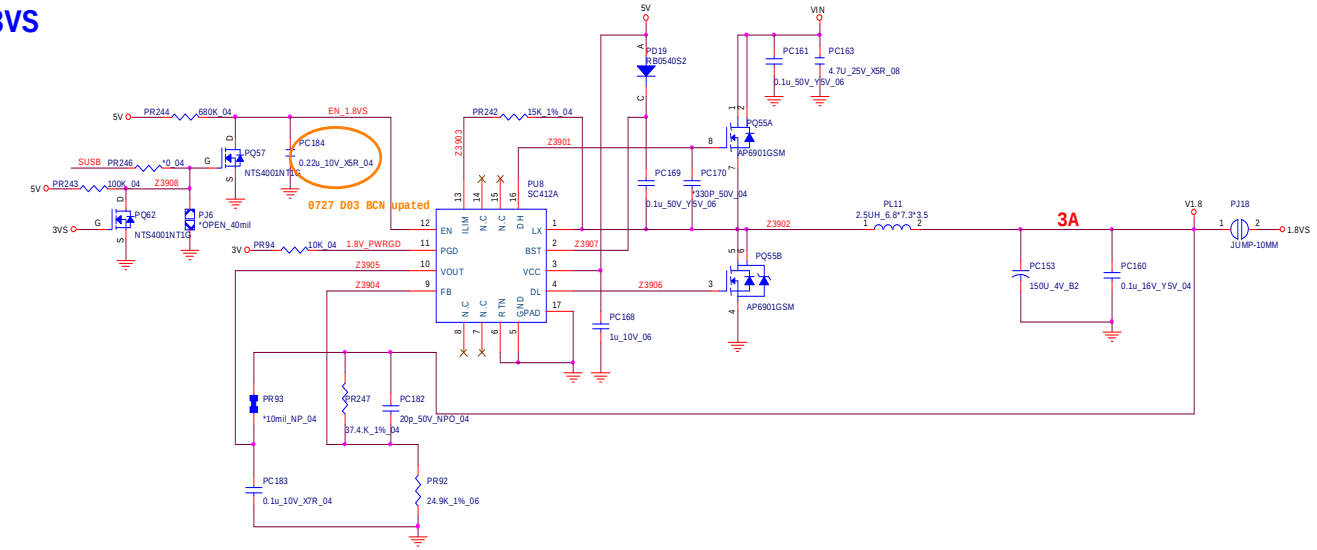
Sheet 39 of 52
Power 1.5V/0.75VS



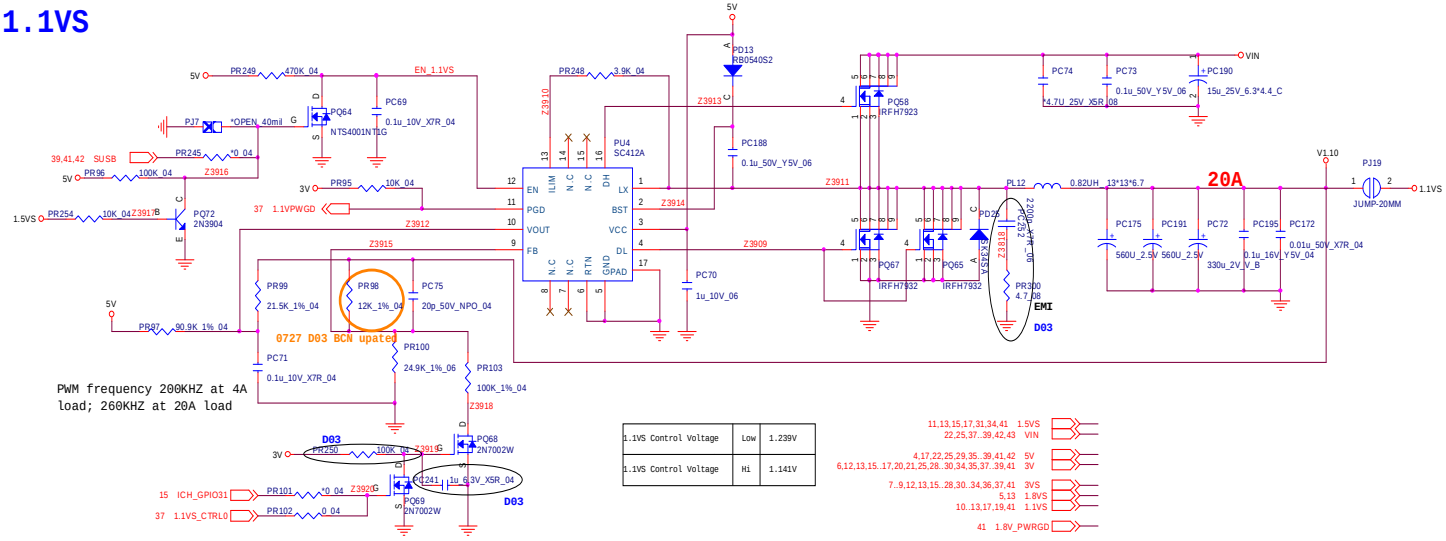
1.5V_CTRL1	1.5_CTRL0	Voltage
1	1	1.55V
1	0	1.60V
0	1	1.65V
0	0	1.70V

