

SERVICE MANUAL

W350ETQ

notebook



Notebook Computer

W350ETQ

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 **W350ETQ** 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

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 (Full Range AC/DC Adapter – AC Input 100 - 240V, 50 - 60Hz, DC Output 19V, 6.3A).

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

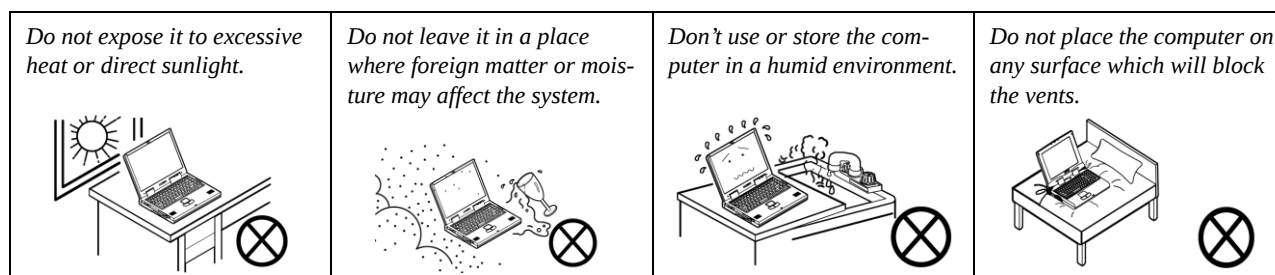
Instructions for Care and Operation

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

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



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

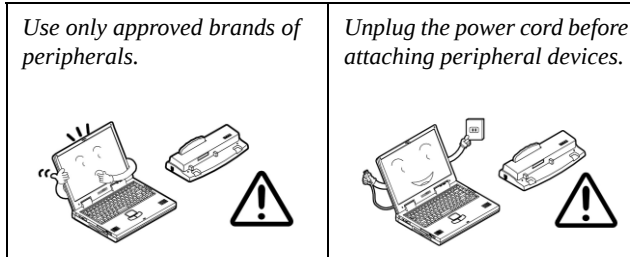


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

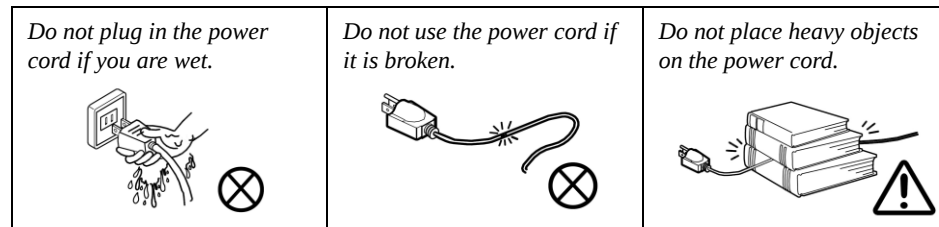
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



Power Safety

The computer has specific power requirements:

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



Power Safety Warning

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

Battery Precautions

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

Battery Guidelines

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

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



Battery Disposal

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

Caution

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

Battery Level

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

Preface

Related Documents

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

User's Manual on CD

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.

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **W350ETQ** 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 *User's Manual*. That manual is shipped with the computer.

Operating systems (e.g. *Windows 7*, etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The **W350ETQ** 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 note the warning and safety information indicated by the “” symbol.

The balance of this chapter reviews the computer's technical specifications and features.

System Specifications

Processor Options

Intel® Core™ i7 Processor

i7-3820QM (2.70GHz)

8MB L3 Cache, 22nm, DDR3-1600MHz, TDP 45W

i7-3720QM (2.60GHz), i7-3610QM (2.30GHz)

6MB L3 Cache, 22nm, DDR3-1600MHz, TDP 45W

i7-3520M (2.90GHz)

4MB L3 Cache, 22nm, DDR3-1600MHz, TDP 35W

Intel® Core™ i5 Processor

i5-3360M (2.80GHz), i5-3320M (2.60GHz), i5-3210M (2.50GHz)

3MB L3 Cache, 22nm, DDR3-1600MHz, TDP 35W

Intel® Core™ i3 Processor

i3-3110M (2.40GHz)

3MB L3 Cache, 22nm, DDR3-1600MHz, TDP 35W

Intel® Core™ i7 Processor

i7-2860QM (2.50GHz), i7-2820QM (2.30GHz)

8MB L3 Cache, 32nm, DDR3-1600MHz, TDP 45W

i7-2760QM (2.40GHz), i7-2720QM (2.20GHz)

6MB L3 Cache, 32nm, DDR3-1600MHz, TDP 45W

i7-2670QM (2.20GHz), i7-2630QM (2.00GHz)

6MB L3 Cache, 32nm, DDR3-1333MHz, TDP 45W

i7-2640M (2.80GHz), i7-2620M (2.70GHz)

4MB L3 Cache, 32nm, DDR3-1333MHz, TDP 35W

Intel® Core™ i5 Processor

i5-2540M (2.60GHz), i5-2520M (2.50GHz), i5-2450M (2.50GHz), i5-2430M (2.40GHz), i5-2410M (2.30GHz)

3MB L3 Cache, 32nm, DDR3-1333MHz, TDP 35W

Intel® Core™ i3 Processor

i3-2370M (2.40GHz), i3-2350M (2.30GHz), i3-2330M (2.20GHz), i3-2310M (2.10GHz)

3MB L3 Cache, 32nm, DDR3-1333MHz, TDP 35W

Core Logic

Intel® HM77 Chipset

BIOS

One 48Mb SPI Flash ROM

AMI BIOS

LCD

15.6" (39.62cm) HD+ (1600 * 900) / FHD (1920 * 1080), 16:9 Backlit Panel

Audio

High Definition Audio Compliant Interface

S/PDIF Digital Output

THX TruStudio Pro

2 * Built-In Speakers

Built-In Microphone

Storage

One 12.7 mm Super Multi/Blu-Ray Combo/Blu-Ray Writer SATA Optical Device Drive (**Factory Option**)

Up to Two (**Factory Option**) Changeable 2.5" 9.5 mm (h) **SATA** (Serial) Hard Disks with RAID Level 0/1 Support

Memory

Dual Channel **DDRIII (DDR3)**

*Three 204 Pin SO-DIMM Sockets Supporting **DDRIII (DDR3) 1333/1600** MHz Memory Modules (*real operational frequency depends on the FSB of the processor*)

*Note: Three SO-DIMMs are only supported by Quad-Core CPUs; Dual-Core CPUs support two SO-DIMMs maximum

Memory Expandable up to 24GB

Compatible with 2GB, 4GB or 8GB Modules

Video Adapter

Intel® Integrated GPU and NVIDIA® Discrete GPU

Supports NVIDIA® Optimus Technology

Intel Integrated GPU (GPU is Dependent on Processor)

Intel® HD Graphics 3000

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)

Microsoft DirectX®10 Compatible

Intel® HD Graphics 4000

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)

Microsoft DirectX®11 Compatible

NVIDIA Discrete GPU

NVIDIA® GeForce GTX 660M

2GB GDDR5 Video RAM

Microsoft DirectX®11 Compatible

Security

BIOS Password
Security (Kensington® Type) Lock Slot
Fingerprint Reader Module (**Factory Option**)

Keyboard

Full Size Isolated Winkey Keyboard with
Numeric Keypad

Pointing Device

Built-In TouchPad (with Multi Gesture
Functionality)

Interface

One USB 2.0 Port
Three USB 3.0 Ports
One eSATA Port (SATA/USB 3.0 Combo)
One External Monitor Port
One HDMI™-Out (High-Definition Multimedia
Interface) Port (with HDCP)
One Microphone-In Jack
One Headphone/Speaker-Out Jack
One S/PDIF Out Jack
One RJ-45 LAN Jack
One DC-In Jack

Slots**1st Mini-Card Slot:**

Mini-Card Slot for WLAN & Bluetooth Combo
Half Mini-Card Module with PCIe and USB
Interface

2nd Mini-Card Slot for Model A Only:

Mini-Card Slot for 3G Full Size Mini-Card
Module with USB Interface

Card Reader

Embedded Multi-In-1 Push-Push Card Reader
- MMC / RSMHC
- SD / Mini SD / SDHC / SDXC
- MS / MS Pro / MS Duo

Note: Some of these cards require PC
adapters that are usually supplied with the
cards.

Communication

Built-In 10/100/1000Mb Base-TX Ethernet LAN
(**Factory Option**) 1.3M Pixels/2M Pixels (HD)
PC Camera Module

WLAN/ Bluetooth Half Mini-Card Modules:

(**Factory Option**) Intel® Centrino® Ultimate-N
6300 Wireless LAN (**802.11a/g/n**)

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

(**Factory Option**) Intel® Centrino® Wireless-N
2230 Wireless LAN (**802.11b/g/n**) + Bluetooth
4.0

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

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

UMTS/HSPDA **OR** UMTS/HSPDA+ based **3G**
Module with Mini-Card Interface (**Factory**
Option)

Quad-band GSM/GPRS (850 MHz, 900 MHz,
1800 MHz, 1900 MHz)

UMTS WCDMA FDD (2100 MHz)

Note that UMTS modes CAN NOT be used in
North America

Power

Full Range AC/DC Adapter – AC in 100 - 240V,
50 - 60Hz DC Output 19V, 6.3A (**120 Watts**)

Removable 8 Cell Smart Lithium Ion Battery Pack
76.96WH

Environmental Spec

Temperature

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Physical Dimensions & Weight

374mm (w) * 250mm (d) * 16.3 - 42.7mm (h)

2.7kg with ODD and Battery

Introduction

Figure 1
Top View

1. Optional Built-In PC Camera
2. LCD
3. Power Button
4. Top Case LED Indicators
5. WLAN Hot Key Button
6. GPU Button
7. Speakers
8. Keyboard
9. Built-In Microphone
10. Touchpad & Buttons

External Locator - Front View with LCD Panel Open



External Locator - Front & Right side Views

Figure 2
Front Views

1. LED Indicators



Figure 3
Right Side Views

1. Multi-in-1 Card Reader
2. USB 3.0 Ports
3. Combined eSATA/USB 3.0 Port
4. HDMI-Out Port
5. RJ-45 LAN Jack



Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. Security Lock Slot
2. USB 2.0 Port
3. S/PDIF-Out Jack
4. Microphone-In Jack
5. Headphone-Out Jack
6. Optical Device Drive Bay
7. Emergency Eject Hole



Figure 5
Rear View

1. External Monitor Port
2. DC-In Jack
3. Vent



External Locator - Bottom View

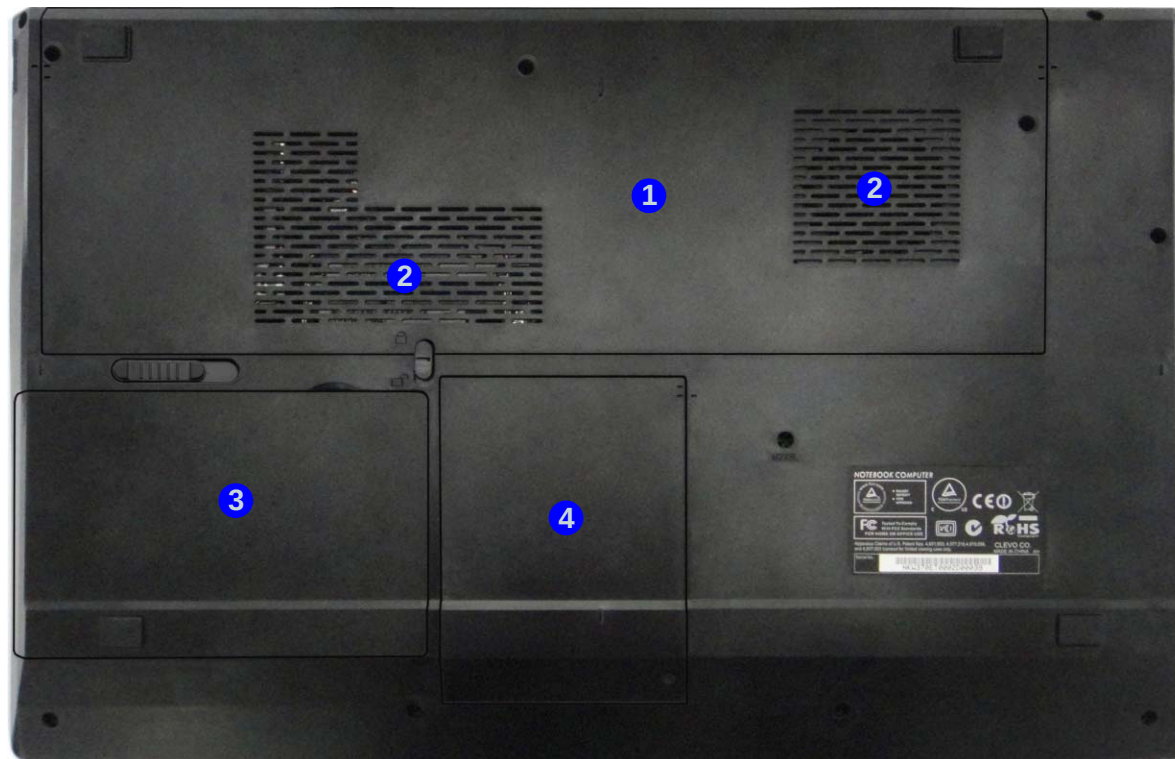


Figure 6
Bottom View

1. Component Bay Cover
2. Vent
3. Battery
4. HDD Bay



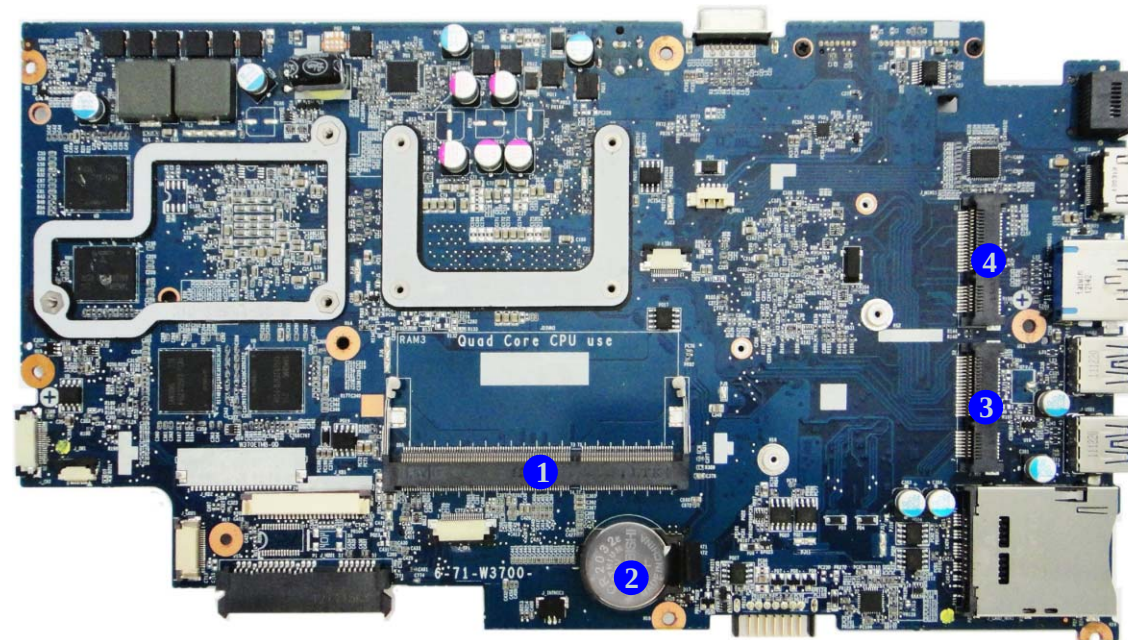
Overheating

To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

Introduction

Figure 7
**Mainboard Top
Key Parts**

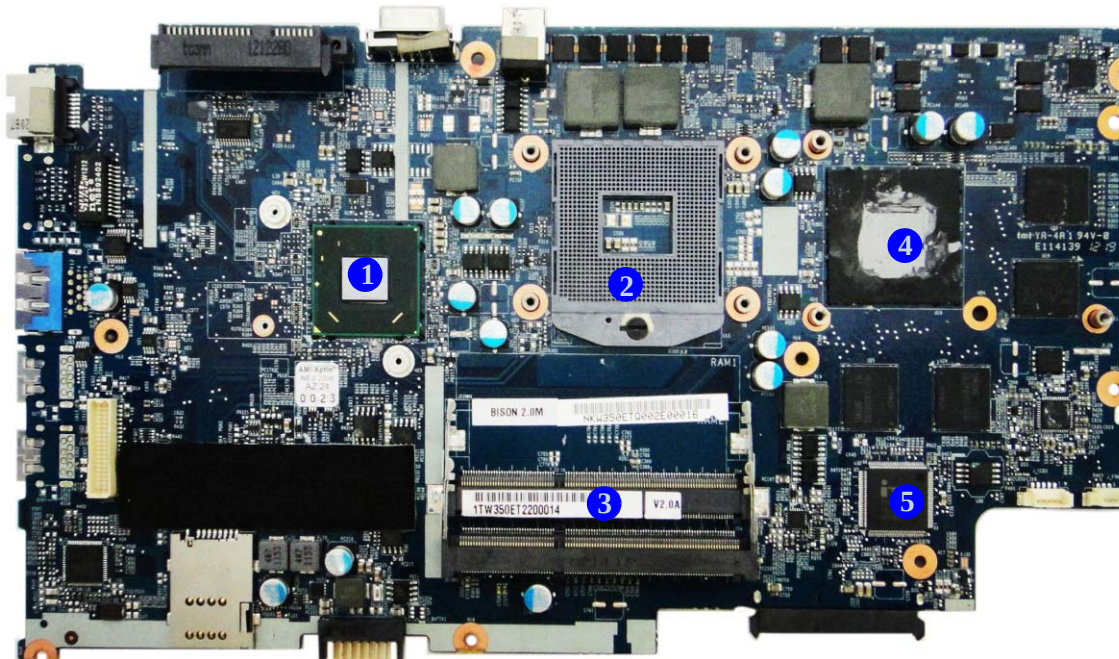
1. Memory Slots DDR3 So-DIMM
2. CMOS Battery
3. Mini-Card Connector (3G Module)
4. Mini-Card Connector (WLAN Module)



Mainboard Overview - Bottom (Key Parts)

Figure 8
**Mainboard Bottom
Key Parts**

1. PantherPoint
Controller
2. CPU Socket
3. Memory Slots DDR3
So-DIMM
4. NV Graphic
5. KBC

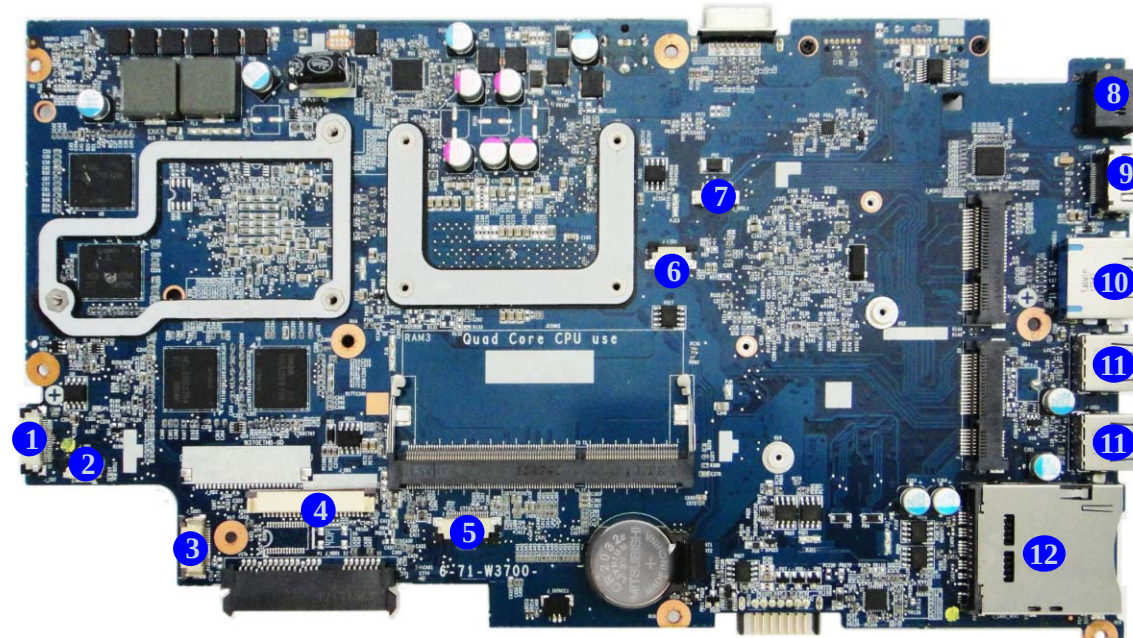


Introduction

Figure 9
**Mainboard Top
Connectors**

Mainboard Overview - Top (Connectors)

1. Audio Cable Connector
2. Power Switch Cable Connector
3. ODD Cable Connector
4. Keyboard Cable Connector
5. Click Board Cable Connector
6. VGA SW Cable Connector
7. Speaker Cable Connector
8. RJ-45 LAN Jack
9. HDMI-Out Port
10. eSATA Connector
11. USB 3.0 Ports
12. Multi-in-1 Card Reader



Mainboard Overview - Bottom (Connectors)

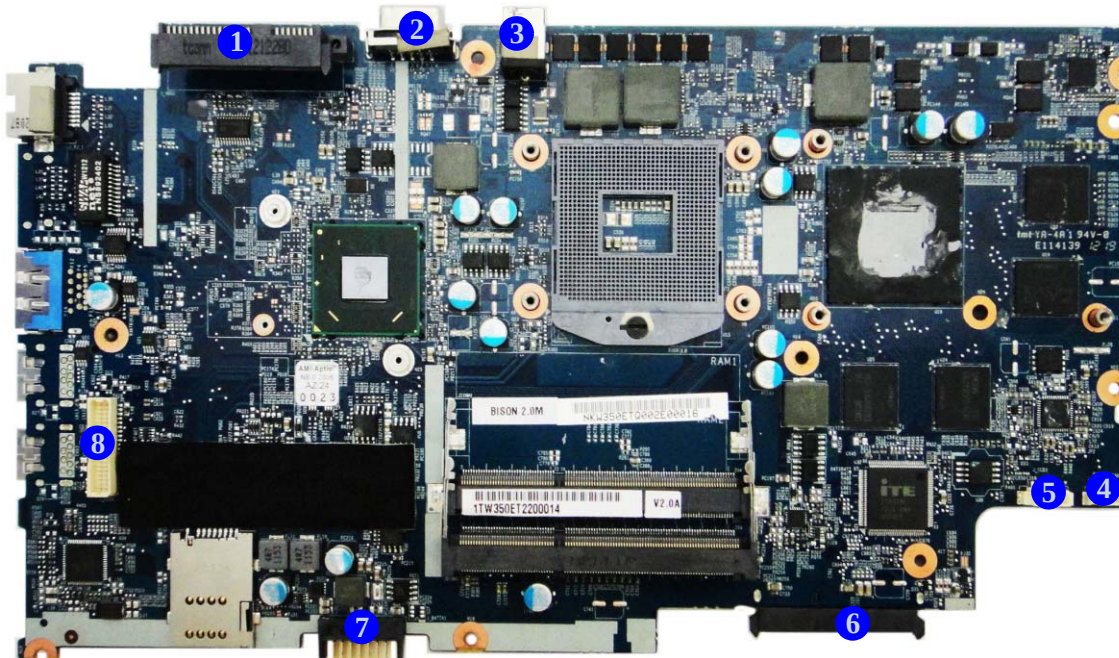


Figure 10
**Mainboard Bottom
Connectors**

1. HDD2 Connector
2. External Monitor Port
3. DC-In Jack
4. Fan Cable Connector
5. CCD Cable Connector
6. HDD1 Connector
7. Battery Connector
8. LCD Cable Connector

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the **W350ETQ** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

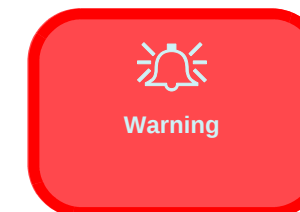
We suggest you completely review any procedure before you take the computer apart.

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

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

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

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



Disassembly

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

Maintenance Tools

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

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

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

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

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

Cleaning

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

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



Power Safety Warning

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

Disassembly Steps

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

To remove the Battery:

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

To remove the Optical Device:

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

To remove the HDD:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 7](#)

To remove and install the Processor:

1. Remove the battery [page 2 - 5](#)
2. Remove the Processor [page 2 - 10](#)
3. Install the Processor [page 2 - 12](#)

To remove the Keyboard:

1. Remove the battery [page 2 - 5](#)
2. Remove the keyboard [page 2 - 13](#)

To remove the System Memory:

1. Remove the battery [page 2 - 5](#)
2. Remove the system memory [page 2 - 14](#)

To remove the Hinge Cover:

1. Remove the battery [page 2 - 5](#)
2. Remove the hinge cover [page 2 - 16](#)

Removing the Battery

If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery.

1. Turn the computer off, and turn it over.
2. Slide the latch **1** in the direction of the arrow.
3. Slide the latch **2** in the direction of the arrow and battery will pop-up.
4. Lift the battery **3** up (*Figure b*) and out of the battery bay.

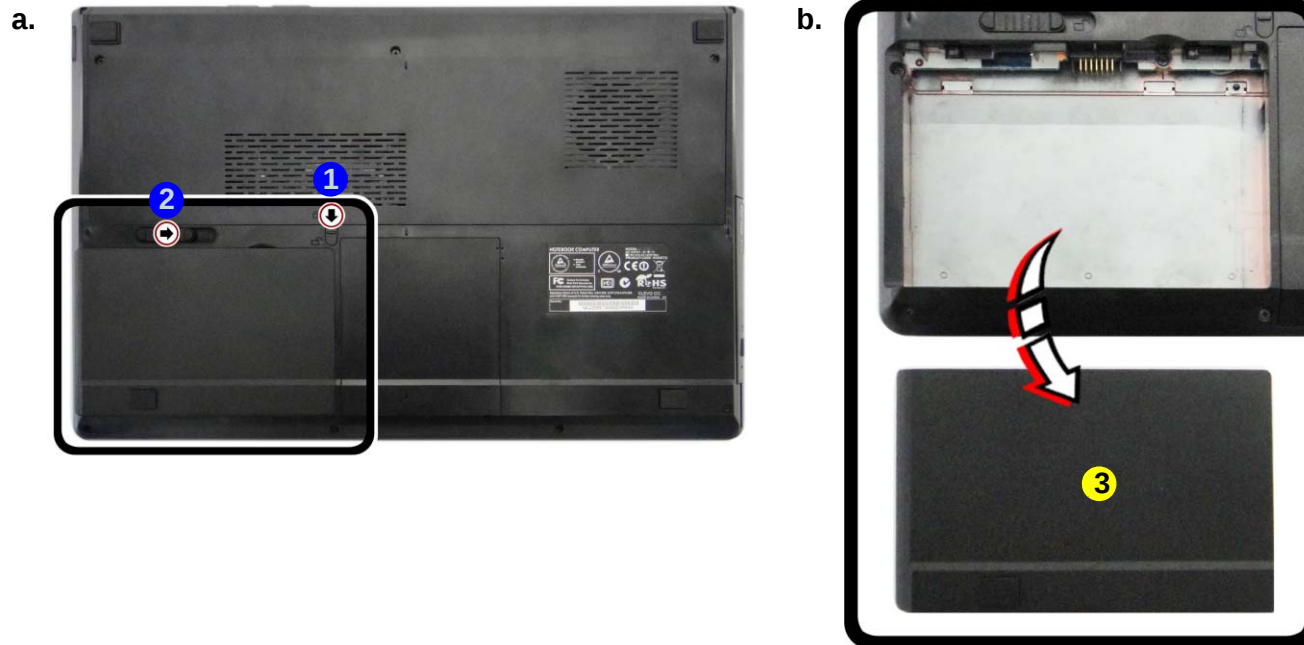


Figure 1
Battery Removal

- a. Slide the latch **1** in the direction of the arrow. and slide the latch **2** in the direction of the arrow and battery will pop-up.
- b. Lift the battery out of the bay as indicated.



3. Battery

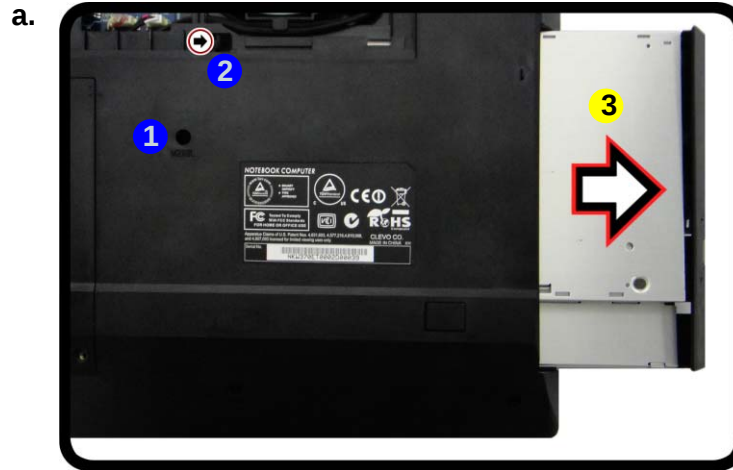
Disassembly

Figure 2
**Optical Device
Removal**

- a. Remove the screw and push the optical device out of the computer.

Removing the Optical (CD/DVD) Device

1. Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)) and remove the component bay cover ([page 2 - 9](#)).
2. Remove the screw **1**, and use a screwdriver to carefully push out the optical device **3** at point **2**.
3. Reverse the process to install the new device.