Power 1.8VS, 1.1VS

1.8VS



1.1VS



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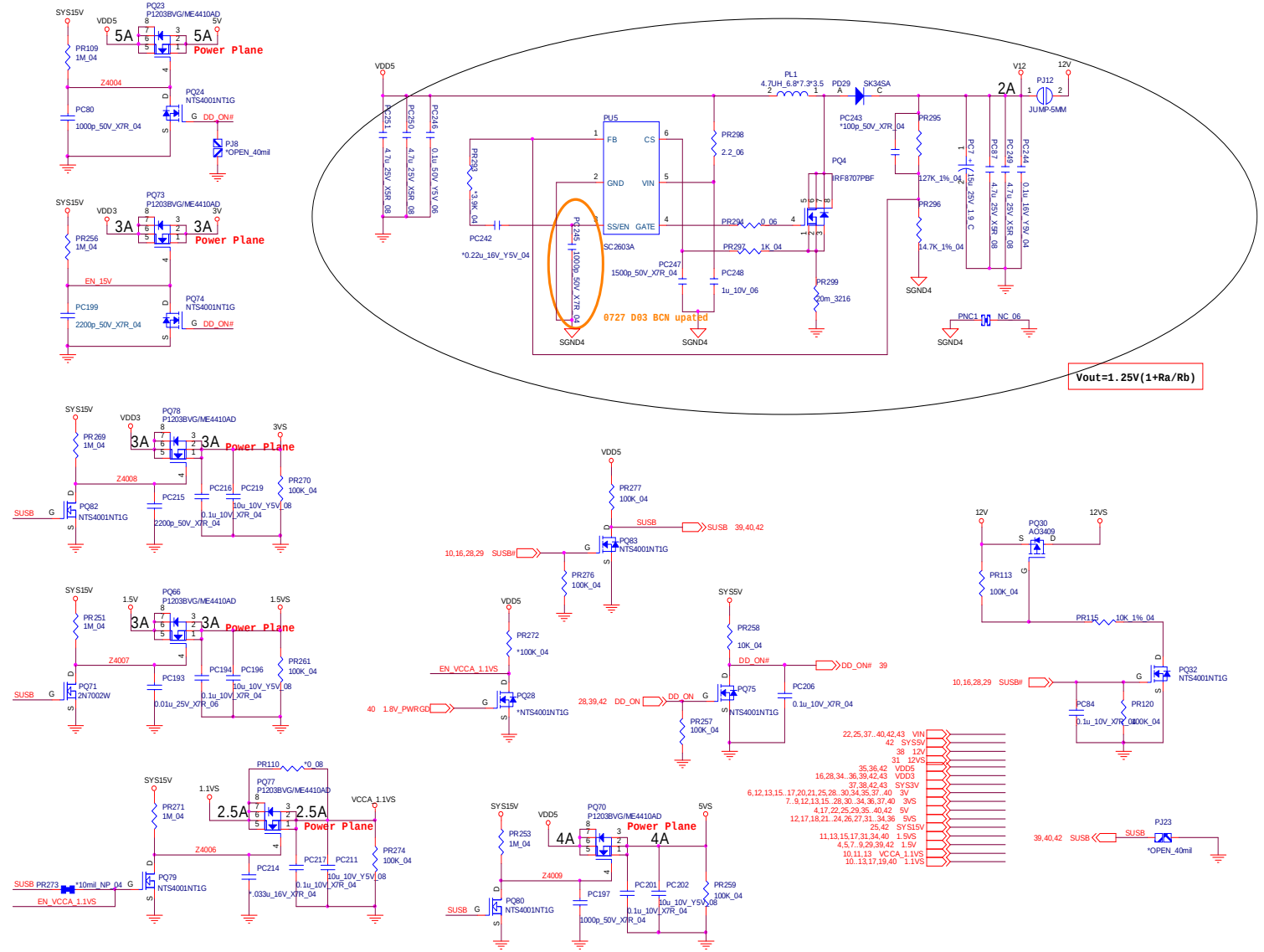
Power 1.8VS, 1.1VS