3. Optical Device

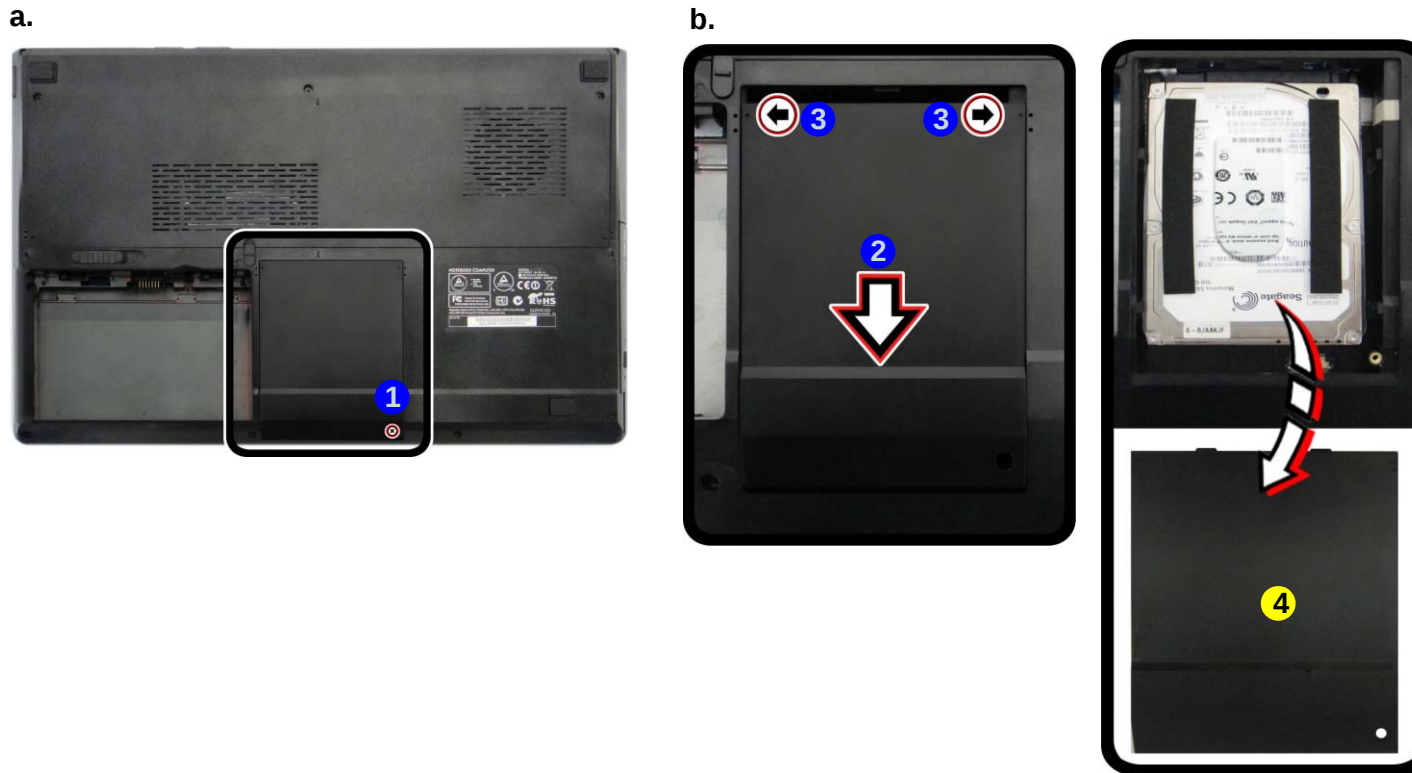
- 1 Screw

Removing the Hard Disk Drive

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

Hard Disk Upgrade Process

1. Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)).
2. Locate the Hard disk bay cover and remove screw ①.
3. Slide the cover in the direction of the arrow ② (as illustrated) until the case markers ③ line up.
4. Remove the bay cover ④.



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

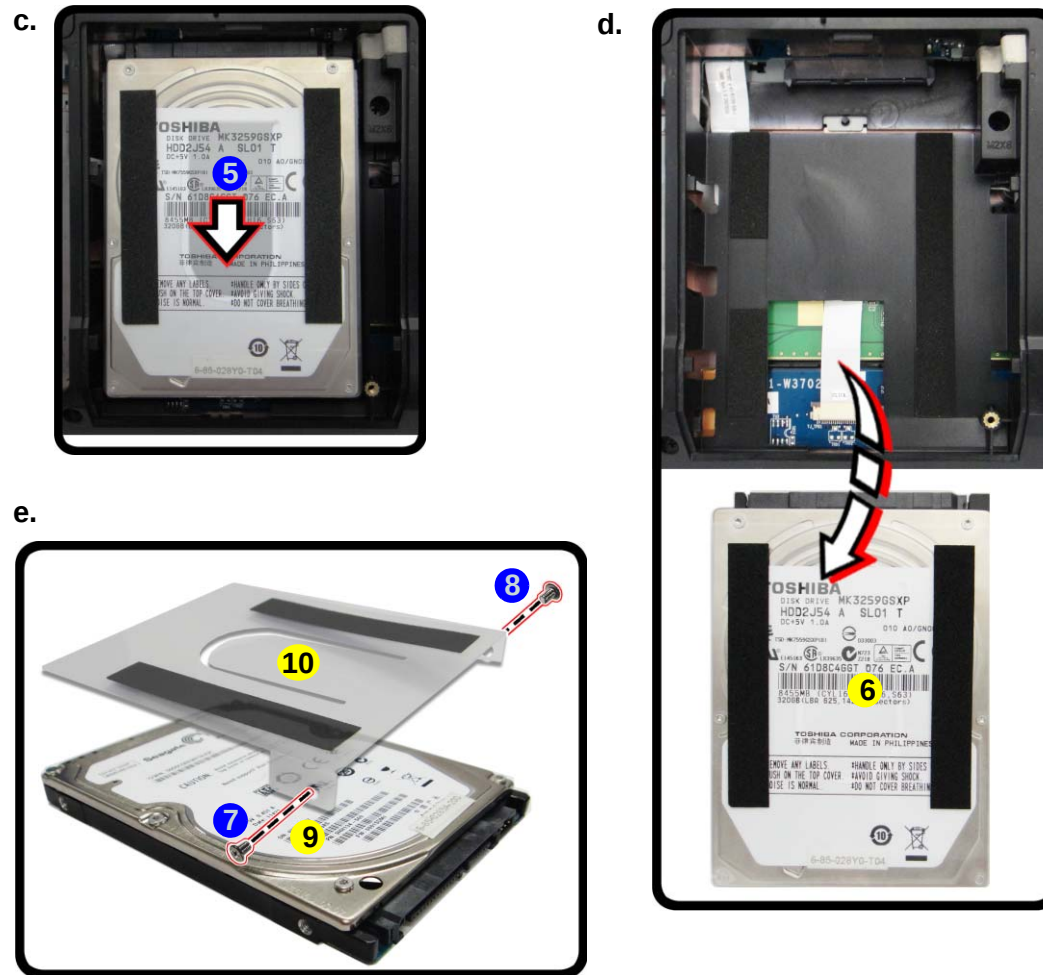
4. Hard Disk Bay Cover
- 1 Screws

Disassembly

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

- c. Slide the hard disk assembly out.
- d. Lift the hard disk assembly out of the computer.
- e. Remove the screws to release the hard disk from the mylar.

5. Grip the tab and slide the hard disk in the direction of arrow **5** (*Figure 4e*).
6. Lift the hard disk assembly **6** out of the computer.
7. Remove screws **7** - **8**.
8. Separate the hard disk **9** and hard disk mylar **10**.
9. Reverse the process to install a new hard disk(s).

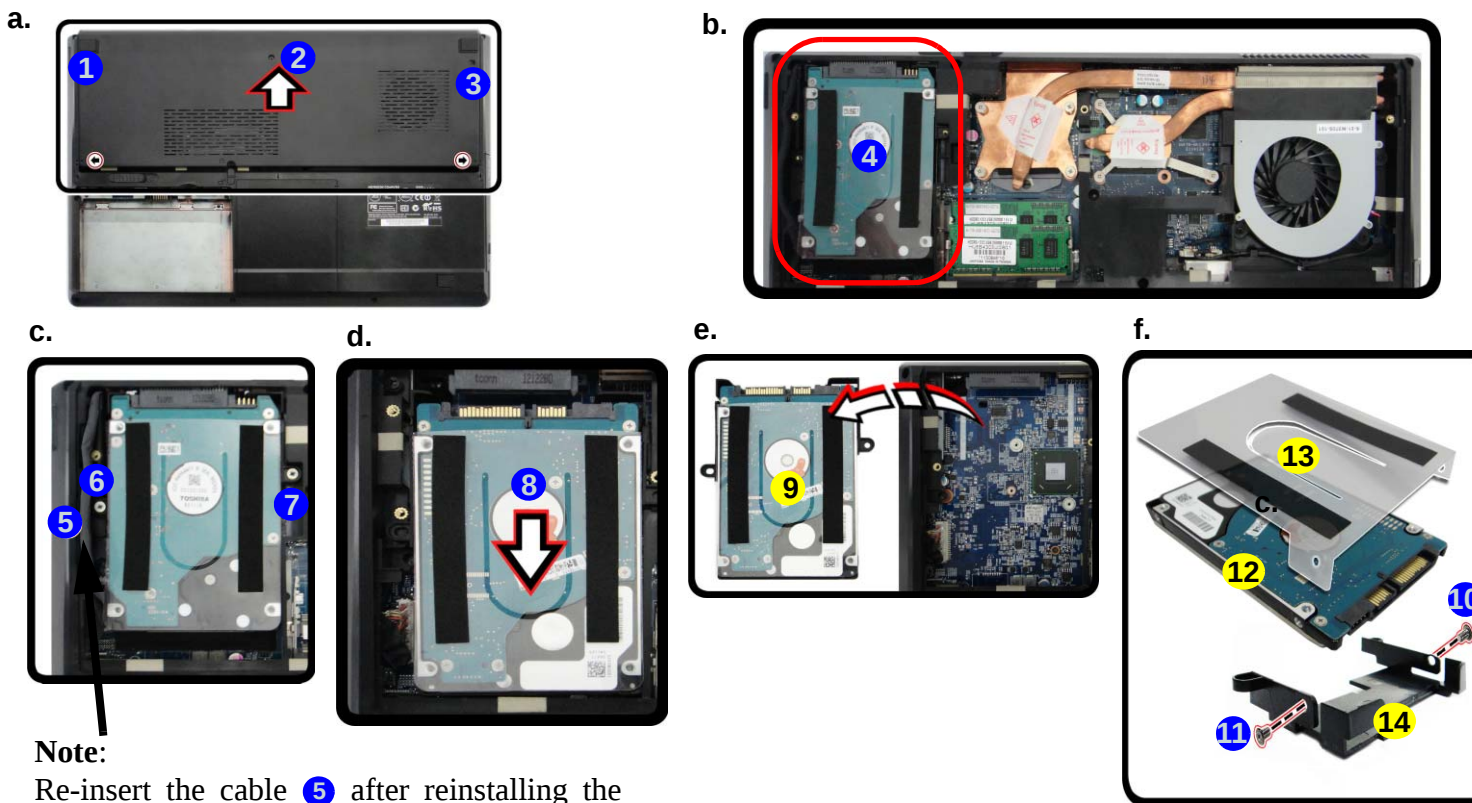


- 6 Hard Disk Assembly
- 9 Hard Disks
- 10 Hard Disk Mylar

- 2 Screws

Removing the Hard Disk(s) in the Secondary HDD Bay

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the component bay cover and remove screws ① - ③ and the cover.
3. The hard disk will be visible at point ④ on the mainboard.
4. Remove screws ⑥ - ⑦ (Note that you need to set aside the cable ⑤ to see the screw ⑥).
5. Grip the tab and slide the hard disk in the direction of arrow ⑧ (Figure 5e).
6. Lift the hard disk assembly ⑨ out of the compartment.
7. Remove the screws ⑩ - ⑪ to release the hard disk(s) ⑫ and hard disk mylar ⑬ from the case ⑭.
8. Reverse the process to install any new hard disk(s).



Note:

Re-insert the cable ⑤ after reinstalling the hard disk assembly and tightening the screws.

Figure 5
Secondary HDD
Assembly Removal

- a. Remove the screws and cover.
- b. Locate the hard disk.
- c. Remove the screws.
- d. Slide the hard disk assembly out.
- e. Lift the hard disk assembly out of the computer.
- f. Remove the screws and separate the HDD(s) from case.

9. Hard Disk Assembly
12. Hard Disks
13. Hard Disk Mylar
14. Hard Disk Case

- 7 Screws

Disassembly

Figure 6
Processor Removal

- Locate the heat sink.
- Remove the screws.
- Grip the heat sink tab and carefully lift the heat sink up and off the computer.



Caution

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



9. CPU Heat Sink

- 7 Screws

Removing and Installing the Processor

Processor Removal Procedure

- Turn off the computer, and turn it over, remove the battery ([page 2 - 5](#)), and component bay cover ([page 2 - 9](#)).
- The CPU heat sink will be visible at point **A** on the mainboard.
- Remove screws **7**, **6**, **5**, **4**, **3**, **2**, **1**, the reverse order indicated on the label ([Figure 6b](#)).
- Grip the heat sink tab **8** and carefully lift the heat sink **9** up straight (**do not angle it as you lift it**) about a centimeter in order to clear the fan unit, and then angle it around 45° to remove it from the computer.

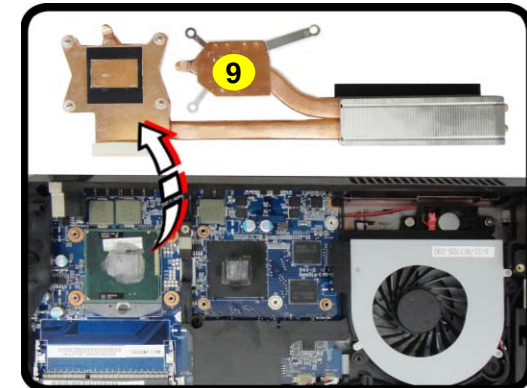
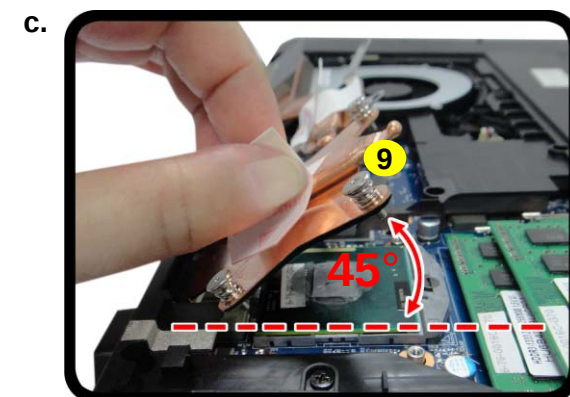
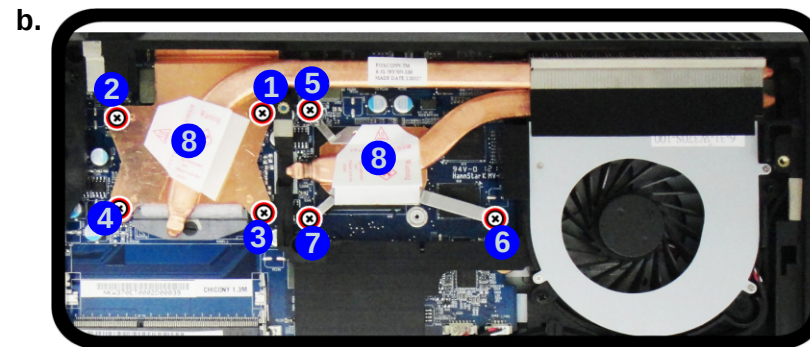
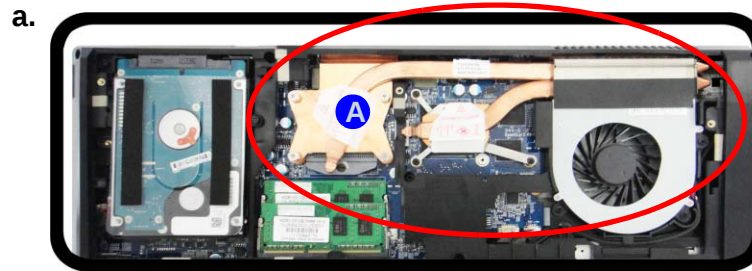


Figure 7
**Processor Removal
(cont'd)**

- d. Turn the release latch to unlock the CPU.
- e. Lift the CPU out of the socket.

d.

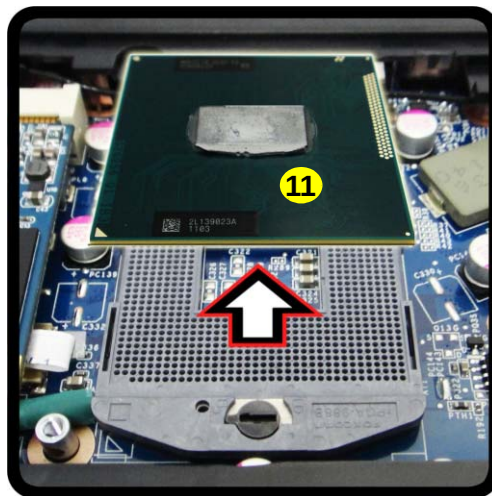


Unlock



Lock

e.



Caution

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



11. CPU

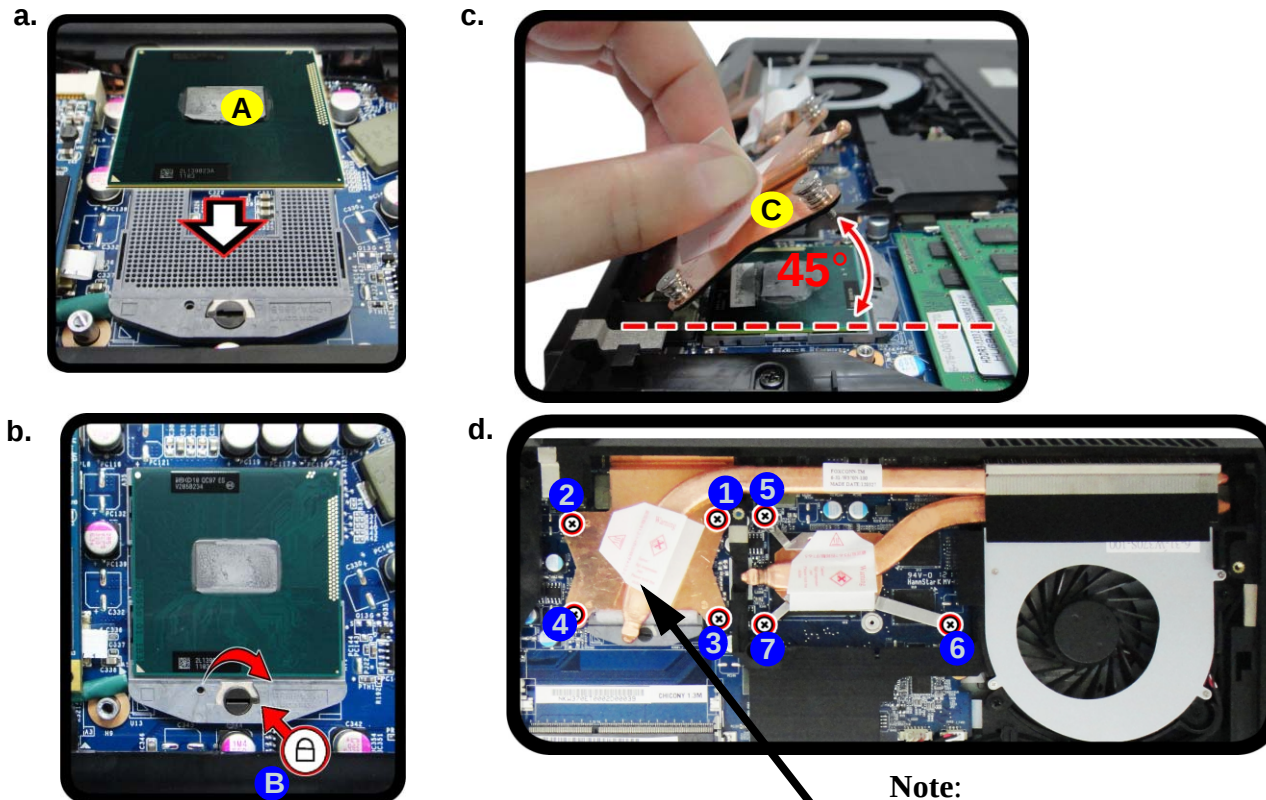
Disassembly

Figure 8
Processor Installation

- Insert the CPU.
- Turn the release latch towards the lock symbol.
- Insert the heat sink.
- Tighten the screws.

Processor Installation Procedure

- Insert the CPU **A** (*Figure 8a*), pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!), and turn the release latch **B** towards the lock symbol  (*Figure 8b*).
- Insert the heat sink **C** at an angle of around 30° as indicated in *Figure 8c*.
- Tighten the CPU heat sink screws in the order **1**, **2**, **3**, **4**, **5**, **6** & **7** (the order as indicated on the label and *Figure 8d*).
- Replace the component bay cover.

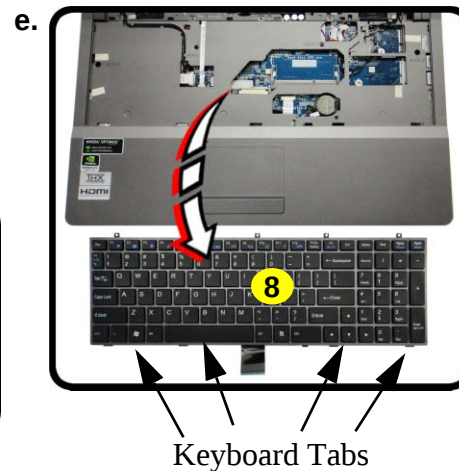
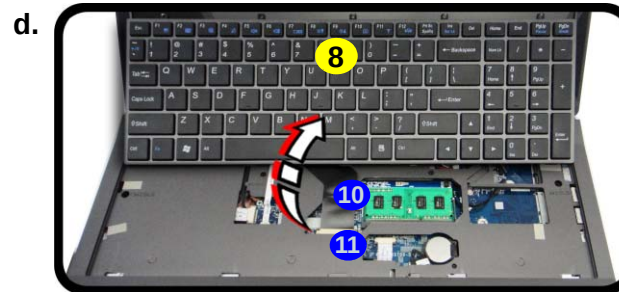
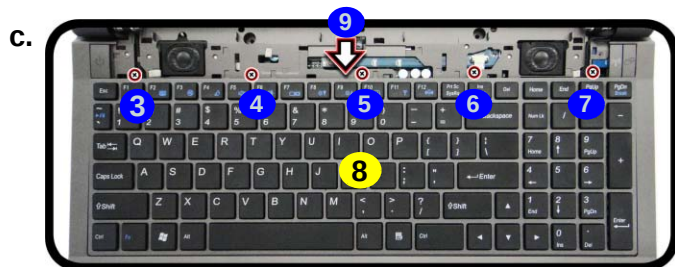
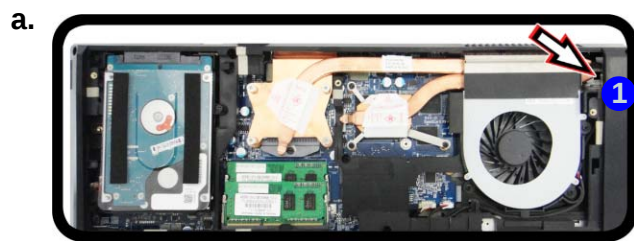


Note:
Tighten the screws in the order as indicated on the label.

- A. CPU
C. Heat Sink
- 7 Screws

Removing the Keyboard

1. Turn off the computer, and turn it over and remove the battery ([page 2 - 5](#)), and component bay cover ([page 2 - 9](#)).
2. Use a screwdriver to carefully push out the speakers cover **2** at point **1**.
3. Turn the computer over, unsnap the speaker cover **2** upward from the center of the computer ([Figure 9b](#)).
4. Remove screws **3** - **7** from the keyboard ([Figure 9c](#)).
5. Carefully lift the keyboard **8** up from point **9**, being careful not to bend the keyboard ribbon cable **10**.
6. Disconnect the keyboard ribbon cable **10** from the locking collar socket **11** by using a flat-head screwdriver to pry the locking collar pins away from the base ([Figure 9d](#)).
7. Carefully lift up the keyboard **8** ([Figure 9e](#)) off the computer.



Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **four** keyboard tabs at the bottom ([Figure 9e](#)) at the bottom of the keyboard with the slots in the case.

Figure 9
Keyboard Removal

- a. Use a screwdriver to carefully push out the speakers cover at point **1**.
- b. Turn the computer over, unsnap the LED cover module upward from the center of the computer.
- c. Remove screws from the keyboard. Carefully lift the keyboard up.
- c. Disconnect the keyboard ribbon cable from the locking collar socket by using a flat-head screwdriver to pry the locking collar pins away from the base.
- e. Remove the keyboard.

2. Speaker Cover
8. Keyboard
- 5 Screws

Disassembly

Figure 10
RAM Module Removal

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



Contact Warning

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



4. RAM Module

Removing the System Memory (RAM)

The computer has **three** memory sockets for 204 pin Small Outline Dual In-line (SO-DIMM) **DDR III (DDR3)** type memory modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

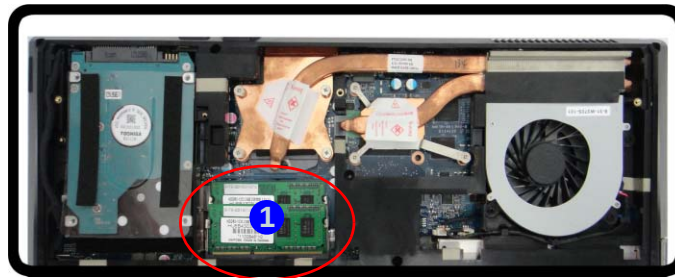
Note that **three SO-DIMMs are only supported by Quad-Core CPUs; Dual-Core CPUs support two SO-DIMMs maximum.**

Two primary memory sockets are located under component bay cover (the bottom case cover), and one secondary memory sockets are located under the keyboard. If you are installing only two RAM modules then they should be installed in the primary memory sockets under the component bay cover.

Primary System Memory Upgrade Process

- Turn **off** the computer, turn it over and remove the battery ([page 2 - 5](#)) and remove the component bay cover ([page 2 - 9](#)).
- The RAM modules will be visible at point ① on the mainboard.
- Gently pull the two release latches (② & ③) on the sides of the memory socket in the direction indicated by the arrows ([Figure 10b](#)). The RAM module ④ will pop-up ([Figure 10c](#)), and you can then remove it.
- Pull the latches to release the second module if necessary.

a.



b.

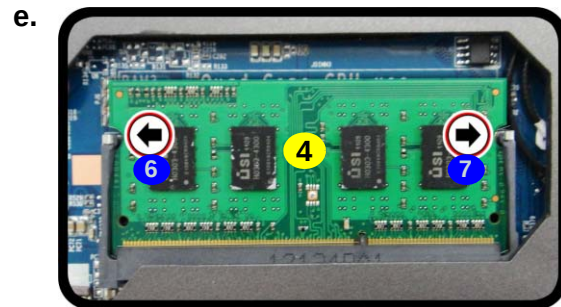


c.



Memory (under Keyboard) Upgrade Process

5. Turn **off** the computer, turn it over and remove the battery ([page 2 - 5](#)), component bay cover ([page 2 - 9](#)) and keyboard ([page 2 - 13](#)).
6. The memory sockets will be visible at point **5** ([Figure 11d](#)).
7. Gently pull the two release latches (**6** & **7**) on the sides of the memory socket(s) in the direction indicated below.
8. The RAM module **4** will pop-up, and you can 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.

9. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
10. 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.
11. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
12. Replace the bay cover and screws.
13. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.



4 RAM Module

Figure 11
**RAM Module
(under keyboard)
Removal**

- d. The secondary RAM modules will be visible at point **5**.
- e. Pull the release latches.
- f. Remove the module.

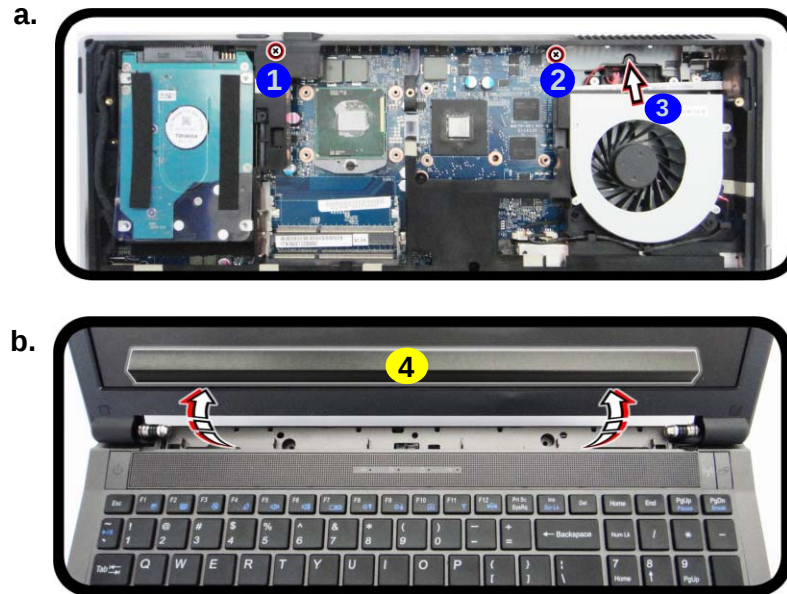
Disassembly

Figure 12
**Hinge Cover
Removal**

- a. Remove the screws and use a screwdriver to push out the hinge cover.
- b. Turn the computer over, remove the hinge cover.

Removing the Hinge Cover

1. Turn off the computer, turn it over and remove the battery ([page 2 - 5](#)), and component bay cover ([page 2 - 9](#)).
2. Remove screws ① - ② and use a screwdriver to carefully push out the hinge cover ④ at point ③.
3. Turn the computer over, carefully lift the hinge cover ④ out of the computer ([Figure 12b](#)).



4. Hinge Cover

- 2 Screws

Appendix A: Part Lists

This appendix breaks down the *W350ETQ* 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 Lists

Part List Illustration Location

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

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

Parts	W350ETQ
Top with Fingerprint	<i>page A - 3</i>
Top without Fingerprint	<i>page A - 4</i>
Bottom	<i>page A - 5</i>
LCD	<i>page A - 6</i>
HDD	<i>page A - 7</i>
2nd HDD	<i>page A - 8</i>
DVD	<i>page A - 9</i>
COMBO	<i>page A - 10</i>

Top with Fingerprint

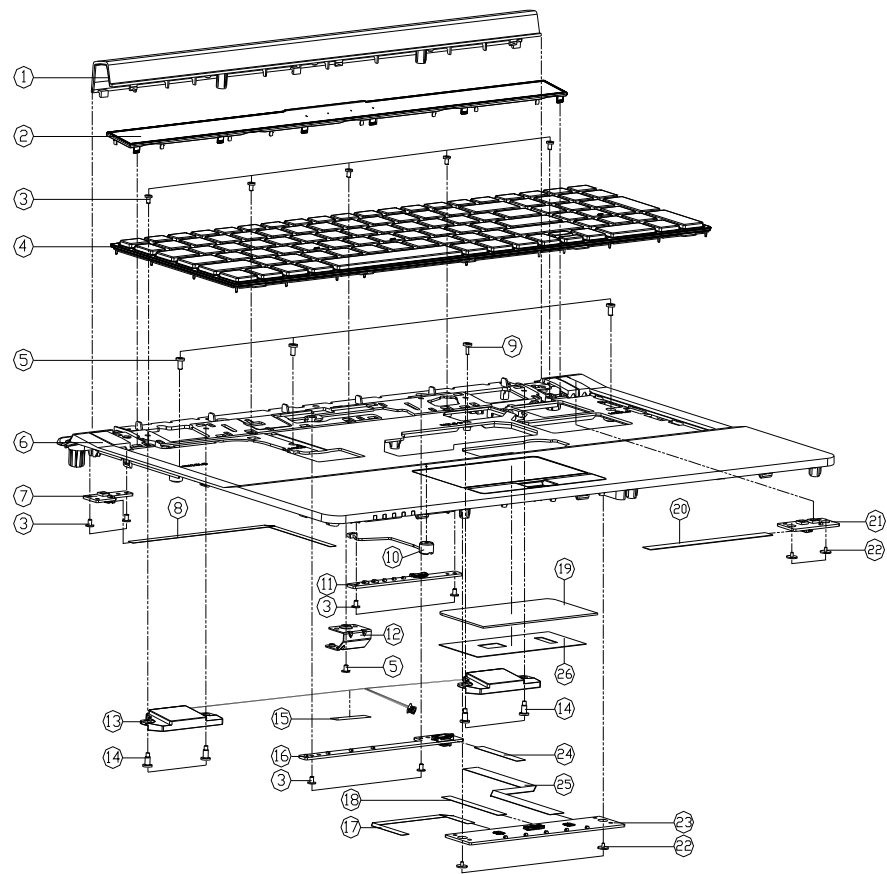


Figure A - 1
Top with
Fingerprint

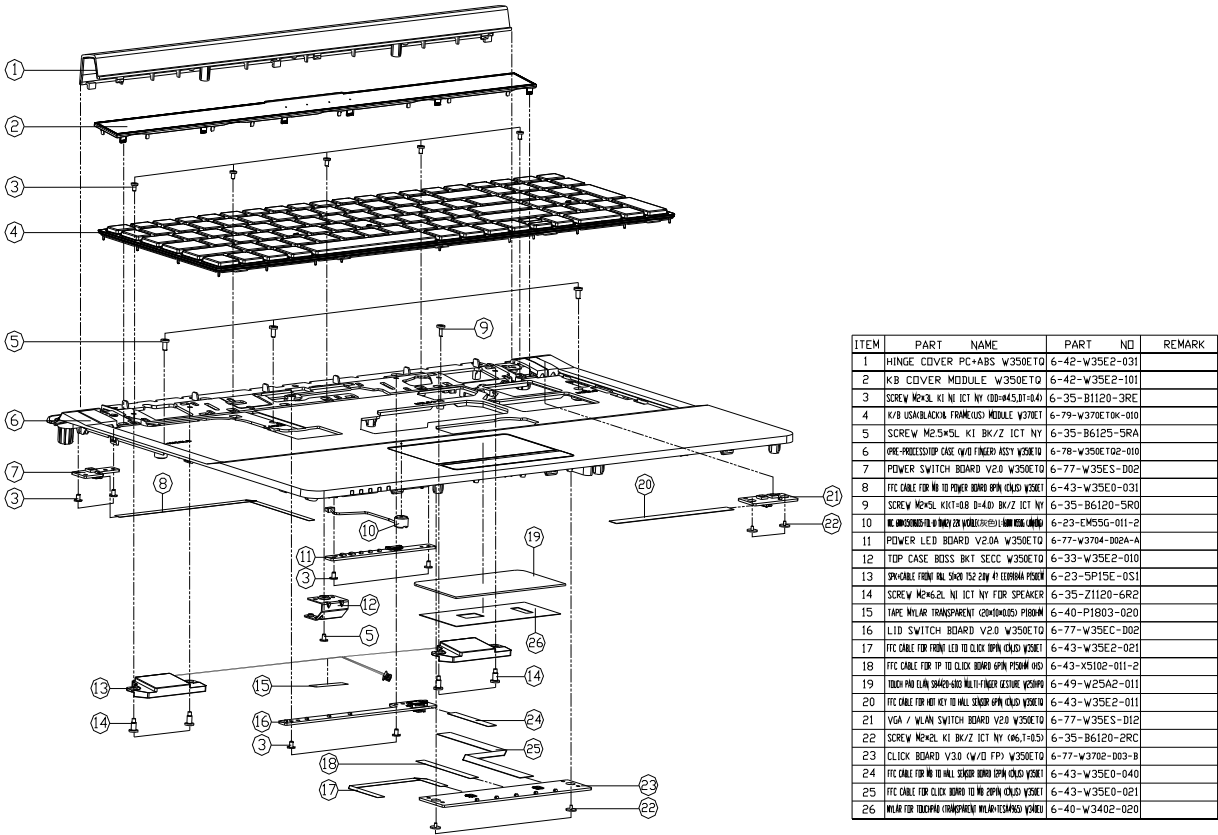
ITEM	PART NAME	PART NO	REMARK
1	HINGE COVER PC+ABS W350ETO	6-42-W35E2-031	
2	KB COVER MODULE W350ETO	6-42-W35E2-101	
3	SCREW M2xL KI NI ICT NY (D0=04.5,B1=04)	6-35-B1120-3RE	
4	K/B US/BLACK/FR/ENG/US) MODULE W370ET	6-79-W370ET0K-010	
5	SCREW M2.5xSL KI BK/Z ICT NY	6-35-B6125-5RA	
6	ONE-PROCESS/TP CASE (W/FINGER) ASSY W350ETO	6-78-W350ET02-020	
7	POWER SWITCH BOARD V2.0 W350ETO	6-77-W35ES-D02	
8	FPC CABLE FOR M0 TO POWER BOARD (PIN COLD) Y30ET	6-43-W35E0-031	
9	SCREW M2xSL KI CT=0.8 D=4.0 BK/Z ICT NY	6-35-B6120-5RO	
10	POWER LED BOARD V2.0A W350ETO	6-23-EM55G-011-2	
11	POWER LED BOARD V2.0A W350ETO	6-77-W3784-102A-A	
12	TOP CASE BOSS BKT SECC W350ETO	6-33-W35E2-010	
13	SPEAKER FRONT RL SWR 152 2W 4T FERROXIA PSEW	6-23-SP15E-0S1	
14	SCREW M2xL KI NI ICT NY FOR SPEAKER	6-35-Z1120-6R2	
15	TAPE NYLON TRANSPARENT (G0404000) P1803	6-40-P1803-020	
16	LID SWITCH BOARD V2.0 W350ETO	6-77-W35EC-D02	
17	FPC CABLE FOR FRONT LED TO CLICK BOARD (PIN COLD) Y30ET	6-43-W35E2-021	
18	FPC CABLE FOR TP TO CLICK BOARD (PIN COLD) Y30ET	6-43-XS102-011-2	
19	TOUCH PAD FILM (S4424-000) MULTI-TOUCH (GESTURE) Y30ET	6-49-W25A2-011	
20	FPC CABLE FOR RED KEY TO HALL SENSOR (PIN COLD) Y30ET	6-43-W35E2-011	
21	VGA / WLAN SWITCH BOARD V2.0 W350ETO	6-77-W35ES-D12	
22	SCREW M2xL KI BK/Z ICT NY (04.1=0.5)	6-35-B6120-2RC	
23	CLICK BOARD V3.0 (W/FP) W350ETO	6-77-W3702-D03-A	
24	FPC CABLE FOR M0 TO HALL SENSOR (PIN COLD) Y30ET	6-43-W35E0-040	
25	FPC CABLE FOR CLICK BOARD TO M0 (PIN COLD) Y30ET	6-43-W35E0-021	
26	FPC CABLE FOR TOUCHPAD TRANSPARENT NYLON-RESIN (S4424-000)	6-40-W3402-020	

A.Part Lists

Part Lists

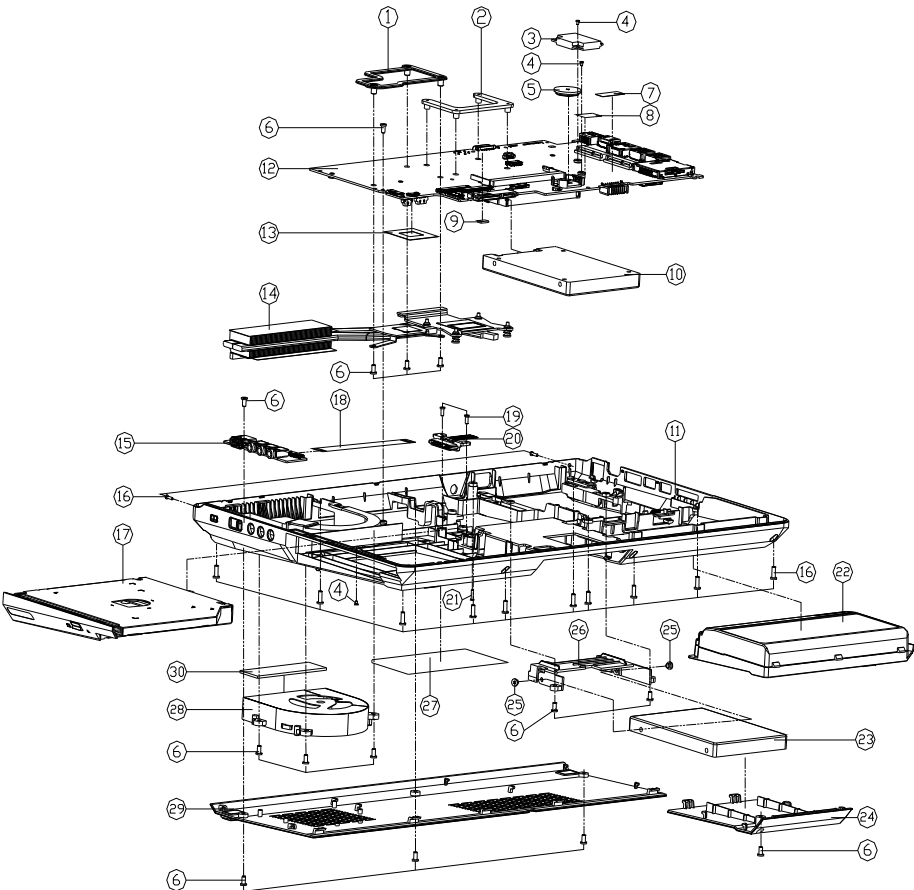
Top without Fingerprint

Figure A - 2
Top without
Fingerprint



A - 4 Top without Fingerprint

Bottom



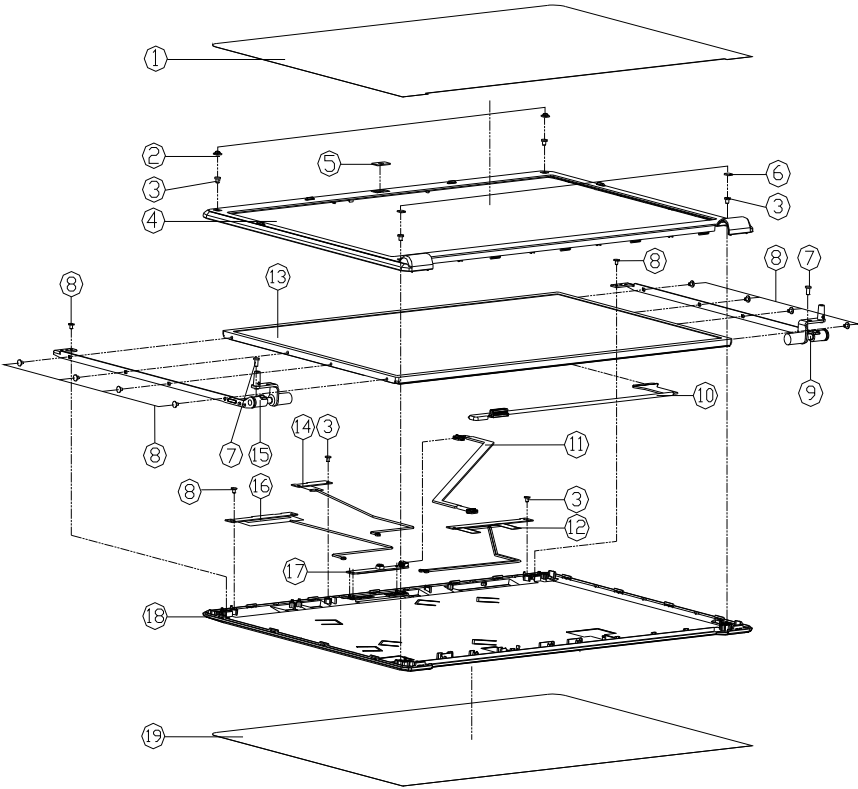
ITEM	PART NAME	PART NO	REMARK
1	VGA SUPPORTER SECC W150E80	6-33-W15ES-012	
2	CPU SUPPORT BRACKET SECC T-15 P150M	6-33-X510S-011	
3	WATER COOLING PUMP WITH FAN (OPTIONAL) (W/ FAN)	6-88-M77C2-4220	(OPTION)
3	WATER COOLING PUMP WITH FAN (OPTIONAL) (W/ FAN)	6-88-P17E7-4220	(OPTION)
3	WATER COOLING PUMP WITH FAN (OPTIONAL) (W/ FAN)	6-88-W255F-4220	(OPTION)
3	WATER COOLING PUMP WITH FAN (OPTIONAL) (W/ FAN)	6-88-W345F-9400	(OPTION)
3	WATER COOLING PUMP WITH FAN (OPTIONAL) (W/ FAN)	6-88-W345F-8700	(OPTION)
3	WATER COOLING PUMP WITH FAN (OPTIONAL) (W/ FAN)	6-88-W25H2-9400	(OPTION)
3	WATER COOLING PUMP WITH FAN (OPTIONAL) (W/ FAN)	6-88-W25H2-7000	(OPTION)
4	SCREW M2.5X5 L1.1 CT NY (00-845,01-04)	6-35-B1120-3RE	
5	BATTERY 3V 210MA CR2032 (MITSUBISHI)	6-23-6201S-607	
6	SCREW M2.5X5 L1.1 BK/Z CT NY	6-35-B6125-SRA	
7	TAPE MILAR TRANSPARENT (OPTIONAL) P1803	6-40-P1803-020	
8	W/O HDD ASS'Y W/350E TO	6-40-X510S-020	
9	GASOLIN (W/ FAN) FOR USB BOARD (W/ FAN)	6-47-00190-12J	
10	W/ HDD ASS'Y W/350E TO	6-79-W350E TOJ-020	(OPTION)
10	W/ HDD ASS'Y W/350E TO	6-79-W350E TOJ-010	(OPTION)
10	W/ HDD W/ 2HDD ASS'Y W/350E TO	6-79-W350E TOJ-030	(OPTION)
11	BOTTOM CASE MODULE W/350E TO	6-39-W35E3-011	
12	MAIN BOARD V3.0 (W/3G) W/350E TO	6-77-W35E0-D03	
12	MAIN BOARD V3.0 (W/3G) W/350E TO	6-77-W35E0-D03-1	
13	VGA CHIP MILAR (W/ FAN) (W/ FAN) (W/ FAN)	6-40-MB60S-092	
14	CPU HEATSINK MODULE W/370E T	6-31-W370N-101	
15	PHONE JACK & USB BOARD V2.0A W/370E T	6-77-W370A-D02A	
16	SCREW M2.5X8 L1.1 BK/Z CT NY	6-35-B6125-BR0	
17	W/ HDD ASS'Y W/350E TO (OPTION)	6-79-W350E TOJ-000	(OPTION)
17	SATA DVD SUPER MULTI ASS'Y (OPTION)	6-79-W350E TOJ-000	(OPTION)
17	SATA BLU-RAY COMBO ASS'Y (OPTION)	6-79-W350E TOJ-000	(OPTION)
18	ITE CABLE FOR AUDIO BOARD TO MP3 BOARD (W/ FAN)	6-43-W35E0-011	
19	SCREW M2.5X8 L1.1 BK/Z CT NY	6-35-B6120-SR0	
20	W/O HDD ASS'Y W/350E TO	6-23-F W35E-010	
21	SCREW M2.5X8 L1.1 BK/Z CT NY	6-35-B6120-BR0	
22	W/ HDD ASS'Y W/350E TO (OPTION)	6-79-W370S-4271	(OPTION)
23	W/ HDD 2HDD ASS'Y W/370E T	6-79-W370E TOJ-040	(OPTION)
24	HDD COVER MODULE W/350E TO	6-42-W35EJ-100	
25	SCREW M2.5X8 L1.1 BK/Z CT NY	6-35-B6130-4RB	
26	SECOND HDD HOLDING PC-BAS (W/ FAN) (W/ FAN)	6-42-W370J-020	
27	PRODUCT LABEL FOR W/350E TO	6-45-W350E TOJ-010	
28	FAN MODULE (ADDA) W/370E T	6-31-W370S-101	
29	CPU COVER MODULE W/350E TO	6-42-W35E8-101	
30	SPRINGER L. SPRING (W/ FAN) (W/ FAN) (W/ FAN)	6-47-0019A-660	

Figure A - 3
Bottom

Part Lists

LCD

Figure A - 4
LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION FILM (B51M8)	6-40-B51M8-010	
2	LCD FRONT COVER SCREW RUBBER SLEEVE (C4500)	6-47-C4501-031	
3	SCREW M2.5X5L KI BK/Z ICT NY	6-35-B6120-5R0	
4	LCD FRONT COVER MODULE (A00 R00) B500M	6-39-B51M1-014	
5	CCD BRACKET (MMA M810L)	6-42-M8101-011	
6	W/O CCD COSMETIC PC (M810L)	6-42-M8101-020	
7	FRONT COVER PC FOR SCREW (C4500)	6-40-C4501-071	
8	SCREW M2.5X5L KI BK/Z ICT NY	6-35-B6125-5RA	
9	HINGE R (SECC+SK7) W350E10	6-33-W35E1-0R2	
10	WIRE CABLE FOR LCD TO MAIN BOARD (CONNECTION) W350E10	6-43-W35E1-011-C	
11	WIRE CABLE SPIN FOR CCD (M810L) W350E10	6-43-W35E1-011	
12	HINGE L (SECC+SK7) W350E10	6-23-7W35E-011	
13	LCD 15.6" HD LG IPS (WVGA) 16:9 (1280x800) S.M.M	6-50-LA157-L02	
14	LCD 15.6" HD LG IPS (WVGA) 16:9 (1280x800) S.M.M	6-50-LA157-L03	
15	LCD 15.6" HD LG IPS (WVGA) 16:9 (1280x800) S.M.M	6-50-LB257-L02	
16	LCD 15.6" HD LG IPS (WVGA) 16:9 (1280x800) S.M.M	6-50-LB257-L05	
17	ANTENNA (VIBRA) W350E10	6-23-7W35E-021	
18	HINGE L (SECC+SK7) W350E10	6-33-W35E1-0L1	
19	BACK COVER (MMA M810L) W350E10	6-23-7W15E-010	
17	OPTIONAL CAMERA (OPTION) FOR CAMERA (1.3MP) W350E10	6-88-E510C-4904	OPTION
17	OPTIONAL CAMERA (OPTION) FOR CAMERA (1.3MP) W350E10	6-88-W25UC-5100	OPTION
17	OPTIONAL CAMERA (OPTION) FOR CAMERA (1.3MP) W350E10	6-88-W21EC-5100	OPTION
17	OPTIONAL CAMERA (OPTION) FOR CAMERA (1.3MP) W350E10	6-88-W15EC-4901	OPTION
18	LCD BACK COVER (MMA M810L) W350E10	6-39-W35E1-021	
19	LCD BACK COVER PROTECTION FILM (B51M8) W350E10	6-40-E5558-010	

HDD

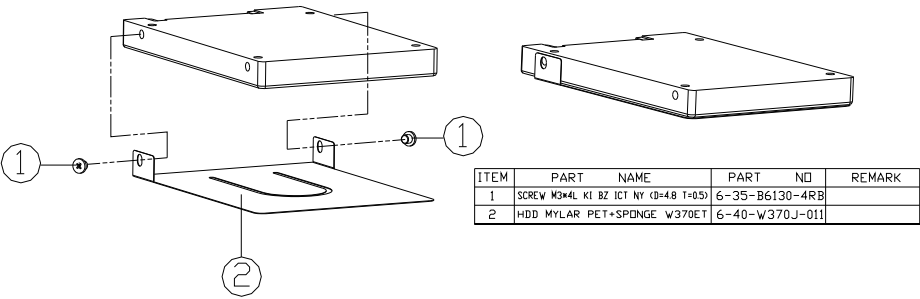
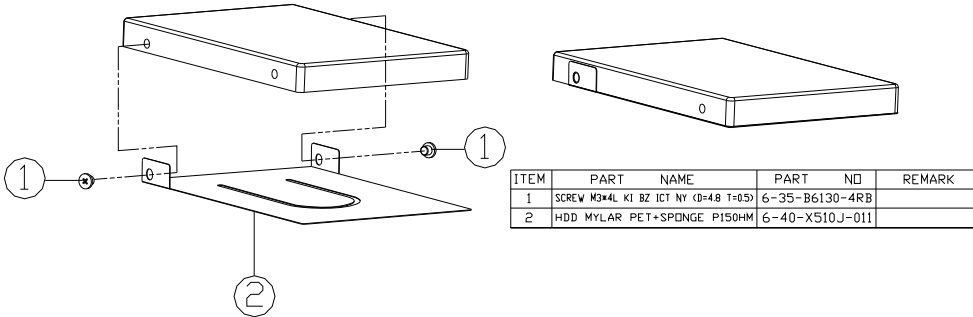


Figure A - 5
HDD

2nd HDD

Figure A - 6
2nd HDD



DVD

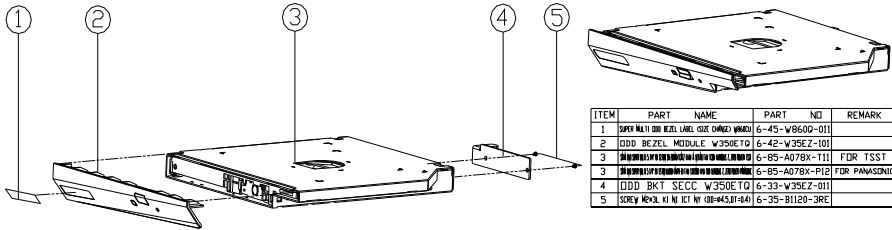
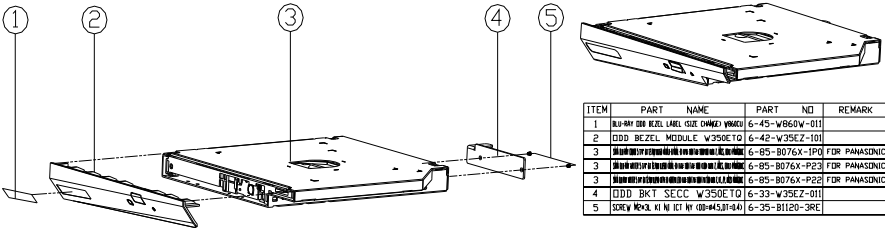


Figure A - 7
DVD

Part Lists

COMBO

Figure A - 8
COMBO



Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the W370ET notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	VGA NVDD Decoupling - Page B - 21	VDD3, VDD5 - Page B - 40
Ivy Bridge 1/7 - Page B - 3	PantherPoint M 1/9 - Page B - 22	Power 0.85VS, 1.8VS - Page B - 41
Ivy Bridge 2/7 - Page B - 4	PantherPoint M 2/9 - Page B - 23	Power 1.5/0.75V/PEX_VDD - Page B - 42
Ivy Bridge 3/7 - Page B - 5	PantherPoint M 3/9 - Page B - 24	Power 1.05VS, 0.85VS - Page B - 43
Ivy Bridge 4/7 - Page B - 6	PantherPoint M 4/9 - Page B - 25	Power V-Core 1 - Page B - 44
Ivy Bridge 5/7 - Page B - 7	PantherPoint M 5/9 - Page B - 26	Power V-Core 2 - Page B - 45
Ivy Bridge 6/7 - Page B - 8	PantherPoint M 6/9 - Page B - 27	VGA NVVDD - Page B - 46
Ivy Bridge 7/7 - Page B - 9	PantherPoint M 7/9 - Page B - 28	AC-In, Charger - Page B - 47
DDR3 SO-DIMM A_0 - Page B - 10	PantherPoint M 8/9 - Page B - 29	W370/350ET Audio Board - Page B - 48
DDR3 SO-DIMM B_0 - Page B - 11	PantherPoint M 9/9 - Page B - 30	W370/350ET Power LED Board - Page B - 49
DDR3 SO-DIMM A_1 - Page B - 12	Mini PCIE, Fan, Audio Con - Page B - 31	W370/350ET Click Board - Page B - 50
Panel, Inverter, CRT - Page B - 13	USB Charge, CCD, TPM, Multi-Con - Page B - 32	W370ET Power Switch Board - Page B - 51
VGA PCI-E Interface - Page B - 14	ESATA/USB3.0 Connector - Page B - 33	W350ET Power Switch Board - Page B - 52
VGA Frame Buffer Interface - Page B - 15	Card Reader / LAN RTL8411 - Page B - 34	W370ET LID / VGA LED Board - Page B - 53
VGA Frame Buffer A - Page B - 16	SATA HDD, VLED CON, LID SW - Page B - 35	W350ET LID / VGA LED Board - Page B - 54
VGA Frame Buffer A - Page B - 17	HDMI, RJ45, Audio AMP - Page B - 36	W350ET VGA / WLAN SW Board - Page B - 55
VGA Frame Buffer B - Page B - 18	Audio Codec ALC269 - Page B - 37	POWER ON SEQUENCE - Page B - 56
VGA Frame Buffer B - Page B - 19	KBC ITE IT8518E - Page B - 38	
VGA I/O - Page B - 20	5VS, 3VS, 3.3VM, 1.5VS_CPU - Page B - 39	

Table B - 1
Schematic
Diagrams

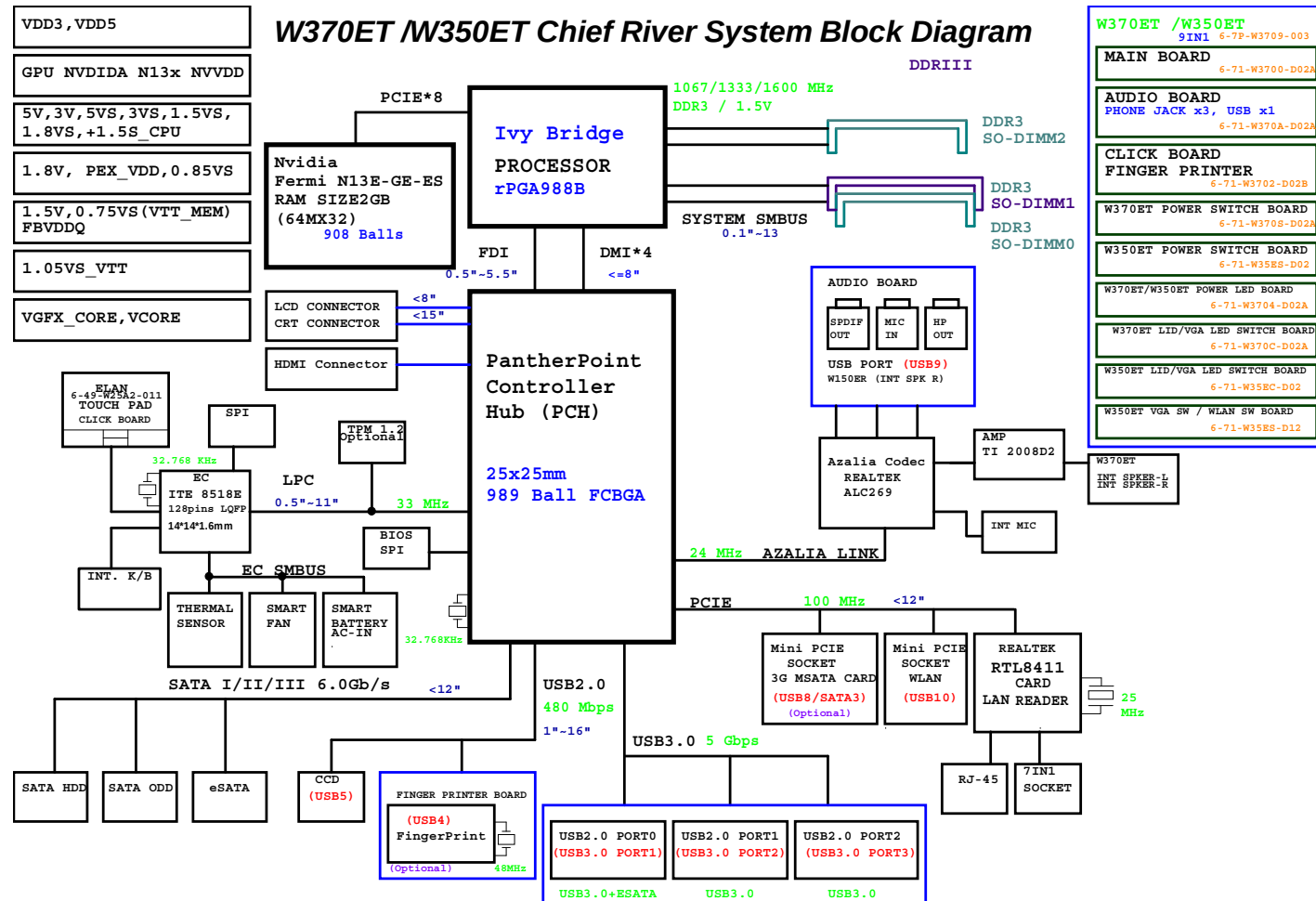


Version Note

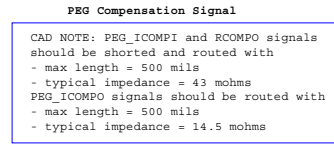
The schematic diagrams in this chapter are based upon version 6-7P-W3709-003. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 55
System Block
Diagram



Ivy Bridge Processor 1/7 (DMI,PEG,FDI)



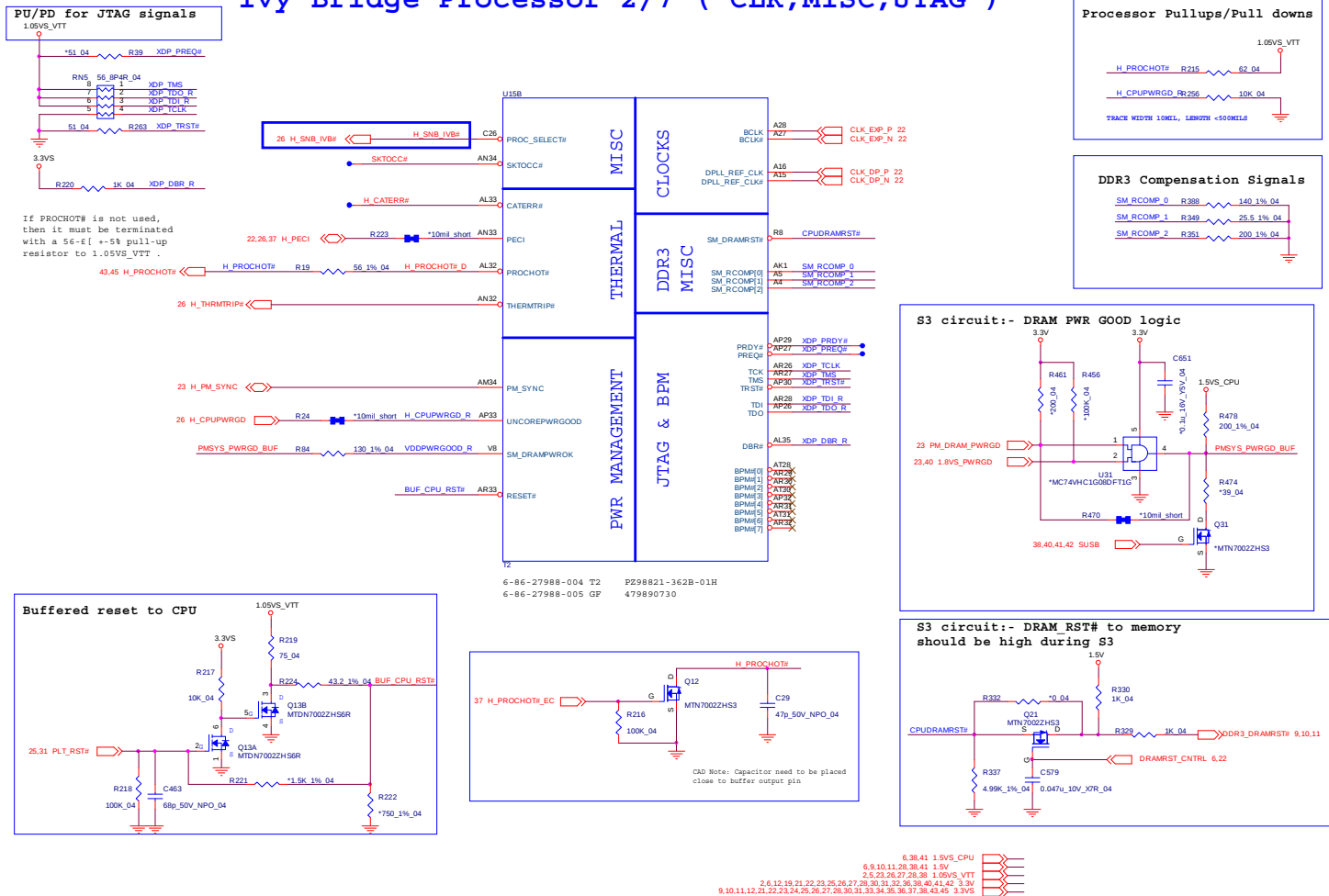
Sheet 2 of 55
Ivy Bridge 1/7

Schematic Diagrams

Ivy Bridge 2/7

Sheet 3 of 55
Ivy Bridge 2/7

Ivy Bridge Processor 2/7 (CLK,MISC,JTAG)