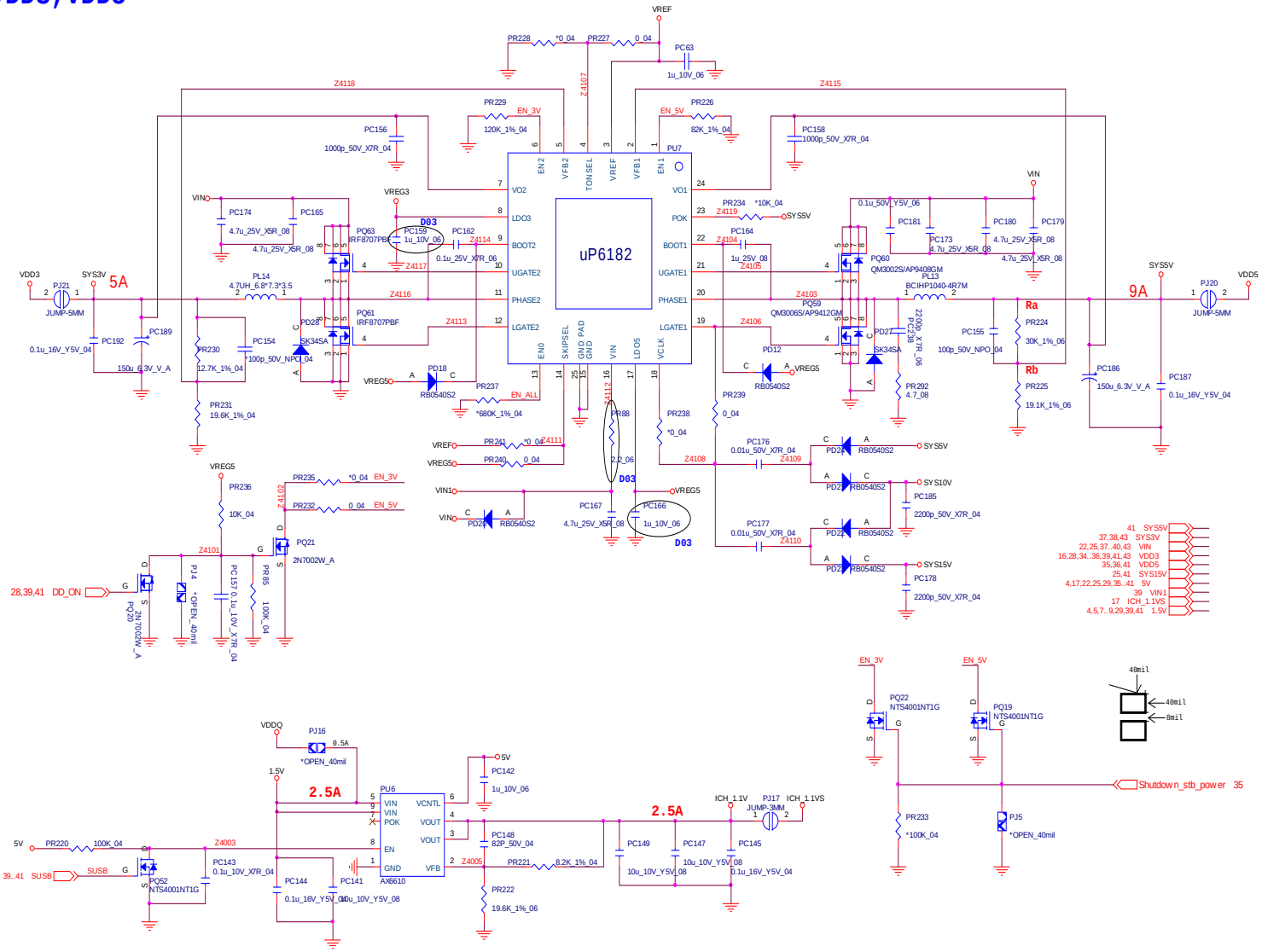
12V/Power Switch

Sheet 41 of 52
12V/Power Switch



Power VDD3, VDD5, ICH_1.1VS

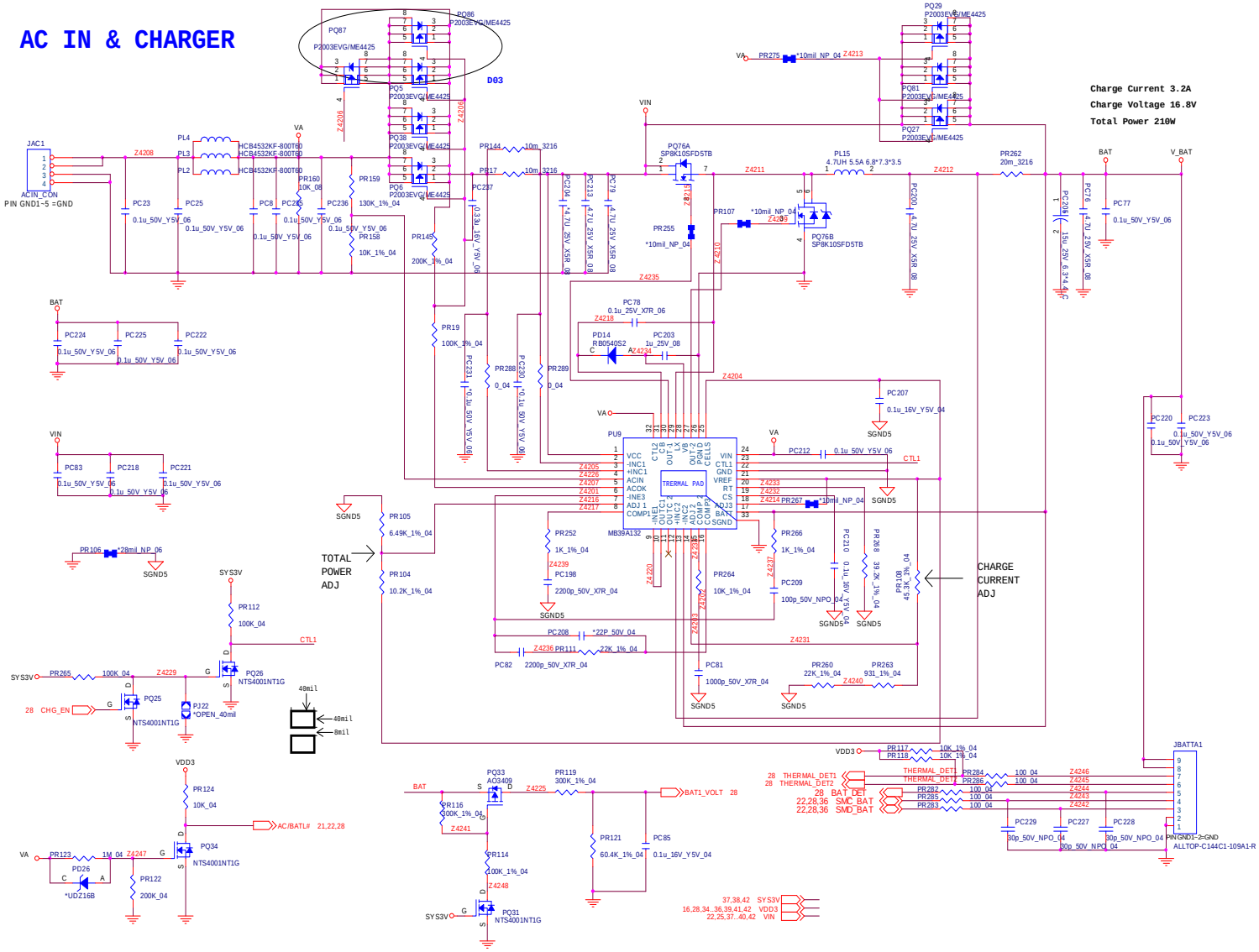
VDD3,VDD5



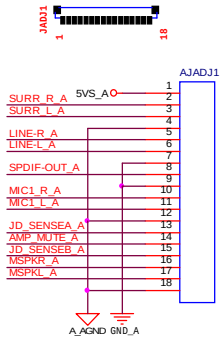
Sheet 42 of 52
Power VDD3, VDD5, ICH_1.1VS