Ivy Bridge Processor 3/7 (DDR3)

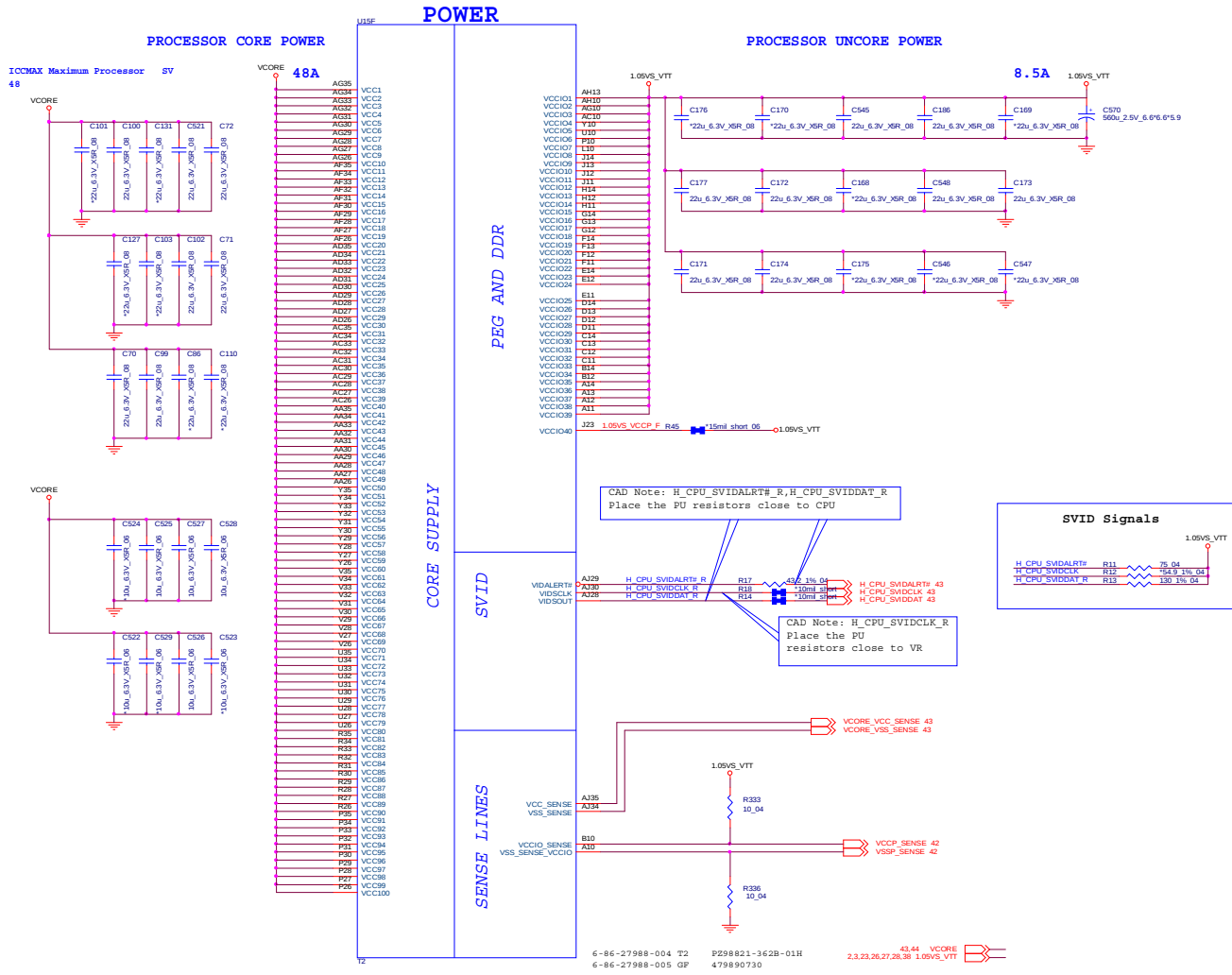


Schematic Diagrams

Ivy Bridge 4/7

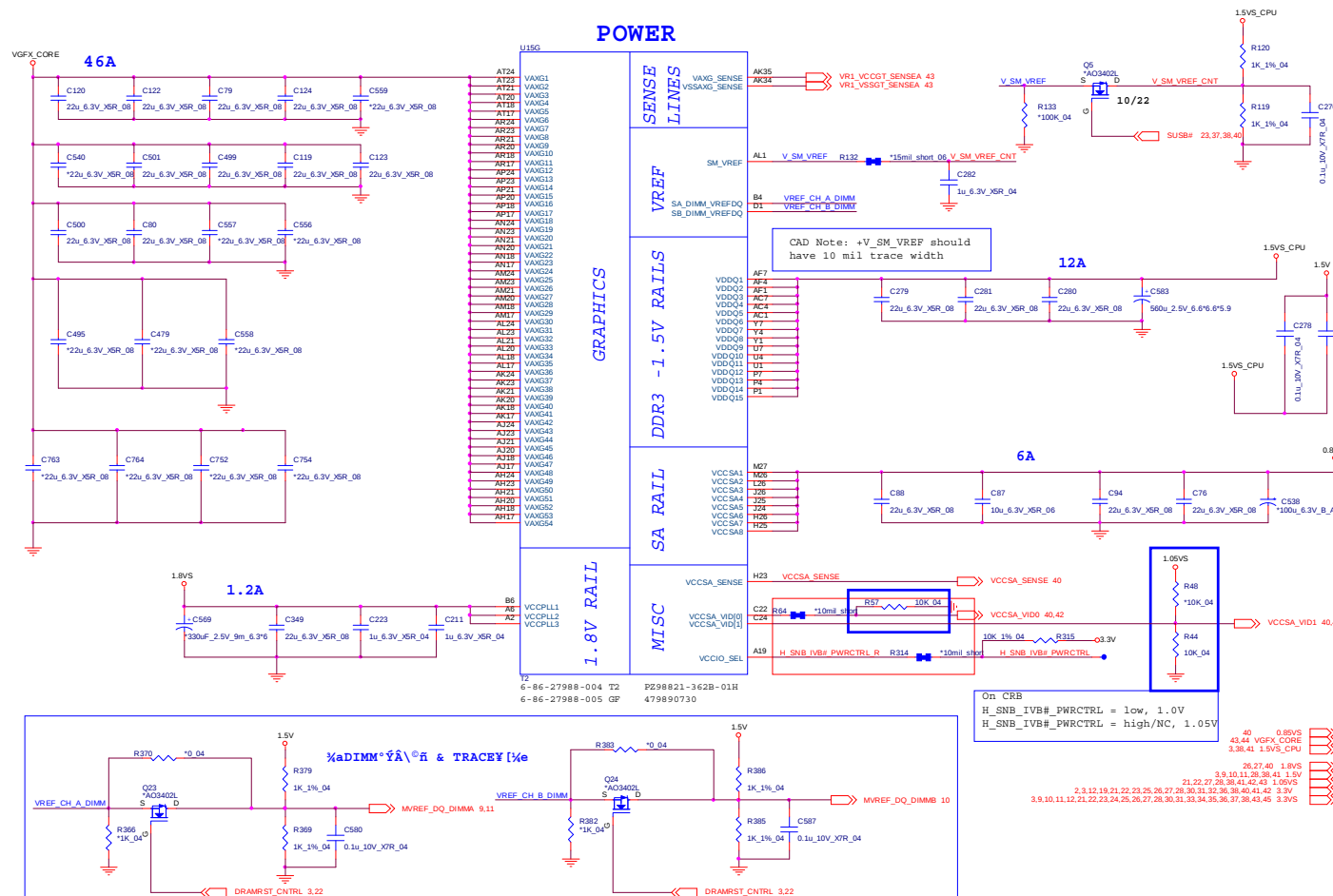
Sheet 5 of 55
Ivy Bridge 4/7

Ivy Bridge Processor 4/7 (POWER)



Ivy Bridge 5/7 B - 7

Sheet 6 of 55
Ivy Bridge 5/7



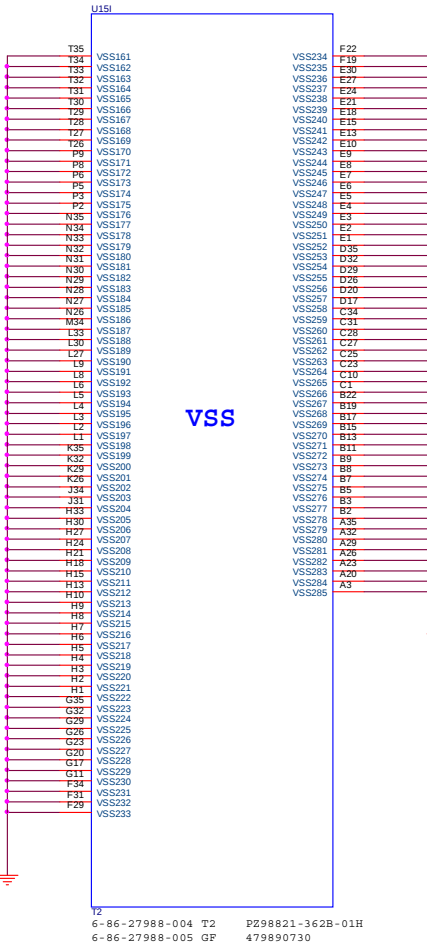
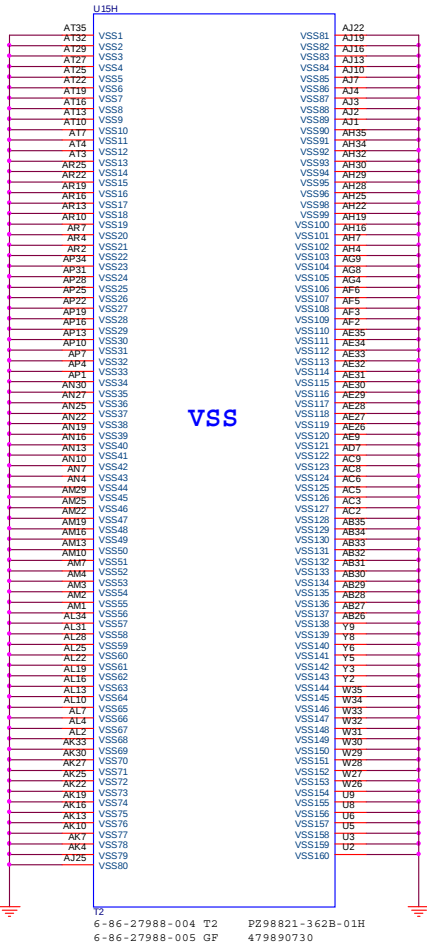
Ivy Bridge 6/7

Ivy Bridge Processor 6/7 (GND)

B.Schematic Diagrams

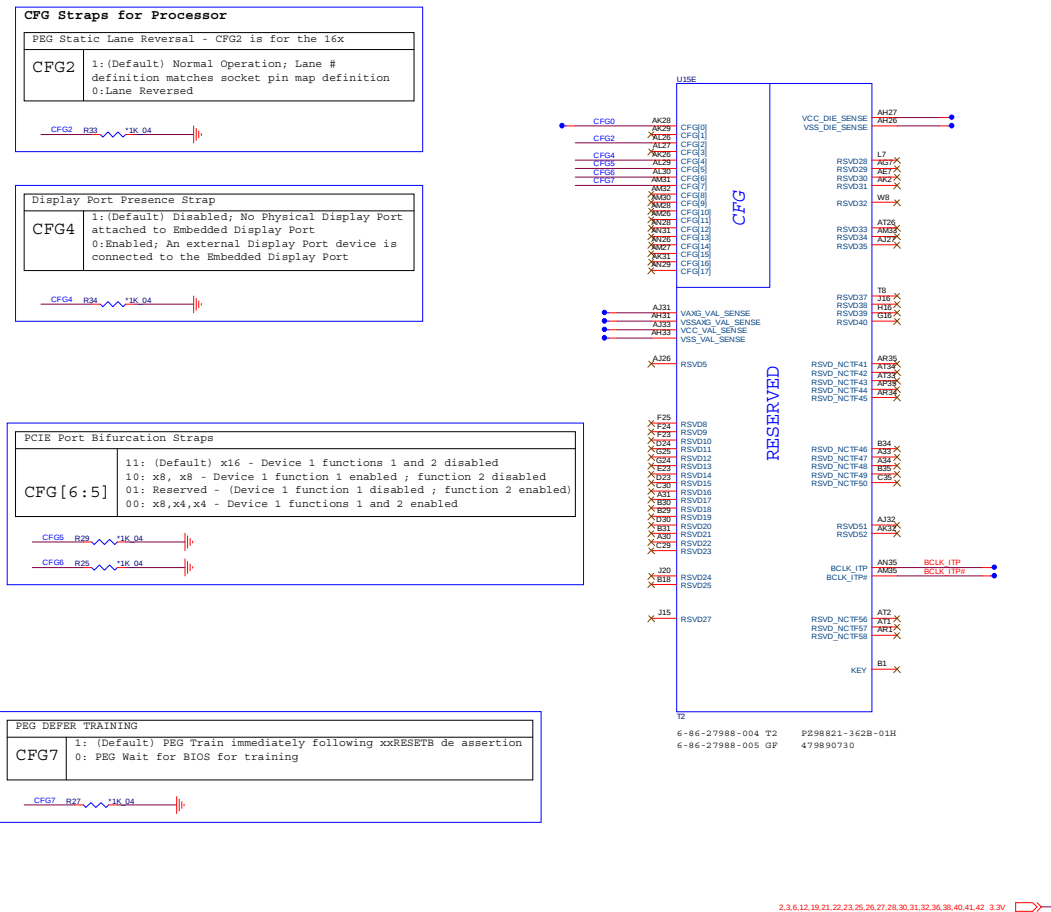
Sheet 7 of 55
Ivy Bridge 6/7

CAD Note: 0 ohm resistor
should be placed close
to CPU



Ivy Bridge 7/7

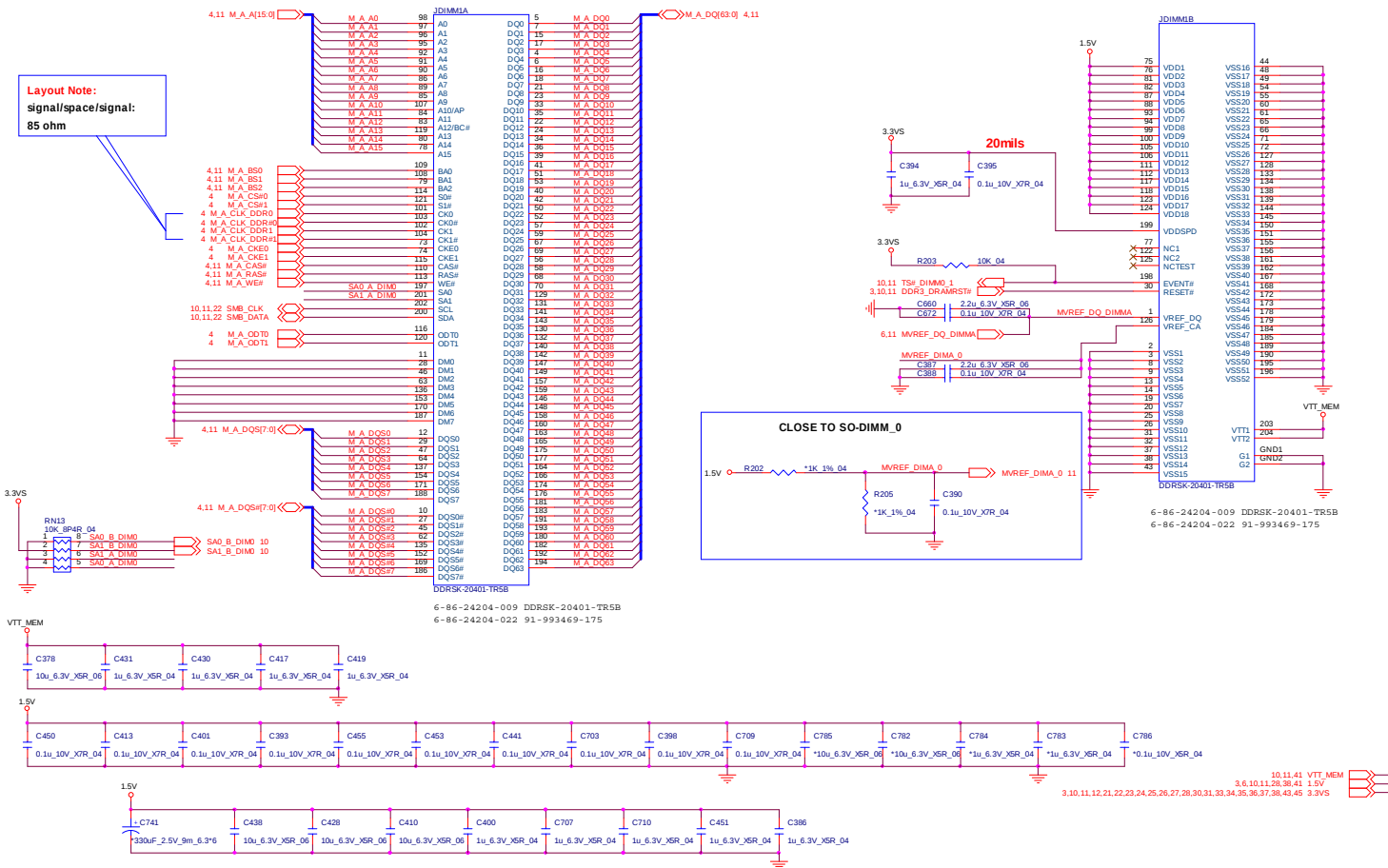
Ivy Bridge Processor 7/7 (RESERVED)

Sheet 8 of 55
Ivy Bridge 7/7

DDR3 SO-DIMM A_0

SO-DIMM A 0

CHANGE TO STANDARD



SO-DIMM B_0

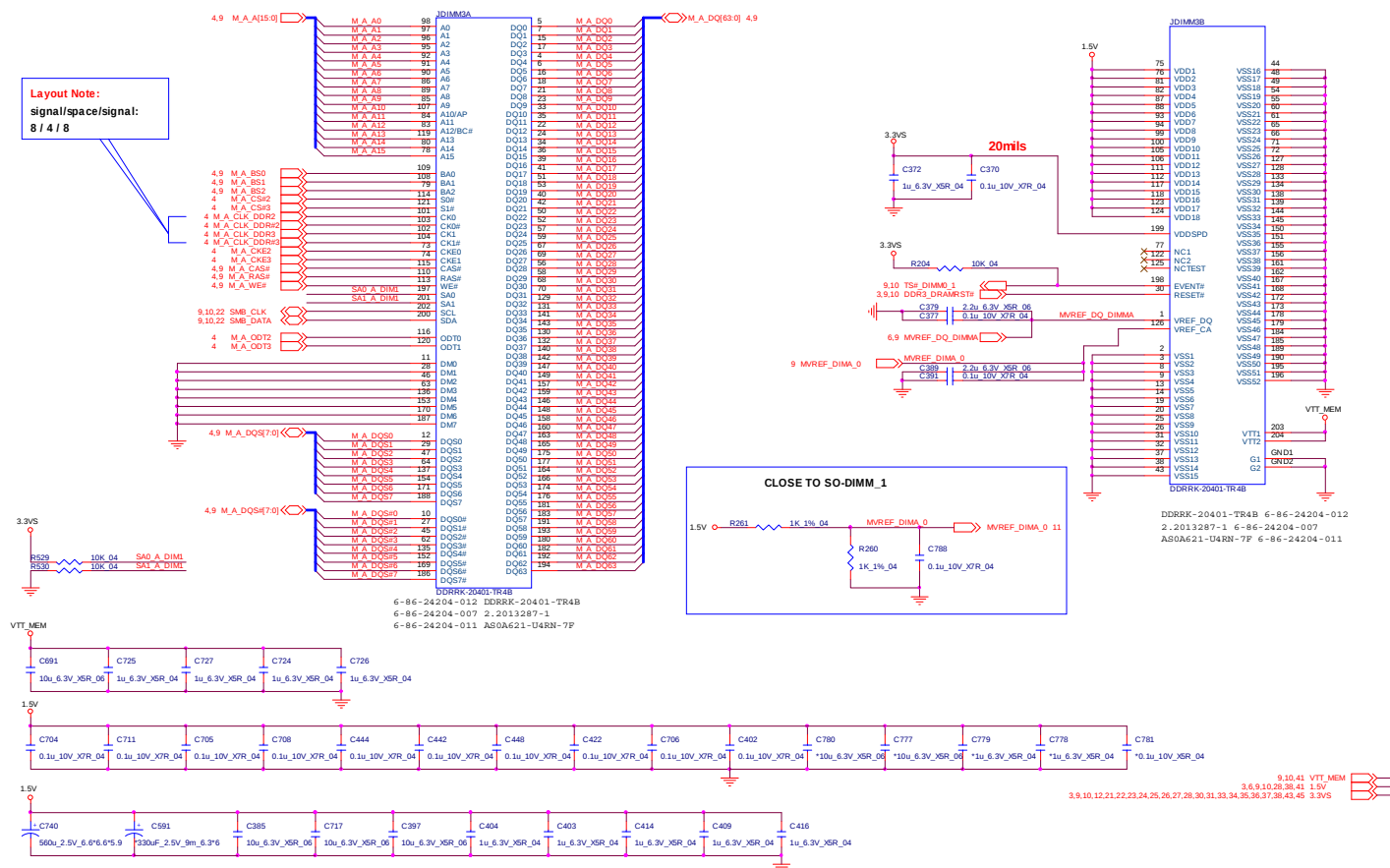
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DDR3 SO-DIMM B_0 B - 11

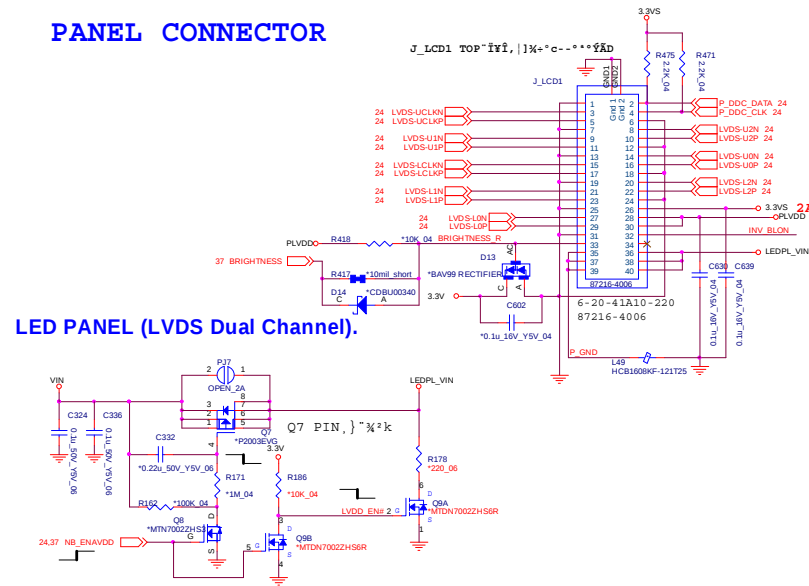
B.Schematic Diagrams

SO-DIMM A 1

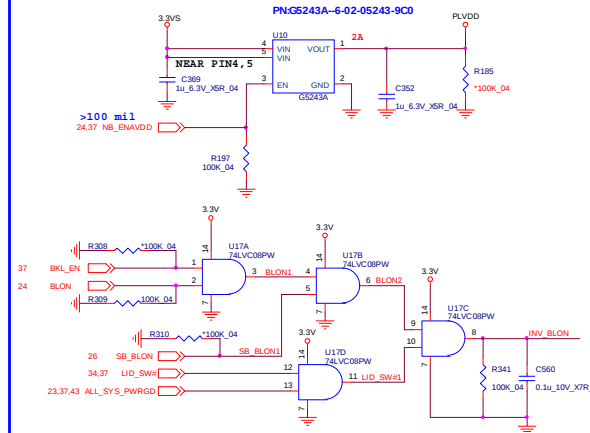
Sheet 11 of 55
DDR3 SO-DIMM
A_1



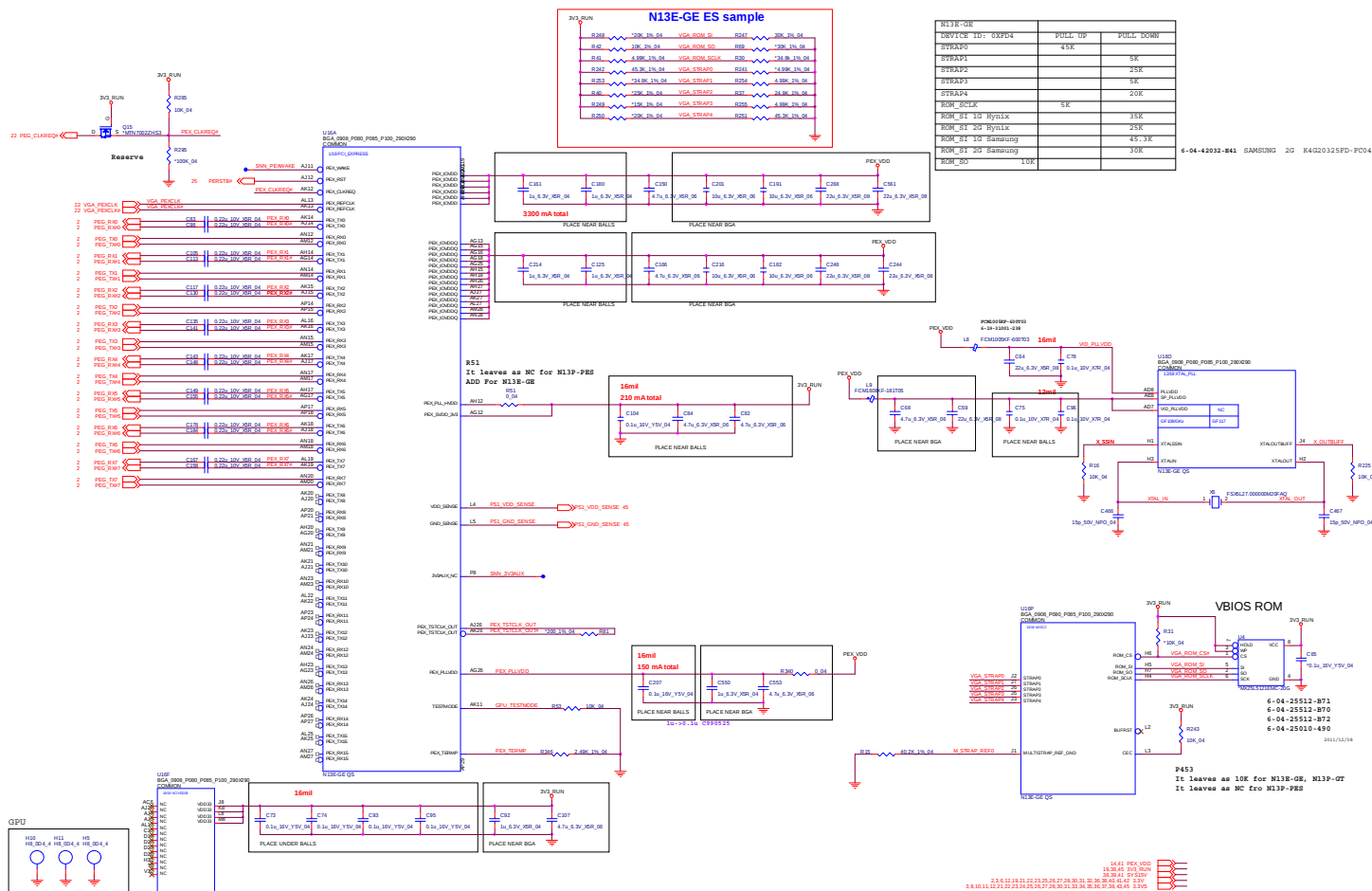
PANEL CONNECTOR



W150ERQAY®094V-0 -G-ú®«OÅ®:q*ý
 Å & B V6,¼-ø¶i®E*-¾0ðV-Å-n²Å|XUL 94V-0
 ^NViVH0EYi|Å'E'Nµ|panel*:q-¾u,ð*-«OÅ®:q*ý

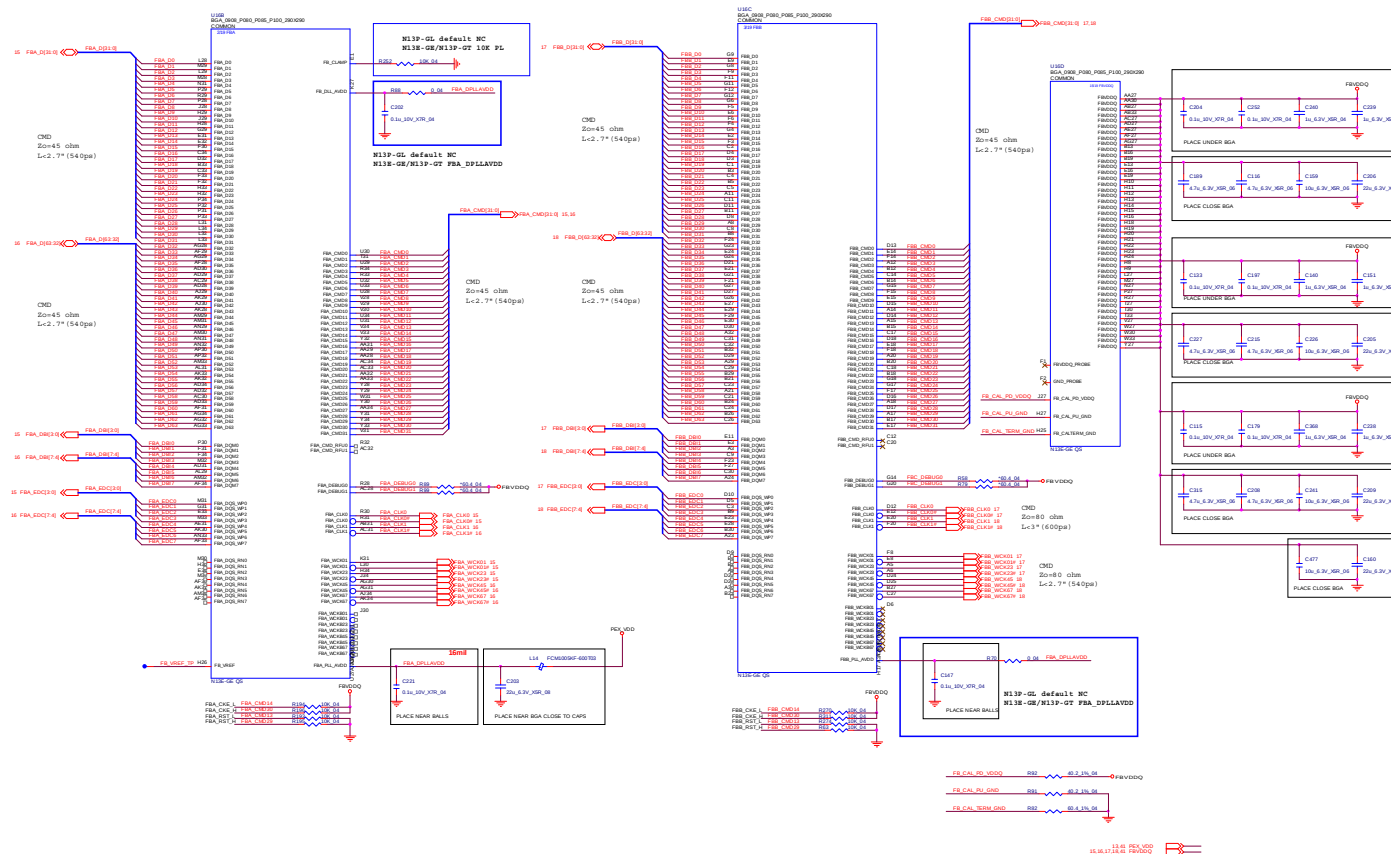
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Sheet 13 of 55
VGA PCI-E
Interface