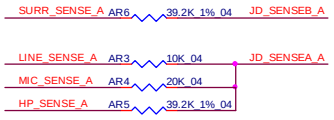
Power AC_In, Charge

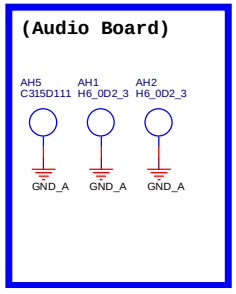
Sheet 43 of 52
Power AC_In, Charge

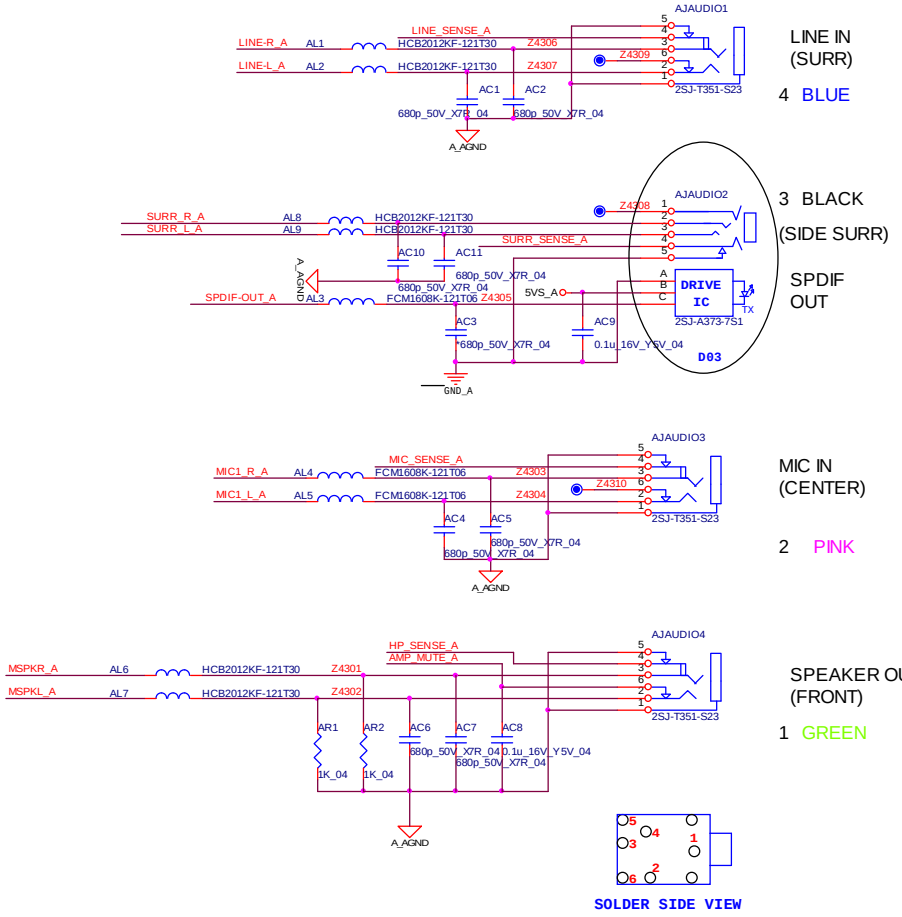


Audio Board









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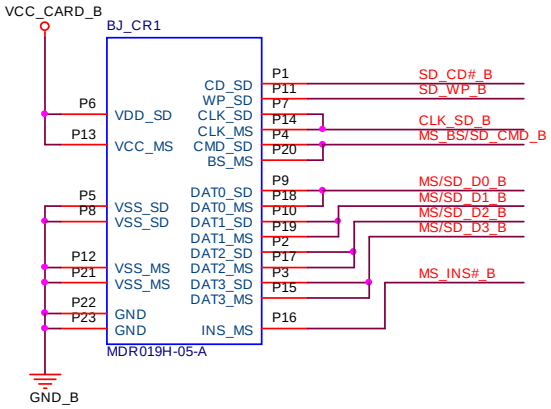
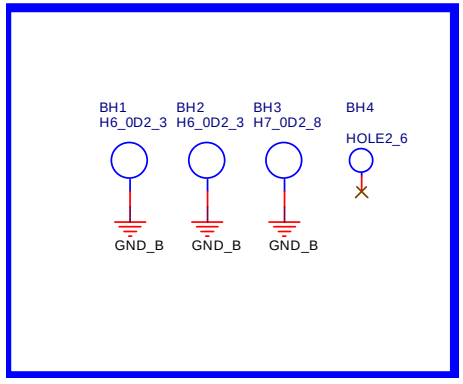
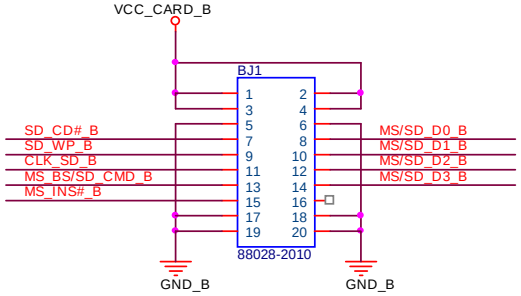
Audio Board

Card Reader Board

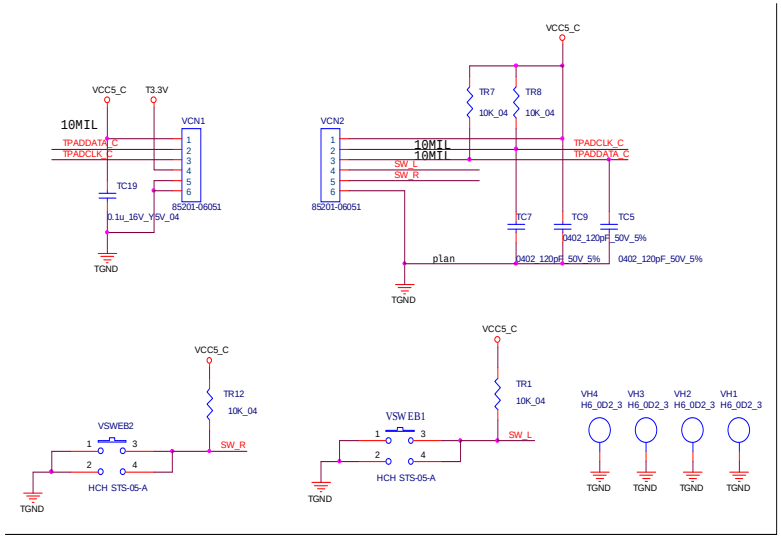


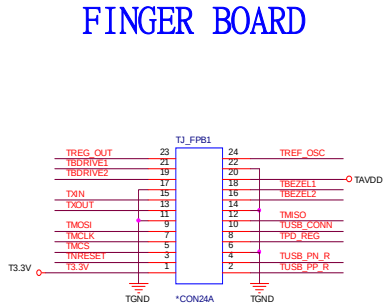
Sheet 45 of 52
Card Reader Board



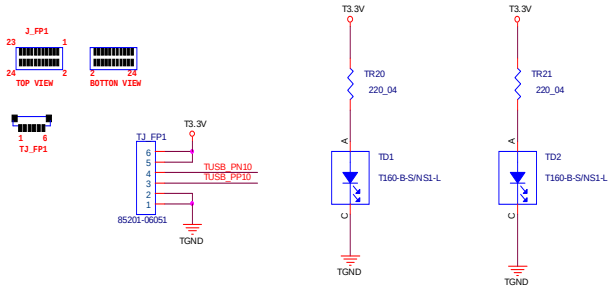


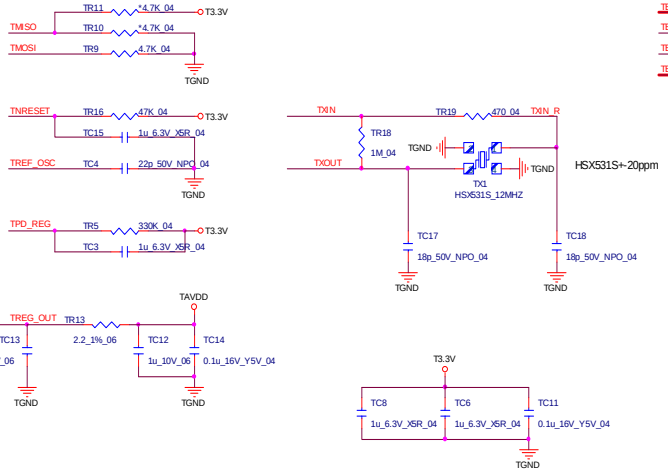
Click Board





Place Botton





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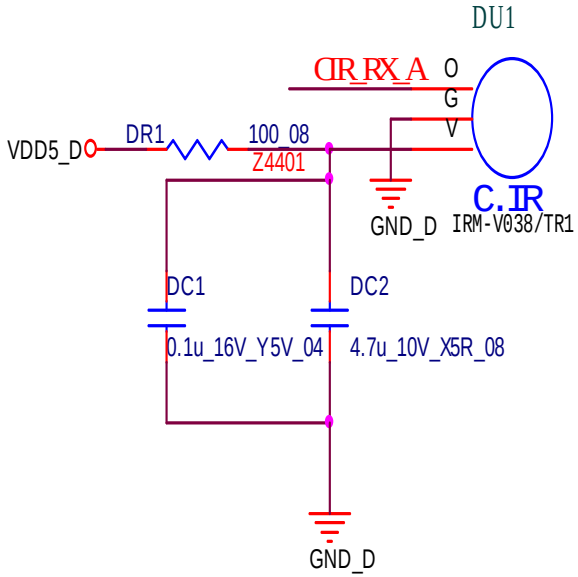
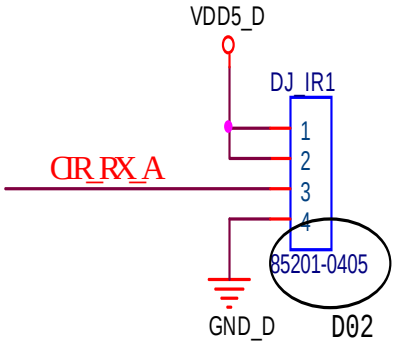
Click Board