VGA Frame Buffer Interface

Frame Buffer Interface

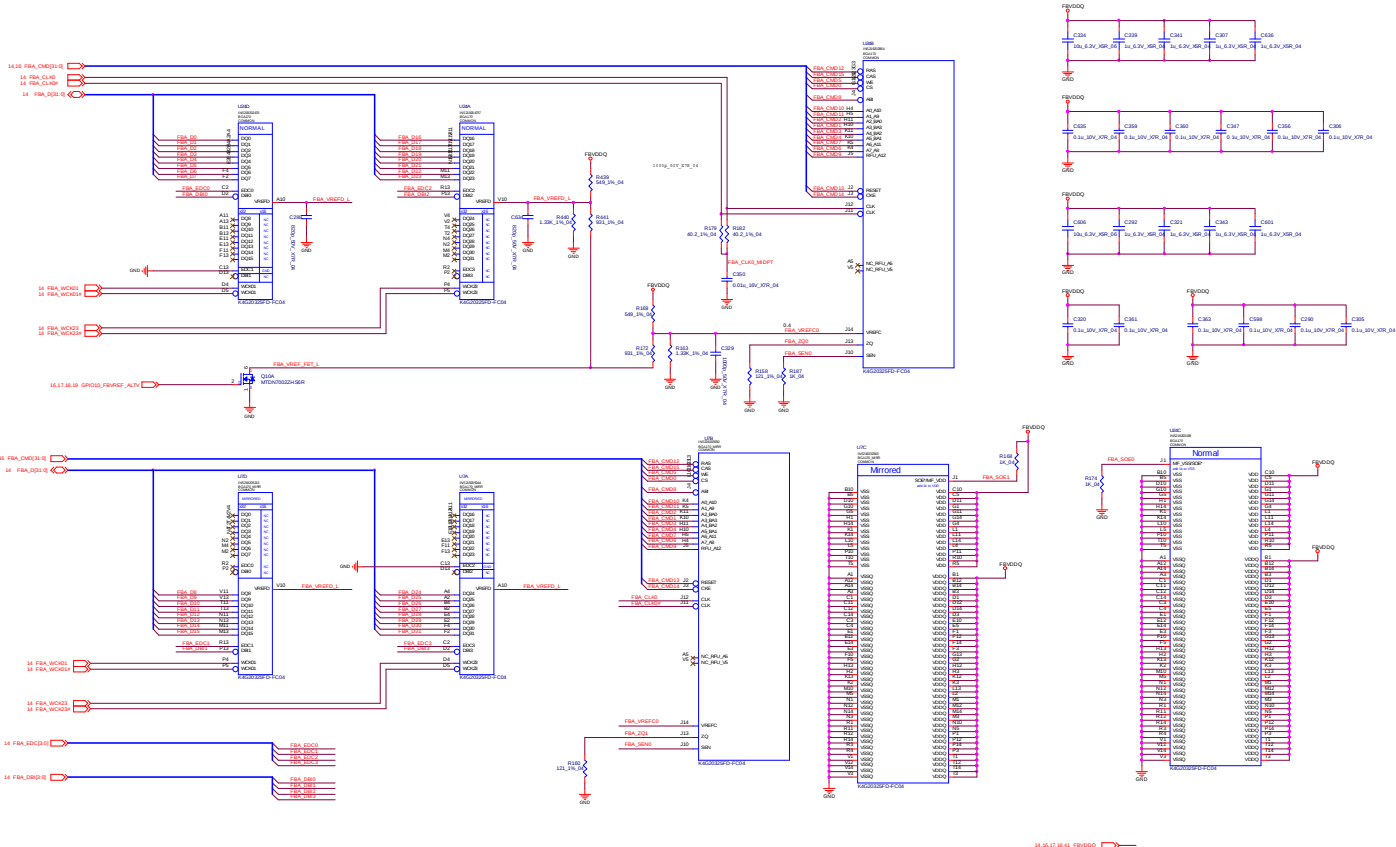


Sheet 14 of 55
VGA Frame Buffer Interface

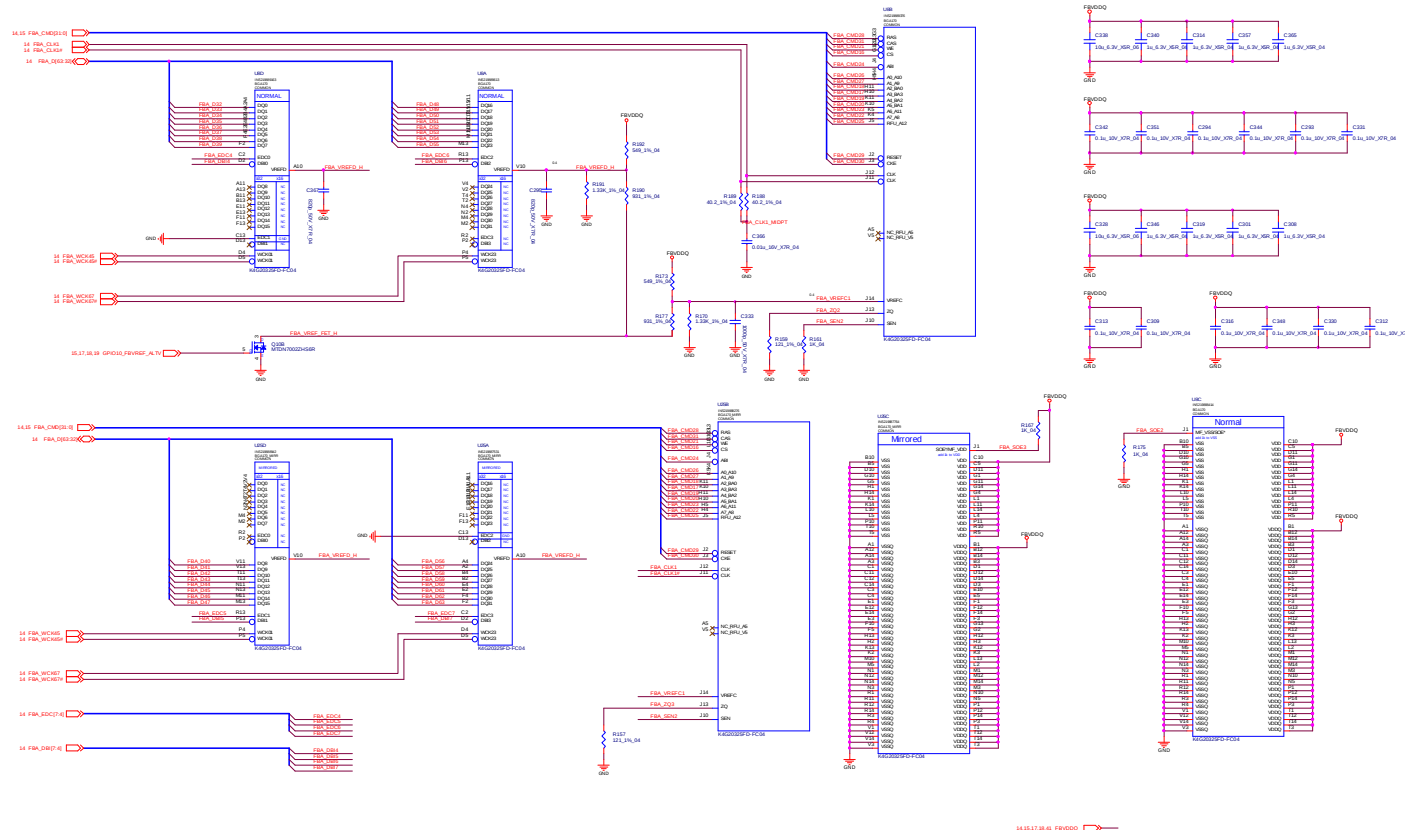
VGA Frame Buffer A

B.Schematic Diagrams

Sheet 15 of 55
VGA Frame Buffer
A



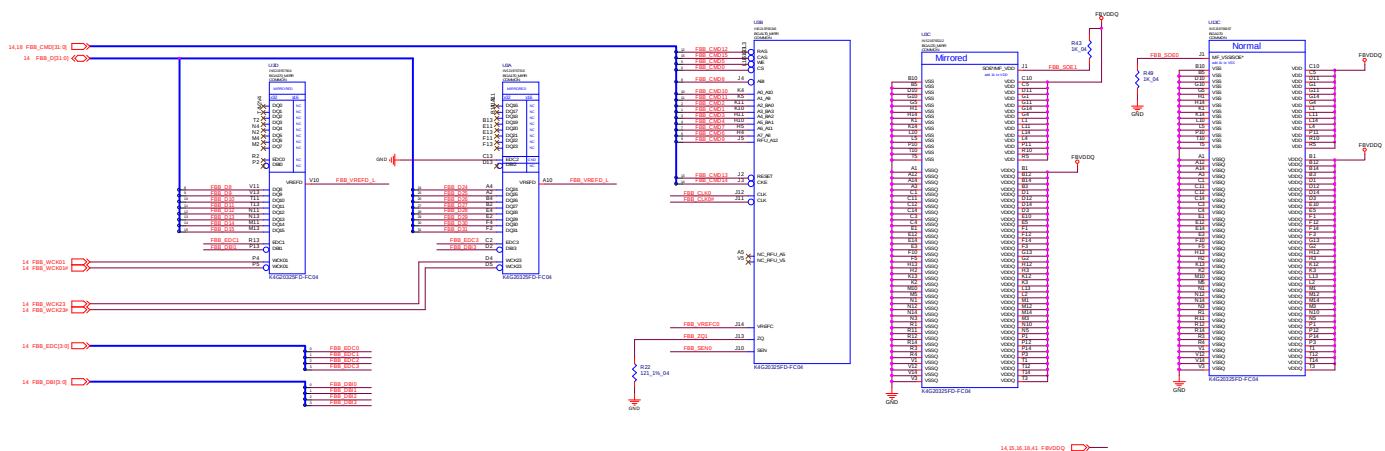
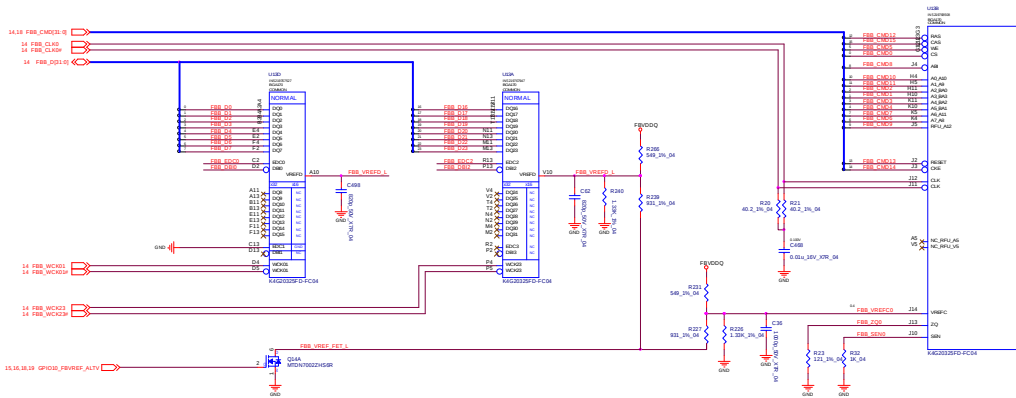
VGA Frame Buffer A



Sheet 16 of 55
VGA Frame Buffer A

VGA Frame Buffer B

6. Frame Buffer Partition B - Lower Half



B. Schematic Diagrams

Sheet 17 of 55
VGA Frame Buffer
B

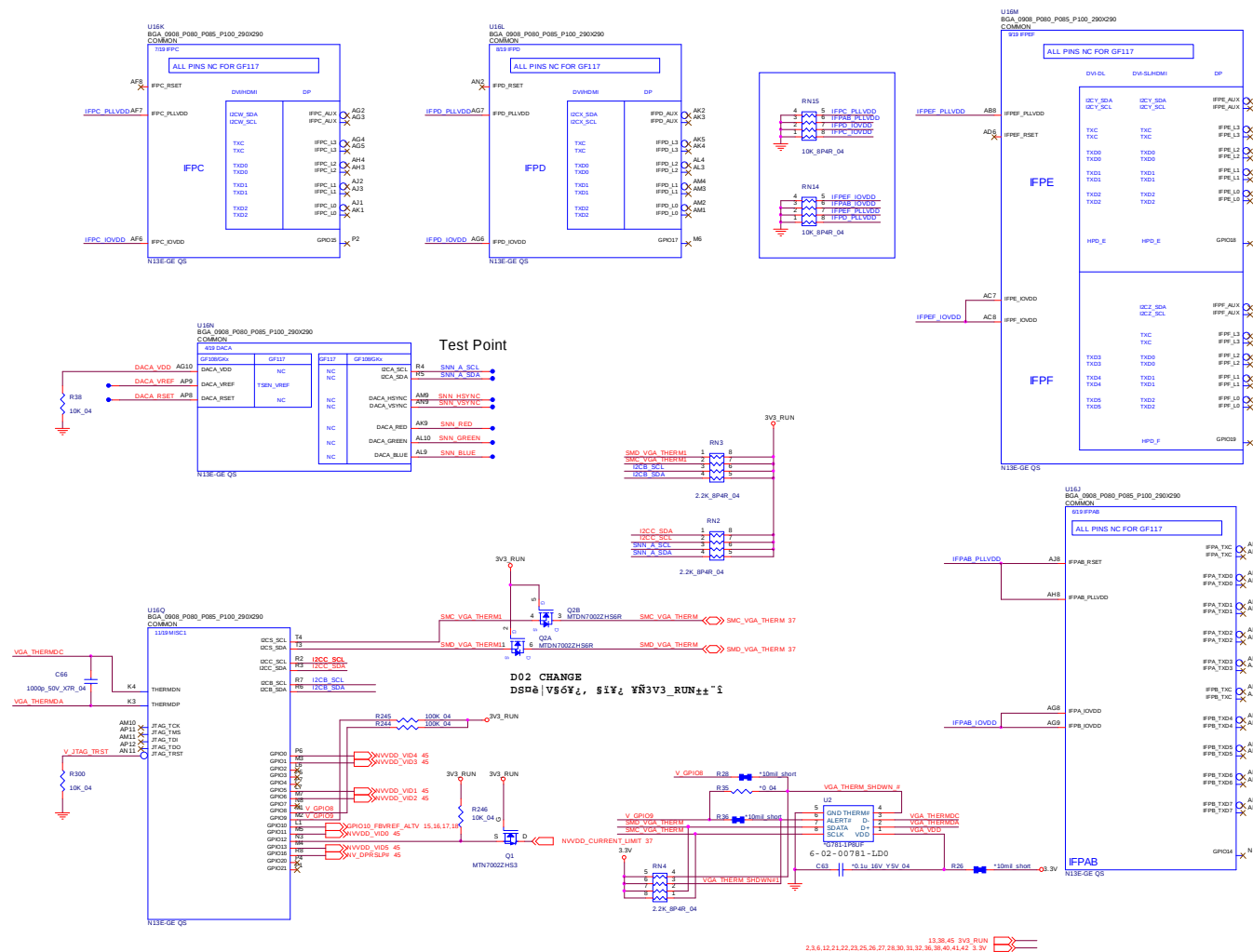
Schematic Diagrams

Sheet 18 of 55
VGA Frame Buffer
B

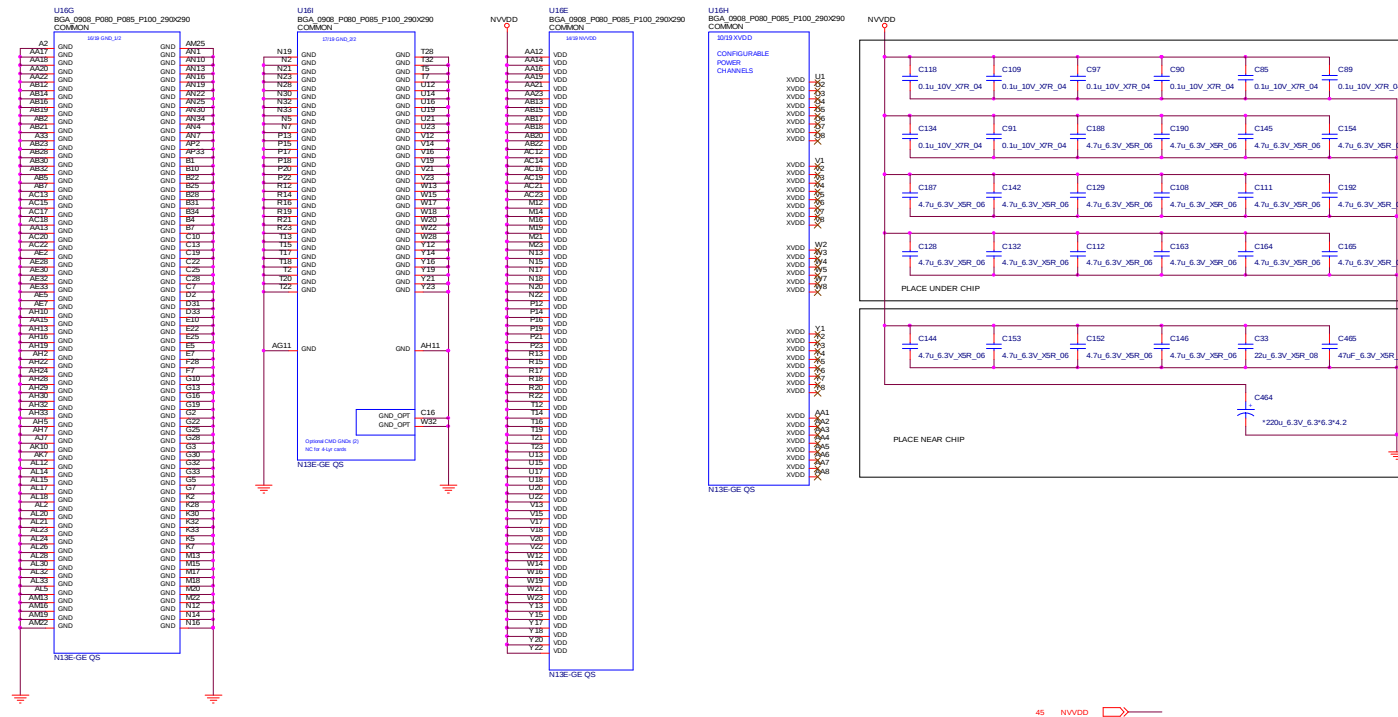


VGA I/O

Sheet 19 of 55
VGA I/O



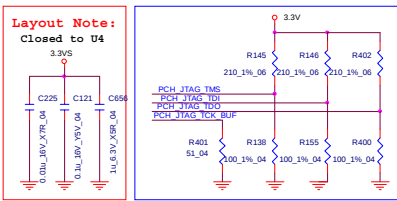
VGA NVDD Decoupling



Sheet 20 of 55
VGA NVDD
Decoupling

B.Schematic Diagrams

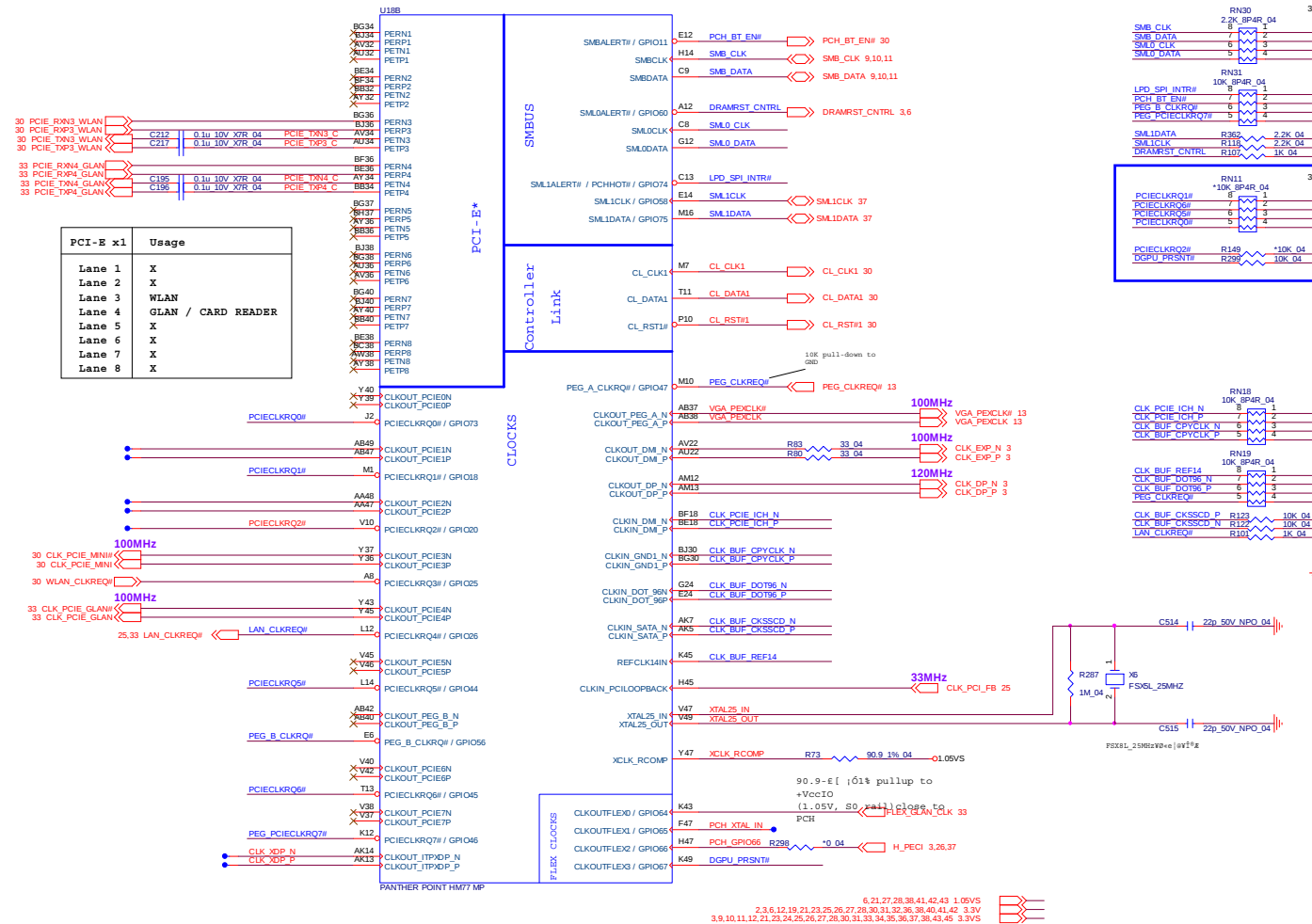
PantherPoint - M (HDA, JTAG, SATA)



B.Schematic Diagrams

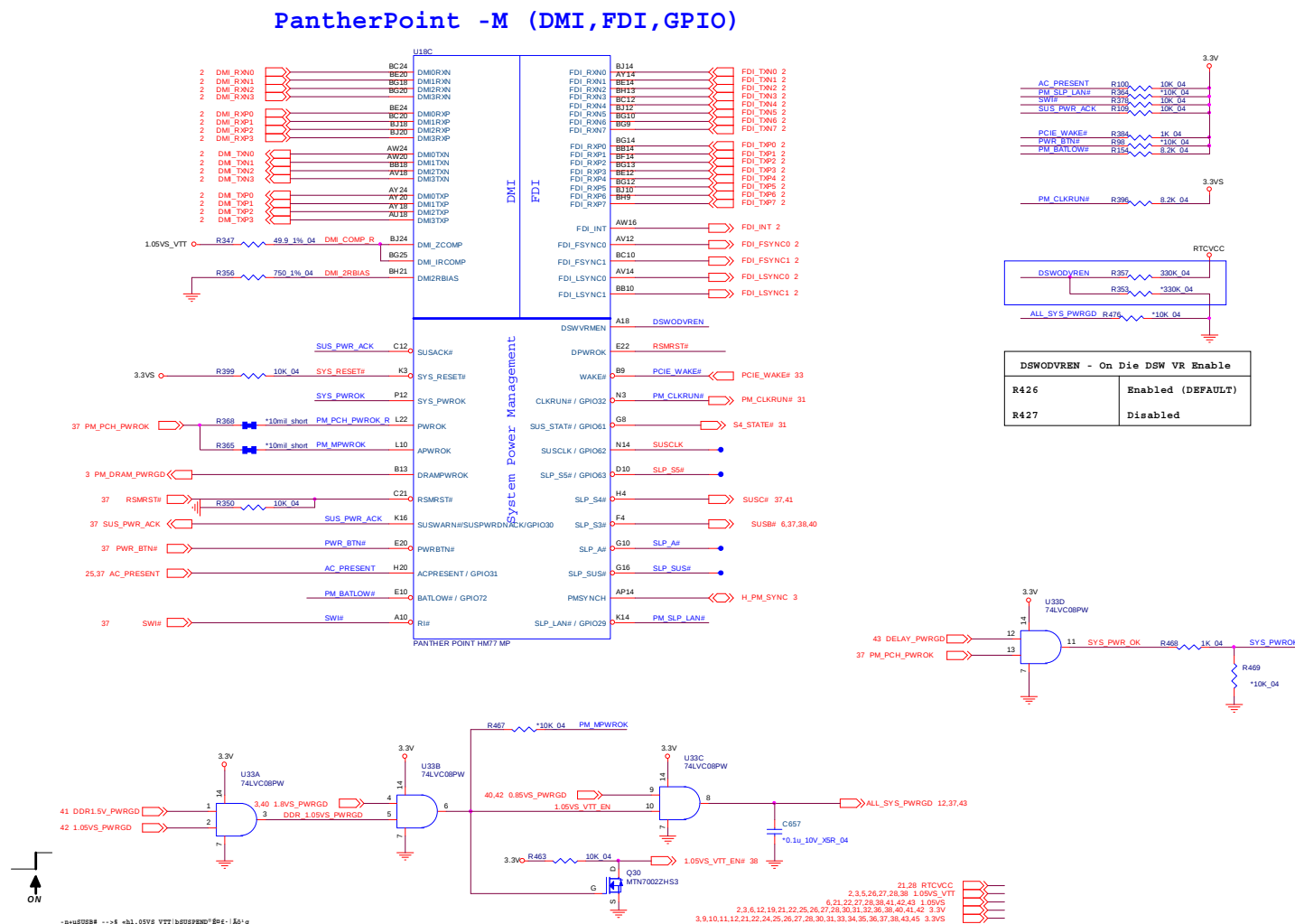
PantherPoint M 2/9 B - 23

Sheet 22 of 55
PantherPoint M 2/9



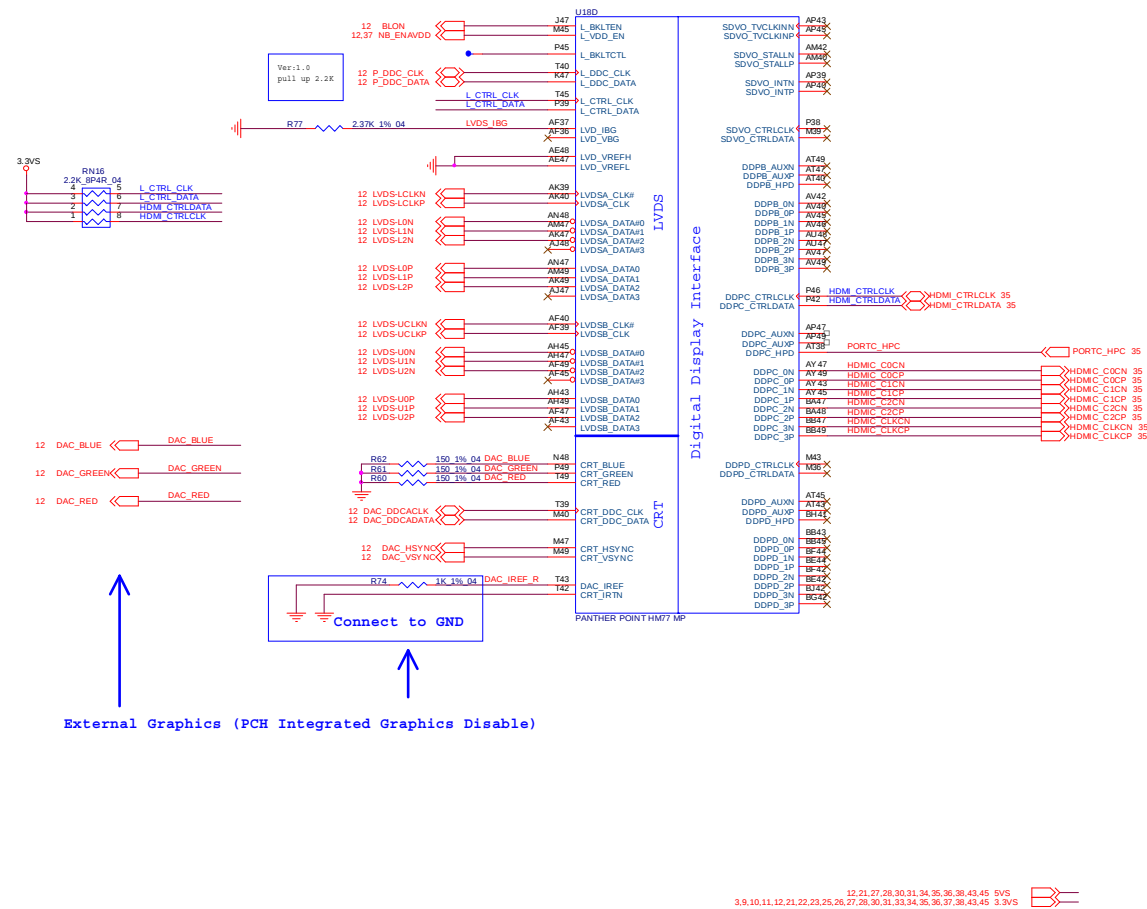
PantherPoint M 3/9

Sheet 23 of 55
PantherPoint M 3/9



PantherPoint M 4/9

PantherPoint -M (LVDS,DDI)