Consumer IR Board





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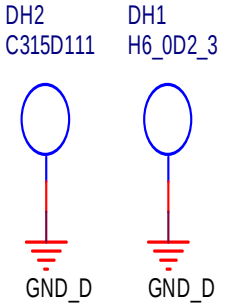
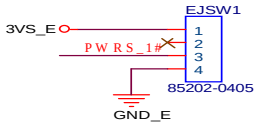
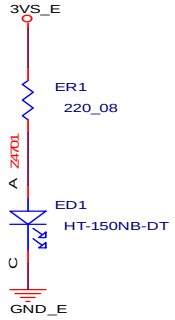
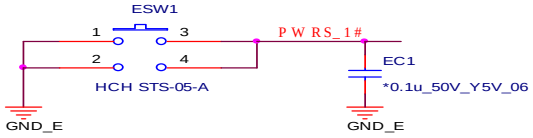
Consumer IR Board



Switch Board







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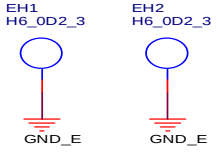
Switch Board



USB Board

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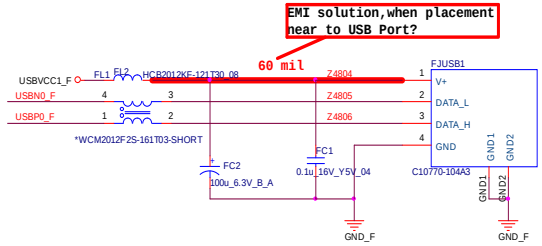
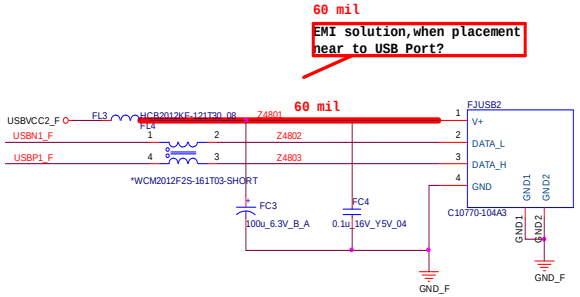
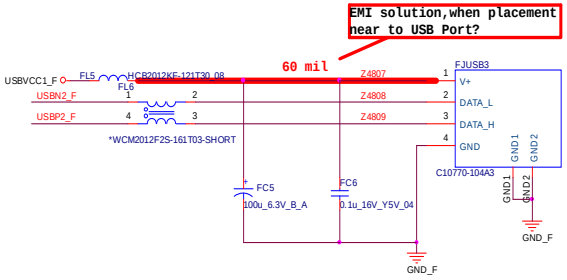
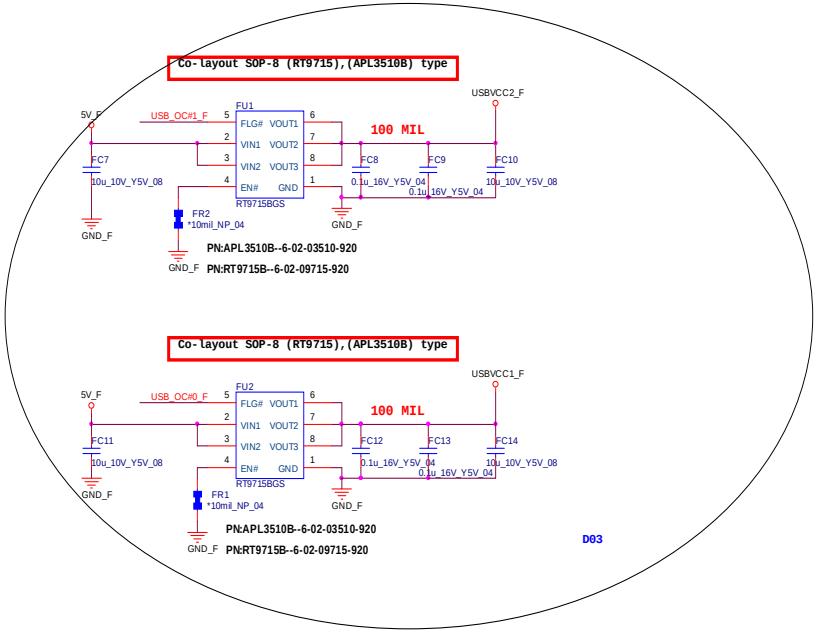
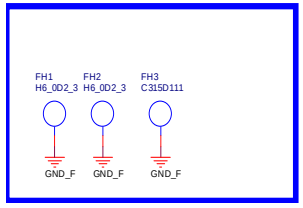
USB Board

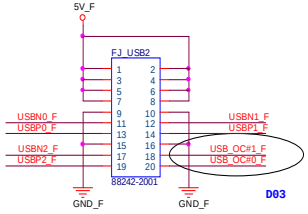












Finger Sensor Board

The TESD_GND trace has to be wide (> 20mil)

The path be marked in RED

needs to be design to be short and at low impedance.

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Finger Sensor Board

Touch Sensor Board

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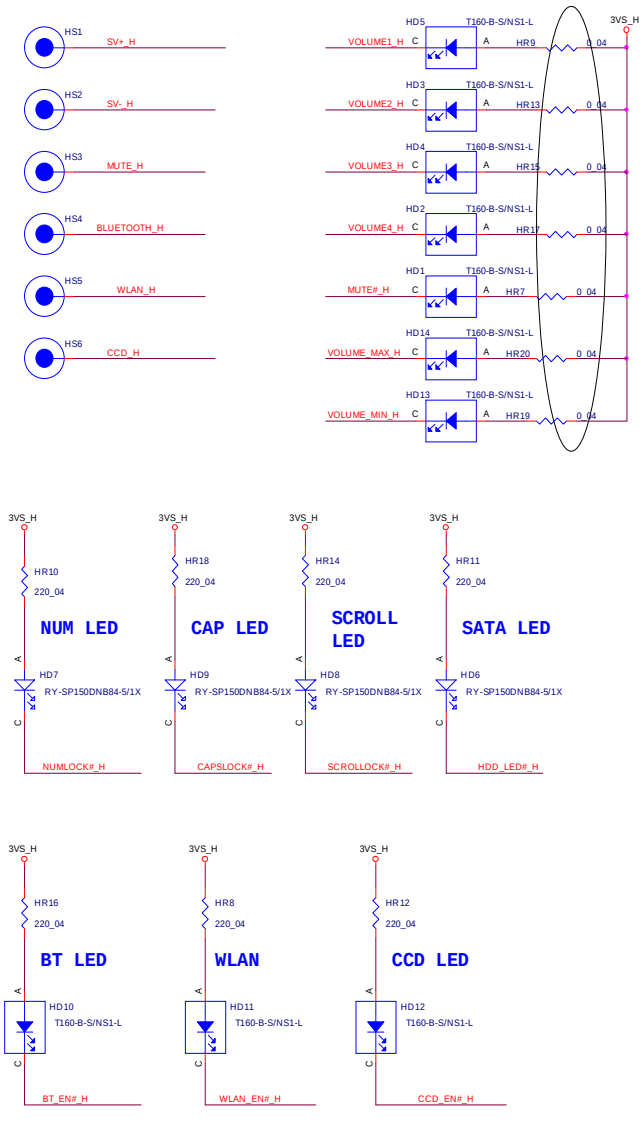
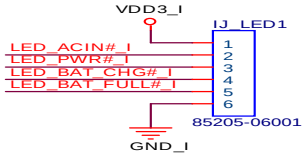
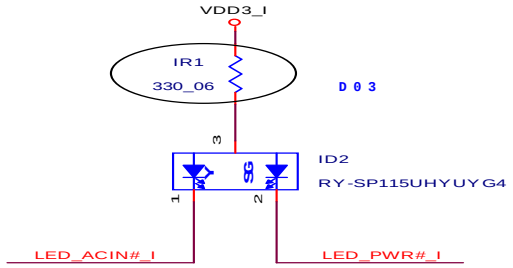
Touch Sensor Board



Power LED Board



AC IN/POWER ON LED



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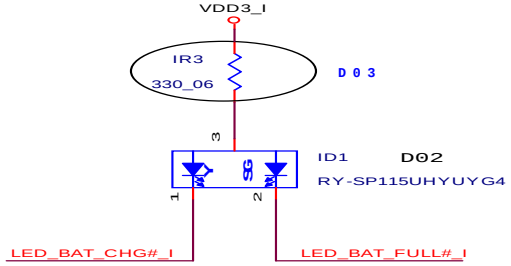
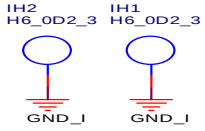
Power LED Board

BAT CHARGE/FULL LED





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).

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.