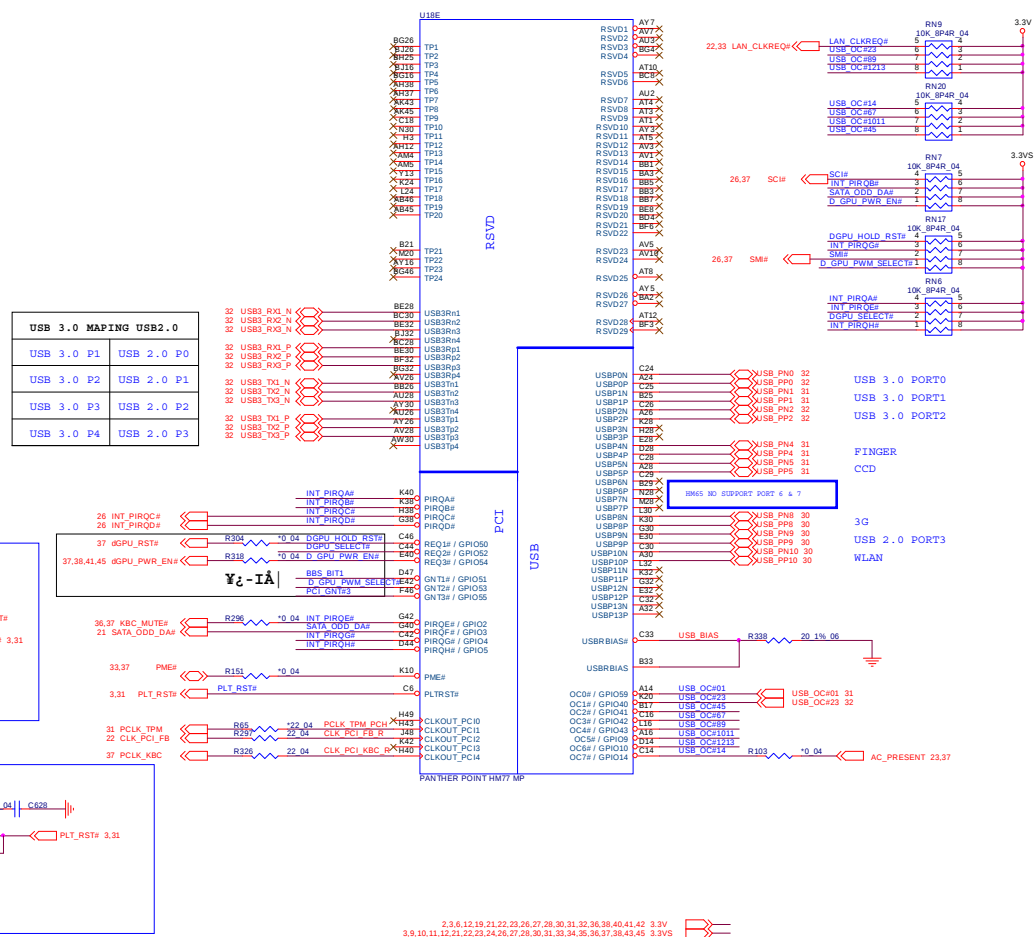
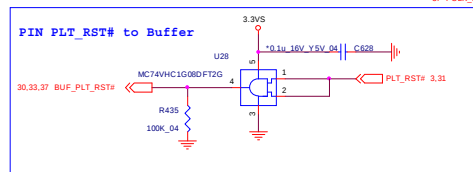
Sheet 24 of 55
PantherPoint M 4/9

PantherPoint -M (PCI,USB,NVRAM)

Boot BIOS Strap		
BBS_BIT1	BBS_BIT0	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

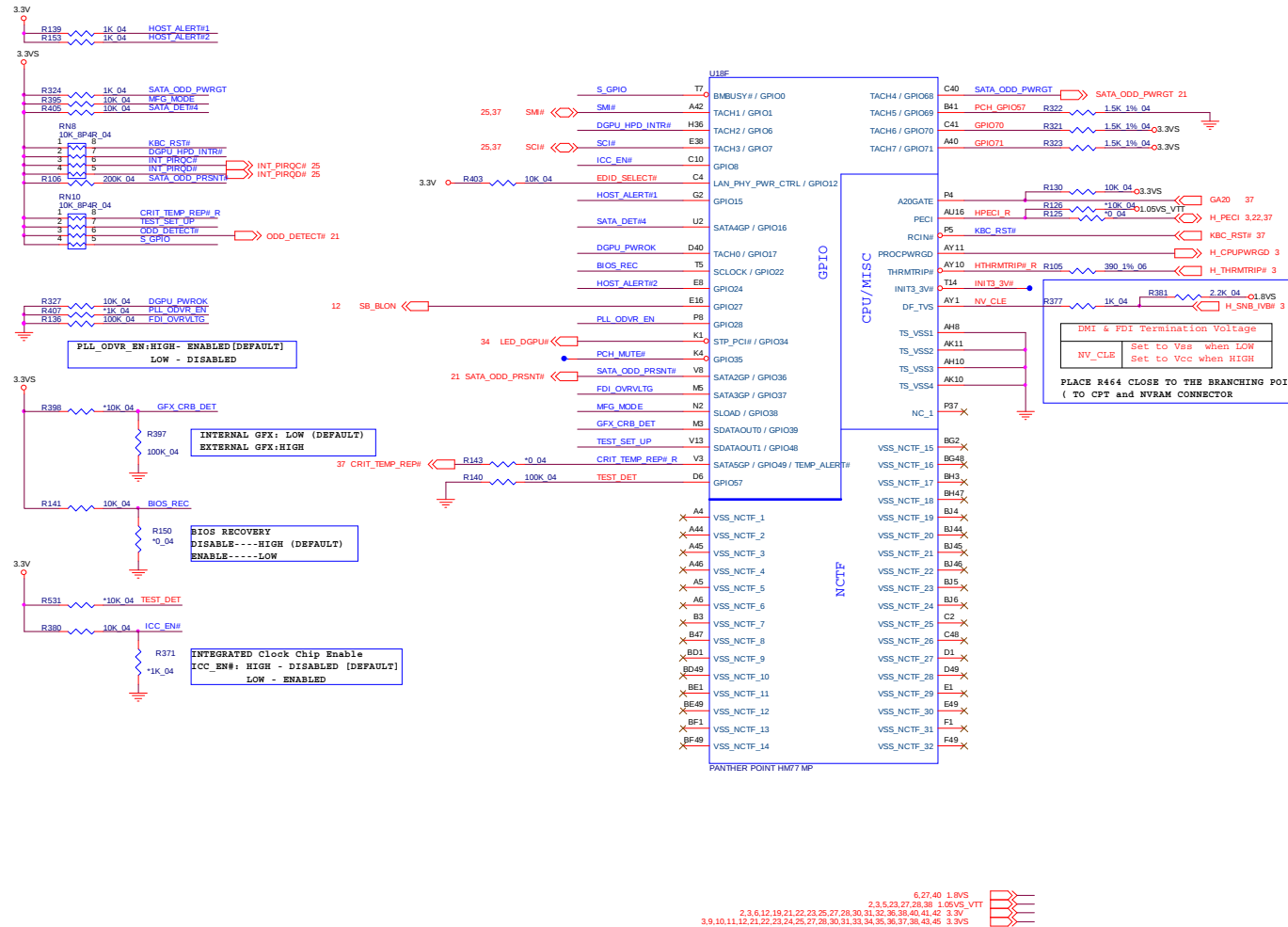
Flash Descriptor security override strap	
PCI_GNT#3	LOW = PCI_GNT#3 swap override HIGH = Default

 MPC Switch Control
MPC OFF -- 0 DEFAULT
MPC ON -- 1



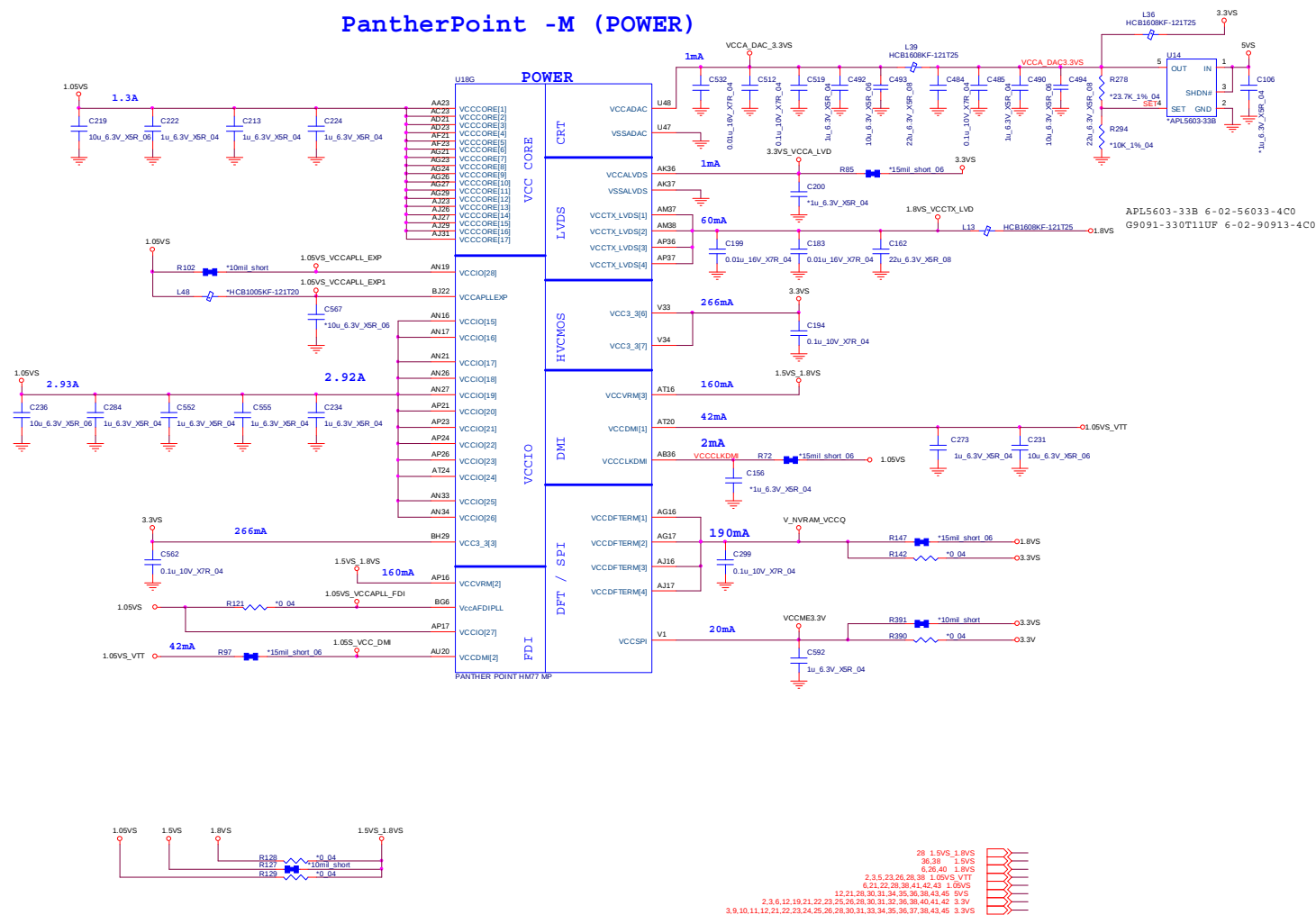
PantherPoint M 6/9

PantherPoint - M (GPIO,VSS_NCTF,RSVD)



Sheet 26 of 55
PantherPoint M 6/9

PantherPoint -M (POWER)



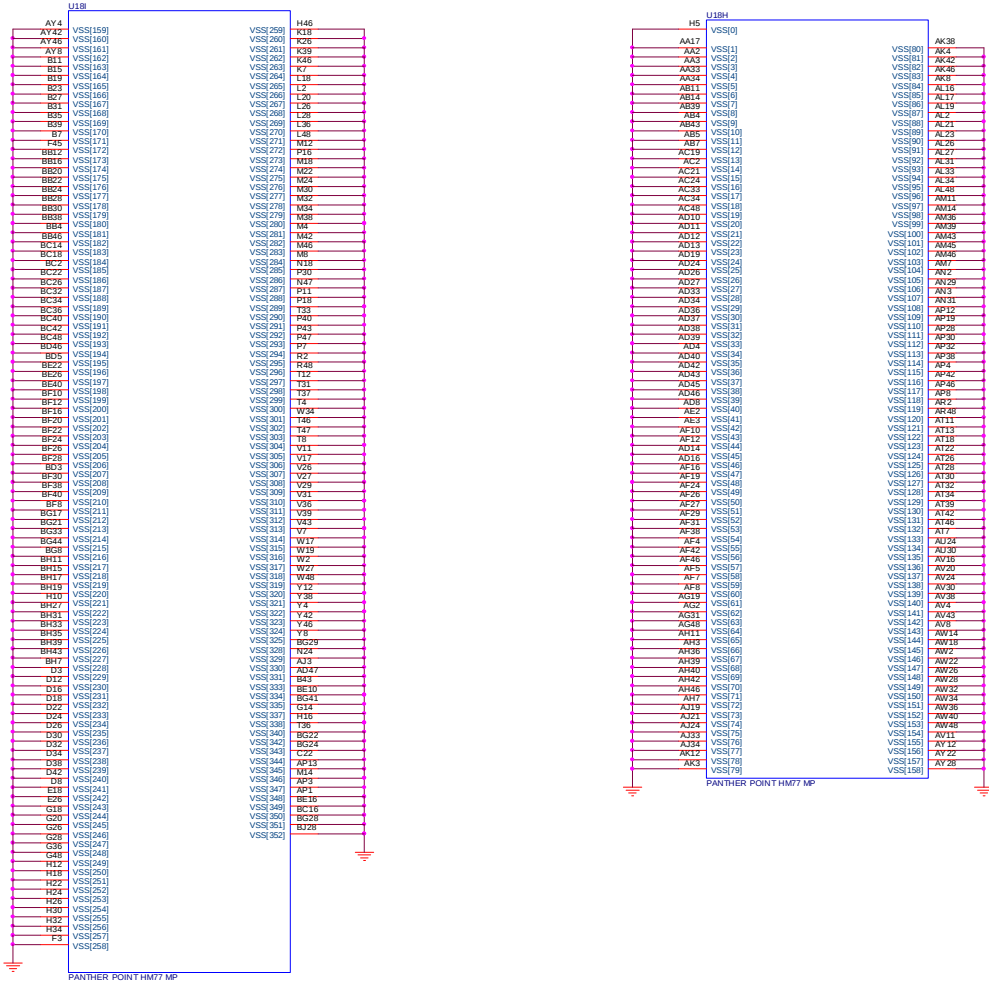
Sheet 28 of 55
PantherPoint M 8/9

CougarPoint power supply range		
Min	Voltage	Max
1.00V	1.05V	1.10V
1.43V	1.5V	1.58V
1.71V	1.8V	1.89V
3.14V	3.3V	3.47V
4.75V	5V	5.25V

Schematic Diagrams

PantherPoint M 9/9

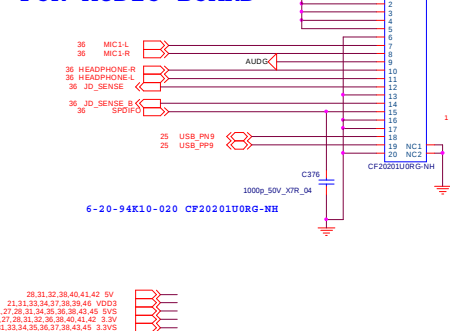
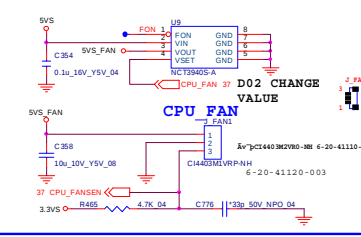
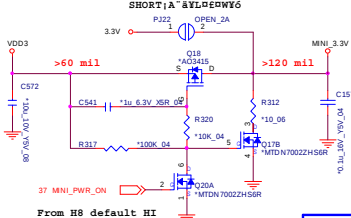
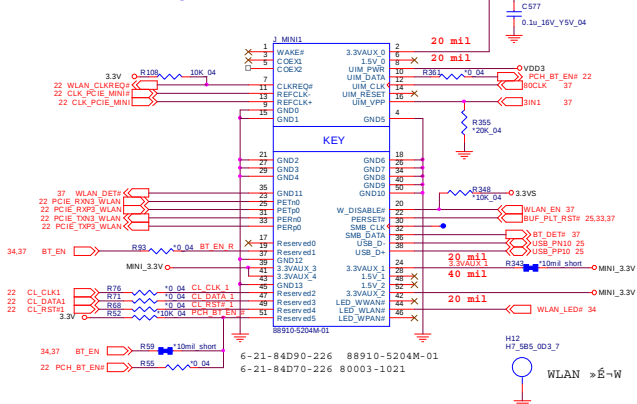
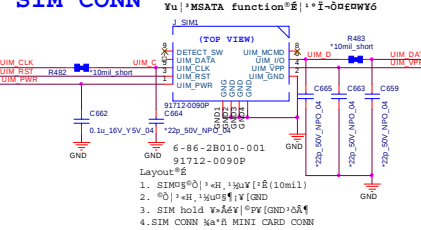
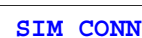
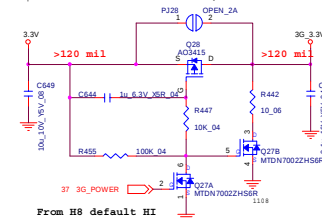
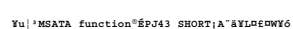
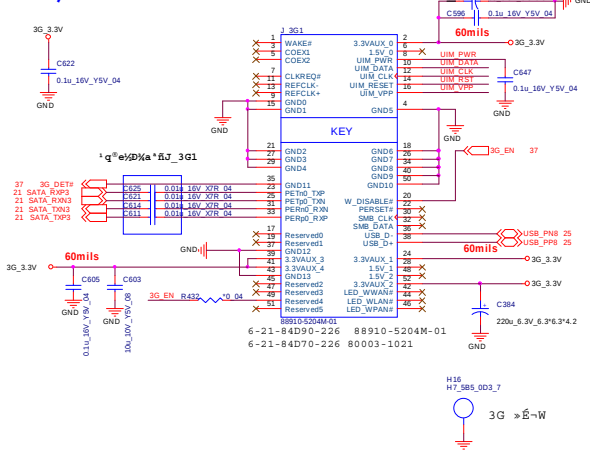
PantherPoint -M (GND)



Voltage Rail	Voltage	S0 Iccmax	Current (A)
V_CPU_IO	1.05	1	(mA)
V5REF	5	1	(mA)
V5REF_Sus	5	1	(mA)
Vcc3_3	3.3	0.266	
VccADAC3	1.05	1	(mA)
VccADPLLA	1.05	0.08	
VccADPLLB	1.05	0.08	
VccCore	1.05	1.3	
VccDMI	1.1	0.042	
VccIO	1.05	2.925	
VccASW	1.05	1.01	
VccSPI	3.3	0.020	
VccDSW3_3	3.3	2	(mA)
VccDFTERM	1.8	0.19	
VccBus3_3	3.3	0.097	
VccBusHDA	3.3	1	(mA)
VccVFM	1.5	0.16	
VccCLKDMI	1.05	0.02	
VccSSC	1.05	0.095	
VccDIFFCLKN	1.05	0.055	
VccALVDS	3.3	1	(mA)
VccTX_LVDS	1.8	0.06	

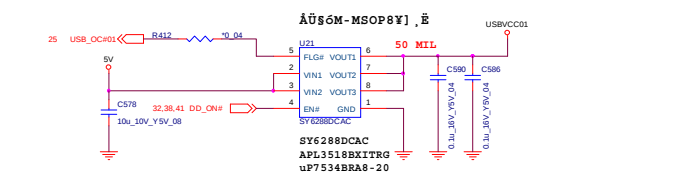
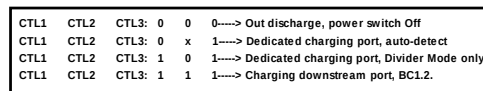
Sheet 30 of 55
Mini PCIE, FAN,
Audio Con

3G POWER

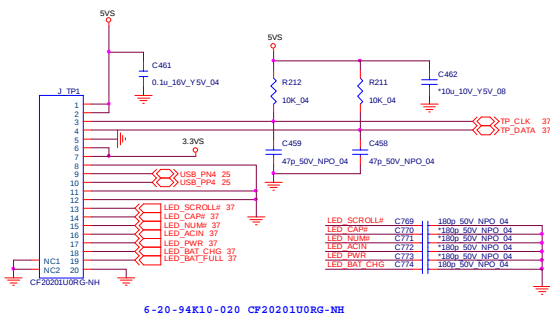


B - 32 USB Charge, CCD, TPM, Multi-Con

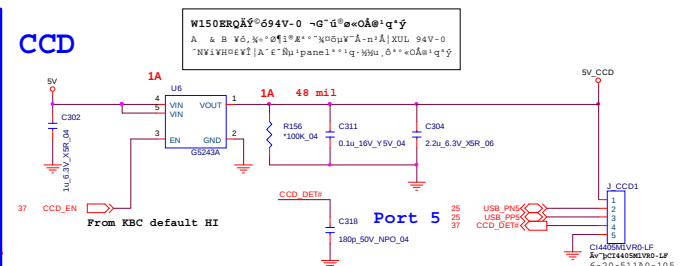
Sheet 31 of 55
USB Charge, CCD,
TPM, Multi-Con



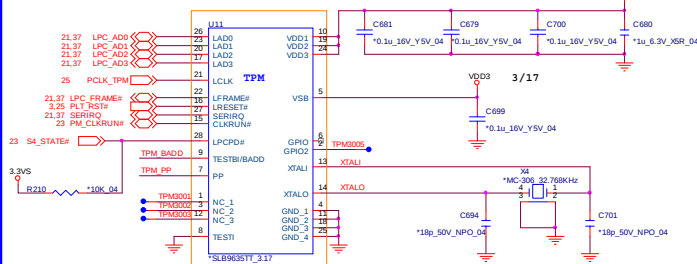
CLICK CONN



CCD



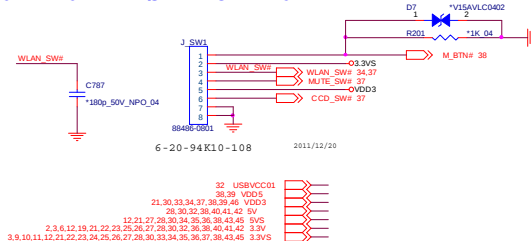
TPM 1.2



Asserted before entering S3
LPC reset timing:
LPCPD# inactive to LRST# inactive 32~96us

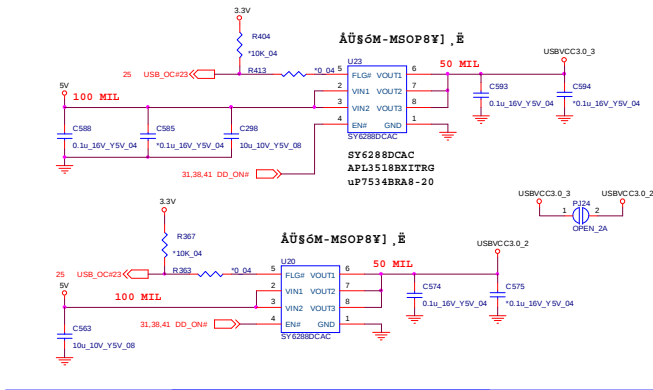
TPM_PP	HI: ACCESS LOW: NORMAL (Internal PD)
TPM_BADD	HI: 4E/ 4F H LOW: 2E/ 2F H

FOR POWER SWITCH BOARD

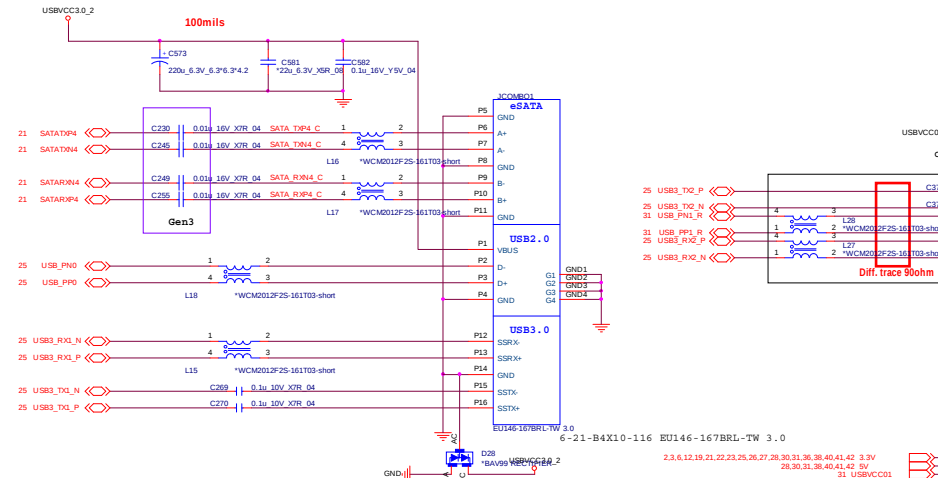


ESATA/USB3.0 Connector

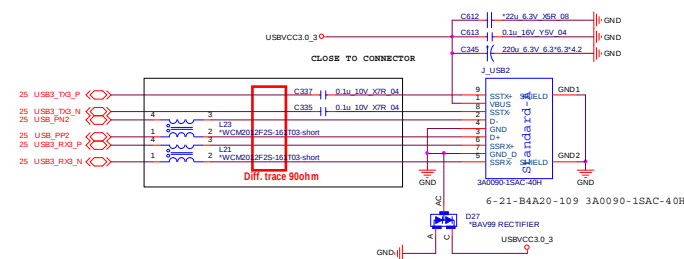
USB POWER SWITCH



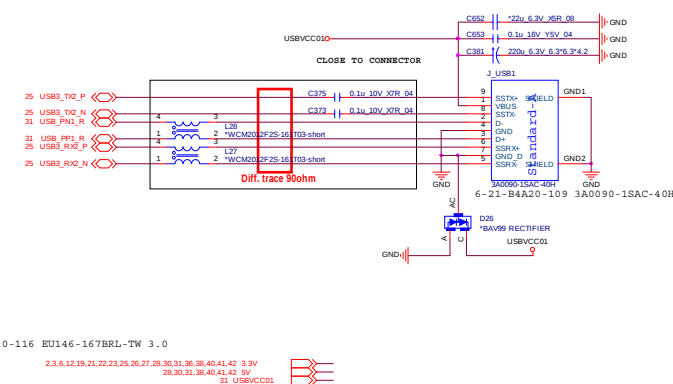
ESATA+USB3.0 USB2.0 PORT(PORT0) USB3.0 PORT(PORT1)



USB2.0 PORT(PORT2) USB3.0 PORT(PORT3)

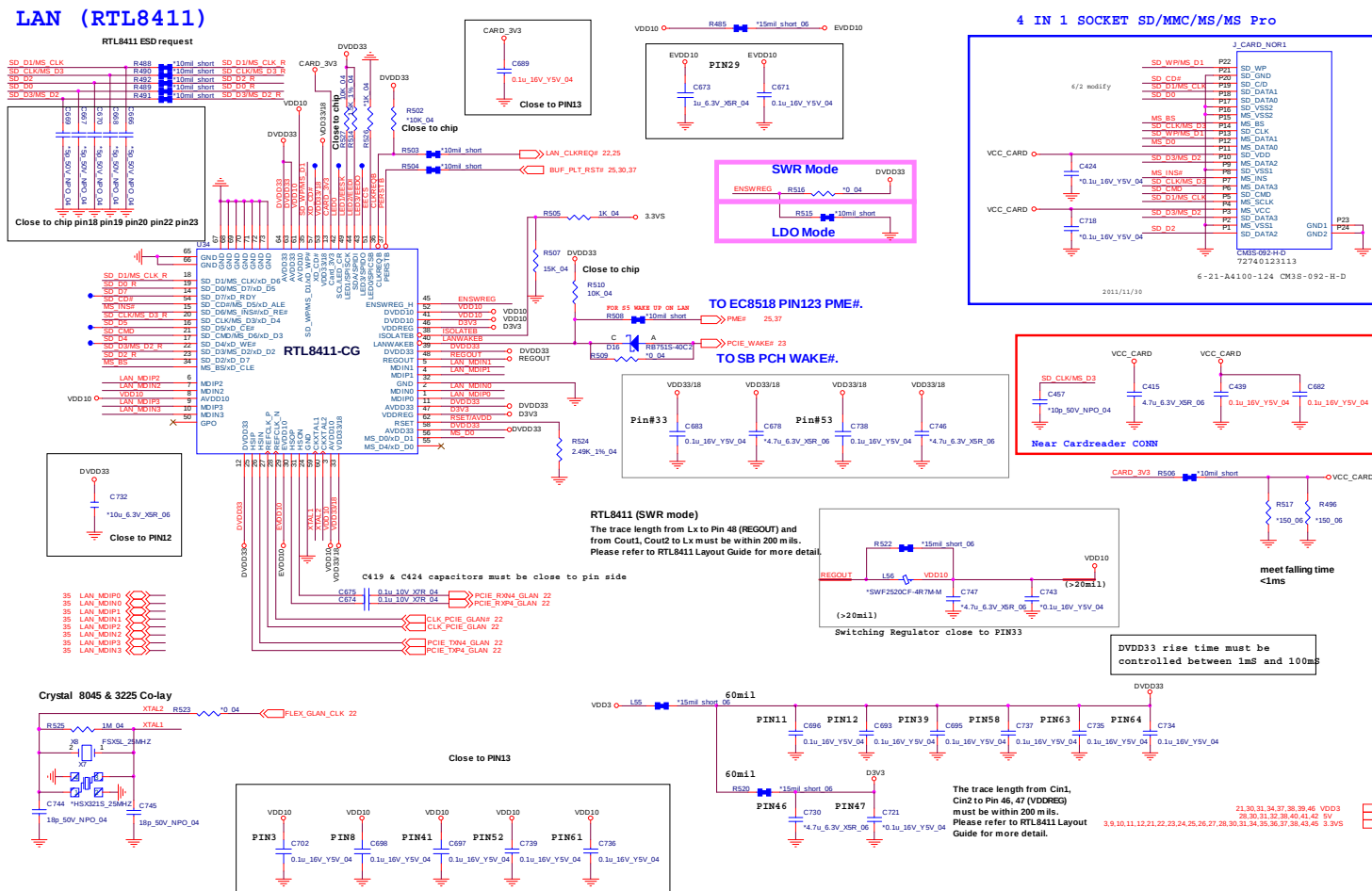


USB2.0 PORT(PORT1) Debug USB3.0 PORT(PORT2) USB2.0 Charge Function

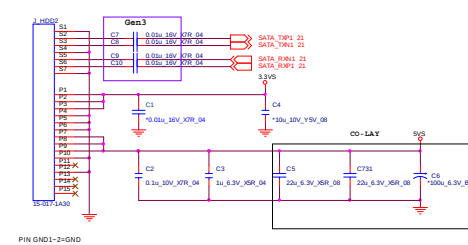
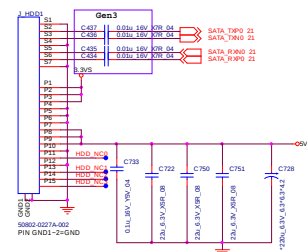


Sheet 32 of 55
ESATA/USB3.0
Connector

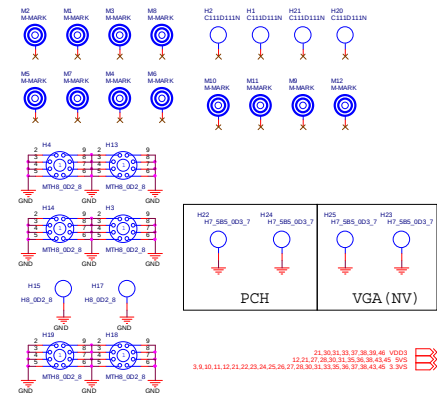
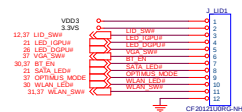
Sheet 33 of 55
Card Reader /
LAN RTL8411



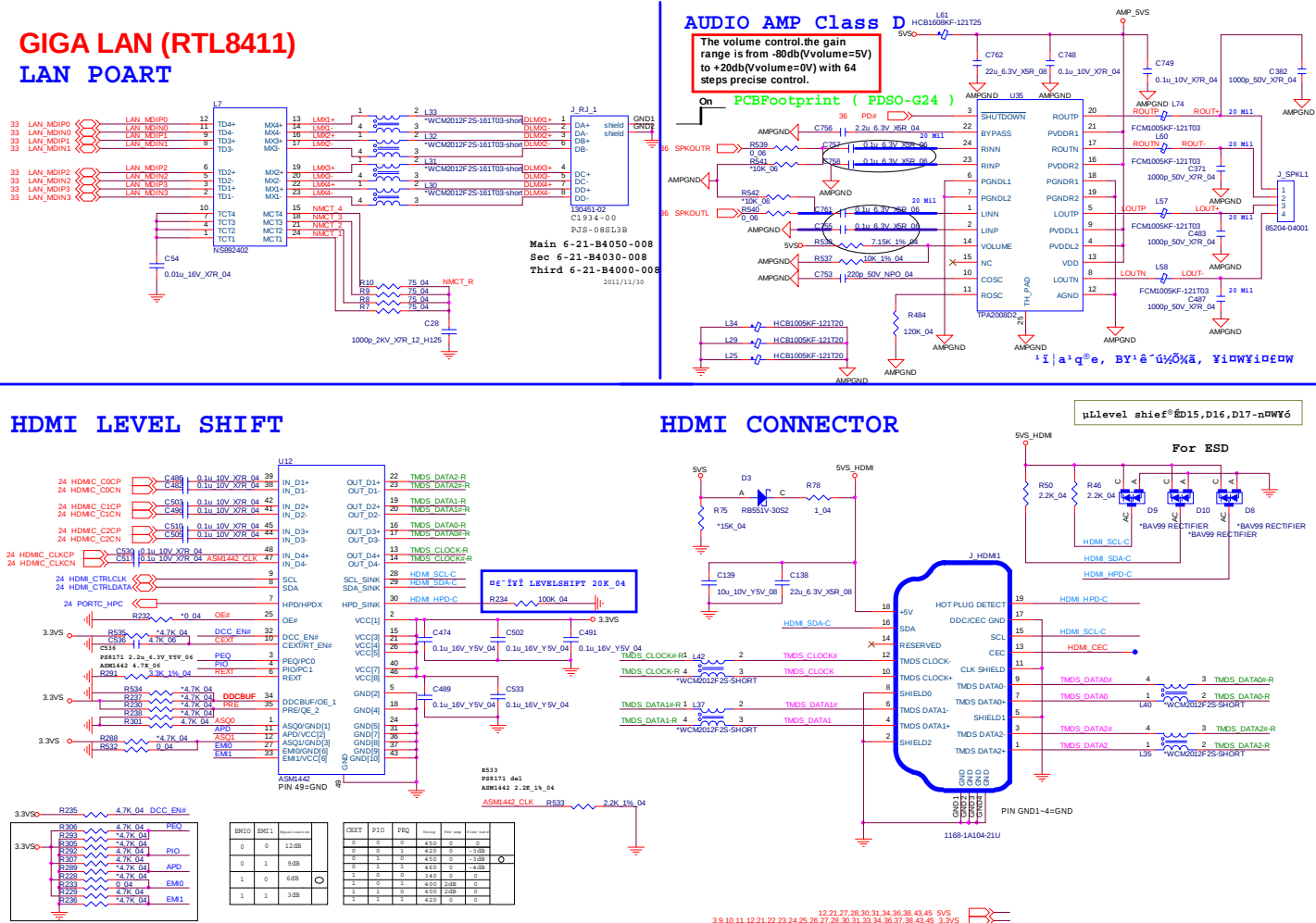
Sheet 34 of 55
SATA HDD, VLED
CON, LI DSW



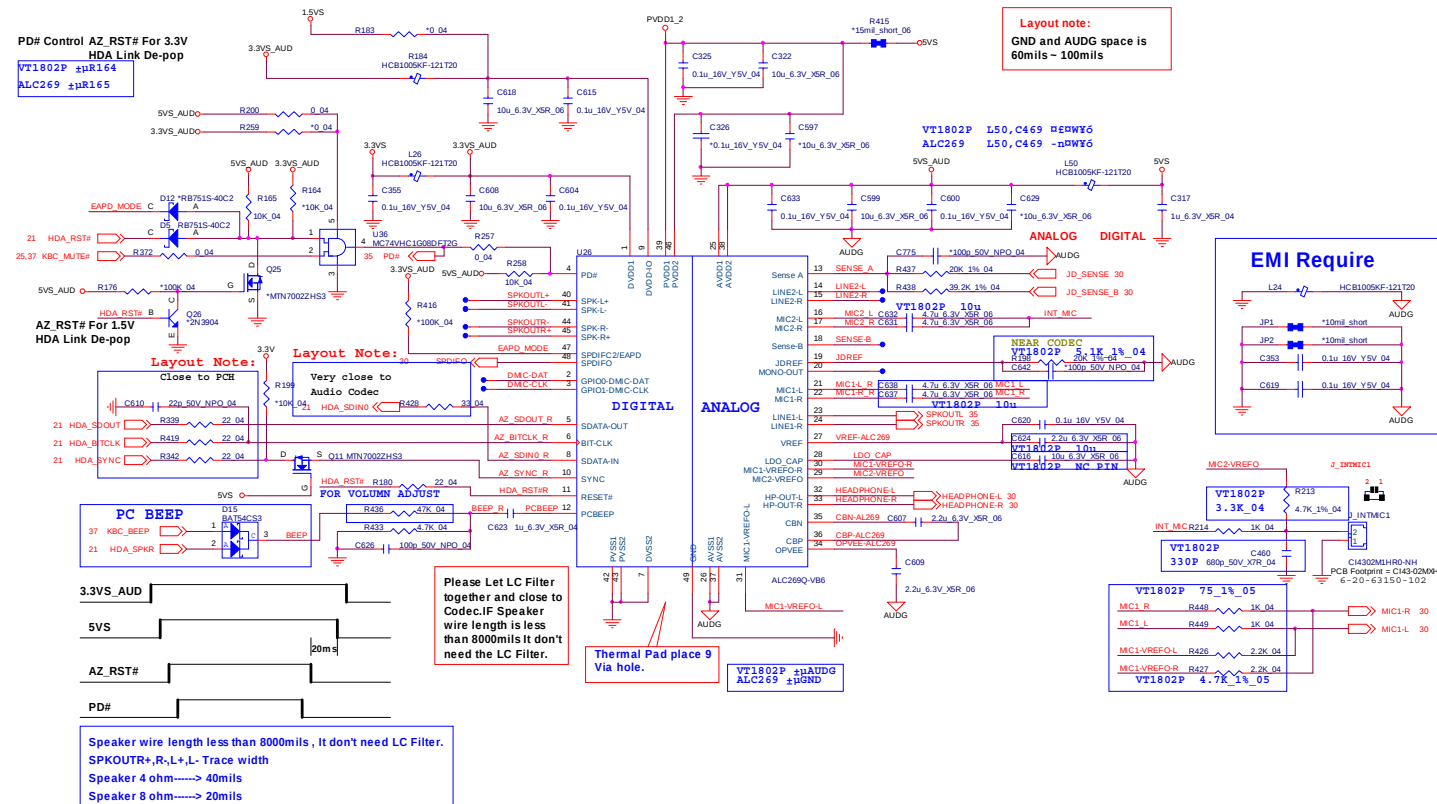
W370ET W350ET LID / VGA LED CON



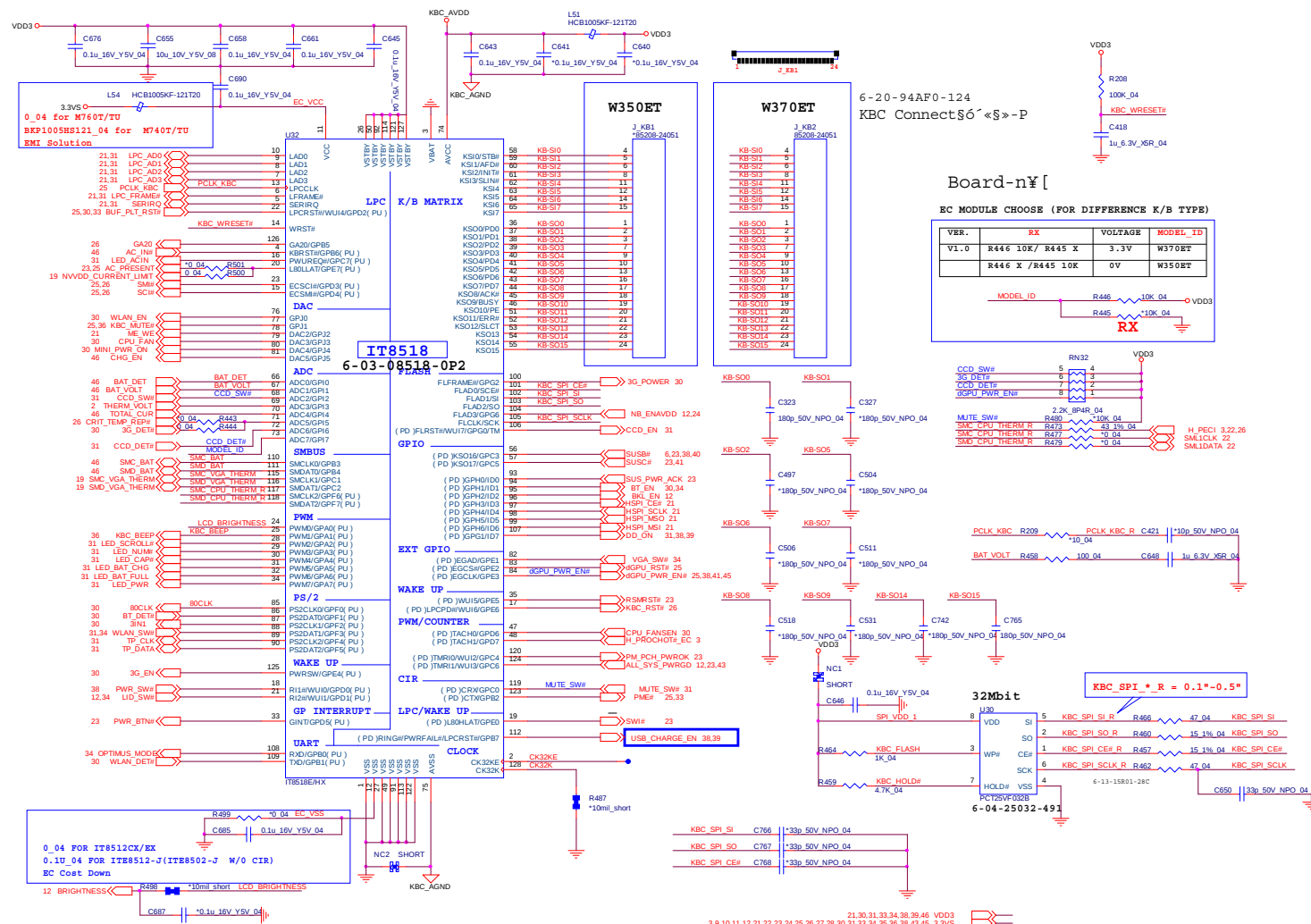
HDMI, RJ45, Audio AMP



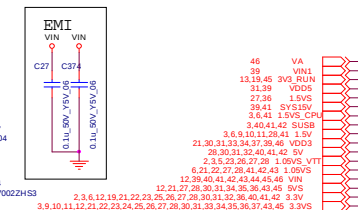
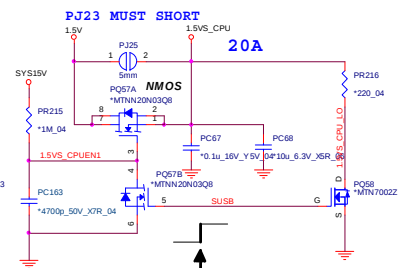
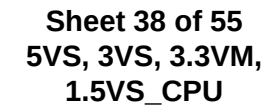
CODEC (ALC269)



B - 38 KBC ITE IT8518E

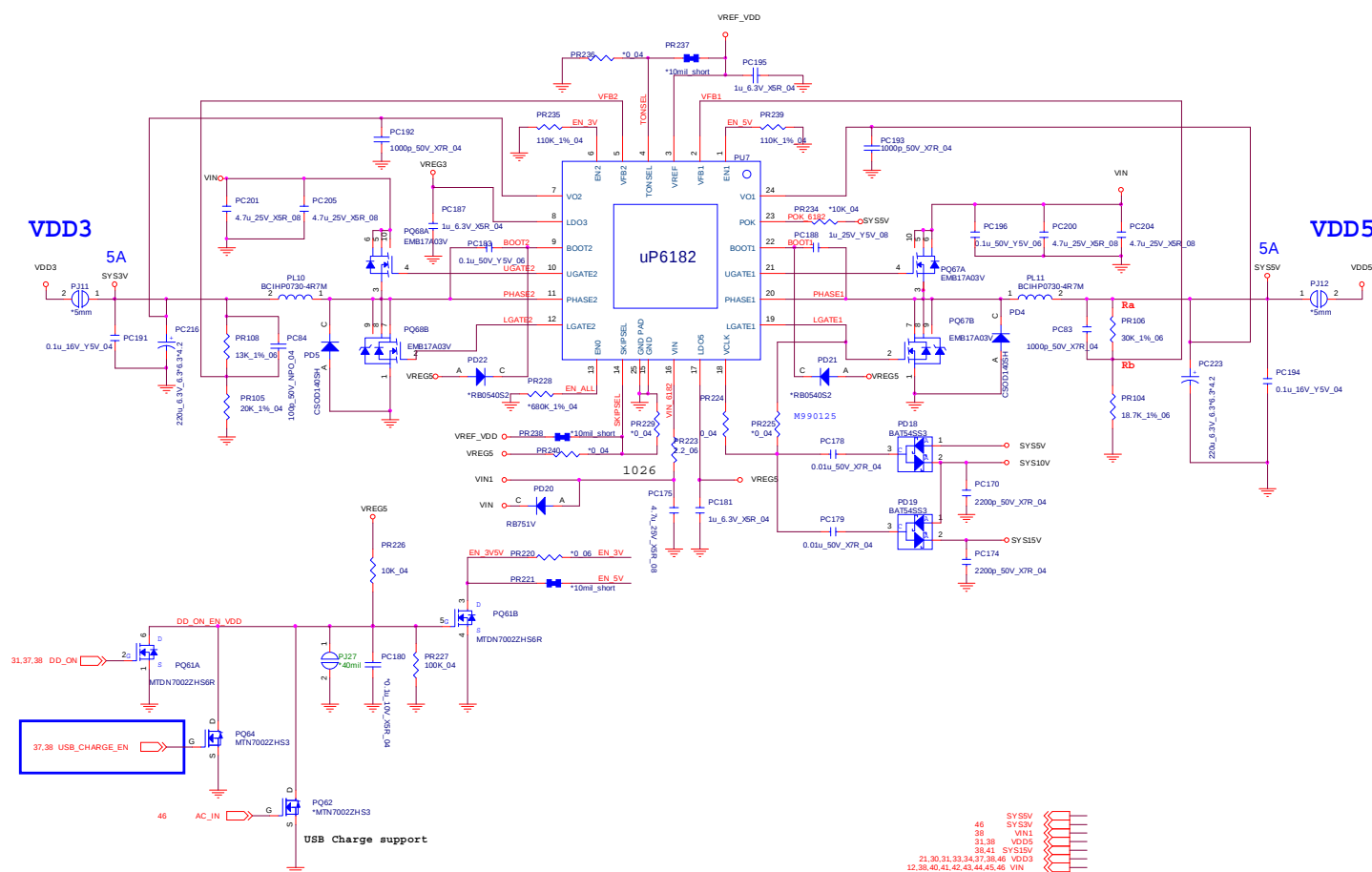


Schematic Diagrams

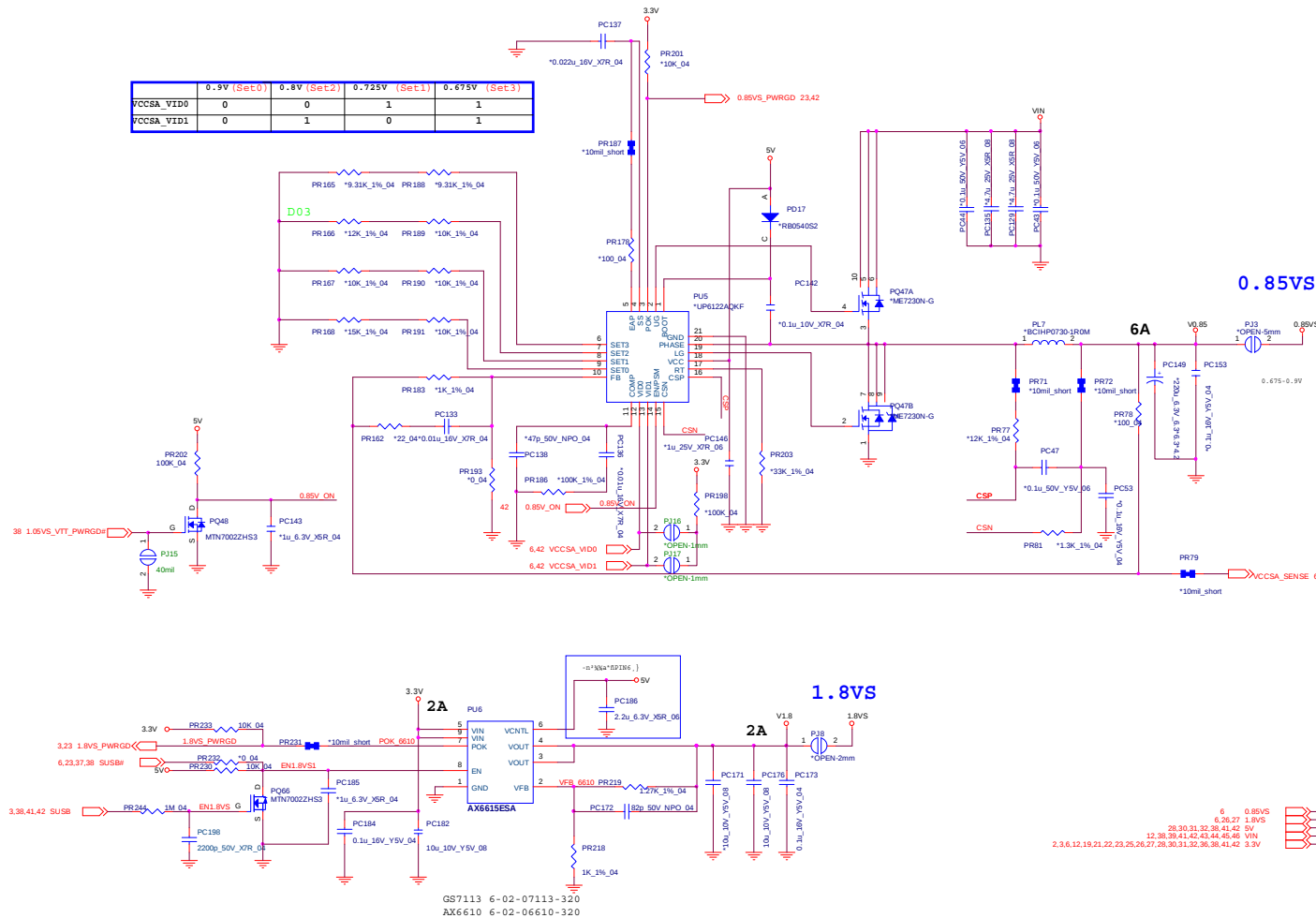


VDD3, VDD5

Sheet 39 of 55
VDD3, VDD5



Power 0.85VS, 1.8VS



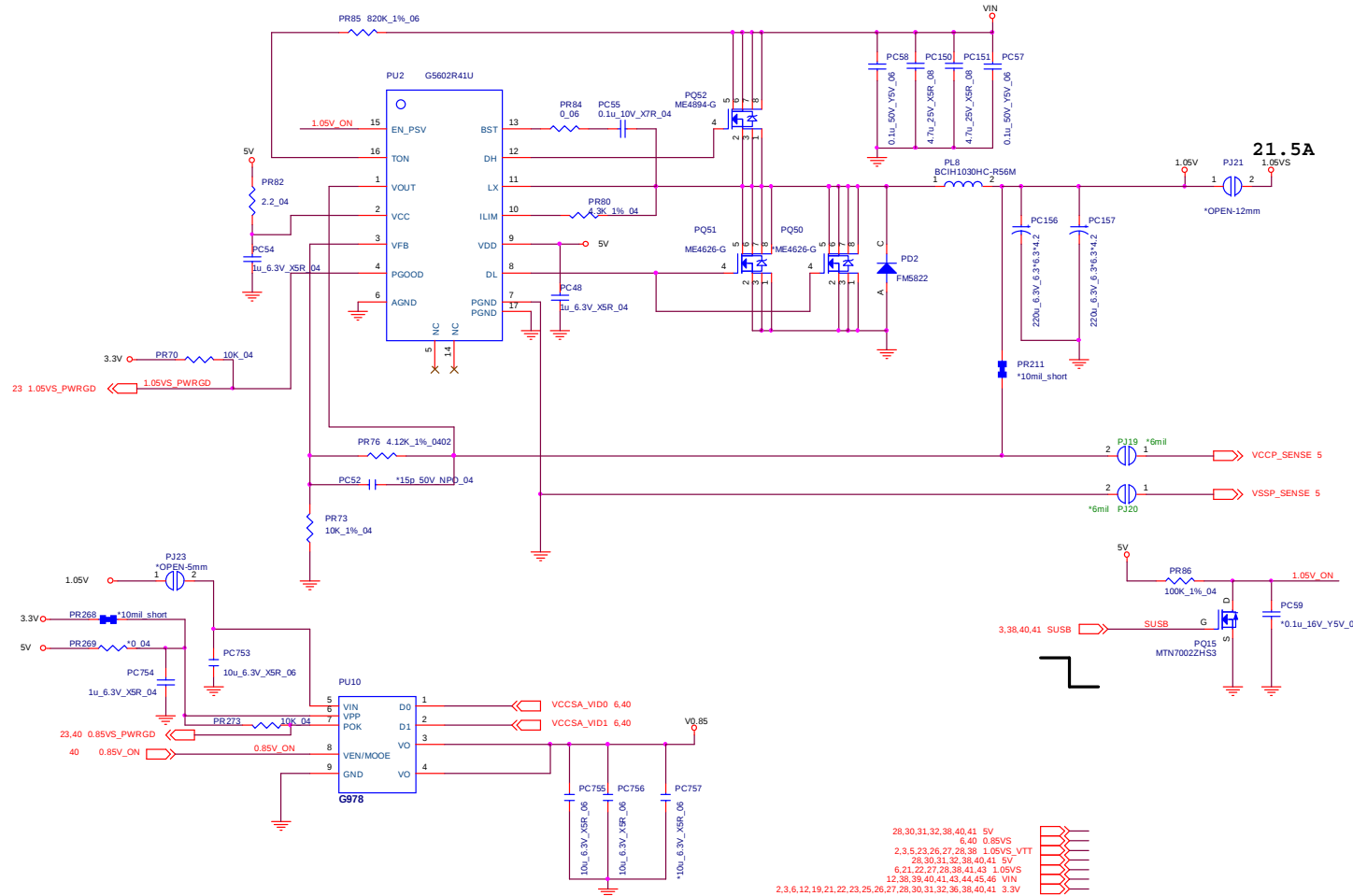
Sheet 40 of 55
Power 0.85VS,
1.8VS

Power 1.5/0.75V/PEX_VDD

[illegible]

Power 1.05VS, 0.85VS

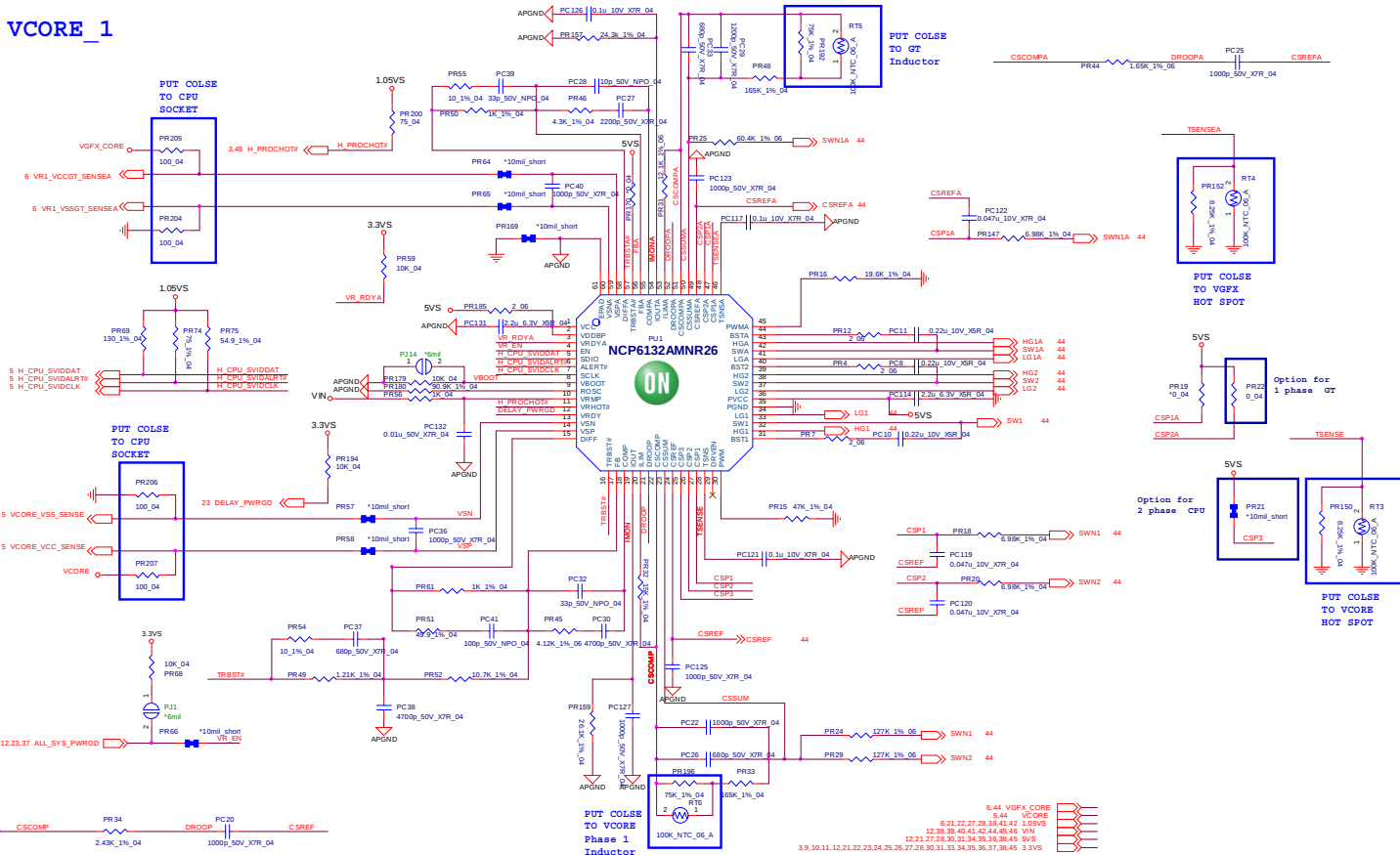
Sheet 42 of 55
Power 1.05VS/
0.85VS



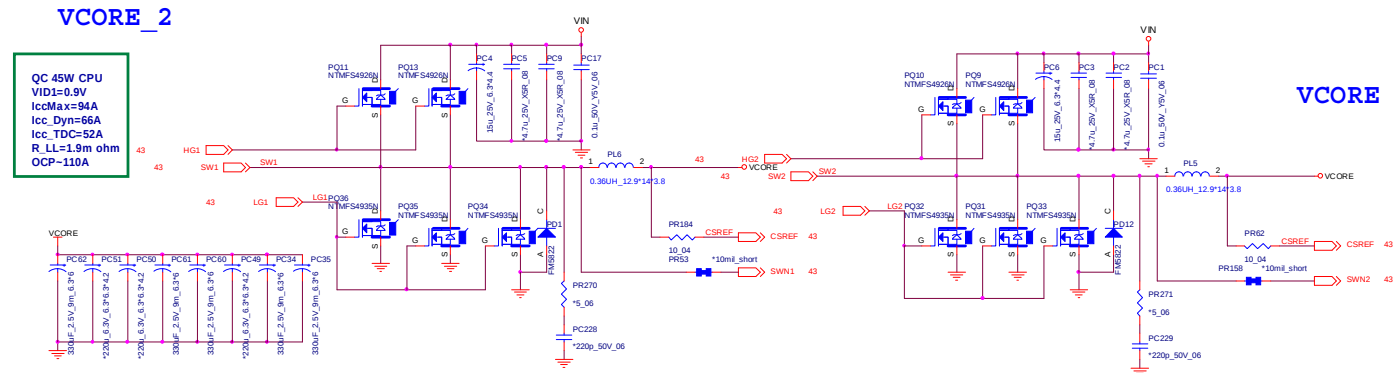
Power V-Core 1

B.Schematic Diagrams

Sheet 43 of 55
Power V-Core 1



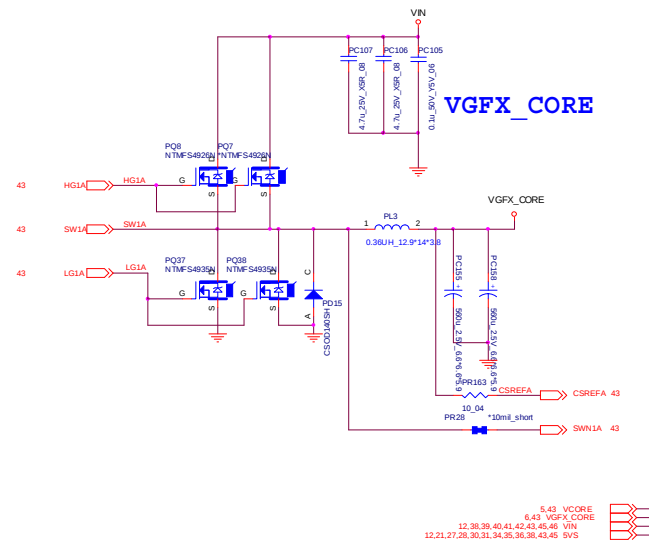
Power V-Core 2



Sheet 44 of 55
Power V-Core 2

VGFX_CORE

QC 45W GT2
VID=1.23V
IccMax=25A
Icc_Dyn=37A
Icc_TDC=38A
R_LL=3.9m ohm
OCP=30A

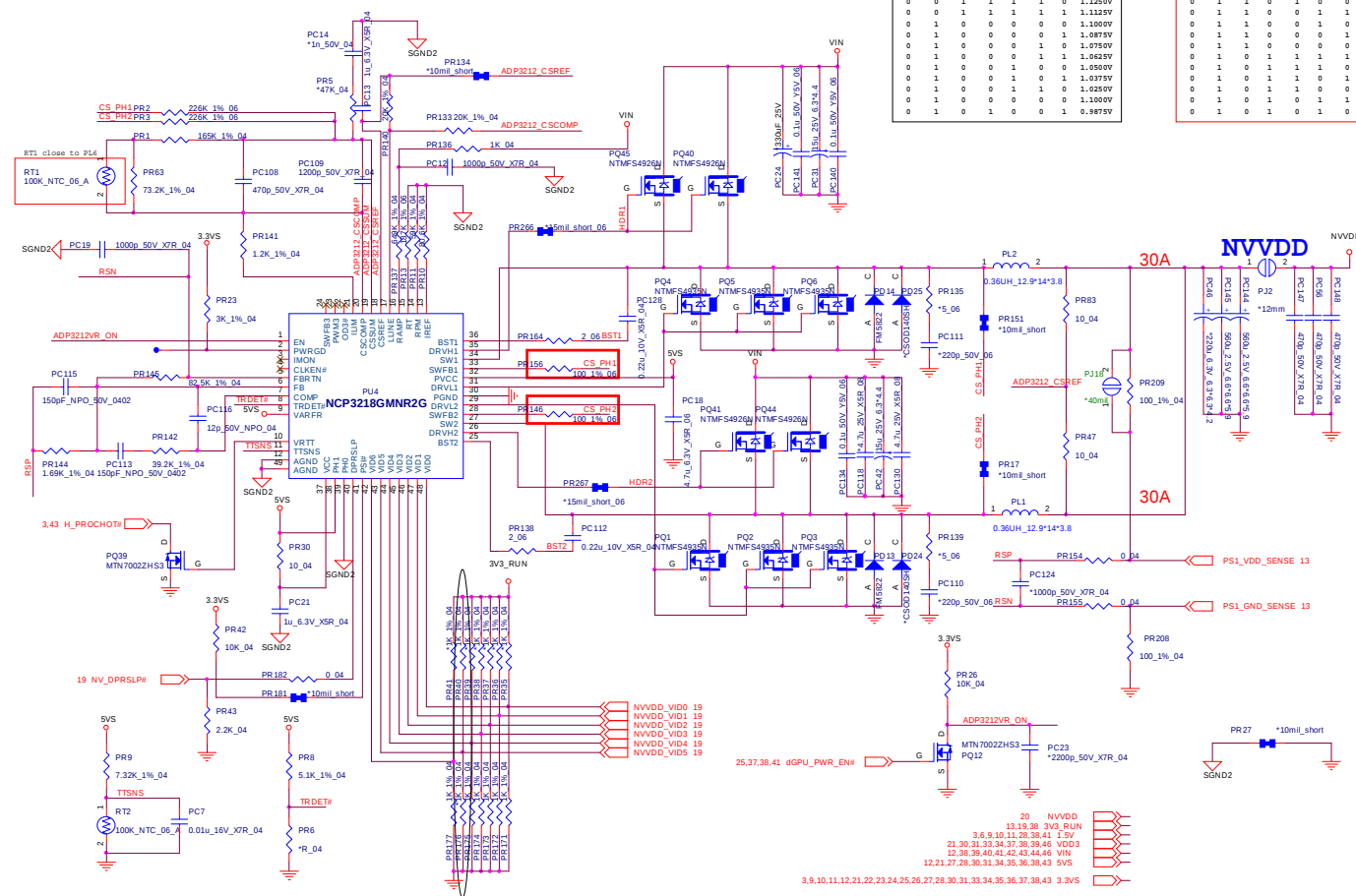


VGA NVVDD

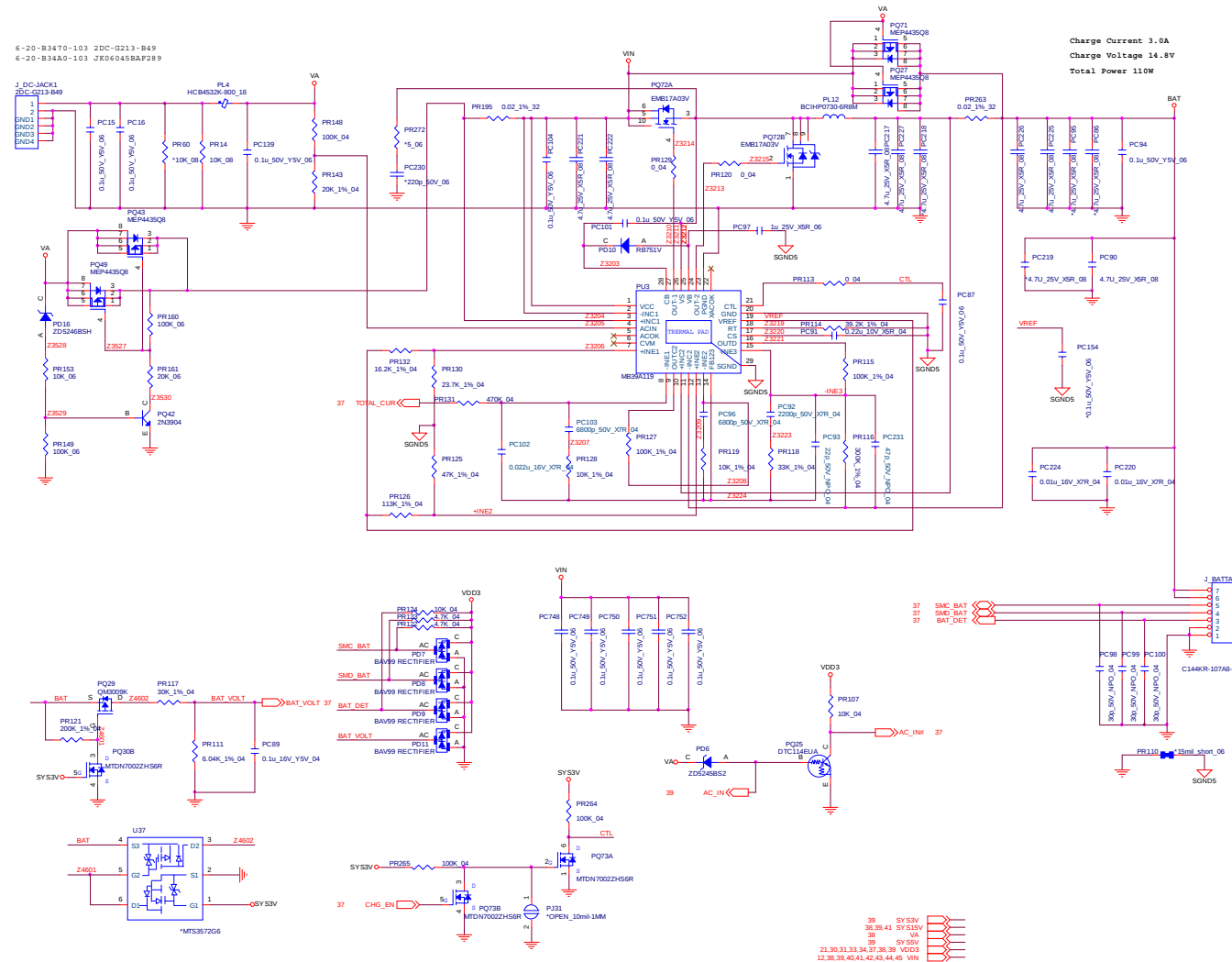
VGA NVVDD

[illegible]

Vide	Vide	Vide	Vide	Vide	Output
0	1	1	1	1	0.71235
0	1	1	1	1	0.72500
0	1	1	1	1	0.73765
0	1	1	1	1	0.75000
0	1	1	1	0	0.76235
0	1	1	0	1	0.77500
0	1	0	1	1	0.78765
0	1	0	1	1	0.80000
0	1	1	0	1	0.81235
0	1	1	0	1	0.82500
0	1	1	0	0	0.83735
0	1	0	0	1	0.85000
0	1	0	0	1	0.86235
0	1	0	0	0	0.87500
0	1	0	0	0	0.88765
0	1	0	1	1	0.90000
0	1	0	1	1	0.91235
0	1	0	1	1	0.92500
0	1	0	0	1	0.93735
0	1	0	0	0	0.95000
0	1	0	0	0	0.96235
0	1	0	0	1	0.97500

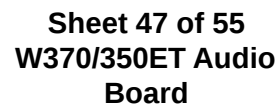


AC-In, Charger B - 47



B. Schematic Diagrams

USB PORT (PORT9)



CO-Ray DIFF USB8P&N-U1u1-U7n

A 5V

A_AUDG<

AMICL_L

AMICL_R

AHEADPHONE_R

AHEADPHONE_L

AMIC_SENSE

AHP_SENSE

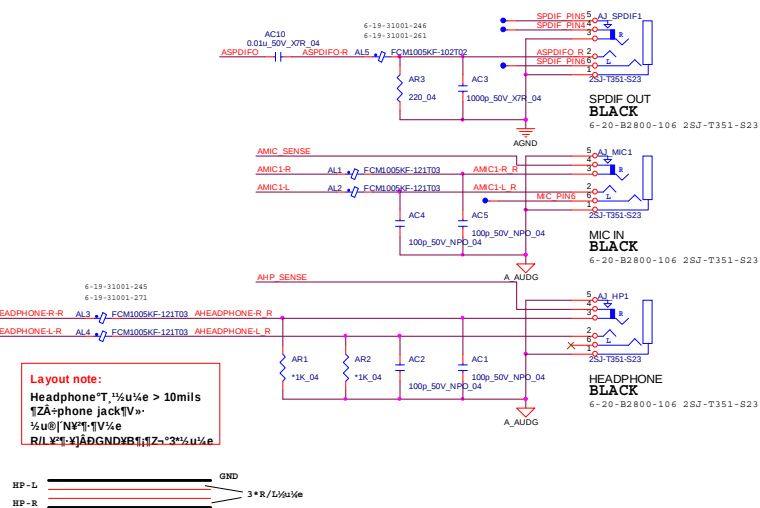
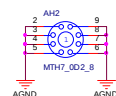
ASPDIF0

AUSB_PWS

AUSB_PPS

AGND

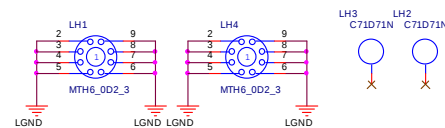
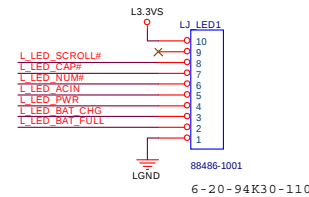
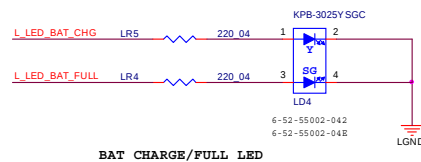
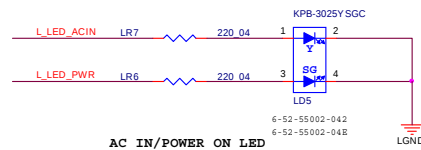
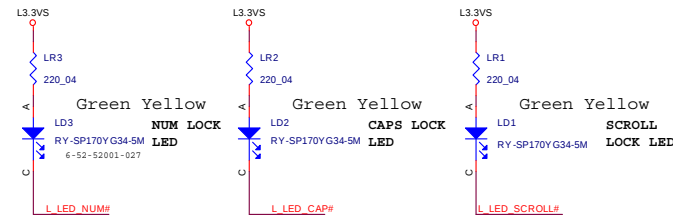
CF20201U0RG4NH
6-20-94K10-020 CF20201U0RG-NH



W370/350ET Power LED Board

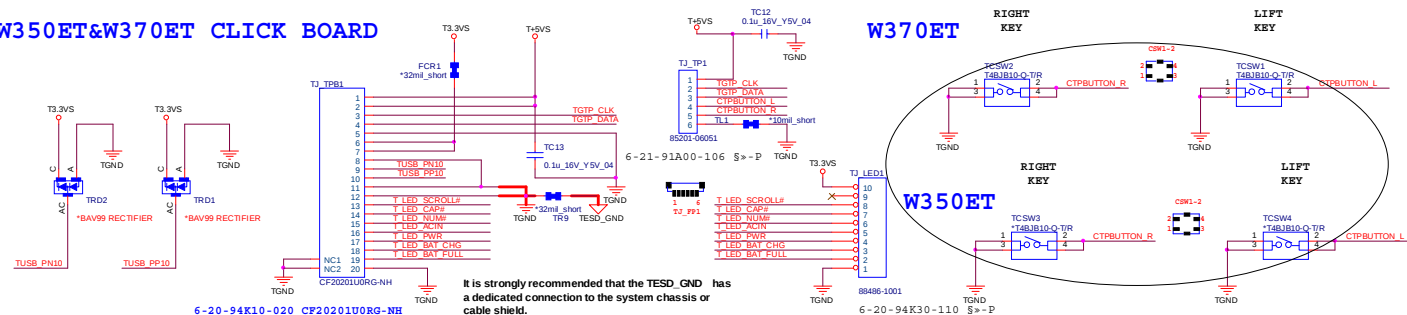
W370ET /W350ET

LED



Sheet 48 of 55
W370/350ET Power
LED Board

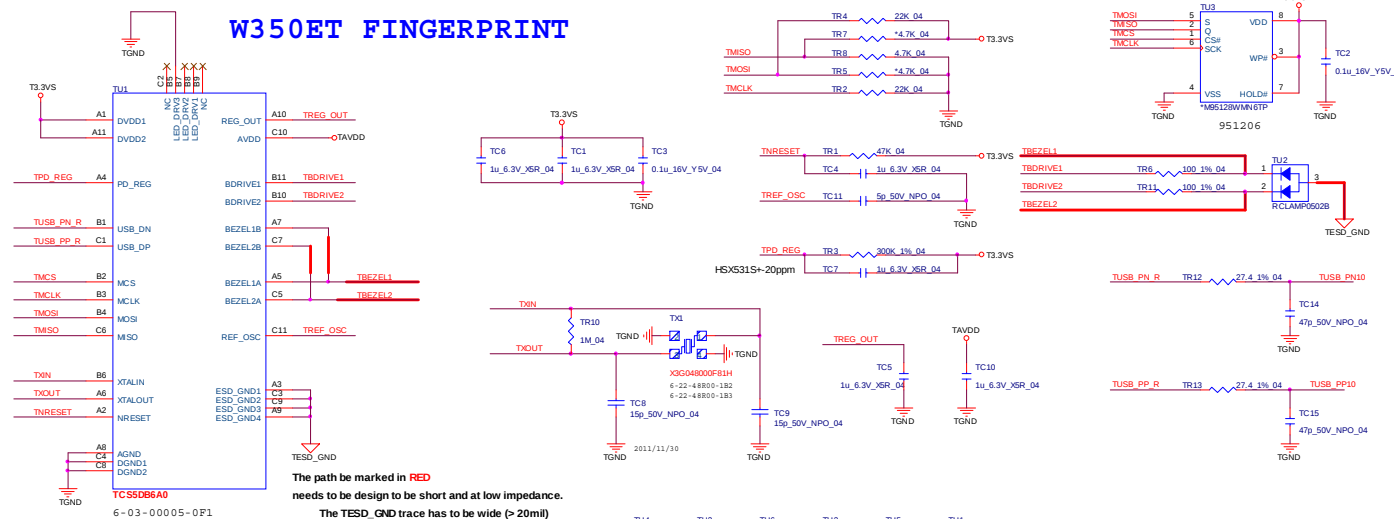
W350ET&W370ET CLICK BOARD



It is strongly recommended that the **TESD_GND** has a dedicated connection to the system chassis or cable shield.

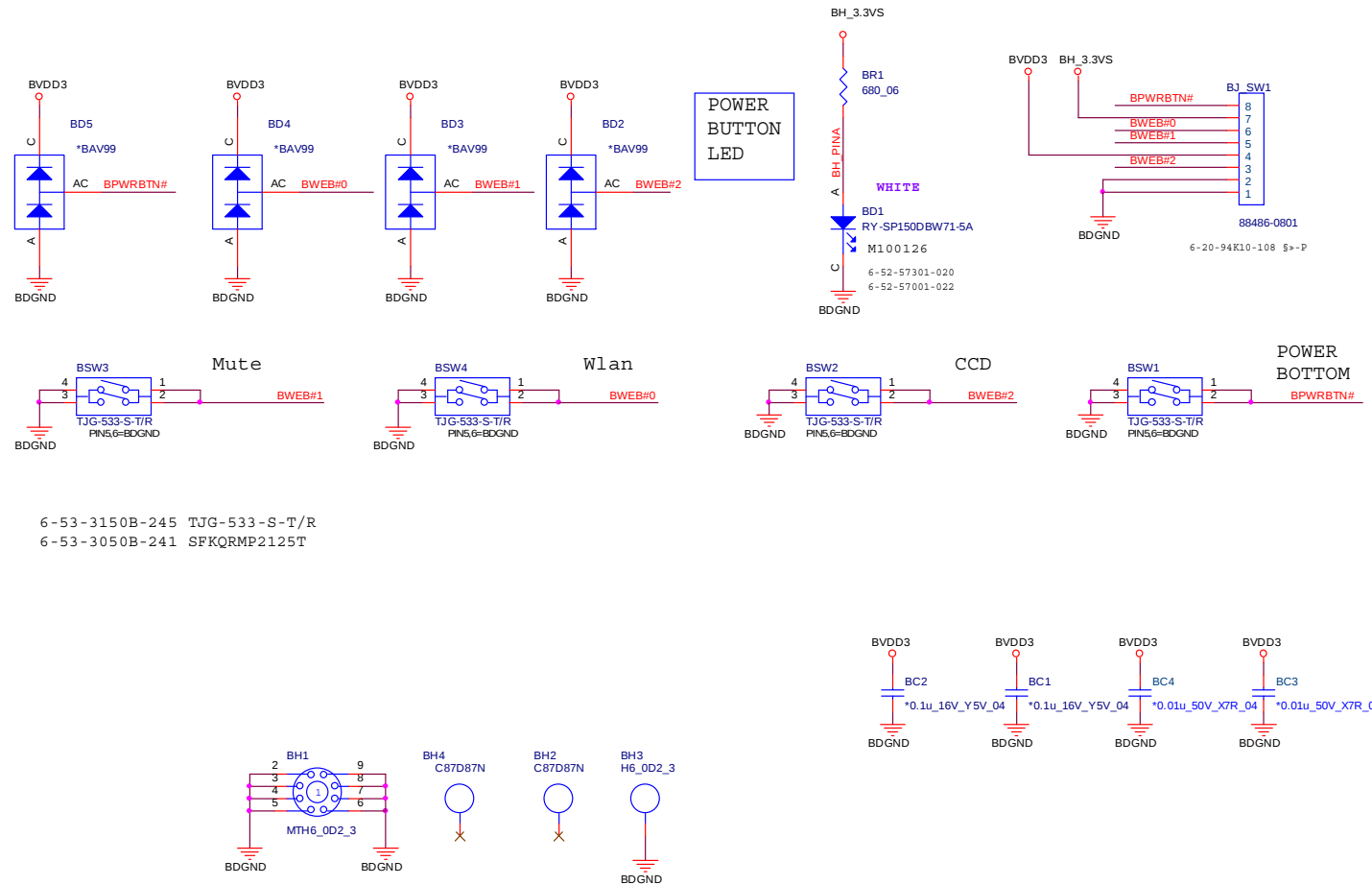
Sheet 49 of 55
W370/350ET Click
Board

W350ET FINGERPRINT



W370ET Power Switch Board

W370ET POWER SWITCH BOARD



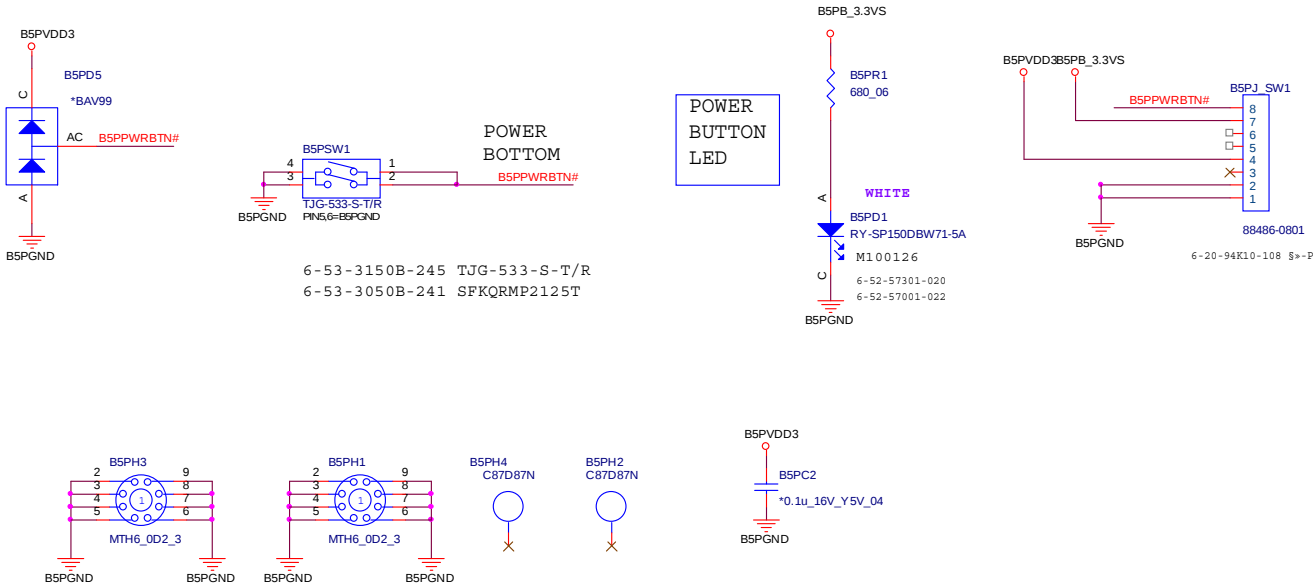
Sheet 50 of 55
W370ET Power
Switch Board

Schematic Diagrams

W350ET Power Switch Board

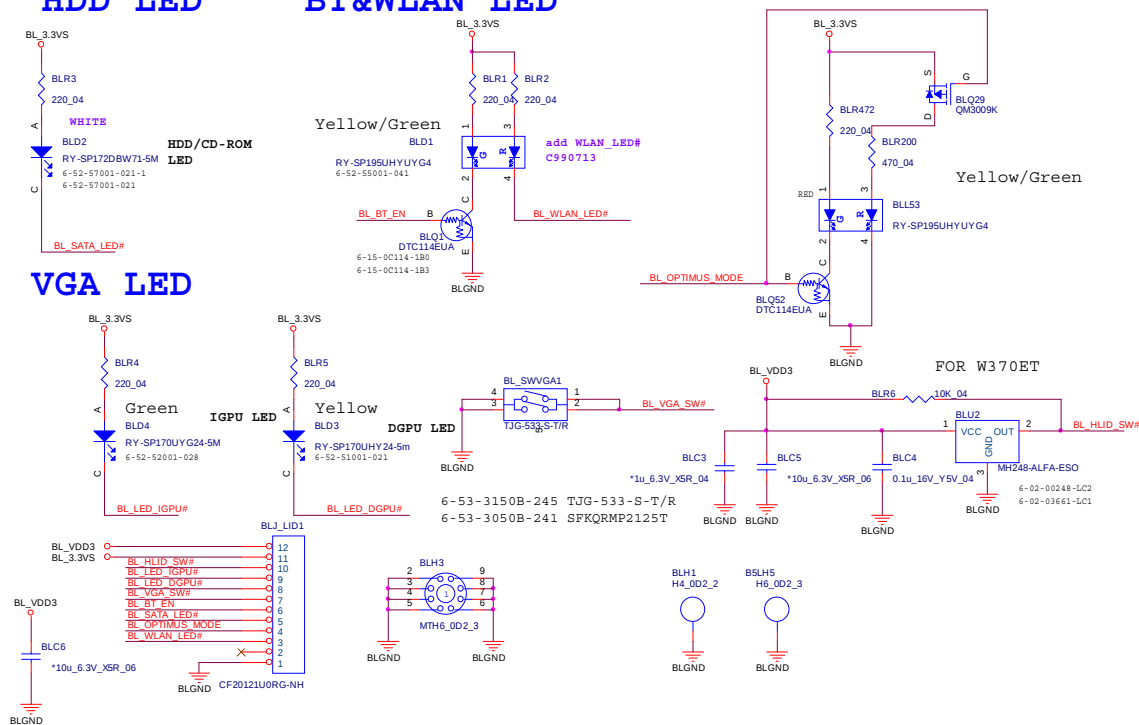
Sheet 51 of 55
W350ET Power
Switch Board

W350ET POWER SWITCH BOARD



W370ET LID & VGA LED SW BOARD

HDD LED BT&WLAN LED VGA SWITCH & LED



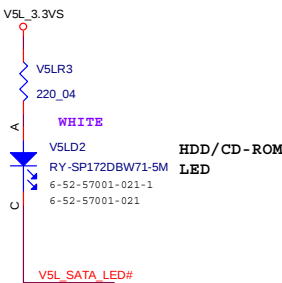
B.Schematic Diagrams

Schematic Diagrams

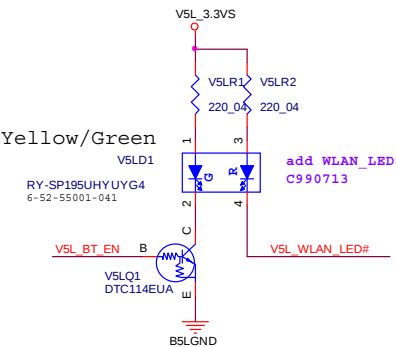
W350ET LID / VGA LED Board

W350ET LID & VGA LED BOARD

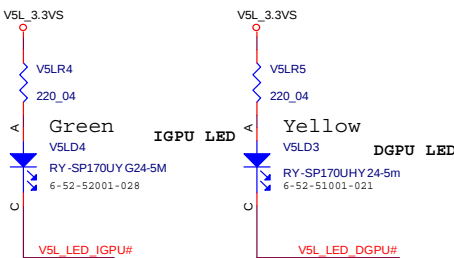
HDD LED



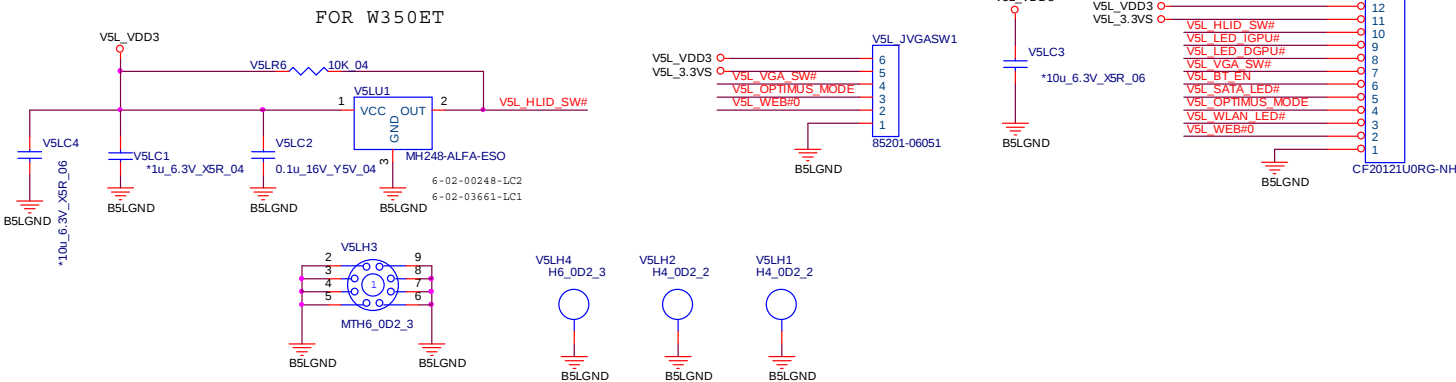
BT&WLAN LED



VGA LED

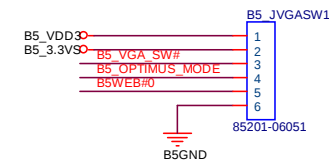
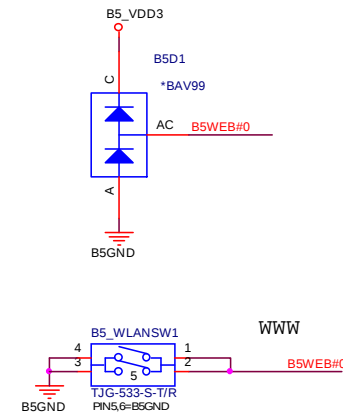


LID SWITCH IC



W350ET VGA & WWW SW BOARD

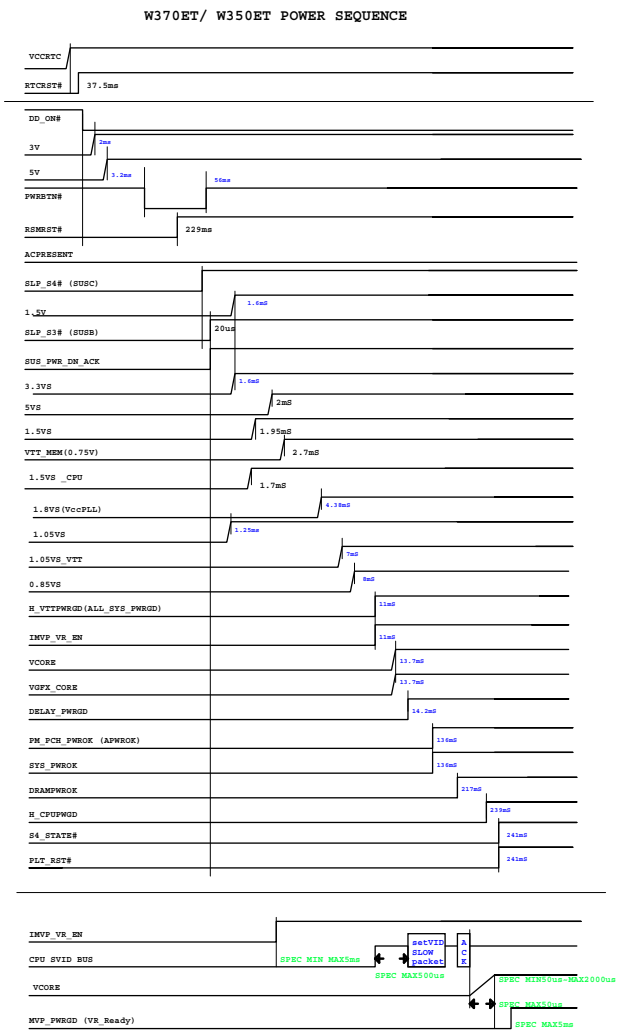
Diagram illustrating the connection of B5H3, B5H1, B5H4, and B5H2 to B5GND. B5H3 and B5H1 are connected to B5GND via a red line. B5H4 and B5H2 are not connected to B5GND, indicated by a red 'X' on the connection line.



Sheet 54 of 55
W350ET VGA /
WLAN SW Board

POWER ON SEQUENCE

Sheet 55 of 55
POWER ON
SEQUENCE



Appendix C: Updating the FLASH ROM BIOS

To update the FLASH ROM BIOS you must:

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

Download the BIOS

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

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

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

Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the “+” and “-” keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F4** to save any changes you have made and exit the BIOS to restart the computer.



BIOS Version

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

You should only download BIOS versions that are **V1.01.XX or higher** as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore **you may not downgrade your BIOS to an older version** after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

BIOS Update

Use the flash tools to update the BIOS

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

C:\> Flash.bat

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

Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F3**) and select “**Yes**” to confirm the selection.
5. Press **F4** to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

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